

# European Union Stocks

## v4.495 (Apr-21-2021)

Not present Present Preferred

| Stock   | Time Series Types |        |        |         |
|---|-------------------|--------|--------|---------|
|   | B/Bmsy            | U/Umsy | B/Bmgt | U/Umgmt |
| 1. ANCHIXa [Anchovy Portugese Waters -East]                         | TB SSB            | ER F   | TB SSB | ER F    |
| 2. ANCHOBAYB [Anchovy Bay of Biscay]                                | TB SSB            | ER F   | TB SSB | ER F    |
| 3. ANGLVIIIC-IXa [Black bellied angler ICES 8c-9a]                  | TB SSB            | ER F   | TB SSB | ER F    |
| 4. ANGLVII-VIIAbd [Black bellied angler ICES 7-8abd]                | TB SSB            | ER F   | TB SSB | ER F    |
| 5. ASHARNEATL [Angel shark Northeast Atlantic]                      | TB SSB            | ER F   | TB SSB | ER F    |
| 6. BERYXSPNEATL [Beryx spp Northeast Atlantic]                      | TB SSB            | ER F   | TB SSB | ER F    |
| 7. BJMACKXa2 [Blue jack mackerel Azores]                            | TB SSB            | ER F   | TB SSB | ER F    |
| 8. BKSFNEATL [Black scabbardfish Northeast Atlantic]                | TB SSB            | ER F   | TB SSB | ER F    |
| 9. BLINGI-II-IIIa-IVa-VIII-IX-XII [Blue ling ICES 1-2-3a-4a-8-9-12] | TB SSB            | ER F   | TB SSB | ER F    |
| 10. BLINGVb-VI-VII [Blue ling ICES 5b-6-7]                          | TB SSB            | ER F   | TB SSB | ER F    |
| 11. BLRAYIVa-VI [Blonde ray ICES 4a-6]                              | TB SSB            | ER F   | TB SSB | ER F    |
| 12. BLRAYIVc-VIId [Blonde ray ICES 4c-7d]                           | TB SSB            | ER F   | TB SSB | ER F    |
| 13. BLRAYIXa [Blonde ray Portugese Waters -East]                    | TB SSB            | ER F   | TB SSB | ER F    |
| 14. BLRAYVIIafg [Blonde ray ICES 7afg]                              | TB SSB            | ER F   | TB SSB | ER F    |
| 15. BLRAYVIIe [Blonde ray Western English Channel]                  | TB SSB            | ER F   | TB SSB | ER F    |
| 16. BMDOGVIII-IXa [Blackmouth dogfish ICES 8-9a]                    | TB SSB            | ER F   | TB SSB | ER F    |
| 17. BMDOGVI-VII [Blackmouth dogfish ICES 6-7]                       | TB SSB            | ER F   | TB SSB | ER F    |
| 18. BOARVI-VIII [Boarfish ICES 6-8]                                 | TB SSB            | ER F   | TB SSB | ER F    |
| 19. BRILL2232 [Brill Baltic Areas 22-32]                            | TB SSB            | ER F   | TB SSB | ER F    |
| 20. BRILLIIIa-IV-VIilde [Brill ICES 3a-4-7de]                       | TB SSB            | ER F   | TB SSB | ER F    |
| 21. BSKSHARNEATL [Basking shark Northeast Atlantic]                 | TB SSB            | ER F   | TB SSB | ER F    |
| 22. BWHITNEA [Blue whiting Northeast Atlantic]                      | TB SSB            | ER F   | TB SSB | ER F    |
| 23. CKRAYIIIa-IV [Cuckoo ray ICES 3a-4]                             | TB SSB            | ER F   | TB SSB | ER F    |
| 24. CKRAYIXa [Cuckoo ray Portugese Waters -East]                    | TB SSB            | ER F   | TB SSB | ER F    |
| 25. CKRAYVIIIC [Cuckoo ray Bay of Biscay -South]                    | TB SSB            | ER F   | TB SSB | ER F    |
| 26. CKRAYVI-VII [Cuckoo ray ICES 6-7]                               | TB SSB            | ER F   | TB SSB | ER F    |
| 27. CODBA2224 [Atlantic cod Western Baltic]                         | TB SSB            | ER F   | TB SSB | ER F    |
| 28. CODBA2532 [Atlantic cod Eastern Baltic]                         | TB SSB            | ER F   | TB SSB | ER F    |
| 29. CODIIIaW-IV-VIId [Atlantic cod ICES 3a(west)-4-7d]              | TB SSB            | ER F   | TB SSB | ER F    |
| 30. CODIS [Atlantic cod Irish Sea]                                  | TB SSB            | ER F   | TB SSB | ER F    |
| 31. CODKAT [Atlantic cod Kattegat]                                  | TB SSB            | ER F   | TB SSB | ER F    |
| 32. CODVIA [Atlantic cod West of Scotland]                          | TB SSB            | ER F   | TB SSB | ER F    |
| 33. CODVIB [Atlantic cod Rockall Bank]                              | TB SSB            | ER F   | TB SSB | ER F    |
| 34. CODVIIlek [Atlantic cod Celtic Sea]                             | TB SSB            | ER F   | TB SSB | ER F    |
| 35. CUSKNEATL [Tusk Northeast Atlantic]                             | TB SSB            | ER F   | TB SSB | ER F    |
| 36. CUSKVa-XIV [Tusk ICES 5a-14]                                    | TB SSB            | ER F   | TB SSB | ER F    |
| 37. CUSKVIB [Tusk Rockall Bank]                                     | TB SSB            | ER F   | TB SSB | ER F    |
| 38. CUSKXII [Tusk North of Azores]                                  | TB SSB            | ER F   | TB SSB | ER F    |
| 39. DAB2232 [Dab Baltic Areas 22-32]                                | TB SSB            | ER F   | TB SSB | ER F    |

|   |        |      |        |      |
|---|--------|------|--------|------|
| 40. DABIIIa-IV [Dab ICES 3a-4]  | TB SSB | ER F | TB SSB | ER F |
| 41. EBASSIVbc-VII [European seabass ICES 4bc-7]                             | TB SSB | ER F | TB SSB | ER F |
| 42. EBASSVIa-VIIb-j [European seabass ICES 6a-7b-j]                         | TB SSB | ER F | TB SSB | ER F |
| 43. EBASSVIIlab [European seabass ICES 8ab]                                 | TB SSB | ER F | TB SSB | ER F |
| 44. EBASSVIIlc-IXa [European seabass ICES 8c-9a]                            | TB SSB | ER F | TB SSB | ER F |
| 45. EFLOUN2223 [European flounder Subdivisions 22-23]                       | TB SSB | ER F | TB SSB | ER F |
| 46. EFLOUN2425 [European flounder Subdivisions 24-25]                       | TB SSB | ER F | TB SSB | ER F |
| 47. EFLOUN26-28 [European flounder Subdivisions 26-28]                      | TB SSB | ER F | TB SSB | ER F |
| 48. EFLOUN27-2932 [European flounder Subdivisions 27 and 29-32]             | TB SSB | ER F | TB SSB | ER F |
| 49. EFLOUNIIIa-IV [European flounder ICES 3a-4]                             | TB SSB | ER F | TB SSB | ER F |
| 50. EPOLLIV-IIIa [European pollack ICES 3a-4]                               | TB SSB | ER F | TB SSB | ER F |
| 51. EPOLLVIII-IXa [European pollack ICES 8-9a]                              | TB SSB | ER F | TB SSB | ER F |
| 52. FMEG8c9a [Fourspotted megrim ICES 8c-9a]                                | TB SSB | ER F | TB SSB | ER F |
| 53. GFORKNEATL [Greater forkbeard Northeast Atlantic]                       | TB SSB | ER F | TB SSB | ER F |
| 54. GGURNIIIa-IV-VIId [Grey gurnard ICES 3a-4-7d]                           | TB SSB | ER F | TB SSB | ER F |
| 55. GHALV-VI-XII-XIV [Greenland halibut ICES 5-6-12-14]                     | TB SSB | ER F | TB SSB | ER F |
| 56. GOLDREDV-VI-XII-XIV [Golden redfish ICES 5-6-12-14]                     | TB SSB | ER F | TB SSB | ER F |
| 57. GSSMELTI-II-IIIa-IV [Greater silver smelt ICES 1-2-3a-4]                | TB SSB | ER F | TB SSB | ER F |
| 58. GSSMELTVIb-VII-VIII-IX-X-XII [Greater silver smelt ICES 6b-7-8-9-10-12] | TB SSB | ER F | TB SSB | ER F |
| 59. HADIS [Haddock Irish Sea]   | TB SSB | ER F | TB SSB | ER F |
| 60. HADNS-IIIa-VIa [Haddock ICES 3a-4-6a]                                   | TB SSB | ER F | TB SSB | ER F |
| 61. HADROCK [Haddock Rockall Bank]  | TB SSB | ER F | TB SSB | ER F |
| 62. HADVIIb-k [Haddock ICES 7b-k]   | TB SSB | ER F | TB SSB | ER F |
| 63. HAKENRTN [Hake ICES 3a-4-6-7-8abd]                                      | TB SSB | ER F | TB SSB | ER F |
| 64. HAKESOTH [Hake ICES 8c-9a]  | TB SSB | ER F | TB SSB | ER F |
| 65. HERR2224IIIa [Herring ICES 22-24-3a]                                    | TB SSB | ER F | TB SSB | ER F |
| 66. HERR2529-32 [Herring Subdivisions 25-29 and 32]                         | TB SSB | ER F | TB SSB | ER F |
| 67. HERR30-31 [Herring Subdivisions 30-31]                                  | TB SSB | ER F | TB SSB | ER F |
| 68. HERRNIRS [Herring Irish Sea]  | TB SSB | ER F | TB SSB | ER F |
| 69. HERRNS-IIIa-VIId [Herring ICES 3a-4-7d]                                 | TB SSB | ER F | TB SSB | ER F |
| 70. HERRRIGA [Herring Gulf of Riga East of Gotland]                         | TB SSB | ER F | TB SSB | ER F |
| 71. HERRSIRS [Herring ICES 7a-g-h-j-k]                                      | TB SSB | ER F | TB SSB | ER F |
| 72. HERRVIa [Herring West of Scotland]                                      | TB SSB | ER F | TB SSB | ER F |
| 73. HERRVIaVIIbc [Herring ICES 5a-7bc]                                      | TB SSB | ER F | TB SSB | ER F |
| 74. HMACKIIIa-IVa-Vb-VIa-VII-VIII [Horse mackerel ICES 2a-4a-5b-6a-7-8]     | TB SSB | ER F | TB SSB | ER F |
| 75. HMACKIIIa-IVbc-VIId [Horse mackerel ICES 3a-4bc-7d]                     | TB SSB | ER F | TB SSB | ER F |
| 76. HMACKIXa [Horse mackerel Portugese Waters -East]                        | TB SSB | ER F | TB SSB | ER F |
| 77. KFSHARNEATL [Kitefin shark Northeast Atlantic]                          | TB SSB | ER F | TB SSB | ER F |
| 78. LGSHARNEATL [Leafscale gulper shark Northeast Atlantic]                 | TB SSB | ER F | TB SSB | ER F |
| 79. LINGNEATL [Ling Northeast Atlantic]                                     | TB SSB | ER F | TB SSB | ER F |
| 80. LSDOGIIIa-IV-VIId [Lesser spotted dogfish ICES 3a-4-7d]                 | TB SSB | ER F | TB SSB | ER F |
| 81. LSDOGVIIab [Lesser spotted dogfish ICES 8abd]                           | TB SSB | ER F | TB SSB | ER F |
| 82. LSDOGVIIlc-IXa [Lesser spotted dogfish ICES 8c-9a]                      | TB SSB | ER F | TB SSB | ER F |
| 83. LSDOGVI-VIIabcefghij [Lesser spotted dogfish ICES 6-7abcefghij]         | TB SSB | ER F | TB SSB | ER F |
| 84. LSOLEIIIa-IV-VIId [Lemon sole ICES 3a-4-7d]                             | TB SSB | ER F | TB SSB | ER F |
| 85. MACKNEICES [Mackerel ICES Northeast Atlantic]                           | TB SSB | ER F | TB SSB | ER F |
| 86. MEG8c9a [Megrim ICES 8c-9a]   | TB SSB | ER F | TB SSB | ER F |

|   |        |      |        |      |
|---|--------|------|--------|------|
| 87. MEGSPPIVa-VIa [Megrim spp ICES 4a-6a]                                   | TB SSB | ER F | TB SSB | ER F |
| 88. MEGSPPVlb [Megrim spp Rockall Bank]                                     | TB SSB | ER F | TB SSB | ER F |
| 89. MEGVII-VIIIabd [Megrim ICES 7-8abd]                                     | TB SSB | ER F | TB SSB | ER F |
| 90. NEPHFU10 [Norway lobster Noup (FU 10)]                                  | TB SSB | ER F | TB SSB | ER F |
| 91. NEPHFU11 [Norway lobster North Minch (FU 11)]                           | TB SSB | ER F | TB SSB | ER F |
| 92. NEPHFU12 [Norway lobster South Minch (FU 12)]                           | TB SSB | ER F | TB SSB | ER F |
| 93. NEPHFU13 [Norway lobster Firth of Clyde and Sound of Jura (FU 13)]      | TB SSB | ER F | TB SSB | ER F |
| 94. NEPHFU14 [Norway lobster Irish Sea East (FU 14)]                        | TB SSB | ER F | TB SSB | ER F |
| 95. NEPHFU15 [Norway lobster Irish Sea West (FU 15)]                        | TB SSB | ER F | TB SSB | ER F |
| 96. NEPHFU16 [Norway lobster Porcupine Bank (FU 16)]                        | TB SSB | ER F | TB SSB | ER F |
| 97. NEPHFU17 [Norway lobster Aran Grounds (FU 17)]                          | TB SSB | ER F | TB SSB | ER F |
| 98. NEPHFU19 [Norway lobster South East and West of IRL (FU 19)]            | TB SSB | ER F | TB SSB | ER F |
| 99. NEPHFU2021 [Norway lobster Labadie, Jones and Cockburn (FU 20-21)]      | TB SSB | ER F | TB SSB | ER F |
| 100. NEPHFU22 [Norway lobster Smalls (FU 22)]                               | TB SSB | ER F | TB SSB | ER F |
| 101. NEPHFU25 [Norway lobster North Galicia (FU 25)]                        | TB SSB | ER F | TB SSB | ER F |
| 102. NEPHFU2627 [Norway lobster West Galicia and North Portugal (FU 26-27)] | TB SSB | ER F | TB SSB | ER F |
| 103. NEPHFU2829 [Norway lobster South-West and South Portugal (FU 28-29)]   | TB SSB | ER F | TB SSB | ER F |
| 104. NEPHFU30 [Norway lobster Gulf of Cadiz (FU 30)]                        | TB SSB | ER F | TB SSB | ER F |
| 105. NEPHFU31 [Norway lobster Cantabrian Sea (FU 31)]                       | TB SSB | ER F | TB SSB | ER F |
| 106. NEPHFU32 [Norway lobster Norwegian Deeps (FU 32)]                      | TB SSB | ER F | TB SSB | ER F |
| 107. NEPHFU33 [Norway lobster Off Horn Reef (FU 33)]                        | TB SSB | ER F | TB SSB | ER F |
| 108. NEPHFU34 [Norway lobster Devils Hole (FU 34)]                          | TB SSB | ER F | TB SSB | ER F |
| 109. NEPHFU3-4 [Norway lobster Skagerak Kattegat (FU 3-4)]                  | TB SSB | ER F | TB SSB | ER F |
| 110. NEPHFU5 [Norway lobster Botney Cut - Silver Pit (FU 5)]                | TB SSB | ER F | TB SSB | ER F |
| 111. NEPHFU6 [Norway lobster Farn Deeps (FU 6)]                             | TB SSB | ER F | TB SSB | ER F |
| 112. NEPHFU7 [Norway lobster Fladen Ground (FU 7)]                          | TB SSB | ER F | TB SSB | ER F |
| 113. NEPHFU8 [Norway lobster Firth of Forth (FU 8)]                         | TB SSB | ER F | TB SSB | ER F |
| 114. NEPHFU9 [Norway lobster Moray Firth (FU 9)]                            | TB SSB | ER F | TB SSB | ER F |
| 115. NEPHIV [Norway lobster North Sea]                                      | TB SSB | ER F | TB SSB | ER F |
| 116. NEPHVIa [Norway lobster West of Scotland]                              | TB SSB | ER F | TB SSB | ER F |
| 117. NEPHVII [Norway lobster ICES 7]  | TB SSB | ER F | TB SSB | ER F |
| 118. NEPHVIIIab [Norway lobster ICES 8ab]                                   | TB SSB | ER F | TB SSB | ER F |
| 119. NPOUTIIla-IV [Norway pout ICES 3a-4]                                   | TB SSB | ER F | TB SSB | ER F |
| 120. NPOUTVIa [Norway pout West of Scotland]                                | TB SSB | ER F | TB SSB | ER F |
| 121. OROUGHYNEATL [Orange roughy Northeast Atlantic]                        | TB SSB | ER F | TB SSB | ER F |
| 122. PANDALIIlaW-IVaE [Northern shrimp ICES 3a(west)-4a(east)]              | TB SSB | ER F | TB SSB | ER F |
| 123. PANDALIVa [Northern shrimp Northern North Sea]                         | TB SSB | ER F | TB SSB | ER F |
| 124. PLAIC2123 [European plaice Subdivisions 21-23]                         | TB SSB | ER F | TB SSB | ER F |
| 125. PLAIC2432 [European plaice Subdivisions 24-32]                         | TB SSB | ER F | TB SSB | ER F |
| 126. PLAIC7d [European plaice Eastern English Channel]                      | TB SSB | ER F | TB SSB | ER F |
| 127. PLAICCELT [European plaice Celtic Sea]                                 | TB SSB | ER F | TB SSB | ER F |
| 128. PLAICECHW [European plaice Western English Channel]                    | TB SSB | ER F | TB SSB | ER F |
| 129. PLAICIS [European plaice Irish Sea]                                    | TB SSB | ER F | TB SSB | ER F |
| 130. PLAICNS [European plaice North Sea]                                    | TB SSB | ER F | TB SSB | ER F |
| 131. PLAICVIIbc [European plaice ICES 7bc]                                  | TB SSB | ER F | TB SSB | ER F |

|   |        |      |        |      |
|---|--------|------|--------|------|
| 132. PLAICVIIh-k [European plaice ICES 7h-k]  | TB SSB | ER F | TB SSB | ER F |
| 133. PLAICVIII-IXa [European plaice ICES 8-9a]                                      | TB SSB | ER F | TB SSB | ER F |
| 134. POLLNS-VI-IIla [Pollock ICES 3a-4-6]   | TB SSB | ER F | TB SSB | ER F |
| 135. PORSHARNEATL [Porbeagle shark Northeast Atlantic]                              | TB SSB | ER F | TB SSB | ER F |
| 136. RBRMIX [Red seabream ICES 9]   | TB SSB | ER F | TB SSB | ER F |
| 137. RBRMVI-VII-VIII [Red seabream ICES 6-7-8]                                      | TB SSB | ER F | TB SSB | ER F |
| 138. RBRMX [Red seabream Azores Grounds]  | TB SSB | ER F | TB SSB | ER F |
| 139. REDDEEPXIVb [Beaked redfish Southeast Greenland]                               | TB SSB | ER F | TB SSB | ER F |
| 140. RGURNNEATL [Red gurnard Northeast Atlantic]                                    | TB SSB | ER F | TB SSB | ER F |
| 141. RHGRENNEATL [Roughhead grenadier Northeast Atlantic]                           | TB SSB | ER F | TB SSB | ER F |
| 142. RNGENI-II-IV-Va2-VIII-IX-XIVab2 [Roundnose grenadier ICES 1-2-4-5a2-8-9-14ab2] | TB SSB | ER F | TB SSB | ER F |
| 143. RNGENMATLR [Roundnose grenadier Mid-Atlantic Ridge]                            | TB SSB | ER F | TB SSB | ER F |
| 144. RNGENVb-VI-VII-XIIb [Roundnose grenadier ICES 5b-6-7-12b]                      | TB SSB | ER F | TB SSB | ER F |
| 145. RNGRENIlla [Roundnose grenadier Kattegat and Skagerrak]                        | TB SSB | ER F | TB SSB | ER F |
| 146. SARDPVIIIf-IYa [Sardine ICES 8c-9a]  | TB SSB | ER F | TB SSB | ER F |
| 147. SARDVII [Sardine ICES 7]   | TB SSB | ER F | TB SSB | ER F |
| 148. SARDVIIlabd [Sardine ICES 8abd]  | TB SSB | ER F | TB SSB | ER F |
| 149. SDRAYVI-VII [Sandy ray ICES 6-7]   | TB SSB | ER F | TB SSB | ER F |
| 150. SEELNSSA1 [Sand eel Sandeel Area 1]  | TB SSB | ER F | TB SSB | ER F |
| 151. SEELNSSA2 [Sand eel Sandeel Area 2]  | TB SSB | ER F | TB SSB | ER F |
| 152. SEELNSSA3 [Sand eel Sandeel Area 3]  | TB SSB | ER F | TB SSB | ER F |
| 153. SEELNSSA4 [Sand eel Sandeel Area 4]  | TB SSB | ER F | TB SSB | ER F |
| 154. SEELNSSA5 [Sand eel Sandeel Area 5]  | TB SSB | ER F | TB SSB | ER F |
| 155. SEELNSSA6 [Sand eel Sandeel Area 6]  | TB SSB | ER F | TB SSB | ER F |
| 156. SEELNSSA7 [Sand eel Sandeel Area 7]  | TB SSB | ER F | TB SSB | ER F |
| 157. SEELVla [Sand eel West of Scotland]  | TB SSB | ER F | TB SSB | ER F |
| 158. SERAYVIIde [Smalleyed ray ICES 7de]  | TB SSB | ER F | TB SSB | ER F |
| 159. SERAYVIIIf-g [Smalleyed ray Celtic Sea]  | TB SSB | ER F | TB SSB | ER F |
| 160. SGRAYVI-VII [Shagreen ray ICES 6-7]  | TB SSB | ER F | TB SSB | ER F |
| 161. SHSPPNNEATL [Smooth hound Northeast Atlantic]                                  | TB SSB | ER F | TB SSB | ER F |
| 162. SOLECS [Common sole Celtic Sea]  | TB SSB | ER F | TB SSB | ER F |
| 163. SOLEIIlla-2224 [Common sole ICES 22-24-3a]                                     | TB SSB | ER F | TB SSB | ER F |
| 164. SOLEIS [Common sole Irish Sea]   | TB SSB | ER F | TB SSB | ER F |
| 165. SOLENS [Common sole North Sea]   | TB SSB | ER F | TB SSB | ER F |
| 166. SOLEVIIbc [Common sole ICES 7bc]   | TB SSB | ER F | TB SSB | ER F |
| 167. SOLEVIIId [Common sole Eastern English Channel]                                | TB SSB | ER F | TB SSB | ER F |
| 168. SOLEVIIle [Common sole Western English Channel]                                | TB SSB | ER F | TB SSB | ER F |
| 169. SOLEVIIh-k [Common sole ICES 7h-k]   | TB SSB | ER F | TB SSB | ER F |
| 170. SOLEVIIIfab [Common sole ICES 8ab]   | TB SSB | ER F | TB SSB | ER F |
| 171. SOLEVIIIfc-IXa [Common sole ICES 8c-9a]  | TB SSB | ER F | TB SSB | ER F |
| 172. SPRAT22-32 [Sprat Baltic Areas 22-32]  | TB SSB | ER F | TB SSB | ER F |
| 173. SPRATIIlla-IV [Sprat ICES 3a-4]  | TB SSB | ER F | TB SSB | ER F |
| 174. SPRATVIIde [Sprat ICES 7de]  | TB SSB | ER F | TB SSB | ER F |
| 175. SPRATVI-VIIabcfgijkl [Sprat ICES 6-7-abcfgijkl]                                | TB SSB | ER F | TB SSB | ER F |
| 176. SPRAYIIlla-IV-VIId [Spotted ray ICES 3a-4-7d]                                  | TB SSB | ER F | TB SSB | ER F |
| 177. SPRAYIXa [Spotted ray Portugese Waters -East]                                  | TB SSB | ER F | TB SSB | ER F |
| 178. SPRAYVIIaefgh [Spotted ray ICES 7aefgh]  | TB SSB | ER F | TB SSB | ER F |
| 179. SPRAYVIII [Spotted ray Bay of Biscay]  | TB SSB | ER F | TB SSB | ER F |

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|--|--------|------|--------|------|
| 180. SPRAYVI-VIIbj [Spotted ray ICES 6-7bj]  | TB SSB | ER F | TB SSB | ER F |
| 181. SPURDNEATL [Spurdog Northeast Atlantic]                                       | TB SSB | ER F | TB SSB | ER F |
| 182. STRAYII-IIIa-IV [Starry ray ICES 2-3a-4]                                      | TB SSB | ER F | TB SSB | ER F |
| 183. STRMULLIIla-IV-VIId [Striped red mullet ICES 3a-4-7d]                         | TB SSB | ER F | TB SSB | ER F |
| 184. STRMULLVI-VIIabcefghijk-VIII-IXa [Striped red mullet ICES 6-7abcefghijk-8-9a] | TB SSB | ER F | TB SSB | ER F |
| 185. STROUT22-32 [Sea trout Baltic Areas 22-32]                                    | TB SSB | ER F | TB SSB | ER F |
| 186. TBSKAIlla-IV-VIId [Thornback skate ICES 3a-4-7d]                              | TB SSB | ER F | TB SSB | ER F |
| 187. TBSKAIXa [Thornback skate Portugese Waters -East]                             | TB SSB | ER F | TB SSB | ER F |
| 188. TBSKAVI [Thornback skate ICES 6]  | TB SSB | ER F | TB SSB | ER F |
| 189. TBSKAVIIafg [Thornback skate ICES 7afg]                                       | TB SSB | ER F | TB SSB | ER F |
| 190. TBSKAVIIe [Thornback skate Western English Channel]                           | TB SSB | ER F | TB SSB | ER F |
| 191. TBSKAVIII [Thornback skate Bay of Biscay]                                     | TB SSB | ER F | TB SSB | ER F |
| 192. TPSHARNEATL [Tope shark Northeast Atlantic]                                   | TB SSB | ER F | TB SSB | ER F |
| 193. TUR2232 [Turbot Baltic Areas 22-32]   | TB SSB | ER F | TB SSB | ER F |
| 194. TURIlla [Turbot Kattegat and Skagerrak]                                       | TB SSB | ER F | TB SSB | ER F |
| 195. TURIV [Turbot North Sea]  | TB SSB | ER F | TB SSB | ER F |
| 196. URAYVIIde [Undulate ray ICES 7de]   | TB SSB | ER F | TB SSB | ER F |
| 197. URAYVIIlab [Undulate ray ICES 8ab]  | TB SSB | ER F | TB SSB | ER F |
| 198. WANGVIIlc-IXa [White anglerfish ICES 8c-9a]                                   | TB SSB | ER F | TB SSB | ER F |
| 199. WANGVII-VIIlabd [White anglerfish ICES 7-8abd]                                | TB SSB | ER F | TB SSB | ER F |
| 200. WHITIIlla [Whiting Kattegat and Skagerrak]                                    | TB SSB | ER F | TB SSB | ER F |
| 201. WHITNS-VIId [Whiting ICES 4-7d]   | TB SSB | ER F | TB SSB | ER F |
| 202. WHITVIIa [Whiting West of Scotland]   | TB SSB | ER F | TB SSB | ER F |
| 203. WHITVIIb [Whiting Rockall Bank]   | TB SSB | ER F | TB SSB | ER F |
| 204. WHITVIIla [Whiting Irish Sea]   | TB SSB | ER F | TB SSB | ER F |
| 205. WHITVIIbce-k [Whiting Celtic Sea]   | TB SSB | ER F | TB SSB | ER F |
| 206. WHITVIII-IXa [Whiting ICES 8-9a]  | TB SSB | ER F | TB SSB | ER F |
| 207. WITFLOUNIIlla-IV-VIId [Witch flounder ICES 3a-4-7d]                           | TB SSB | ER F | TB SSB | ER F |

## Anchovy Portugese Waters -East [ANCHIXa]

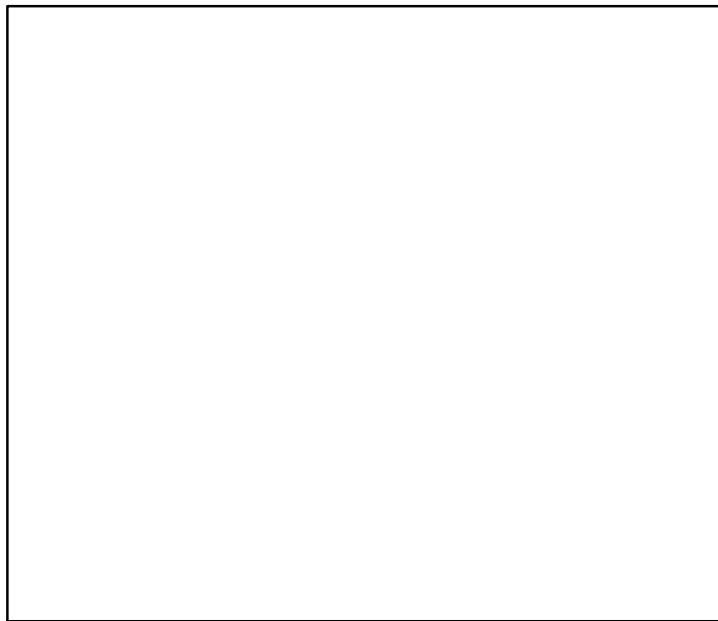
| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Engraulis encrasiculus  |
| <b>Current Assess ID</b>    | WGHANSA-ANCHIXa-1989-2019-ICESIMP2021                         |
| <b>Area</b>                 | Portuguese Waters -East                                       |
| <b>Management Authority</b> | International Council for the Exploration of the Sea          |
| <b>Assessor</b>             | Working Group on Southern Horse Mackerel, Anchovy and Sardine |
| <b>Asmts in RAM</b>         | 2016, 2016, 2018, 2019, 2017                                  |

| Reference Points |                 |           |       |
|------------------|-----------------|-----------|-------|
| Type             | ID              | Asmt Year | Value |
| <b>TBmsy</b>     | -               | -         | -     |
| <b>SSBmsy</b>    | -               | -         | -     |
| <b>Fmsy</b>      | -               | -         | -     |
| <b>ERmsy</b>     | -               | -         | -     |
| <b>TBmgt</b>     | -               | -         | -     |
| <b>SSBmgt</b>    | SSBmgt-relative | 2019      | 0.504 |
| <b>Fmgt</b>      | -               | -         | -     |
| <b>ERmgt</b>     | -               | -         | -     |
| <b>TB0</b>       | -               | -         | -     |
| <b>SSB0</b>      | -               | -         | -     |
| <b>MSY</b>       | -               | -         | -     |
| <b>M</b>         | -               | -         | -     |
| <b>TBlim</b>     | -               | -         | -     |
| <b>SSBlim</b>    | SSBlim-relative | 2018      | 1440  |
| <b>Flim</b>      | -               | -         | -     |
| <b>ERlim</b>     | -               | -         | -     |

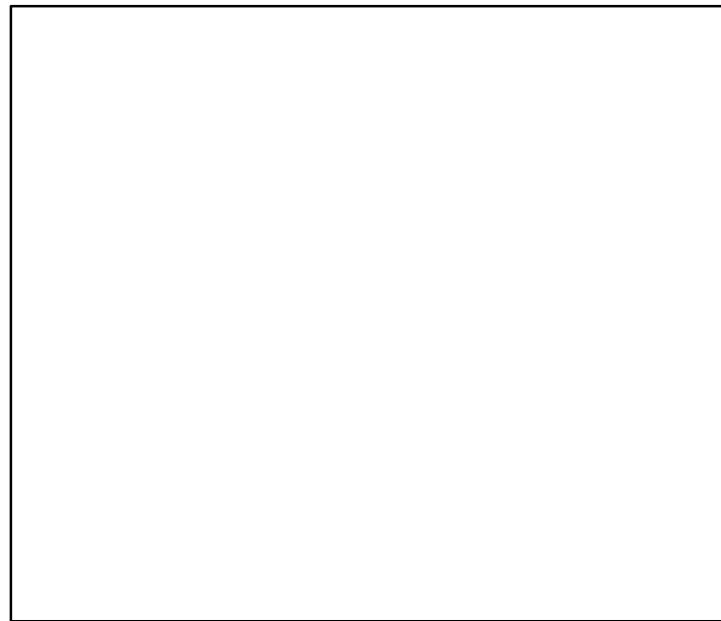
| Time Series       |              |           |            |     |        |
|-------------------|--------------|-----------|------------|-----|--------|
| Type              | ID           | Asmt Year | Curr Value | Sex | Age    |
| <b>TB</b>         | -            | -         | -          | -   | -      |
| <b>SSB</b>        | SSB-relative | 2019      | 0.972      | -   | -      |
| <b>TN</b>         | -            | -         | -          | -   | -      |
| <b>R</b>          | -            | -         | -          | -   | -      |
| <b>F</b>          | F-relative   | 2019      | 0.449      | -   | 0 to 3 |
| <b>ER</b>         | ER-ratio     | 2016      | 0.253      | -   | -      |
| <b>TC</b>         | TC-MT        | 2019      | 15,799     |     |        |
| <b>TL</b>         | TL-MT        | 2019      | 15,770     |     |        |
| <b>TB/TBmsy</b>   | -            | -         | -          |     |        |
| <b>SSB/SSBmsy</b> | -            | -         | -          |     |        |
| <b>F/Fmsy</b>     | -            | -         | -          |     |        |
| <b>ER/ERmsy</b>   | -            | -         | -          |     |        |
| <b>TB/TBmgt</b>   | -            | -         | -          |     |        |
| <b>SSB/SSBmgt</b> | -            | -         | -          |     |        |
| <b>F/Fmgt</b>     | -            | -         | -          |     |        |
| <b>ER/ERmgt</b>   | -            | -         | -          |     |        |

Anchovy Portuguese Waters –East [ANCHIXa]

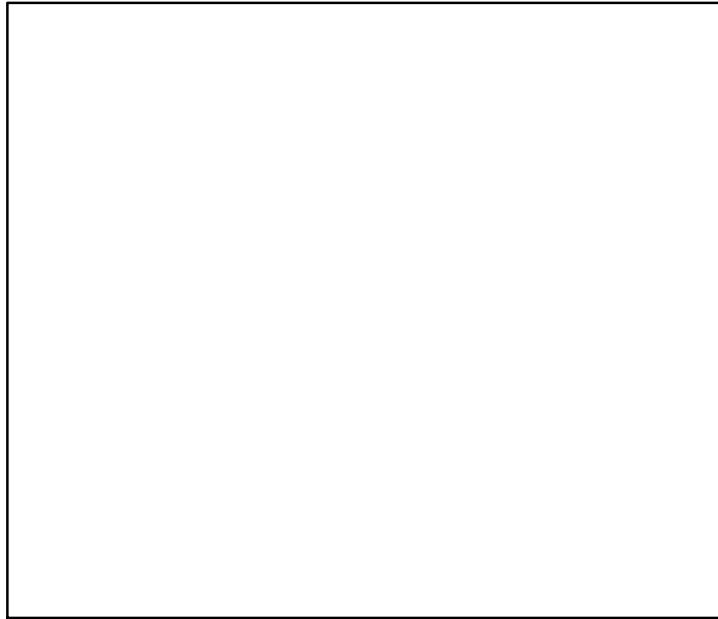
Kobe MSY\*



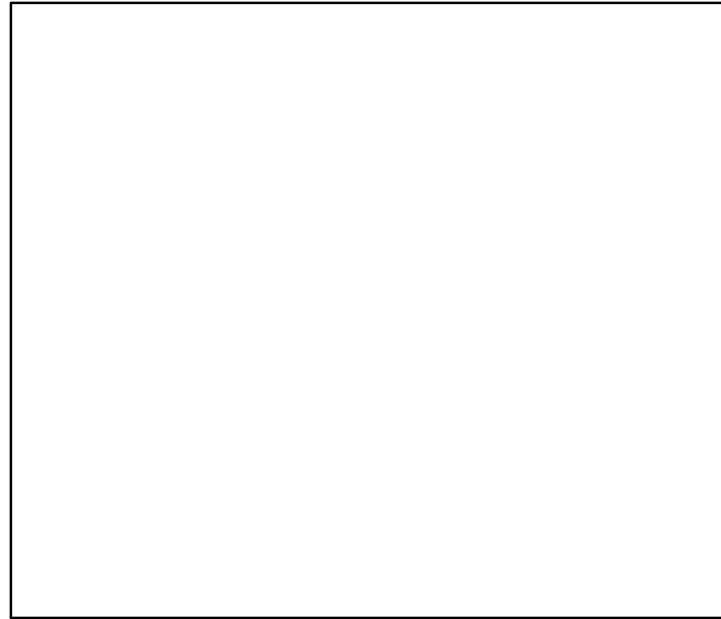
Kobe MGT\*



Spawner Recruit\*



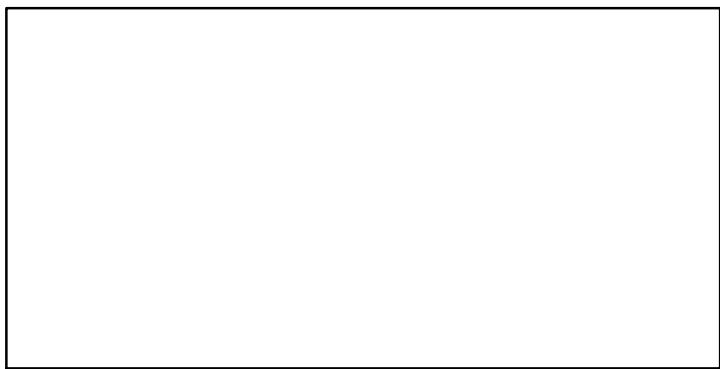
Production\*



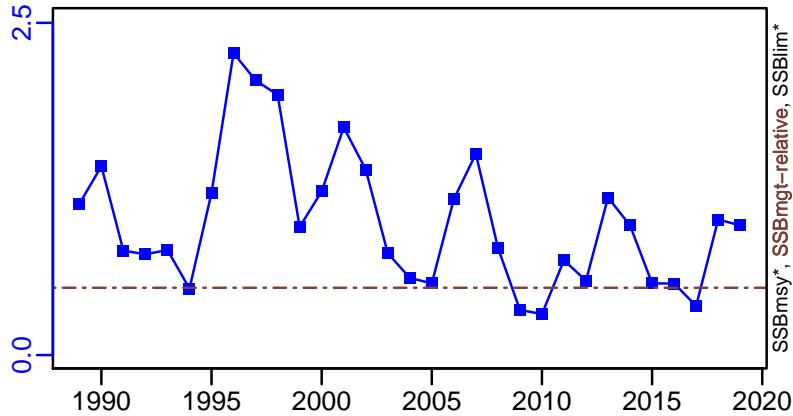
◆ Start Year ◆ End Year \* No Data

### Anchovy Portuguese Waters –East [ANCHIXa]

**TB\***



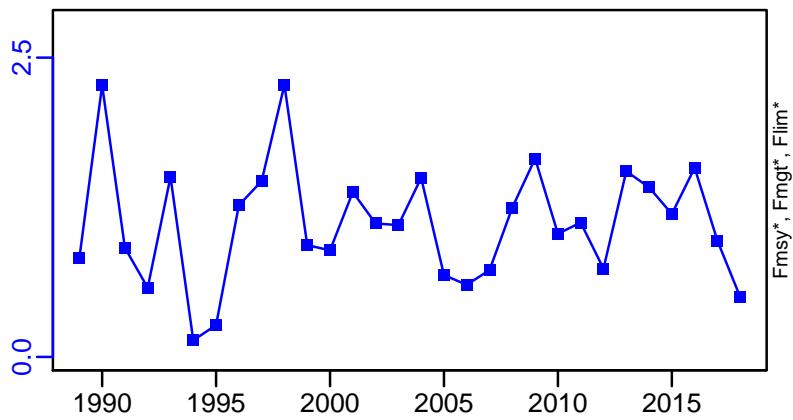
**SSB-relative (1989–2019–ICESIMP2021)**



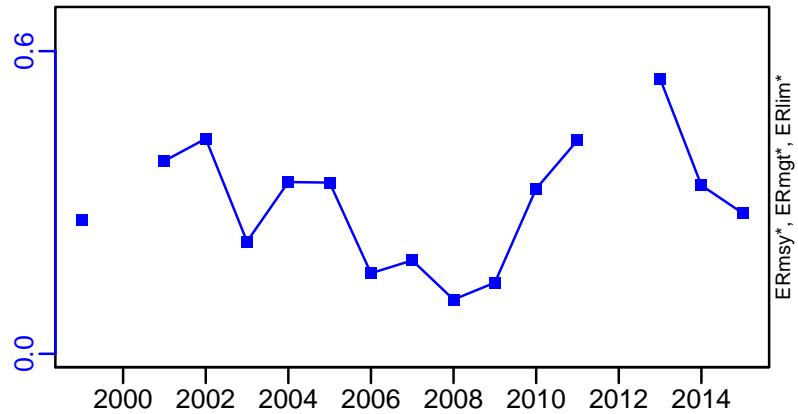
**TN \***



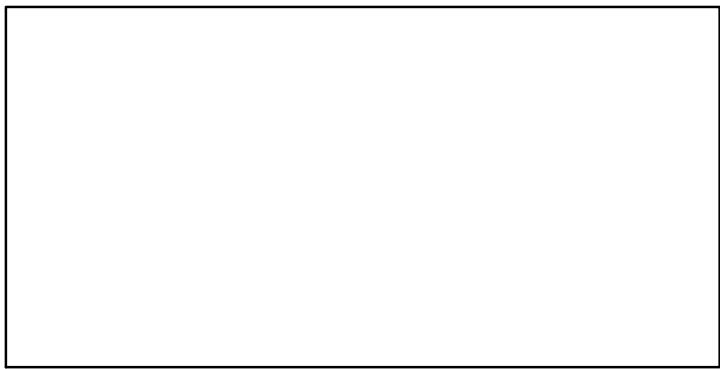
**F-relative (1989–2019–ICESIMP2021)**



**ER-ratio (1989–2016–ICESIMP2016)**



**Recruits\***

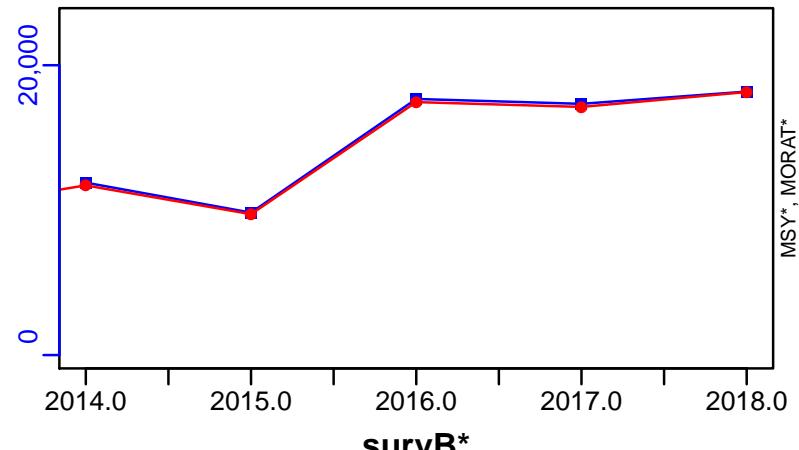


- Listed time series
- Target BRP
- MSY-based BRP
- Lim BRP
- Rec-Est
- \* No Data

Anchovy Portuguese Waters –East [ANCHIXa]

TC–MT, TL–MT, RecC\* (1989–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



survB\*

MSY\*, MORAT\*

TAC\*, Cpair\*, Cadv\*

CPUE\*

EFFORT\*

CdivMSY\*

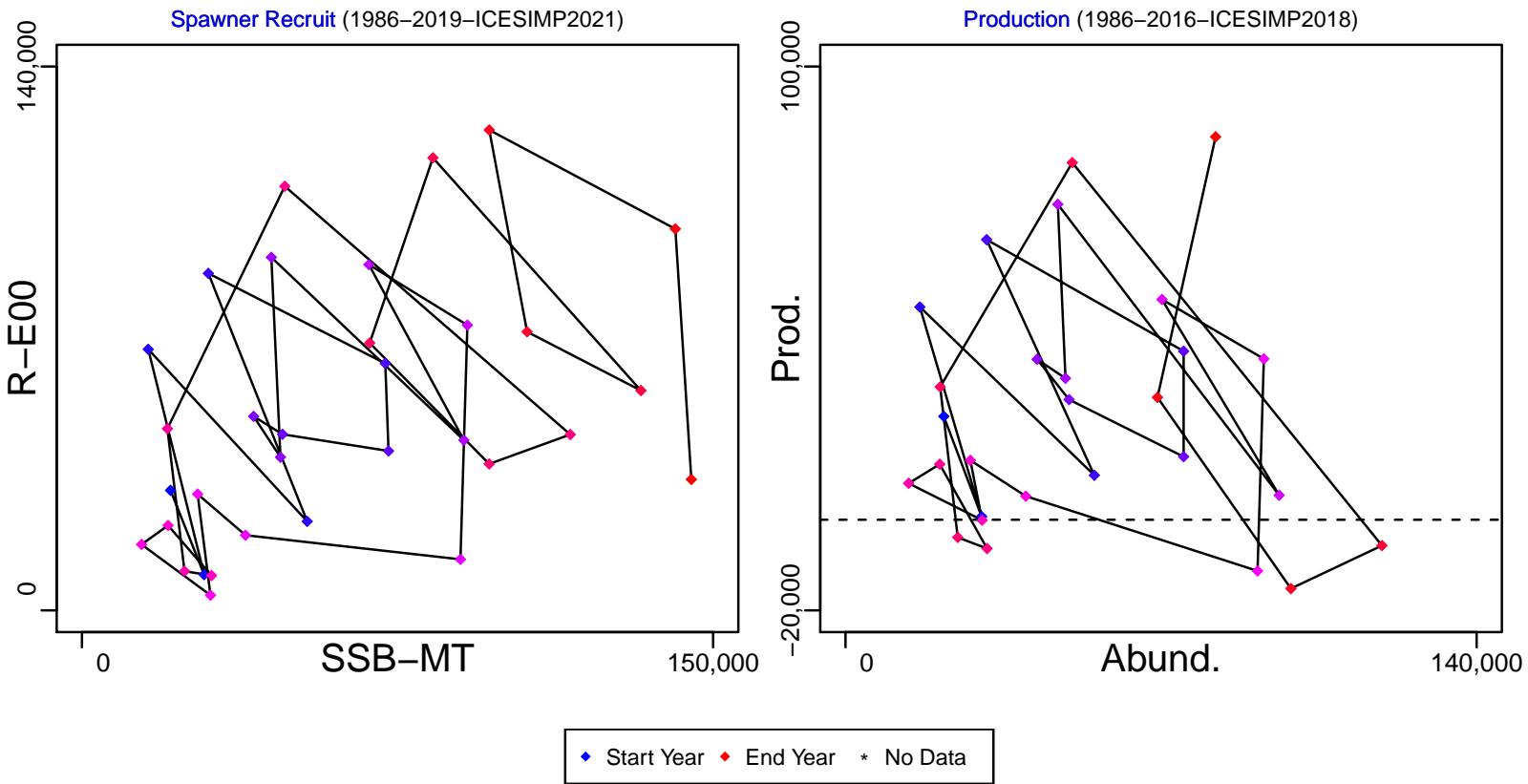
- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Anchovy Bay of Biscay [ANCHOBAYB]

| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Engraulis encrasicolus  |
| <b>Current Assess ID</b>    | WGHANSA-ANCHOBAYB-1986-2019-ICESIMP2021                       |
| <b>Area</b>                 | Bay of Biscay   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea          |
| <b>Assessor</b>             | Working Group on Southern Horse Mackerel, Anchovy and Sardine |
| <b>Asmts in RAM</b>         | 2013, 2014, 2015, 2016, 2017, 2019, 2007                      |

| Reference Points |           |           |        |
|------------------|-----------|-----------|--------|
| Type             | ID        | Asmt Year | Value  |
| <b>TBmsy</b>     | -         | -         | -      |
| <b>SSBmsy</b>    | -         | -         | -      |
| <b>Fmsy</b>      | -         | -         | -      |
| <b>ERmsy</b>     | -         | -         | -      |
| <b>TBmgt</b>     | -         | -         | -      |
| <b>SSBmgt</b>    | SSBmgt-MT | 2019      | 89,000 |
| <b>Fmgt</b>      | -         | -         | -      |
| <b>ERmgt</b>     | -         | -         | -      |
| <b>TB0</b>       | -         | -         | -      |
| <b>SSB0</b>      | -         | -         | -      |
| <b>MSY</b>       | -         | -         | -      |
| <b>M</b>         | M-1/yr    | 2007      | 1.2    |
| <b>TBlim</b>     | TBlim-MT  | 2014      | 21,000 |
| <b>SSBlim</b>    | SSBlim-MT | 2017      | 21,000 |
| <b>Flim</b>      | -         | -         | -      |
| <b>ERlim</b>     | -         | -         | -      |

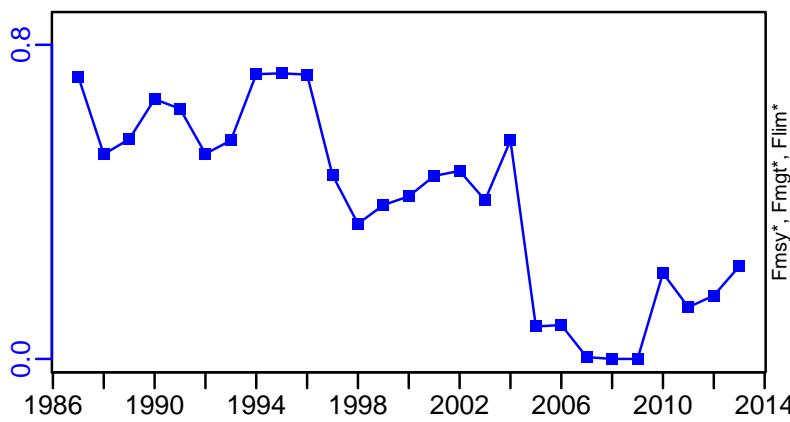
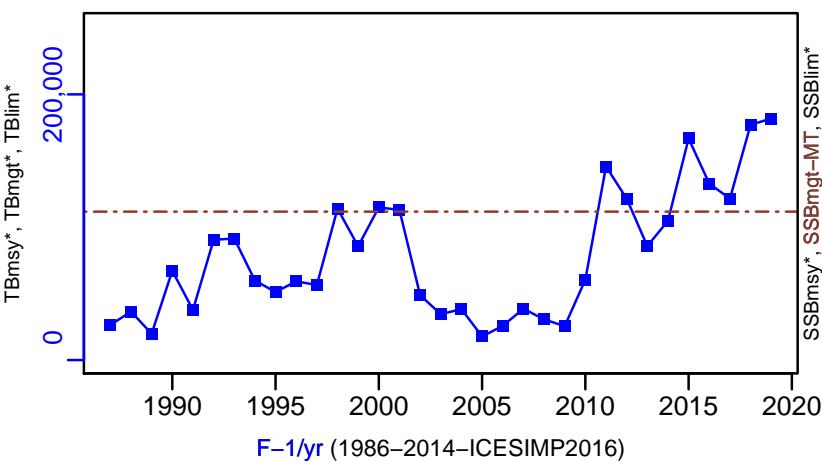
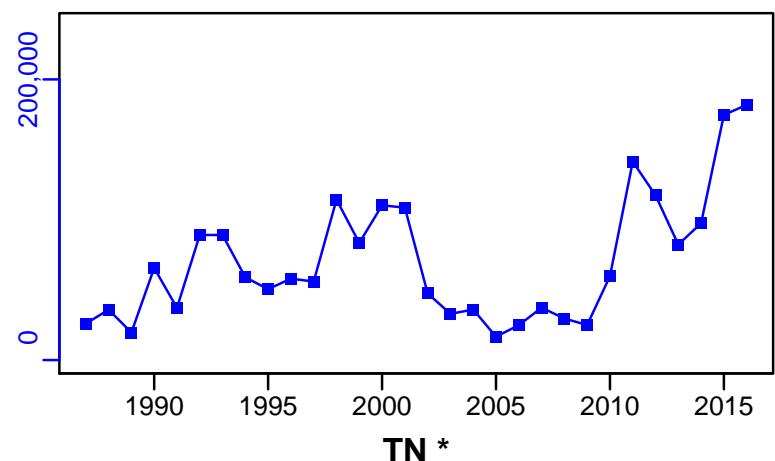
| Time Series       |                  |           |            |      |     |
|-------------------|------------------|-----------|------------|------|-----|
| Type              | ID               | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>         | TB-MT            | 2016      | 153,000    | Both | -   |
| <b>SSB</b>        | SSB-MT           | 2019      | 144,834    | -    | -   |
| <b>TN</b>         | -                | -         | -          | -    | -   |
| <b>R</b>          | R-E00            | 2019      | 33,706     | -    | 1   |
| <b>F</b>          | F-1/yr           | 2014      | 0.222      | -    | 1+  |
| <b>ER</b>         | ER-ratio         | 2019      | 0.184      | -    | 2+  |
| <b>TC</b>         | TC-MT            | 2019      | 26,622     |      |     |
| <b>TL</b>         | TL-MT            | 2019      | 25,743     |      |     |
| <b>TB/TBmsy</b>   | -                | -         | -          |      |     |
| <b>SSB/SSBmsy</b> | -                | -         | -          |      |     |
| <b>F/Fmsy</b>     | -                | -         | -          |      |     |
| <b>ER/ERmsy</b>   | -                | -         | -          |      |     |
| <b>TB/TBmgt</b>   | -                | -         | -          |      |     |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2019      | 1.627      |      |     |
| <b>F/Fmgt</b>     | -                | -         | -          |      |     |
| <b>ER/ERmgt</b>   | -                | -         | -          |      |     |

**Kobe MSY\*****Kobe MGT\***

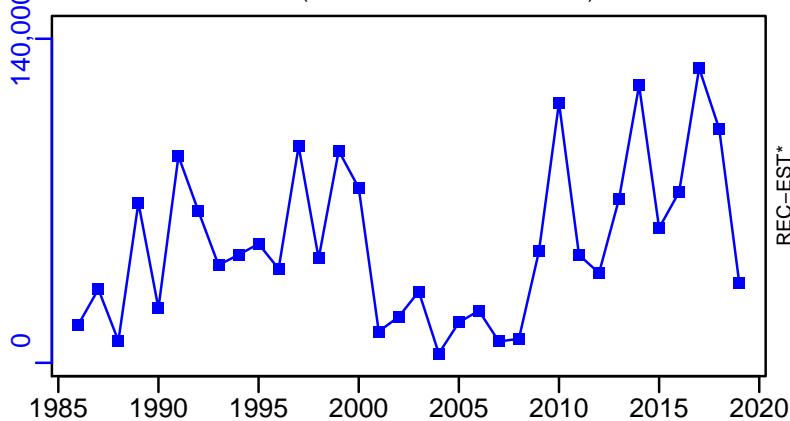
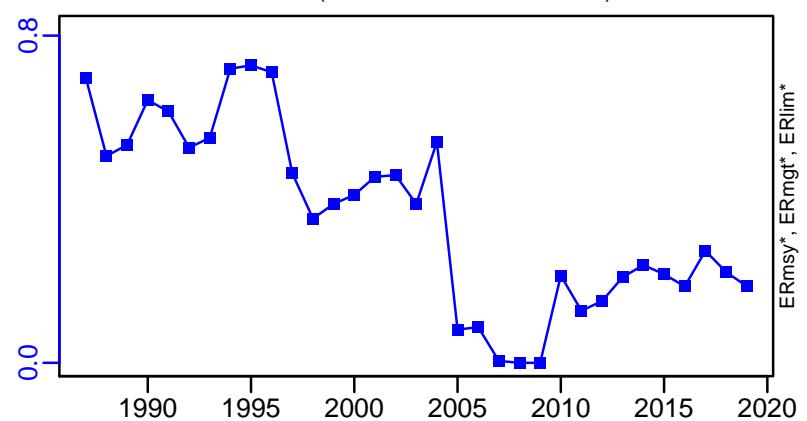
### Anchovy Bay of Biscay [ANCHOBAYB]

TB-MT (1986–2016–ICESIMP2018)

SSB-MT (1986–2019–ICESIMP2021)



ER-ratio (1986–2019–ICESIMP2021)

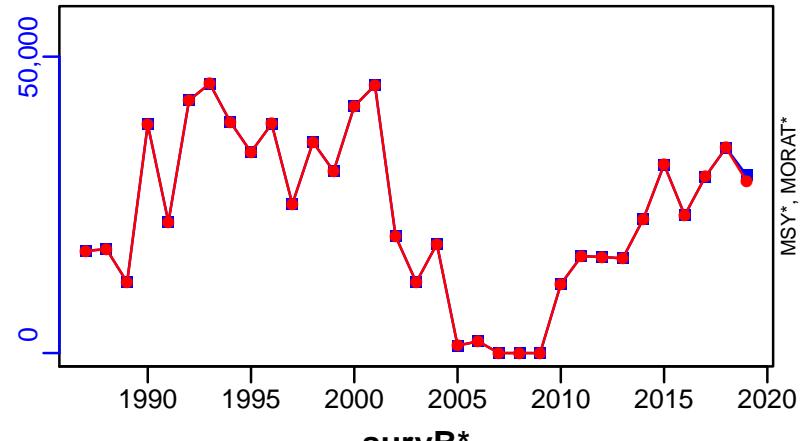


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | --- Lim BRP  | * No Data |

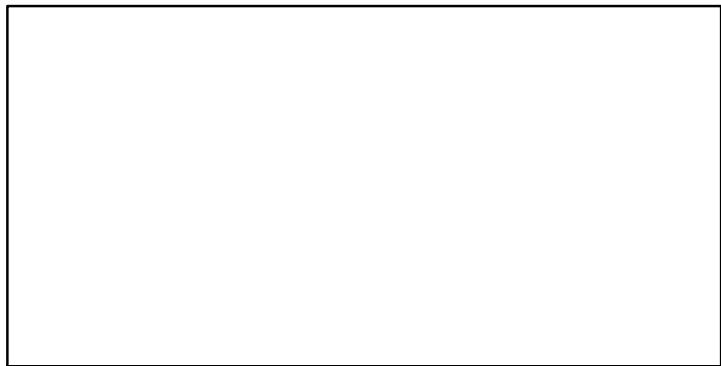
### Anchovy Bay of Biscay [ANCHOBAYB]

TC-MT, TL-MT, RecC\* (1986–2019–ICESIMP2021)

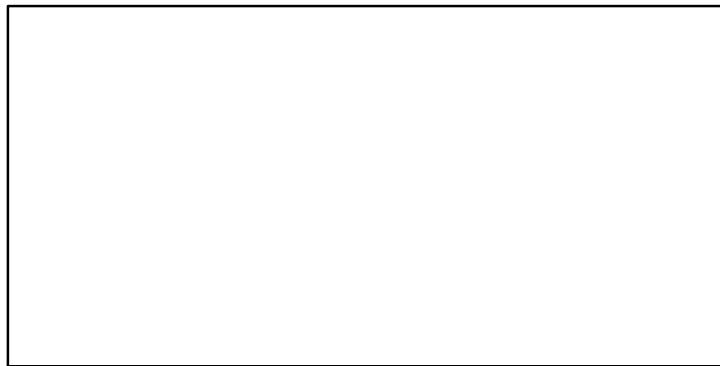
TAC\*, Cpair\*, Cadv\*



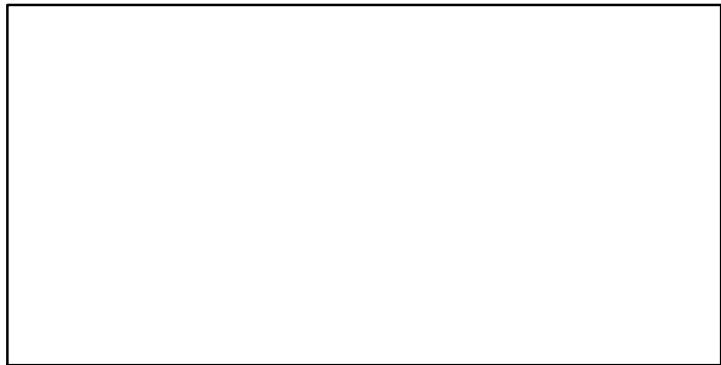
survB\*



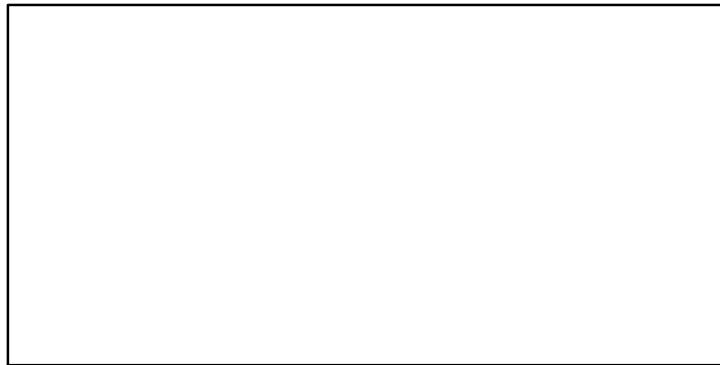
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Black bellied angler ICES 8c-9a [ANGLVIIIC-IXa]

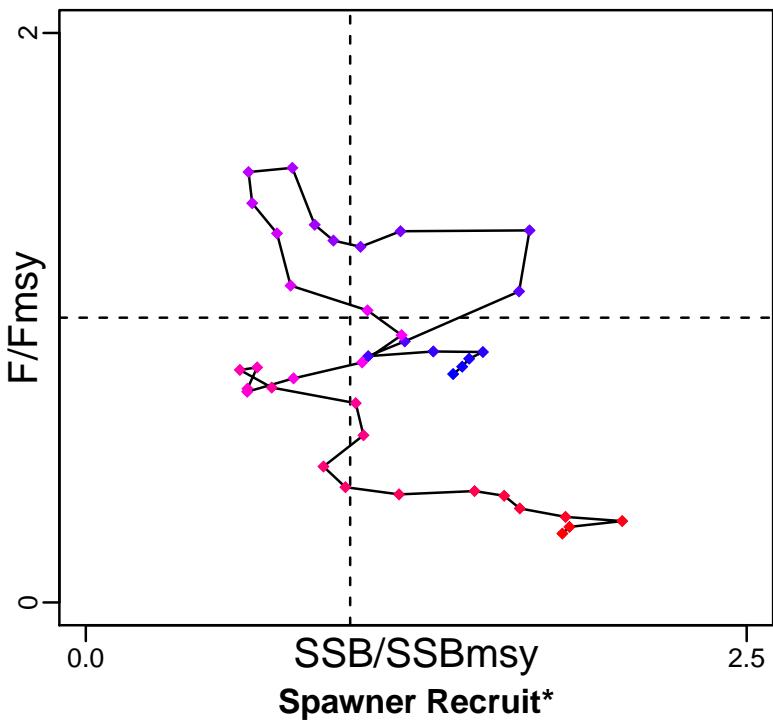
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Lophius budegassa  |
| <b>Current Assess ID</b>    | WGBIE-ANGLVIIIC-IXa-1978-2019-ICESIMP2021                            |
| <b>Area</b>                 | ICES 8c-9a   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                 |
| <b>Assessor</b>             | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion |
| <b>Asmts in RAM</b>         | 2019, 2014, 2015, 2016, 2017, 2018, 2011, 2012, 2013                 |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

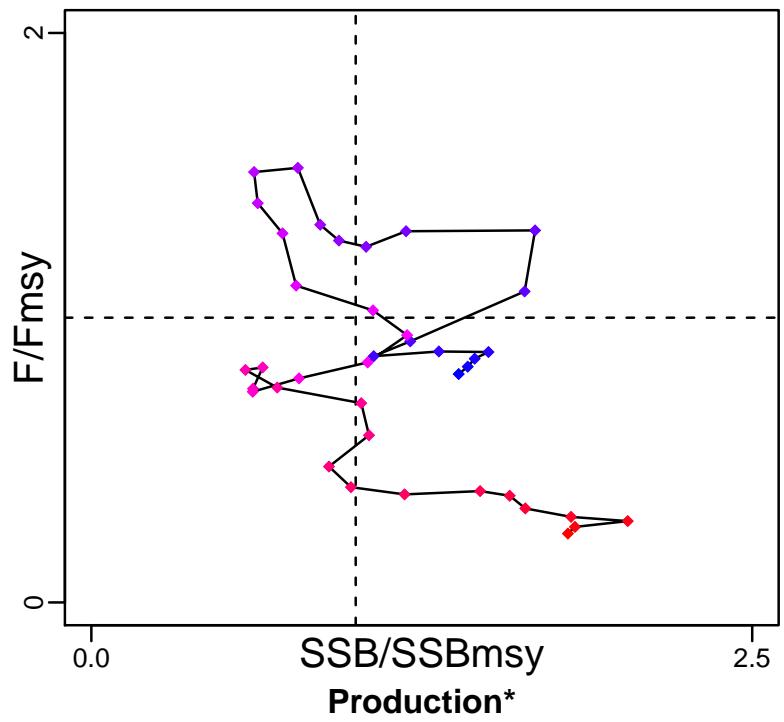
| <b>Time Series</b> |                            |           |            |      |     |   |
|--------------------|----------------------------|-----------|------------|------|-----|---|
| Type               | ID                         | Asmt Year | Curr Value | Sex  | Age |   |
| <b>TB</b>          | -                          | -         | -          | -    | -   | - |
| <b>SSB</b>         | SSB-relative               | 2018      | 1.38       | Both | -   |   |
| <b>TN</b>          | -                          | -         | -          | -    | -   | - |
| <b>R</b>           | -                          | -         | -          | -    | -   | - |
| <b>F</b>           | F-relative                 | 2018      | 0.342      | -    | -   |   |
| <b>ER</b>          | -                          | -         | -          | -    | -   | - |
| <b>TC</b>          | -                          | -         | -          |      |     |   |
| <b>TL</b>          | TL-MT                      | 2019      | 764        |      |     |   |
| <b>TB/TBmsy</b>    | TBdivTBmsy-dimensionless   | 2017      | 1.2        |      |     |   |
| <b>SSB/SSBmsy</b>  | SSBdivSSBmsy-dimensionless | 2019      | 1.702      |      |     |   |
| <b>F/Fmsy</b>      | FdivFmsy-dimensionless     | 2019      | 0.242      |      |     |   |
| <b>ER/ERmsy</b>    | -                          | -         | -          |      |     |   |
| <b>TB/TBmgt</b>    | -                          | -         | -          |      |     |   |
| <b>SSB/SSBmgt</b>  | -                          | -         | -          |      |     |   |
| <b>F/Fmgt</b>      | -                          | -         | -          |      |     |   |
| <b>ER/ERmgt</b>    | -                          | -         | -          |      |     |   |

**Black bellied angler ICES 8c–9a [ANGLVIIIC–IXa]**

Kobe MSYpref (1978–2019–ICESIMP2021)



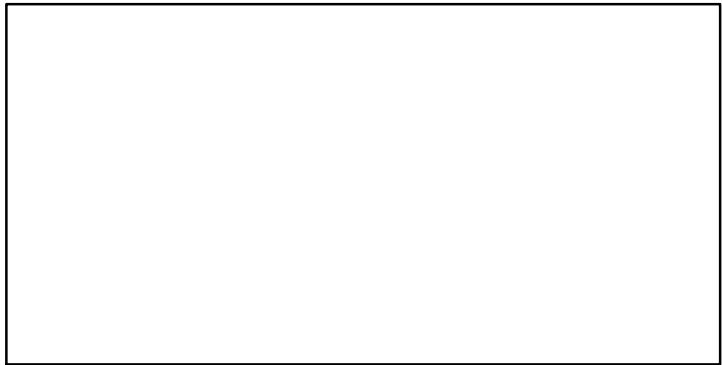
Kobe MGTpref (1978–2019–ICESIMP2021)



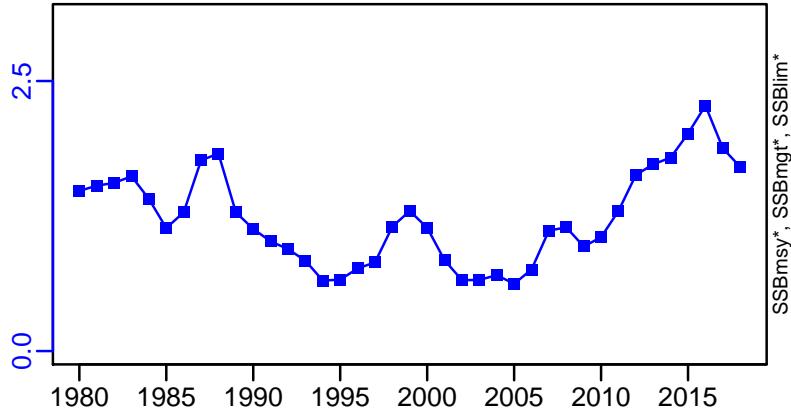
|              |            |   |         |
|--------------|------------|---|---------|
| ◆ Start Year | ◆ End Year | * | No Data |
|--------------|------------|---|---------|

**Black bellied angler ICES 8c–9a [ANGLVIIIC–IXa]**

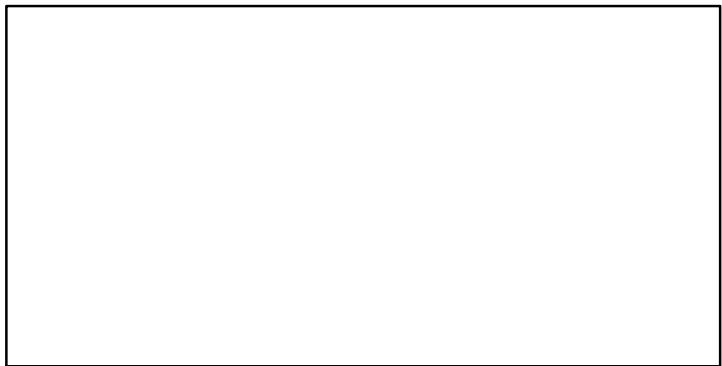
**TB\***



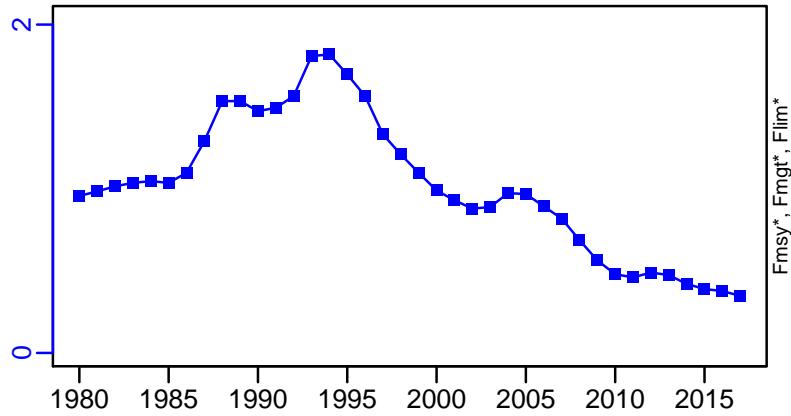
**SSB-relative (1980–2018–ICESIMP2018)**



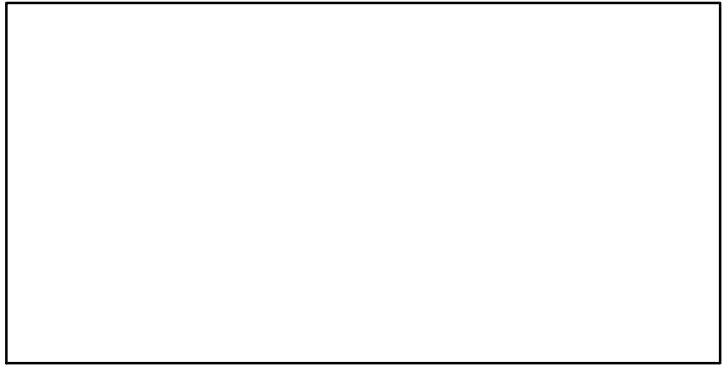
**TN \***



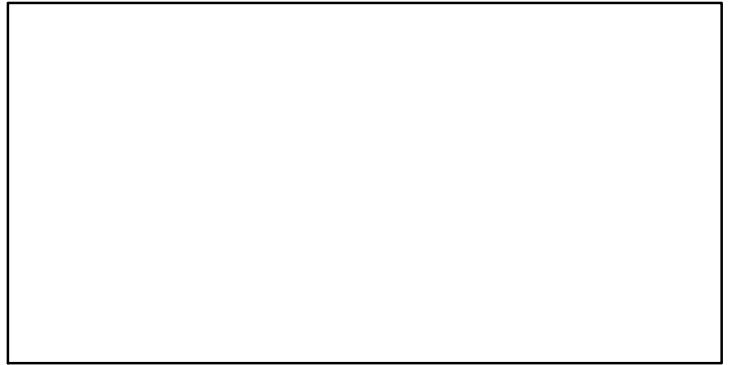
**F-relative (1980–2018–ICESIMP2018)**



**ER\***



**Recruits\***

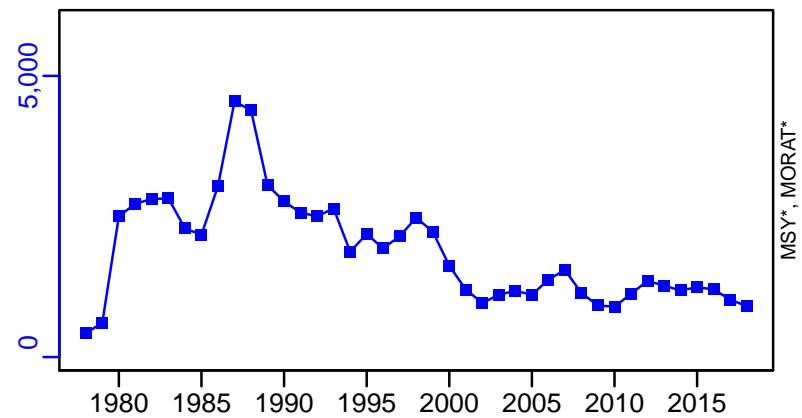


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

**Black bellied angler ICES 8c–9a [ANGLVIIIC–IXa]**

TL–MT, TC\*, RecC\* (1978–2019–ICESIMP2021)

**TAC\*, Cpair\*, Cadv\***



**survB\***

**CPUE\***

**EFFORT\***

**CdivMSY\***

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

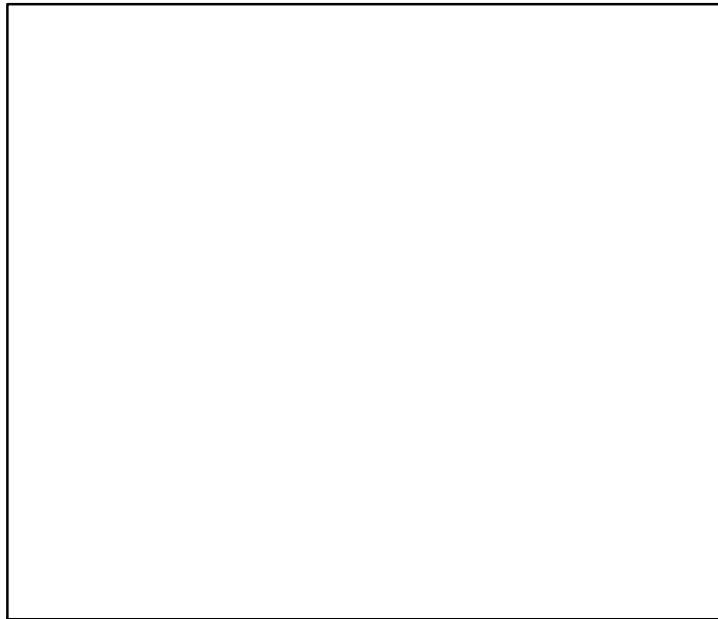
## Black bellied angler ICES 7-8abd [ANGLVII-VIIIabd]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Lophius budegassa  |
| <b>Current Assess ID</b>    | WGBIE-ANGLVII-VIIIabd-1986-2018-ICESIMP2021                          |
| <b>Area</b>                 | ICES 7-8abd  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                 |
| <b>Assessor</b>             | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion |
| <b>Asmts in RAM</b>         | 2016, 2017, 2018   |

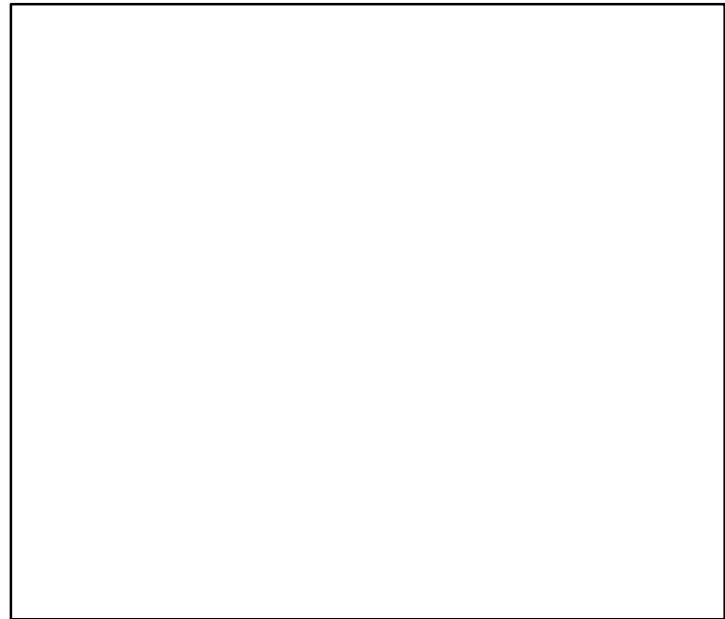
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |                        |           |            |     |     |  |
|--------------------|------------------------|-----------|------------|-----|-----|--|
| Type               | ID                     | Asmt Year | Curr Value | Sex | Age |  |
| <b>TB</b>          | -                      | -         | -          | -   | -   |  |
| <b>SSB</b>         | -                      | -         | -          | -   | -   |  |
| <b>TN</b>          | -                      | -         | -          | -   | -   |  |
| <b>R</b>           | R-index                | 2018      | 2.197      | -   | -   |  |
| <b>F</b>           | F-1/yr                 | 2018      | 0.729      | -   | -   |  |
| <b>ER</b>          | -                      | -         | -          | -   | -   |  |
| <b>TC</b>          | TC-MT                  | 2017      | 13,500     |     |     |  |
| <b>TL</b>          | TL-MT                  | 2018      | 10,174     |     |     |  |
| <b>TB/TBmsy</b>    | -                      | -         | -          |     |     |  |
| <b>SSB/SSBmsy</b>  | -                      | -         | -          |     |     |  |
| <b>F/Fmsy</b>      | FdivFmsy-dimensionless | 2017      | 0.836      |     |     |  |
| <b>ER/ERmsy</b>    | -                      | -         | -          |     |     |  |
| <b>TB/TBmgt</b>    | -                      | -         | -          |     |     |  |
| <b>SSB/SSBmgt</b>  | -                      | -         | -          |     |     |  |
| <b>F/Fmgt</b>      | -                      | -         | -          |     |     |  |
| <b>ER/ERmgt</b>    | -                      | -         | -          |     |     |  |

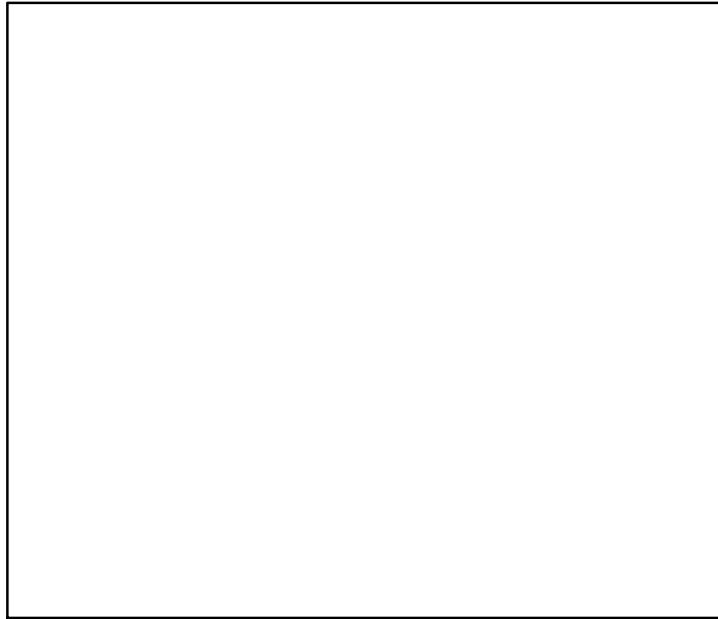
**Kobe MSY\***



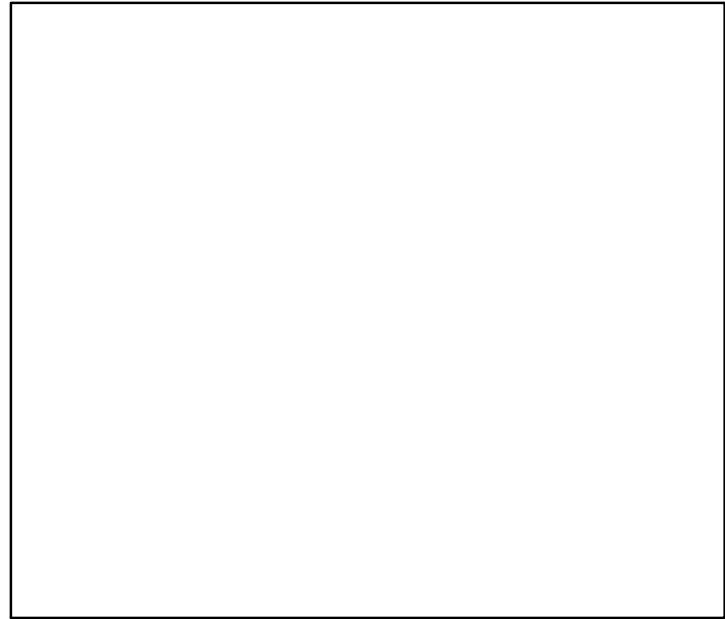
**Kobe MGT\***



**Spawner Recruit\***



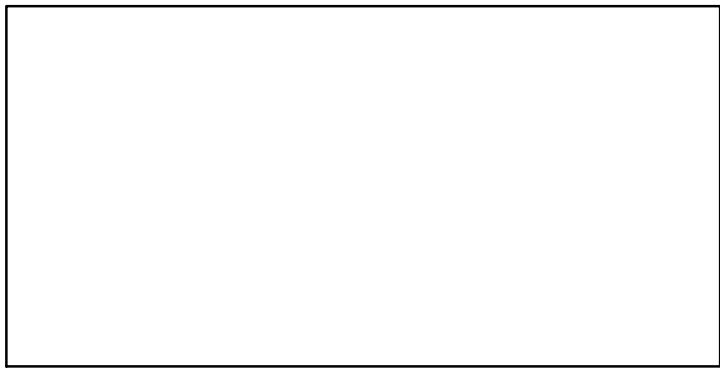
**Production\***



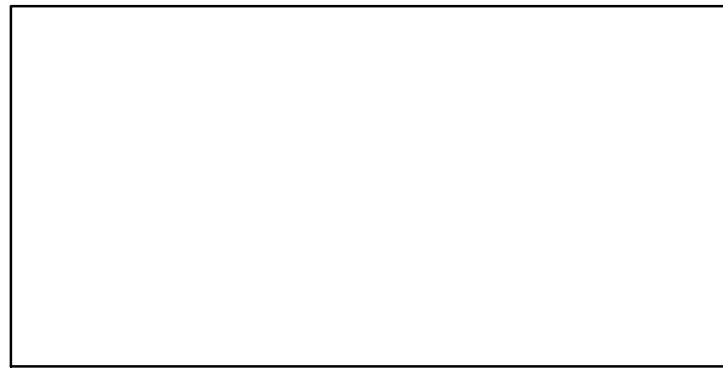
◆ Start Year ♦ End Year \* No Data

**Black bellied angler ICES 7–8abd [ANGLVII–VIIIab]**

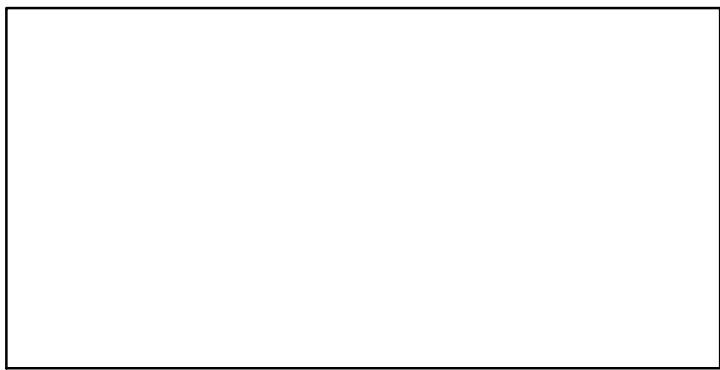
**TB\***



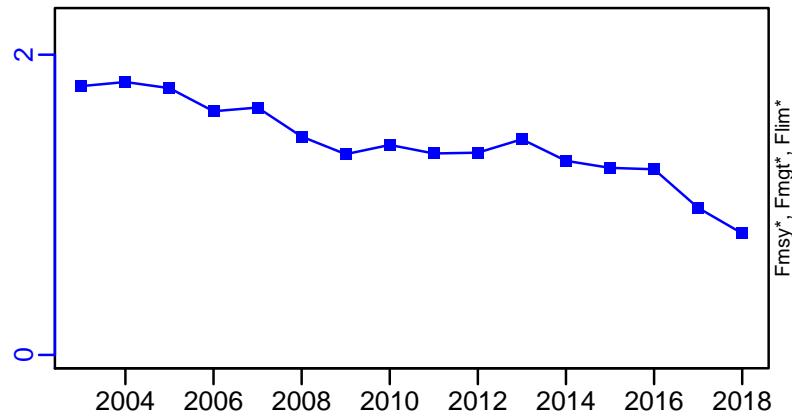
**SSB\***



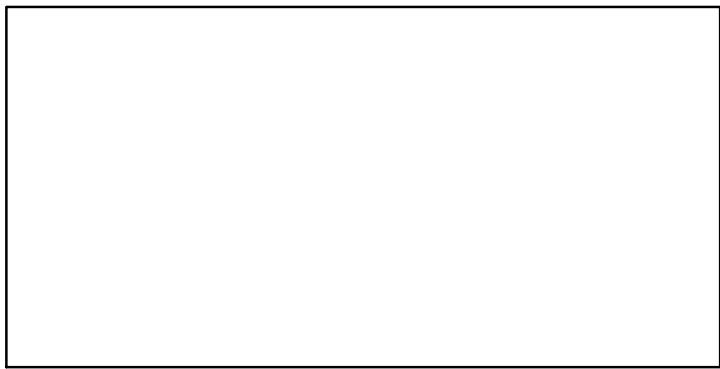
**TN \***



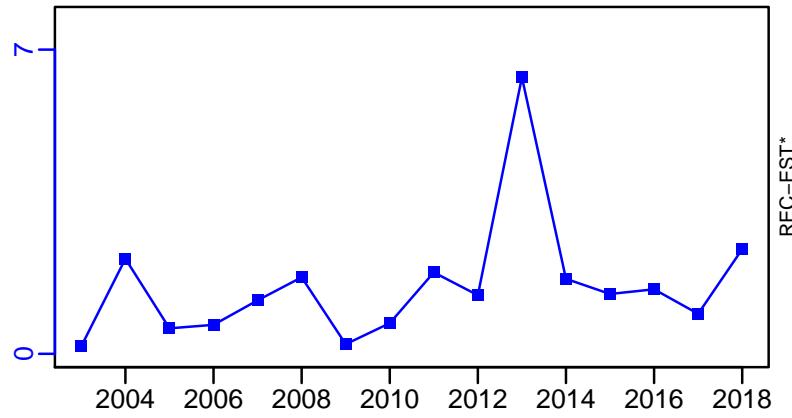
**F-1/yr (1986–2018–ICESIMP2021)**



**ER\***



**R-index (1986–2018–ICESIMP2021)**

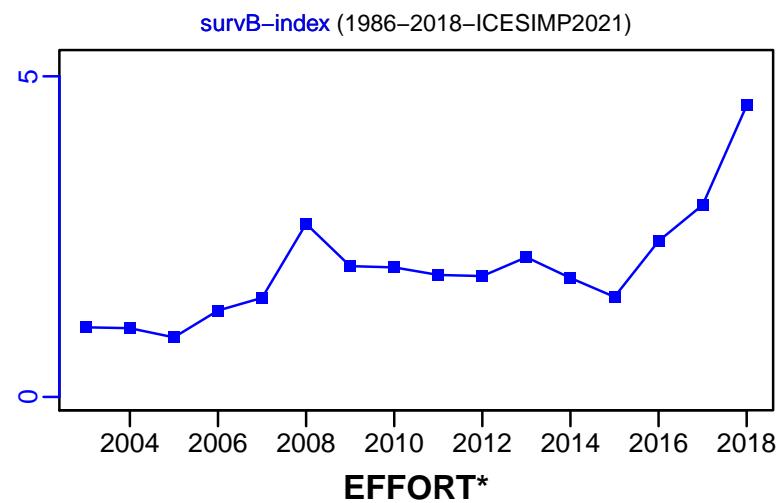
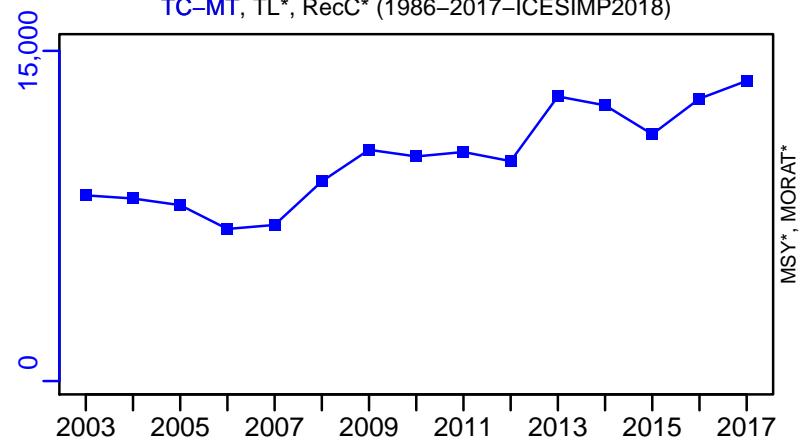


- Listed time series
- - - Target BRP
- - MSY-based BRP
- - Lim BRP
- Rec-Est
- \* No Data

**Black bellied angler ICES 7–8abd [ANGLVII–VIIIab]**

TC-MT, TL\*, RecC\* (1986–2017–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



**EFFORT\***

**CPUE\***

**CdivMSY\***



|                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Angel shark Northeast Atlantic [ASHARNEATL]

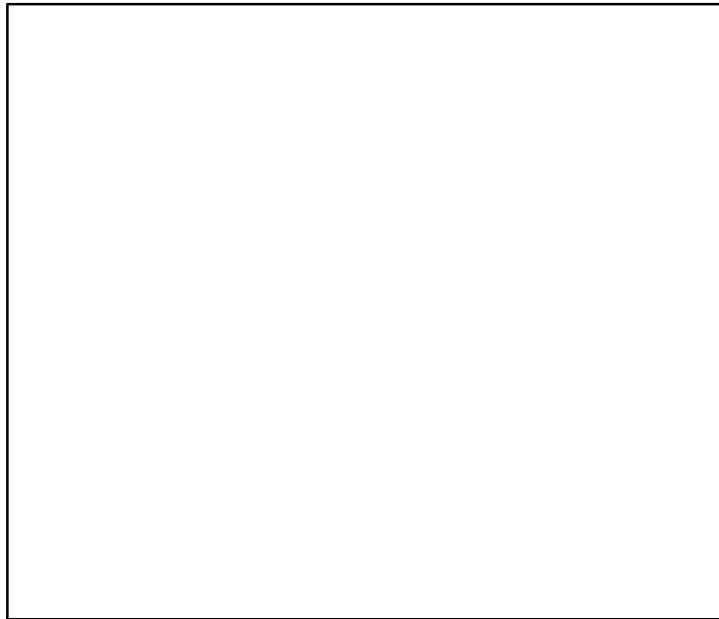
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Squatina squatina                                    |
| <b>Current Assess ID</b>    | WGEF-ASHARNEATL-1973-2018-ICESIMP2021                |
| <b>Area</b>                 | Northeast Atlantic                                   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2011, 2018   |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

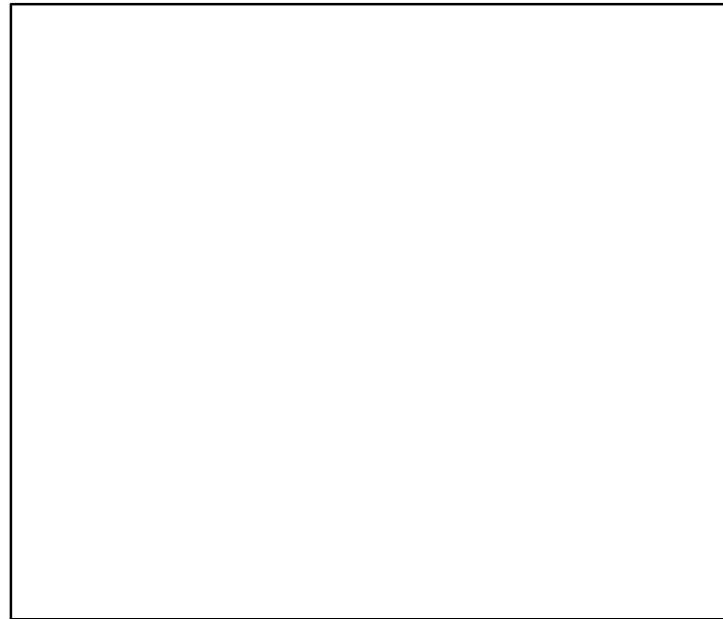
| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | -     | -         | -          |     |     |
| <b>TL</b>          | TL-MT | 2018      | 0          |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

Angel shark Northeast Atlantic [ASHARNEATL]

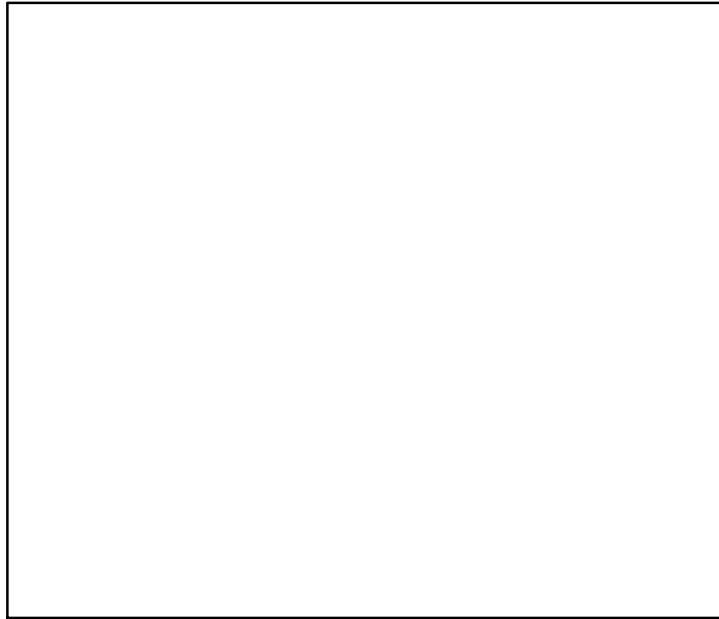
**Kobe MSY\***



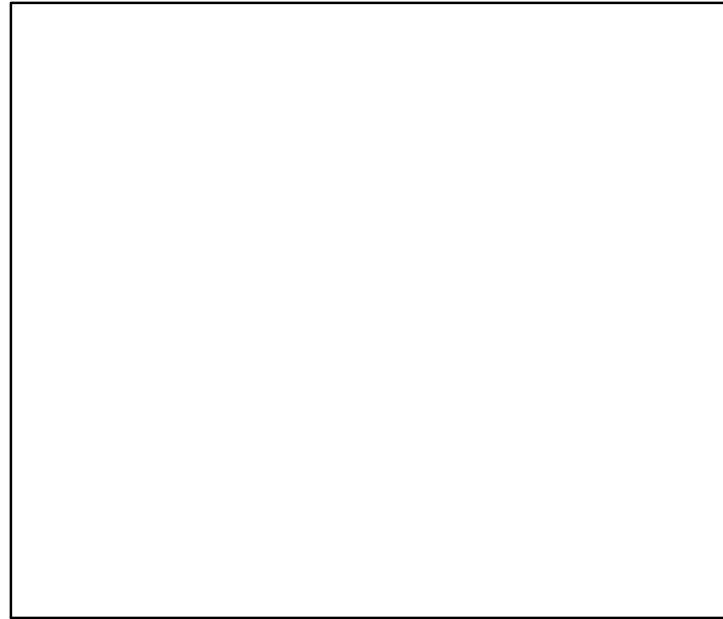
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ◆ End Year \* No Data

Angel shark Northeast Atlantic [ASHARNEATL]

**TB\***



**SSB\***



**TN \***



**F\***



**ER\***



**Recruits\***

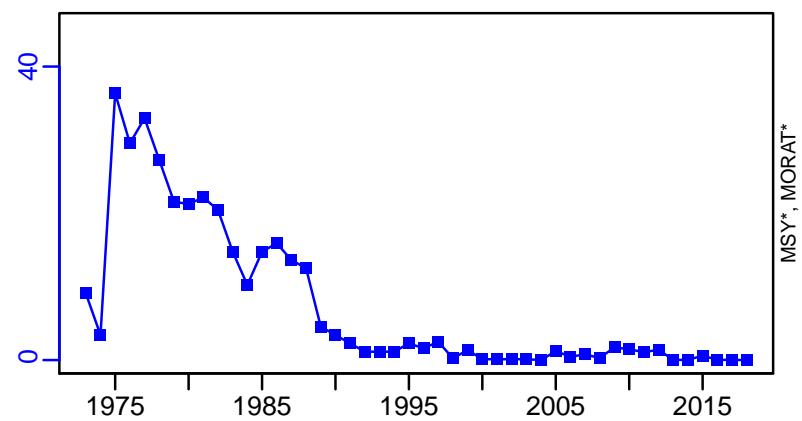


- |       |                    |       |            |   |         |
|-------|--------------------|-------|------------|---|---------|
| ■     | Listed time series | - - - | Target BRP | — | Rec-Est |
| - - - | MSY-based BRP      | - - - | Lim BRP    | * | No Data |

Angel shark Northeast Atlantic [ASHARNEATL]

TL-MT, TC\*, RecC\* (1973–2018—ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



survB\*

CPUE\*

EFFORT\*

CdivMSY\*

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

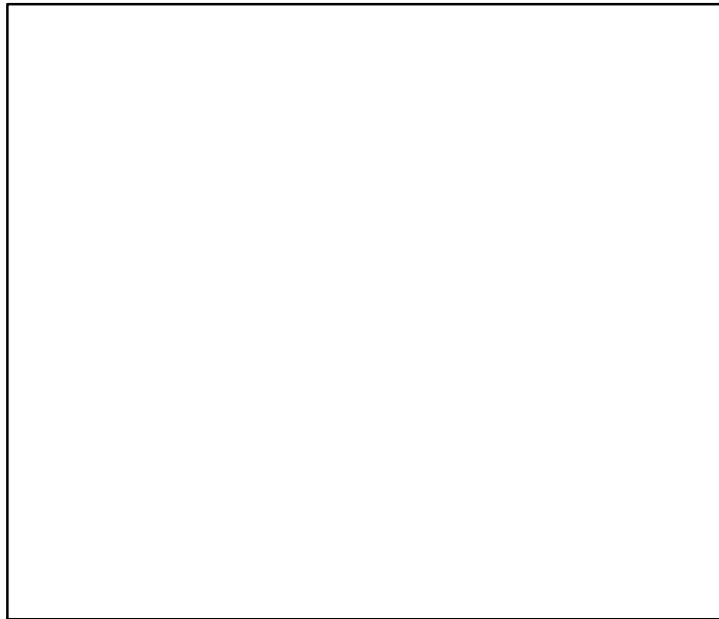
## Beryx spp Northeast Atlantic [BERYXSPPNEATL]

| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Beryx spp   |
| <b>Current Assess ID</b>    | WGDEEP-BERYXSPPNEATL-1988-2017-ICESIMP2018                                  |
| <b>Area</b>                 | Northeast Atlantic  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                        |
| <b>Assessor</b>             | Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources |
| <b>Asmts in RAM</b>         | 2017  |

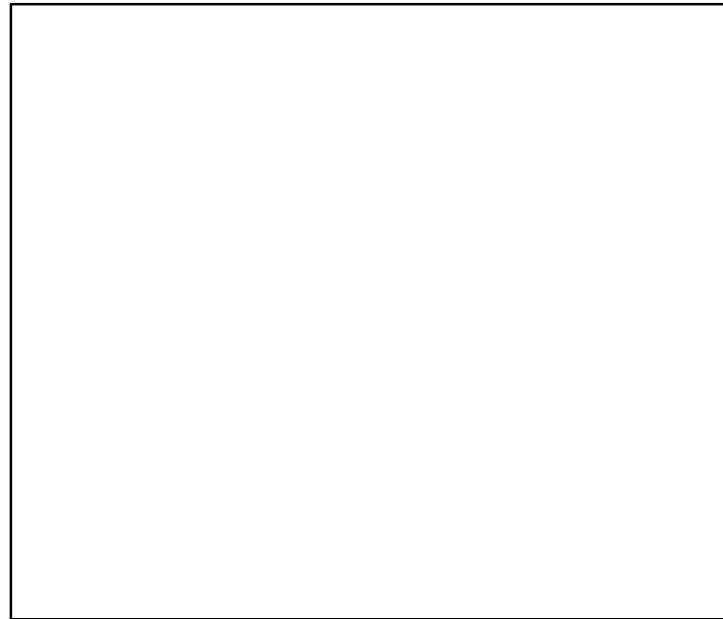
| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | -     | -         | -          |     |     |
| <b>TL</b>         | TL-MT | 2017      | 240        |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

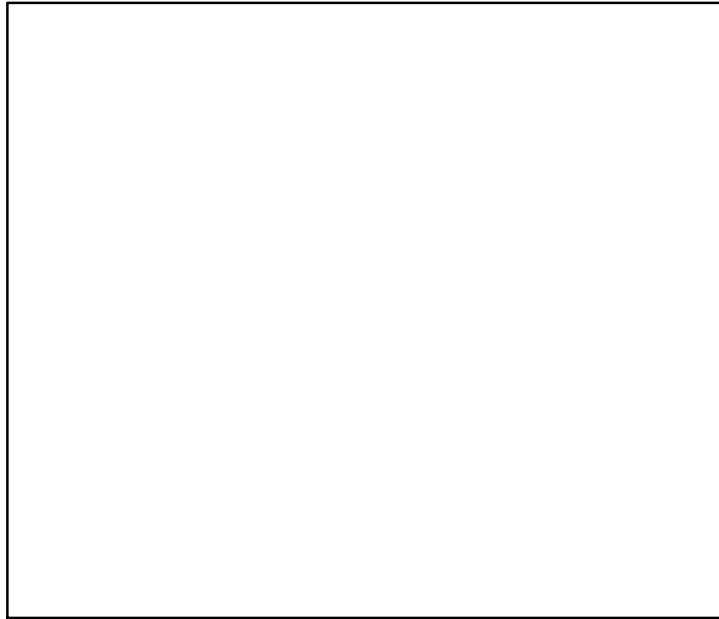
Kobe MSY\*



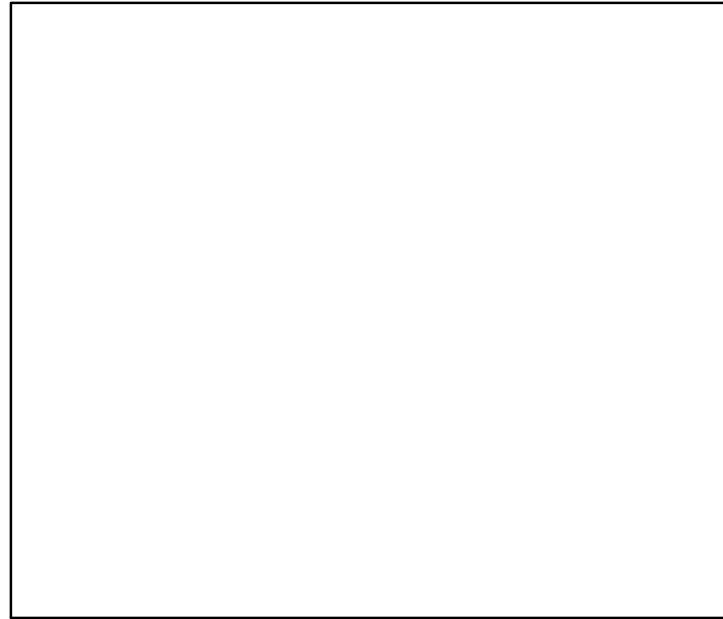
Kobe MGT\*



Spawner Recruit\*



Production\*



◆ Start Year ♦ End Year \* No Data

Beryx spp Northeast Atlantic [BERYXSPPNEATL]

**TB\***



**SSB\***



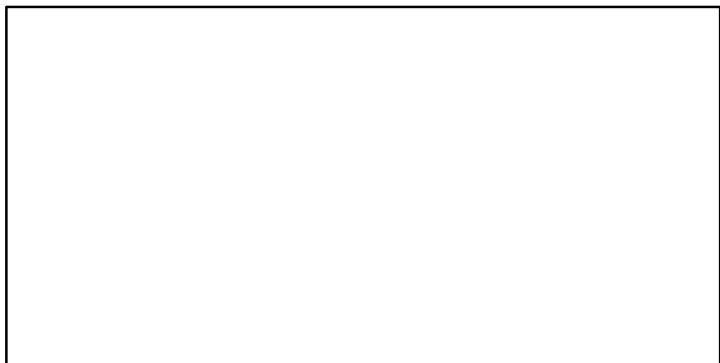
**TN \***



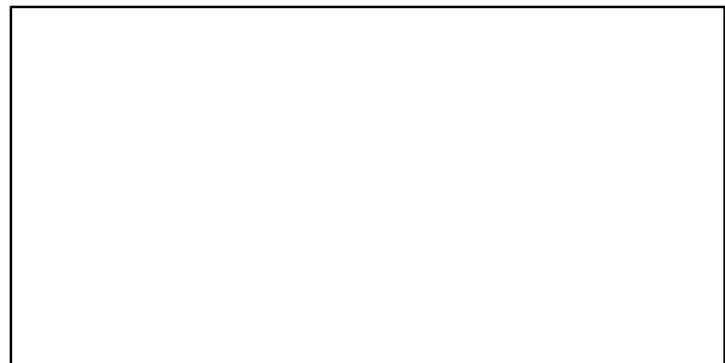
**F\***



**ER\***



**Recruits\***

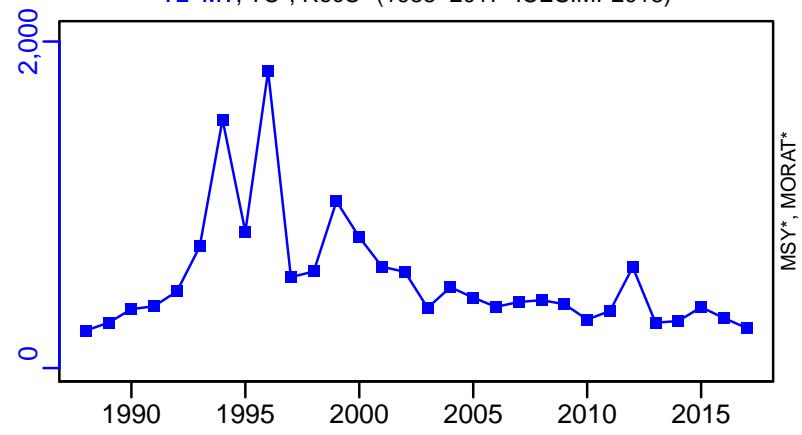


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Beryx spp Northeast Atlantic [BERYXSPPNEATL]

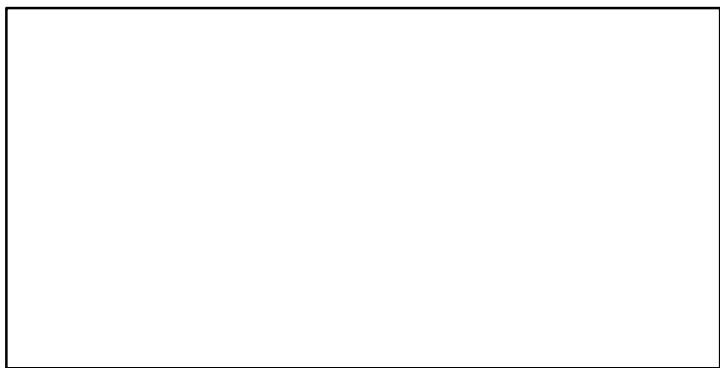
TL-MT, TC\*, RecC\* (1988–2017–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*

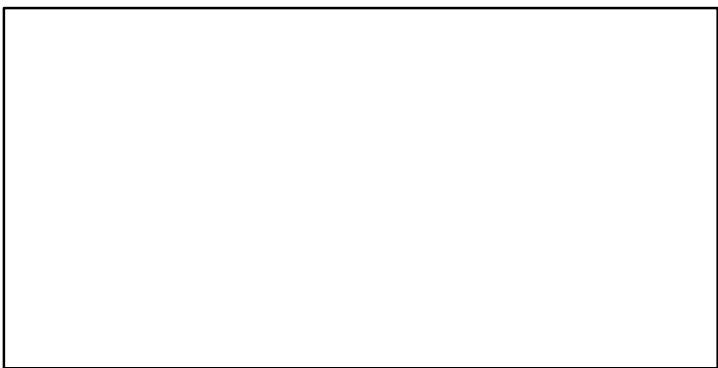


survB\*

MSY\*, MORAT\*



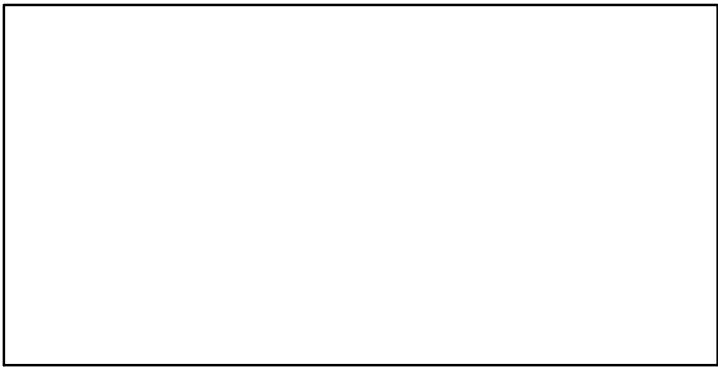
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

## Blue jack mackerel Azores [BJMACKXa2]

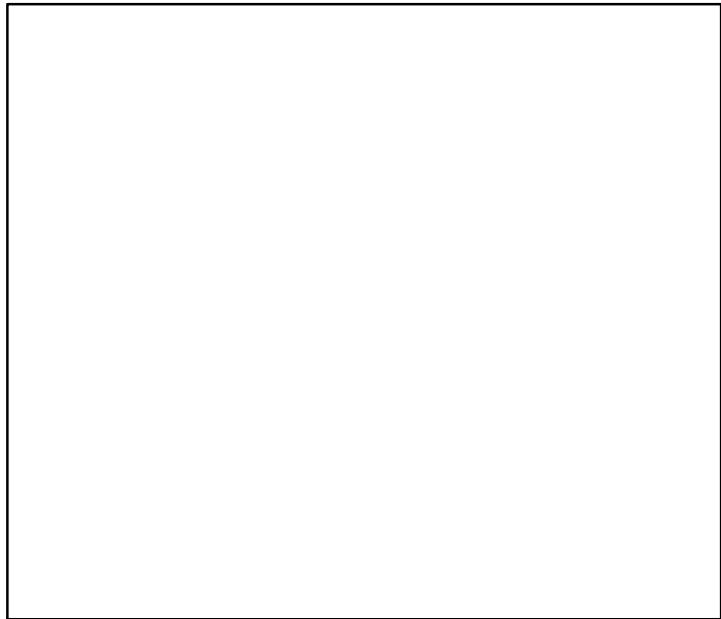
| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Trachurus picturatus  |
| <b>Current Assess ID</b>    | WGHANSA-BJMACKXa2-1978-2017-ICESIMP2018                       |
| <b>Area</b>                 | Azores  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea          |
| <b>Assessor</b>             | Working Group on Southern Horse Mackerel, Anchovy and Sardine |
| <b>Asmts in RAM</b>         | 2016, 2017  |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

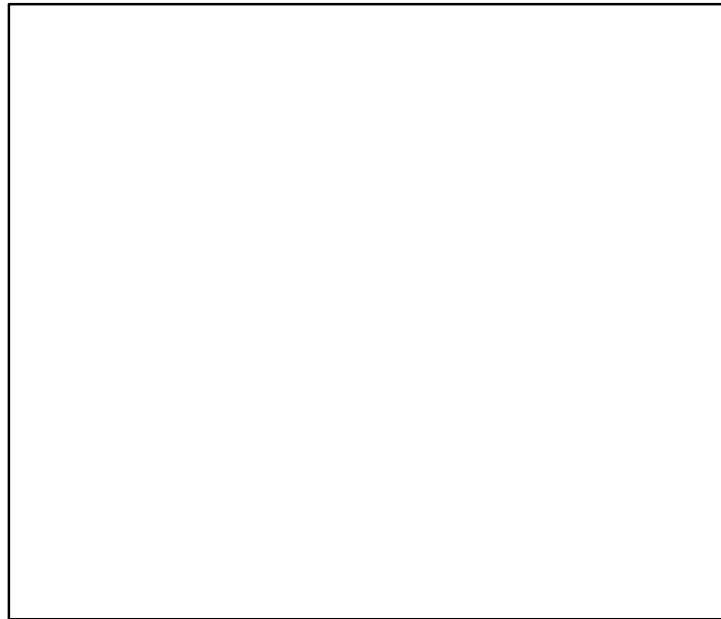
| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | TC-MT | 2016      | 1140       |     |     |
| <b>TL</b>          | TL-MT | 2017      | 991        |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

**Blue jack mackerel Azores [BJMACKXa2]**

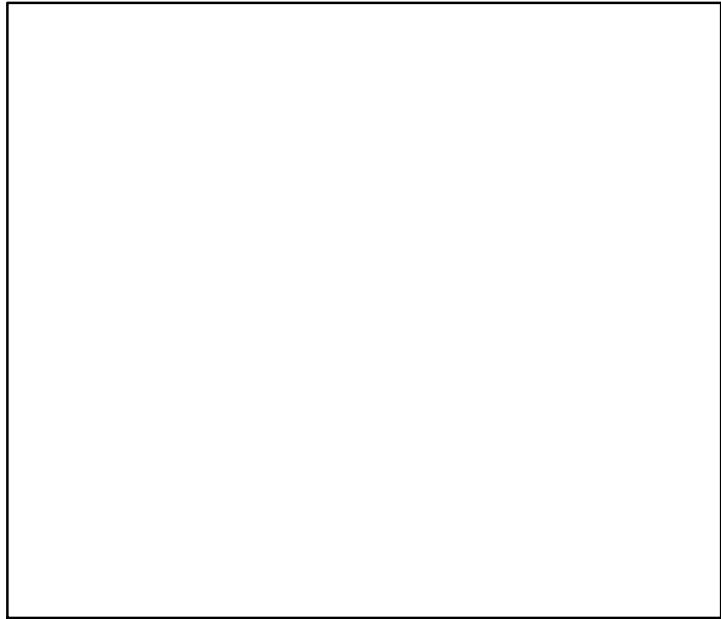
**Kobe MSY\***



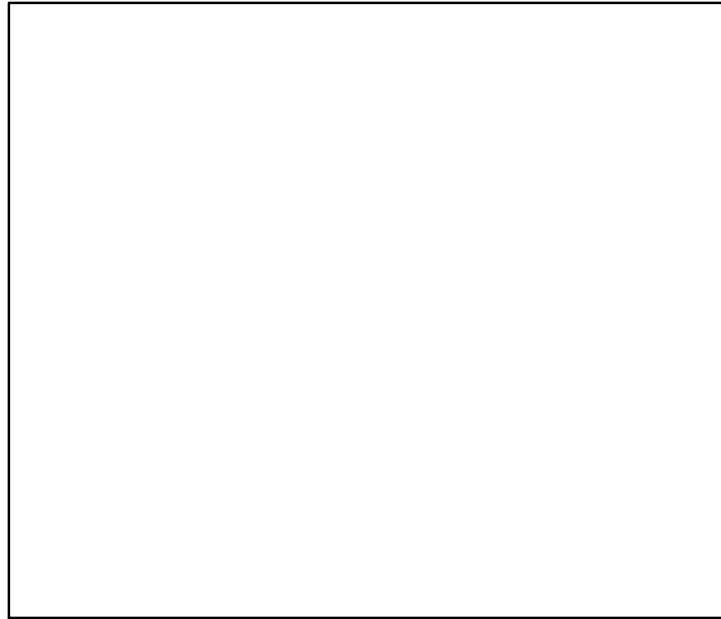
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

**Blue jack mackerel Azores [BJMACKXa2]**

**TB\***



**SSB\***



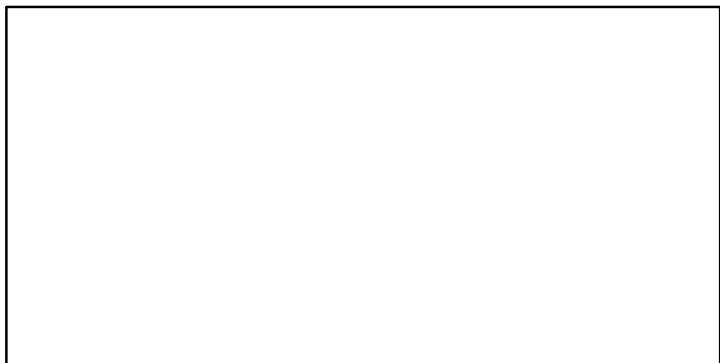
**TN \***



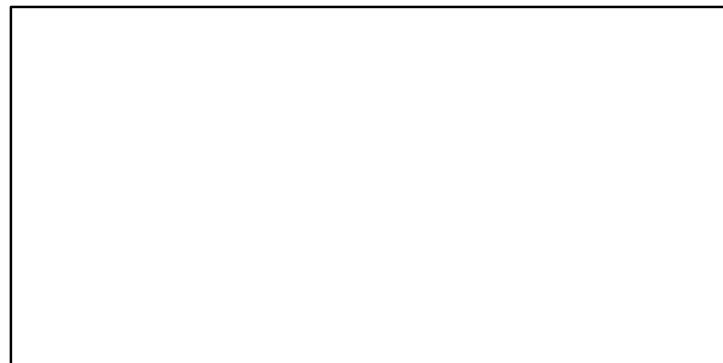
**F\***



**ER\***



**Recruits\***

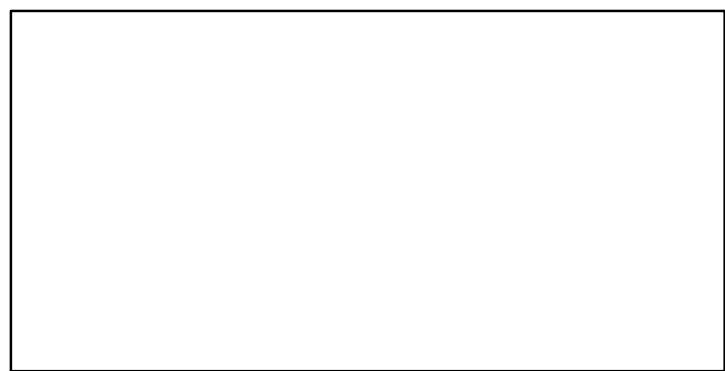
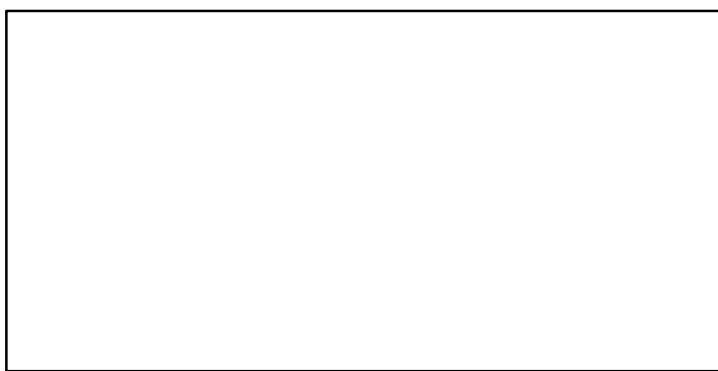
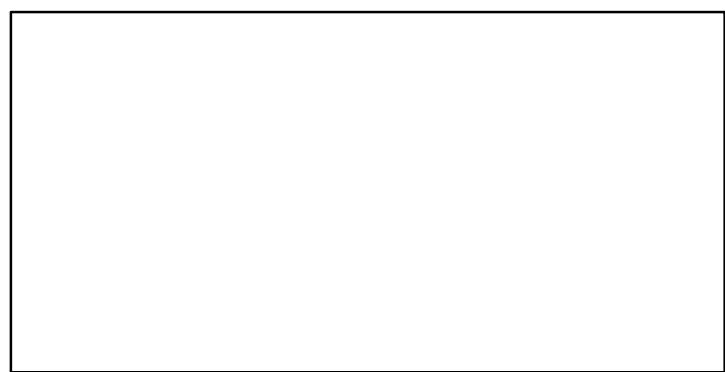
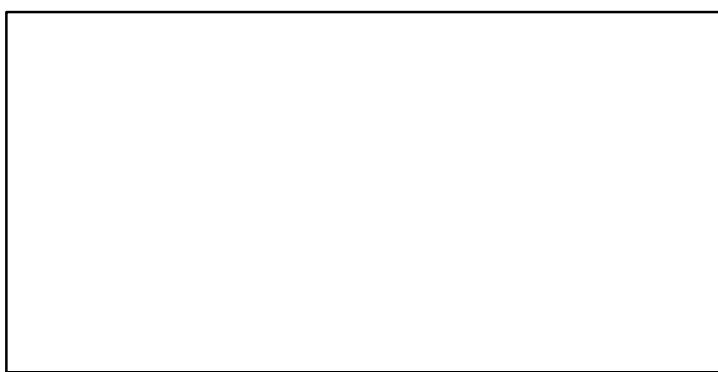
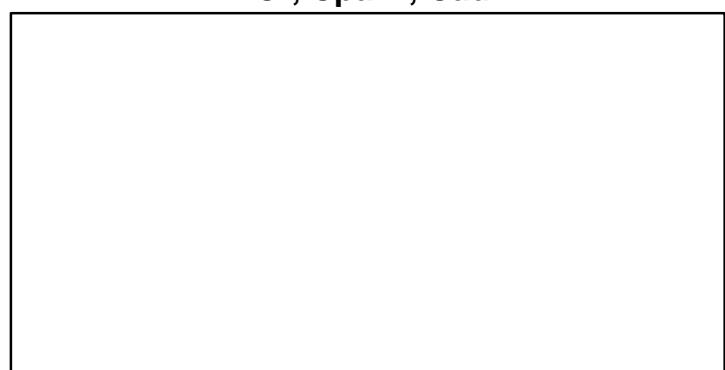
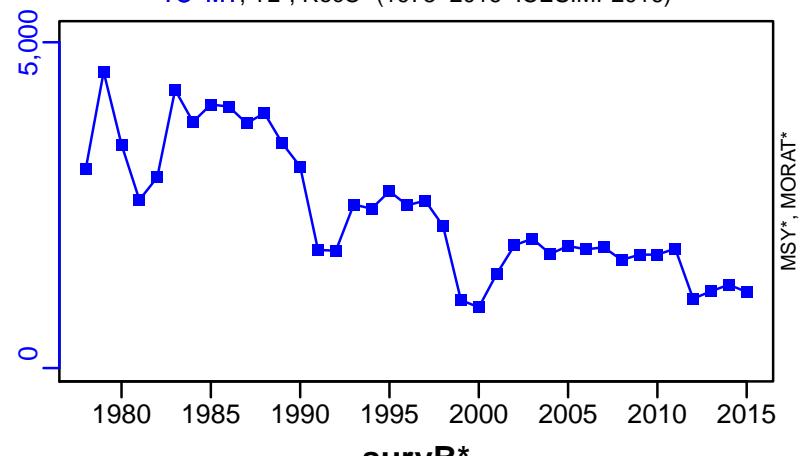


- |       |                    |       |            |   |         |
|-------|--------------------|-------|------------|---|---------|
| ■     | Listed time series | - - - | Target BRP | — | Rec-Est |
| - - - | MSY-based BRP      | - - - | Lim BRP    | * | No Data |

Blue jack mackerel Azores [BJMACKXa2]

TC-MT, TL\*, RecC\* (1978–2016–ICESIMP2016)

TAC\*, Cpair\*, Cadv\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

## Black scabbardfish Northeast Atlantic [BKSFNEATL]

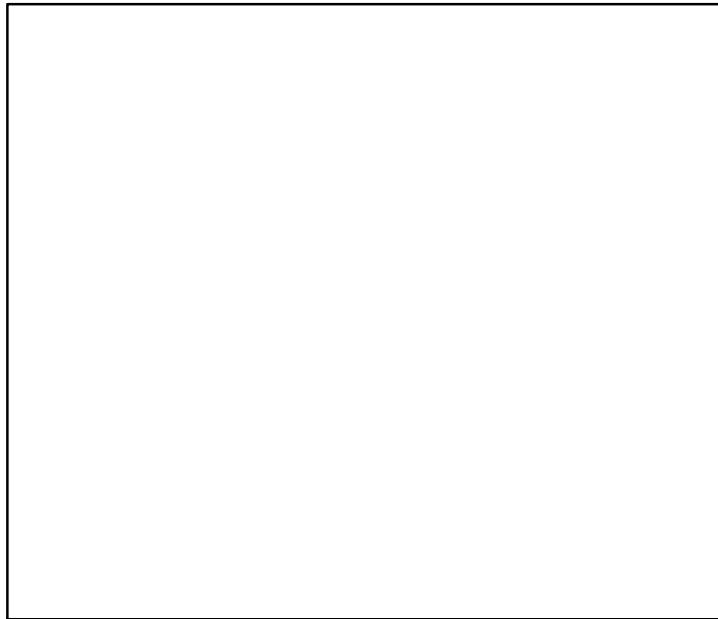
| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Aphanopus carbo   |
| <b>Current Assess ID</b>    | WGDEEP-BKSFNEATL-1988-2017-ICESIMP2018                                      |
| <b>Area</b>                 | Northeast Atlantic  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                        |
| <b>Assessor</b>             | Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources |
| <b>Asmts in RAM</b>         | 2017, 2013  |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

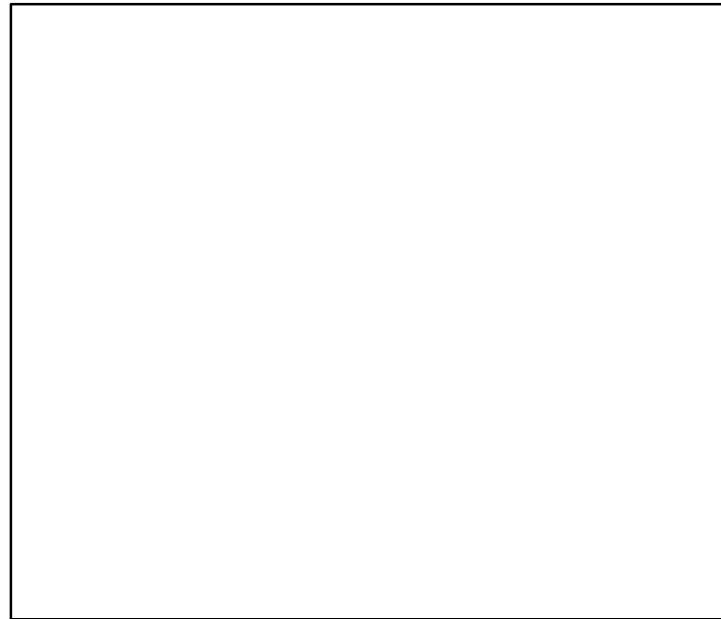
| <b>Time Series</b> |          |           |            |     |     |  |
|--------------------|----------|-----------|------------|-----|-----|--|
| Type               | ID       | Asmt Year | Curr Value | Sex | Age |  |
| <b>TB</b>          | -        | -         | -          | -   | -   |  |
| <b>SSB</b>         | -        | -         | -          | -   | -   |  |
| <b>TN</b>          | -        | -         | -          | -   | -   |  |
| <b>R</b>           | -        | -         | -          | -   | -   |  |
| <b>F</b>           | F-1/yr   | 2013      | 0.022      | -   | -   |  |
| <b>ER</b>          | ER-ratio | 2017      | 0.056      | -   | -   |  |
| <b>TC</b>          | TC-MT    | 2017      | 5          |     |     |  |
| <b>TL</b>          | -        | -         | -          |     |     |  |
| <b>TB/TBmsy</b>    | -        | -         | -          |     |     |  |
| <b>SSB/SSBmsy</b>  | -        | -         | -          |     |     |  |
| <b>F/Fmsy</b>      | -        | -         | -          |     |     |  |
| <b>ER/ERmsy</b>    | -        | -         | -          |     |     |  |
| <b>TB/TBmgt</b>    | -        | -         | -          |     |     |  |
| <b>SSB/SSBmgt</b>  | -        | -         | -          |     |     |  |
| <b>F/Fmgt</b>      | -        | -         | -          |     |     |  |
| <b>ER/ERmgt</b>    | -        | -         | -          |     |     |  |

**Black scabbardfish Northeast Atlantic [BKSFNEATL]**

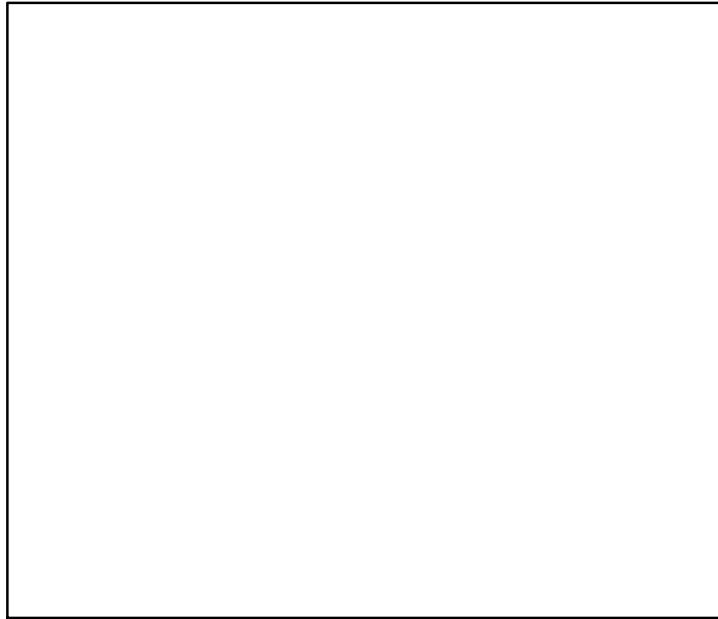
**Kobe MSY\***



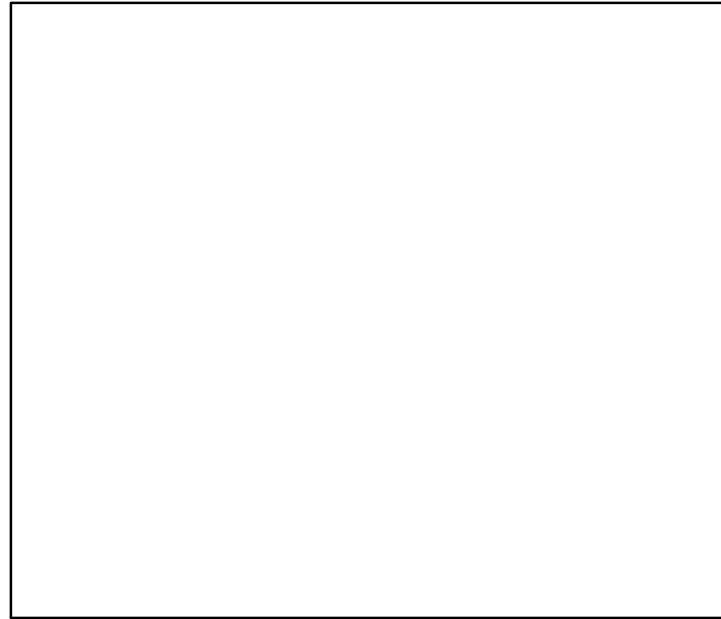
**Kobe MGT\***



**Spawner Recruit\***



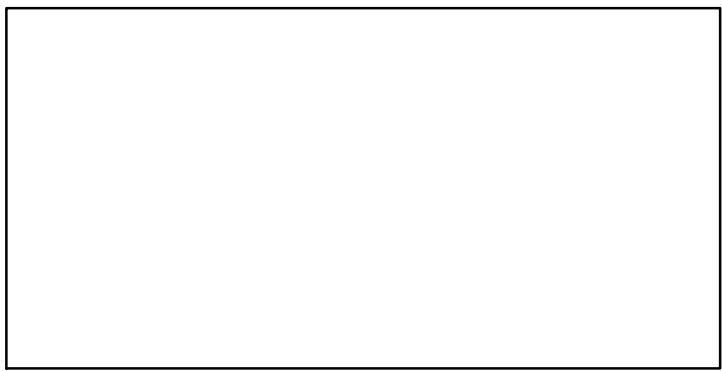
**Production\***



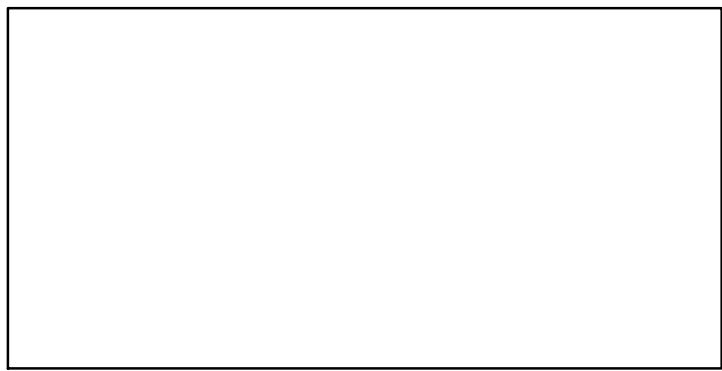
◆ Start Year ♦ End Year \* No Data

**Black scabbardfish Northeast Atlantic [BKSFNEATL]**

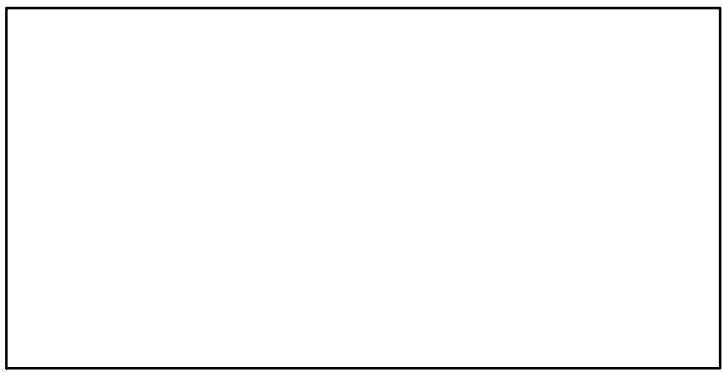
**TB\***



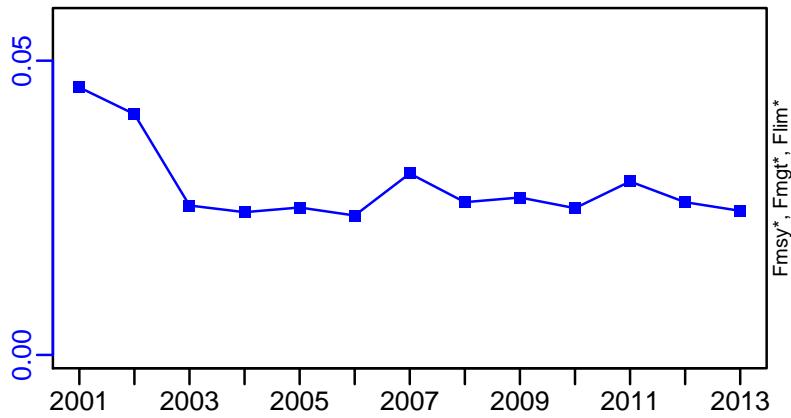
**SSB\***



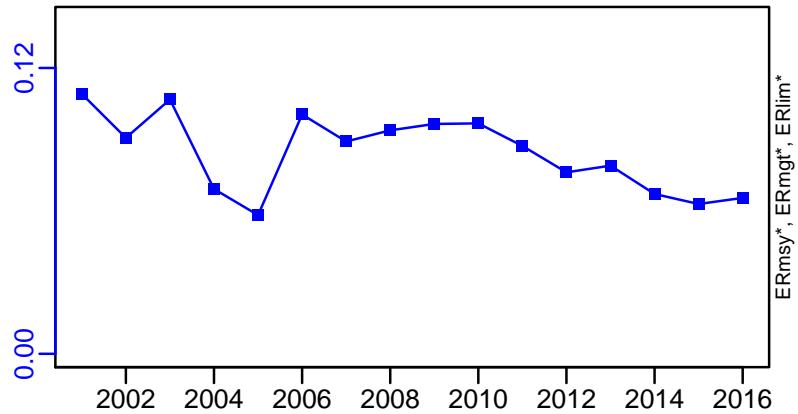
**TN \***



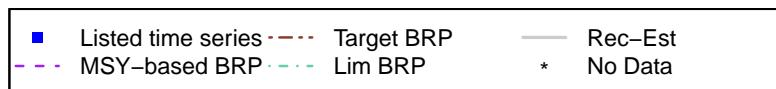
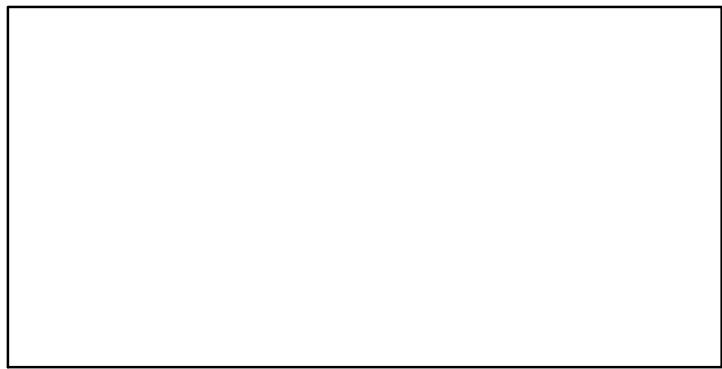
**F-1/yr (2001–2013–ICESIMP2018)**



**ER-ratio (1988–2017–ICESIMP2018)**



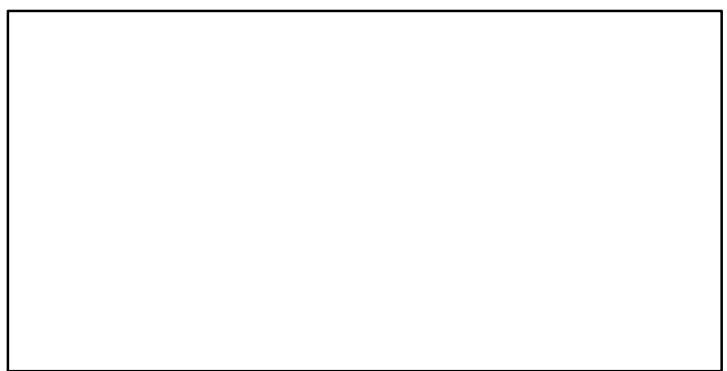
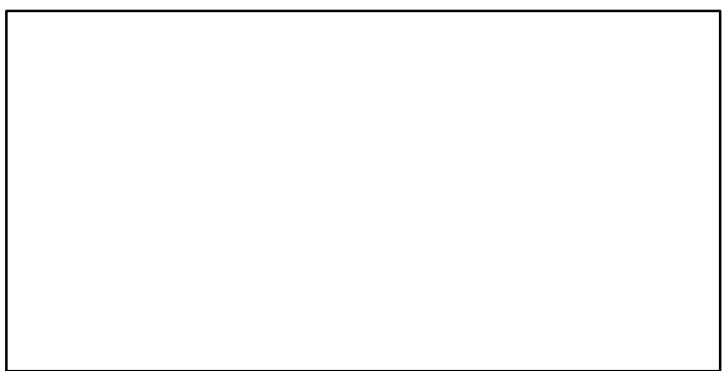
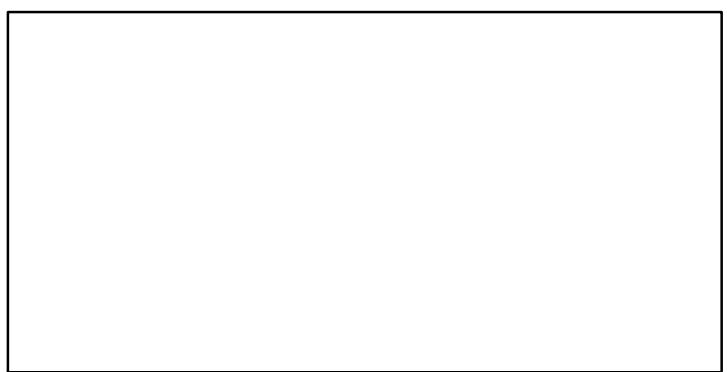
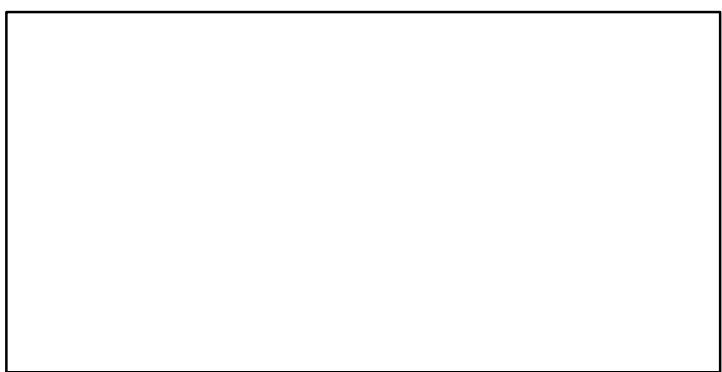
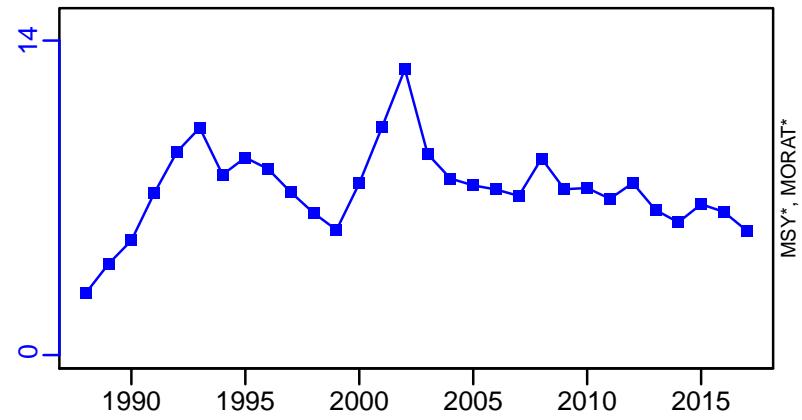
**Recruits\***



**Black scabbardfish Northeast Atlantic [BKSFNEATL]**

TC-MT, TL\*, RecC\* (1988–2017–ICESIMP2018)

**TAC\*, Cpair\*, Cadv\***



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Blue ling ICES 1-2-3a-4a-8-9-12 [BLINGI-II-IIIa-IVa-VIII-IX-XII]

| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Molva dypterygia  |
| <b>Current Assess ID</b>    | WGDEEP-BLINGI-II-IIIa-IVa-VIII-IX-XII-1988-2018-ICESIMP2021                 |
| <b>Area</b>                 | ICES 1-2-3a-4a-8-9-12   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                        |
| <b>Assessor</b>             | Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources |
| <b>Asmts in RAM</b>         | 2015, 2016, 2018  |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | TC-MT | 2015      | 240        |     |     |
| <b>TL</b>          | TL-MT | 2018      | 348        |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

**Spawner Recruit\***

**Production\***

◆ Start Year ♦ End Year \* No Data

**Blue ling ICES 1–2–3a–4a–8–9–12 [BLINGI–II–IIIa–IVa–VIII–IX–XII]**

**TB\***



**SSB\***



**TN \***



**F\***



**ER\***



**Recruits\***

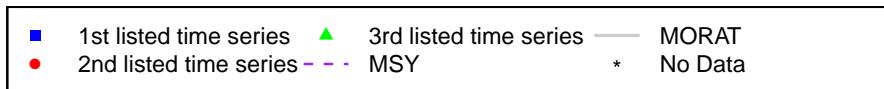
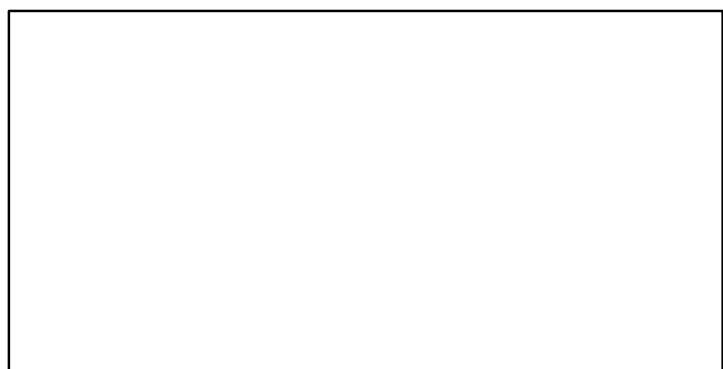
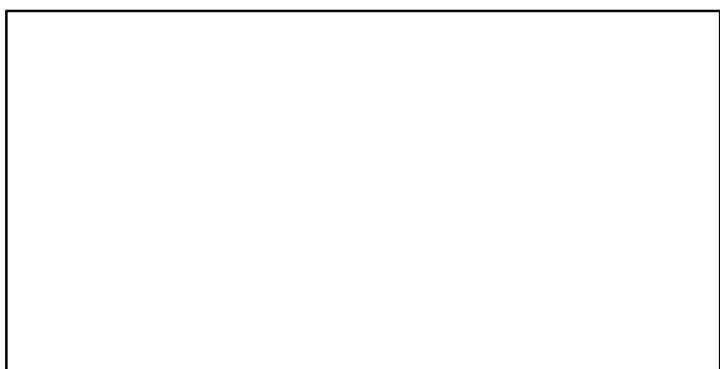
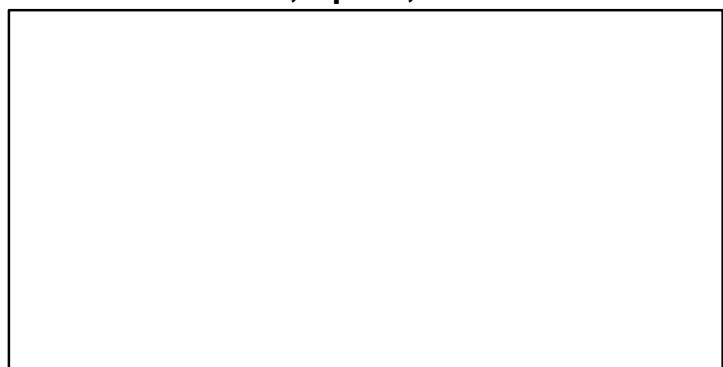
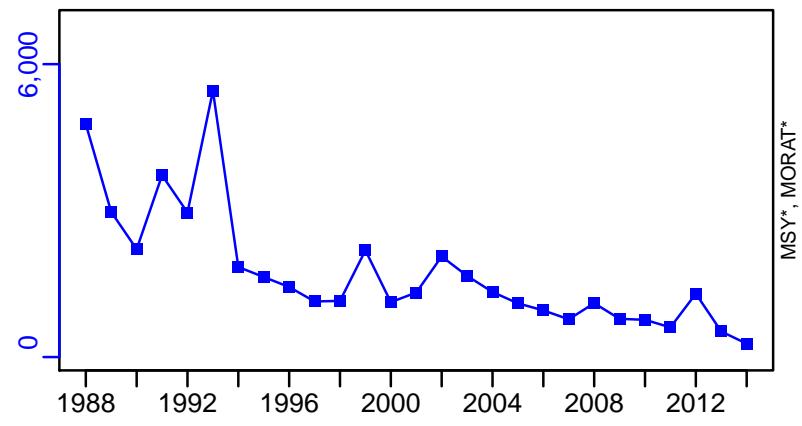


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Blue ling ICES 1–2–3a–4a–8–9–12 [BLINGI–II–IIIa–IVa–VIII–IX–XII]

TC–MT, TL\*, RecC\* (1988–2015–ICESIMP2016)

TAC\*, Cpair\*, Cadv\*



## Blue ling ICES 5b-6-7 [BLINGVb-VI-VII]

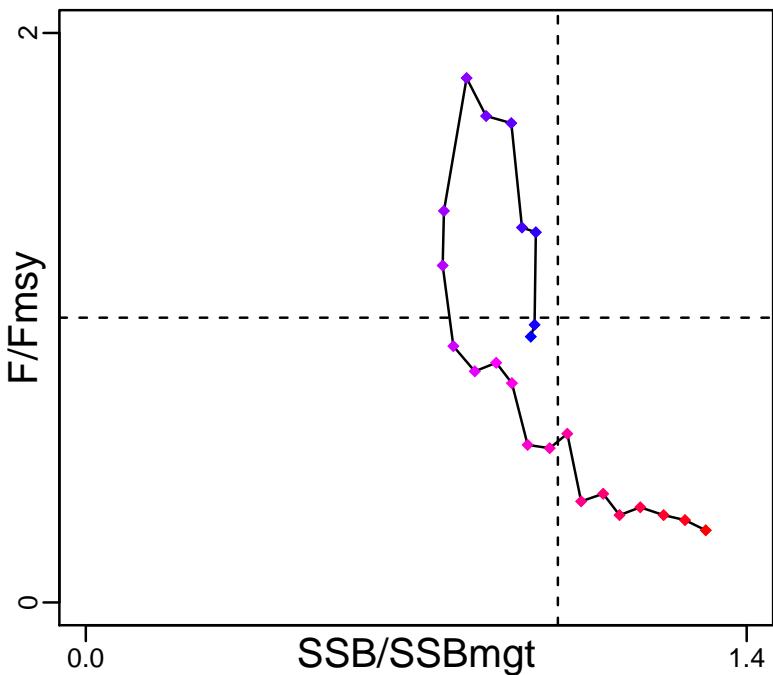
| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Molva dypterygia  |
| <b>Current Assess ID</b>    | WGDEEP-BLINGVb-VI-VII-1966-2018-ICESIMP2018                                 |
| <b>Area</b>                 | ICES 5b-6-7   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                        |
| <b>Assessor</b>             | Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources |
| <b>Asmts in RAM</b>         | 2016, 2018, 2014  |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2018             | 0.12         |
| <b>ERrmsy</b>           | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2018             | 75,000       |
| <b>Fmgt</b>             | Fmgt-1/yr | 2018             | 0.12         |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | SSBlim-MT | 2018             | 54,000       |
| <b>Flim</b>             | Flim-1/yr | 2018             | 0.17         |
| <b>ERlim</b>            | -         | -                | -            |

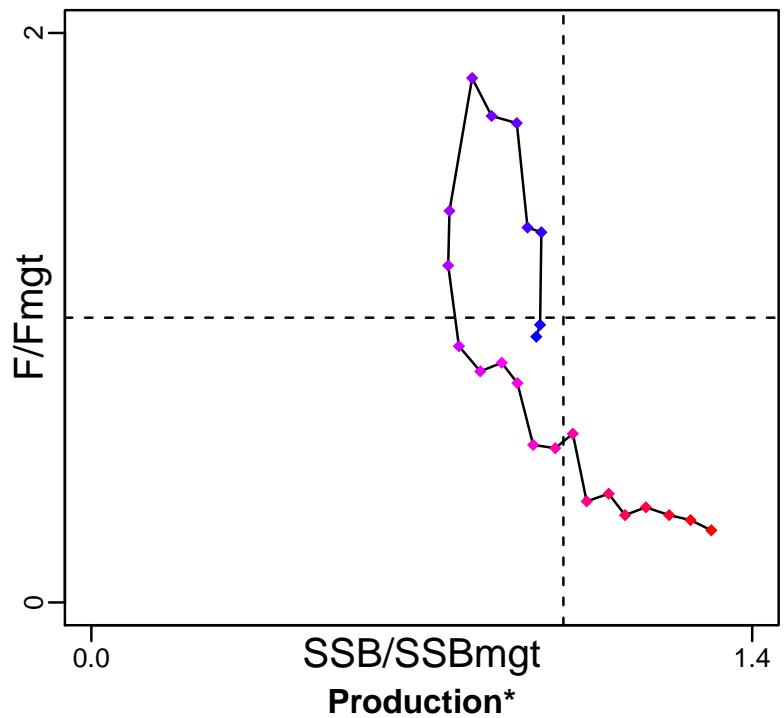
| <b>Time Series</b> |                  |                  |                   |            |            |   |
|--------------------|------------------|------------------|-------------------|------------|------------|---|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |   |
| <b>TB</b>          | -                | -                | -                 | -          | -          | - |
| <b>SSB</b>         | SSB-MT           | 2018             | 102,000           | Both       | -          |   |
| <b>TN</b>          | -                | -                | -                 | -          | -          | - |
| <b>R</b>           | R-E00            | 2018             | 3,480,000         | -          | 9          |   |
| <b>F</b>           | F-1/yr           | 2018             | 0.03              | -          | 9 to 19    |   |
| <b>ER</b>          | -                | -                | -                 | -          | -          |   |
| <b>TC</b>          | TC-MT            | 2018             | 2670              |            |            |   |
| <b>TL</b>          | TL-MT            | 2018             | 2670              |            |            |   |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |   |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |   |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2018             | 0.253             |            |            |   |
| <b>ER/ERrmsy</b>   | -                | -                | -                 |            |            |   |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |   |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2018             | 1.36              |            |            |   |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2018             | 0.253             |            |            |   |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |   |

**Blue ling ICES 5b–6–7 [BLINGVb–VI–VII]**

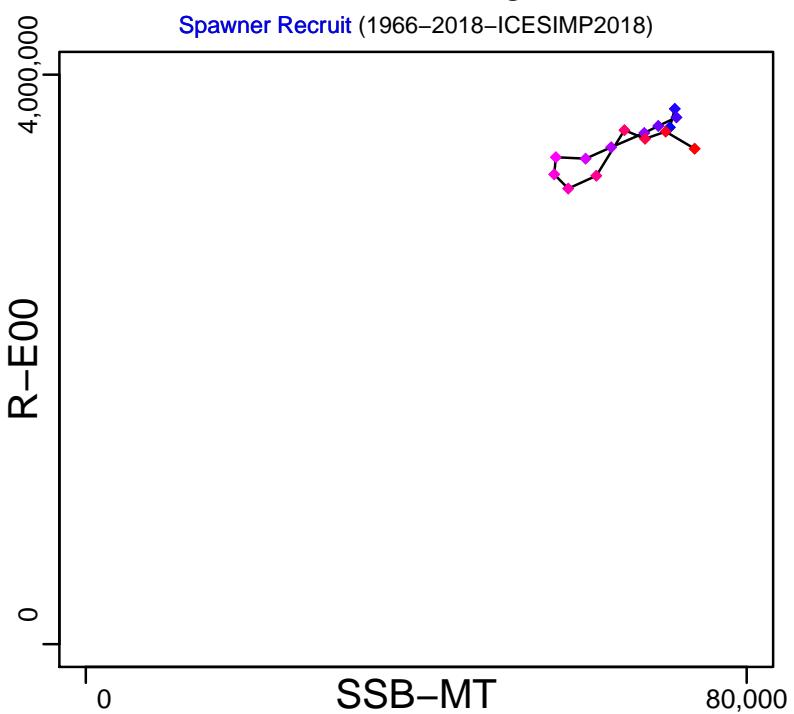
Kobe MSYpref (1966–2018–ICESIMP2018)



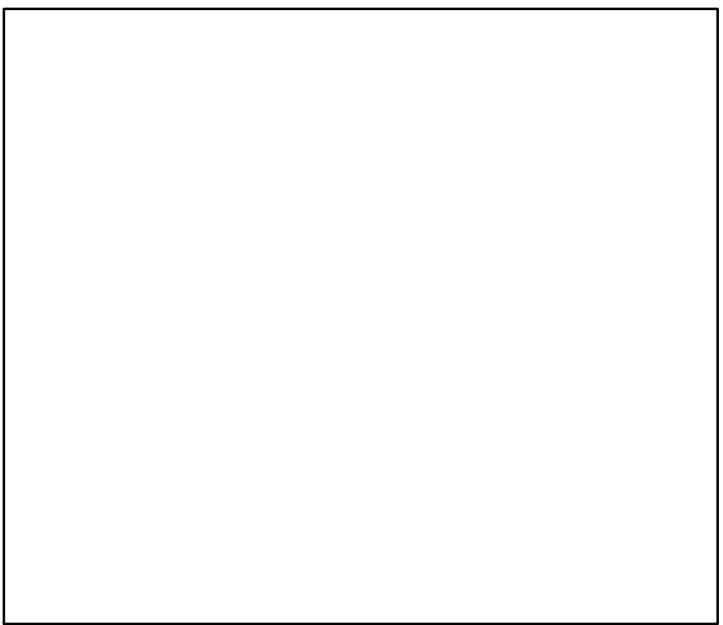
Kobe MGTpref (1966–2018–ICESIMP2018)



Spawner Recruit (1966–2018–ICESIMP2018)



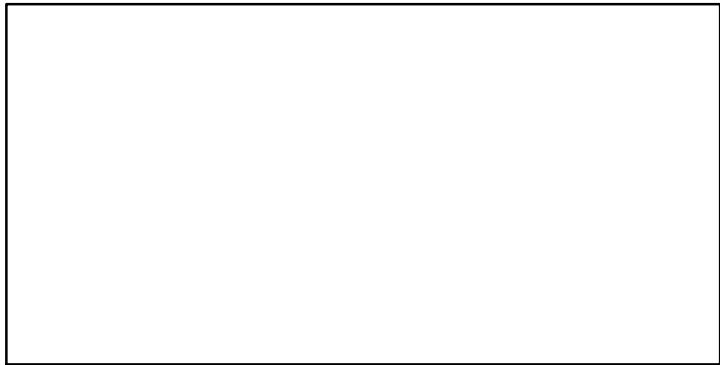
Production\*



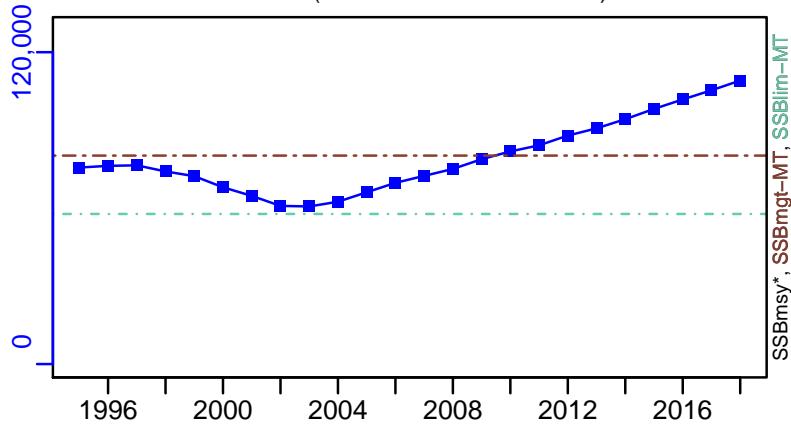
◆ Start Year   ◆ End Year   \* No Data

Blue ling ICES 5b–6–7 [BLINGVb–VI–VII]

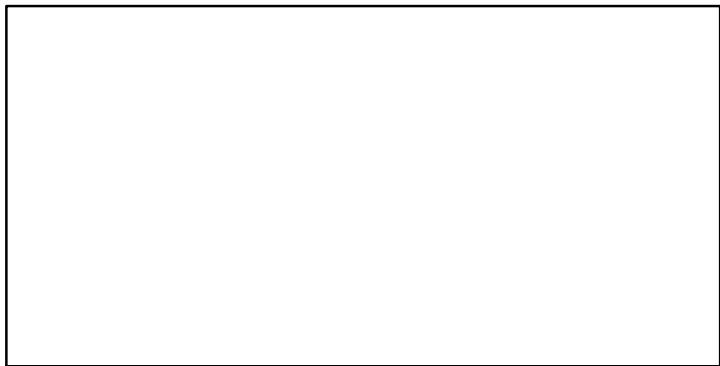
**TB\***



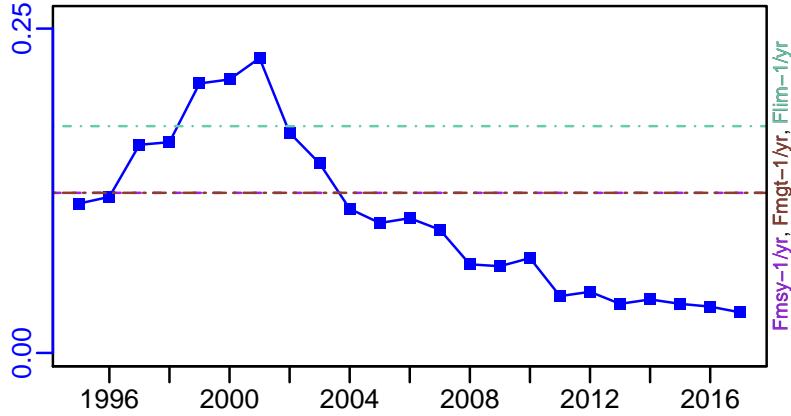
SSB-MT (1966–2018–ICESIMP2018)



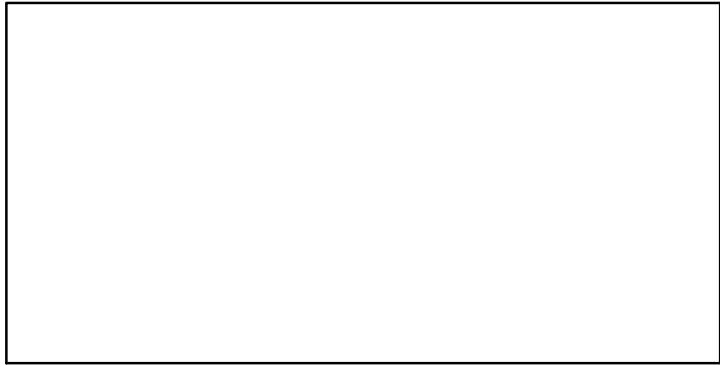
**TN \***



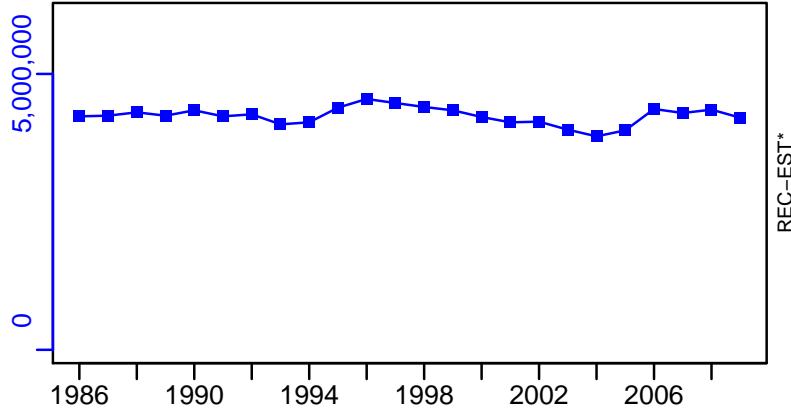
F-1/yr (1966–2018–ICESIMP2018)



**ER\***



R-E00 (1966–2018–ICESIMP2018)

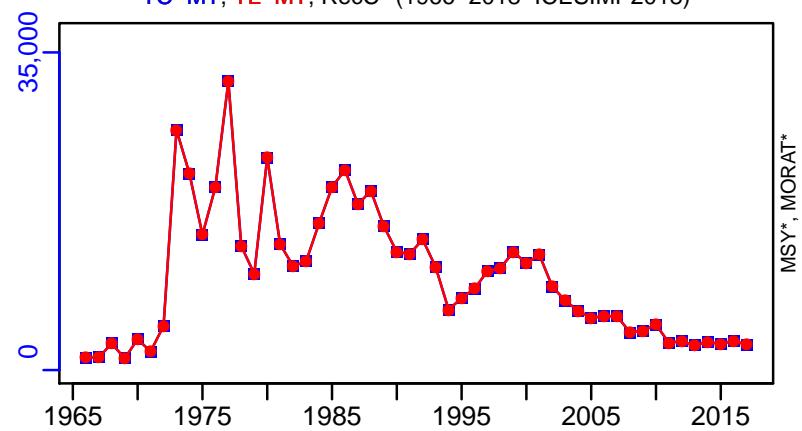


- Listed time series    - - - Target BRP    — Rec-Est
- - - MSY-based BRP    - - - Lim BRP    \* No Data

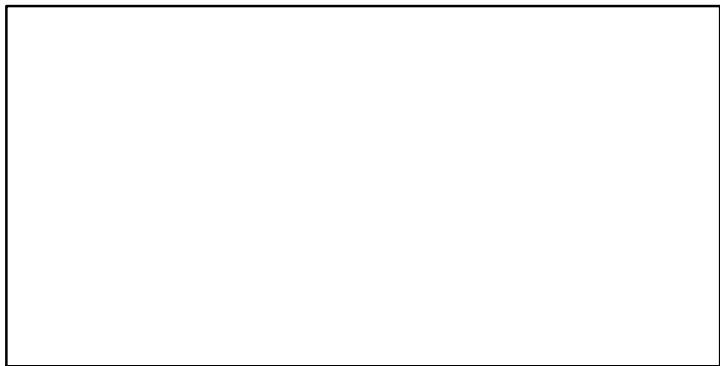
Blue ling ICES 5b–6–7 [BLINGVb–VI–VII]

TC–MT, TL–MT, RecC\* (1966–2018–ICESIMP2018)

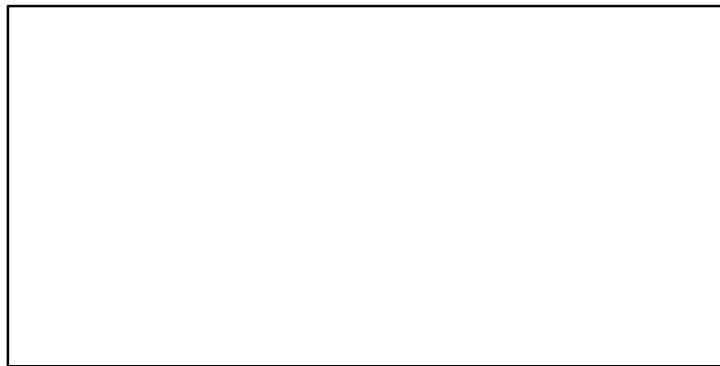
TAC\*, Cpair\*, Cadv\*



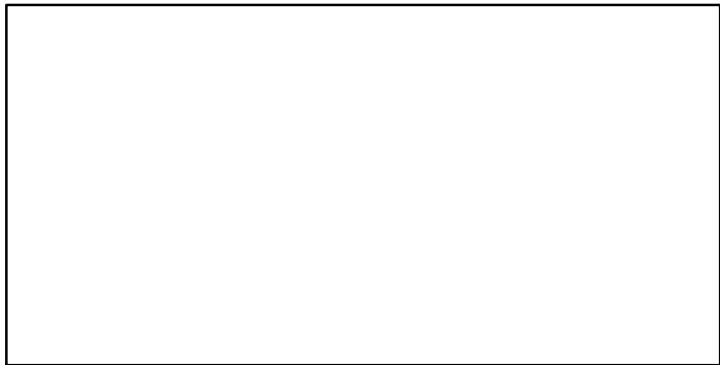
survB\*



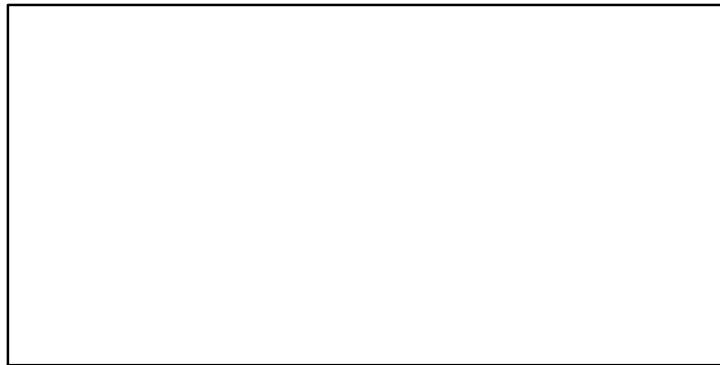
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

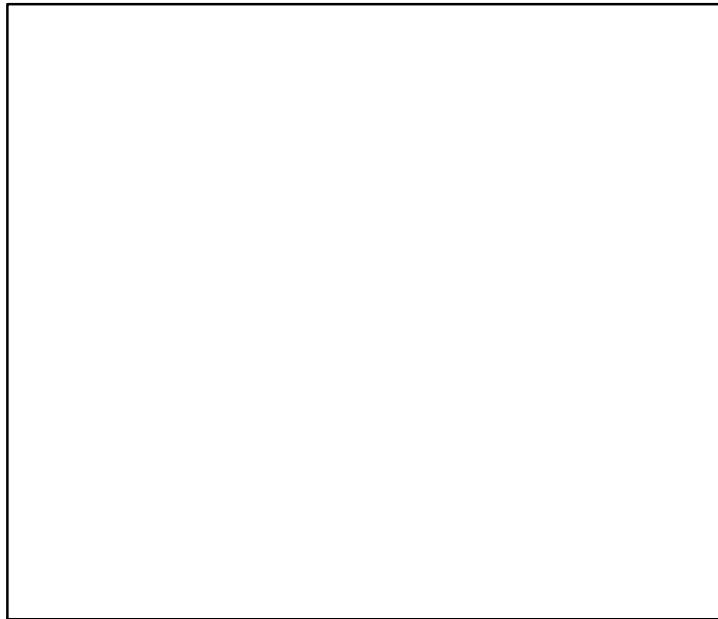
## Blonde ray ICES 4a-6 [BLRAYIVa-VI]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Raja brachyura                                       |
| <b>Current Assess ID</b>    | WGEF-BLRAYIVa-VI-2005-2018-ICESIMP2021               |
| <b>Area</b>                 | ICES 4a-6  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2018, 2016   |

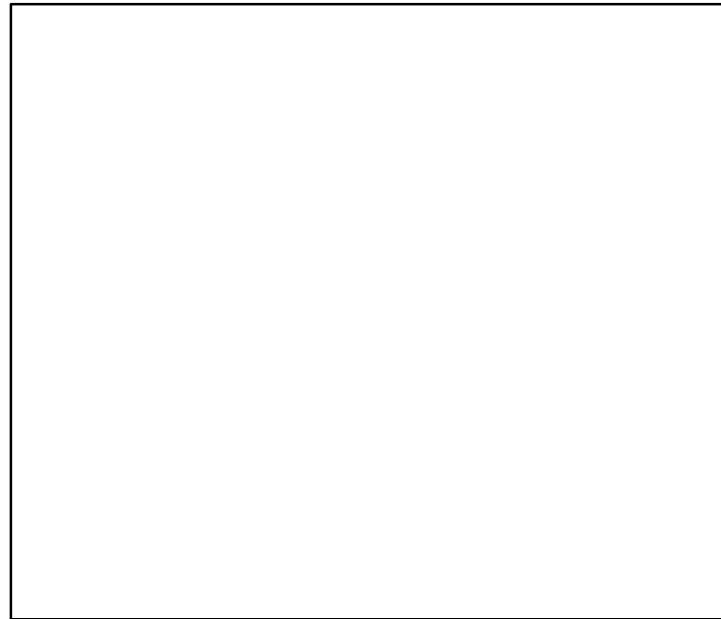
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | -     | -         | -          |     |     |
| <b>TL</b>          | TL-MT | 2018      | 27         |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

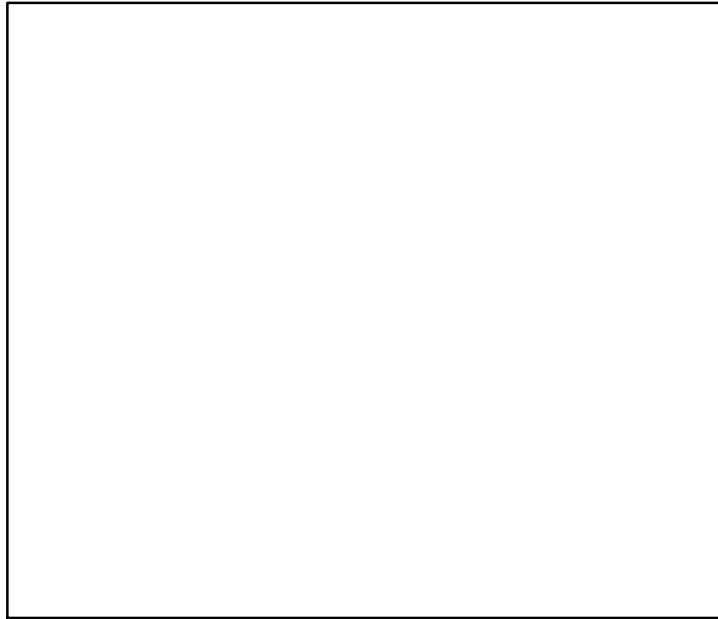
**Kobe MSY\***



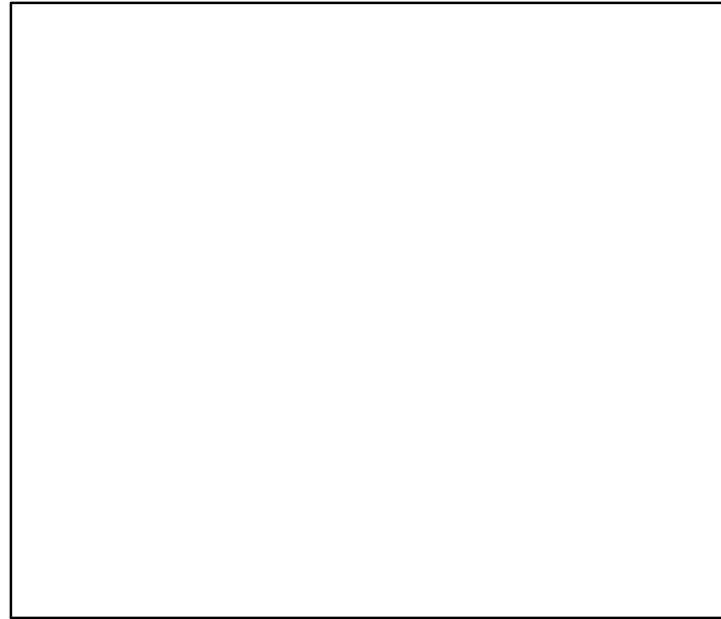
**Kobe MGT\***



**Spawner Recruit\***



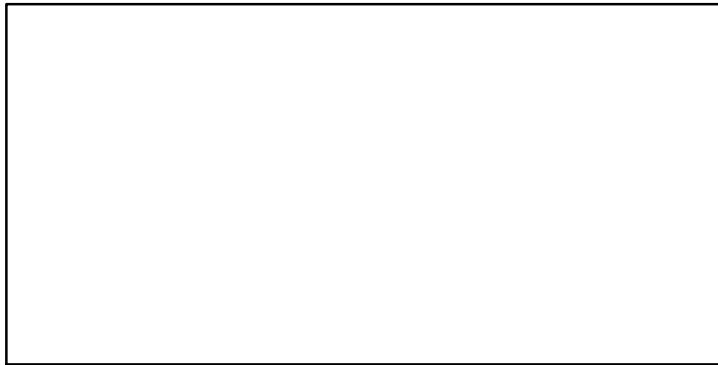
**Production\***



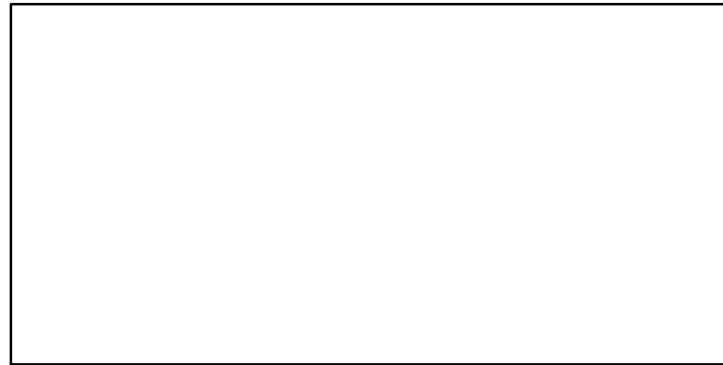
◆ Start Year ♦ End Year \* No Data

**Blonde ray ICES 4a–6 [BLRAYIVa–VI]**

**TB\***



**SSB\***



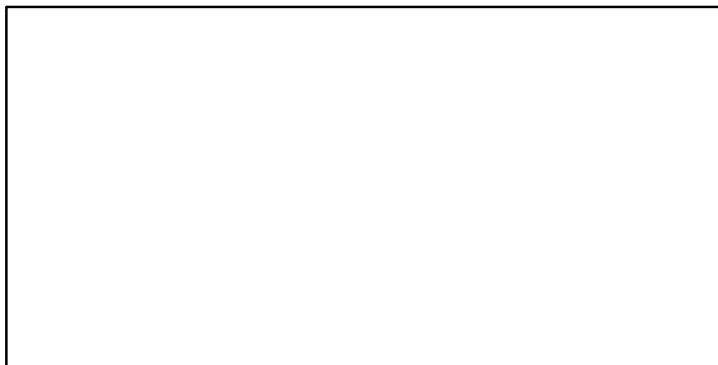
**TN \***



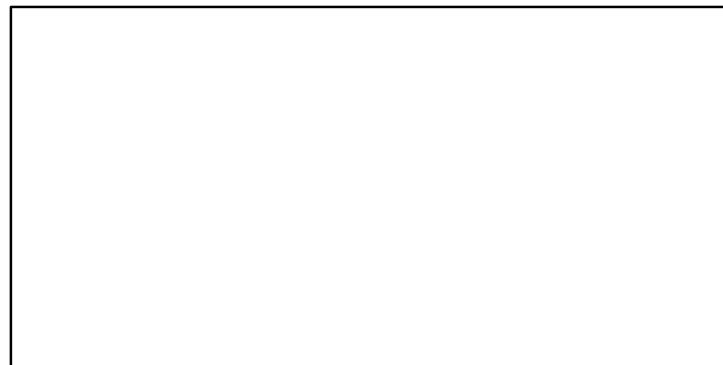
**F\***



**ER\***



**Recruits\***

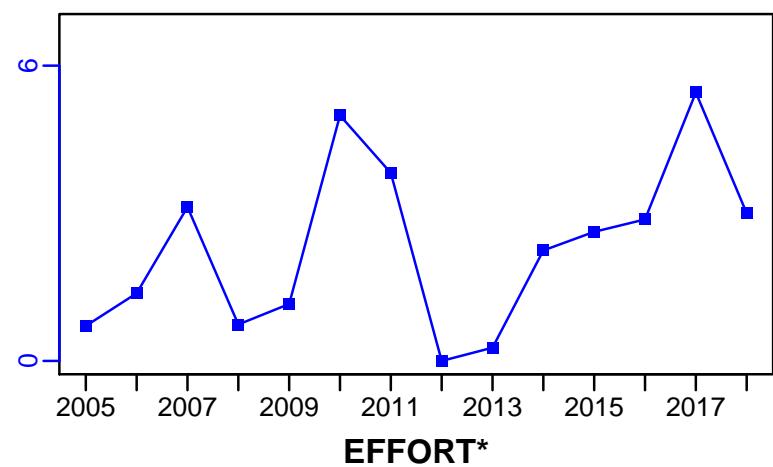
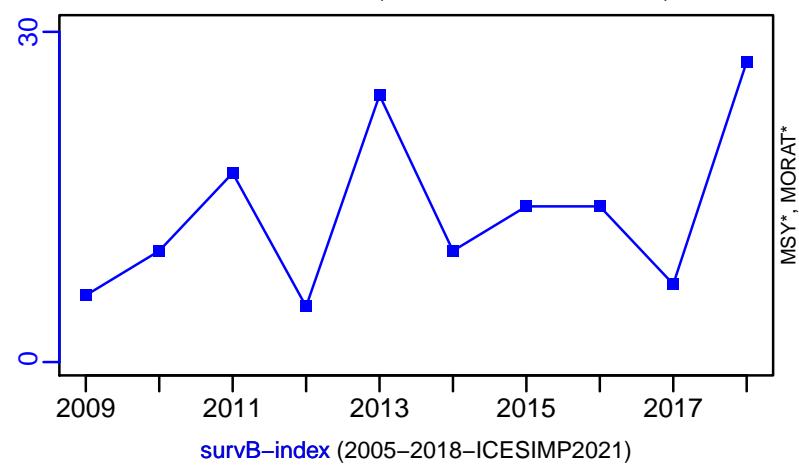


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

**Blonde ray ICES 4a–6 [BLRAYIVa–VI]**

TL-MT, TC\*, RecC\* (2005–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



**EFFORT\***

**CPUE\***

**CdivMSY\***

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

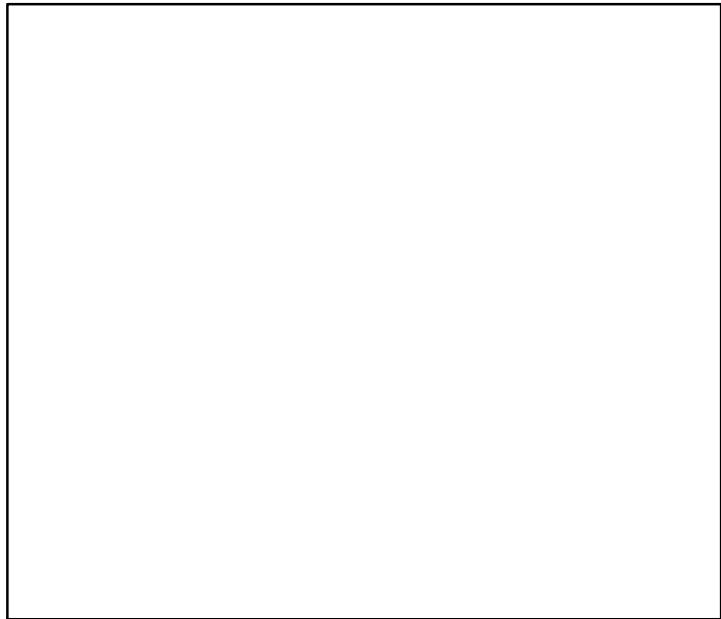
## Blonde ray ICES 4c-7d [BLRAYIVc-VIId]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Raja brachyura                                       |
| <b>Current Assess ID</b>    | WGEF-BLRAYIVc-VIId-1988-2018-ICESIMP2021             |
| <b>Area</b>                 | ICES 4c-7d   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2018, 2016   |

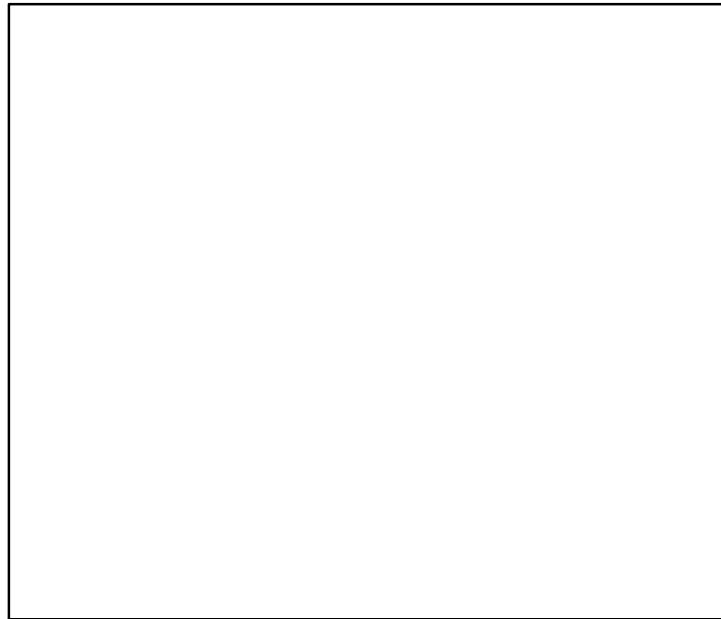
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | -     | -         | -          |     |     |
| <b>TL</b>          | TL-MT | 2018      | 251        |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

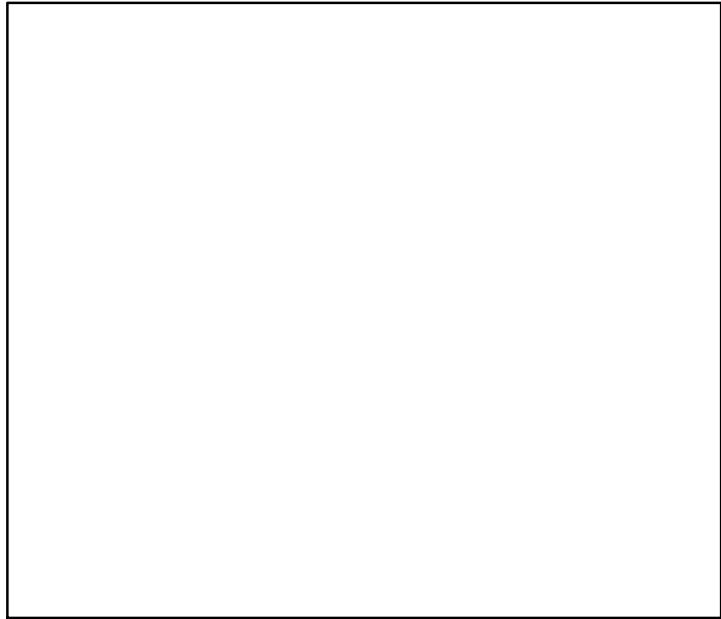
**Kobe MSY\***



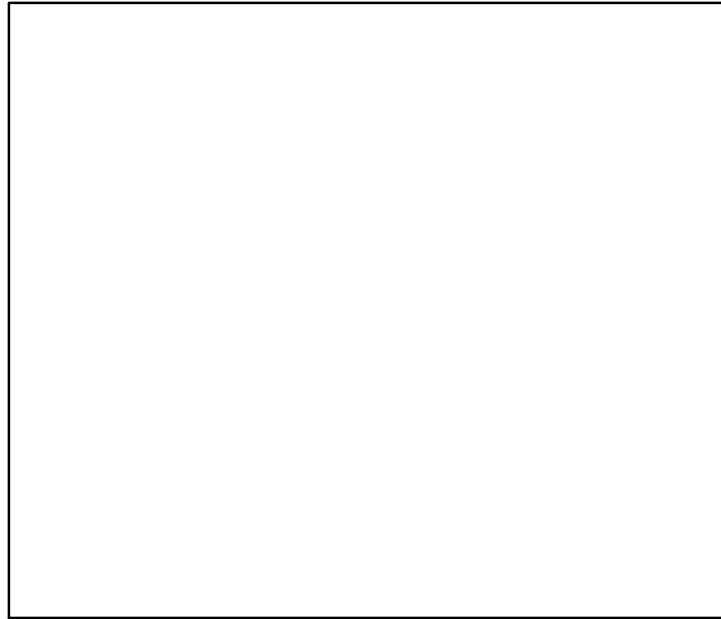
**Kobe MGT\***



**Spawner Recruit\***



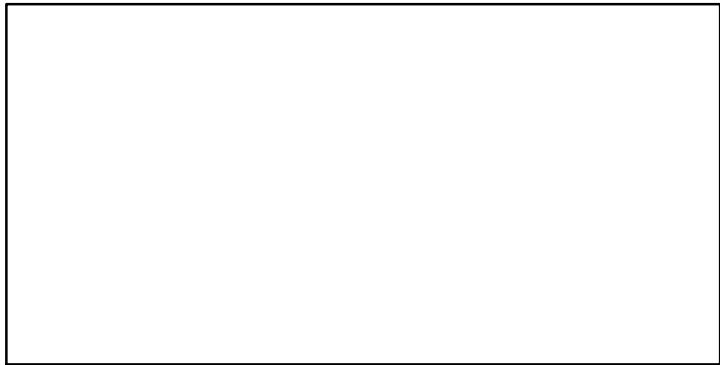
**Production\***



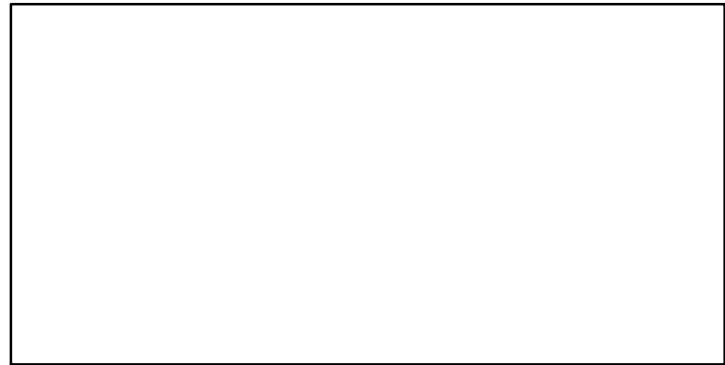
◆ Start Year ♦ End Year \* No Data

**Blonde ray ICES 4c–7d [BLRAYIVc–VIIId]**

**TB\***



**SSB\***



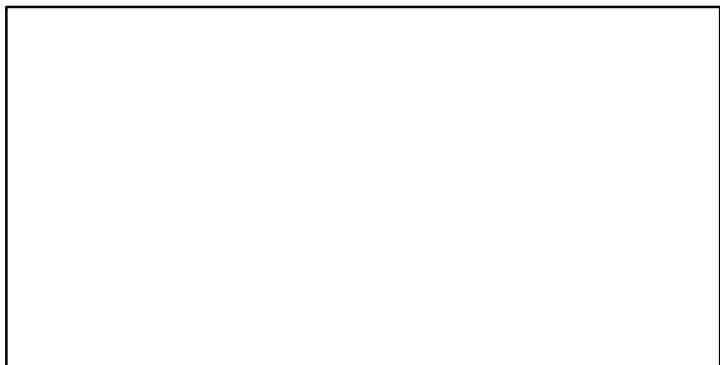
**TN \***



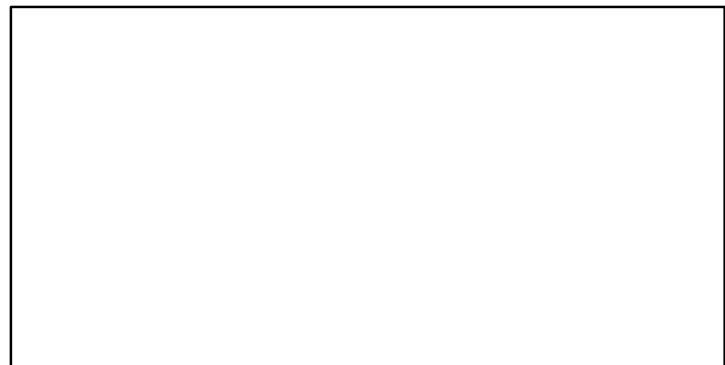
**F\***



**ER\***



**Recruits\***

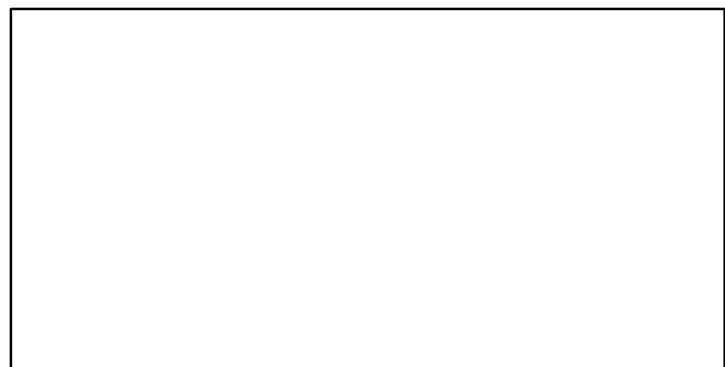
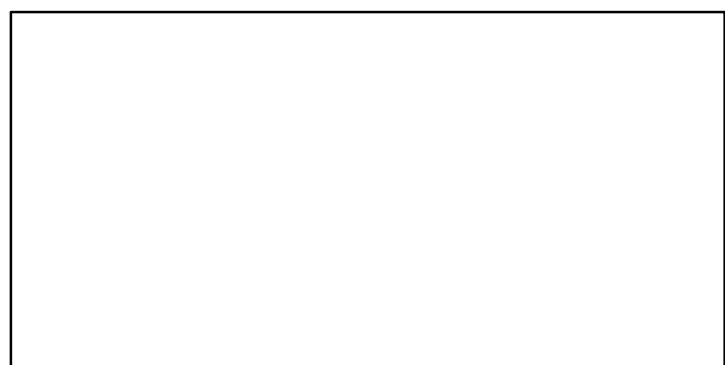
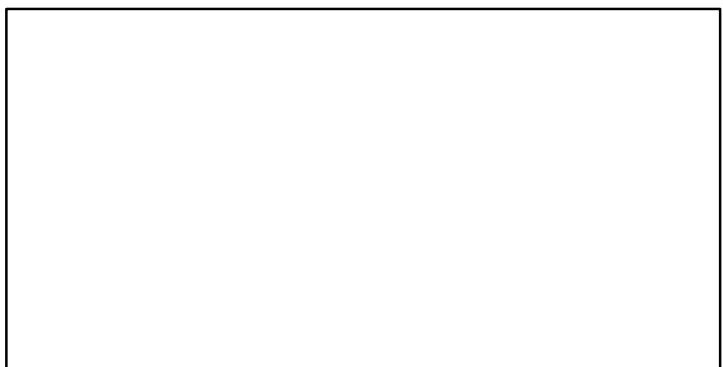
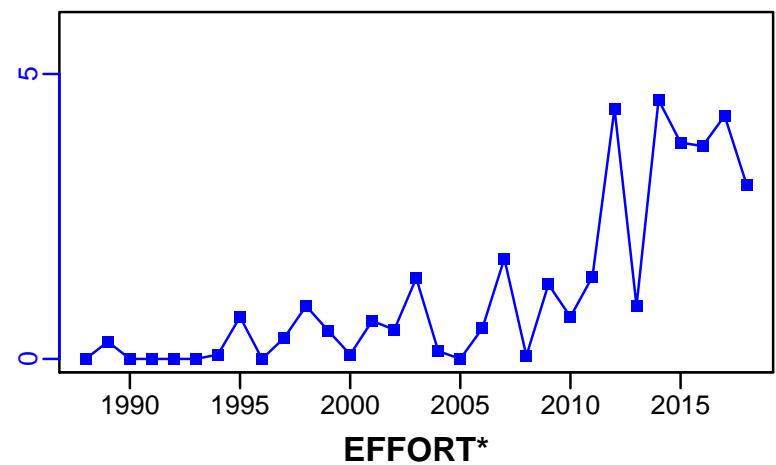
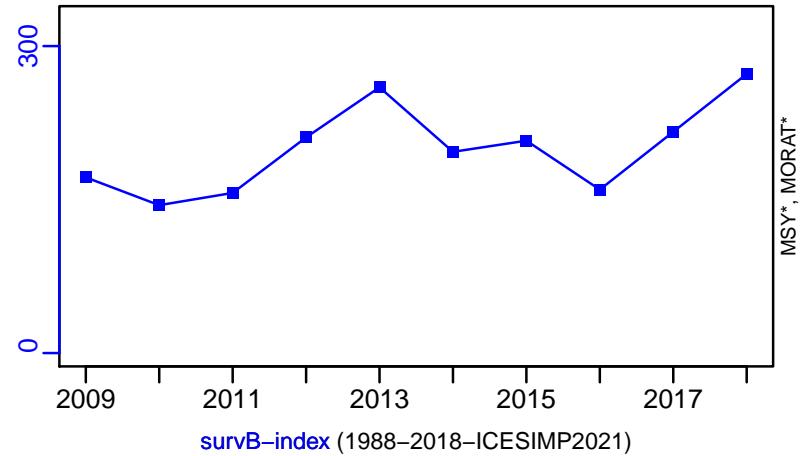


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Blonde ray ICES 4c–7d [BLRAYIVc–VIIId]

TL–MT, TC\*, RecC\* (1988–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



|                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

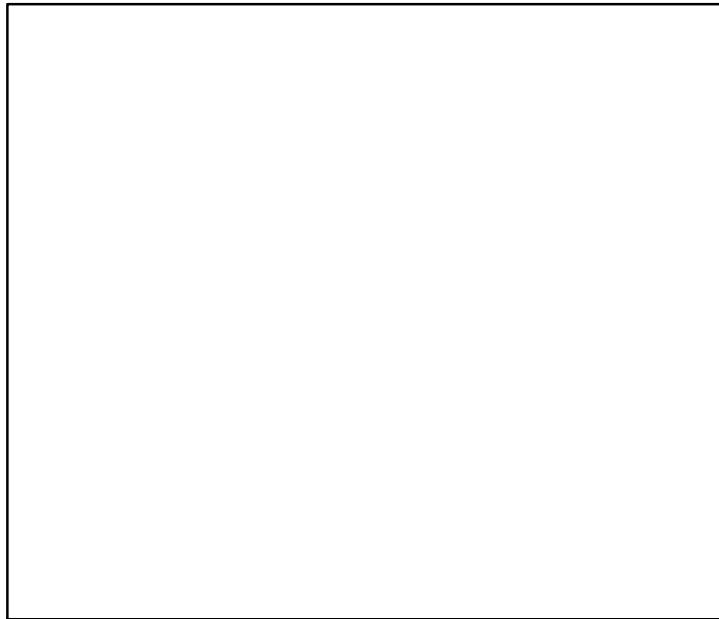
## Blonde ray Portugese Waters -East [BLRAYIXa]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Raja brachyura                                       |
| <b>Current Assess ID</b>    | WGEF-BLRAYIXa-2005-2015-ICESIMP2018                  |
| <b>Area</b>                 | Portugese Waters -East                               |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2015   |

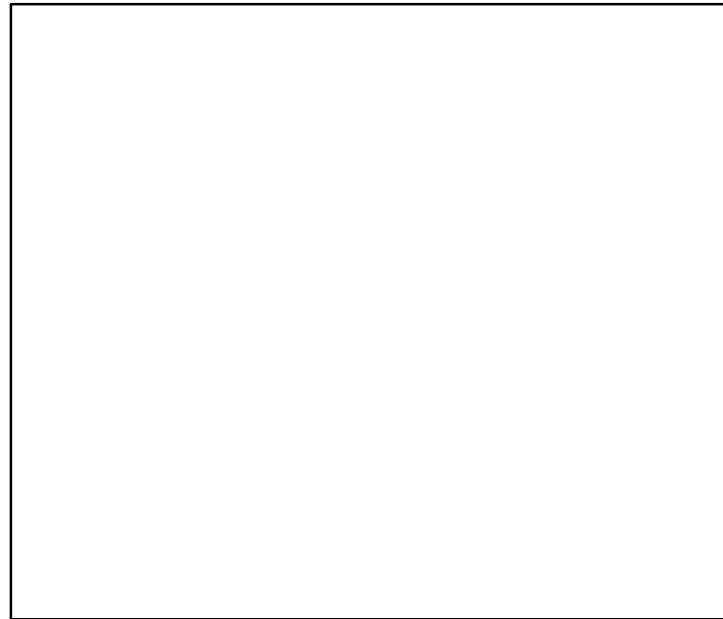
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2015      | 1.09       | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | -         | -         | -          |      |     |
| <b>TL</b>          | TL-MT     | 2015      | 218        |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

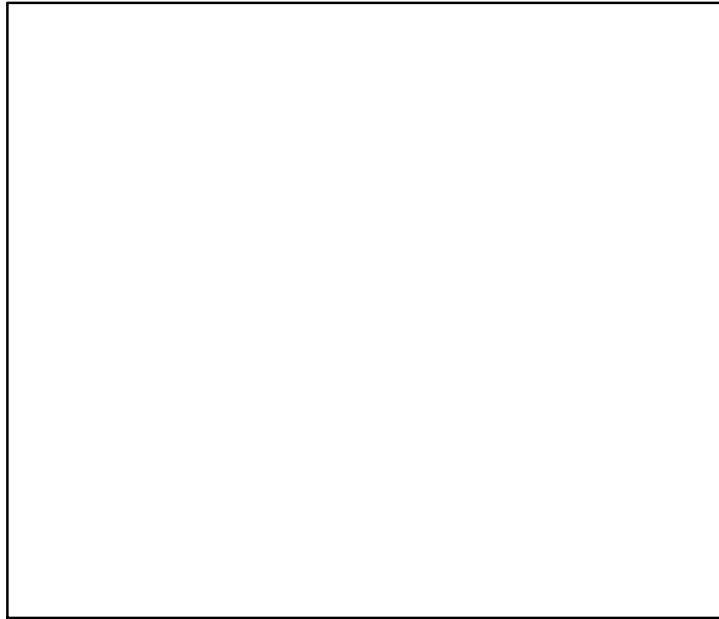
**Kobe MSY\***



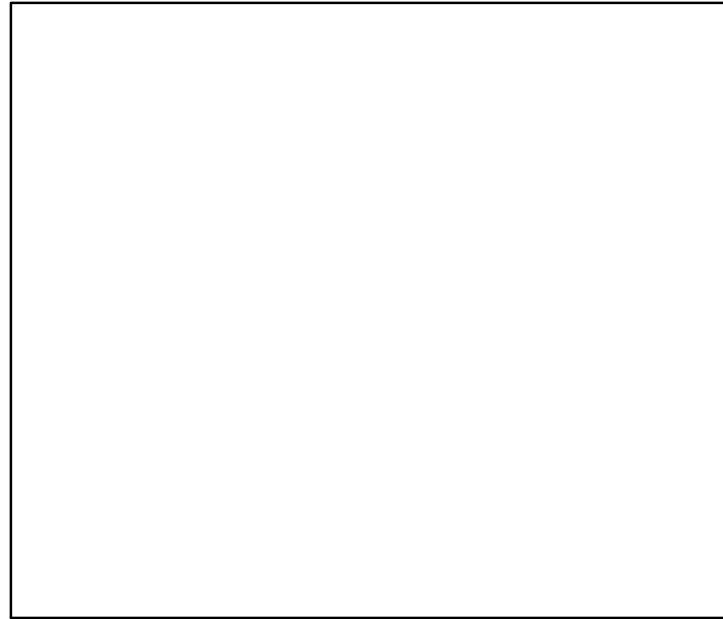
**Kobe MGT\***



**Spawner Recruit\***



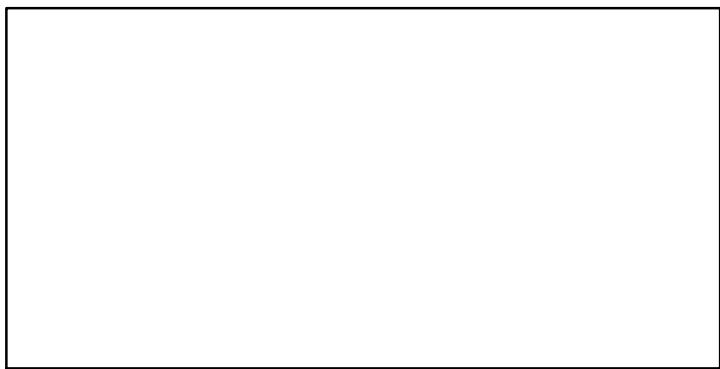
**Production\***



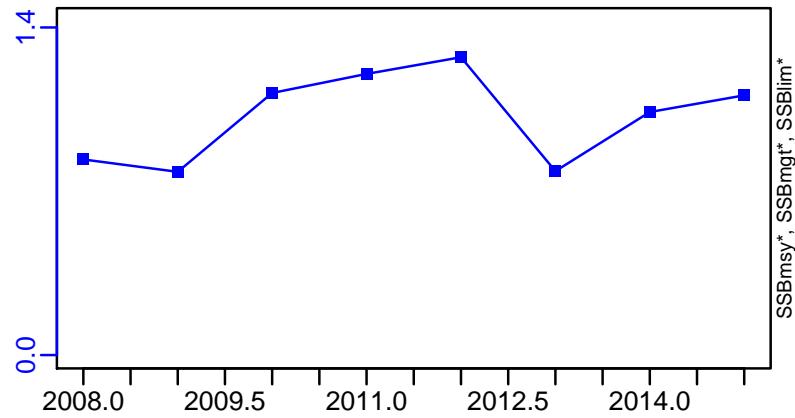
◆ Start Year ♦ End Year \* No Data

Blonde ray Portuguese Waters –East [BLRAYIXa]

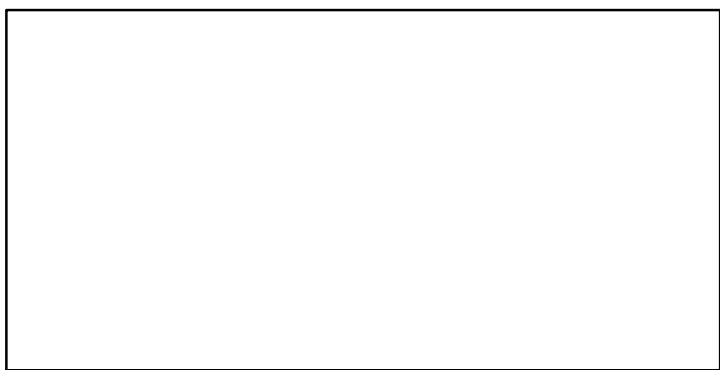
**TB\***



SSB–index (2005–2015–ICESIMP2018)



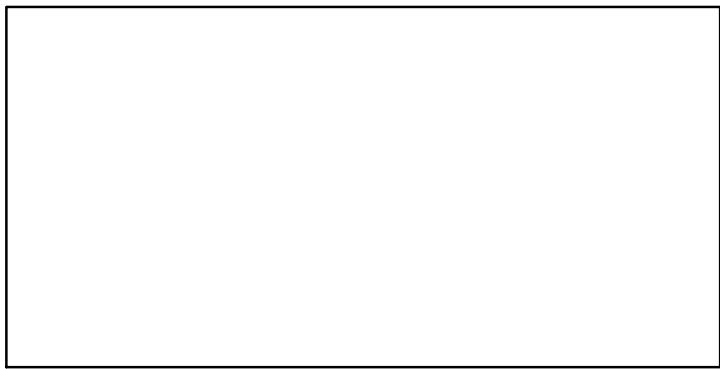
**TN \***



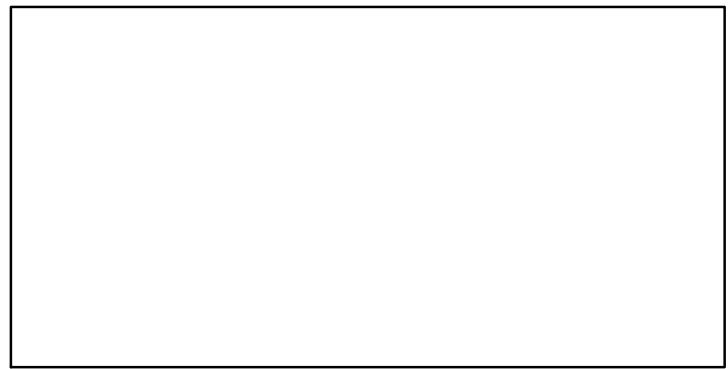
**F\***



**ER\***



**Recruits\***

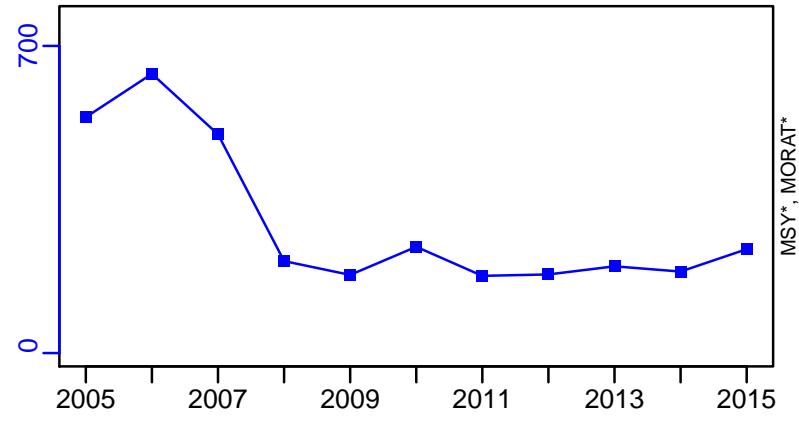


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

**Blonde ray Portuguese Waters –East [BLRAYIXa]**

TL-MT, TC\*, RecC\* (2005–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



**survB\***

MSY\*, MORAT\*

**CPUE\***

**EFFORT\***

**CdivMSY\***

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

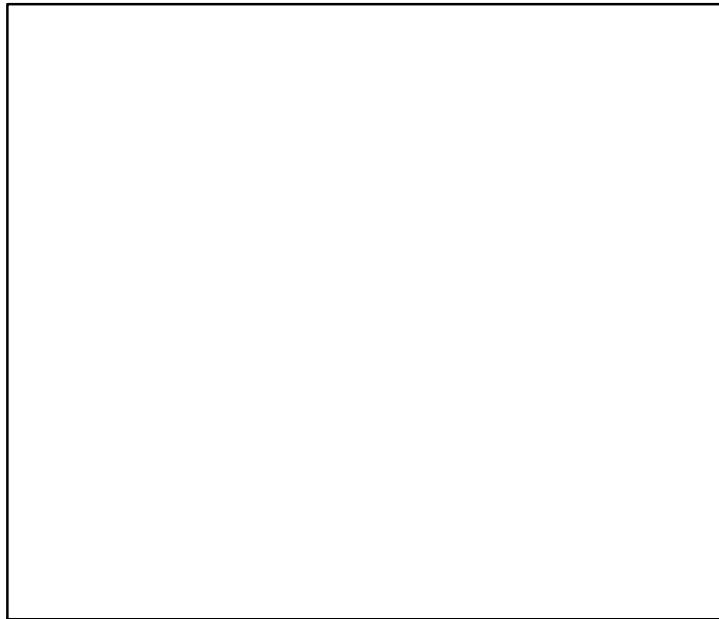
## Blonde ray ICES 7afg [BLRAYVIIafg]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Raja brachyura                                       |
| <b>Current Assess ID</b>    | WGEF-BLRAYVIIafg-1993-2015-ICESIMP2018               |
| <b>Area</b>                 | ICES 7afg  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2015   |

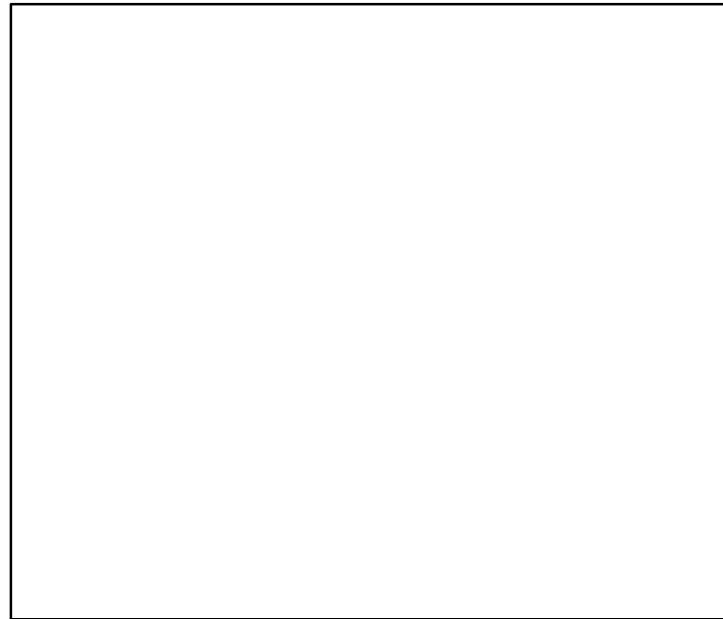
| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | -     | -         | -          |     |     |
| <b>TL</b>         | TL-MT | 2015      | 1170       |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

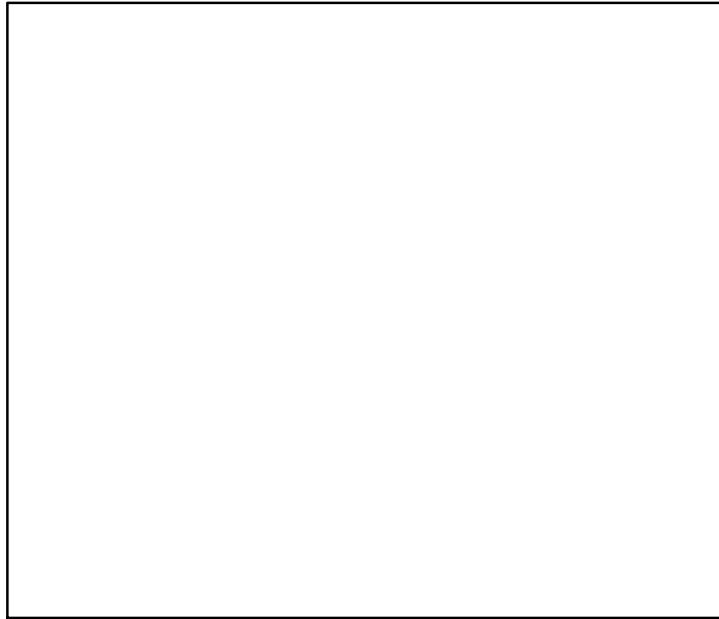
**Kobe MSY\***



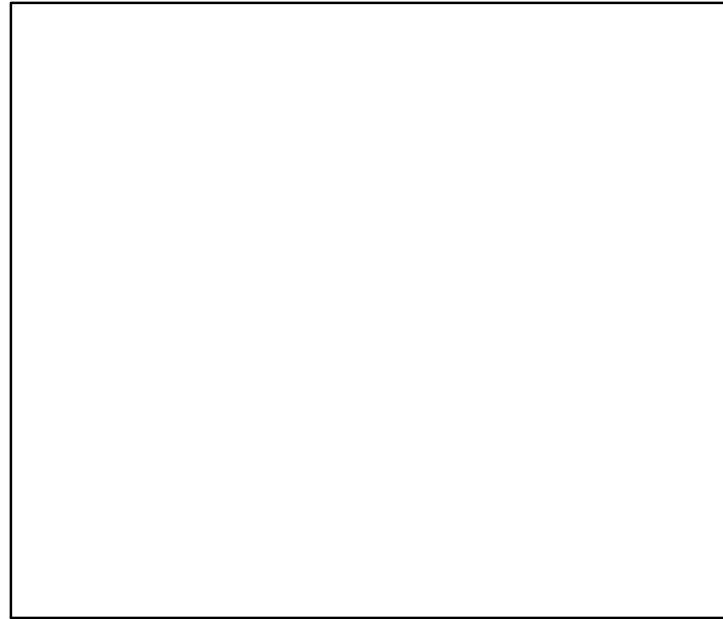
**Kobe MGT\***



**Spawner Recruit\***



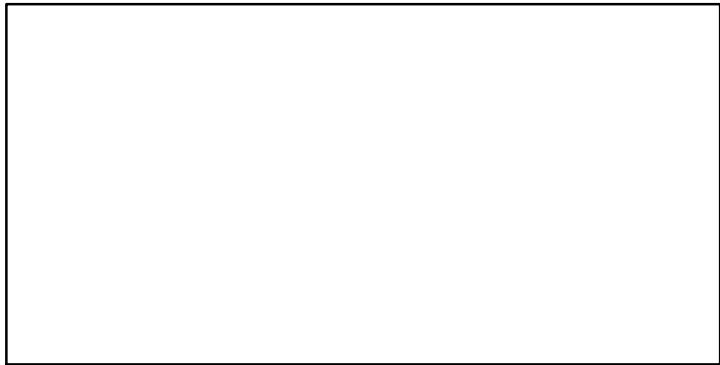
**Production\***



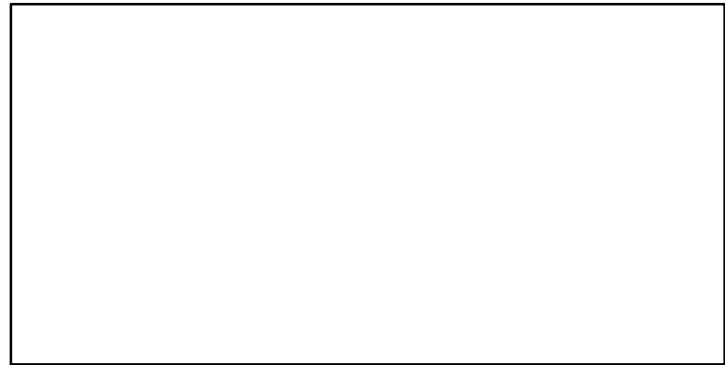
◆ Start Year ♦ End Year \* No Data

Blonde ray ICES 7afg [BLRAYVIIafg]

**TB\***



**SSB\***



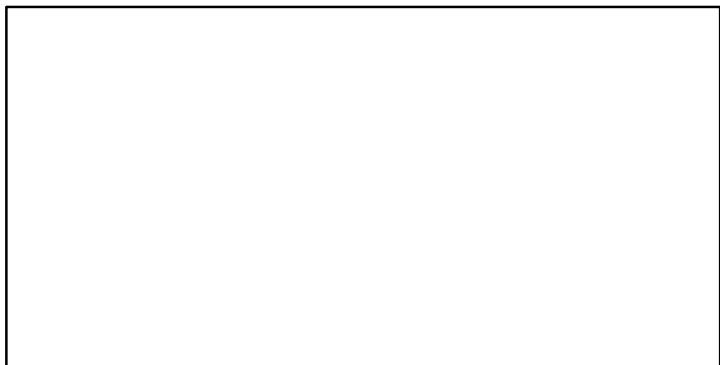
**TN \***



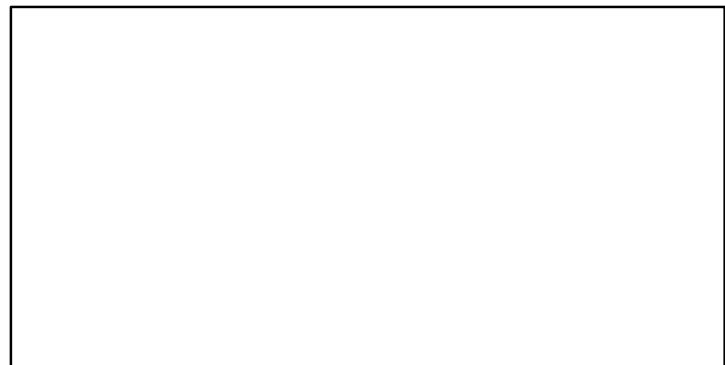
**F\***



**ER\***



**Recruits\***

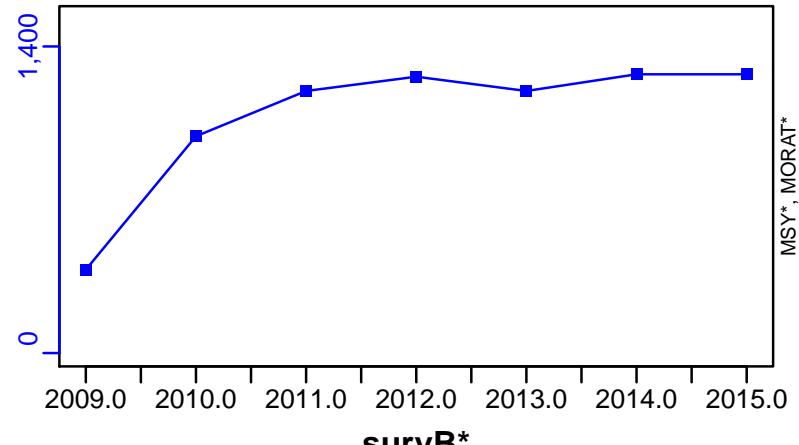


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

**Blonde ray ICES 7afg [BLRAYVIIafg]**

TL-MT, TC\*, RecC\* (1993–2015–ICESIMP2018)

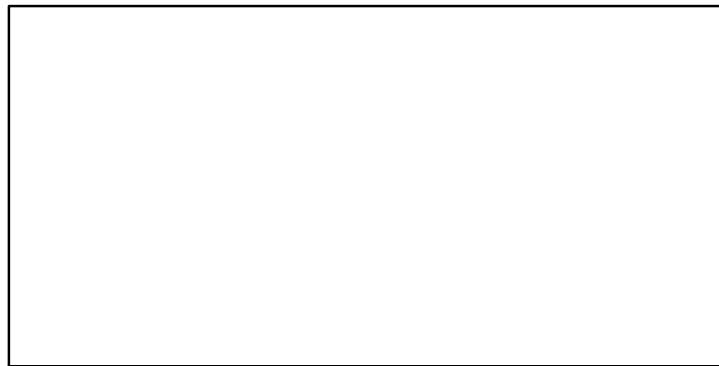
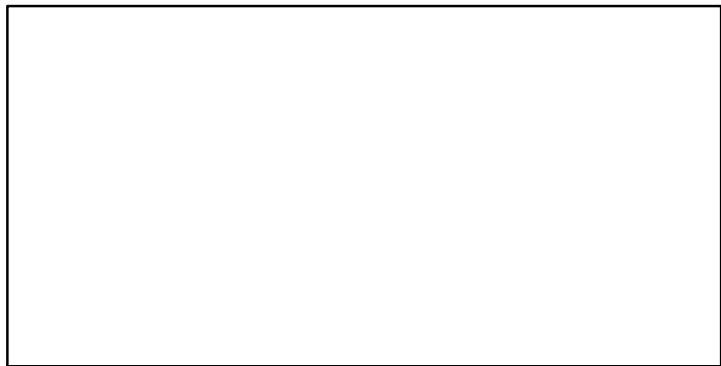
**TAC\*, Cpair\*, Cadv\***



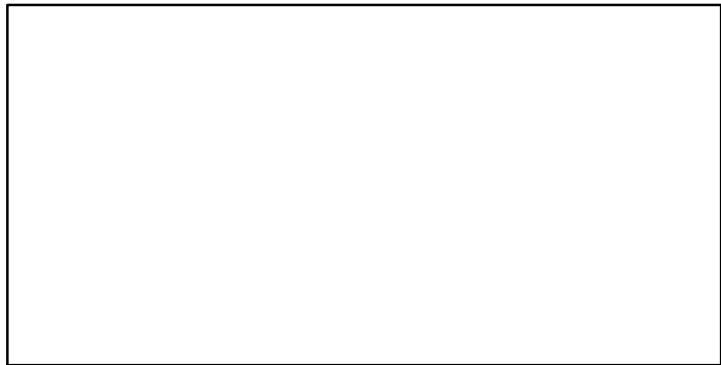
**survB\***

MSY\*, MORAT\*

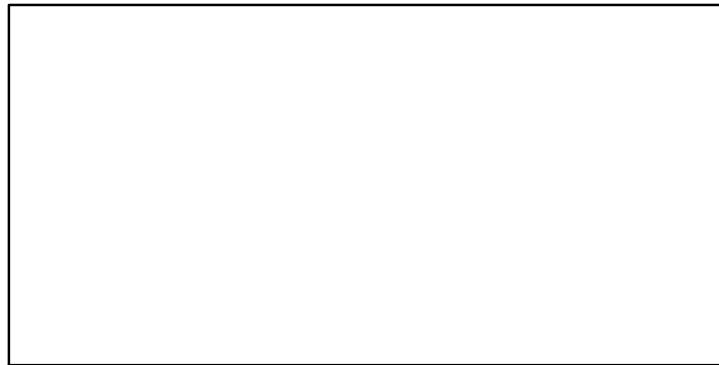
**CPUE\***



**EFFORT\***



**CdivMSY\***



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

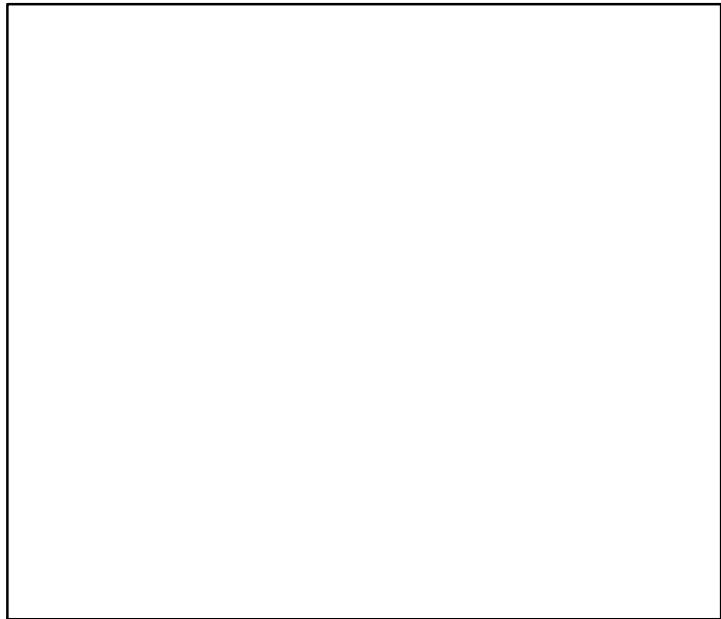
## Blonde ray Western English Channel [BLRAYVIIe]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Raja brachyura                                       |
| <b>Current Assess ID</b>    | WGEF-BLRAYVIIe-2009-2015-ICESIMP2018                 |
| <b>Area</b>                 | Western English Channel                              |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2015   |

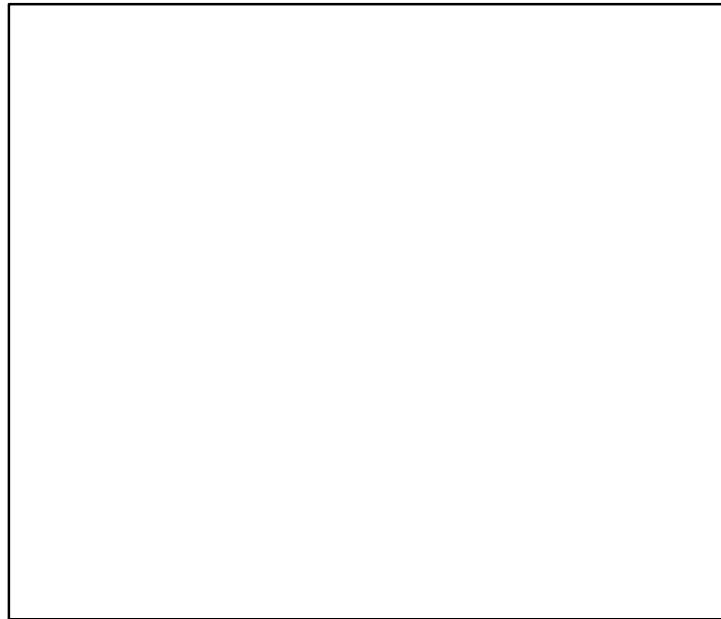
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | -     | -         | -          |     |     |
| <b>TL</b>          | TL-MT | 2015      | 731        |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

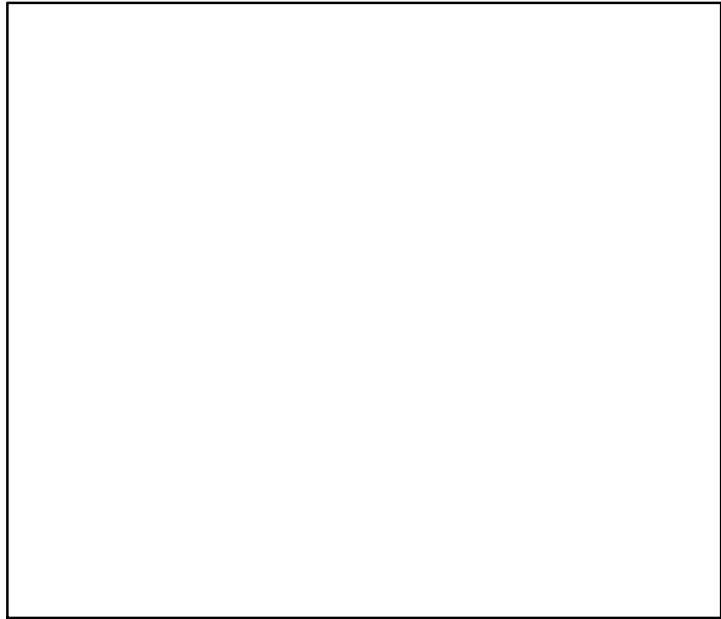
**Kobe MSY\***



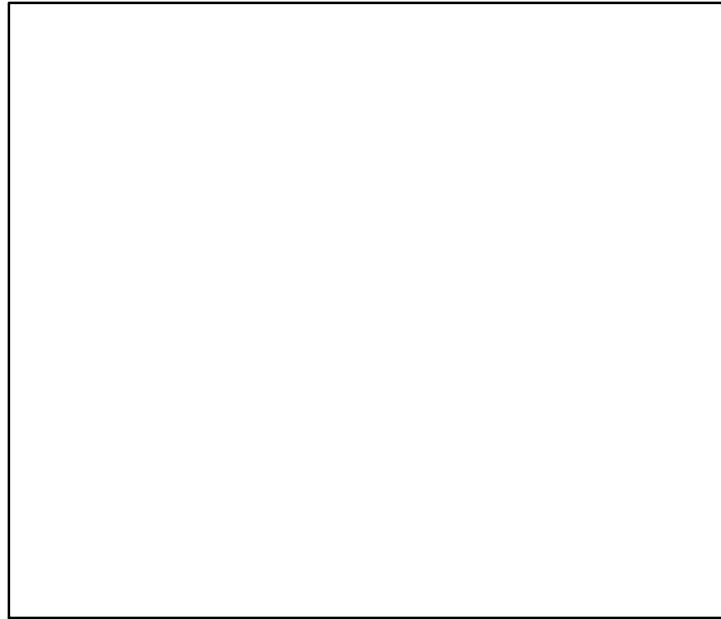
**Kobe MGT\***



**Spawner Recruit\***

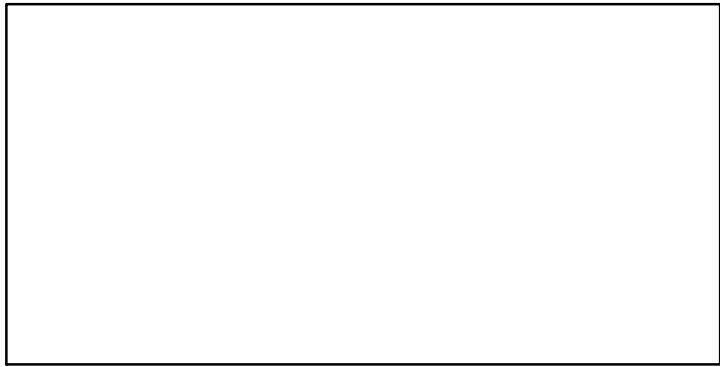


**Production\***

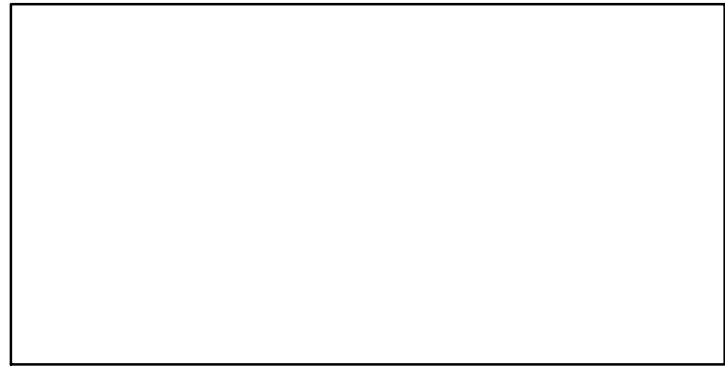


◆ Start Year ♦ End Year \* No Data

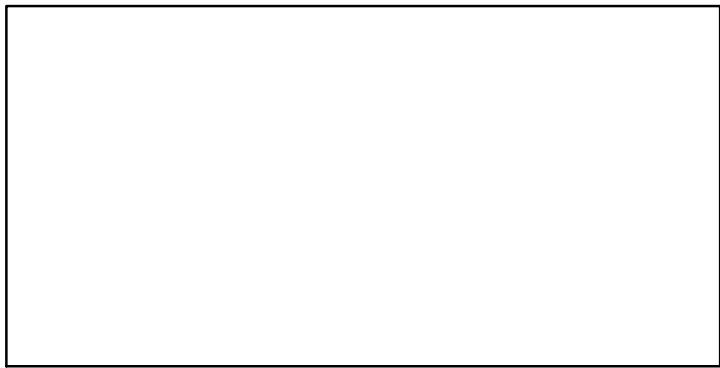
**TB\***



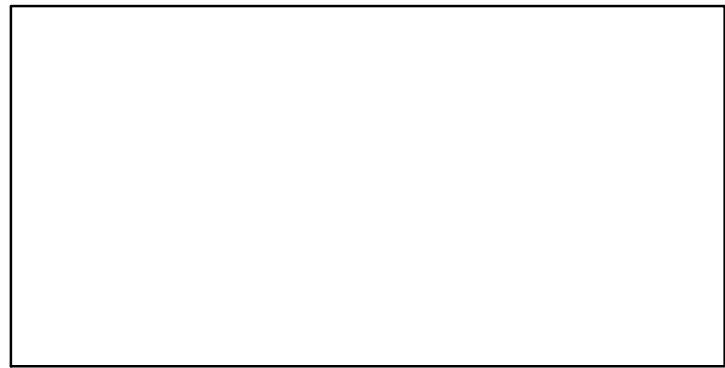
**SSB\***



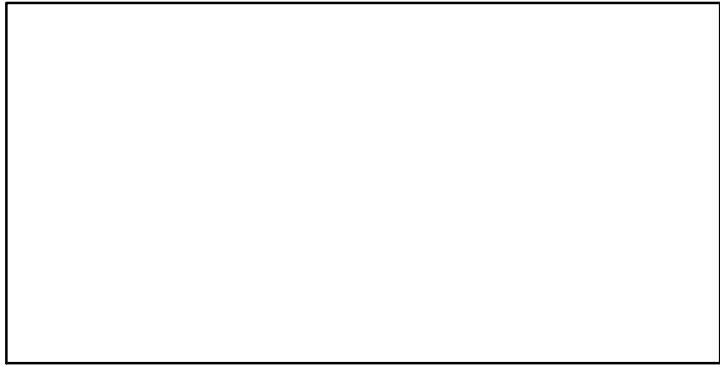
**TN \***



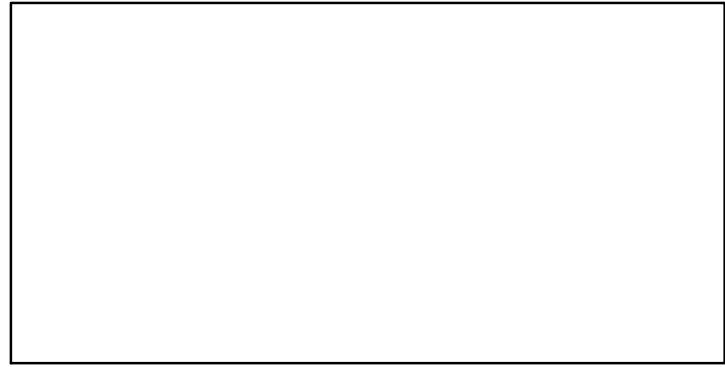
**F\***



**ER\***



**Recruits\***

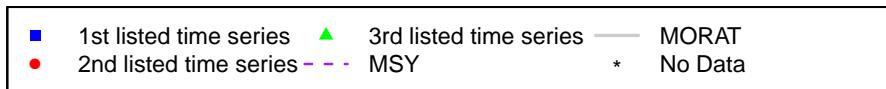
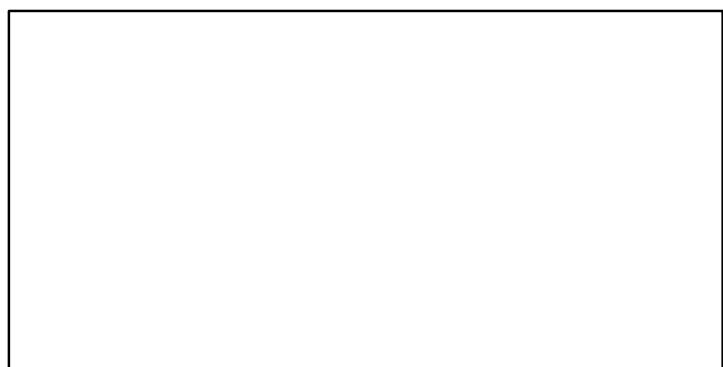
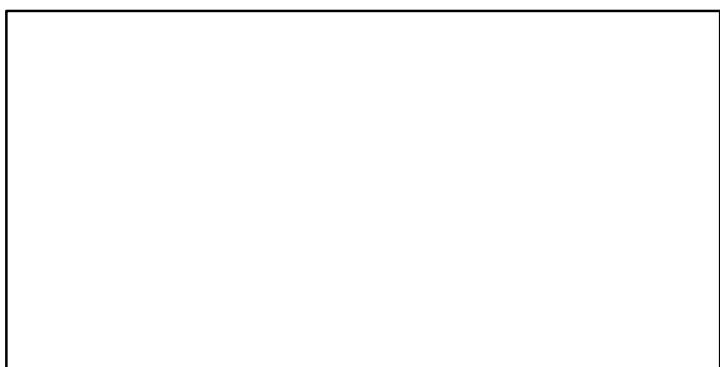
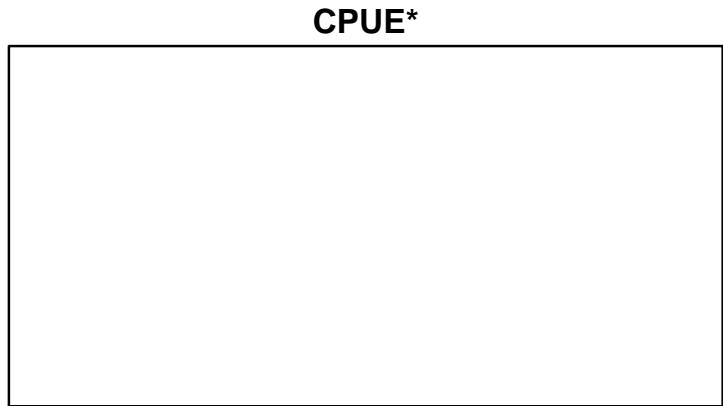
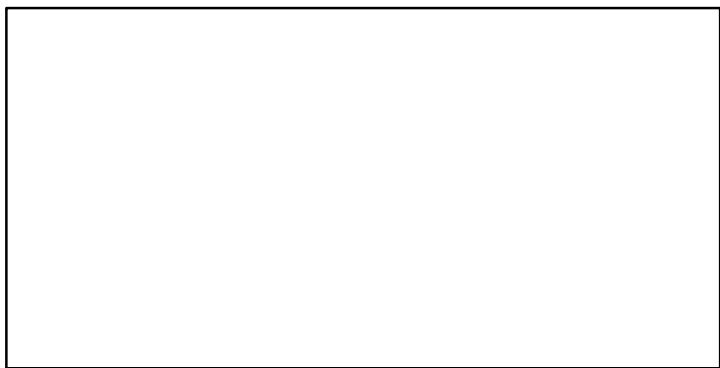
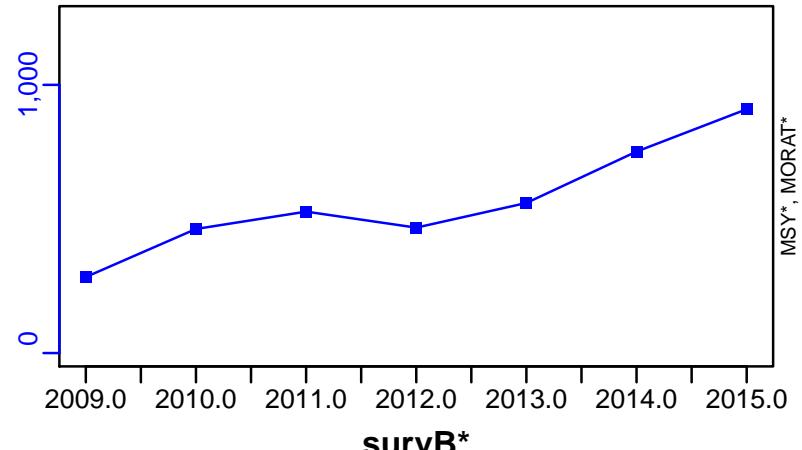


- |       |                    |       |            |   |         |
|-------|--------------------|-------|------------|---|---------|
| ■     | Listed time series | - - - | Target BRP | — | Rec-Est |
| - - - | MSY-based BRP      | - - - | Lim BRP    | * | No Data |

**Blonde ray Western English Channel [BLRAYVIIe]**

TL-MT, TC\*, RecC\* (2009–2015–ICESIMP2018)

**TAC\*, Cpair\*, Cadv\***



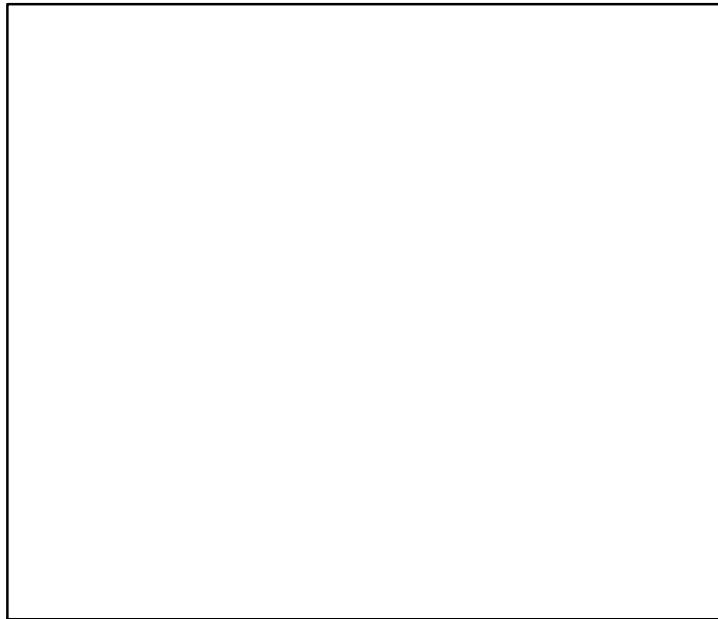
## Blackmouth dogfish ICES 8-9a [BMDOGVIII-IXa]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Galeus melastomus                                    |
| <b>Current Assess ID</b>    | WGEF-BMDOGVIII-IXa-1997-2018-ICESIMP2021             |
| <b>Area</b>                 | ICES 8-9a  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2014, 2016, 2018                                     |

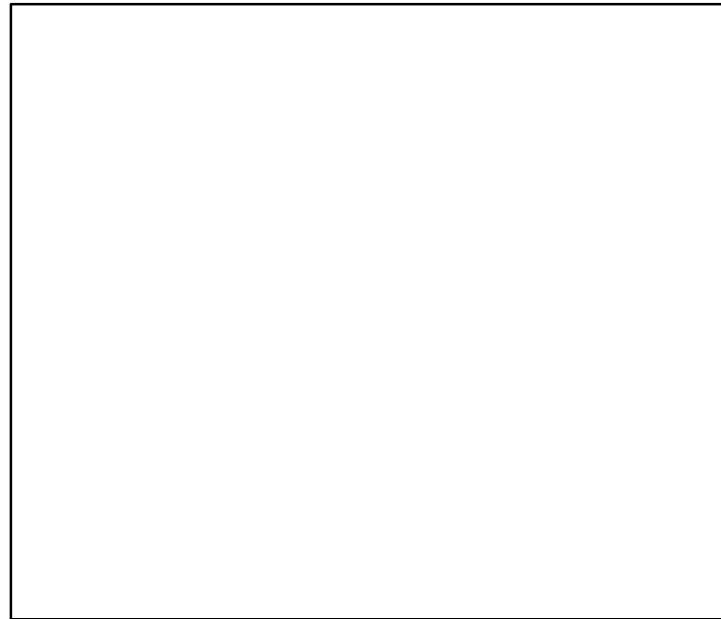
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2014      | 1.2        | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | TC-MT     | 2018      | 454        |      |     |
| <b>TL</b>          | TL-MT     | 2018      | 181        |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

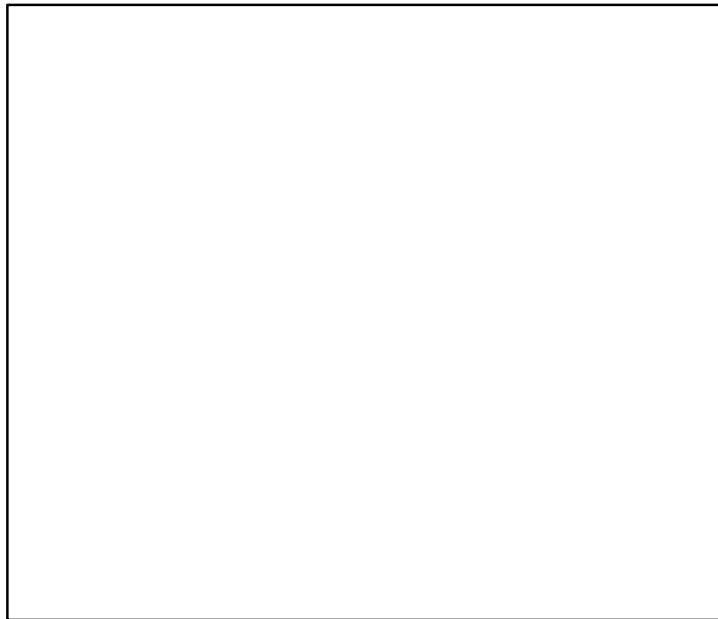
**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



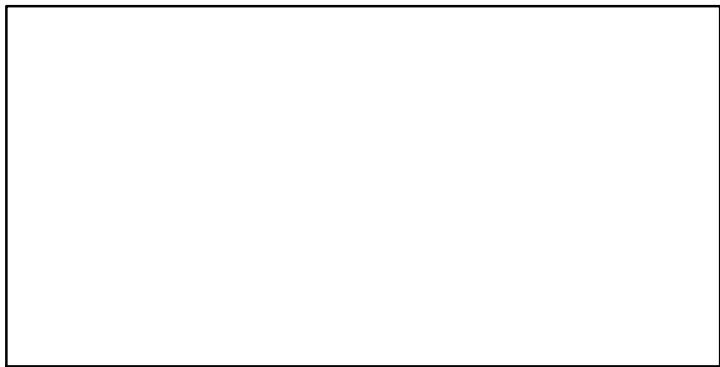
**Production\***



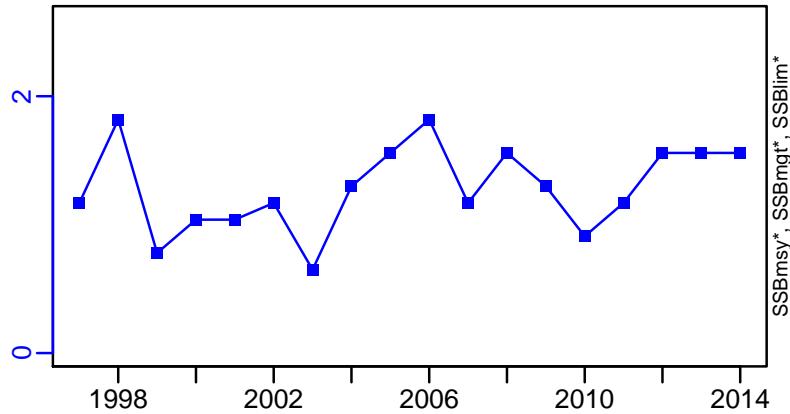
◆ Start Year ♦ End Year \* No Data

**Blackmouth dogfish ICES 8–9a [BMDOGVIII–IXa]**

**TB\***



**SSB–index (1997–2014–ICESIMP2018)**



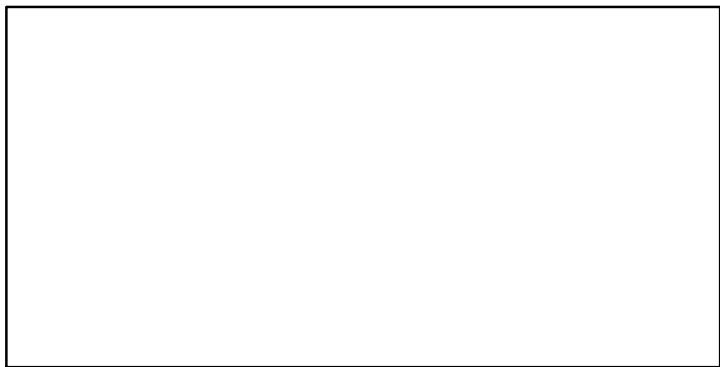
**TN \***



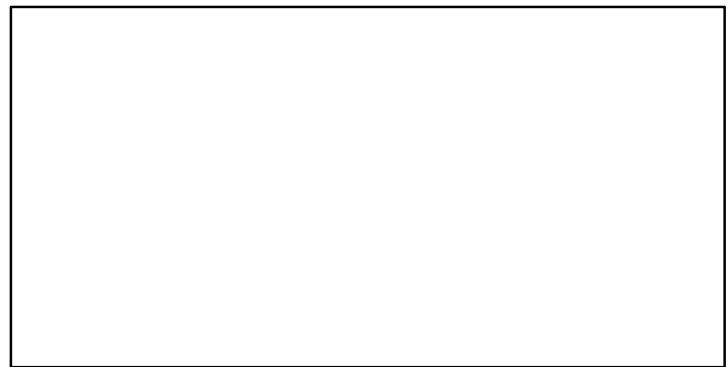
**F\***



**ER\***



**Recruits\***

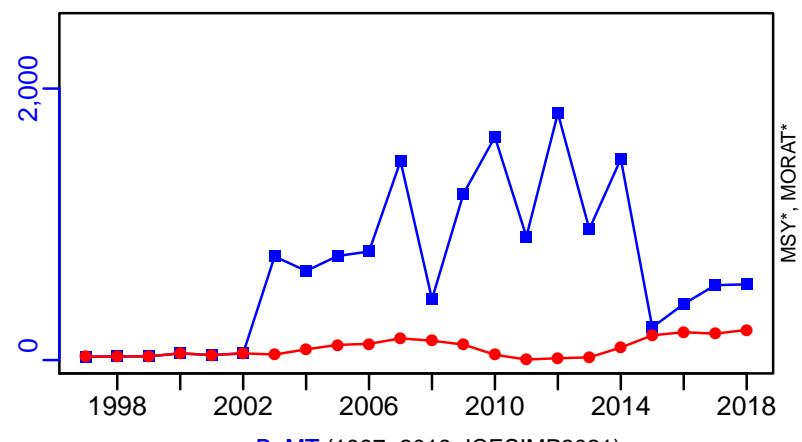


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

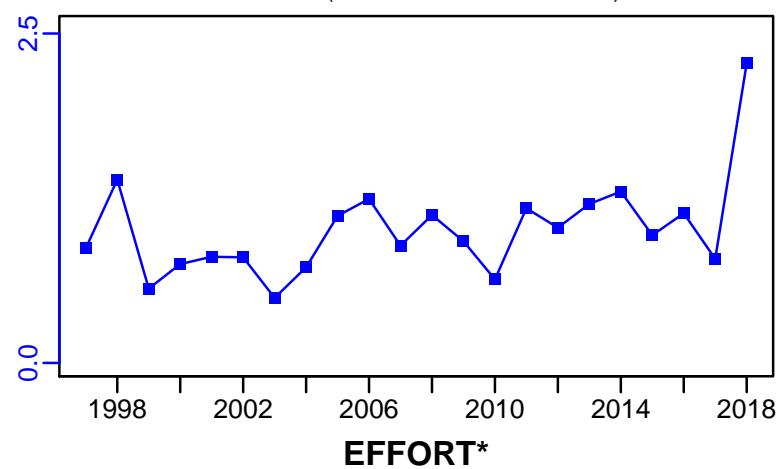
**Blackmouth dogfish ICES 8–9a [BMDOGVIII–IXa]**

TC–MT, TL–MT, RecC\* (1997–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



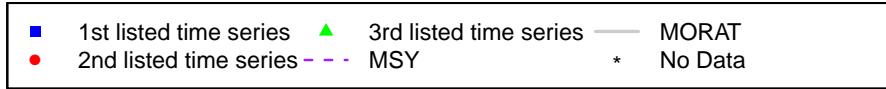
survB–MT (1997–2018–ICESIMP2021)



EFFORT\*

CPUE\*

CdivMSY\*



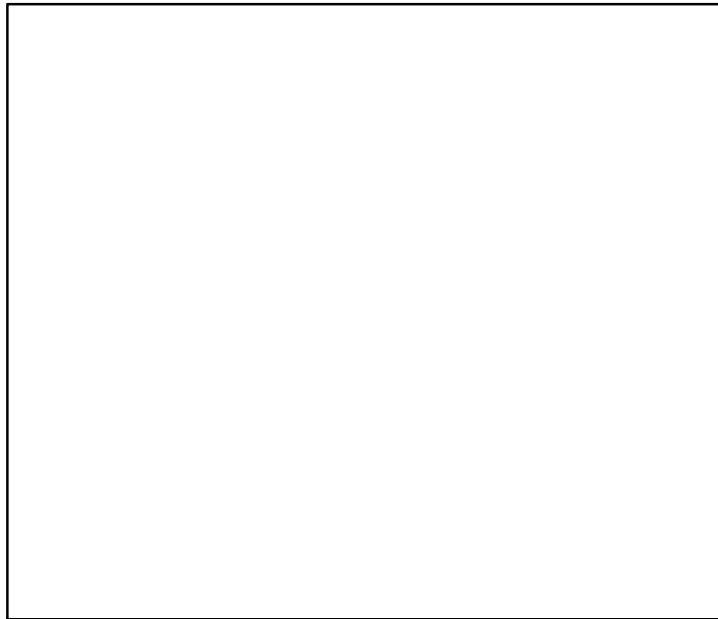
## Blackmouth dogfish ICES 6-7 [BMDOGVI-VII]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Galeus melastomus                                    |
| <b>Current Assess ID</b>    | WGEF-BMDOGVI-VII-2001-2018-ICESIMP2021               |
| <b>Area</b>                 | ICES 6-7   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2014, 2018, 2016                                     |

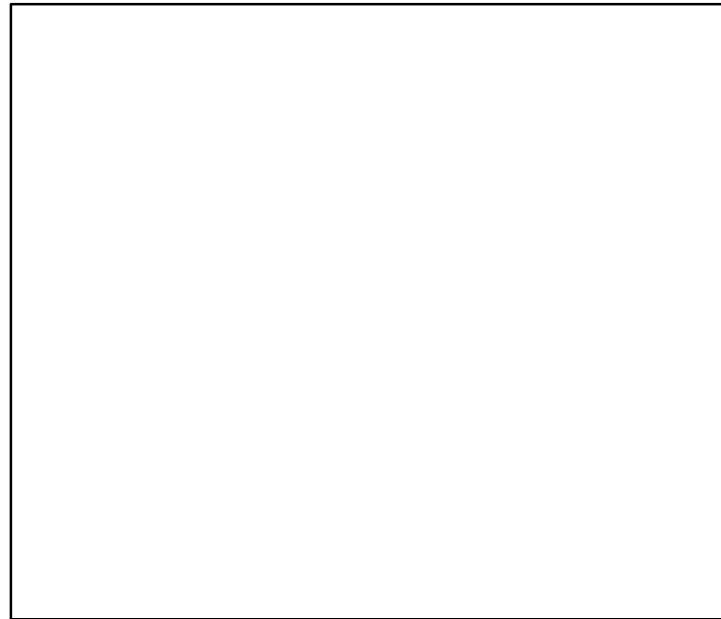
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |        |           |            |     |     |
|--------------------|--------|-----------|------------|-----|-----|
| Type               | ID     | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -      | -         | -          | -   | -   |
| <b>SSB</b>         | SSB-MT | 2018      | 61         | -   | -   |
| <b>TN</b>          | -      | -         | -          | -   | -   |
| <b>R</b>           | -      | -         | -          | -   | -   |
| <b>F</b>           | -      | -         | -          | -   | -   |
| <b>ER</b>          | -      | -         | -          | -   | -   |
| <b>TC</b>          | -      | -         | -          |     |     |
| <b>TL</b>          | TL-MT  | 2018      | 0.015      |     |     |
| <b>TB/TBmsy</b>    | -      | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -      | -         | -          |     |     |
| <b>F/Fmsy</b>      | -      | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -      | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -      | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -      | -         | -          |     |     |
| <b>F/Fmgt</b>      | -      | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -      | -         | -          |     |     |

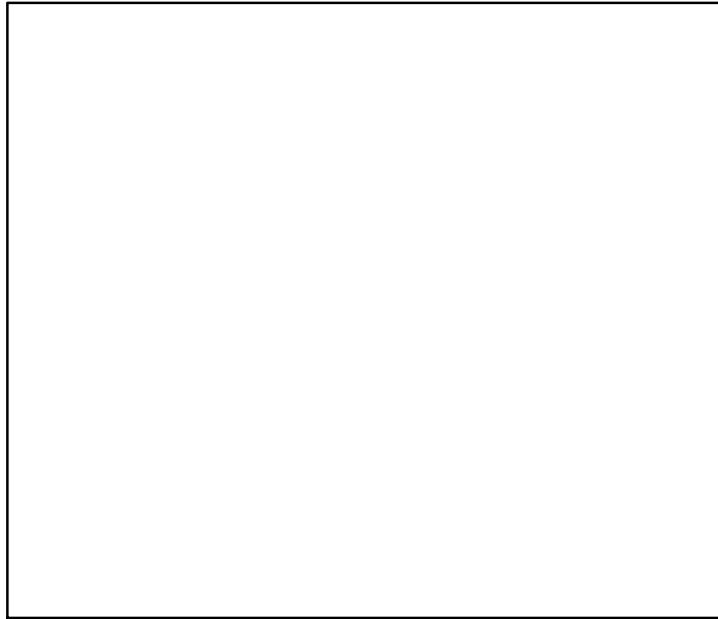
**Kobe MSY\***



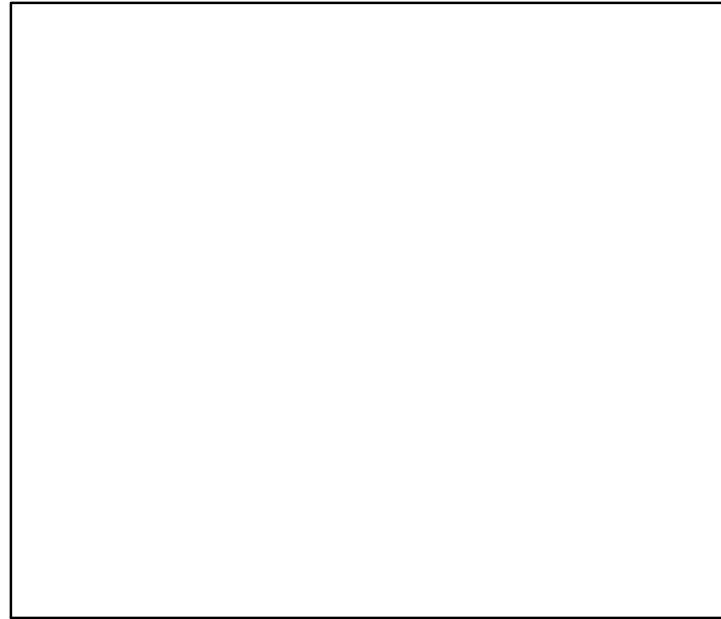
**Kobe MGT\***



**Spawner Recruit\***



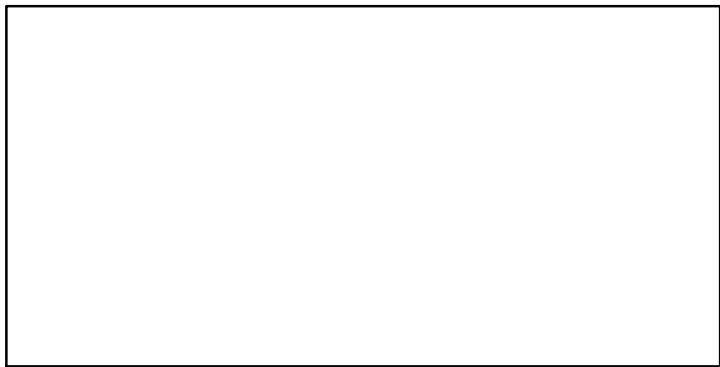
**Production\***



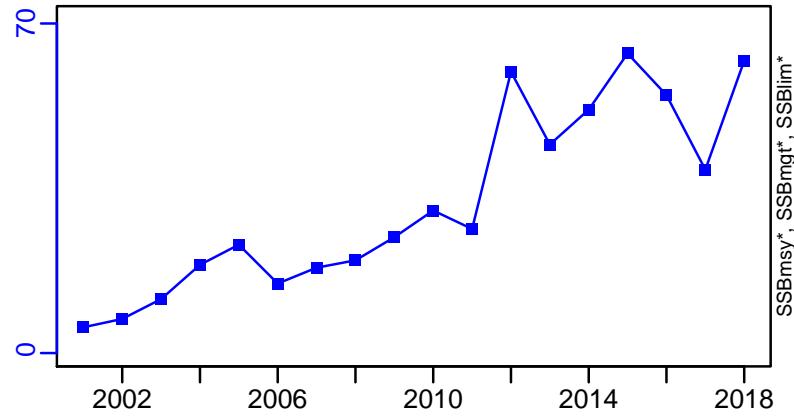
◆ Start Year ♦ End Year \* No Data

**Blackmouth dogfish ICES 6–7 [BMDOGVI–VII]**

**TB\***



**SSB-MT (2001–2018–ICESIMP2021)**



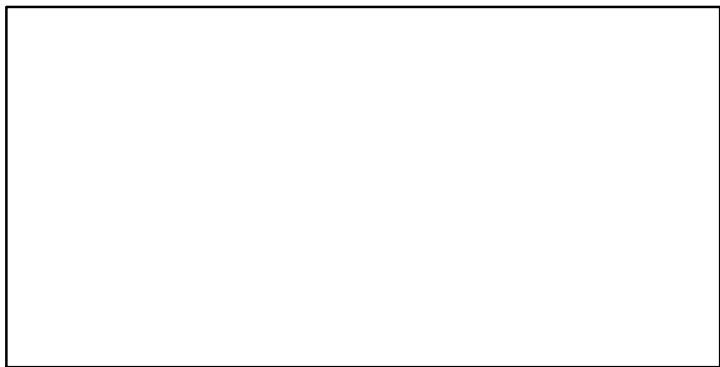
**TN \***



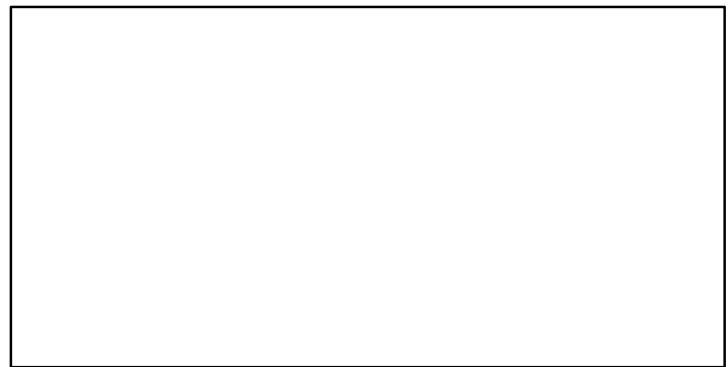
**F\***



**ER\***



**Recruits\***

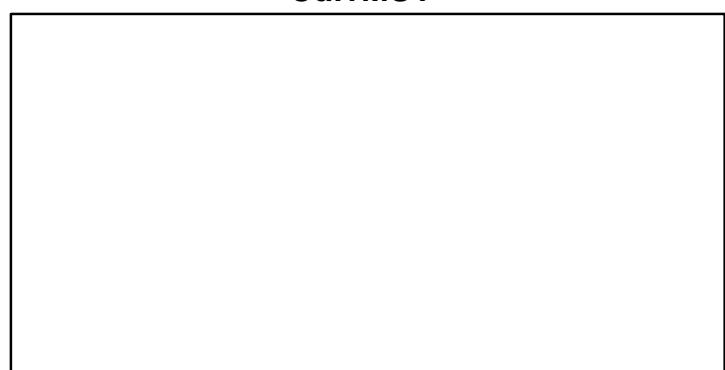
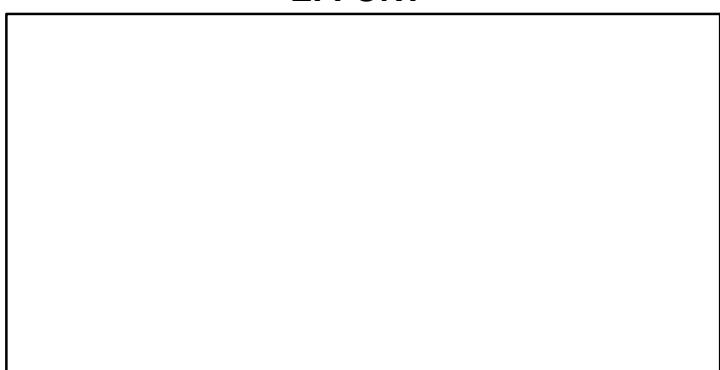
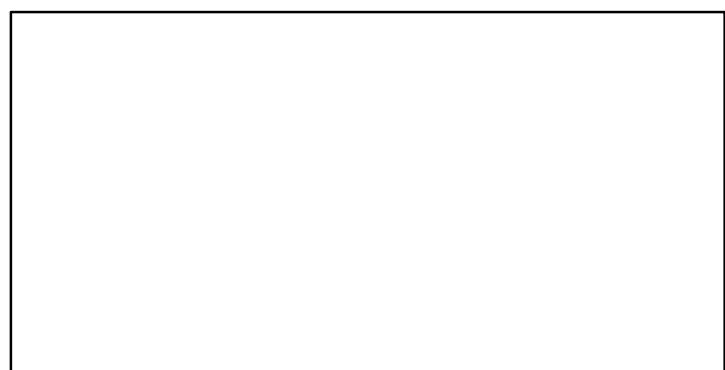
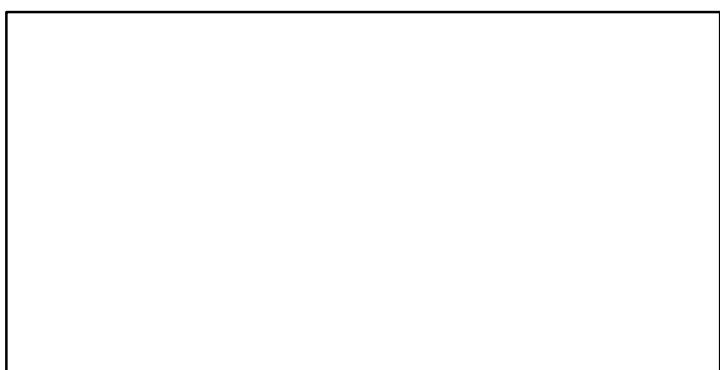
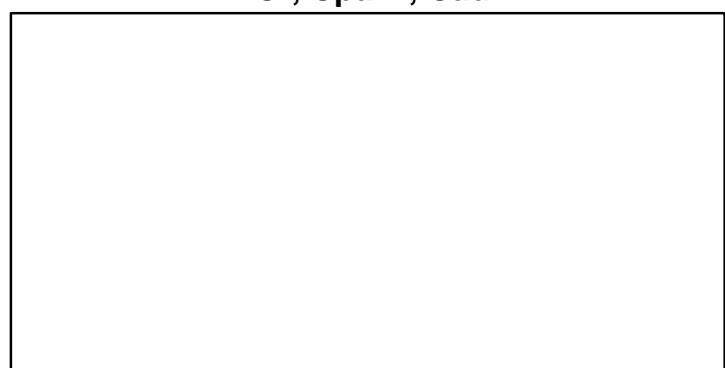
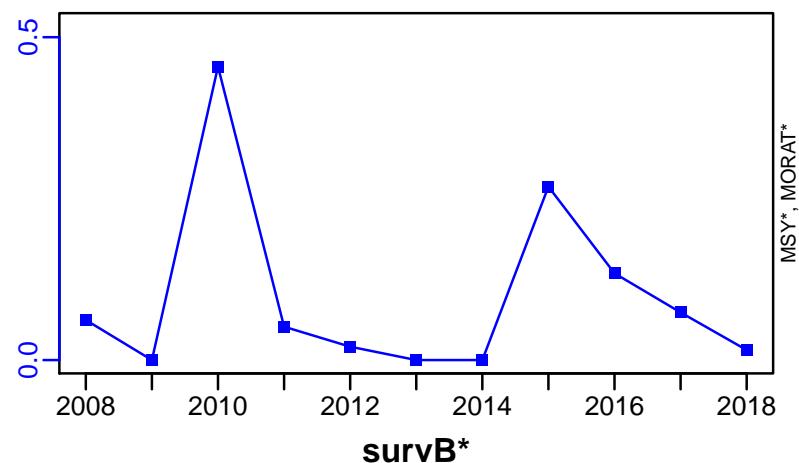


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

**Blackmouth dogfish ICES 6–7 [BMDOGVI–VII]**

TL–MT, TC\*, RecC\* (2001–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

## Boarfish ICES 6-8 [BOARVI-VIII]

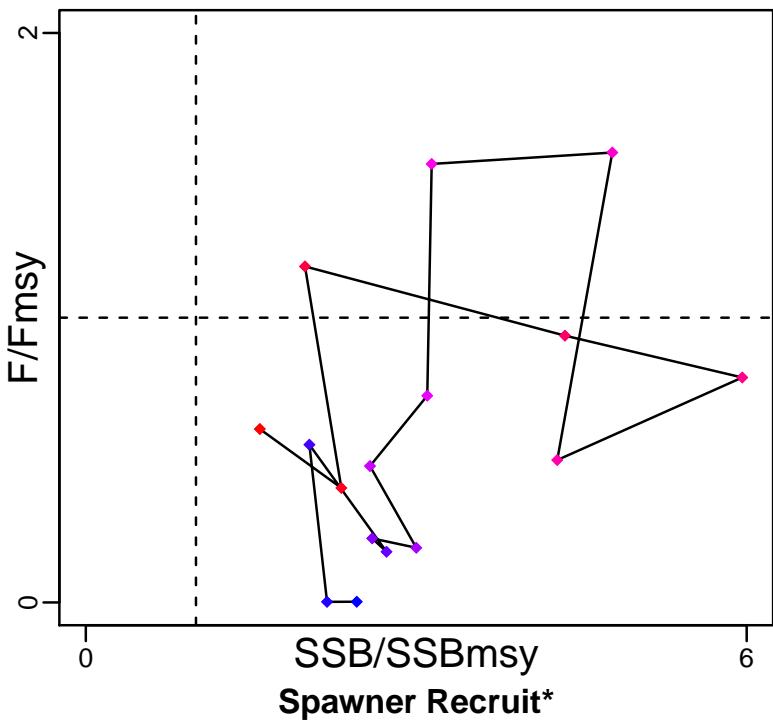
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Capros aper  |
| <b>Current Assess ID</b>    | WGWISE-BOARVI-VIII-1991-2019-ICESIMP2021             |
| <b>Area</b>                 | ICES 6-8   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Widely Distributed Stocks           |
| <b>Asmts in RAM</b>         | 2013, 2014, 2016, 2017, 2019, 2015                   |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | -         | -                | -            |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | -         | -                | -            |
| <b>Fmgt</b>             | -         | -                | -            |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | -         | -                | -            |
| <b>Flim</b>             | -         | -                | -            |
| <b>ERlim</b>            | -         | -                | -            |

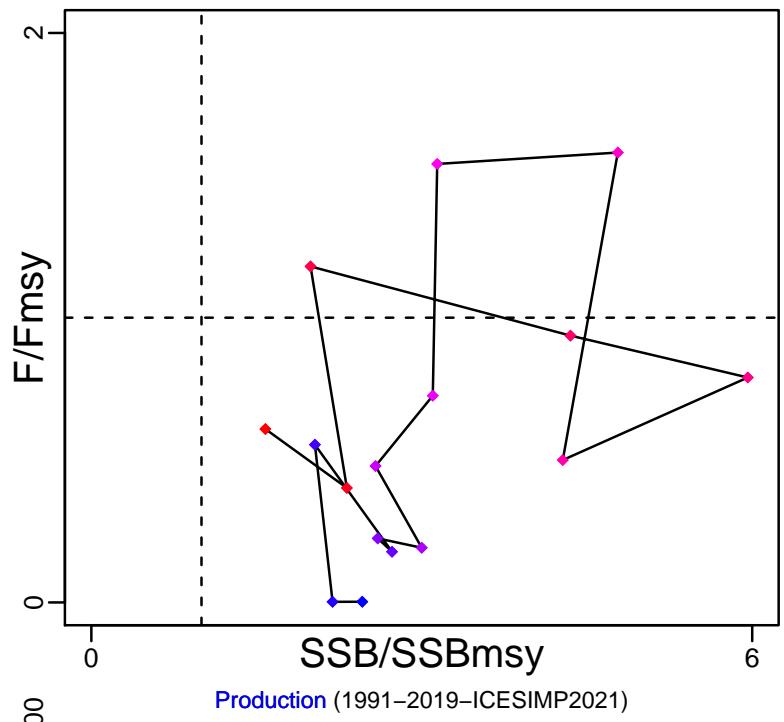
| <b>Time Series</b> |                            |                  |                   |            |            |  |
|--------------------|----------------------------|------------------|-------------------|------------|------------|--|
| <b>Type</b>        | <b>ID</b>                  | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |  |
| <b>TB</b>          | TB-MT                      | 2019             | 270,900           | -          | -          |  |
| <b>SSB</b>         | SSB-MT                     | 2019             | 270,900           | -          | -          |  |
| <b>TN</b>          | -                          | -                | -                 | -          | -          |  |
| <b>R</b>           | -                          | -                | -                 | -          | -          |  |
| <b>F</b>           | F-relative                 | 2016             | 0.581             | -          | -          |  |
| <b>ER</b>          | ER-calc-ratio              | 2019             | 0.029             | -          | -          |  |
| <b>TC</b>          | TC-MT                      | 2019             | 11,286            |            |            |  |
| <b>TL</b>          | TL-MT                      | 2019             | 9927              |            |            |  |
| <b>TB/TBmsy</b>    | -                          | -                | -                 |            |            |  |
| <b>SSB/SSBmsy</b>  | SSBdivSSBmsy-dimensionless | 2017             | 1.96              |            |            |  |
| <b>F/Fmsy</b>      | FdivFmsy-dimensionless     | 2017             | 0.609             |            |            |  |
| <b>ER/ERmsy</b>    | -                          | -                | -                 |            |            |  |
| <b>TB/TBmgt</b>    | -                          | -                | -                 |            |            |  |
| <b>SSB/SSBmgt</b>  | -                          | -                | -                 |            |            |  |
| <b>F/Fmgt</b>      | -                          | -                | -                 |            |            |  |
| <b>ER/ERmgt</b>    | -                          | -                | -                 |            |            |  |

**Boarfish ICES 6–8 [BOARVI–VIII]**

Kobe MSYpref (1991–2017–ICESIMP2018)

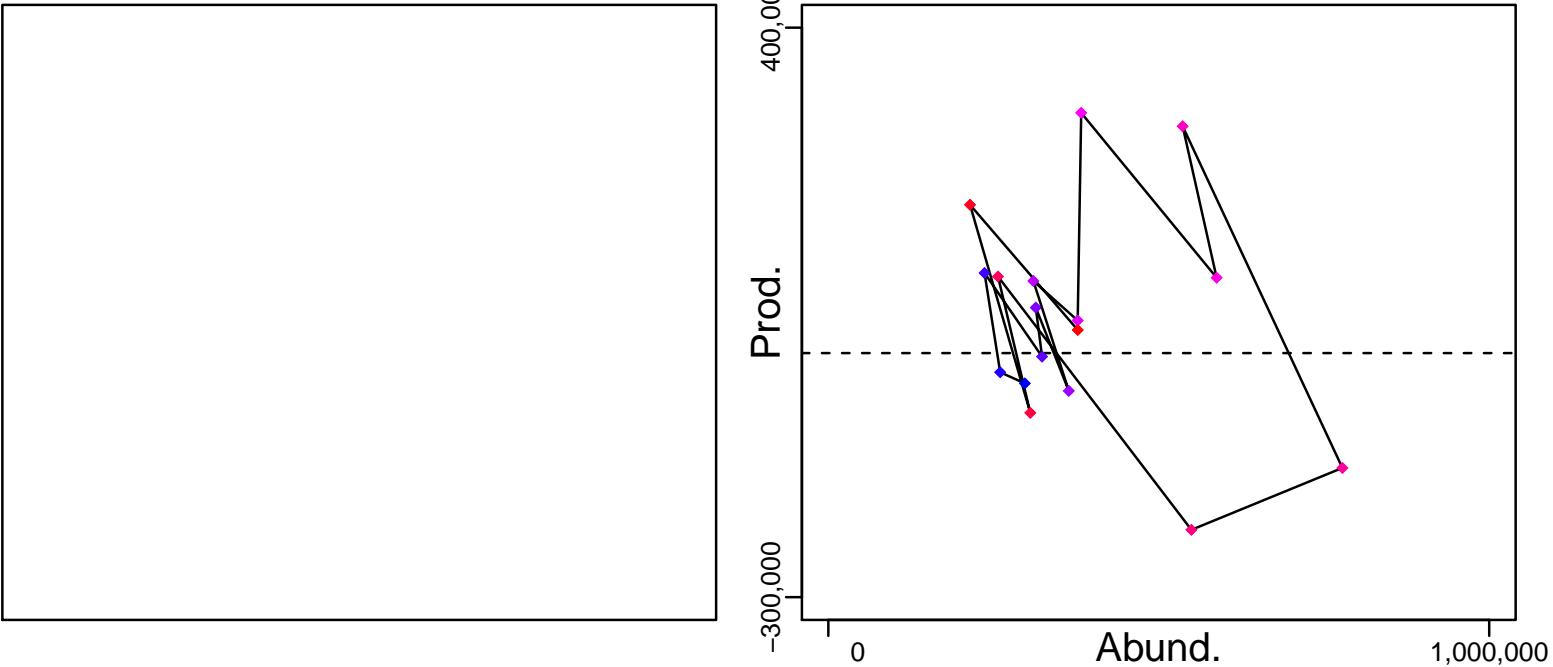


Kobe MGTpref (1991–2017–ICESIMP2018)



**Spawner Recruit\***

Production (1991–2019–ICESIMP2021)

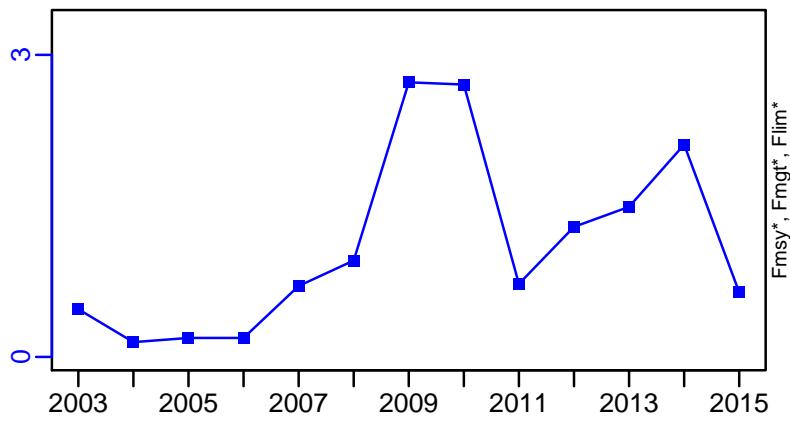
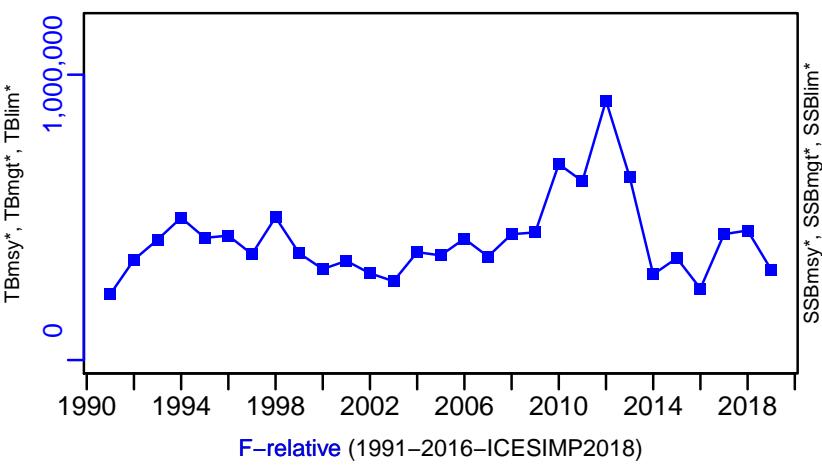
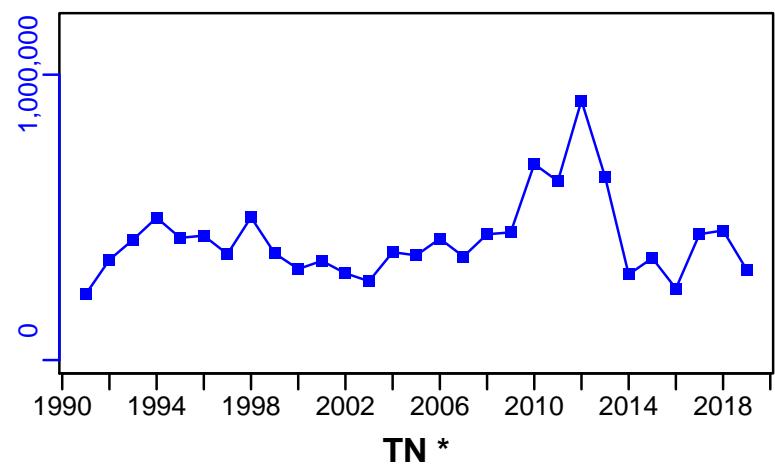


◆ Start Year ◆ End Year \* No Data

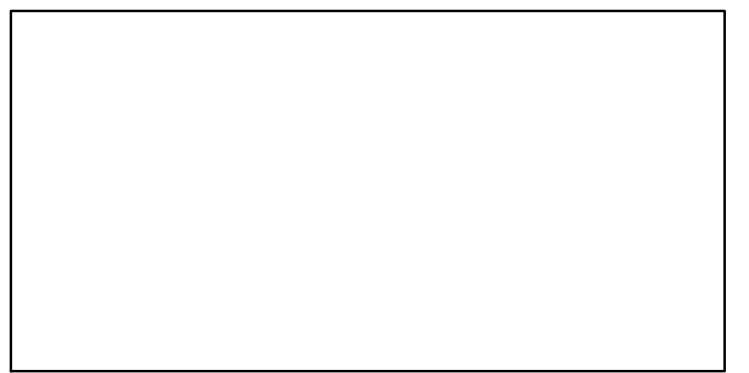
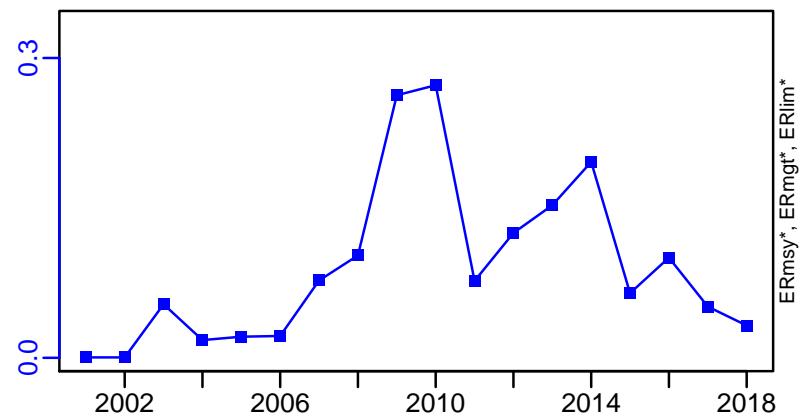
### Boarfish ICES 6–8 [BOARVI–VIII]

**TB-MT** (1991–2019–ICESIMP2021)

**SSB-MT** (1991–2019–ICESIMP2021)



**ER-calc-ratio (1991–2019–ICESIMP2021)**

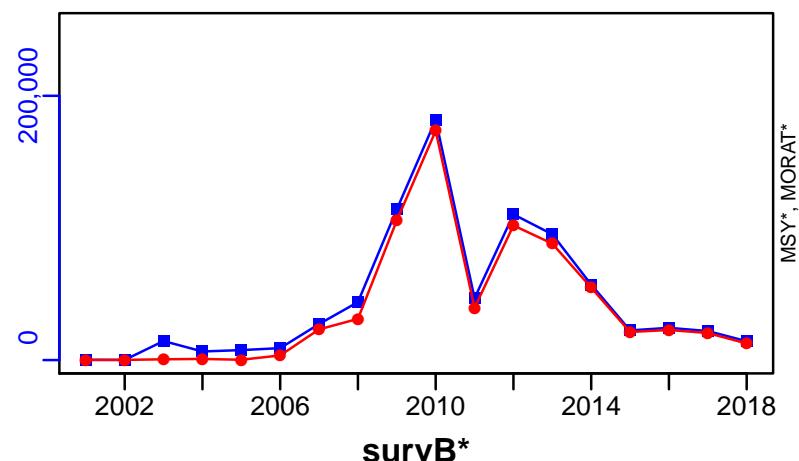


|  |   |   |
|--|---|---|
| <span style="color: blue;">■</span> Listed time series | <span style="color: red;">—</span> Target BRP | <span style="color: grey;">—</span> Rec-Est |
| <span style="color: purple;">—</span> MSY-based BRP    | <span style="color: green;">—</span> Lim BRP  | * No Data                                   |

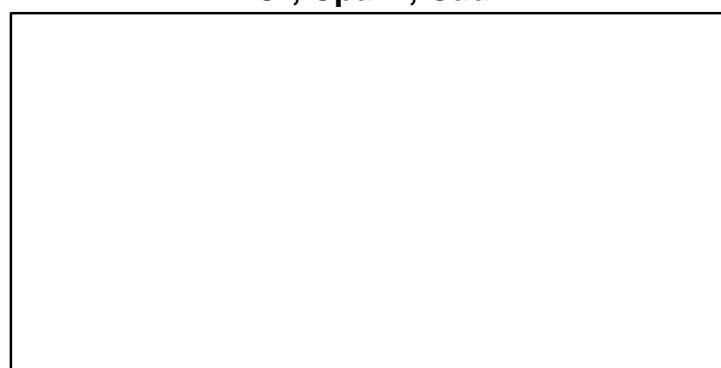
**Boarfish ICES 6–8 [BOARVI–VIII]**

TC–MT, TL–MT, RecC\* (1991–2019–ICESIMP2021)

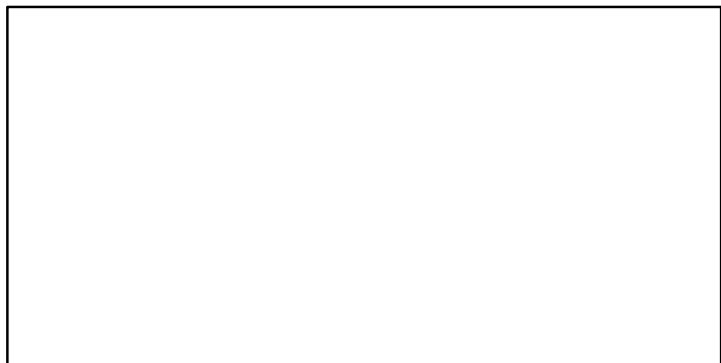
TAC\*, Cpair\*, Cadv\*



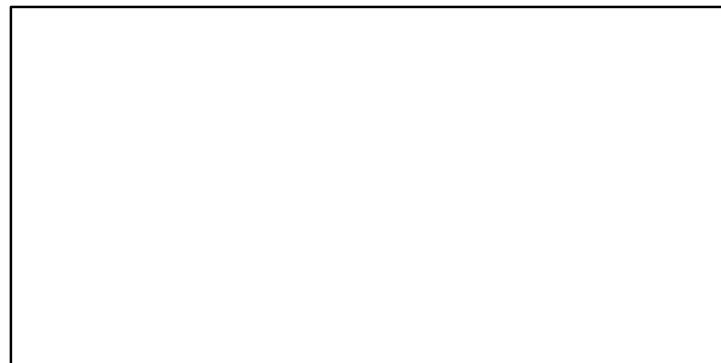
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

## Brill Baltic Areas 22-32 [BRILL2232]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Scophthalmus rhombus                                 |
| <b>Current Assess ID</b>    | WGBFAS-BRILL2232-1970-2016-ICESIMP2018               |
| <b>Area</b>                 | Baltic Areas 22-32                                   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Baltic Fisheries Assessment Working Group            |
| <b>Asmts in RAM</b>         | 2014, 2016, 2016                                     |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2014      | 0.93       | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | TC-MT     | 2014      | 32         |      |     |
| <b>TL</b>          | TL-MT     | 2016      | 40         |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

**Kobe MSY\***

**Kobe MGT\***

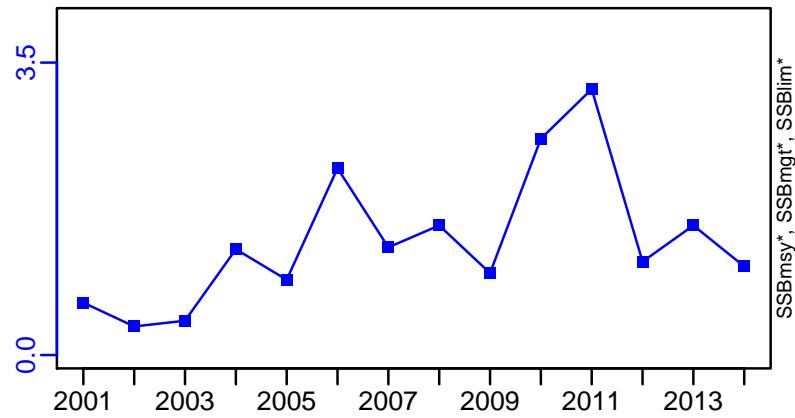
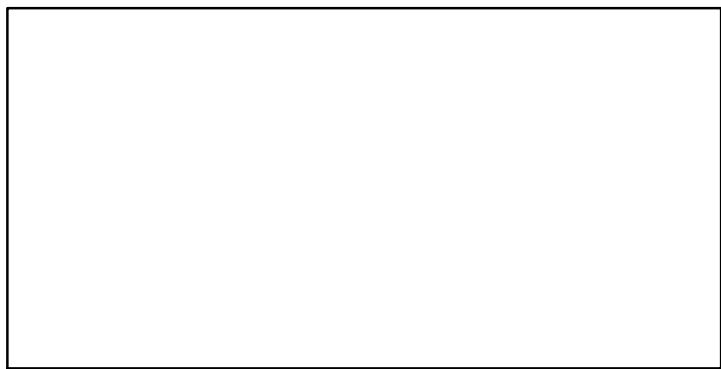
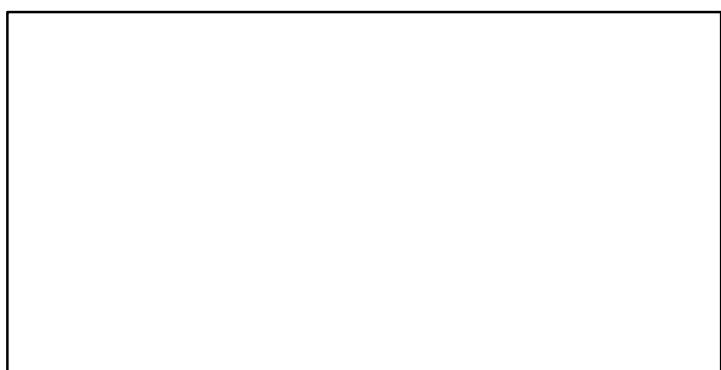
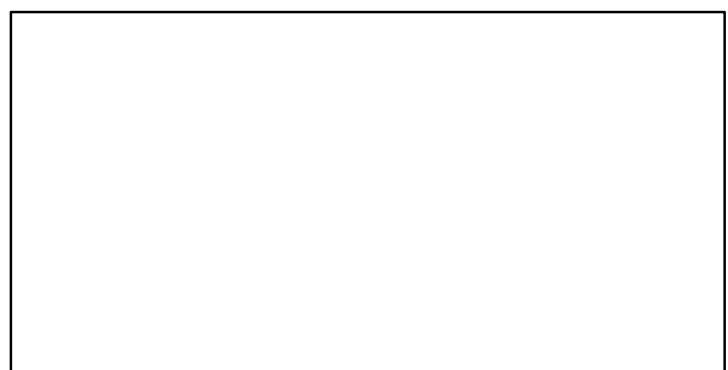
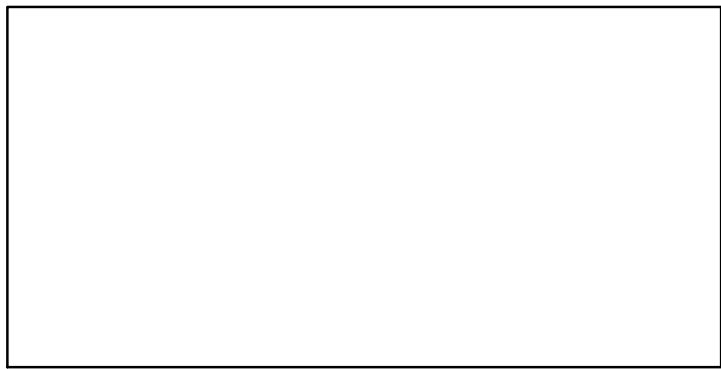
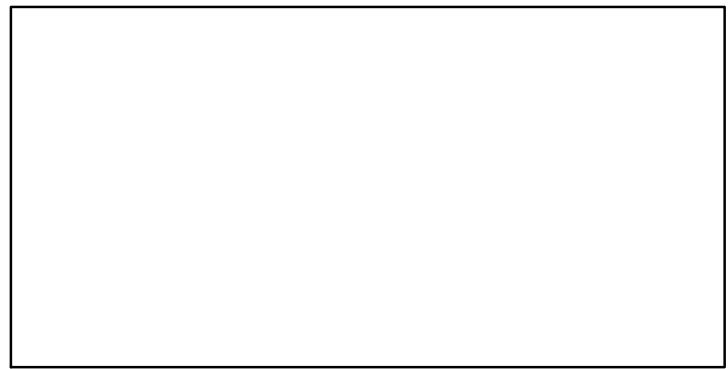
**Spawner Recruit\***

**Production\***

◆ Start Year   ◆ End Year   \* No Data

**TB\***

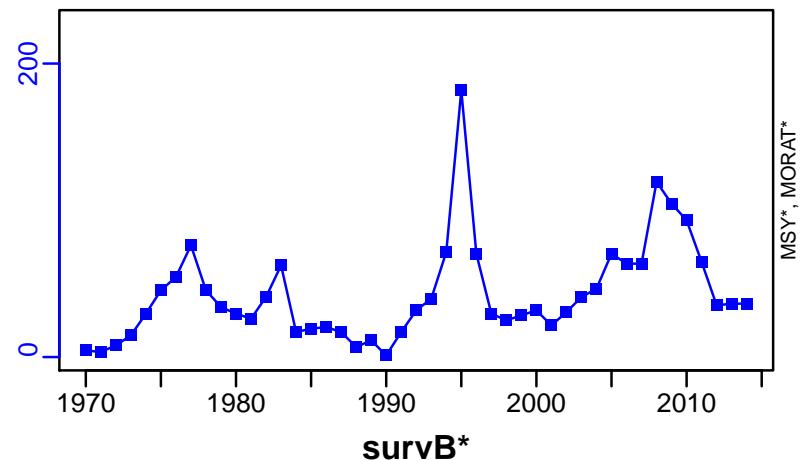
SSB-index (1970–2014–ICESIMP2018)

**TN \*****F\*****ER\*****Recruits\***

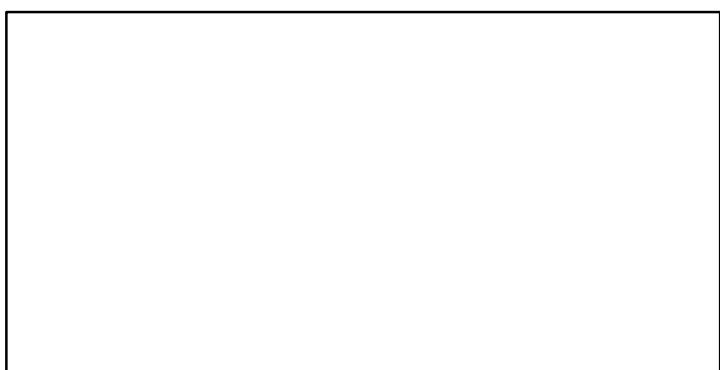
- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

TC-MT, TL\*, RecC\* (1970–2014–ICESIMP2018)

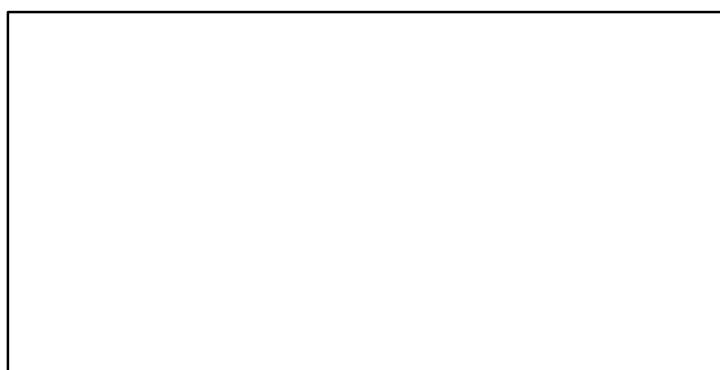
TAC\*, Cpair\*, Cadv\*



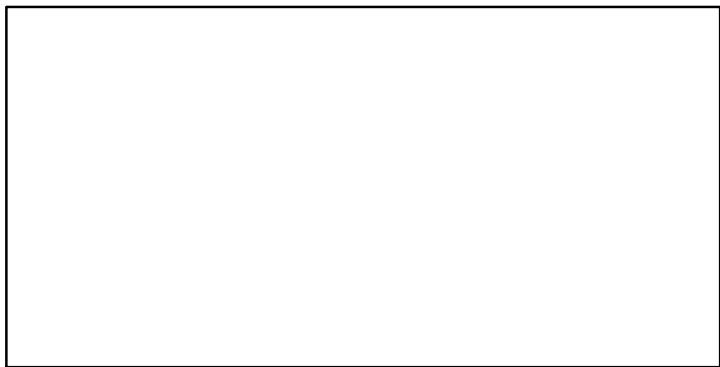
survB\*



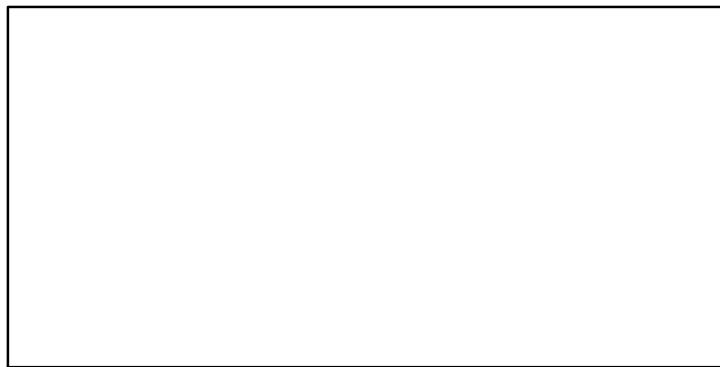
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

### Brill ICES 3a-4-7de [BRILLIIla-IV-VIilde]

| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Scophthalmus rhombus  |
| <b>Current Assess ID</b>    | WGNSSK-BRILLIIla-IV-VIilde-1950-2018-ICESIMP2021                                  |
| <b>Area</b>                 | ICES 3a-4-7de   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2014, 2016, 2018  |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2014      | 46         | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | TC-MT     | 2016      | 2620       |      |     |
| <b>TL</b>          | TL-MT     | 2018      | 1933       |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

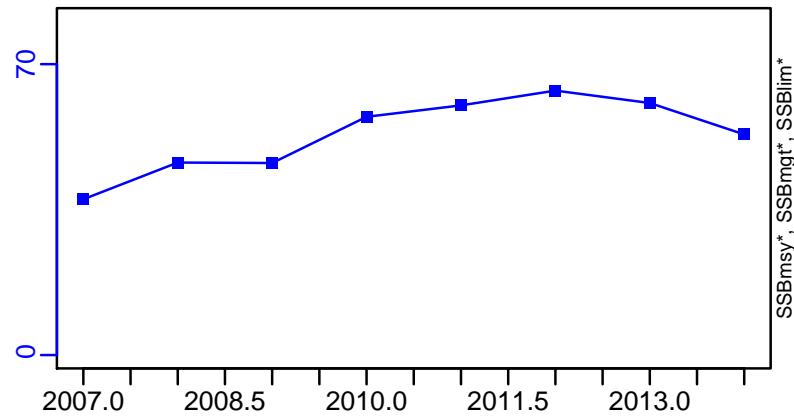
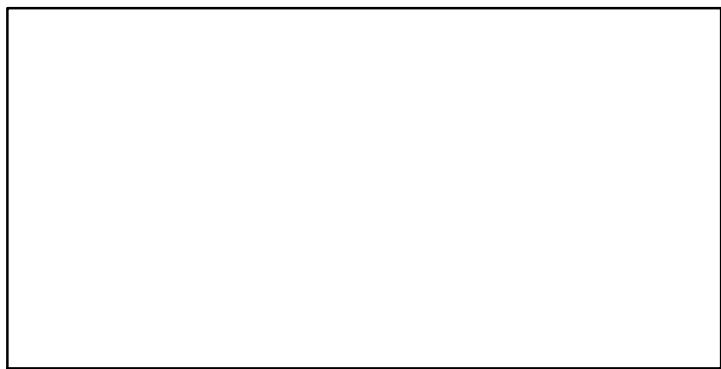
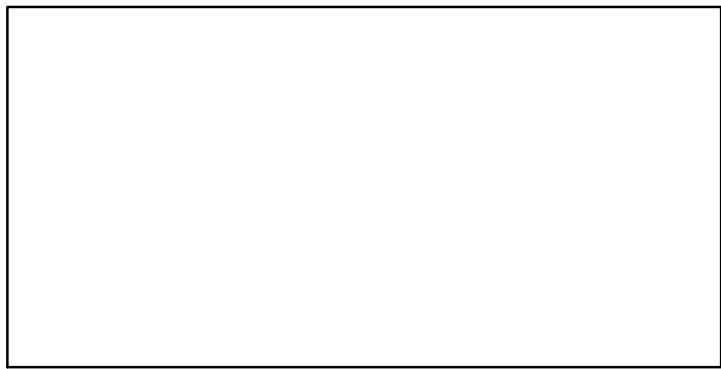
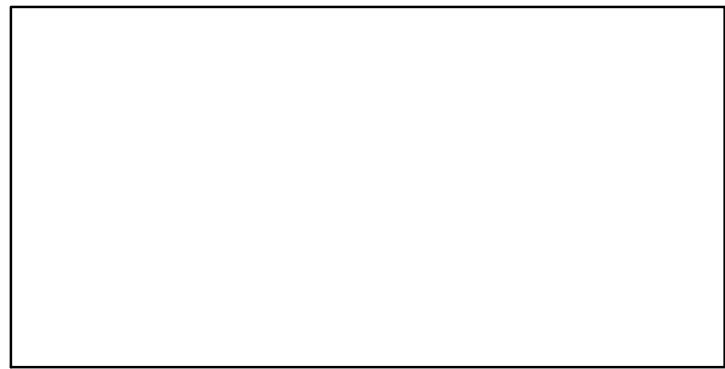
**Kobe MSY\***

**Kobe MGT\***

**Spawner Recruit\***

**Production\***

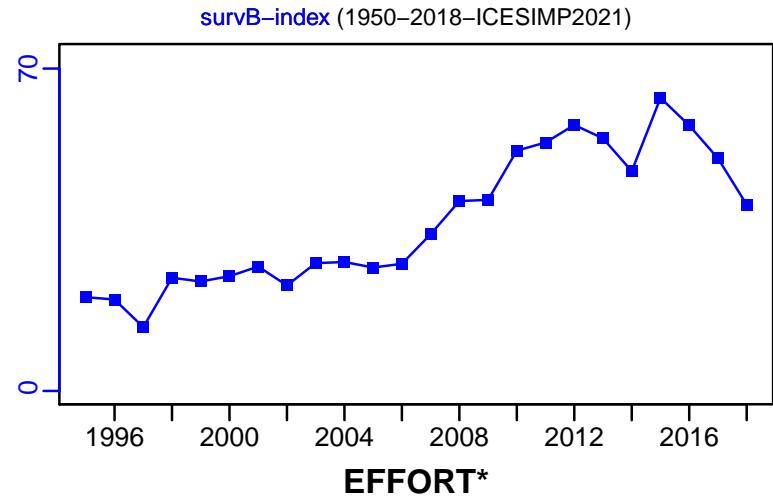
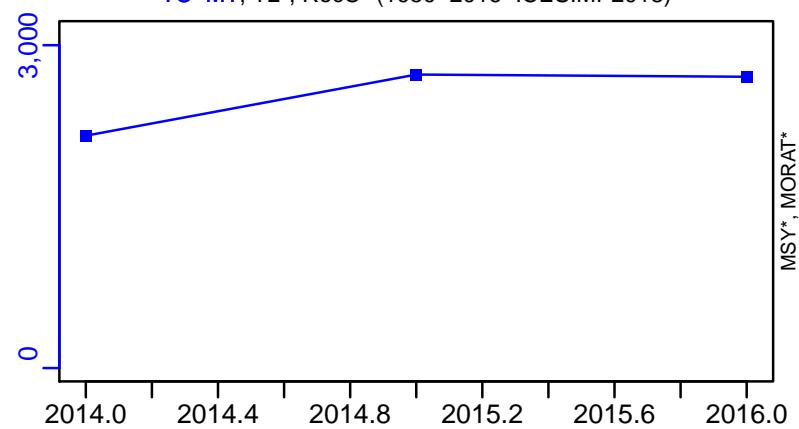
◆ Start Year   ◆ End Year   \* No Data

**TB\*****SSB-index (1950–2014–ICESIMP2018)****TN \*****F\*****ER\*****Recruits\***

- |   |  |   |
|---|--|---|
| <span style="color: blue;">■</span> Listed time series<br><span style="color: purple;">—</span> MSY-based BRP | <span style="color: brown;">—</span> Target BRP<br><span style="color: cyan;">—</span> Lim BRP | <span style="color: gray;">—</span> Rec-Est<br><span style="color: black;">*</span> No Data |
|---|--|---|

TC-MT, TL\*, RecC\* (1950–2016–ICESIMP2018)

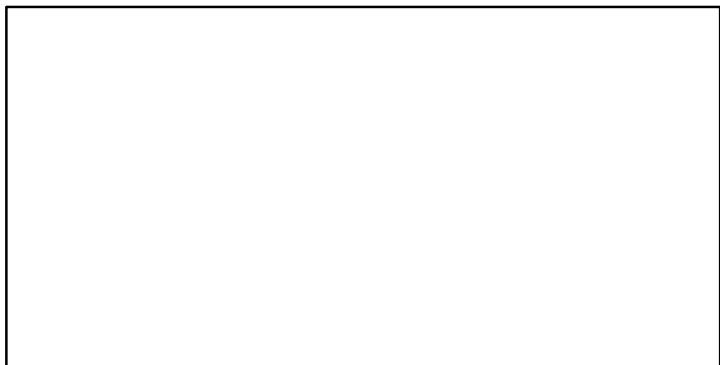
TAC\*, Cpair\*, Cadv\*



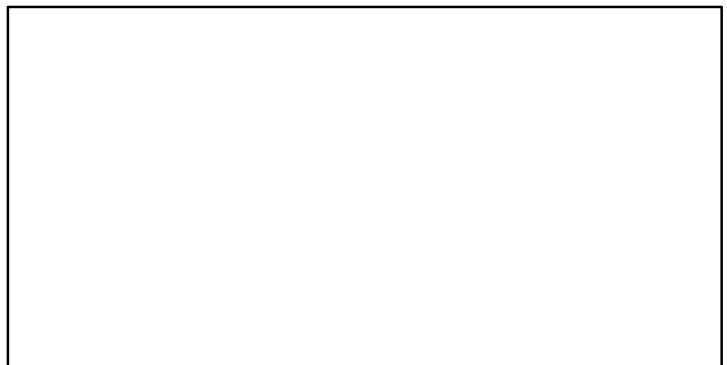
CPUE\*



EFFORT\*



CdivMSY\*



- |   |   |  |  |
|---|---|--|--|
| <span style="color: blue;">■</span> 1st listed time series<br><span style="color: red;">●</span> 2nd listed time series | <span style="color: green;">▲</span> 3rd listed time series<br><span style="color: purple;">○</span> 2nd listed time series | <span style="color: grey;">—</span> MORAT<br><span style="color: purple;">- - -</span> MSY | <span style="color: black;">*</span> No Data |
|---|---|--|--|

## Basking shark Northeast Atlantic [BSKSHARNEATL]

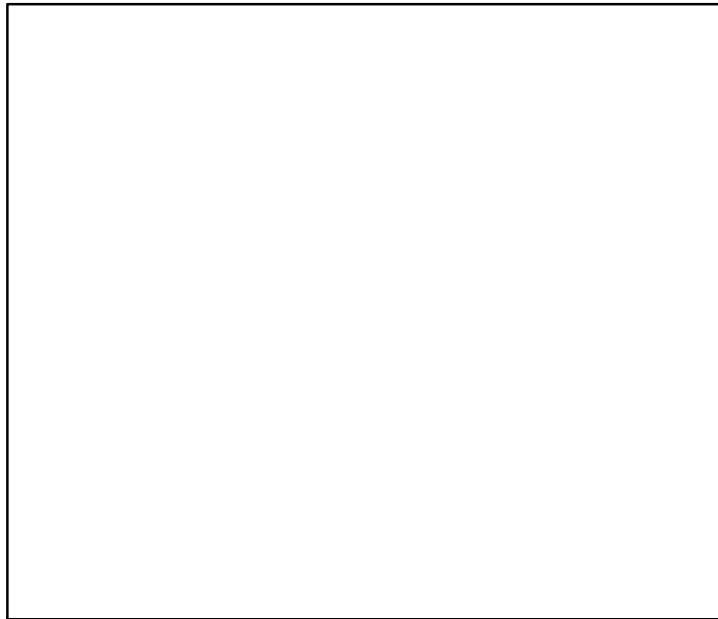
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Cetorhinus maximus                                   |
| <b>Current Assess ID</b>    | WGEF-BSKSHARNEATL-1977-2018-ICESIMP2021              |
| <b>Area</b>                 | Northeast Atlantic                                   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2014, 2018   |

| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

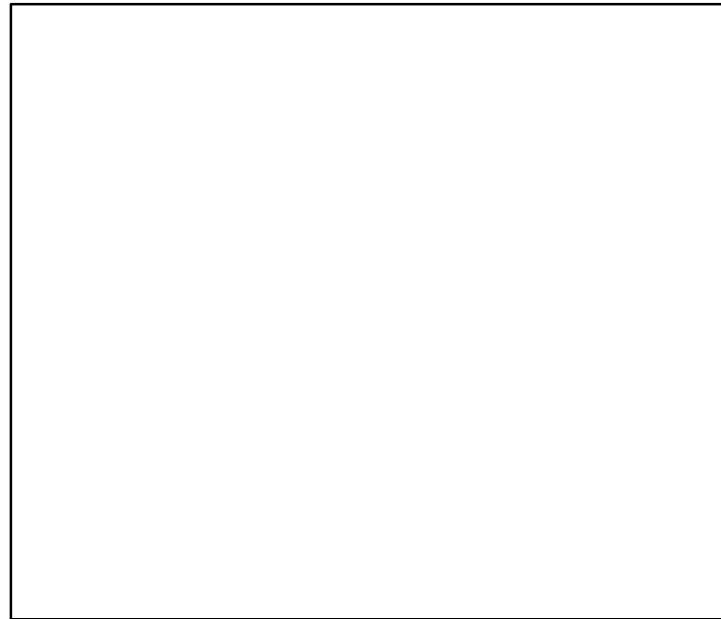
| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | -     | -         | -          |     |     |
| <b>TL</b>         | TL-MT | 2018      | 0          |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

Basking shark Northeast Atlantic [BSKSHARNEATL]

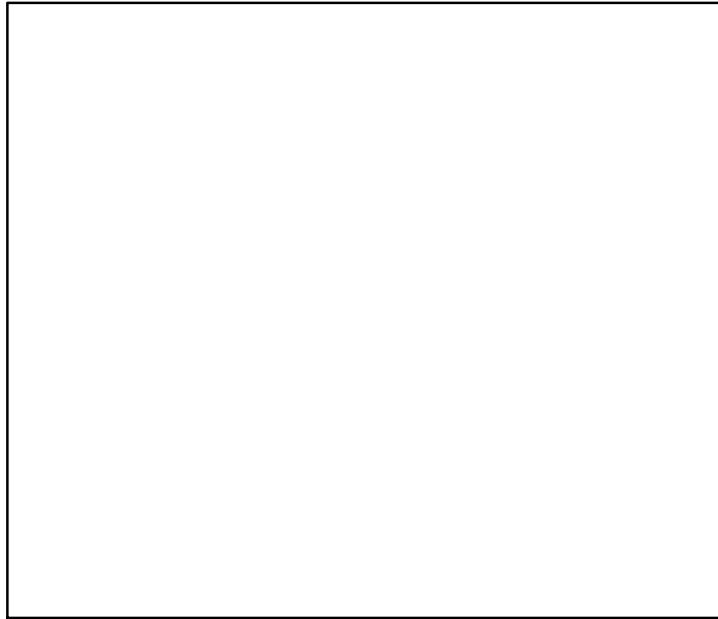
Kobe MSY\*



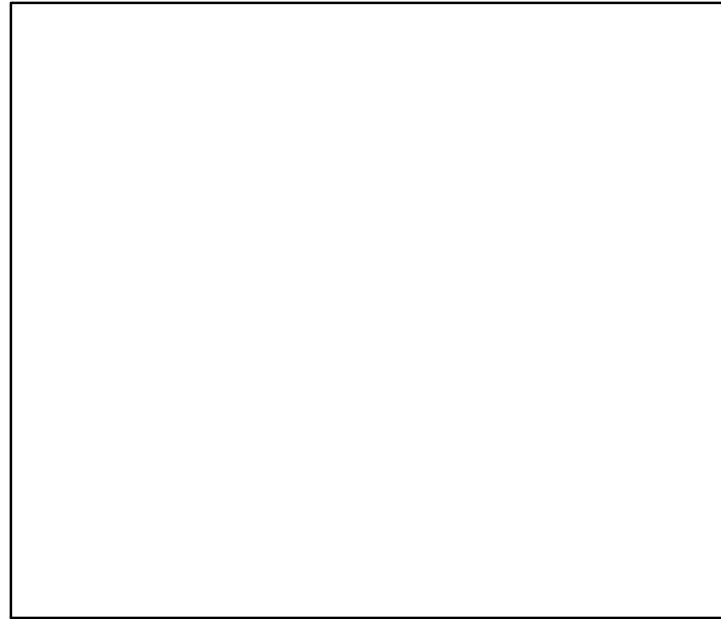
Kobe MGT\*



Spawner Recruit\*



Production\*



◆ Start Year ◆ End Year \* No Data

Basking shark Northeast Atlantic [BSKSHARNEATL]

**TB\***



**SSB\***



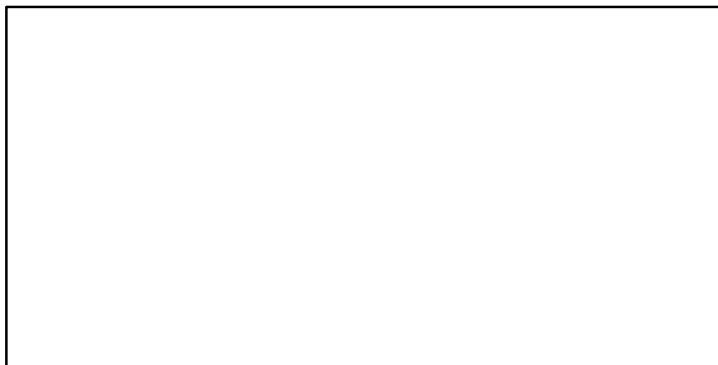
**TN \***



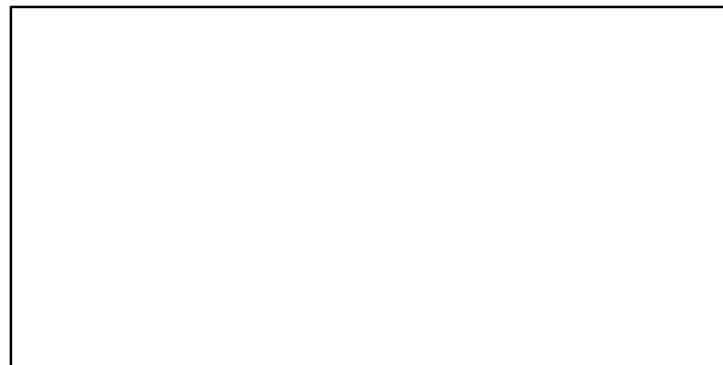
**F\***



**ER\***



**Recruits\***

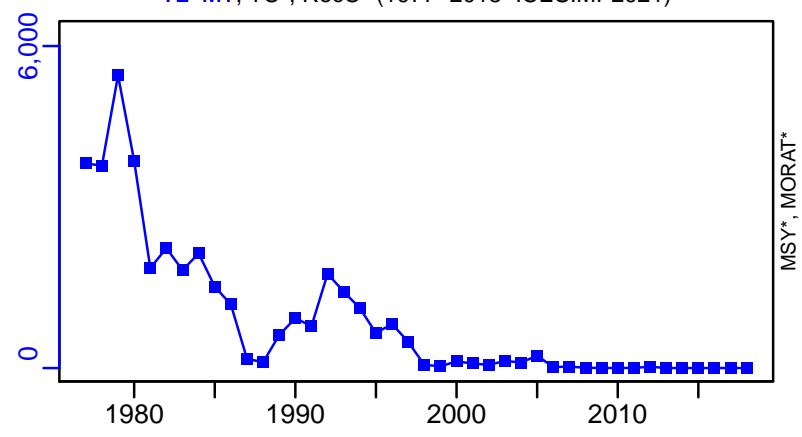


- |       |                    |       |            |   |         |
|-------|--------------------|-------|------------|---|---------|
| ■     | Listed time series | - - - | Target BRP | — | Rec-Est |
| - - - | MSY-based BRP      | - - - | Lim BRP    | * | No Data |

Basking shark Northeast Atlantic [BSKSHARNEATL]

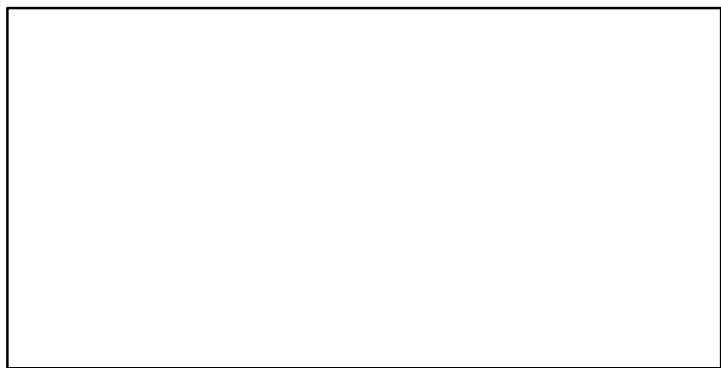
TL-MT, TC\*, RecC\* (1977–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*

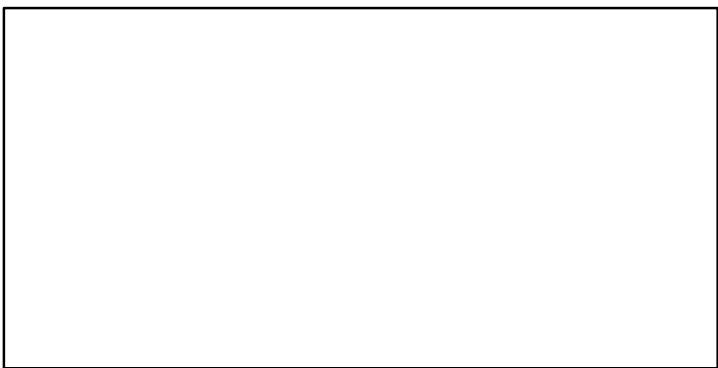


survB\*

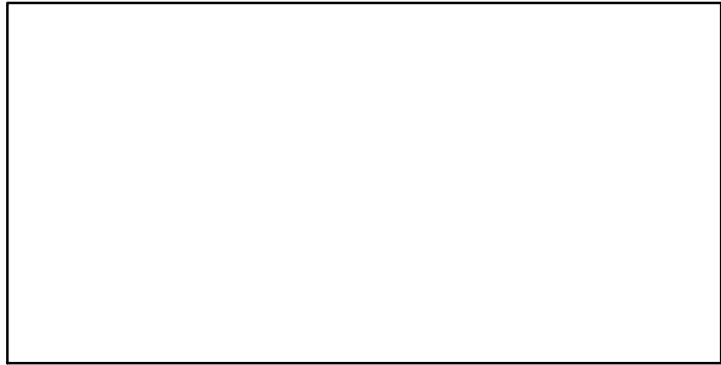
MSY\*, MORAT\*



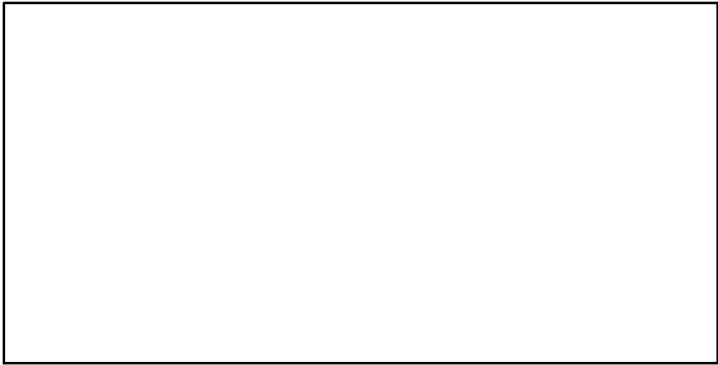
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Blue whiting Northeast Atlantic [BWHITNEA]

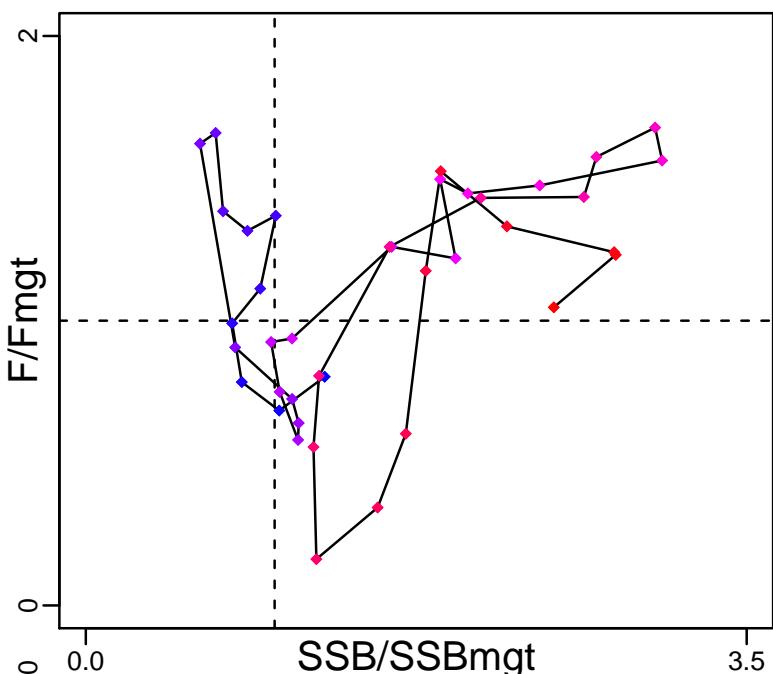
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Micromesistius poutassou                             |
| <b>Current Assess ID</b>    | WGWISE-BWHITNEA-1980-2020-ICESIMP2021                |
| <b>Area</b>                 | Northeast Atlantic                                   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Widely Distributed Stocks           |
| <b>Asmts in RAM</b>         | 2012, 2013, 2014, 2015, 2017, 2018, 2020             |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2018             | 0.32         |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2020             | 2,250,000    |
| <b>Fmgt</b>             | Fmgt-1/yr | 2020             | 0.32         |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | SSBlim-MT | 2018             | 1,500,000    |
| <b>Flim</b>             | Flim-1/yr | 2018             | 0.88         |
| <b>ERlim</b>            | -         | -                | -            |

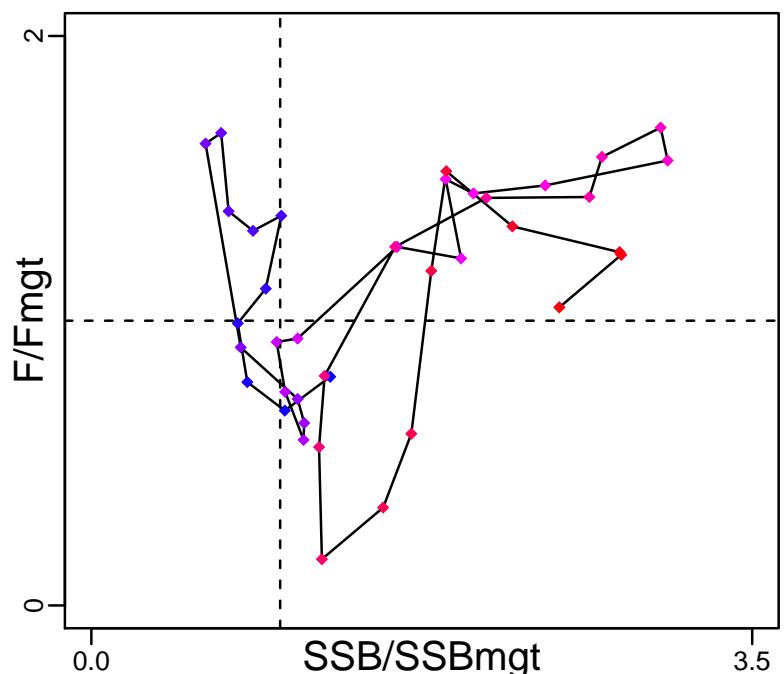
| <b>Time Series</b> |                  |                  |                   |            |            |
|--------------------|------------------|------------------|-------------------|------------|------------|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |
| <b>TB</b>          | TB-MT            | 2020             | 5,700,362         | -          | -          |
| <b>SSB</b>         | SSB-MT           | 2020             | 4,325,386         | -          | -          |
| <b>TN</b>          | -                | -                | -                 | -          | -          |
| <b>R</b>           | R-E00            | 2020             | 5,466,776,000     | -          | 1          |
| <b>F</b>           | F-1/yr           | 2020             | 0.335             | -          | 3 to 7     |
| <b>ER</b>          | ER-calc-ratio    | 2020             | 0.21              | -          | -          |
| <b>TC</b>          | TC-MT            | 2020             | 1,444,301         |            |            |
| <b>TL</b>          | TL-MT            | 2020             | 1,444,301         |            |            |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2018             | 1.256             |            |            |
| <b>ER/ERmsy</b>    | -                | -                | -                 |            |            |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2020             | 1.922             |            |            |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2020             | 1.047             |            |            |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |

### Blue whiting Northeast Atlantic [BWHITNEA]

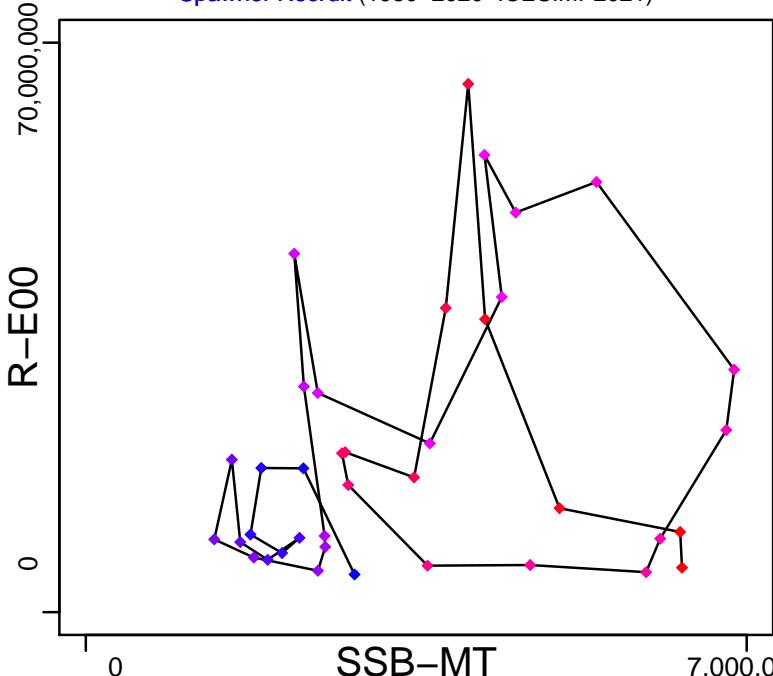
Kobe MSYpref (1980–2020–ICESIMP2021)



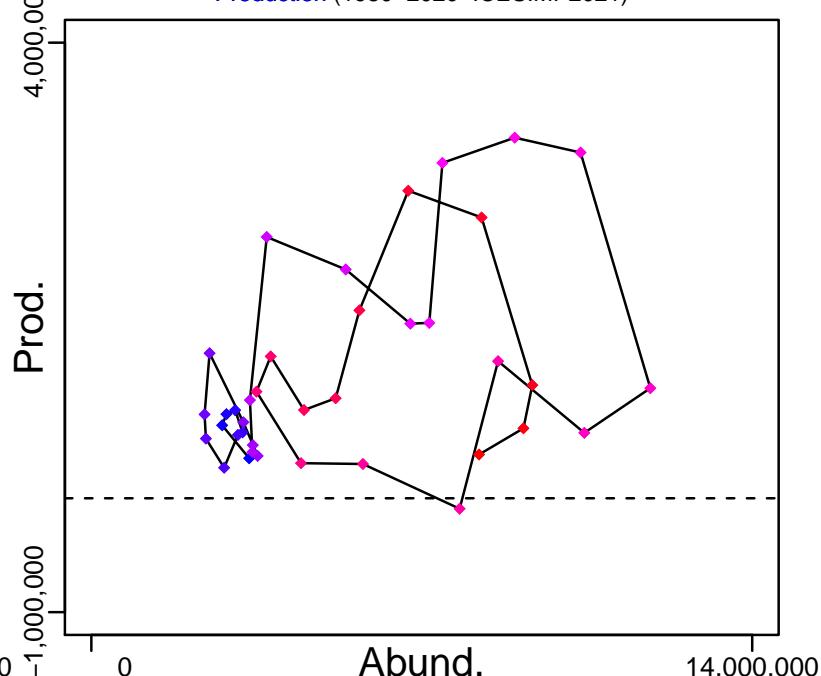
Kobe MGTpref (1980–2020–ICESIMP2021)



Spawner Recruit (1980–2020–ICESIMP2021)



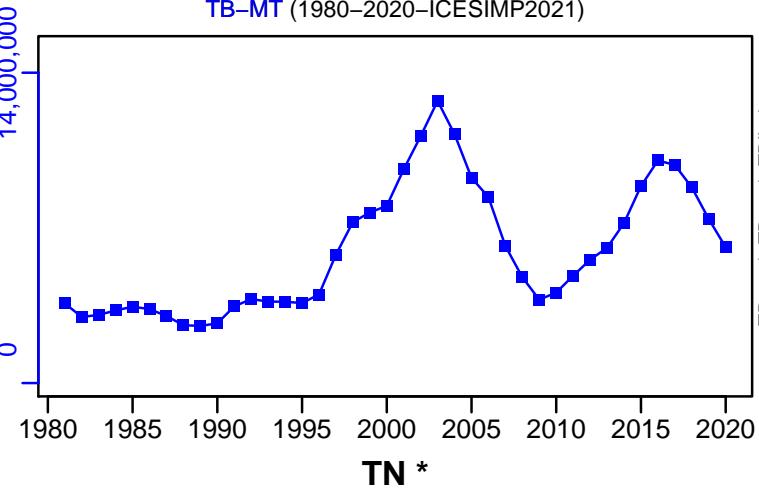
Production (1980–2020–ICESIMP2021)



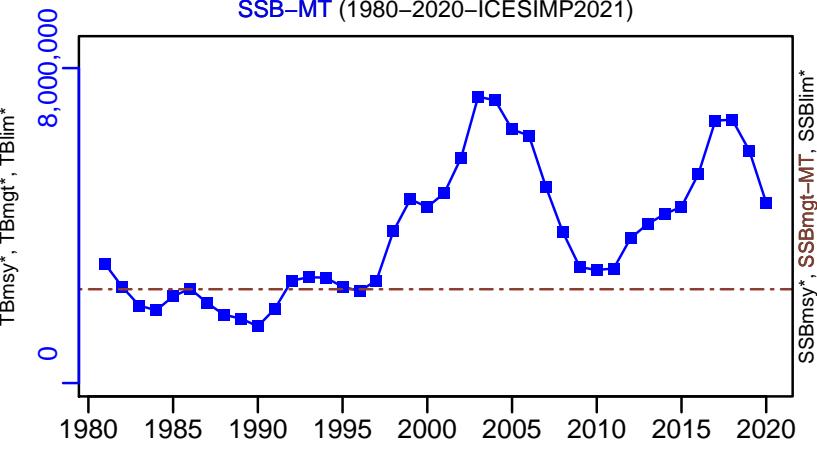
◆ Start Year ◆ End Year \* No Data

### Blue whiting Northeast Atlantic [BWHITNEA]

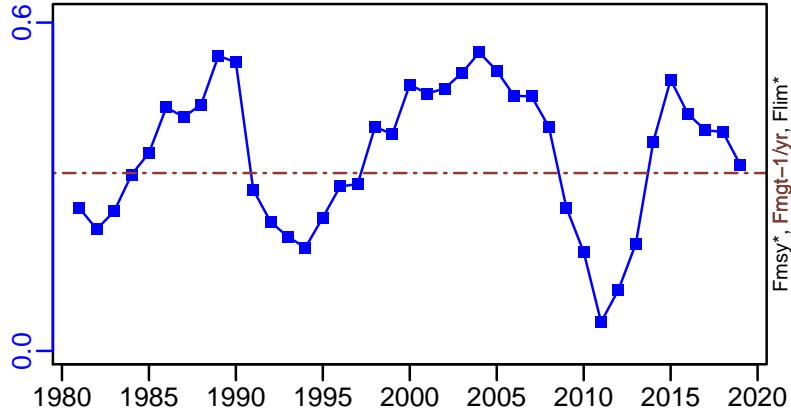
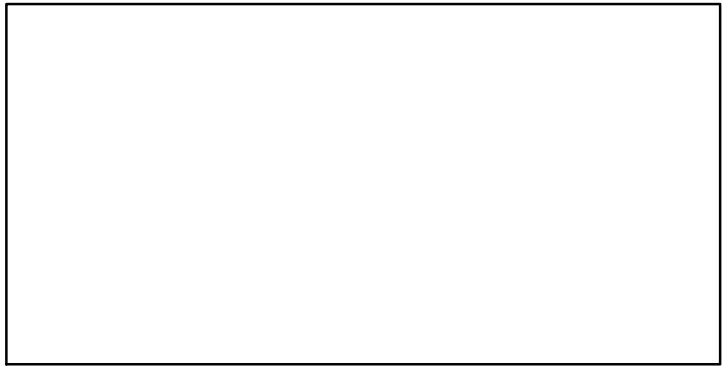
TB-MT (1980–2020–ICESIMP2021)



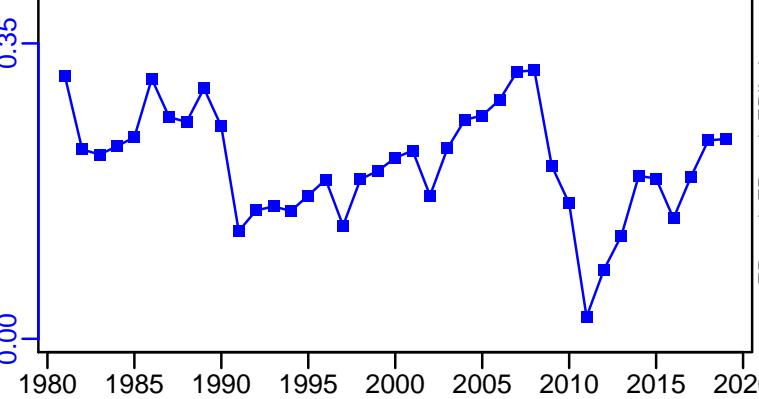
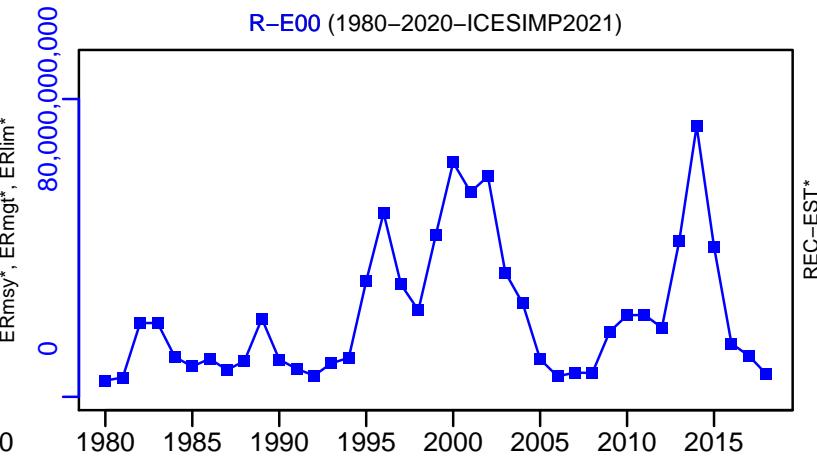
SSB-MT (1980–2020–ICESIMP2021)



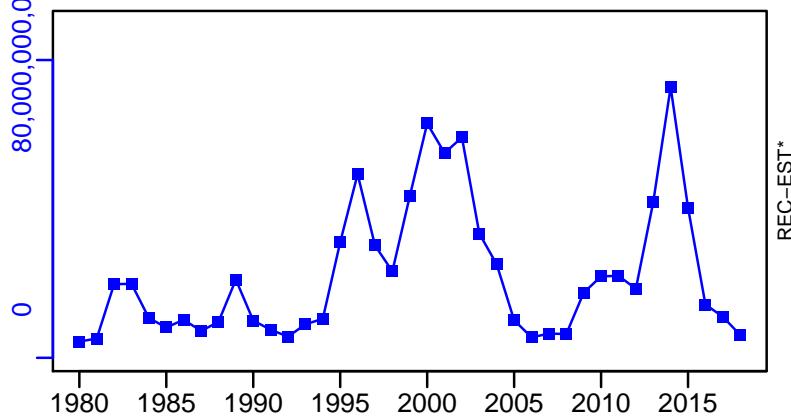
**TN \***



ER-calc-ratio (1980–2020–ICESIMP2021)



R-E00 (1980–2020–ICESIMP2021)

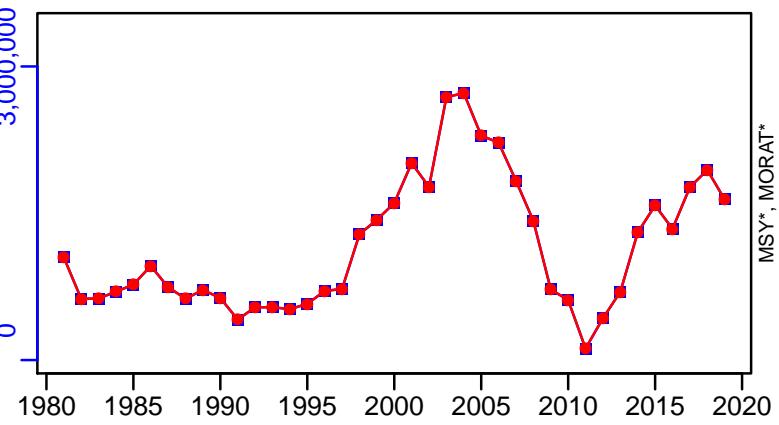


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | --- Lim BRP  | * No Data |

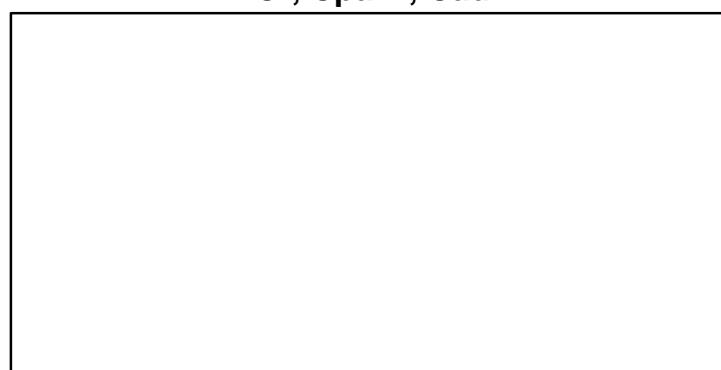
Blue whiting Northeast Atlantic [BWHITNEA]

TC-MT, TL-MT, RecC\* (1980–2020–ICESIMP2021)

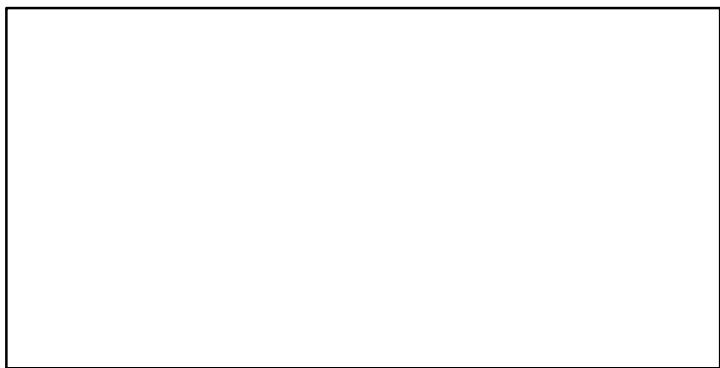
TAC\*, Cpair\*, Cadv\*



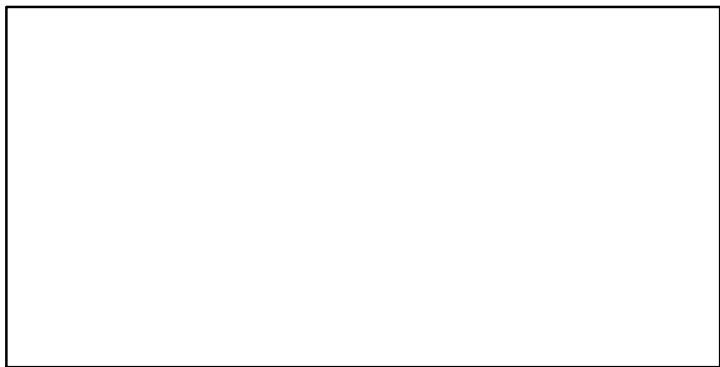
survB\*



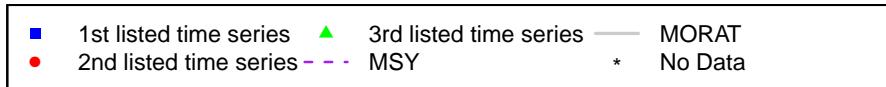
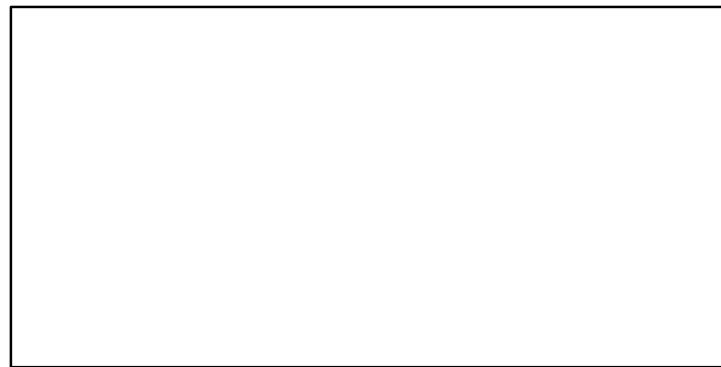
CPUE\*



EFFORT\*



CdivMSY\*



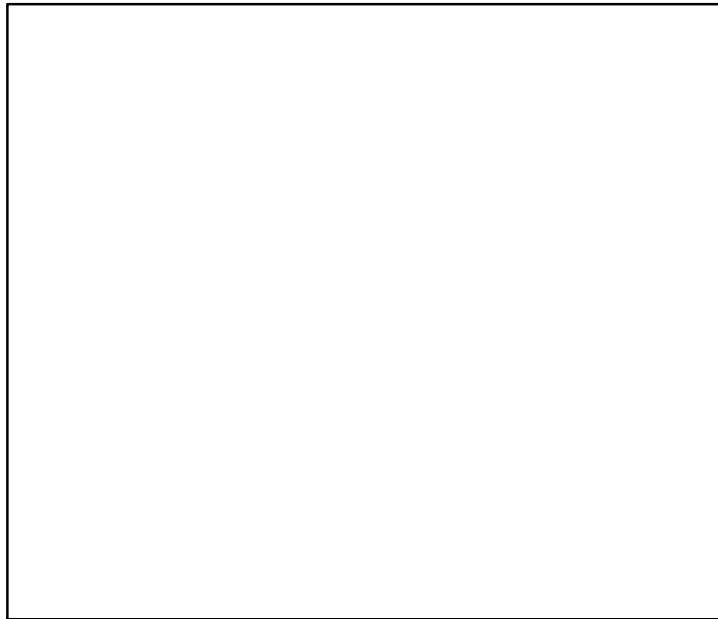
## Cuckoo ray ICES 3a-4 [CKRAYIIIa-IV]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Leucoraja naevus                                     |
| <b>Current Assess ID</b>    | WGEF-CKRAYIIIa-IV-1991-2018-ICESIMP2021              |
| <b>Area</b>                 | ICES 3a-4  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2014, 2018, 2016                                     |

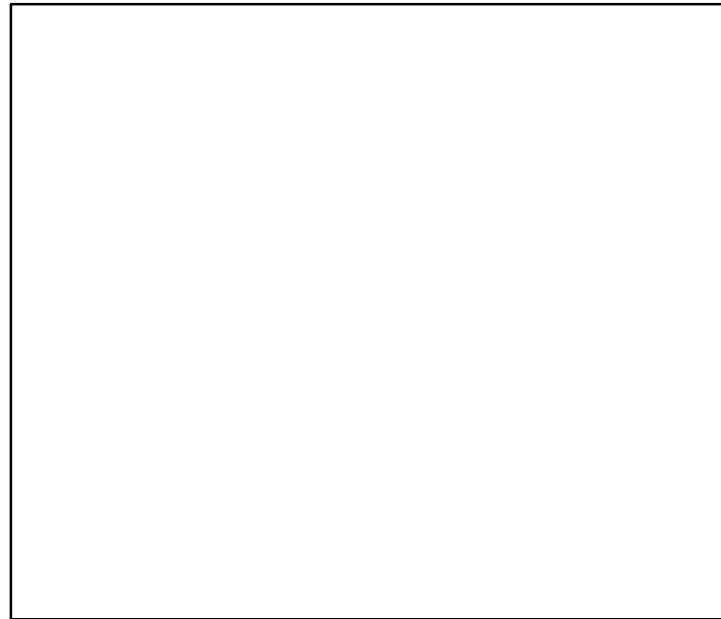
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2014      | 1.03       | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | -         | -         | -          |      |     |
| <b>TL</b>          | TL-MT     | 2018      | 180        |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

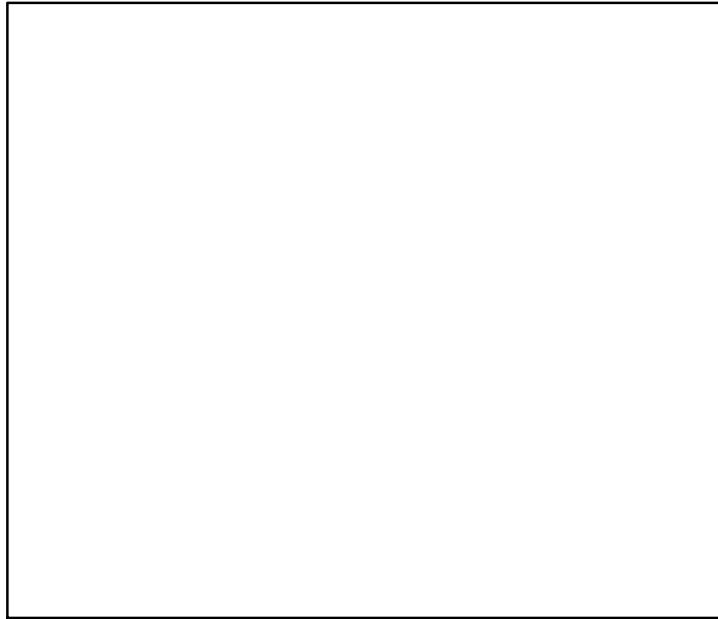
**Kobe MSY\***



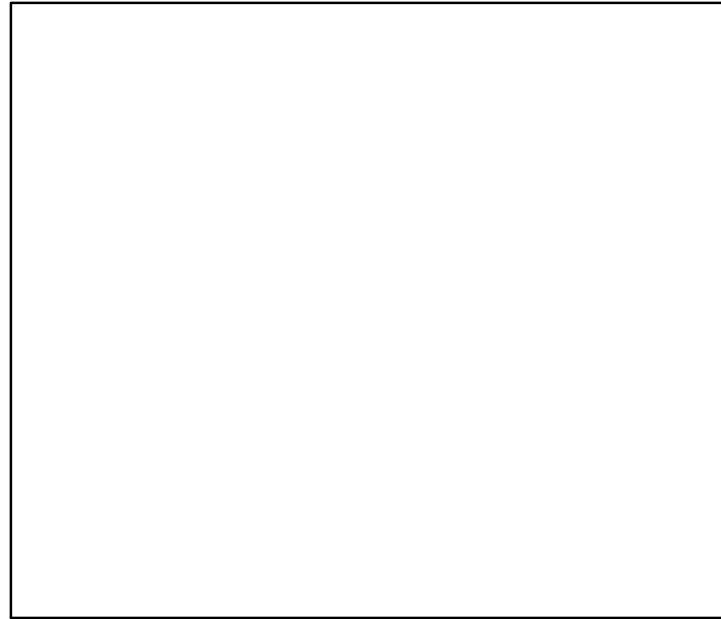
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



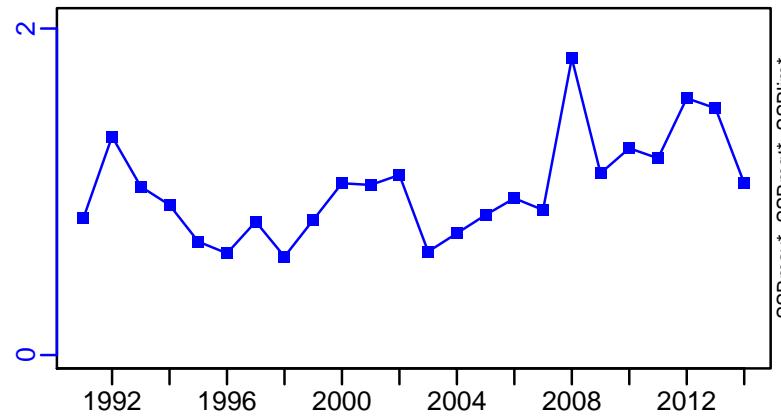
◆ Start Year ♦ End Year \* No Data

Cuckoo ray ICES 3a–4 [CKRAYIIIa–IV]

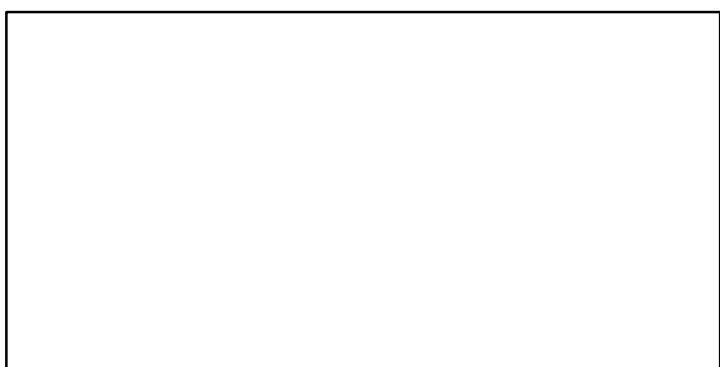
**TB\***



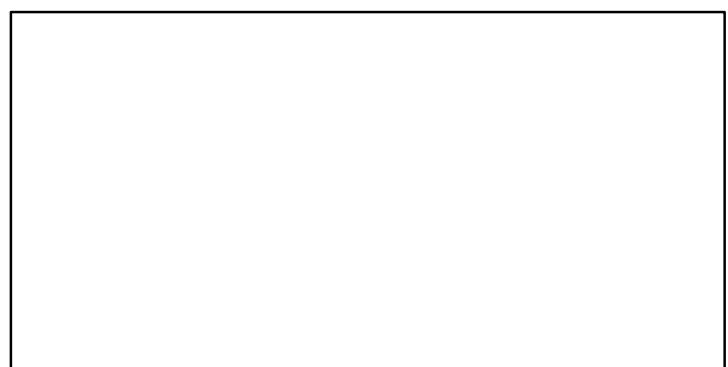
SSB-index (1991–2014–ICESIMP2018)



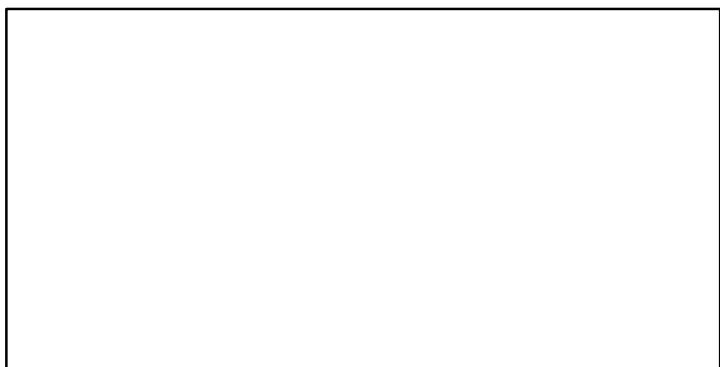
**TN \***



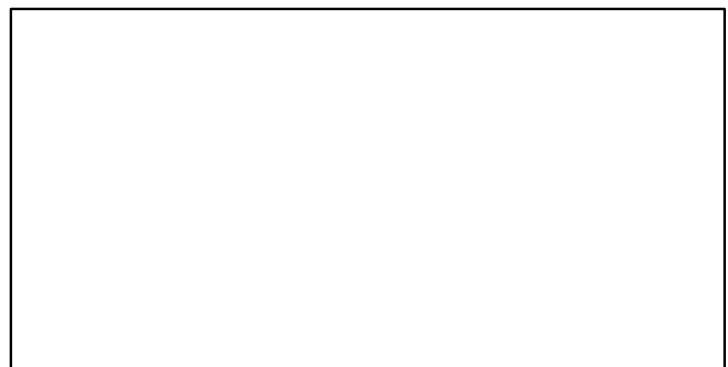
**F\***



**ER\***



**Recruits\***

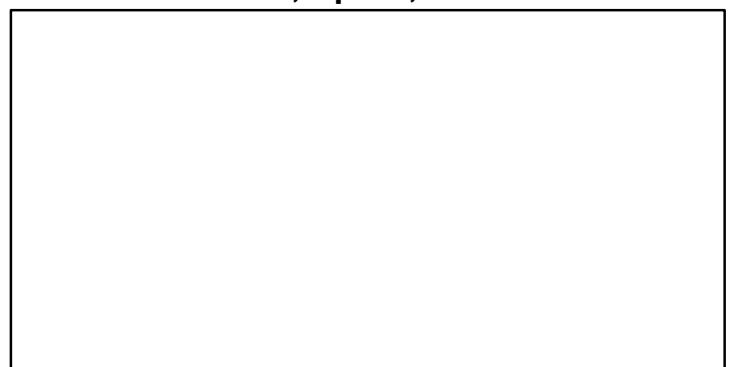
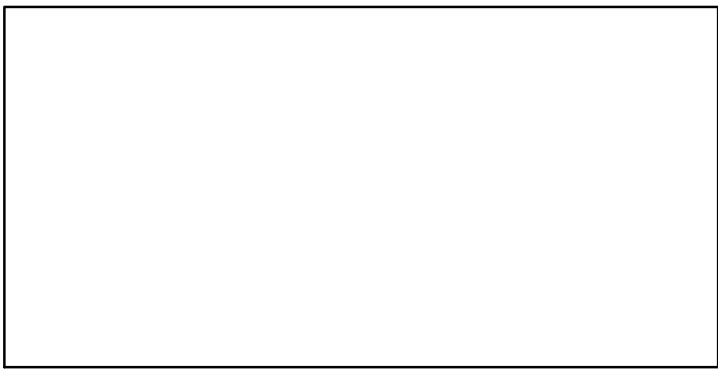
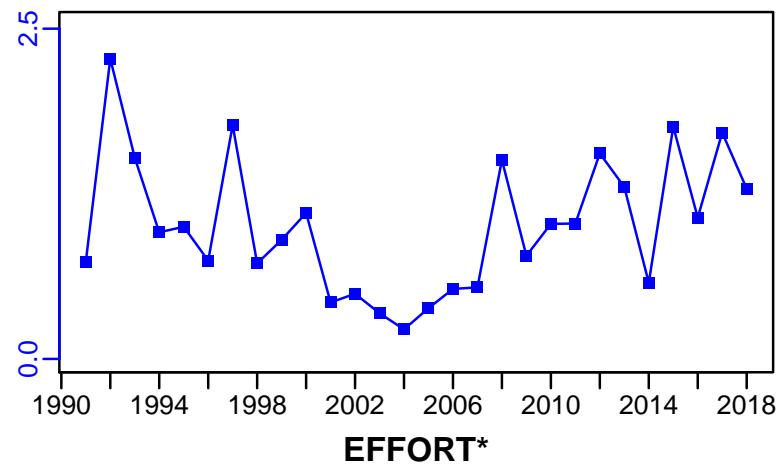
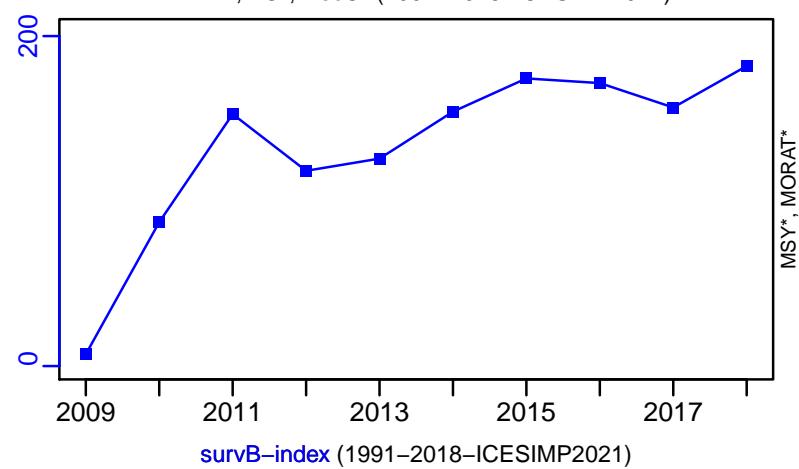


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

Cuckoo ray ICES 3a-4 [CKRAYIIIa-IV]

TL-MT, TC\*, RecC\* (1991–2018–ICESIMP2021)

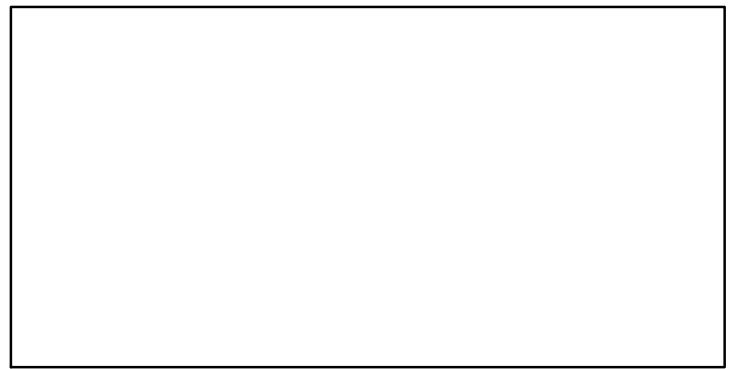
TAC\*, Cpair\*, Cadv\*



CPUE\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

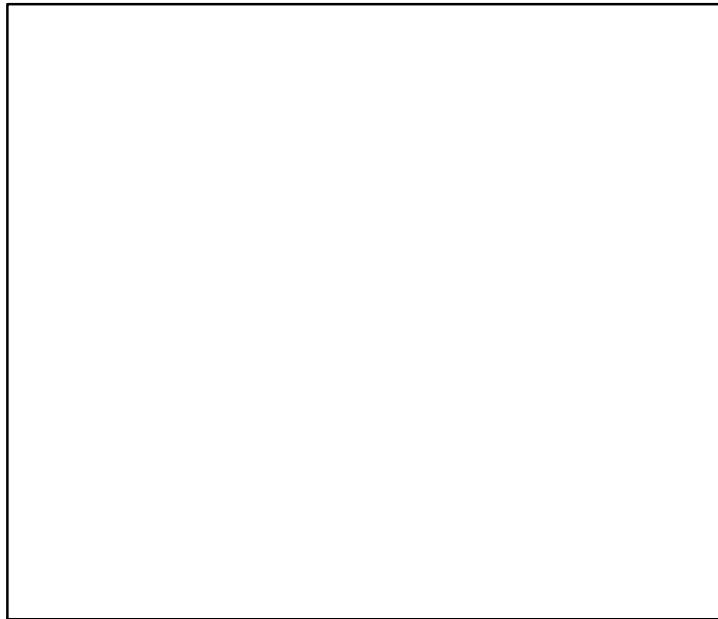
## Cuckoo ray Portugese Waters -East [CKRAYIXa]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Leucoraja naevus                                     |
| <b>Current Assess ID</b>    | WGEF-CKRAYIXa-1998-2015-ICESIMP2018                  |
| <b>Area</b>                 | Portugese Waters -East                               |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2015   |

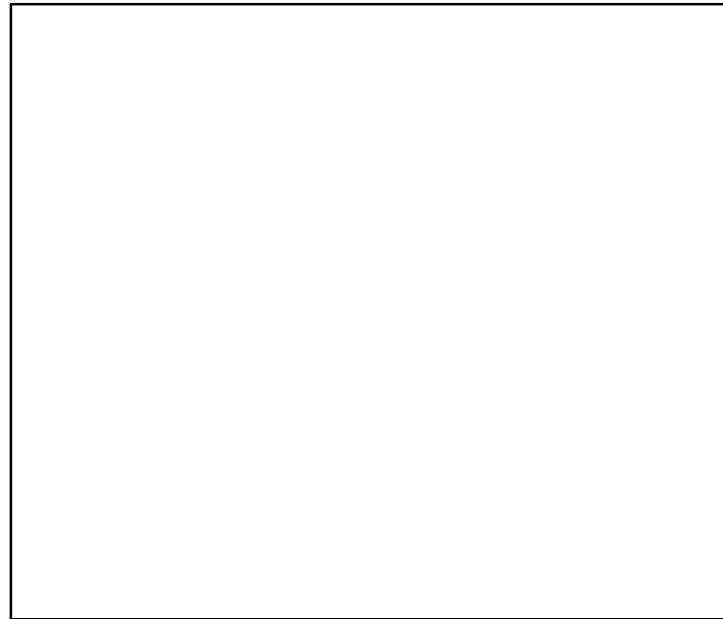
| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |           |           |            |      |     |
|-------------------|-----------|-----------|------------|------|-----|
| Type              | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>         | -         | -         | -          | -    | -   |
| <b>SSB</b>        | SSB-index | 2015      | 2.62       | Both | -   |
| <b>TN</b>         | -         | -         | -          | -    | -   |
| <b>R</b>          | -         | -         | -          | -    | -   |
| <b>F</b>          | -         | -         | -          | -    | -   |
| <b>ER</b>         | -         | -         | -          | -    | -   |
| <b>TC</b>         | -         | -         | -          |      |     |
| <b>TL</b>         | TL-MT     | 2015      | 19         |      |     |
| <b>TB/TBmsy</b>   | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b> | -         | -         | -          |      |     |
| <b>F/Fmsy</b>     | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>   | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>   | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b> | -         | -         | -          |      |     |
| <b>F/Fmgt</b>     | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>   | -         | -         | -          |      |     |

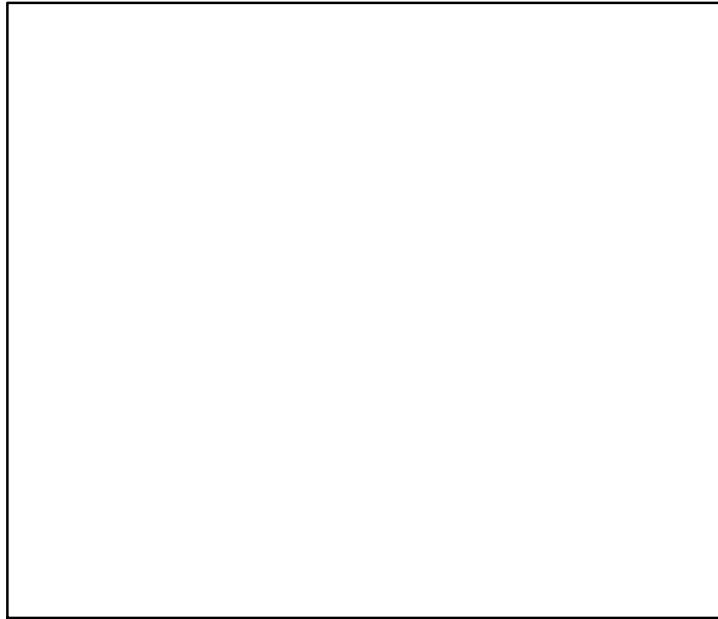
**Kobe MSY\***



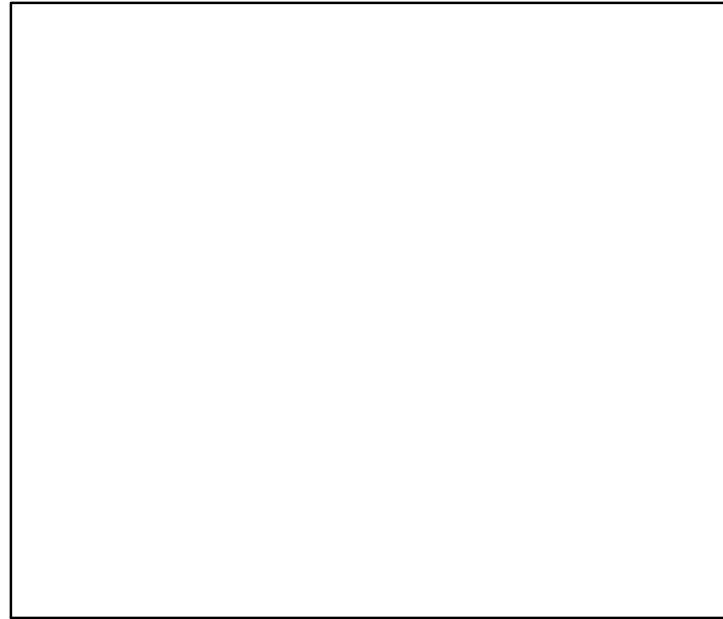
**Kobe MGT\***



**Spawner Recruit\***



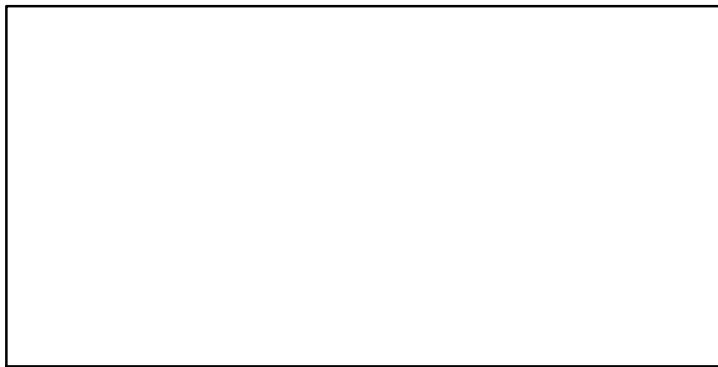
**Production\***



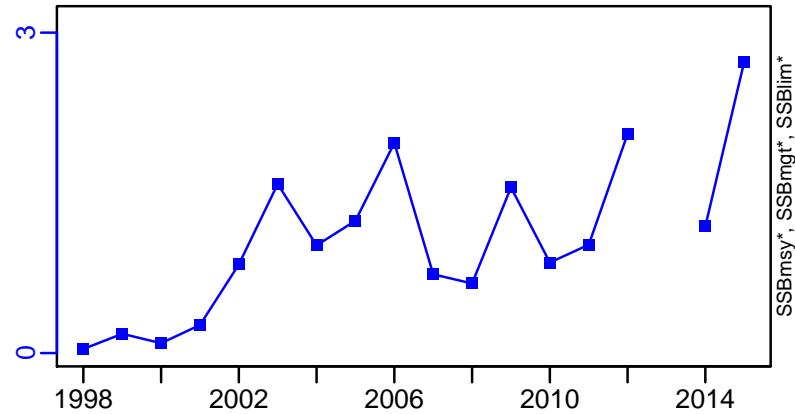
◆ Start Year ◆ End Year \* No Data

Cuckoo ray Portugese Waters –East [CKRAYIXa]

**TB\***



SSB–index (1998–2015–ICESIMP2018)



SSBm<sup>\*</sup>, SSBmgt<sup>\*</sup>, SSBlim<sup>\*</sup>

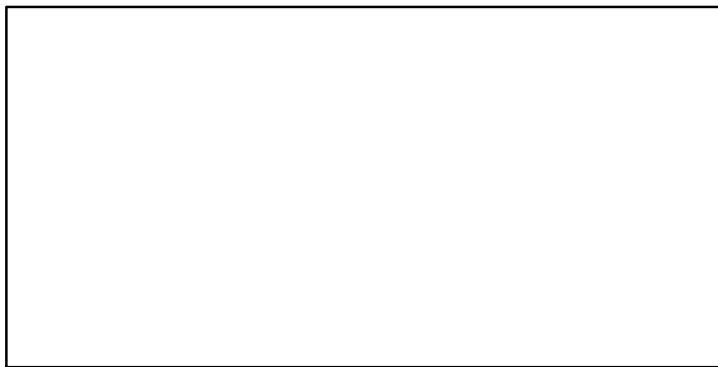
**TN \***



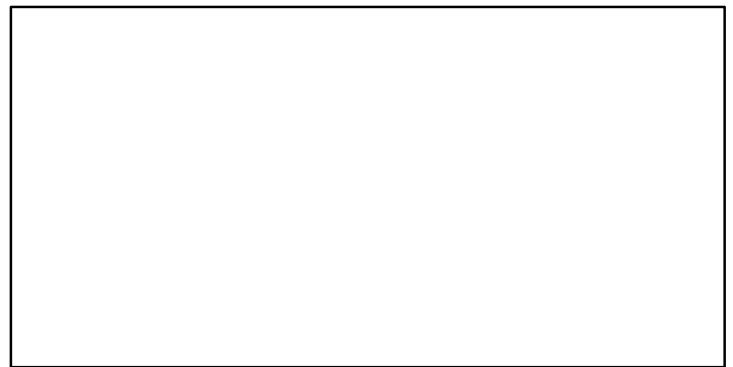
**F\***



**ER\***



**Recruits\***

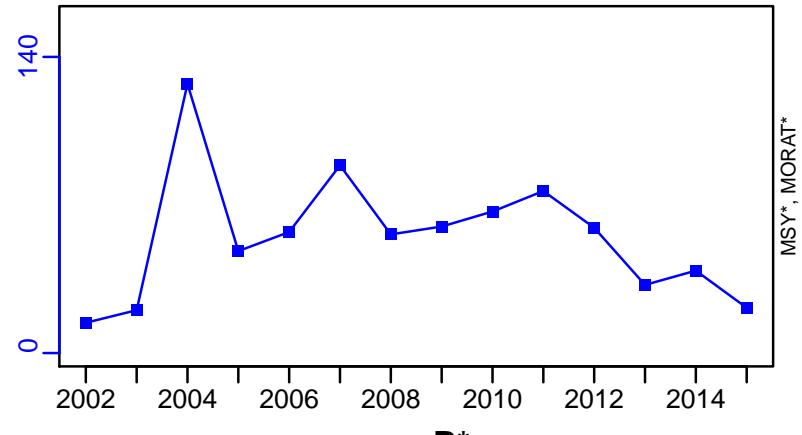


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

Cuckoo ray Portuguese Waters –East [CKRAYIXa]

TL–MT, TC\*, RecC\* (1998–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



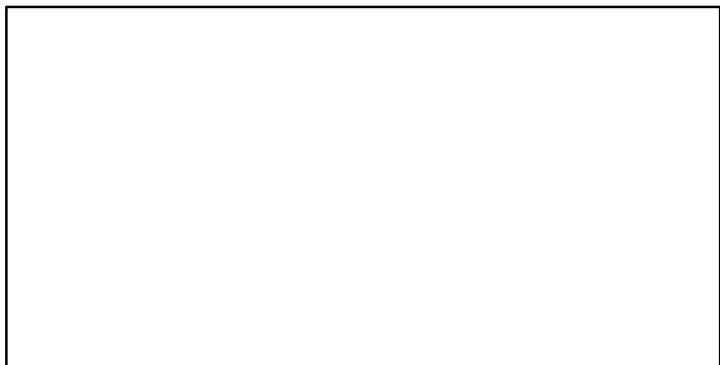
survB\*



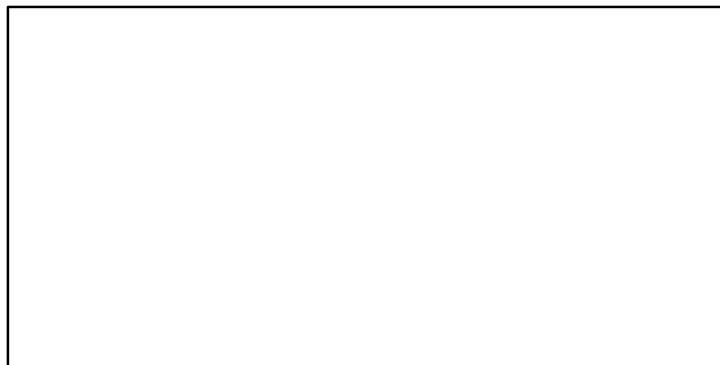
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Cuckoo ray Bay of Biscay -South [CKRAYVIIIC]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Leucoraja naevus                                     |
| <b>Current Assess ID</b>    | WGEF-CKRAYVIIIC-1999-2015-ICESIMP2018                |
| <b>Area</b>                 | Bay of Biscay -South                                 |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2015   |

| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |           |           |            |      |     |
|-------------------|-----------|-----------|------------|------|-----|
| Type              | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>         | -         | -         | -          | -    | -   |
| <b>SSB</b>        | SSB-index | 2015      | 0.309      | Both | -   |
| <b>TN</b>         | -         | -         | -          | -    | -   |
| <b>R</b>          | -         | -         | -          | -    | -   |
| <b>F</b>          | -         | -         | -          | -    | -   |
| <b>ER</b>         | -         | -         | -          | -    | -   |
| <b>TC</b>         | -         | -         | -          |      |     |
| <b>TL</b>         | TL-MT     | 2015      | 15         |      |     |
| <b>TB/TBmsy</b>   | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b> | -         | -         | -          |      |     |
| <b>F/Fmsy</b>     | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>   | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>   | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b> | -         | -         | -          |      |     |
| <b>F/Fmgt</b>     | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>   | -         | -         | -          |      |     |

**Kobe MSY\***

**Kobe MGT\***

**Spawner Recruit\***

**Production\***

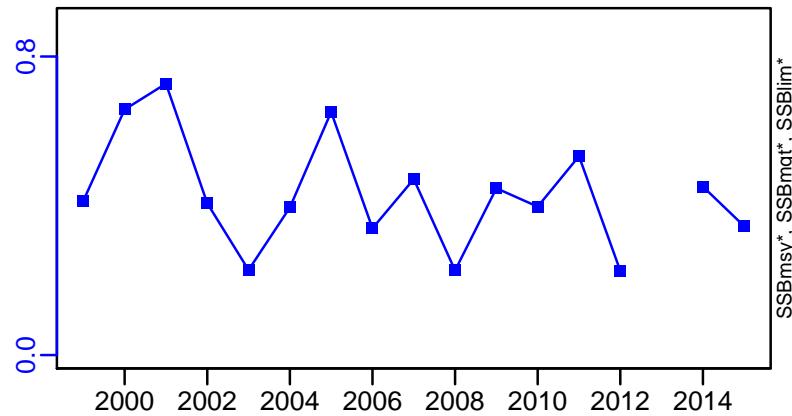
◆ Start Year ♦ End Year \* No Data

Cuckoo ray Bay of Biscay –South [CKRAYVIIIC]

**TB\***

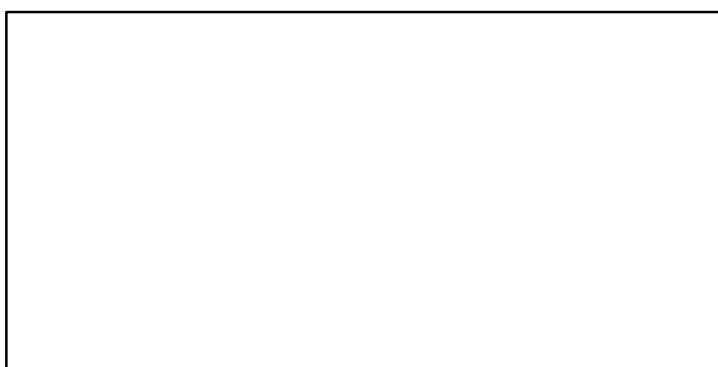


SSB–index (1999–2015–ICESIMP2018)

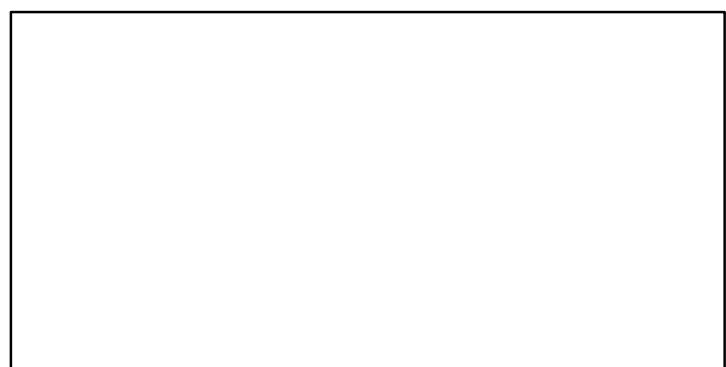


SSBm<sup>\*</sup>, SSBmgt<sup>\*</sup>, SSBlim<sup>\*</sup>

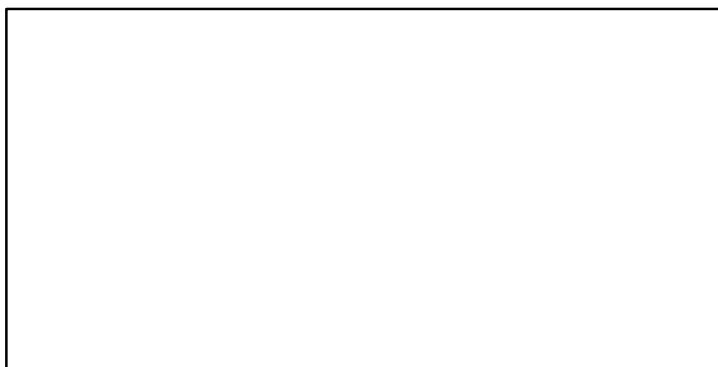
**TN \***



**F\***



**ER\***



**Recruits\***

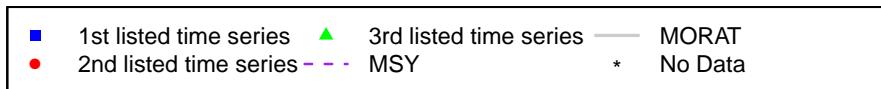
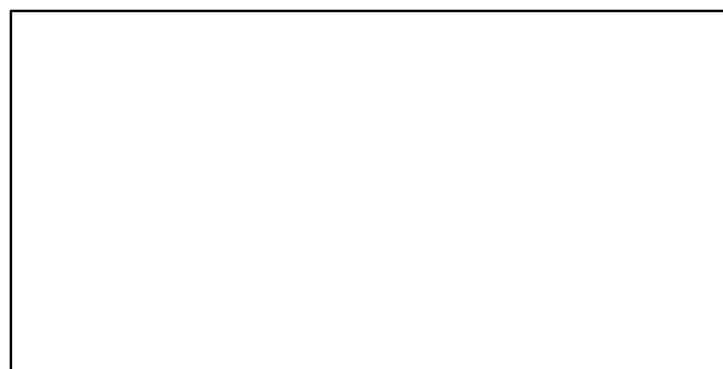
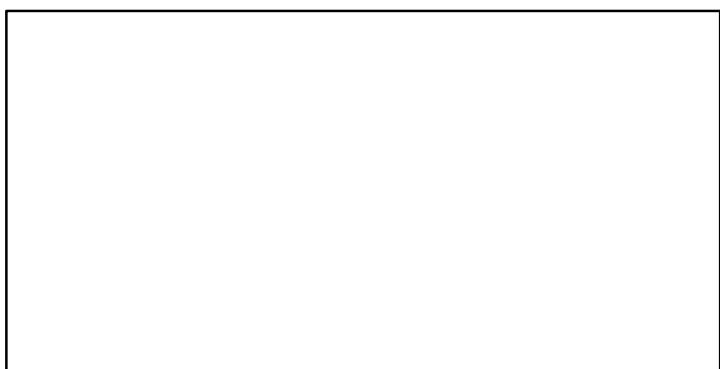
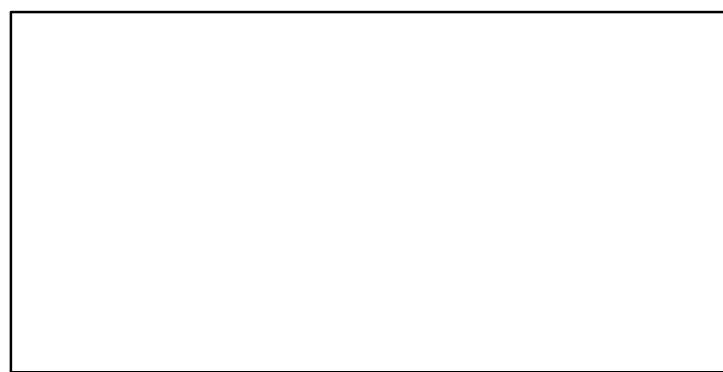
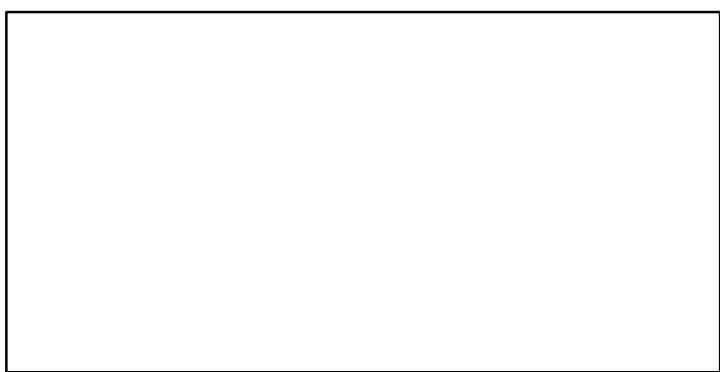
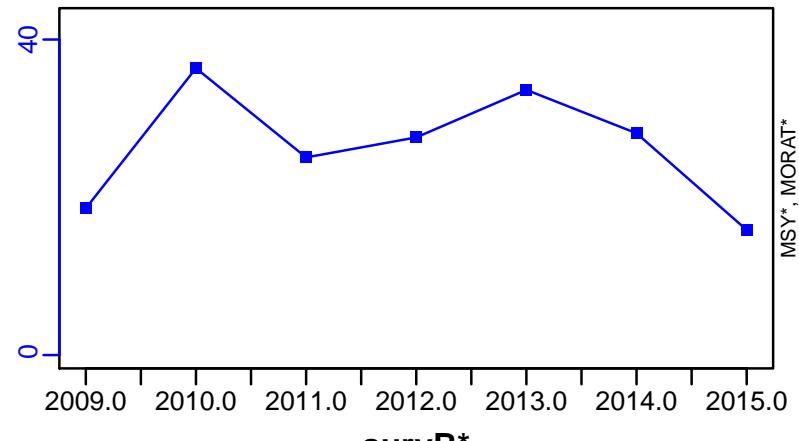


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

Cuckoo ray Bay of Biscay –South [CKRAYVIIIC]

TL–MT, TC\*, RecC\* (1999–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



## Cuckoo ray ICES 6-7 [CKRAYVI-VII]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Leucoraja naevus                                     |
| <b>Current Assess ID</b>    | WGEF-CKRAYVI-VII-2005-2015-ICESIMP2018               |
| <b>Area</b>                 | ICES 6-7   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2015   |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2015      | 1.51       | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | -         | -         | -          |      |     |
| <b>TL</b>          | TL-MT     | 2015      | 3360       |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

**Kobe MSY\***

**Kobe MGT\***

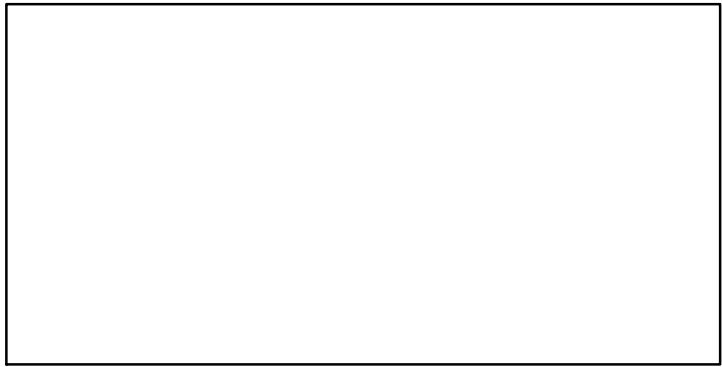
**Spawner Recruit\***

**Production\***

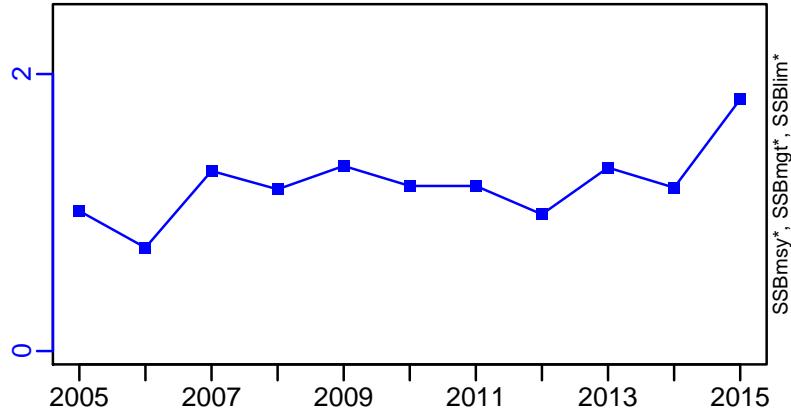
◆ Start Year ♦ End Year \* No Data

Cuckoo ray ICES 6–7 [CKRAYVI–VII]

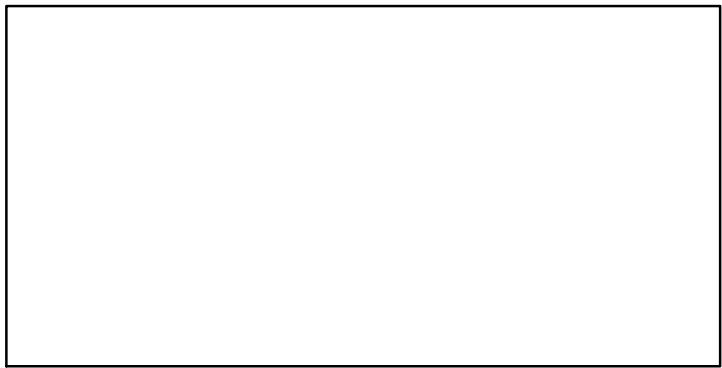
**TB\***



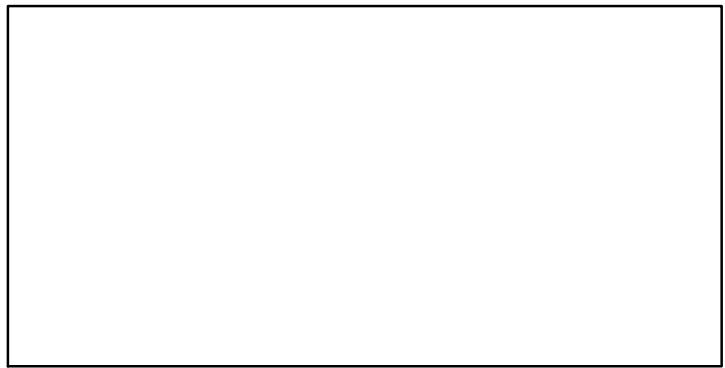
SSB–index (2005–2015–ICESIMP2018)



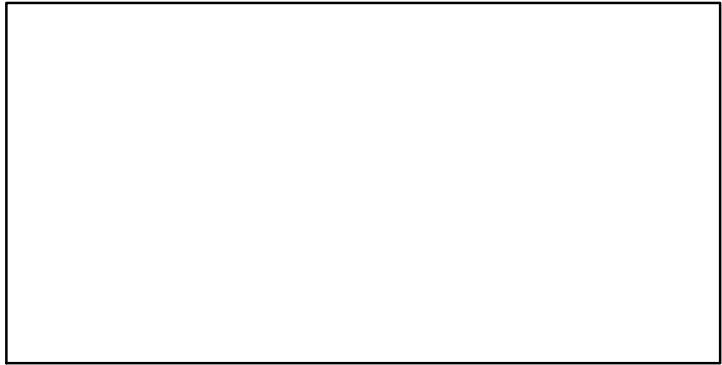
**TN \***



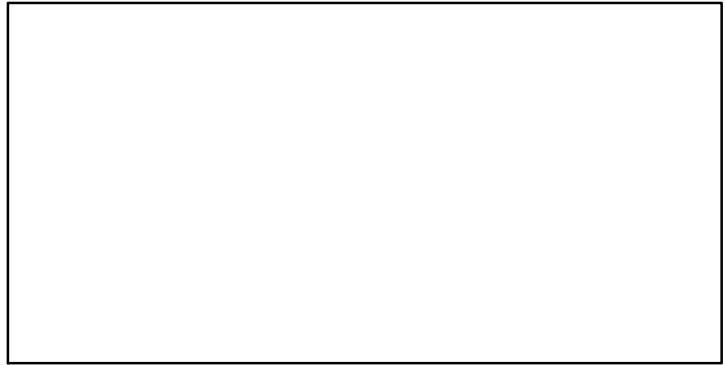
**F\***



**ER\***



**Recruits\***

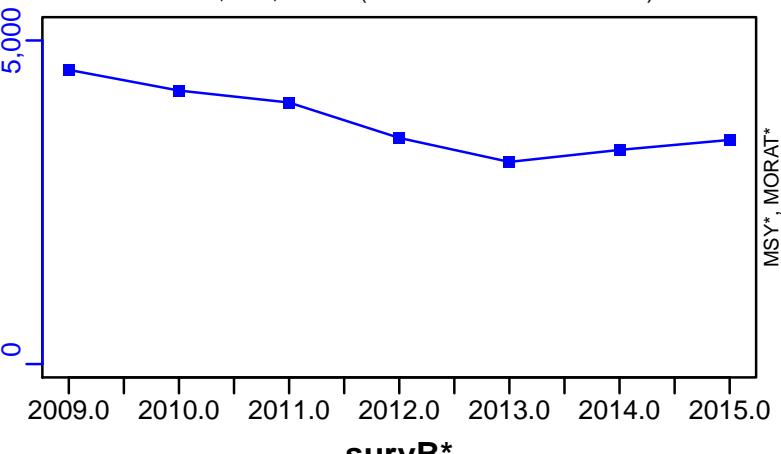


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

Cuckoo ray ICES 6–7 [CKRAYVI–VII]

TL–MT, TC\*, RecC\* (2005–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



MSY\*, MORAT\*

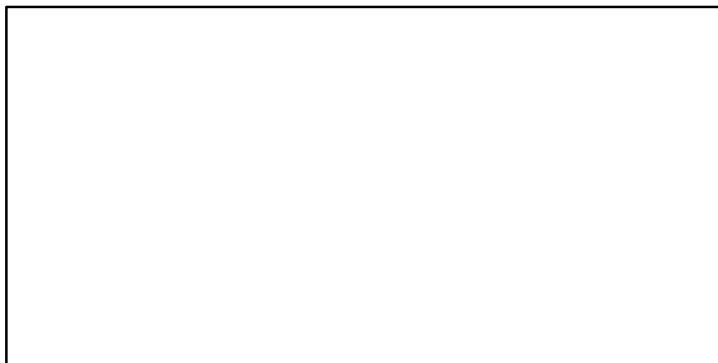
survB\*



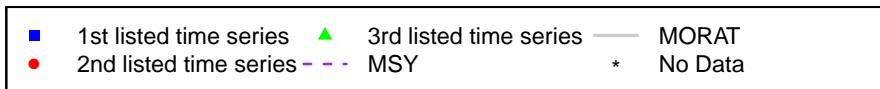
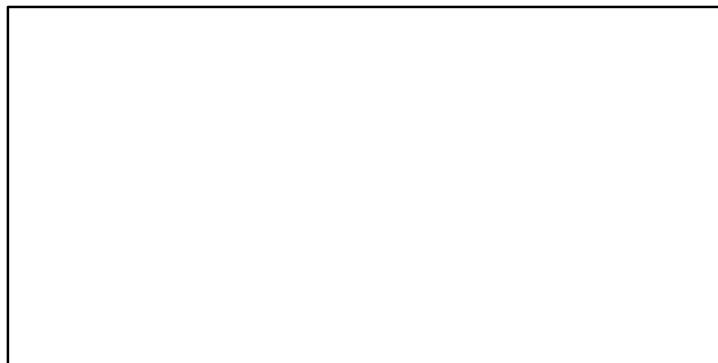
CPUE\*



EFFORT\*



CdivMSY\*



## Atlantic cod Western Baltic [CDBA2224]

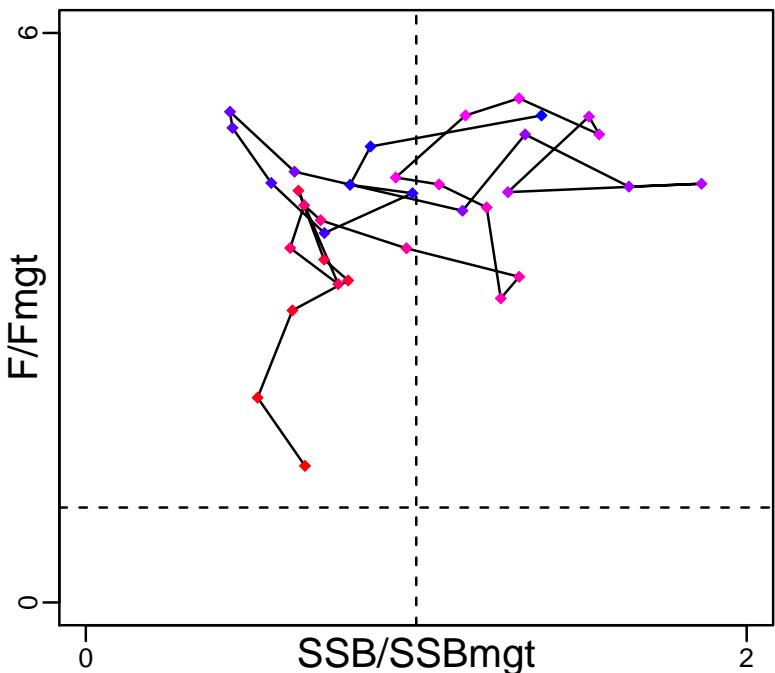
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Gadus morhua   |
| <b>Current Assess ID</b>    | WGBFAS-CDBA2224-1984-2019-ICESIMP2021                |
| <b>Area</b>                 | Western Baltic                                       |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Baltic Fisheries Assessment Working Group            |
| <b>Asmts in RAM</b>         | 2012, 2013, 2014, 2019, 2015, 2016, 2016, 2017, 2018 |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2018             | 0.26         |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019             | 21,876       |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019             | 0.26         |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | MSY-MT    | 2012             | 23,000       |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | SSBlim-MT | 2018             | 27,400       |
| <b>Flim</b>             | Flim-1/yr | 2018             | 1.01         |
| <b>ERlim</b>            | -         | -                | -            |

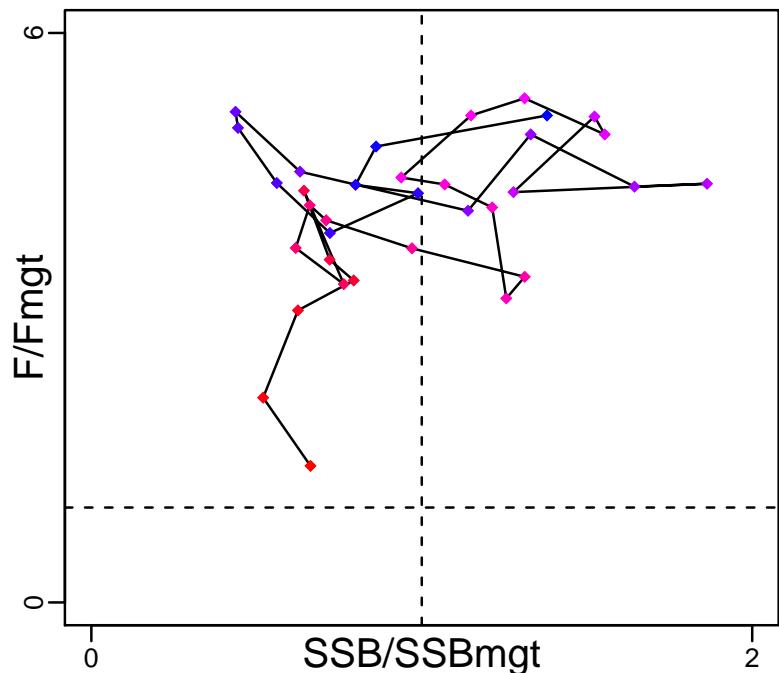
| <b>Time Series</b> |                  |                  |                   |            |            |  |
|--------------------|------------------|------------------|-------------------|------------|------------|--|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |  |
| <b>TB</b>          | TB-MT            | 2019             | 22,710            | -          | -          |  |
| <b>SSB</b>         | SSB-MT           | 2019             | 21,297            | -          | -          |  |
| <b>TN</b>          | -                | -                | -                 | -          | -          |  |
| <b>R</b>           | R-E00            | 2019             | 2226              | -          | 1          |  |
| <b>F</b>           | F-1/yr           | 2019             | 0.374             | -          | 3 to 5     |  |
| <b>ER</b>          | ER-calc-ratio    | 2019             | 0.29              | -          | -          |  |
| <b>TC</b>          | TC-MT            | 2019             | 5312              |            |            |  |
| <b>TL</b>          | TL-MT            | 2019             | 3546              |            |            |  |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |  |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2018             | 2.312             |            |            |  |
| <b>ER/ERmsy</b>    | -                | -                | -                 |            |            |  |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019             | 0.974             |            |            |  |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019             | 1.438             |            |            |  |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |  |

Atlantic cod Western Baltic [CODBA2224]

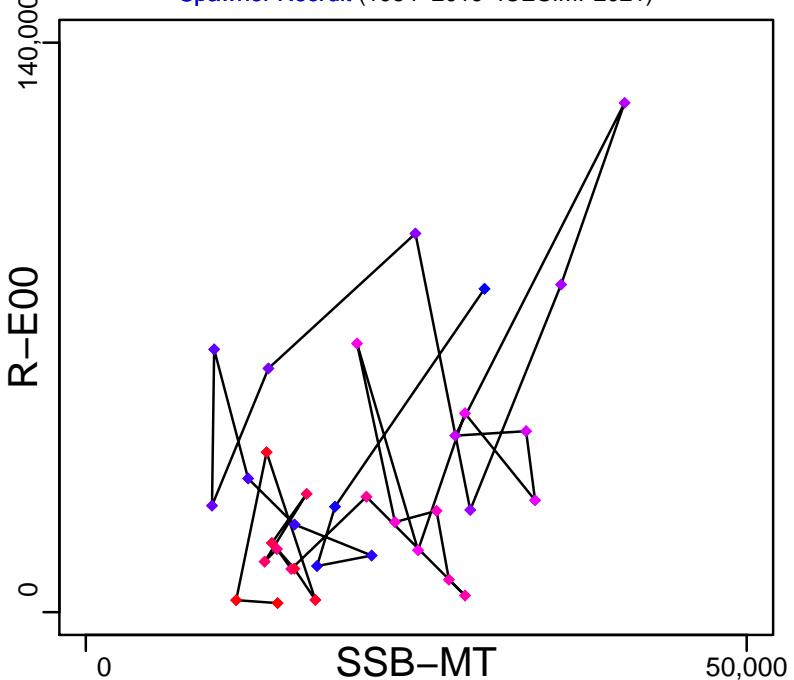
Kobe MSYpref (1984–2019–ICESIMP2021)



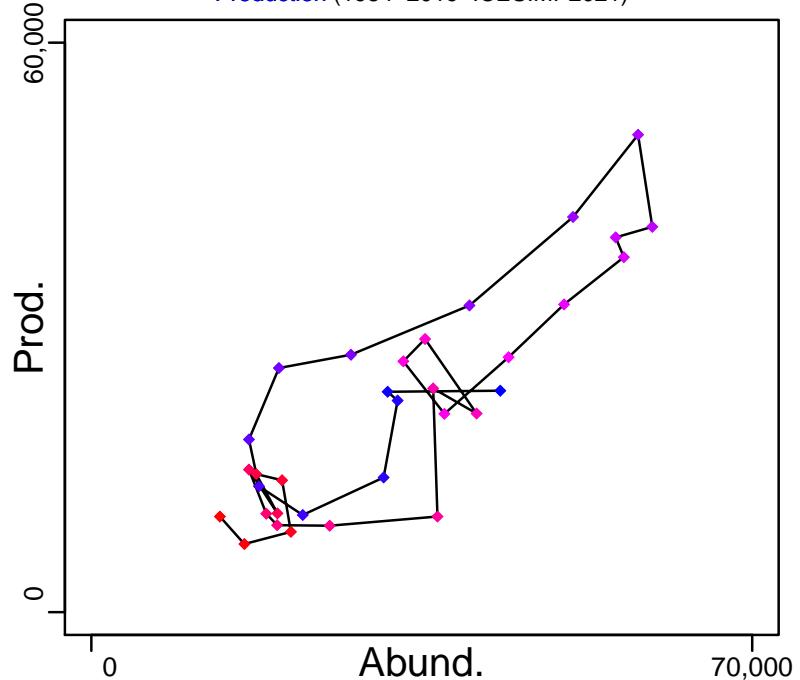
Kobe MGTpref (1984–2019–ICESIMP2021)



Spawner Recruit (1984–2019–ICESIMP2021)



Production (1984–2019–ICESIMP2021)

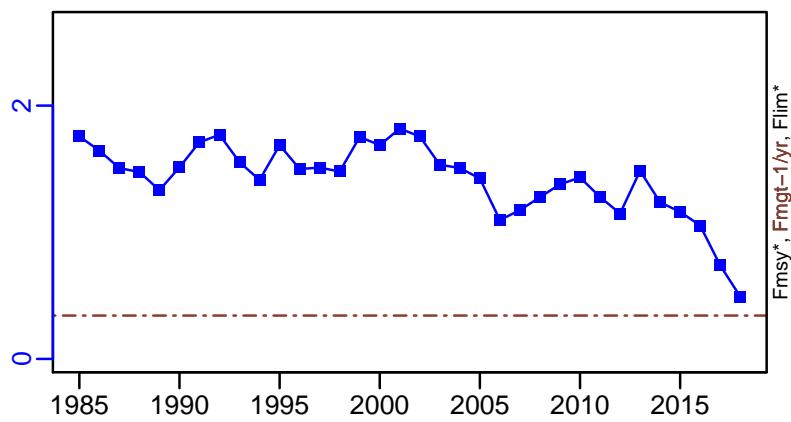
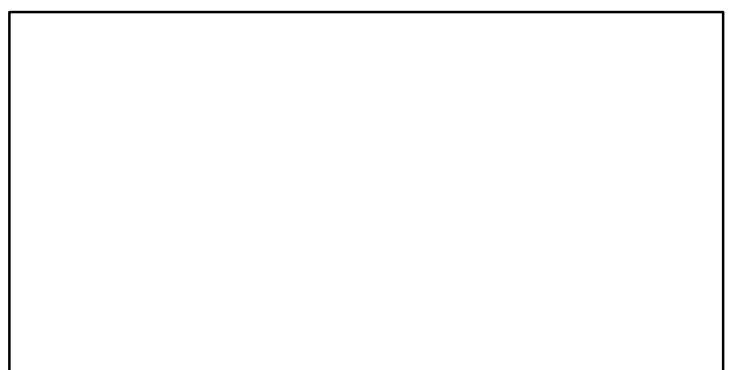
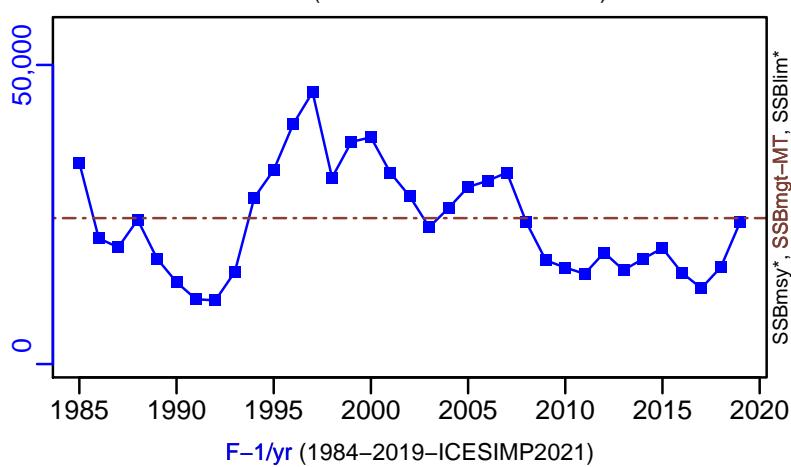
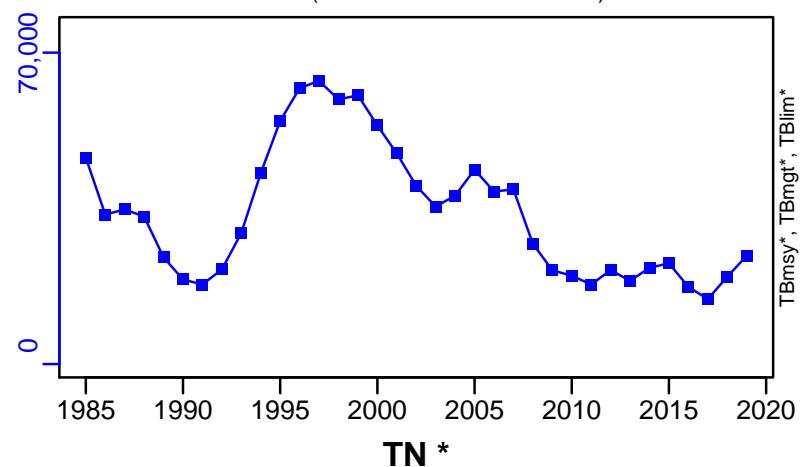


◆ Start Year   ◆ End Year   \* No Data

### Atlantic cod Western Baltic [CODBA2224]

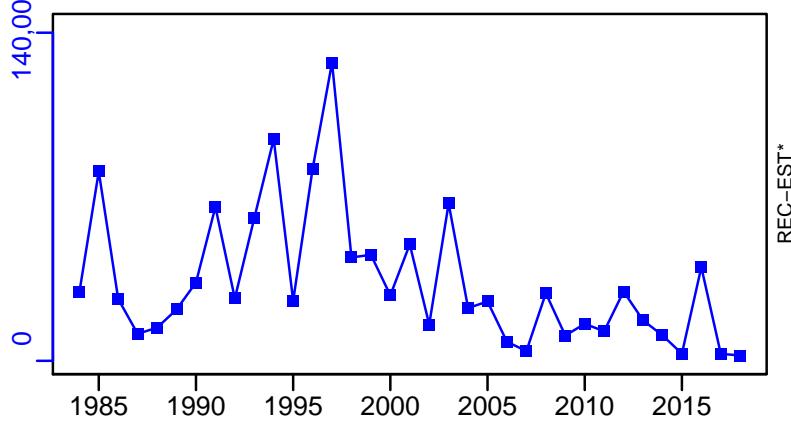
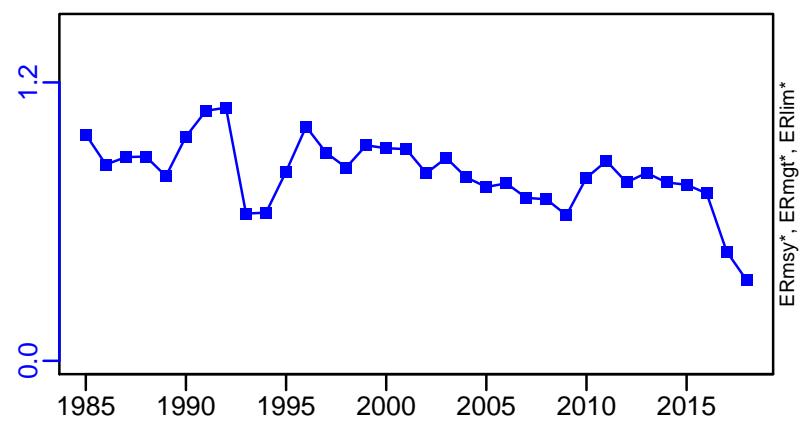
TB-MT (1984–2019–ICESIMP2021)

SSB-MT (1984–2019–ICESIMP2021)



ER-calc-ratio (1984–2019–ICESIMP2021)

R-E00 (1984–2019–ICESIMP2021)

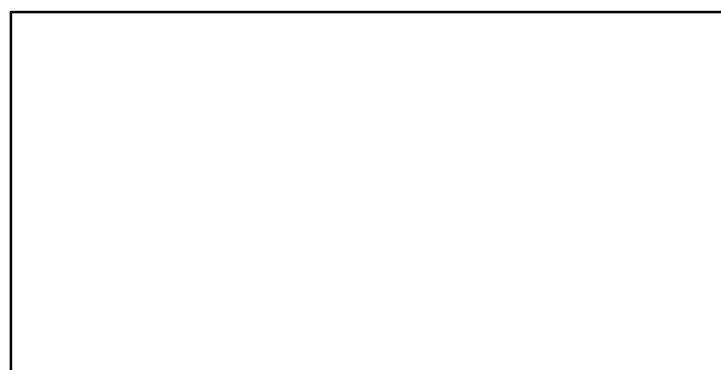
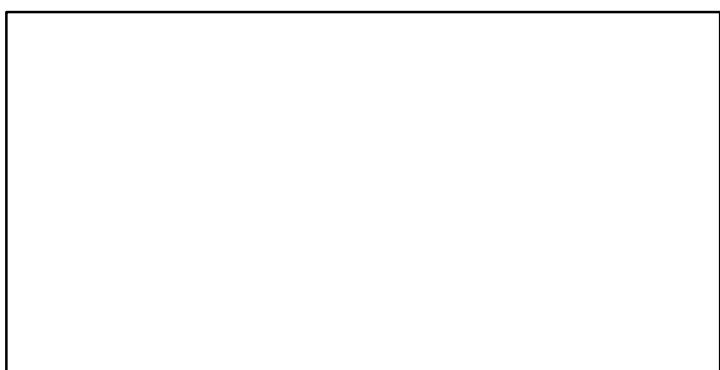
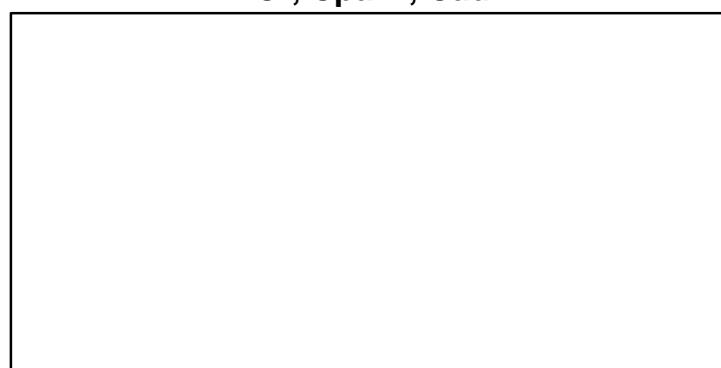
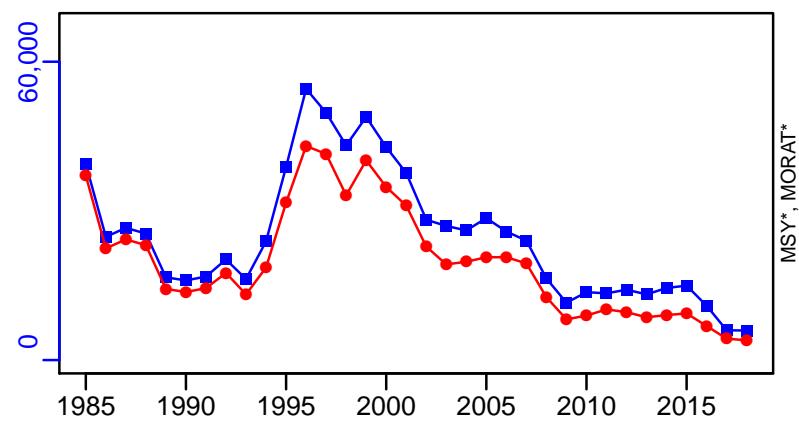


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | --- Lim BRP  | * No Data |

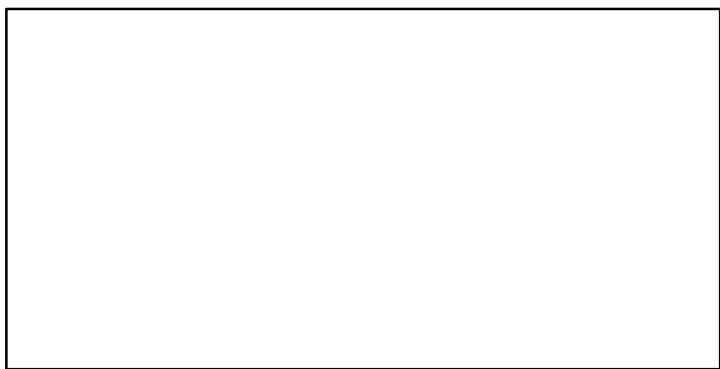
Atlantic cod Western Baltic [CODBA2224]

TC-MT, TL-MT, RecC\* (1984–2019–ICESIMP2021)

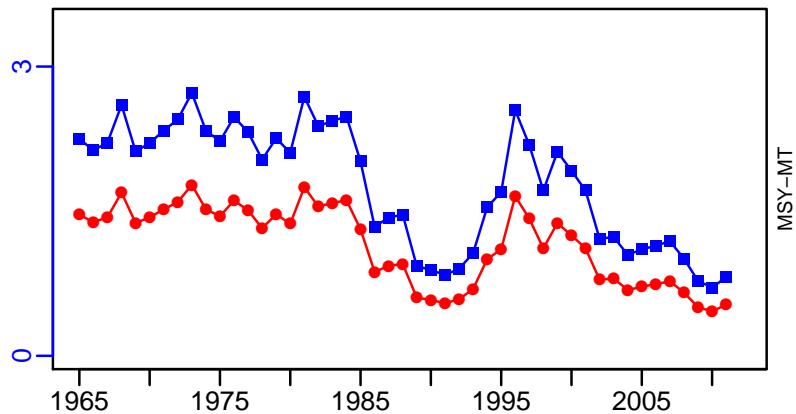
TAC\*, Cpair\*, Cadv\*



**EFFORT\***



TL-MT/MSY-MT, CdiveMEANC-ratio, (1965–2012–CHING)



|                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Atlantic cod Eastern Baltic [CDBA2532]

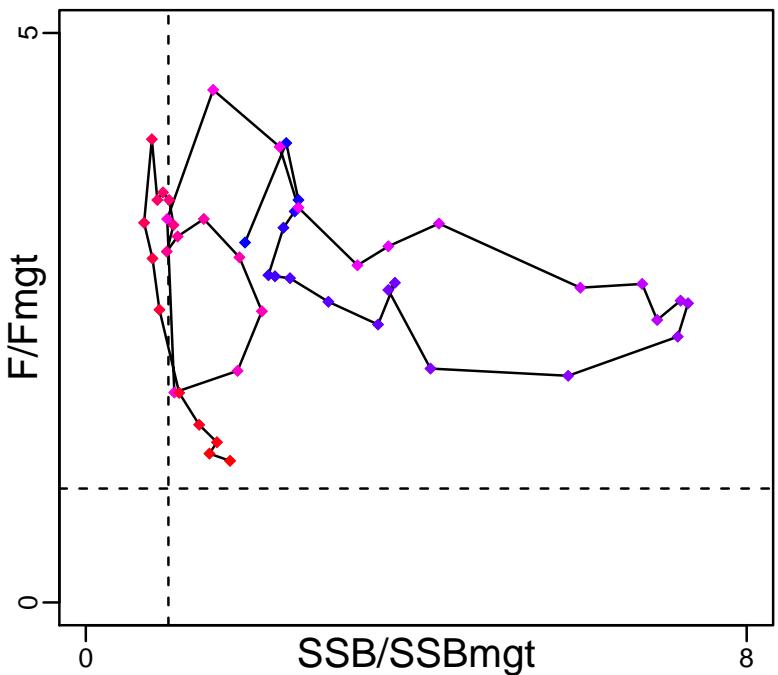
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Gadus morhua   |
| <b>Current Assess ID</b>    | WGBFAS-CDBA2532-1946-2019-ICESIMP2021                |
| <b>Area</b>                 | Eastern Baltic                                       |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Baltic Fisheries Assessment Working Group            |
| <b>Asmts in RAM</b>         | 2019, 2013, 2016, 2016, 2017, 2012                   |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2012             | 0.3          |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2013             | 88,200       |
| <b>Fmgt</b>             | Fmgt-1/yr | 2013             | 0.3          |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | SSBlim-MT | 2013             | 63,000       |
| <b>Flim</b>             | -         | -                | -            |
| <b>ERlim</b>            | -         | -                | -            |

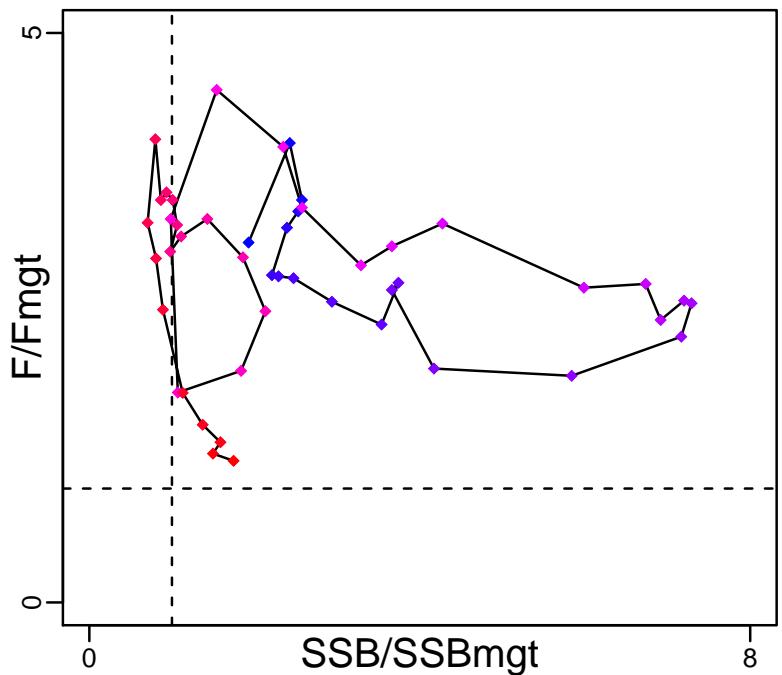
| <b>Time Series</b> |                  |                  |                   |            |            |  |
|--------------------|------------------|------------------|-------------------|------------|------------|--|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |  |
| <b>TB</b>          | TB-MT            | 2013             | 233,000           | Both       | -          |  |
| <b>SSB</b>         | SSB-MT           | 2019             | 66,412            | -          | -          |  |
| <b>TN</b>          | -                | -                | -                 | -          | -          |  |
| <b>R</b>           | R-E00            | 2019             | 2,358,730         | -          | 0          |  |
| <b>F</b>           | F-1/yr           | 2019             | 0.21              | -          | 4 to 6     |  |
| <b>ER</b>          | ER-ratio         | 2016             | 0.344             | -          | -          |  |
| <b>TC</b>          | TC-MT            | 2017             | 30,900            |            |            |  |
| <b>TL</b>          | TL-MT            | 2019             | 15,907            |            |            |  |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |  |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2012             | 0.857             |            |            |  |
| <b>ER/ERmsy</b>    | -                | -                | -                 |            |            |  |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2013             | 2.041             |            |            |  |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2013             | 1.243             |            |            |  |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |  |

Atlantic cod Eastern Baltic [CODBA2532]

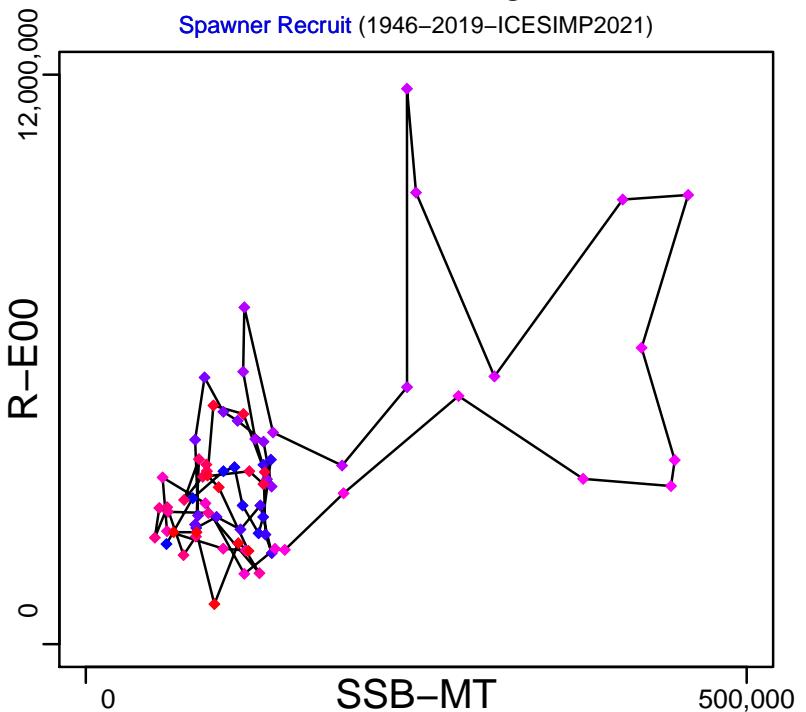
Kobe MSYpref (1964–2013–ICESIMP2016)



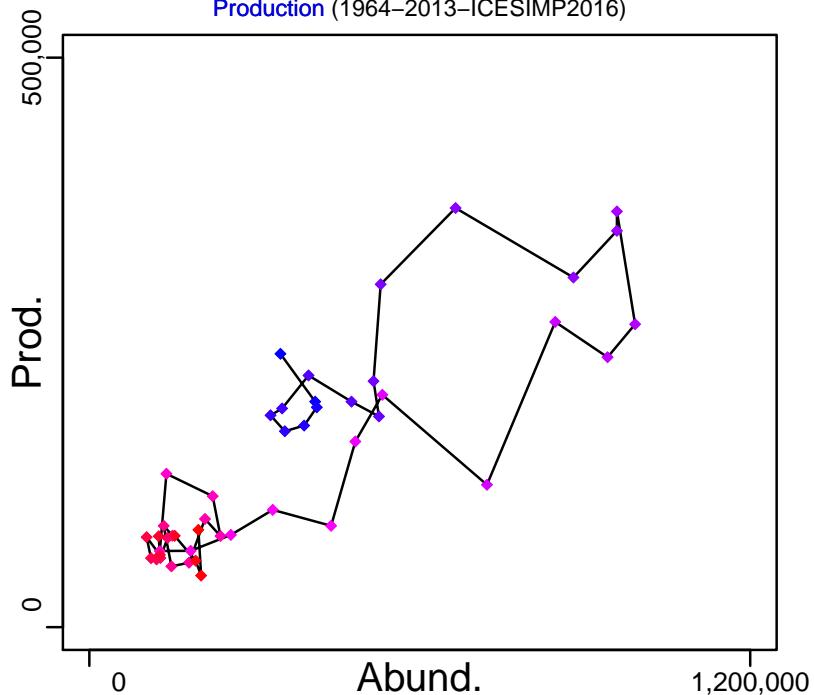
Kobe MGTpref (1964–2013–ICESIMP2016)



Spawner Recruit (1946–2019–ICESIMP2021)



Production (1964–2013–ICESIMP2016)

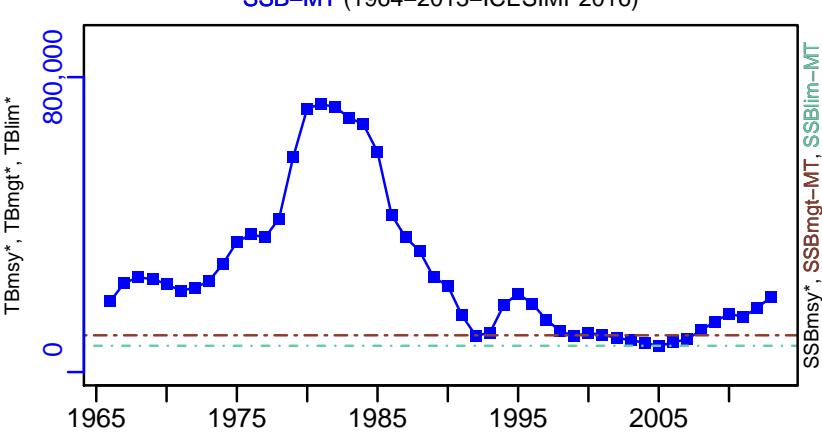
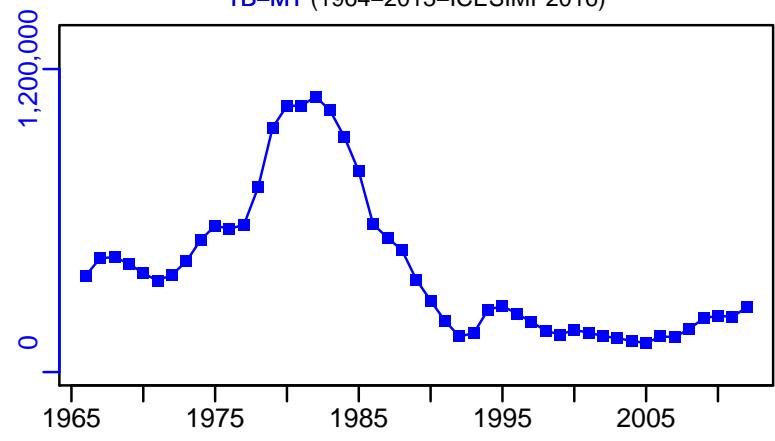


◆ Start Year   ◆ End Year   \* No Data

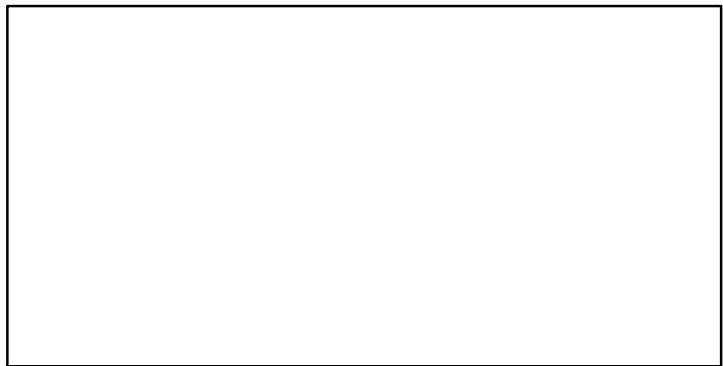
### Atlantic cod Eastern Baltic [CODBA2532]

TB-MT (1964–2013–ICESIMP2016)

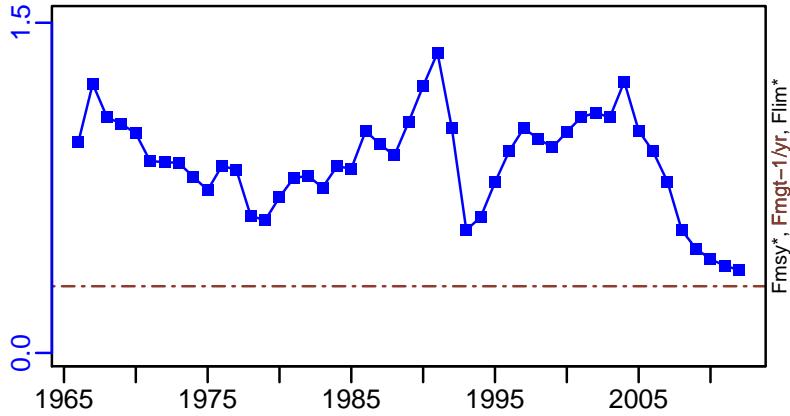
SSB-MT (1964–2013–ICESIMP2016)



TN \*

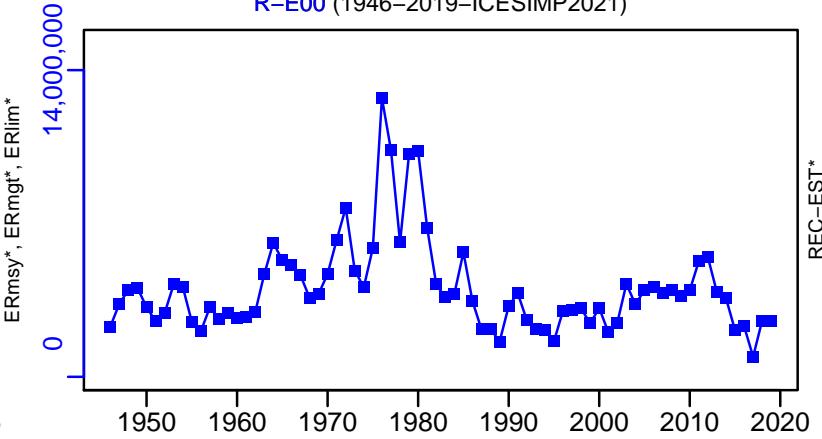
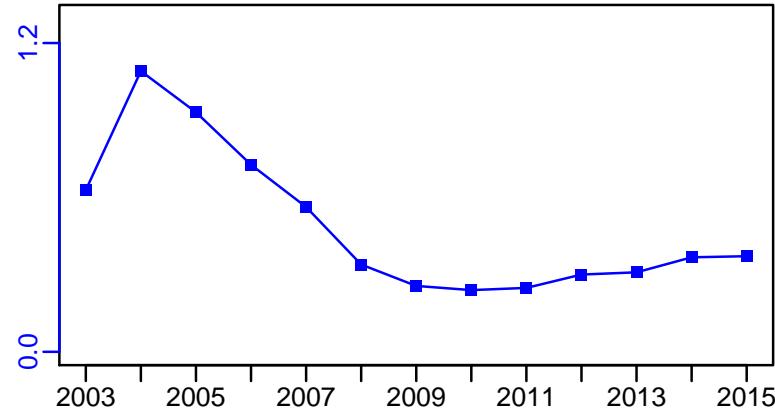


F-1/yr (1964–2013–ICESIMP2016)



ER-ratio (1965–2016–ICESIMP2016)

R-E00 (1946–2019–ICESIMP2021)

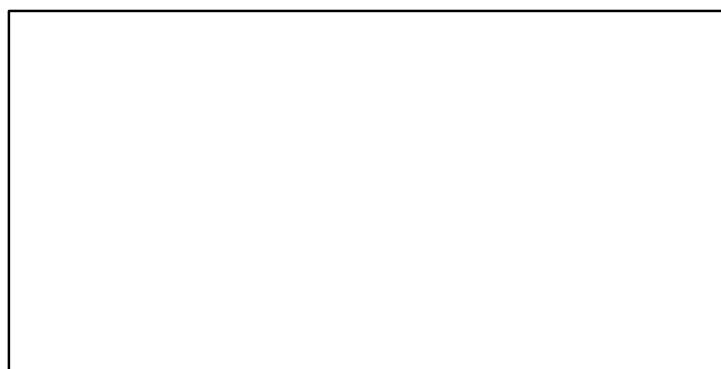
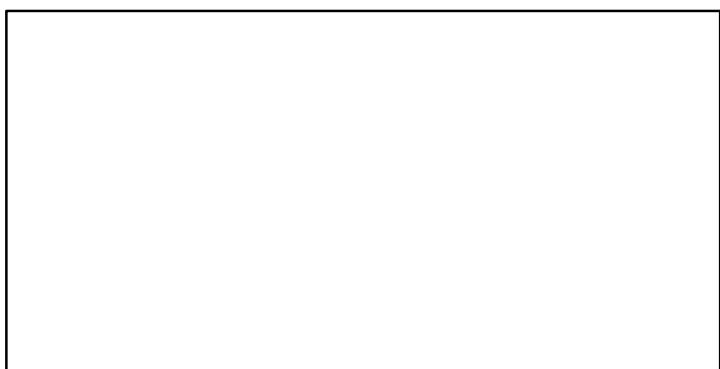
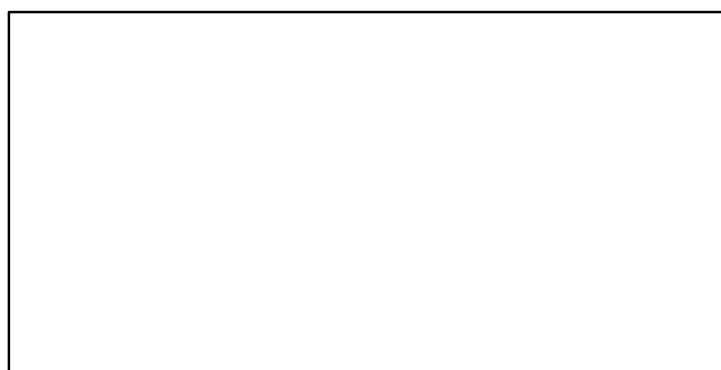
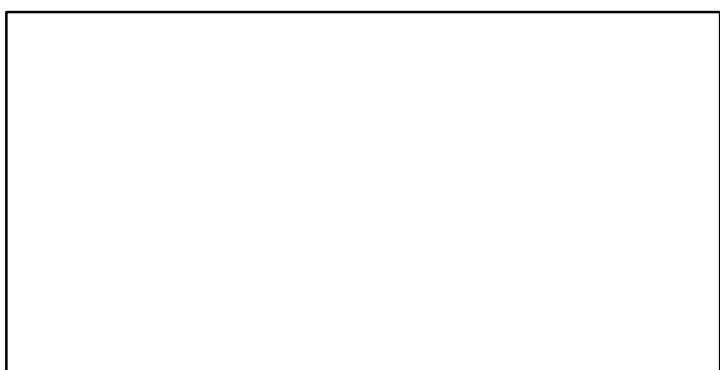
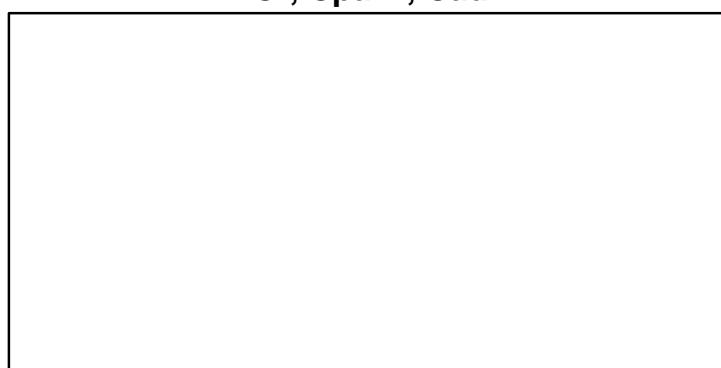
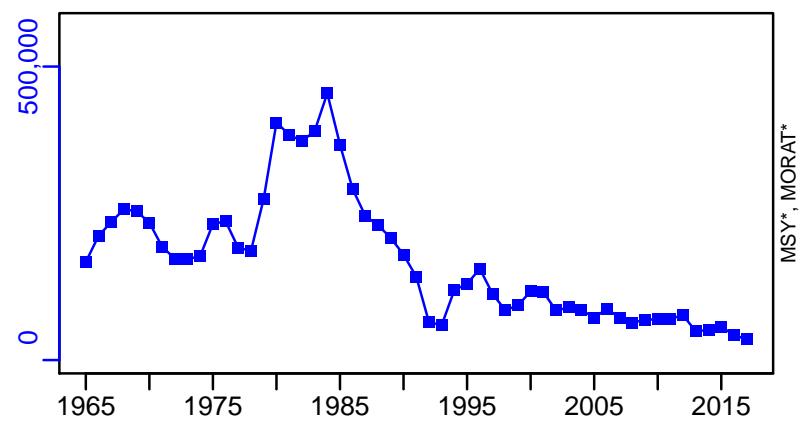


|                      |               |           |
|----------------------|---------------|-----------|
| ■ Listed time series | — Target BRP  | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP | * No Data |

Atlantic cod Eastern Baltic [CDBA2532]

TC-MT, TL\*, RecC\* (1965–2017–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

### Atlantic cod ICES 3a(west)-4-7d [CODIIIaW-IV-VIId]

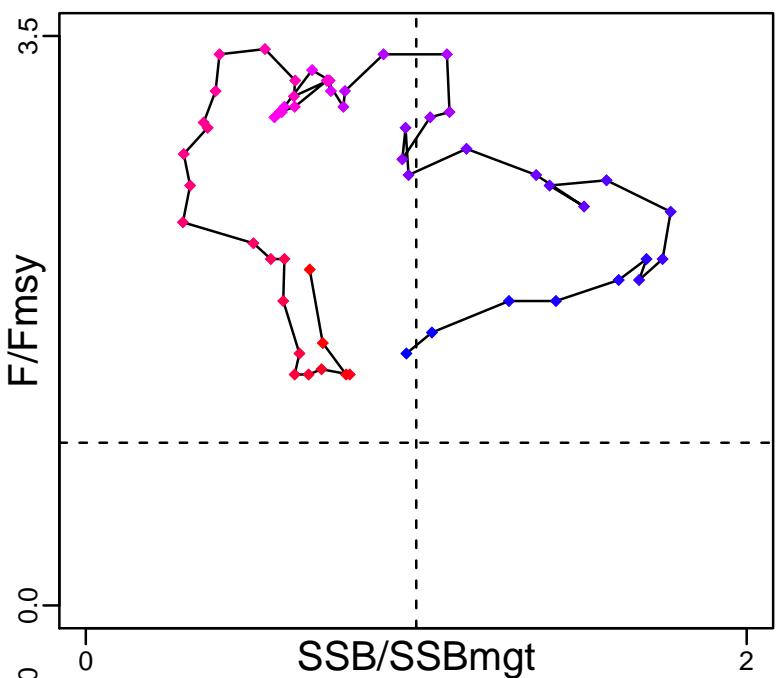
| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Gadus morhua  |
| <b>Current Assess ID</b>    | WGNSSK-CODIIIaW-IV-VIId-1962-2019-ICESIMP2021                                     |
| <b>Area</b>                 | ICES 3a(west)-4-7d  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2011, 2013, 2014, 2015, 2016, 2016, 2017, 2018, 2019                              |

| <b>Reference Points</b> |           |           |         |
|-------------------------|-----------|-----------|---------|
| Type                    | ID        | Asmt Year | Value   |
| <b>TBmsy</b>            | -         | -         | -       |
| <b>SSBmsy</b>           | -         | -         | -       |
| <b>Fmsy</b>             | Fmsy-1/yr | 2019      | 0.31    |
| <b>ERmsy</b>            | -         | -         | -       |
| <b>TBmgt</b>            | -         | -         | -       |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019      | 150,000 |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019      | 0.31    |
| <b>ERmgt</b>            | -         | -         | -       |
| <b>TB0</b>              | -         | -         | -       |
| <b>SSB0</b>             | -         | -         | -       |
| <b>MSY</b>              | -         | -         | -       |
| <b>M</b>                | -         | -         | -       |
| <b>TBlim</b>            | TBlim-MT  | 2011      | 70,000  |
| <b>SSBlim</b>           | SSBlim-MT | 2018      | 107,000 |
| <b>Flim</b>             | Flim-1/yr | 2018      | 0.54    |
| <b>ERlim</b>            | -         | -         | -       |

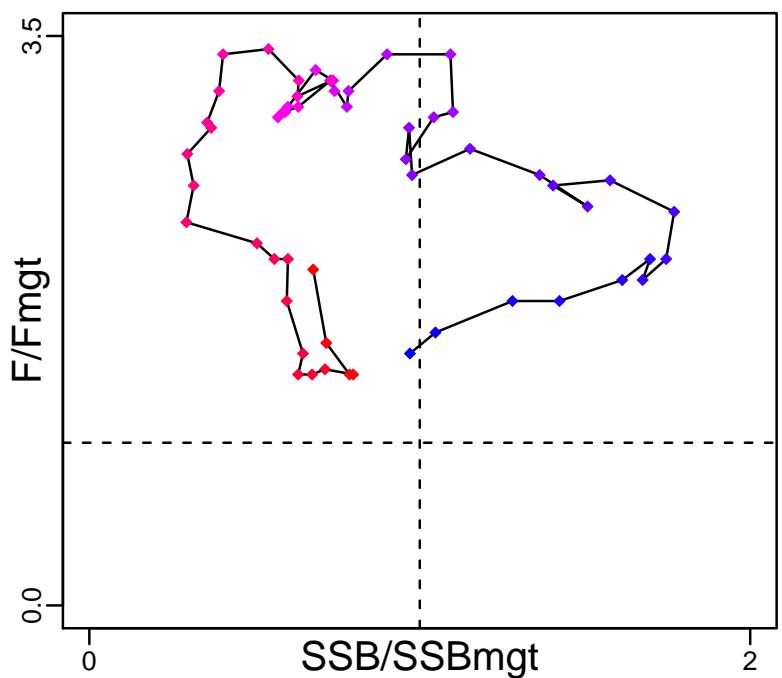
| <b>Time Series</b> |                  |           |             |     |        |
|--------------------|------------------|-----------|-------------|-----|--------|
| Type               | ID               | Asmt Year | Curr Value  | Sex | Age    |
| <b>TB</b>          | TB-MT            | 2019      | 175,062     | -   | -      |
| <b>SSB</b>         | SSB-MT           | 2019      | 80,475      | -   | -      |
| <b>TN</b>          | -                | -         | -           | -   | -      |
| <b>R</b>           | R-E00            | 2019      | 181,905,000 | -   | 1      |
| <b>F</b>           | F-1/yr           | 2019      | 0.64        | -   | 2 to 4 |
| <b>ER</b>          | ER-calc-ratio    | 2019      | 0.289       | -   | -      |
| <b>TC</b>          | TC-MT            | 2019      | 50,573      |     |        |
| <b>TL</b>          | TL-MT            | 2019      | 41,433      |     |        |
| <b>TB/TBmsy</b>    | -                | -         | -           |     |        |
| <b>SSB/SSBmsy</b>  | -                | -         | -           |     |        |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2019      | 2.065       |     |        |
| <b>ER/ERmsy</b>    | -                | -         | -           |     |        |
| <b>TB/TBmgt</b>    | -                | -         | -           |     |        |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019      | 0.536       |     |        |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019      | 2.065       |     |        |
| <b>ER/ERmgt</b>    | -                | -         | -           |     |        |

Atlantic cod ICES 3a(west)–4–7d [CODIIIaW–IV–VIId]

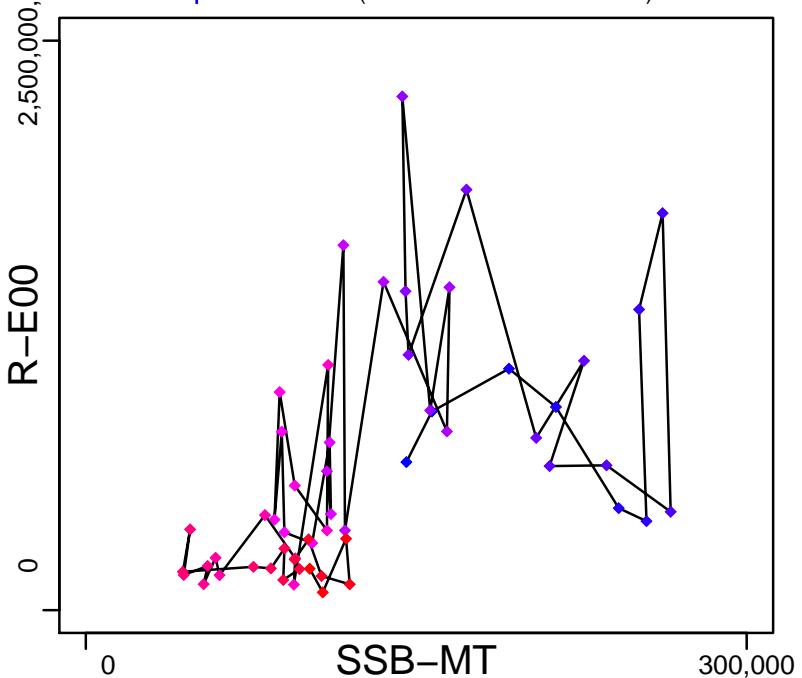
Kobe MSYpref (1962–2019–ICESIMP2021)



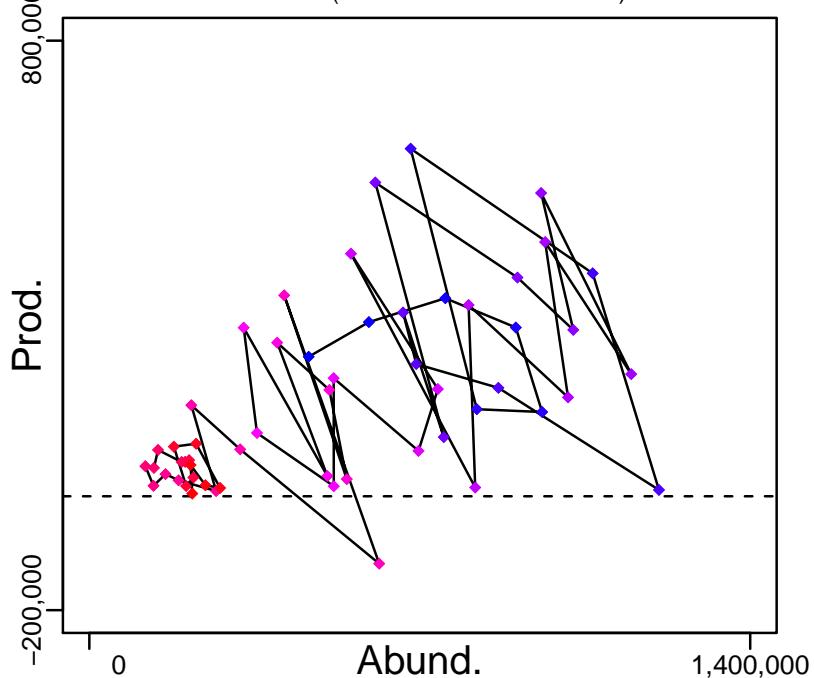
Kobe MGTpref (1962–2019–ICESIMP2021)



Spawner Recruit (1962–2019–ICESIMP2021)



Production (1962–2019–ICESIMP2021)

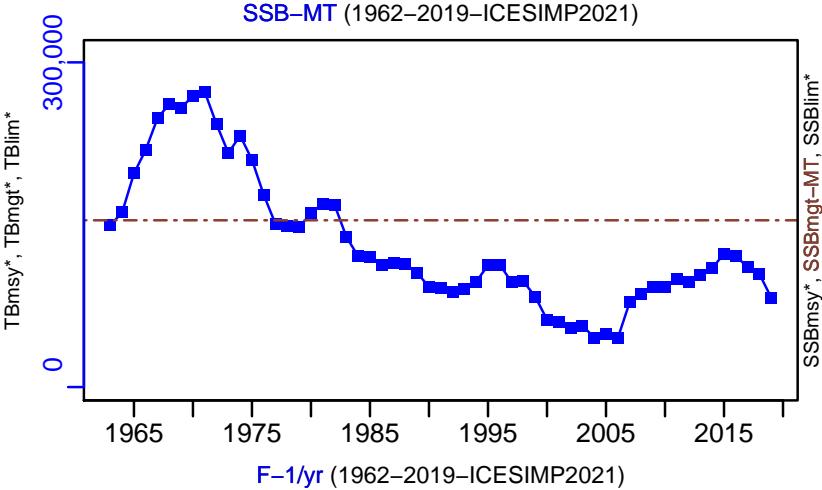
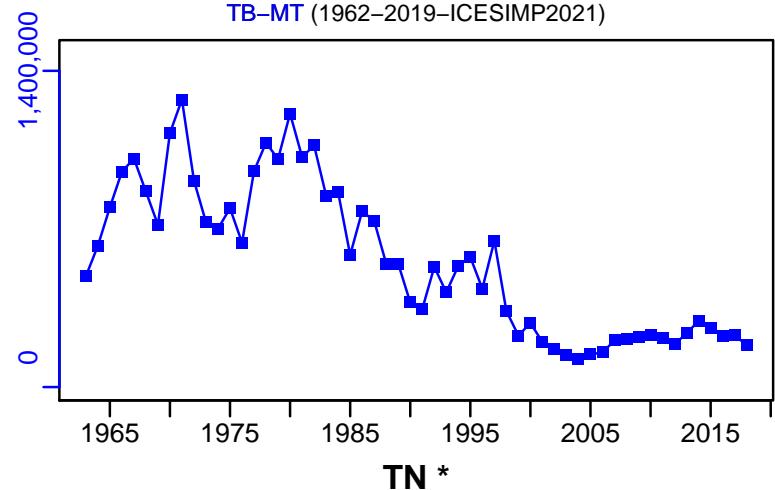


◆ Start Year   ◆ End Year   \* No Data

Atlantic cod ICES 3a(west)–4–7d [CODIIIaW–IV–VIId]

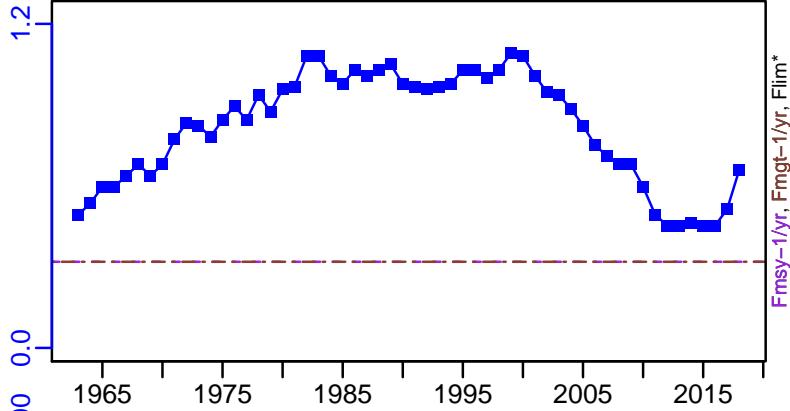
TB-MT (1962–2019–ICESIMP2021)

SSB-MT (1962–2019–ICESIMP2021)



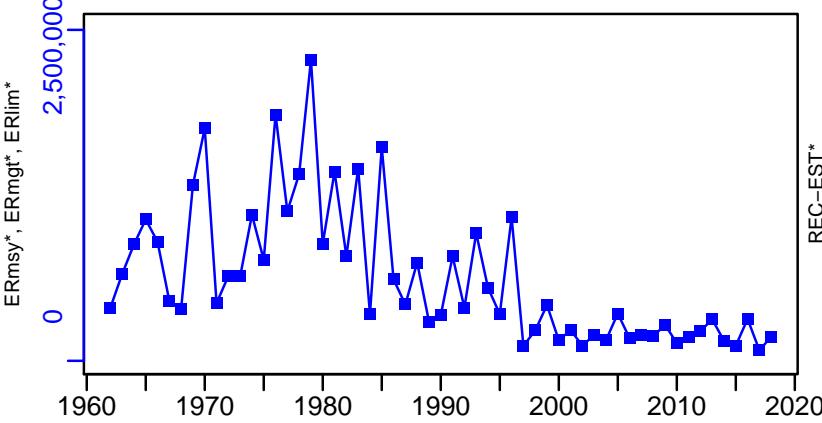
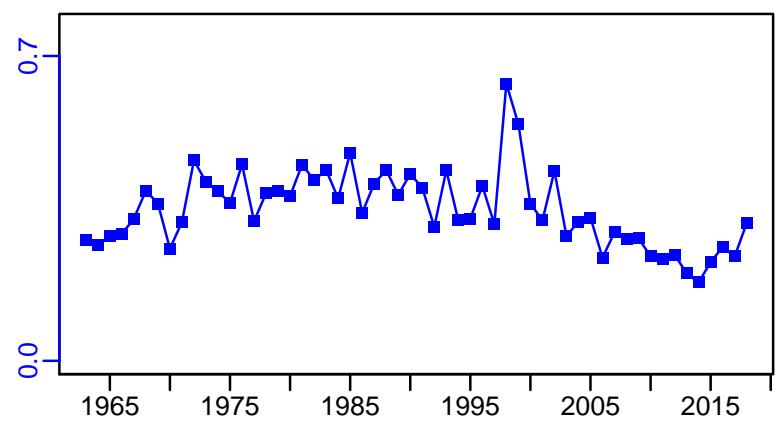
TN \*

F-1/yr (1962–2019–ICESIMP2021)



ER-calc-ratio (1962–2019–ICESIMP2021)

R-E00 (1962–2019–ICESIMP2021)

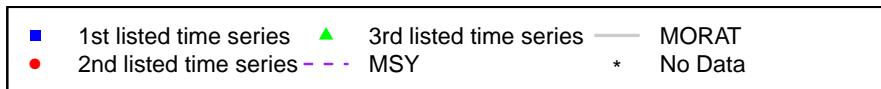
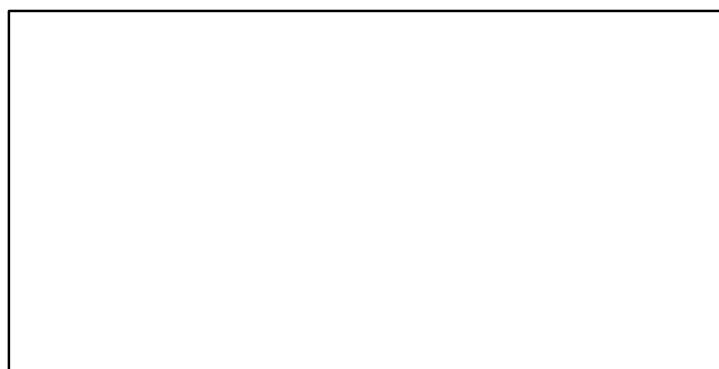
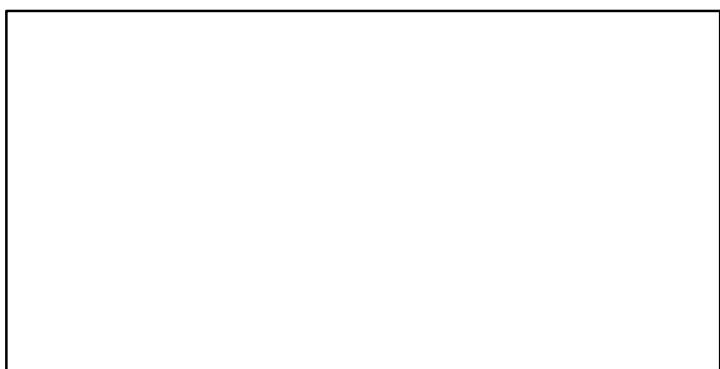
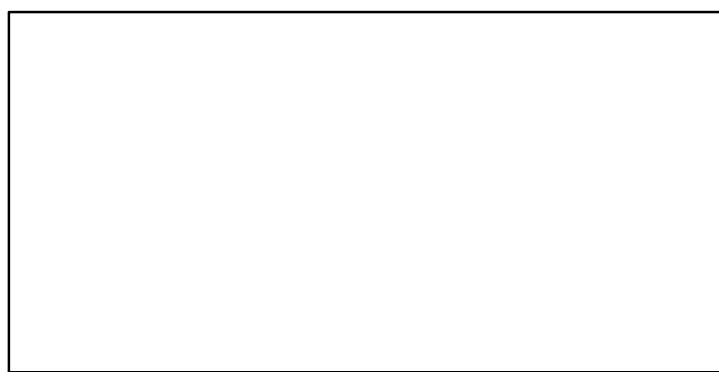
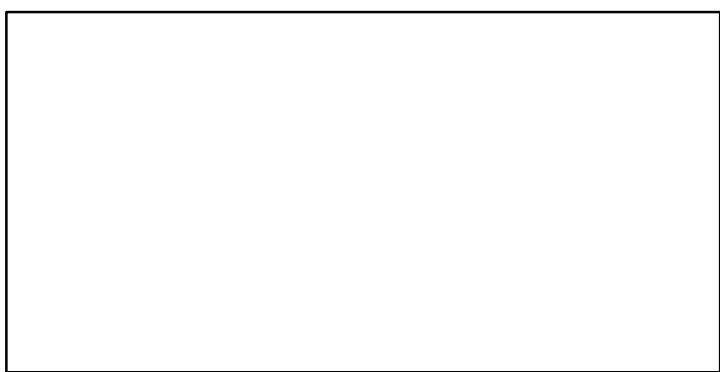
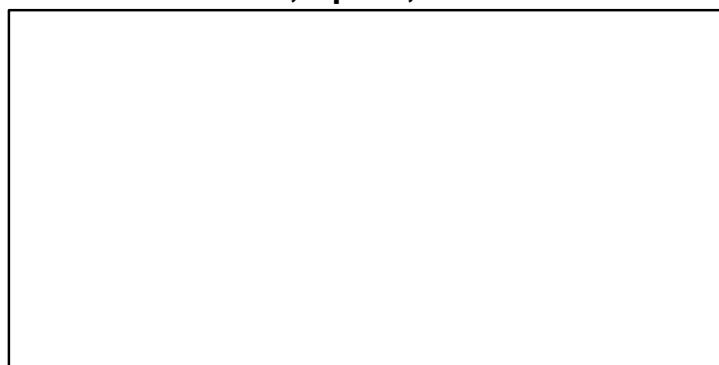
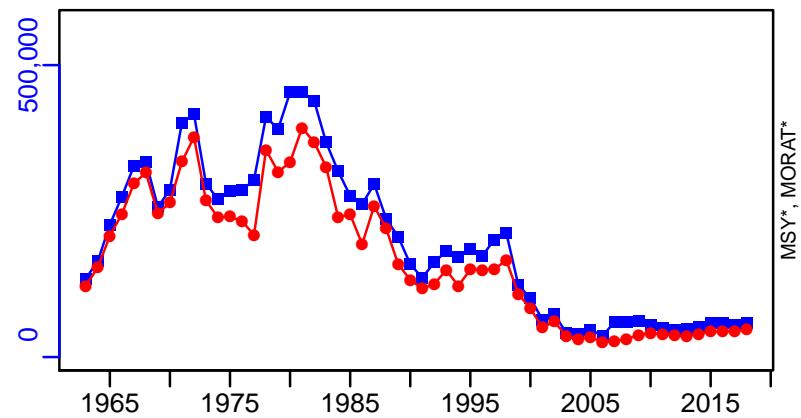


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - MSY-based BRP      | - Lim BRP    | * No Data |

Atlantic cod ICES 3a(west)–4–7d [CODIIIaW–IV–VIId]

TC–MT, TL–MT, RecC\* (1962–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



## Atlantic cod Irish Sea [CODIS]

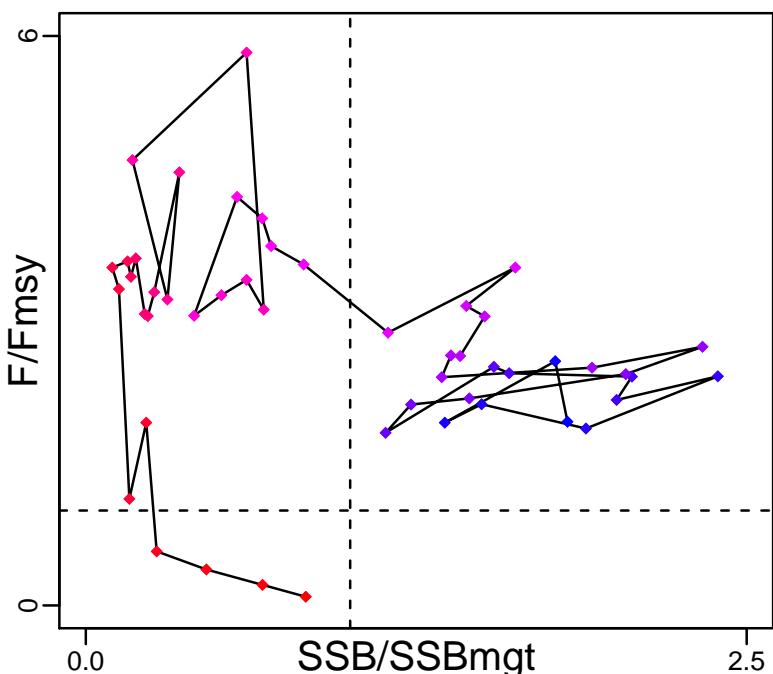
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Gadus morhua   |
| <b>Current Assess ID</b>    | WGCSE-CODIS-1968-2018-ICESIMP2021                    |
| <b>Area</b>                 | Irish Sea  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2010, 2013, 2014, 2015, 2016, 2017, 2018             |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2017             | 0.309        |
| <b>ERrmsy</b>           | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2017             | 8616         |
| <b>Fmgt</b>             | Fmgt-1/yr | 2017             | 0.309        |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | M-1/yr    | 2010             | 0.2          |
| <b>TBlim</b>            | TBlim-MT  | 2010             | 6000         |
| <b>SSBlim</b>           | SSBlim-MT | 2017             | 6000         |
| <b>Flim</b>             | Flim-1/yr | 2017             | 0.614        |
| <b>ERlim</b>            | -         | -                | -            |

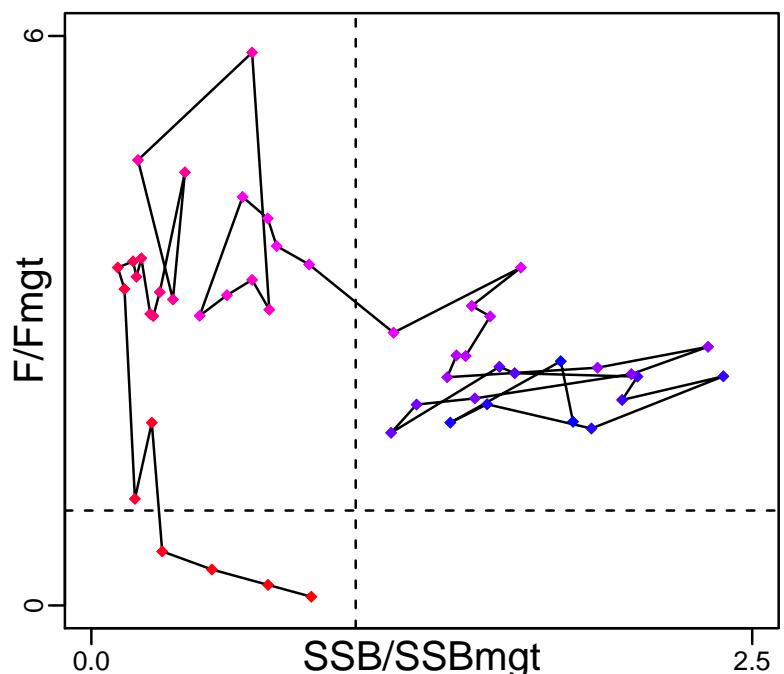
| <b>Time Series</b> |                  |                  |                   |            |            |
|--------------------|------------------|------------------|-------------------|------------|------------|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |
| <b>TB</b>          | TB-MT            | 2017             | 8650              | Both       | -          |
| <b>SSB</b>         | SSB-relative     | 2018             | 0.352             | -          | -          |
| <b>TN</b>          | -                | -                | -                 | -          | -          |
| <b>R</b>           | R-E00            | 2017             | 5,510,000         | -          | 0          |
| <b>F</b>           | F-relative       | 2018             | 0.34              | -          | -          |
| <b>ER</b>          | ER-calc-ratio    | 2017             | 0.016             | -          | -          |
| <b>TC</b>          | TC-MT            | 2018             | 257               |            |            |
| <b>TL</b>          | TL-MT            | 2018             | 226               |            |            |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2017             | 0.092             |            |            |
| <b>ER/ERrmsy</b>   | -                | -                | -                 |            |            |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2017             | 1.195             |            |            |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2017             | 0.092             |            |            |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |

### Atlantic cod Irish Sea [CODIS]

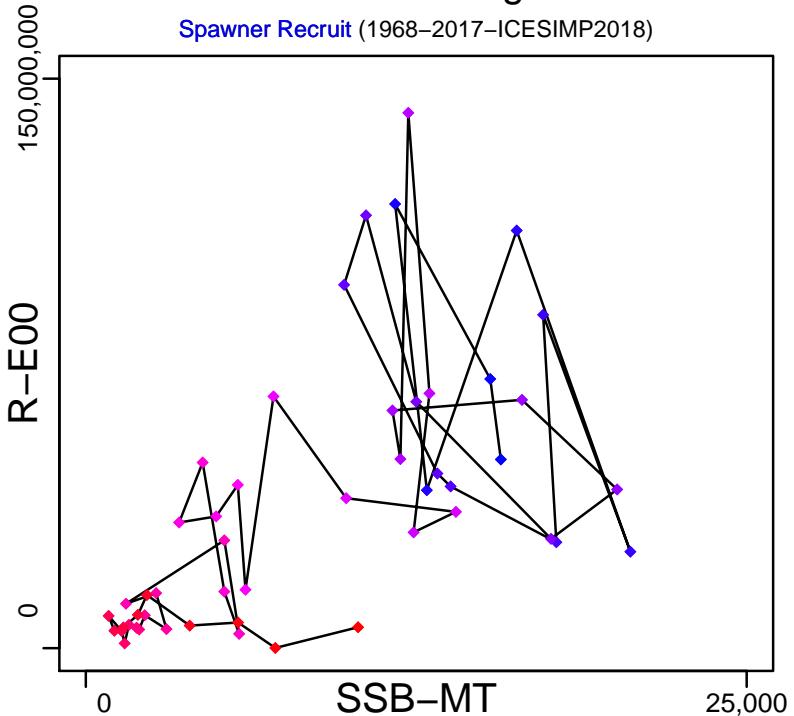
Kobe MSYpref (1968–2017–ICESIMP2018)



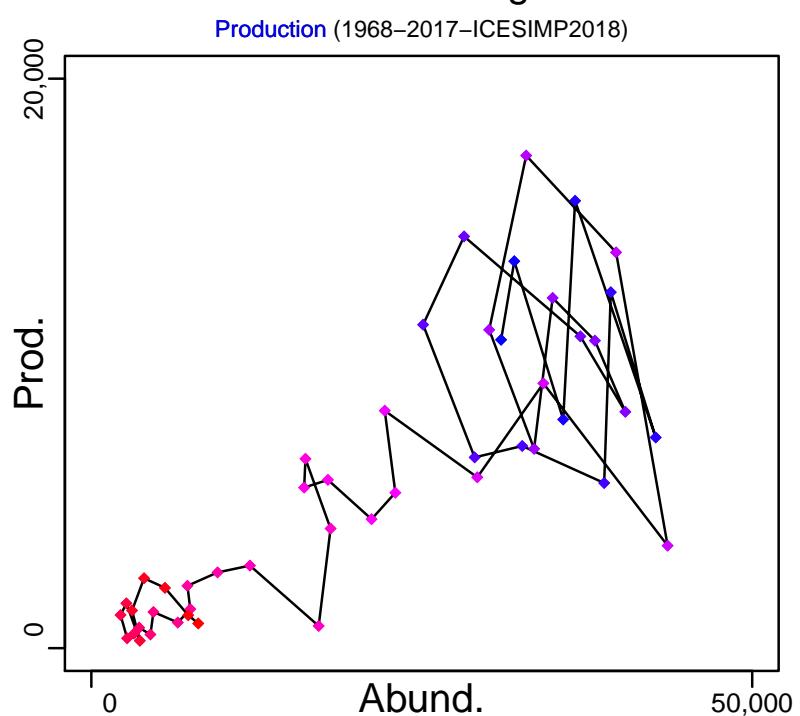
Kobe MGTpref (1968–2017–ICESIMP2018)



Spawner Recruit (1968–2017–ICESIMP2018)



Production (1968–2017–ICESIMP2018)

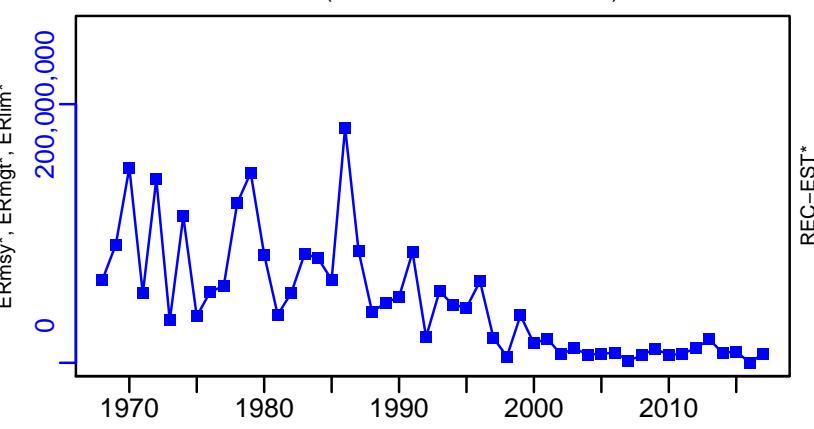
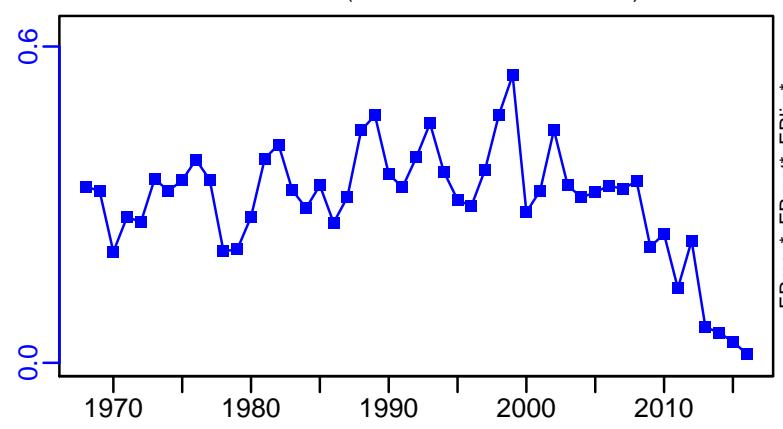
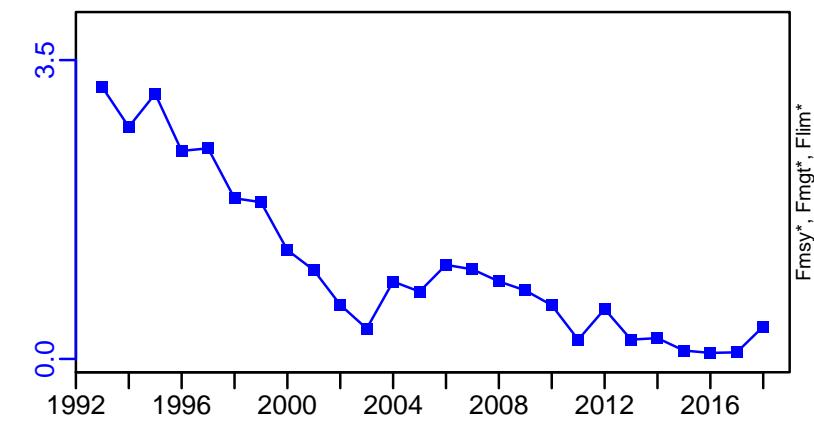
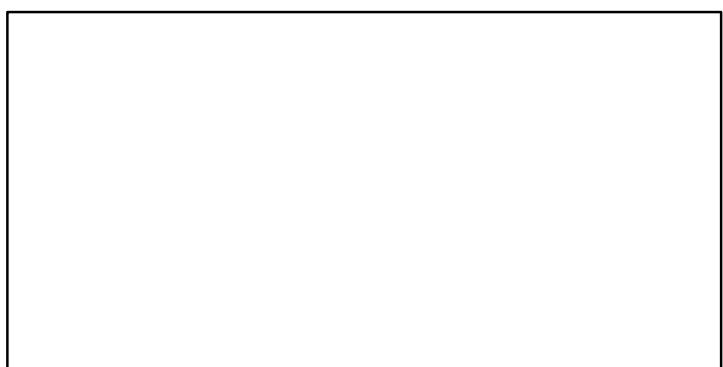
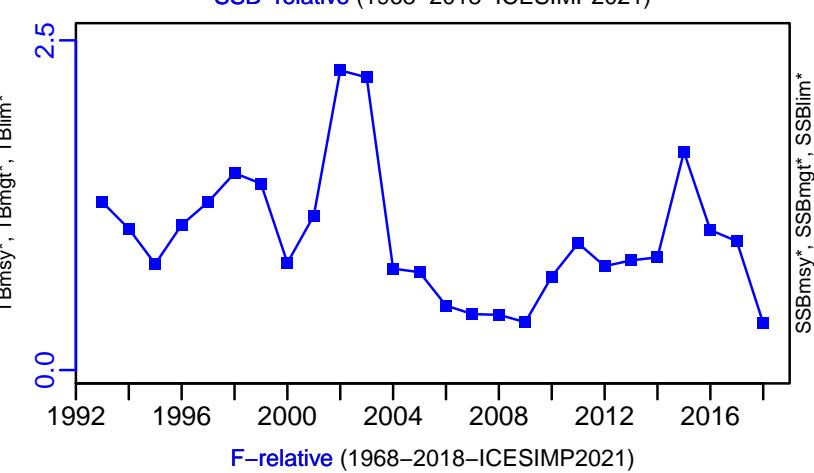
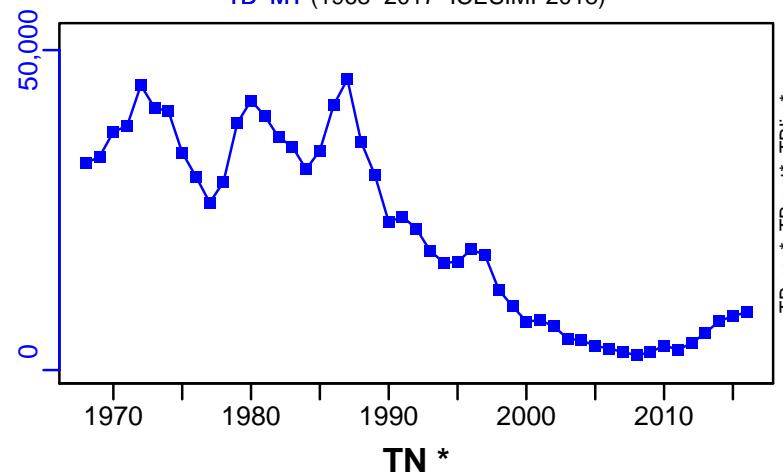


|              |            |   |         |
|--------------|------------|---|---------|
| ◆ Start Year | ◆ End Year | * | No Data |
|--------------|------------|---|---------|

### Atlantic cod Irish Sea [CODIS]

TB-MT (1968–2017–ICESIMP2018)

SSB-relative (1968–2018–ICESIMP2021)

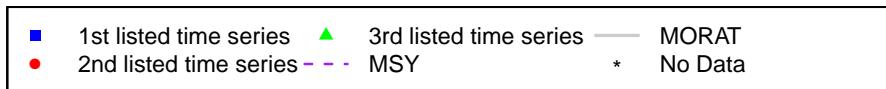
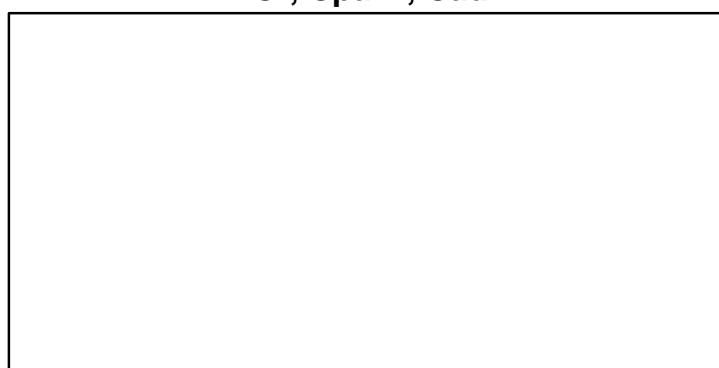
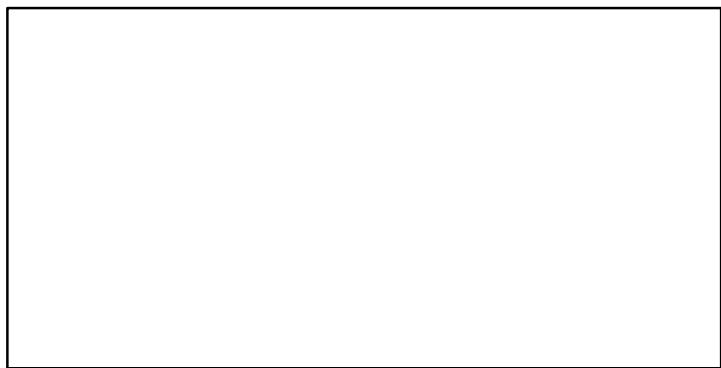
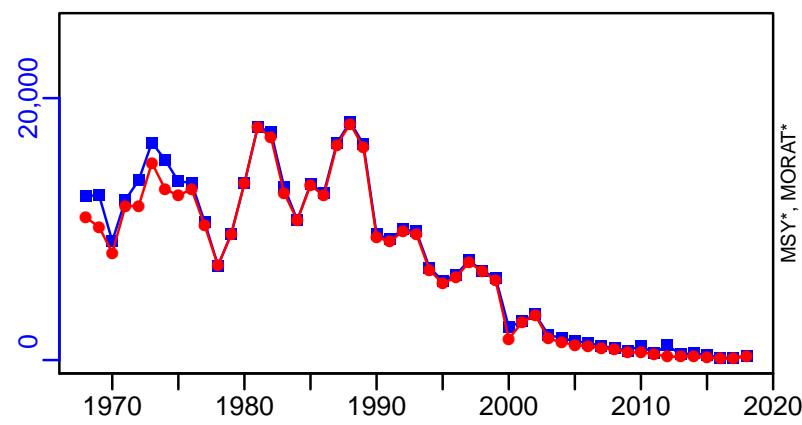


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | ··· Lim BRP  | * No Data |

Atlantic cod Irish Sea [CODIS]

TC-MT, TL-MT, RecC\* (1968–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*

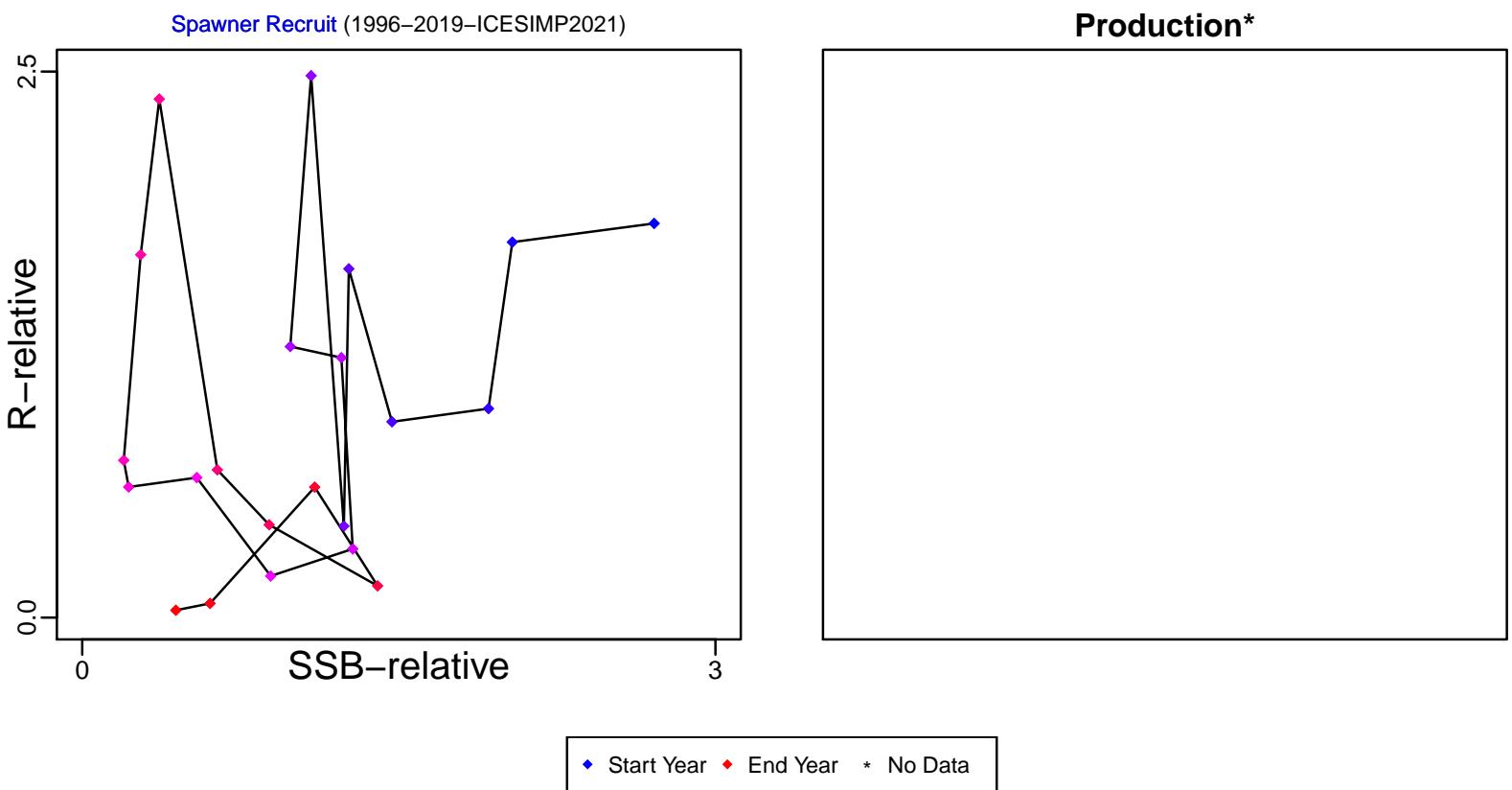


## Atlantic cod Kattegat [CODKAT]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Gadus morhua   |
| <b>Current Assess ID</b>    | WGBFAS-CODKAT-1996-2019-ICESIMP2021                  |
| <b>Area</b>                 | Kattegat   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Baltic Fisheries Assessment Working Group            |
| <b>Asmts in RAM</b>         | 2012, 2015, 2016, 2017, 2018, 2019                   |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | -         | -                | -            |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | -         | -                | -            |
| <b>Fmgt</b>             | -         | -                | -            |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | TBlim-MT  | 2012             | 6400         |
| <b>SSBlim</b>           | -         | -                | -            |
| <b>Flim</b>             | -         | -                | -            |
| <b>ERlim</b>            | -         | -                | -            |

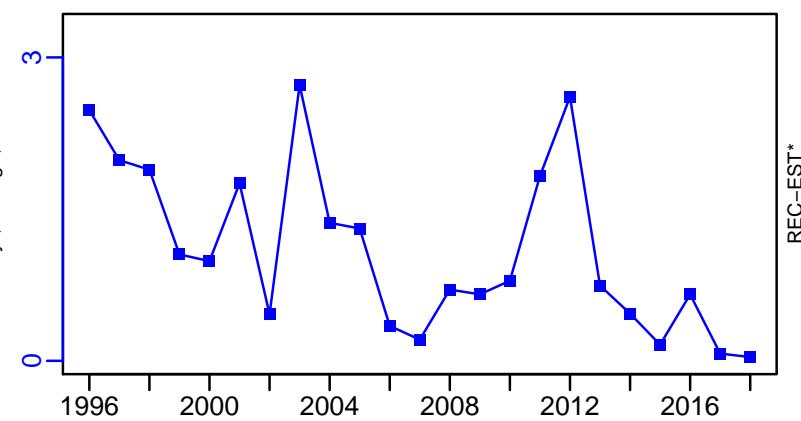
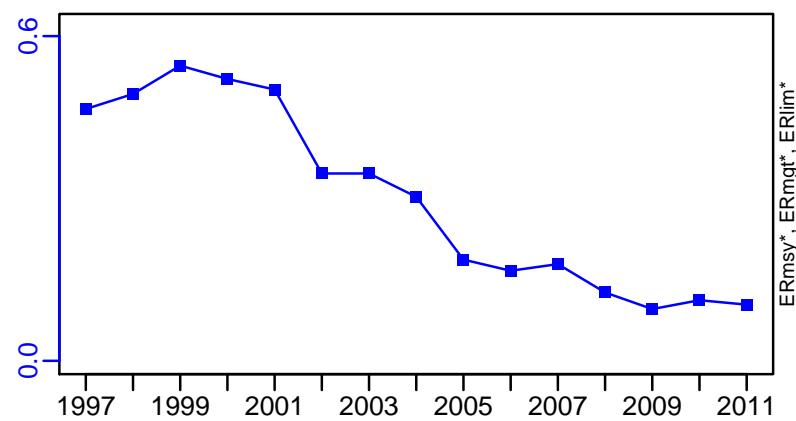
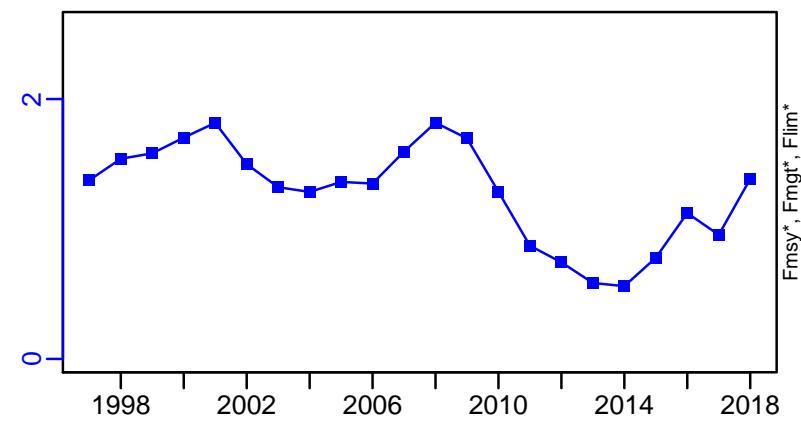
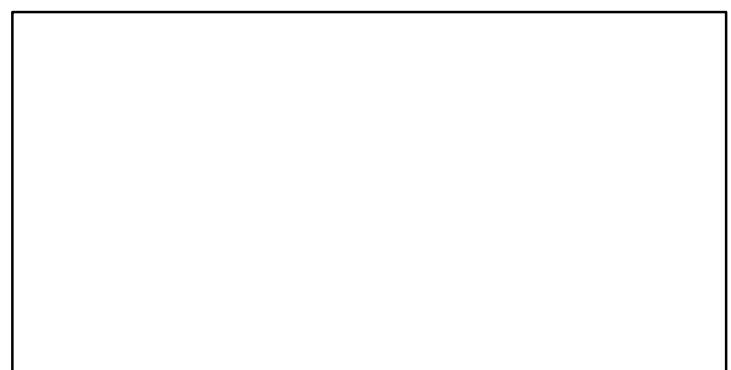
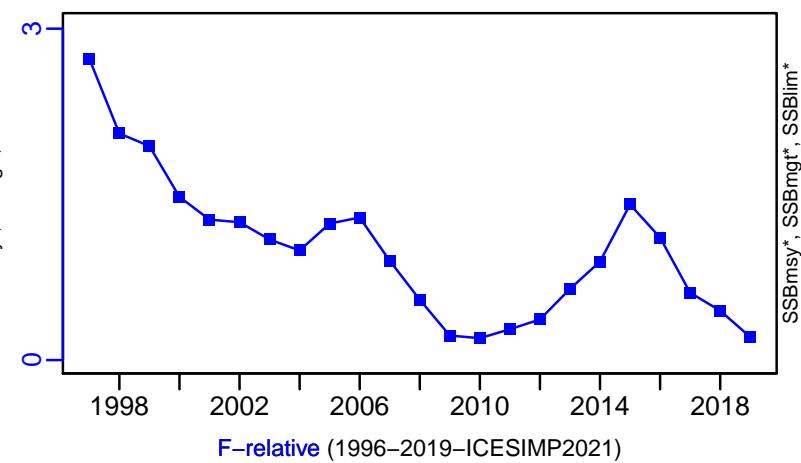
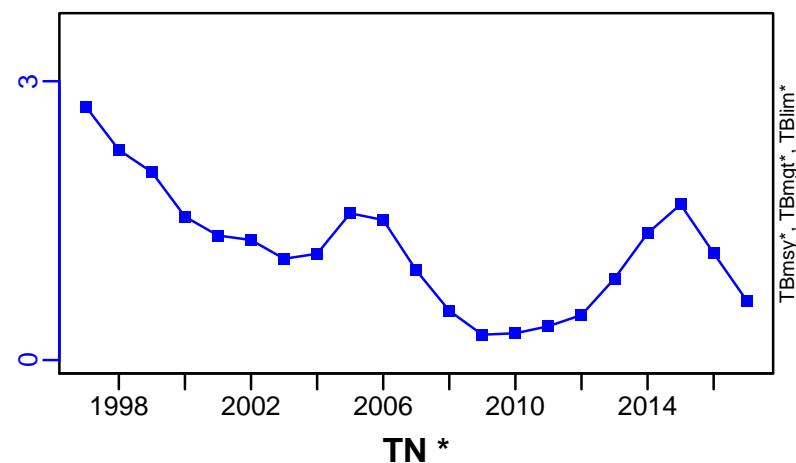
| <b>Time Series</b> |              |                  |                   |            |            |
|--------------------|--------------|------------------|-------------------|------------|------------|
| <b>Type</b>        | <b>ID</b>    | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |
| <b>TB</b>          | TB-relative  | 2018             | 0.535             | Both       | -          |
| <b>SSB</b>         | SSB-relative | 2019             | 0.207             | -          | -          |
| <b>TN</b>          | -            | -                | -                 | -          | -          |
| <b>R</b>           | R-relative   | 2019             | 0.034             | -          | 1          |
| <b>F</b>           | F-relative   | 2019             | 1.079             | -          | -          |
| <b>ER</b>          | ER-ratio     | 2012             | 0.101             | -          | -          |
| <b>TC</b>          | TC-MT        | 2019             | 284               |            |            |
| <b>TL</b>          | TL-MT        | 2019             | 212               |            |            |
| <b>TB/TBmsy</b>    | -            | -                | -                 |            |            |
| <b>SSB/SSBmsy</b>  | -            | -                | -                 |            |            |
| <b>F/Fmsy</b>      | -            | -                | -                 |            |            |
| <b>ER/ERmsy</b>    | -            | -                | -                 |            |            |
| <b>TB/TBmgt</b>    | -            | -                | -                 |            |            |
| <b>SSB/SSBmgt</b>  | -            | -                | -                 |            |            |
| <b>F/Fmgt</b>      | -            | -                | -                 |            |            |
| <b>ER/ERmgt</b>    | -            | -                | -                 |            |            |

**Kobe MSY\*****Kobe MGT\***

### Atlantic cod Kattegat [CODKAT]

TB-relative (1996–2018–ICESIMP2018)

SSB-relative (1996–2019–ICESIMP2021)

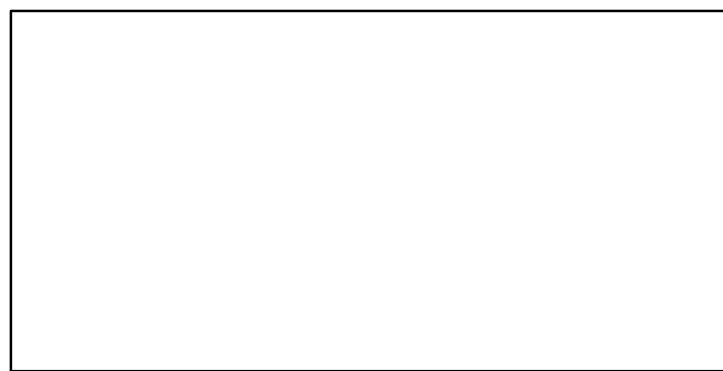
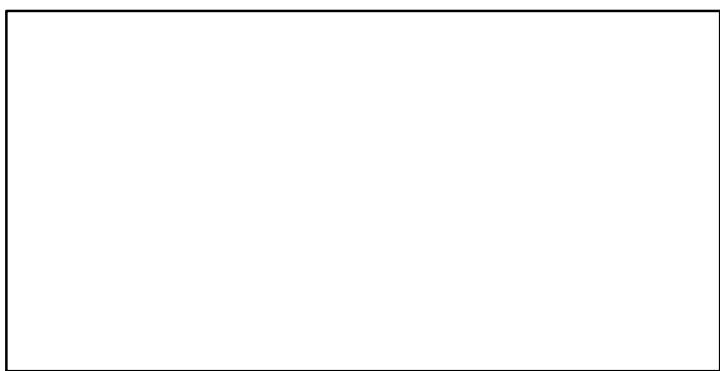
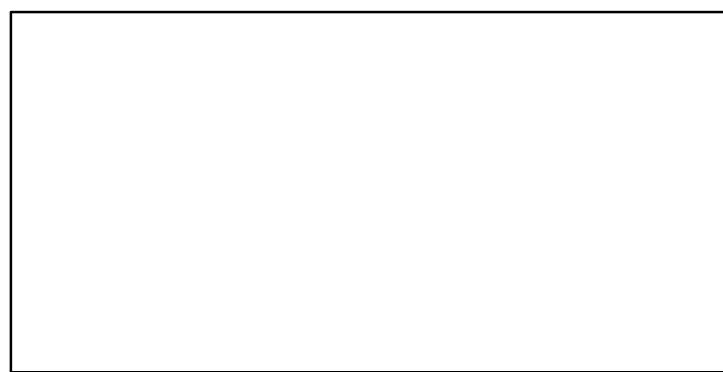
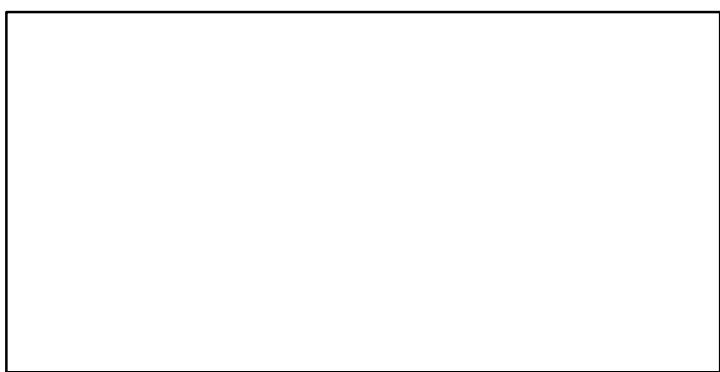
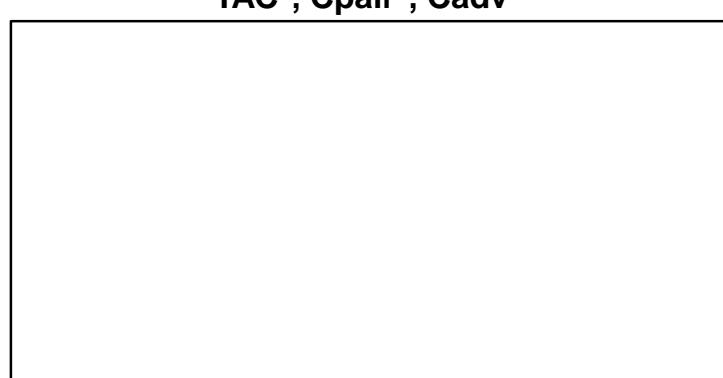
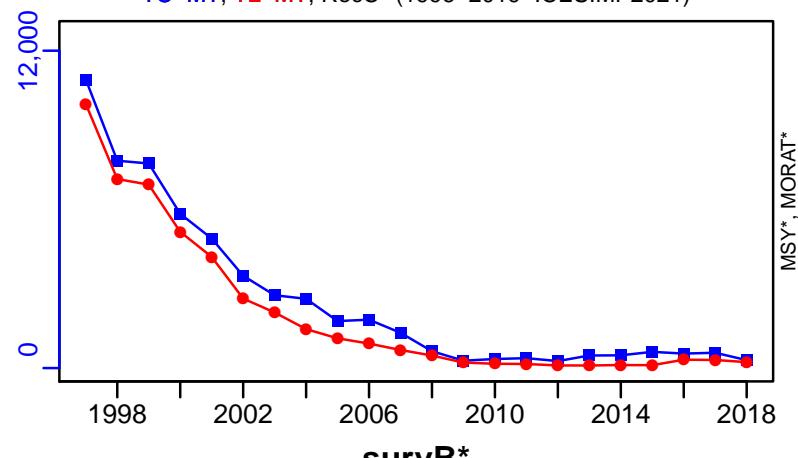


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | ·· Lim BRP   | * No Data |

Atlantic cod Kattegat [CODKAT]

TC-MT, TL-MT, RecC\* (1996–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



- |  |   |  |
|--|---|--|
| <ul style="list-style-type: none"> <li>■ 1st listed time series</li> <li>● 2nd listed time series</li> </ul> | <ul style="list-style-type: none"> <li>▲ 3rd listed time series</li> <li>- - - MSY</li> </ul> | <ul style="list-style-type: none"> <li>— MORAT</li> <li>* No Data</li> </ul> |
|--|---|--|

## Atlantic cod West of Scotland [CODVla]

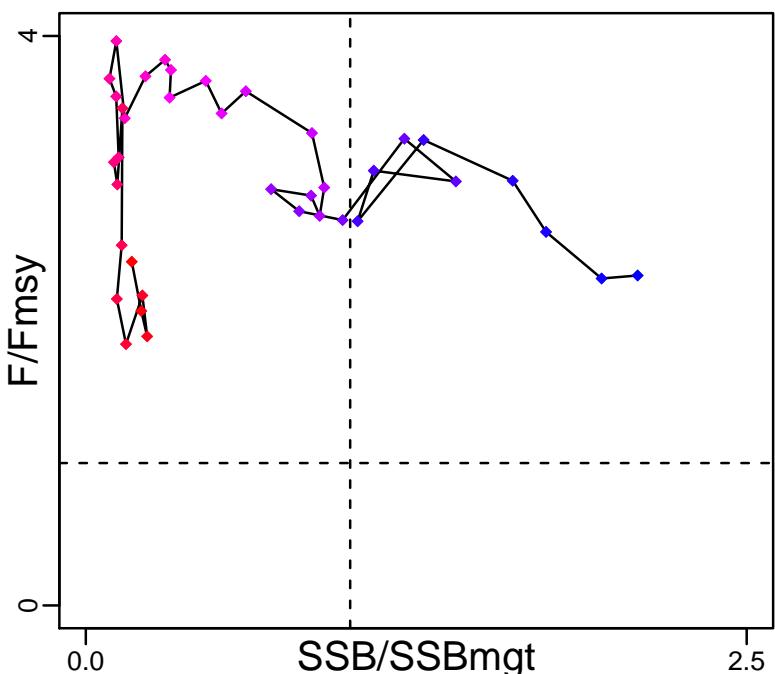
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Gadus morhua   |
| <b>Current Assess ID</b>    | WGCSE-CODVla-1980-2019-ICESIMP2021                   |
| <b>Area</b>                 | West of Scotland                                     |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2013, 2014, 2015, 2017, 2019, 2012, 2016             |

| <b>Reference Points</b> |              |                  |              |
|-------------------------|--------------|------------------|--------------|
| <b>Type</b>             | <b>ID</b>    | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -            | -                | -            |
| <b>SSBmsy</b>           | SSBmsy-pr-MT | 2012             | 22,000       |
| <b>Fmsy</b>             | Fmsy-1/yr    | 2019             | 0.29         |
| <b>ERmsy</b>            | -            | -                | -            |
| <b>TBmgt</b>            | -            | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT    | 2019             | 20,000       |
| <b>Fmgt</b>             | Fmgt-1/yr    | 2019             | 0.29         |
| <b>ERmgt</b>            | -            | -                | -            |
| <b>TB0</b>              | -            | -                | -            |
| <b>SSB0</b>             | -            | -                | -            |
| <b>MSY</b>              | -            | -                | -            |
| <b>M</b>                | -            | -                | -            |
| <b>TBlim</b>            | -            | -                | -            |
| <b>SSBlim</b>           | SSBlim-MT    | 2017             | 14,000       |
| <b>Flim</b>             | Flim-1/yr    | 2017             | 0.82         |
| <b>ERlim</b>            | -            | -                | -            |

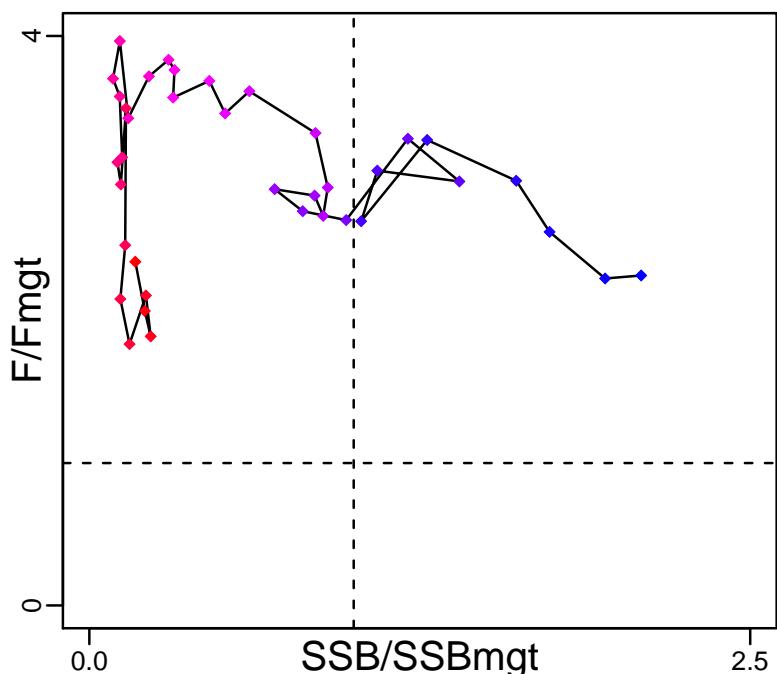
| <b>Time Series</b> |                     |                  |                   |            |            |  |
|--------------------|---------------------|------------------|-------------------|------------|------------|--|
| <b>Type</b>        | <b>ID</b>           | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |  |
| <b>TB</b>          | TB-MT               | 2017             | 4250              | Both       | -          |  |
| <b>SSB</b>         | SSB-MT              | 2019             | 2357              | -          | -          |  |
| <b>TN</b>          | -                   | -                | -                 | -          | -          |  |
| <b>R</b>           | R-E00               | 2019             | 2,348,806         | -          | 1          |  |
| <b>F</b>           | F-1/yr              | 2019             | 0.7               | -          | 2 to 5     |  |
| <b>ER</b>          | ER-calc-ratio       | 2017             | 0.419             | -          | -          |  |
| <b>TC</b>          | TC-MT               | 2019             | 1890              |            |            |  |
| <b>TL</b>          | TL-MT               | 2019             | 1129              |            |            |  |
| <b>TB/TBmsy</b>    | -                   | -                | -                 |            |            |  |
| <b>SSB/SSBmsy</b>  | SSB-MT/SSBmsy-pr-MT | 2012             | 0.169             |            |            |  |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr    | 2019             | 2.414             |            |            |  |
| <b>ER/ERmsy</b>    | -                   | -                | -                 |            |            |  |
| <b>TB/TBmgt</b>    | -                   | -                | -                 |            |            |  |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT    | 2019             | 0.118             |            |            |  |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr    | 2019             | 2.414             |            |            |  |
| <b>ER/ERmgt</b>    | -                   | -                | -                 |            |            |  |

Atlantic cod West of Scotland [CODW]

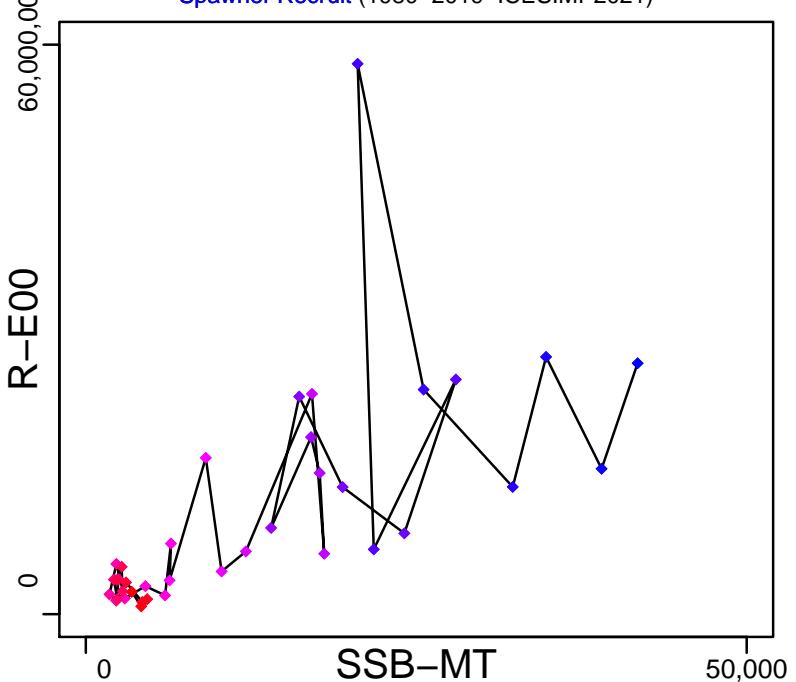
Kobe MSYpref (1980–2019–ICESIMP2021)



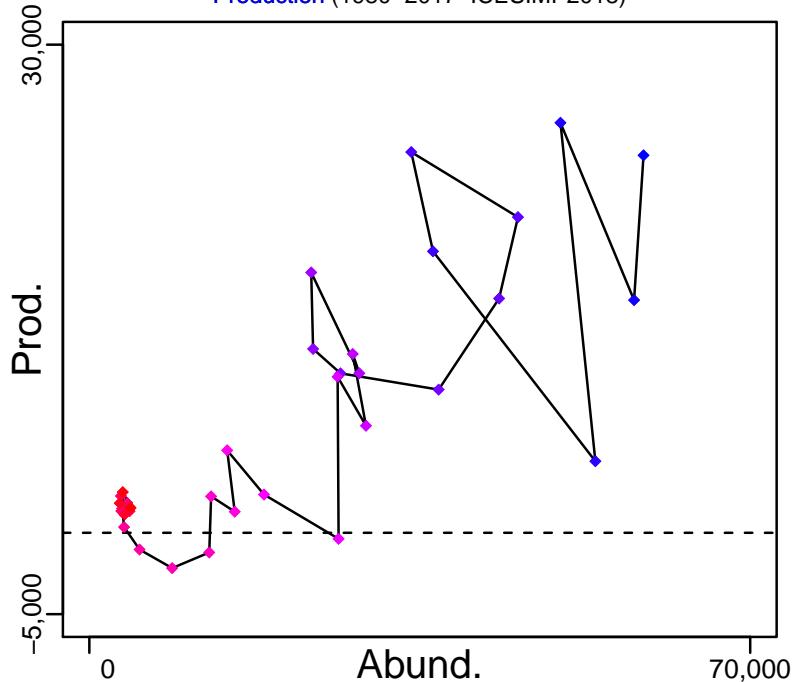
Kobe MGTpref (1980–2019–ICESIMP2021)



Spawner Recruit (1980–2019–ICESIMP2021)



Production (1980–2017–ICESIMP2018)

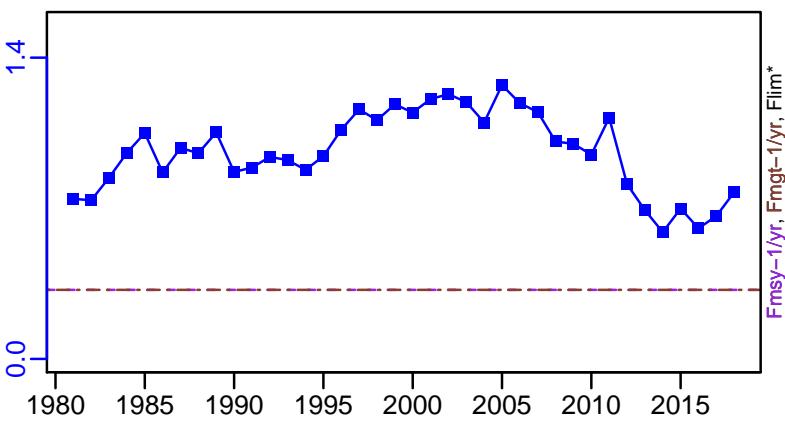
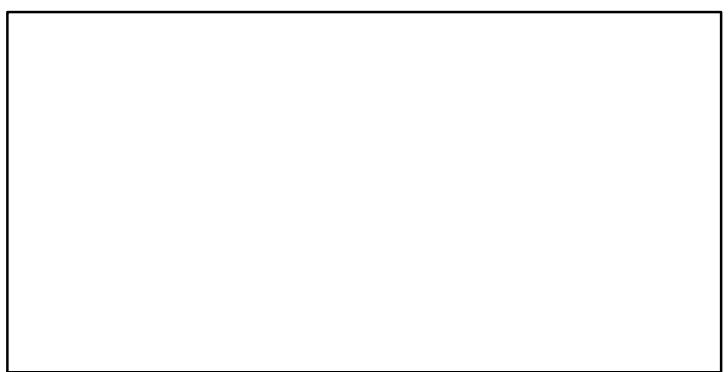
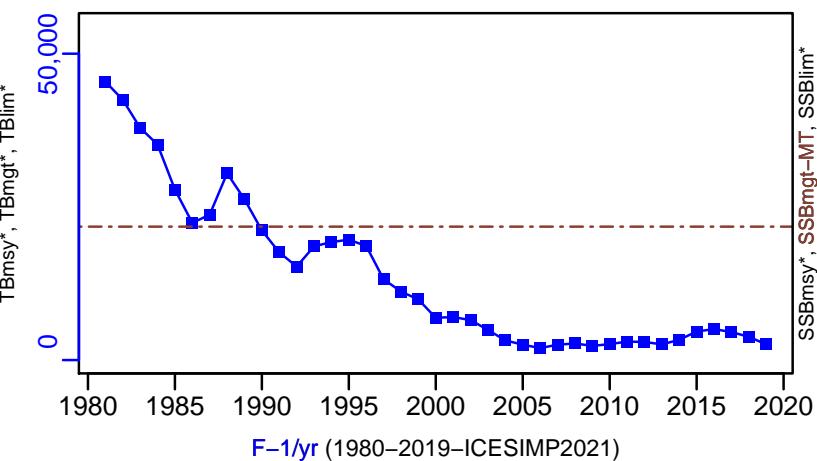
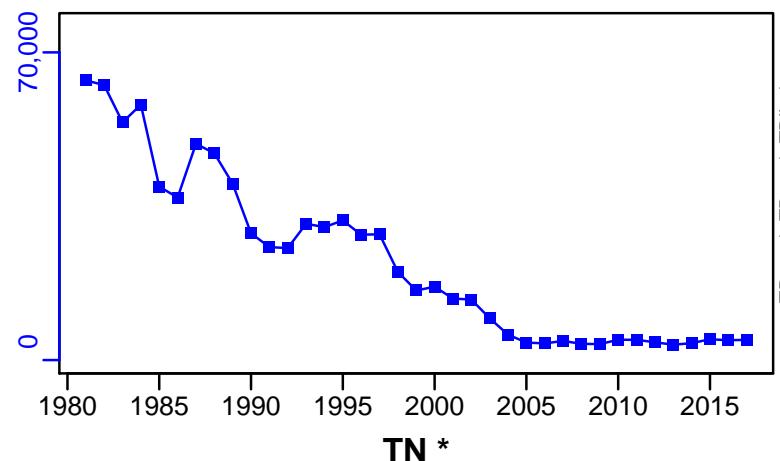


◆ Start Year   ◆ End Year   \* No Data

### Atlantic cod West of Scotland [CODVla]

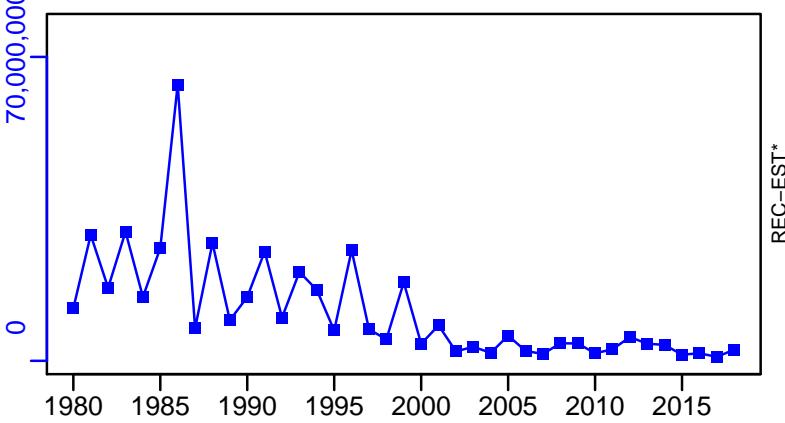
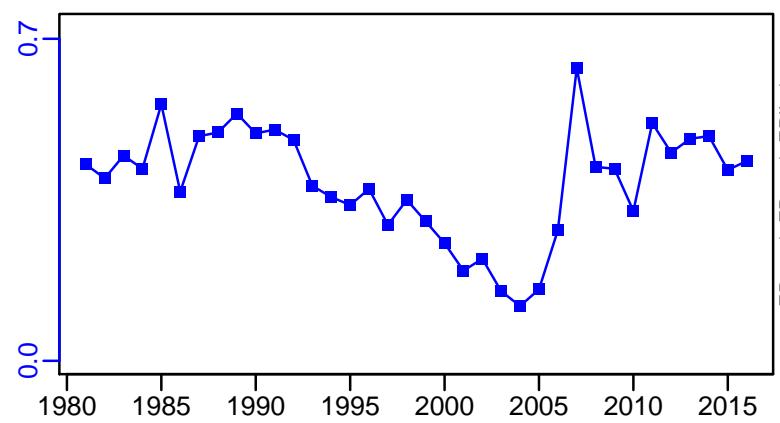
TB-MT (1980–2017–ICESIMP2018)

SSB-MT (1980–2019–ICESIMP2021)



ER-calc-ratio (1980–2017–ICESIMP2018)

R-E00 (1980–2019–ICESIMP2021)

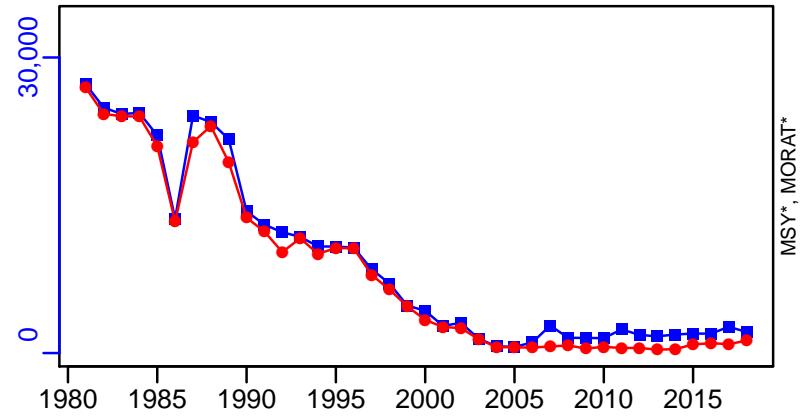


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - Lim BRP  | * No Data |

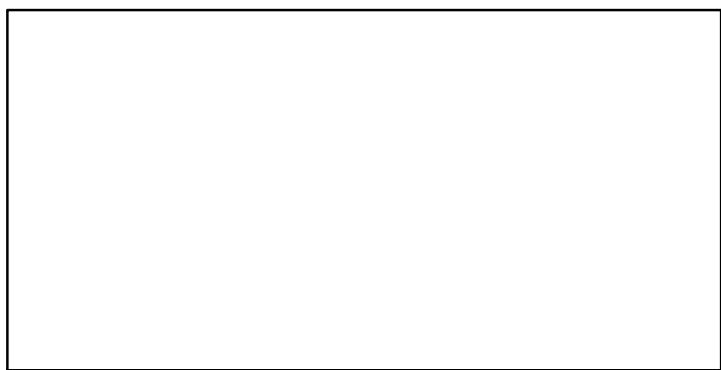
Atlantic cod West of Scotland [CODVla]

TC-MT, TL-MT, RecC\* (1980–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



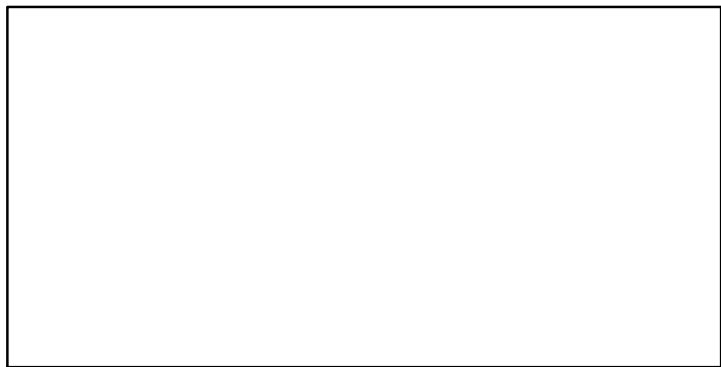
survB\*



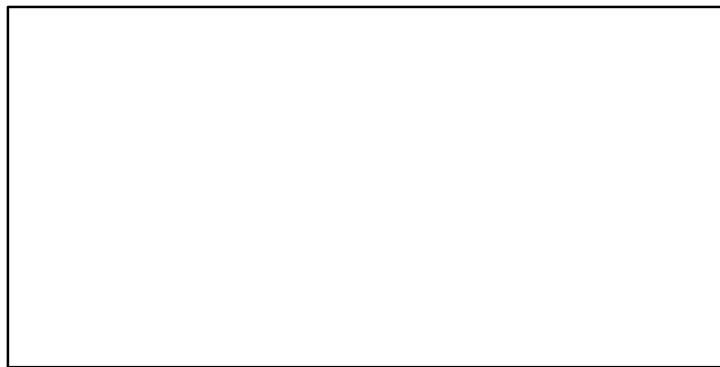
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

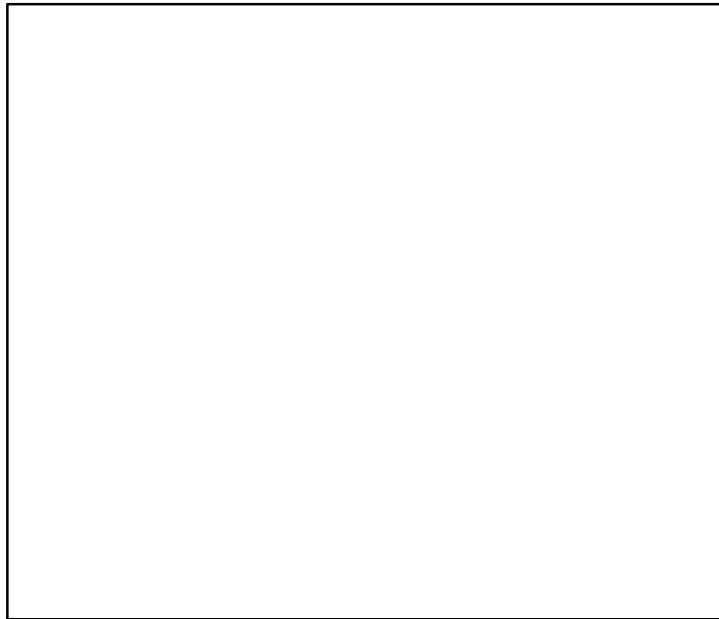
## Atlantic cod Rockall Bank [CODVlb]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Gadus morhua   |
| <b>Current Assess ID</b>    | WGCSE-CODVlb-1984-2016-ICESIMP2018                   |
| <b>Area</b>                 | Rockall Bank   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2014, 2016   |

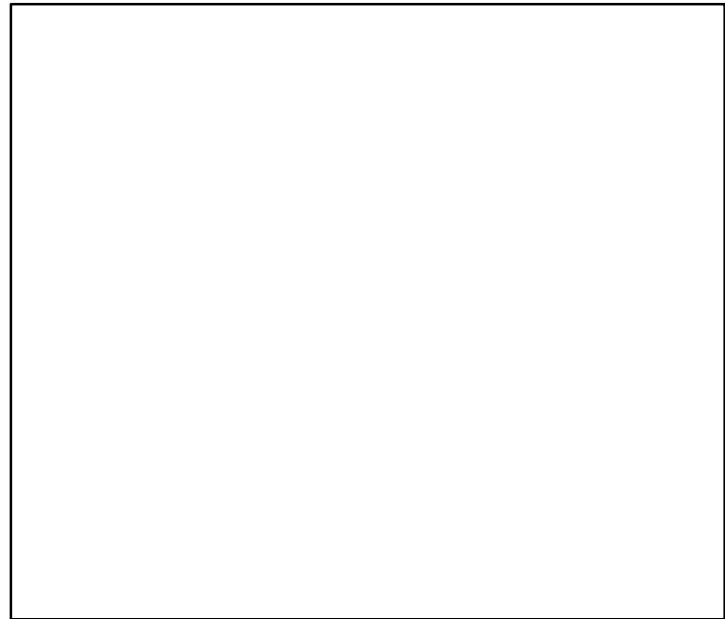
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | -     | -         | -          |     |     |
| <b>TL</b>          | TL-MT | 2016      | 62         |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

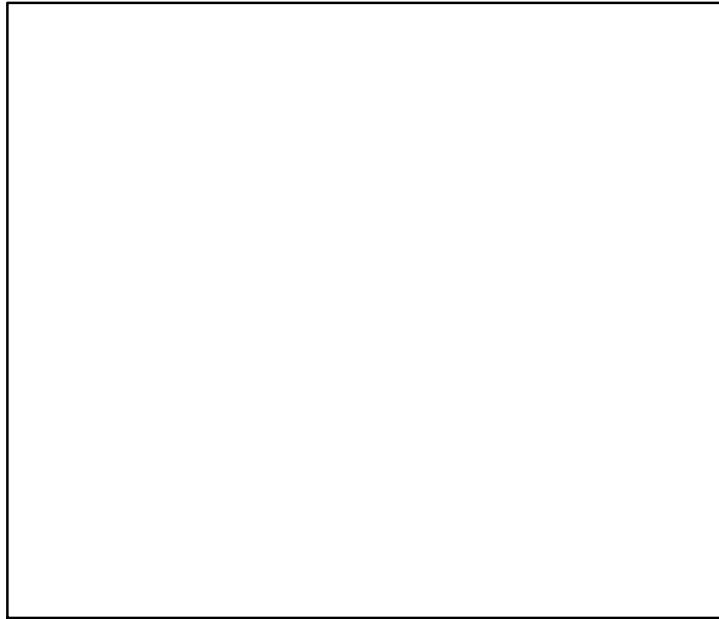
**Kobe MSY\***



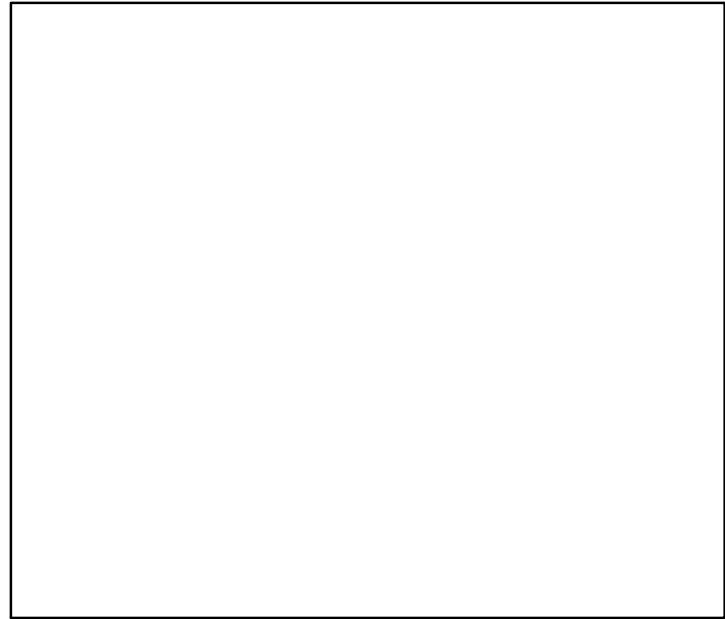
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

Atlantic cod Rockall Bank [CODVlb]

**TB\***



**SSB\***



**TN \***



**F\***



**ER\***



**Recruits\***

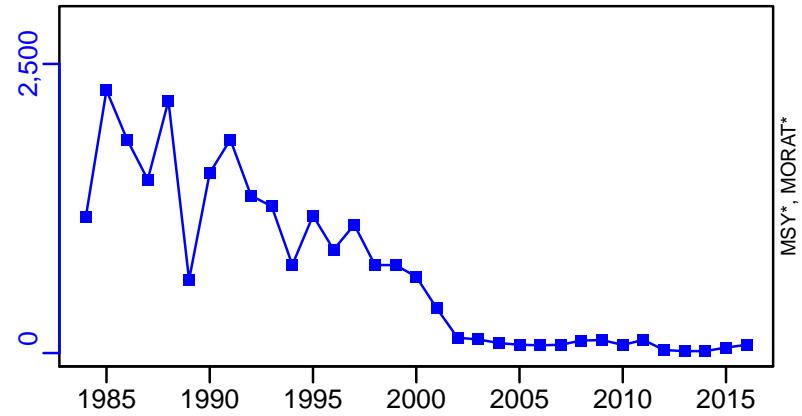


- |       |                    |       |            |   |         |
|-------|--------------------|-------|------------|---|---------|
| ■     | Listed time series | - - - | Target BRP | — | Rec-Est |
| - - - | MSY-based BRP      | - - - | Lim BRP    | * | No Data |

Atlantic cod Rockall Bank [CODVlb]

TL-MT, TC\*, RecC\* (1984–2016–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



survB\*

CPUE\*

EFFORT\*

CdivMSY\*

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Atlantic cod Celtic Sea [CODVilek]

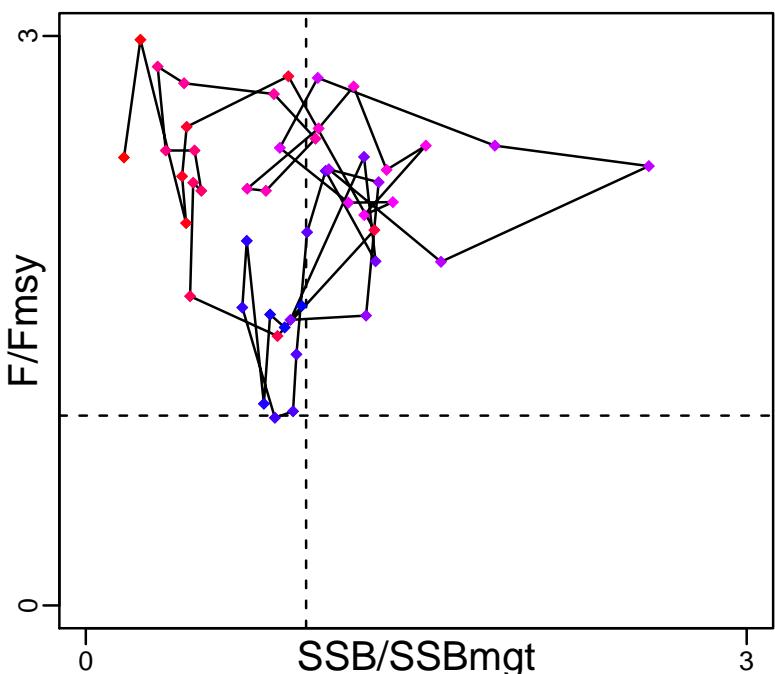
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Gadus morhua   |
| <b>Current Assess ID</b>    | WGCSE-CODVilek-1970-2019-ICESIMP2021                 |
| <b>Area</b>                 | Celtic Sea   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2012, 2013, 2014, 2015, 2016, 2017, 2019             |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2019             | 0.353        |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019             | 10,300       |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019             | 0.353        |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | MSY-MT    | 2012             | 10,300       |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | SSBlim-MT | 2017             | 7300         |
| <b>Flim</b>             | Flim-1/yr | 2017             | 0.807        |
| <b>ERlim</b>            | -         | -                | -            |

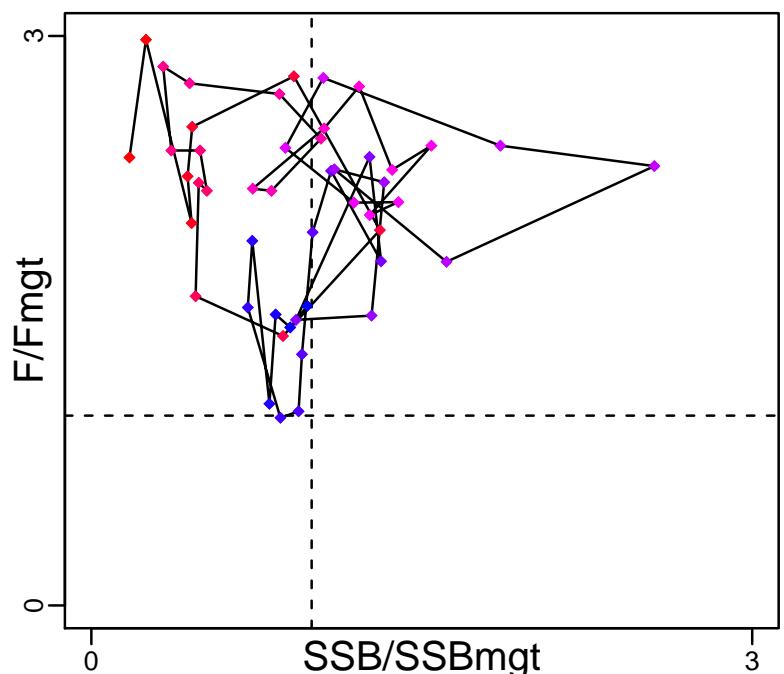
| <b>Time Series</b> |                  |                  |                   |            |            |  |
|--------------------|------------------|------------------|-------------------|------------|------------|--|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |  |
| <b>TB</b>          | TB-MT            | 2019             | 2678              | -          | -          |  |
| <b>SSB</b>         | SSB-MT           | 2019             | 1290              | -          | -          |  |
| <b>TN</b>          | -                | -                | -                 | -          | -          |  |
| <b>R</b>           | R-E00            | 2019             | 2,166,000         | -          | 1          |  |
| <b>F</b>           | F-1/yr           | 2019             | 0.833             | -          | 2 to 5     |  |
| <b>ER</b>          | ER-calc-ratio    | 2019             | 0.584             | -          | -          |  |
| <b>TC</b>          | TC-MT            | 2019             | 1565              |            |            |  |
| <b>TL</b>          | TL-MT            | 2019             | 1385              |            |            |  |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |  |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2019             | 2.36              |            |            |  |
| <b>ER/ERmsy</b>    | -                | -                | -                 |            |            |  |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019             | 0.125             |            |            |  |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019             | 2.36              |            |            |  |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |  |

Atlantic cod Celtic Sea [CODVIlek]

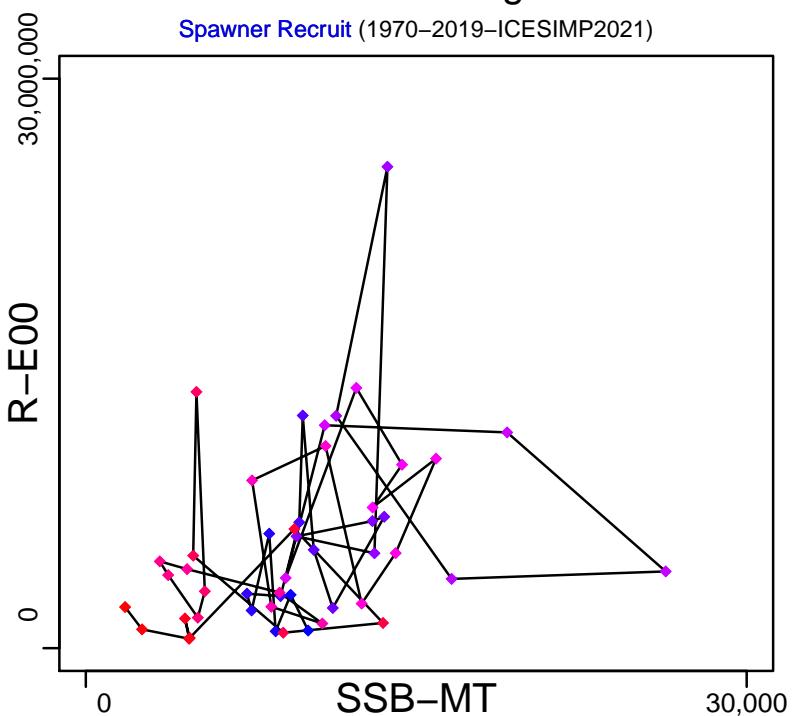
Kobe MSYpref (1970–2019–ICESIMP2021)



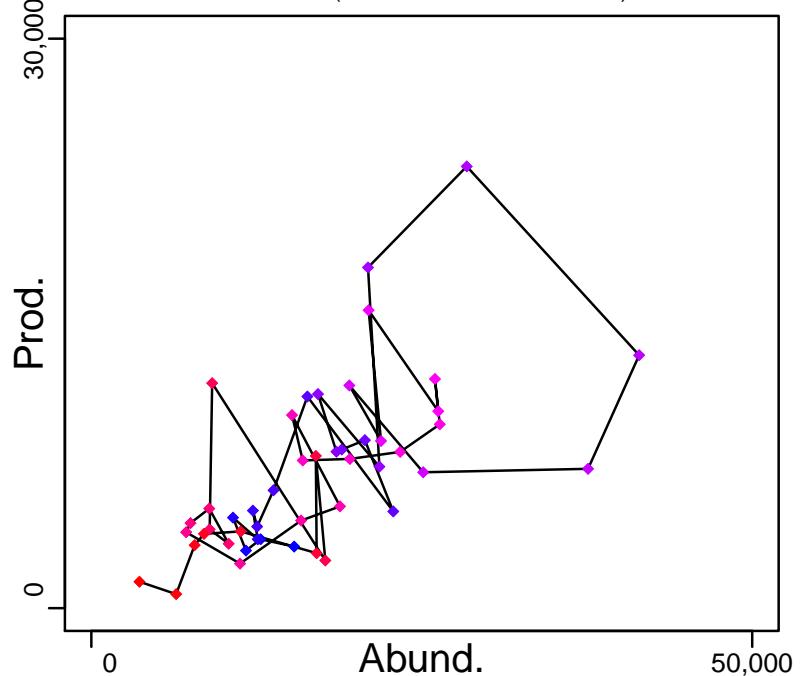
Kobe MGTpref (1970–2019–ICESIMP2021)



Spawner Recruit (1970–2019–ICESIMP2021)



Production (1970–2019–ICESIMP2021)

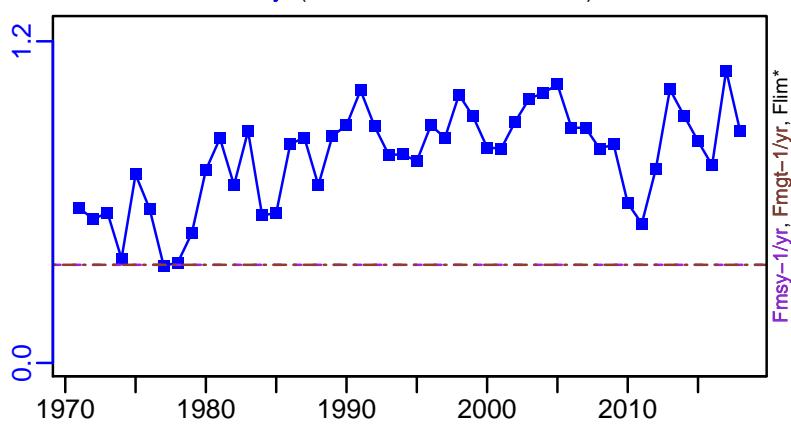
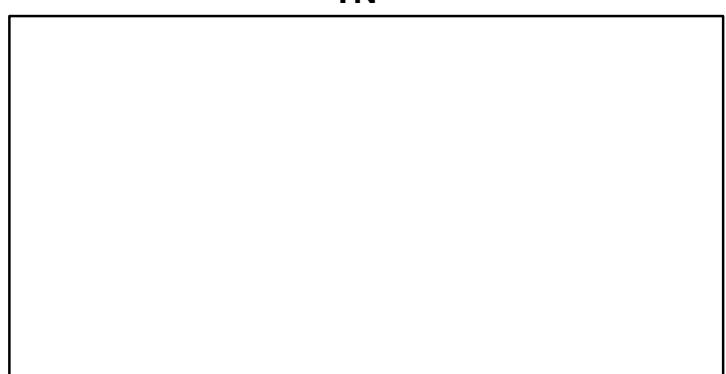
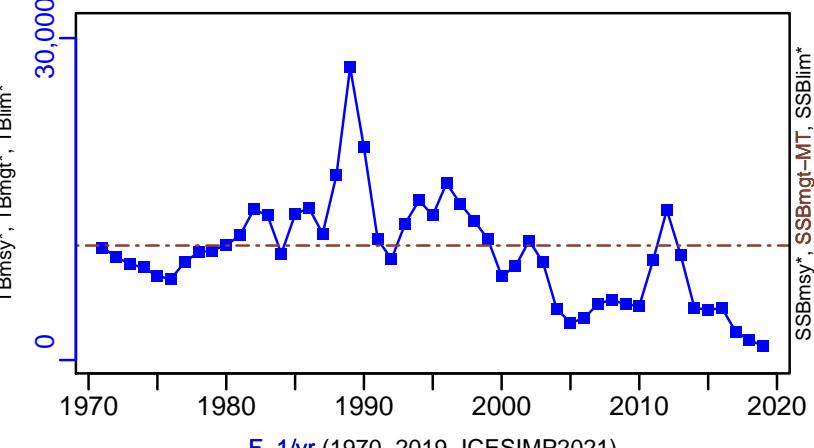
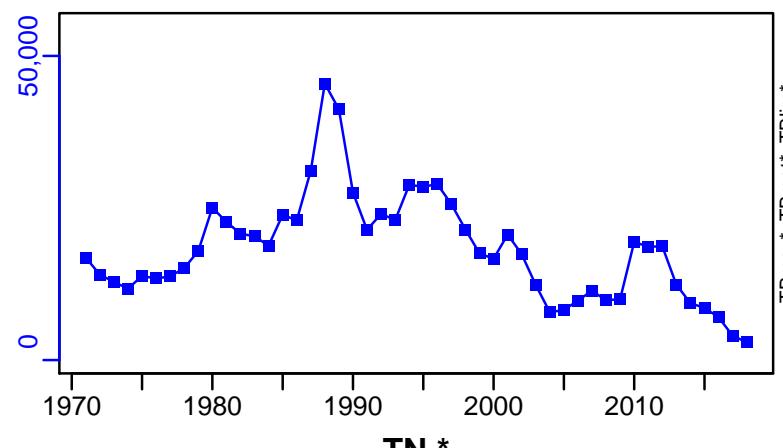


◆ Start Year   ◆ End Year   \* No Data

### Atlantic cod Celtic Sea [CODVIlek]

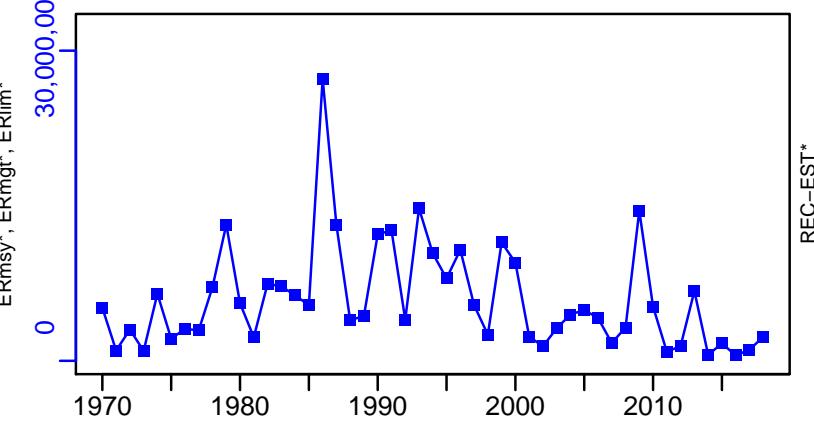
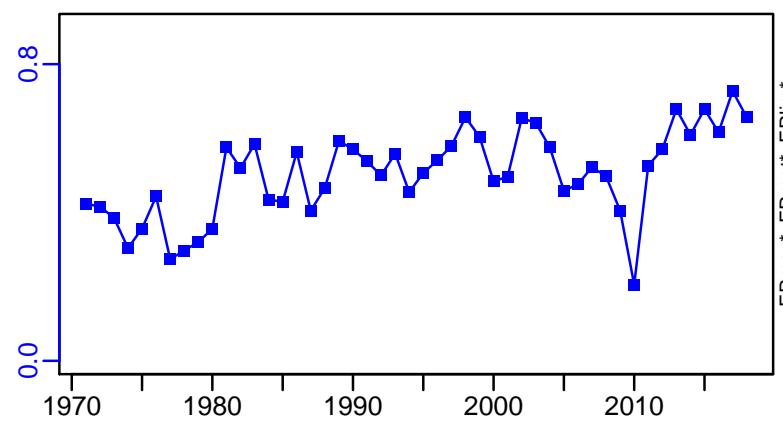
TB-MT (1970–2019–ICESIMP2021)

SSB-MT (1970–2019–ICESIMP2021)



ER-calc-ratio (1970–2019–ICESIMP2021)

R-E00 (1970–2019–ICESIMP2021)

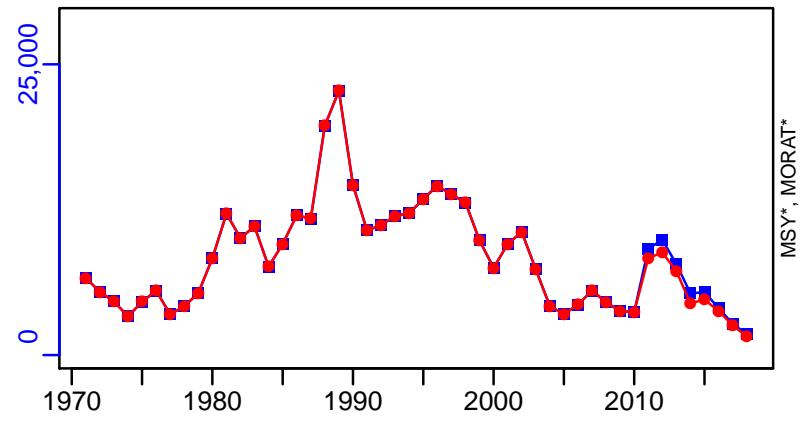


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | --- Lim BRP  | * No Data |

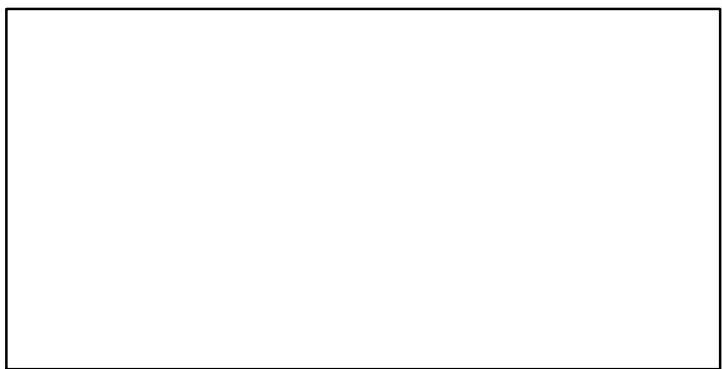
Atlantic cod Celtic Sea [CODVIlek]

TC-MT, TL-MT, RecC\* (1970–2019–ICESIMP2021)

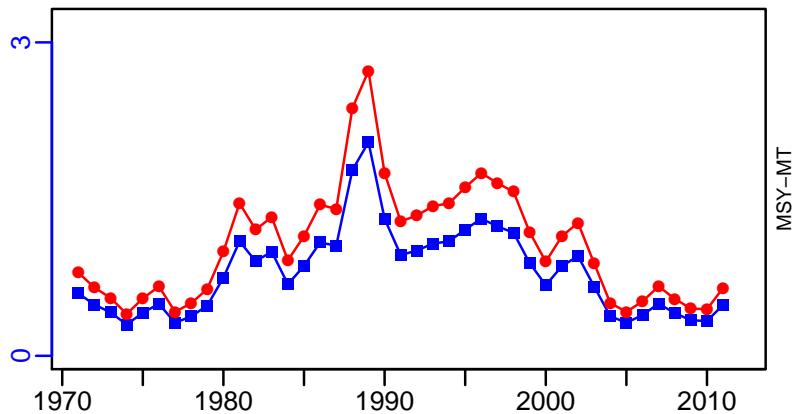
TAC\*, Cpair\*, Cadv\*



**EFFORT\***



TL-MT/MSY-MT, CdiveMEANC-ratio, (1971–2012–CHING)



|                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

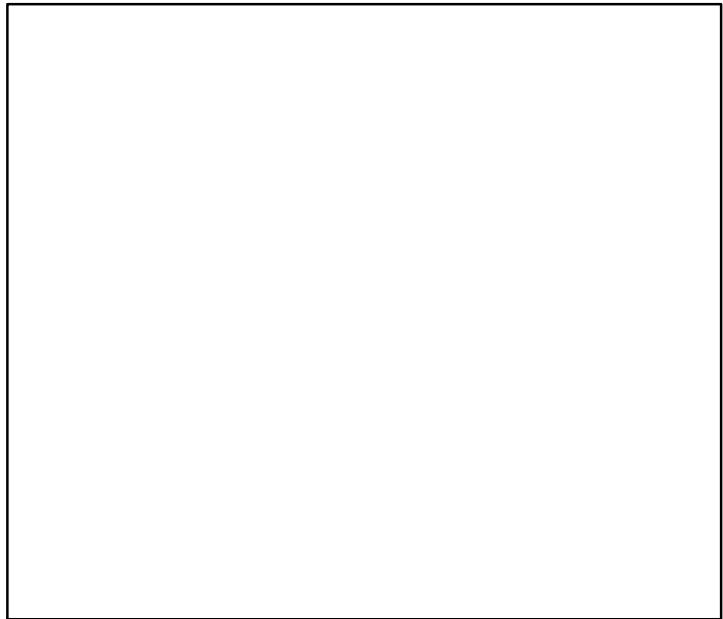
## Tusk Northeast Atlantic [CUSKNEATL]

| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Brosme brosme   |
| <b>Current Assess ID</b>    | WGDEEP-CUSKNEATL-1988-2018-ICESIMP2021                                      |
| <b>Area</b>                 | Northeast Atlantic  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                        |
| <b>Assessor</b>             | Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources |
| <b>Asmts in RAM</b>         | 2014, 2016, 2018  |

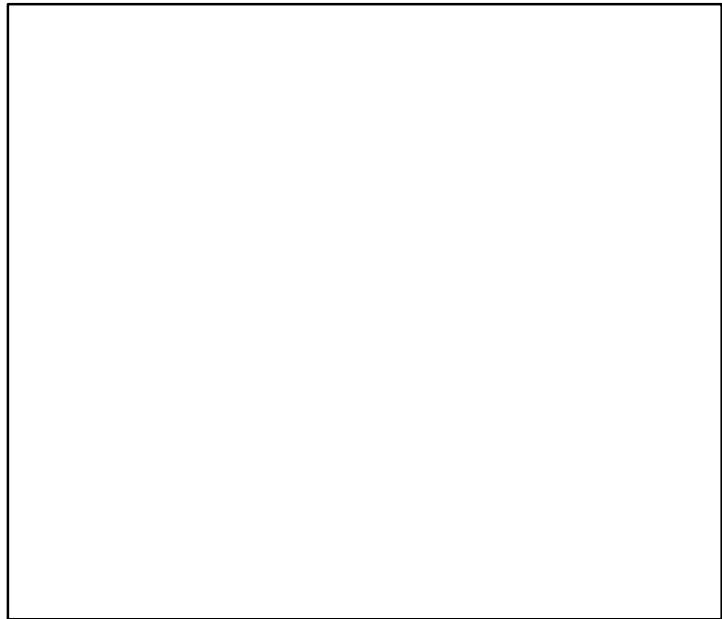
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2014      | 131        | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | TC-MT     | 2014      | 4590       |      |     |
| <b>TL</b>          | TL-MT     | 2018      | 4411       |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

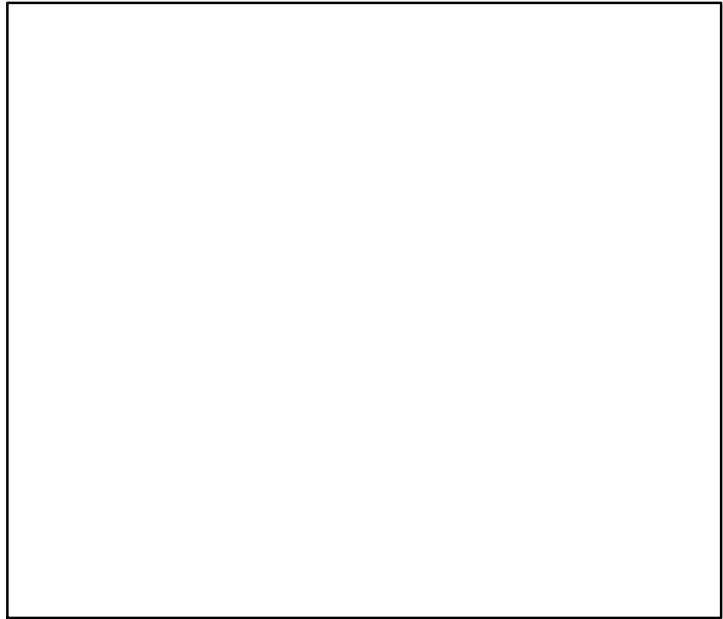
**Kobe MSY\***



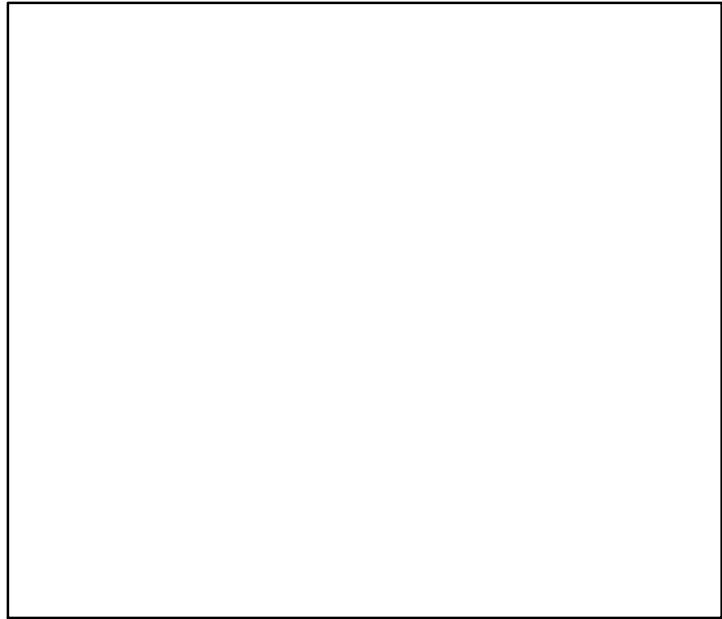
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



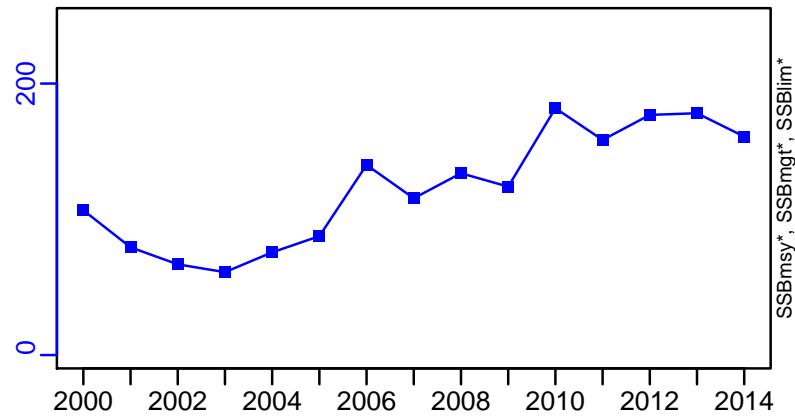
◆ Start Year ♦ End Year \* No Data

Tusk Northeast Atlantic [CUSKNEATL]

**TB\***

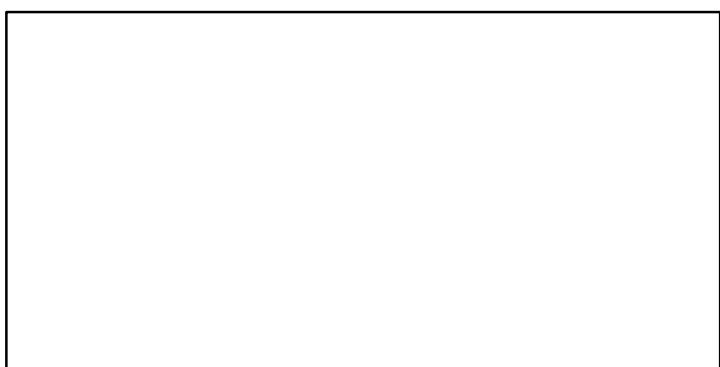


SSB-index (1988–2014–ICESIMP2018)

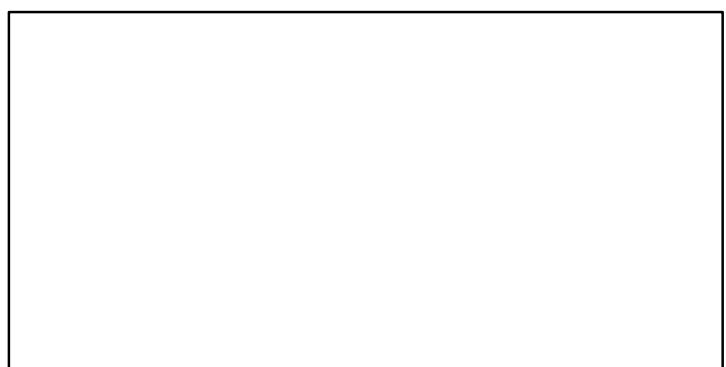


SSB<sub>m</sub>sy\*, SSB<sub>mgt</sub>, SSB<sub>lim</sub>\*

**TN \***



**F\***



**ER\***



**Recruits\***

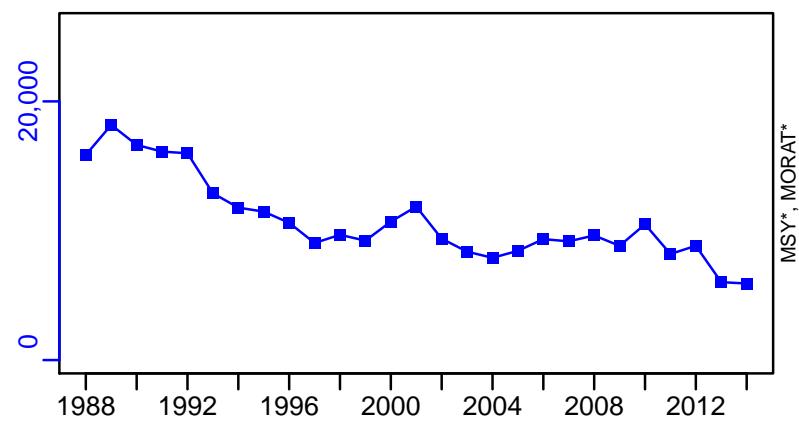


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | ··· Lim BRP  | * No Data |

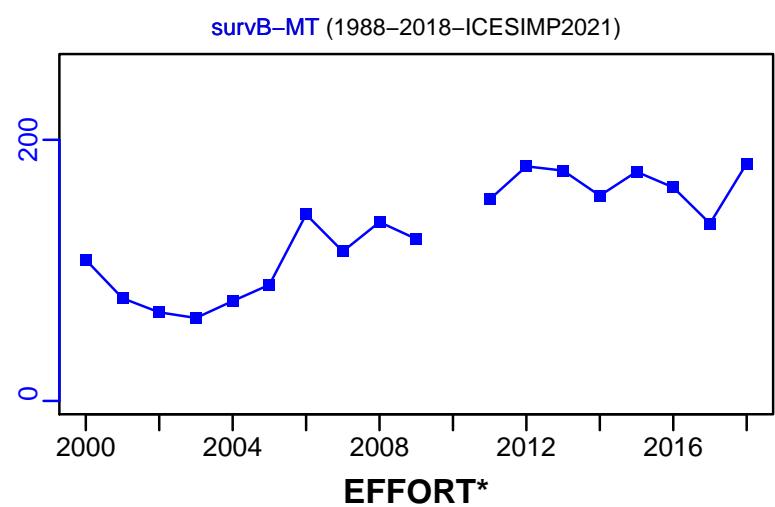
Tusk Northeast Atlantic [CUSKNEATL]

TC-MT, TL\*, RecC\* (1988–2014–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



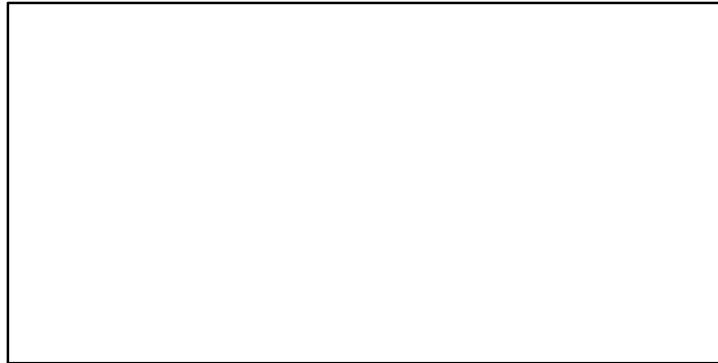
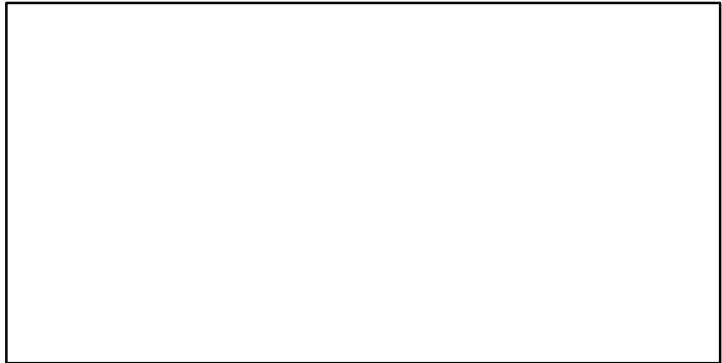
MSY\*, MORAT\*



EFFORT\*

CPUE\*

CdivMSY\*



- |   |  |  |  |
|---|--|--|--|
| <span style="color: blue;">█</span> 1st listed time series<br><span style="color: red;">●</span> 2nd listed time series | <span style="color: green;">▲</span> 3rd listed time series<br><span style="color: black;">●</span> 2nd listed time series | <span style="color: grey;">—</span> MORAT<br><span style="color: purple;">- - -</span> MSY | <span style="color: black;">*</span> No Data |
|---|--|--|--|

## Tusk ICES 5a-14 [CUSKVa-XIV]

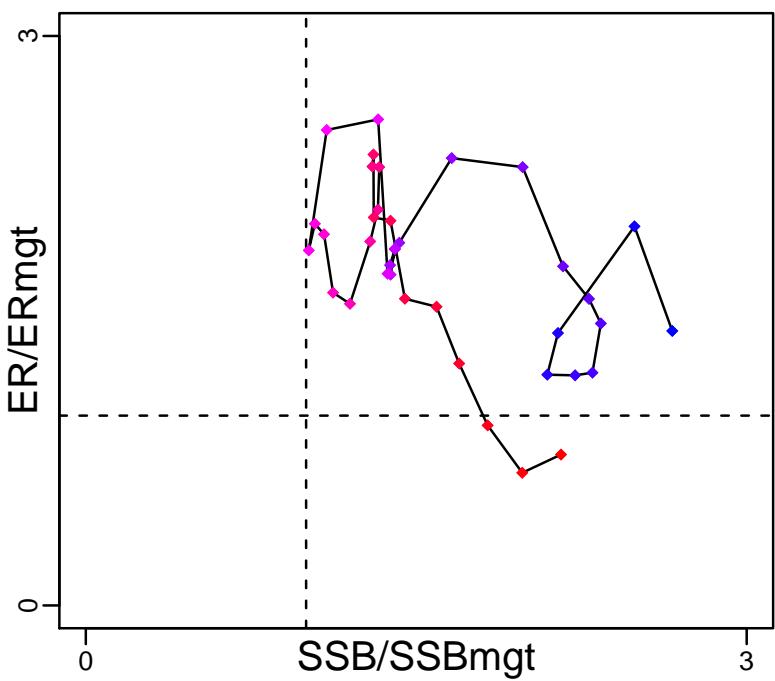
| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Brosme brosme   |
| <b>Current Assess ID</b>    | WGDEEP-CUSKVa-XIV-1973-2019-ICESIMP2021                                     |
| <b>Area</b>                 | ICES 5a-14  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                        |
| <b>Assessor</b>             | Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources |
| <b>Asmts in RAM</b>         | 2019, 2014, 2017, 2018, 2015, 2016  |

| <b>Reference Points</b> |             |           |       |
|-------------------------|-------------|-----------|-------|
| Type                    | ID          | Asmt Year | Value |
| <b>TBmsy</b>            | -           | -         | -     |
| <b>SSBmsy</b>           | -           | -         | -     |
| <b>Fmsy</b>             | Fmsy-1/yr   | 2016      | 0.2   |
| <b>ERrmsy</b>           | -           | -         | -     |
| <b>TBmgt</b>            | -           | -         | -     |
| <b>SSBmgt</b>           | SSBmgt-MT   | 2019      | 6240  |
| <b>Fmgt</b>             | Fmgt-1/yr   | 2016      | 0.2   |
| <b>ERmgt</b>            | ERmgt-ratio | 2019      | 0.13  |
| <b>TB0</b>              | -           | -         | -     |
| <b>SSB0</b>             | -           | -         | -     |
| <b>MSY</b>              | -           | -         | -     |
| <b>M</b>                | -           | -         | -     |
| <b>TBlim</b>            | -           | -         | -     |
| <b>SSBlim</b>           | SSBlim-MT   | 2018      | 4460  |
| <b>Flim</b>             | -           | -         | -     |
| <b>ERlim</b>            | -           | -         | -     |

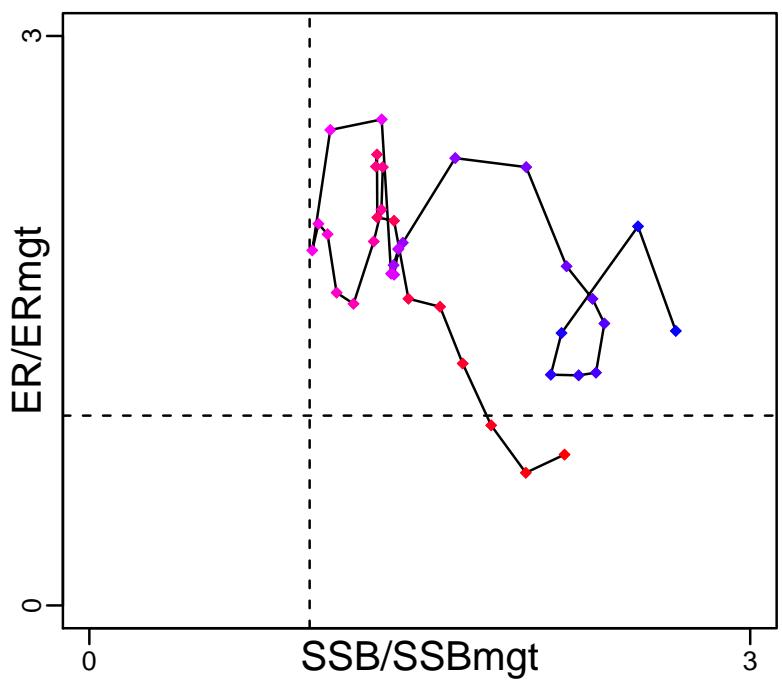
| <b>Time Series</b> |                  |           |            |     |     |
|--------------------|------------------|-----------|------------|-----|-----|
| Type               | ID               | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | TB-MT            | 2019      | 37,093     | -   | -   |
| <b>SSB</b>         | SSB-MT           | 2019      | 14,143     | -   | -   |
| <b>TN</b>          | -                | -         | -          | -   | -   |
| <b>R</b>           | R-E00            | 2019      | 18,433,788 | -   | 3   |
| <b>F</b>           | F-1/yr           | 2016      | 0.22       | -   | -   |
| <b>ER</b>          | ER-ratio         | 2019      | 0.103      | -   | -   |
| <b>TC</b>          | TC-MT            | 2017      | 3490       |     |     |
| <b>TL</b>          | TL-MT            | 2019      | 3621       |     |     |
| <b>TB/TBmsy</b>    | -                | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -                | -         | -          |     |     |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2016      | 1.1        |     |     |
| <b>ER/ERrmsy</b>   | -                | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -                | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019      | 2.267      |     |     |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2016      | 1.1        |     |     |
| <b>ER/ERmgt</b>    | -                | -         | -          |     |     |

Tusk ICES 5a-14 [CUSKVa-XIV]

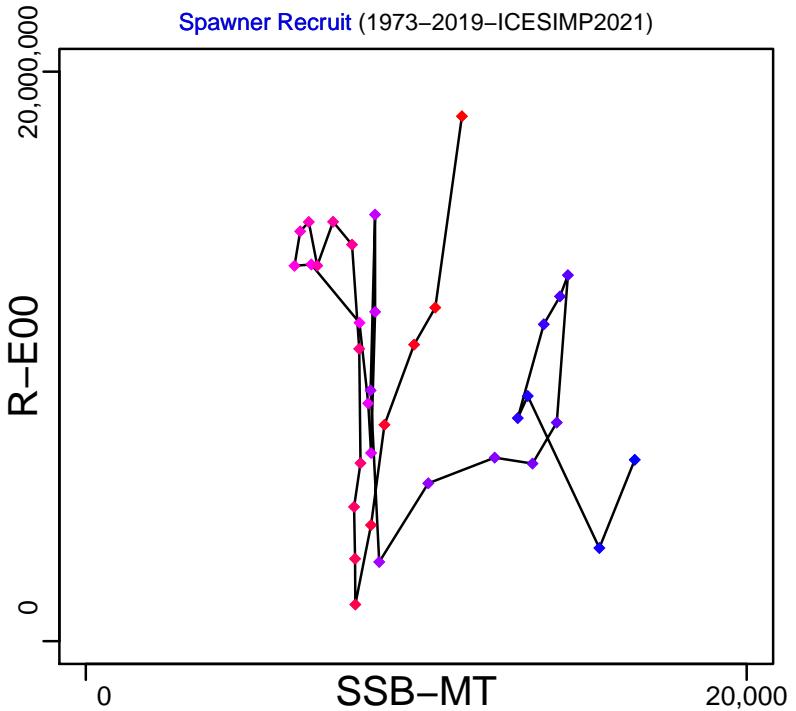
Kobe MSYpref (1973–2019–ICESIMP2021)



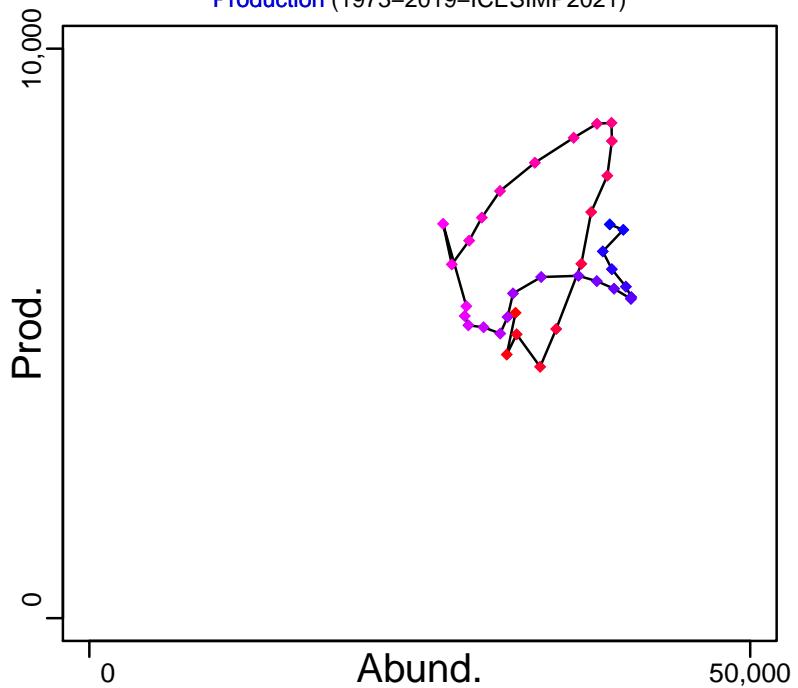
Kobe MGTpref (1973–2019–ICESIMP2021)



## Spawner Recruit (1973–2019–ICESIMP2021)



Production (1973–2019–ICESIMP2021)

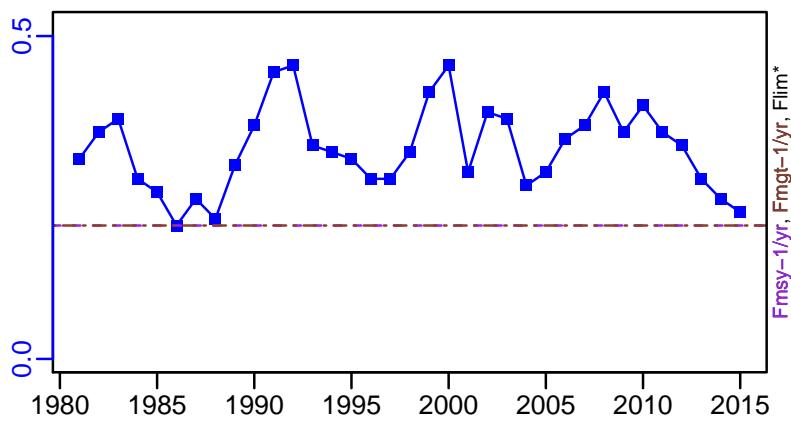
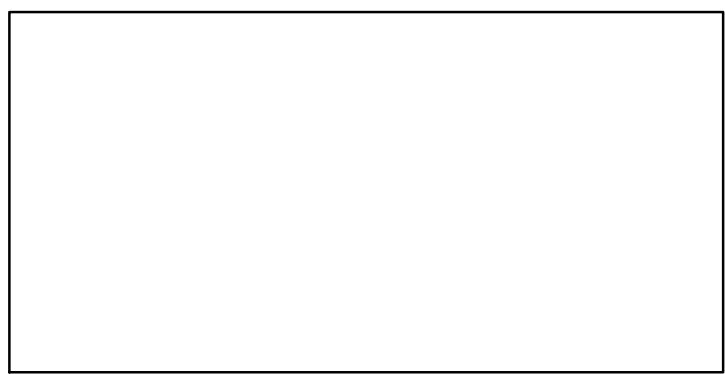
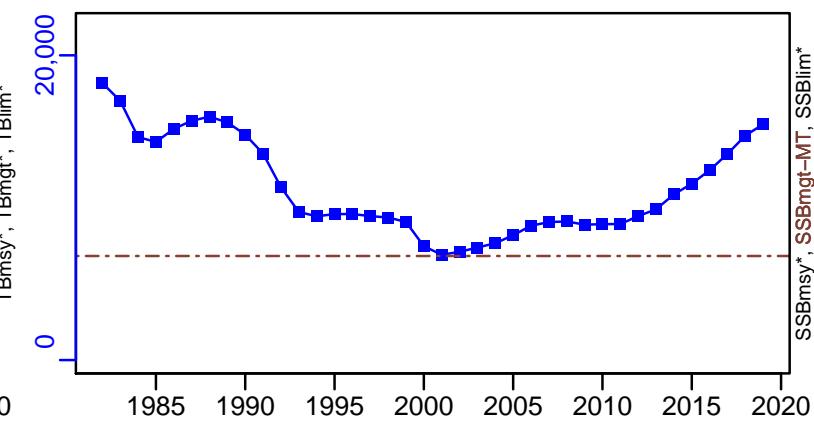
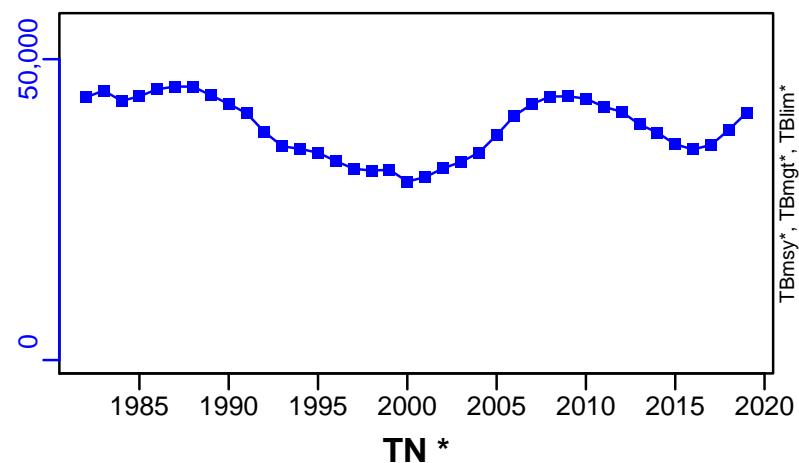


- ◆ Start Year
- ◆ End Year
- \* No Data

### Tusk ICES 5a–14 [CUSKVa–XIV]

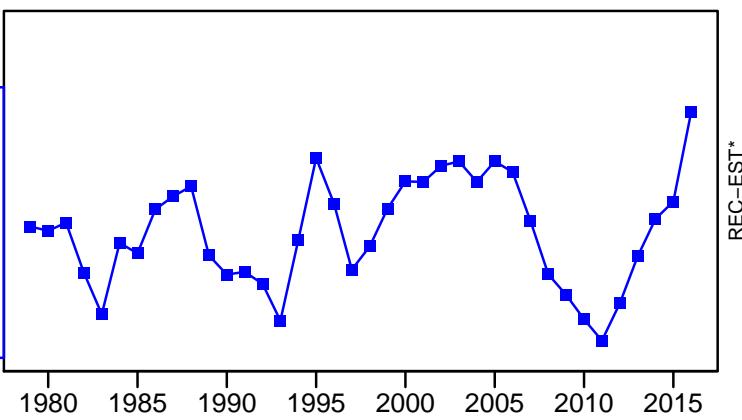
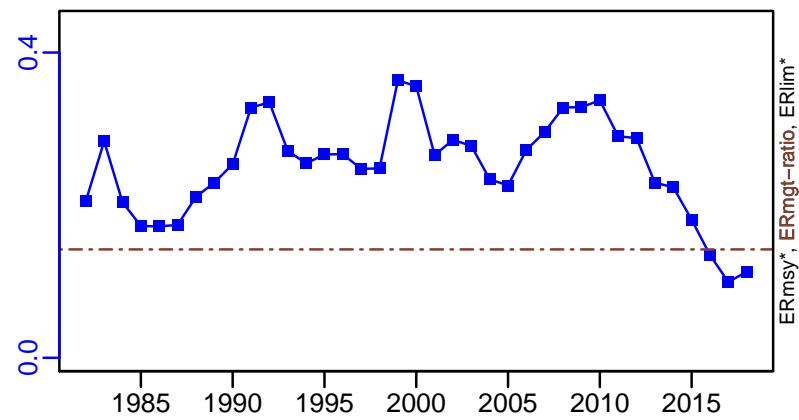
TB-MT (1973–2019–ICESIMP2021)

SSB-MT (1973–2019–ICESIMP2021)



ER-ratio (1973–2019–ICESIMP2021)

R-E00 (1973–2019–ICESIMP2021)

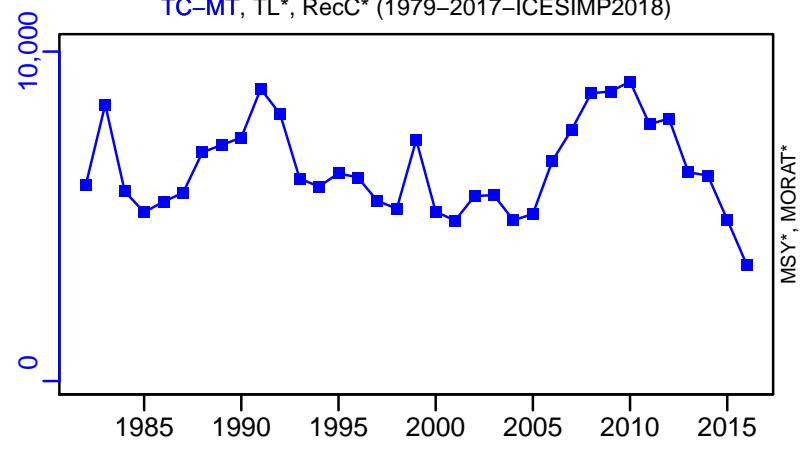


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | --- Lim BRP  | * No Data |

Tusk ICES 5a–14 [CUSKVa–XIV]

TC–MT, TL\*, RecC\* (1979–2017–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



survB\*

CPUE\*

EFFORT\*

CdivMSY\*

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

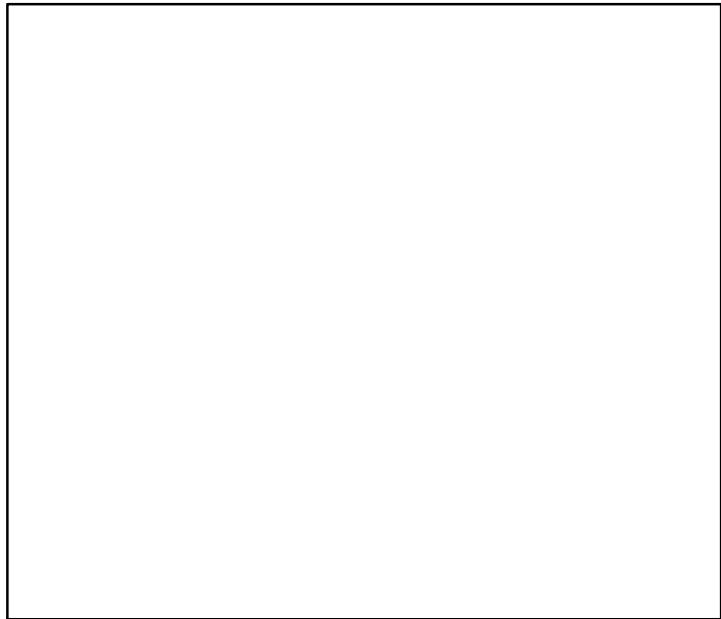
## Tusk Rockall Bank [CUSKVlb]

| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Brosme brosme   |
| <b>Current Assess ID</b>    | WGDEEP-CUSKVlb-1988-2017-ICESIMP2018  |
| <b>Area</b>                 | Rockall Bank  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                        |
| <b>Assessor</b>             | Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources |
| <b>Asmts in RAM</b>         | 2016, 2017  |

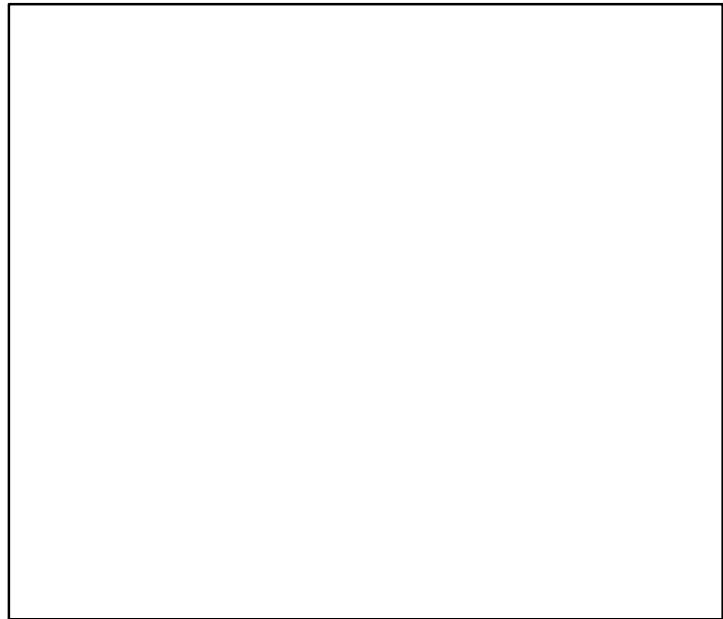
| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | -         | -                | -            |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | -         | -                | -            |
| <b>Fmgt</b>             | -         | -                | -            |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | -         | -                | -            |
| <b>Flim</b>             | -         | -                | -            |
| <b>ERlim</b>            | -         | -                | -            |

| <b>Time Series</b> |           |                  |                   |            |            |
|--------------------|-----------|------------------|-------------------|------------|------------|
| <b>Type</b>        | <b>ID</b> | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |
| <b>TB</b>          | -         | -                | -                 | -          | -          |
| <b>SSB</b>         | -         | -                | -                 | -          | -          |
| <b>TN</b>          | -         | -                | -                 | -          | -          |
| <b>R</b>           | -         | -                | -                 | -          | -          |
| <b>F</b>           | -         | -                | -                 | -          | -          |
| <b>ER</b>          | -         | -                | -                 | -          | -          |
| <b>TC</b>          | -         | -                | -                 |            |            |
| <b>TL</b>          | TL-MT     | 2017             | 47                |            |            |
| <b>TB/TBmsy</b>    | -         | -                | -                 |            |            |
| <b>SSB/SSBmsy</b>  | -         | -                | -                 |            |            |
| <b>F/Fmsy</b>      | -         | -                | -                 |            |            |
| <b>ER/ERmsy</b>    | -         | -                | -                 |            |            |
| <b>TB/TBmgt</b>    | -         | -                | -                 |            |            |
| <b>SSB/SSBmgt</b>  | -         | -                | -                 |            |            |
| <b>F/Fmgt</b>      | -         | -                | -                 |            |            |
| <b>ER/ERmgt</b>    | -         | -                | -                 |            |            |

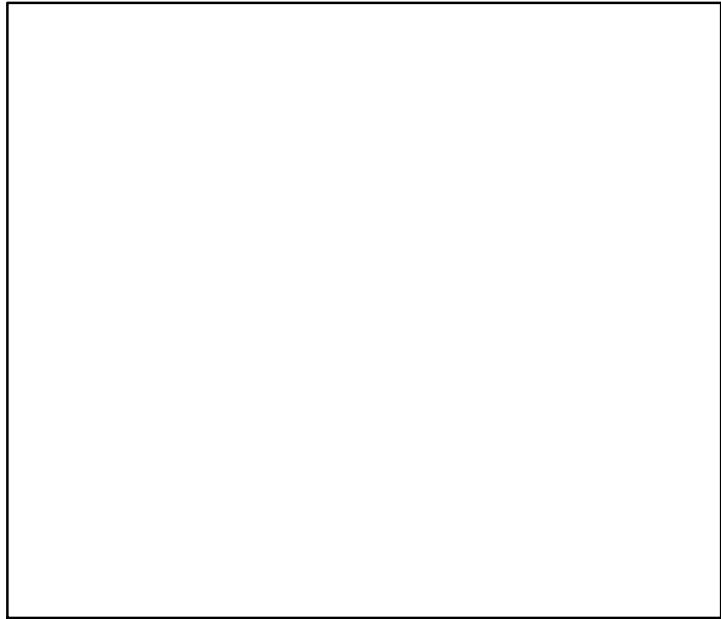
**Kobe MSY\***



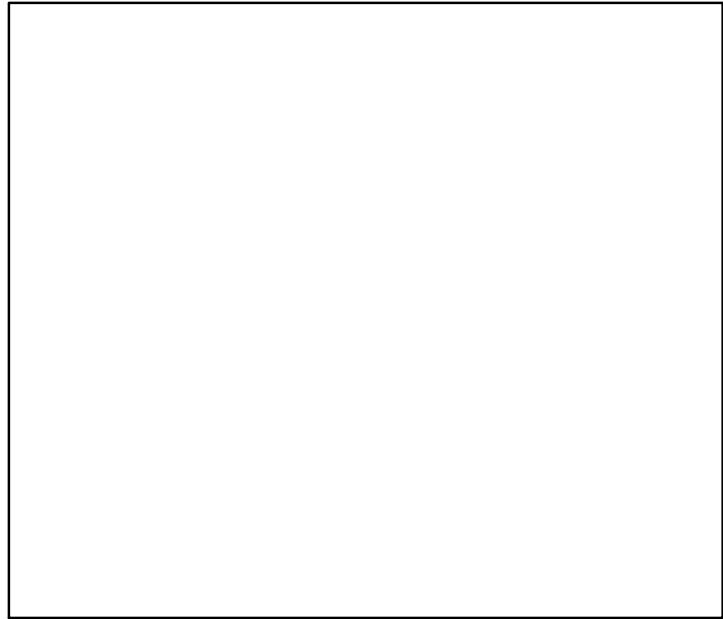
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

**TB\***



**SSB\***



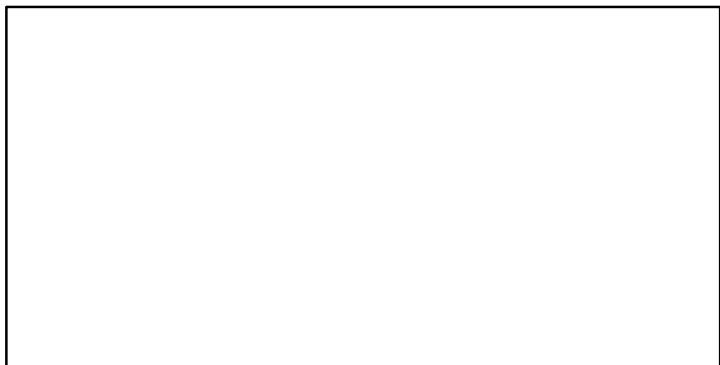
**TN \***



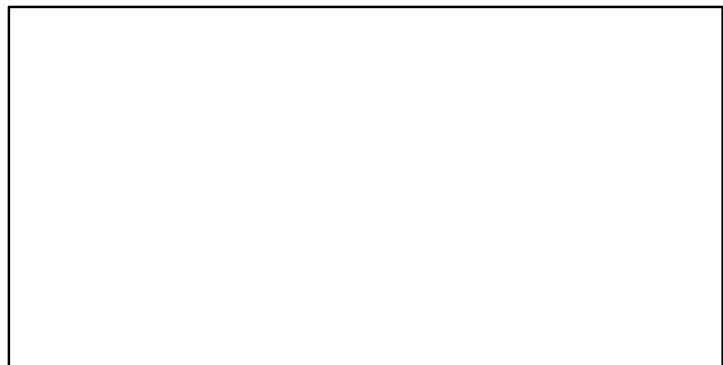
**F\***



**ER\***



**Recruits\***

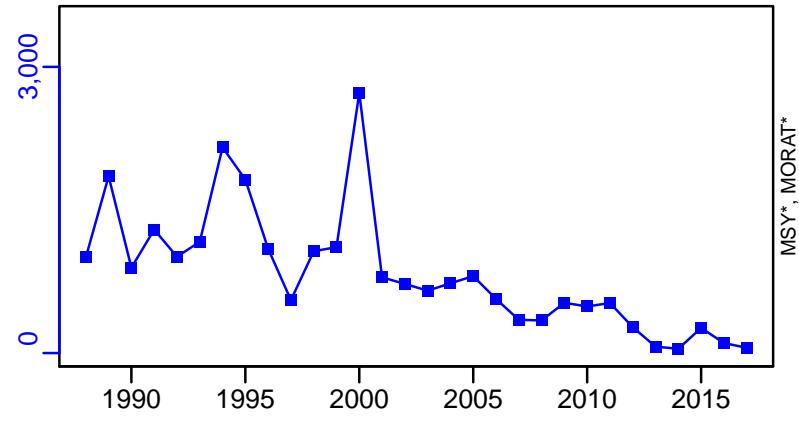


- |       |                    |       |            |   |         |
|-------|--------------------|-------|------------|---|---------|
| ■     | Listed time series | - - - | Target BRP | — | Rec-Est |
| - - - | MSY-based BRP      | - - - | Lim BRP    | * | No Data |

Tusk Rockall Bank [CUSKVIb]

TL-MT, TC\*, RecC\* (1988–2017–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*

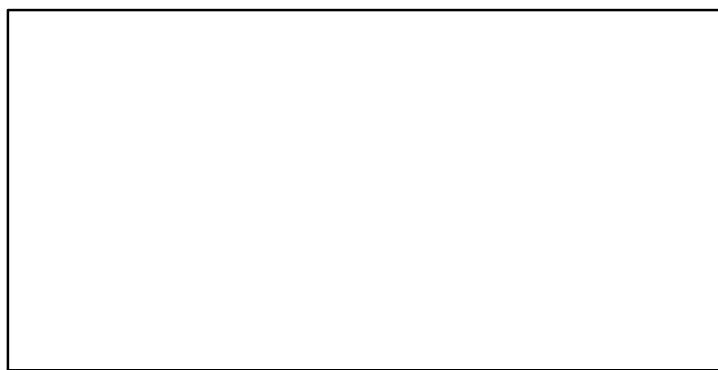


survB\*

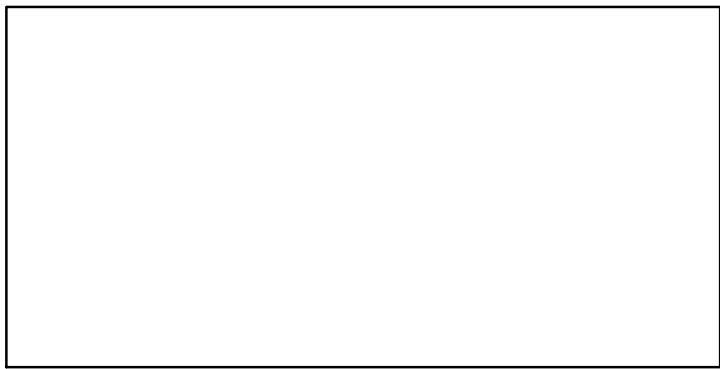
MSY\*, MORAT\*



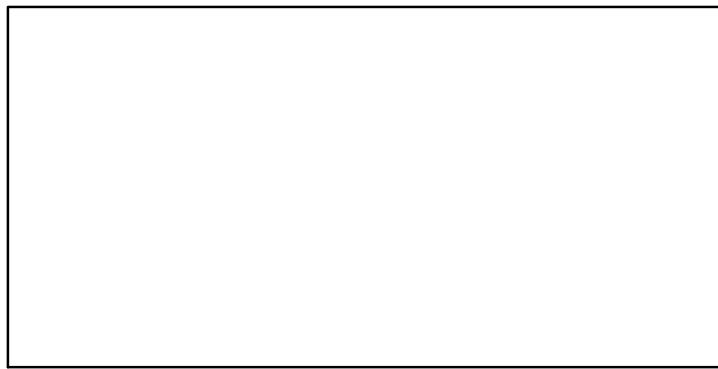
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

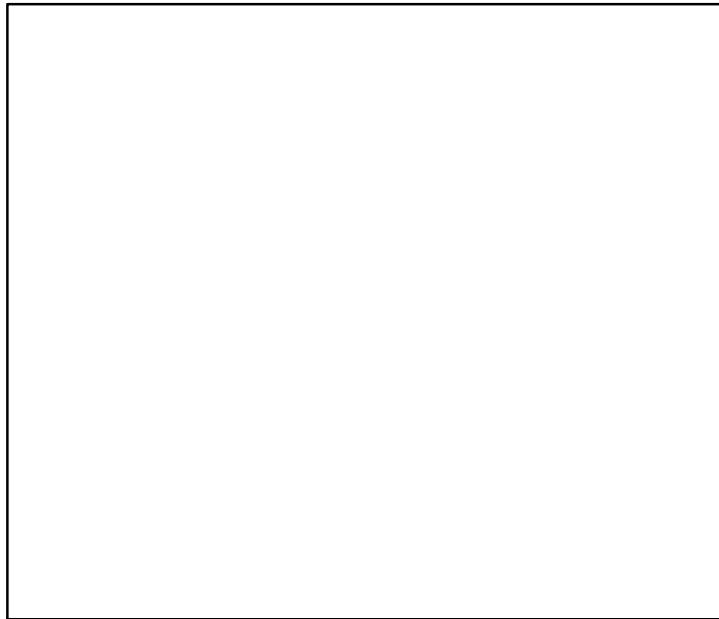
## Tusk North of Azores [CUSKXII]

| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Brosme brosme   |
| <b>Current Assess ID</b>    | WGDEEP-CUSKXII-1988-2018-ICESIMP2021  |
| <b>Area</b>                 | North of Azores   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                        |
| <b>Assessor</b>             | Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources |
| <b>Asmts in RAM</b>         | 2015, 2016, 2018  |

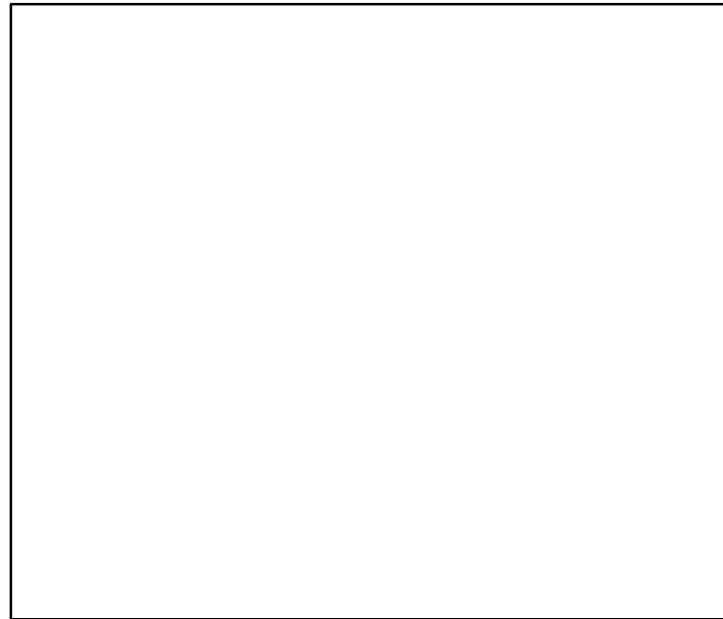
| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | -         | -                | -            |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | -         | -                | -            |
| <b>Fmgt</b>             | -         | -                | -            |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | -         | -                | -            |
| <b>Flim</b>             | -         | -                | -            |
| <b>ERlim</b>            | -         | -                | -            |

| <b>Time Series</b> |           |                  |                   |            |            |
|--------------------|-----------|------------------|-------------------|------------|------------|
| <b>Type</b>        | <b>ID</b> | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |
| <b>TB</b>          | -         | -                | -                 | -          | -          |
| <b>SSB</b>         | -         | -                | -                 | -          | -          |
| <b>TN</b>          | -         | -                | -                 | -          | -          |
| <b>R</b>           | -         | -                | -                 | -          | -          |
| <b>F</b>           | -         | -                | -                 | -          | -          |
| <b>ER</b>          | -         | -                | -                 | -          | -          |
| <b>TC</b>          | -         | -                | -                 |            |            |
| <b>TL</b>          | TL-MT     | 2018             | 0                 |            |            |
| <b>TB/TBmsy</b>    | -         | -                | -                 |            |            |
| <b>SSB/SSBmsy</b>  | -         | -                | -                 |            |            |
| <b>F/Fmsy</b>      | -         | -                | -                 |            |            |
| <b>ER/ERmsy</b>    | -         | -                | -                 |            |            |
| <b>TB/TBmgt</b>    | -         | -                | -                 |            |            |
| <b>SSB/SSBmgt</b>  | -         | -                | -                 |            |            |
| <b>F/Fmgt</b>      | -         | -                | -                 |            |            |
| <b>ER/ERmgt</b>    | -         | -                | -                 |            |            |

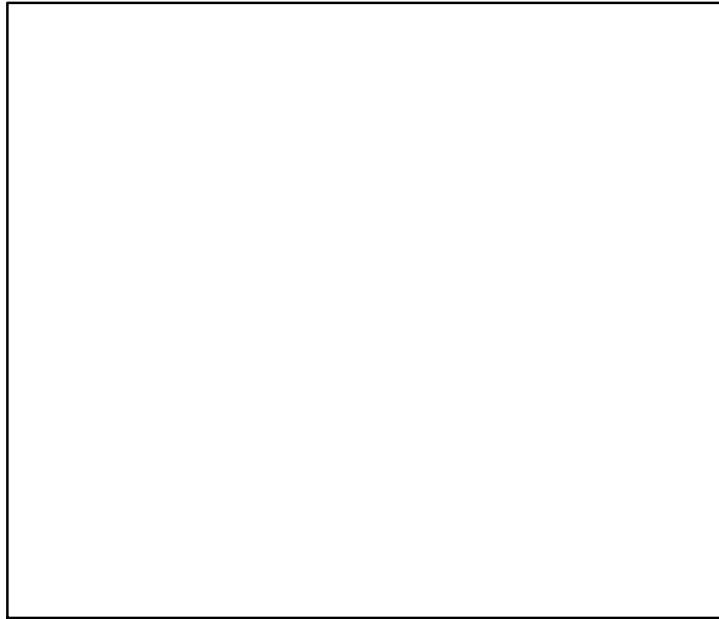
**Kobe MSY\***



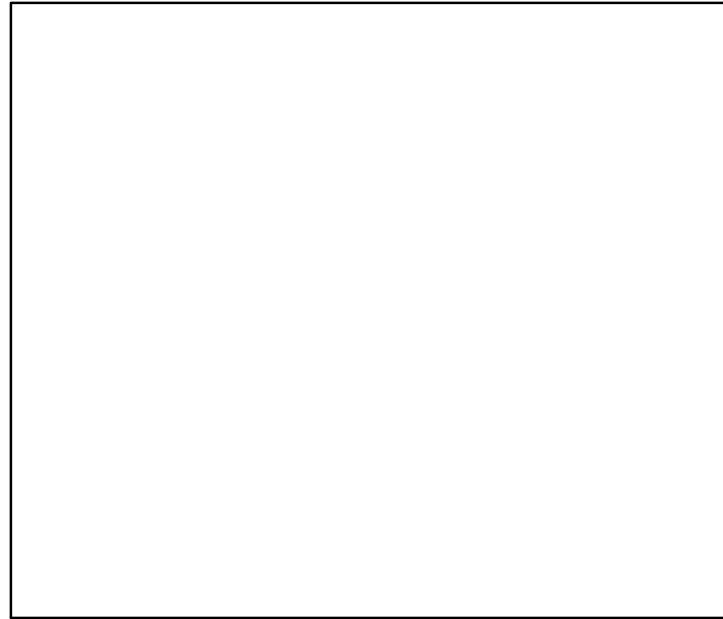
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

Tusk North of Azores [CUSKXII]

**TB\***



**SSB\***



**TN \***



**F\***



**ER\***



**Recruits\***

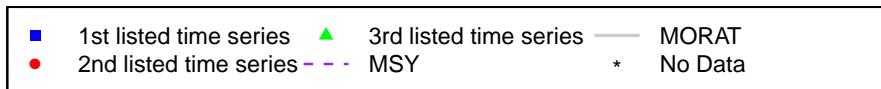
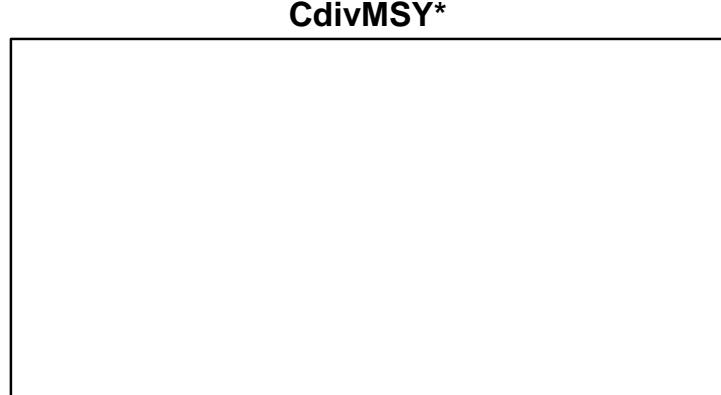
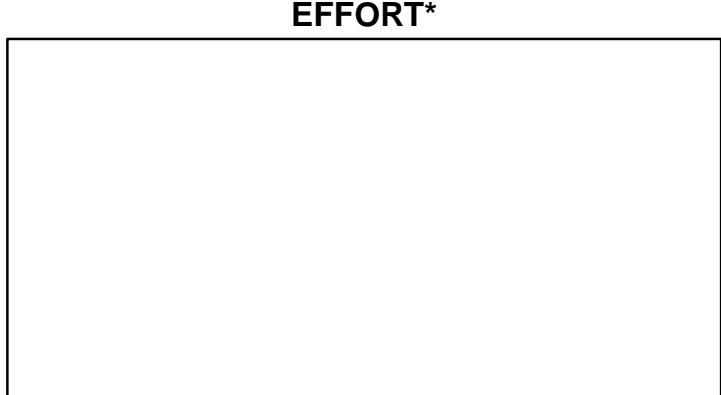
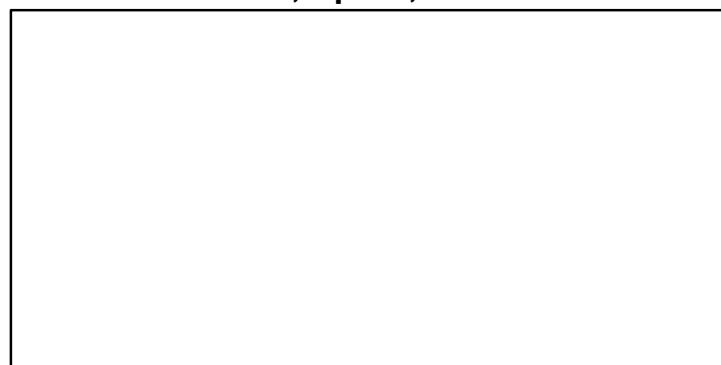
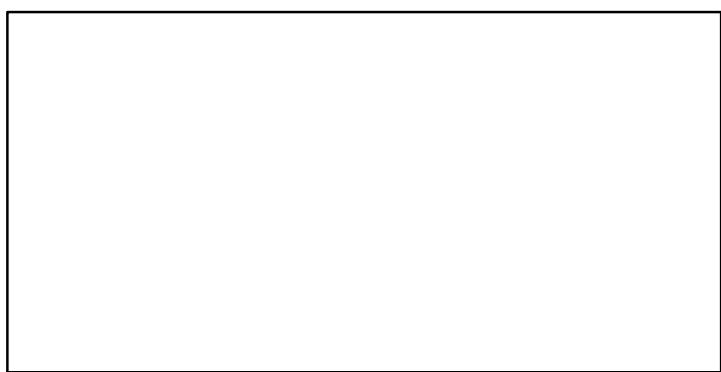
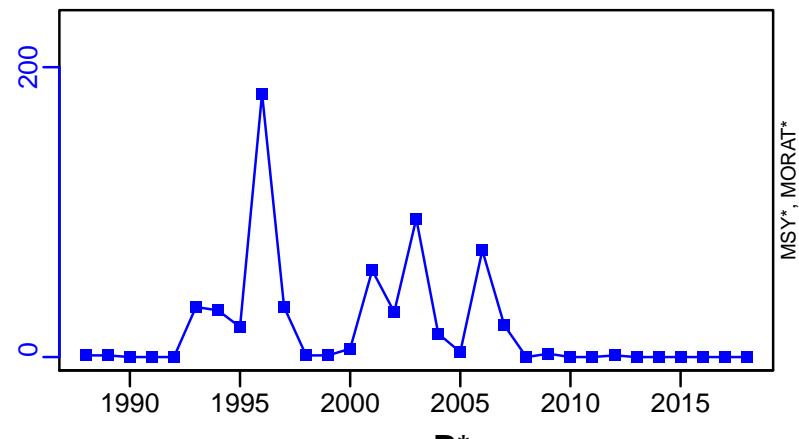


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

**Tusk North of Azores [CUSKXII]**

TL-MT, TC\*, RecC\* (1988–2018–ICESIMP2021)

**TAC\*, Cpair\*, Cadv\***



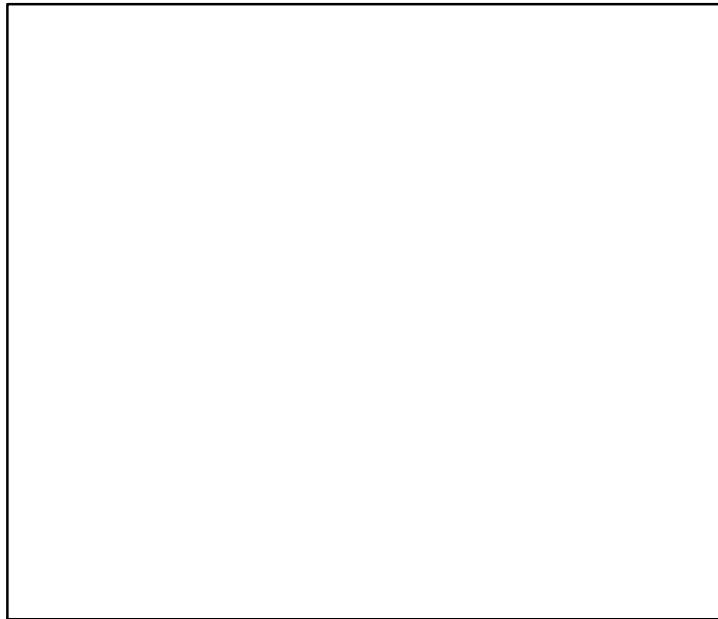
## Dab Baltic Areas 22-32 [DAB2232]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Limanda limanda                                      |
| <b>Current Assess ID</b>    | WGBFAS-DAB2232-1970-2016-ICESIMP2018                 |
| <b>Area</b>                 | Baltic Areas 22-32                                   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Baltic Fisheries Assessment Working Group            |
| <b>Asmts in RAM</b>         | 2016, 2016   |

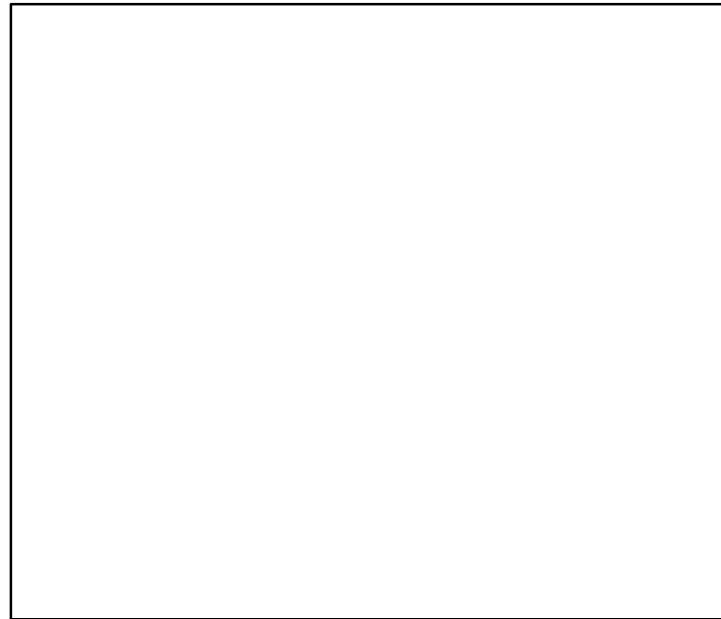
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | TC-MT | 2016      | 2360       |     |     |
| <b>TL</b>          | TL-MT | 2016      | 1270       |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

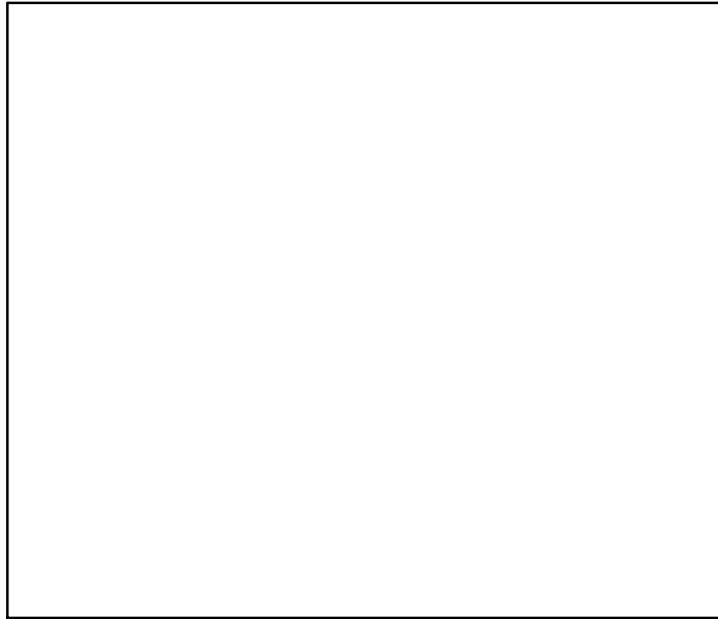
**Kobe MSY\***



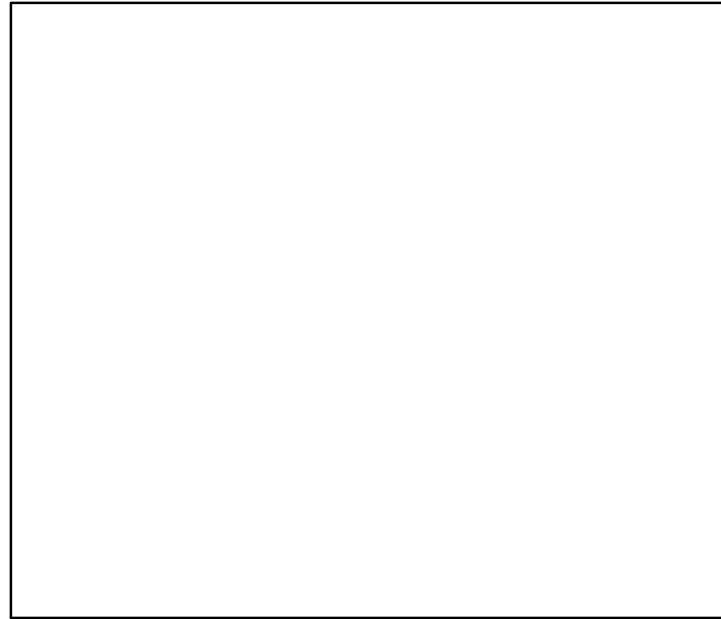
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

**TB\***



**SSB\***



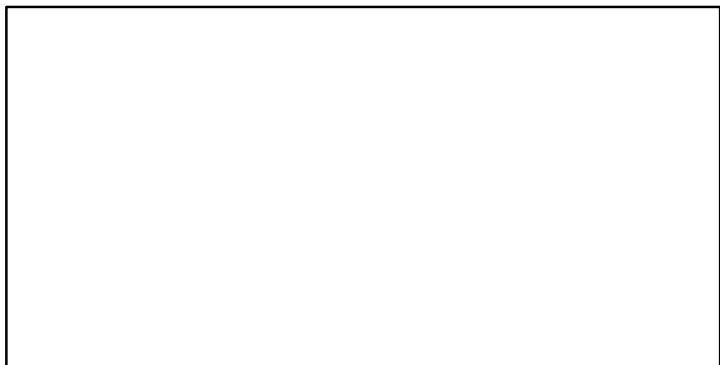
**TN \***



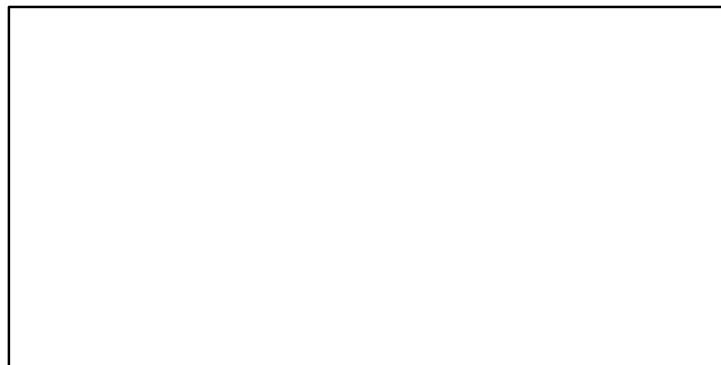
**F\***



**ER\***



**Recruits\***

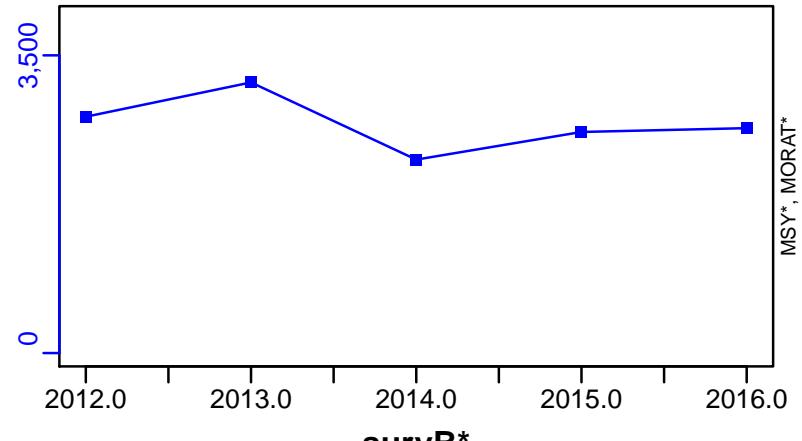


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

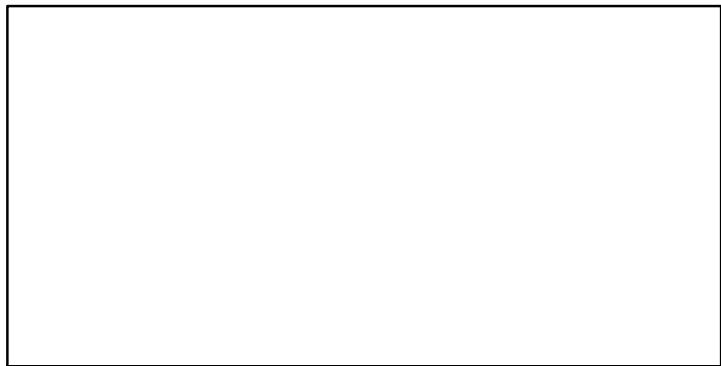
Dab Baltic Areas 22–32 [DAB2232]

TC-MT, TL\*, RecC\* (1970–2016–ICESIMP2018)

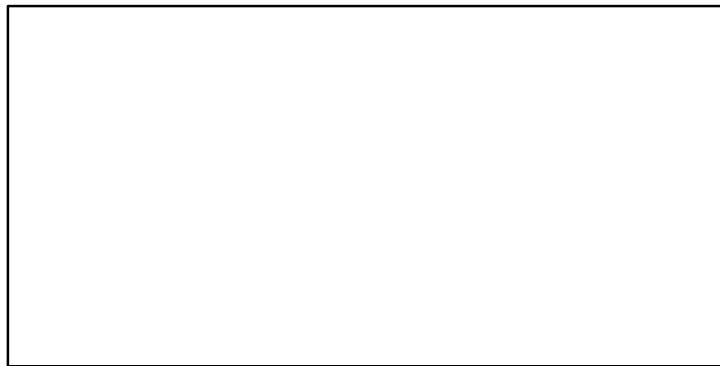
TAC\*, Cpair\*, Cadv\*



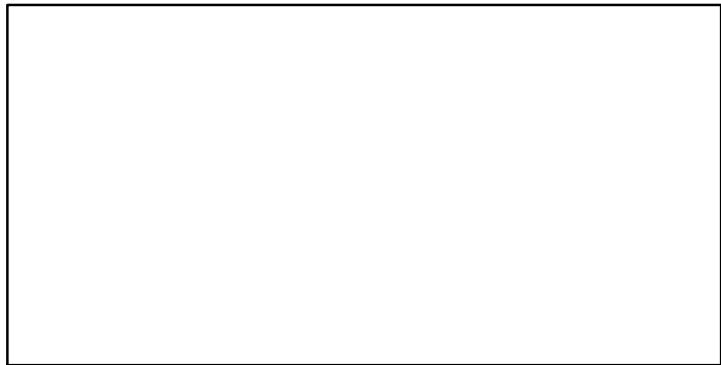
survB\*



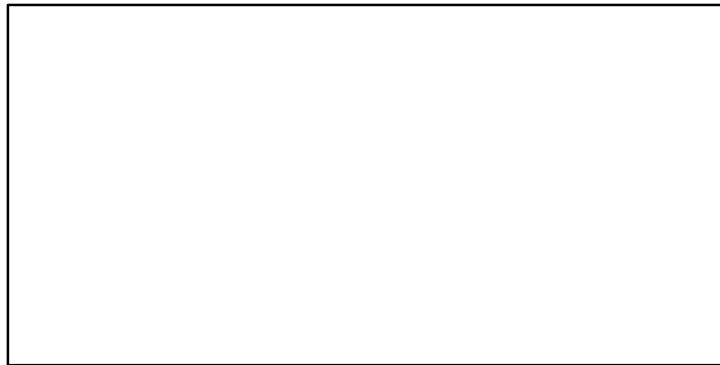
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Dab ICES 3a-4 [DABIIIa-IV]

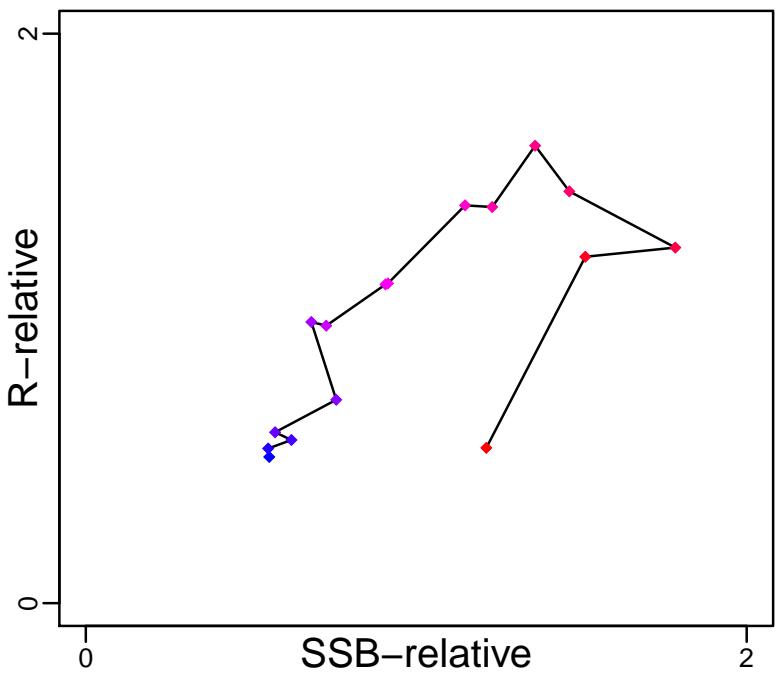
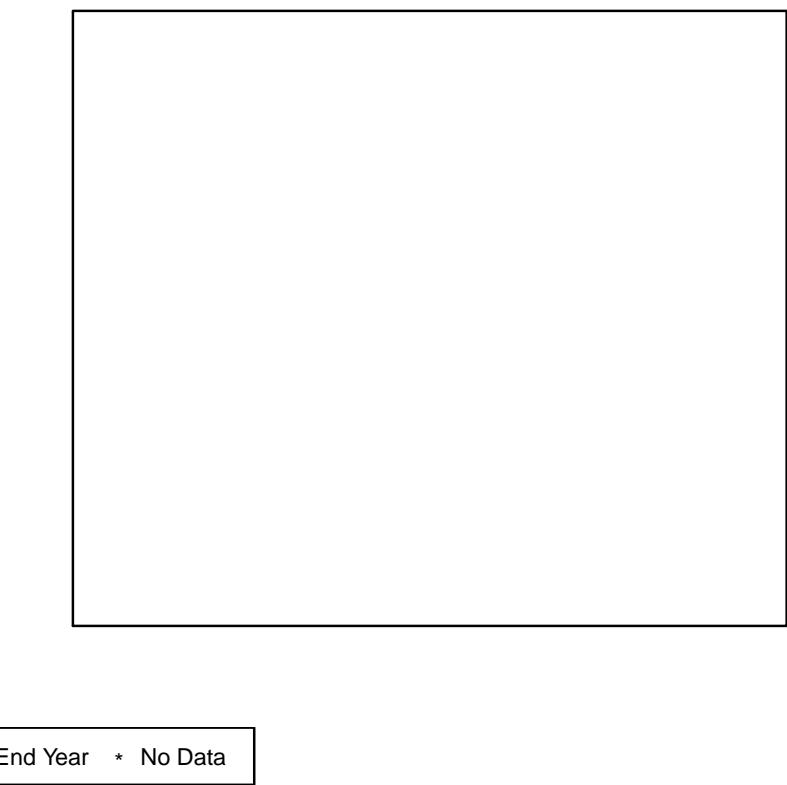
| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Limanda limanda   |
| <b>Current Assess ID</b>    | WGNSSK-DABIIIa-IV-1965-2018-ICESIMP2021   |
| <b>Area</b>                 | ICES 3a-4   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2015, 2016, 2018  |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |              |           |            |     |     |  |
|--------------------|--------------|-----------|------------|-----|-----|--|
| Type               | ID           | Asmt Year | Curr Value | Sex | Age |  |
| <b>TB</b>          | TB-relative  | 2018      | 1.166      | -   | -   |  |
| <b>SSB</b>         | SSB-relative | 2018      | 1.212      | -   | -   |  |
| <b>TN</b>          | -            | -         | -          | -   | -   |  |
| <b>R</b>           | R-relative   | 2018      | 0.545      | -   | -   |  |
| <b>F</b>           | F-relative   | 2018      | 1.145      | -   | -   |  |
| <b>ER</b>          | -            | -         | -          | -   | -   |  |
| <b>TC</b>          | TC-MT        | 2018      | 44,792     |     |     |  |
| <b>TL</b>          | TL-MT        | 2018      | 4233       |     |     |  |
| <b>TB/TBmsy</b>    | -            | -         | -          |     |     |  |
| <b>SSB/SSBmsy</b>  | -            | -         | -          |     |     |  |
| <b>F/Fmsy</b>      | -            | -         | -          |     |     |  |
| <b>ER/ERmsy</b>    | -            | -         | -          |     |     |  |
| <b>TB/TBmgt</b>    | -            | -         | -          |     |     |  |
| <b>SSB/SSBmgt</b>  | -            | -         | -          |     |     |  |
| <b>F/Fmgt</b>      | -            | -         | -          |     |     |  |
| <b>ER/ERmgt</b>    | -            | -         | -          |     |     |  |

**Kobe MSY\*****Kobe MGT\***

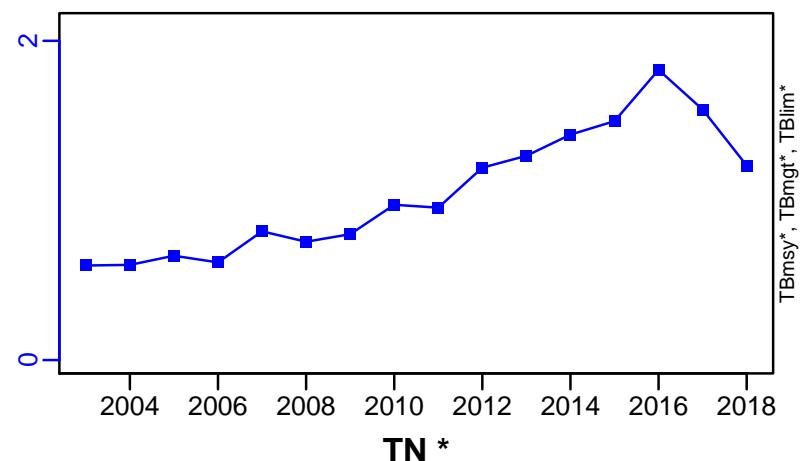
Spawner Recruit (1965–2018–ICESIMP2021)

**Production\***

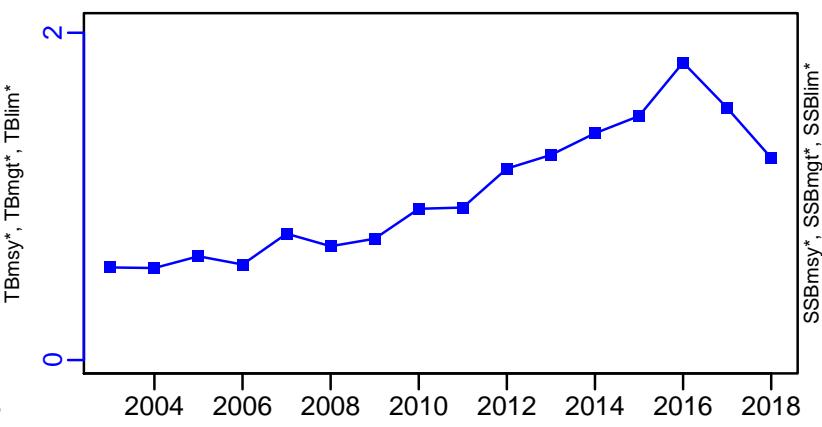
Dab ICES 3a–4 [DABIIIa–IV]

TB-relative (1965–2018–ICESIMP2021)

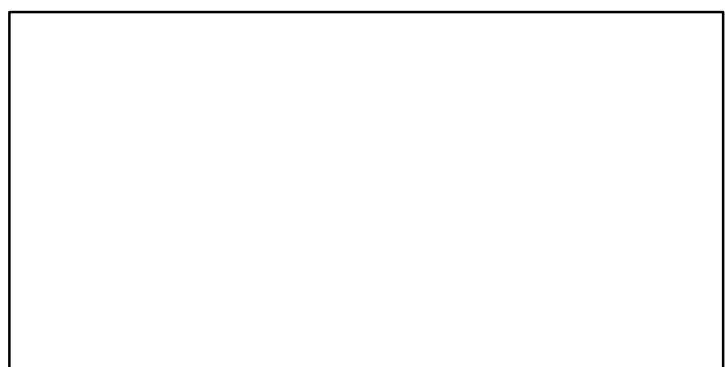
SSB-relative (1965–2018–ICESIMP2021)



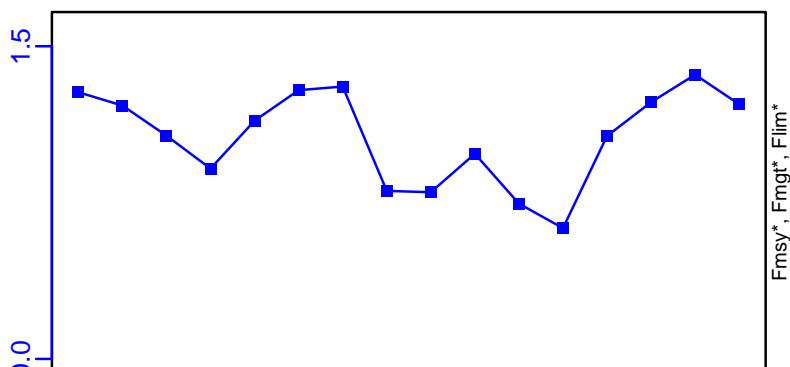
TN \*



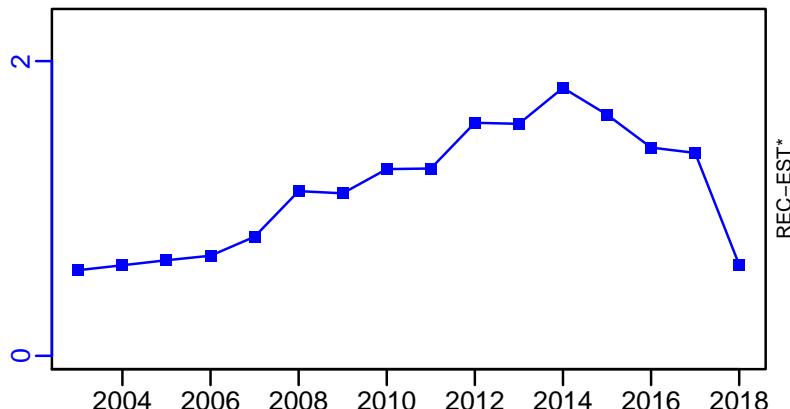
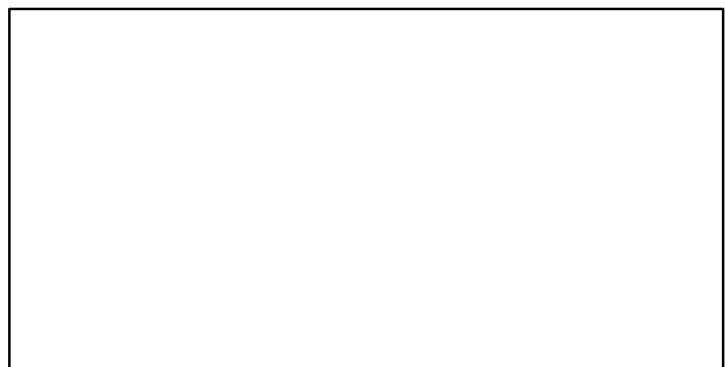
F-relative (1965–2018–ICESIMP2021)



ER\*



R-relative (1965–2018–ICESIMP2021)



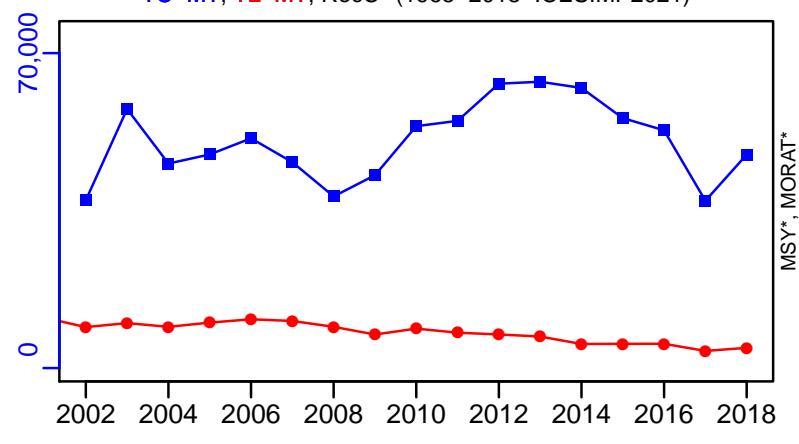
REC-EST\*

- Listed time series
- Target BRP
- MSY-based BRP
- Lim BRP
- Rec-Est
- \* No Data

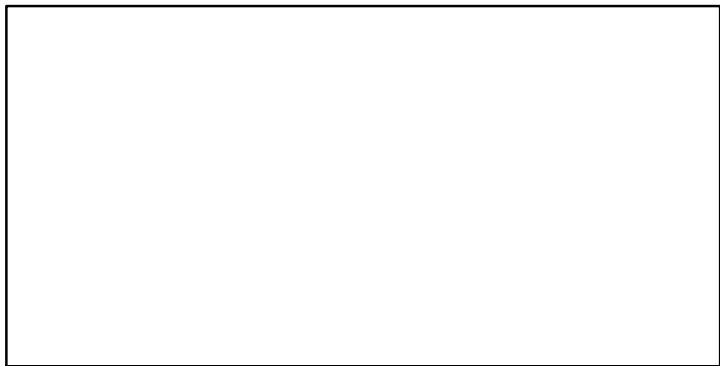
Dab ICES 3a–4 [DABIIIa–IV]

TC–MT, TL–MT, RecC\* (1965–2018–ICESIMP2021)

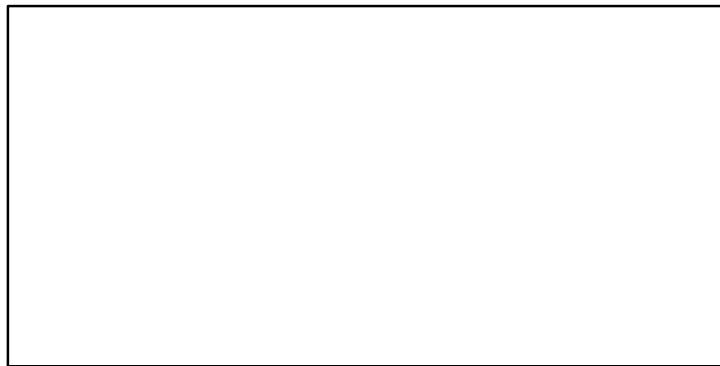
TAC\*, Cpair\*, Cadv\*



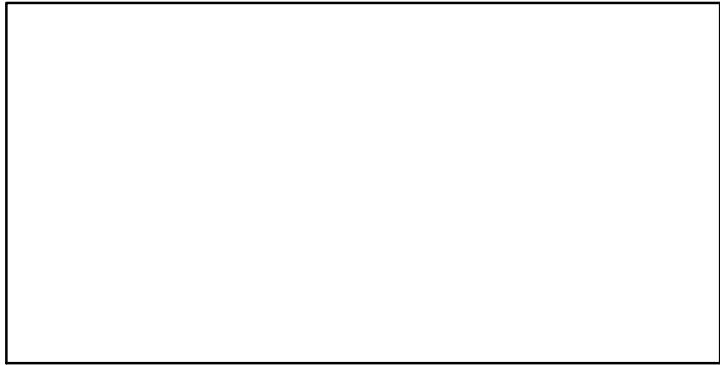
survB\*



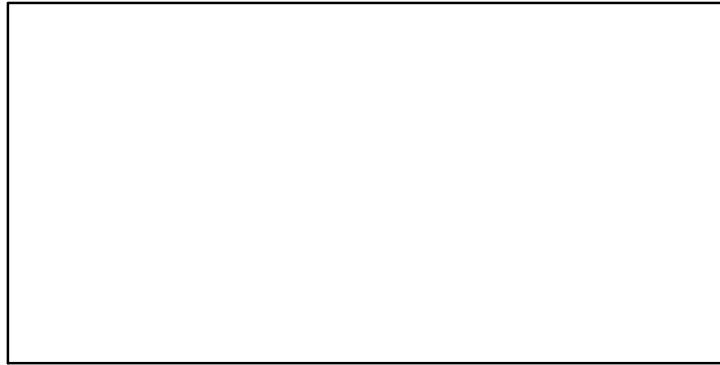
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## European seabass ICES 4bc-7 [EBASSIVbc-VII]

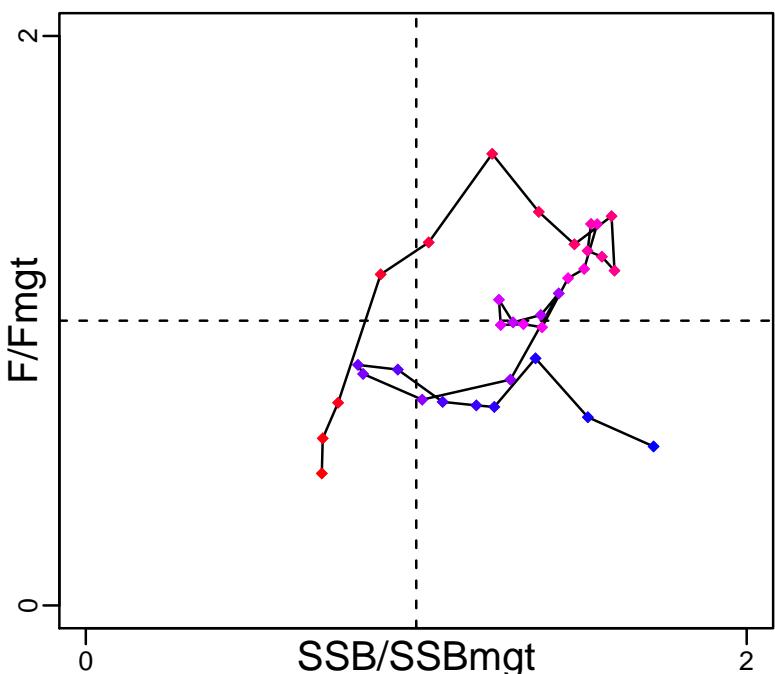
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Dicentrarchus labrax                                 |
| <b>Current Assess ID</b>    | WGCSE-EBASSIVbc-VII-1985-2019-ICESIMP2021            |
| <b>Area</b>                 | ICES 4bc-7   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2014, 2015, 2016, 2017, 2018, 2019                   |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2018             | 0.203        |
| <b>ERrmsy</b>           | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019             | 14,439       |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019             | 0.171        |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | SSBlim-MT | 2018             | 9618         |
| <b>Flim</b>             | Flim-1/yr | 2018             | 0.295        |
| <b>ERlim</b>            | -         | -                | -            |

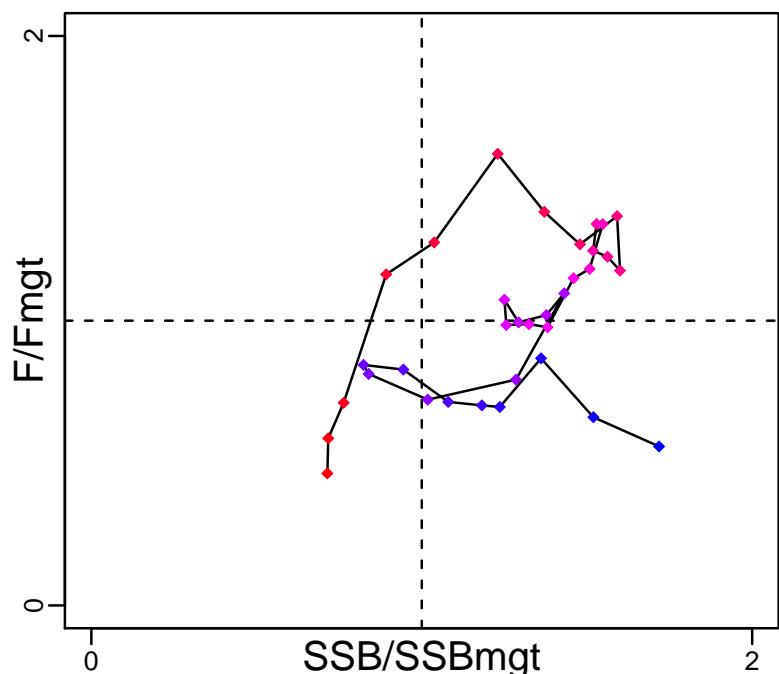
| <b>Time Series</b> |                  |                  |                   |            |            |  |
|--------------------|------------------|------------------|-------------------|------------|------------|--|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |  |
| <b>TB</b>          | TB-MT            | 2017             | 10,800            | Both       | -          |  |
| <b>SSB</b>         | SSB-MT           | 2019             | 10,884            | -          | -          |  |
| <b>TN</b>          | -                | -                | -                 | -          | -          |  |
| <b>R</b>           | R-E00            | 2019             | 12,382,797        | -          | 0          |  |
| <b>F</b>           | F-1/yr           | 2019             | 0.079             | -          | 4 to 15    |  |
| <b>ER</b>          | ER-calc-ratio    | 2017             | 0.106             | -          | -          |  |
| <b>TC</b>          | TC-MT            | 2018             | 1150              |            |            |  |
| <b>TL</b>          | TL-MT            | 2019             | 801               |            |            |  |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |  |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2018             | 0.591             |            |            |  |
| <b>ER/ERrmsy</b>   | -                | -                | -                 |            |            |  |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019             | 0.754             |            |            |  |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019             | 0.464             |            |            |  |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |  |

European seabass ICES 4bc–7 [EBASSIVbc–VII]

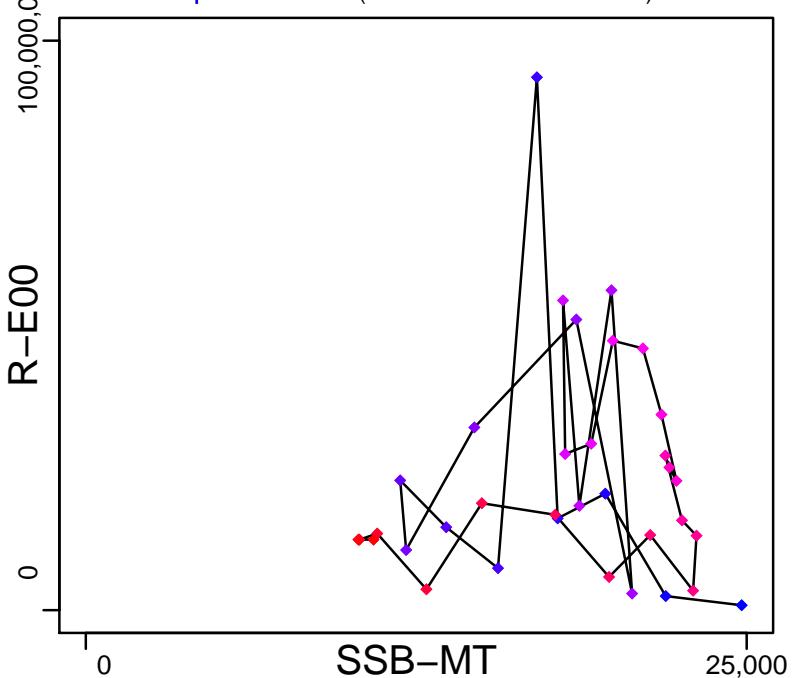
Kobe MSYpref (1985–2019–ICESIMP2021)



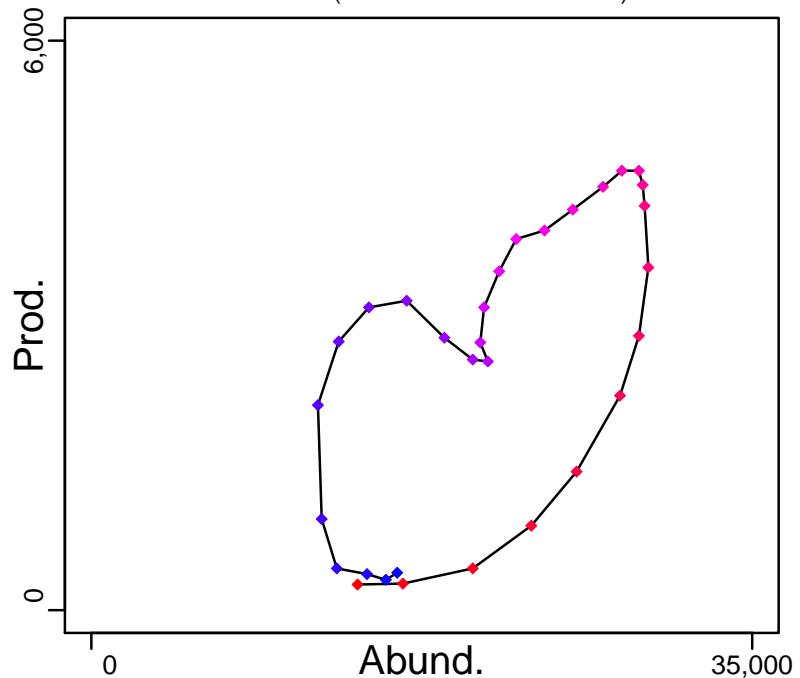
Kobe MGTpref (1985–2019–ICESIMP2021)



Spawner Recruit (1985–2019–ICESIMP2021)



Production (1985–2017–ICESIMP2018)

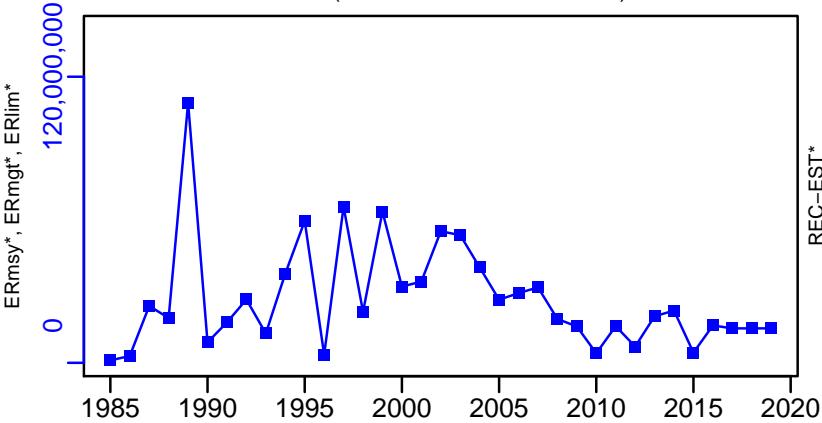
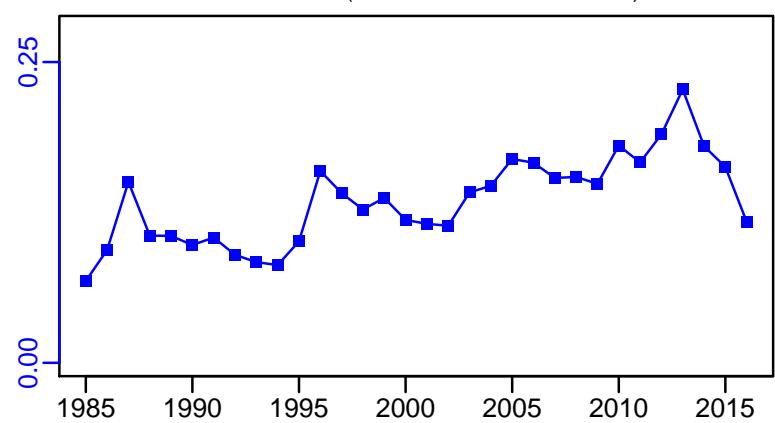
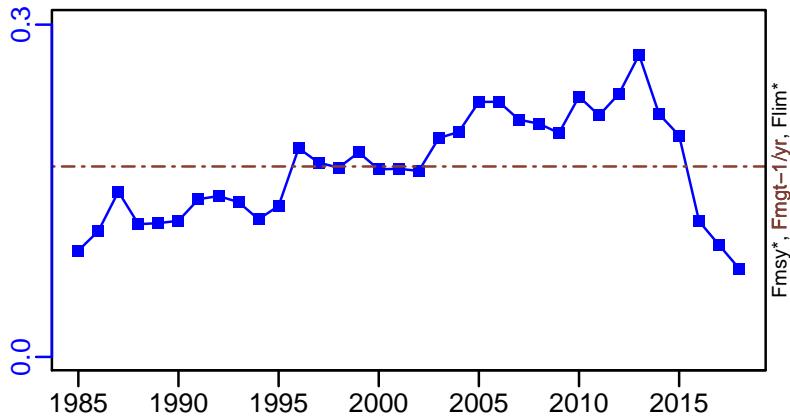
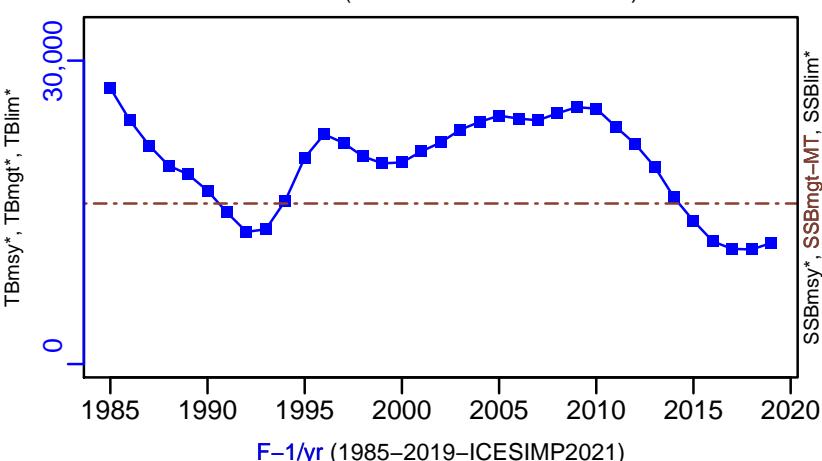
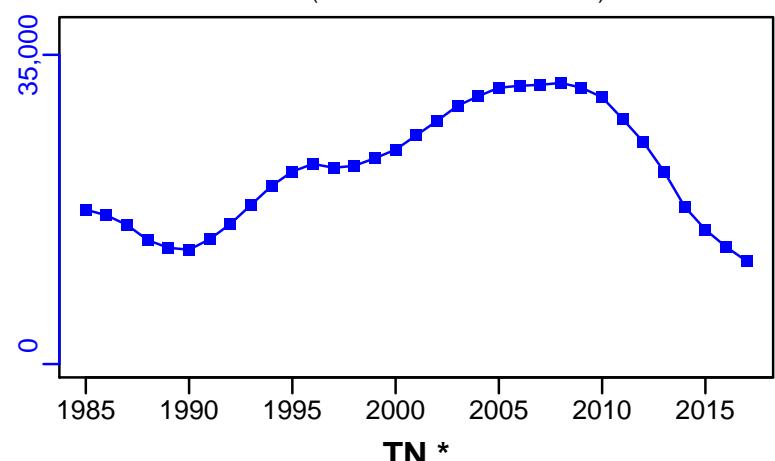


◆ Start Year ♦ End Year \* No Data

### European seabass ICES 4bc–7 [EBASSIVbc–VII]

TB-MT (1985–2017–ICESIMP2018)

SSB-MT (1985–2019–ICESIMP2021)

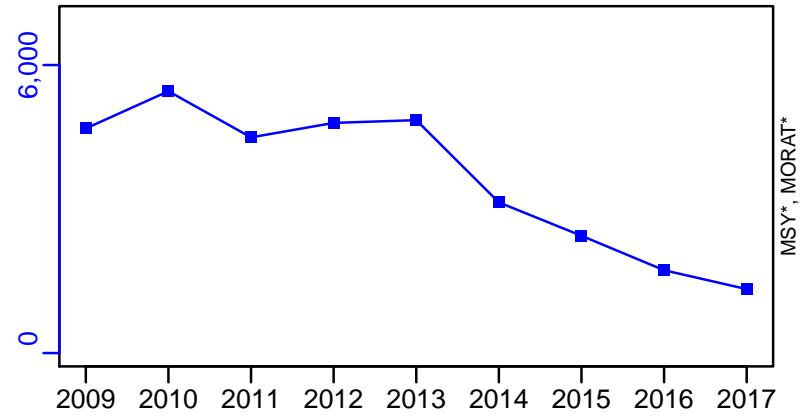


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | - - Lim BRP  | * No Data |

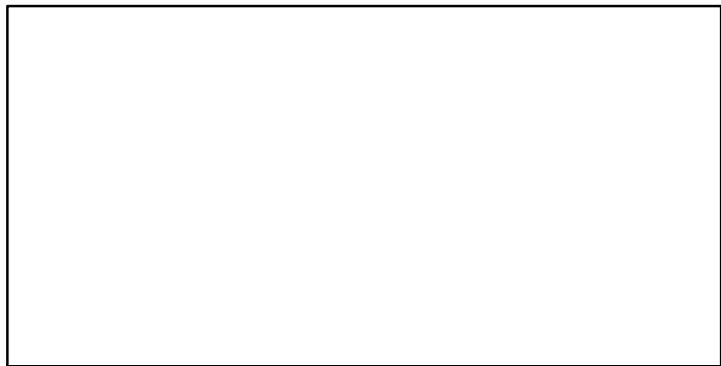
European seabass ICES 4bc–7 [EBASSIVbc–VII]

TC–MT, TL\*, RecC\* (1985–2018–ICESIMP2018)

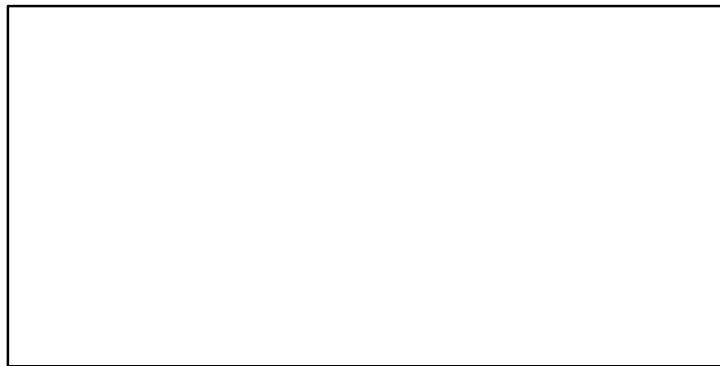
TAC\*, Cpair\*, Cadv\*



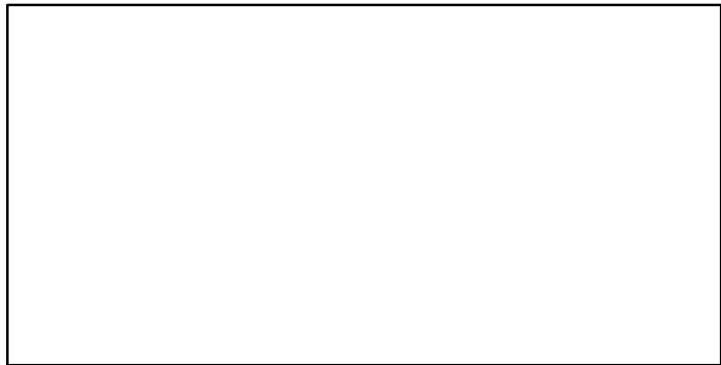
survB\*



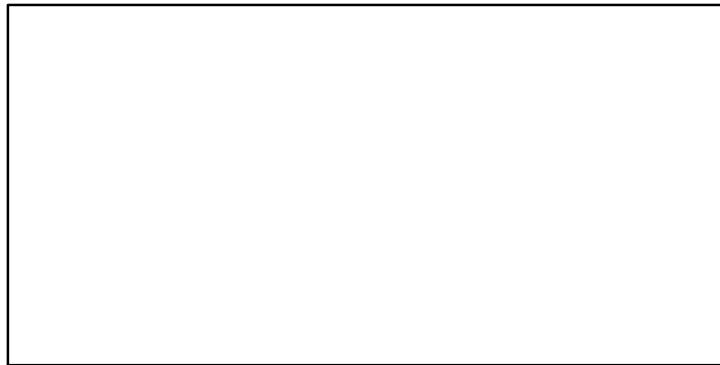
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## European seabass ICES 6a-7b-j [EBASSVIa-VIIb-j]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Dicentrarchus labrax                                 |
| <b>Current Assess ID</b>    | WGCSE-EBASSVIa-VIIb-j-2000-2016-ICESIMP2018          |
| <b>Area</b>                 | ICES 6a-7b-j   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2015, 2016   |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | TC-MT | 2015      | 2          |     |     |
| <b>TL</b>          | TL-MT | 2016      | 0.1        |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

**Spawner Recruit\***

**Production\***

◆ Start Year ♦ End Year \* No Data

**TB\***



**SSB\***



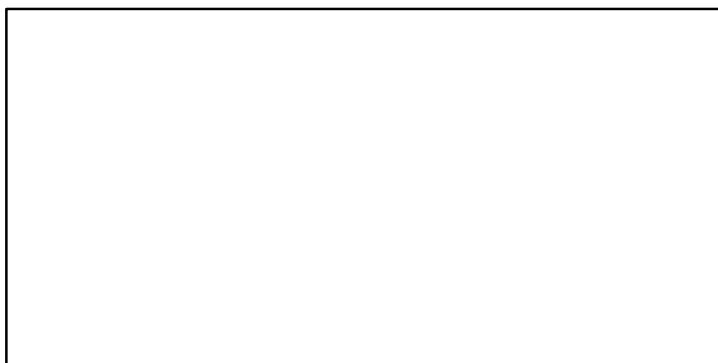
**TN \***



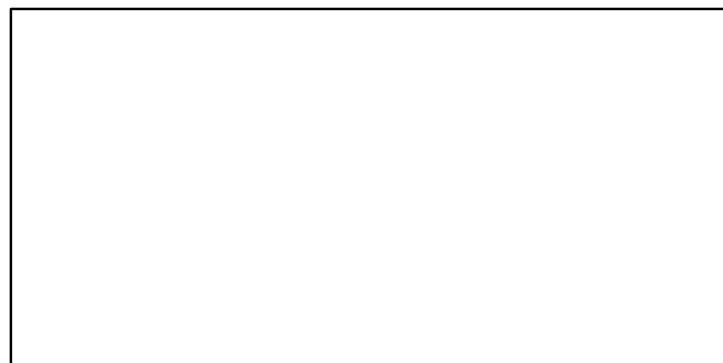
**F\***



**ER\***



**Recruits\***

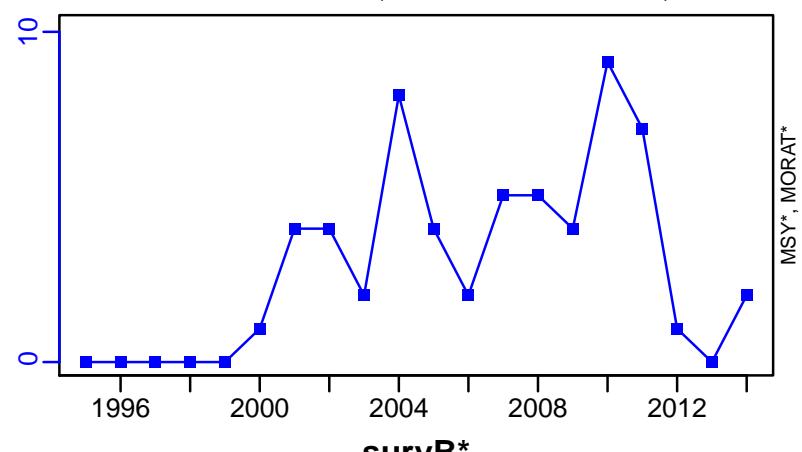


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

European seabass ICES 6a–7b–j [EBASSVla–VIIb–j]

TC–MT, TL\*, RecC\* (1995–2015–ICESIMP2016)

TAC\*, Cpair\*, Cadv\*



survB\*

CPUE\*

EFFORT\*

CdivMSY\*

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

## European seabass ICES 8ab [EBASSVIIlab]

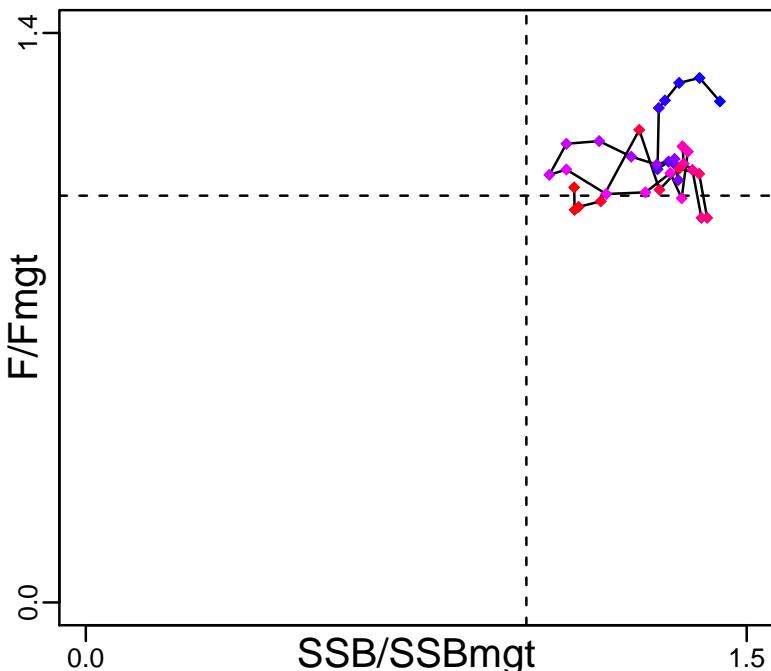
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Dicentrarchus labrax   |
| <b>Current Assess ID</b>    | WGBIE-EBASSVIIlab-1985-2019-ICESIMP2021                              |
| <b>Area</b>                 | ICES 8ab   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                 |
| <b>Assessor</b>             | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion |
| <b>Asmts in RAM</b>         | 2019, 2014, 2016   |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | -         | -                | -            |
| <b>ERrmsy</b>           | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019             | 16,688       |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019             | 0.123        |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | -         | -                | -            |
| <b>Flim</b>             | -         | -                | -            |
| <b>ERlim</b>            | -         | -                | -            |

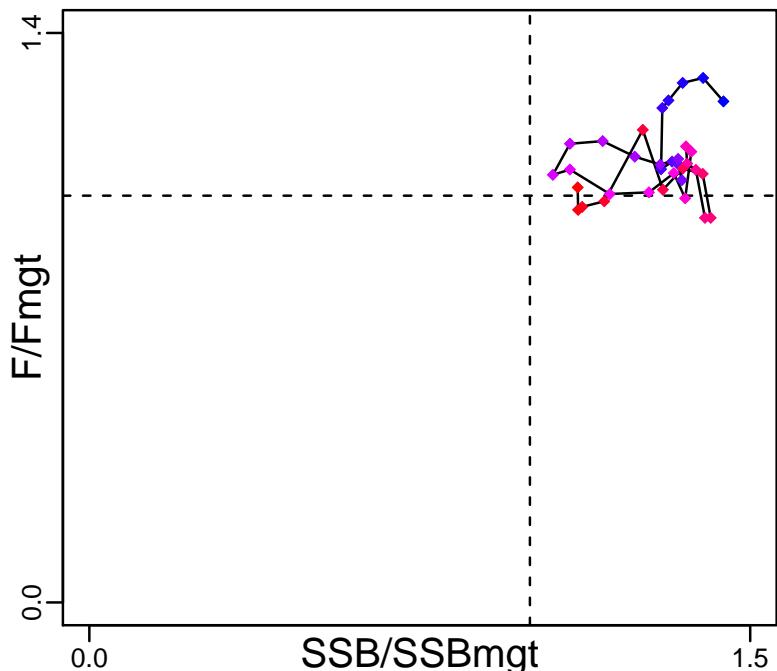
| <b>Time Series</b> |                  |                  |                   |            |            |   |
|--------------------|------------------|------------------|-------------------|------------|------------|---|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |   |
| <b>TB</b>          | -                | -                | -                 | -          | -          | - |
| <b>SSB</b>         | SSB-MT           | 2019             | 17,730            | -          | -          | - |
| <b>TN</b>          | -                | -                | -                 | -          | -          | - |
| <b>R</b>           | R-E00            | 2019             | 18,827,000        | -          | 0          |   |
| <b>F</b>           | F-1/yr           | 2019             | 0.126             | -          | 4 to 15    |   |
| <b>ER</b>          | -                | -                | -                 | -          | -          |   |
| <b>TC</b>          | TC-MT            | 2019             | 2422              |            |            |   |
| <b>TL</b>          | TL-MT            | 2019             | 2316              |            |            |   |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |   |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |   |
| <b>F/Fmsy</b>      | -                | -                | -                 |            |            |   |
| <b>ER/ERrmsy</b>   | -                | -                | -                 |            |            |   |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |   |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019             | 1.062             |            |            |   |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019             | 1.02              |            |            |   |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |   |

European seabass ICES 8ab [EBASSVIIlab]

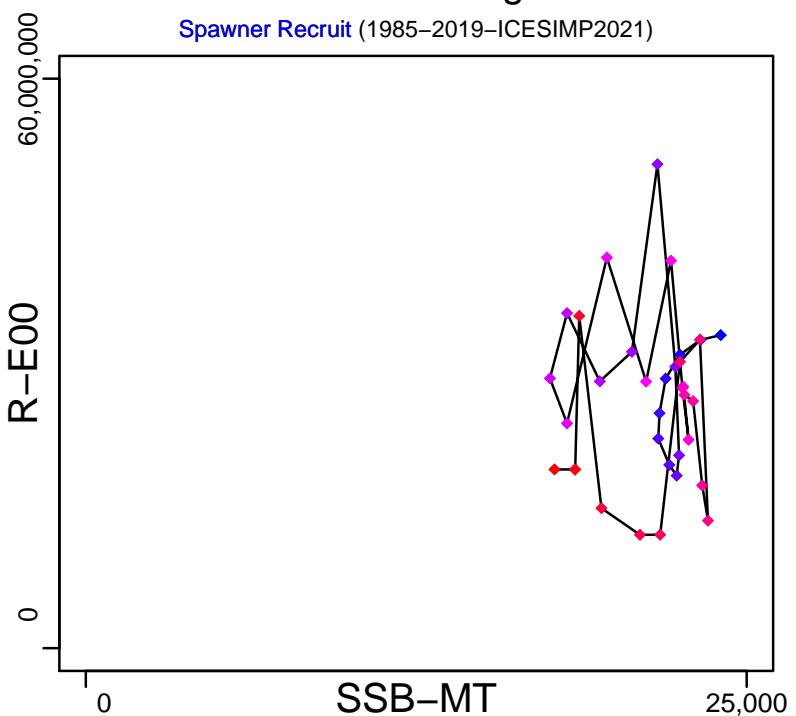
Kobe MSYpref (1985–2019–ICESIMP2021)



Kobe MGTpref (1985–2019–ICESIMP2021)



Spawner Recruit (1985–2019–ICESIMP2021)



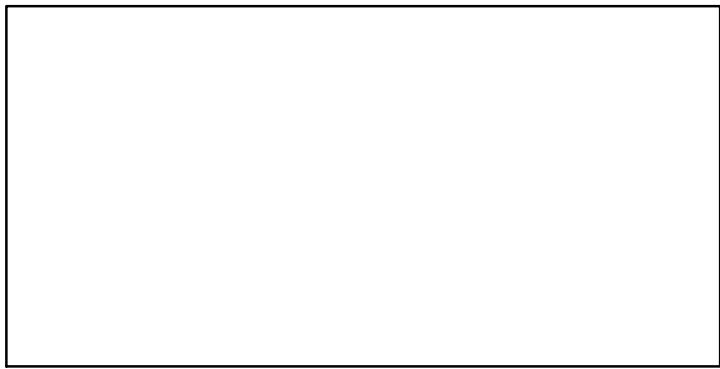
Production\*



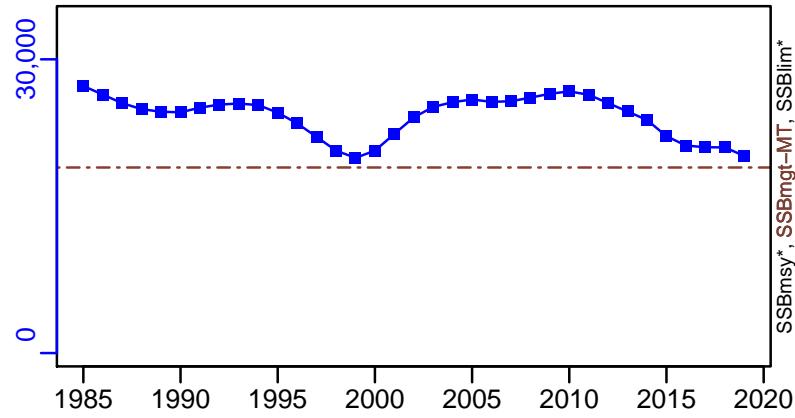
◆ Start Year ♦ End Year \* No Data

European seabass ICES 8ab [EBASSVIIlab]

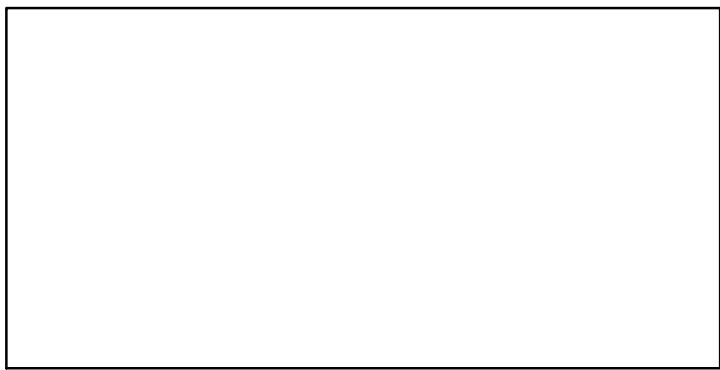
**TB\***



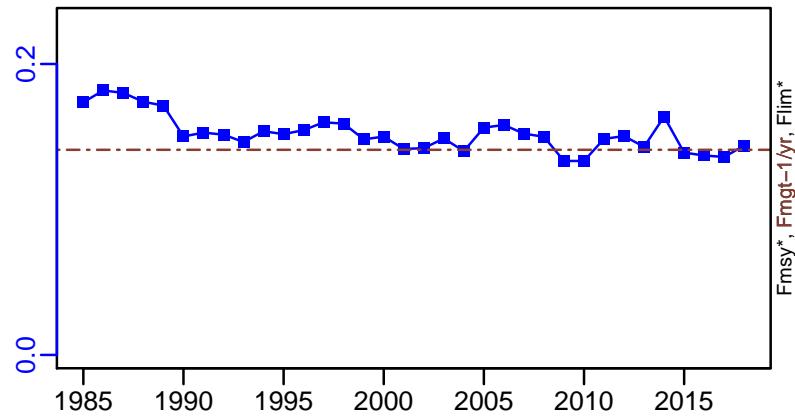
**SSB-MT (1985–2019–ICESIMP2021)**



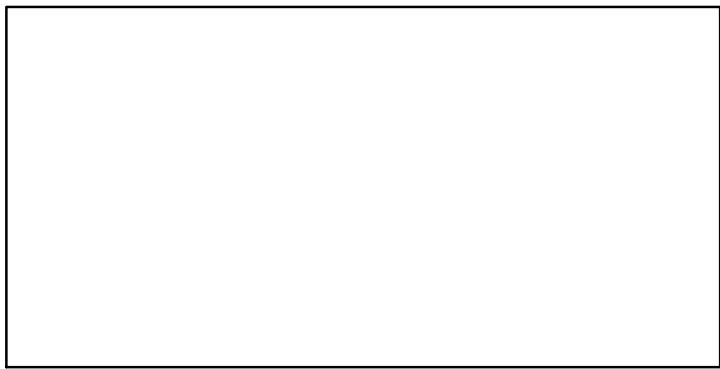
**TN \***



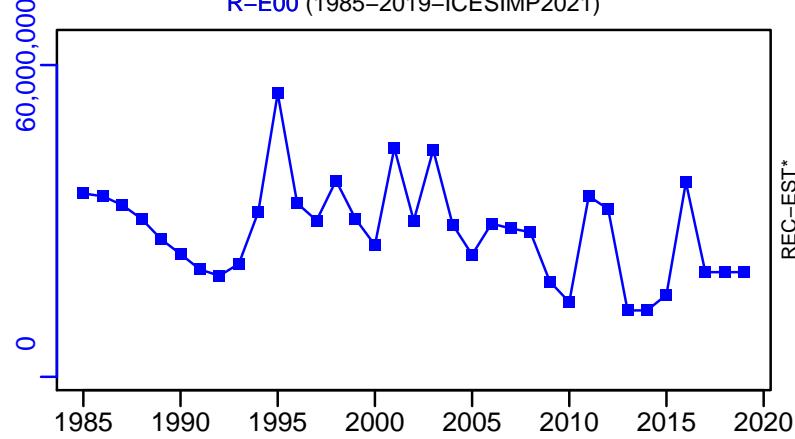
**F-1/yr (1985–2019–ICESIMP2021)**



**ER\***



**R-E00 (1985–2019–ICESIMP2021)**

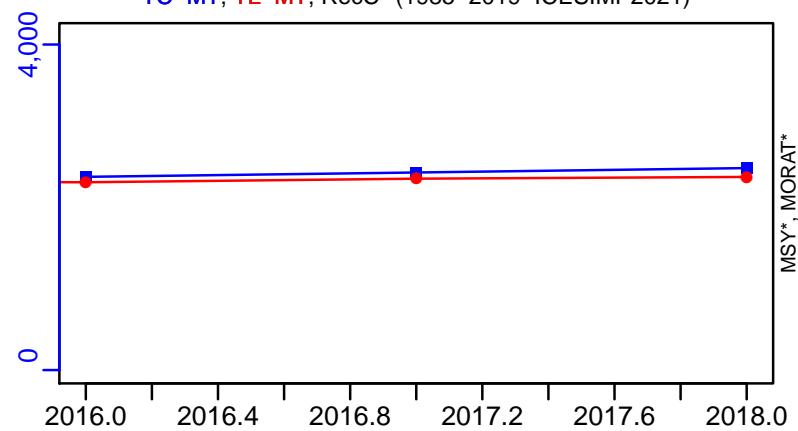


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - MSY-based BRP      | --- Lim BRP  | * No Data |

European seabass ICES 8ab [EBASSVIIlab]

TC-MT, TL-MT, RecC\* (1985–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



survB\*

MSY\*, MORAT\*

CPUE\*

EFFORT\*

CdivMSY\*

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

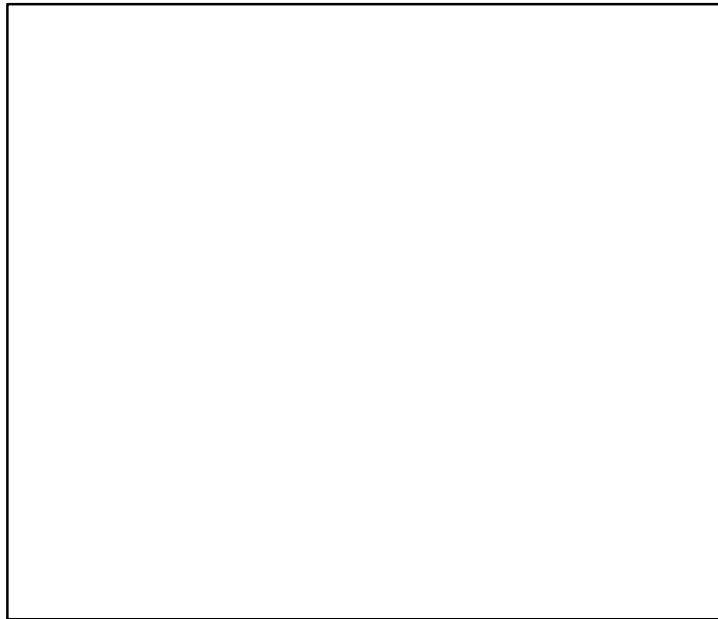
## European seabass ICES 8c-9a [EBASSVIIIC-IXa]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Dicentrarchus labrax   |
| <b>Current Assess ID</b>    | WGBIE-EBASSVIIIC-IXa-1978-2018-ICESIMP2021                           |
| <b>Area</b>                 | ICES 8c-9a   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                 |
| <b>Assessor</b>             | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion |
| <b>Asmts in RAM</b>         | 2015, 2016, 2018   |

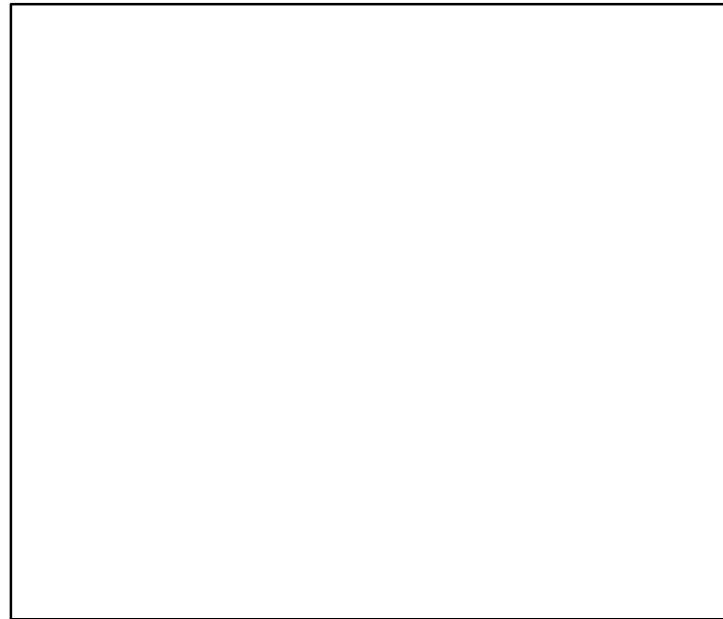
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | TC-MT | 2015      | 917        |     |     |
| <b>TL</b>          | TL-MT | 2018      | 832        |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

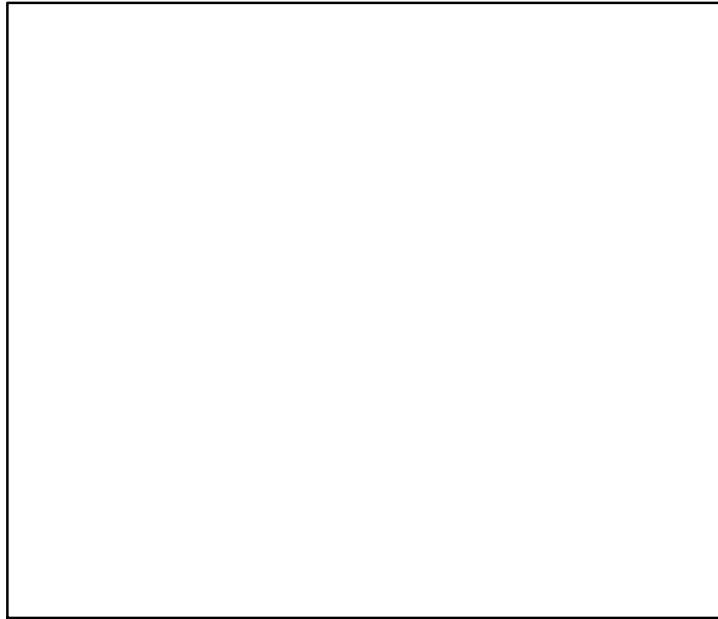
**Kobe MSY\***



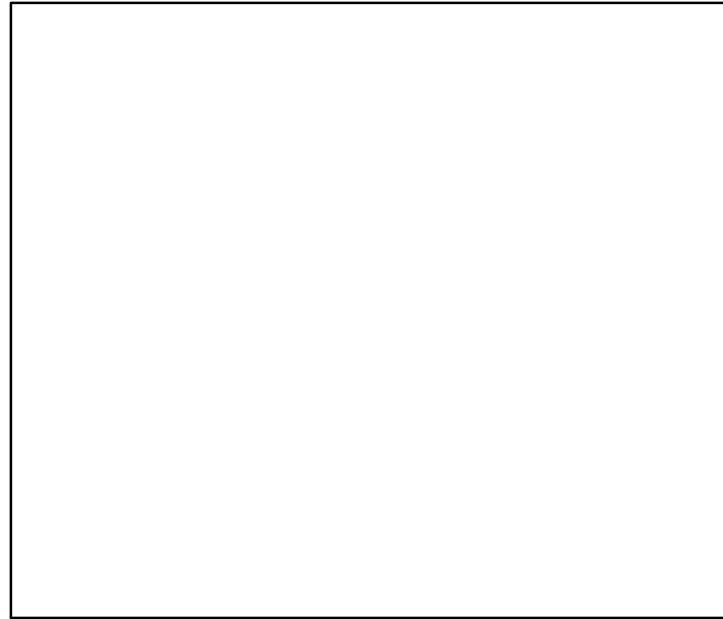
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

**TB\***



**SSB\***



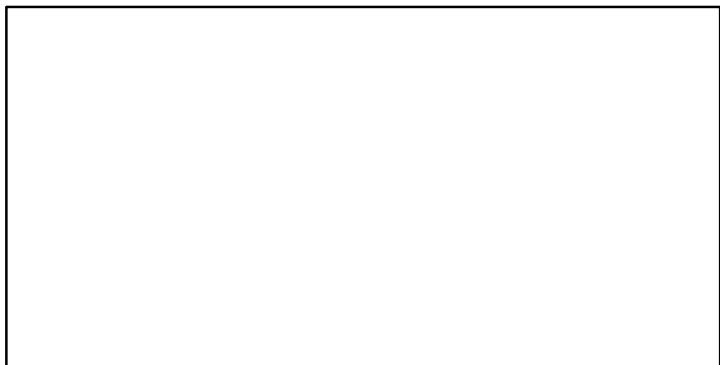
**TN \***



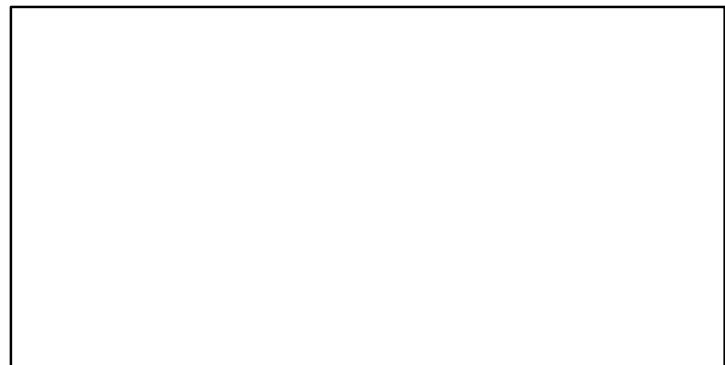
**F\***



**ER\***



**Recruits\***

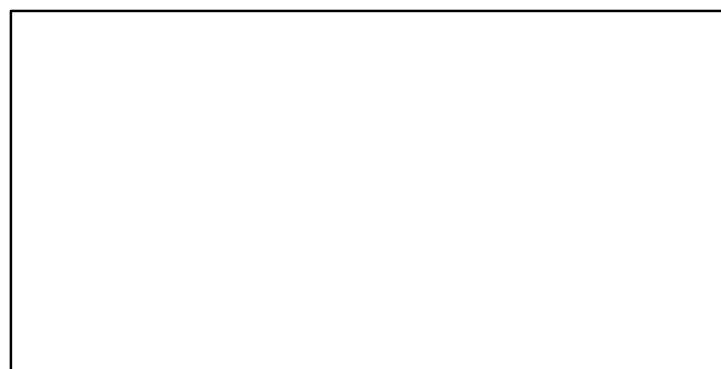
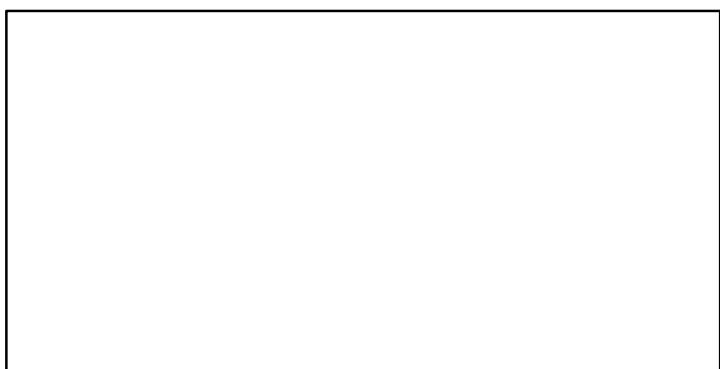
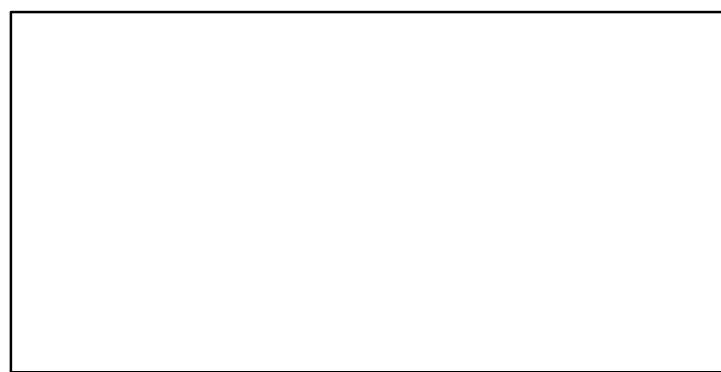
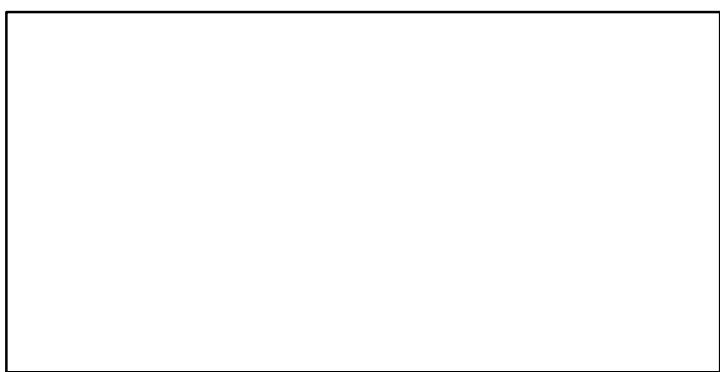
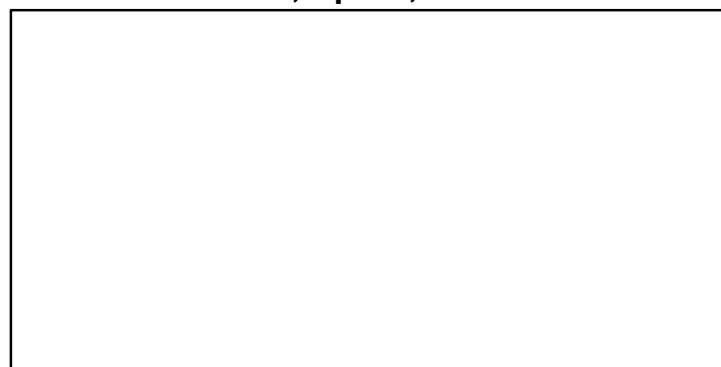
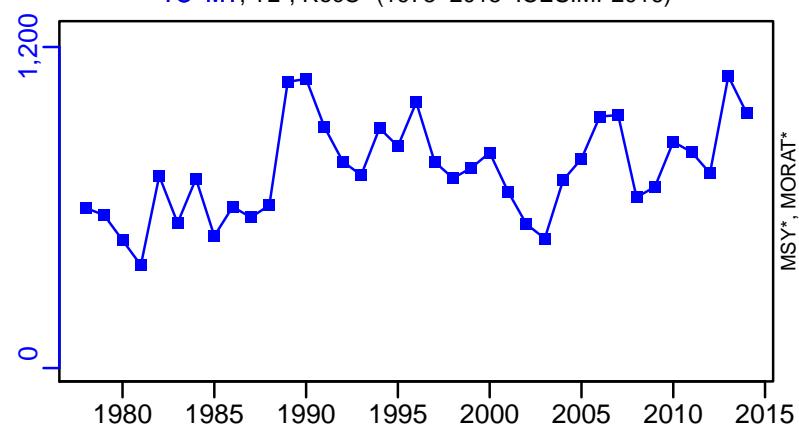


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

European seabass ICES 8c–9a [EBASSVIIIC–IXa]

TC–MT, TL\*, RecC\* (1978–2015–ICESIMP2016)

TAC\*, Cpair\*, Cadv\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

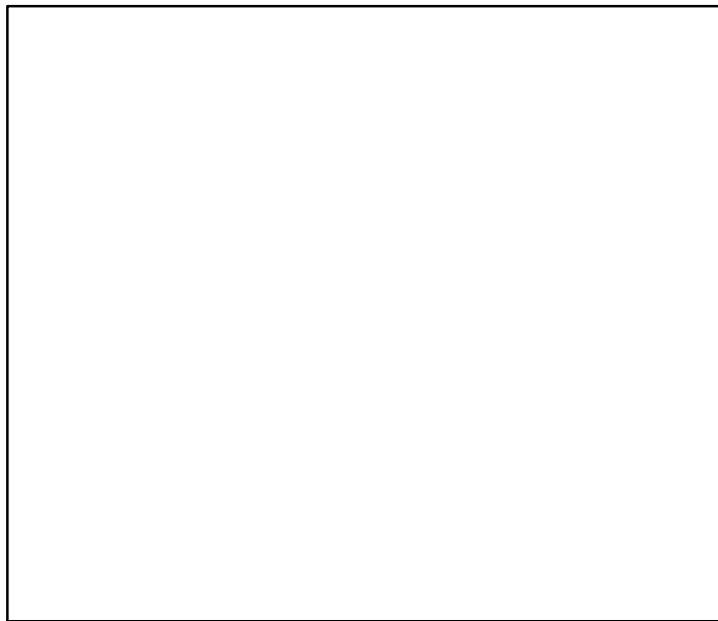
## European flounder Subdivisions 22-23 [EFLOUN2223]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Platichthys flesus                                   |
| <b>Current Assess ID</b>    | WGBFAS-EFLOUN2223-1973-2018-ICESIMP2021              |
| <b>Area</b>                 | Subdivisions 22-23                                   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Baltic Fisheries Assessment Working Group            |
| <b>Asmts in RAM</b>         | 2014, 2016, 2016, 2018                               |

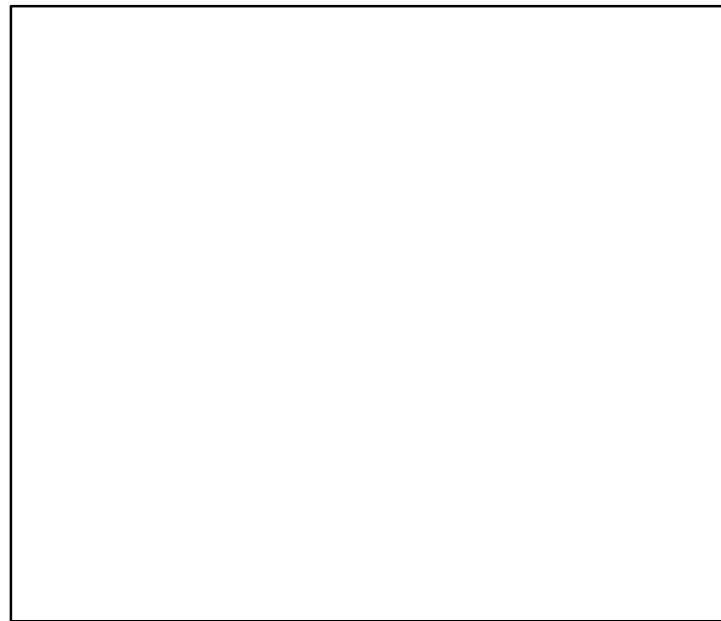
| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |           |           |            |      |     |
|-------------------|-----------|-----------|------------|------|-----|
| Type              | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>         | -         | -         | -          | -    | -   |
| <b>SSB</b>        | SSB-index | 2014      | 385        | Both | -   |
| <b>TN</b>         | -         | -         | -          | -    | -   |
| <b>R</b>          | -         | -         | -          | -    | -   |
| <b>F</b>          | -         | -         | -          | -    | -   |
| <b>ER</b>         | -         | -         | -          | -    | -   |
| <b>TC</b>         | TC-MT     | 2018      | 982        |      |     |
| <b>TL</b>         | TL-MT     | 2018      | 809        |      |     |
| <b>TB/TBmsy</b>   | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b> | -         | -         | -          |      |     |
| <b>F/Fmsy</b>     | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>   | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>   | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b> | -         | -         | -          |      |     |
| <b>F/Fmgt</b>     | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>   | -         | -         | -          |      |     |

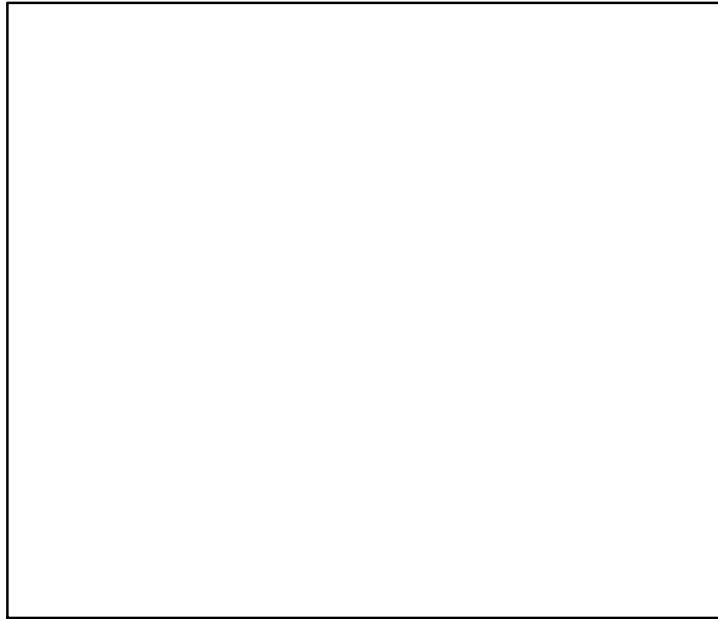
**Kobe MSY\***



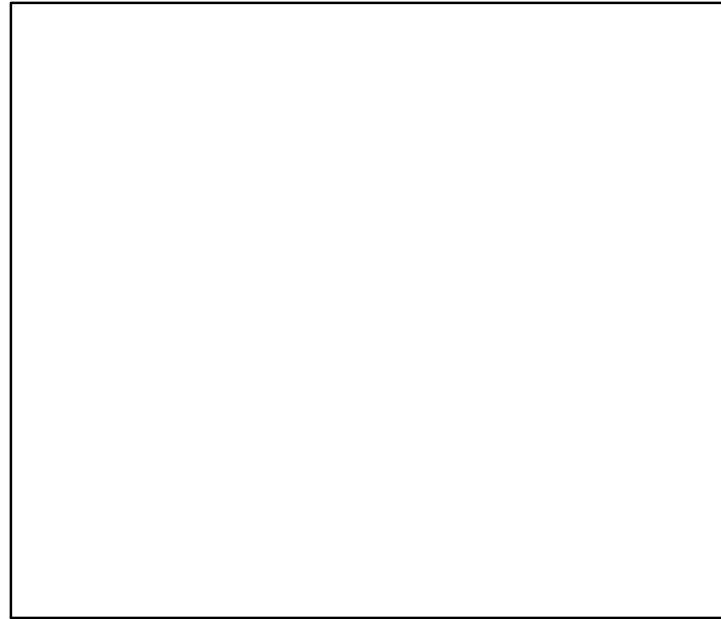
**Kobe MGT\***



**Spawner Recruit\***



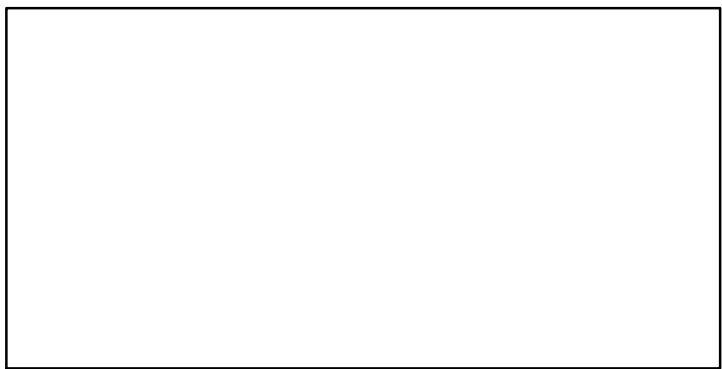
**Production\***



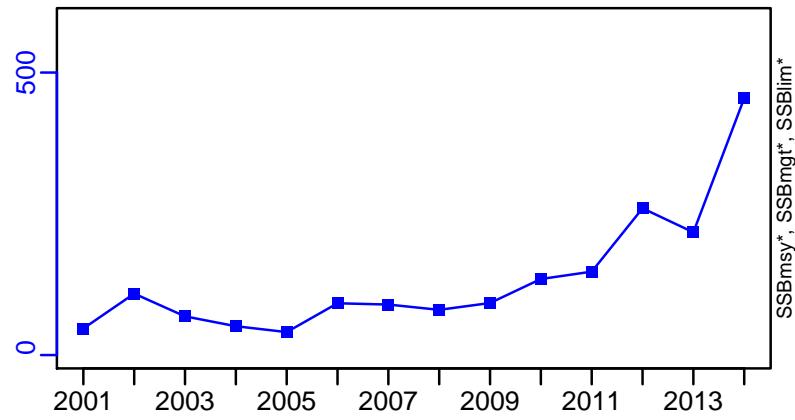
◆ Start Year ♦ End Year \* No Data

European flounder Subdivisions 22–23 [EFLOUN2223]

**TB\***



SSB-index (1973–2014–ICESIMP2018)



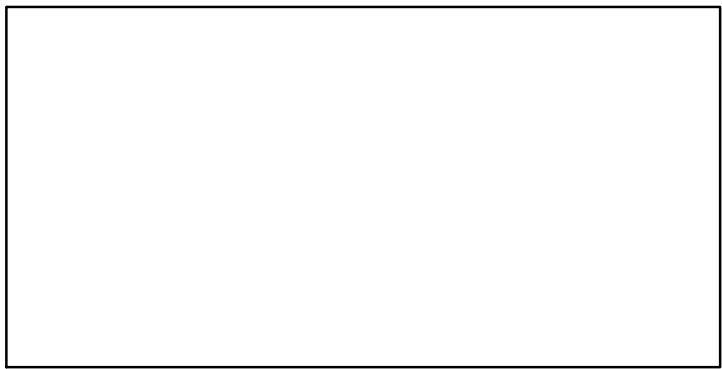
**TN \***



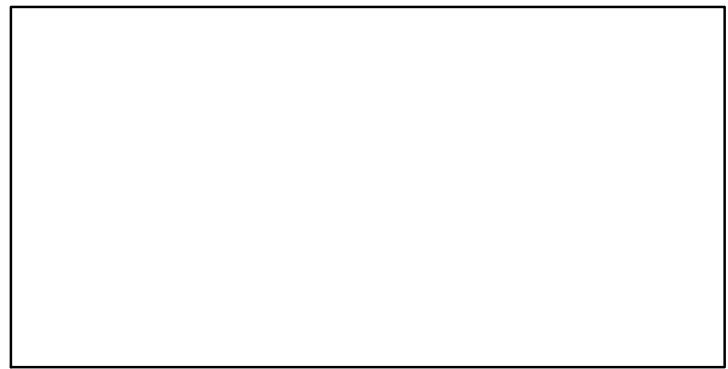
**F\***



**ER\***



**Recruits\***

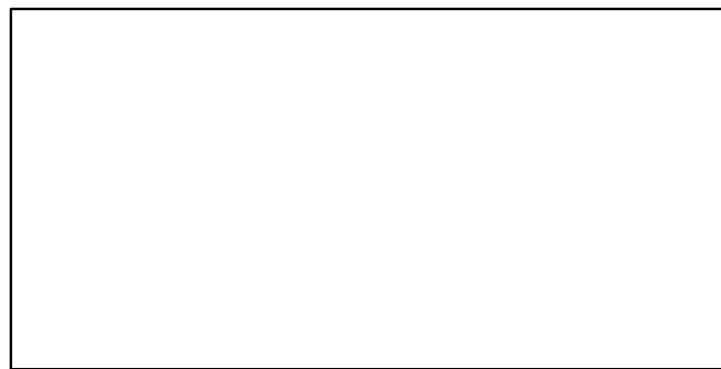
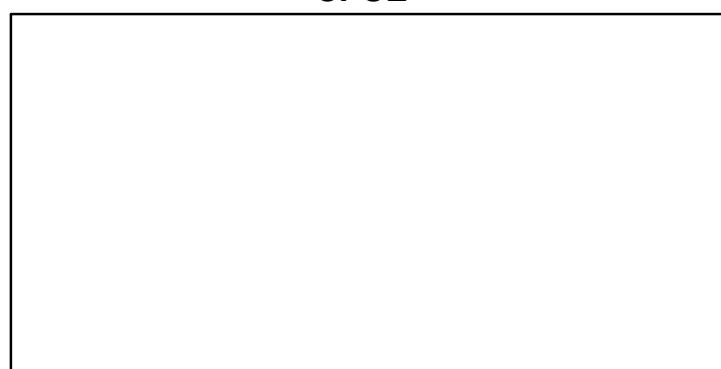
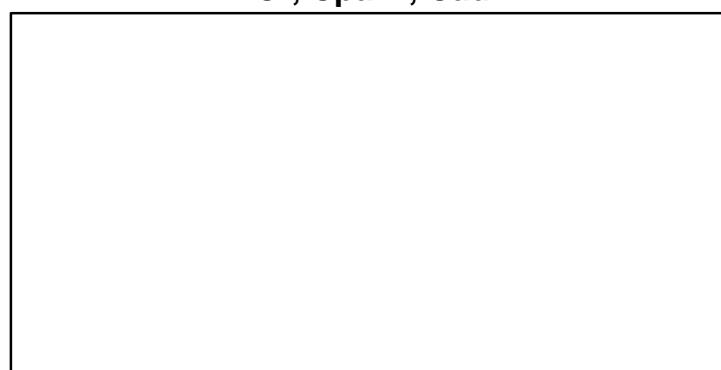
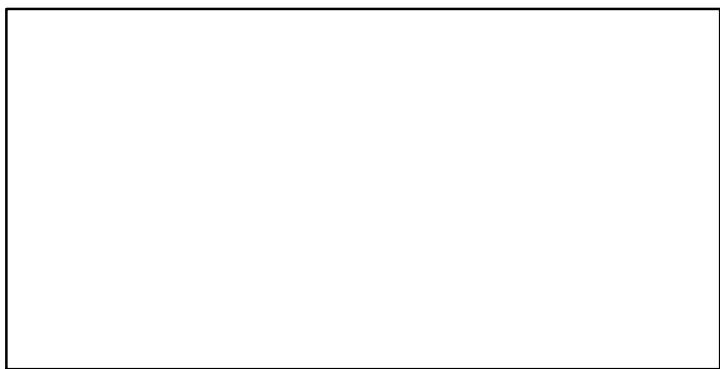
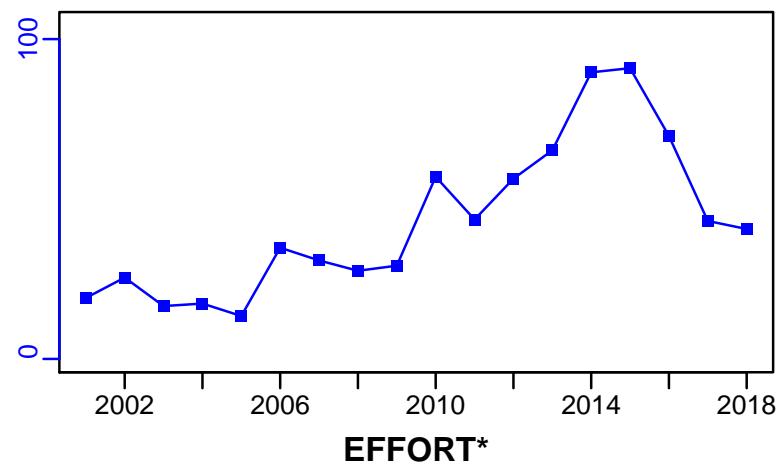
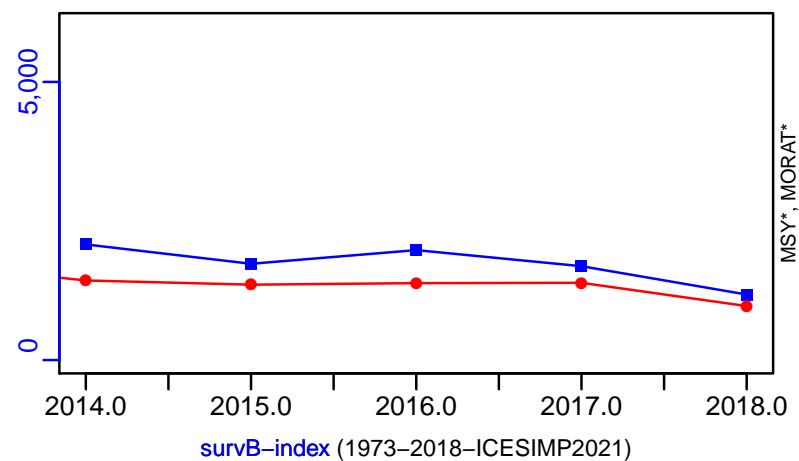


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

European flounder Subdivisions 22–23 [EFLOUN2223]

TC-MT, TL-MT, RecC\* (1973–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



|                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

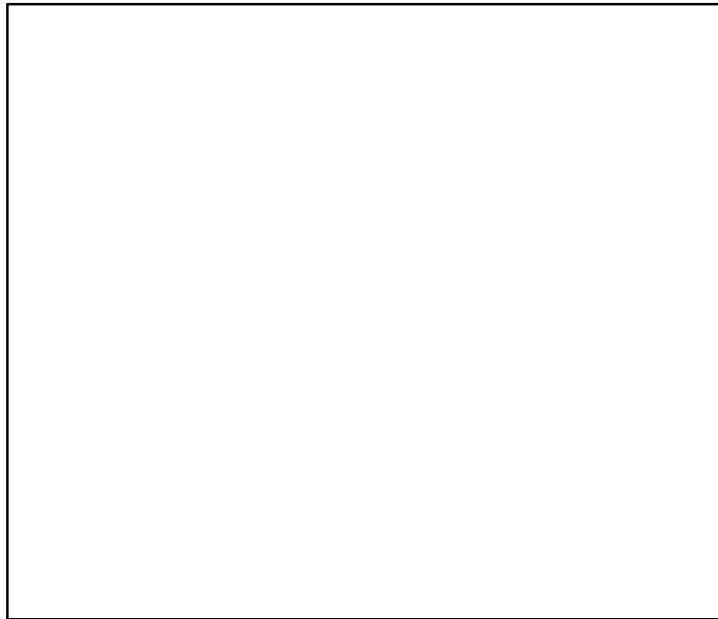
## European flounder Subdivisions 24-25 [EFLOUN2425]

| Metadata             |  |
|----------------------|--|
| Scientific Name      | Platichthys flesus                                   |
| Current Assess ID    | WGBFAS-EFLOUN2425-1973-2016-ICESIMP2018              |
| Area                 | Subdivisions 24-25                                   |
| Management Authority | International Council for the Exploration of the Sea |
| Assessor             | Baltic Fisheries Assessment Working Group            |
| Asmts in RAM         | 2016, 2016   |

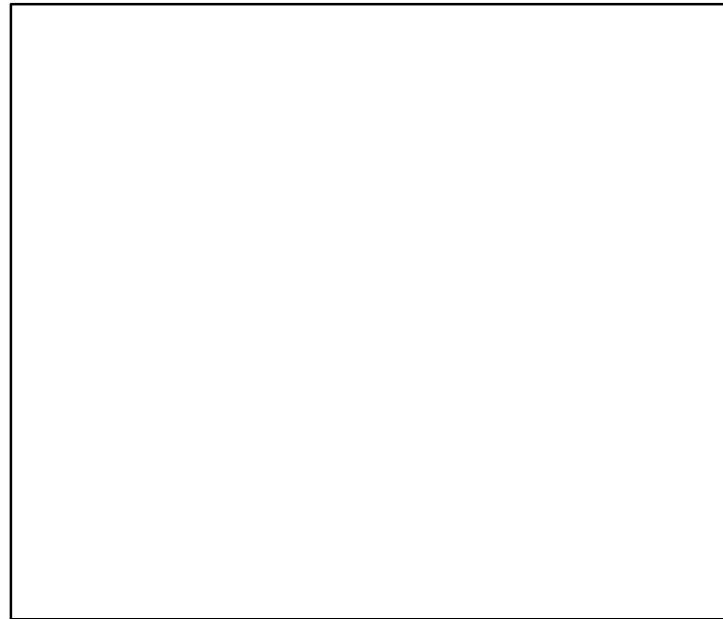
| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| TBmsy            | -  | -         | -     |
| SSBmsy           | -  | -         | -     |
| Fmsy             | -  | -         | -     |
| ERmsy            | -  | -         | -     |
| TBmgt            | -  | -         | -     |
| SSBmgt           | -  | -         | -     |
| Fmgt             | -  | -         | -     |
| ERmgt            | -  | -         | -     |
| TB0              | -  | -         | -     |
| SSB0             | -  | -         | -     |
| MSY              | -  | -         | -     |
| M                | -  | -         | -     |
| TBlim            | -  | -         | -     |
| SSBlim           | -  | -         | -     |
| Flim             | -  | -         | -     |
| ERlim            | -  | -         | -     |

| Time Series |       |           |            |     |     |
|-------------|-------|-----------|------------|-----|-----|
| Type        | ID    | Asmt Year | Curr Value | Sex | Age |
| TB          | -     | -         | -          | -   | -   |
| SSB         | -     | -         | -          | -   | -   |
| TN          | -     | -         | -          | -   | -   |
| R           | -     | -         | -          | -   | -   |
| F           | -     | -         | -          | -   | -   |
| ER          | -     | -         | -          | -   | -   |
| TC          | TC-MT | 2016      | 19,800     |     |     |
| TL          | TL-MT | 2016      | 11,100     |     |     |
| TB/TBmsy    | -     | -         | -          |     |     |
| SSB/SSBmsy  | -     | -         | -          |     |     |
| F/Fmsy      | -     | -         | -          |     |     |
| ER/ERmsy    | -     | -         | -          |     |     |
| TB/TBmgt    | -     | -         | -          |     |     |
| SSB/SSBmgt  | -     | -         | -          |     |     |
| F/Fmgt      | -     | -         | -          |     |     |
| ER/ERmgt    | -     | -         | -          |     |     |

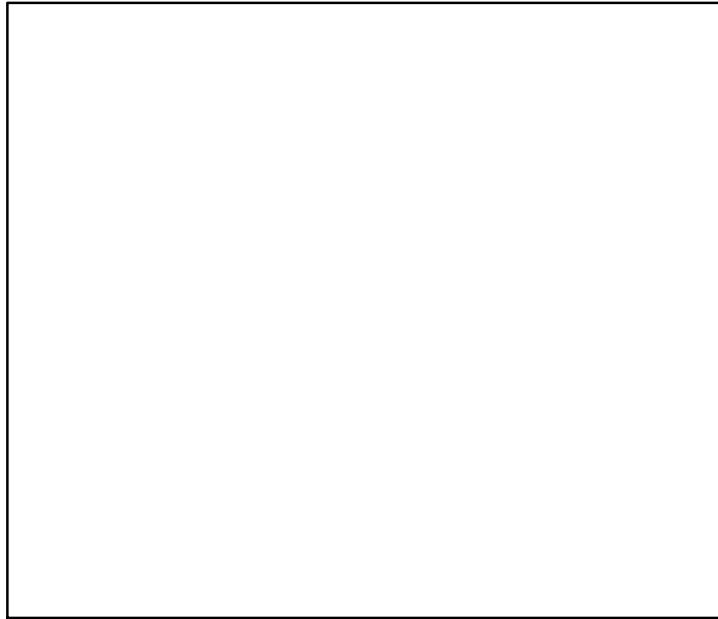
**Kobe MSY\***



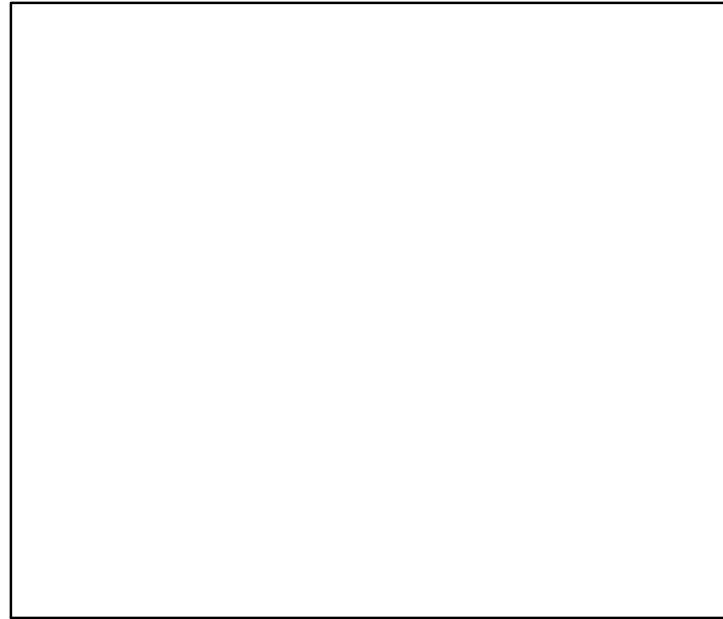
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

European flounder Subdivisions 24–25 [EFLOUN2425]

**TB\***



**SSB\***



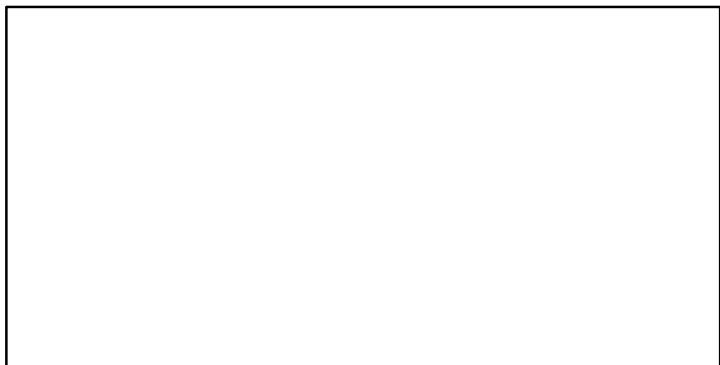
**TN \***



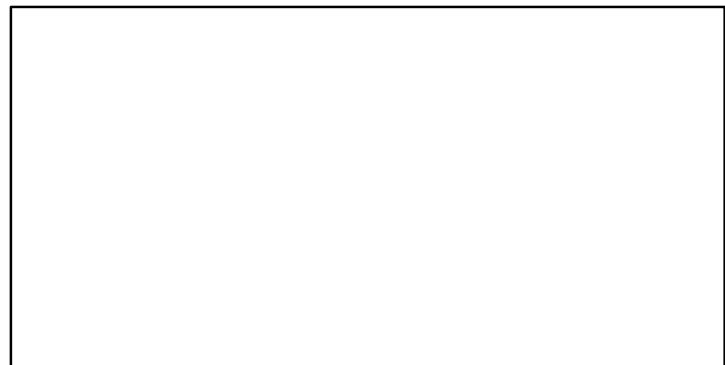
**F\***



**ER\***



**Recruits\***

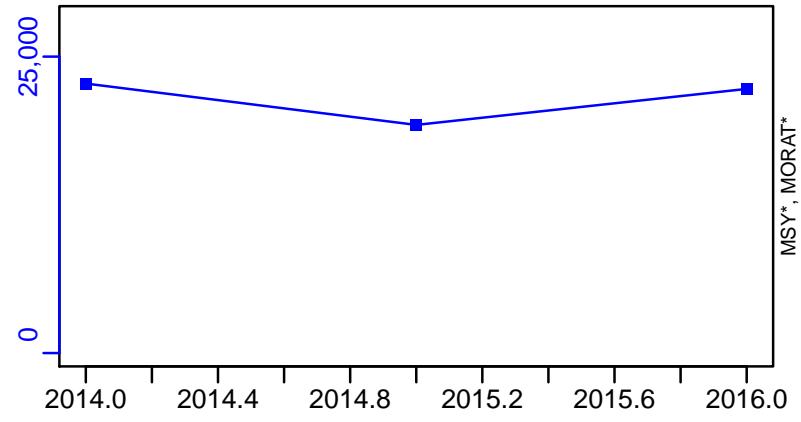


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

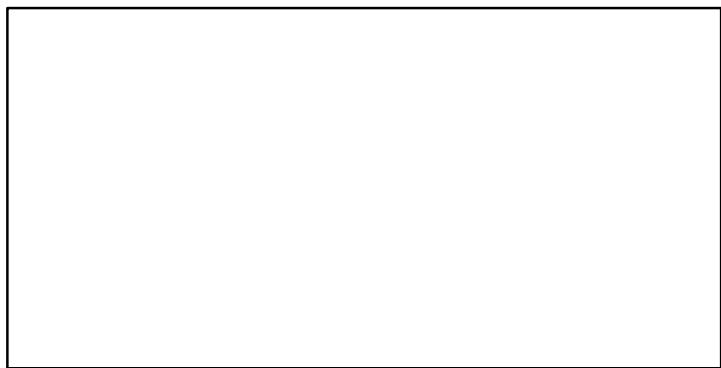
European flounder Subdivisions 24–25 [EFLOUN2425]

TC-MT, TL\*, RecC\* (1973–2016—ICESIMP2018)

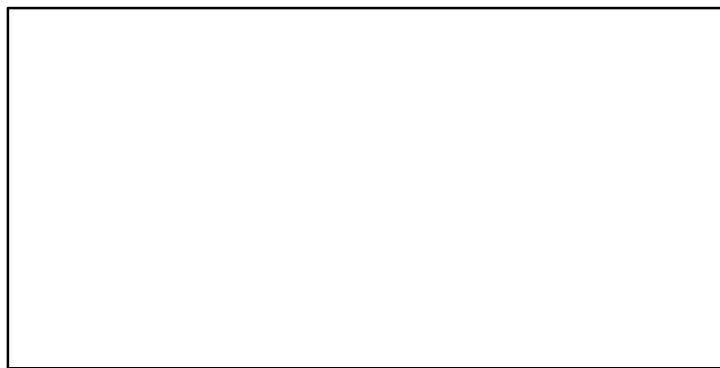
TAC\*, Cpair\*, Cadv\*



survB\*



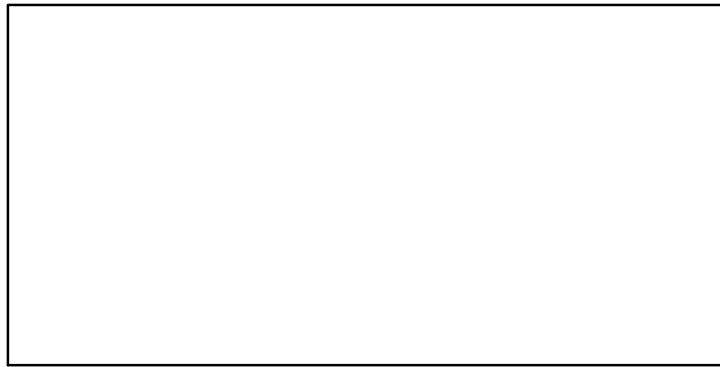
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## European flounder Subdivisions 26-28 [EFLOUN26-28]

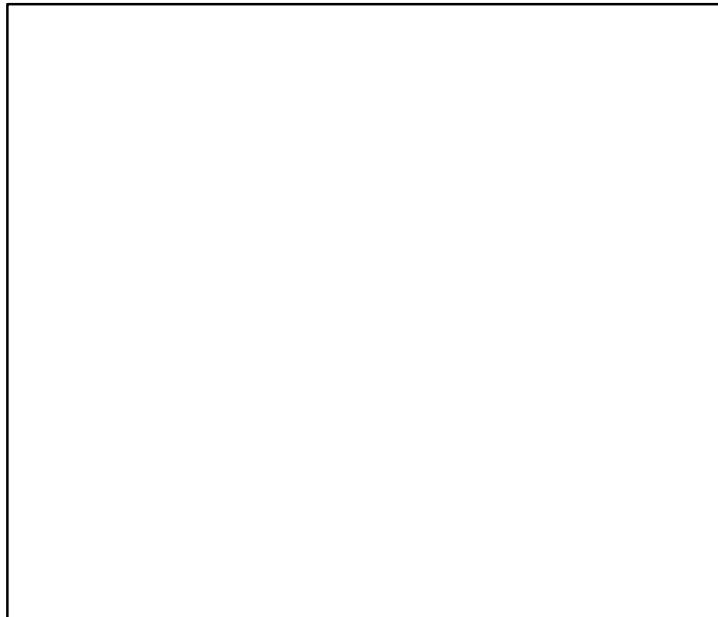
| Metadata             |  |
|----------------------|--|
| Scientific Name      | Platichthys flesus                                   |
| Current Assess ID    | WGBFAS-EFLOUN26-28-1996-2016-ICESIMP2018             |
| Area                 | Subdivisions 26-28                                   |
| Management Authority | International Council for the Exploration of the Sea |
| Assessor             | Baltic Fisheries Assessment Working Group            |
| Asmts in RAM         | 2016, 2016   |

| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

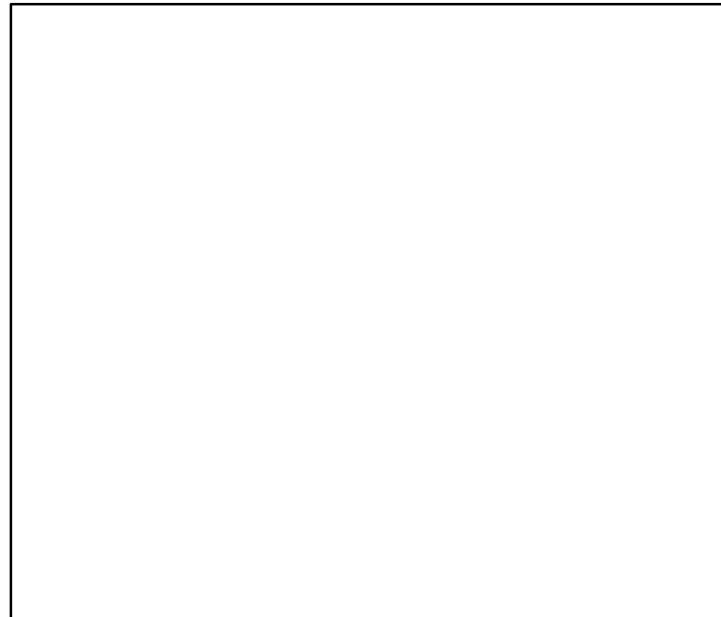
| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | TC-MT | 2016      | 4440       |     |     |
| <b>TL</b>         | TL-MT | 2016      | 4440       |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

European flounder Subdivisions 26–28 [EFLOUN26–28]

**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

European flounder Subdivisions 26–28 [EFLOUN26–28]

**TB\***



**SSB\***



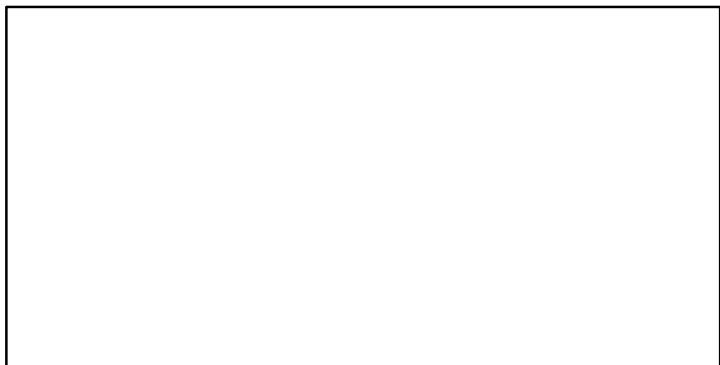
**TN \***



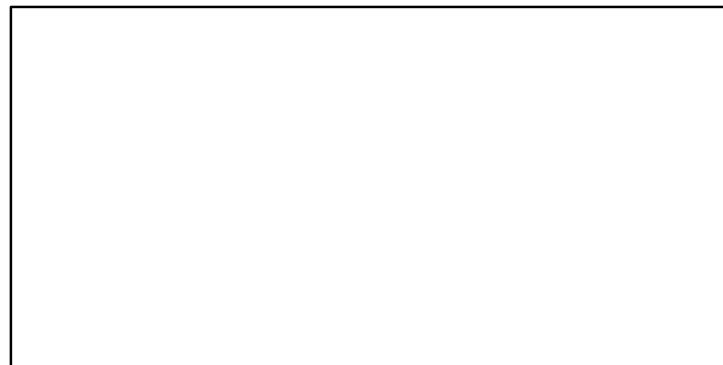
**F\***



**ER\***



**Recruits\***

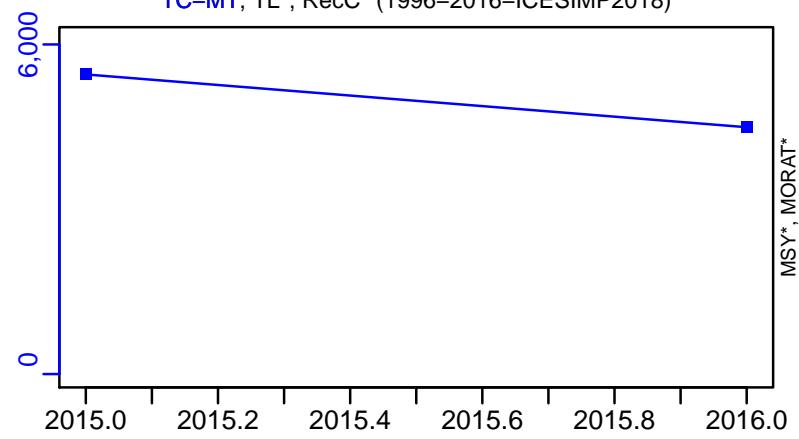


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

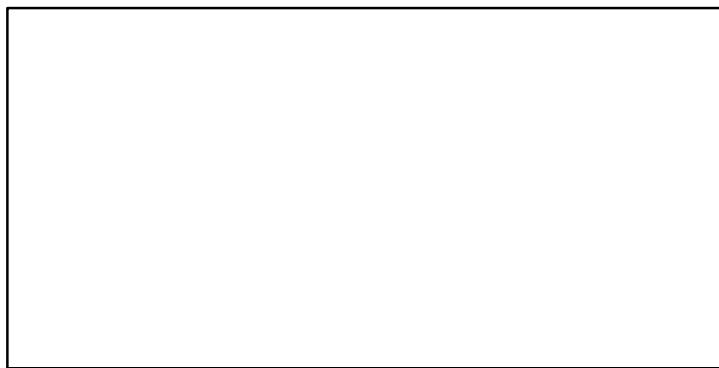
European flounder Subdivisions 26–28 [EFLOUN26–28]

TC-MT, TL\*, RecC\* (1996–2016—ICESIMP2018)

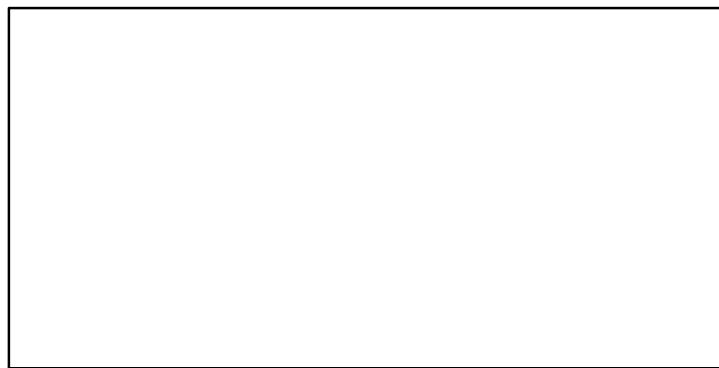
TAC\*, Cpair\*, Cadv\*



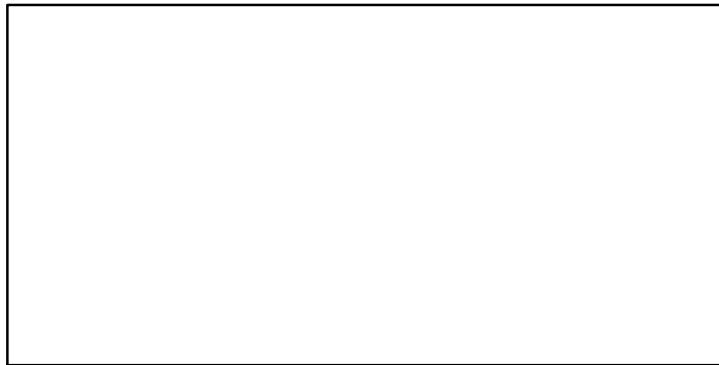
**survB\***



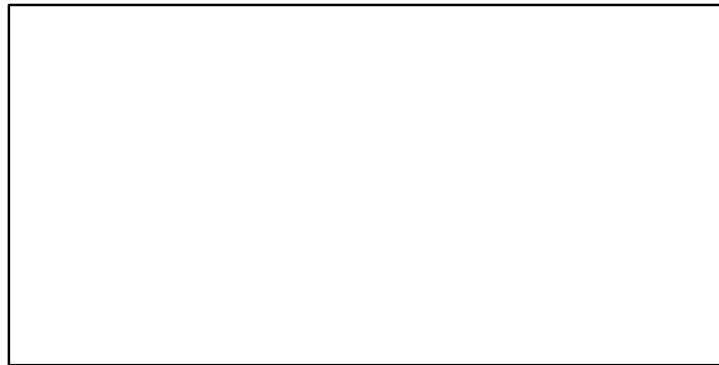
**CPUE\***



**EFFORT\***



**CdivMSY\***



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

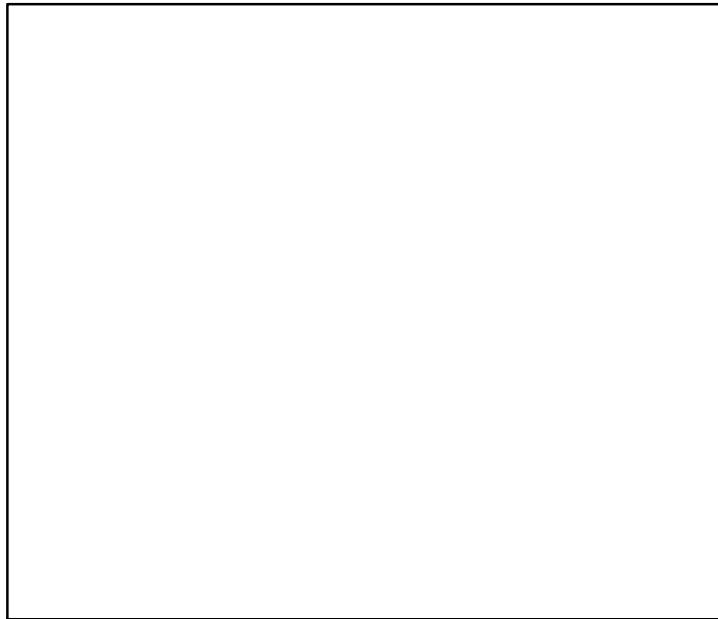
## European flounder Subdivisions 27 and 29-32 [EFLOUN27-2932]

| Metadata             |  |
|----------------------|--|
| Scientific Name      | Platichthys flesus                                   |
| Current Assess ID    | WGBFAS-EFLOUN27-2932-1980-2016-ICESIMP2018           |
| Area                 | Subdivisions 27 and 29-32                            |
| Management Authority | International Council for the Exploration of the Sea |
| Assessor             | Baltic Fisheries Assessment Working Group            |
| Asmts in RAM         | 2016, 2016   |

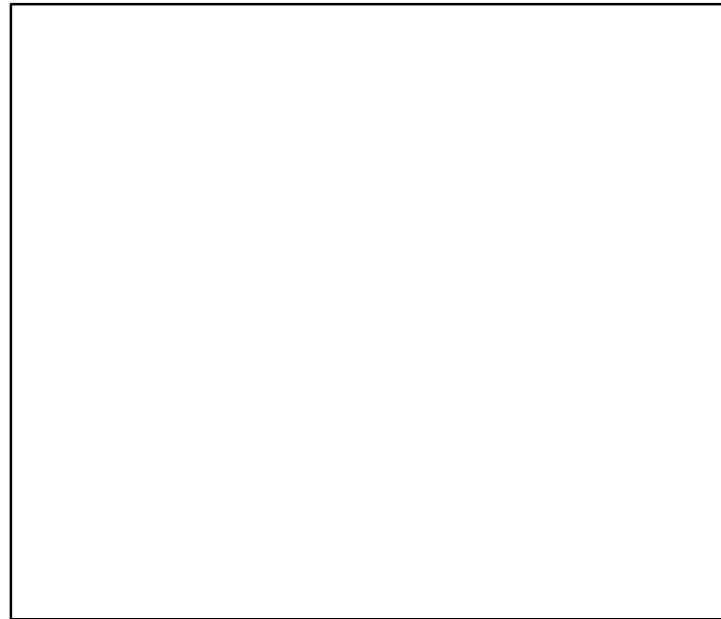
| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | -     | -         | -          |     |     |
| <b>TL</b>         | TL-MT | 2016      | 176        |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

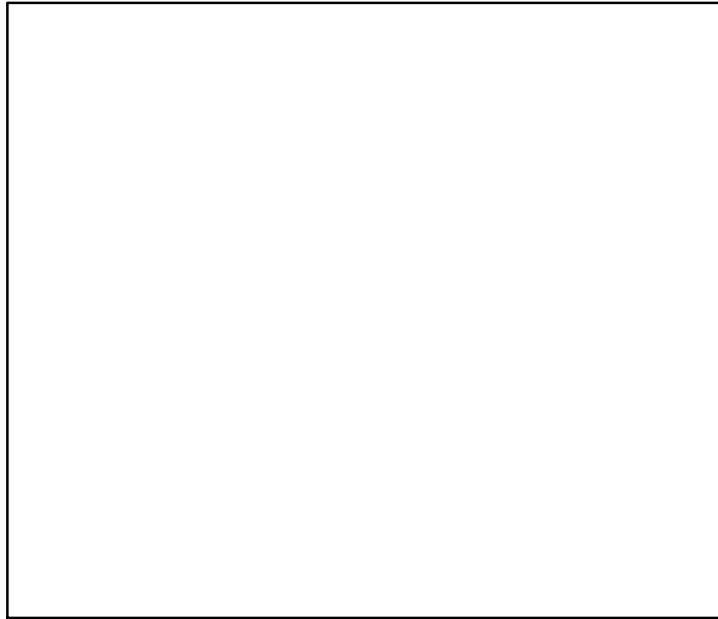
**Kobe MSY\***



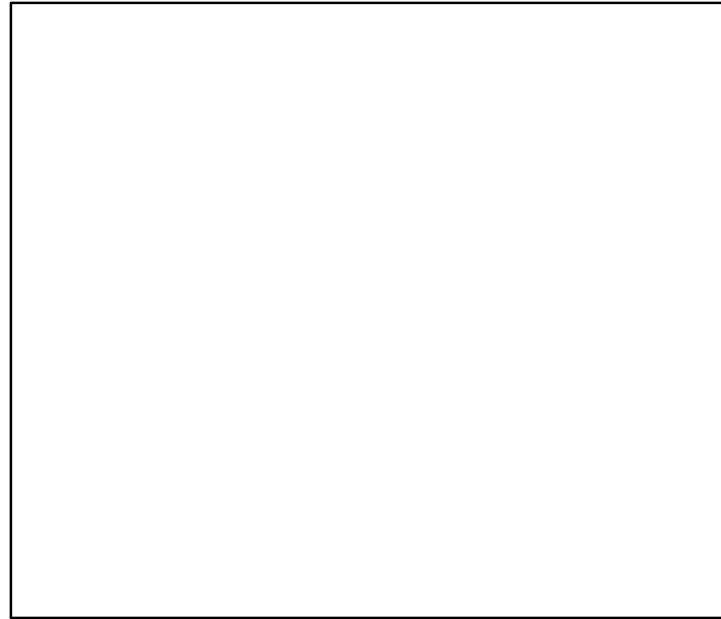
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

European flounder Subdivisions 27 and 29–32 [EFLOUN27–2932]

**TB\***



**SSB\***



**TN \***



**F\***



**ER\***



**Recruits\***

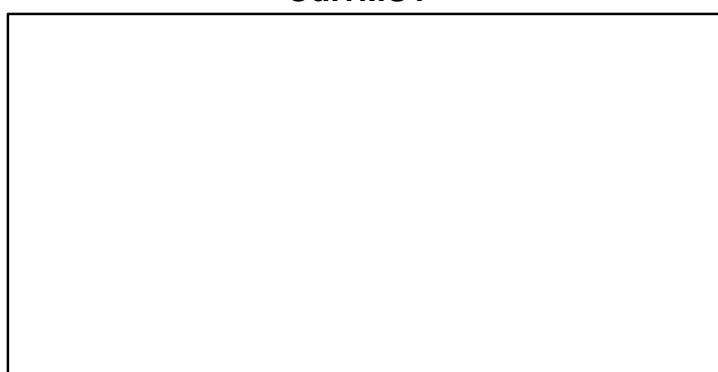
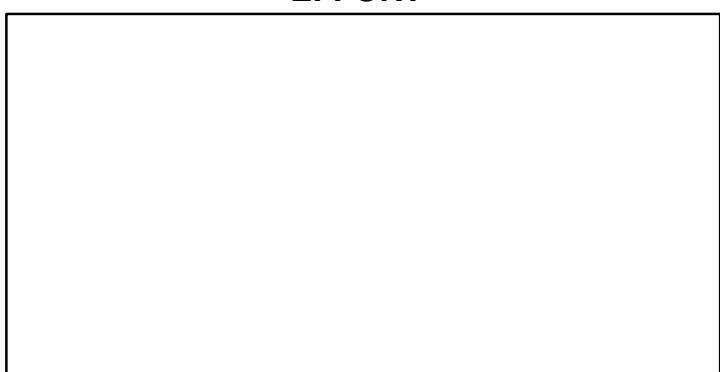
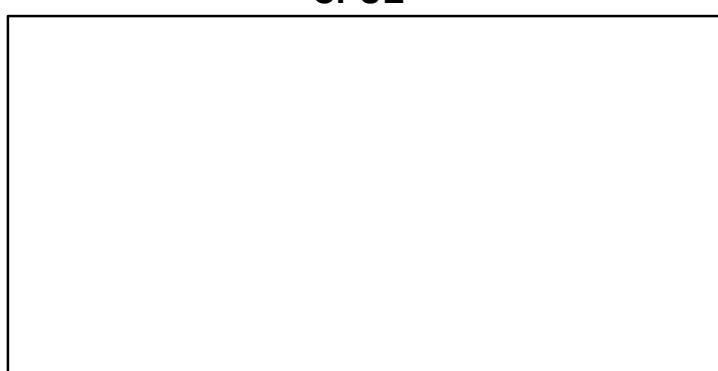
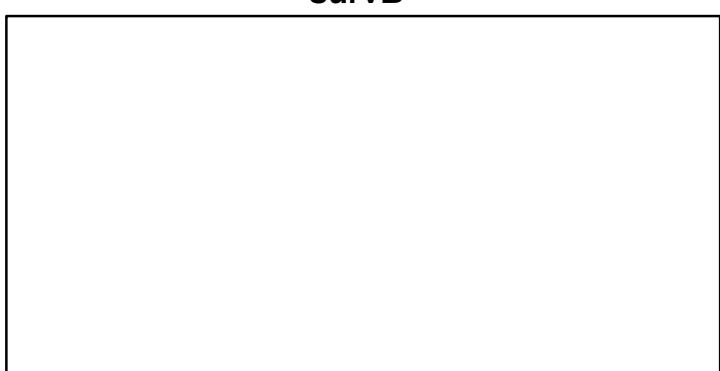
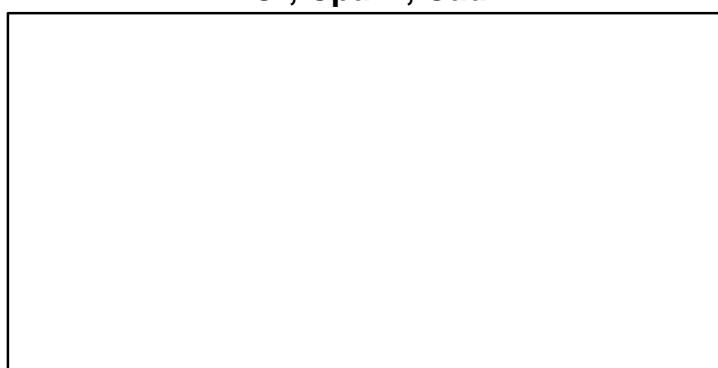
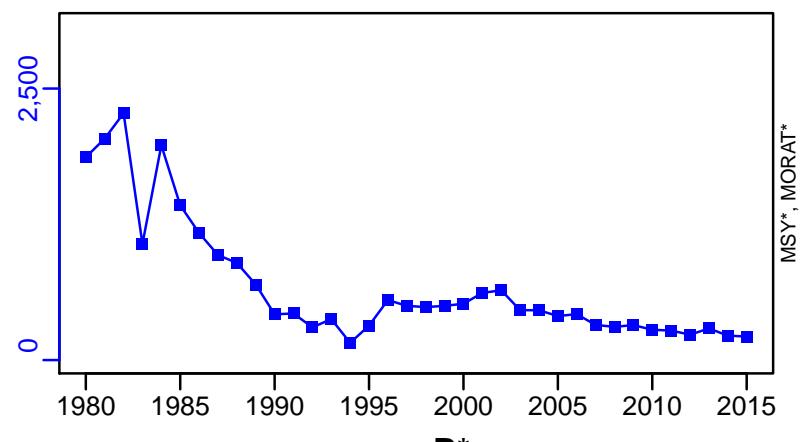


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

European flounder Subdivisions 27 and 29–32 [EFLOUN27–2932]

TL-MT, TC\*, RecC\* (1980–2016—ICESIMP2016)

TAC\*, Cpair\*, Cadv\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

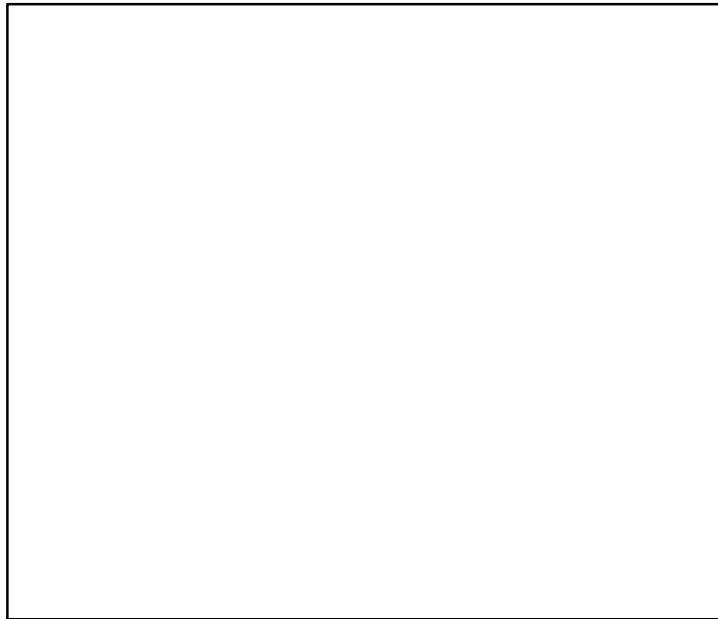
## European flounder ICES 3a-4 [EFLOUNIIla-IV]

| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Platichthys flesus  |
| <b>Current Assess ID</b>    | WGNSSK-EFLOUNIIla-IV-1950-2019-ICESIMP2021  |
| <b>Area</b>                 | ICES 3a-4   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2015, 2019, 2016  |

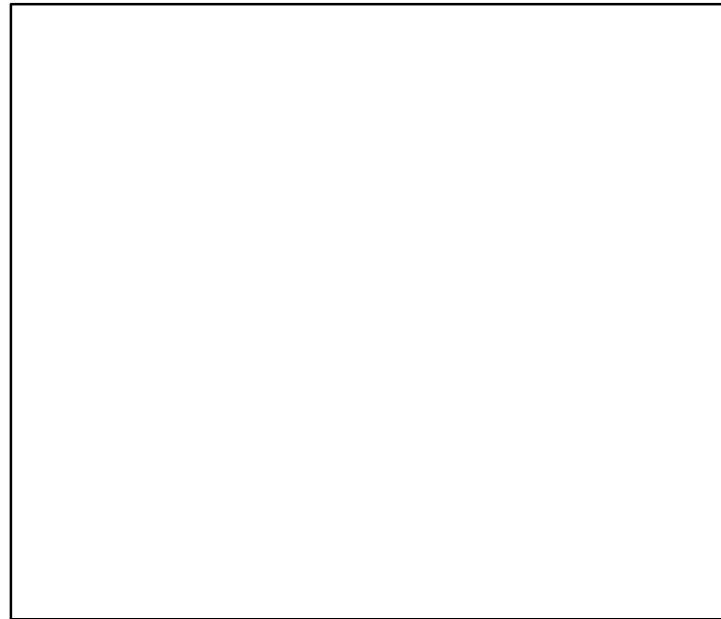
| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | -         | -                | -            |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | -         | -                | -            |
| <b>Fmgt</b>             | -         | -                | -            |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | -         | -                | -            |
| <b>Flim</b>             | -         | -                | -            |
| <b>ERlim</b>            | -         | -                | -            |

| <b>Time Series</b> |           |                  |                   |            |            |
|--------------------|-----------|------------------|-------------------|------------|------------|
| <b>Type</b>        | <b>ID</b> | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |
| <b>TB</b>          | -         | -                | -                 | -          | -          |
| <b>SSB</b>         | SSB-MT    | 2019             | 0.65              | -          | -          |
| <b>TN</b>          | -         | -                | -                 | -          | -          |
| <b>R</b>           | -         | -                | -                 | -          | -          |
| <b>F</b>           | -         | -                | -                 | -          | -          |
| <b>ER</b>          | -         | -                | -                 | -          | -          |
| <b>TC</b>          | TC-MT     | 2019             | 2245              |            |            |
| <b>TL</b>          | TL-MT     | 2019             | 1587              |            |            |
| <b>TB/TBmsy</b>    | -         | -                | -                 |            |            |
| <b>SSB/SSBmsy</b>  | -         | -                | -                 |            |            |
| <b>F/Fmsy</b>      | -         | -                | -                 |            |            |
| <b>ER/ERmsy</b>    | -         | -                | -                 |            |            |
| <b>TB/TBmgt</b>    | -         | -                | -                 |            |            |
| <b>SSB/SSBmgt</b>  | -         | -                | -                 |            |            |
| <b>F/Fmgt</b>      | -         | -                | -                 |            |            |
| <b>ER/ERmgt</b>    | -         | -                | -                 |            |            |

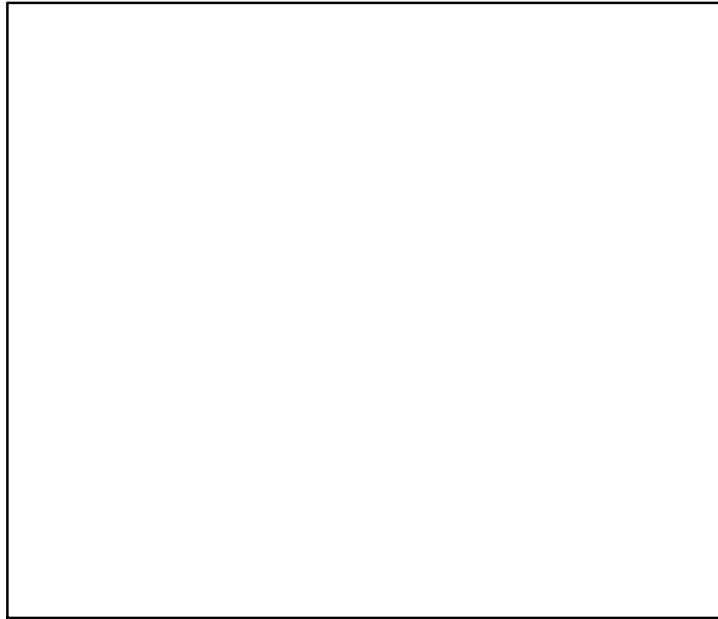
Kobe MSY\*



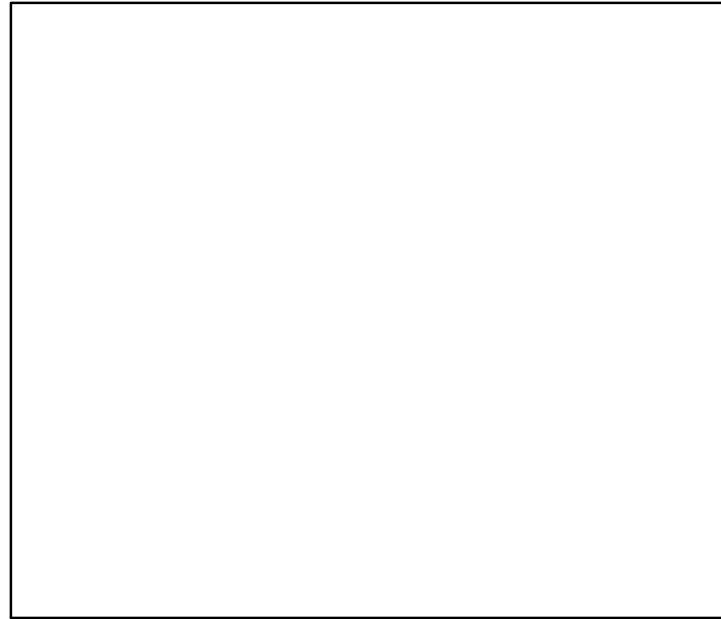
Kobe MGT\*



Spawner Recruit\*



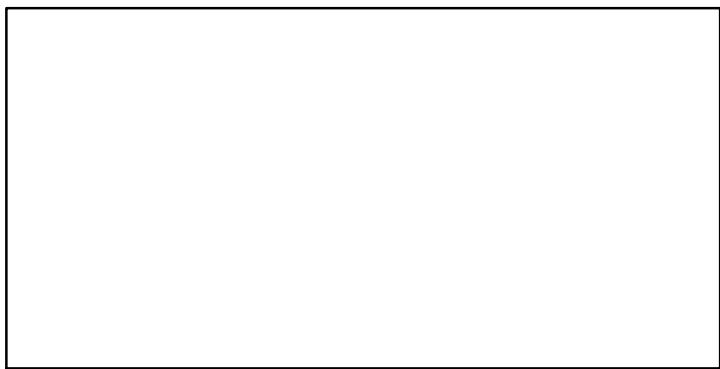
Production\*



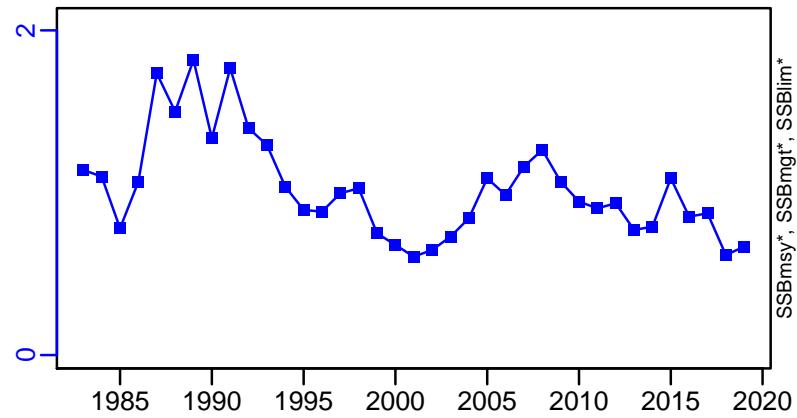
◆ Start Year ♦ End Year \* No Data

European flounder ICES 3a–4 [EFLOUNIIla–IV]

**TB\***



**SSB-MT (1950–2019–ICESIMP2021)**



ssBmsy\*, ssBmgt\*, ssBlim\*

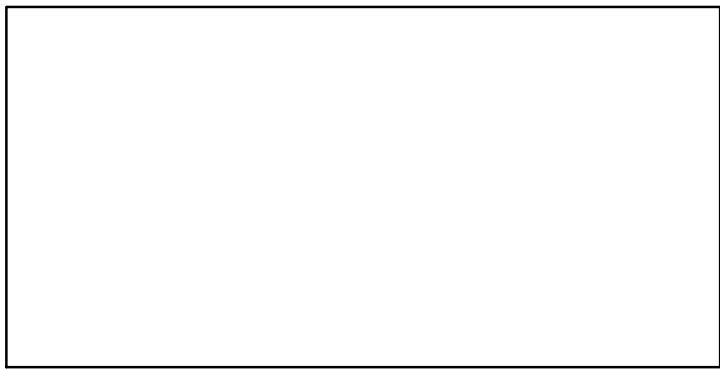
**TN \***



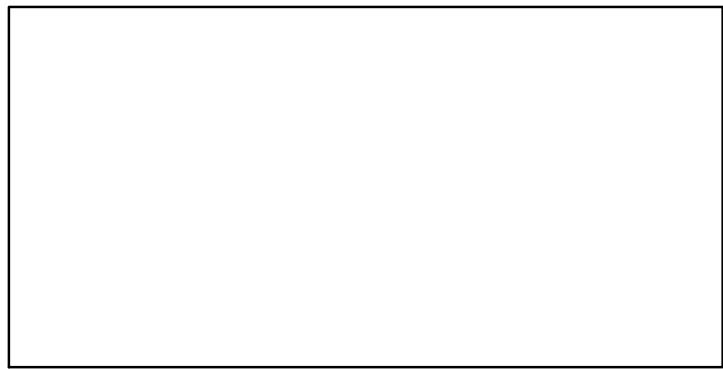
**F\***



**ER\***



**Recruits\***

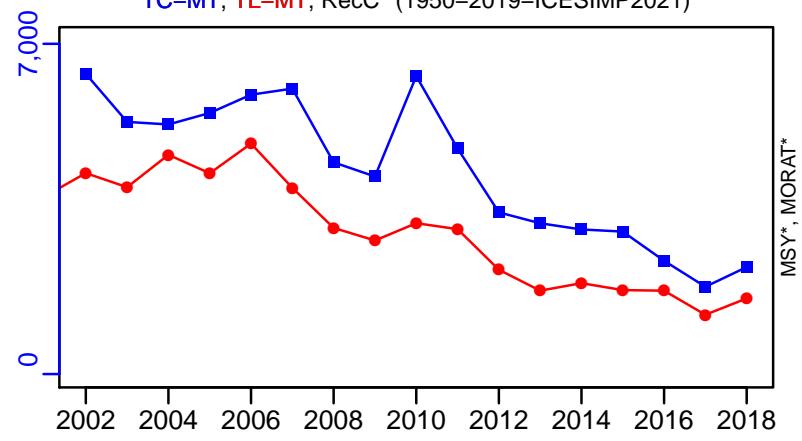


- Listed time series
- Target BRP
- Rec-Est
- MSY-based BRP
- Lim BRP
- \* No Data

European flounder ICES 3a–4 [EFLOUNIIla–IV]

TC-MT, TL-MT, RecC\* (1950–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



survB\*

CPUE\*

EFFORT\*

CdivMSY\*

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

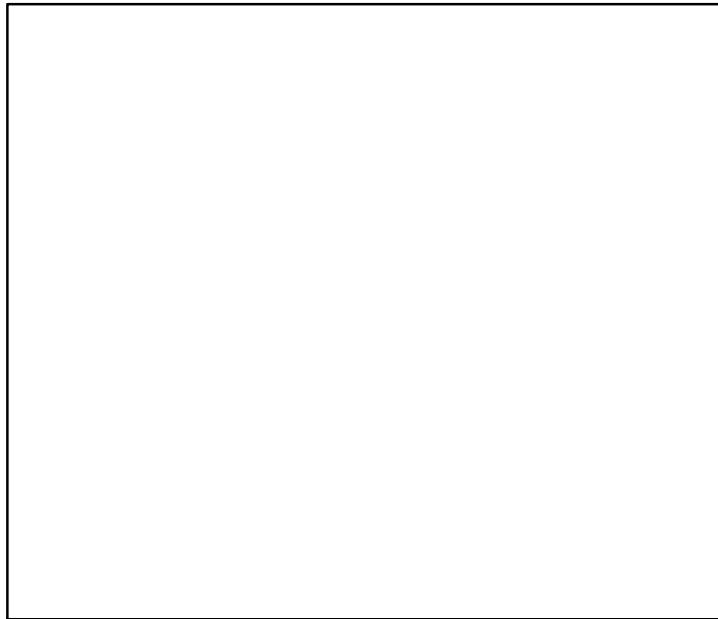
## European pollack ICES 3a-4 [EPOLLIV-IIIa]

| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Pollachius pollachius   |
| <b>Current Assess ID</b>    | WGNSSK-EPOLLIV-IIIa-1977-2017-ICESIMP2018   |
| <b>Area</b>                 | ICES 3a-4   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2016, 2017  |

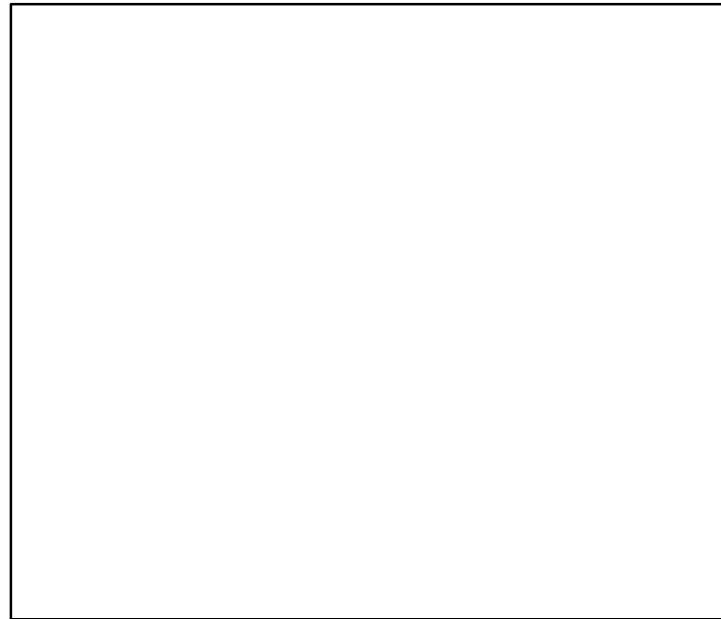
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | TC-MT | 2017      | 1910       |     |     |
| <b>TL</b>          | TL-MT | 2017      | 1900       |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

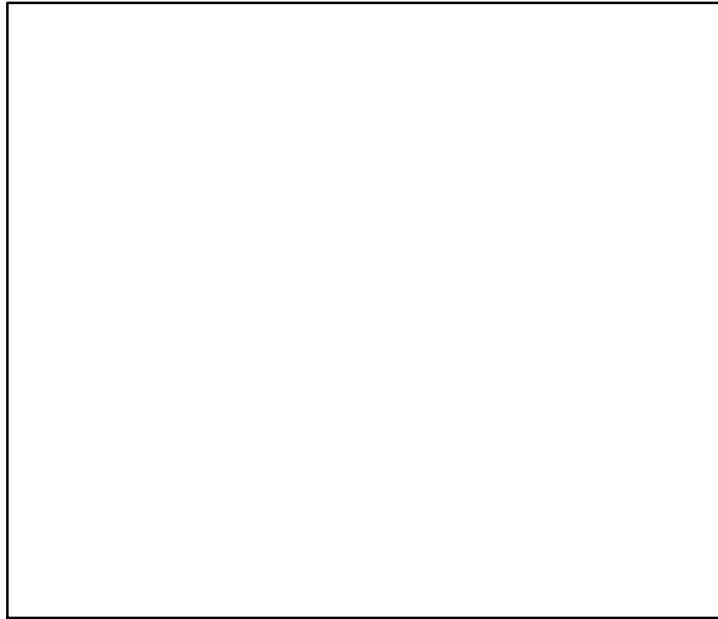
**Kobe MSY\***



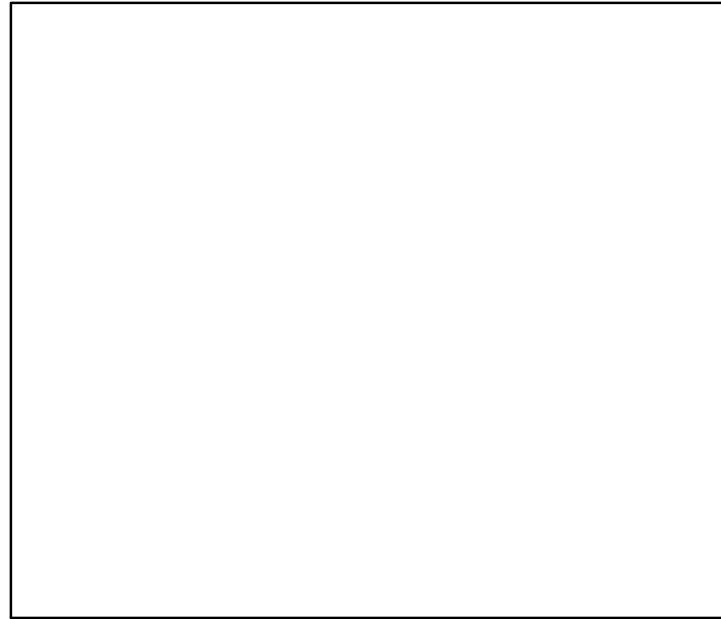
**Kobe MGT\***



**Spawner Recruit\***



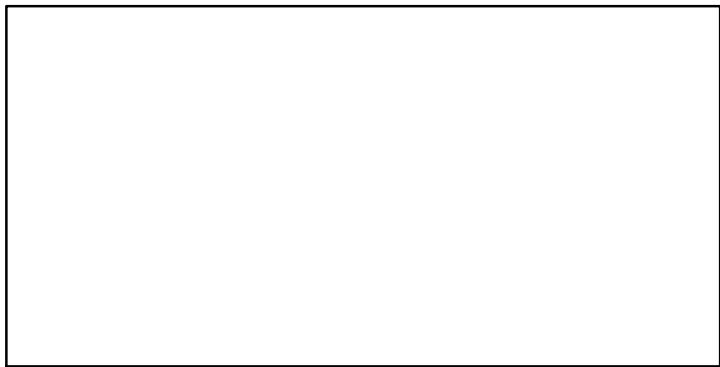
**Production\***



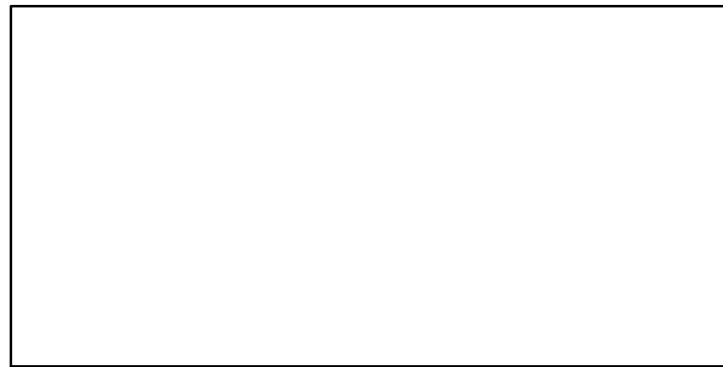
◆ Start Year ♦ End Year \* No Data

European pollack ICES 3a–4 [EPOLLIV–IIIa]

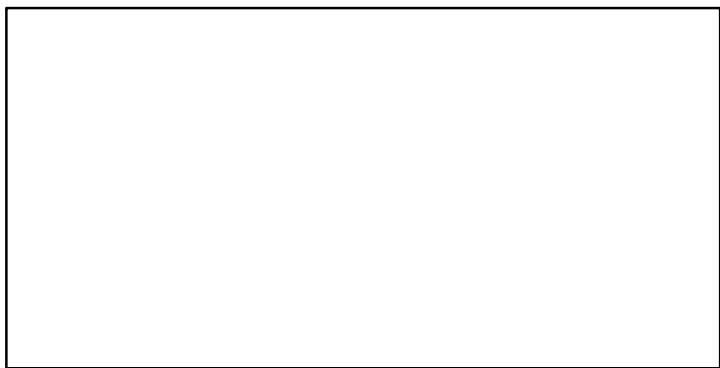
**TB\***



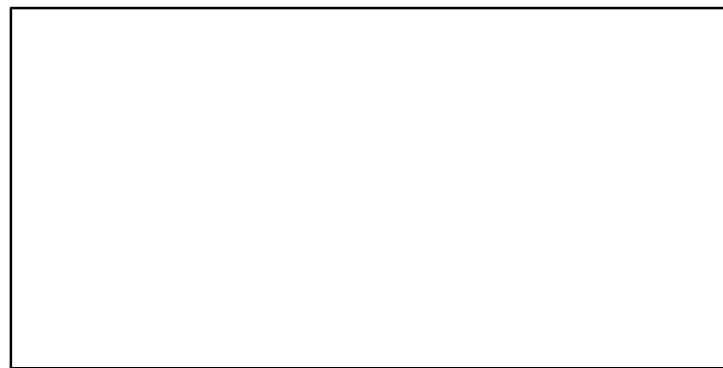
**SSB\***



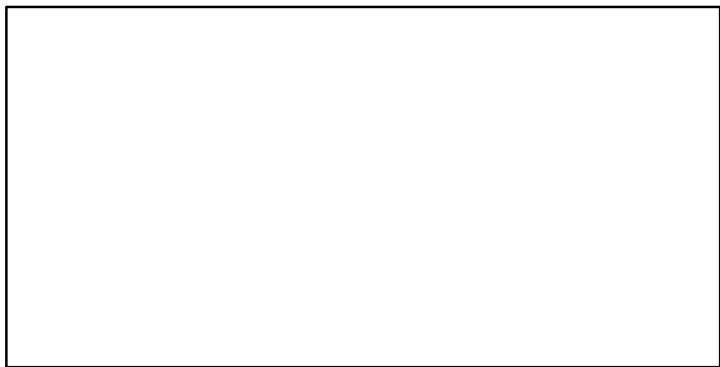
**TN \***



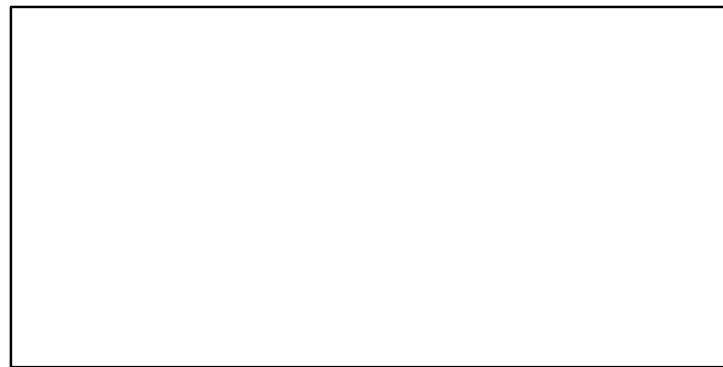
**F\***



**ER\***



**Recruits\***

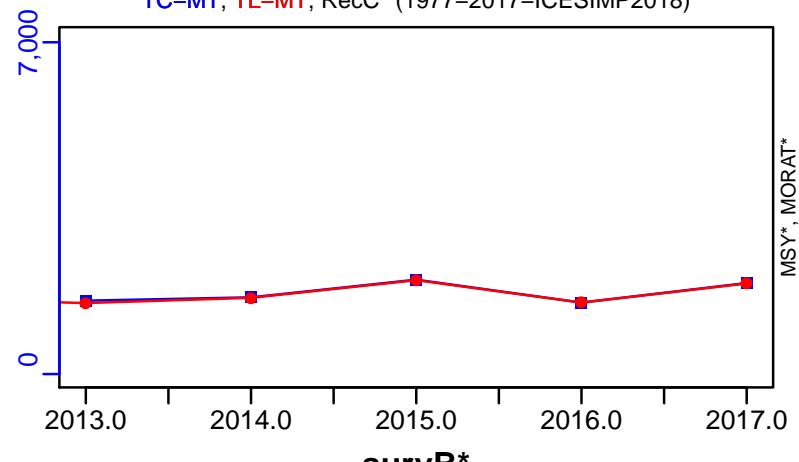


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

European pollack ICES 3a–4 [EPOLLIV–IIIa]

TC–MT, TL–MT, RecC\* (1977–2017–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



survB\*

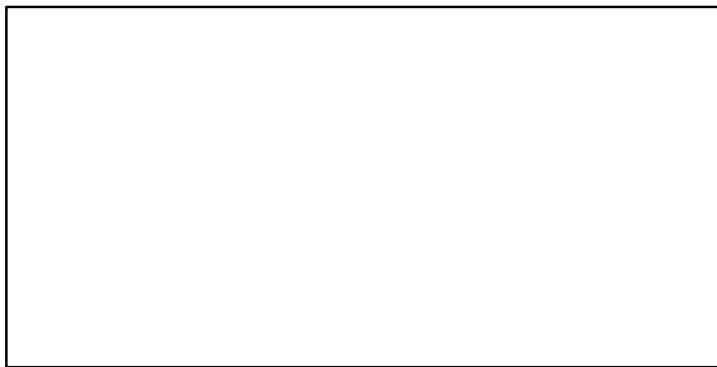
MSY\*, MORAT\*



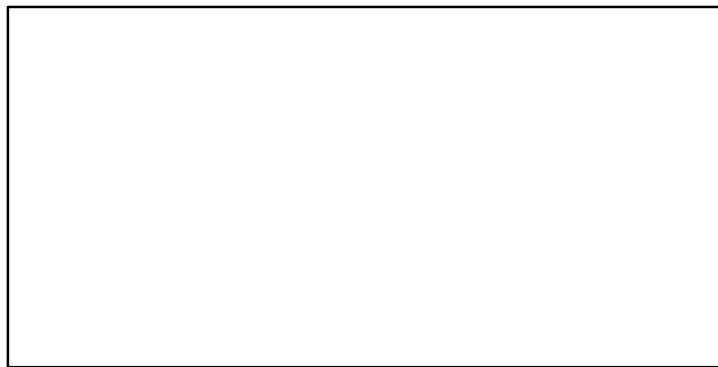
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

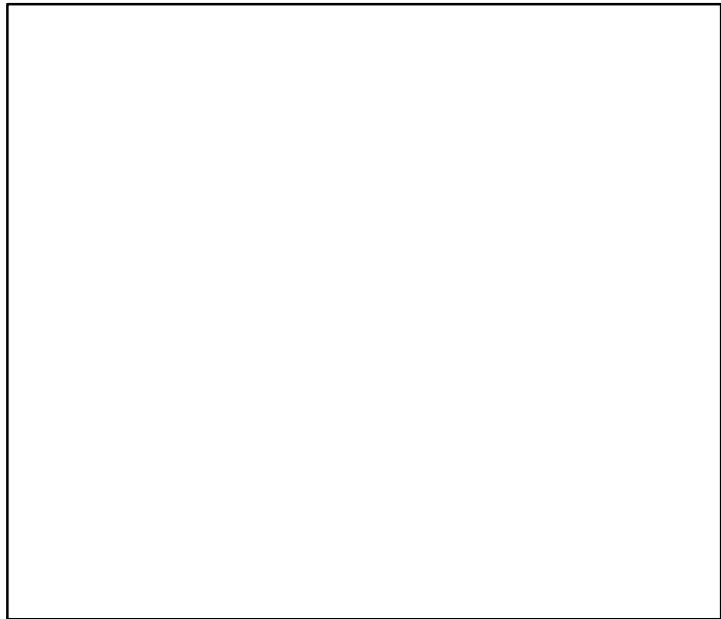
## European pollack ICES 8-9a [EPOLLVIII-IXa]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Pollachius pollachius  |
| <b>Current Assess ID</b>    | WGBIE-EPOLLVIII-IXa-1986-2018-ICESIMP2021                            |
| <b>Area</b>                 | ICES 8-9a  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                 |
| <b>Assessor</b>             | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion |
| <b>Asmts in RAM</b>         | 2015, 2016, 2016, 2018   |

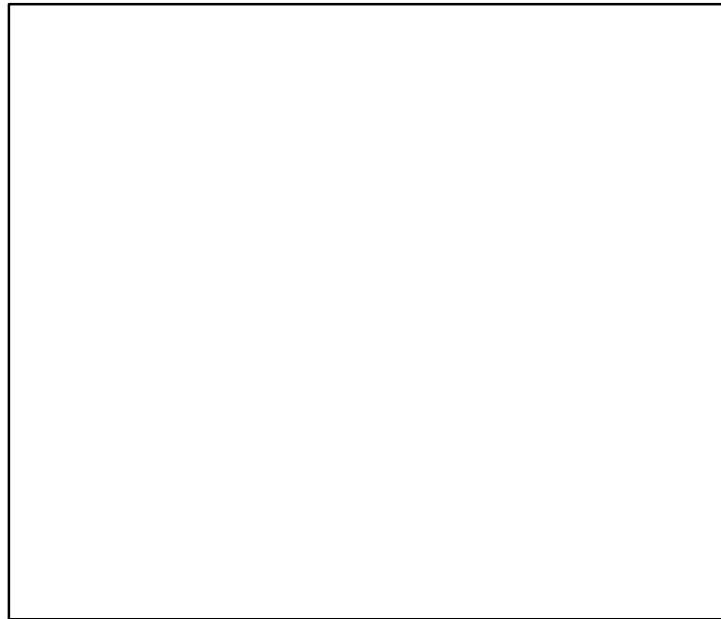
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | -     | -         | -          |     |     |
| <b>TL</b>          | TL-MT | 2018      | 1512       |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

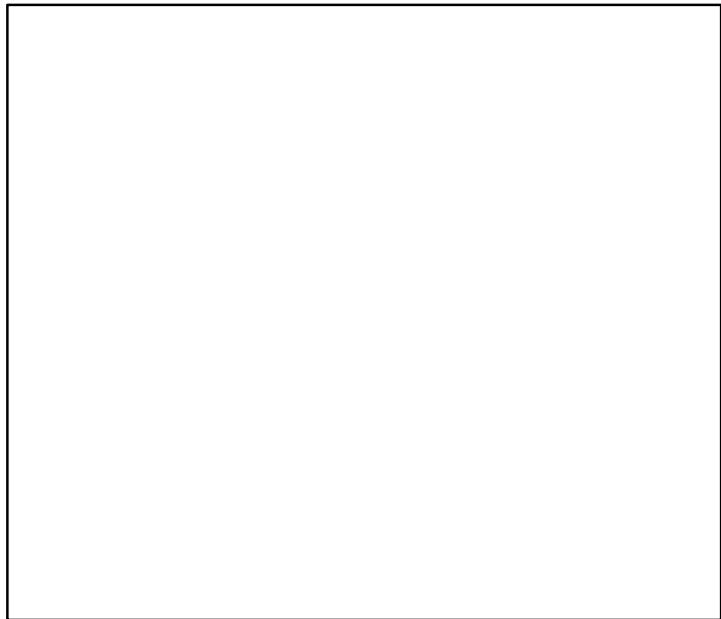
**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



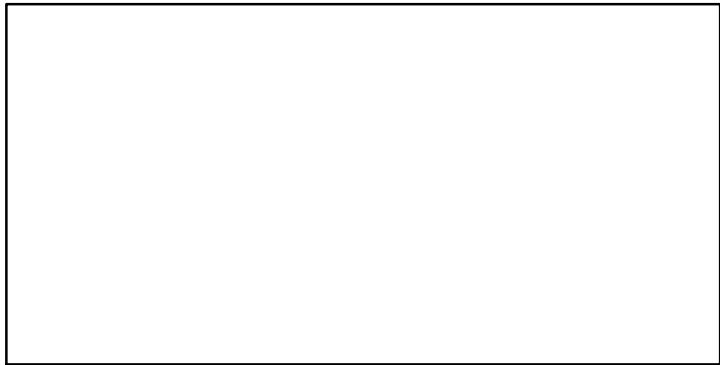
**Production\***



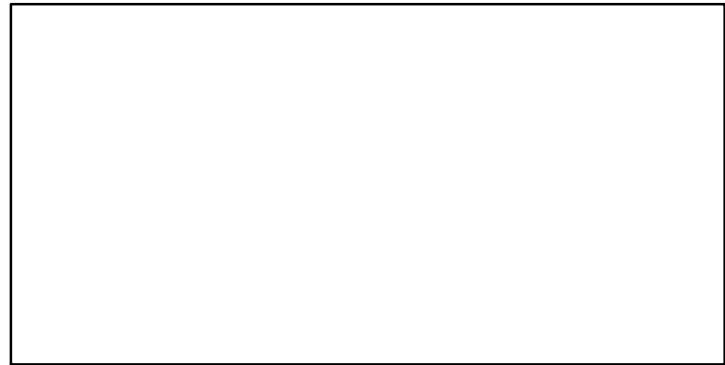
◆ Start Year ♦ End Year \* No Data

European pollack ICES 8–9a [EPOLLVIII–IXa]

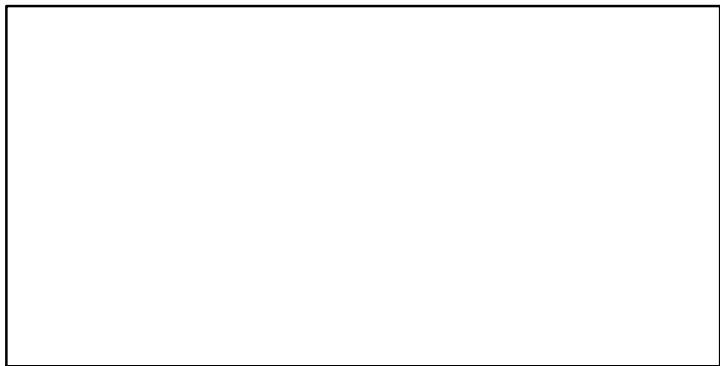
**TB\***



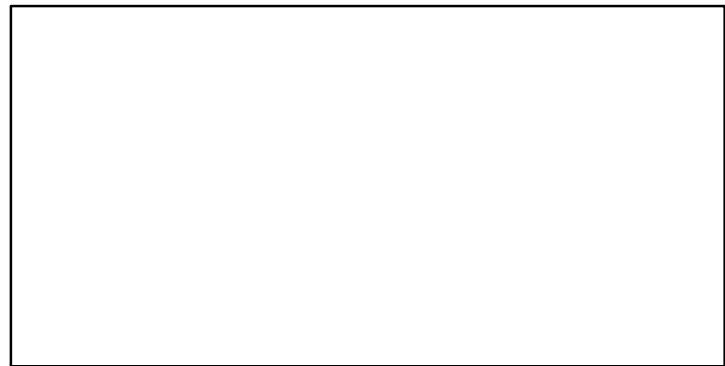
**SSB\***



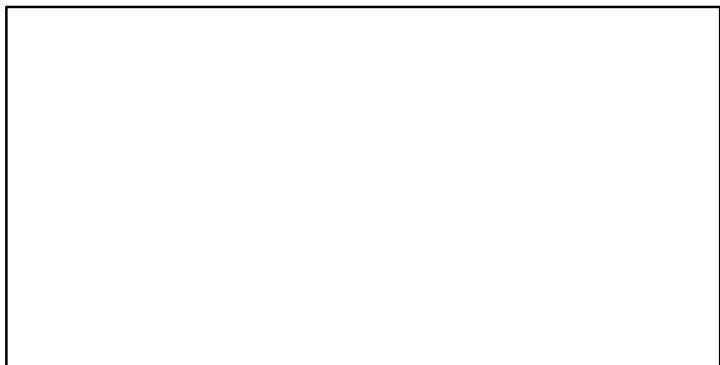
**TN \***



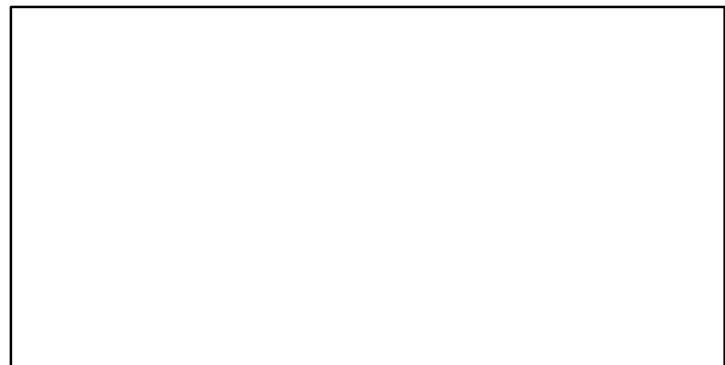
**F\***



**ER\***



**Recruits\***

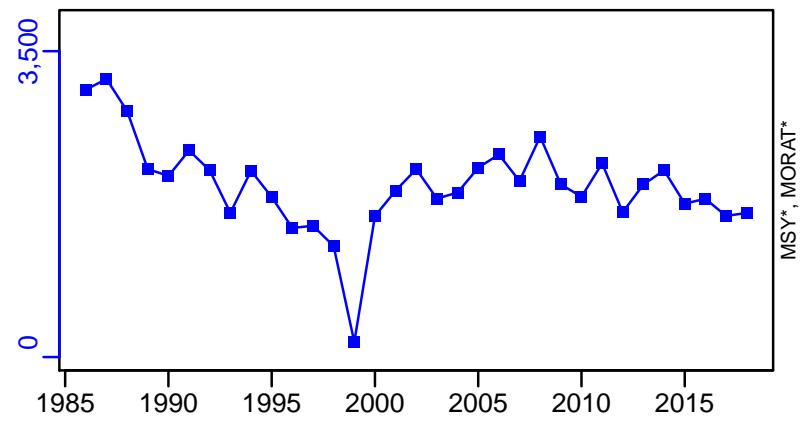


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

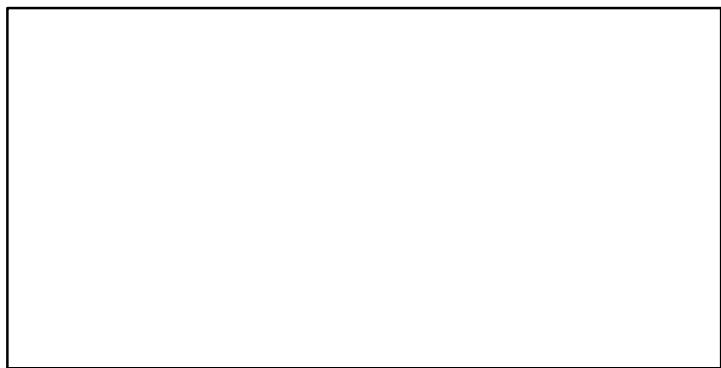
European pollack ICES 8–9a [EPOLLVIII–IXa]

TL–MT, TC\*, RecC\* (1986–2018–ICESIMP2021)

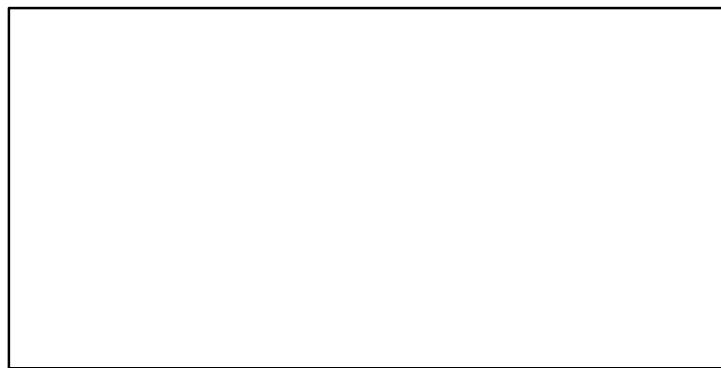
TAC\*, Cpair\*, Cadv\*



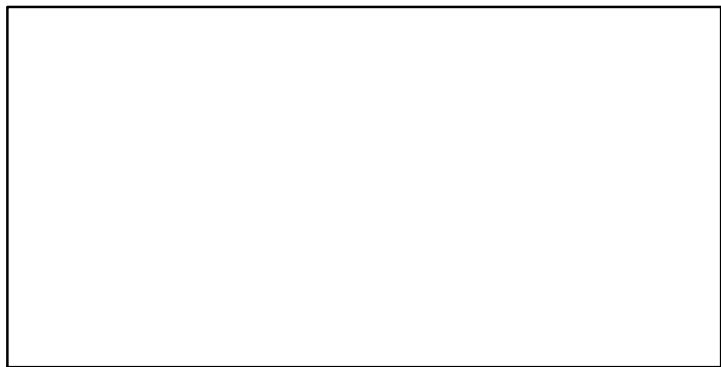
survB\*



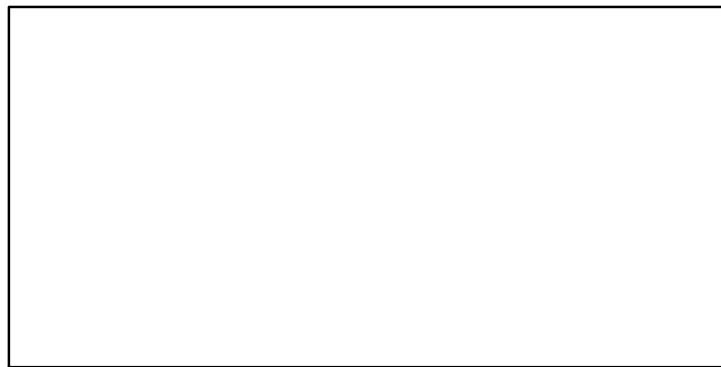
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Fourspotted megrim ICES 8c-9a [FMEG8c9a]

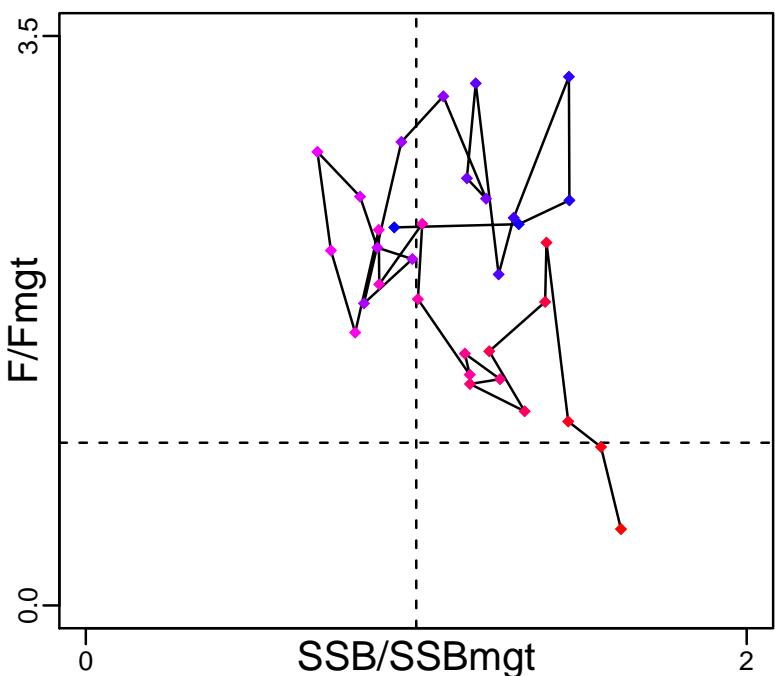
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Lepidorhombus boscii   |
| <b>Current Assess ID</b>    | WGBIE-FMEG8c9a-1986-2019-ICESIMP2021                                 |
| <b>Area</b>                 | ICES 8c-9a   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                 |
| <b>Assessor</b>             | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion |
| <b>Asmts in RAM</b>         | 2014, 2015, 2016, 2017, 2018, 2019, 2010, 2013                       |

| Reference Points |           |           |       |
|------------------|-----------|-----------|-------|
| Type             | ID        | Asmt Year | Value |
| <b>TBmsy</b>     | -         | -         | -     |
| <b>SSBmsy</b>    | -         | -         | -     |
| <b>Fmsy</b>      | Fmsy-1/yr | 2018      | 0.193 |
| <b>ERrmsy</b>    | -         | -         | -     |
| <b>TBmgt</b>     | -         | -         | -     |
| <b>SSBmgt</b>    | SSBmgt-MT | 2019      | 4600  |
| <b>Fmgt</b>      | Fmgt-1/yr | 2019      | 0.193 |
| <b>ERmgt</b>     | -         | -         | -     |
| <b>TB0</b>       | -         | -         | -     |
| <b>SSB0</b>      | -         | -         | -     |
| <b>MSY</b>       | -         | -         | -     |
| <b>M</b>         | M-1/yr    | 2010      | 0.2   |
| <b>TBlim</b>     | -         | -         | -     |
| <b>SSBlim</b>    | SSBlim-MT | 2018      | 3300  |
| <b>Flim</b>      | Flim-1/yr | 2018      | 0.57  |
| <b>ERlim</b>     | -         | -         | -     |

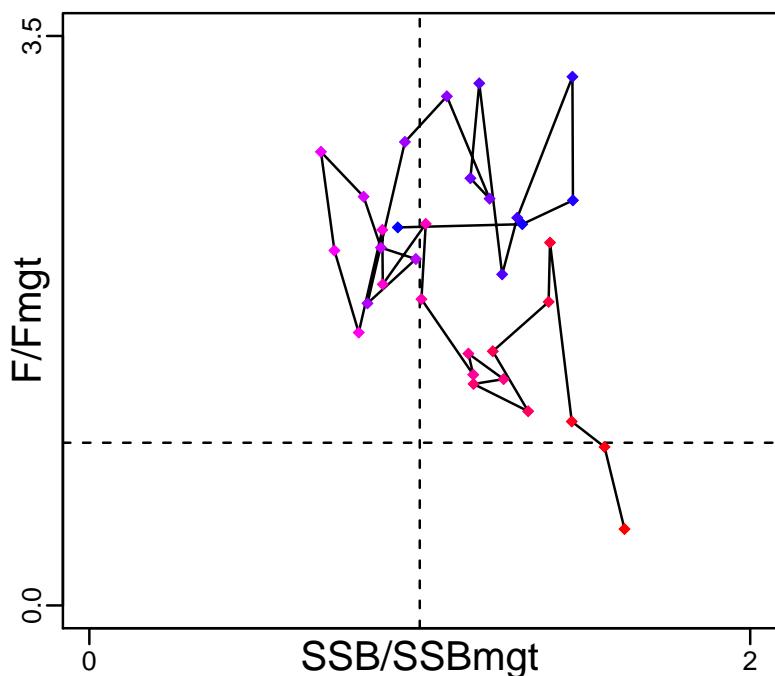
| Time Series       |                  |           |            |     |        |  |
|-------------------|------------------|-----------|------------|-----|--------|--|
| Type              | ID               | Asmt Year | Curr Value | Sex | Age    |  |
| <b>TB</b>         | TB-MT            | 2019      | 7878       | -   | -      |  |
| <b>SSB</b>        | SSB-MT           | 2019      | 8854       | -   | -      |  |
| <b>TN</b>         | -                | -         | -          | -   | -      |  |
| <b>R</b>          | R-E00            | 2019      | 45,233,000 | -   | 0      |  |
| <b>F</b>          | F-1/yr           | 2019      | 0.091      | -   | 2 to 4 |  |
| <b>ER</b>         | ER-calc-ratio    | 2019      | 0.115      | -   | -      |  |
| <b>TC</b>         | TC-MT            | 2019      | 906        |     |        |  |
| <b>TL</b>         | TL-MT            | 2019      | 814        |     |        |  |
| <b>TB/TBmsy</b>   | -                | -         | -          |     |        |  |
| <b>SSB/SSBmsy</b> | -                | -         | -          |     |        |  |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr | 2018      | 0.917      |     |        |  |
| <b>ER/ERrmsy</b>  | -                | -         | -          |     |        |  |
| <b>TB/TBmgt</b>   | -                | -         | -          |     |        |  |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2019      | 1.925      |     |        |  |
| <b>F/Fmgt</b>     | F-1/yr/Fmgt-1/yr | 2019      | 0.469      |     |        |  |
| <b>ER/ERmgt</b>   | -                | -         | -          |     |        |  |

Fourspotted megrim ICES 8c–9a [FMEG8c9a]

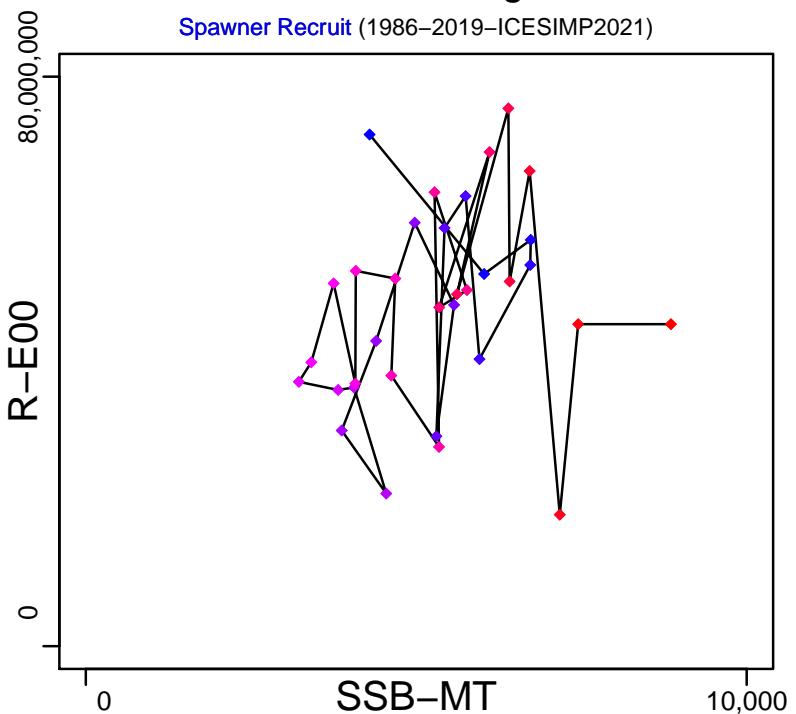
Kobe MSYpref (1986–2019–ICESIMP2021)



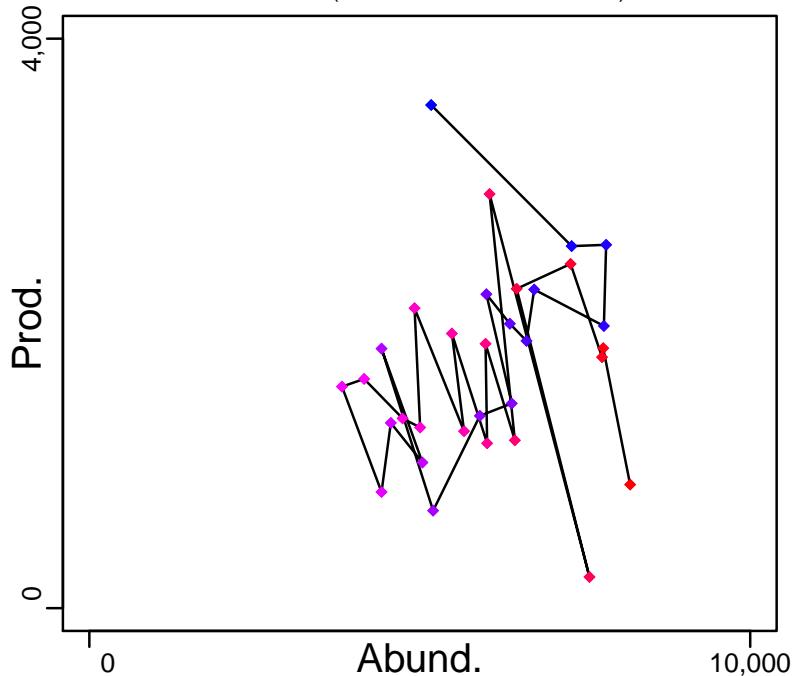
Kobe MGTpref (1986–2019–ICESIMP2021)



Spawner Recruit (1986–2019–ICESIMP2021)



Production (1986–2019–ICESIMP2021)

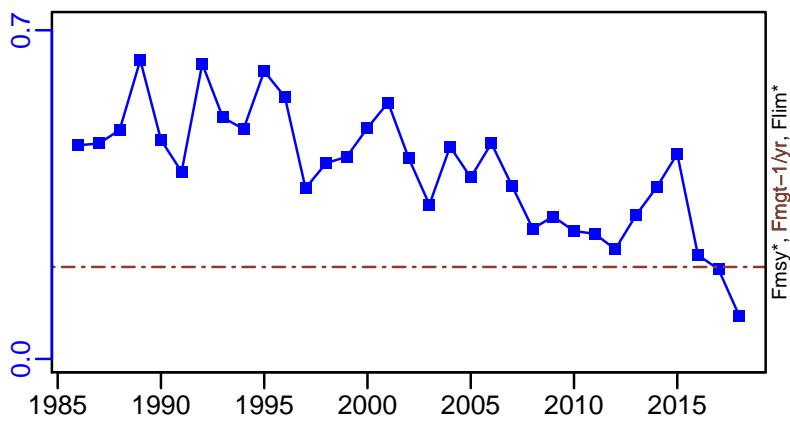
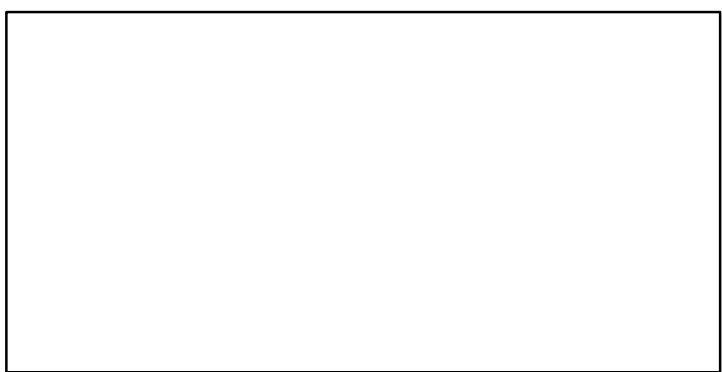
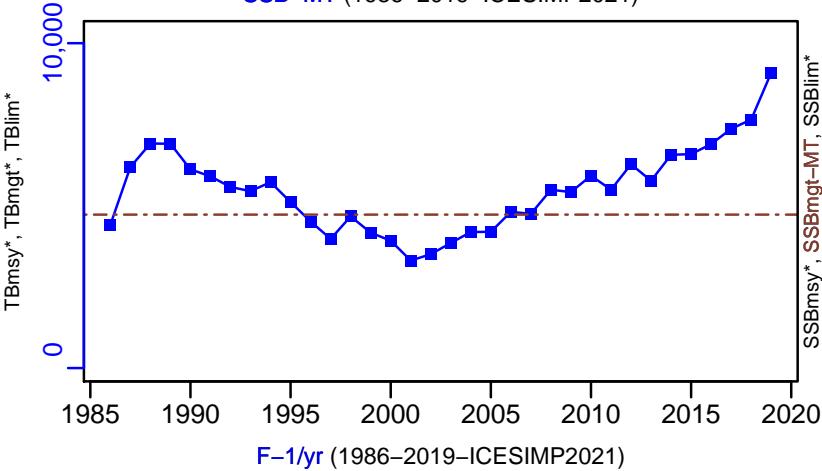
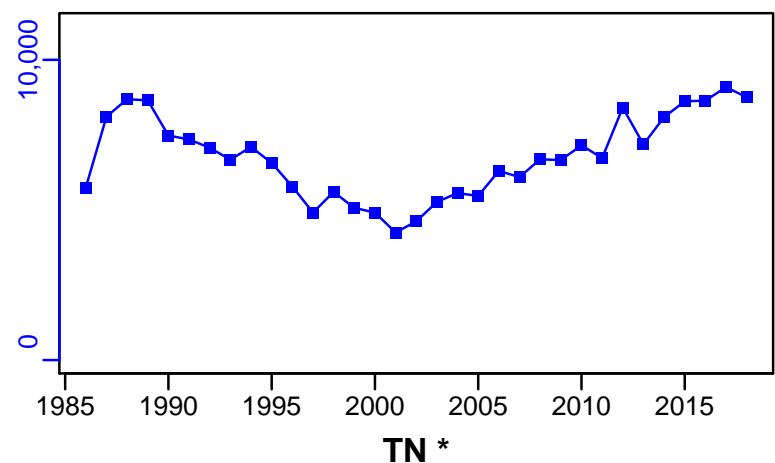


◆ Start Year   ◆ End Year   \* No Data

Fourspotted megrim ICES 8c–9a [FMEG8c9a]

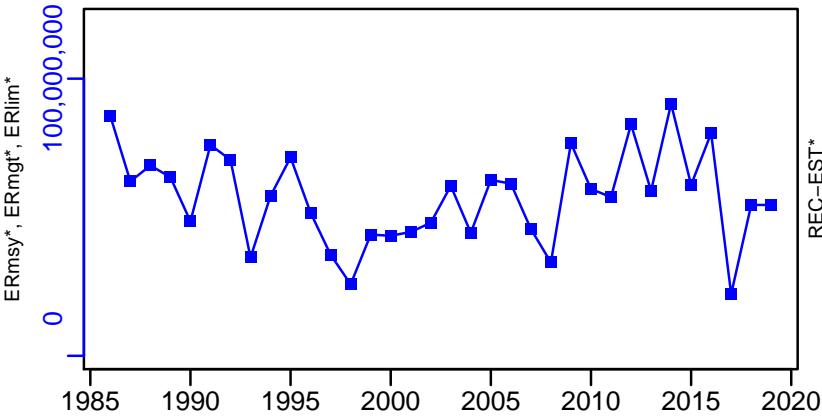
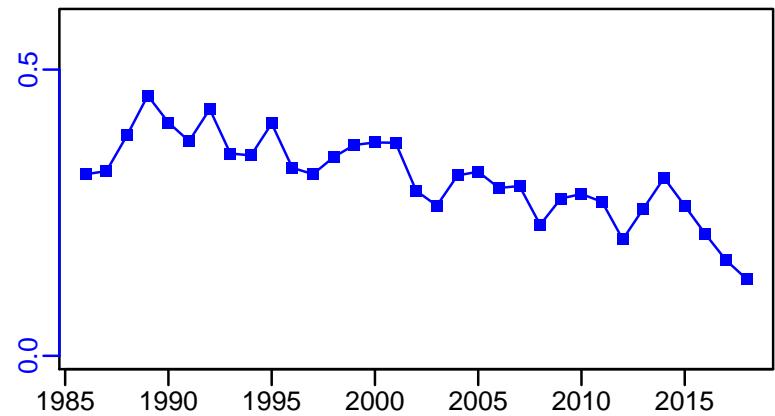
TB-MT (1986–2019–ICESIMP2021)

SSB-MT (1986–2019–ICESIMP2021)



ER-calc-ratio (1986–2019–ICESIMP2021)

R-E00 (1986–2019–ICESIMP2021)

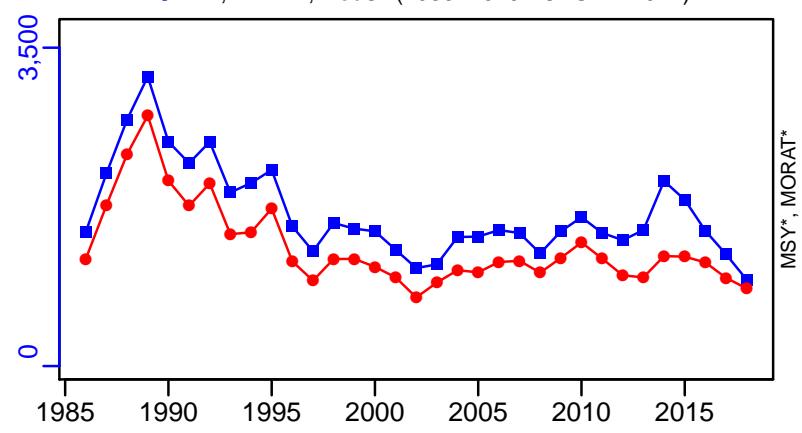


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | --- Lim BRP  | * No Data |

Fourspotted megrim ICES 8c–9a [FMEG8c9a]

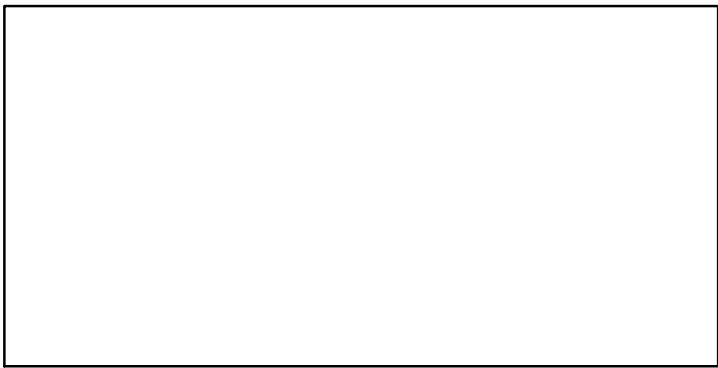
TC-MT, TL-MT, RecC\* (1986–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*

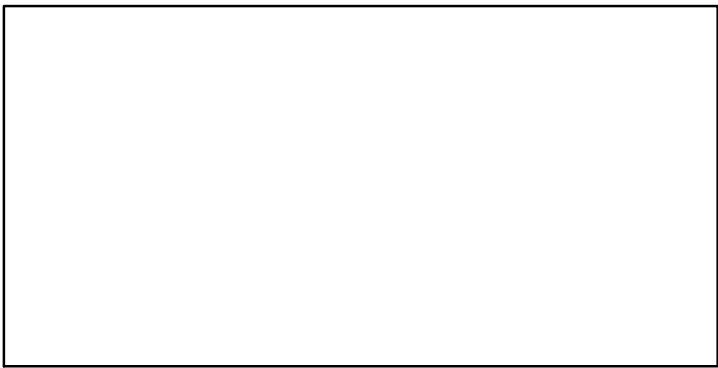


MSY\*, MORAT\*

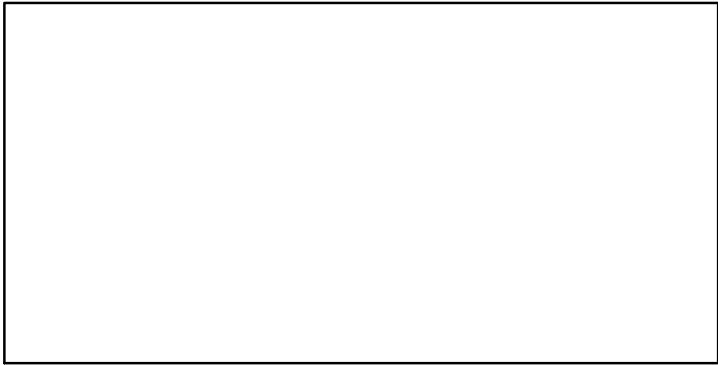
survB\*



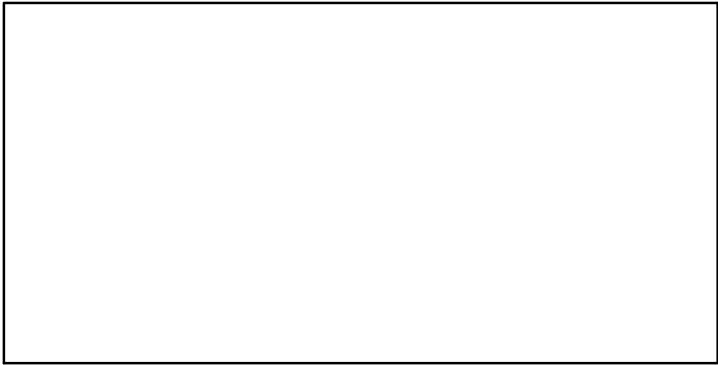
CPUE\*



EFFORT\*



CdivMSY\*



## Greater forkbeard Northeast Atlantic [GFORKNEATL]

| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Phycis blennoides   |
| <b>Current Assess ID</b>    | WGDEEP-GFORKNEATL-2005-2017-ICESIMP2018                                     |
| <b>Area</b>                 | Northeast Atlantic  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                        |
| <b>Assessor</b>             | Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources |
| <b>Asmts in RAM</b>         | 2016, 2017  |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | TC-MT | 2017      | 2020       |     |     |
| <b>TL</b>          | TL-MT | 2017      | 1500       |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

**Spawner Recruit\***

**Production\***

◆ Start Year ♦ End Year \* No Data

**Greater forkbeard Northeast Atlantic [GFORKNEATL]**

**TB\***



**SSB\***



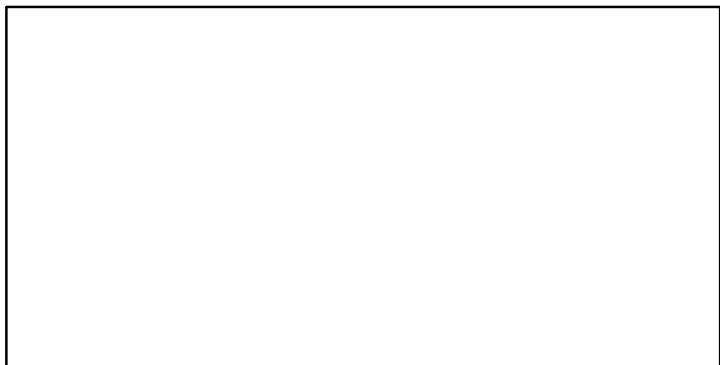
**TN \***



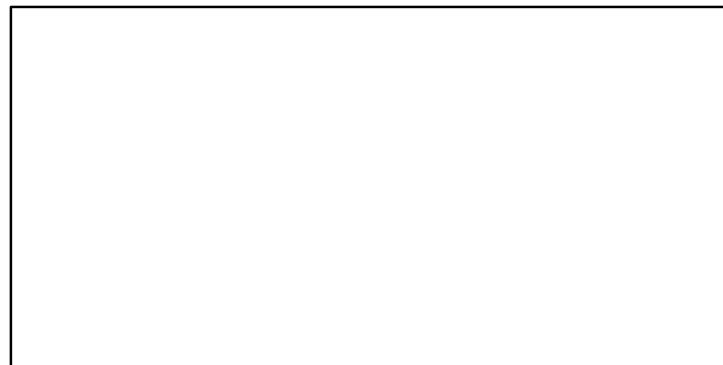
**F\***



**ER\***



**Recruits\***

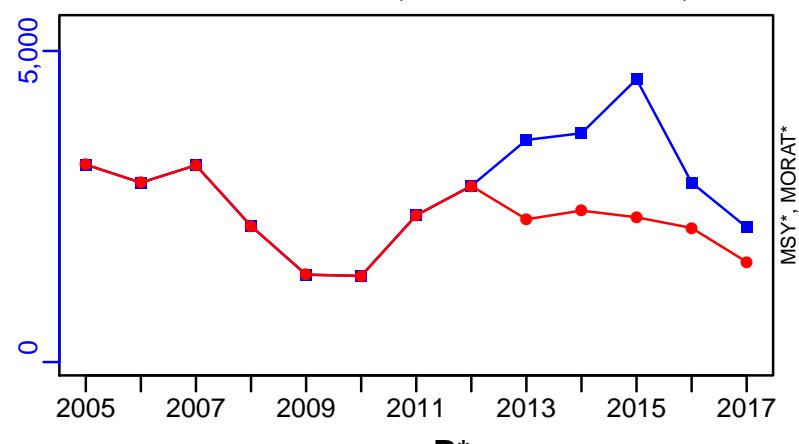


- |       |                    |       |            |   |         |
|-------|--------------------|-------|------------|---|---------|
| ■     | Listed time series | - - - | Target BRP | — | Rec-Est |
| - - - | MSY-based BRP      | - - - | Lim BRP    | * | No Data |

**Greater forkbeard Northeast Atlantic [GFORKNEATL]**

TC-MT, TL-MT, RecC\* (2005–2017–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



survB\*

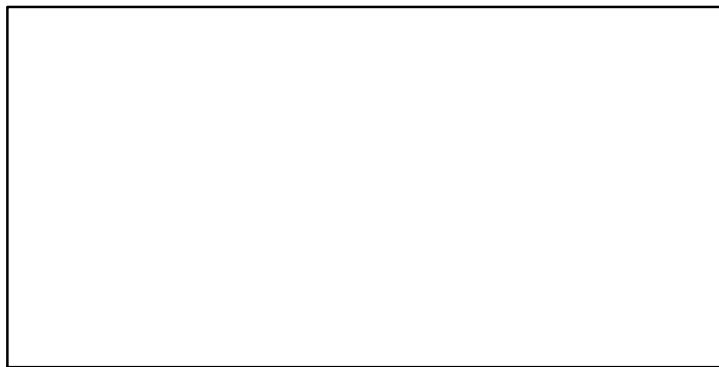
MSY\*, MORAT\*



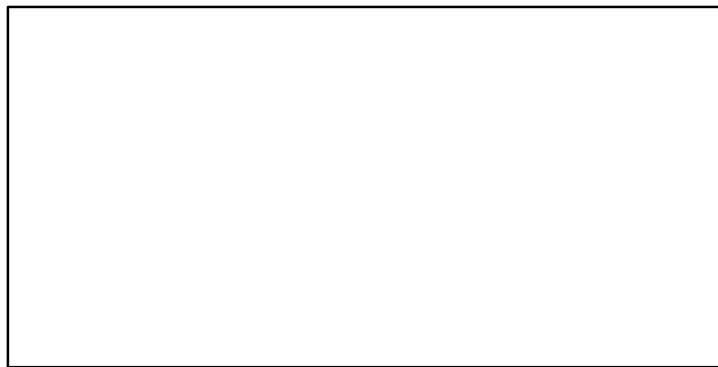
CPUE\*



EFFORT\*



CdivMSY\*



- |  |   |  |
|--|---|--|
| <ul style="list-style-type: none"> <li>■ 1st listed time series</li> <li>● 2nd listed time series</li> </ul> | <ul style="list-style-type: none"> <li>▲ 3rd listed time series</li> <li>- - MSY</li> </ul> | <ul style="list-style-type: none"> <li>— MORAT</li> <li>* No Data</li> </ul> |
|--|---|--|

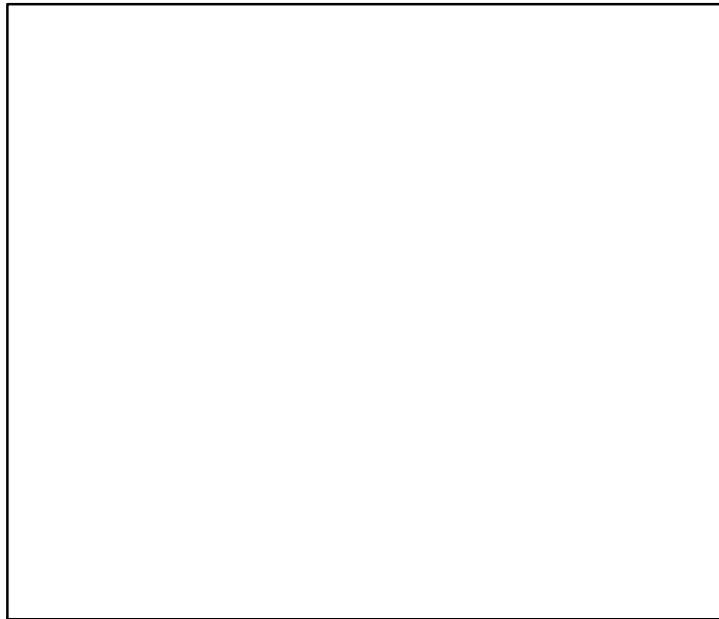
## Grey gurnard ICES 3a-4-7d [GGURNIIIA-IV-VIId]

| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Eutrigla gurnardus  |
| <b>Current Assess ID</b>    | WGNSSK-GGURNIIIA-IV-VIId-1983-2017-ICESIMP2018                                    |
| <b>Area</b>                 | ICES 3a-4-7d  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2016, 2017  |

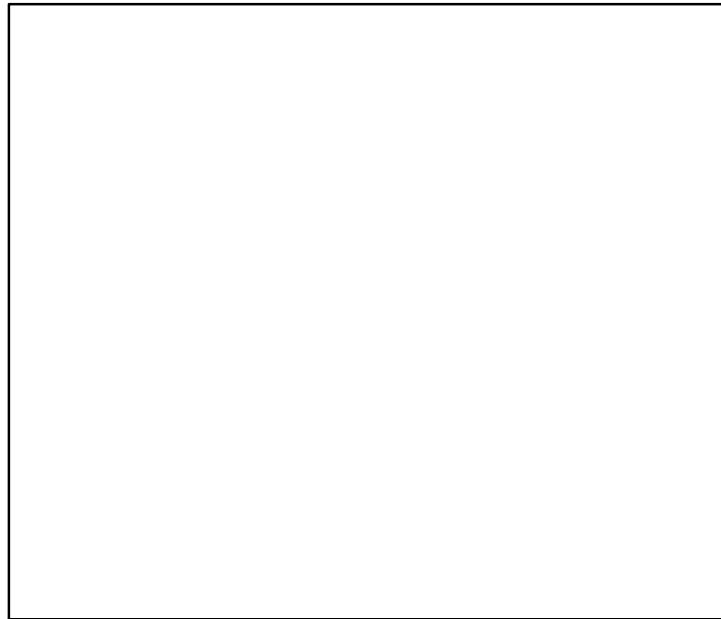
| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | -         | -                | -            |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | -         | -                | -            |
| <b>Fmgt</b>             | -         | -                | -            |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | -         | -                | -            |
| <b>Flim</b>             | -         | -                | -            |
| <b>ERlim</b>            | -         | -                | -            |

| <b>Time Series</b> |           |                  |                   |            |            |
|--------------------|-----------|------------------|-------------------|------------|------------|
| <b>Type</b>        | <b>ID</b> | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |
| <b>TB</b>          | -         | -                | -                 | -          | -          |
| <b>SSB</b>         | -         | -                | -                 | -          | -          |
| <b>TN</b>          | -         | -                | -                 | -          | -          |
| <b>R</b>           | -         | -                | -                 | -          | -          |
| <b>F</b>           | -         | -                | -                 | -          | -          |
| <b>ER</b>          | -         | -                | -                 | -          | -          |
| <b>TC</b>          | TC-MT     | 2017             | 17,100            |            |            |
| <b>TL</b>          | TL-MT     | 2017             | 3450              |            |            |
| <b>TB/TBmsy</b>    | -         | -                | -                 |            |            |
| <b>SSB/SSBmsy</b>  | -         | -                | -                 |            |            |
| <b>F/Fmsy</b>      | -         | -                | -                 |            |            |
| <b>ER/ERmsy</b>    | -         | -                | -                 |            |            |
| <b>TB/TBmgt</b>    | -         | -                | -                 |            |            |
| <b>SSB/SSBmgt</b>  | -         | -                | -                 |            |            |
| <b>F/Fmgt</b>      | -         | -                | -                 |            |            |
| <b>ER/ERmgt</b>    | -         | -                | -                 |            |            |

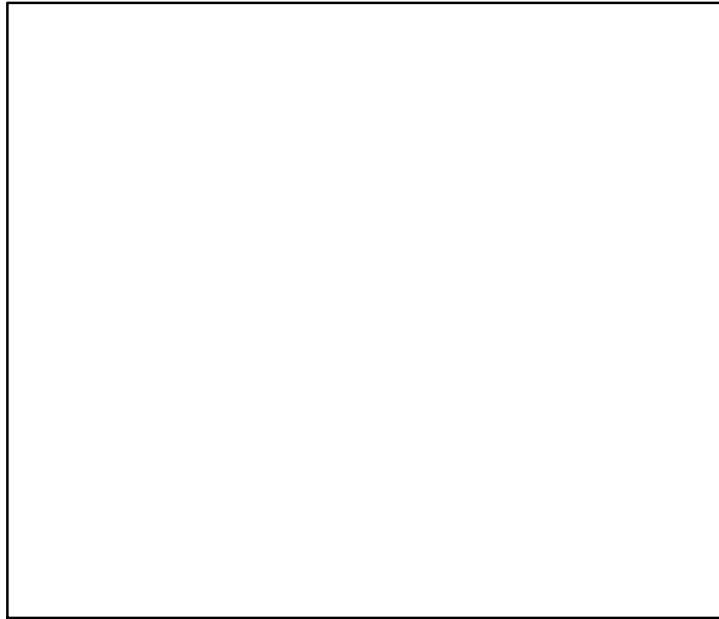
Kobe MSY\*



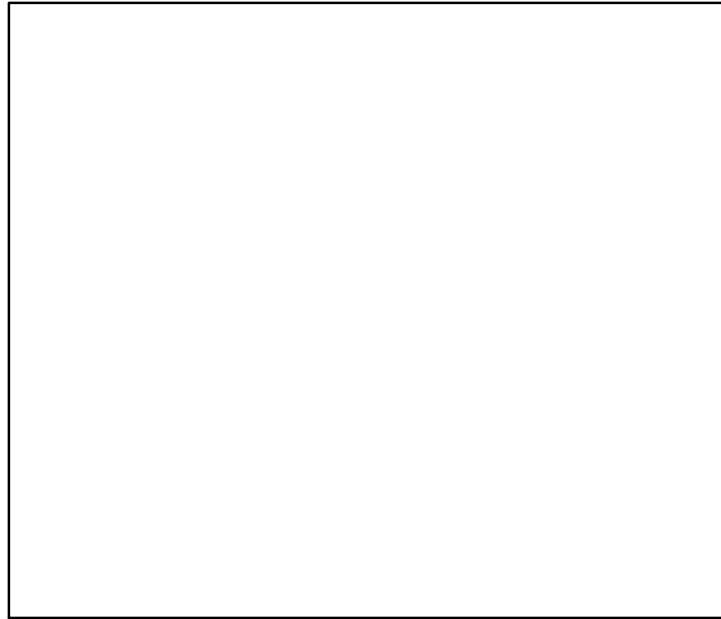
Kobe MGT\*



Spawner Recruit\*

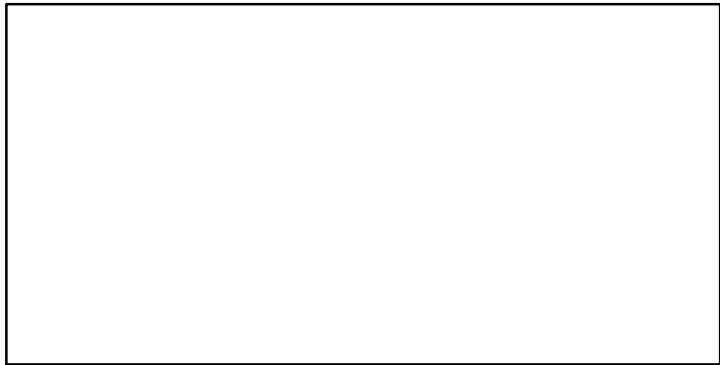


Production\*

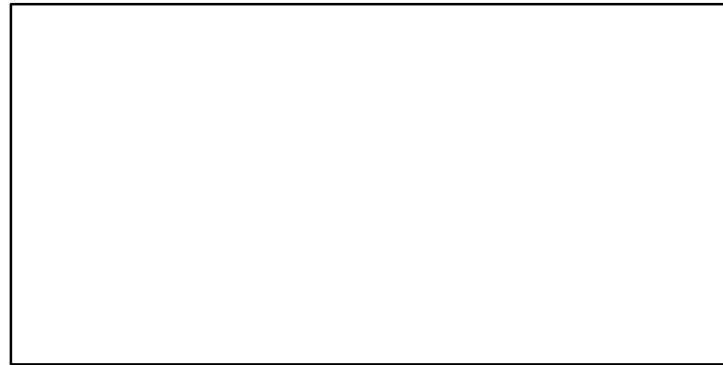


◆ Start Year ♦ End Year \* No Data

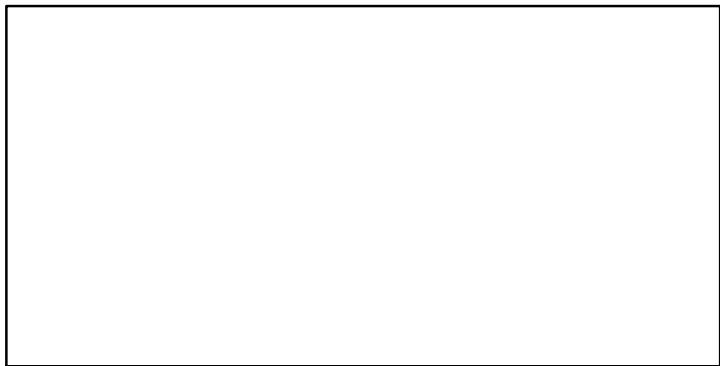
**TB\***



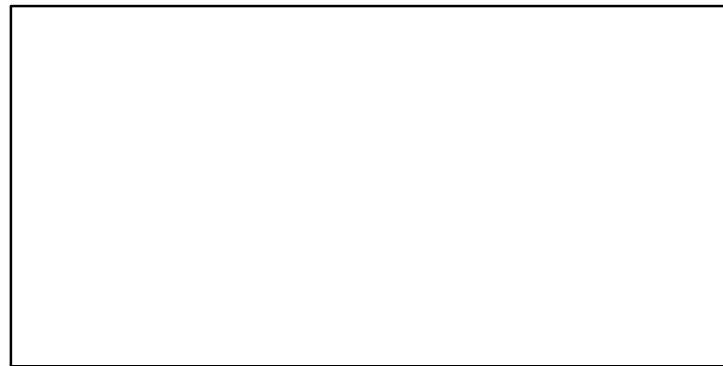
**SSB\***



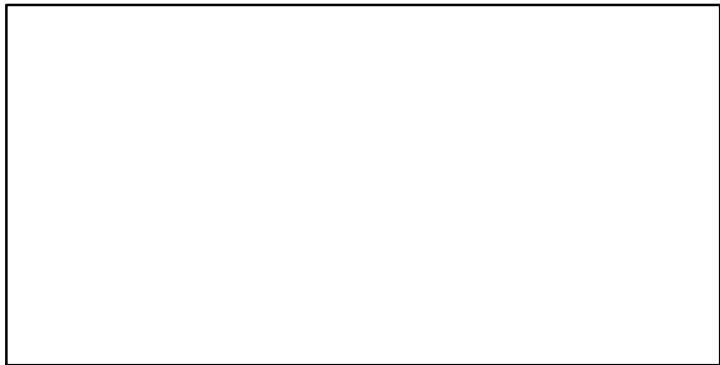
**TN \***



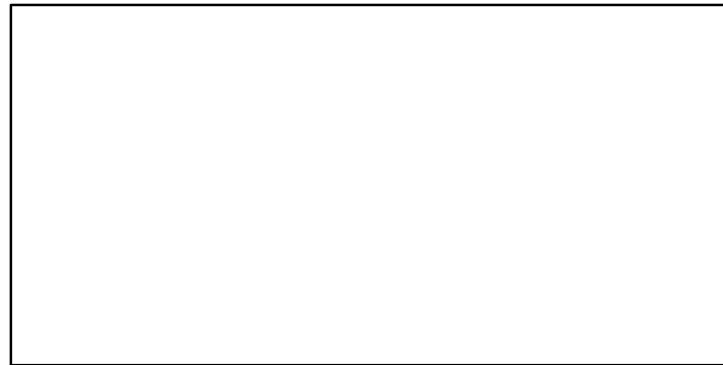
**F\***



**ER\***



**Recruits\***

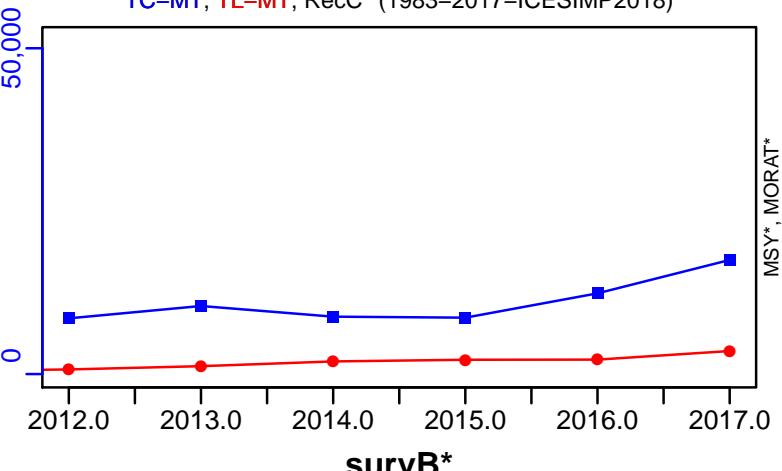


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

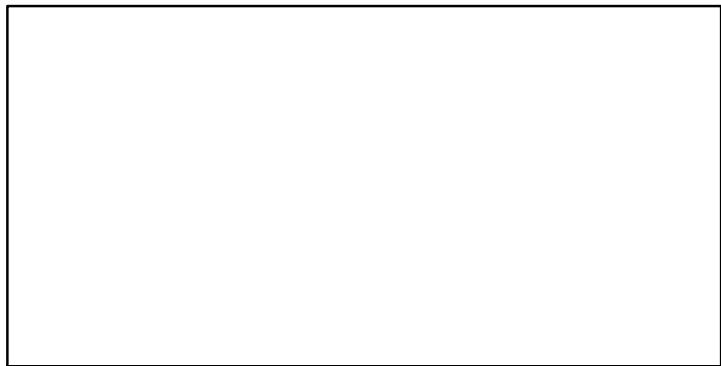
**Grey gurnard ICES 3a–4–7d [GGURNIIla–IV–VIIId]**

TC–MT, TL–MT, RecC\* (1983–2017–ICESIMP2018)

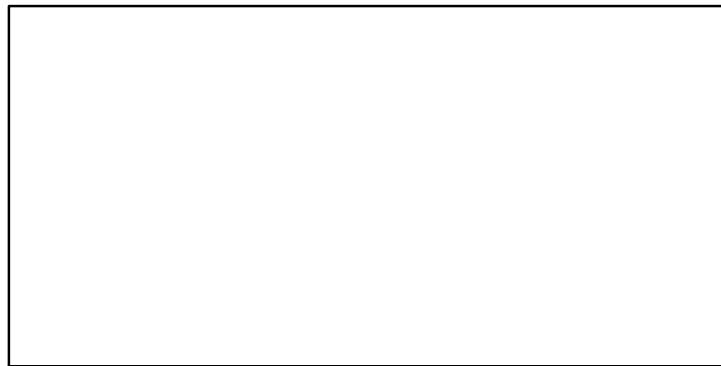
TAC\*, Cpair\*, Cadv\*



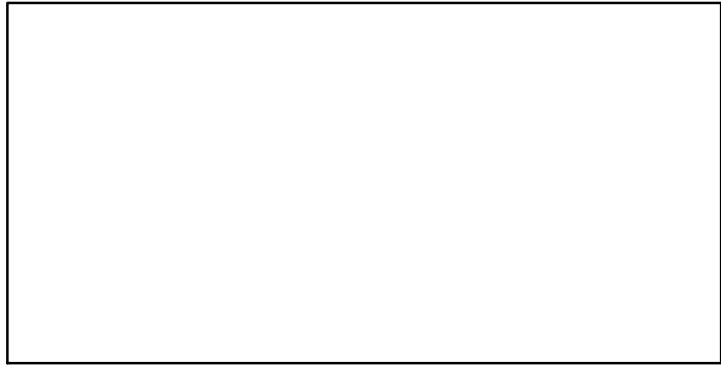
**survB\***



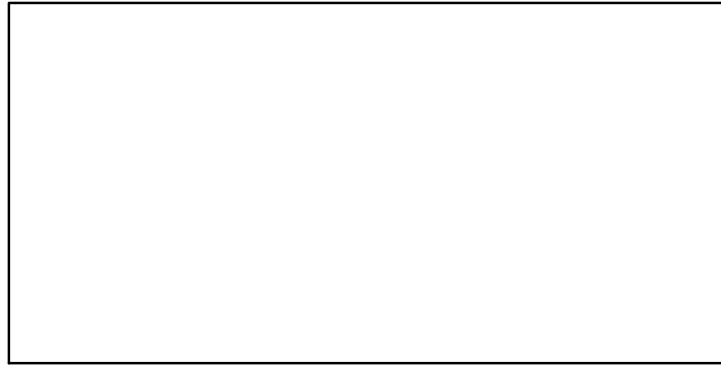
**CPUE\***



**EFFORT\***



**CdivMSY\***



## Greenland halibut ICES 5-6-12-14 [GHALV-VI-XII-XIV]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Reinhardtius hippoglossoides                         |
| <b>Current Assess ID</b>    | NWWG-GHALV-VI-XII-XIV-1960-2019-ICESIMP2021          |
| <b>Area</b>                 | ICES 5-6-12-14                                       |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | North-Western Working Group                          |
| <b>Asmts in RAM</b>         | 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019       |

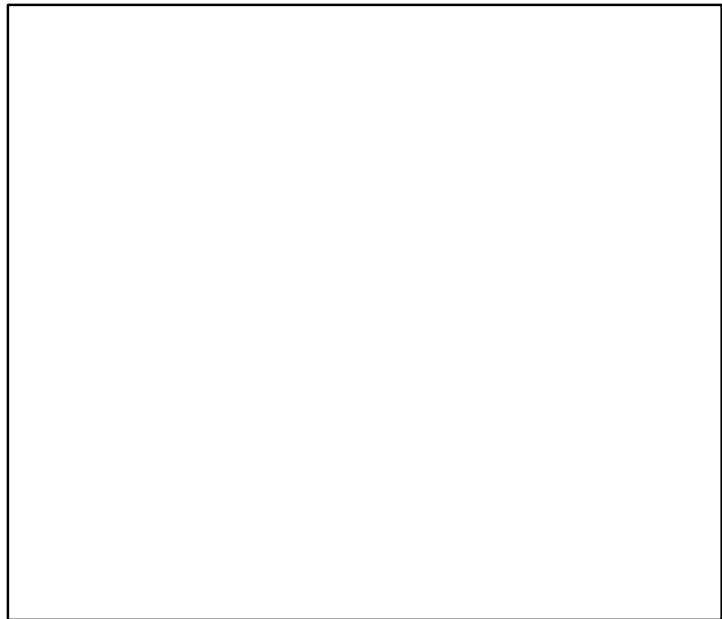
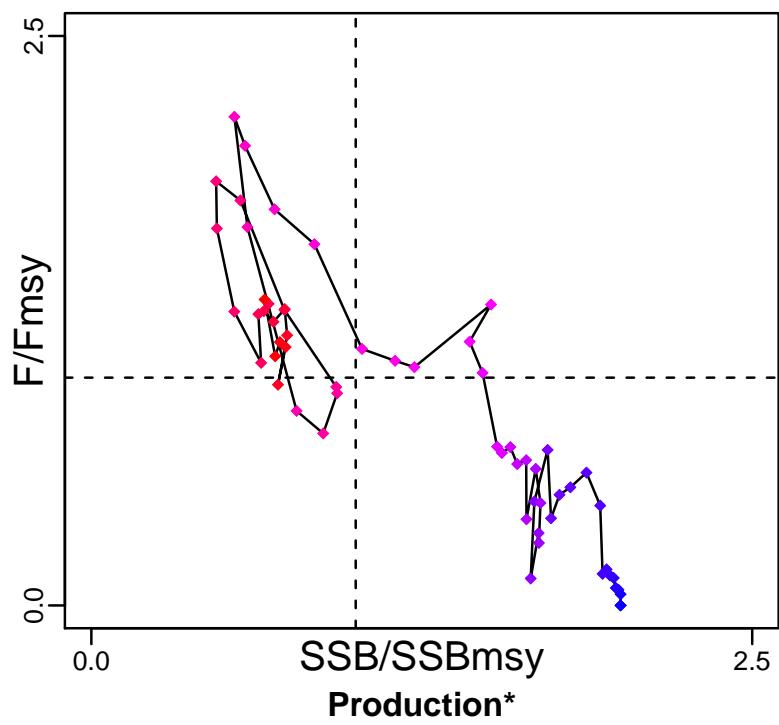
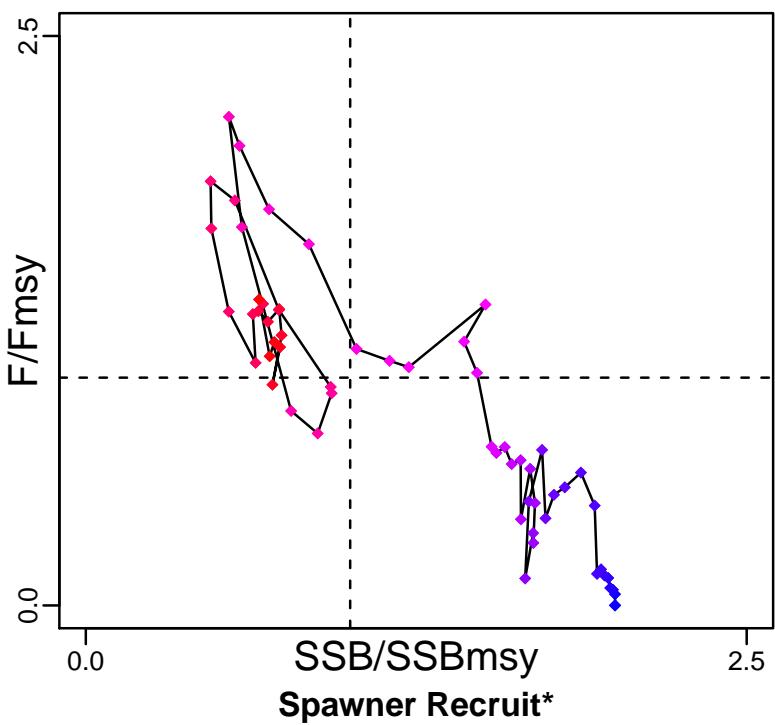
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |                            |           |            |     |     |  |
|--------------------|----------------------------|-----------|------------|-----|-----|--|
| Type               | ID                         | Asmt Year | Curr Value | Sex | Age |  |
| <b>TB</b>          | -                          | -         | -          | -   | -   |  |
| <b>SSB</b>         | -                          | -         | -          | -   | -   |  |
| <b>TN</b>          | -                          | -         | -          | -   | -   |  |
| <b>R</b>           | -                          | -         | -          | -   | -   |  |
| <b>F</b>           | -                          | -         | -          | -   | -   |  |
| <b>ER</b>          | -                          | -         | -          | -   | -   |  |
| <b>TC</b>          | TC-MT                      | 2018      | 23,500     |     |     |  |
| <b>TL</b>          | TL-MT                      | 2019      | 27,141     |     |     |  |
| <b>TB/TBmsy</b>    | -                          | -         | -          |     |     |  |
| <b>SSB/SSBmsy</b>  | SSBdivSSBmsy-dimensionless | 2019      | 0.657      |     |     |  |
| <b>F/Fmsy</b>      | FdivFmsy-dimensionless     | 2019      | 1.343      |     |     |  |
| <b>ER/ERmsy</b>    | -                          | -         | -          |     |     |  |
| <b>TB/TBmgt</b>    | -                          | -         | -          |     |     |  |
| <b>SSB/SSBmgt</b>  | -                          | -         | -          |     |     |  |
| <b>F/Fmgt</b>      | -                          | -         | -          |     |     |  |
| <b>ER/ERmgt</b>    | -                          | -         | -          |     |     |  |

Greenland halibut ICES 5–6–12–14 [GHALV–VI–XII–XIV]

Kobe MSYpref (1960–2019–ICESIMP2021)

Kobe MGTpref (1960–2019–ICESIMP2021)



|              |            |   |         |
|--------------|------------|---|---------|
| ◆ Start Year | ◆ End Year | * | No Data |
|--------------|------------|---|---------|

**TB\***



**SSB\***



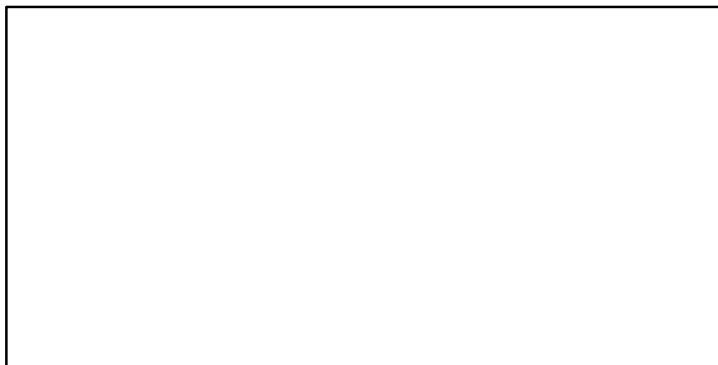
**TN \***



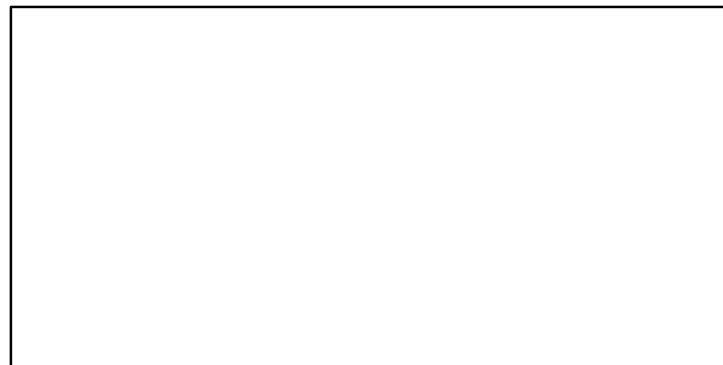
**F\***



**ER\***



**Recruits\***

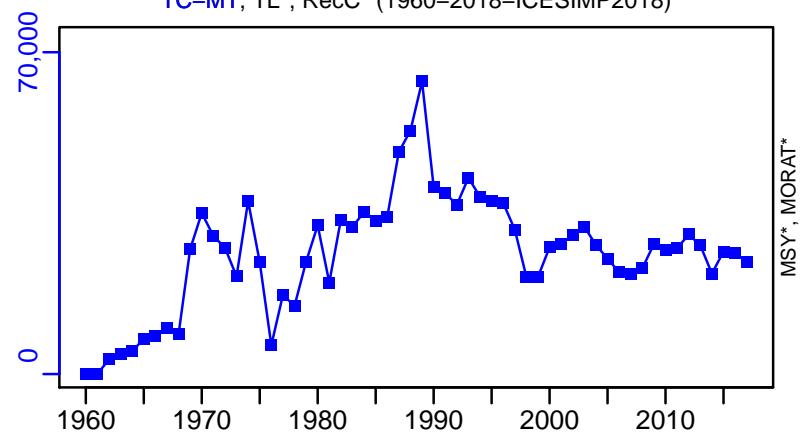


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

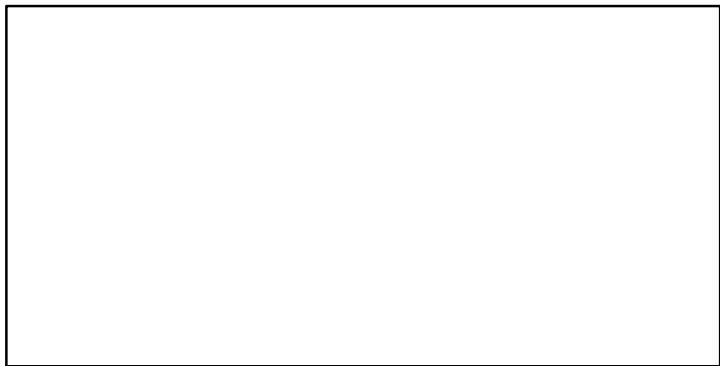
Greenland halibut ICES 5–6–12–14 [GHALV–VI–XII–XIV]

TC–MT, TL\*, RecC\* (1960–2018–ICESIMP2018)

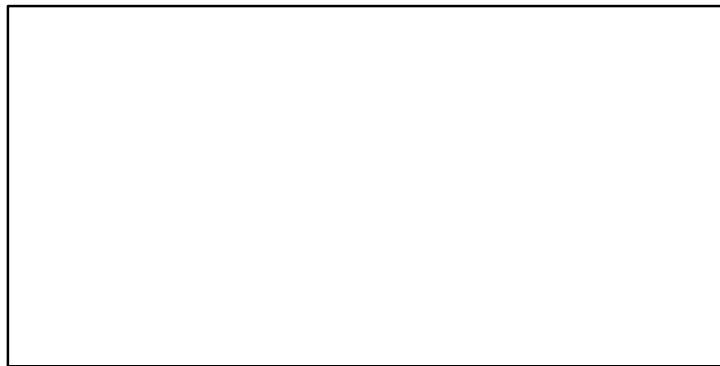
TAC\*, Cpair\*, Cadv\*



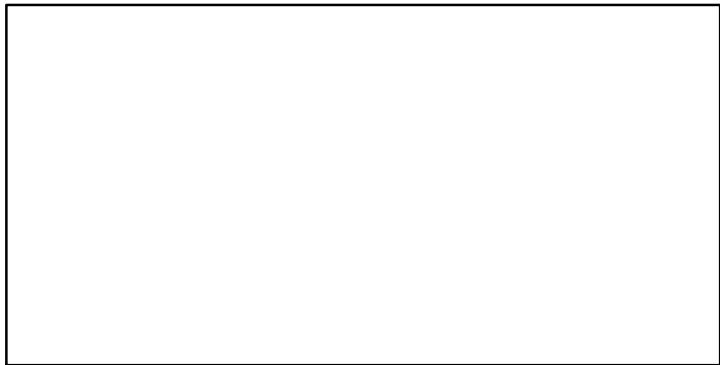
**survB\***



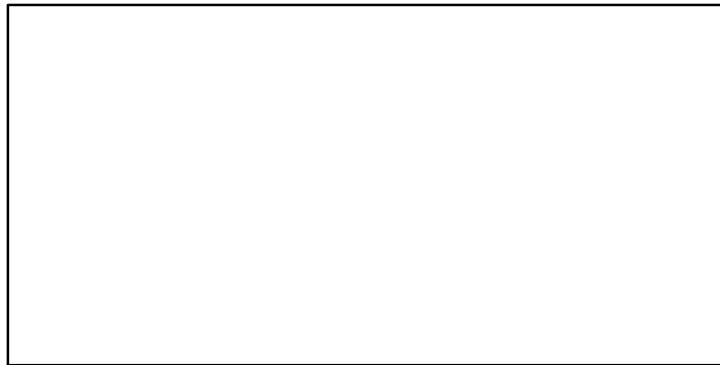
**CPUE\***



**EFFORT\***



**CdivMSY\***



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Golden redfish ICES 5-6-12-14 [GOLDREDV-VI-XII-XIV]

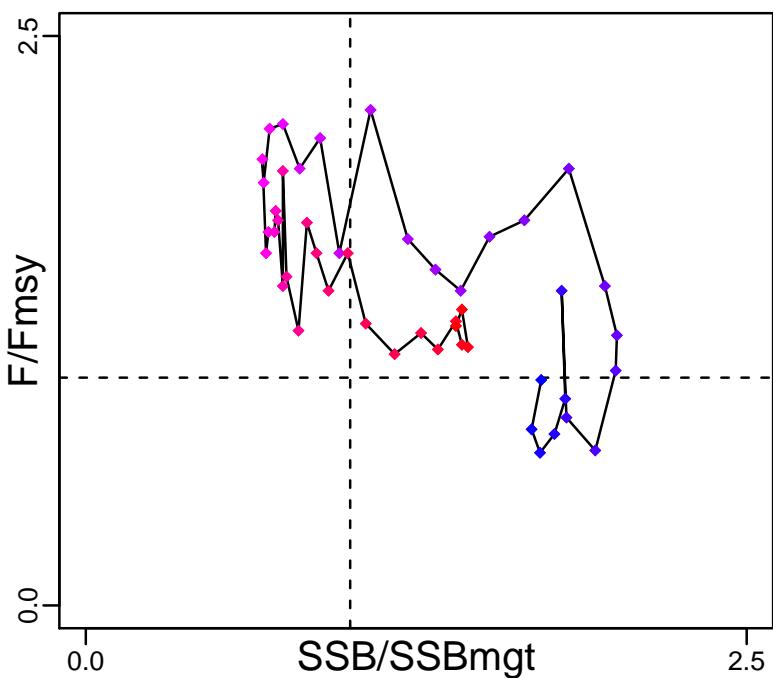
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Sebastes norvegicus                                  |
| <b>Current Assess ID</b>    | NWWG-GOLDREDV-VI-XII-XIV-1966-2018-ICESIMP2018       |
| <b>Area</b>                 | ICES 5-6-12-14                                       |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | North-Western Working Group                          |
| <b>Asmts in RAM</b>         | 2014, 2017, 2018, 2015, 2016                         |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2018             | 0.097        |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2018             | 220,000      |
| <b>Fmgt</b>             | Fmgt-1/yr | 2018             | 0.097        |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | SSBlim-MT | 2018             | 160,000      |
| <b>Flim</b>             | Flim-1/yr | 2018             | 0.226        |
| <b>ERlim</b>            | -         | -                | -            |

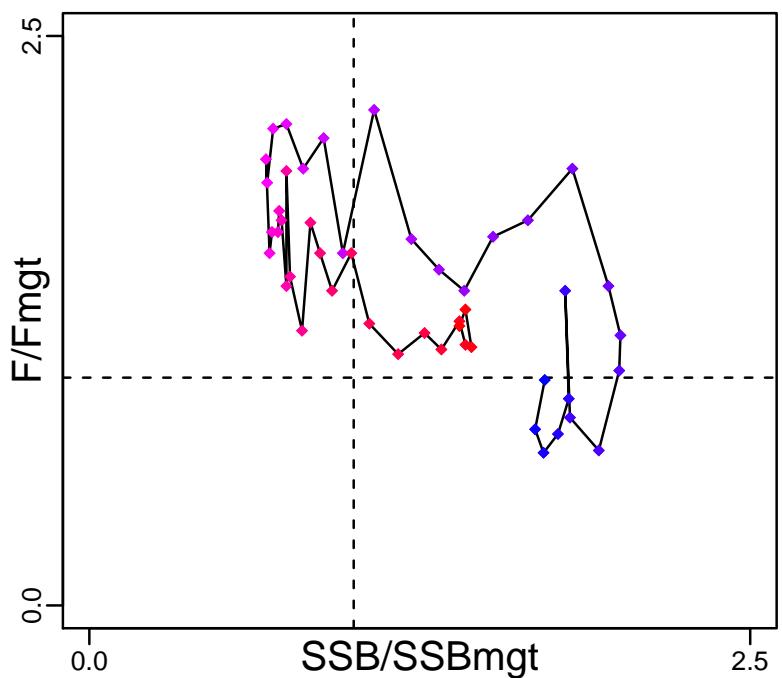
| <b>Time Series</b> |                  |                  |                   |            |            |
|--------------------|------------------|------------------|-------------------|------------|------------|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |
| <b>TB</b>          | TB-MT            | 2018             | 434,000           | Both       | -          |
| <b>SSB</b>         | SSB-MT           | 2018             | 296,000           | Both       | -          |
| <b>TN</b>          | -                | -                | -                 | -          | -          |
| <b>R</b>           | R-E00            | 2018             | $4.5 \times 10^7$ | -          | 5          |
| <b>F</b>           | F-1/yr           | 2018             | 0.119             | -          | 9 to 19    |
| <b>ER</b>          | ER-calc-ratio    | 2018             | 0.122             | -          | -          |
| <b>TC</b>          | TC-MT            | 2018             | 56,000            |            |            |
| <b>TL</b>          | TL-MT            | 2018             | 56,000            |            |            |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2018             | 1.227             |            |            |
| <b>ER/ERmsy</b>    | -                | -                | -                 |            |            |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2018             | 1.345             |            |            |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2018             | 1.227             |            |            |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |

Golden redfish ICES 5–6–12–14 [GOLDREDV–VI–XII–XIV]

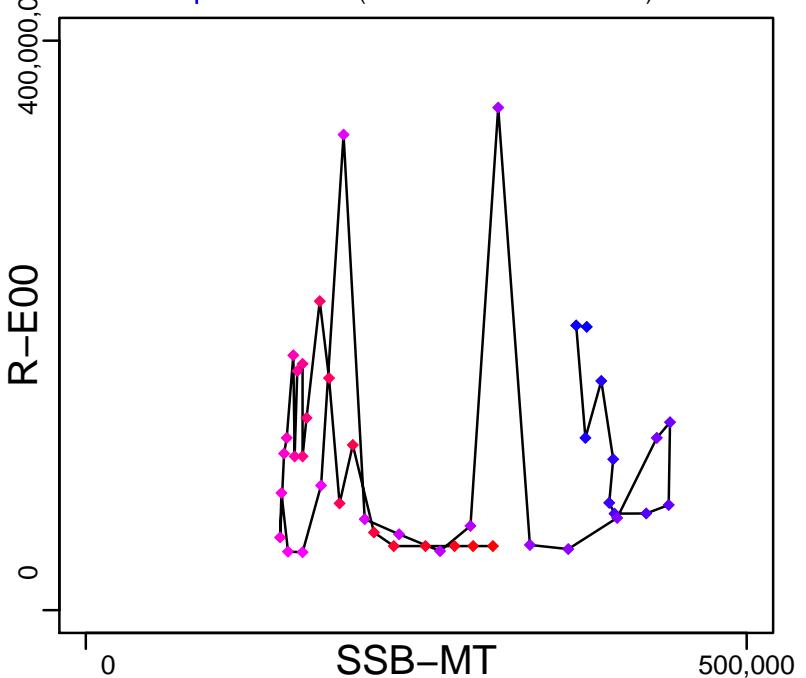
Kobe MSYpref (1966–2018–ICESIMP2018)



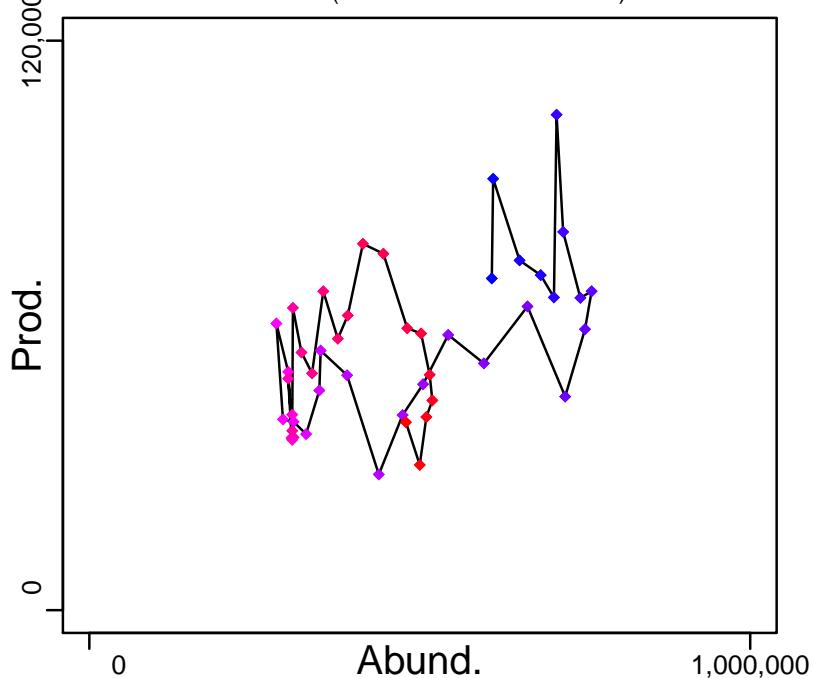
Kobe MGTpref (1966–2018–ICESIMP2018)



Spawner Recruit (1966–2018–ICESIMP2018)



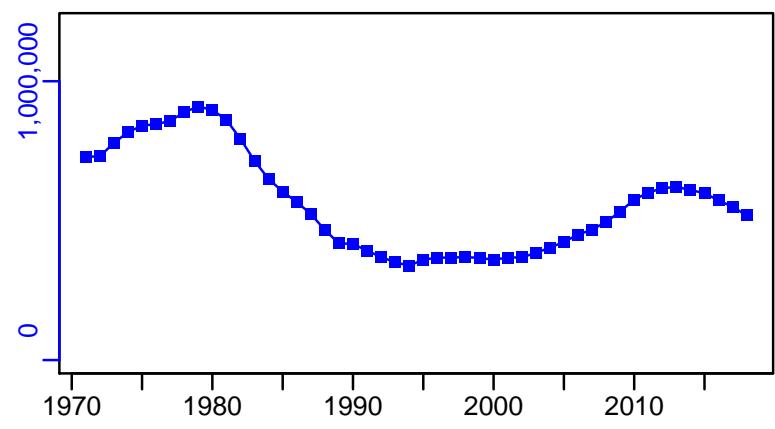
Production (1966–2018–ICESIMP2018)



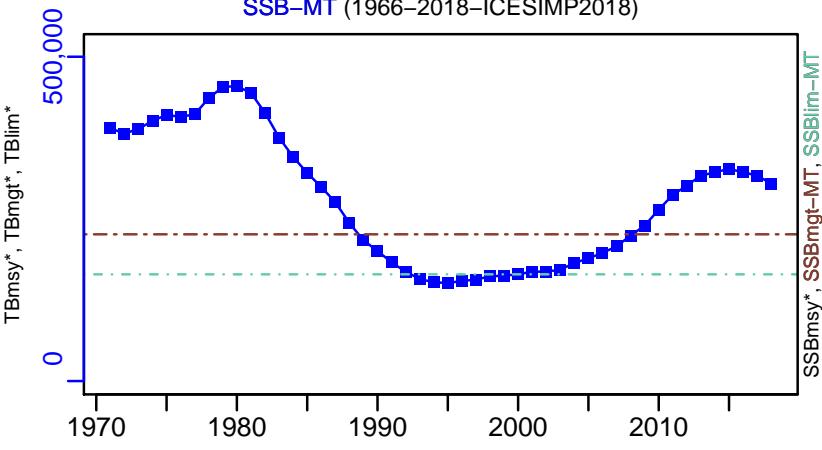
◆ Start Year ◆ End Year \* No Data

Golden redfish ICES 5–6–12–14 [GOLDREDV–VI–XII–XIV]

TB-MT (1966–2018–ICESIMP2018)



SSB-MT (1966–2018–ICESIMP2018)

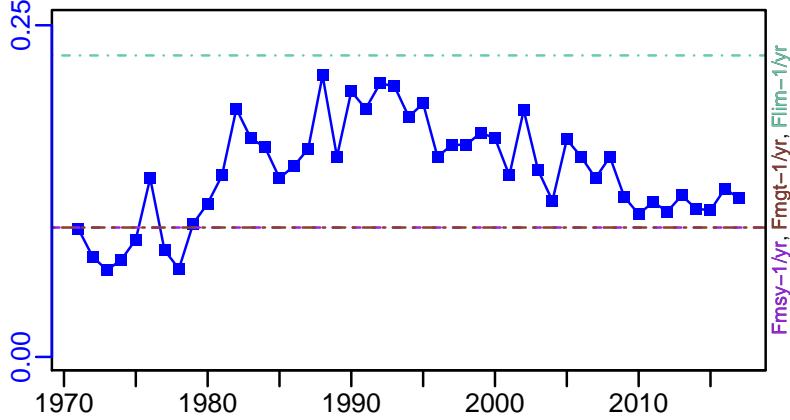


TN \*

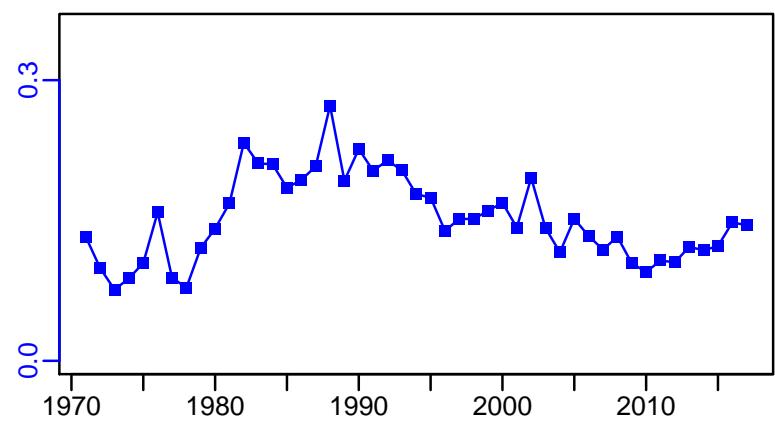


F-1/yr

F-1/yr (1966–2018–ICESIMP2018)

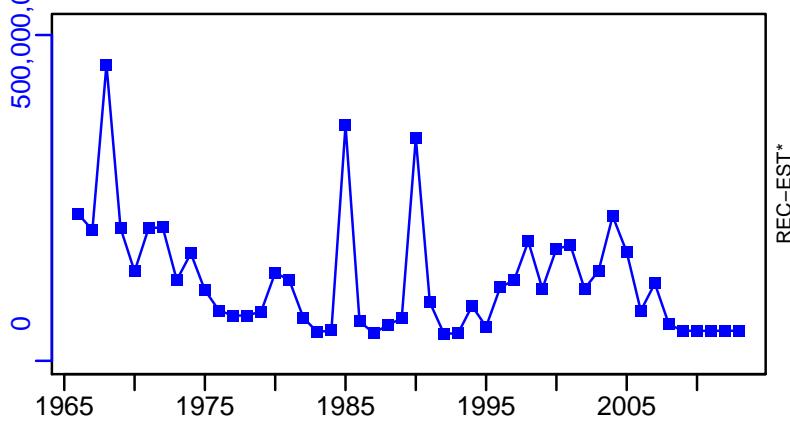


ER-calc-ratio (1966–2018–ICESIMP2018)



ER<sub>mgt\*</sub>, ER<sub>lim\*</sub>

R-E00 (1966–2018–ICESIMP2018)



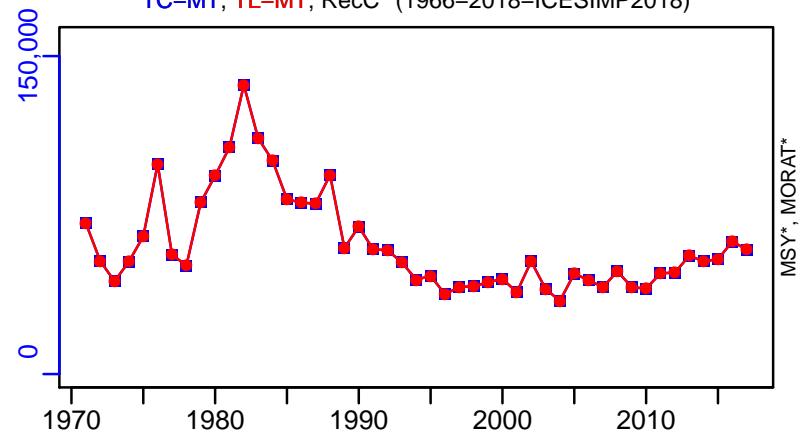
R-E00

|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

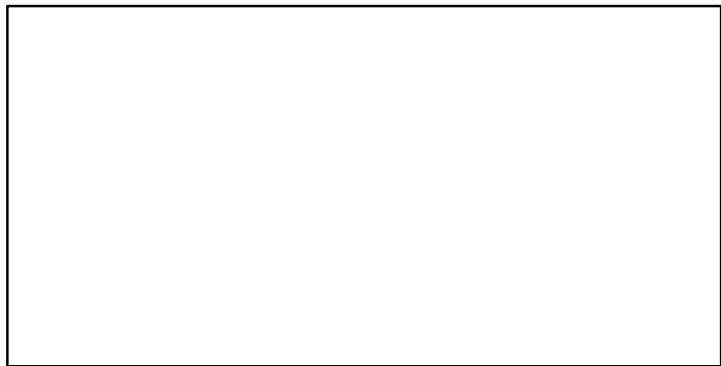
Golden redfish ICES 5–6–12–14 [GOLDREDV–VI–XII–XIV]

TC–MT, TL–MT, RecC\* (1966–2018–ICESIMP2018)

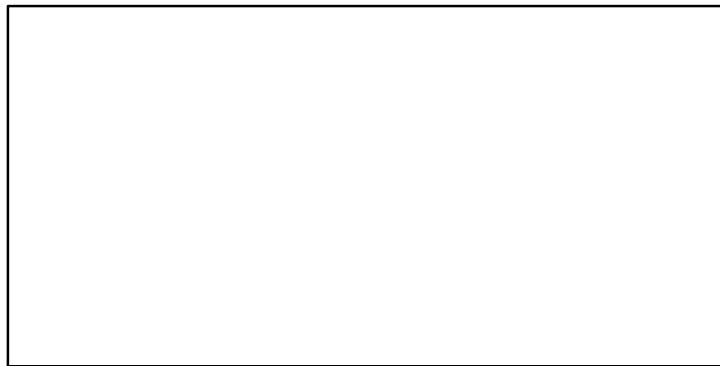
TAC\*, Cpair\*, Cadv\*



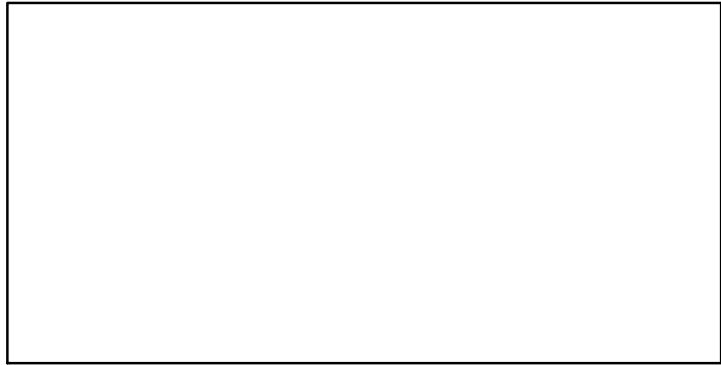
survB\*



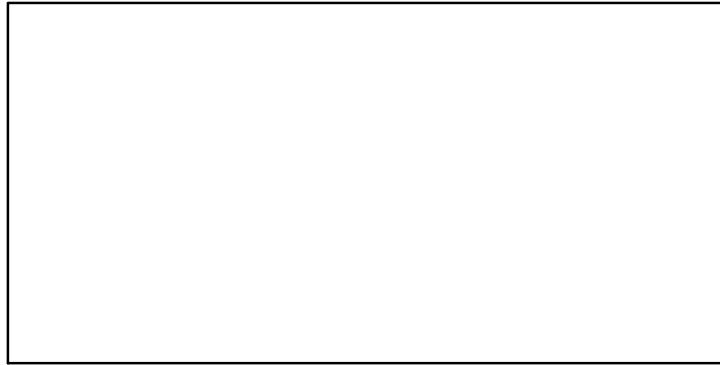
CPUE\*



EFFORT\*



CdivMSY\*



- |  |   |  |
|--|---|--|
| <ul style="list-style-type: none"> <li>■ 1st listed time series</li> <li>● 2nd listed time series</li> </ul> | <ul style="list-style-type: none"> <li>▲ 3rd listed time series</li> <li>- - - MSY</li> </ul> | <ul style="list-style-type: none"> <li>— MORAT</li> <li>* No Data</li> </ul> |
|--|---|--|

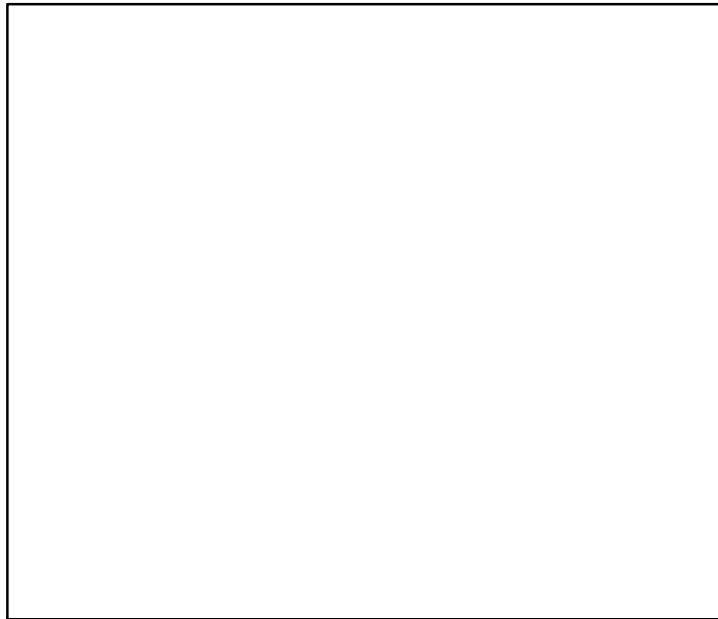
## Greater silver smelt ICES 1-2-3a-4 [GSSMELTI-II-IIa-IV]

| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Argentina silus   |
| <b>Current Assess ID</b>    | WGDEEP-GSSMELTI-II-IIa-IV-1988-2018-ICESIMP2021                             |
| <b>Area</b>                 | ICES 1-2-3a-4   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                        |
| <b>Assessor</b>             | Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources |
| <b>Asmts in RAM</b>         | 2014, 2016, 2018  |

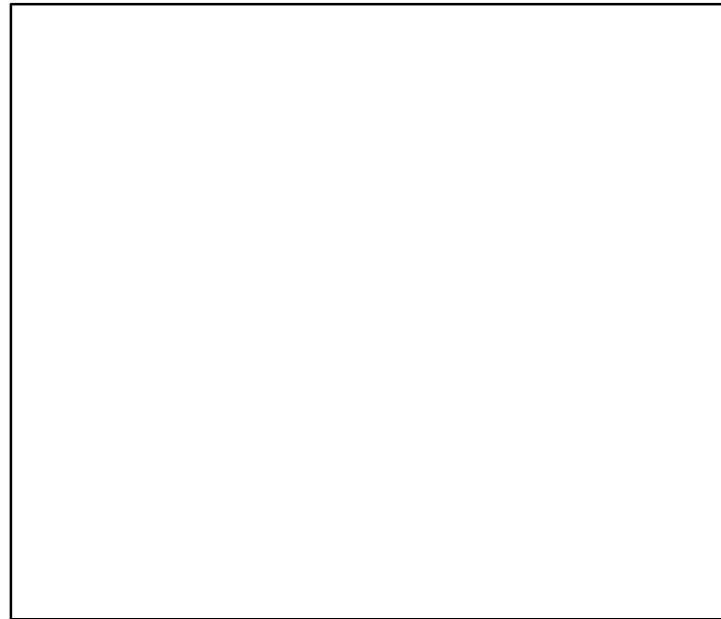
| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | -         | -                | -            |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | -         | -                | -            |
| <b>Fmgt</b>             | -         | -                | -            |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | -         | -                | -            |
| <b>Flim</b>             | -         | -                | -            |
| <b>ERlim</b>            | -         | -                | -            |

| <b>Time Series</b> |           |                  |                   |            |            |
|--------------------|-----------|------------------|-------------------|------------|------------|
| <b>Type</b>        | <b>ID</b> | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |
| <b>TB</b>          | -         | -                | -                 | -          | -          |
| <b>SSB</b>         | -         | -                | -                 | -          | -          |
| <b>TN</b>          | -         | -                | -                 | -          | -          |
| <b>R</b>           | -         | -                | -                 | -          | -          |
| <b>F</b>           | -         | -                | -                 | -          | -          |
| <b>ER</b>          | -         | -                | -                 | -          | -          |
| <b>TC</b>          | TC-MT     | 2014             | 15,100            |            |            |
| <b>TL</b>          | TL-MT     | 2018             | 23,859            |            |            |
| <b>TB/TBmsy</b>    | -         | -                | -                 |            |            |
| <b>SSB/SSBmsy</b>  | -         | -                | -                 |            |            |
| <b>F/Fmsy</b>      | -         | -                | -                 |            |            |
| <b>ER/ERmsy</b>    | -         | -                | -                 |            |            |
| <b>TB/TBmgt</b>    | -         | -                | -                 |            |            |
| <b>SSB/SSBmgt</b>  | -         | -                | -                 |            |            |
| <b>F/Fmgt</b>      | -         | -                | -                 |            |            |
| <b>ER/ERmgt</b>    | -         | -                | -                 |            |            |

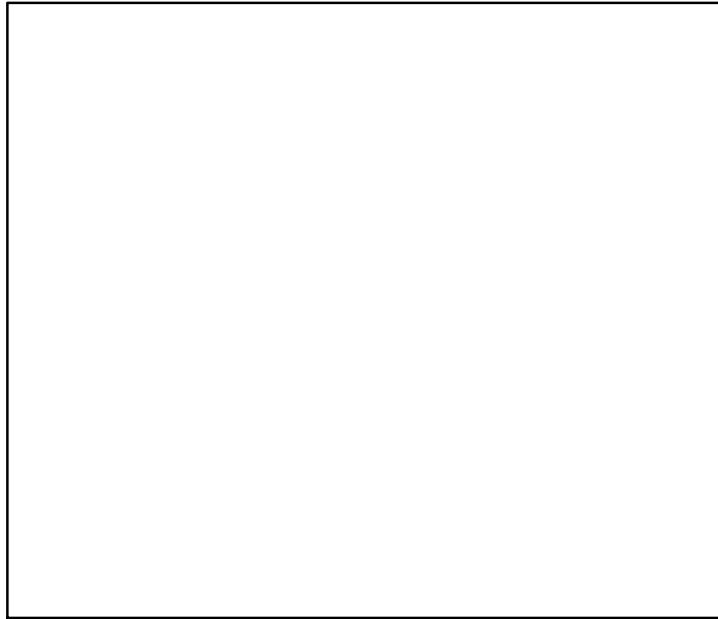
**Kobe MSY\***



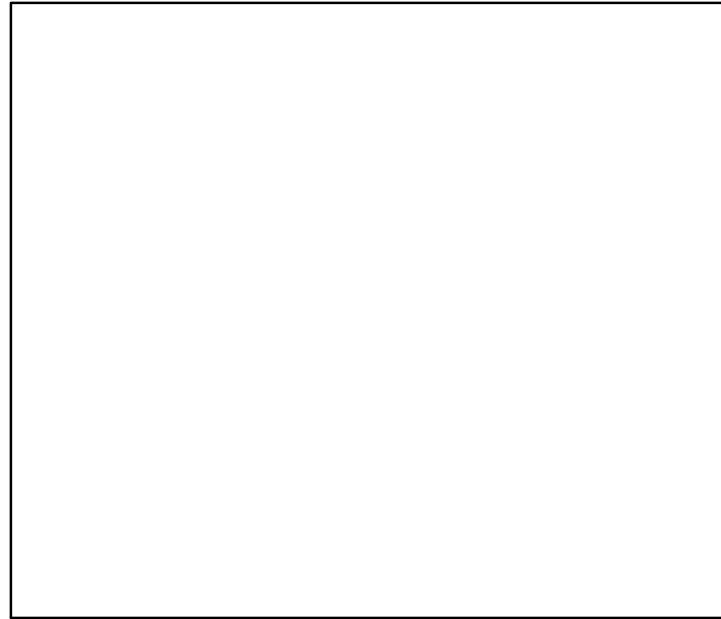
**Kobe MGT\***



**Spawner Recruit\***



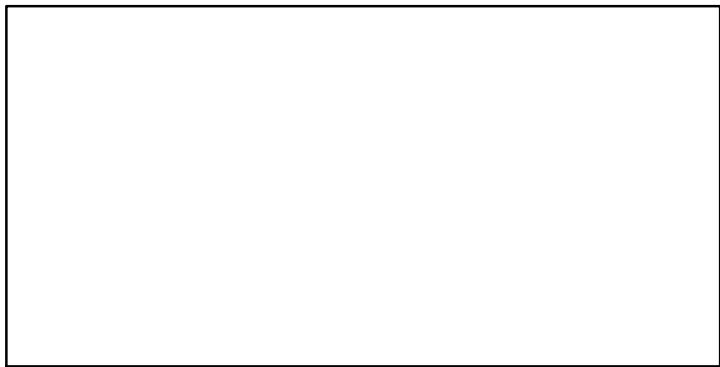
**Production\***



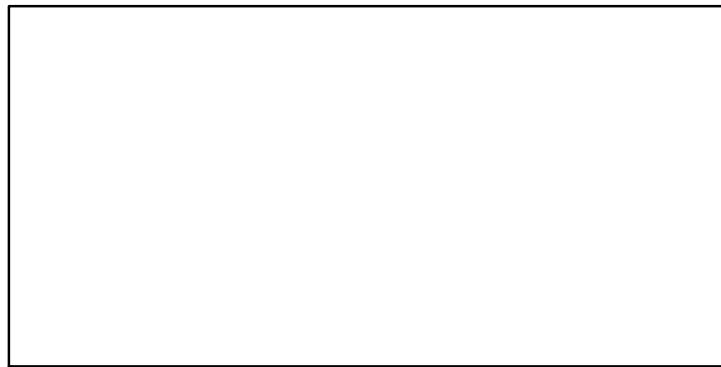
◆ Start Year ♦ End Year \* No Data

**Greater silver smelt ICES 1–2–3a–4 [GSSMELTI–II–IIIa–IV]**

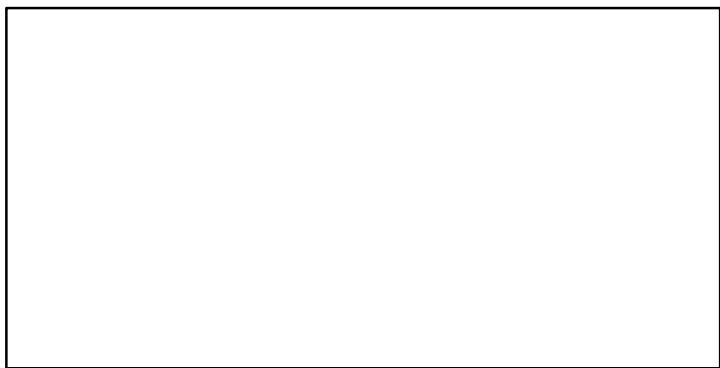
**TB\***



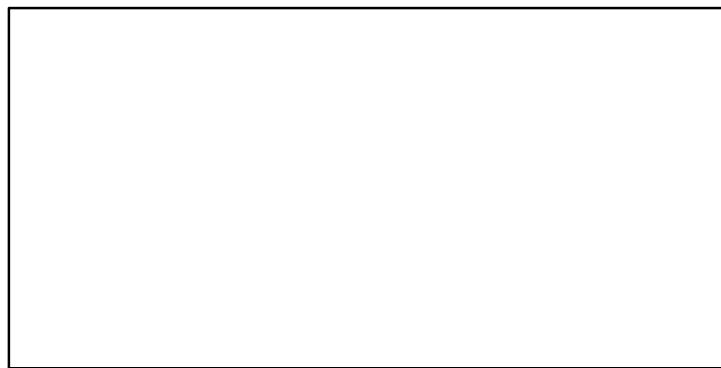
**SSB\***



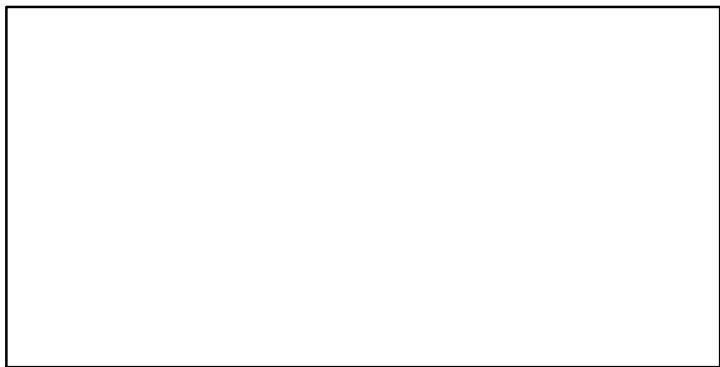
**TN \***



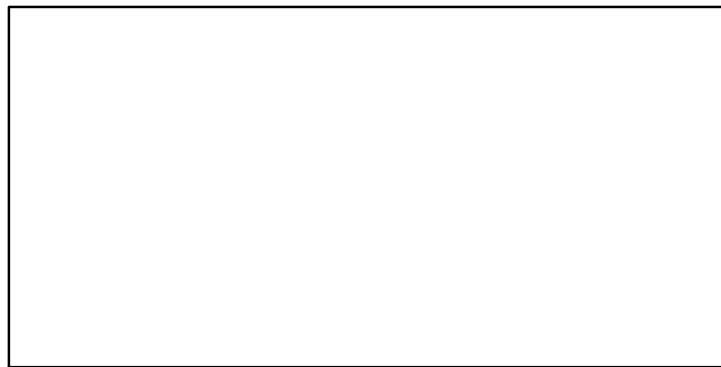
**F\***



**ER\***



**Recruits\***

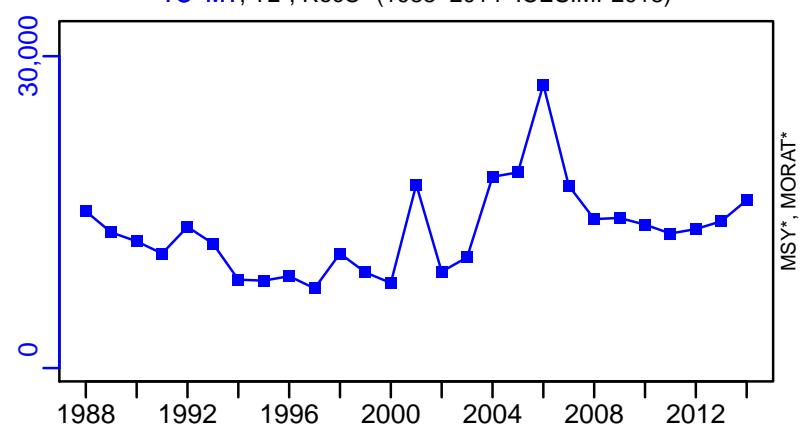


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

**Greater silver smelt ICES 1–2–3a–4 [GSSMELTI-II–IIIa–IV]**

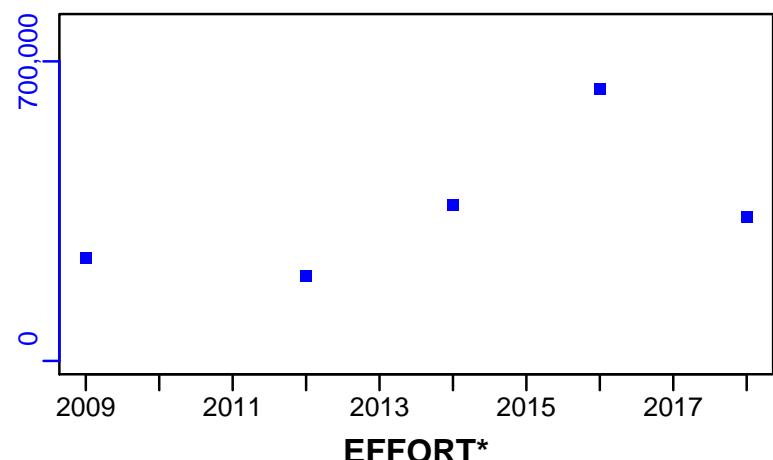
TC–MT, TL\*, RecC\* (1988–2014–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



survB–MT (1988–2018–ICESIMP2021)

CPUE\*



EFFORT\*

CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

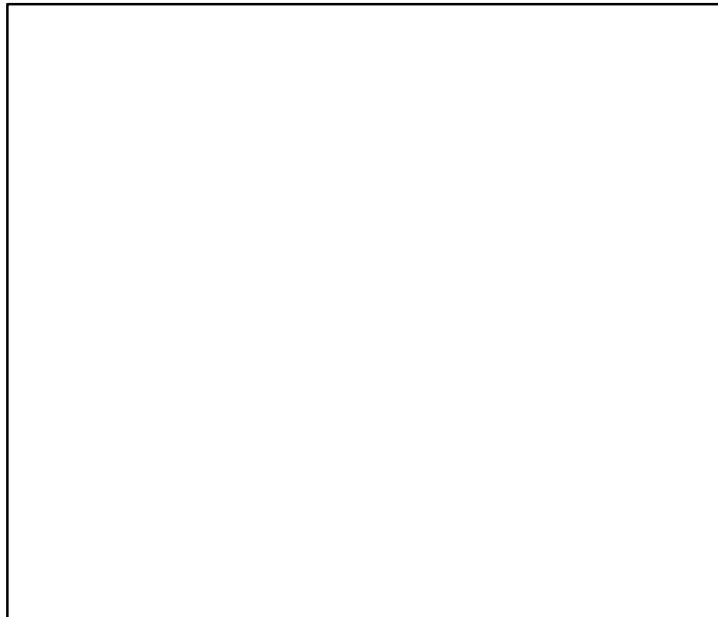
## Greater silver smelt ICES 6b-7-8-9-10-12 [GSSMELTVIb-VII-VIII-IX-X-XII]

| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Argentina silus   |
| <b>Current Assess ID</b>    | WGDEEP-GSSMELTVIb-VII-VIII-IX-X-XII-1973-2018-ICESIMP2021                   |
| <b>Area</b>                 | ICES 6b-7-8-9-10-12   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                        |
| <b>Assessor</b>             | Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources |
| <b>Asmts in RAM</b>         | 2014, 2016, 2018  |

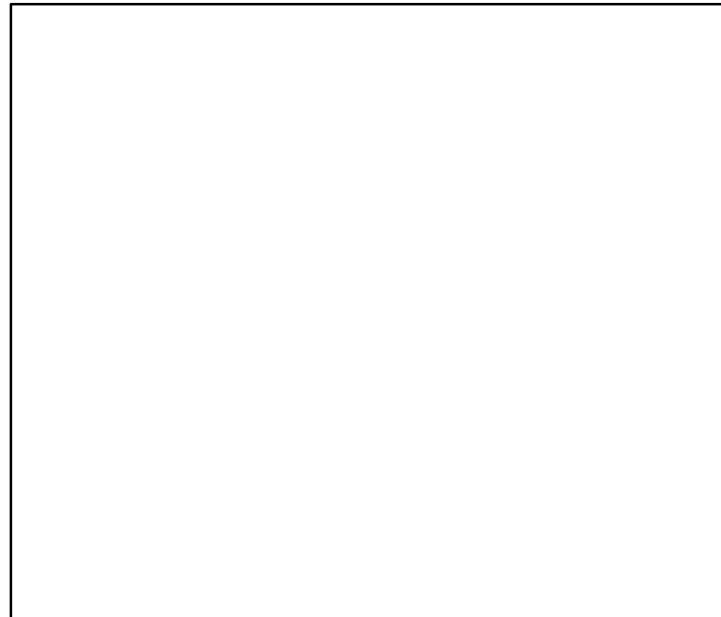
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | TC-MT | 2018      | 140        |     |     |
| <b>TL</b>          | TL-MT | 2018      | 36         |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

**Greater silver smelt ICES 6b–7–8–9–10–12 [GSSMELTVIb–VII–VIII–IX–X–XII]**

**TB\***



**SSB\***



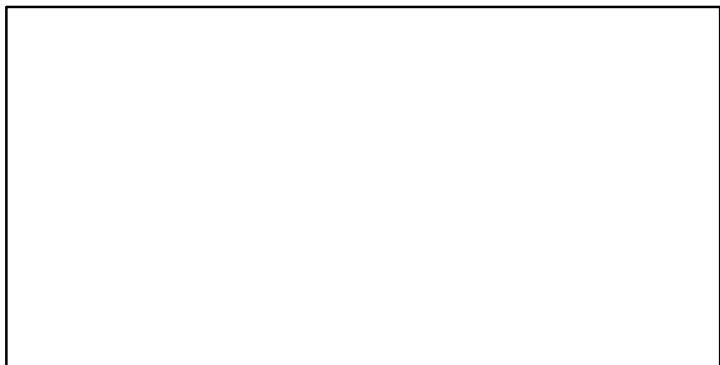
**TN \***



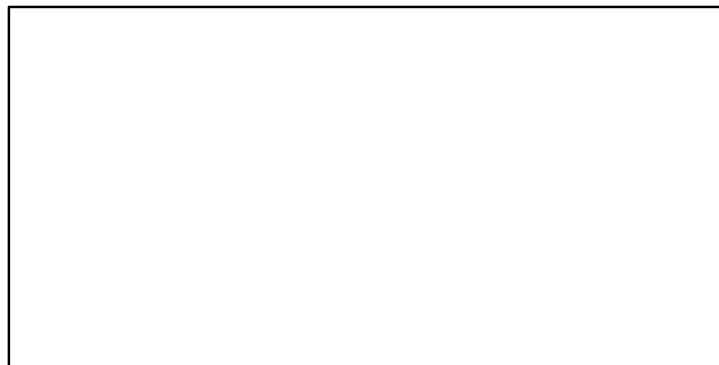
**F\***



**ER\***



**Recruits\***

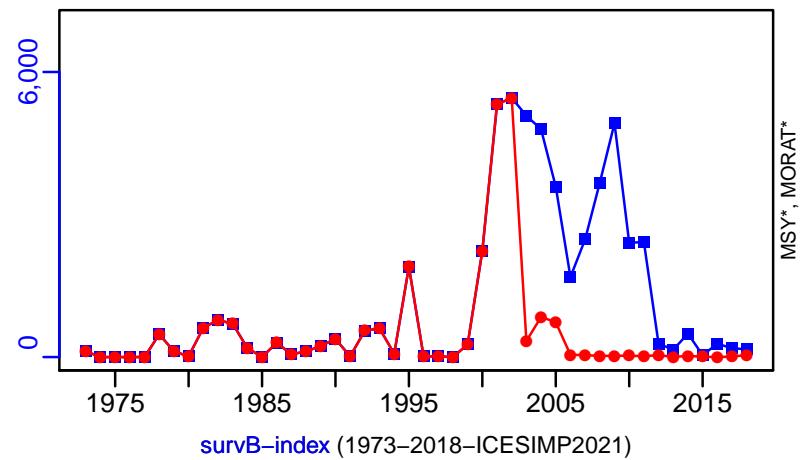


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

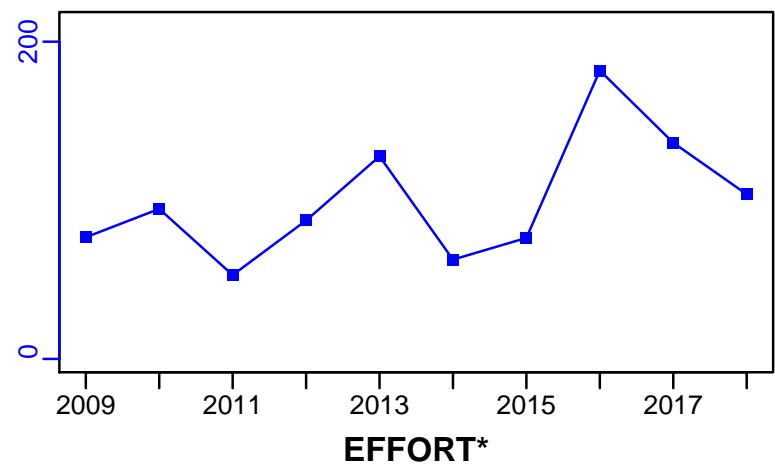
**Greater silver smelt ICES 6b–7–8–9–10–12 [GSSMELTVIb–VII–VIII–IX–X–XII]**

**TC–MT, TL–MT, RecC\*** (1973–2018–ICESIMP2021)

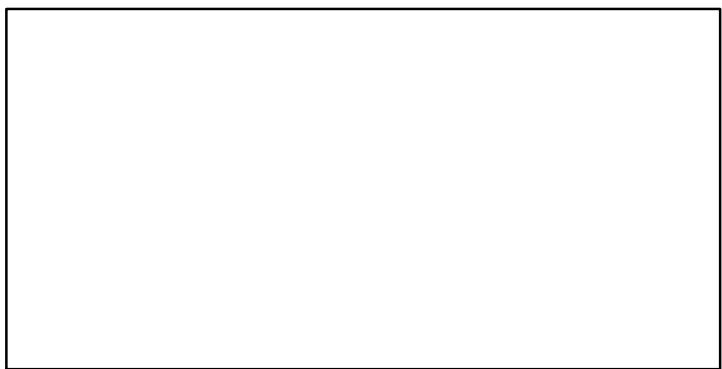
**TAC\*, Cpair\*, Cadv\***



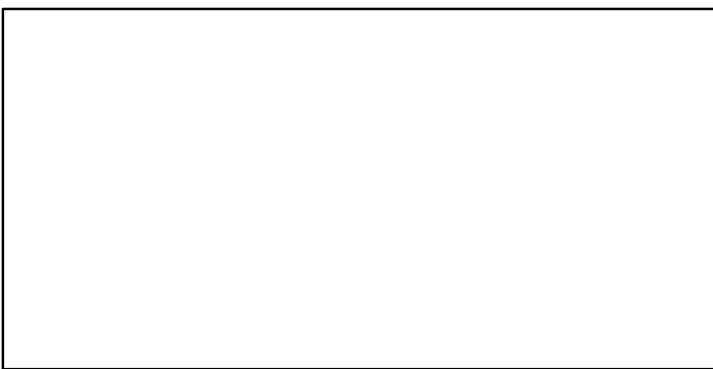
MSY\*, MORAT\*



**CPUE\***



**CdivMSY\***



|                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

## Haddock Irish Sea [HADIS]

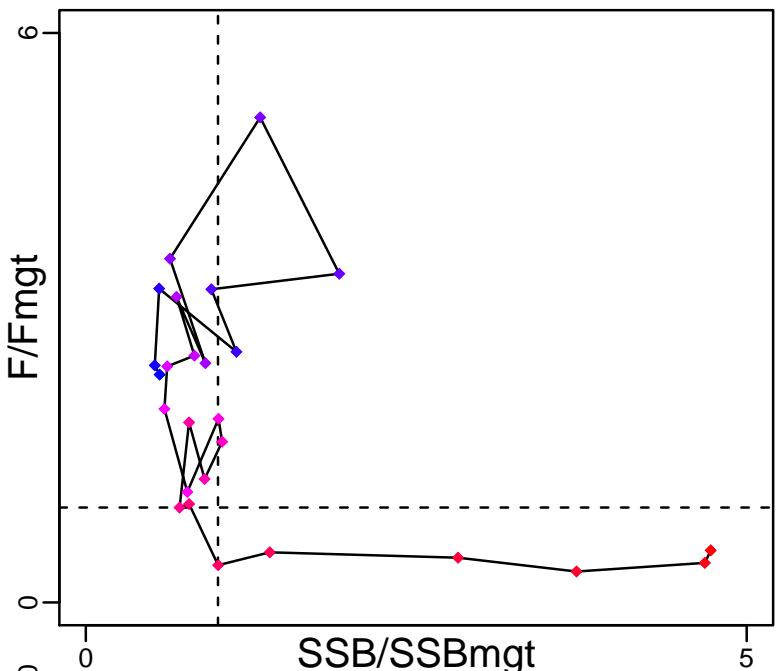
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Melanogrammus aeglefinus                             |
| <b>Current Assess ID</b>    | WGCSE-HADIS-1993-2019-ICESIMP2021                    |
| <b>Area</b>                 | Irish Sea  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2014, 2015, 2016, 2016, 2017, 2019, 2012             |

| Reference Points |           |           |       |
|------------------|-----------|-----------|-------|
| Type             | ID        | Asmt Year | Value |
| <b>TBmsy</b>     | -         | -         | -     |
| <b>SSBmsy</b>    | -         | -         | -     |
| <b>Fmsy</b>      | Fmsy-1/yr | 2017      | 0.27  |
| <b>ERrmsy</b>    | -         | -         | -     |
| <b>TBmgt</b>     | -         | -         | -     |
| <b>SSBmgt</b>    | SSBmgt-MT | 2019      | 4281  |
| <b>Fmgt</b>      | Fmgt-1/yr | 2019      | 0.28  |
| <b>ERmgt</b>     | -         | -         | -     |
| <b>TB0</b>       | -         | -         | -     |
| <b>SSB0</b>      | -         | -         | -     |
| <b>MSY</b>       | -         | -         | -     |
| <b>M</b>         | -         | -         | -     |
| <b>TBlim</b>     | -         | -         | -     |
| <b>SSBlim</b>    | SSBlim-MT | 2017      | 2300  |
| <b>Flim</b>      | Flim-1/yr | 2017      | 0.47  |
| <b>ERlim</b>     | -         | -         | -     |

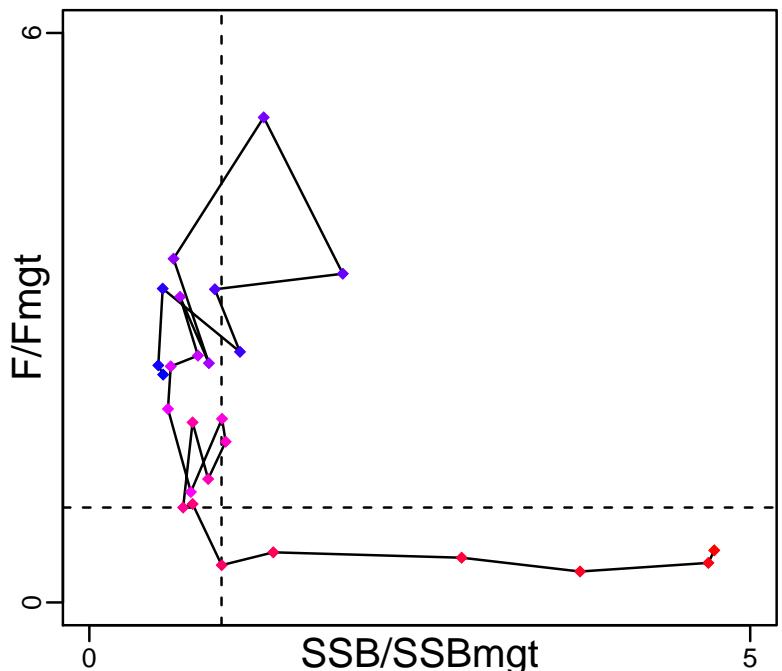
| Time Series       |                  |           |             |     |        |  |
|-------------------|------------------|-----------|-------------|-----|--------|--|
| Type              | ID               | Asmt Year | Curr Value  | Sex | Age    |  |
| <b>TB</b>         | TB-MT            | 2019      | 28,668      | -   | -      |  |
| <b>SSB</b>        | SSB-MT           | 2019      | 18,945      | -   | -      |  |
| <b>TN</b>         | -                | -         | -           | -   | -      |  |
| <b>R</b>          | R-E00            | 2019      | 357,134,000 | -   | 0      |  |
| <b>F</b>          | F-1/yr           | 2019      | 0.154       | -   | 2 to 4 |  |
| <b>ER</b>         | ER-calc-ratio    | 2019      | 0.089       | -   | -      |  |
| <b>TC</b>         | TC-MT            | 2019      | 2561        |     |        |  |
| <b>TL</b>         | TL-MT            | 2019      | 1993        |     |        |  |
| <b>TB/TBmsy</b>   | -                | -         | -           |     |        |  |
| <b>SSB/SSBmsy</b> | -                | -         | -           |     |        |  |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr | 2017      | 0.393       |     |        |  |
| <b>ER/ERrmsy</b>  | -                | -         | -           |     |        |  |
| <b>TB/TBmgt</b>   | -                | -         | -           |     |        |  |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2019      | 4.425       |     |        |  |
| <b>F/Fmgt</b>     | F-1/yr/Fmgt-1/yr | 2019      | 0.549       |     |        |  |
| <b>ER/ERmgt</b>   | -                | -         | -           |     |        |  |

Haddock Irish Sea [HADIS]

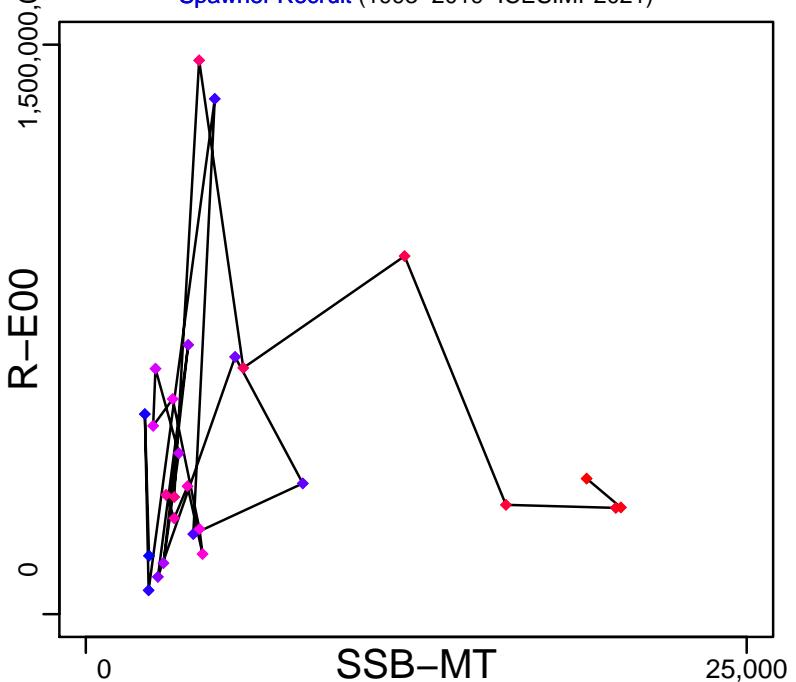
Kobe MSYpref (1993–2019–ICESIMP2021)



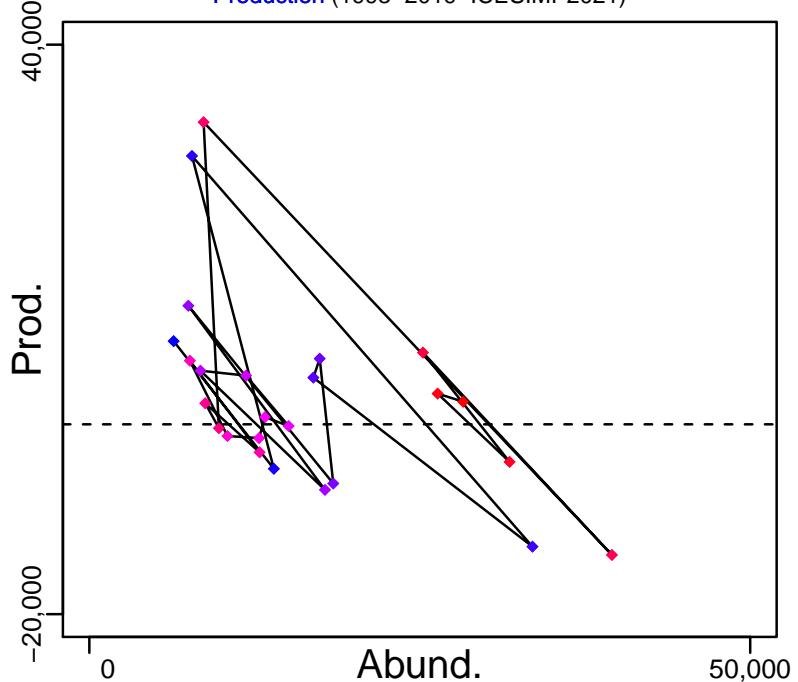
Kobe MGTpref (1993–2019–ICESIMP2021)



Spawner Recruit (1993–2019–ICESIMP2021)



Production (1993–2019–ICESIMP2021)

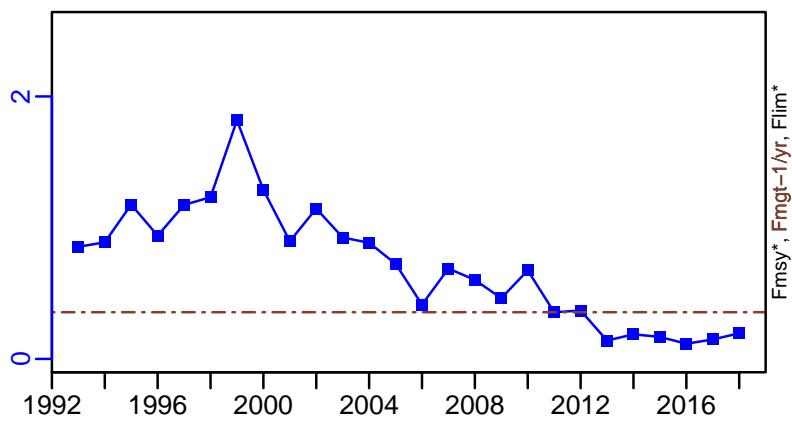
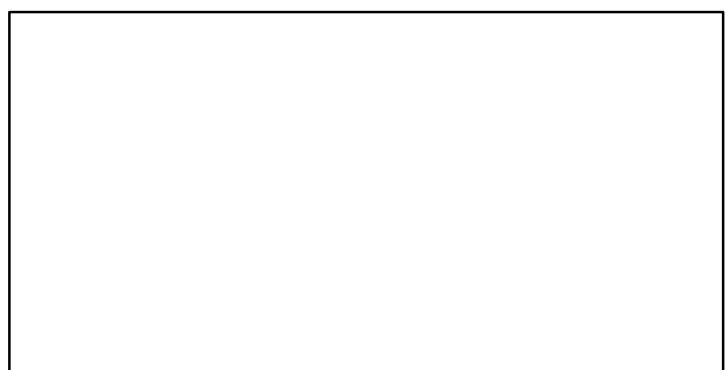
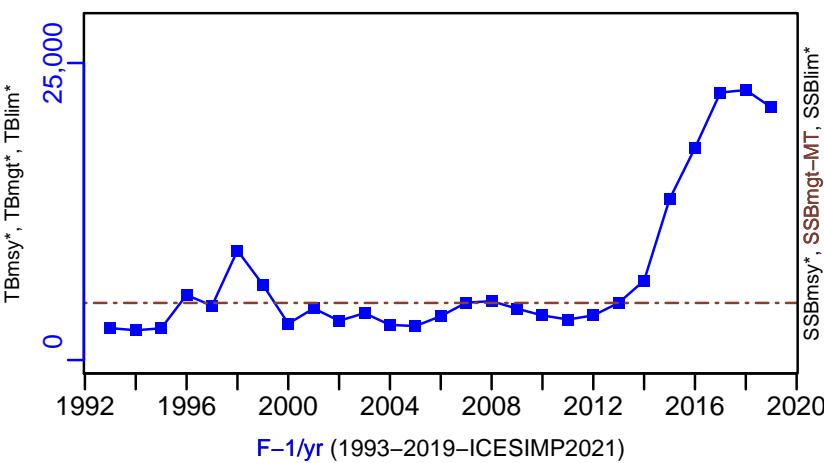
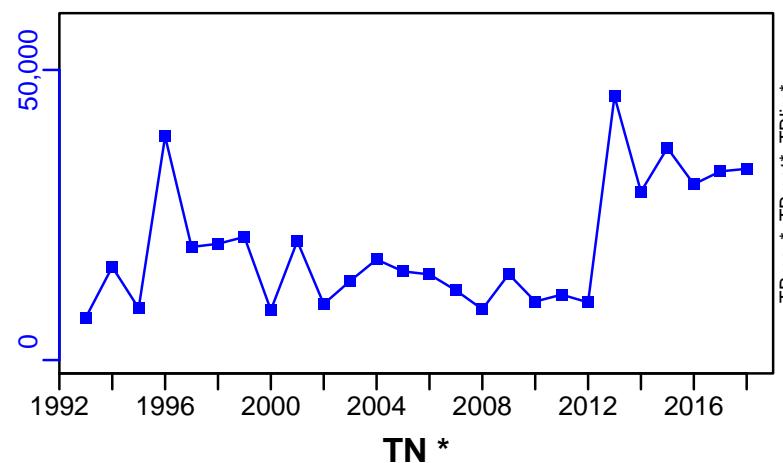


◆ Start Year   ◆ End Year   \* No Data

### Haddock Irish Sea [HADIS]

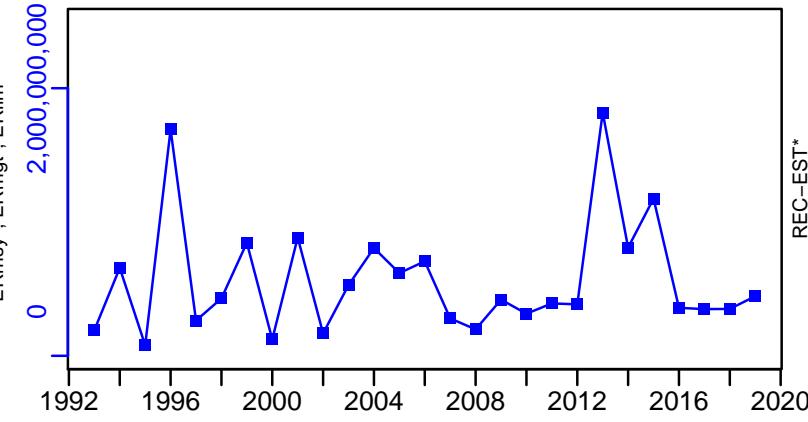
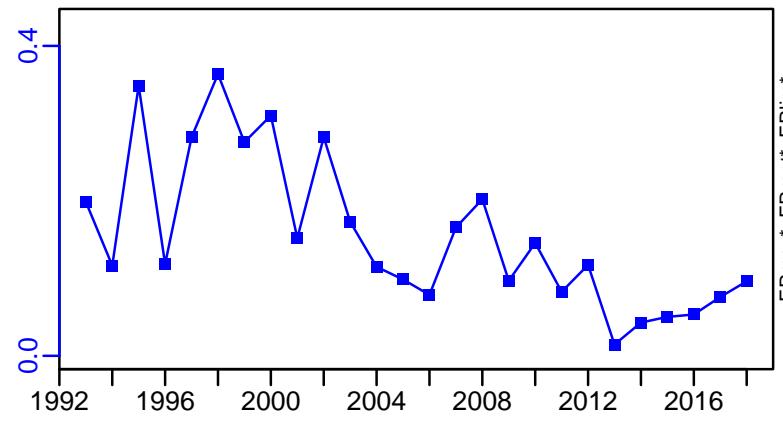
TB-MT (1993–2019–ICESIMP2021)

SSB-MT (1993–2019–ICESIMP2021)



ER-calc-ratio (1993–2019–ICESIMP2021)

R-E00 (1993–2019–ICESIMP2021)

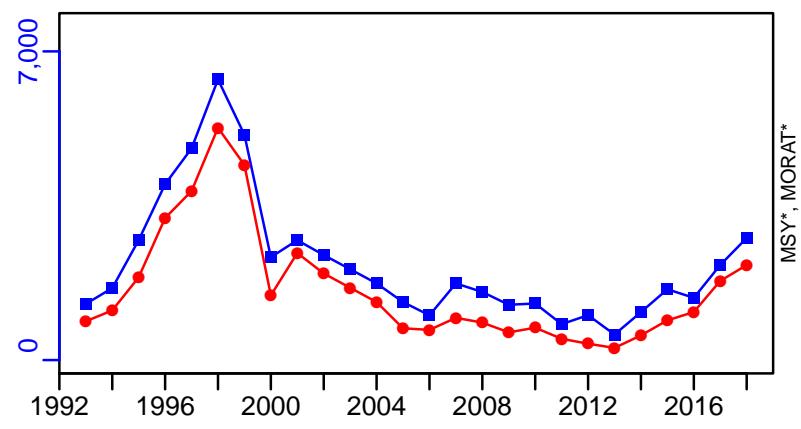


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | --- Lim BRP  | * No Data |

Haddock Irish Sea [HADIS]

TC-MT, TL-MT, RecC\* (1993–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



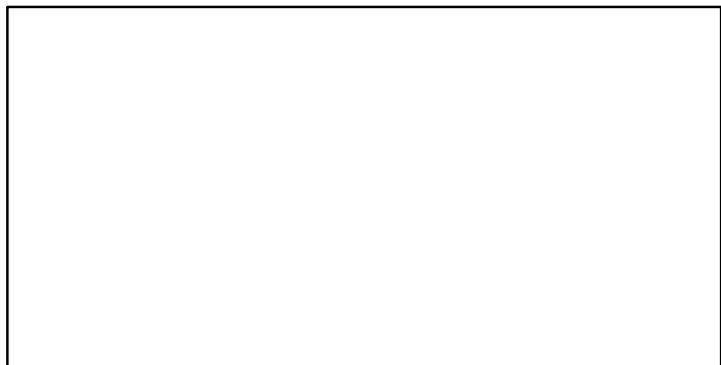
survB\*



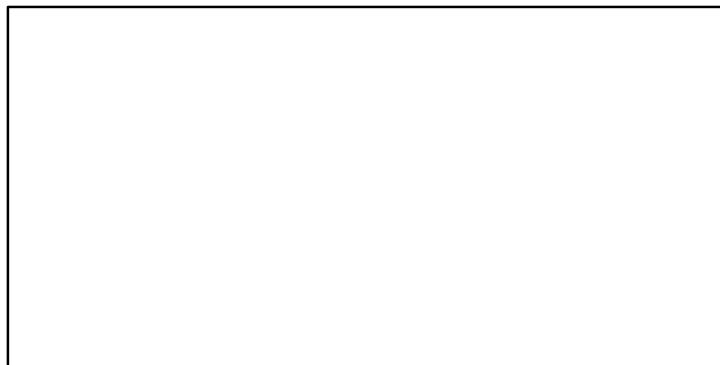
CPUE\*



EFFORT\*



CdivMSY\*



- |  |   |  |
|--|---|--|
| <ul style="list-style-type: none"> <li>■ 1st listed time series</li> <li>● 2nd listed time series</li> </ul> | <ul style="list-style-type: none"> <li>▲ 3rd listed time series</li> <li>- - MSY</li> </ul> | <ul style="list-style-type: none"> <li>— MORAT</li> <li>* No Data</li> </ul> |
|--|---|--|

## Haddock ICES 3a-4-6a [HADNS-IIIA-VIa]

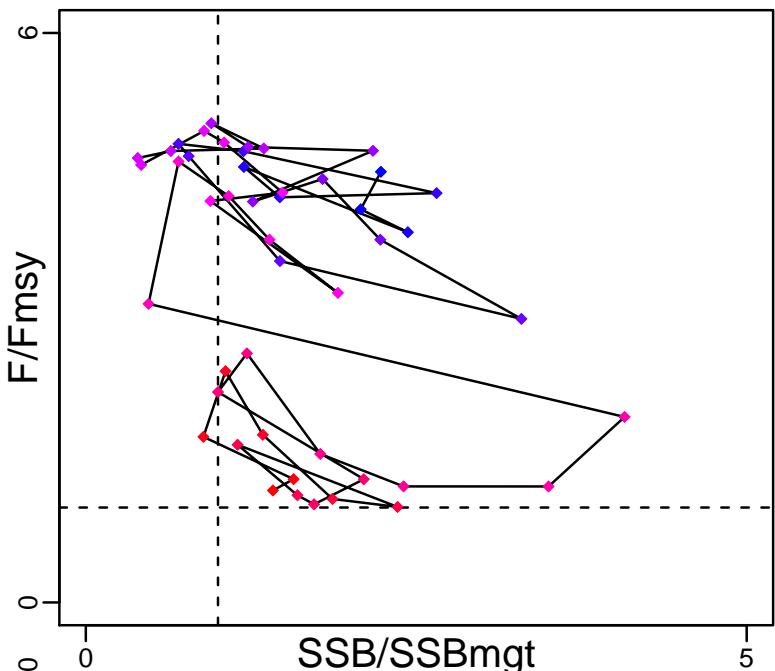
| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Melanogrammus aeglefinus  |
| <b>Current Assess ID</b>    | WGNSSK-HADNS-IIIA-VIa-1972-2019-ICESIMP2021                                       |
| <b>Area</b>                 | ICES 3a-4-6a  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2014, 2015, 2015, 2016, 2017, 2018, 2019  |

| Reference Points |           |           |         |
|------------------|-----------|-----------|---------|
| Type             | ID        | Asmt Year | Value   |
| <b>TBmsy</b>     | -         | -         | -       |
| <b>SSBmsy</b>    | -         | -         | -       |
| <b>Fmsy</b>      | Fmsy-1/yr | 2019      | 0.19    |
| <b>ERmsy</b>     | -         | -         | -       |
| <b>TBmgt</b>     | -         | -         | -       |
| <b>SSBmgt</b>    | SSBmgt-MT | 2019      | 132,000 |
| <b>Fmgt</b>      | Fmgt-1/yr | 2019      | 0.19    |
| <b>ERmgt</b>     | -         | -         | -       |
| <b>TB0</b>       | -         | -         | -       |
| <b>SSB0</b>      | -         | -         | -       |
| <b>MSY</b>       | -         | -         | -       |
| <b>M</b>         | -         | -         | -       |
| <b>TBlim</b>     | -         | -         | -       |
| <b>SSBlim</b>    | SSBlim-MT | 2018      | 94,000  |
| <b>Flim</b>      | Flim-1/yr | 2018      | 0.39    |
| <b>ERlim</b>     | -         | -         | -       |

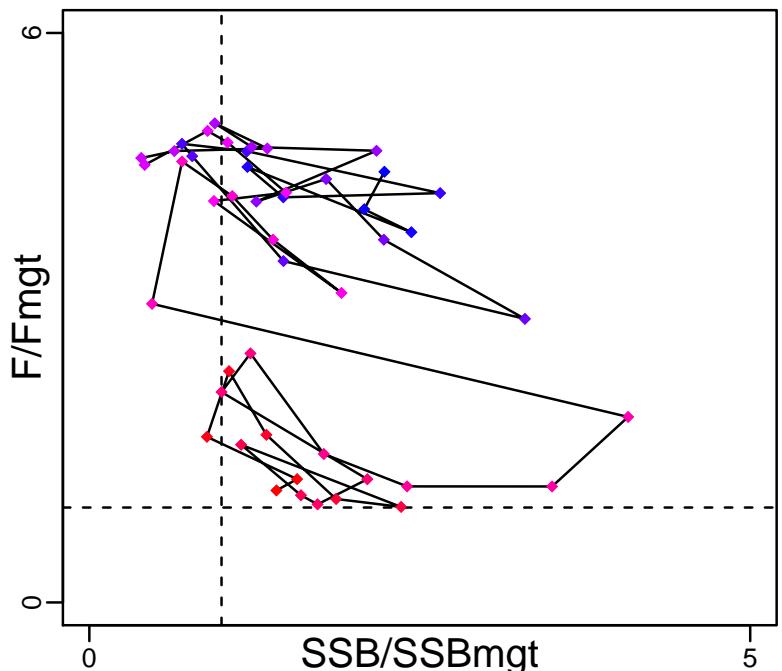
| Time Series       |                  |           |                       |     |        |  |
|-------------------|------------------|-----------|-----------------------|-----|--------|--|
| Type              | ID               | Asmt Year | Curr Value            | Sex | Age    |  |
| <b>TB</b>         | TB-MT            | 2019      | 509,663               | -   | -      |  |
| <b>SSB</b>        | SSB-MT           | 2019      | 236,941               | -   | -      |  |
| <b>TN</b>         | -                | -         | -                     | -   | -      |  |
| <b>R</b>          | R-E00            | 2019      | $2.03 \times 10^{10}$ | -   | 0      |  |
| <b>F</b>          | F-1/yr           | 2019      | 0.224                 | -   | 2 to 4 |  |
| <b>ER</b>         | ER-calc-ratio    | 2019      | 0.095                 | -   | -      |  |
| <b>TC</b>         | TC-MT            | 2019      | 39,524                |     |        |  |
| <b>TL</b>         | TL-MT            | 2019      | 34,470                |     |        |  |
| <b>TB/TBmsy</b>   | -                | -         | -                     |     |        |  |
| <b>SSB/SSBmsy</b> | -                | -         | -                     |     |        |  |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr | 2019      | 1.18                  |     |        |  |
| <b>ER/ERmsy</b>   | -                | -         | -                     |     |        |  |
| <b>TB/TBmgt</b>   | -                | -         | -                     |     |        |  |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2019      | 1.795                 |     |        |  |
| <b>F/Fmgt</b>     | F-1/yr/Fmgt-1/yr | 2019      | 1.18                  |     |        |  |
| <b>ER/ERmgt</b>   | -                | -         | -                     |     |        |  |

Haddock ICES 3a–4–6a [HADNS–IIIa–VIa]

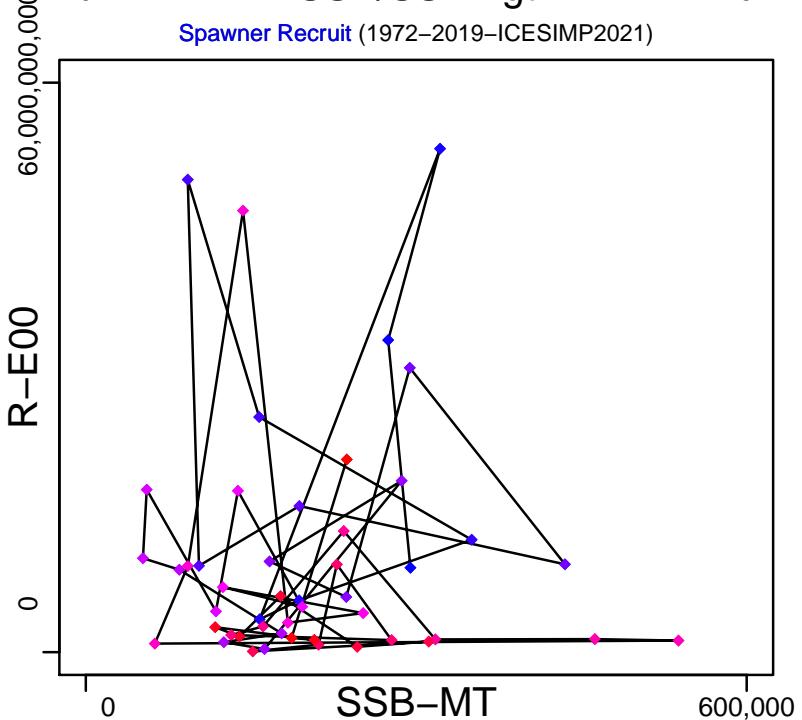
Kobe MSYpref (1972–2019–ICESIMP2021)



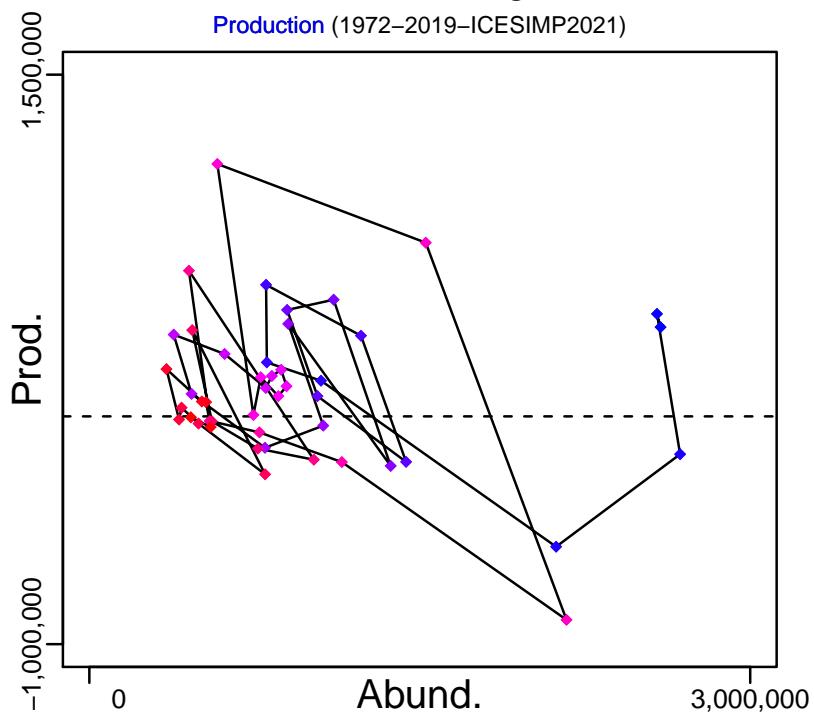
Kobe MGTpref (1972–2019–ICESIMP2021)



Spawner Recruit (1972–2019–ICESIMP2021)



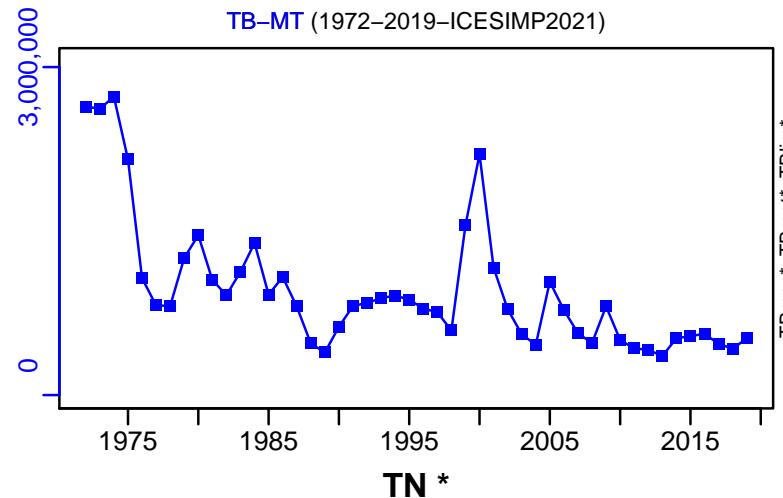
Production (1972–2019–ICESIMP2021)



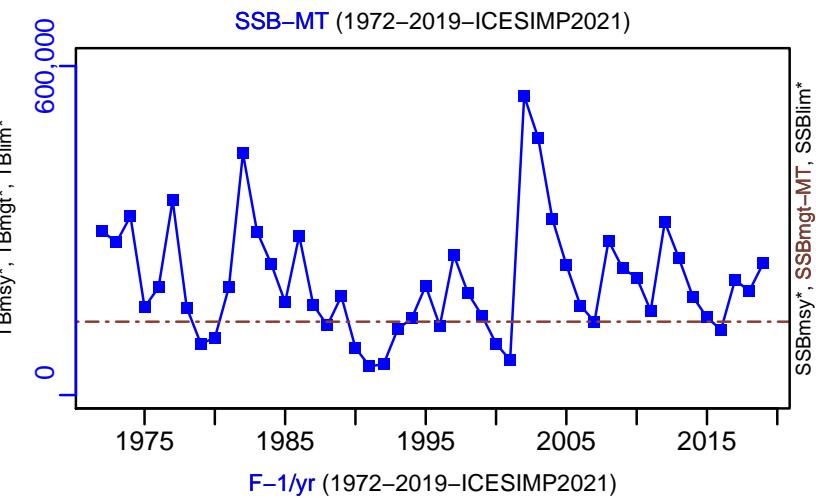
|              |            |   |         |
|--------------|------------|---|---------|
| ◆ Start Year | ◆ End Year | * | No Data |
|--------------|------------|---|---------|

Haddock ICES 3a–4–6a [HADNS–IIIa–VIa]

TB-MT (1972–2019–ICESIMP2021)



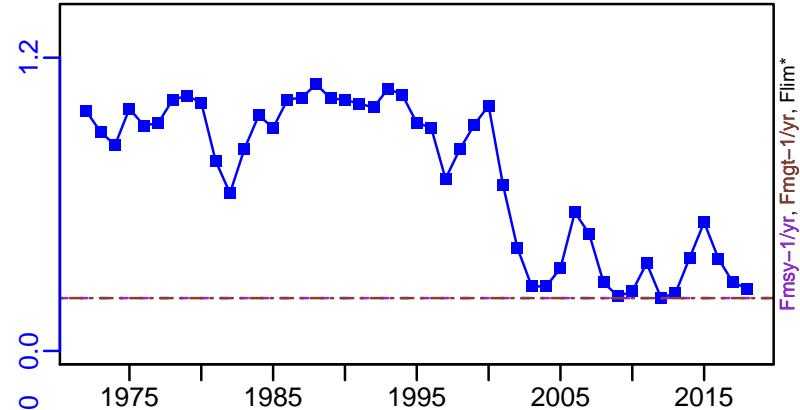
SSB-MT (1972–2019–ICESIMP2021)



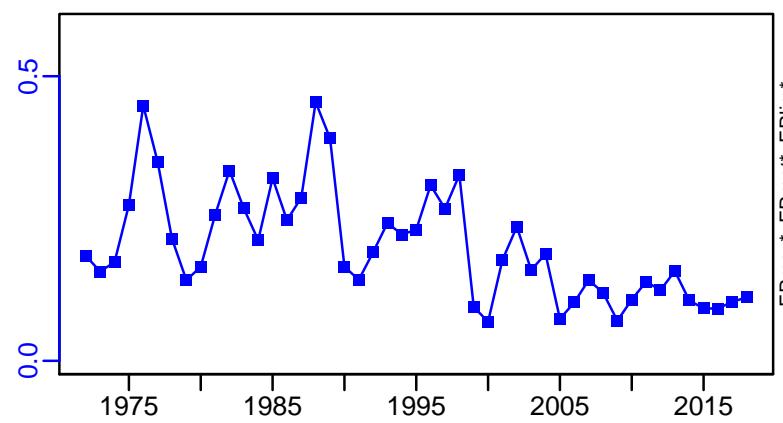
TN \*



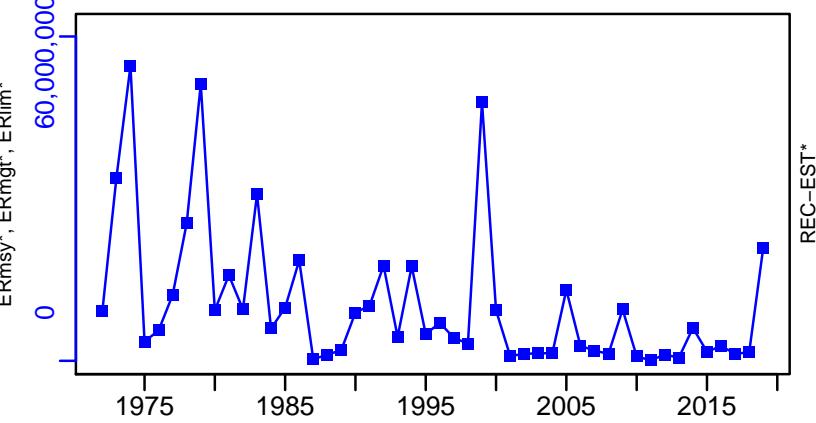
F-1/yr (1972–2019–ICESIMP2021)



ER-calc-ratio (1972–2019–ICESIMP2021)



R-E00 (1972–2019–ICESIMP2021)

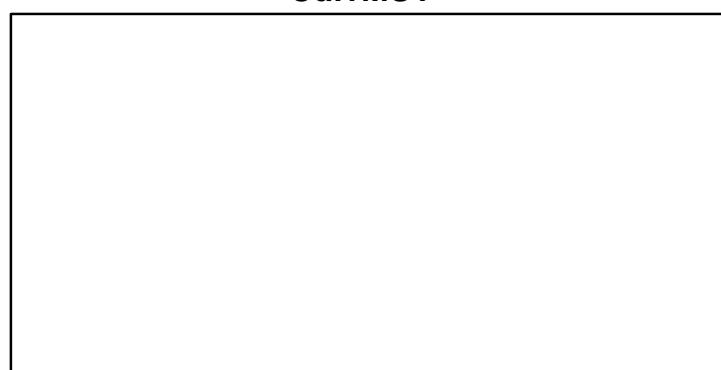
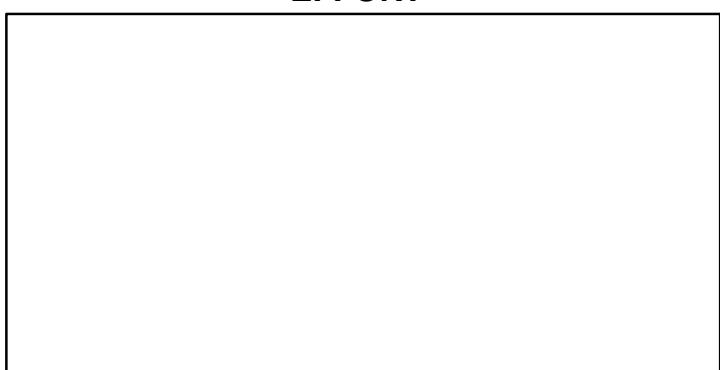
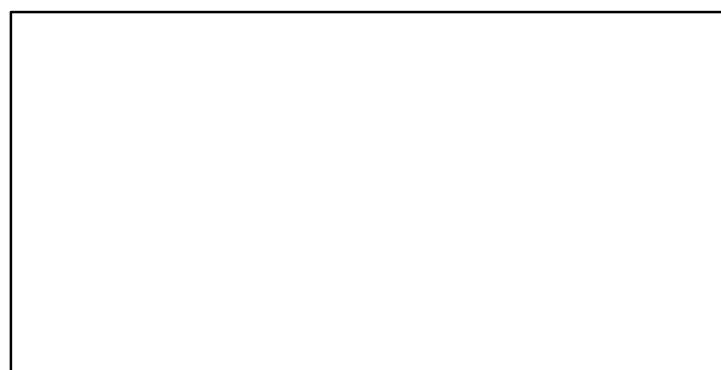
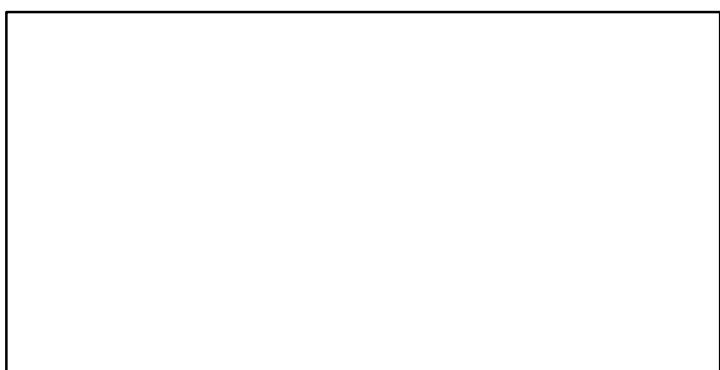
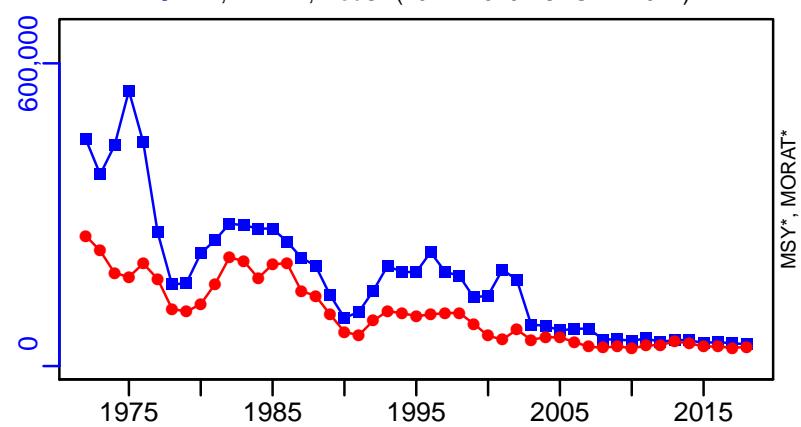


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - MSY-based BRP      | --- Lim BRP  | * No Data |

Haddock ICES 3a–4–6a [HADNS–IIIa–VIa]

TC–MT, TL–MT, RecC\* (1972–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Haddock Rockall Bank [HADROCK]

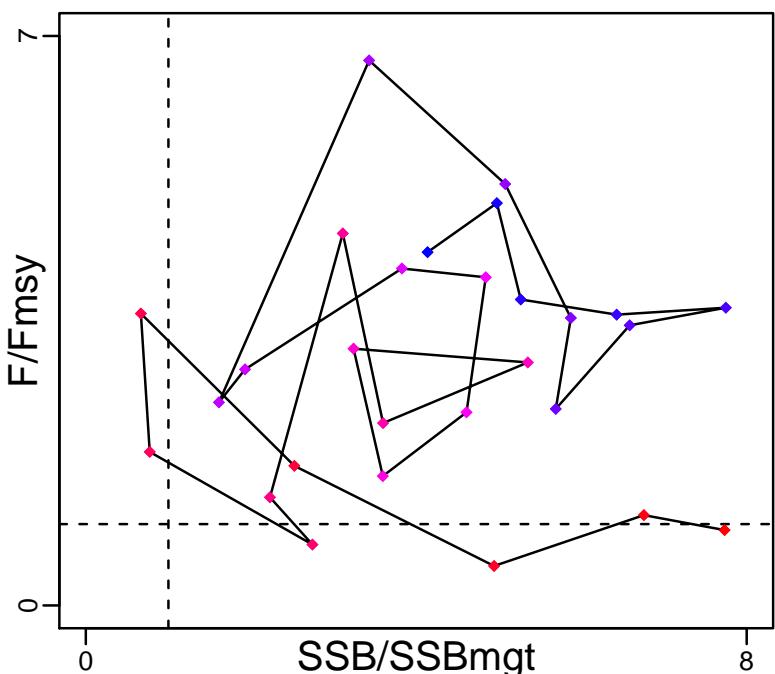
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Melanogrammus aeglefinus                             |
| <b>Current Assess ID</b>    | WGCSE-HADROCK-1990-2019-ICESIMP2021                  |
| <b>Area</b>                 | Rockall Bank   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2013, 2014, 2015, 2016, 2017, 2019, 2012             |

| Reference Points |           |           |       |
|------------------|-----------|-----------|-------|
| Type             | ID        | Asmt Year | Value |
| <b>TBmsy</b>     | -         | -         | -     |
| <b>SSBmsy</b>    | -         | -         | -     |
| <b>Fmsy</b>      | Fmsy-1/yr | 2019      | 0.168 |
| <b>ERrmsy</b>    | -         | -         | -     |
| <b>TBmgt</b>     | -         | -         | -     |
| <b>SSBmgt</b>    | SSBmgt-MT | 2019      | 3712  |
| <b>Fmgt</b>      | Fmgt-1/yr | 2019      | 0.168 |
| <b>ERmgt</b>     | -         | -         | -     |
| <b>TB0</b>       | -         | -         | -     |
| <b>SSB0</b>      | -         | -         | -     |
| <b>MSY</b>       | MSY-MT    | 2012      | 9000  |
| <b>M</b>         | -         | -         | -     |
| <b>TBlim</b>     | -         | -         | -     |
| <b>SSBlim</b>    | SSBlim-MT | 2017      | 6800  |
| <b>Flim</b>      | Flim-1/yr | 2017      | 0.69  |
| <b>ERlim</b>     | -         | -         | -     |

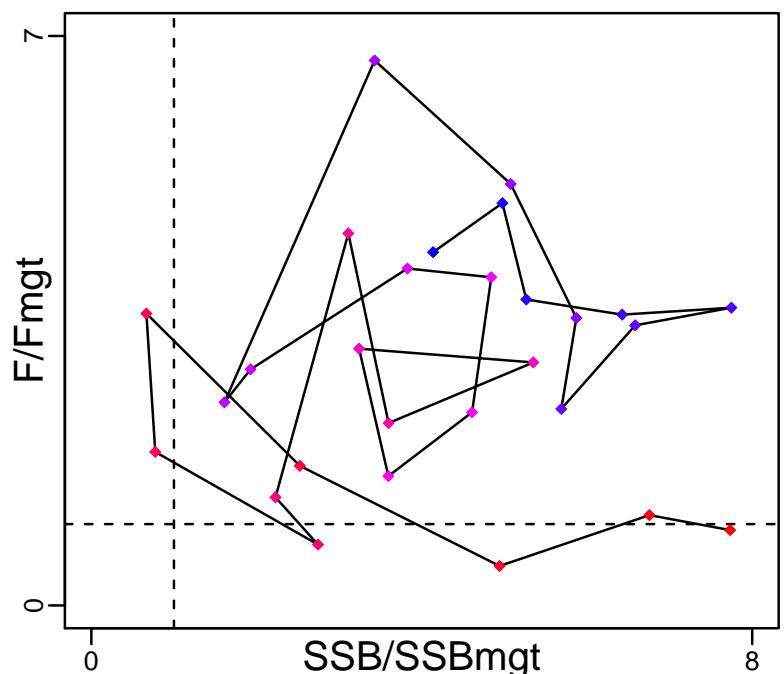
| Time Series       |                  |           |            |     |        |  |
|-------------------|------------------|-----------|------------|-----|--------|--|
| Type              | ID               | Asmt Year | Curr Value | Sex | Age    |  |
| <b>TB</b>         | TB-MT            | 2019      | 58,034     | -   | -      |  |
| <b>SSB</b>        | SSB-MT           | 2019      | 48,513     | -   | -      |  |
| <b>TN</b>         | -                | -         | -          | -   | -      |  |
| <b>R</b>          | R-E00            | 2019      | 24,444,000 | -   | 1      |  |
| <b>F</b>          | F-1/yr           | 2019      | 0.156      | -   | 2 to 5 |  |
| <b>ER</b>         | ER-calc-ratio    | 2019      | 0.072      | -   | -      |  |
| <b>TC</b>         | TC-MT            | 2019      | 3850       |     |        |  |
| <b>TL</b>         | TL-MT            | 2019      | 3850       |     |        |  |
| <b>TB/TBmsy</b>   | -                | -         | -          |     |        |  |
| <b>SSB/SSBmsy</b> | -                | -         | -          |     |        |  |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr | 2019      | 0.926      |     |        |  |
| <b>ER/ERrmsy</b>  | -                | -         | -          |     |        |  |
| <b>TB/TBmgt</b>   | -                | -         | -          |     |        |  |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2019      | 13.069     |     |        |  |
| <b>F/Fmgt</b>     | F-1/yr/Fmgt-1/yr | 2019      | 0.926      |     |        |  |
| <b>ER/ERmgt</b>   | -                | -         | -          |     |        |  |

### Haddock Rockall Bank [HADROCK]

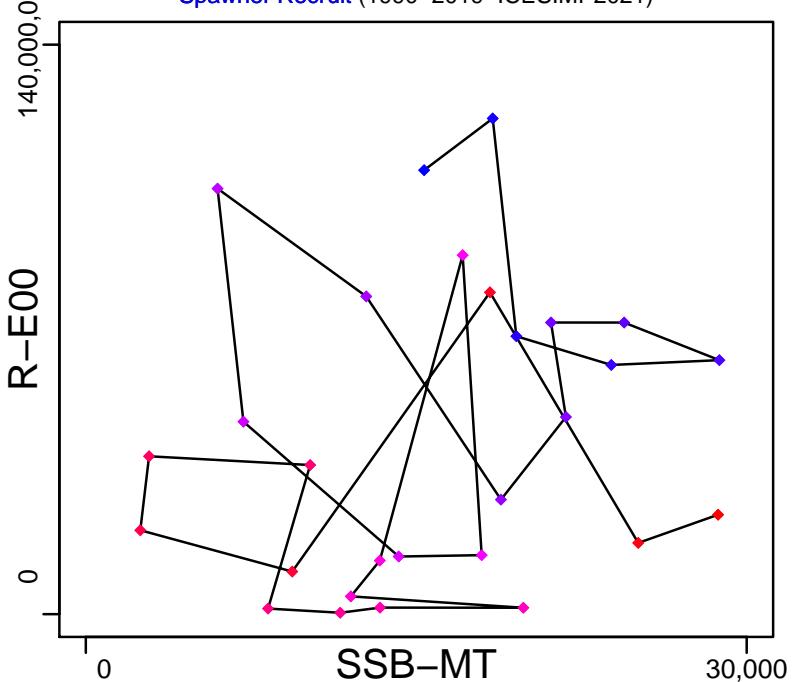
Kobe MSYpref (1990–2019–ICESIMP2021)



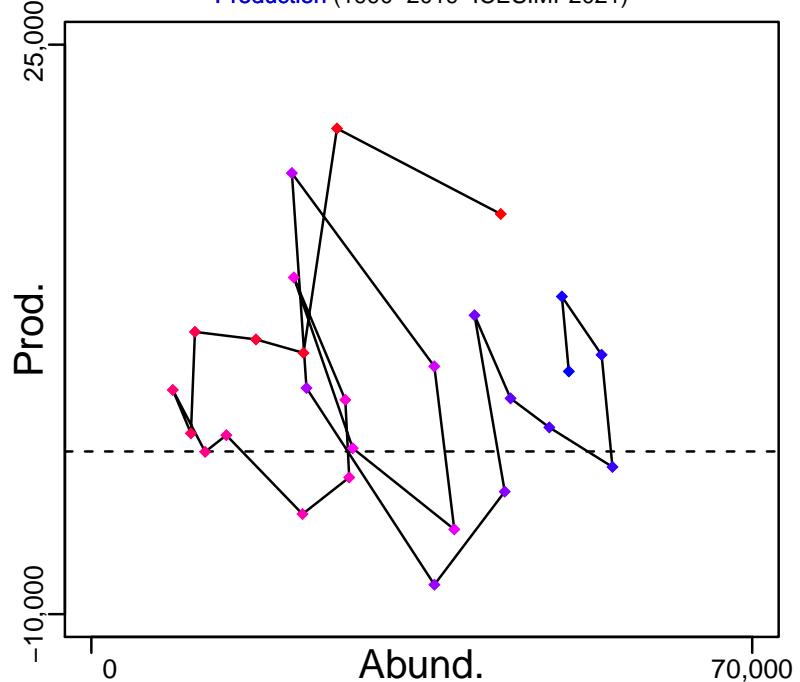
Kobe MGTpref (1990–2019–ICESIMP2021)



Spawner Recruit (1990–2019–ICESIMP2021)



Production (1990–2019–ICESIMP2021)

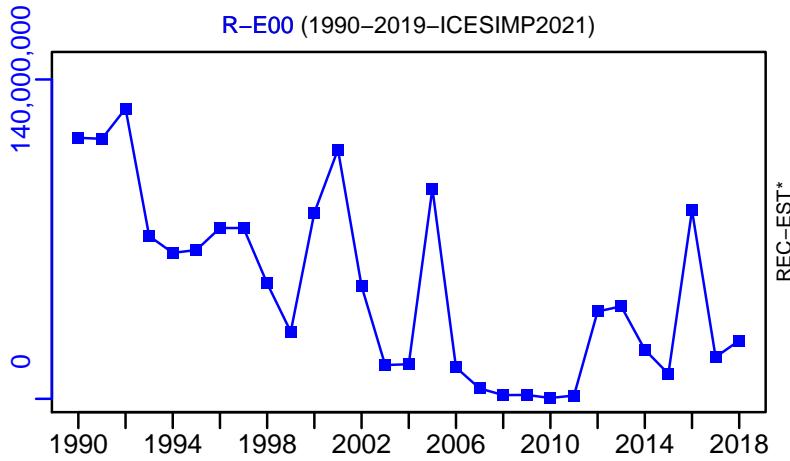
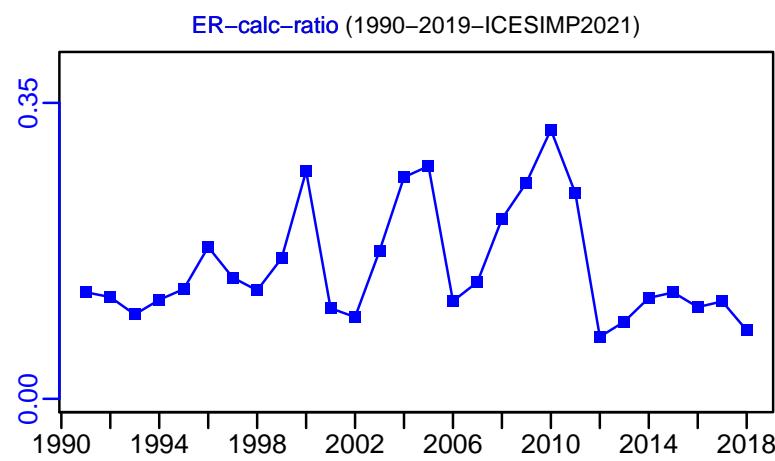
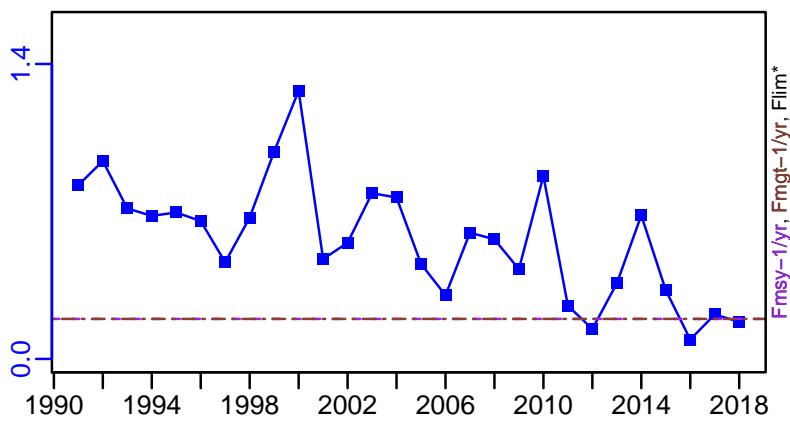
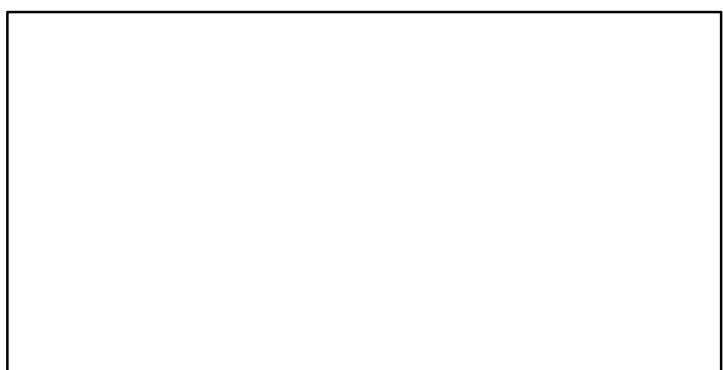
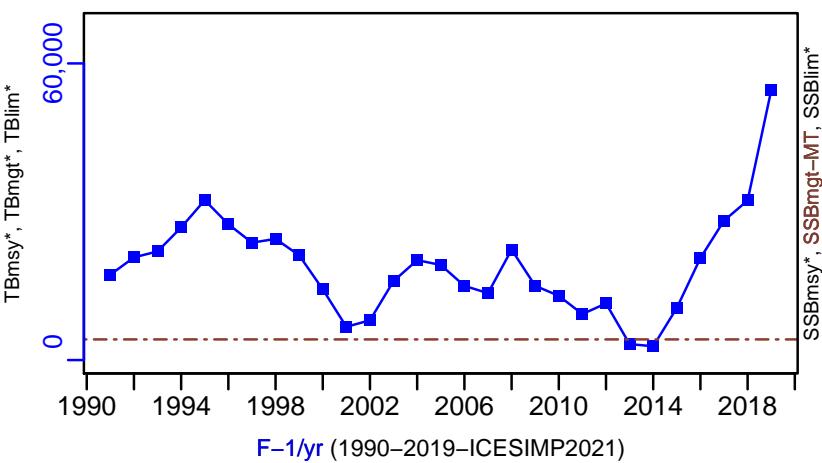
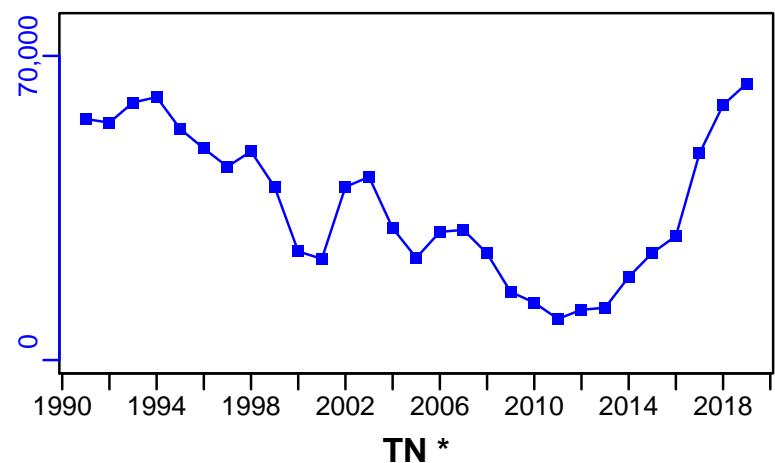


◆ Start Year ◆ End Year \* No Data

### Haddock Rockall Bank [HADROCK]

TB-MT (1990–2019–ICESIMP2021)

SSB-MT (1990–2019–ICESIMP2021)

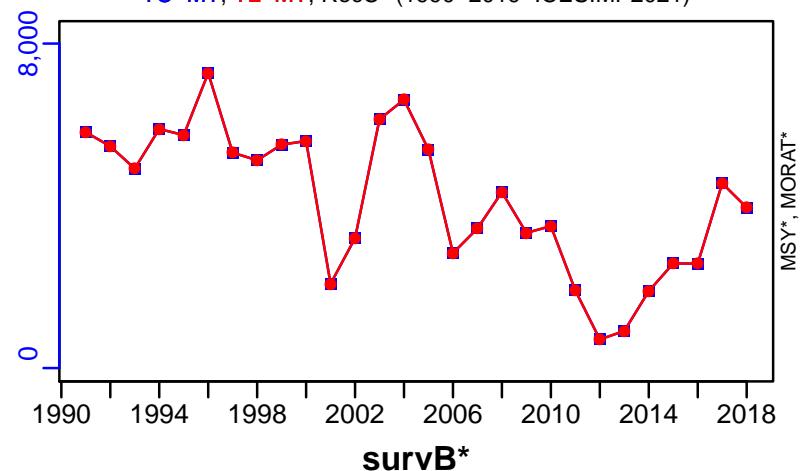


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | --- Lim BRP  | * No Data |

Haddock Rockall Bank [HADROCK]

TC-MT, TL-MT, RecC\* (1990–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



MSY\*, MORAT\*

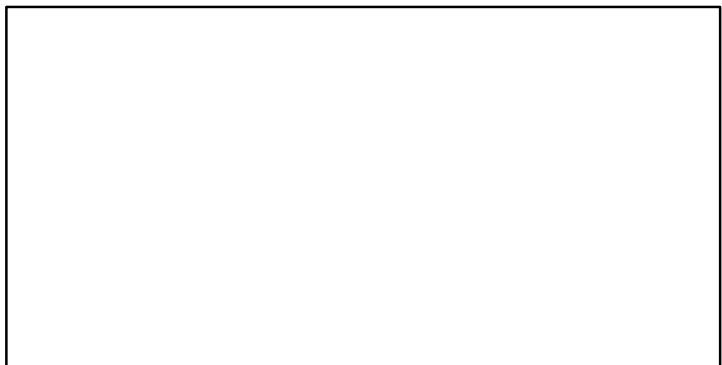
survB\*



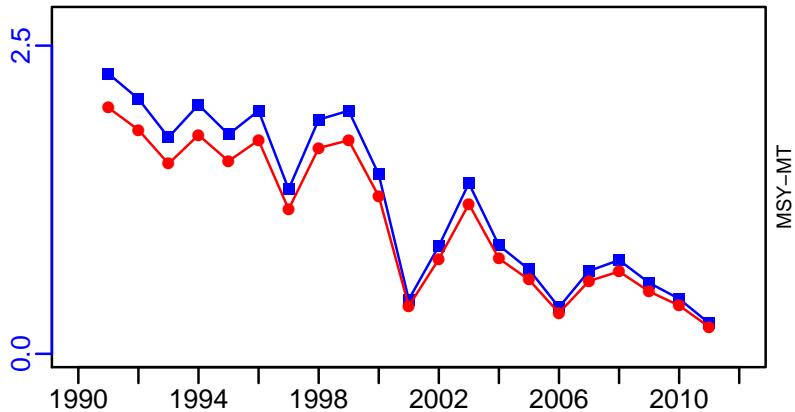
CPUE\*



EFFORT\*



TL-MT/MSY-MT, CdiveMEANC-ratio, (1990–2012–CHING)



MSY-MT

|                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Haddock ICES 7b-k [HADVIIb-k]

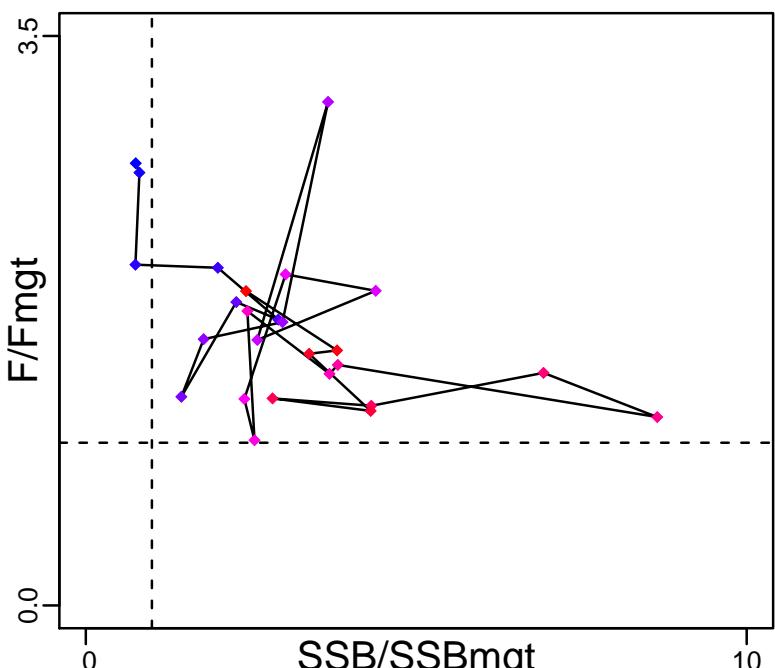
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Melanogrammus aeglefinus                             |
| <b>Current Assess ID</b>    | WGCSE-HADVIIb-k-1993-2019-ICESIMP2021                |
| <b>Area</b>                 | ICES 7b-k  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2013, 2014, 2015, 2016, 2017, 2019, 2012             |

| Reference Points |           |           |        |
|------------------|-----------|-----------|--------|
| Type             | ID        | Asmt Year | Value  |
| <b>TBmsy</b>     | -         | -         | -      |
| <b>SSBmsy</b>    | -         | -         | -      |
| <b>Fmsy</b>      | Fmsy-1/yr | 2017      | 0.4    |
| <b>ERmsy</b>     | -         | -         | -      |
| <b>TBmgt</b>     | -         | -         | -      |
| <b>SSBmgt</b>    | SSBmgt-MT | 2019      | 10,000 |
| <b>Fmgt</b>      | Fmgt-1/yr | 2019      | 0.4    |
| <b>ERmgt</b>     | -         | -         | -      |
| <b>TB0</b>       | -         | -         | -      |
| <b>SSB0</b>      | -         | -         | -      |
| <b>MSY</b>       | -         | -         | -      |
| <b>M</b>         | -         | -         | -      |
| <b>TBlim</b>     | -         | -         | -      |
| <b>SSBlim</b>    | SSBlim-MT | 2017      | 6700   |
| <b>Flim</b>      | Flim-1/yr | 2017      | 1.41   |
| <b>ERlim</b>     | -         | -         | -      |

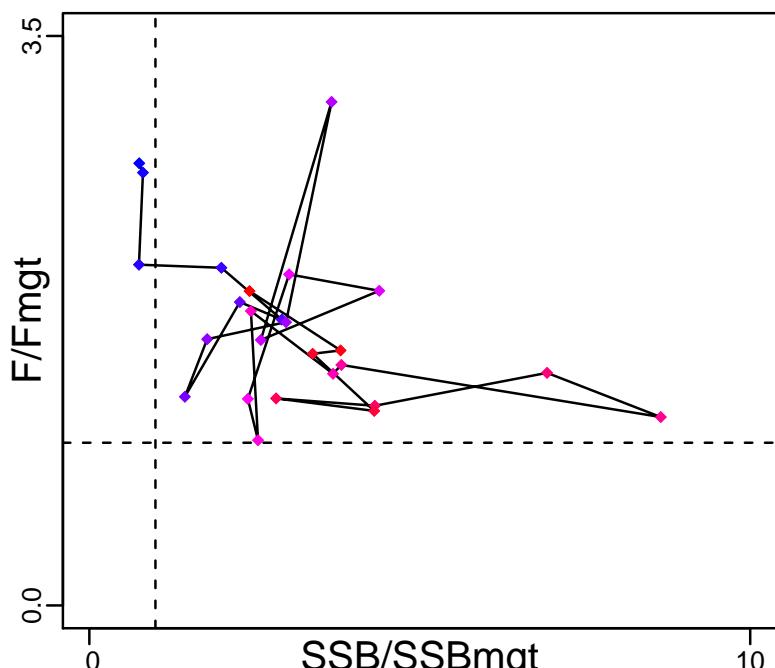
| Time Series       |                  |           |             |     |        |  |
|-------------------|------------------|-----------|-------------|-----|--------|--|
| Type              | ID               | Asmt Year | Curr Value  | Sex | Age    |  |
| <b>TB</b>         | TB-MT            | 2019      | 74,659      | -   | -      |  |
| <b>SSB</b>        | SSB-MT           | 2019      | 14,205      | -   | -      |  |
| <b>TN</b>         | -                | -         | -           | -   | -      |  |
| <b>R</b>          | R-E00            | 2019      | 252,713,000 | -   | 0      |  |
| <b>F</b>          | F-1/yr           | 2019      | 0.773       | -   | 3 to 5 |  |
| <b>ER</b>         | ER-calc-ratio    | 2019      | 0.168       | -   | -      |  |
| <b>TC</b>         | TC-MT            | 2019      | 12,546      |     |        |  |
| <b>TL</b>         | TL-MT            | 2019      | 7109        |     |        |  |
| <b>TB/TBmsy</b>   | -                | -         | -           |     |        |  |
| <b>SSB/SSBmsy</b> | -                | -         | -           |     |        |  |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr | 2017      | 1.685       |     |        |  |
| <b>ER/ERmsy</b>   | -                | -         | -           |     |        |  |
| <b>TB/TBmgt</b>   | -                | -         | -           |     |        |  |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2019      | 1.421       |     |        |  |
| <b>F/Fmgt</b>     | F-1/yr/Fmgt-1/yr | 2019      | 1.932       |     |        |  |
| <b>ER/ERmgt</b>   | -                | -         | -           |     |        |  |

Haddock ICES 7b–k [HADVIIb–k]

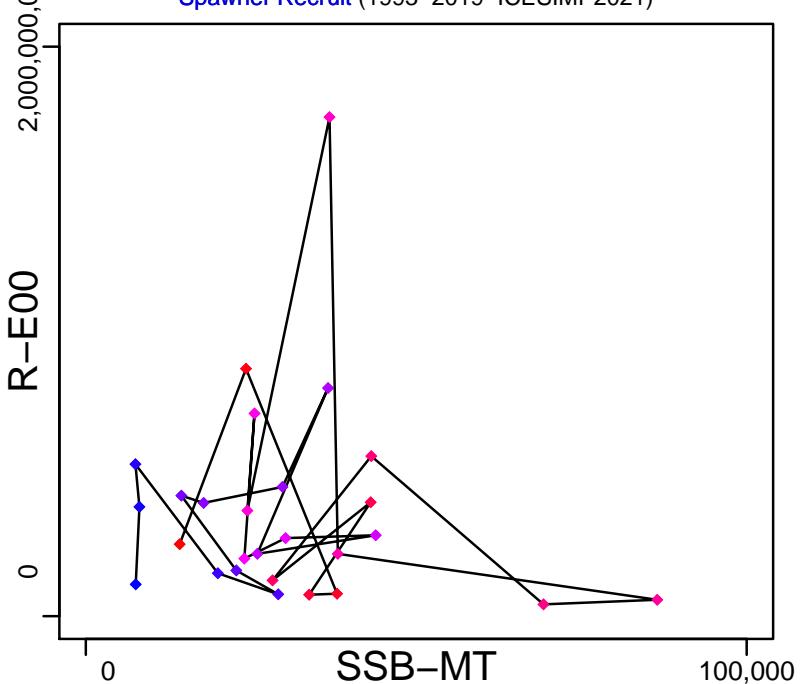
Kobe MSYpref (1993–2019–ICESIMP2021)



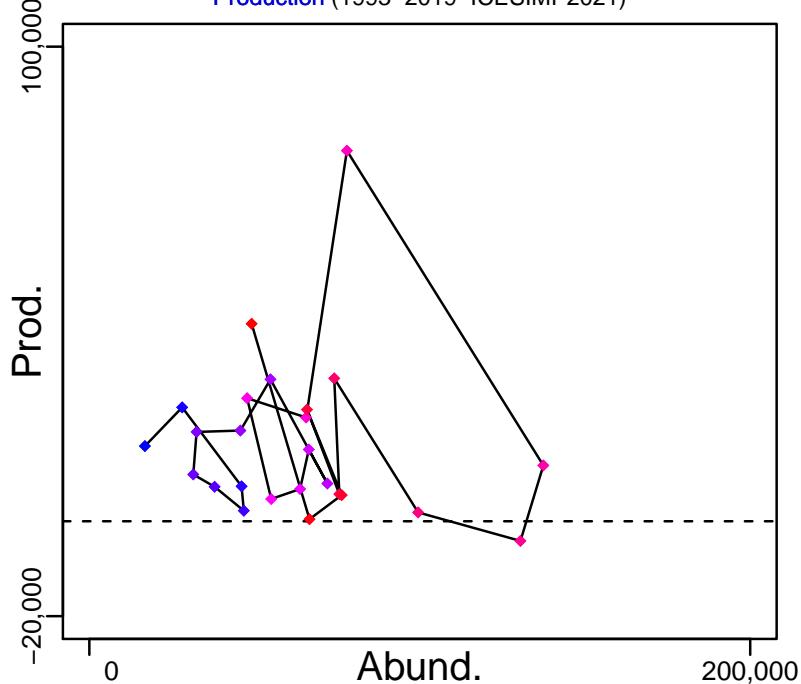
Kobe MGTpref (1993–2019–ICESIMP2021)



Spawner Recruit (1993–2019–ICESIMP2021)



Production (1993–2019–ICESIMP2021)

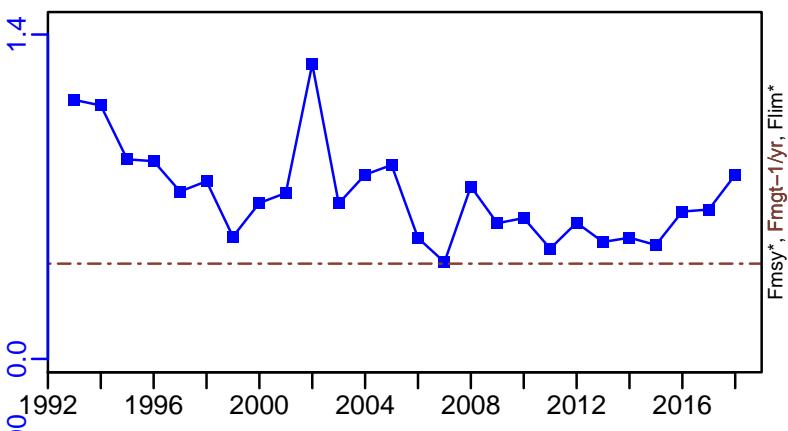
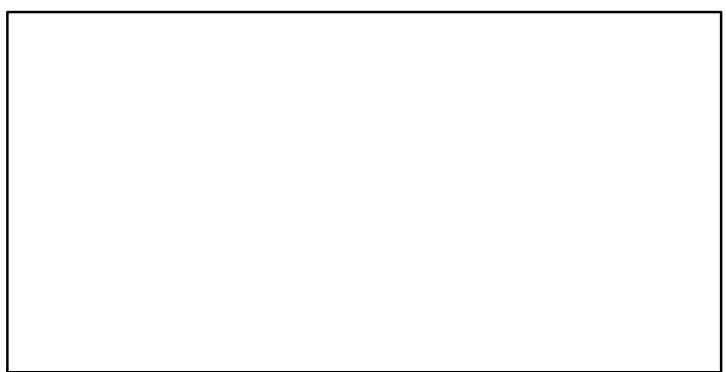
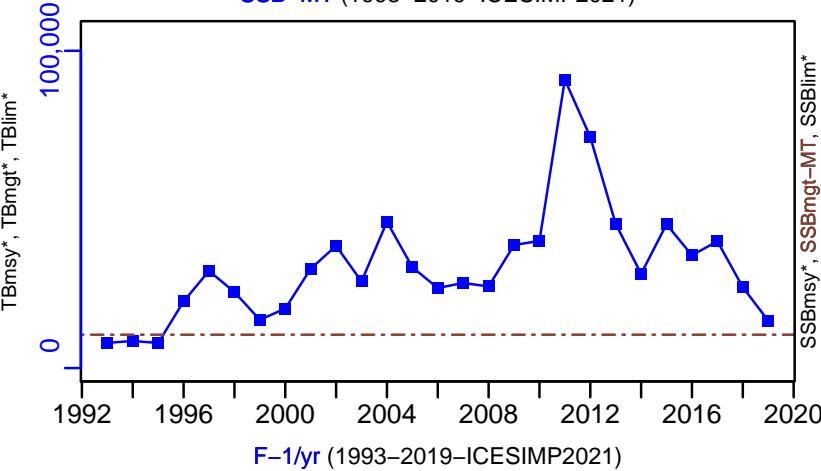
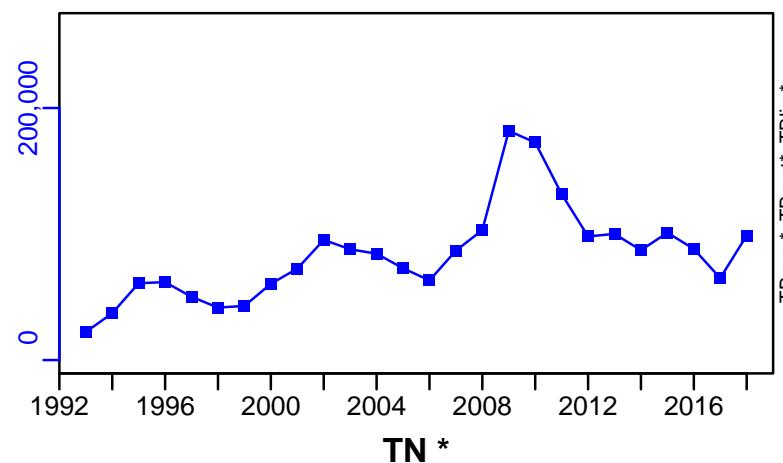


|              |            |   |         |
|--------------|------------|---|---------|
| ◆ Start Year | ◆ End Year | * | No Data |
|--------------|------------|---|---------|

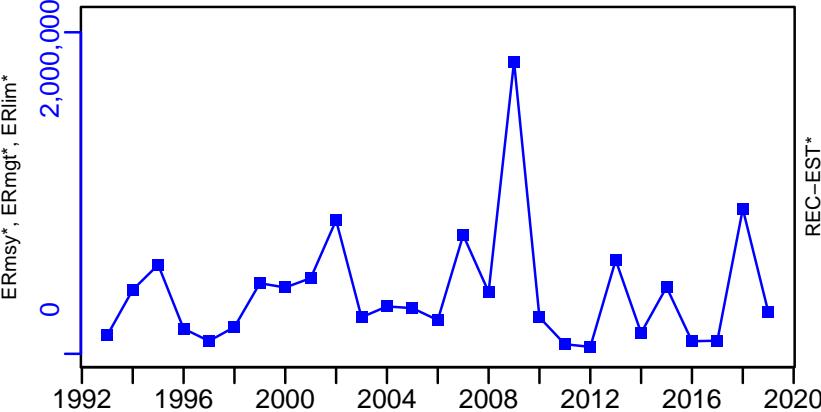
Haddock ICES 7b–k [HADVIIb–k]

TB-MT (1993–2019–ICESIMP2021)

SSB-MT (1993–2019–ICESIMP2021)



ER-calc-ratio (1993–2019–ICESIMP2021)

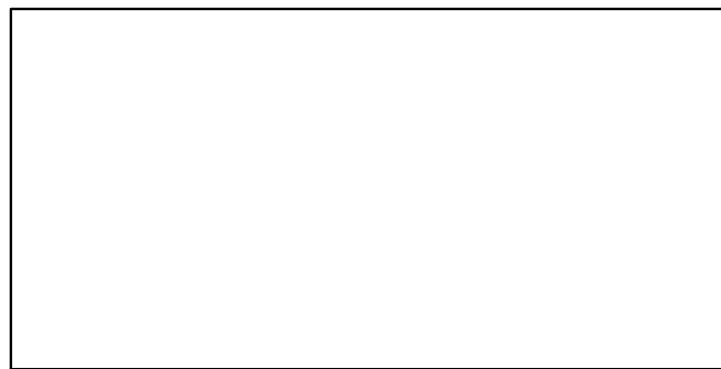
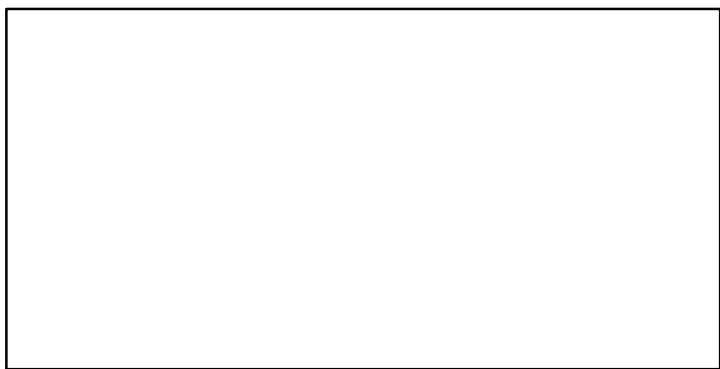
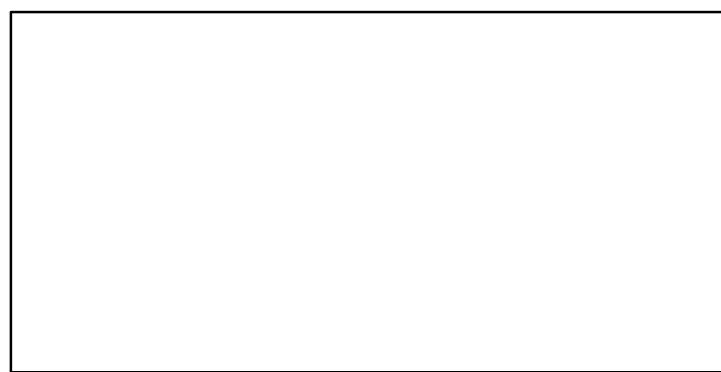
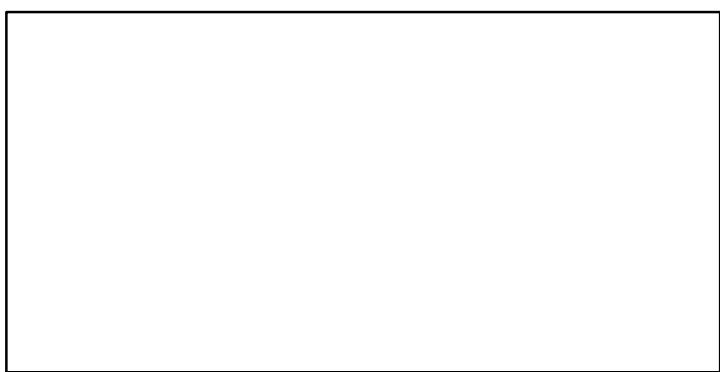
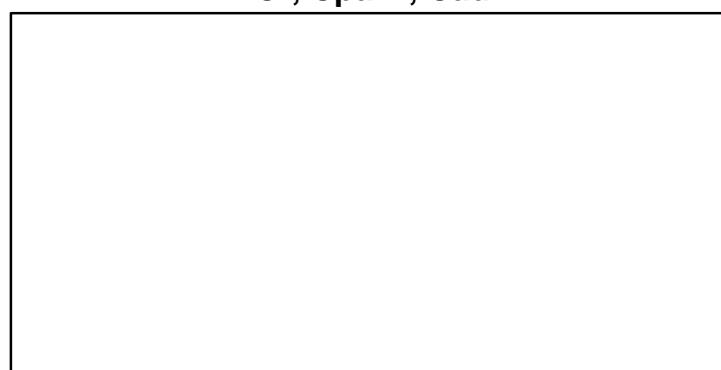
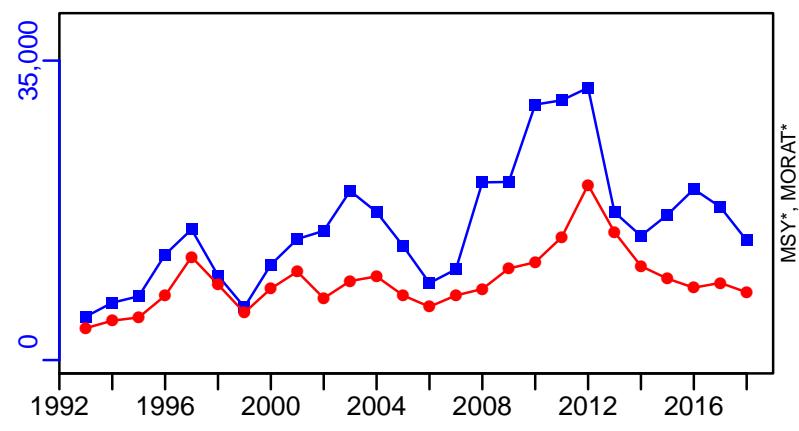


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | --- Lim BRP  | * No Data |

Haddock ICES 7b–k [HADVIIb–k]

TC–MT, TL–MT, RecC\* (1993–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Hake ICES 3a-4-6-7-8abd [HAKENRTN]

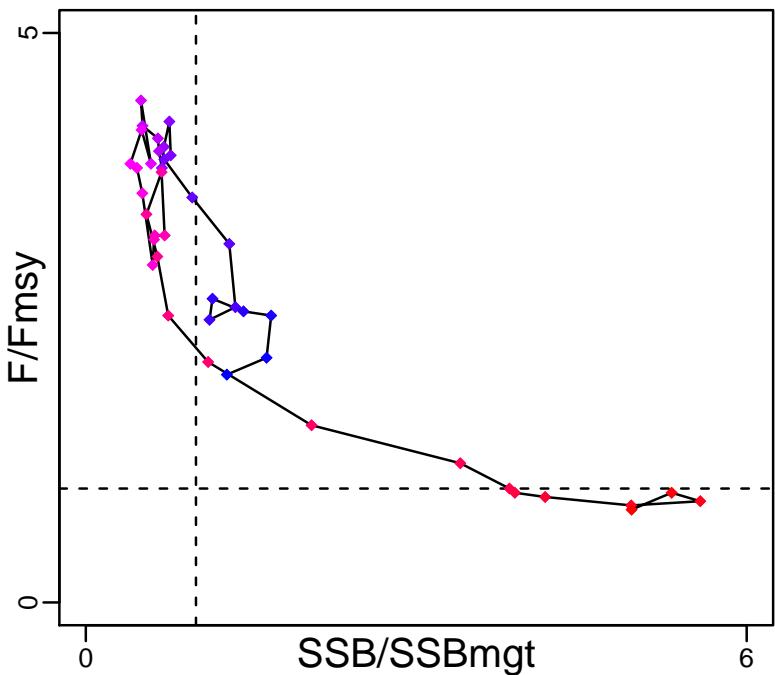
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Merluccius merluccius  |
| <b>Current Assess ID</b>    | WGBIE-HAKENRTN-1978-2019-ICESIMP2021                                 |
| <b>Area</b>                 | ICES 3a-4-6-7-8abd   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                 |
| <b>Assessor</b>             | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion |
| <b>Asmts in RAM</b>         | 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2011                       |

| Reference Points |           |           |        |
|------------------|-----------|-----------|--------|
| Type             | ID        | Asmt Year | Value  |
| <b>TBmsy</b>     | -         | -         | -      |
| <b>SSBmsy</b>    | -         | -         | -      |
| <b>Fmsy</b>      | Fmsy-1/yr | 2019      | 0.27   |
| <b>ERmsy</b>     | -         | -         | -      |
| <b>TBmgt</b>     | -         | -         | -      |
| <b>SSBmgt</b>    | SSBmgt-MT | 2019      | 56,000 |
| <b>Fmgt</b>      | Fmgt-1/yr | 2019      | 0.27   |
| <b>ERmgt</b>     | -         | -         | -      |
| <b>TB0</b>       | -         | -         | -      |
| <b>SSB0</b>      | -         | -         | -      |
| <b>MSY</b>       | -         | -         | -      |
| <b>M</b>         | -         | -         | -      |
| <b>TBlim</b>     | -         | -         | -      |
| <b>SSBlim</b>    | SSBlim-MT | 2018      | 32,000 |
| <b>Flim</b>      | Flim-1/yr | 2018      | 0.87   |
| <b>ERlim</b>     | -         | -         | -      |

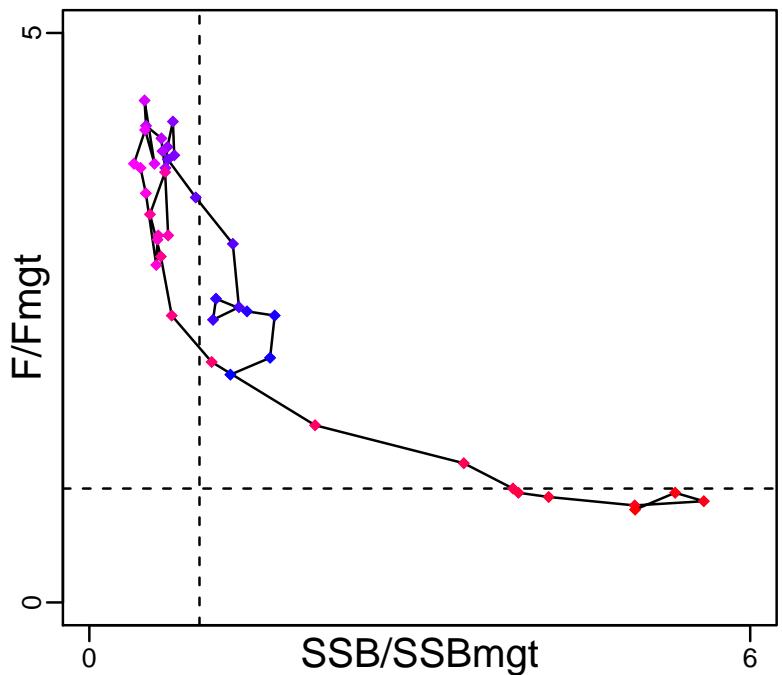
| Time Series       |                  |           |             |     |     |
|-------------------|------------------|-----------|-------------|-----|-----|
| Type              | ID               | Asmt Year | Curr Value  | Sex | Age |
| <b>TB</b>         | TB-MT            | 2019      | 339,643     | -   | -   |
| <b>SSB</b>        | SSB-MT           | 2019      | 285,371     | -   | -   |
| <b>TN</b>         | -                | -         | -           | -   | -   |
| <b>R</b>          | R-E00            | 2019      | 310,754,000 | -   | 0   |
| <b>F</b>          | F-1/yr           | 2019      | 0.22        | -   | -   |
| <b>ER</b>         | ER-calc-ratio    | 2019      | 0.283       | -   | -   |
| <b>TC</b>         | TC-MT            | 2019      | 96,188      |     |     |
| <b>TL</b>         | TL-MT            | 2019      | 89,695      |     |     |
| <b>TB/TBmsy</b>   | -                | -         | -           |     |     |
| <b>SSB/SSBmsy</b> | -                | -         | -           |     |     |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr | 2019      | 0.815       |     |     |
| <b>ER/ERmsy</b>   | -                | -         | -           |     |     |
| <b>TB/TBmgt</b>   | -                | -         | -           |     |     |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2019      | 5.096       |     |     |
| <b>F/Fmgt</b>     | F-1/yr/Fmgt-1/yr | 2019      | 0.815       |     |     |
| <b>ER/ERmgt</b>   | -                | -         | -           |     |     |

Hake ICES 3a–4–6–7–8abd [HAKENRTN]

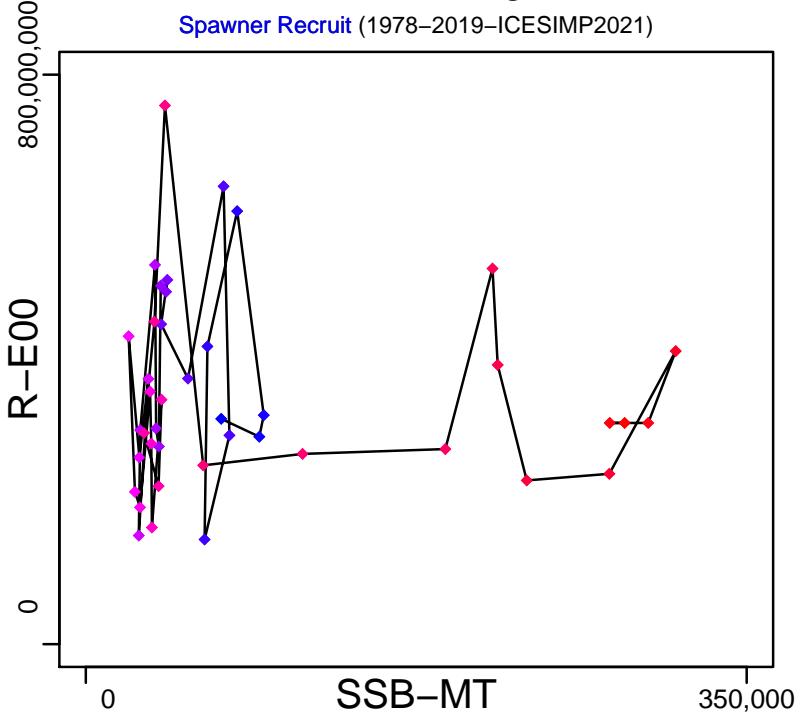
Kobe MSYpref (1978–2019–ICESIMP2021)



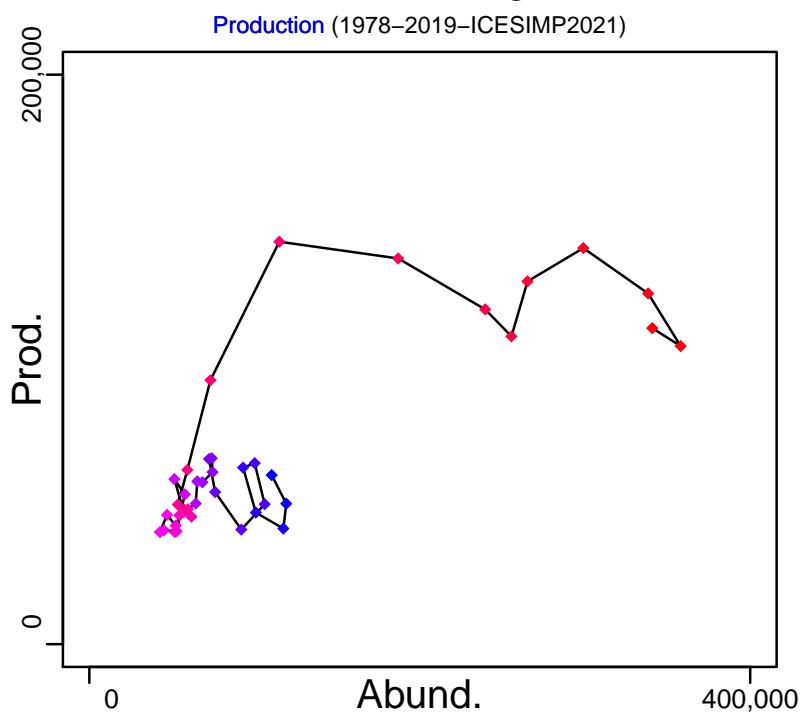
Kobe MGTpref (1978–2019–ICESIMP2021)



Spawner Recruit (1978–2019–ICESIMP2021)



Production (1978–2019–ICESIMP2021)

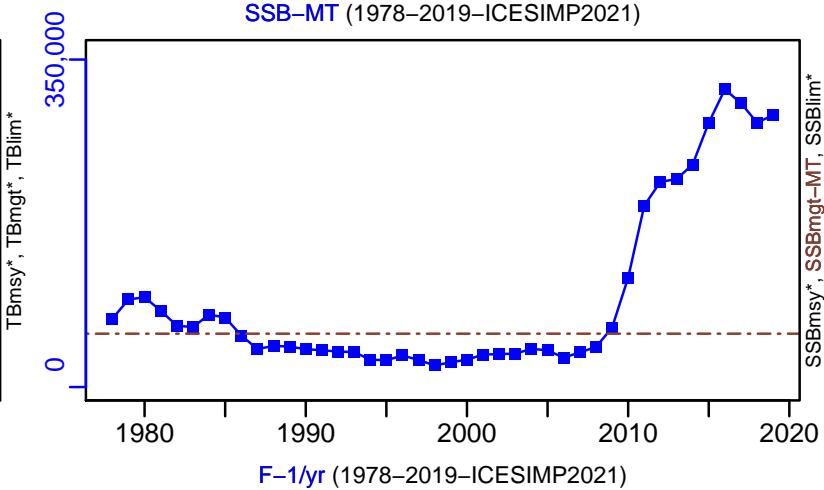
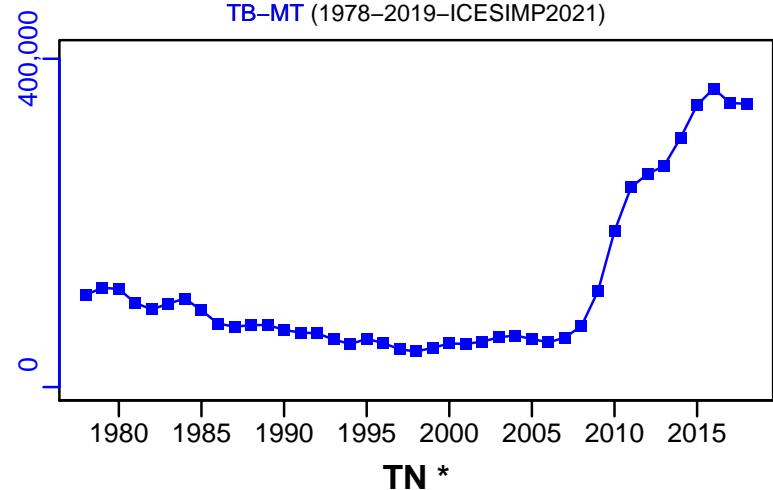


|              |            |   |         |
|--------------|------------|---|---------|
| ◆ Start Year | ◆ End Year | * | No Data |
|--------------|------------|---|---------|

Hake ICES 3a–4–6–7–8abd [HAKENRTN]

TB-MT (1978–2019–ICESIMP2021)

SSB-MT (1978–2019–ICESIMP2021)

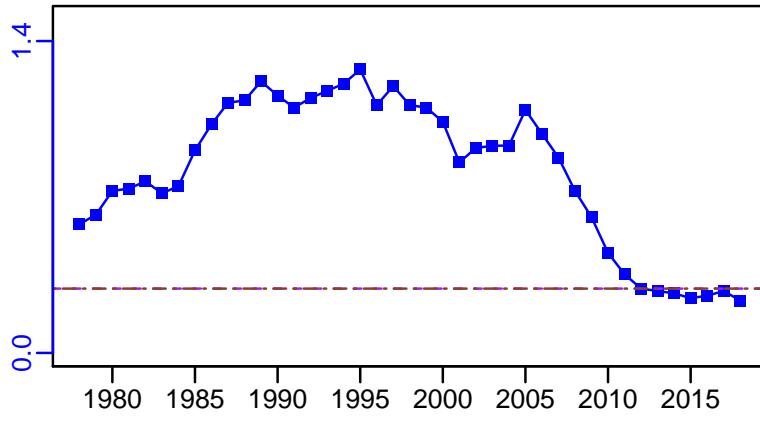
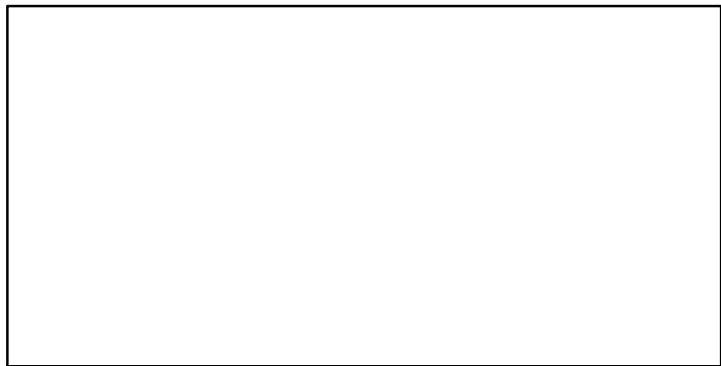


TN \*

F-1/yr (1978–2019–ICESIMP2021)

SSB<sub>msy</sub>\*, SSB<sub>mt</sub>-MT, SSB<sub>lim</sub>\*

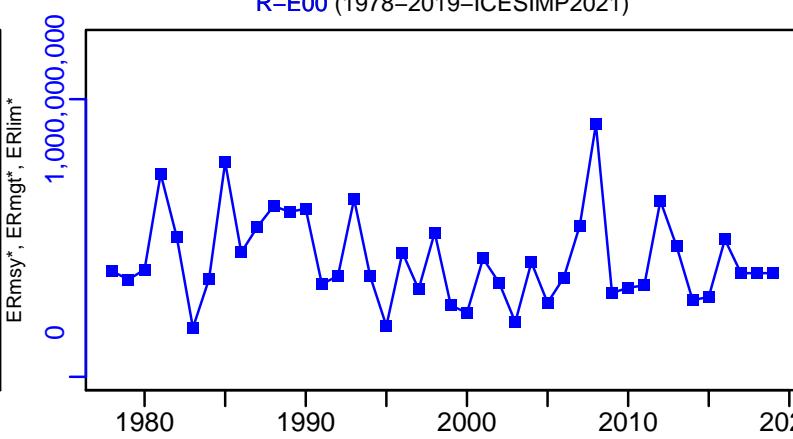
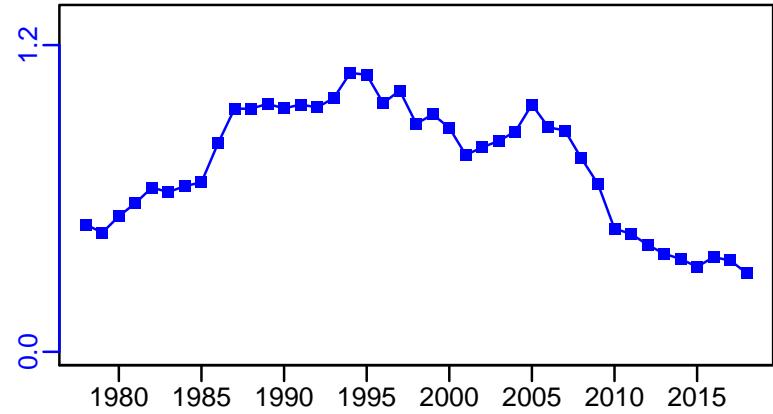
F<sub>msy</sub>-1/yr, F<sub>mt</sub>-1/yr, F<sub>lim</sub>\*



ER-calc-ratio (1978–2019–ICESIMP2021)

R-E00 (1978–2019–ICESIMP2021)

REC-EST\*

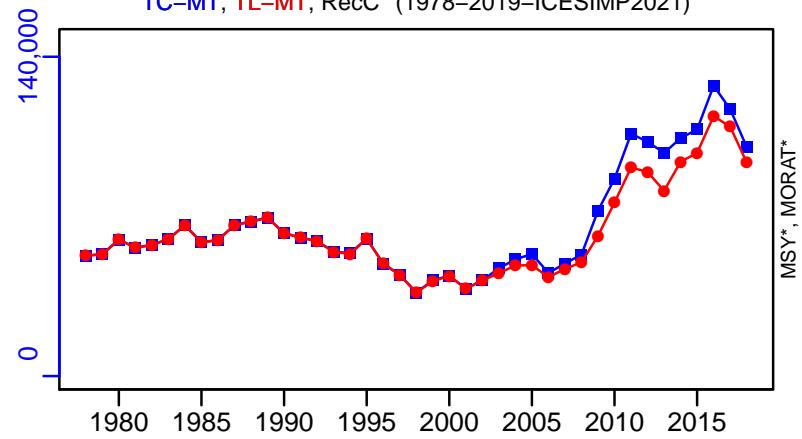


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | ··· Lim BRP  | * No Data |

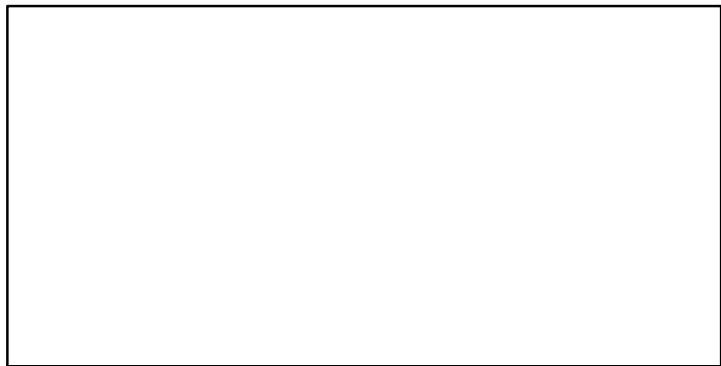
Hake ICES 3a–4–6–7–8abd [HAKENRTN]

TC-MT, TL-MT, RecC\* (1978–2019–ICESIMP2021)

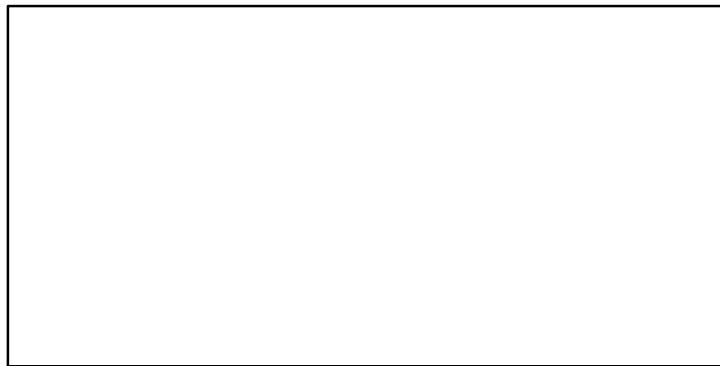
TAC\*, Cpair\*, Cadv\*



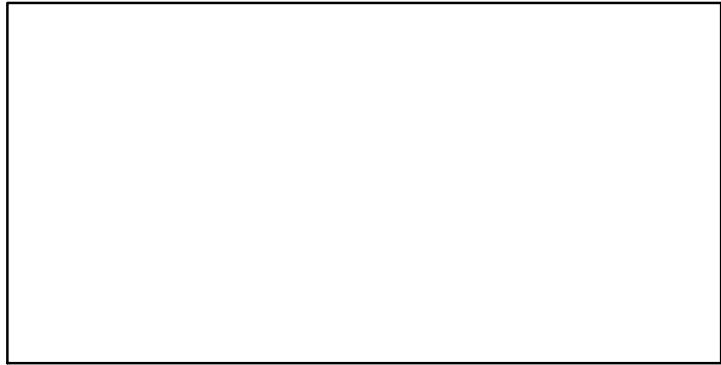
survB\*



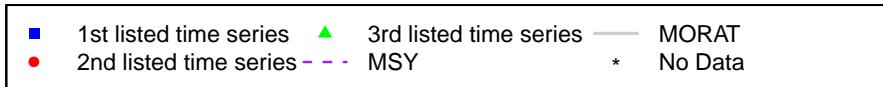
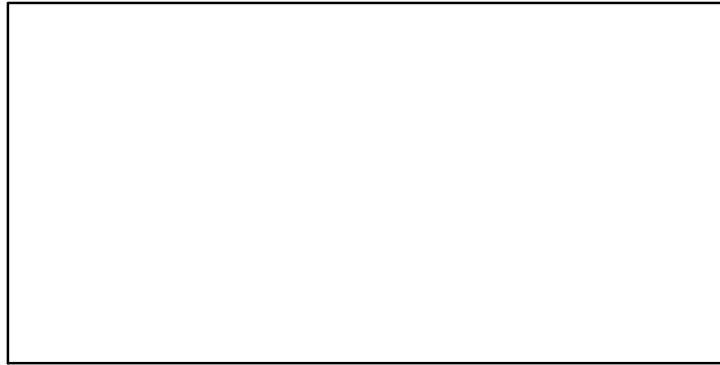
CPUE\*



EFFORT\*



CdivMSY\*



## Hake ICES 8c-9a [HAKESOTH]

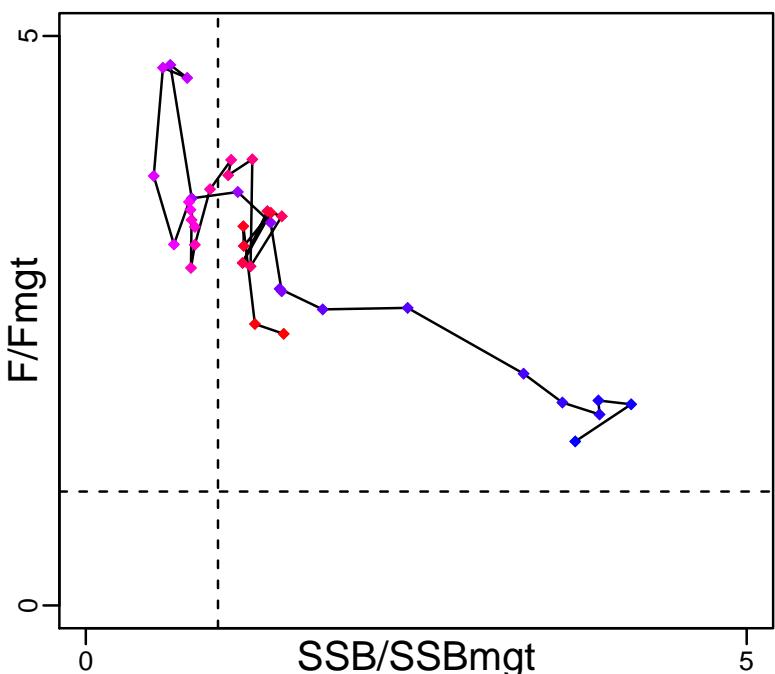
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Merluccius merluccius  |
| <b>Current Assess ID</b>    | WGBIE-HAKESOTH-1982-2019-ICESIMP2021                                 |
| <b>Area</b>                 | ICES 8c-9a   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                 |
| <b>Assessor</b>             | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion |
| <b>Asmts in RAM</b>         | 2014, 2015, 2016, 2017, 2018, 2019, 2011, 2013                       |

| Reference Points |           |           |        |
|------------------|-----------|-----------|--------|
| Type             | ID        | Asmt Year | Value  |
| <b>TBmsy</b>     | -         | -         | -      |
| <b>SSBmsy</b>    | -         | -         | -      |
| <b>Fmsy</b>      | Fmsy-1/yr | 2018      | 0.25   |
| <b>ERmsy</b>     | -         | -         | -      |
| <b>TBmgt</b>     | -         | -         | -      |
| <b>SSBmgt</b>    | SSBmgt-MT | 2019      | 11,100 |
| <b>Fmgt</b>      | Fmgt-1/yr | 2019      | 0.25   |
| <b>ERmgt</b>     | -         | -         | -      |
| <b>TB0</b>       | -         | -         | -      |
| <b>SSB0</b>      | -         | -         | -      |
| <b>MSY</b>       | -         | -         | -      |
| <b>M</b>         | -         | -         | -      |
| <b>TBlim</b>     | -         | -         | -      |
| <b>SSBlim</b>    | SSBlim-MT | 2018      | 8000   |
| <b>Flim</b>      | Flim-1/yr | 2018      | 1.05   |
| <b>ERlim</b>     | -         | -         | -      |

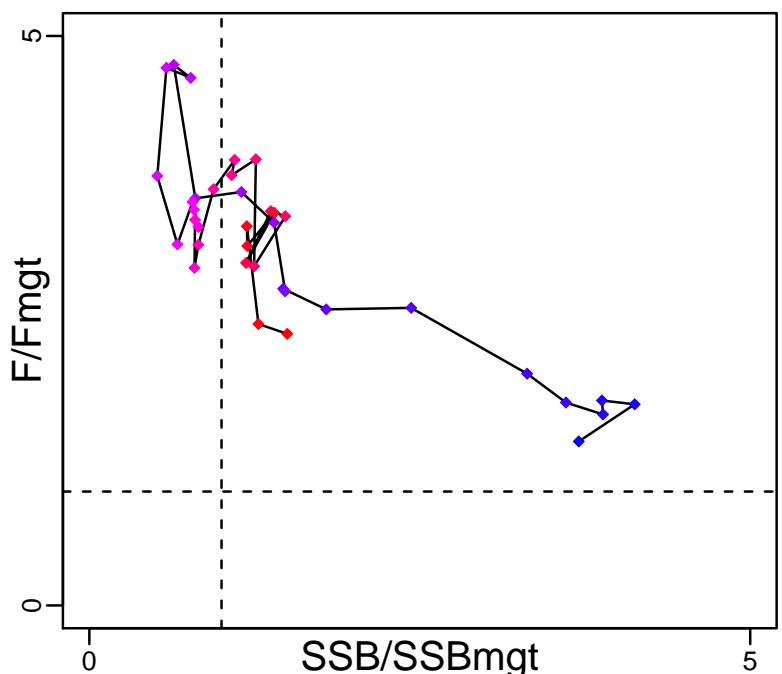
| Time Series       |                  |           |            |     |        |  |
|-------------------|------------------|-----------|------------|-----|--------|--|
| Type              | ID               | Asmt Year | Curr Value | Sex | Age    |  |
| <b>TB</b>         | TB-MT            | 2019      | 20,988     | -   | -      |  |
| <b>SSB</b>        | SSB-MT           | 2019      | 17,430     | -   | -      |  |
| <b>TN</b>         | -                | -         | -          | -   | -      |  |
| <b>R</b>          | R-E00            | 2019      | 78,619,505 | -   | 0      |  |
| <b>F</b>          | F-1/yr           | 2019      | 0.596      | -   | 1 to 3 |  |
| <b>ER</b>         | ER-calc-ratio    | 2019      | 0.575      | -   | -      |  |
| <b>TC</b>         | TC-MT            | 2019      | 12,065     |     |        |  |
| <b>TL</b>         | TL-MT            | 2019      | 10,123     |     |        |  |
| <b>TB/TBmsy</b>   | -                | -         | -          |     |        |  |
| <b>SSB/SSBmsy</b> | -                | -         | -          |     |        |  |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr | 2018      | 1.76       |     |        |  |
| <b>ER/ERmsy</b>   | -                | -         | -          |     |        |  |
| <b>TB/TBmgt</b>   | -                | -         | -          |     |        |  |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2019      | 1.57       |     |        |  |
| <b>F/Fmgt</b>     | F-1/yr/Fmgt-1/yr | 2019      | 2.384      |     |        |  |
| <b>ER/ERmgt</b>   | -                | -         | -          |     |        |  |

Hake ICES 8c–9a [HAKESOTH]

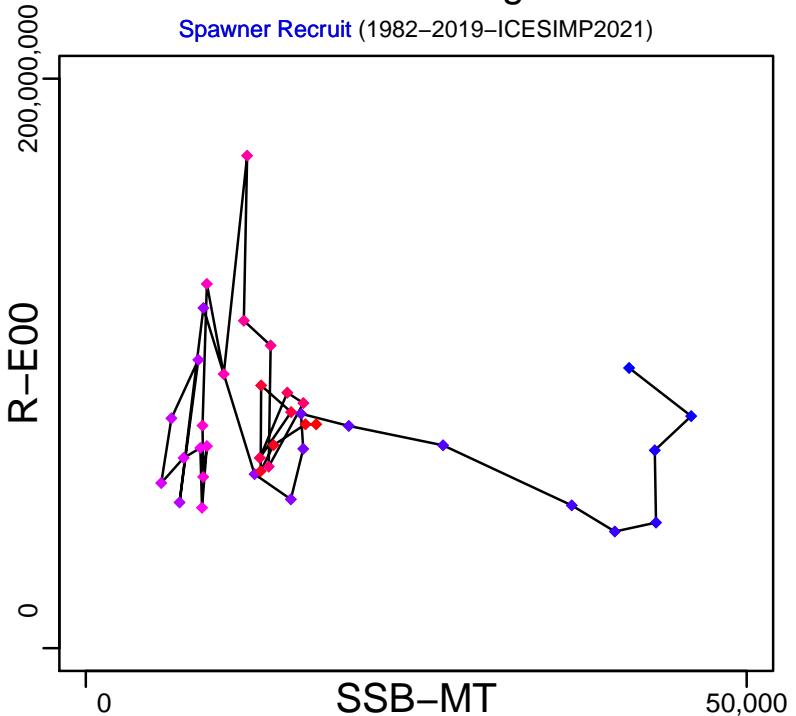
Kobe MSYpref (1982–2019–ICESIMP2021)



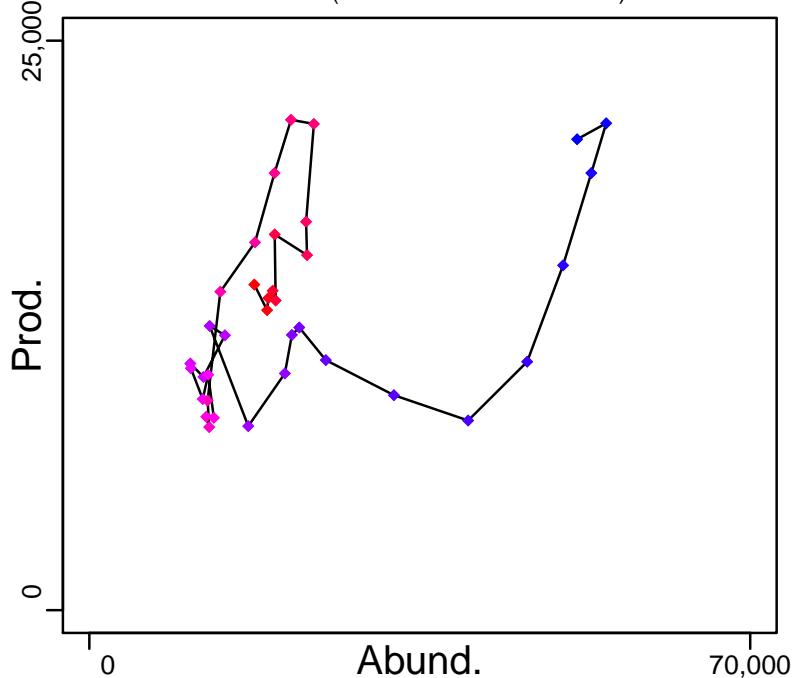
Kobe MGTpref (1982–2019–ICESIMP2021)



Spawner Recruit (1982–2019–ICESIMP2021)



Production (1982–2019–ICESIMP2021)

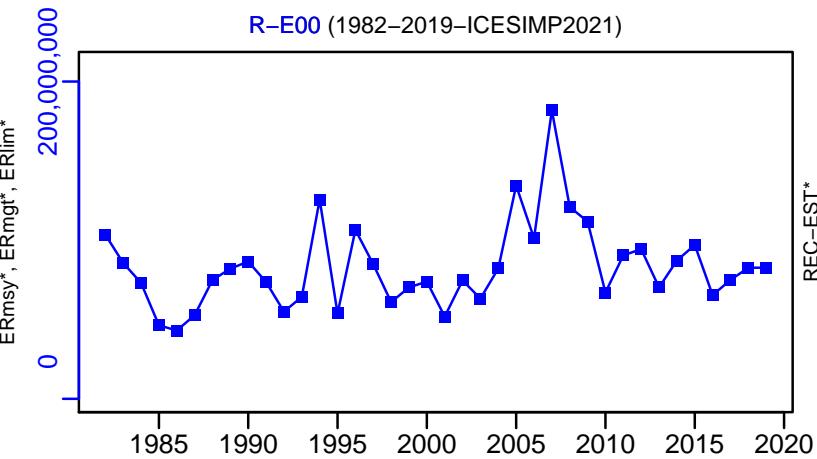
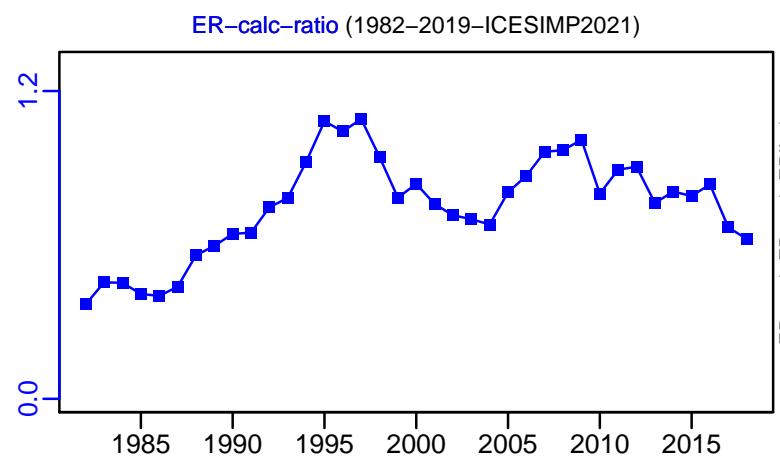
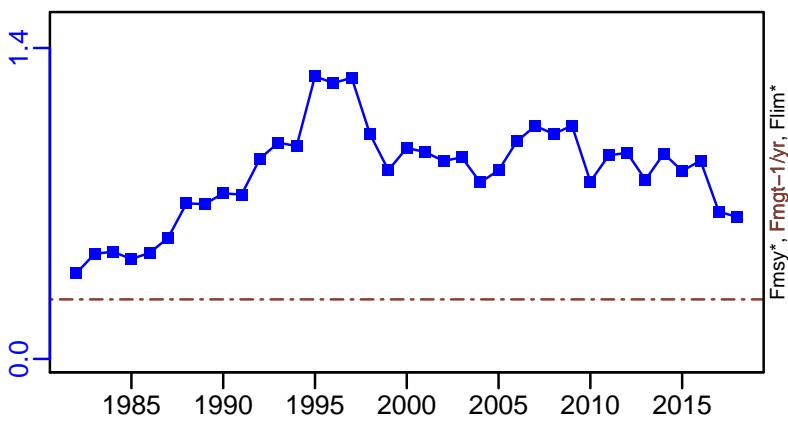
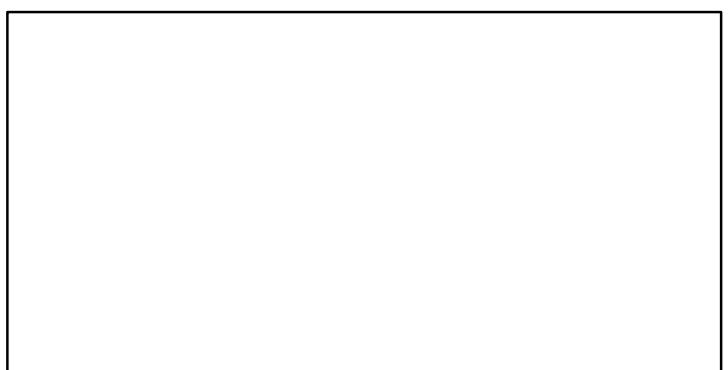
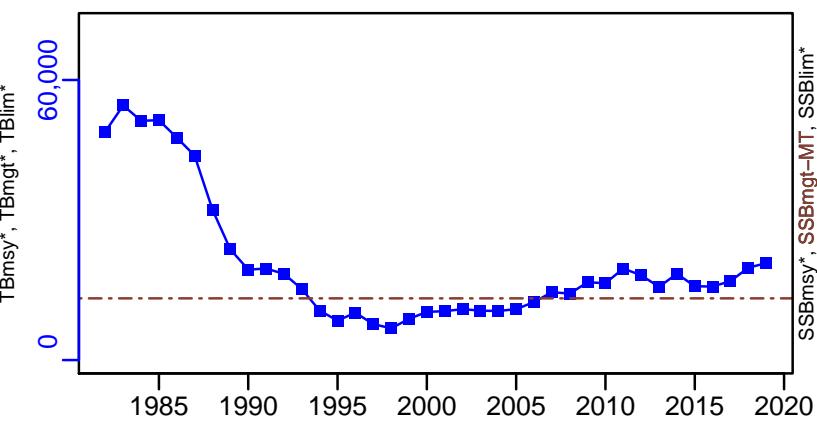
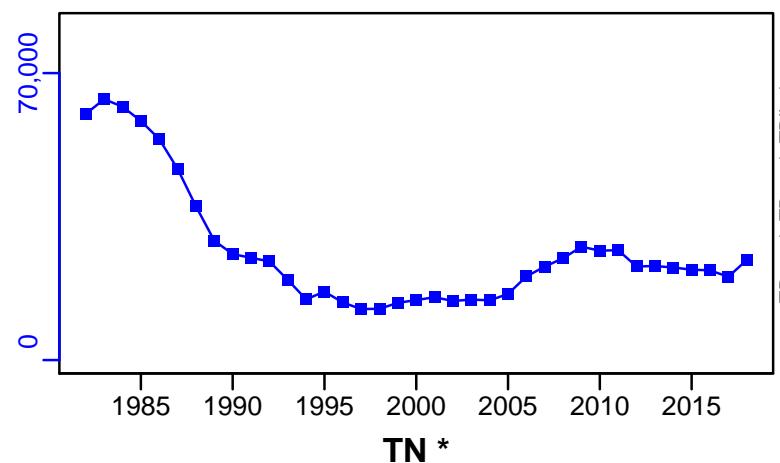


◆ Start Year ◆ End Year \* No Data

Hake ICES 8c–9a [HAKESOTH]

TB-MT (1982–2019–ICESIMP2021)

SSB-MT (1982–2019–ICESIMP2021)

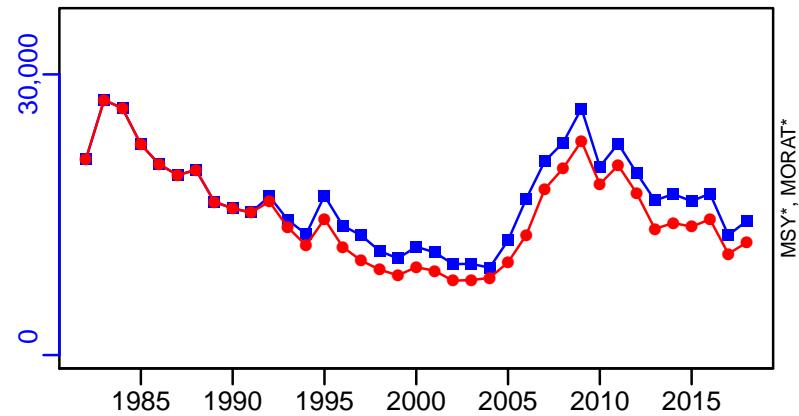


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - MSY-based BRP      | --- Lim BRP  | * No Data |

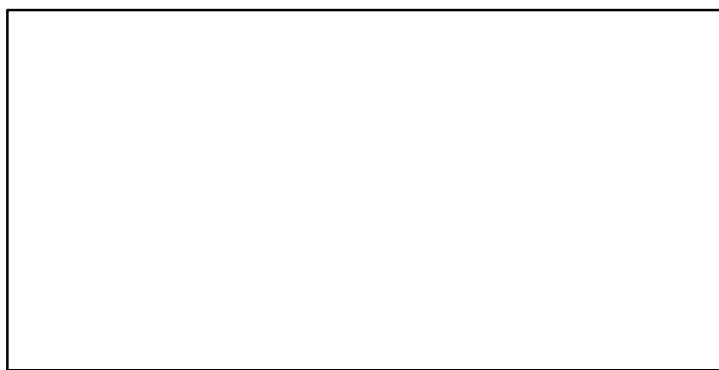
Hake ICES 8c–9a [HAKESOTH]

TC-MT, TL-MT, RecC\* (1982–2019–ICESIMP2021)

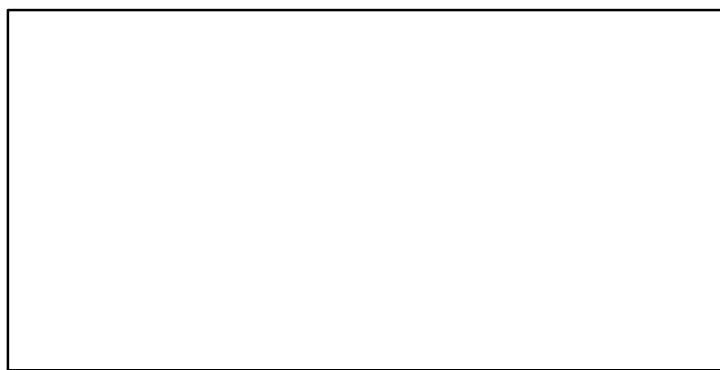
TAC\*, Cpair\*, Cadv\*



survB\*



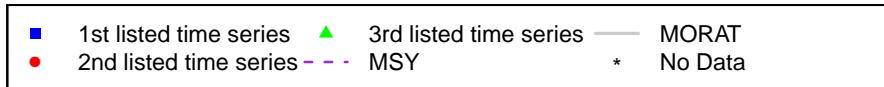
CPUE\*



EFFORT\*



CdivMSY\*



## Herring ICES 22-24-3a [HERR2224IIIa]

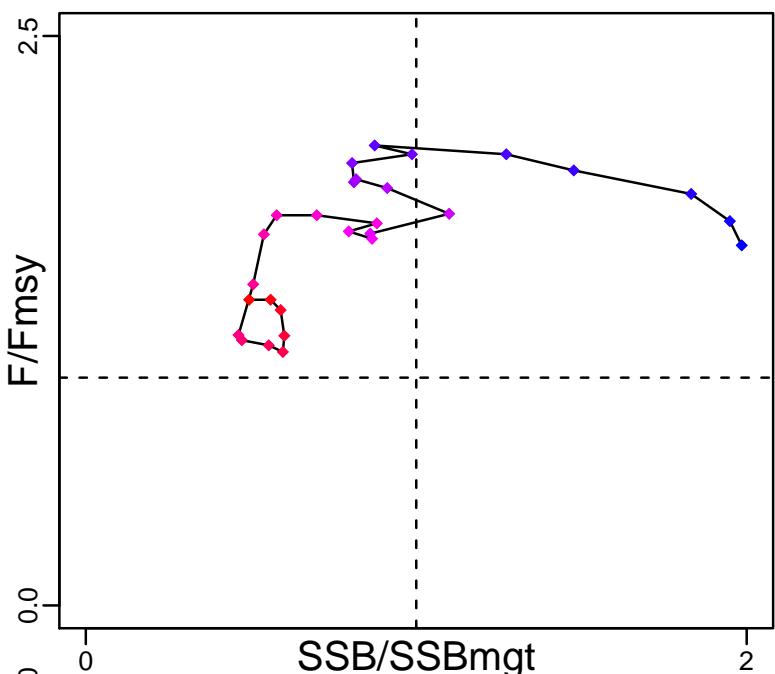
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Clupea harengus  |
| <b>Current Assess ID</b>    | HAWG-HERR2224IIIa-1991-2019-ICESIMP2021                    |
| <b>Area</b>                 | ICES 22-24-3a  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea       |
| <b>Assessor</b>             | Herring Assessment Working Group for the Area South of 62N |
| <b>Asmts in RAM</b>         | 2011, 2013, 2014, 2015, 2016, 2017, 2018, 2019             |

| Reference Points |           |           |         |
|------------------|-----------|-----------|---------|
| Type             | ID        | Asmt Year | Value   |
| <b>TBmsy</b>     | TBmsy-MT  | 2011      | 110,000 |
| <b>SSBmsy</b>    | -         | -         | -       |
| <b>Fmsy</b>      | Fmsy-1/yr | 2019      | 0.31    |
| <b>ERmsy</b>     | -         | -         | -       |
| <b>TBmgt</b>     | -         | -         | -       |
| <b>SSBmgt</b>    | SSBmgt-MT | 2019      | 150,000 |
| <b>Fmgt</b>      | Fmgt-1/yr | 2019      | 0.31    |
| <b>ERmgt</b>     | -         | -         | -       |
| <b>TB0</b>       | -         | -         | -       |
| <b>SSB0</b>      | -         | -         | -       |
| <b>MSY</b>       | -         | -         | -       |
| <b>M</b>         | -         | -         | -       |
| <b>TBlim</b>     | -         | -         | -       |
| <b>SSBlim</b>    | SSBlim-MT | 2018      | 120,000 |
| <b>Flim</b>      | Flim-1/yr | 2018      | 0.45    |
| <b>ERlim</b>     | -         | -         | -       |

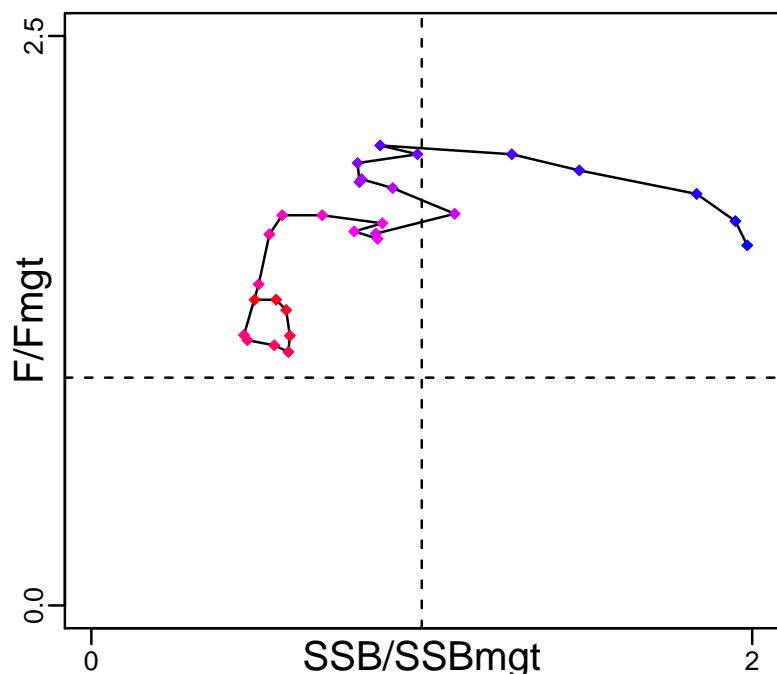
| Time Series       |                  |           |               |     |        |
|-------------------|------------------|-----------|---------------|-----|--------|
| Type              | ID               | Asmt Year | Curr Value    | Sex | Age    |
| <b>TB</b>         | TB-MT            | 2019      | 114,957       | -   | -      |
| <b>SSB</b>        | SSB-MT           | 2019      | 69,743        | -   | -      |
| <b>TN</b>         | -                | -         | -             | -   | -      |
| <b>R</b>          | R-E00            | 2019      | 1,223,484,000 | -   | 0      |
| <b>F</b>          | F-1/yr           | 2019      | 0.416         | -   | 3 to 6 |
| <b>ER</b>         | ER-calc-ratio    | 2019      | 0.357         | -   | -      |
| <b>TC</b>         | TC-MT            | 2019      | 41,058        |     |        |
| <b>TL</b>         | TL-MT            | 2019      | 41,058        |     |        |
| <b>TB/TBmsy</b>   | TB-MT/TBmsy-MT   | 2011      | 1.491         |     |        |
| <b>SSB/SSBmsy</b> | -                | -         | -             |     |        |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr | 2019      | 1.342         |     |        |
| <b>ER/ERmsy</b>   | -                | -         | -             |     |        |
| <b>TB/TBmgt</b>   | -                | -         | -             |     |        |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2019      | 0.465         |     |        |
| <b>F/Fmgt</b>     | F-1/yr/Fmgt-1/yr | 2019      | 1.342         |     |        |
| <b>ER/ERmgt</b>   | -                | -         | -             |     |        |

Herring ICES 22–24–3a [HERR2224IIla]

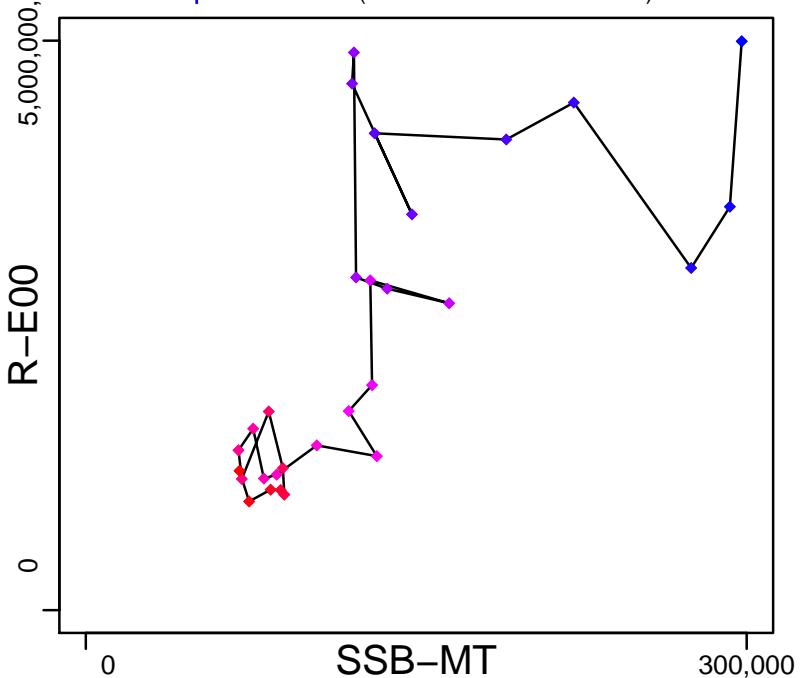
Kobe MSYpref (1991–2019–ICESIMP2021)



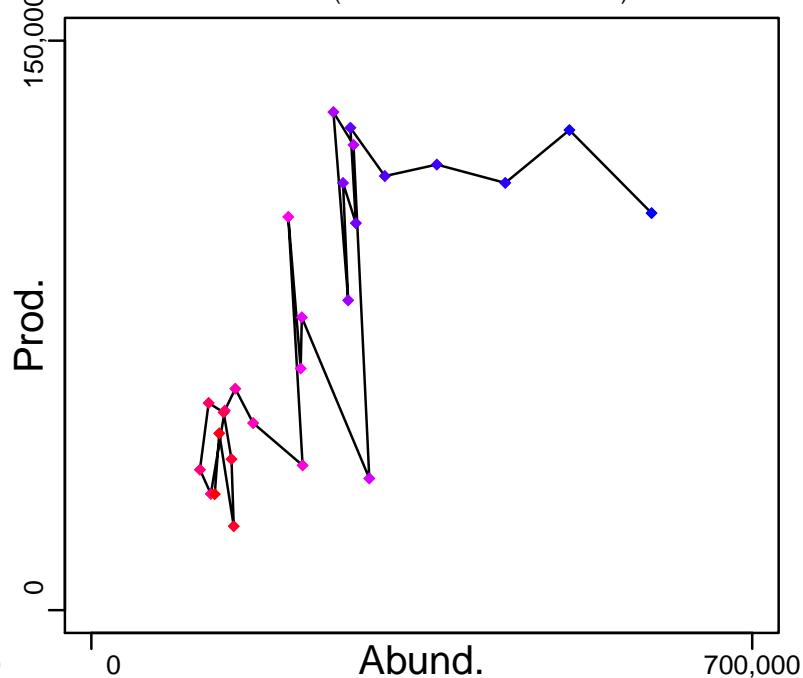
Kobe MGTpref (1991–2019–ICESIMP2021)



Spawner Recruit (1991–2019–ICESIMP2021)



Production (1991–2019–ICESIMP2021)

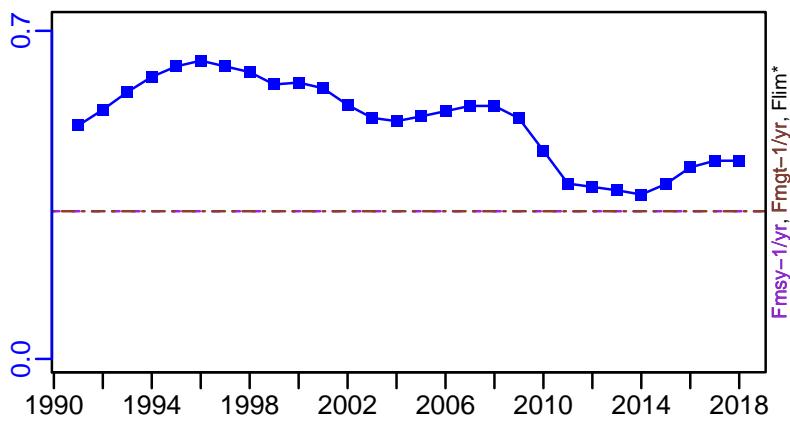
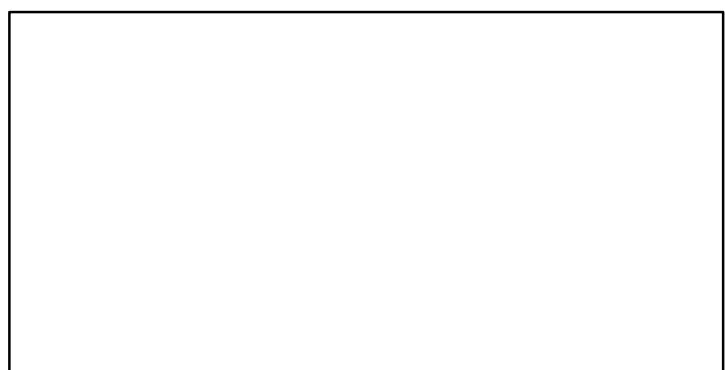
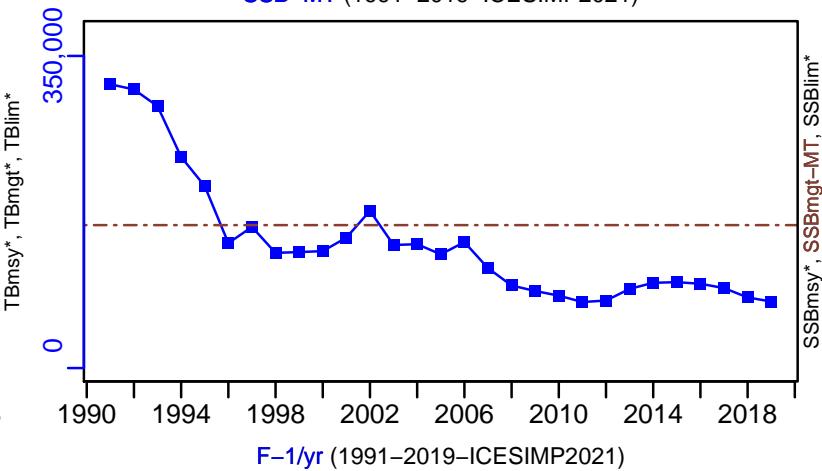
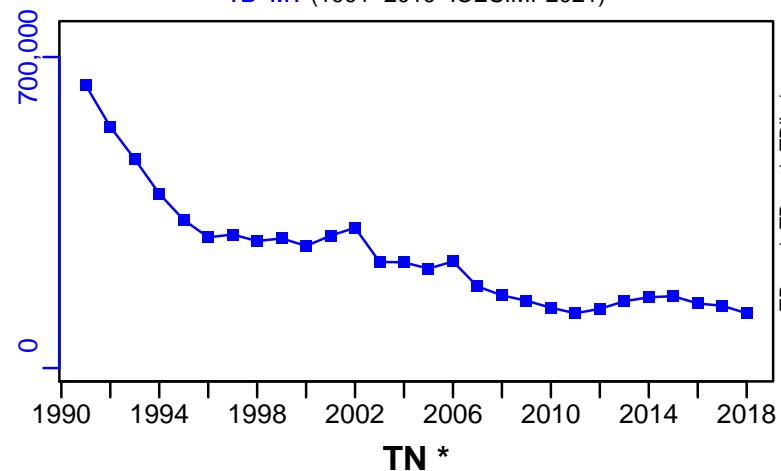


◆ Start Year   ◆ End Year   \* No Data

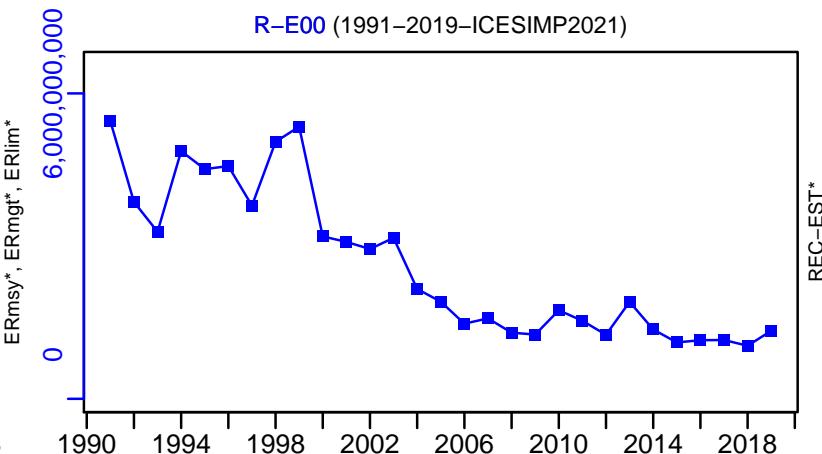
Herring ICES 22–24–3a [HERR2224IIla]

TB-MT (1991–2019–ICESIMP2021)

SSB-MT (1991–2019–ICESIMP2021)



ER-calc-ratio (1991–2019–ICESIMP2021)

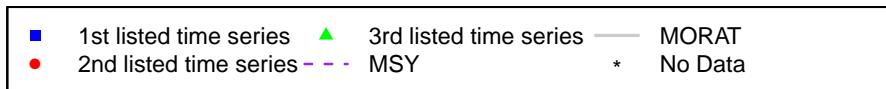
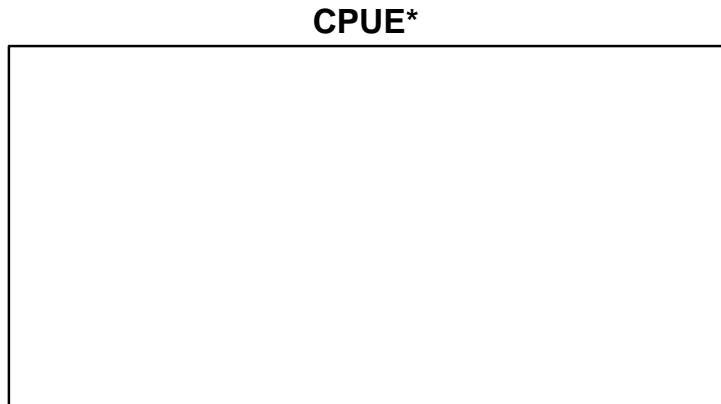
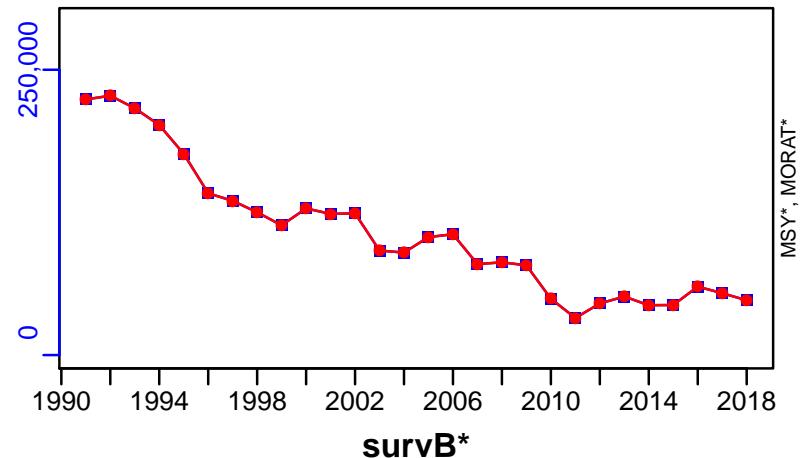


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | --- Lim BRP  | * No Data |

Herring ICES 22–24–3a [HERR2224IIla]

TC-MT, TL-MT, RecC\* (1991–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



## Herring Subdivisions 25-29 and 32 [HERR2529-32]

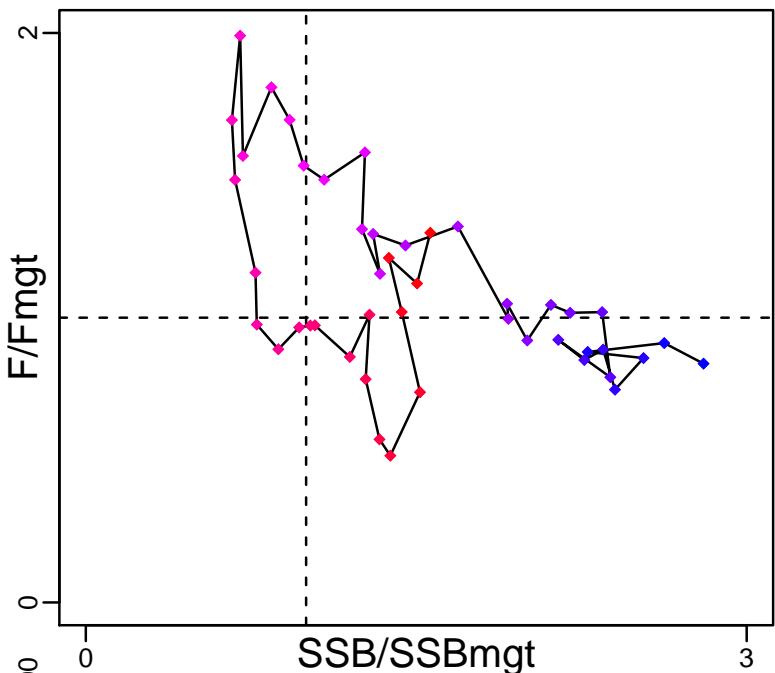
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Clupea harengus                                      |
| <b>Current Assess ID</b>    | WGBFAS-HERR2529-32-1973-2019-ICESIMP2021             |
| <b>Area</b>                 | Subdivisions 25-29 and 32                            |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Baltic Fisheries Assessment Working Group            |
| <b>Asmts in RAM</b>         | 2013, 2014, 2015, 2016, 2017, 2018, 2019             |

| Reference Points |           |           |                 |
|------------------|-----------|-----------|-----------------|
| Type             | ID        | Asmt Year | Value           |
| <b>TBmsy</b>     | -         | -         | -               |
| <b>SSBmsy</b>    | -         | -         | -               |
| <b>Fmsy</b>      | Fmsy-1/yr | 2018      | 0.22            |
| <b>ERmsy</b>     | -         | -         | -               |
| <b>TBmgt</b>     | -         | -         | -               |
| <b>SSBmgt</b>    | SSBmgt-MT | 2019      | $6 \times 10^5$ |
| <b>Fmgt</b>      | Fmgt-1/yr | 2019      | 0.22            |
| <b>ERmgt</b>     | -         | -         | -               |
| <b>TB0</b>       | -         | -         | -               |
| <b>SSB0</b>      | -         | -         | -               |
| <b>MSY</b>       | -         | -         | -               |
| <b>M</b>         | -         | -         | -               |
| <b>TBlim</b>     | -         | -         | -               |
| <b>SSBlim</b>    | SSBlim-MT | 2018      | 430,000         |
| <b>Flim</b>      | Flim-1/yr | 2018      | 0.52            |
| <b>ERlim</b>     | -         | -         | -               |

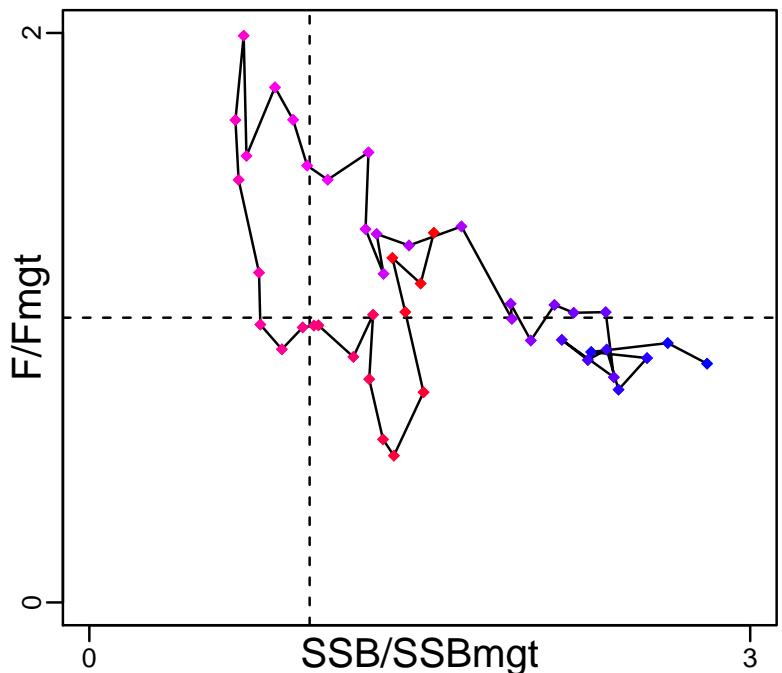
| Time Series       |                  |           |                       |     |        |  |
|-------------------|------------------|-----------|-----------------------|-----|--------|--|
| Type              | ID               | Asmt Year | Curr Value            | Sex | Age    |  |
| <b>TB</b>         | TB-MT            | 2019      | 1,379,633             | -   | -      |  |
| <b>SSB</b>        | SSB-MT           | 2019      | 844,663               | -   | -      |  |
| <b>TN</b>         | -                | -         | -                     | -   | -      |  |
| <b>R</b>          | R-E00            | 2019      | $1.14 \times 10^{10}$ | -   | 1      |  |
| <b>F</b>          | F-1/yr           | 2019      | 0.286                 | -   | 3 to 6 |  |
| <b>ER</b>         | ER-calc-ratio    | 2019      | 0.177                 | -   | -      |  |
| <b>TC</b>         | TC-MT            | 2019      | 244,365               |     |        |  |
| <b>TL</b>         | TL-MT            | 2019      | 244,365               |     |        |  |
| <b>TB/TBmsy</b>   | -                | -         | -                     |     |        |  |
| <b>SSB/SSBmsy</b> | -                | -         | -                     |     |        |  |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr | 2018      | 1.255                 |     |        |  |
| <b>ER/ERmsy</b>   | -                | -         | -                     |     |        |  |
| <b>TB/TBmgt</b>   | -                | -         | -                     |     |        |  |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2019      | 1.408                 |     |        |  |
| <b>F/Fmgt</b>     | F-1/yr/Fmgt-1/yr | 2019      | 1.298                 |     |        |  |
| <b>ER/ERmgt</b>   | -                | -         | -                     |     |        |  |

Herring Subdivisions 25–29 and 32 [HERR2529–32]

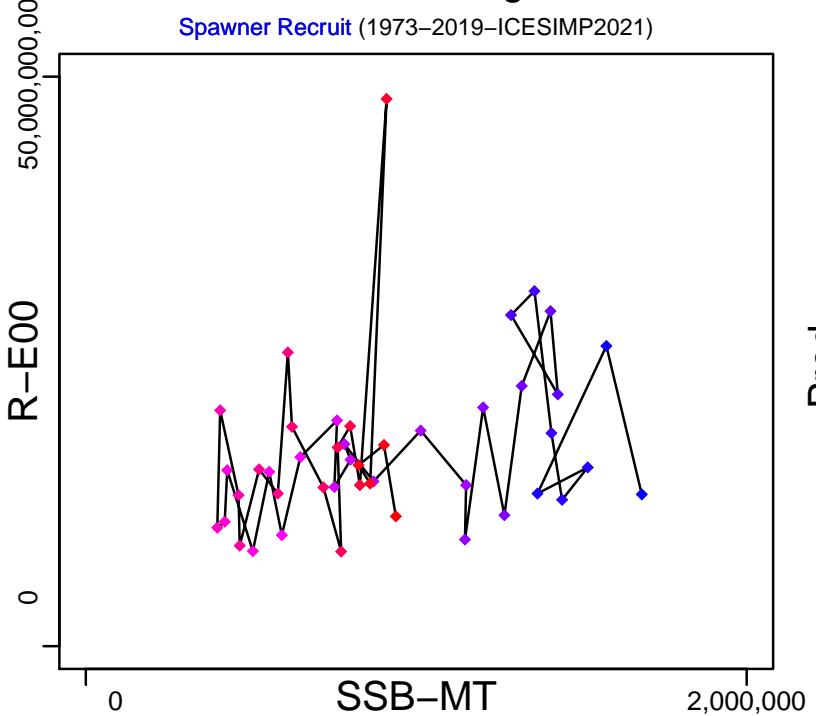
Kobe MSYpref (1973–2019–ICESIMP2021)



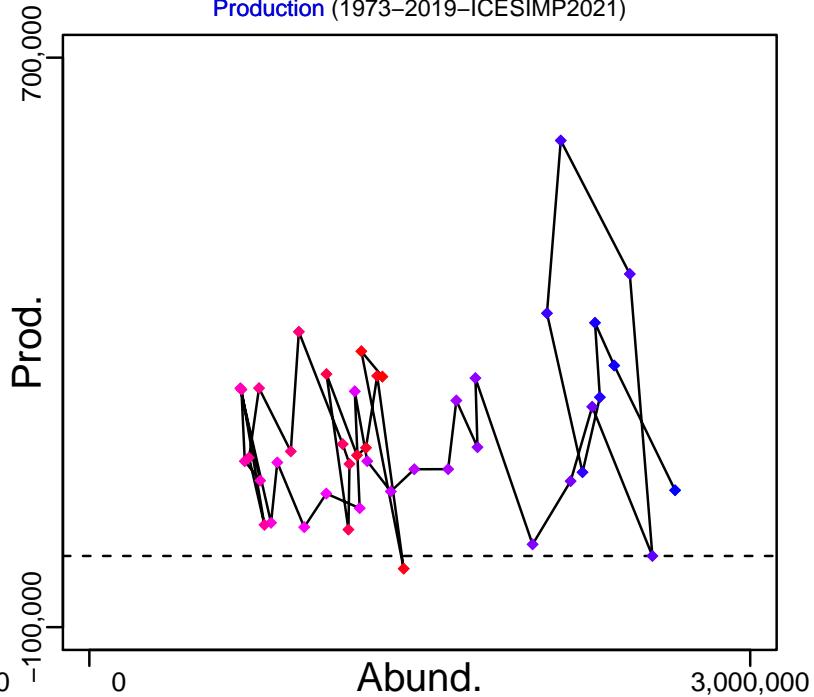
Kobe MGTpref (1973–2019–ICESIMP2021)



Spawner Recruit (1973–2019–ICESIMP2021)



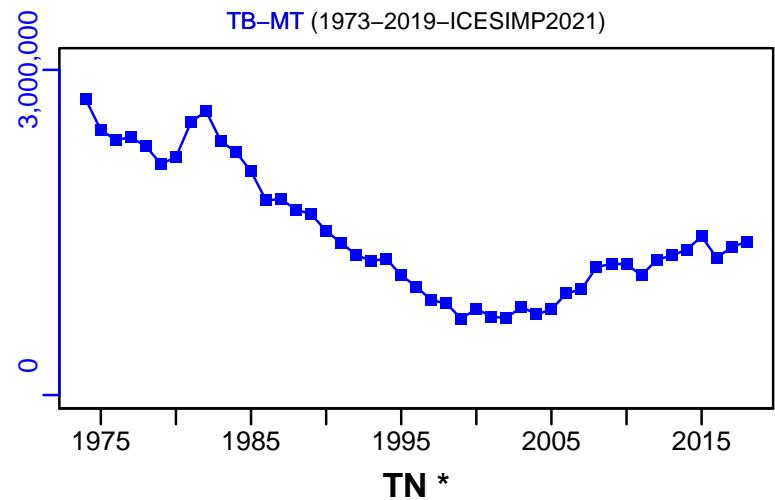
Production (1973–2019–ICESIMP2021)



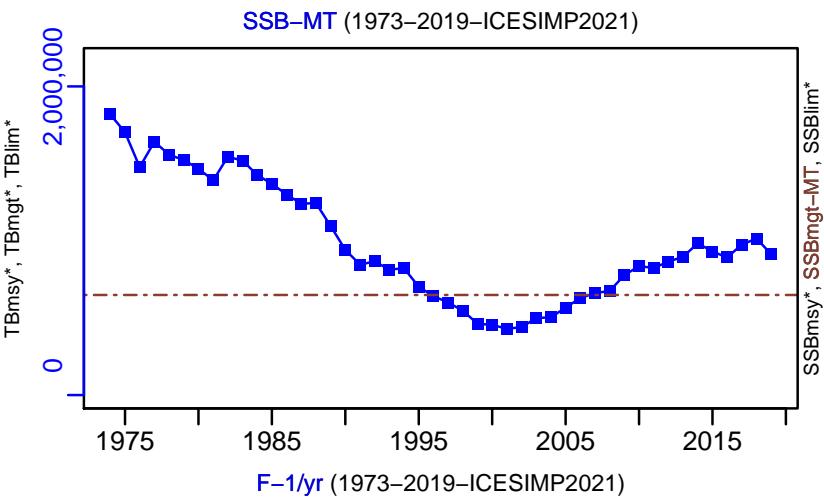
◆ Start Year   ◆ End Year   \* No Data

Herring Subdivisions 25–29 and 32 [HERR2529–32]

TB-MT (1973–2019–ICESIMP2021)



SSB-MT (1973–2019–ICESIMP2021)



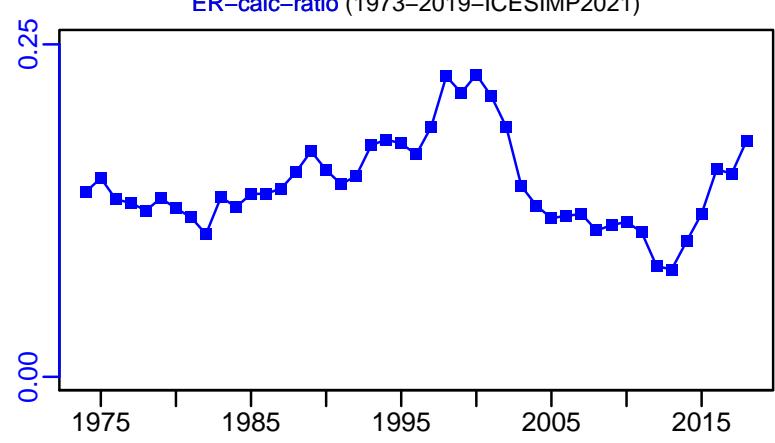
TN \*

TB<sub>msy</sub>\* , TB<sub>mgf</sub>\* , TB<sub>lim</sub>\*

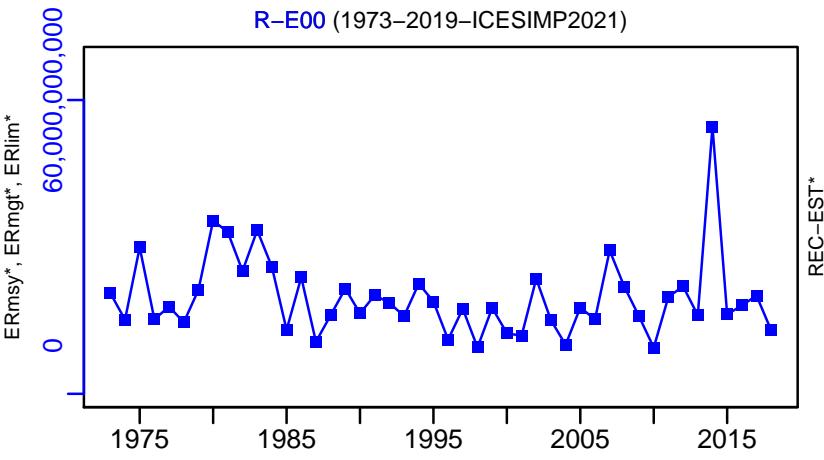
F-1/yr (1973–2019–ICESIMP2021)

F<sub>msy</sub>\* , F<sub>mgf</sub>-1/yr , F<sub>lim</sub>\*

ER-calc-ratio (1973–2019–ICESIMP2021)



R-E00 (1973–2019–ICESIMP2021)



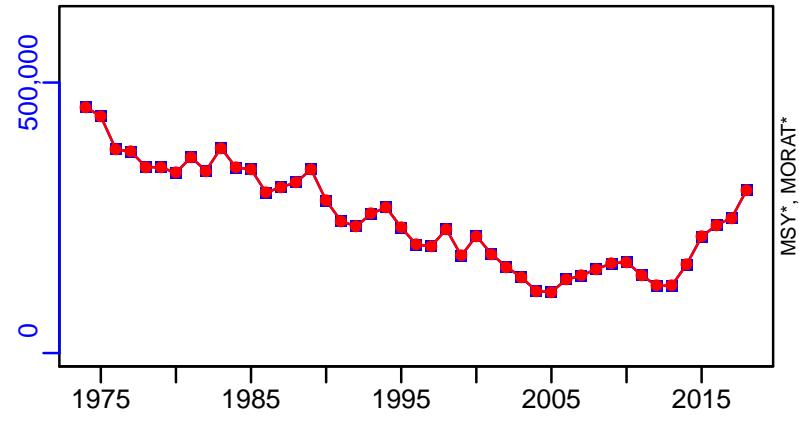
REC-EST\*

- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | ··· Lim BRP  | * No Data |

Herring Subdivisions 25–29 and 32 [HERR2529–32]

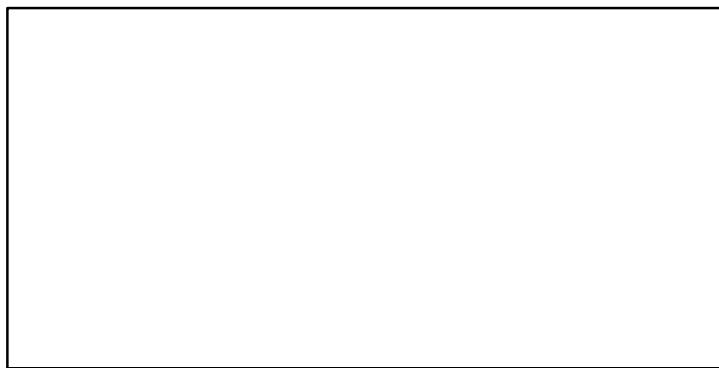
TC-MT, TL-MT, RecC\* (1973–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*

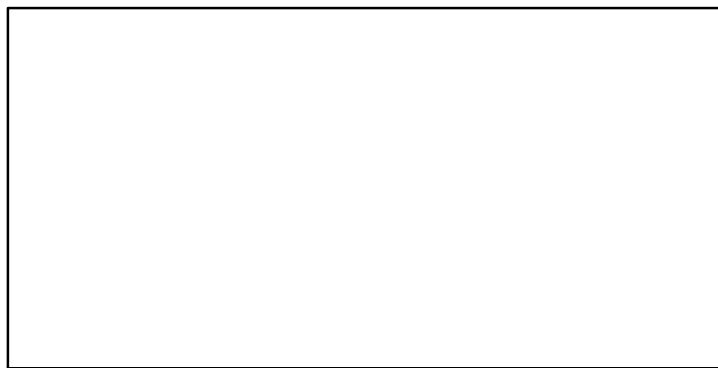


survB\*

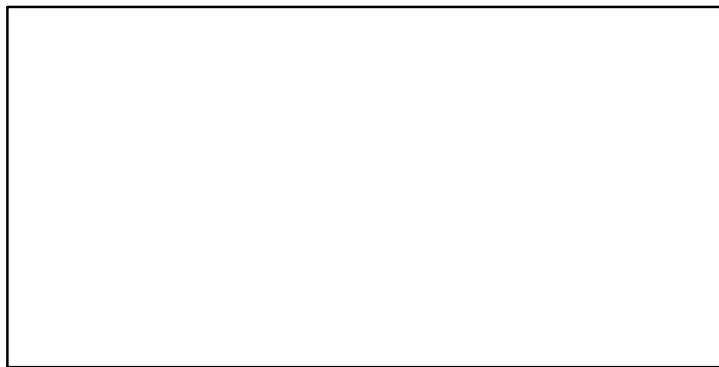
MSY\*, MORAT\*



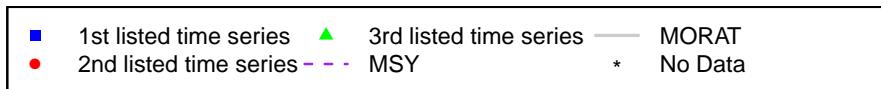
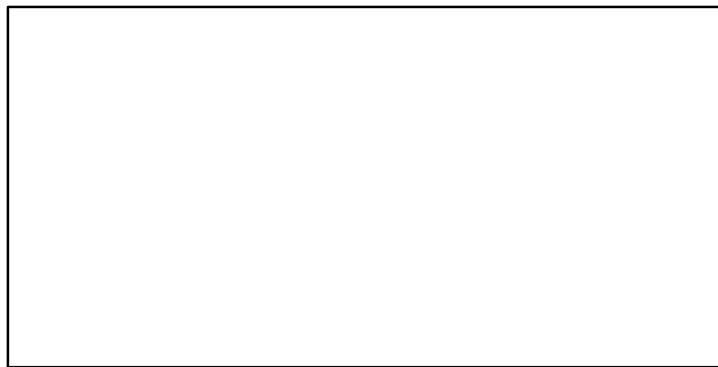
CPUE\*



EFFORT\*



CdivMSY\*



## Herring Subdivisions 30-31 [HERR30-31]

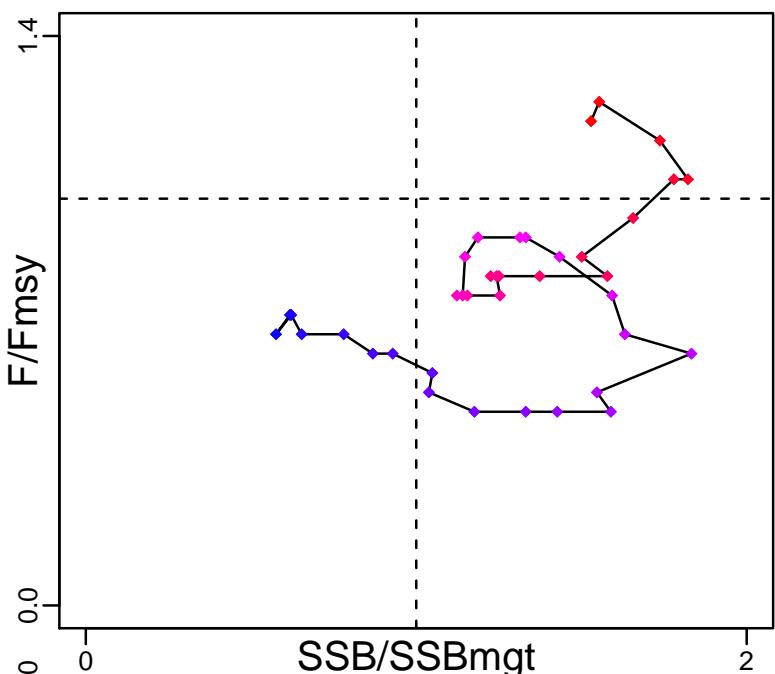
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Clupea harengus                                      |
| <b>Current Assess ID</b>    | WGBFAS-HERR30-31-1979-2018-ICESIMP2021               |
| <b>Area</b>                 | Subdivisions 30-31                                   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Baltic Fisheries Assessment Working Group            |
| <b>Asmts in RAM</b>         | 2017, 2018, 2018                                     |

| Reference Points |           |           |         |
|------------------|-----------|-----------|---------|
| Type             | ID        | Asmt Year | Value   |
| <b>TBmsy</b>     | -         | -         | -       |
| <b>SSBmsy</b>    | -         | -         | -       |
| <b>Fmsy</b>      | Fmsy-1/yr | 2018      | 0.21    |
| <b>ERmsy</b>     | -         | -         | -       |
| <b>TBmgt</b>     | -         | -         | -       |
| <b>SSBmgt</b>    | SSBmgt-MT | 2018      | 283,180 |
| <b>Fmgt</b>      | Fmgt-1/yr | 2018      | 0.21    |
| <b>ERmgt</b>     | -         | -         | -       |
| <b>TB0</b>       | -         | -         | -       |
| <b>SSB0</b>      | -         | -         | -       |
| <b>MSY</b>       | -         | -         | -       |
| <b>M</b>         | -         | -         | -       |
| <b>TBlim</b>     | -         | -         | -       |
| <b>SSBlim</b>    | SSBlim-MT | 2018      | 202,272 |
| <b>Flim</b>      | Flim-1/yr | 2018      | 0.29    |
| <b>ERlim</b>     | -         | -         | -       |

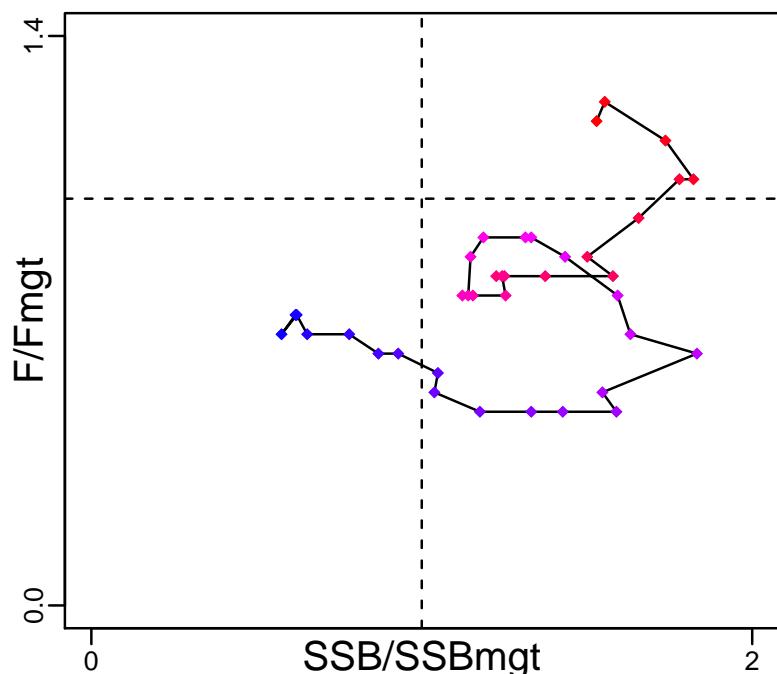
| Time Series       |                  |           |                    |      |        |  |
|-------------------|------------------|-----------|--------------------|------|--------|--|
| Type              | ID               | Asmt Year | Curr Value         | Sex  | Age    |  |
| <b>TB</b>         | TB-relative      | 2018      | 0.892              | -    | -      |  |
| <b>SSB</b>        | SSB-MT           | 2018      | 422,000            | Both | -      |  |
| <b>TN</b>         | -                | -         | -                  | -    | -      |  |
| <b>R</b>          | R-E00            | 2018      | $4.61 \times 10^9$ | -    | 1      |  |
| <b>F</b>          | F-1/yr           | 2018      | 0.25               | -    | 3 to 7 |  |
| <b>ER</b>         | ER-calc-ratio    | 2017      | 0.185              | -    | -      |  |
| <b>TC</b>         | TC-MT            | 2018      | 97,366             |      |        |  |
| <b>TL</b>         | TL-MT            | 2018      | 104,000            |      |        |  |
| <b>TB/TBmsy</b>   | -                | -         | -                  |      |        |  |
| <b>SSB/SSBmsy</b> | -                | -         | -                  |      |        |  |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr | 2018      | 1.19               |      |        |  |
| <b>ER/ERmsy</b>   | -                | -         | -                  |      |        |  |
| <b>TB/TBmgt</b>   | -                | -         | -                  |      |        |  |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2018      | 1.49               |      |        |  |
| <b>F/Fmgt</b>     | F-1/yr/Fmgt-1/yr | 2018      | 1.19               |      |        |  |
| <b>ER/ERmgt</b>   | -                | -         | -                  |      |        |  |

### Herring Subdivisions 30–31 [HERR30–31]

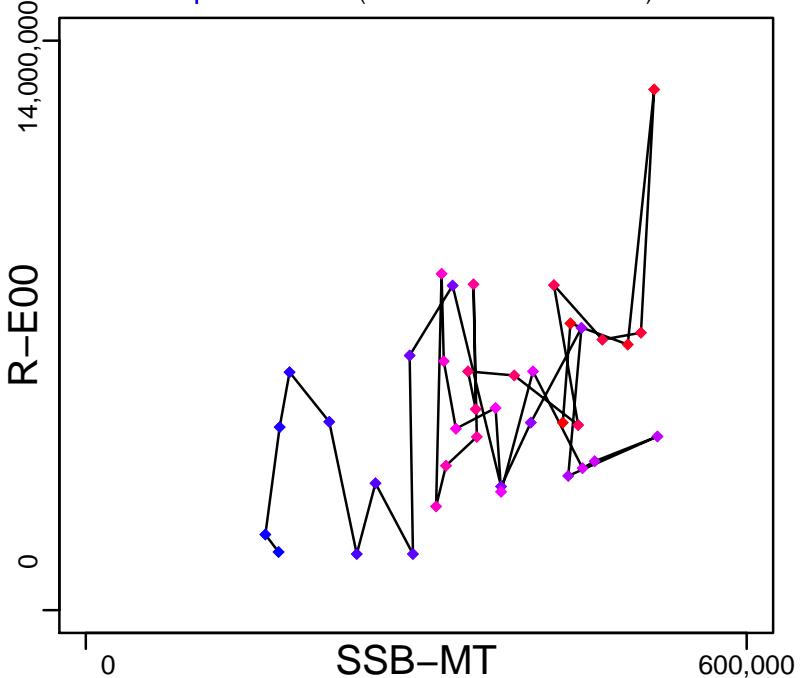
Kobe MSYpref (1979–2018–ICESIMP2018)



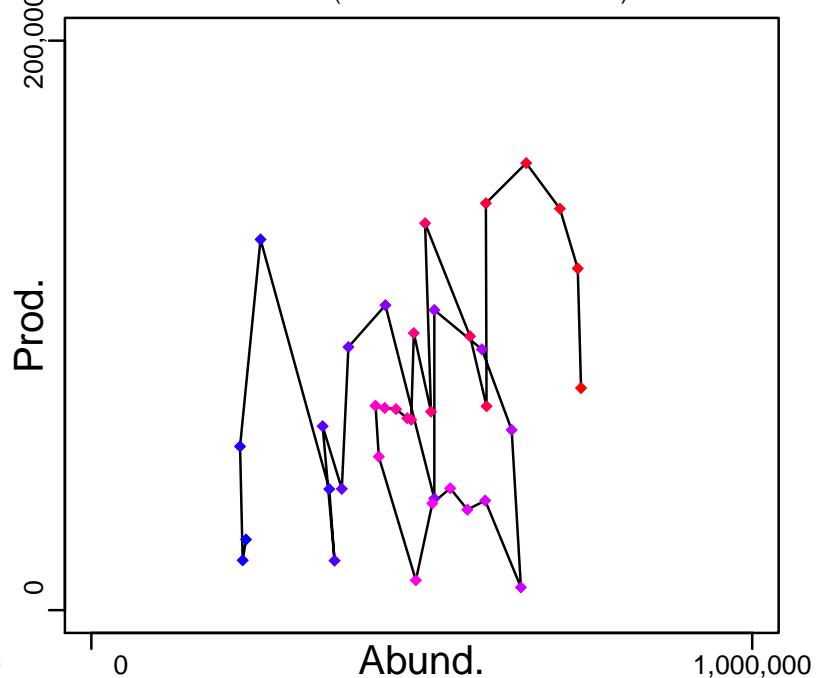
Kobe MGTpref (1979–2018–ICESIMP2018)



Spawner Recruit (1979–2018–ICESIMP2018)



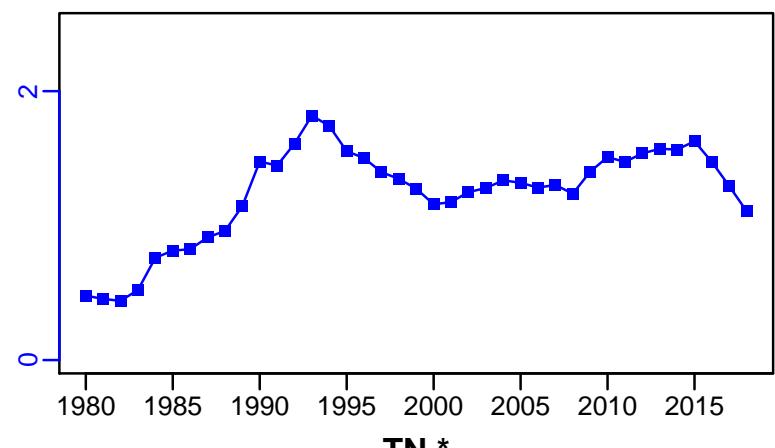
Production (1979–2017–ICESIMP2018)



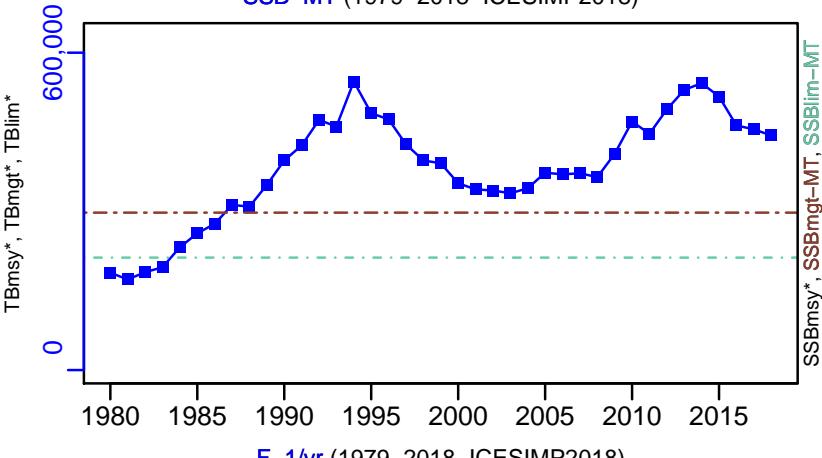
◆ Start Year   ◆ End Year   \* No Data

### Herring Subdivisions 30–31 [HERR30–31]

TB-relative (1979–2018–ICESIMP2021)



SSB-MT (1979–2018–ICESIMP2018)



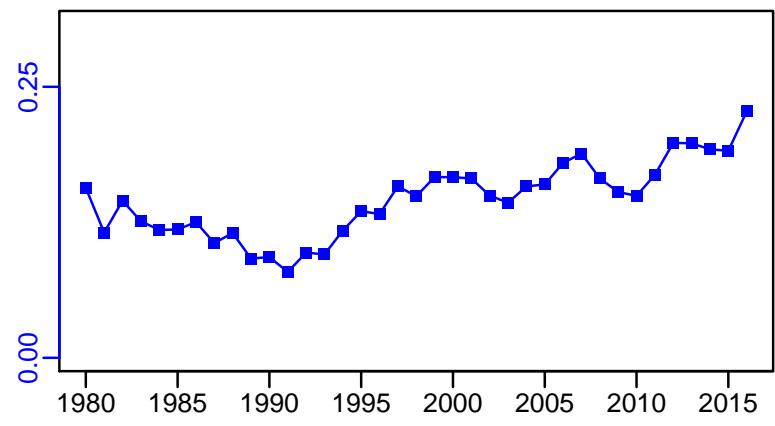
TN \*

F-1/yr (1979–2018–ICESIMP2018)

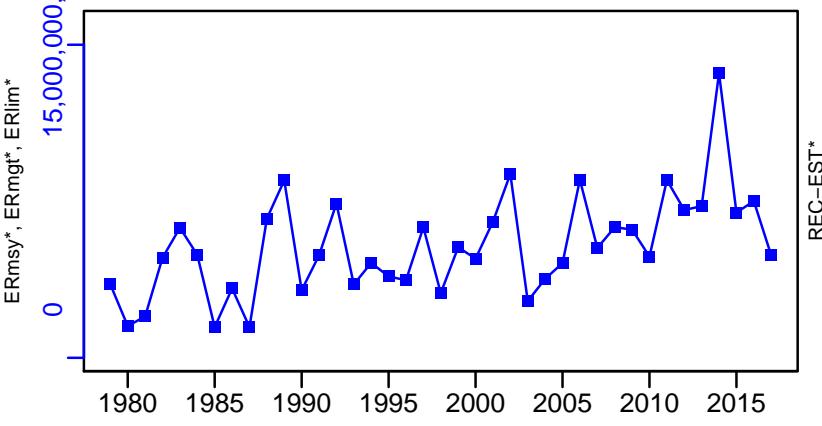
SSBmsy\*, SSBmg\*–MT, SSBlim–MT

Fmsy–1/yr, Fmgt–1/yr, Flim–1/yr

ER-calc-ratio (1979–2017–ICESIMP2018)



R-E00 (1979–2018–ICESIMP2018)



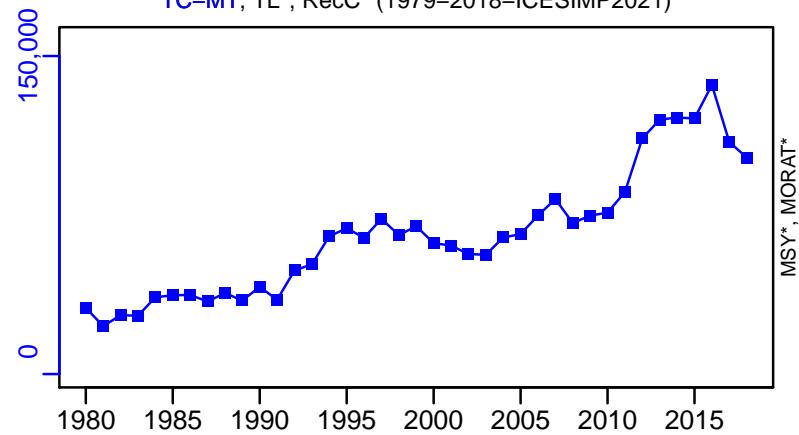
REC-EST\*

- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | - - Lim BRP  | * No Data |

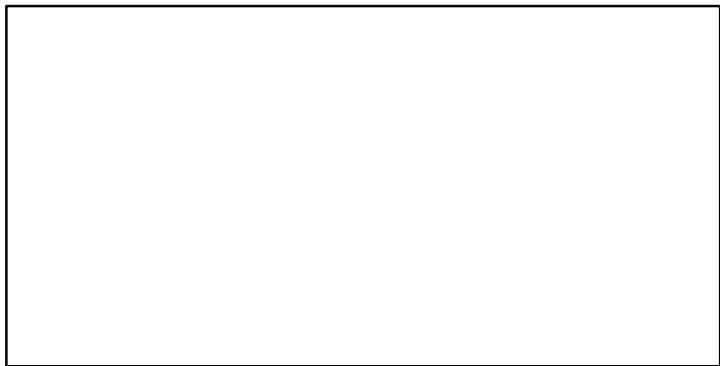
Herring Subdivisions 30–31 [HERR30–31]

TC–MT, TL\*, RecC\* (1979–2018–ICESIMP2021)

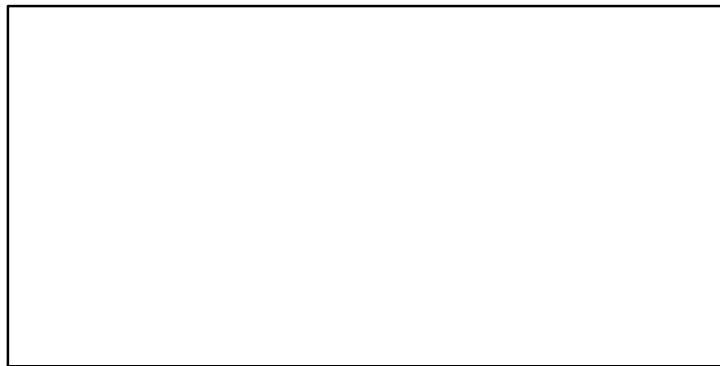
TAC\*, Cpair\*, Cadv\*



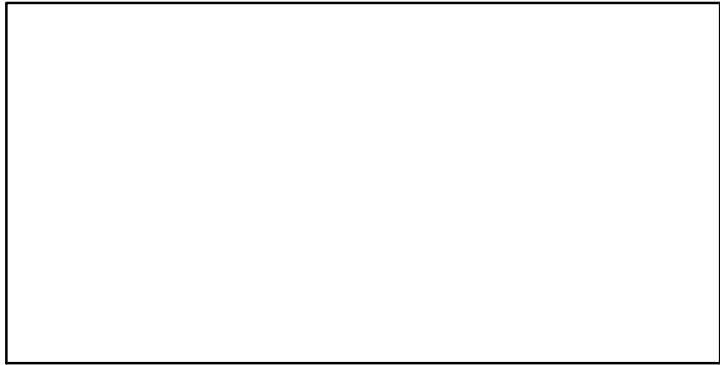
survB\*



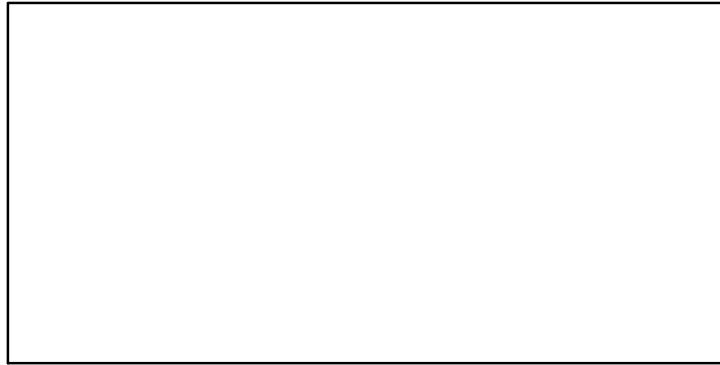
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

## Herring Irish Sea [HERRNIRS]

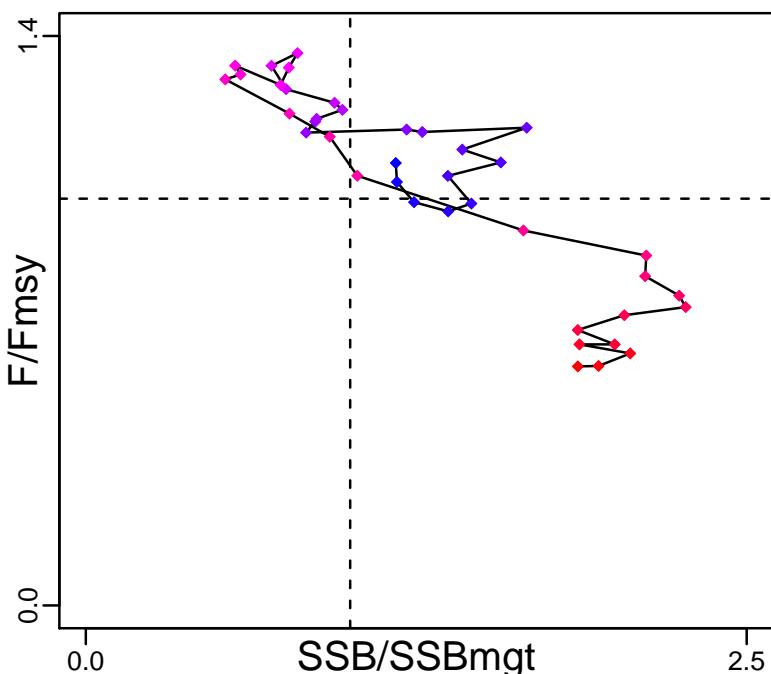
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Clupea harengus  |
| <b>Current Assess ID</b>    | HAWG-HERRNIRS-1979-2019-ICESIMP2021                        |
| <b>Area</b>                 | Irish Sea  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea       |
| <b>Assessor</b>             | Herring Assessment Working Group for the Area South of 62N |
| <b>Asmts in RAM</b>         | 2010, 2013, 2014, 2015, 2016, 2017, 2018, 2019             |

| Reference Points |           |           |        |
|------------------|-----------|-----------|--------|
| Type             | ID        | Asmt Year | Value  |
| <b>TBmsy</b>     | -         | -         | -      |
| <b>SSBmsy</b>    | -         | -         | -      |
| <b>Fmsy</b>      | Fmsy-1/yr | 2019      | 0.266  |
| <b>ERmsy</b>     | -         | -         | -      |
| <b>TBmgt</b>     | -         | -         | -      |
| <b>SSBmgt</b>    | SSBmgt-MT | 2019      | 11,831 |
| <b>Fmgt</b>      | Fmgt-1/yr | 2019      | 0.266  |
| <b>ERmgt</b>     | -         | -         | -      |
| <b>TB0</b>       | -         | -         | -      |
| <b>SSB0</b>      | -         | -         | -      |
| <b>MSY</b>       | -         | -         | -      |
| <b>M</b>         | -         | -         | -      |
| <b>TBlim</b>     | TBlim-MT  | 2010      | 6000   |
| <b>SSBlim</b>    | SSBlim-MT | 2018      | 8500   |
| <b>Flim</b>      | Flim-1/yr | 2018      | 0.397  |
| <b>ERlim</b>     | -         | -         | -      |

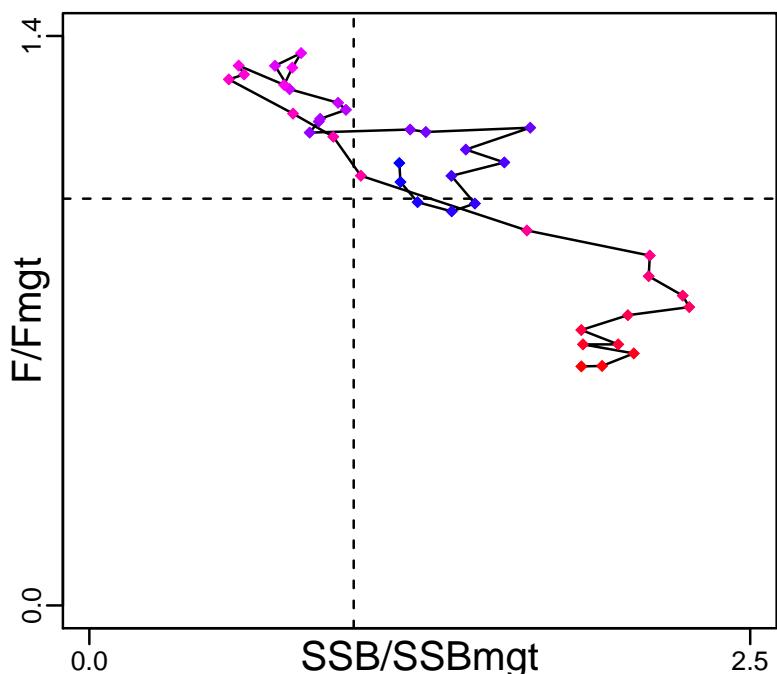
| Time Series       |                  |           |             |     |        |  |
|-------------------|------------------|-----------|-------------|-----|--------|--|
| Type              | ID               | Asmt Year | Curr Value  | Sex | Age    |  |
| <b>TB</b>         | TB-MT            | 2019      | 54,885      | -   | -      |  |
| <b>SSB</b>        | SSB-MT           | 2019      | 23,247      | -   | -      |  |
| <b>TN</b>         | -                | -         | -           | -   | -      |  |
| <b>R</b>          | R-E00            | 2019      | 300,740,000 | -   | 1      |  |
| <b>F</b>          | F-1/yr           | 2019      | 0.156       | -   | 4 to 6 |  |
| <b>ER</b>         | ER-calc-ratio    | 2019      | 0.124       | -   | -      |  |
| <b>TC</b>         | TC-MT            | 2019      | 6804        |     |        |  |
| <b>TL</b>         | TL-MT            | 2019      | 6804        |     |        |  |
| <b>TB/TBmsy</b>   | -                | -         | -           |     |        |  |
| <b>SSB/SSBmsy</b> | -                | -         | -           |     |        |  |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr | 2019      | 0.588       |     |        |  |
| <b>ER/ERmsy</b>   | -                | -         | -           |     |        |  |
| <b>TB/TBmgt</b>   | -                | -         | -           |     |        |  |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2019      | 1.965       |     |        |  |
| <b>F/Fmgt</b>     | F-1/yr/Fmgt-1/yr | 2019      | 0.588       |     |        |  |
| <b>ER/ERmgt</b>   | -                | -         | -           |     |        |  |

Herring Irish Sea [HERRNIRS]

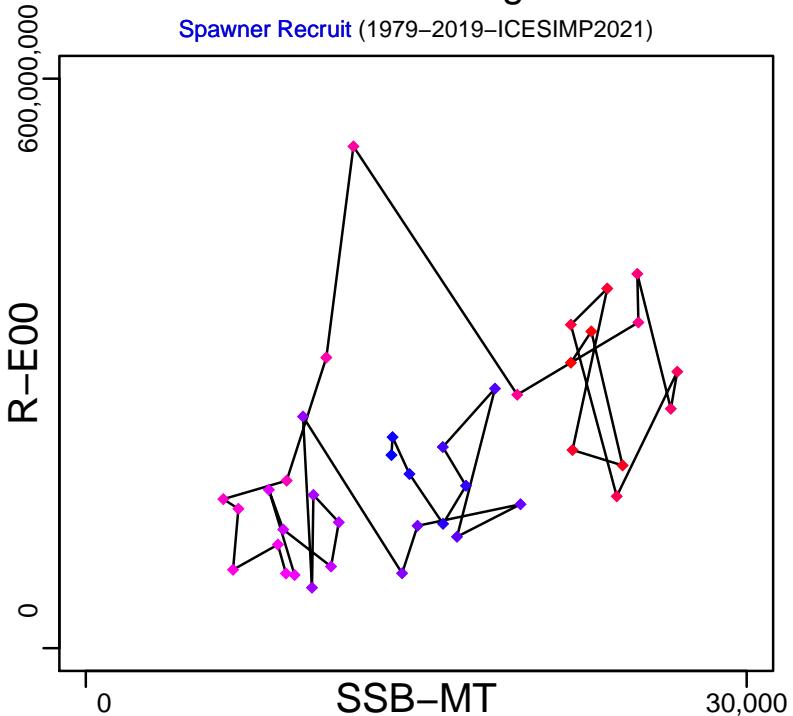
Kobe MSYpref (1979–2019–ICESIMP2021)



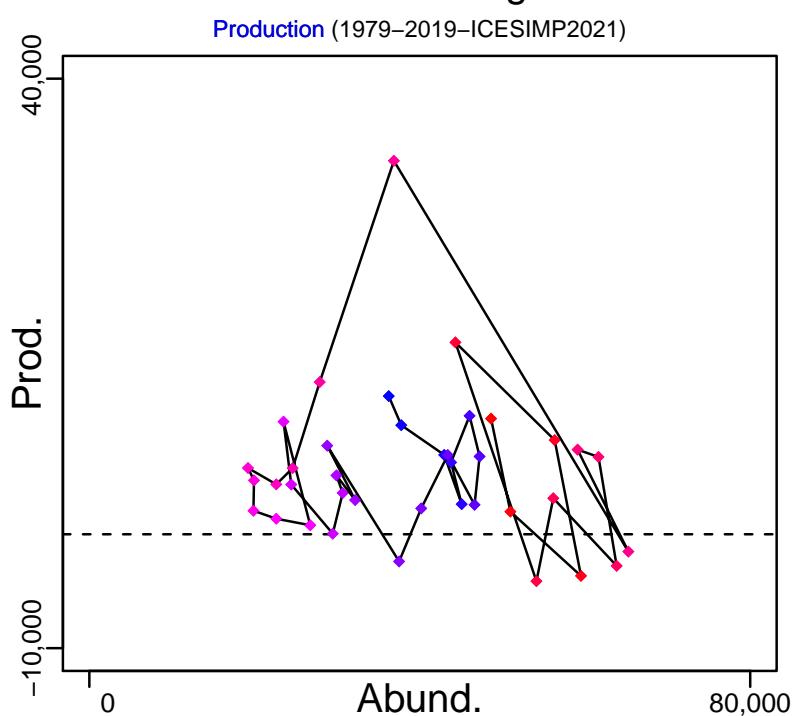
Kobe MGTpref (1979–2019–ICESIMP2021)



Spawner Recruit (1979–2019–ICESIMP2021)



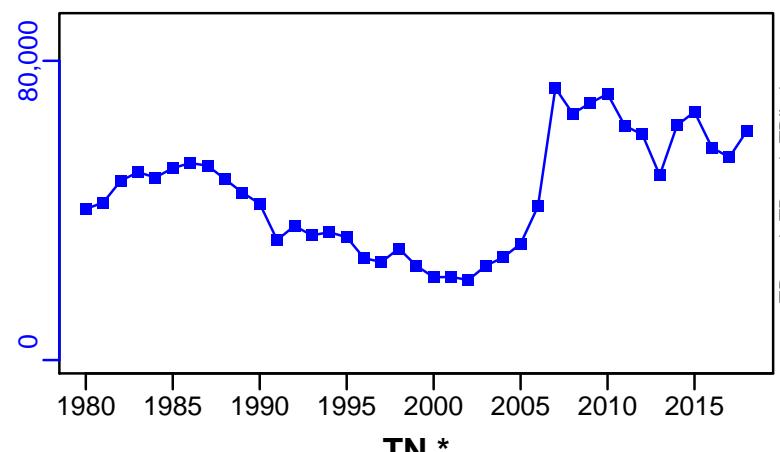
Production (1979–2019–ICESIMP2021)



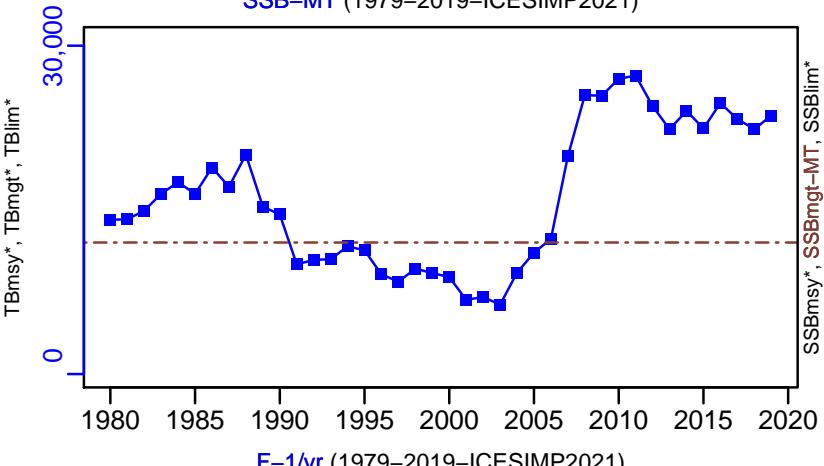
◆ Start Year ♦ End Year \* No Data

### Herring Irish Sea [HERRNIRS]

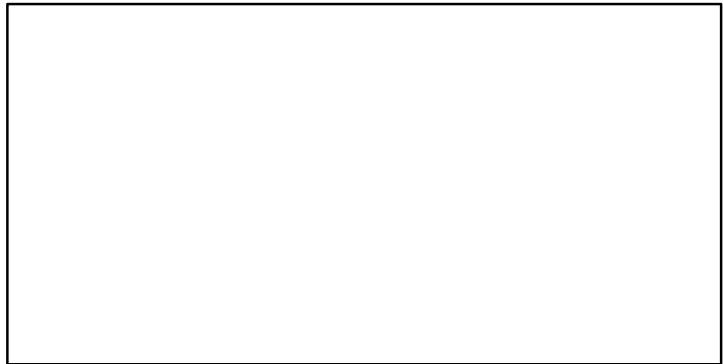
TB-MT (1979–2019–ICESIMP2021)



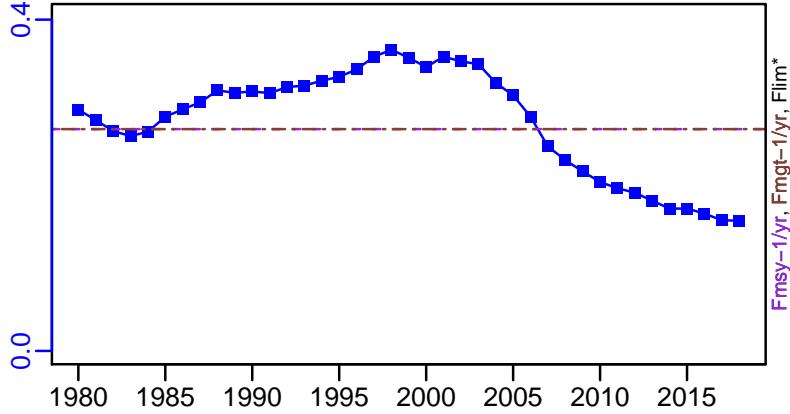
SSB-MT (1979–2019–ICESIMP2021)



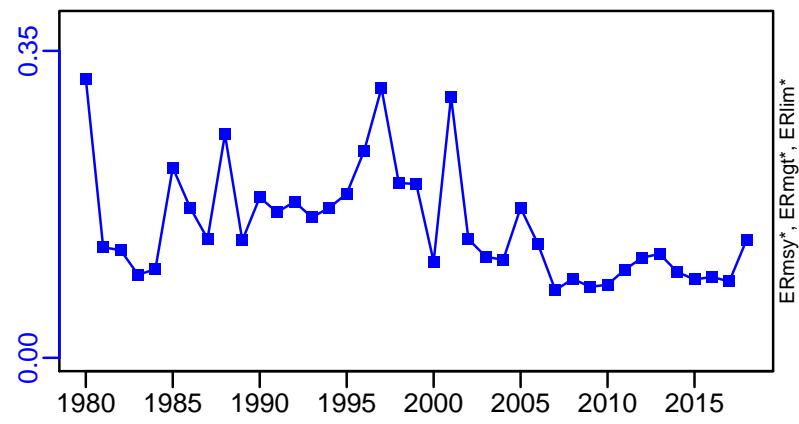
TN \*



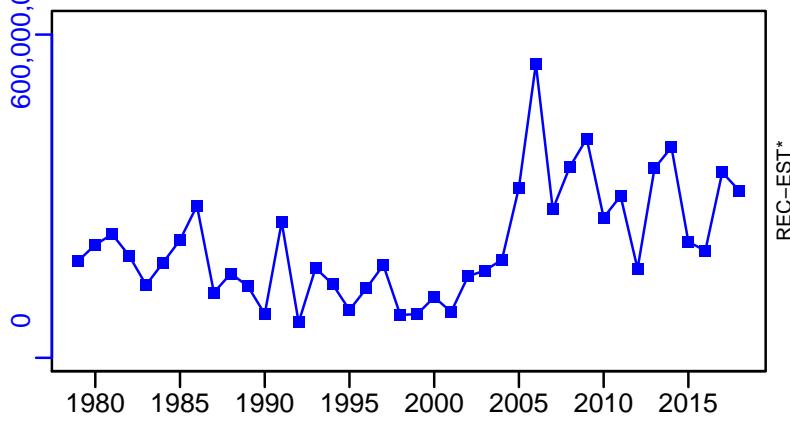
F-1/yr (1979–2019–ICESIMP2021)



ER-calc-ratio (1979–2019–ICESIMP2021)



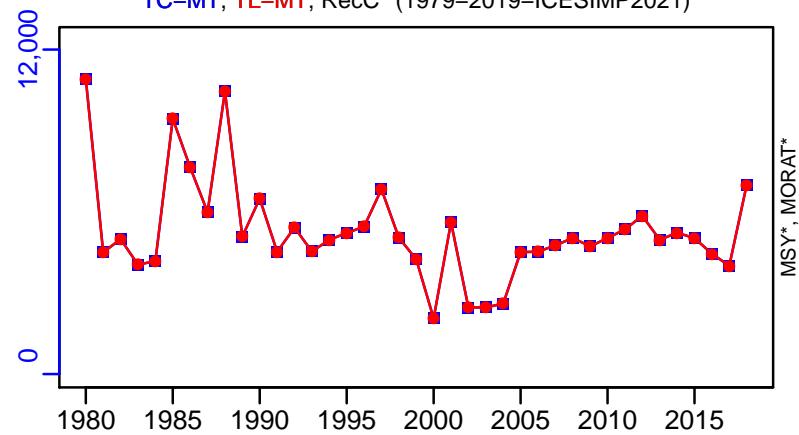
R-E00 (1979–2019–ICESIMP2021)



Herring Irish Sea [HERRNIRS]

TC-MT, TL-MT, RecC\* (1979–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



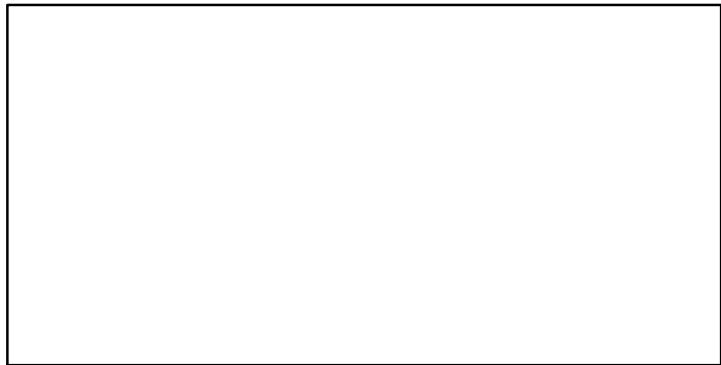
survB\*



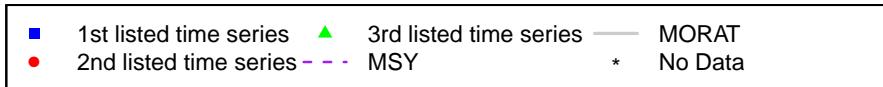
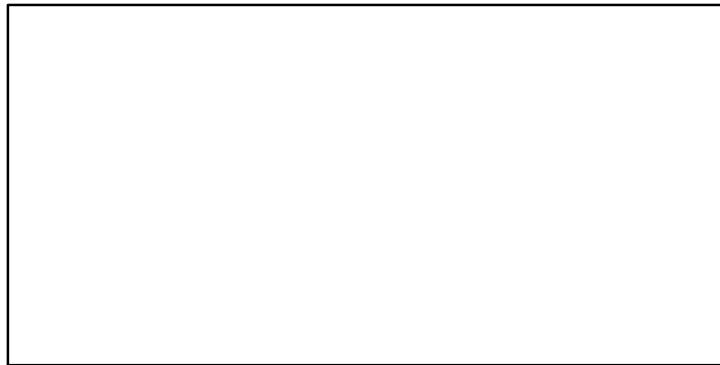
CPUE\*



EFFORT\*



CdivMSY\*



## Herring ICES 3a-4-7d [HERRNS-IIla-VIId]

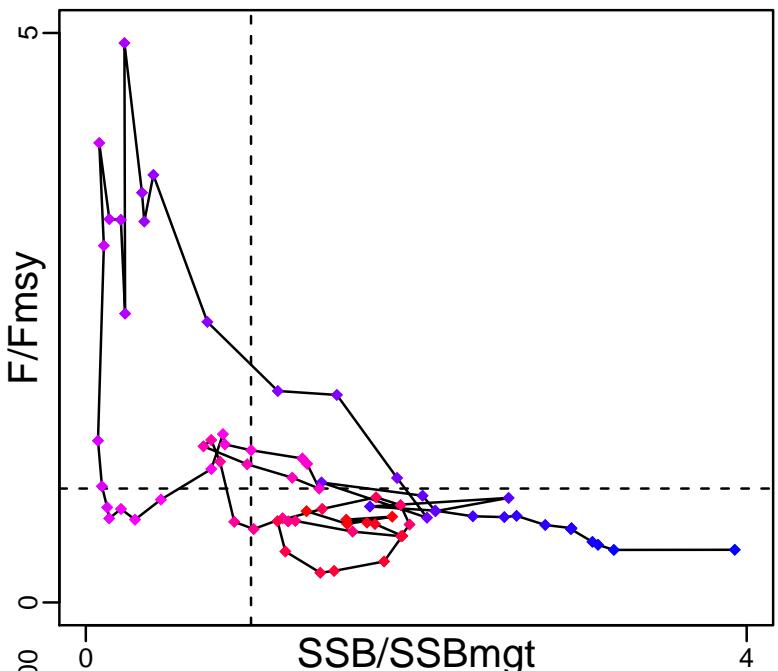
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Clupea harengus  |
| <b>Current Assess ID</b>    | HAWG-HERRNS-IIla-VIId-1947-2019-ICESIMP2021                |
| <b>Area</b>                 | ICES 3a-4-7d   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea       |
| <b>Assessor</b>             | Herring Assessment Working Group for the Area South of 62N |
| <b>Asmts in RAM</b>         | 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2011             |

| Reference Points |           |           |                 |
|------------------|-----------|-----------|-----------------|
| Type             | ID        | Asmt Year | Value           |
| <b>TBmsy</b>     | -         | -         | -               |
| <b>SSBmsy</b>    | -         | -         | -               |
| <b>Fmsy</b>      | Fmsy-1/yr | 2019      | 0.26            |
| <b>ERmsy</b>     | -         | -         | -               |
| <b>TBmgt</b>     | -         | -         | -               |
| <b>SSBmgt</b>    | SSBmgt-MT | 2019      | 1,400,000       |
| <b>Fmgt</b>      | Fmgt-1/yr | 2019      | 0.26            |
| <b>ERmgt</b>     | -         | -         | -               |
| <b>TB0</b>       | -         | -         | -               |
| <b>SSB0</b>      | -         | -         | -               |
| <b>MSY</b>       | -         | -         | -               |
| <b>M</b>         | -         | -         | -               |
| <b>TBlim</b>     | TBlim-MT  | 2011      | $8 \times 10^5$ |
| <b>SSBlim</b>    | SSBlim-MT | 2018      | $8 \times 10^5$ |
| <b>Flim</b>      | Flim-1/yr | 2018      | 0.34            |
| <b>ERlim</b>     | -         | -         | -               |

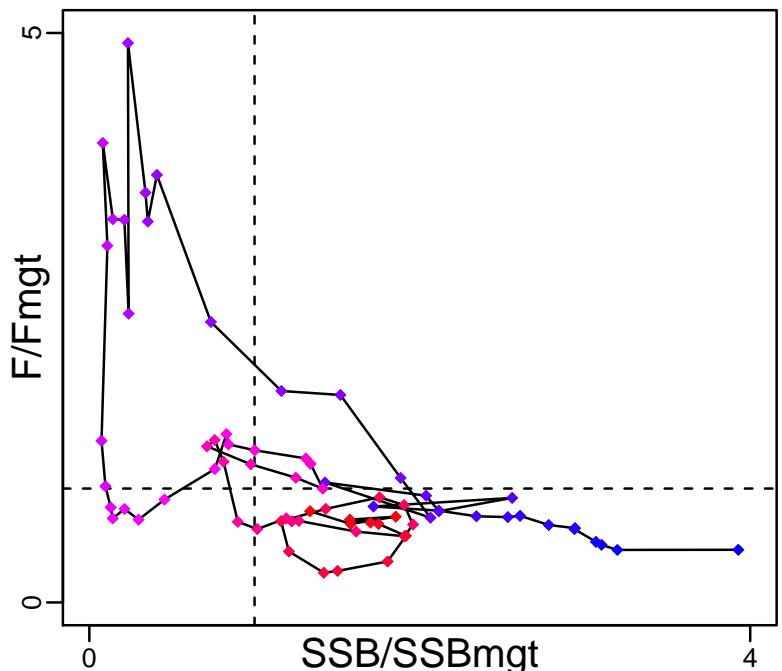
| Time Series       |                  |           |                |     |        |  |
|-------------------|------------------|-----------|----------------|-----|--------|--|
| Type              | ID               | Asmt Year | Curr Value     | Sex | Age    |  |
| <b>TB</b>         | TB-MT            | 2019      | 3,243,613      | -   | -      |  |
| <b>SSB</b>        | SSB-MT           | 2019      | 1,529,000      | -   | -      |  |
| <b>TN</b>         | -                | -         | -              | -   | -      |  |
| <b>R</b>          | R-E00            | 2019      | 26,191,234,000 | -   | 0      |  |
| <b>F</b>          | F-1/yr           | 2019      | 0.208          | -   | 2 to 6 |  |
| <b>ER</b>         | ER-calc-ratio    | 2019      | 0.158          | -   | -      |  |
| <b>TC</b>         | TC-MT            | 2019      | 603,536        |     |        |  |
| <b>TL</b>         | TL-MT            | 2017      | 564,000        |     |        |  |
| <b>TB/TBmsy</b>   | -                | -         | -              |     |        |  |
| <b>SSB/SSBmsy</b> | -                | -         | -              |     |        |  |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr | 2019      | 0.801          |     |        |  |
| <b>ER/ERmsy</b>   | -                | -         | -              |     |        |  |
| <b>TB/TBmgt</b>   | -                | -         | -              |     |        |  |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2019      | 1.092          |     |        |  |
| <b>F/Fmgt</b>     | F-1/yr/Fmgt-1/yr | 2019      | 0.801          |     |        |  |
| <b>ER/ERmgt</b>   | -                | -         | -              |     |        |  |

Herring ICES 3a-4-7d [HERRNS-IIla-VIId]

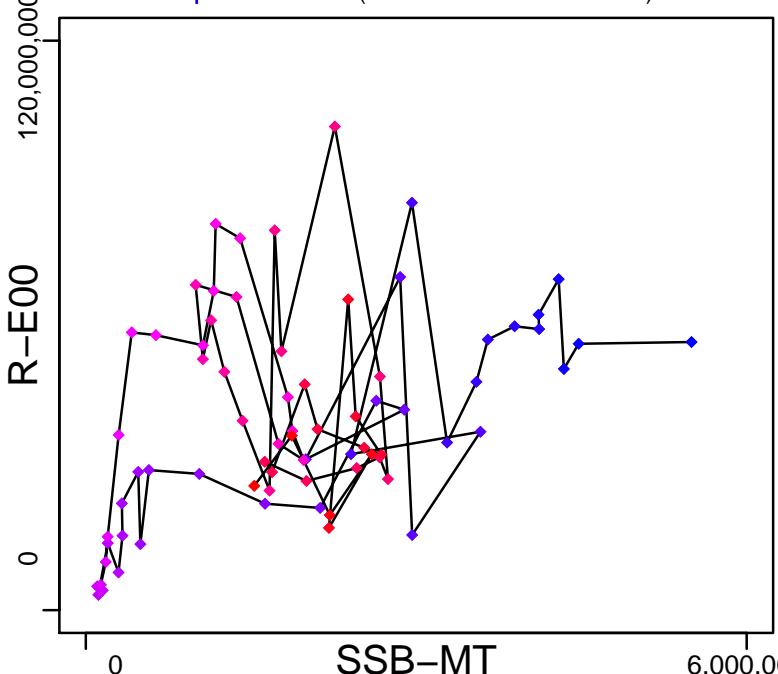
Kobe MSYpref (1947–2019–ICESIMP2021)



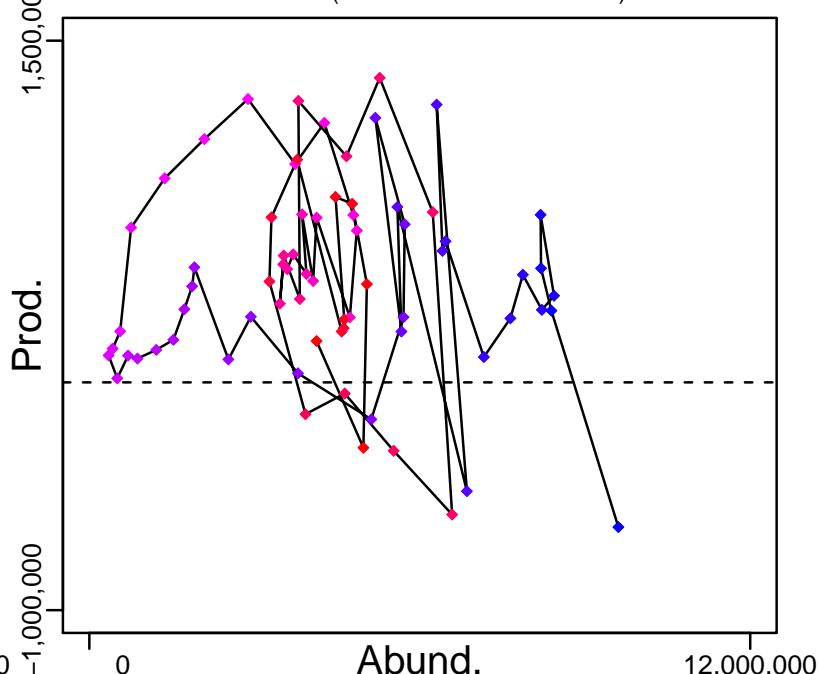
Kobe MGTpref (1947–2019–ICESIMP2021)



Spawner Recruit (1947–2019–ICESIMP2021)



Production (1947–2019–ICESIMP2021)

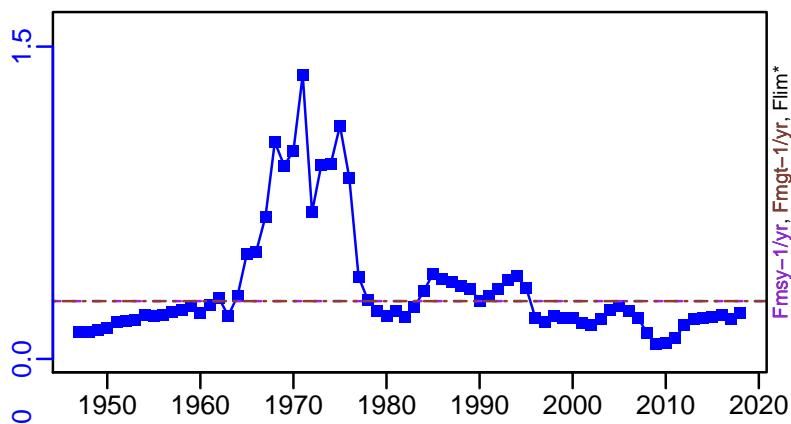
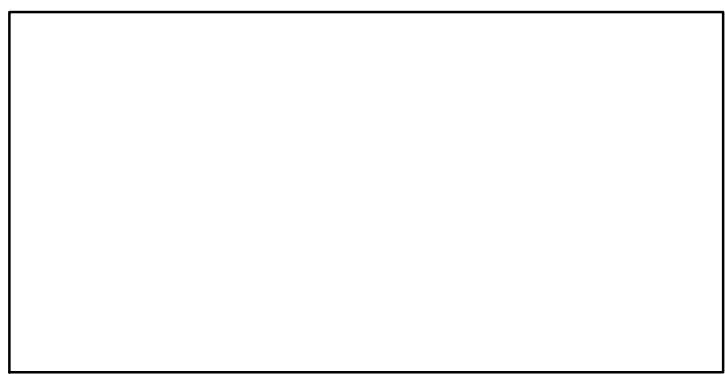
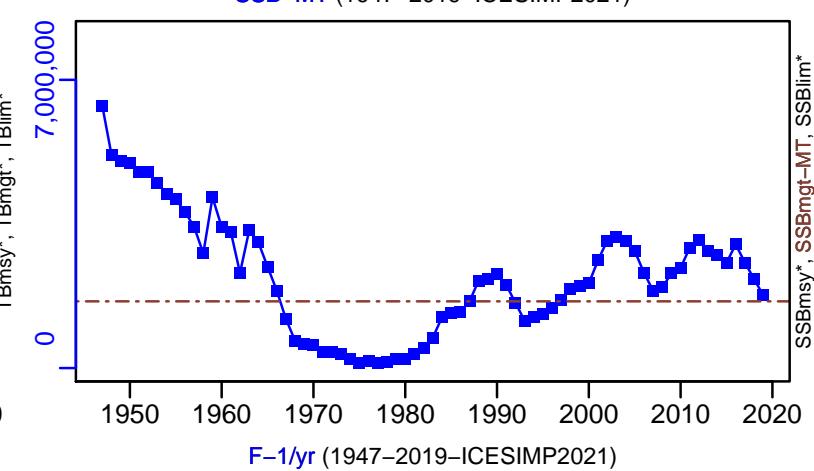
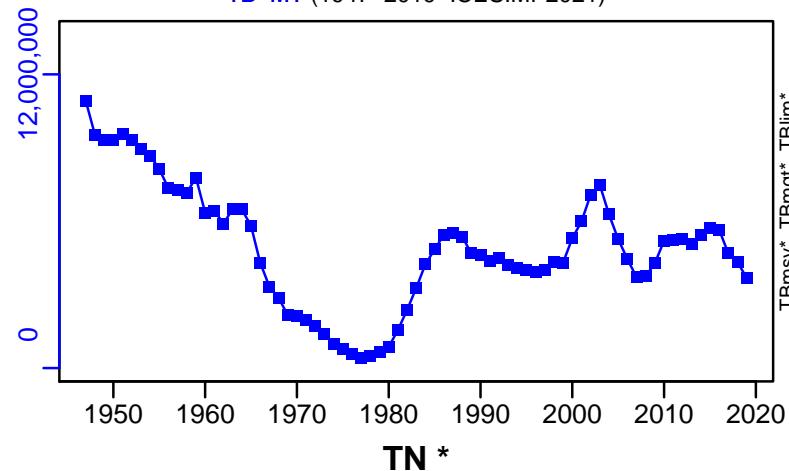


◆ Start Year   ◆ End Year   \* No Data

Herring ICES 3a–4–7d [HERRNS–IIIa–VIIId]

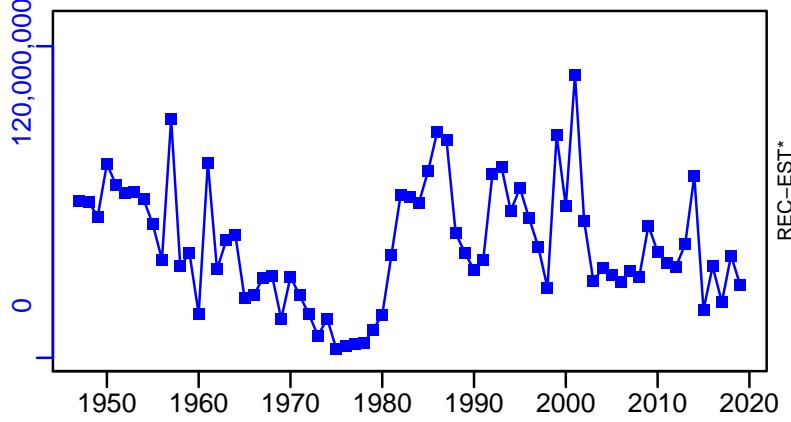
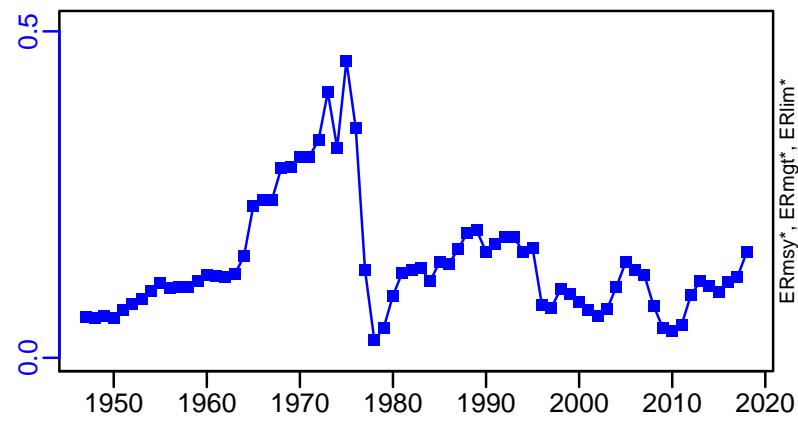
TB-MT (1947–2019–ICESIMP2021)

SSB-MT (1947–2019–ICESIMP2021)



ER-calc-ratio (1947–2019–ICESIMP2021)

R-E00 (1947–2019–ICESIMP2021)

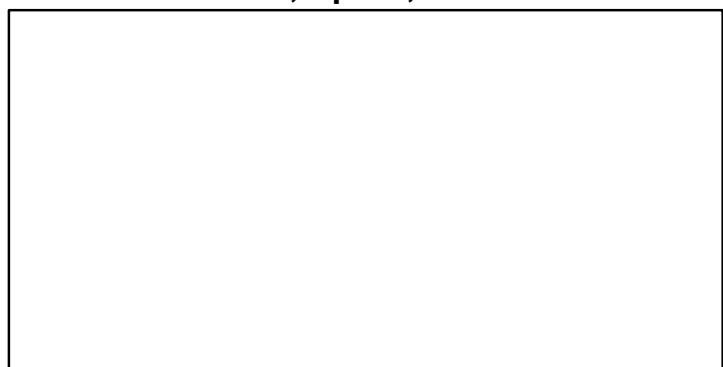
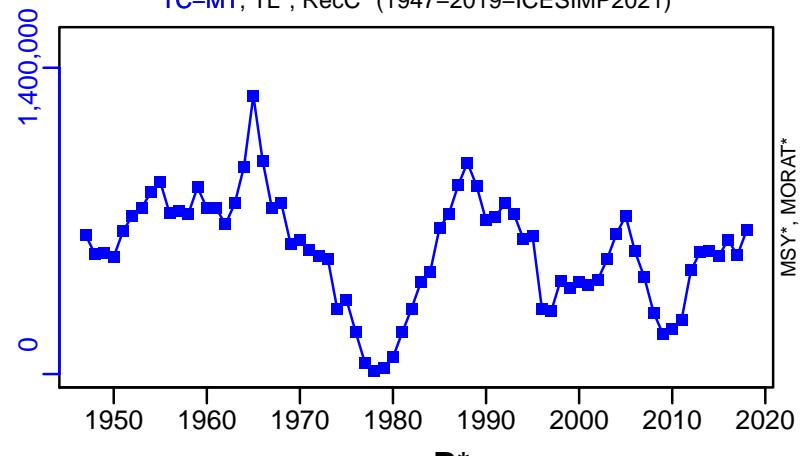


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | --- Lim BRP  | * No Data |

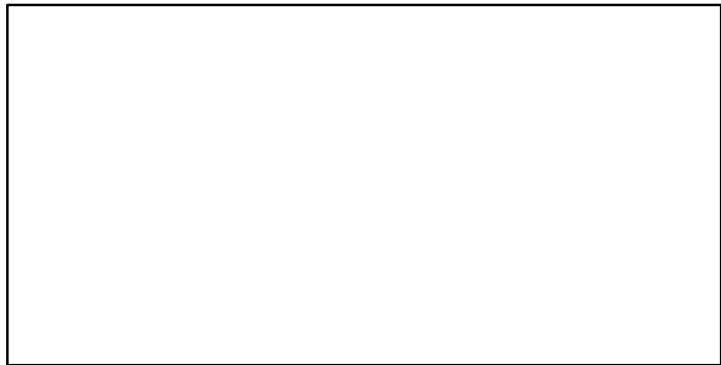
Herring ICES 3a–4–7d [HERRNS–IIIa–VIId]

TC–MT, TL\*, RecC\* (1947–2019–ICESIMP2021)

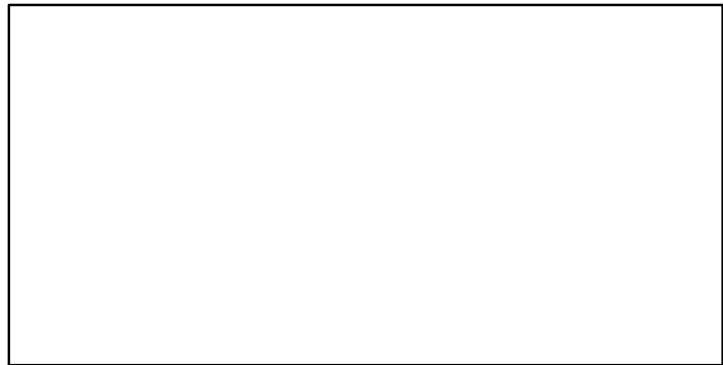
TAC\*, Cpair\*, Cadv\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Herring Gulf of Riga East of Gotland [HERRRIGA]

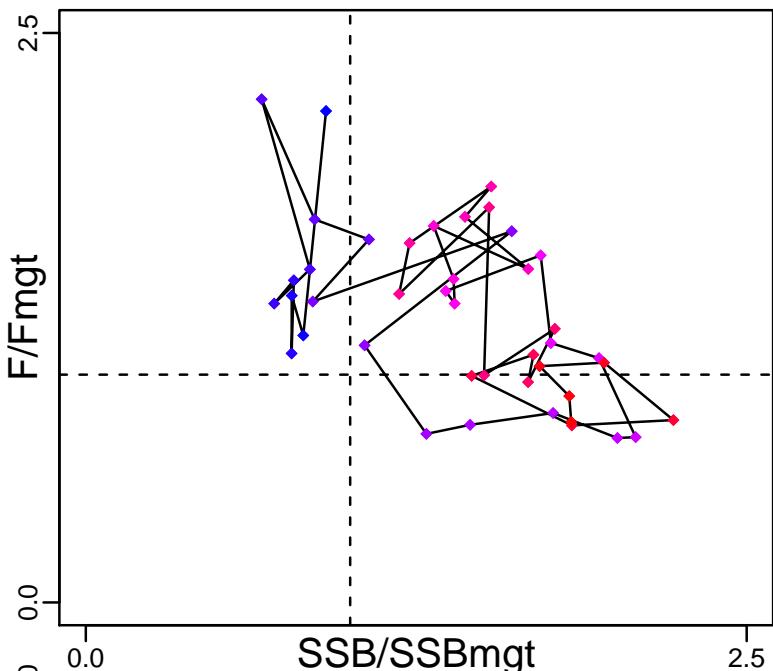
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Clupea harengus                                      |
| <b>Current Assess ID</b>    | WGBFAS-HERRRIGA-1976-2019-ICESIMP2021                |
| <b>Area</b>                 | Gulf of Riga East of Gotland                         |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Baltic Fisheries Assessment Working Group            |
| <b>Asmts in RAM</b>         | 2011, 2013, 2014, 2015, 2016, 2017, 2018, 2019       |

| Reference Points |           |           |        |
|------------------|-----------|-----------|--------|
| Type             | ID        | Asmt Year | Value  |
| <b>TBmsy</b>     | -         | -         | -      |
| <b>SSBmsy</b>    | SSBmsy-MT | 2011      | 60,000 |
| <b>Fmsy</b>      | Fmsy-1/yr | 2018      | 0.32   |
| <b>ERmsy</b>     | -         | -         | -      |
| <b>TBmgt</b>     | -         | -         | -      |
| <b>SSBmgt</b>    | SSBmgt-MT | 2019      | 60,000 |
| <b>Fmgt</b>      | Fmgt-1/yr | 2019      | 0.32   |
| <b>ERmgt</b>     | -         | -         | -      |
| <b>TB0</b>       | -         | -         | -      |
| <b>SSB0</b>      | -         | -         | -      |
| <b>MSY</b>       | -         | -         | -      |
| <b>M</b>         | M-1/yr    | 2011      | 0.2    |
| <b>TBlim</b>     | -         | -         | -      |
| <b>SSBlim</b>    | SSBlim-MT | 2018      | 40,800 |
| <b>Flim</b>      | Flim-1/yr | 2018      | 0.88   |
| <b>ERlim</b>     | -         | -         | -      |

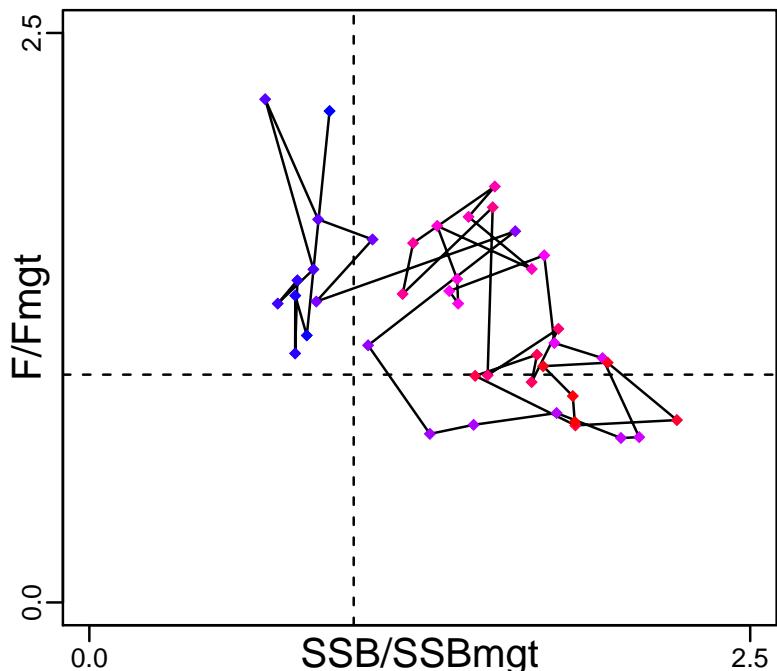
| Time Series       |                  |           |               |     |        |
|-------------------|------------------|-----------|---------------|-----|--------|
| Type              | ID               | Asmt Year | Curr Value    | Sex | Age    |
| <b>TB</b>         | TB-MT            | 2019      | 177,796       | -   | -      |
| <b>SSB</b>        | SSB-MT           | 2019      | 109,238       | -   | -      |
| <b>TN</b>         | -                | -         | -             | -   | -      |
| <b>R</b>          | R-E00            | 2019      | 3,099,173,000 | -   | 1      |
| <b>F</b>          | F-1/yr           | 2019      | 0.254         | -   | 3 to 7 |
| <b>ER</b>         | ER-calc-ratio    | 2019      | 0.145         | -   | -      |
| <b>TC</b>         | TC-MT            | 2017      | 30,900        |     |        |
| <b>TL</b>         | TL-MT            | 2019      | 25,747        |     |        |
| <b>TB/TBmsy</b>   | -                | -         | -             |     |        |
| <b>SSB/SSBmsy</b> | SSB-MT/SSBmsy-MT | 2011      | 1.262         |     |        |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr | 2018      | 1.003         |     |        |
| <b>ER/ERmsy</b>   | -                | -         | -             |     |        |
| <b>TB/TBmgt</b>   | -                | -         | -             |     |        |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2019      | 1.821         |     |        |
| <b>F/Fmgt</b>     | F-1/yr/Fmgt-1/yr | 2019      | 0.792         |     |        |
| <b>ER/ERmgt</b>   | -                | -         | -             |     |        |

Herring Gulf of Riga East of Gotland [HERRRIGA]

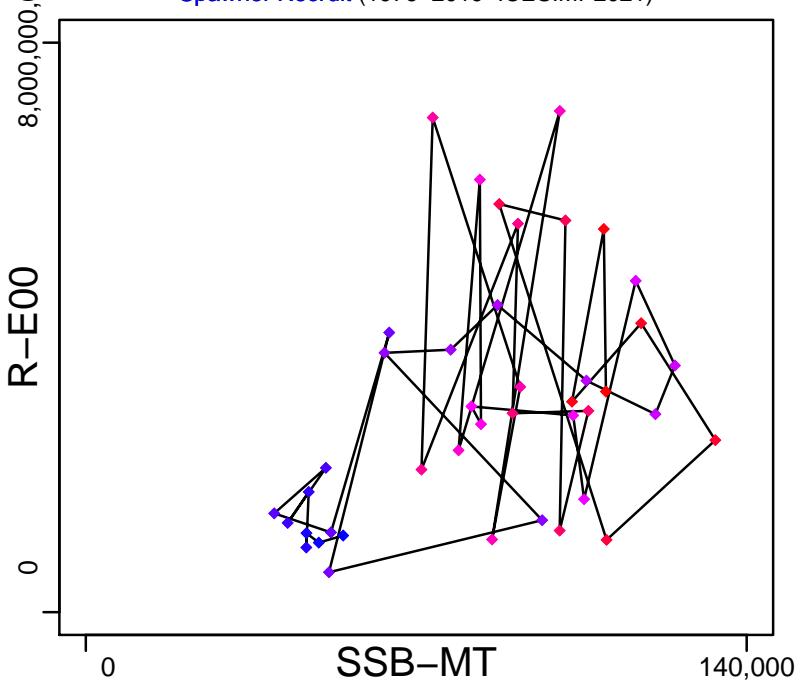
Kobe MSYpref (1976–2019–ICESIMP2021)



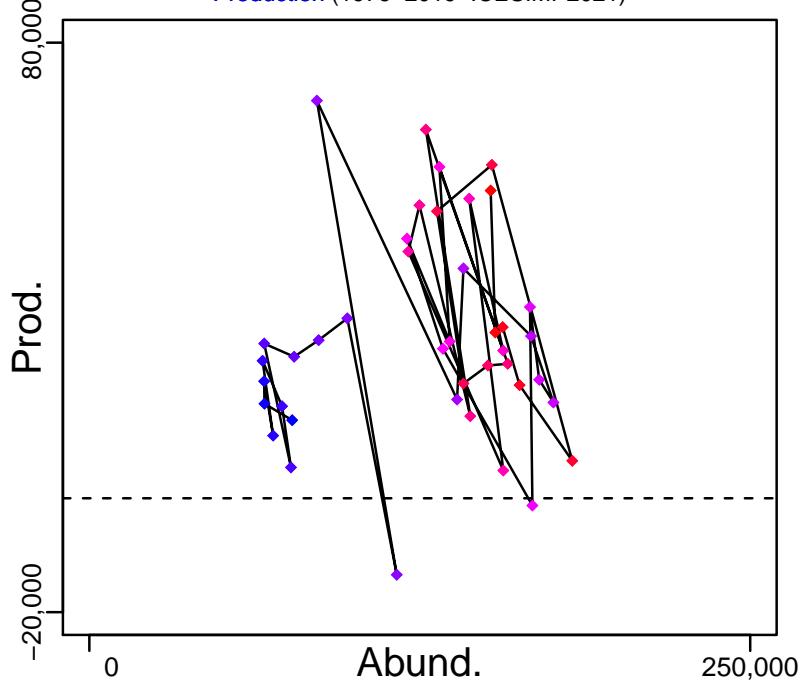
Kobe MGTpref (1976–2019–ICESIMP2021)



Spawner Recruit (1976–2019–ICESIMP2021)



Production (1976–2019–ICESIMP2021)

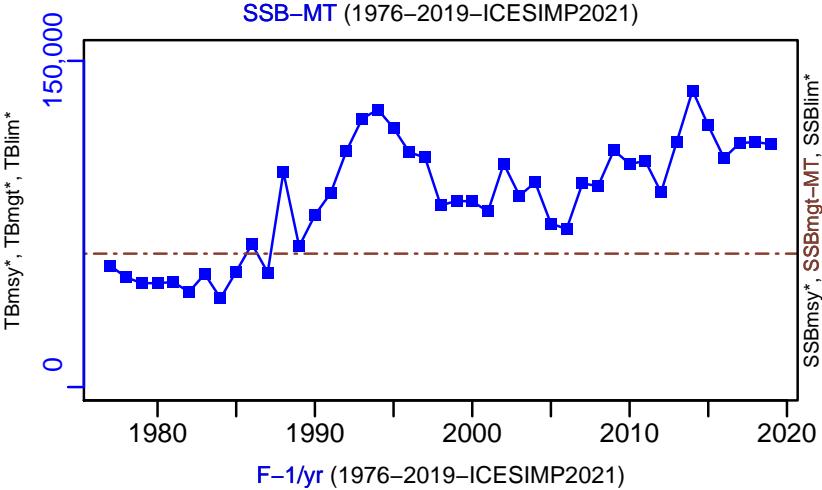
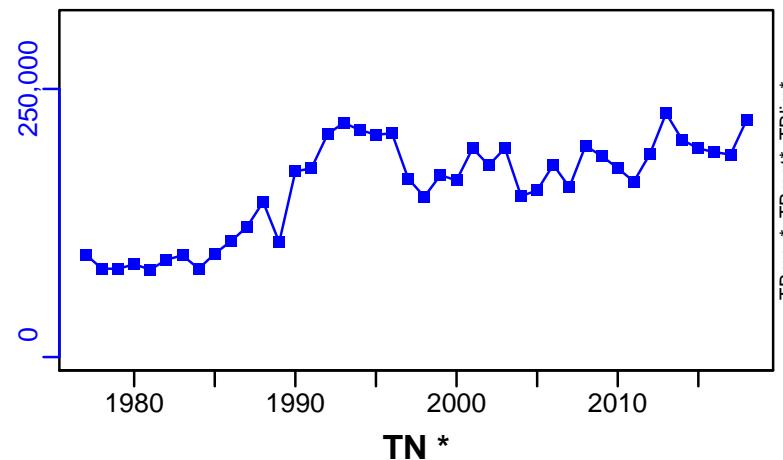


◆ Start Year   ◆ End Year   \* No Data

Herring Gulf of Riga East of Gotland [HERRRIGA]

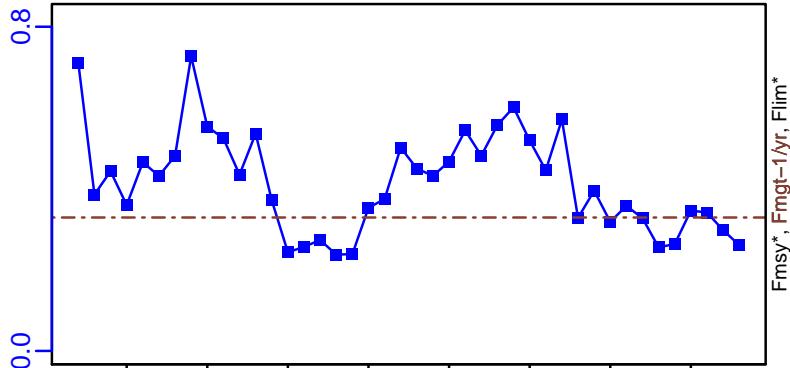
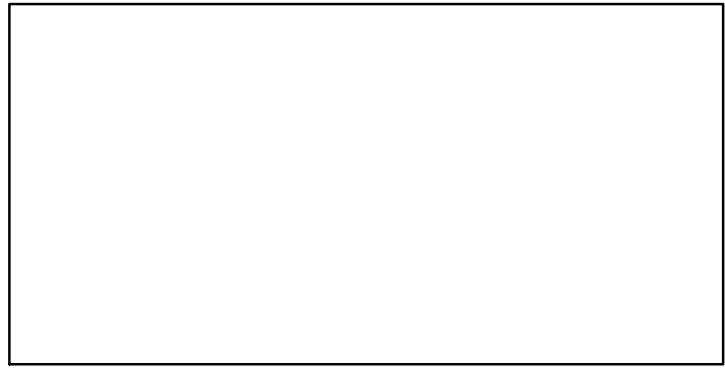
TB-MT (1976–2019–ICESIMP2021)

SSB-MT (1976–2019–ICESIMP2021)



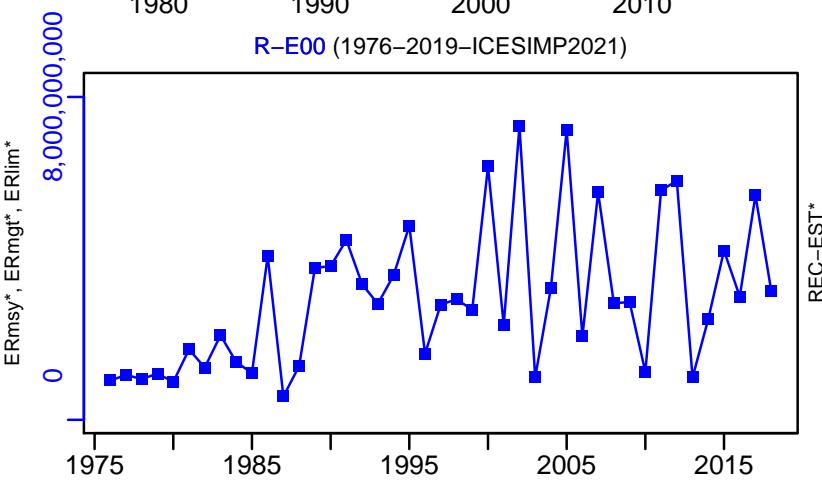
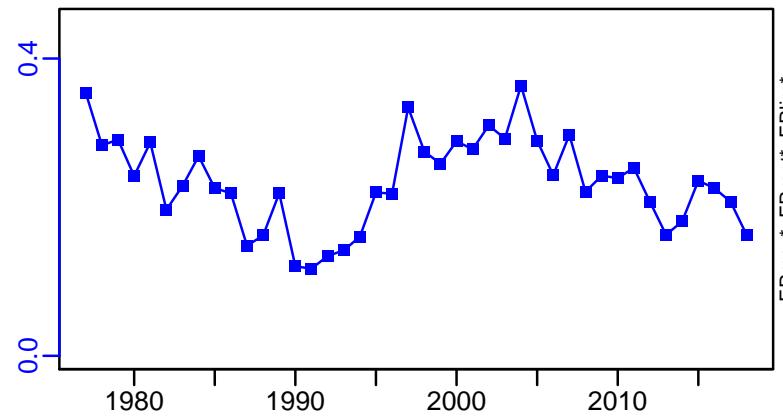
TN \*

F-1/yr (1976–2019–ICESIMP2021)



ER-calc-ratio (1976–2019–ICESIMP2021)

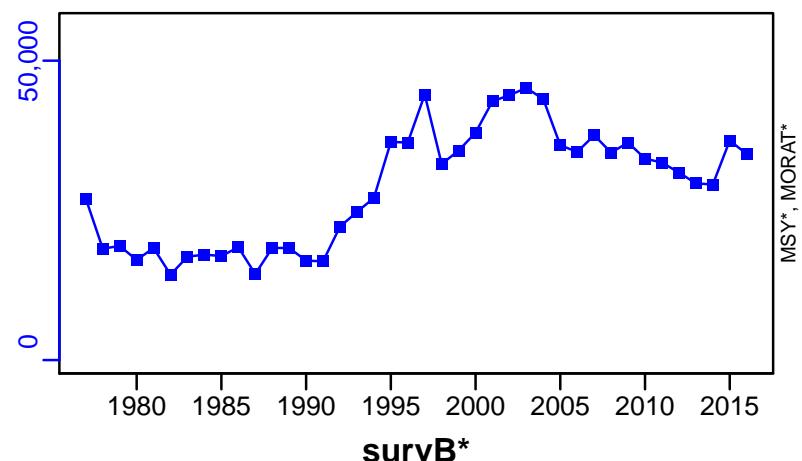
R-E00 (1976–2019–ICESIMP2021)



Herring Gulf of Riga East of Gotland [HERRRIGA]

TC-MT, TL\*, RecC\* (1976–2017–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



**survB\***

**CPUE\***

**EFFORT\***

**CdivMSY\***

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Herring ICES 7a-g-h-j-k [HERRSIRS]

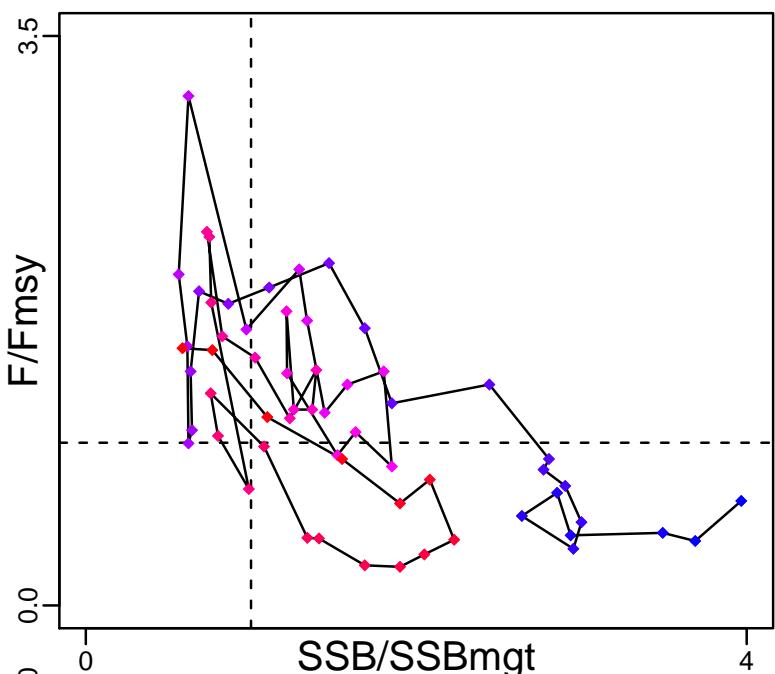
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Clupea harengus  |
| <b>Current Assess ID</b>    | HAWG-HERRSIRS-1957-2018-ICESIMP2018                        |
| <b>Area</b>                 | ICES 7a-g-h-j-k  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea       |
| <b>Assessor</b>             | Herring Assessment Working Group for the Area South of 62N |
| <b>Asmts in RAM</b>         | 2010, 2012, 2013, 2014, 2015, 2016, 2017, 2018             |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2018             | 0.26         |
| <b>ERrmsy</b>           | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2018             | 61,000       |
| <b>Fmgt</b>             | Fmgt-1/yr | 2018             | 0.23         |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | TBlim-MT  | 2010             | 26,000       |
| <b>SSBlim</b>           | SSBlim-MT | 2018             | 54,000       |
| <b>Flim</b>             | Flim-1/yr | 2018             | 0.45         |
| <b>ERlim</b>            | -         | -                | -            |

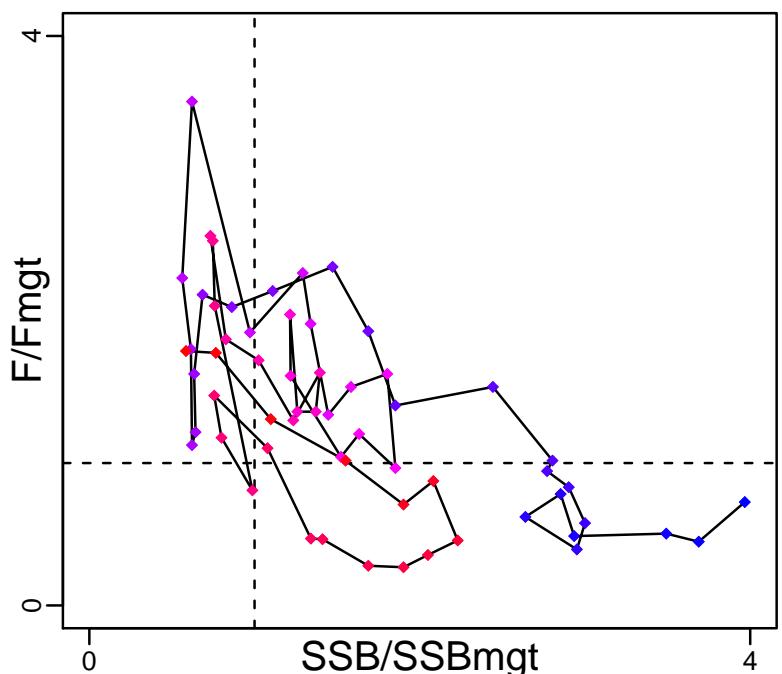
| <b>Time Series</b> |                  |                  |                    |            |            |
|--------------------|------------------|------------------|--------------------|------------|------------|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b>  | <b>Sex</b> | <b>Age</b> |
| <b>TB</b>          | TB-MT            | 2018             | 61,300             | Both       | -          |
| <b>SSB</b>         | SSB-MT           | 2018             | 34,200             | Both       | -          |
| <b>TN</b>          | -                | -                | -                  | -          | -          |
| <b>R</b>           | R-E00            | 2018             | $4.38 \times 10^8$ | -          | 1          |
| <b>F</b>           | F-1/yr           | 2018             | 0.411              | -          | 2 to 5     |
| <b>ER</b>          | ER-calc-ratio    | 2018             | 0.176              | -          | -          |
| <b>TC</b>          | TC-MT            | 2018             | 10,800             |            |            |
| <b>TL</b>          | TL-MT            | 2018             | 10,800             |            |            |
| <b>TB/TBmsy</b>    | -                | -                | -                  |            |            |
| <b>SSB/SSBmsy</b>  | -                | -                | -                  |            |            |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2018             | 1.581              |            |            |
| <b>ER/ERrmsy</b>   | -                | -                | -                  |            |            |
| <b>TB/TBmgt</b>    | -                | -                | -                  |            |            |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2018             | 0.561              |            |            |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2018             | 1.787              |            |            |
| <b>ER/ERmgt</b>    | -                | -                | -                  |            |            |

Herring ICES 7a-g-h-j-k [HERRSIRS]

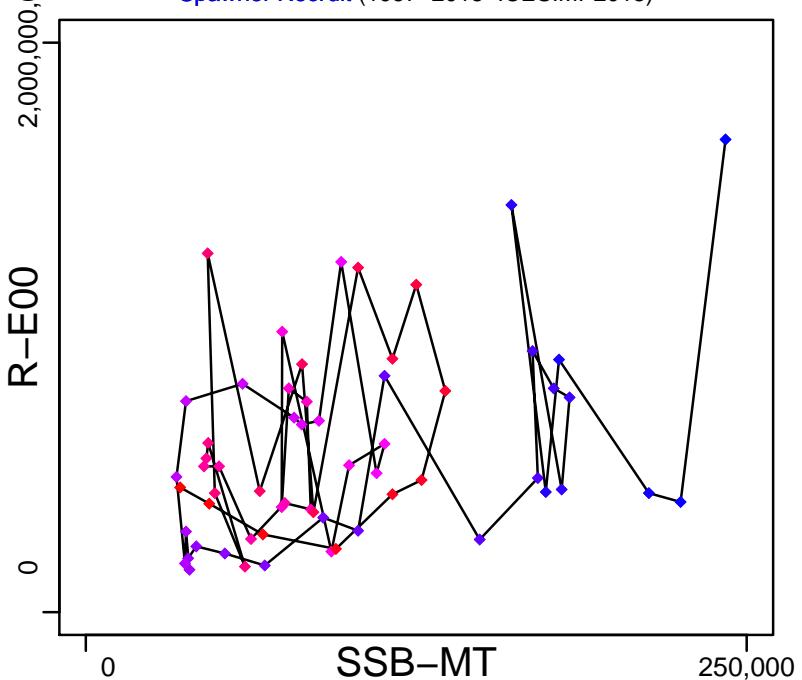
Kobe MSYpref (1957–2018–ICESIMP2018)



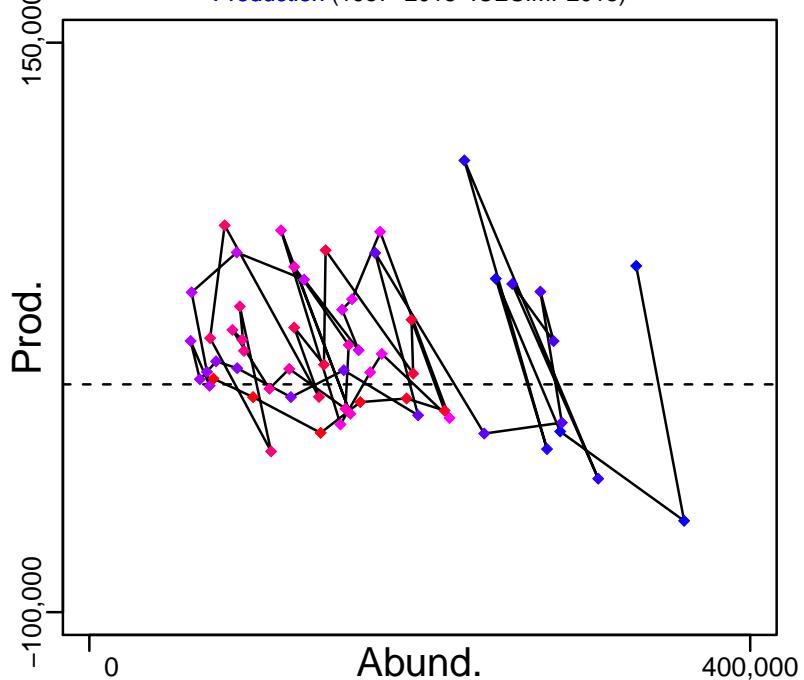
Kobe MGTpref (1957–2018–ICESIMP2018)



Spawner Recruit (1957–2018–ICESIMP2018)



Production (1957–2018–ICESIMP2018)

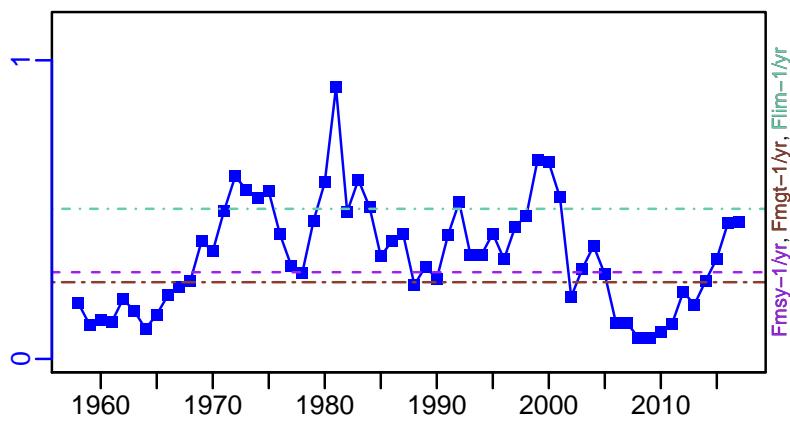
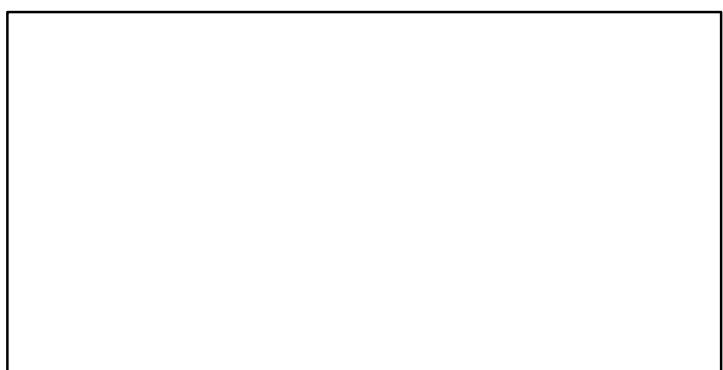
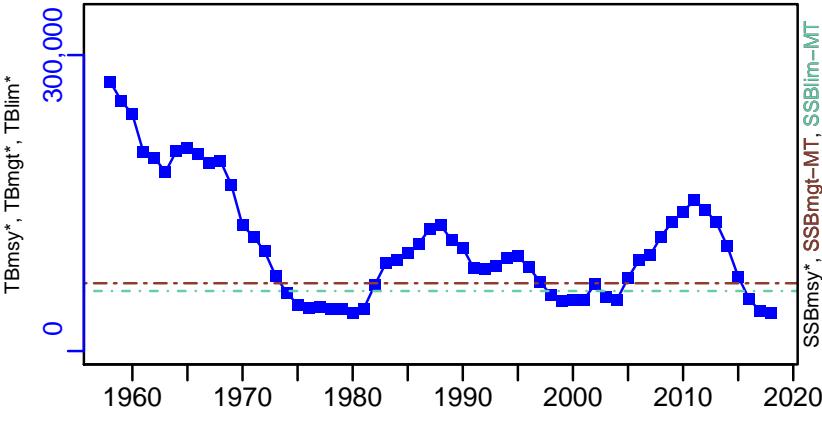
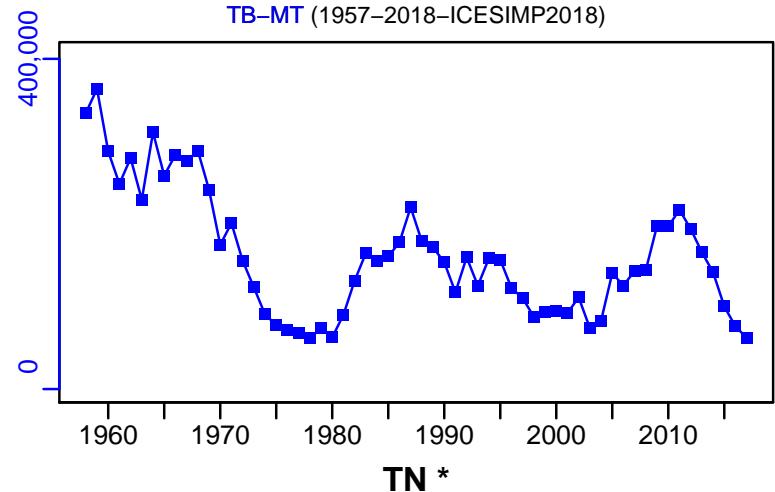


◆ Start Year   ◆ End Year   \* No Data

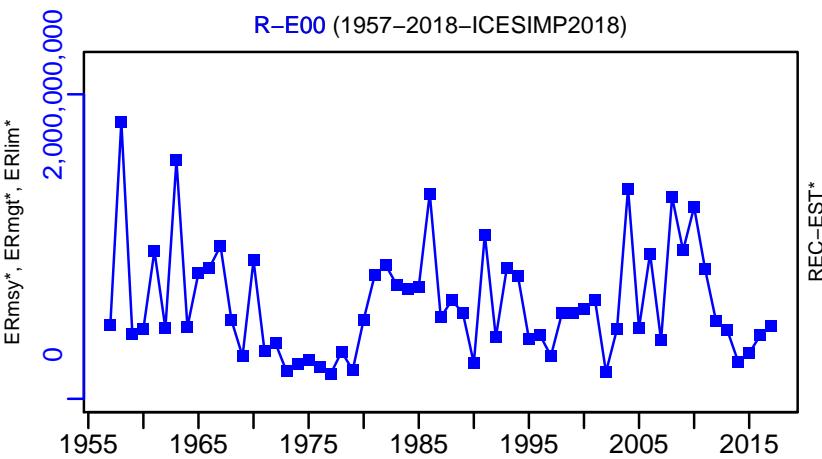
Herring ICES 7a-g-h-j-k [HERRSIRS]

TB-MT (1957–2018–ICESIMP2018)

SSB-MT (1957–2018–ICESIMP2018)



ER-calc-ratio (1957–2018–ICESIMP2018)

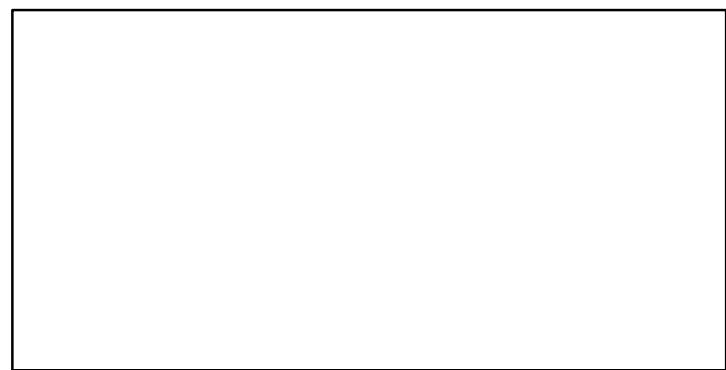
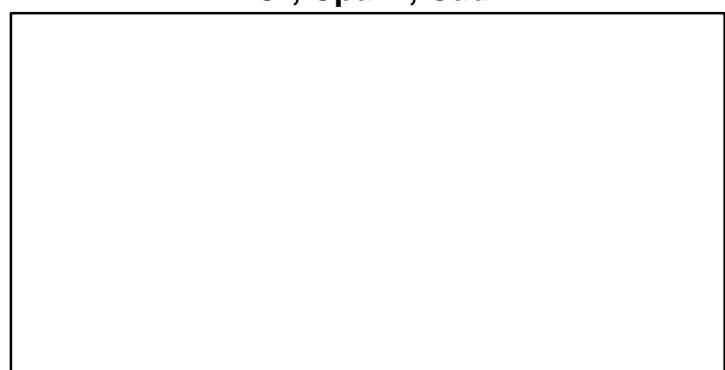
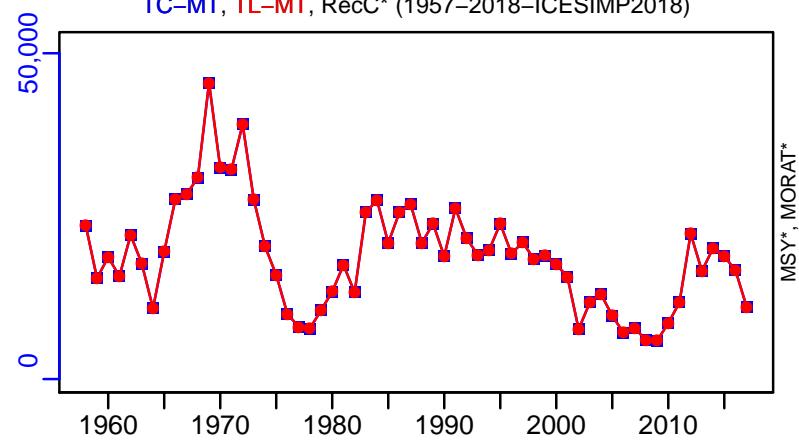


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | - - Lim BRP  | * No Data |

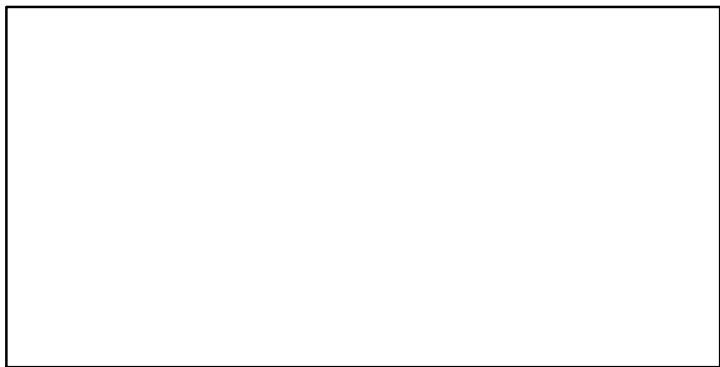
Herring ICES 7a-g-h-j-k [HERRSIRS]

TC-MT, TL-MT, RecC\* (1957–2018–ICESIMP2018)

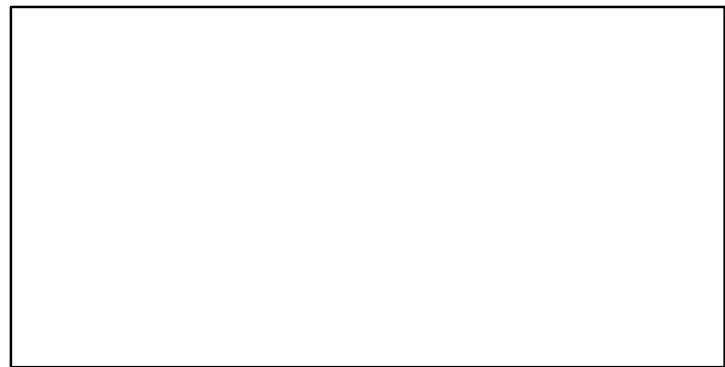
TAC\*, Cpair\*, Cadv\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

## Herring West of Scotland [HERRVla]

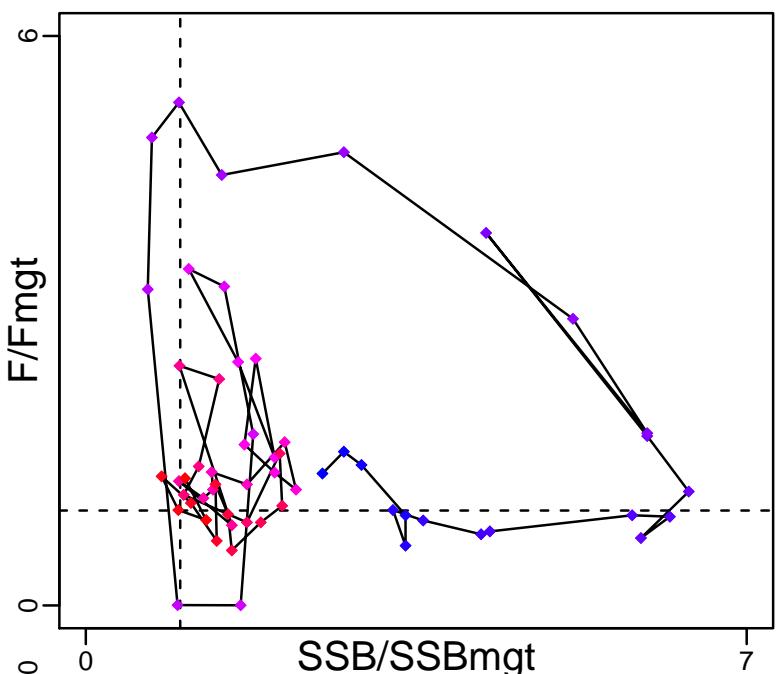
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Clupea harengus  |
| <b>Current Assess ID</b>    | HAWG-HERRVla-1956-2014-ICESIMP2016                         |
| <b>Area</b>                 | West of Scotland   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea       |
| <b>Assessor</b>             | Herring Assessment Working Group for the Area South of 62N |
| <b>Asmts in RAM</b>         | 2010, 2013, 2014   |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2010             | 0.25         |
| <b>ERrmsy</b>           | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2014             | 75,000       |
| <b>Fmgt</b>             | Fmgt-1/yr | 2014             | 0.2          |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | TBlim-MT  | 2010             | 50,000       |
| <b>SSBlim</b>           | SSBlim-MT | 2014             | 50,000       |
| <b>Flim</b>             | -         | -                | -            |
| <b>ERlim</b>            | -         | -                | -            |

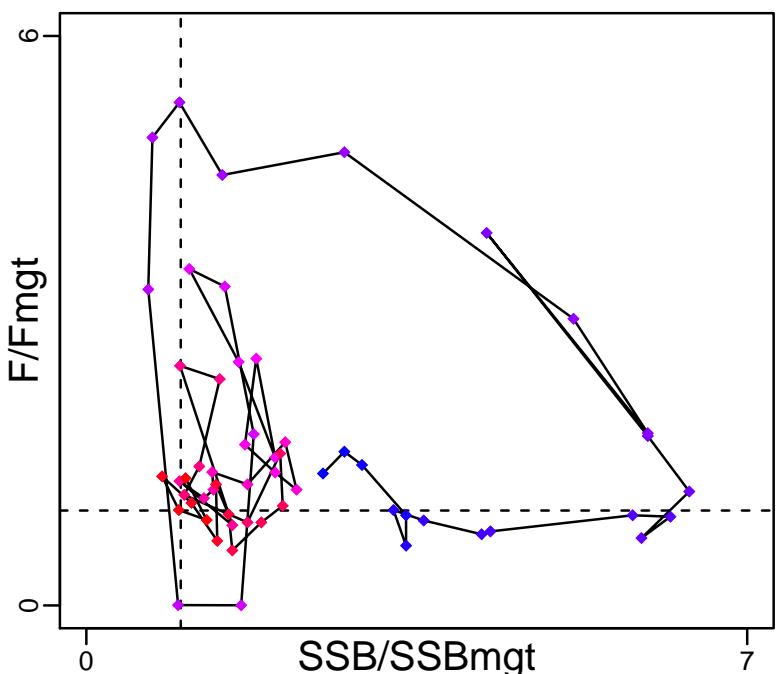
| <b>Time Series</b> |                  |                  |                   |            |               |
|--------------------|------------------|------------------|-------------------|------------|---------------|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b>    |
| <b>TB</b>          | TB-MT            | 2014             | 114,000           | Both       | -             |
| <b>SSB</b>         | SSB-MT           | 2014             | 78,800            | Both       | -             |
| <b>TN</b>          | -                | -                | -                 | -          | -             |
| <b>R</b>           | R-E00            | 2014             | $6 \times 10^8$   | -          | 1             |
| <b>F</b>           | F-1/yr           | 2014             | 0.268             | -          | 3 to 6 ringer |
| <b>ER</b>          | ER-calc-ratio    | 2014             | 0.202             | -          | -             |
| <b>TC</b>          | -                | -                | -                 |            |               |
| <b>TL</b>          | TL-MT            | 2014             | 23,000            |            |               |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |               |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |               |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2010             | 1.064             |            |               |
| <b>ER/ERrmsy</b>   | -                | -                | -                 |            |               |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |               |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2014             | 1.051             |            |               |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2014             | 1.34              |            |               |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |               |

Herring West of Scotland [HERRVla]

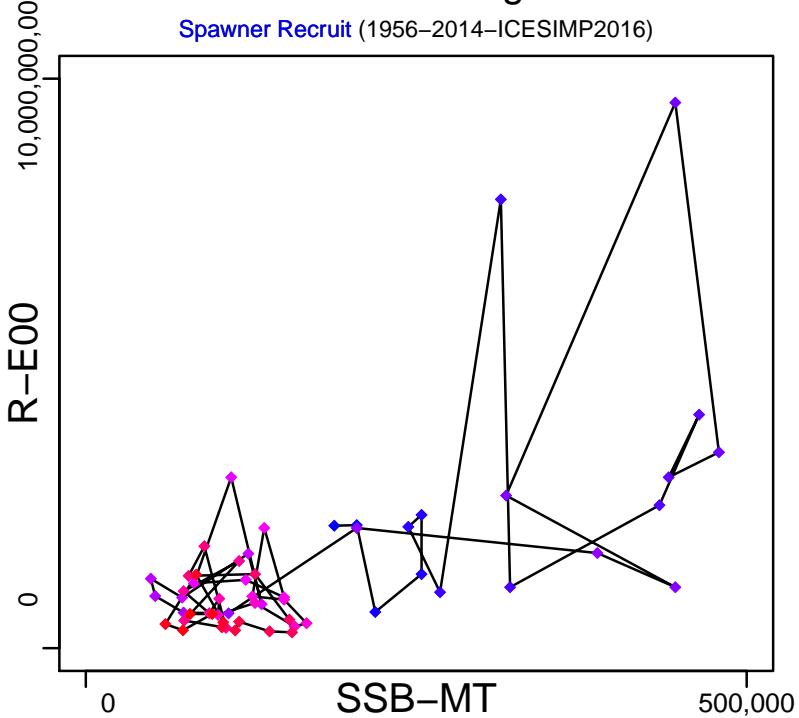
Kobe MSYpref (1956–2014–ICESIMP2016)



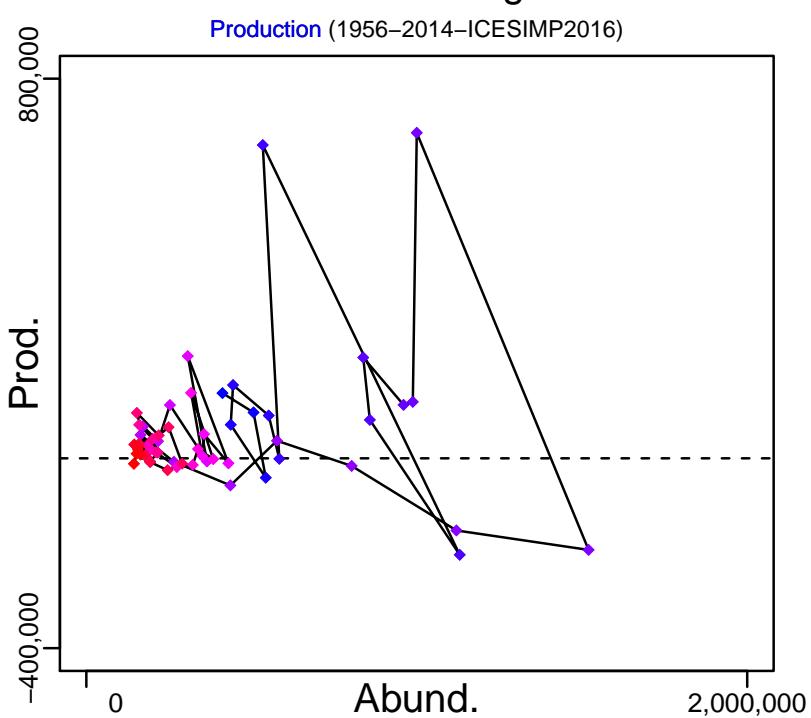
Kobe MGTpref (1956–2014–ICESIMP2016)



Spawner Recruit (1956–2014–ICESIMP2016)



Production (1956–2014–ICESIMP2016)

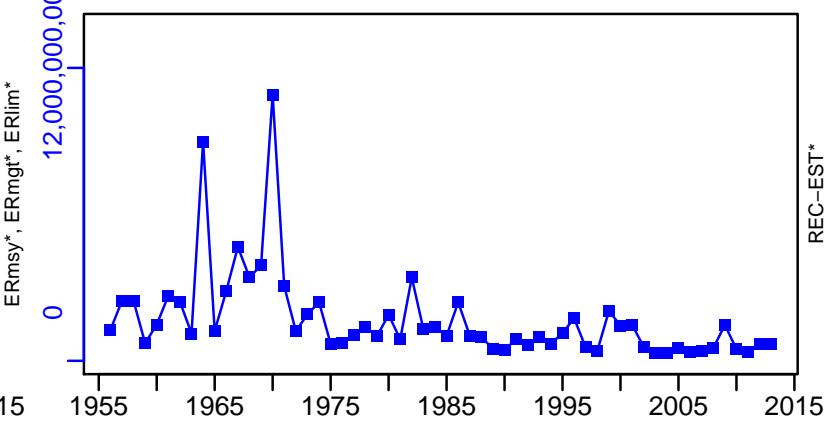
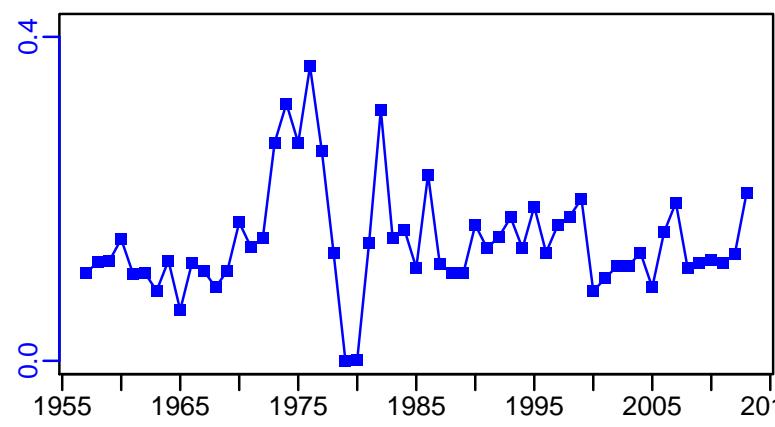
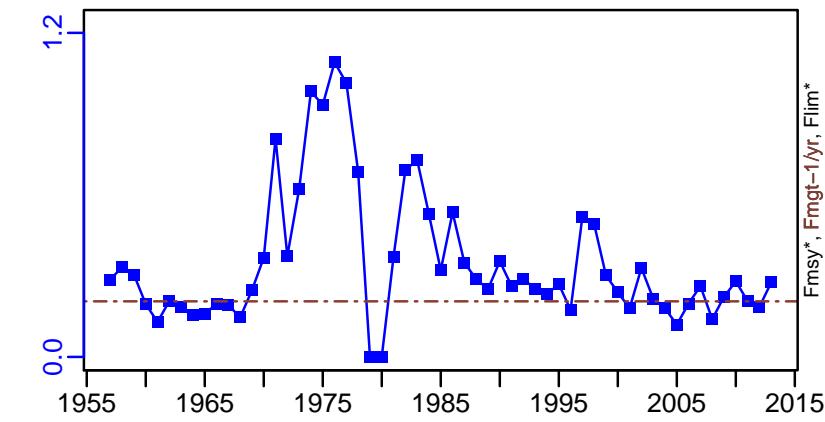
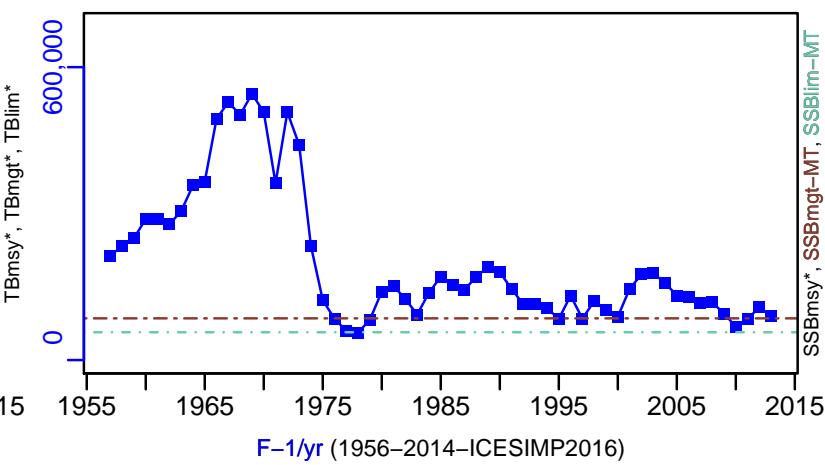
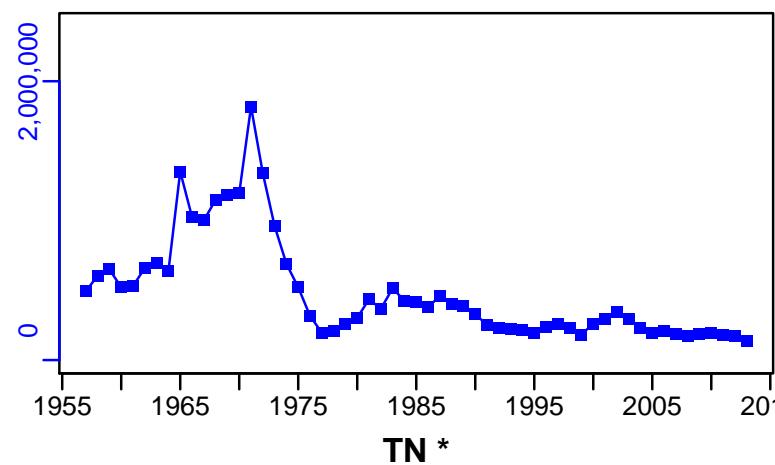


◆ Start Year   ◆ End Year   \* No Data

### Herring West of Scotland [HERRVla]

TB-MT (1956–2014–ICESIMP2016)

SSB-MT (1956–2014–ICESIMP2016)

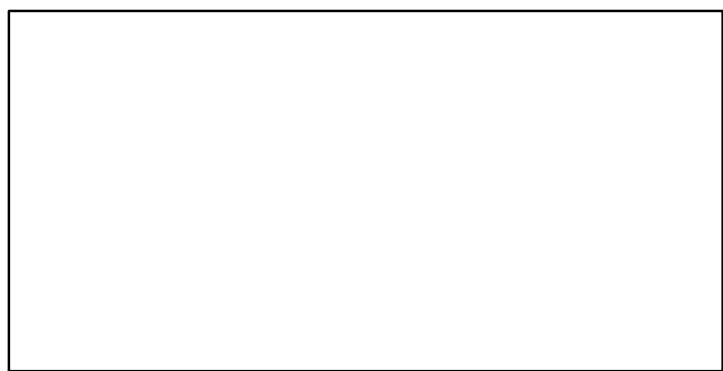
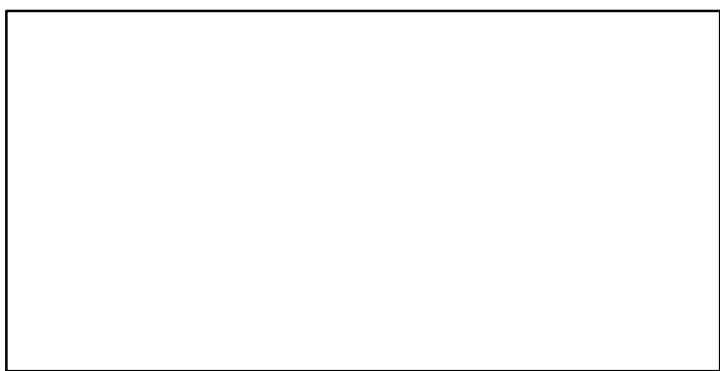
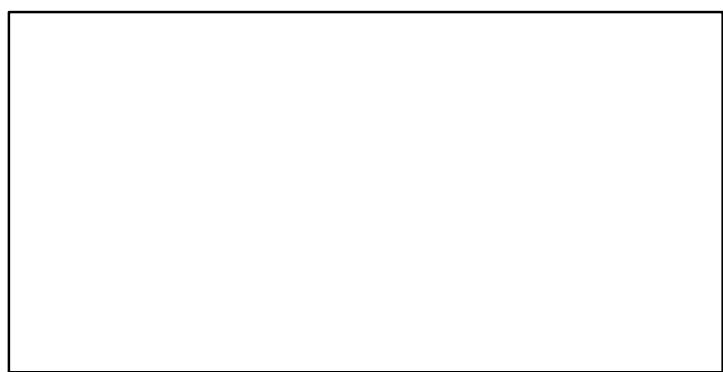
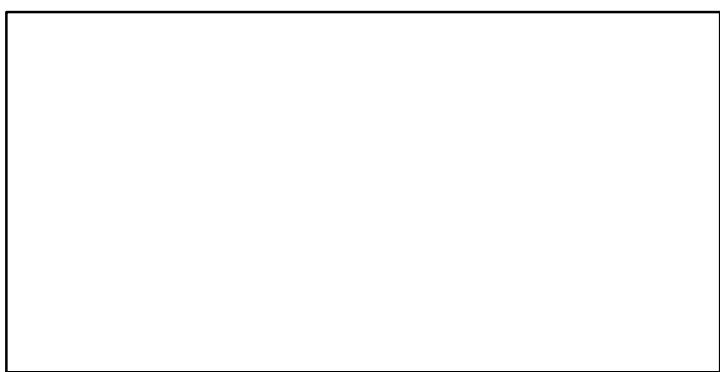
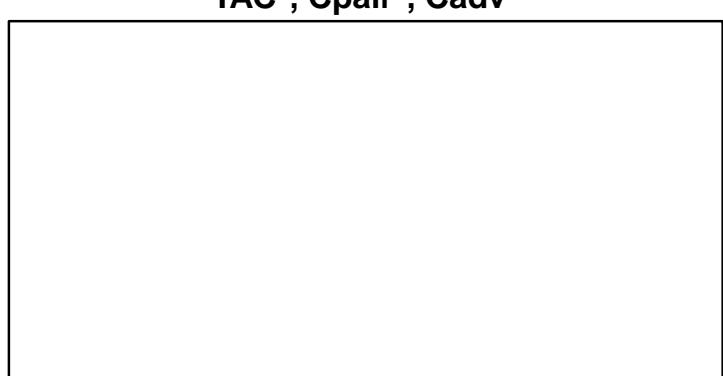
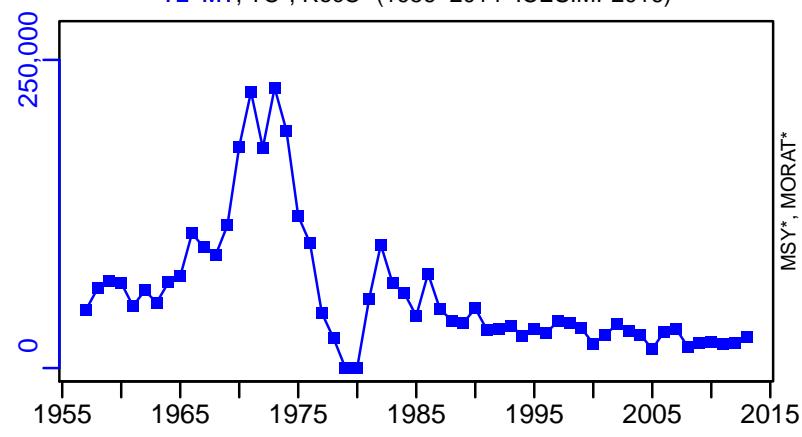


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | - - Lim BRP  | * No Data |

Herring West of Scotland [HERRV1a]

TL-MT, TC\*, RecC\* (1956–2014–ICESIMP2016)

TAC\*, Cpair\*, Cadv\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Herring ICES 5a-7bc [HERRVlaVIIbc]

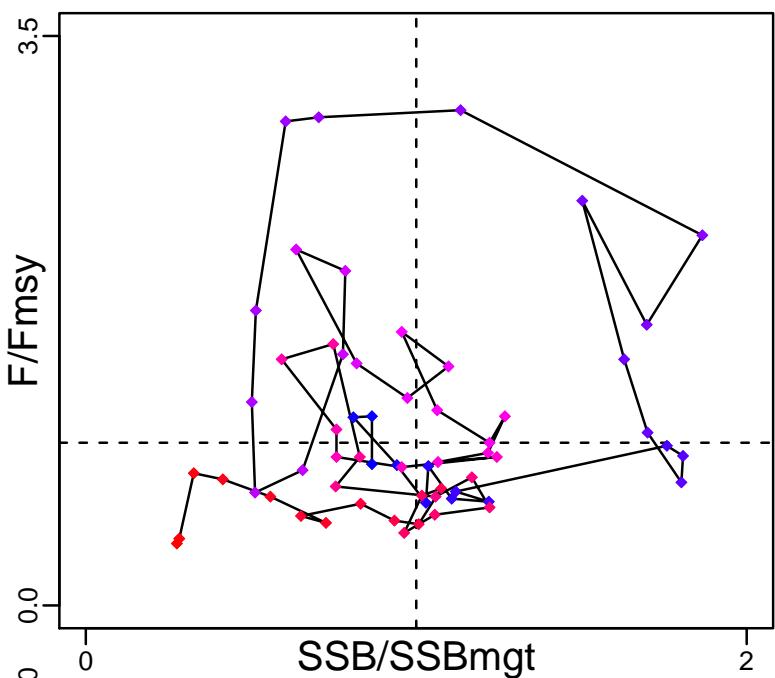
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Clupea harengus  |
| <b>Current Assess ID</b>    | HAWG-HERRVlaVIIbc-1956-2018-ICESIMP2021                    |
| <b>Area</b>                 | ICES 5a-7bc  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea       |
| <b>Assessor</b>             | Herring Assessment Working Group for the Area South of 62N |
| <b>Asmts in RAM</b>         | 2010, 2013, 2014, 2015, 2016, 2017, 2018, 2018             |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2018             | 0.16         |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2018             | 410,000      |
| <b>Fmgt</b>             | Fmgt-1/yr | 2018             | 0.16         |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | TBlim-MT  | 2010             | 81,000       |
| <b>SSBlim</b>           | SSBlim-MT | 2018             | 250,000      |
| <b>Flim</b>             | Flim-1/yr | 2018             | 0.3          |
| <b>ERlim</b>            | -         | -                | -            |

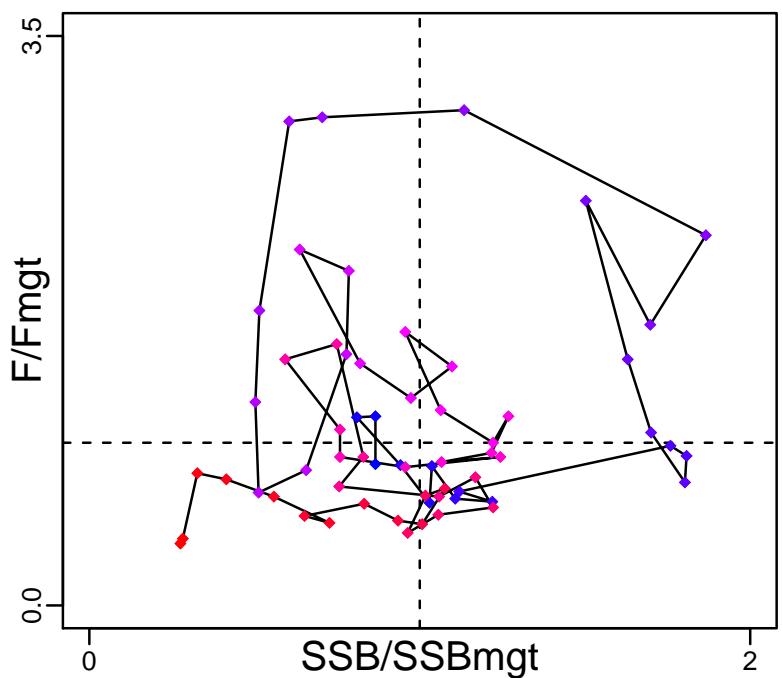
| <b>Time Series</b> |                  |                  |                   |            |            |  |
|--------------------|------------------|------------------|-------------------|------------|------------|--|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |  |
| <b>TB</b>          | TB-MT            | 2018             | 162,000           | Both       | -          |  |
| <b>SSB</b>         | SSB-MT           | 2018             | 91,500            | Both       | -          |  |
| <b>TN</b>          | -                | -                | -                 | -          | -          |  |
| <b>R</b>           | R-E00            | 2018             | $4.4 \times 10^8$ | -          | 1          |  |
| <b>F</b>           | F-1/yr           | 2018             | 0.061             | -          | 3 to 6     |  |
| <b>ER</b>          | ER-calc-ratio    | 2018             | 0.04              | -          | -          |  |
| <b>TC</b>          | TC-MT            | 2018             | 6420              |            |            |  |
| <b>TL</b>          | TL-MT            | 2018             | 6420              |            |            |  |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |  |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2018             | 0.381             |            |            |  |
| <b>ER/ERmsy</b>    | -                | -                | -                 |            |            |  |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2018             | 0.223             |            |            |  |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2018             | 0.381             |            |            |  |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |  |

Herring ICES 5a–7bc [HERRVlaVIIbc]

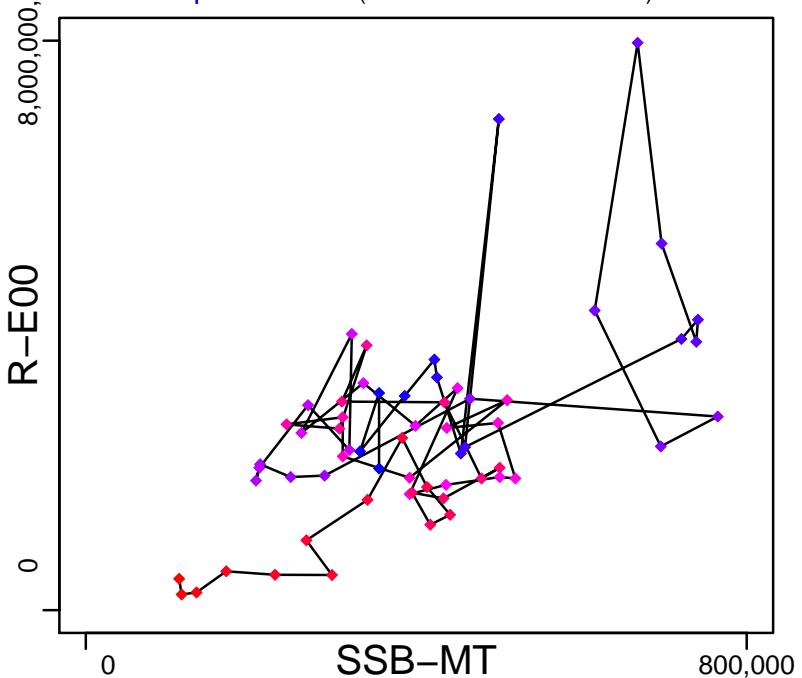
Kobe MSYpref (1956–2018–ICESIMP2018)



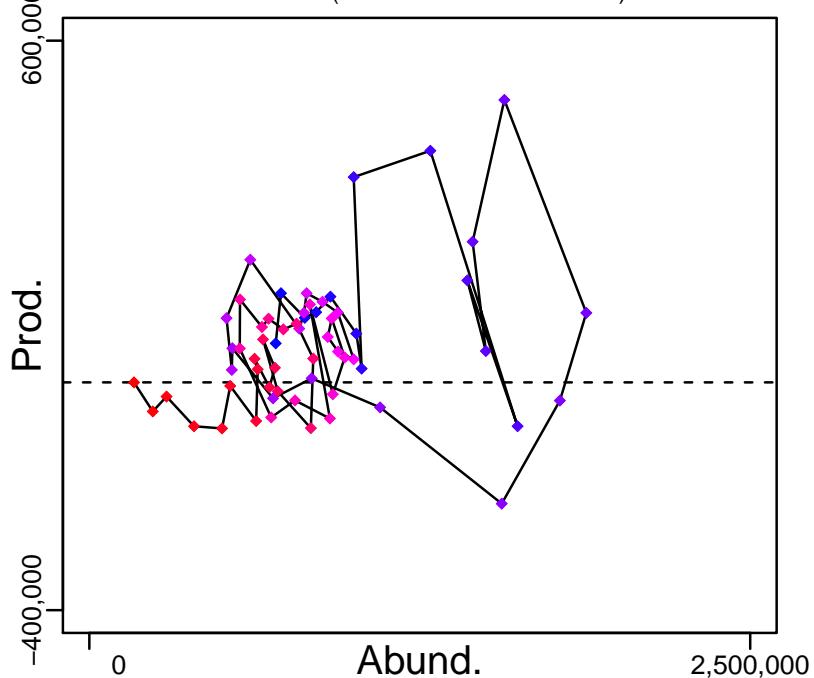
Kobe MGTpref (1956–2018–ICESIMP2018)



Spawner Recruit (1956–2018–ICESIMP2018)



Production (1956–2018–ICESIMP2018)

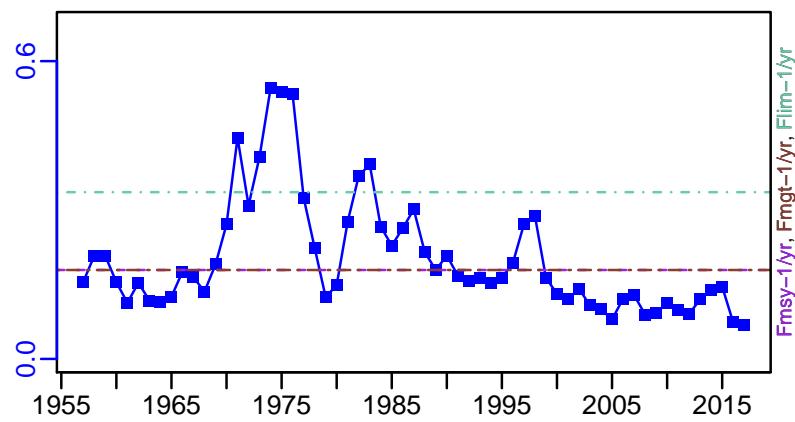
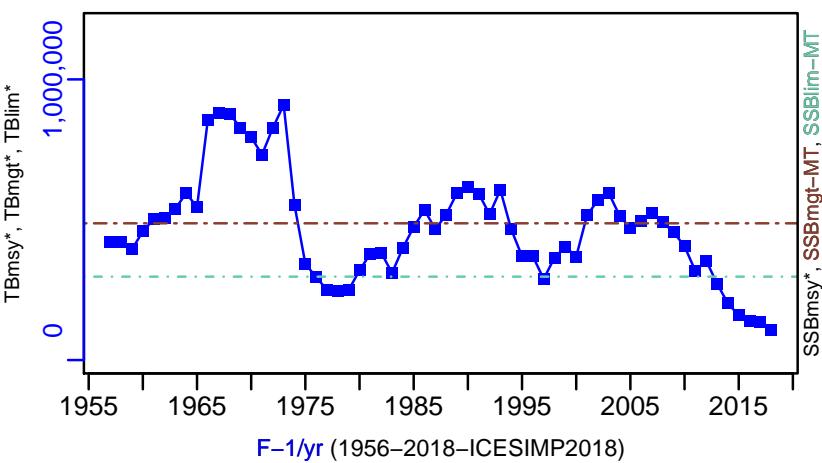
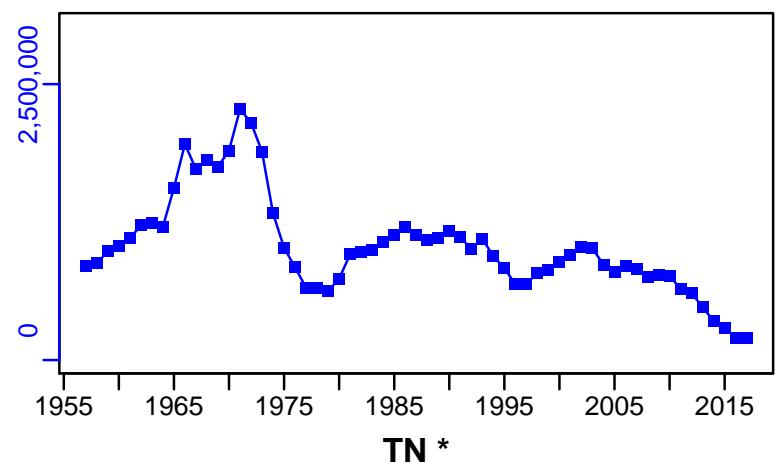


◆ Start Year ♦ End Year \* No Data

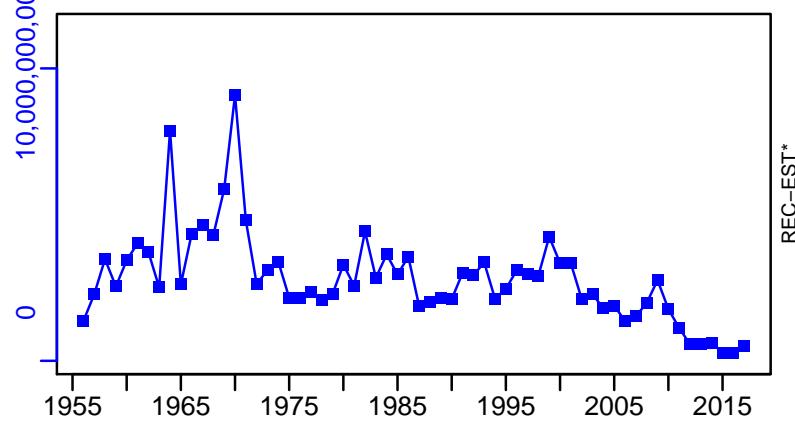
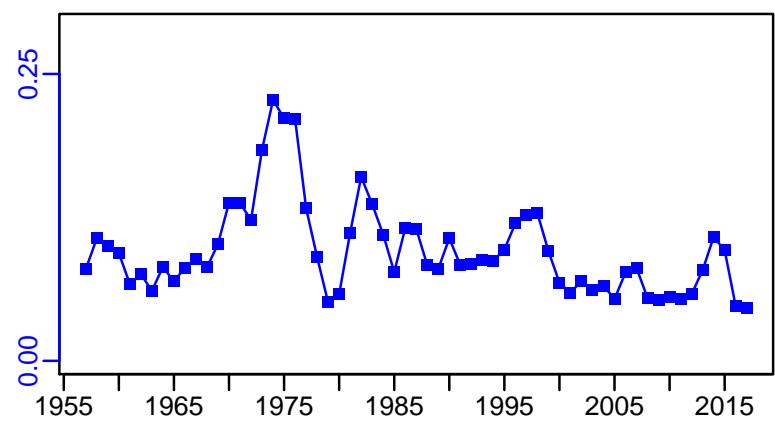
Herring ICES 5a–7bc [HERRVlaVIIbc]

TB-MT (1956–2018–ICESIMP2018)

SSB-MT (1956–2018–ICESIMP2018)



ER-calc-ratio (1956–2018–ICESIMP2018)

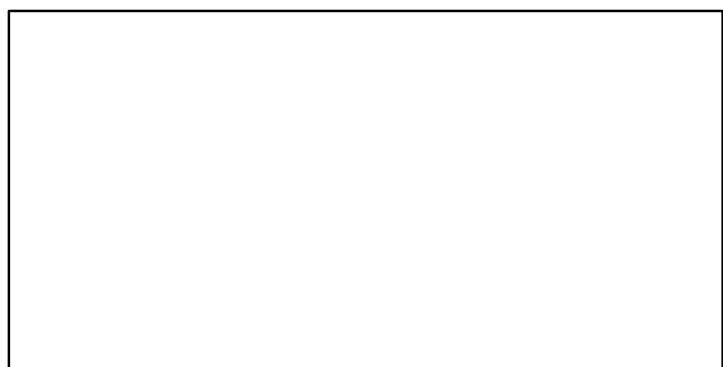
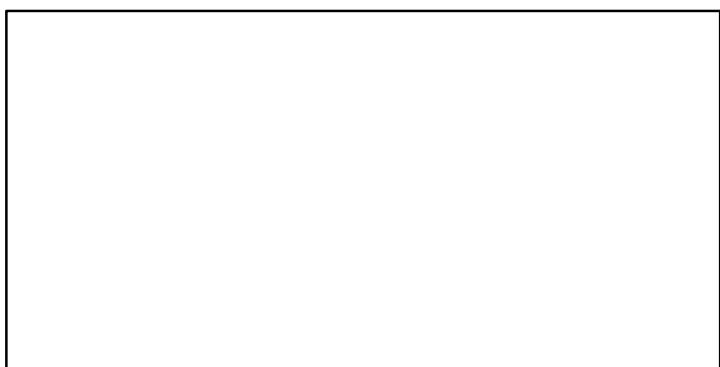
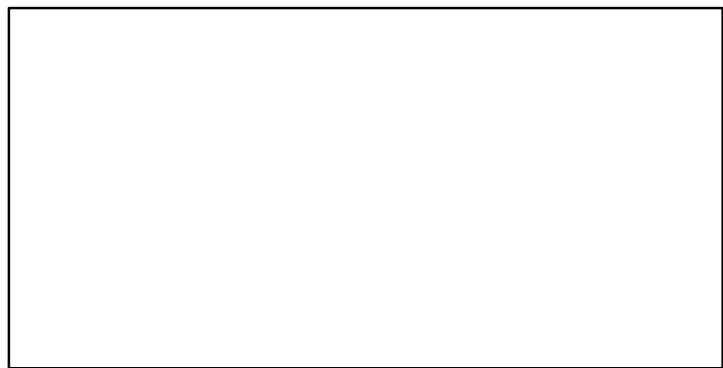
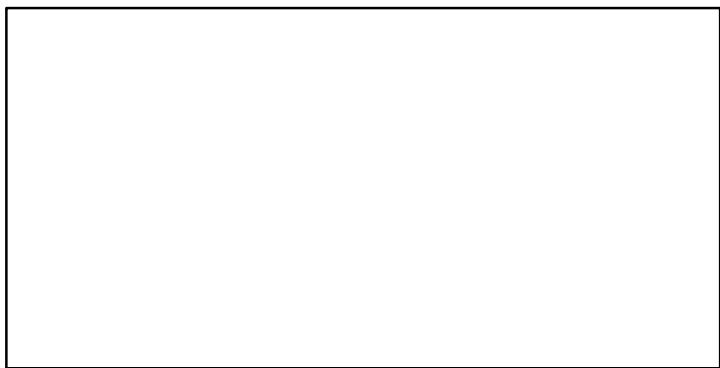
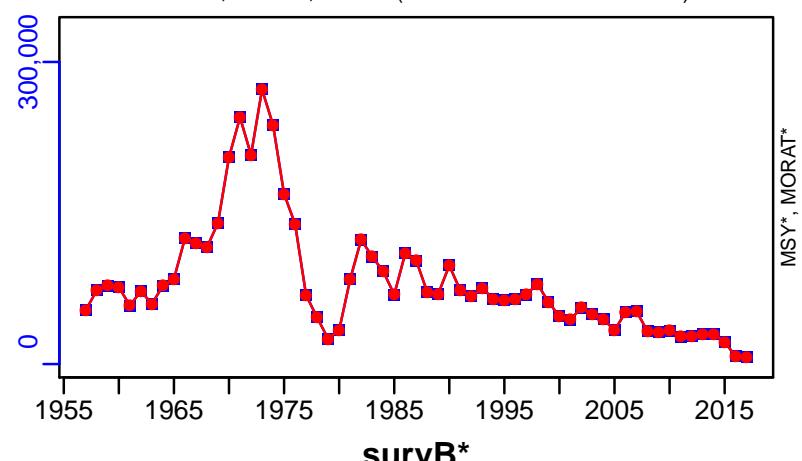


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | --- Lim BRP  | * No Data |

Herring ICES 5a–7bc [HERRVlaVIIbc]

TC–MT, TL–MT, RecC\* (1956–2018–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Horse mackerel ICES 2a-4a-5b-6a-7-8 [HMACKIIa-IVa-Vb-VIa-VII-VIII]

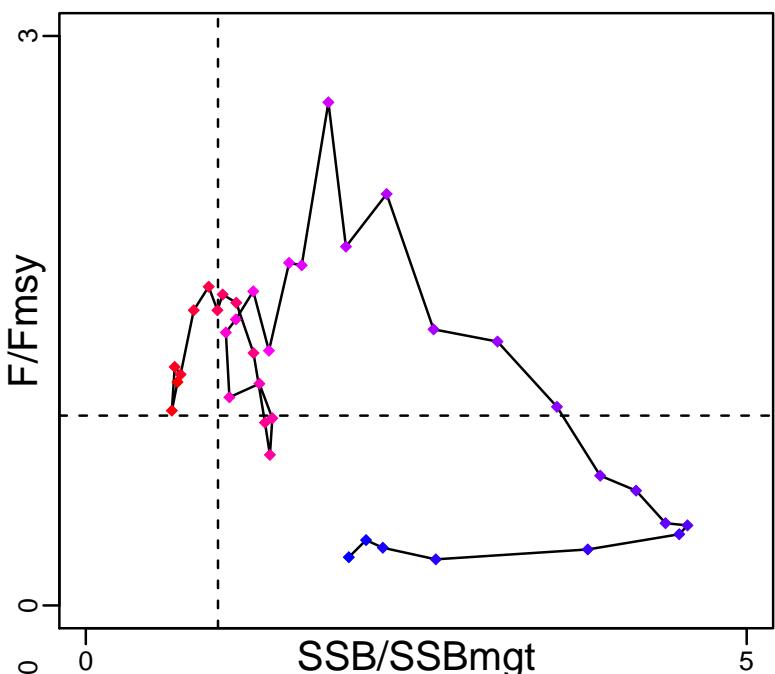
| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Trachurus trachurus                                       |
| <b>Current Assess ID</b>    | WGWISE-HMACKIIa-IVa-Vb-VIa-VII-VIII-1982-2019-ICESIMP2021 |
| <b>Area</b>                 | ICES 2a-4a-5b-6a-7-8                                      |
| <b>Management Authority</b> | International Council for the Exploration of the Sea      |
| <b>Assessor</b>             | Working Group on Widely Distributed Stocks                |
| <b>Asmts in RAM</b>         | 2013, 2014, 2015, 2016, 2017, 2019                        |

| Reference Points |            |           |           |
|------------------|------------|-----------|-----------|
| Type             | ID         | Asmt Year | Value     |
| <b>TBm sy</b>    | -          | -         | -         |
| <b>SSBm sy</b>   | -          | -         | -         |
| <b>Fm sy</b>     | Fm sy-1/yr | 2019      | 0.074     |
| <b>ERm sy</b>    | -          | -         | -         |
| <b>TBmgt</b>     | -          | -         | -         |
| <b>SSBmgt</b>    | SSBmgt-MT  | 2019      | 1,170,000 |
| <b>Fmgt</b>      | Fmgt-1/yr  | 2019      | 0.074     |
| <b>ERmgt</b>     | -          | -         | -         |
| <b>TB0</b>       | -          | -         | -         |
| <b>SSB0</b>      | -          | -         | -         |
| <b>MSY</b>       | -          | -         | -         |
| <b>M</b>         | -          | -         | -         |
| <b>TBlim</b>     | -          | -         | -         |
| <b>SSBlim</b>    | SSBlim-MT  | 2017      | 661,917   |
| <b>Flim</b>      | Flim-1/yr  | 2017      | 0.151     |
| <b>ERlim</b>     | -          | -         | -         |

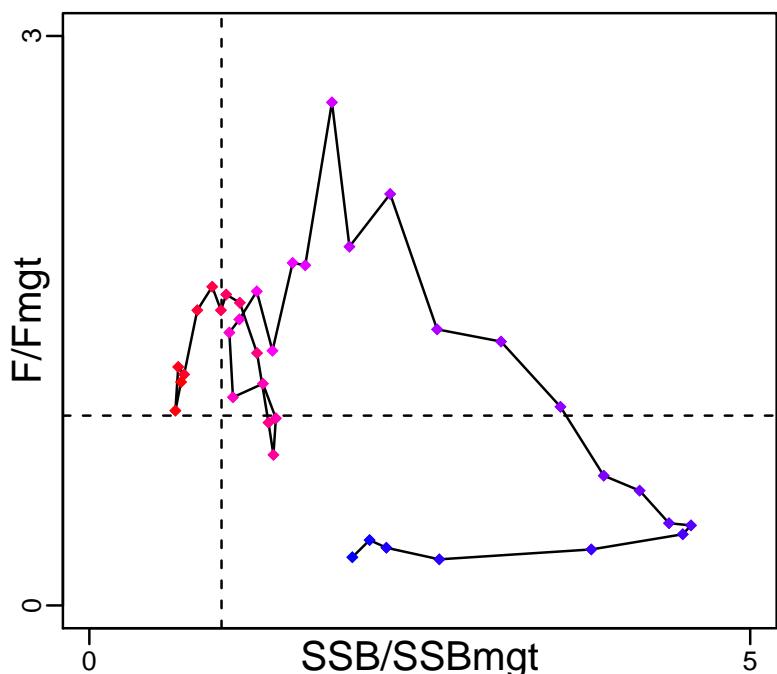
| Time Series        |                   |           |               |      |         |
|--------------------|-------------------|-----------|---------------|------|---------|
| Type               | ID                | Asmt Year | Curr Value    | Sex  | Age     |
| <b>TB</b>          | TB-MT             | 2017      | 1,070,000     | Both | -       |
| <b>SSB</b>         | SSB-MT            | 2019      | 872,831       | -    | -       |
| <b>TN</b>          | -                 | -         | -             | -    | -       |
| <b>R</b>           | R-E00             | 2019      | 2,572,649,000 | -    | 0       |
| <b>F</b>           | F-1/yr            | 2019      | 0.087         | -    | 1 to 10 |
| <b>ER</b>          | ER-calc-ratio     | 2017      | 0.098         | -    | -       |
| <b>TC</b>          | TC-MT             | 2019      | 101,682       |      |         |
| <b>TL</b>          | TL-MT             | 2019      | 99,072        |      |         |
| <b>TB/TBm sy</b>   | -                 | -         | -             |      |         |
| <b>SSB/SSBm sy</b> | -                 | -         | -             |      |         |
| <b>F/Fm sy</b>     | F-1/yr/Fm sy-1/yr | 2019      | 1.177         |      |         |
| <b>ER/ERm sy</b>   | -                 | -         | -             |      |         |
| <b>TB/TBmgt</b>    | -                 | -         | -             |      |         |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT  | 2019      | 0.746         |      |         |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr  | 2019      | 1.177         |      |         |
| <b>ER/ERmgt</b>    | -                 | -         | -             |      |         |

Horse mackerel ICES 2a–4a–5b–6a–7–8 [HMACKIIa–IVa–Vb–VIa–VII–VIII]

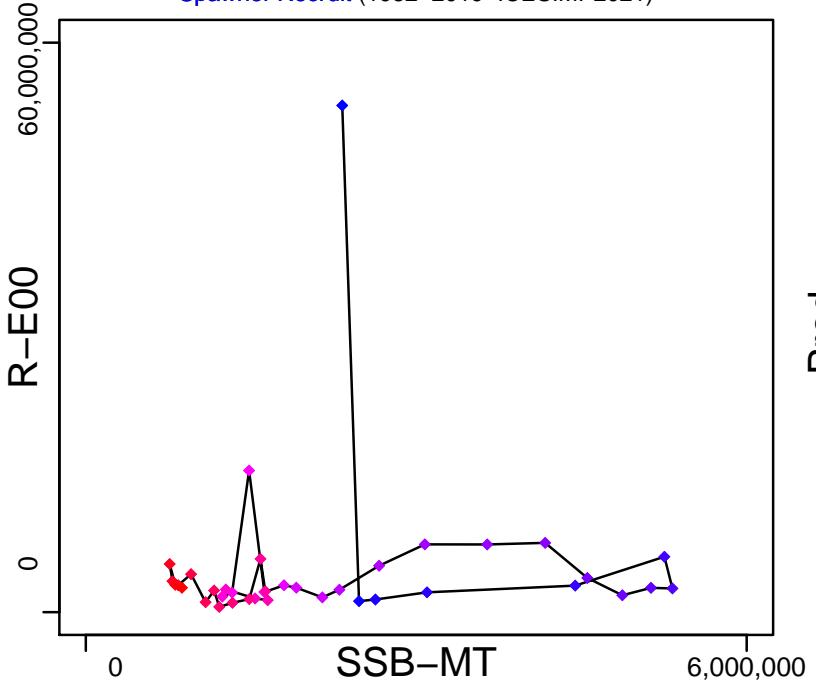
Kobe MSYpref (1982–2019–ICESIMP2021)



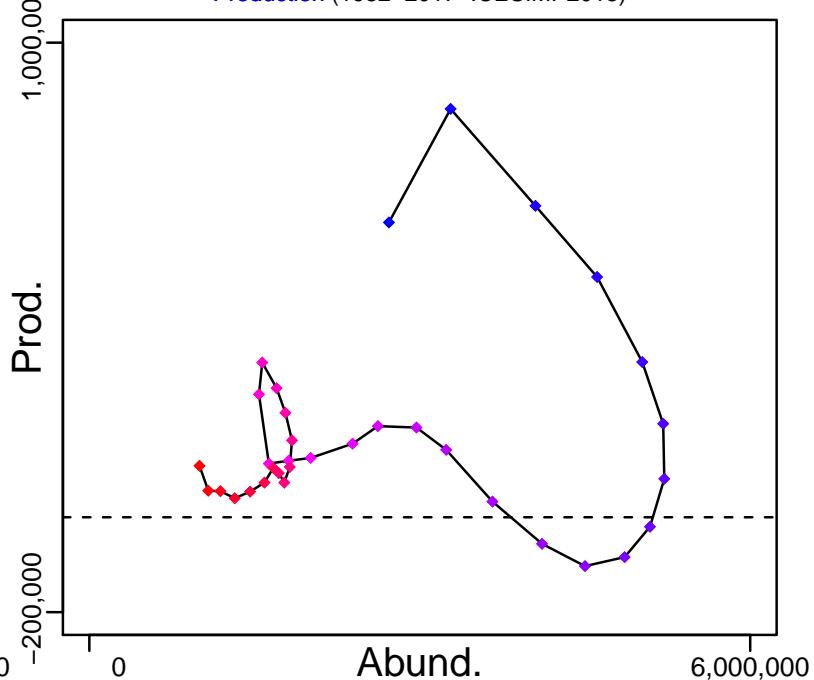
Kobe MGTpref (1982–2019–ICESIMP2021)



Spawner Recruit (1982–2019–ICESIMP2021)



Production (1982–2017–ICESIMP2018)

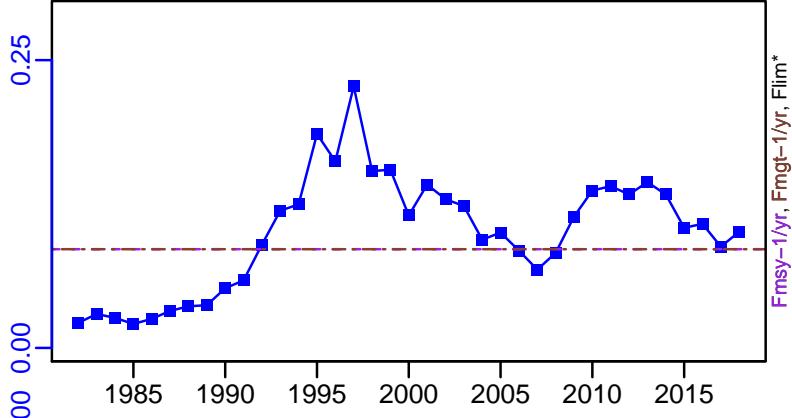
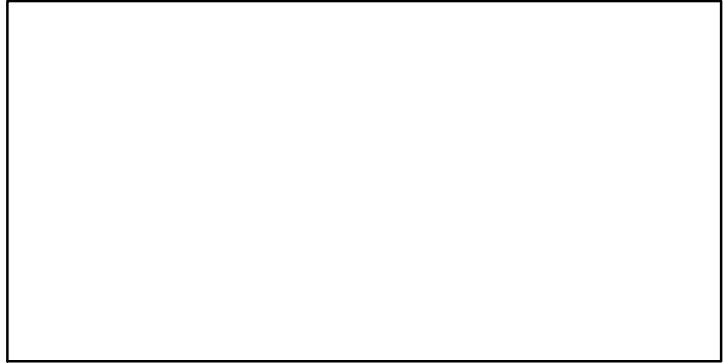
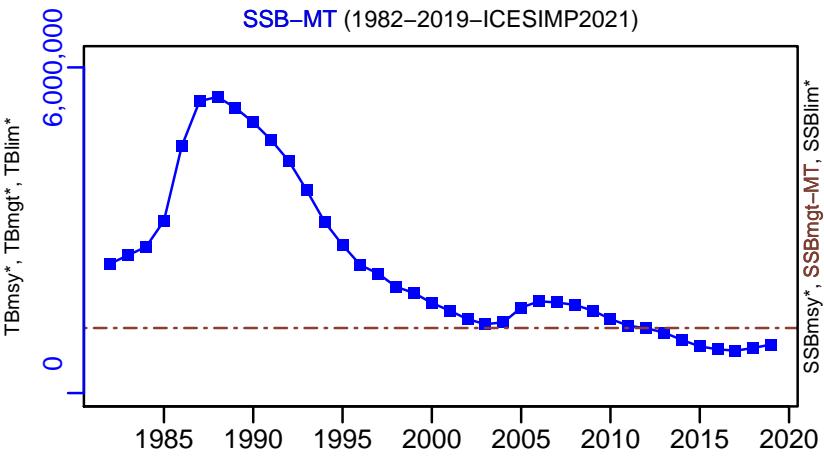
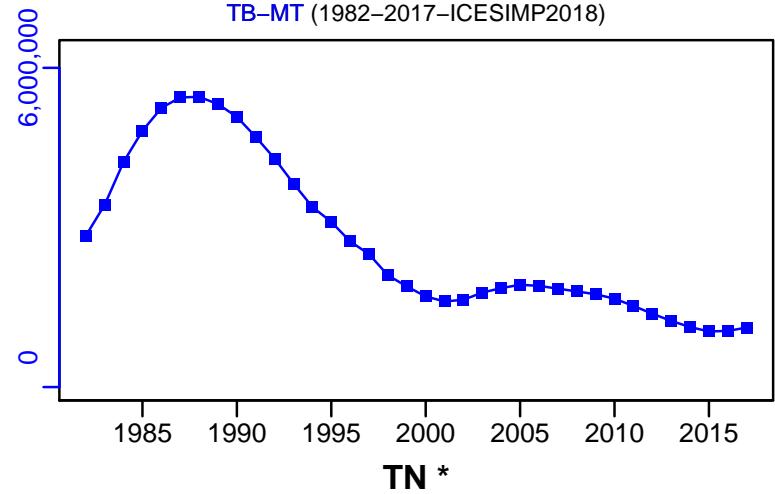


|              |            |   |         |
|--------------|------------|---|---------|
| ◆ Start Year | ◆ End Year | * | No Data |
|--------------|------------|---|---------|

Horse mackerel ICES 2a–4a–5b–6a–7–8 [HMACKIIa–IVa–Vb–VIa–VII–VIII]

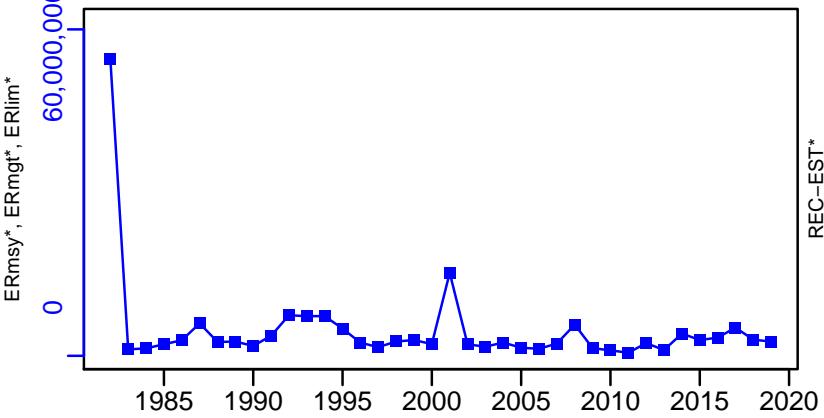
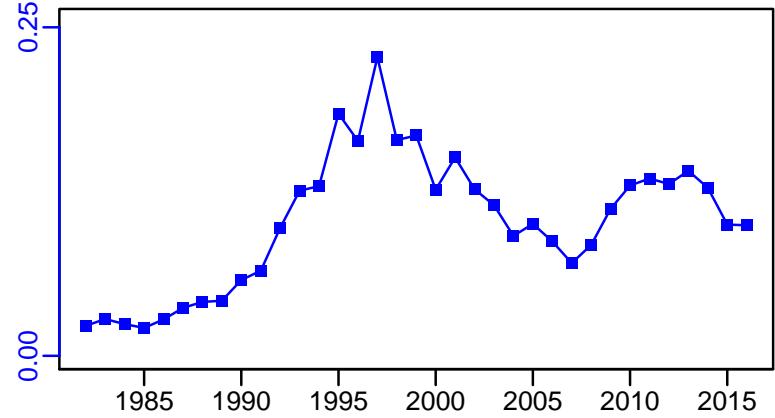
TB-MT (1982–2017–ICESIMP2018)

SSB-MT (1982–2019–ICESIMP2021)



ER-calc-ratio (1982–2017–ICESIMP2018)

R-E00 (1982–2019–ICESIMP2021)

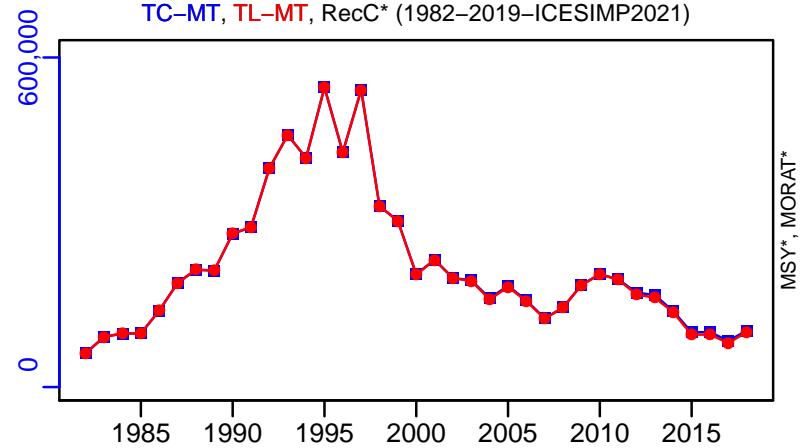


|                      |              |
|----------------------|--------------|
| ■ Listed time series | — Target BRP |
| - - - MSY-based BRP  | — Rec-Est    |
| --- Lim BRP          | * No Data    |

Horse mackerel ICES 2a–4a–5b–6a–7–8 [HMACKIIa–IVa–Vb–VIa–VII–VIII]

TC–MT, TL–MT, RecC\* (1982–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



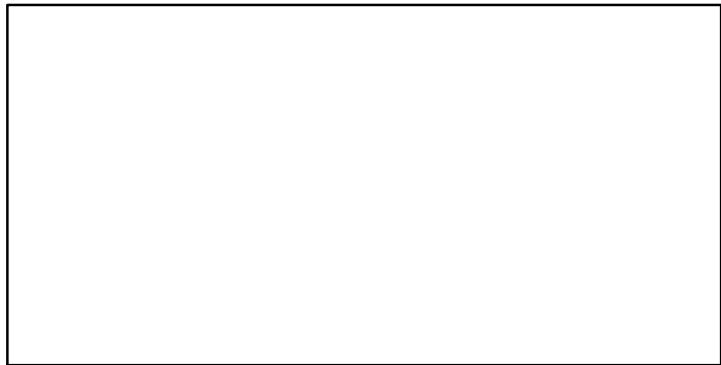
survB\*



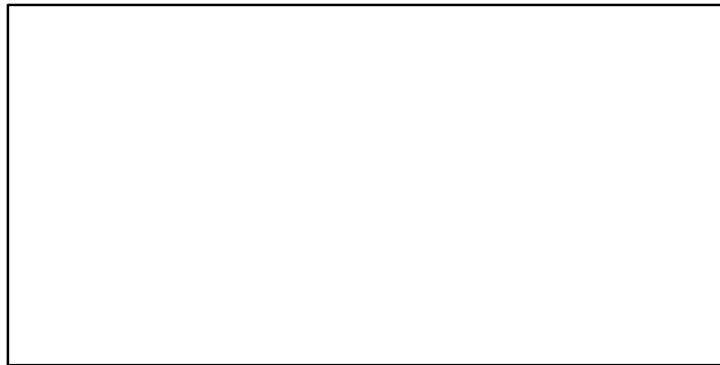
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Horse mackerel ICES 3a-4bc-7d [HMACKIIIa-IVbc-VIId]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Trachurus trachurus                                  |
| <b>Current Assess ID</b>    | WGWHITE-HMACKIIIa-IVbc-VIId-1982-2018-ICESIMP2021    |
| <b>Area</b>                 | ICES 3a-4bc-7d                                       |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Widely Distributed Stocks           |
| <b>Asmts in RAM</b>         | 2015, 2015, 2016, 2018                               |

| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | TC-MT | 2018      | 14,773     |     |     |
| <b>TL</b>         | TL-MT | 2018      | 14,508     |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

**Spawner Recruit\***

**Production\***

◆ Start Year ♦ End Year \* No Data

Horse mackerel ICES 3a–4bc–7d [HMACKIIIa–IVbc–VId]

**TB\***



**SSB\***



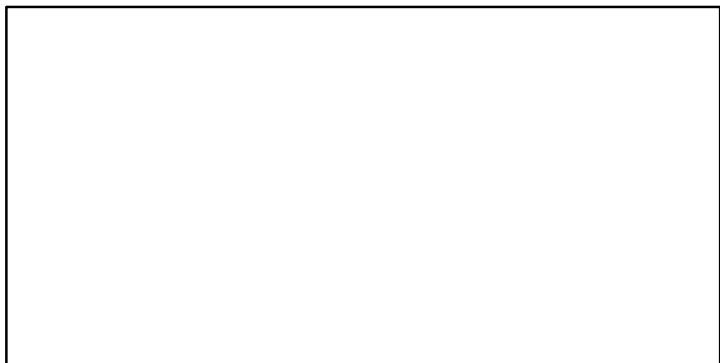
**TN \***



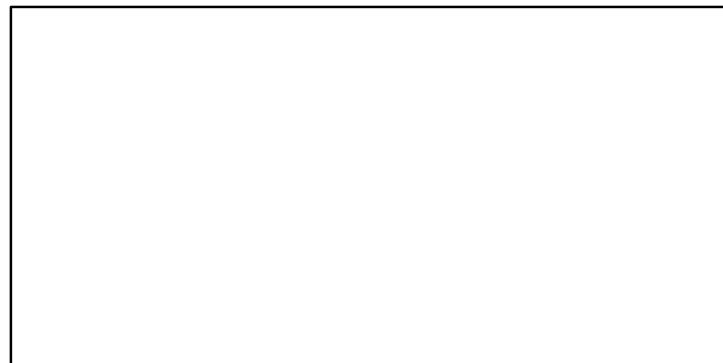
**F\***



**ER\***



**Recruits\***

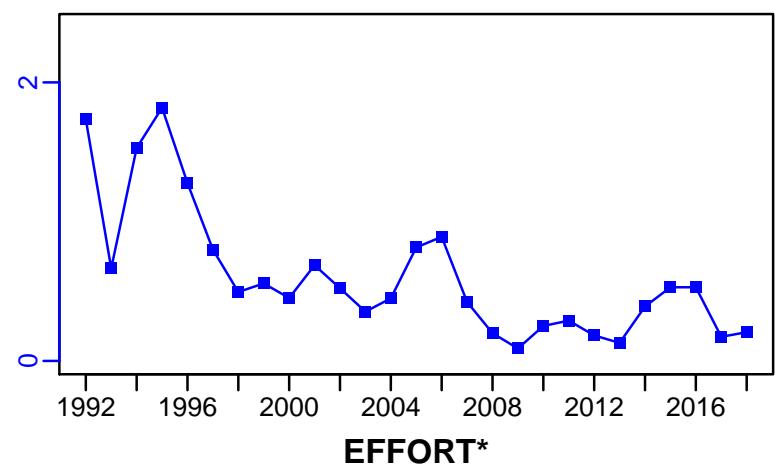
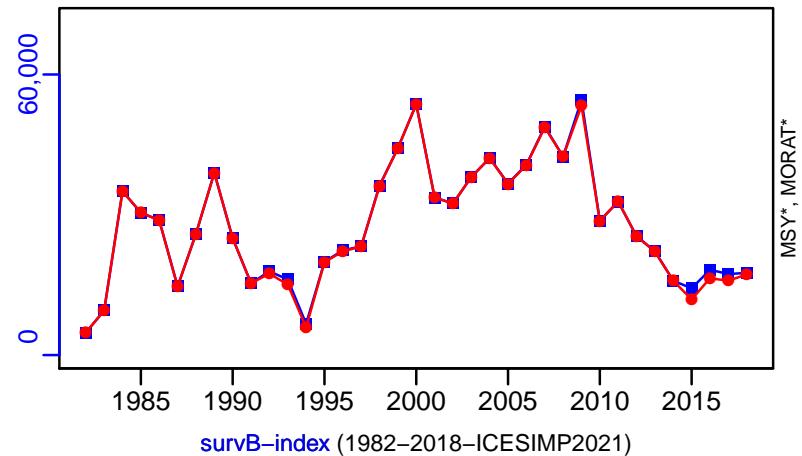


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Horse mackerel ICES 3a–4bc–7d [HMACKIIIa–IVbc–VIIId]

TC–MT, TL–MT, RecC\* (1982–2018–ICESIMP2021)

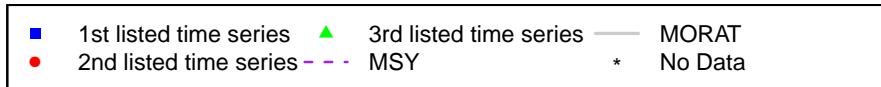
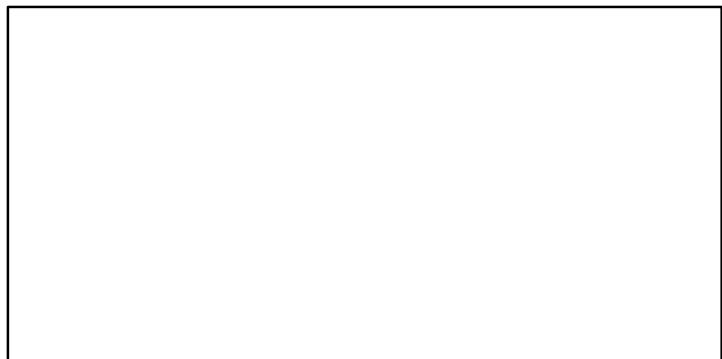
TAC\*, Cpair\*, Cadv\*



CPUE\*



CdivMSY\*



## Horse mackerel Portugese Waters -East [HMACKIXa]

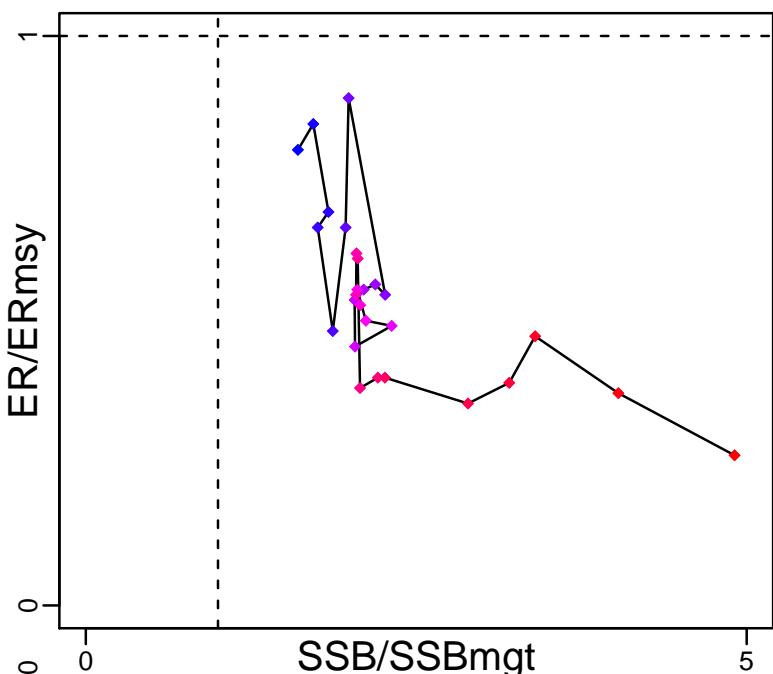
| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Trachurus trachurus   |
| <b>Current Assess ID</b>    | WGHANSA-HMACKIXa-1992-2019-ICESIMP2021                        |
| <b>Area</b>                 | Portuguese Waters -East                                       |
| <b>Management Authority</b> | International Council for the Exploration of the Sea          |
| <b>Assessor</b>             | Working Group on Southern Horse Mackerel, Anchovy and Sardine |
| <b>Asmts in RAM</b>         | 2013, 2014, 2015, 2016, 2017, 2018, 2019                      |

| <b>Reference Points</b> |             |           |         |
|-------------------------|-------------|-----------|---------|
| Type                    | ID          | Asmt Year | Value   |
| <b>TBmsy</b>            | -           | -         | -       |
| <b>SSBmsy</b>           | -           | -         | -       |
| <b>Fmsy</b>             | Fmsy-1/yr   | 2017      | 0.11    |
| <b>ERmsy</b>            | ERmsy-ratio | 2019      | 0.11    |
| <b>TBmgt</b>            | -           | -         | -       |
| <b>SSBmgt</b>           | SSBmgt-MT   | 2019      | 181,000 |
| <b>Fmgt</b>             | Fmgt-1/yr   | 2017      | 0.11    |
| <b>ERmgt</b>            | ERmgt-ratio | 2019      | 0.11    |
| <b>TB0</b>              | -           | -         | -       |
| <b>SSB0</b>             | -           | -         | -       |
| <b>MSY</b>              | -           | -         | -       |
| <b>M</b>                | -           | -         | -       |
| <b>TBlim</b>            | -           | -         | -       |
| <b>SSBlim</b>           | SSBlim-MT   | 2018      | 103,000 |
| <b>Flim</b>             | Flim-1/yr   | 2017      | 0.19    |
| <b>ERlim</b>            | -           | -         | -       |

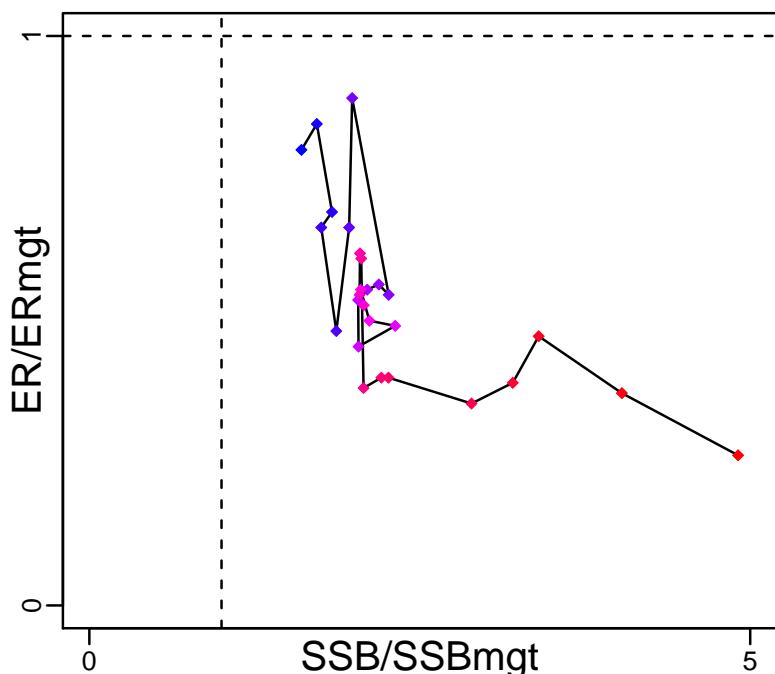
| <b>Time Series</b> |                      |           |               |     |         |
|--------------------|----------------------|-----------|---------------|-----|---------|
| Type               | ID                   | Asmt Year | Curr Value    | Sex | Age     |
| <b>TB</b>          | -                    | -         | -             | -   | -       |
| <b>SSB</b>         | SSB-MT               | 2019      | 1,001,740     | -   | -       |
| <b>TN</b>          | -                    | -         | -             | -   | -       |
| <b>R</b>           | R-E00                | 2019      | 4,692,300,000 | -   | 0       |
| <b>F</b>           | F-1/yr               | 2017      | 0.077         | -   | 2 to 10 |
| <b>ER</b>          | ER-ratio             | 2019      | 0.029         | -   | 2 to 10 |
| <b>TC</b>          | TC-MT                | 2019      | 31,661        |     |         |
| <b>TL</b>          | TL-MT                | 2019      | 31,661        |     |         |
| <b>TB/TBmsy</b>    | -                    | -         | -             |     |         |
| <b>SSB/SSBmsy</b>  | -                    | -         | -             |     |         |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr     | 2017      | 0.704         |     |         |
| <b>ER/ERmsy</b>    | ER-ratio/ERmsy-ratio | 2019      | 0.264         |     |         |
| <b>TB/TBmgt</b>    | -                    | -         | -             |     |         |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT     | 2019      | 5.534         |     |         |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr     | 2017      | 0.704         |     |         |
| <b>ER/ERmgt</b>    | -                    | -         | -             |     |         |

Horse mackerel Portuguese Waters –East [HMACKIXa]

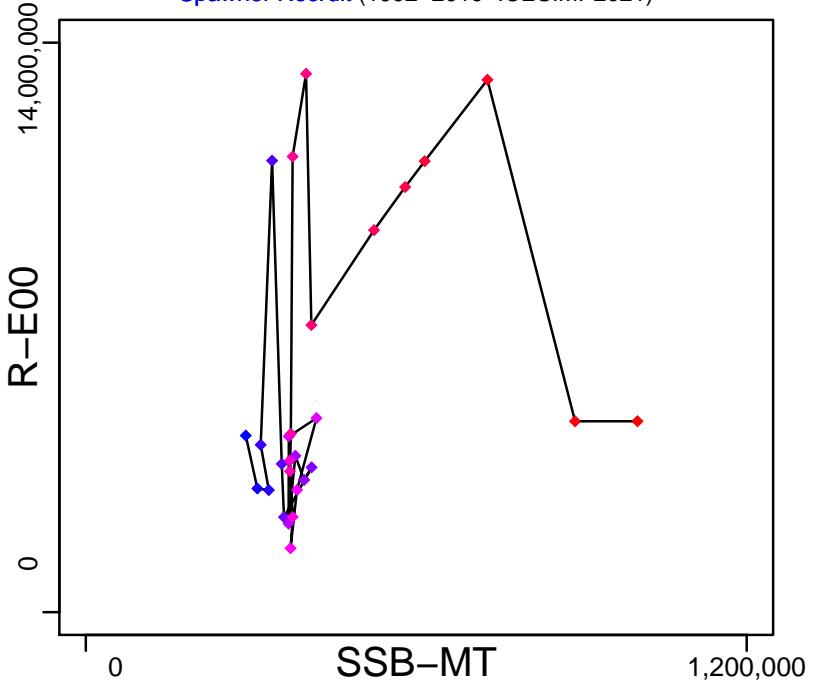
Kobe MSYpref (1992–2019–ICESIMP2021)



Kobe MGTpref (1992–2019–ICESIMP2021)



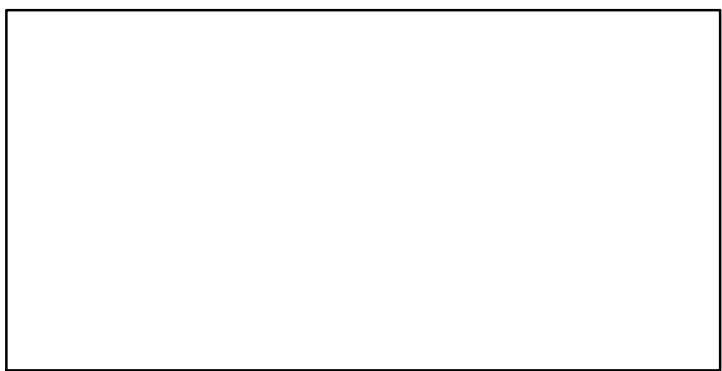
Spawner Recruit (1992–2019–ICESIMP2021)



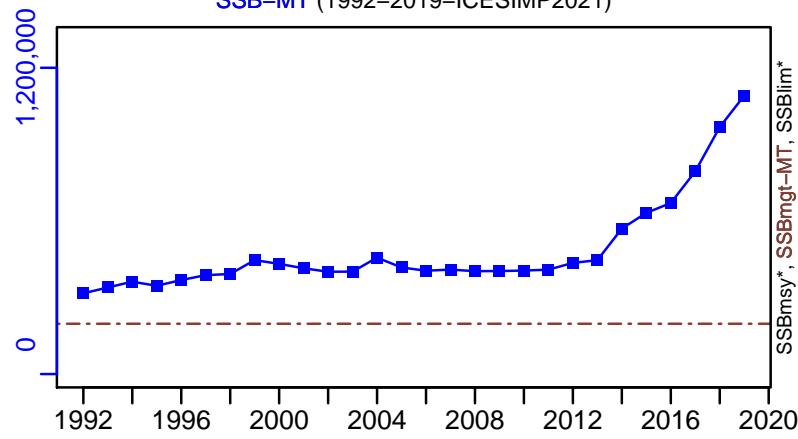
◆ Start Year ◆ End Year \* No Data

Horse mackerel Portuguese Waters –East [HMACKIXa]

**TB\***



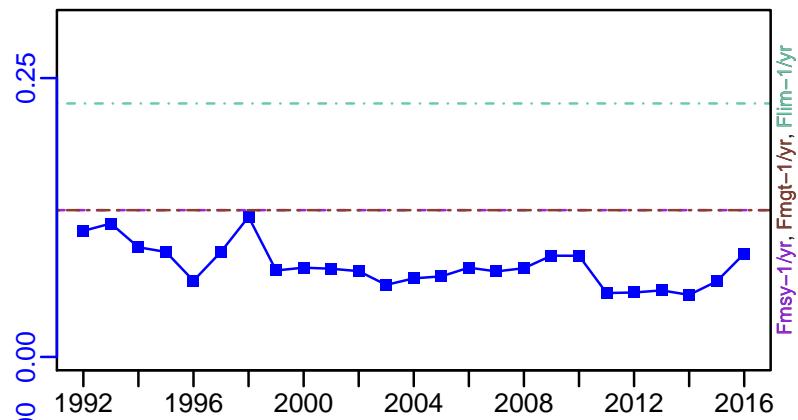
**SSB-MT (1992–2019–ICESIMP2021)**



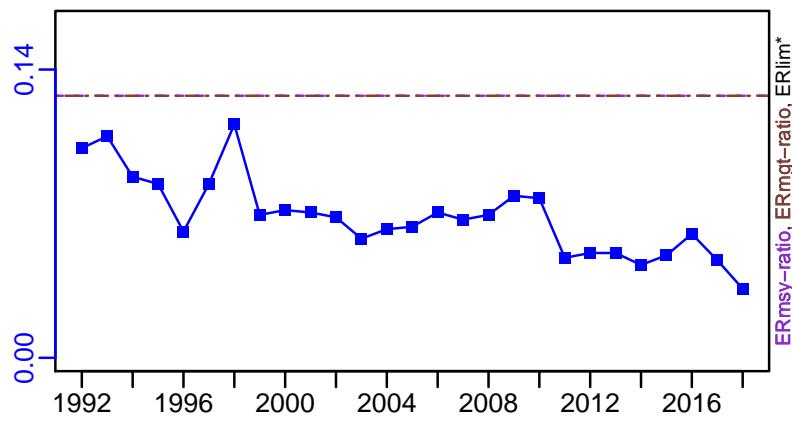
**TN \***



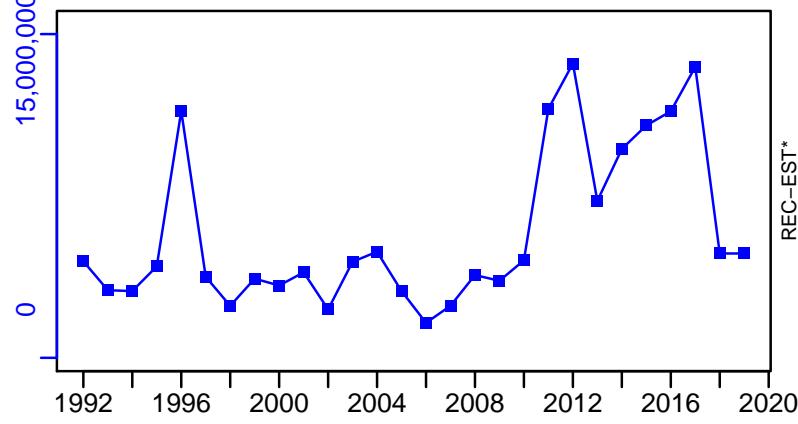
**F-1/yr (1992–2017–ICESIMP2018)**



**ER-ratio (1992–2019–ICESIMP2021)**



**R-E00 (1992–2019–ICESIMP2021)**

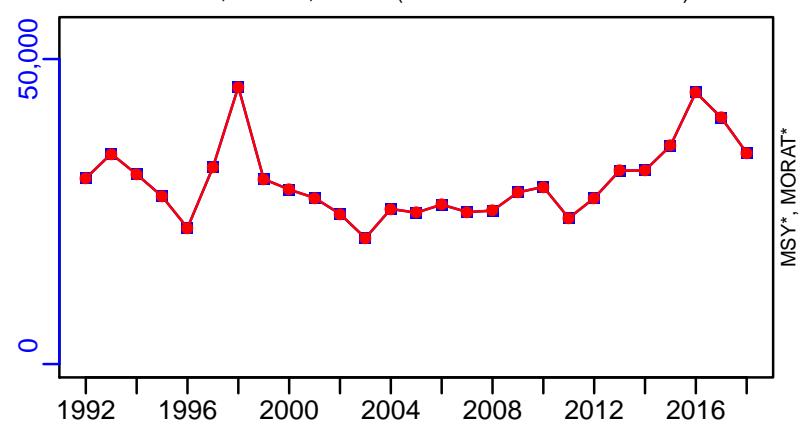


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | - - Lim BRP  | * No Data |

Horse mackerel Portuguese Waters –East [HMACKIXa]

TC–MT, TL–MT, RecC\* (1992–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



survB\*

CPUE\*

EFFORT\*

CdivMSY\*

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

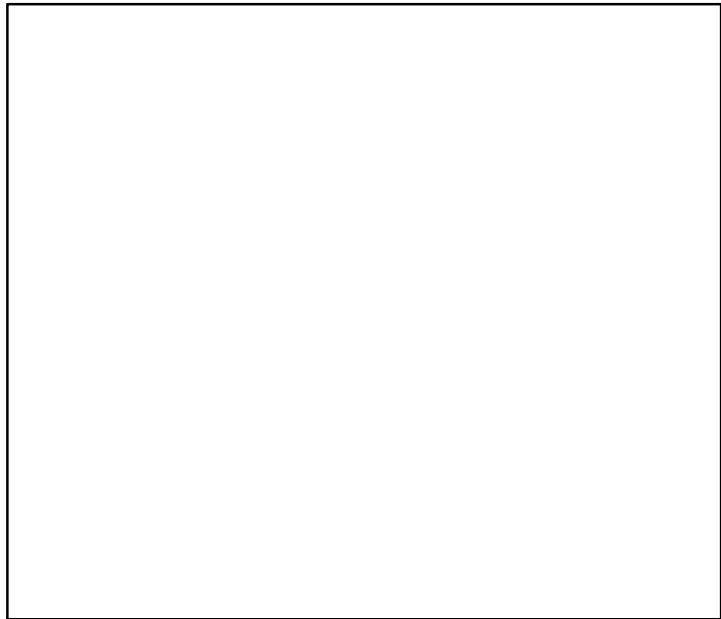
## Kitefin shark Northeast Atlantic [KFSHARNEATL]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Dalatias licha                                       |
| <b>Current Assess ID</b>    | WGEF-KFSHARNEATL-1972-2018-ICESIMP2021               |
| <b>Area</b>                 | Northeast Atlantic                                   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2018, 2014   |

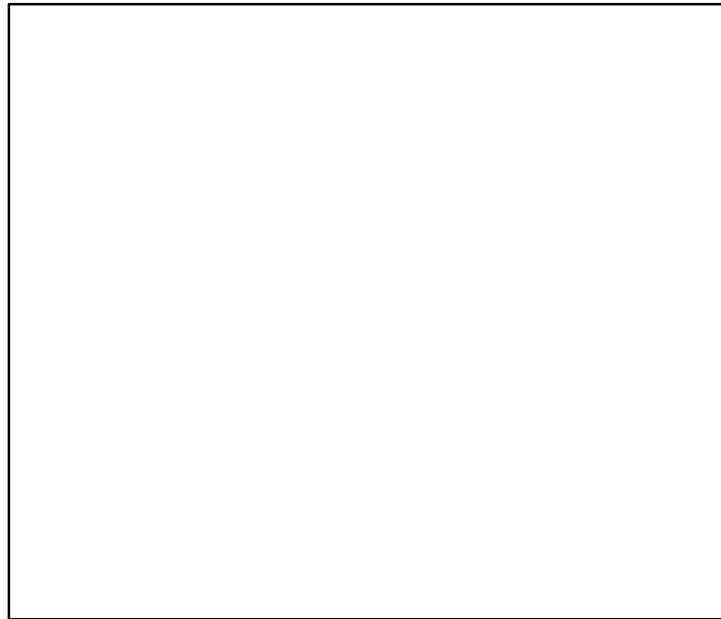
| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | -     | -         | -          |     |     |
| <b>TL</b>         | TL-MT | 2018      | 0          |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

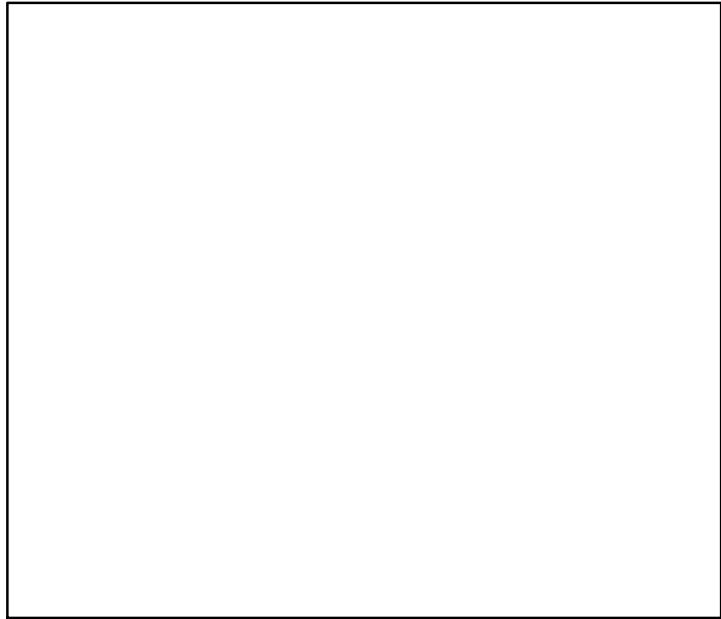
**Kobe MSY\***



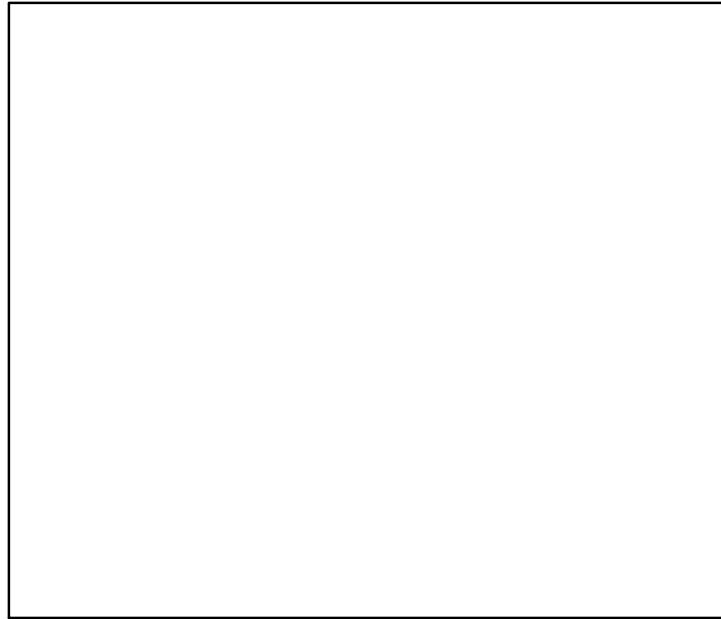
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

Kitefin shark Northeast Atlantic [KFSHARNEATL]

**TB\***



**SSB\***



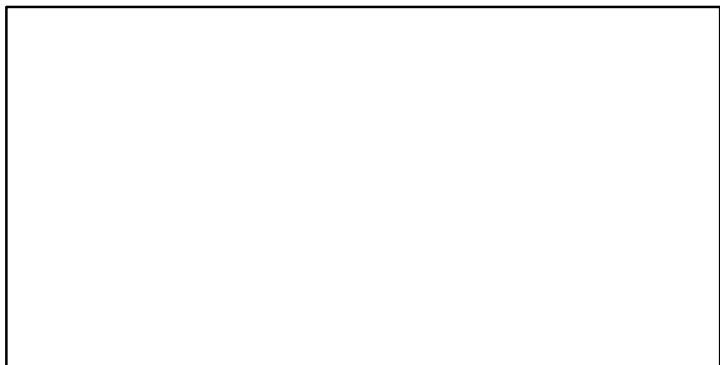
**TN \***



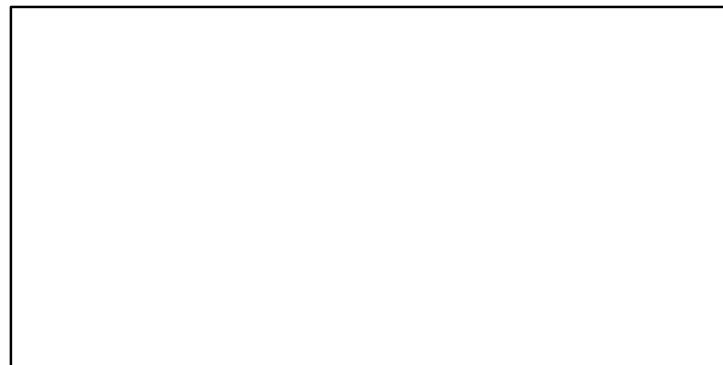
**F\***



**ER\***



**Recruits\***

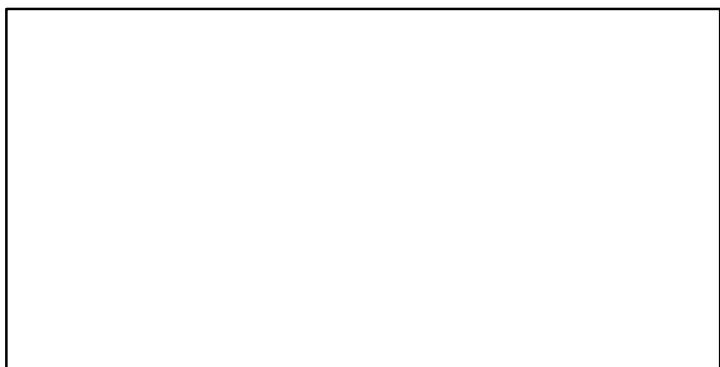
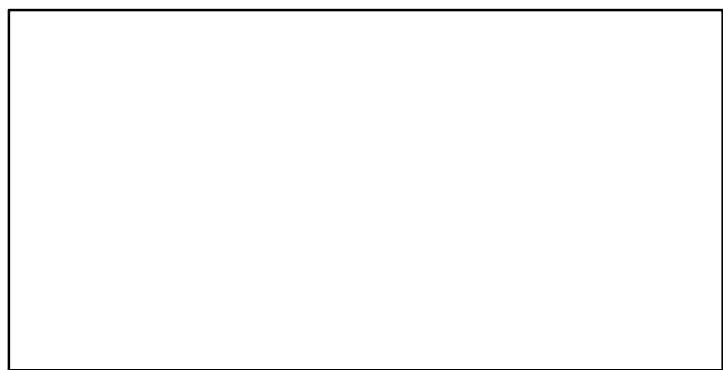
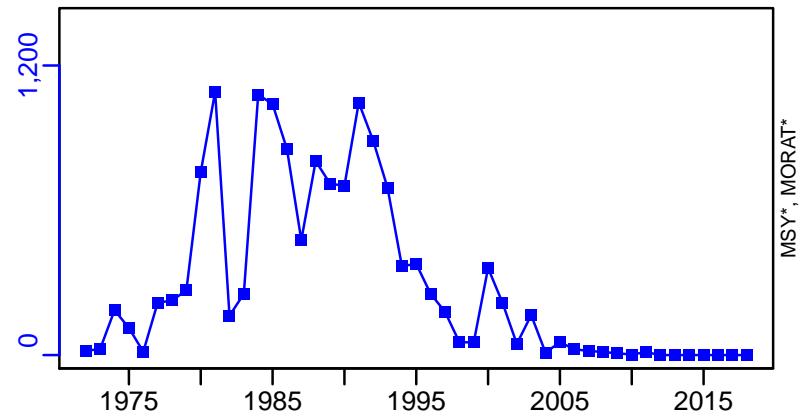


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Kitefin shark Northeast Atlantic [KFSHARNEATL]

TL-MT, TC\*, RecC\* (1972–2018—ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Leafscale gulper shark Northeast Atlantic [LGSHARNEATL]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Centrophorus squamosus                               |
| <b>Current Assess ID</b>    | WGEF-LGSHARNEATL-1988-2018-ICESIMP2021               |
| <b>Area</b>                 | Northeast Atlantic                                   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2014, 2018   |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | -     | -         | -          |     |     |
| <b>TL</b>          | TL-MT | 2018      | 2          |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

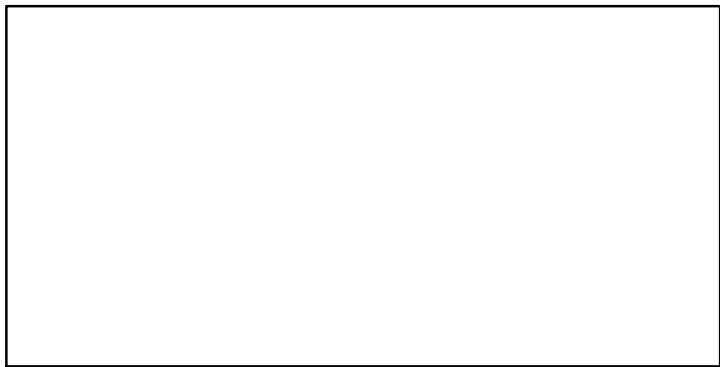
**Spawner Recruit\***

**Production\***

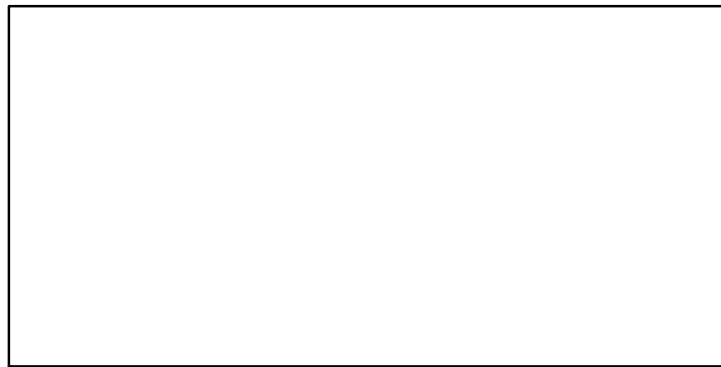
◆ Start Year ♦ End Year \* No Data

**Leafscale gulper shark Northeast Atlantic [LGSHEARNEATL]**

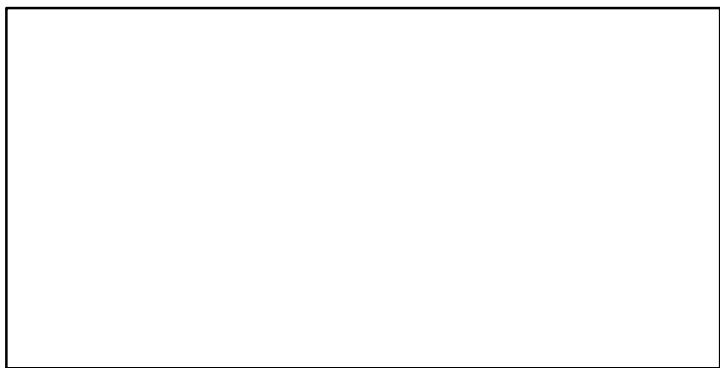
**TB\***



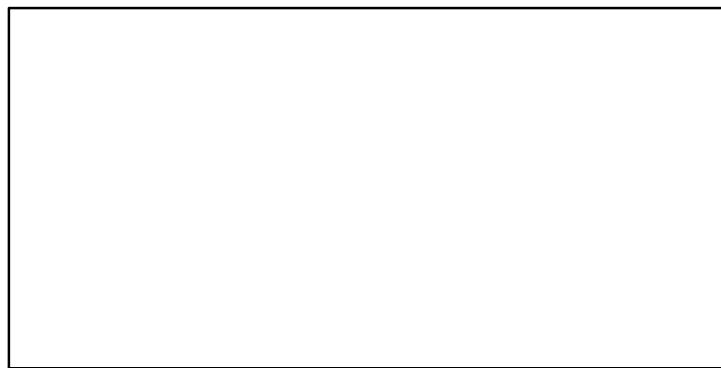
**SSB\***



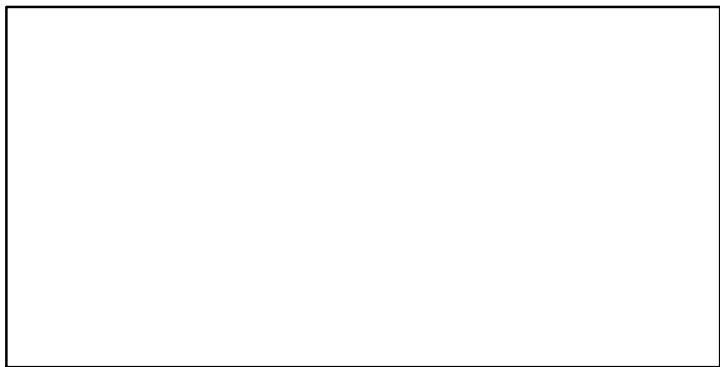
**TN \***



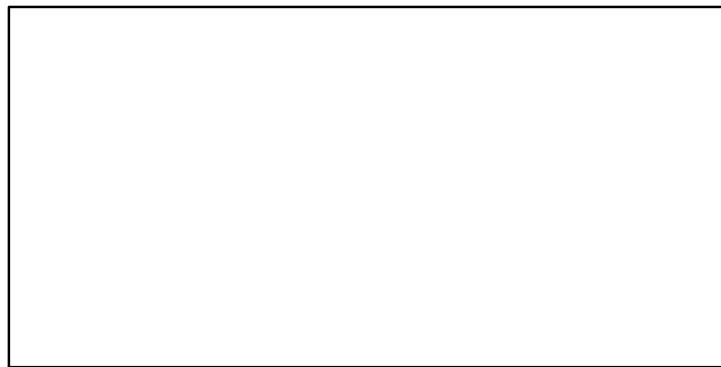
**F\***



**ER\***



**Recruits\***

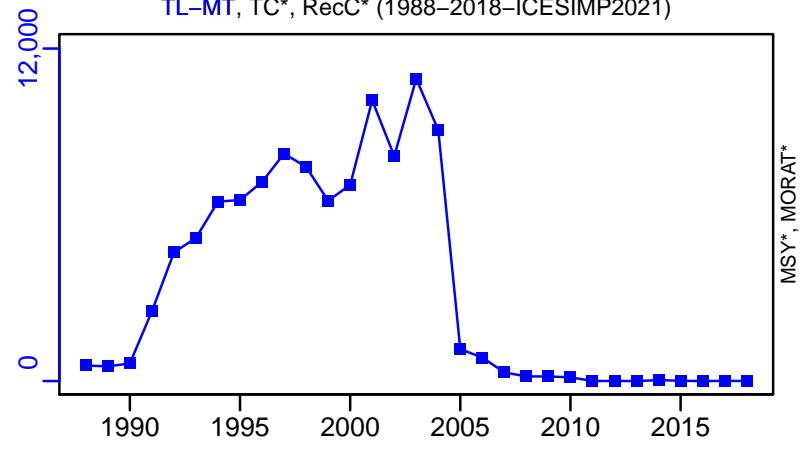


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Leafscale gulper shark Northeast Atlantic [LGSHARNEATL]

TL-MT, TC\*, RecC\* (1988–2018–ICESIMP2021)

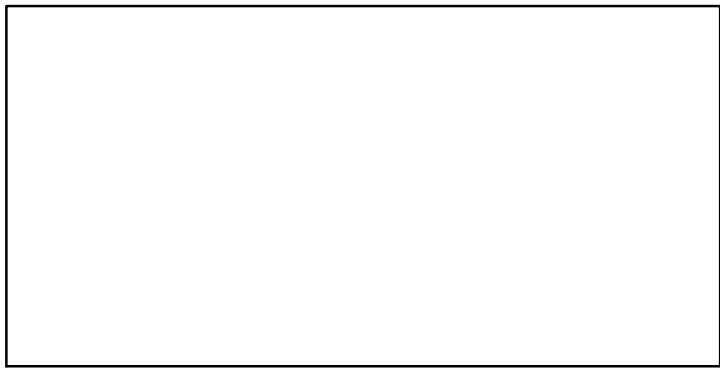
TAC\*, Cpair\*, Cadv\*



survB\*



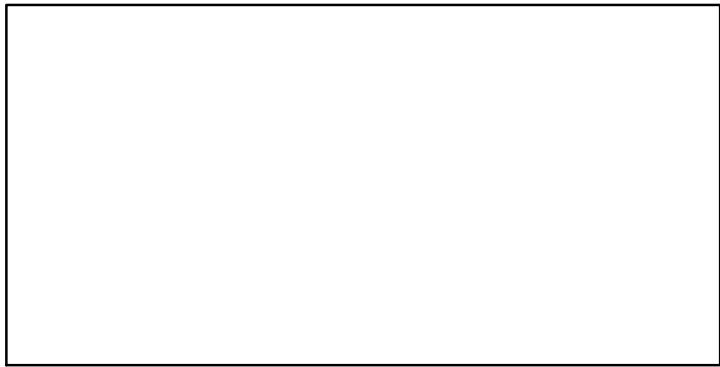
CPUE\*



CdivMSY\*



EFFORT\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

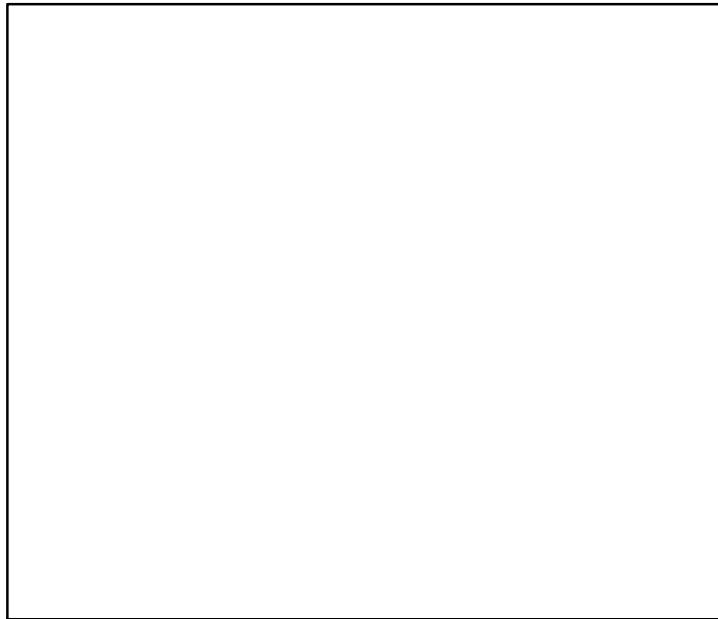
## Ling Northeast Atlantic [LINGNEATL]

| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Molva molva   |
| <b>Current Assess ID</b>    | WGDEEP-LINGNEATL-1988-2018-ICESIMP2021                                      |
| <b>Area</b>                 | Northeast Atlantic  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                        |
| <b>Assessor</b>             | Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources |
| <b>Asmts in RAM</b>         | 2014, 2016, 2018  |

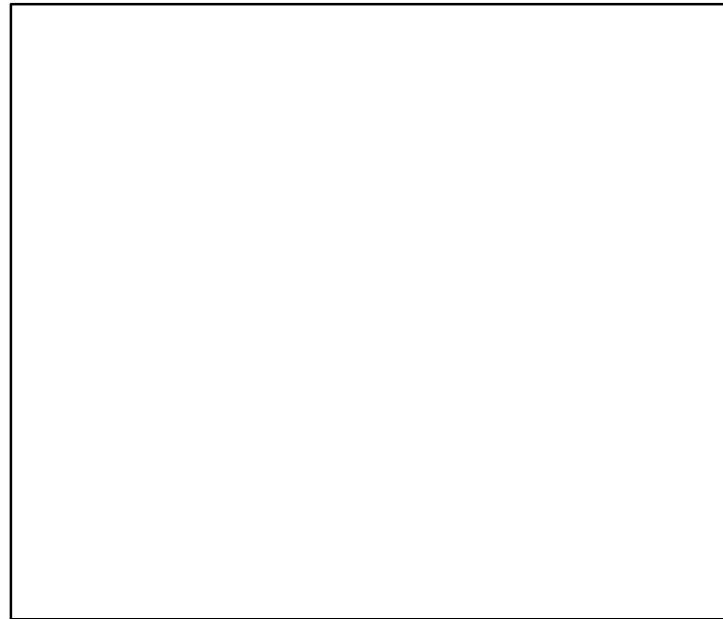
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2014      | 144        | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | -         | -         | -          |      |     |
| <b>TL</b>          | TL-MT     | 2018      | 20,688     |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

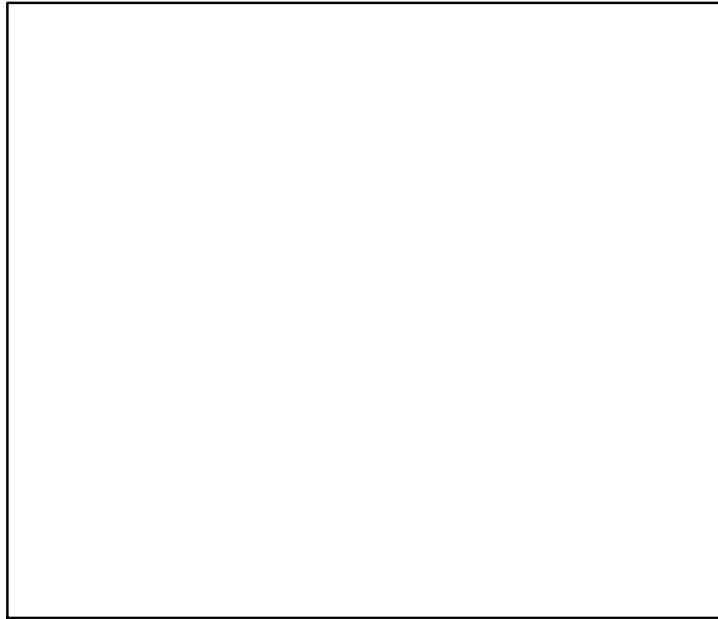
**Kobe MSY\***



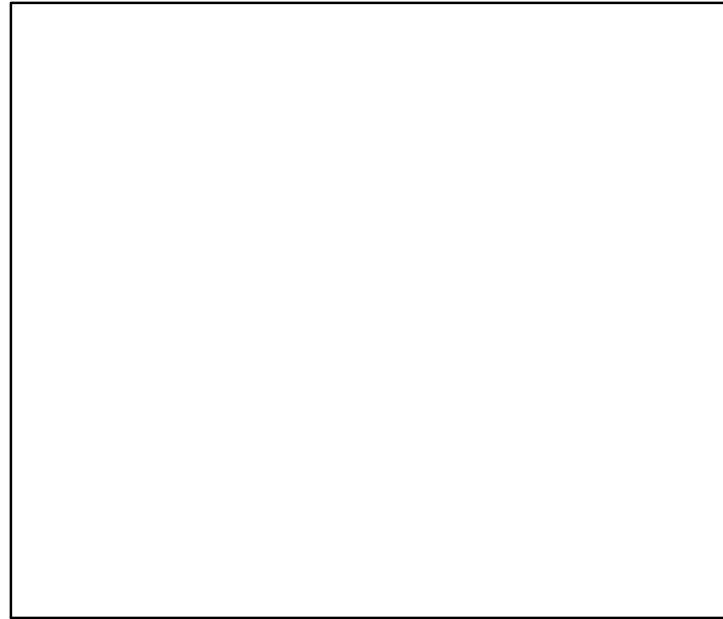
**Kobe MGT\***



**Spawner Recruit\***



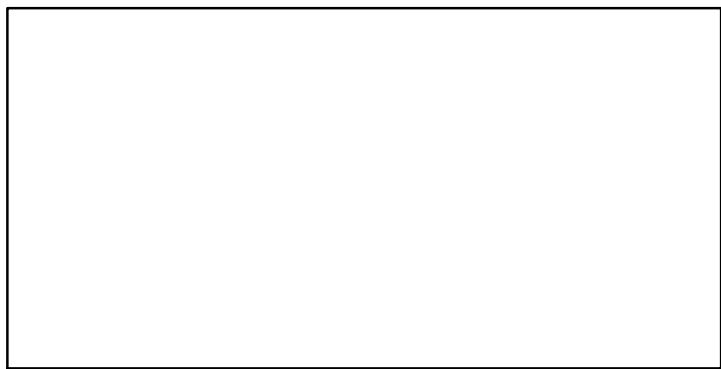
**Production\***



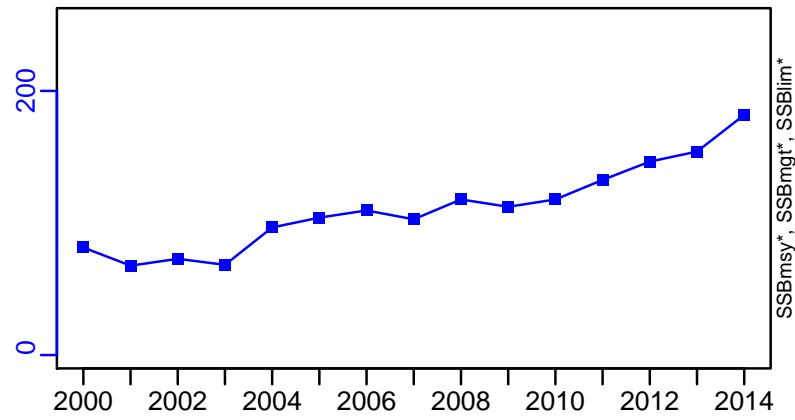
◆ Start Year ♦ End Year \* No Data

Ling Northeast Atlantic [LINGNEATL]

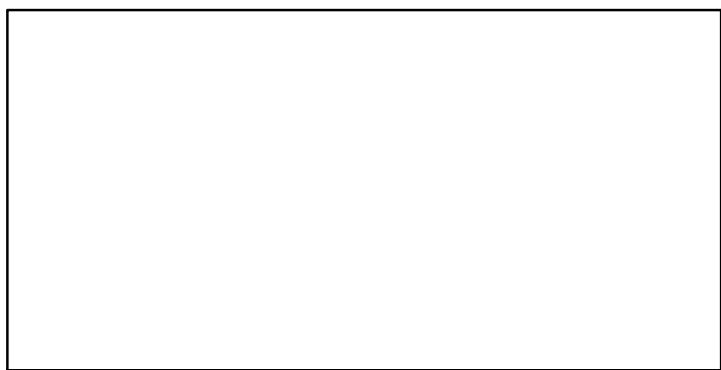
**TB\***



SSB-index (1988–2014–ICESIMP2018)



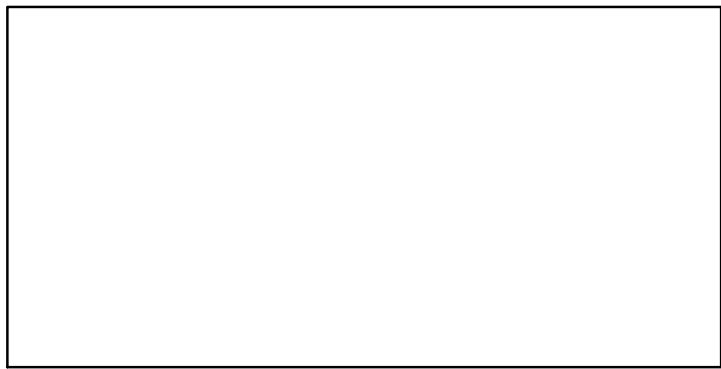
**TN \***



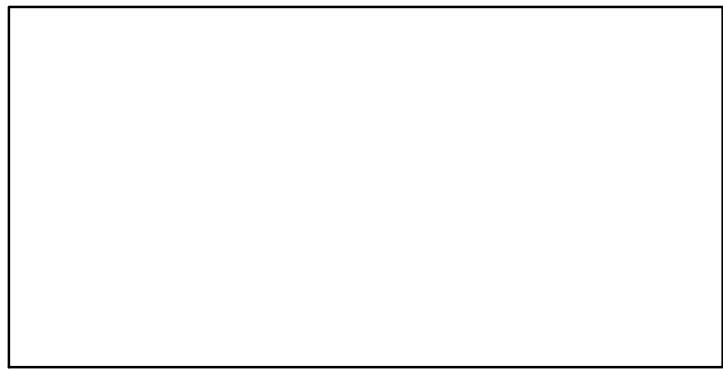
**F\***



**ER\***



**Recruits\***

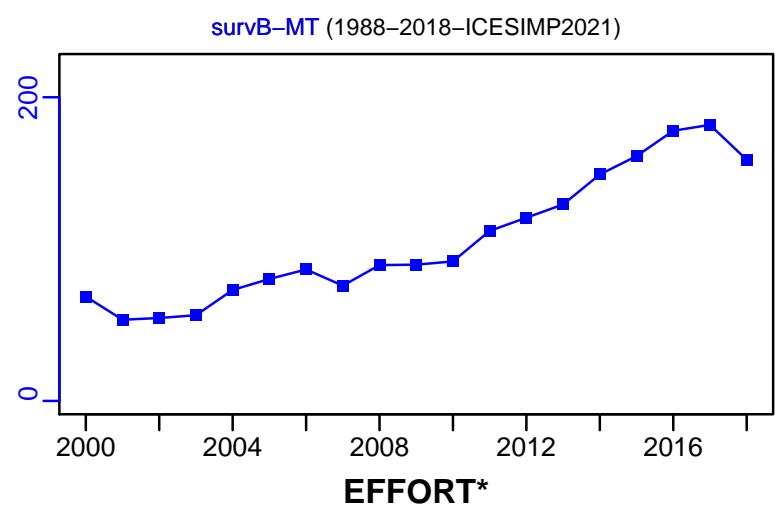
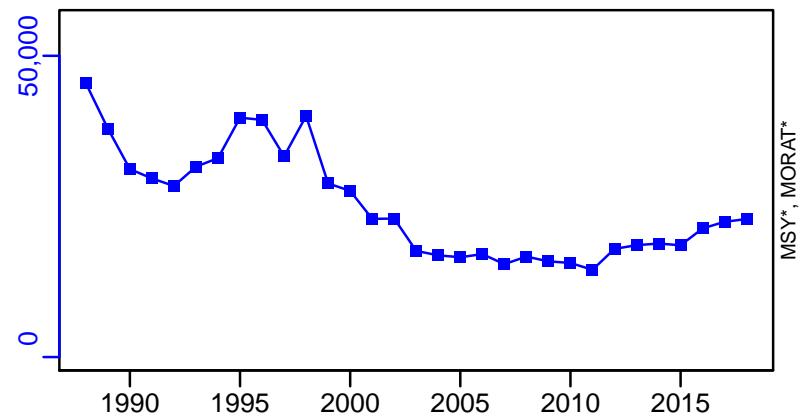


- |   |  |   |
|---|--|---|
| <span style="color: blue;">■</span> Listed time series<br><span style="color: purple;">—</span> MSY-based BRP | <span style="color: brown;">—</span> Target BRP<br><span style="color: cyan;">—</span> Lim BRP | <span style="color: gray;">—</span> Rec-Est<br><span style="color: black;">*</span> No Data |
|---|--|---|

Ling Northeast Atlantic [LINGNEATL]

TL-MT, TC\*, RecC\* (1988–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



EFFORT\*

CPUE\*

CdivMSY\*

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Lesser spotted dogfish ICES 3a-4-7d [LSDOGIIIa-IV-VIId]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Scyliorhinus canicula                                |
| <b>Current Assess ID</b>    | WGEF-LSDOGIIIa-IV-VIId-1993-2018-ICESIMP2021         |
| <b>Area</b>                 | ICES 3a-4-7d   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2014, 2018, 2016                                     |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2014      | 1.93       | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | -         | -         | -          |      |     |
| <b>TL</b>          | TL-MT     | 2018      | 2340       |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

**Kobe MSY\***

**Kobe MGT\***

**Spawner Recruit\***

**Production\***

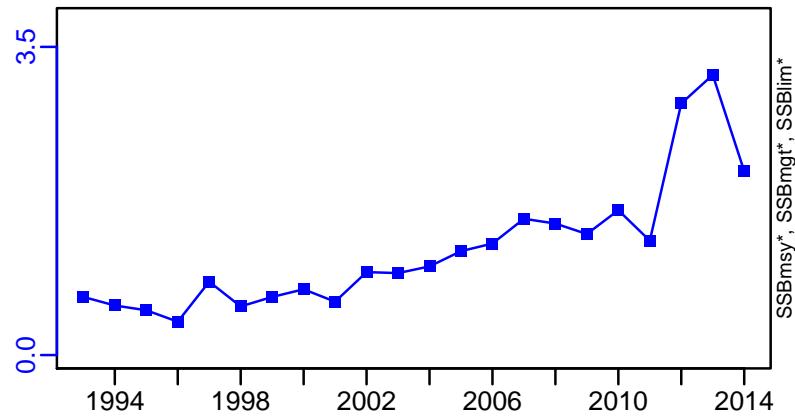
◆ Start Year ♦ End Year \* No Data

Lesser spotted dogfish ICES 3a–4–7d [LSDOGIIa–IV–VIId]

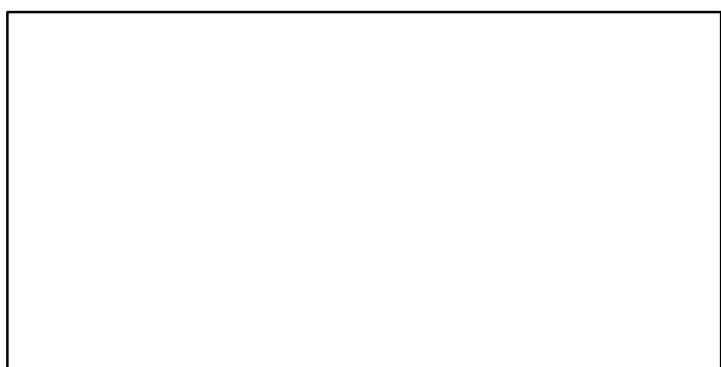
**TB\***



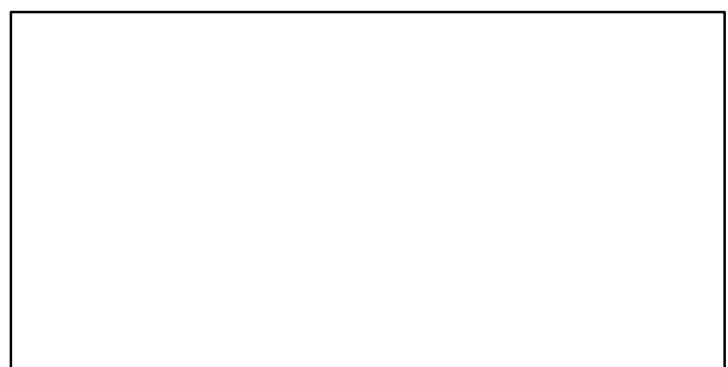
SSB-index (1993–2014–ICESIMP2018)



**TN \***



**F\***



**ER\***



**Recruits\***

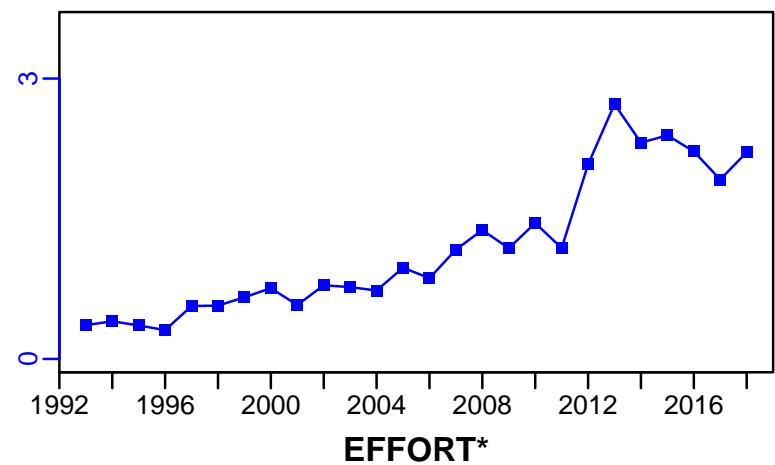
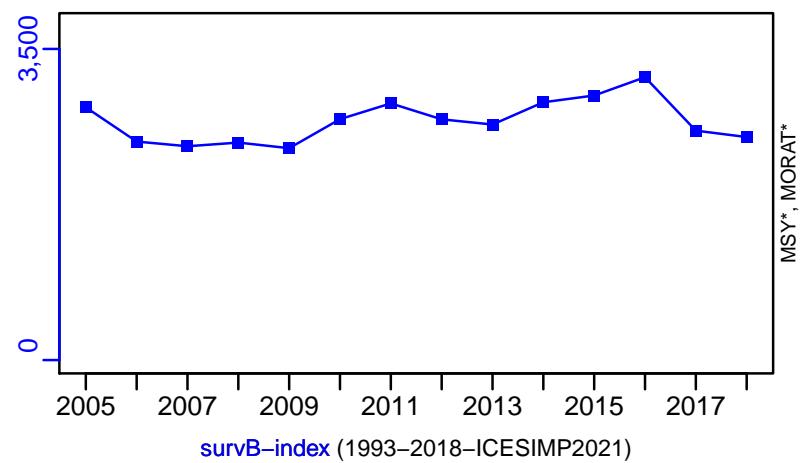


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

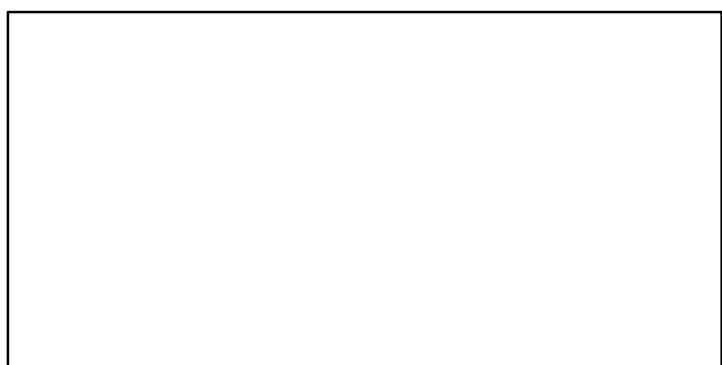
**Lesser spotted dogfish ICES 3a–4–7d [LSDOGIIa–IV–VIId]**

TL–MT, TC\*, RecC\* (1993–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



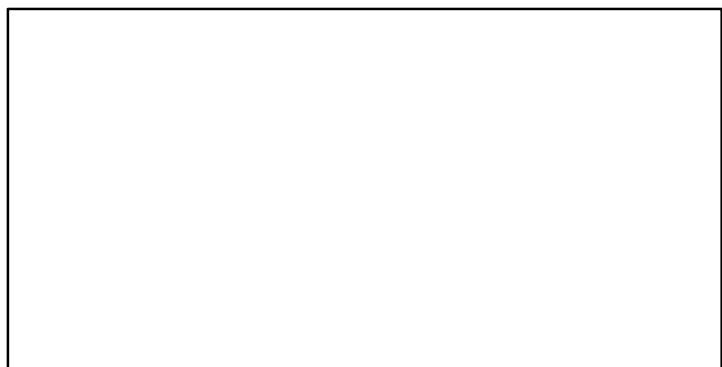
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Lesser spotted dogfish ICES 8abd [LSDOGVIIab]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Scyliorhinus canicula                                |
| <b>Current Assess ID</b>    | WGEF-LSDOGVIIab-1997-2018-ICESIMP2021                |
| <b>Area</b>                 | ICES 8abd  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2014, 2016, 2018                                     |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2014      | 1.02       | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | TC-MT     | 2018      | 8148       |      |     |
| <b>TL</b>          | TL-MT     | 2018      | 1092       |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

**Kobe MSY\***

**Kobe MGT\***

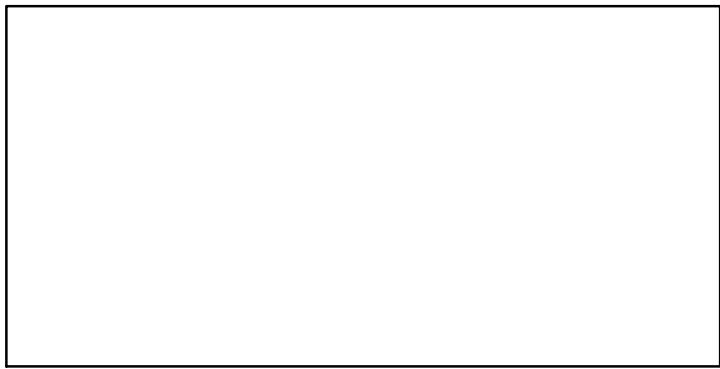
**Spawner Recruit\***

**Production\***

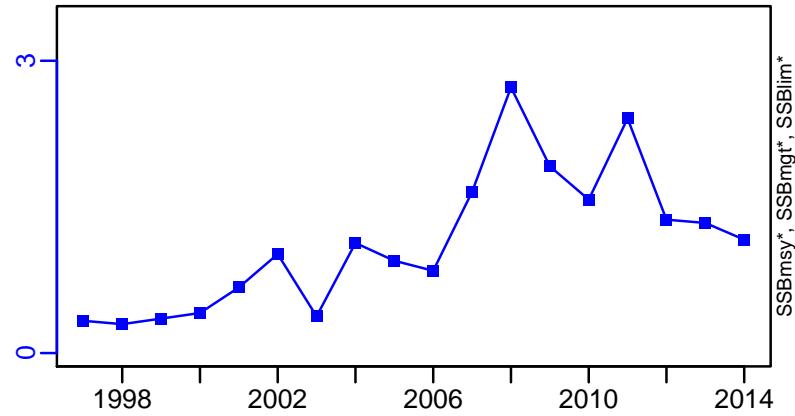
◆ Start Year ♦ End Year \* No Data

Lesser spotted dogfish ICES 8abd [LSDOGVIIlabd]

**TB\***

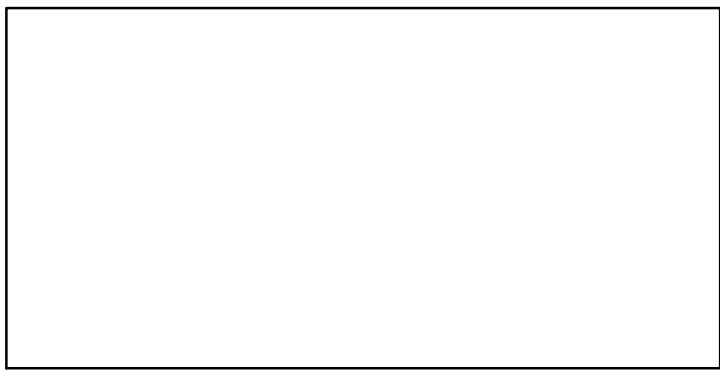


SSB-index (1997–2014–ICESIMP2018)

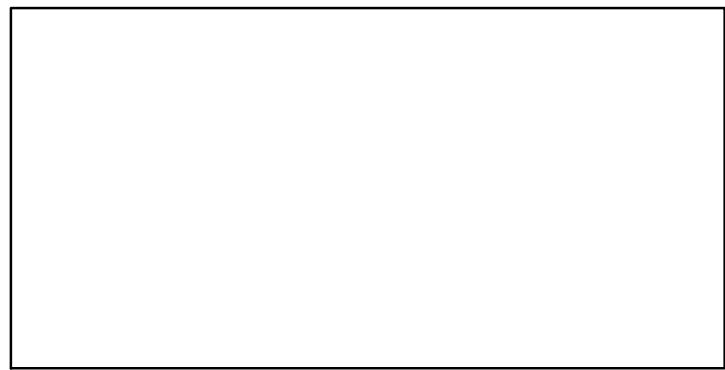


SSB<sub>mgt\*</sub>, SSB<sub>lim\*</sub>

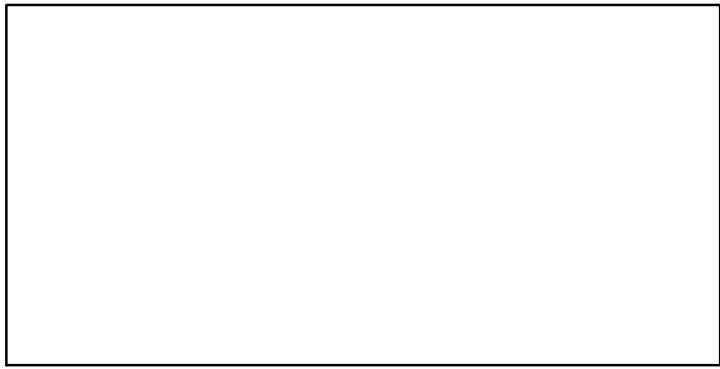
**TN \***



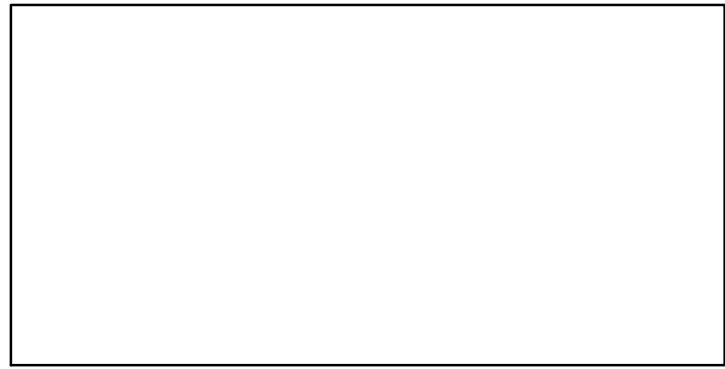
**F\***



**ER\***



**Recruits\***

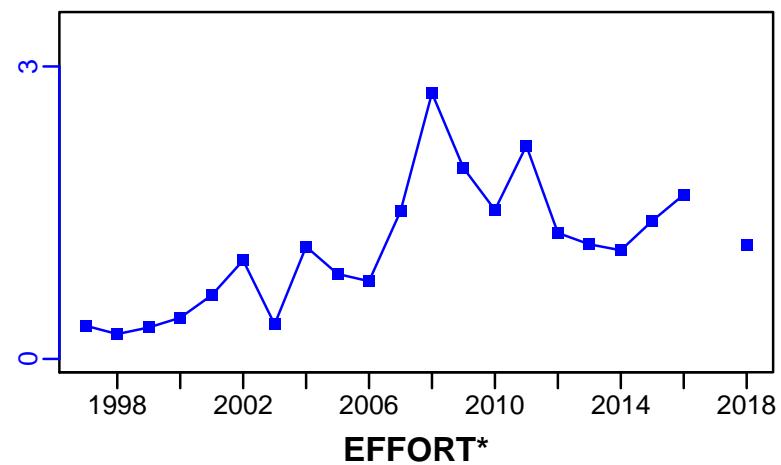
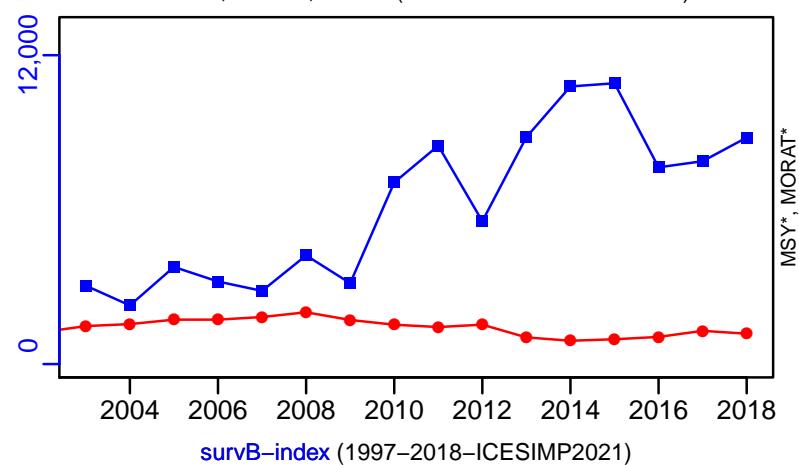


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

**Lesser spotted dogfish ICES 8abd [LSDOGVIIlabd]**

TC-MT, TL-MT, RecC\* (1997–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



CPUE\*



CdivMSY\*



|                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

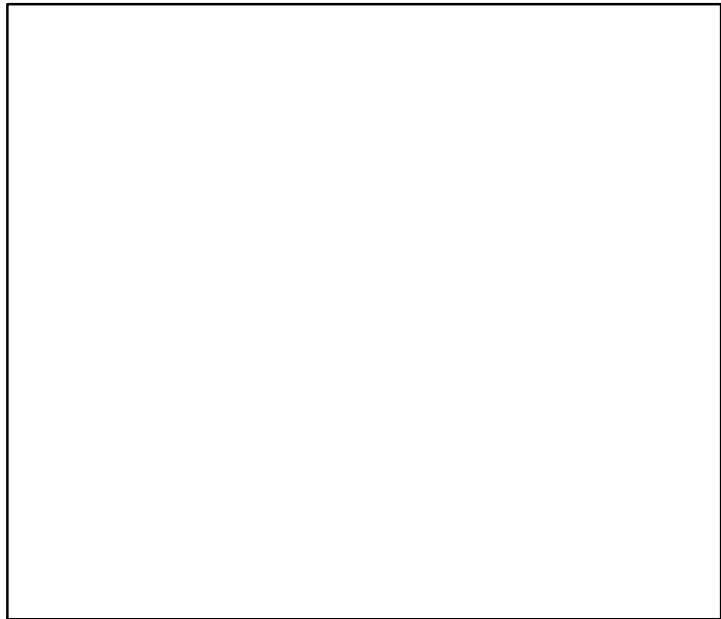
## Lesser spotted dogfish ICES 8c-9a [LSDOGVIIIC-IXa]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Scyliorhinus canicula                                |
| <b>Current Assess ID</b>    | WGEF-LSDOGVIIIC-IXa-1993-2018-ICESIMP2021            |
| <b>Area</b>                 | ICES 8c-9a   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2018, 2016, 2014                                     |

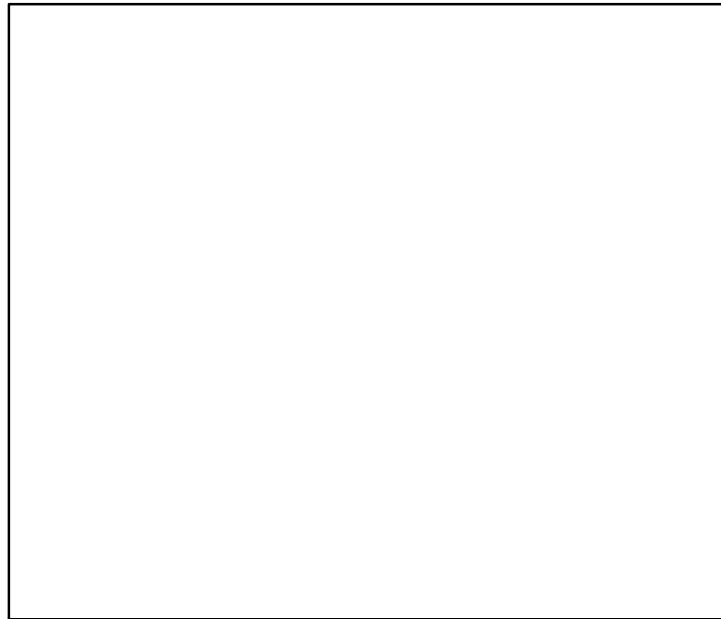
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2014      | 1.42       | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | -         | -         | -          |      |     |
| <b>TL</b>          | TL-MT     | 2018      | 1035       |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

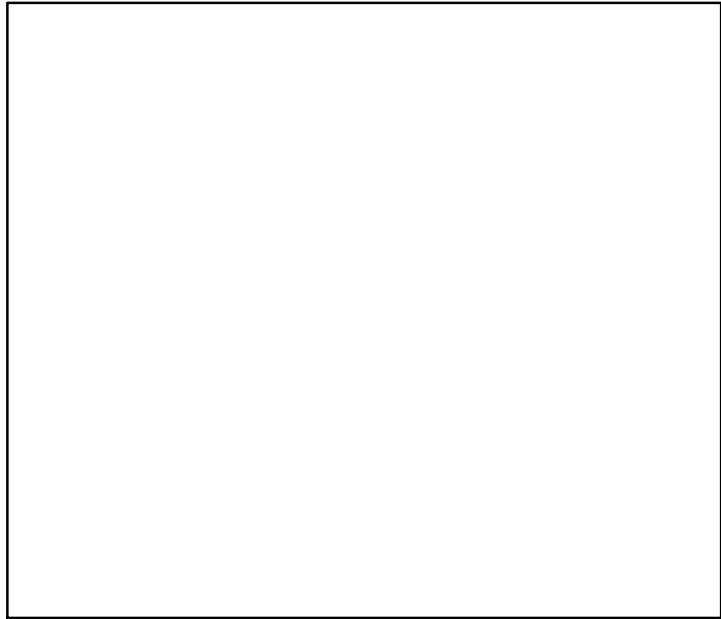
**Kobe MSY\***



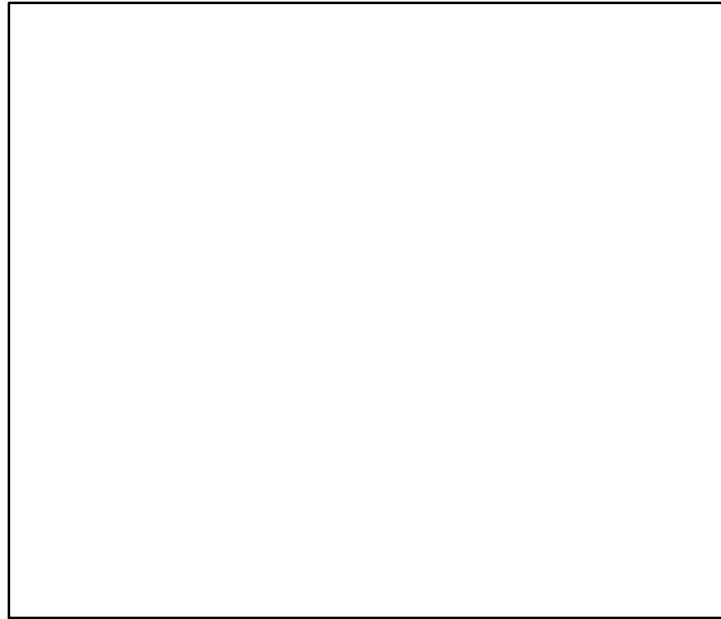
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



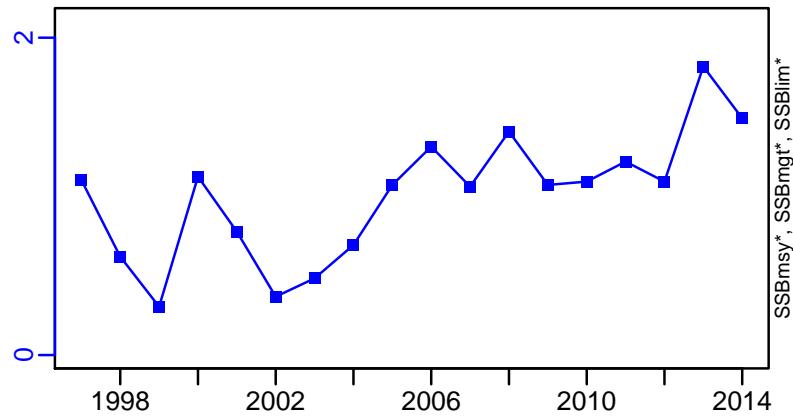
◆ Start Year ♦ End Year \* No Data

**Lesser spotted dogfish ICES 8c-9a [LSDOGVIIIC-IXa]**

**TB\***



**SSB-index (1997–2014–ICESIMP2018)**



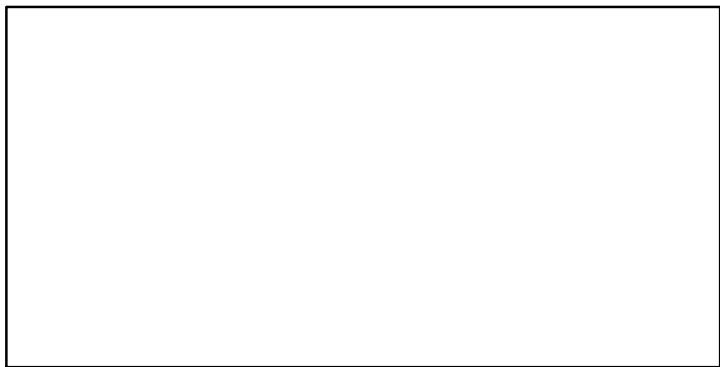
**TN \***



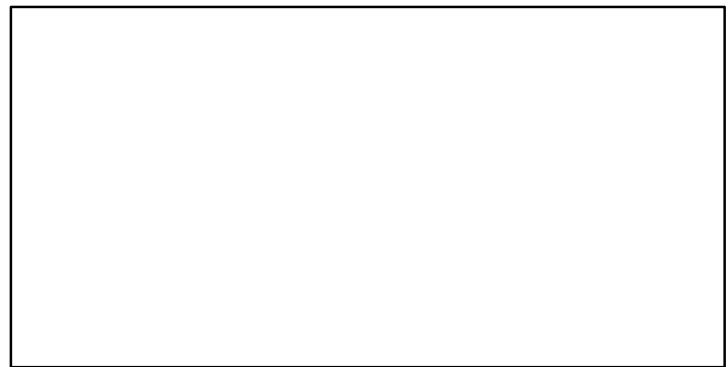
**F\***



**ER\***



**Recruits\***

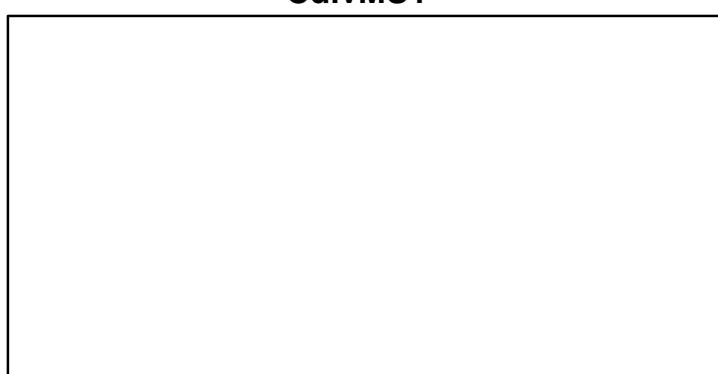
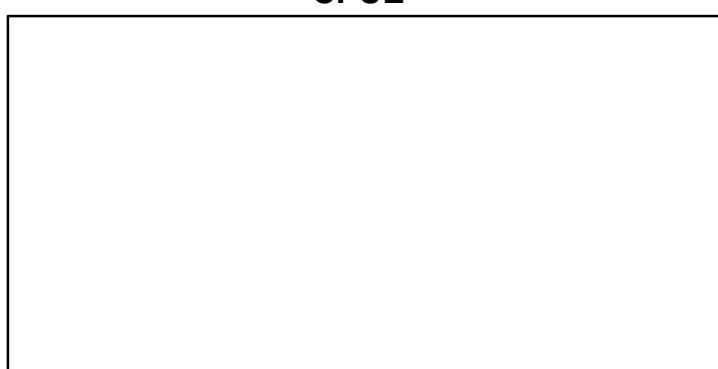
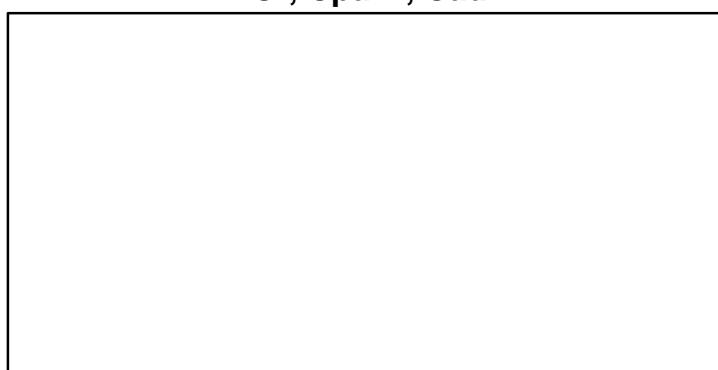
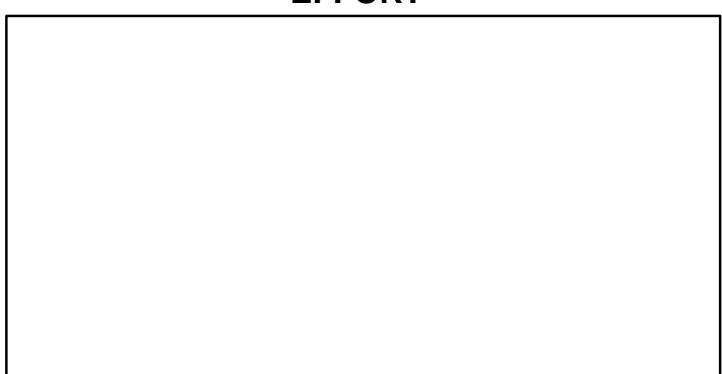
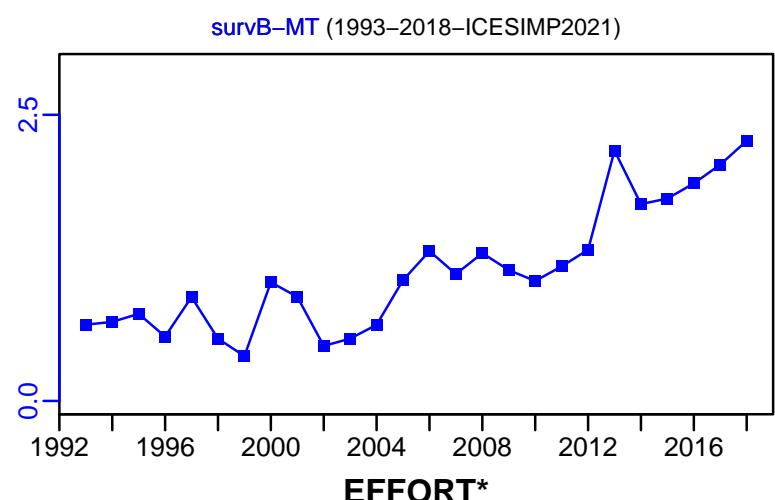
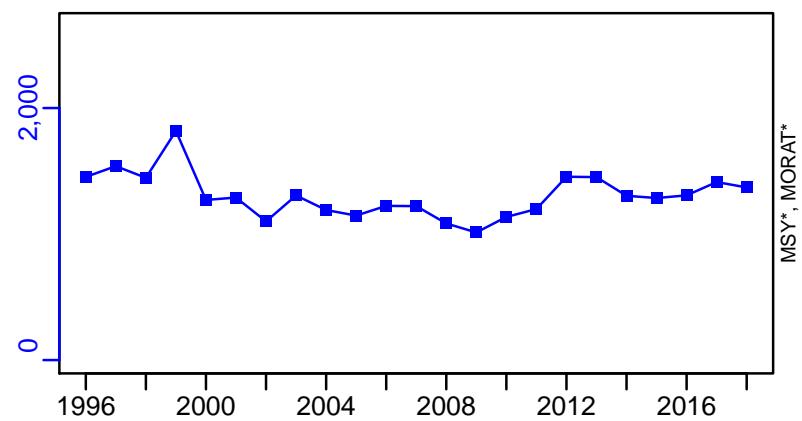


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

**Lesser spotted dogfish ICES 8c-9a [LSDOGVIIIC-IXa]**

TL-MT, TC\*, RecC\* (1993–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



|                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

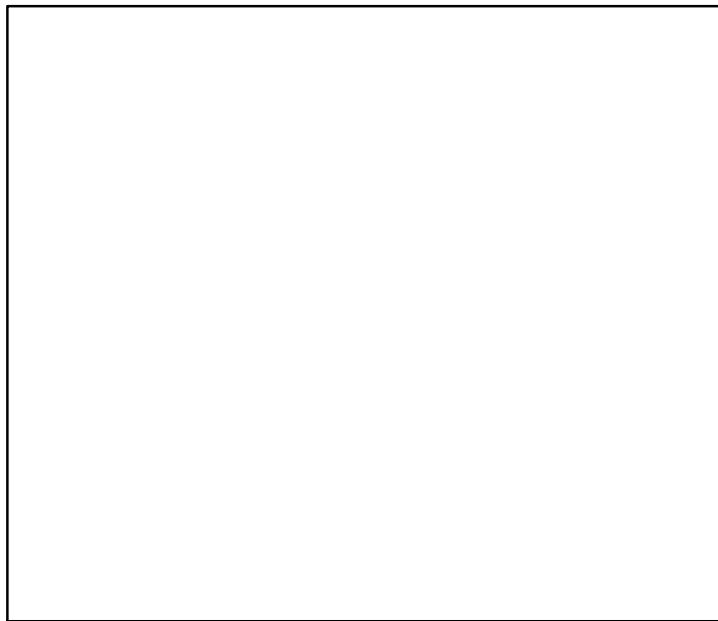
## Lesser spotted dogfish ICES 6-7abcefghij [LSDOGVI-VIIabcefghij]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Scyliorhinus canicula                                |
| <b>Current Assess ID</b>    | WGEF-LSDOGVI-VIIabcefghij-2005-2018-ICESIMP2021      |
| <b>Area</b>                 | ICES 6-7abcefghij                                    |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2014, 2016, 2018                                     |

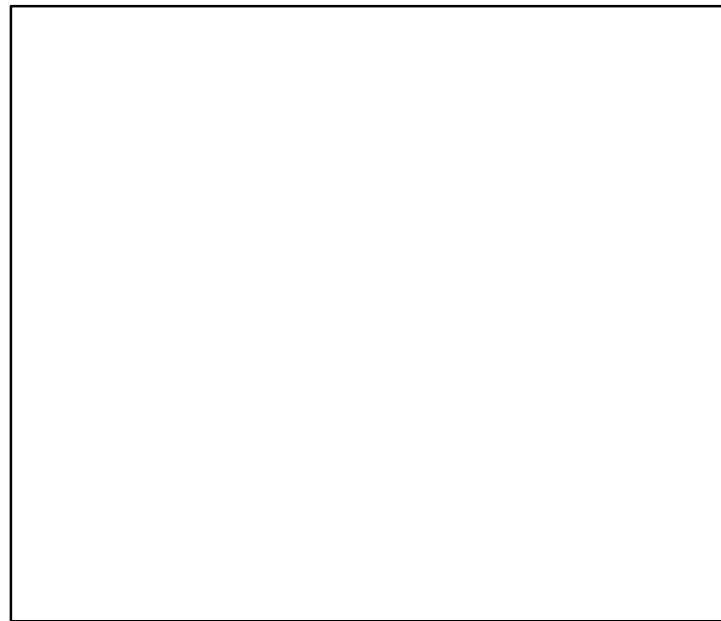
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2014      | 1.14       | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | -         | -         | -          |      |     |
| <b>TL</b>          | TL-MT     | 2018      | 3763       |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

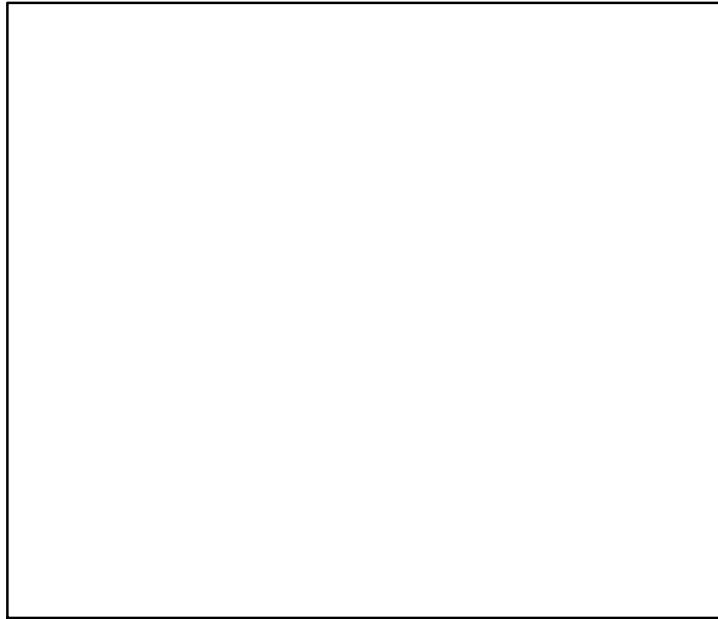
**Kobe MSY\***



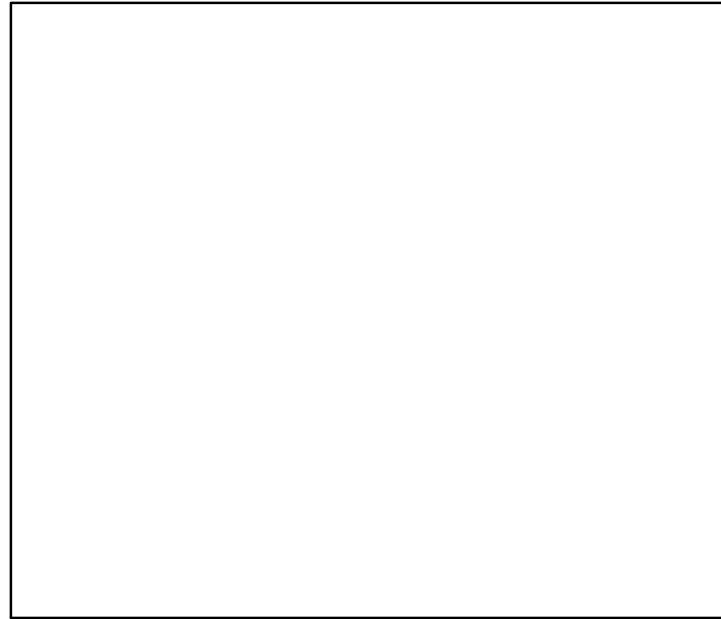
**Kobe MGT\***



**Spawner Recruit\***



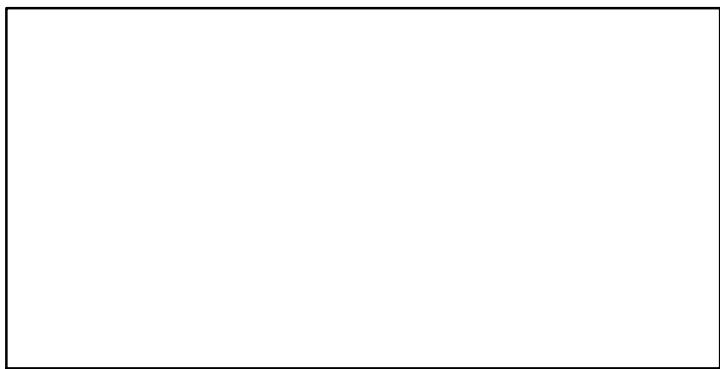
**Production\***



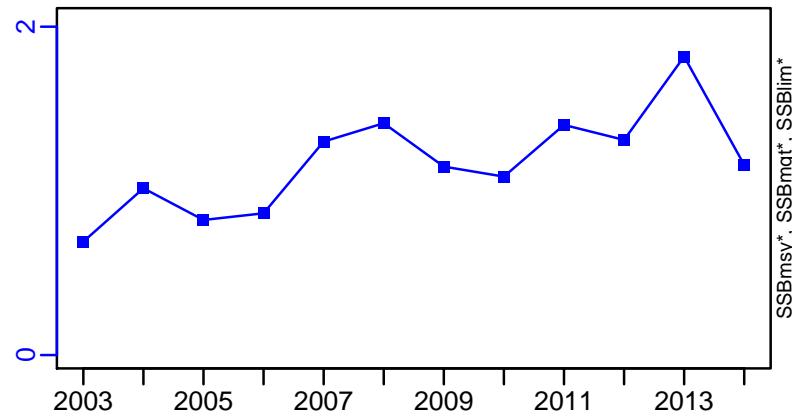
◆ Start Year ♦ End Year \* No Data

Lesser spotted dogfish ICES 6–7abcefghij [LSDOGVI–VIIabcefghij]

**TB\***

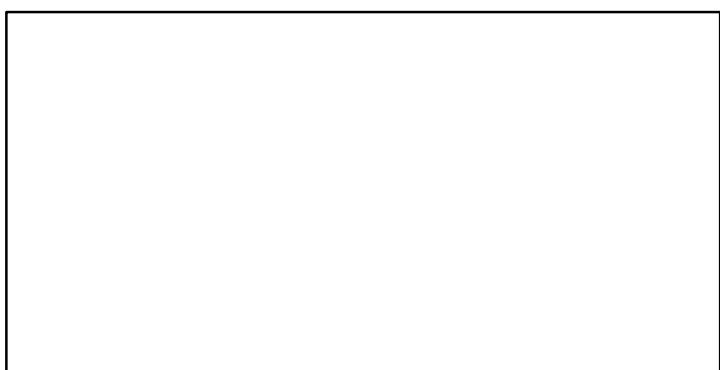


SSB-index (2003–2014–ICESIMP2018)

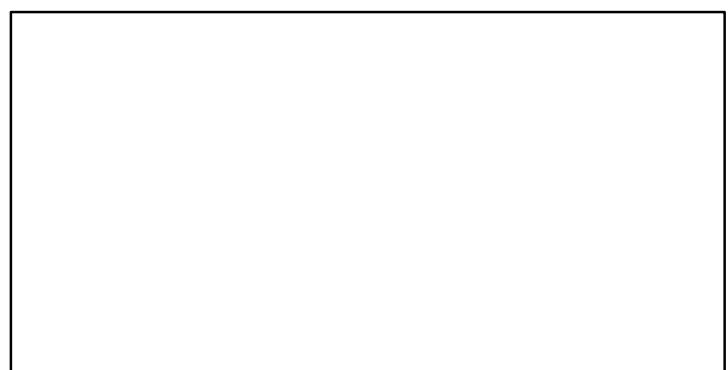


SSB<sub>m</sub>s\*, SSB<sub>mgt</sub>\*, SSB<sub>lim</sub>\*

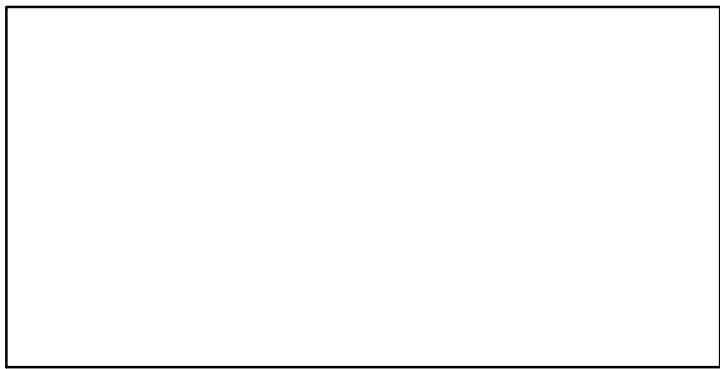
**TN \***



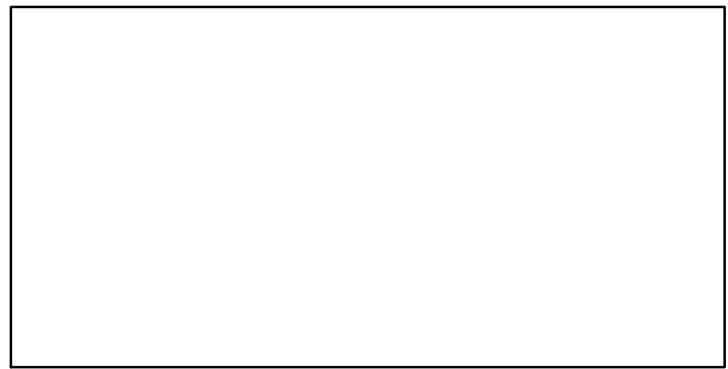
**F\***



**ER\***



**Recruits\***

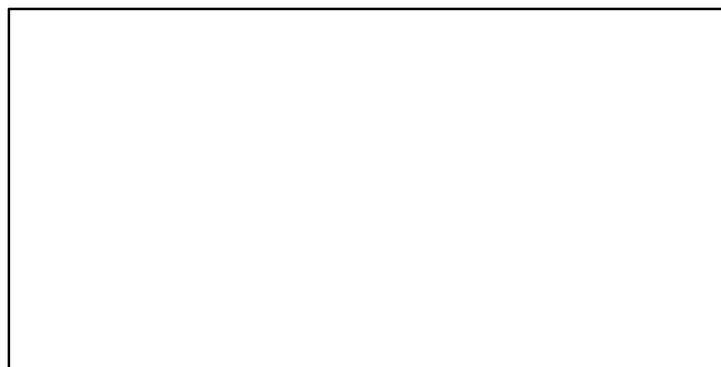
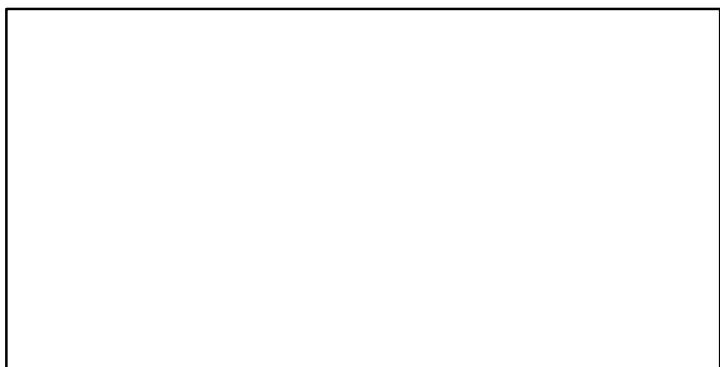
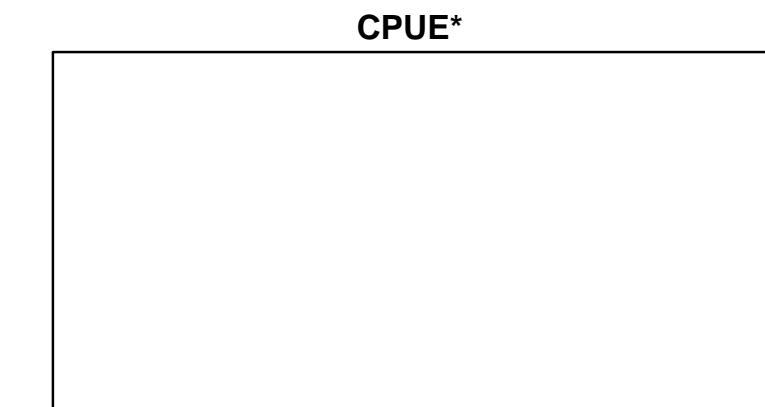
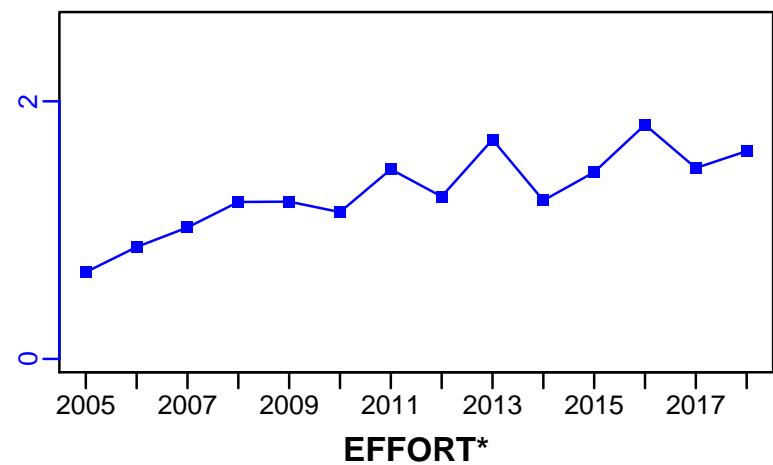
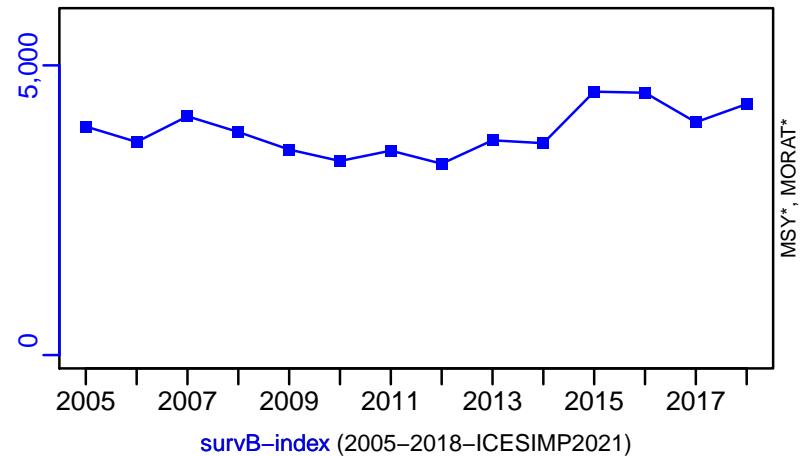


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

**Lesser spotted dogfish ICES 6–7abcefghij [LSDOGVI–VIIabcefghij]**

TL–MT, TC\*, RecC\* (2005–2018–ICESIMP2021)

**TAC\*, Cpair\*, Cadv\***



|                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Lemon sole ICES 3a-4-7d [LSOLEIIIA-IV-VIId]

| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Microstomus kitt  |
| <b>Current Assess ID</b>    | WGNSSK-LSOLEIIIA-IV-VIId-1968-2018-ICESIMP2021                                    |
| <b>Area</b>                 | ICES 3a-4-7d  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2016, 2018, 2015  |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |                          |           |            |      |     |   |
|--------------------|--------------------------|-----------|------------|------|-----|---|
| Type               | ID                       | Asmt Year | Curr Value | Sex  | Age |   |
| <b>TB</b>          | -                        | -         | -          | -    | -   | - |
| <b>SSB</b>         | SSB-index                | 2015      | 1.73       | Both | -   | - |
| <b>TN</b>          | -                        | -         | -          | -    | -   | - |
| <b>R</b>           | R-relative               | 2018      | 0.913      | -    | 1   |   |
| <b>F</b>           | -                        | -         | -          | -    | -   | - |
| <b>ER</b>          | -                        | -         | -          | -    | -   | - |
| <b>TC</b>          | TC-MT                    | 2018      | 3377       |      |     |   |
| <b>TL</b>          | TL-MT                    | 2018      | 3014       |      |     |   |
| <b>TB/TBmsy</b>    | -                        | -         | -          |      |     |   |
| <b>SSB/SSBmsy</b>  | -                        | -         | -          |      |     |   |
| <b>F/Fmsy</b>      | -                        | -         | -          |      |     |   |
| <b>ER/ERmsy</b>    | ERdivERmsy-dimensionless | 2018      | 0.193      |      |     |   |
| <b>TB/TBmgt</b>    | -                        | -         | -          |      |     |   |
| <b>SSB/SSBmgt</b>  | -                        | -         | -          |      |     |   |
| <b>F/Fmgt</b>      | -                        | -         | -          |      |     |   |
| <b>ER/ERmgt</b>    | -                        | -         | -          |      |     |   |

**Kobe MSY\***

**Kobe MGT\***

**Spawner Recruit\***

**Production\***

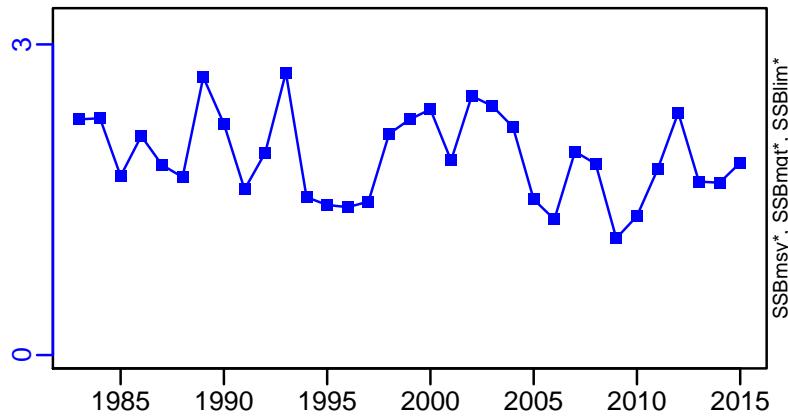
◆ Start Year   ◆ End Year   \* No Data

Lemon sole ICES 3a–4–7d [LSOLEIIIa–IV–VIIId]

**TB\***



SSB-index (1983–2015–ICESIMP2018)



SSB<sub>m</sub>s\*, SSB<sub>mgt</sub>\*, SSB<sub>lim</sub>\*

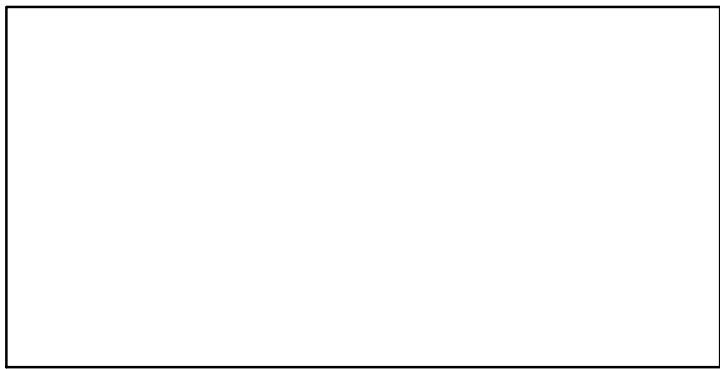
**TN \***



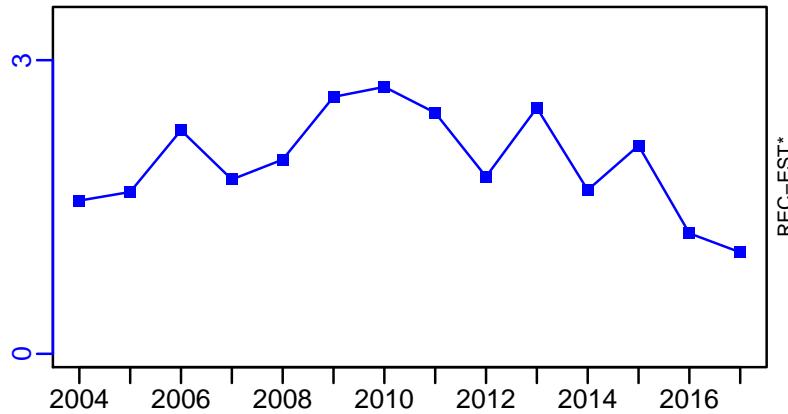
**F\***



**ER\***



R-relative (1968–2018–ICESIMP2021)



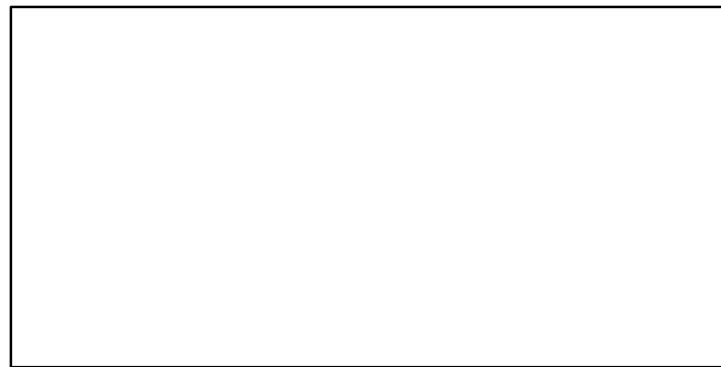
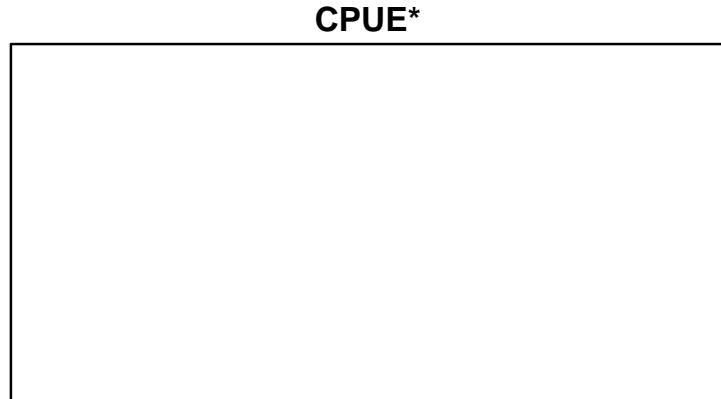
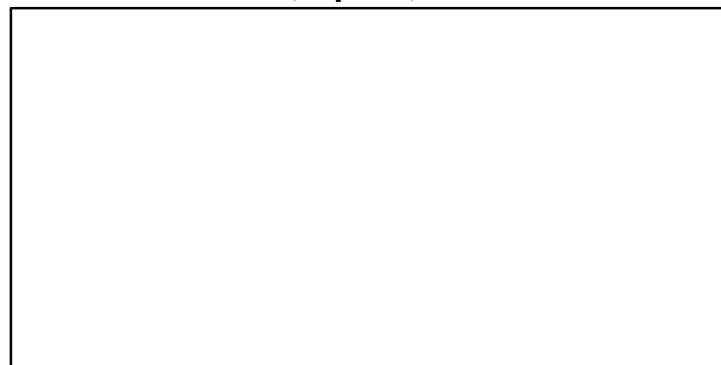
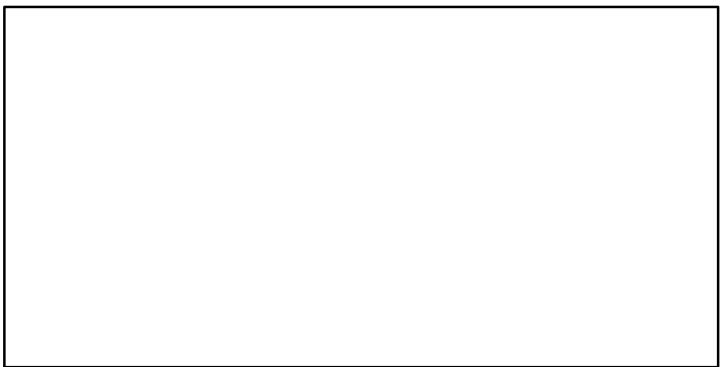
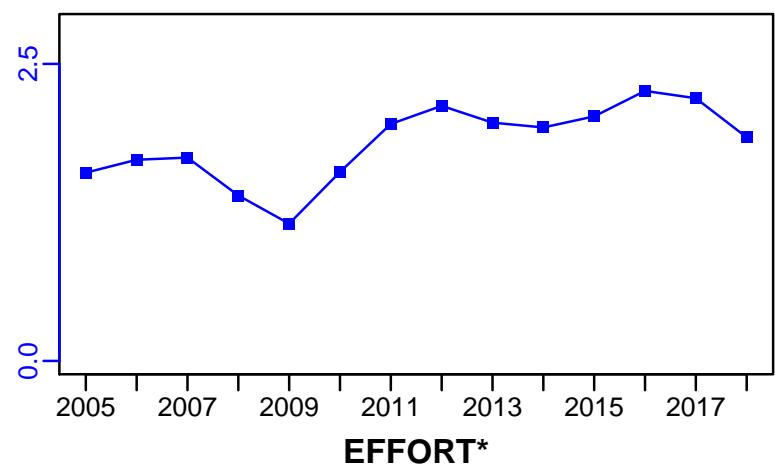
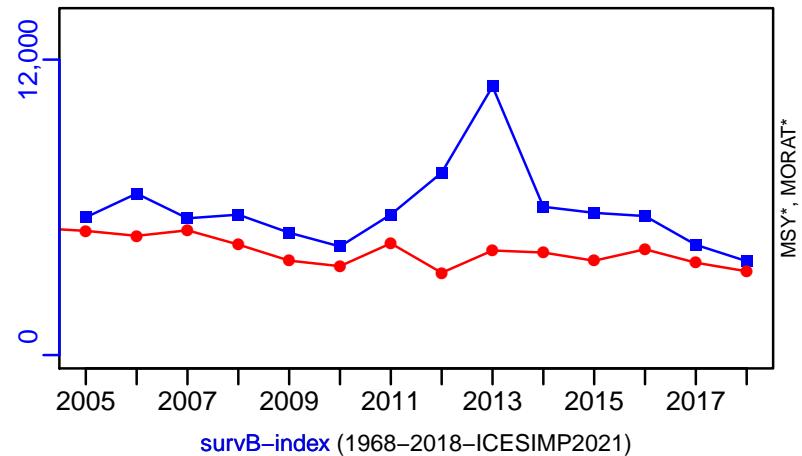
REC-EST\*

- Listed time series
- Target BRP
- Rec-Est
- - MSY-based BRP
- - Lim BRP
- \* No Data

Lemon sole ICES 3a–4–7d [LSOLEIIIa–IV–VIIId]

TC-MT, TL-MT, RecC\* (1968–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



|                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Mackerel ICES Northeast Atlantic [MACKNEICES]

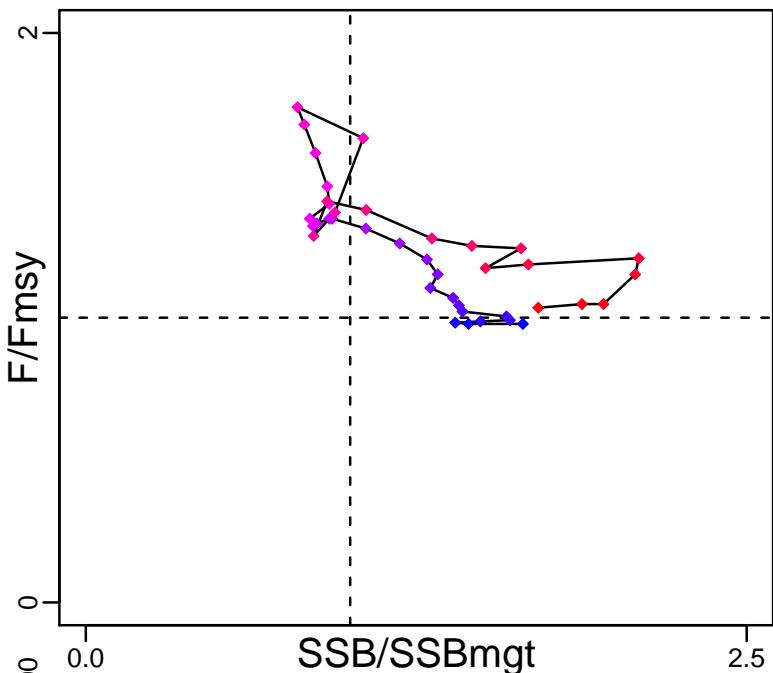
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Scomber scombrus                                     |
| <b>Current Assess ID</b>    | WGWISE-MACKNEICES-1980-2019-ICESIMP2021              |
| <b>Area</b>                 | ICES Northeast Atlantic                              |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Widely Distributed Stocks           |
| <b>Asmts in RAM</b>         | 2007, 2013, 2014, 2015, 2016, 2017, 2019             |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2019             | 0.23         |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019             | 2,500,000    |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019             | 0.23         |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | M-1/yr    | 2007             | 0.15         |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | SSBlim-MT | 2017             | 1,940,000    |
| <b>Flim</b>             | Flim-1/yr | 2017             | 0.48         |
| <b>ERlim</b>            | -         | -                | -            |

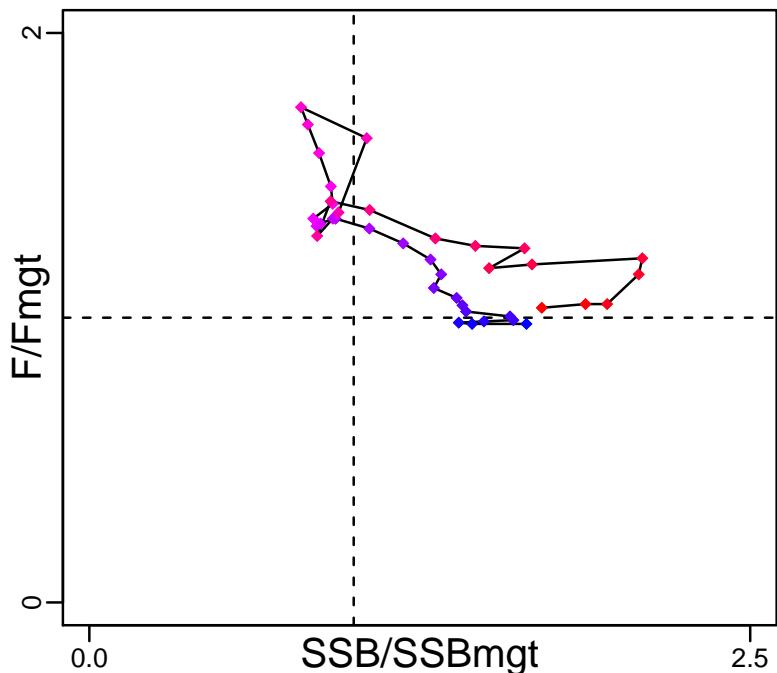
| <b>Time Series</b> |                  |                  |                   |            |            |
|--------------------|------------------|------------------|-------------------|------------|------------|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |
| <b>TB</b>          | TB-MT            | 2019             | 5,684,879         | -          | -          |
| <b>SSB</b>         | SSB-MT           | 2019             | 4,312,156         | -          | -          |
| <b>TN</b>          | -                | -                | -                 | -          | -          |
| <b>R</b>           | R-E00            | 2019             | 4,486,290,000     | -          | 0          |
| <b>F</b>           | F-1/yr           | 2019             | 0.238             | -          | 4 to 8     |
| <b>ER</b>          | ER-calc-ratio    | 2019             | 0.181             | -          | -          |
| <b>TC</b>          | TC-MT            | 2019             | 1,026,437         |            |            |
| <b>TL</b>          | TL-MT            | 2016             | 1,200,000         |            |            |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2019             | 1.035             |            |            |
| <b>ER/ERmsy</b>    | -                | -                | -                 |            |            |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019             | 1.725             |            |            |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019             | 1.035             |            |            |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |

Mackerel ICES Northeast Atlantic [MACKNEICES]

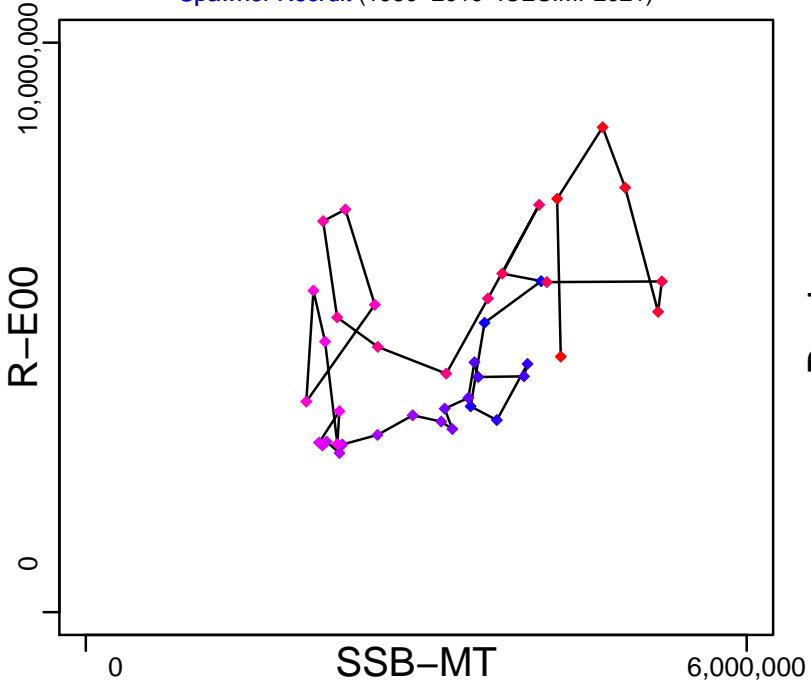
Kobe MSYpref (1980–2019–ICESIMP2021)



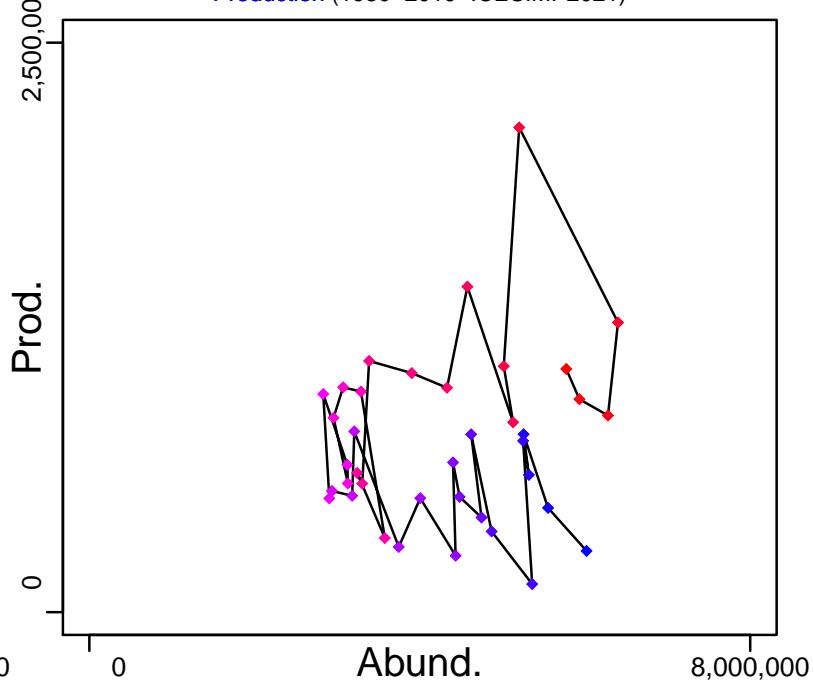
Kobe MGTpref (1980–2019–ICESIMP2021)



Spawner Recruit (1980–2019–ICESIMP2021)



Production (1980–2019–ICESIMP2021)

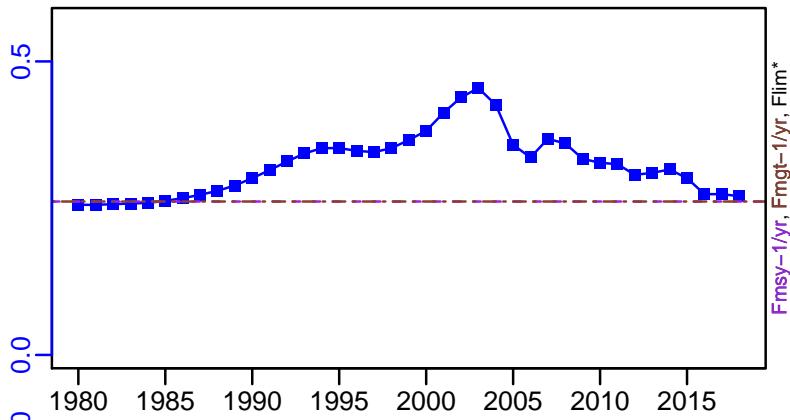
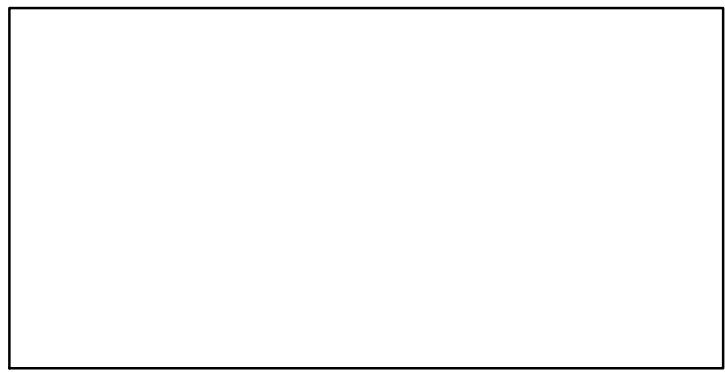
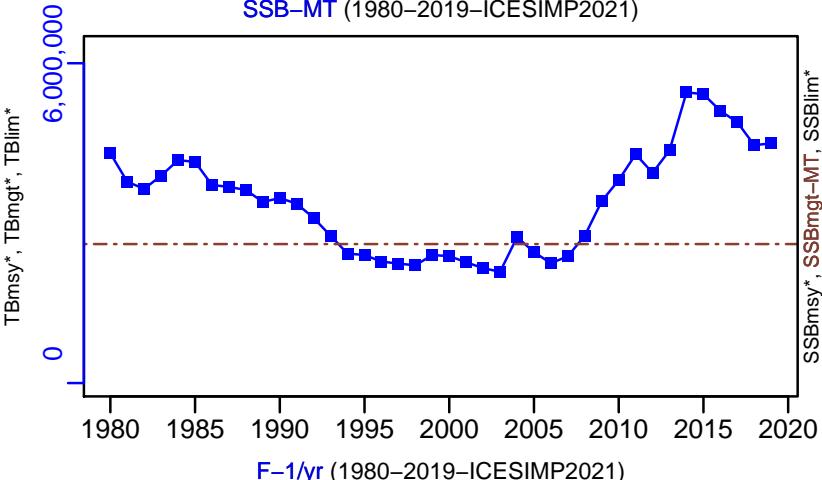
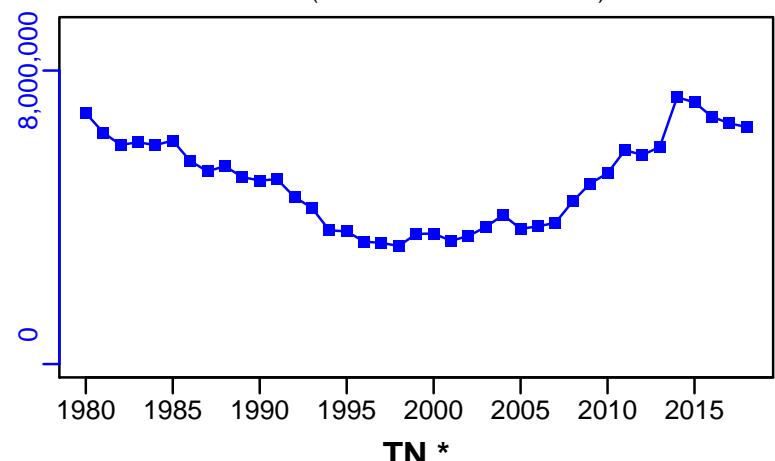


◆ Start Year   ◆ End Year   \* No Data

### Mackerel ICES Northeast Atlantic [MACKNEICES]

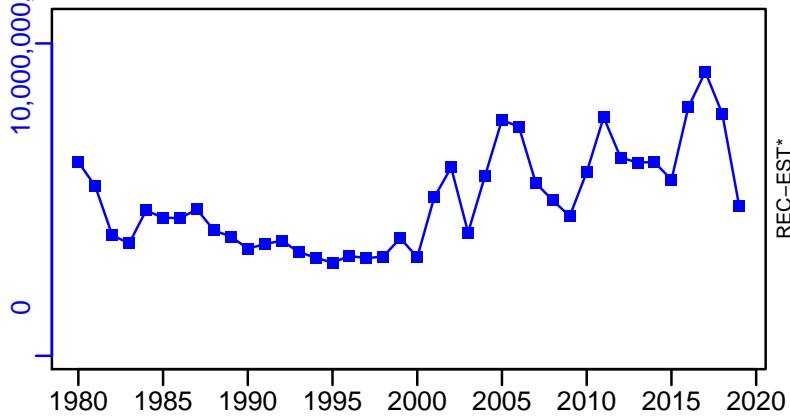
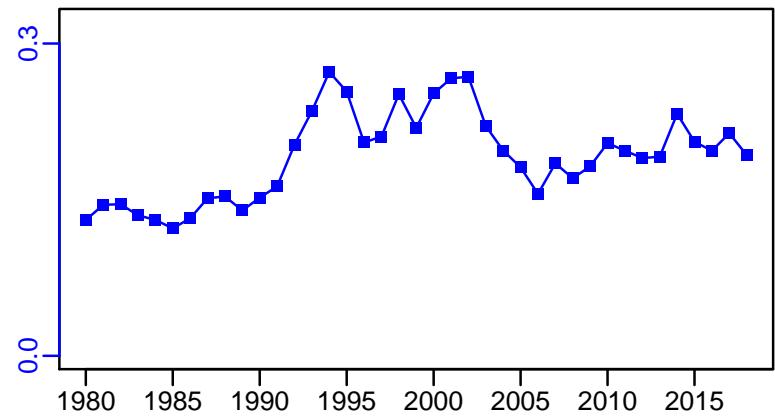
TB-MT (1980–2019–ICESIMP2021)

SSB-MT (1980–2019–ICESIMP2021)



ER-calc-ratio (1980–2019–ICESIMP2021)

R-E00 (1980–2019–ICESIMP2021)

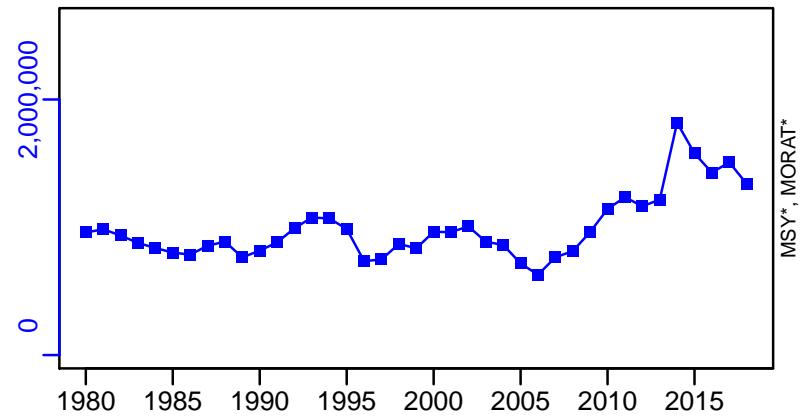


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - - MSY-based BRP  | --- Lim BRP  | * No Data |

Mackerel ICES Northeast Atlantic [MACKNEICES]

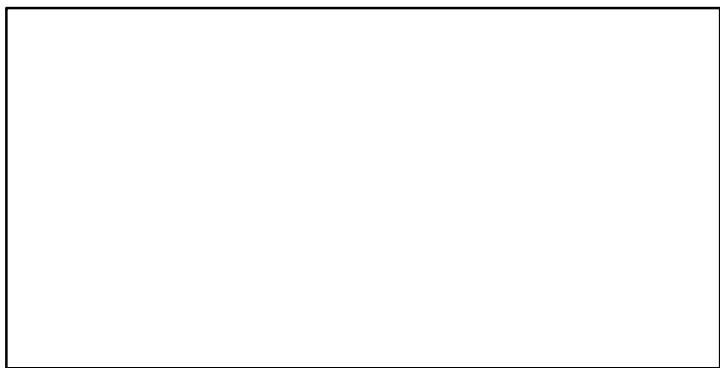
TC-MT, TL\*, RecC\* (1980–2019—ICESIMP2021)

TAC\*, Cpair\*, Cadv\*

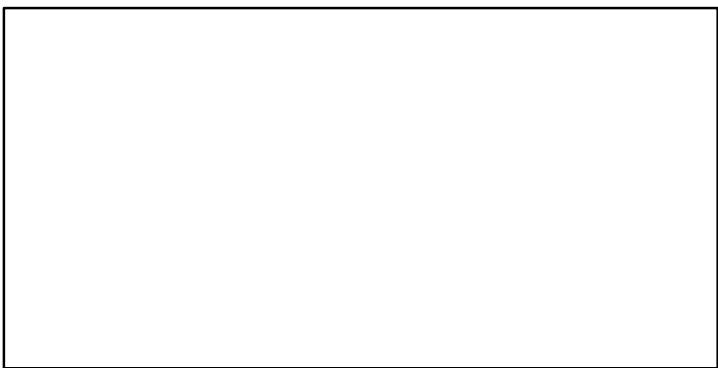


survB\*

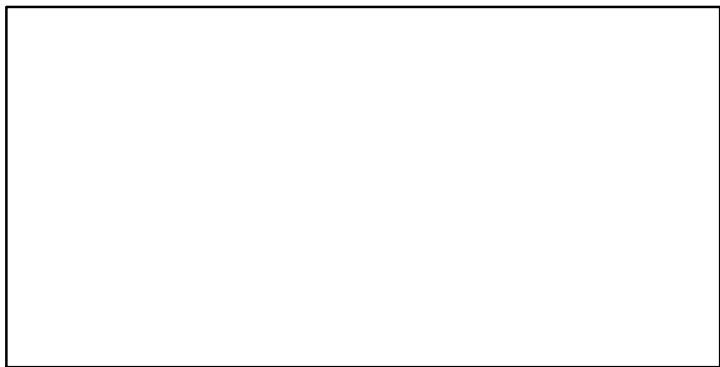
MSY\*, MORAT\*



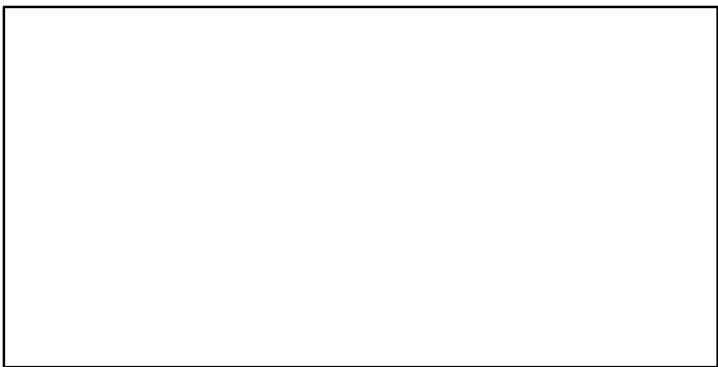
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Megrim ICES 8c-9a [MEG8c9a]

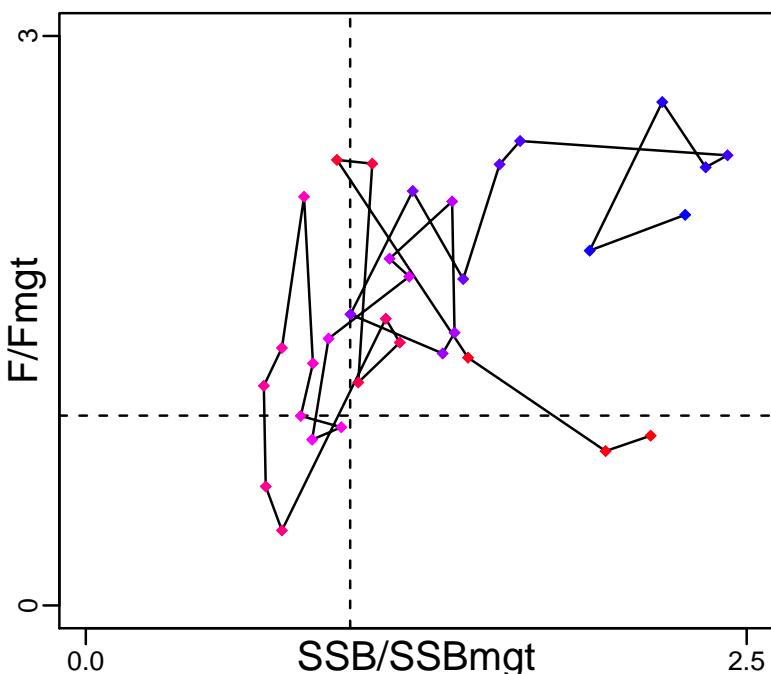
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Lepidorhombus whiffagonis  |
| <b>Current Assess ID</b>    | WGBIE-MEG8c9a-1985-2019-ICESIMP2021                                  |
| <b>Area</b>                 | ICES 8c-9a   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                 |
| <b>Assessor</b>             | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion |
| <b>Asmts in RAM</b>         | 2014, 2015, 2016, 2017, 2018, 2019, 2010, 2013                       |

| Reference Points |           |           |       |
|------------------|-----------|-----------|-------|
| Type             | ID        | Asmt Year | Value |
| <b>TBmsy</b>     | -         | -         | -     |
| <b>SSBmsy</b>    | -         | -         | -     |
| <b>Fmsy</b>      | Fmsy-1/yr | 2018      | 0.191 |
| <b>ERrmsy</b>    | -         | -         | -     |
| <b>TBmgt</b>     | -         | -         | -     |
| <b>SSBmgt</b>    | SSBmgt-MT | 2019      | 980   |
| <b>Fmgt</b>      | Fmgt-1/yr | 2019      | 0.191 |
| <b>ERmgt</b>     | -         | -         | -     |
| <b>TB0</b>       | -         | -         | -     |
| <b>SSB0</b>      | -         | -         | -     |
| <b>MSY</b>       | -         | -         | -     |
| <b>M</b>         | M-1/yr    | 2010      | 0.2   |
| <b>TBlim</b>     | -         | -         | -     |
| <b>SSBlim</b>    | SSBlim-MT | 2018      | 700   |
| <b>Flim</b>      | Flim-1/yr | 2018      | 0.45  |
| <b>ERlim</b>     | -         | -         | -     |

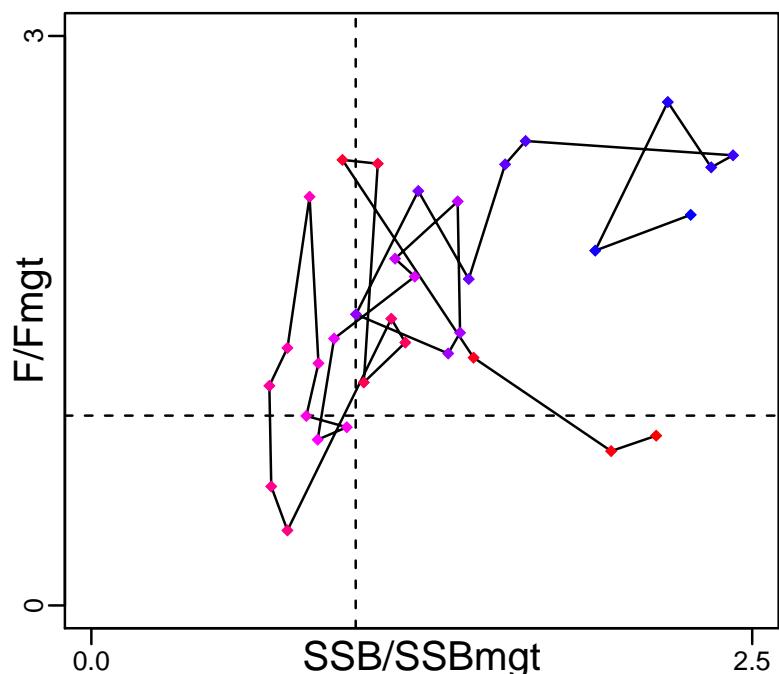
| Time Series       |                  |           |            |     |        |  |
|-------------------|------------------|-----------|------------|-----|--------|--|
| Type              | ID               | Asmt Year | Curr Value | Sex | Age    |  |
| <b>TB</b>         | TB-MT            | 2019      | 2290       | -   | -      |  |
| <b>SSB</b>        | SSB-MT           | 2019      | 2652       | -   | -      |  |
| <b>TN</b>         | -                | -         | -          | -   | -      |  |
| <b>R</b>          | R-E00            | 2019      | 3,542,000  | -   | 1      |  |
| <b>F</b>          | F-1/yr           | 2019      | 0.171      | -   | 2 to 4 |  |
| <b>ER</b>         | ER-calc-ratio    | 2019      | 0.154      | -   | -      |  |
| <b>TC</b>         | TC-MT            | 2019      | 352        |     |        |  |
| <b>TL</b>         | TL-MT            | 2019      | 315        |     |        |  |
| <b>TB/TBmsy</b>   | -                | -         | -          |     |        |  |
| <b>SSB/SSBmsy</b> | -                | -         | -          |     |        |  |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr | 2018      | 0.848      |     |        |  |
| <b>ER/ERrmsy</b>  | -                | -         | -          |     |        |  |
| <b>TB/TBmgt</b>   | -                | -         | -          |     |        |  |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2019      | 2.706      |     |        |  |
| <b>F/Fmgt</b>     | F-1/yr/Fmgt-1/yr | 2019      | 0.894      |     |        |  |
| <b>ER/ERmgt</b>   | -                | -         | -          |     |        |  |

**Megrim ICES 8c–9a [MEG8c9a]**

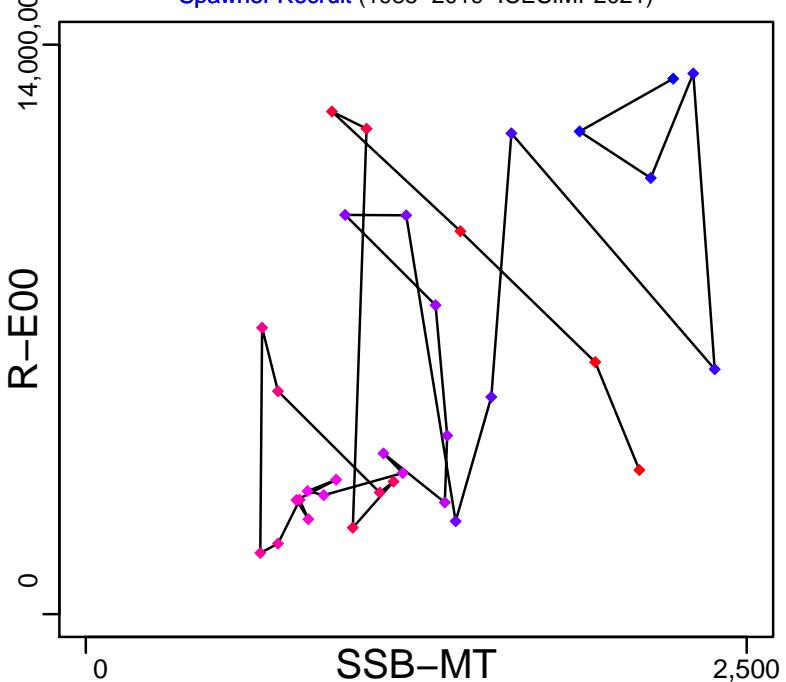
Kobe MSYpref (1985–2019–ICESIMP2021)



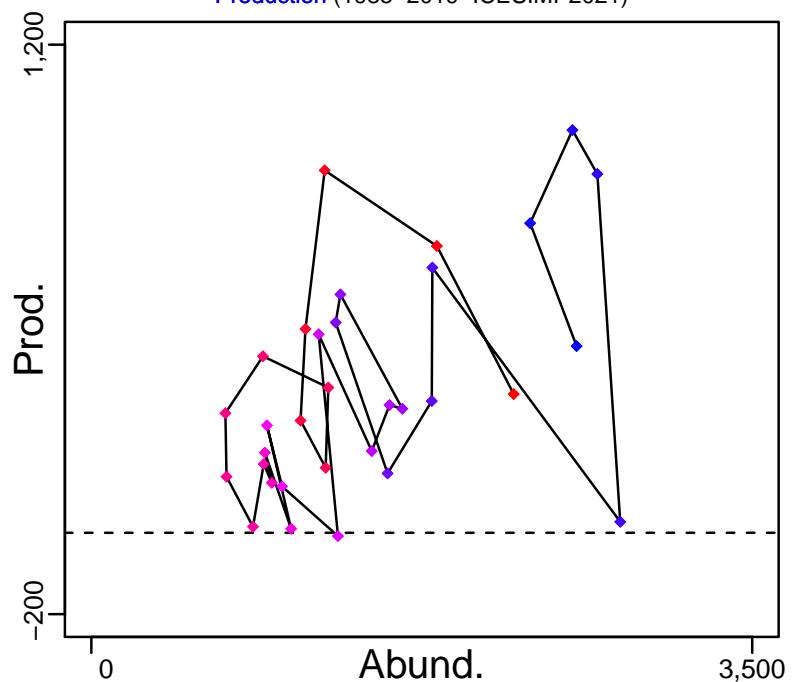
Kobe MGTpref (1985–2019–ICESIMP2021)



Spawner Recruit (1985–2019–ICESIMP2021)



Production (1985–2019–ICESIMP2021)

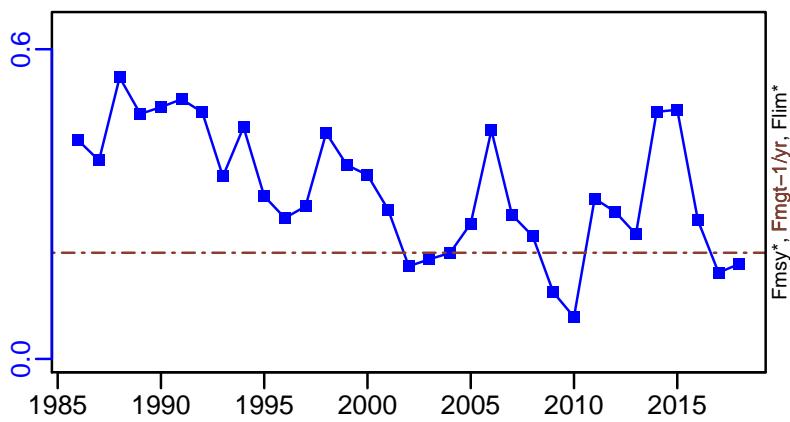
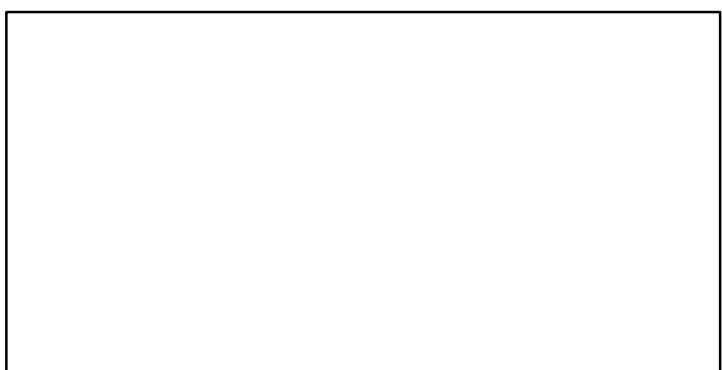
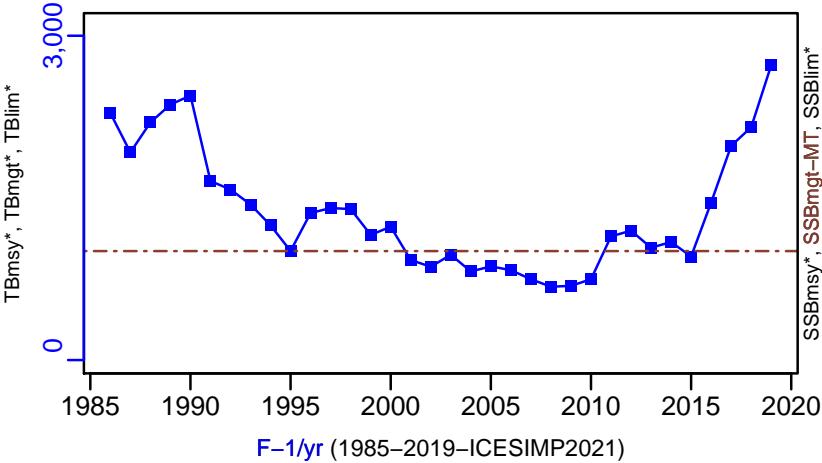
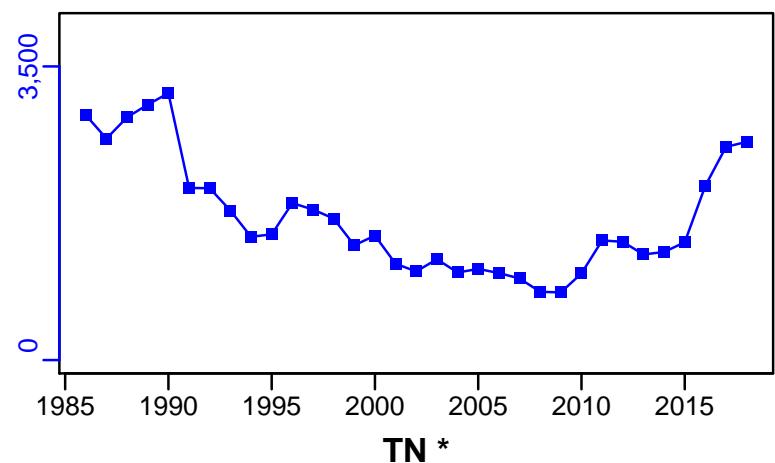


◆ Start Year ◆ End Year \* No Data

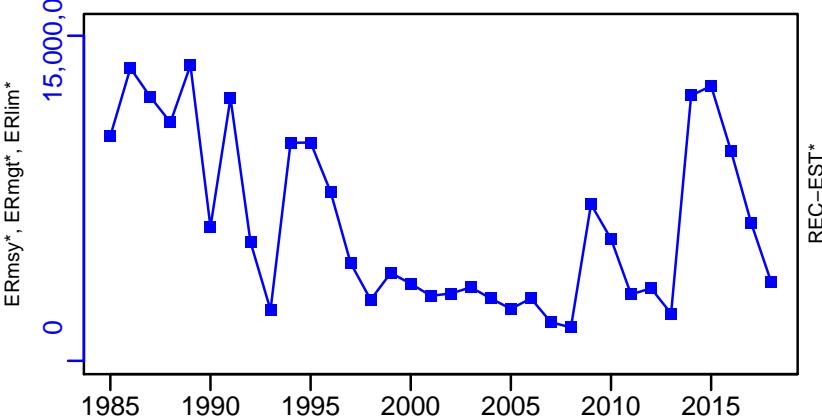
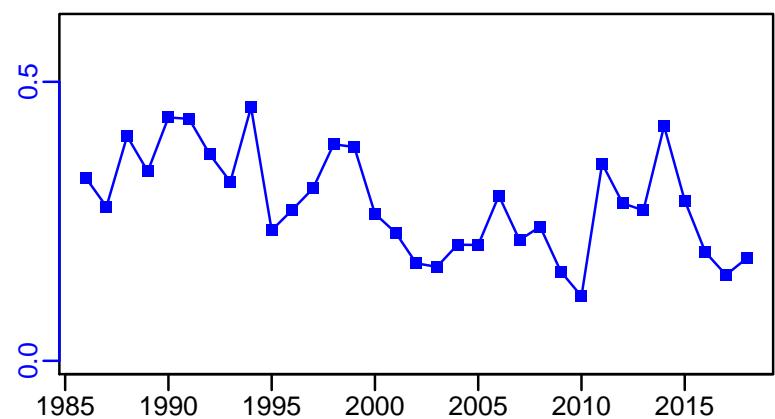
### Megrim ICES 8c–9a [MEG8c9a]

TB-MT (1985–2019–ICESIMP2021)

SSB-MT (1985–2019–ICESIMP2021)



ER-calc-ratio (1985–2019–ICESIMP2021)

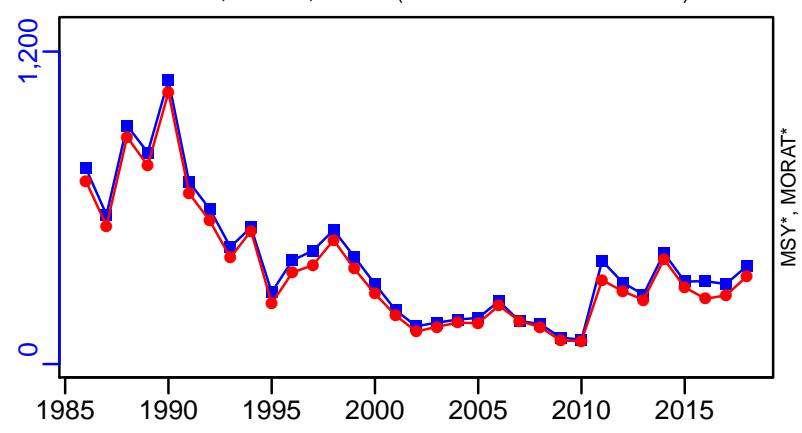


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | --- Lim BRP  | * No Data |

Megrim ICES 8c–9a [MEG8c9a]

TC-MT, TL-MT, RecC\* (1985–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



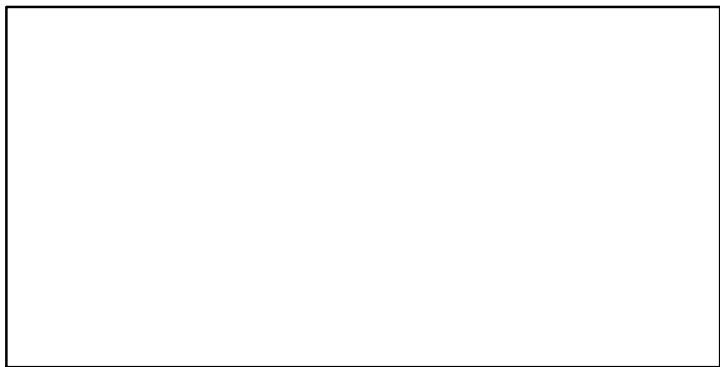
survB\*



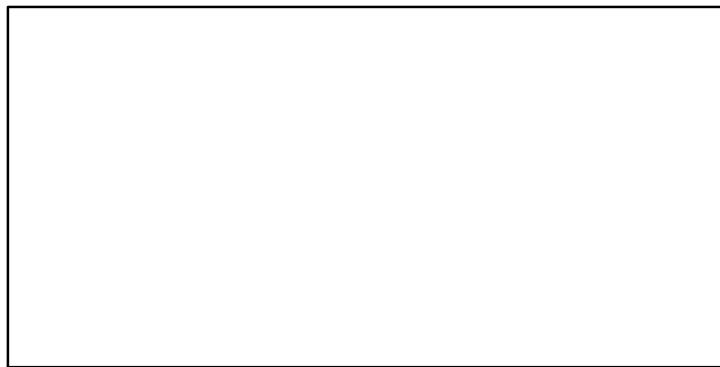
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

## Megrim spp ICES 4a-6a [MEGSPPIVa-VIa]

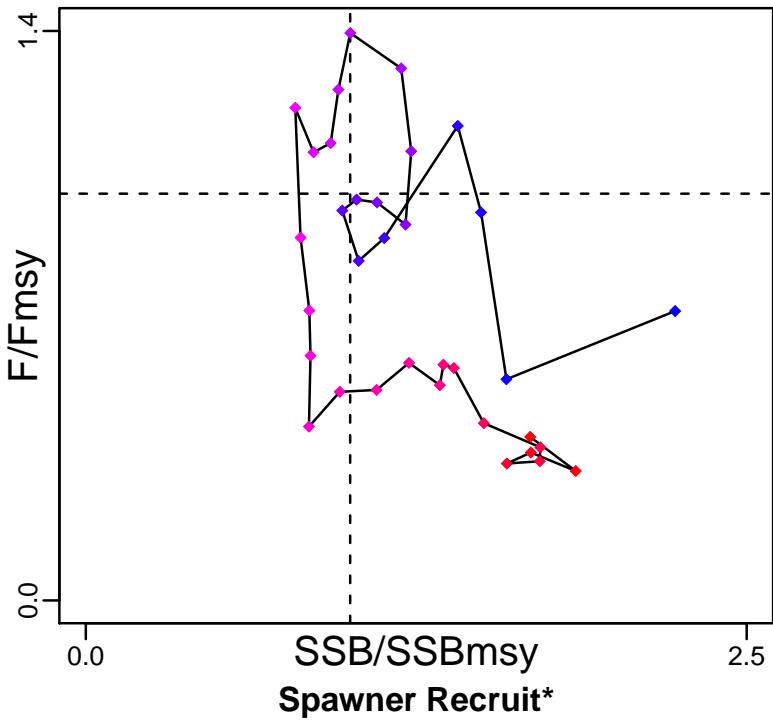
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Lepidorhombus spp                                    |
| <b>Current Assess ID</b>    | WGCSE-MEGSPPIVa-VIa-1985-2018-ICESIMP2021            |
| <b>Area</b>                 | ICES 4a-6a   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2012, 2013, 2015, 2016, 2017, 2018                   |

| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

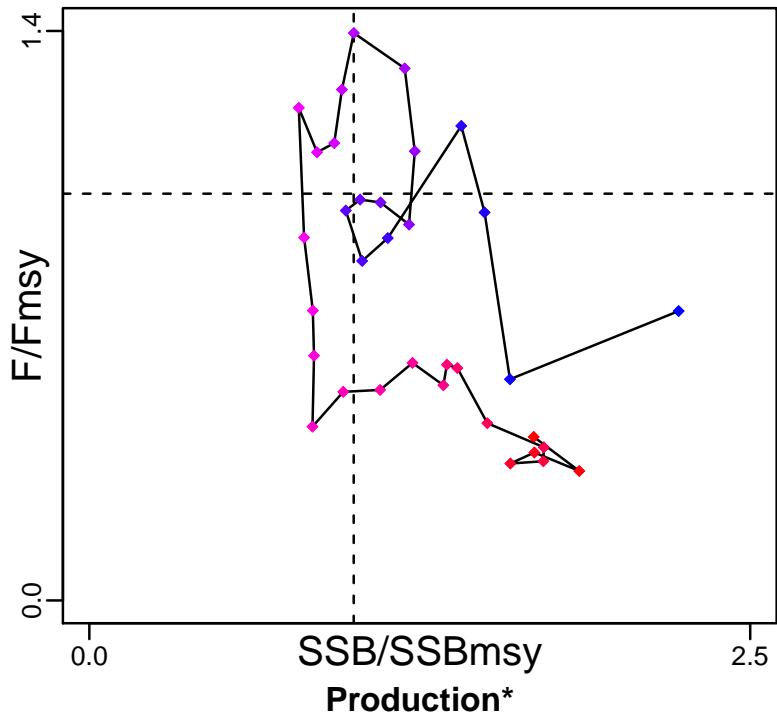
| Time Series       |                            |           |            |     |     |  |
|-------------------|----------------------------|-----------|------------|-----|-----|--|
| Type              | ID                         | Asmt Year | Curr Value | Sex | Age |  |
| <b>TB</b>         | -                          | -         | -          | -   | -   |  |
| <b>SSB</b>        | -                          | -         | -          | -   | -   |  |
| <b>TN</b>         | -                          | -         | -          | -   | -   |  |
| <b>R</b>          | -                          | -         | -          | -   | -   |  |
| <b>F</b>          | -                          | -         | -          | -   | -   |  |
| <b>ER</b>         | -                          | -         | -          | -   | -   |  |
| <b>TC</b>         | TC-MT                      | 2018      | 3258       |     |     |  |
| <b>TL</b>         | TL-MT                      | 2018      | 3003       |     |     |  |
| <b>TB/TBmsy</b>   | -                          | -         | -          |     |     |  |
| <b>SSB/SSBmsy</b> | SSBdivSSBmsy-dimensionless | 2018      | 1.681      |     |     |  |
| <b>F/Fmsy</b>     | FdivFmsy-dimensionless     | 2018      | 0.402      |     |     |  |
| <b>ER/ERmsy</b>   | -                          | -         | -          |     |     |  |
| <b>TB/TBmgt</b>   | -                          | -         | -          |     |     |  |
| <b>SSB/SSBmgt</b> | -                          | -         | -          |     |     |  |
| <b>F/Fmgt</b>     | -                          | -         | -          |     |     |  |
| <b>ER/ERmgt</b>   | -                          | -         | -          |     |     |  |

Megrim spp ICES 4a–6a [MEGSPPIVa–VIa]

Kobe MSYpref (1985–2018–ICESIMP2021)



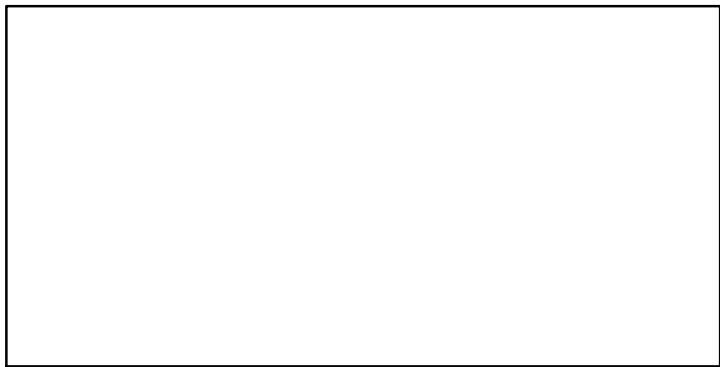
Kobe MGTpref (1985–2018–ICESIMP2021)



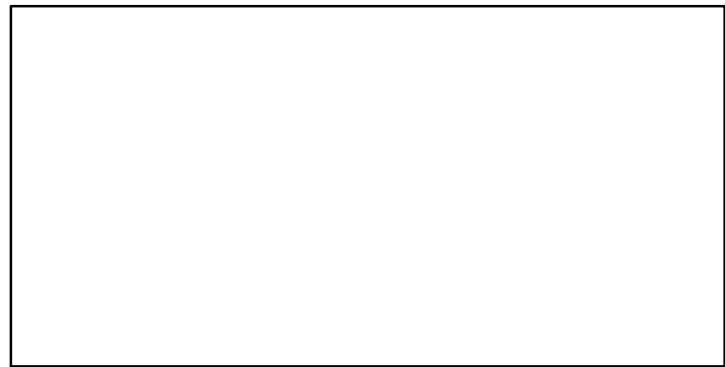
◆ Start Year   ◆ End Year   \* No Data

Megrim spp ICES 4a–6a [MEGSPPIVa–VIa]

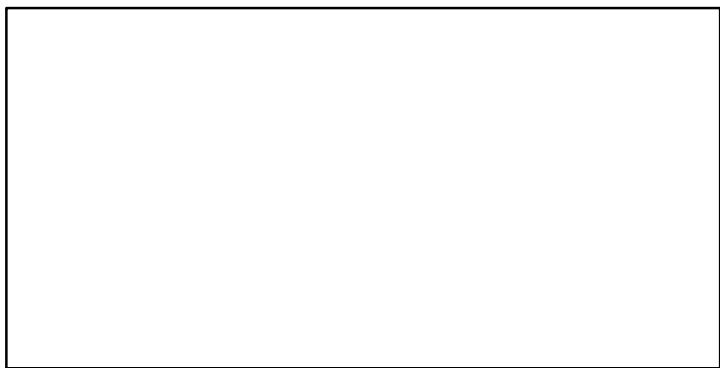
**TB\***



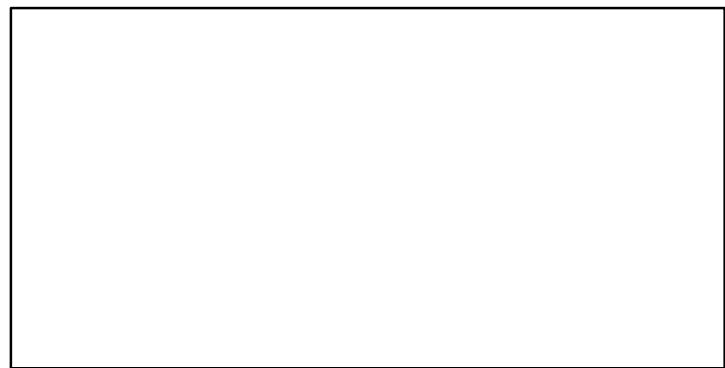
**SSB\***



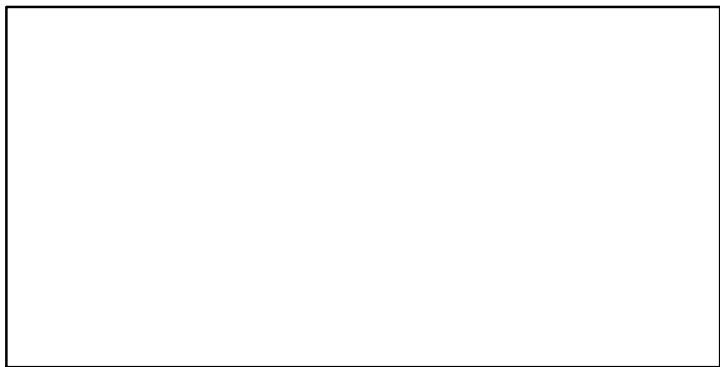
**TN \***



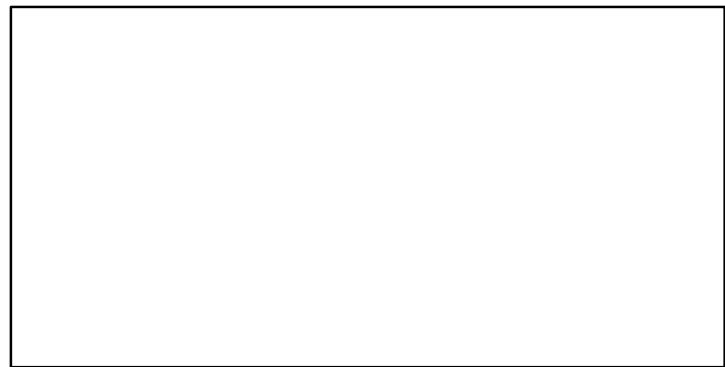
**F\***



**ER\***



**Recruits\***

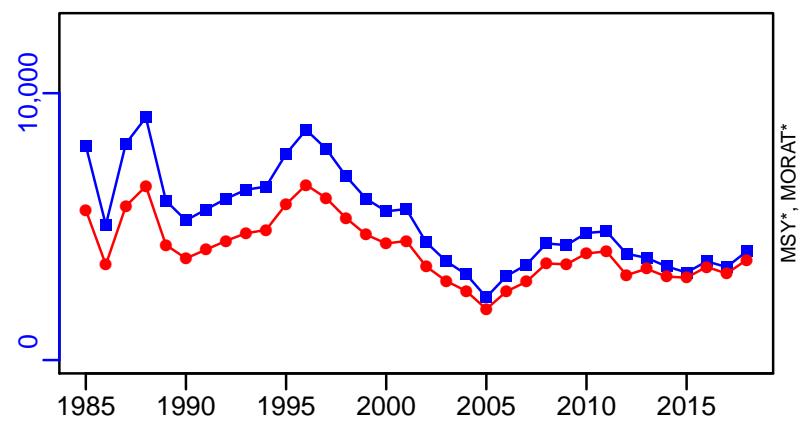


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

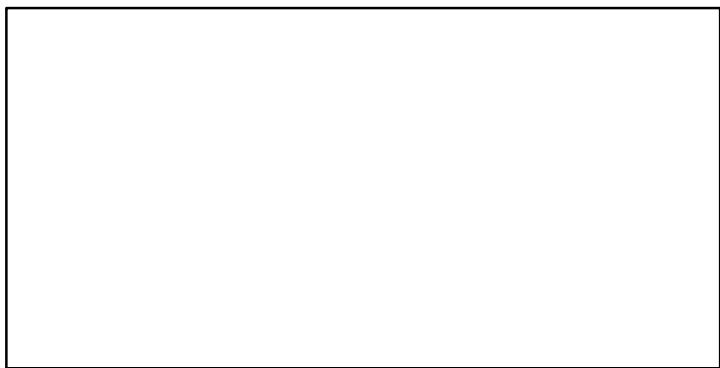
Megrim spp ICES 4a–6a [MEGSPPIVa–VIa]

TC–MT, TL–MT, RecC\* (1985–2018–ICESIMP2021)

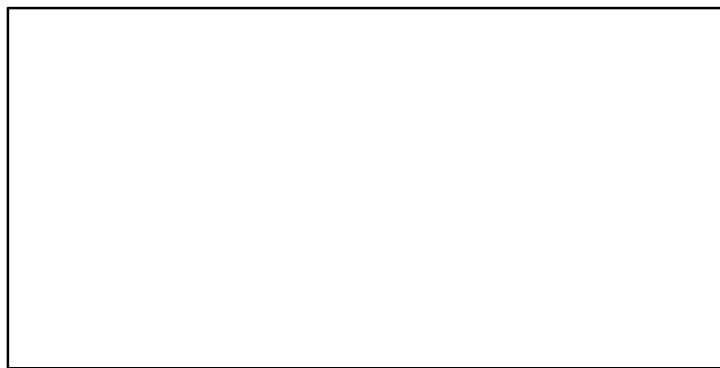
TAC\*, Cpair\*, Cadv\*



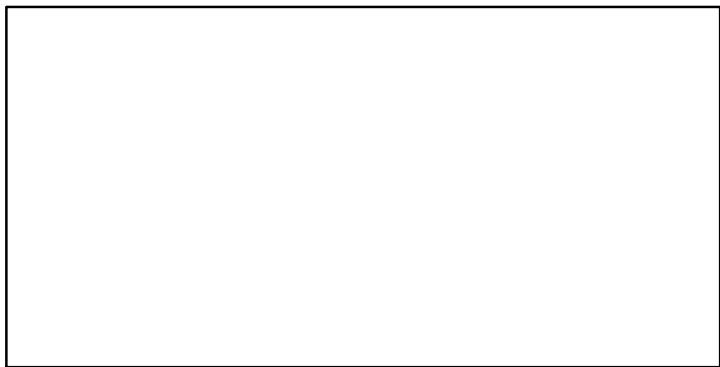
survB\*



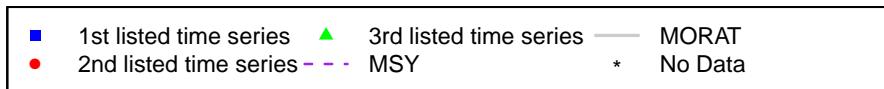
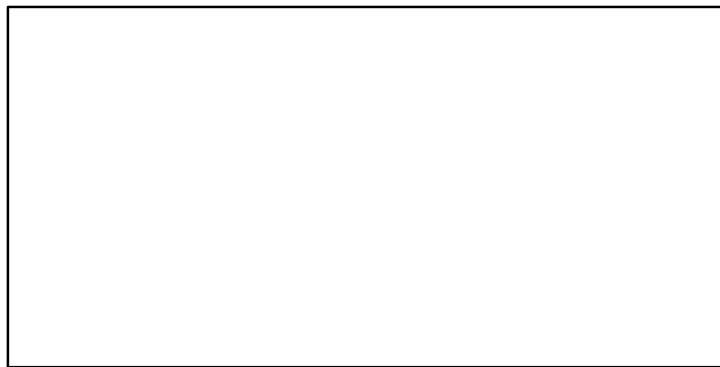
CPUE\*



EFFORT\*



CdivMSY\*



## Megrim spp Rockall Bank [MEGSPPVIb]

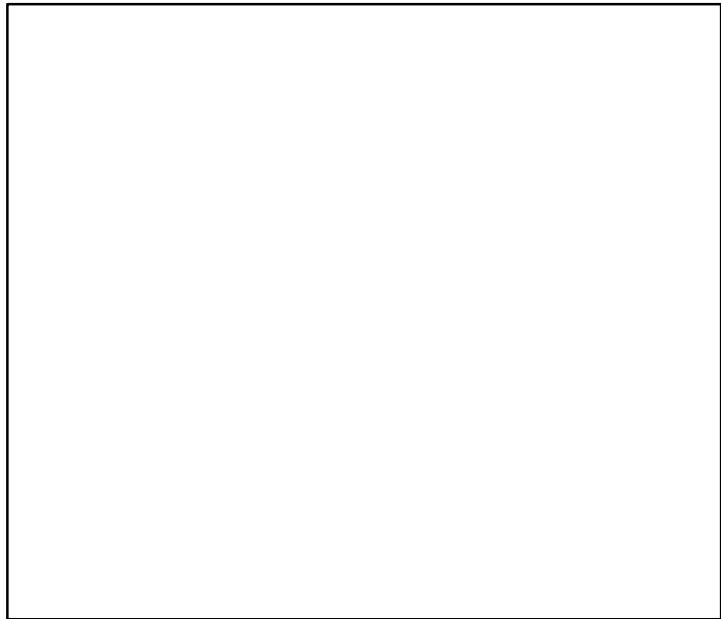
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Lepidorhombus spp                                    |
| <b>Current Assess ID</b>    | WGCSE-MEGSPPVIb-1991-2019-ICESIMP2021                |
| <b>Area</b>                 | Rockall Bank   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2016, 2017, 2019                                     |

| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

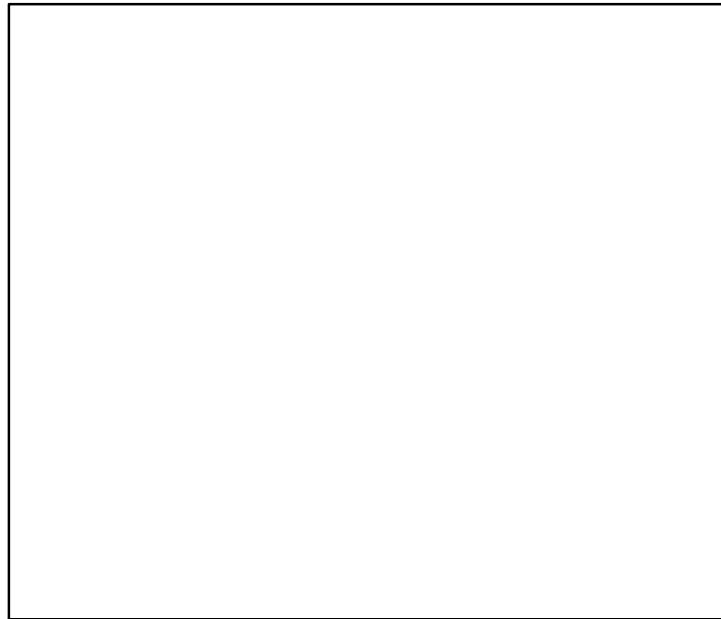
| Time Series       |                        |           |            |      |     |   |
|-------------------|------------------------|-----------|------------|------|-----|---|
| Type              | ID                     | Asmt Year | Curr Value | Sex  | Age |   |
| <b>TB</b>         | -                      | -         | -          | -    | -   | - |
| <b>SSB</b>        | SSB-MT                 | 2016      | 4510       | Both | -   | - |
| <b>TN</b>         | -                      | -         | -          | -    | -   | - |
| <b>R</b>          | -                      | -         | -          | -    | -   | - |
| <b>F</b>          | -                      | -         | -          | -    | -   | - |
| <b>ER</b>         | -                      | -         | -          | -    | -   | - |
| <b>TC</b>         | -                      | -         | -          |      |     |   |
| <b>TL</b>         | TL-MT                  | 2019      | 763        |      |     |   |
| <b>TB/TBmsy</b>   | -                      | -         | -          |      |     |   |
| <b>SSB/SSBmsy</b> | -                      | -         | -          |      |     |   |
| <b>F/Fmsy</b>     | FdivFmsy-dimensionless | 2019      | 0.932      |      |     |   |
| <b>ER/ERmsy</b>   | -                      | -         | -          |      |     |   |
| <b>TB/TBmgt</b>   | -                      | -         | -          |      |     |   |
| <b>SSB/SSBmgt</b> | -                      | -         | -          |      |     |   |
| <b>F/Fmgt</b>     | -                      | -         | -          |      |     |   |
| <b>ER/ERmgt</b>   | -                      | -         | -          |      |     |   |

Megrim spp Rockall Bank [MEGSPPVIb]

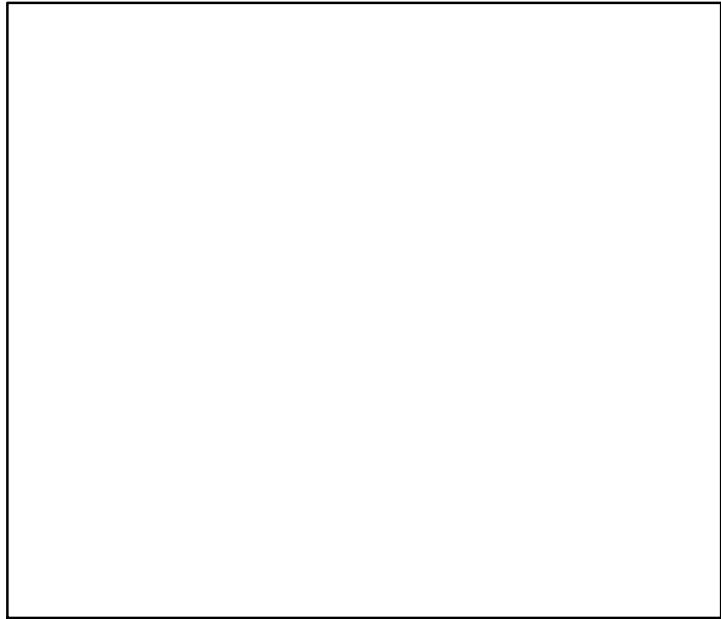
**Kobe MSY\***



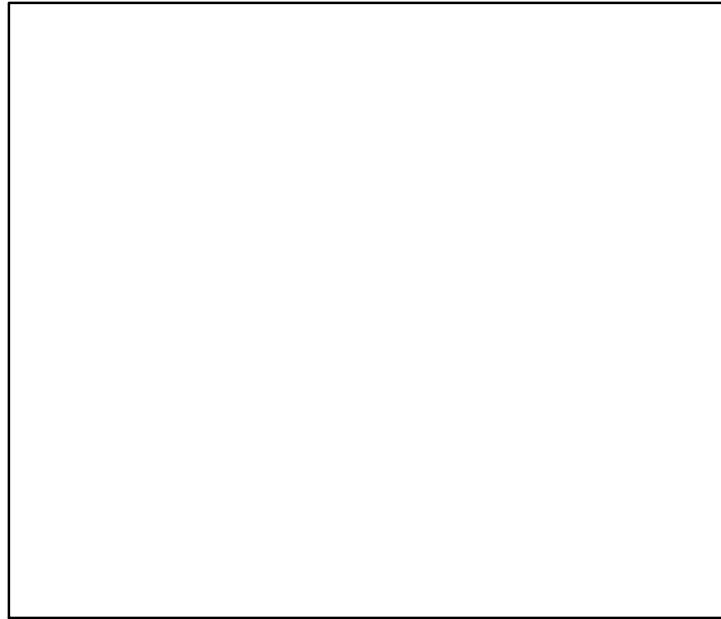
**Kobe MGT\***



**Spawner Recruit\***



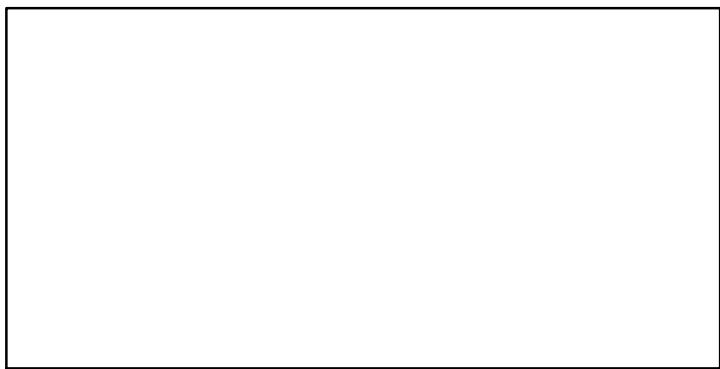
**Production\***



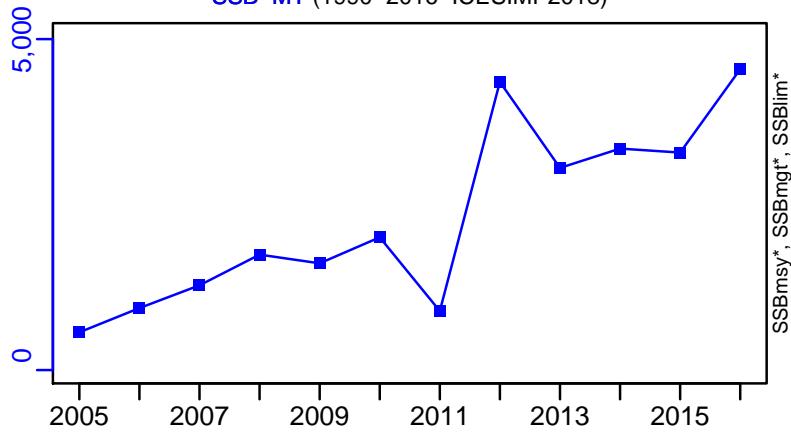
◆ Start Year ♦ End Year \* No Data

Megrim spp Rockall Bank [MEGSPPVIb]

**TB\***



**SSB-MT (1990–2016–ICESIMP2018)**

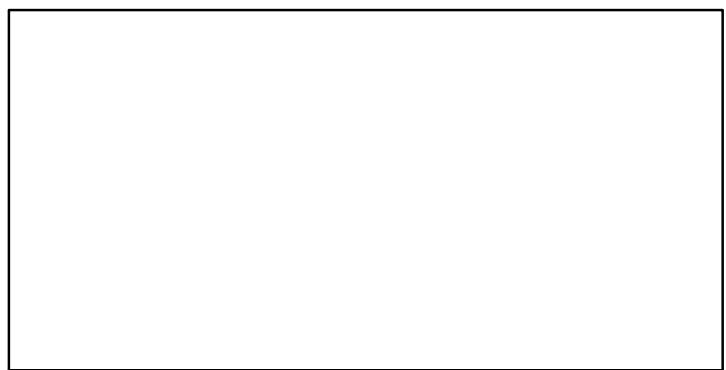


SSB<sub>m</sub>s<sup>y</sup>, SSB<sub>m</sub>g<sup>t</sup>, SSB<sub>lim</sub>\*

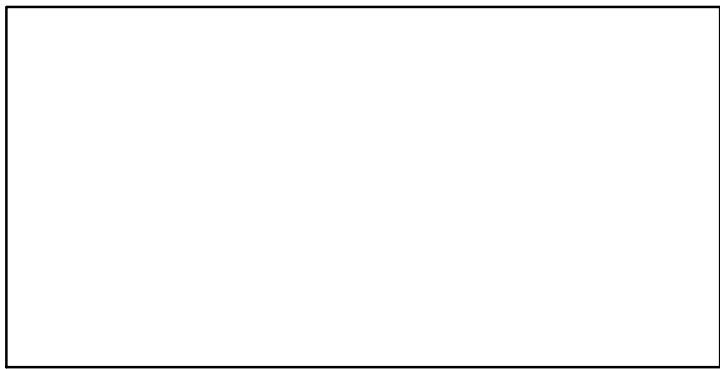
**TN \***



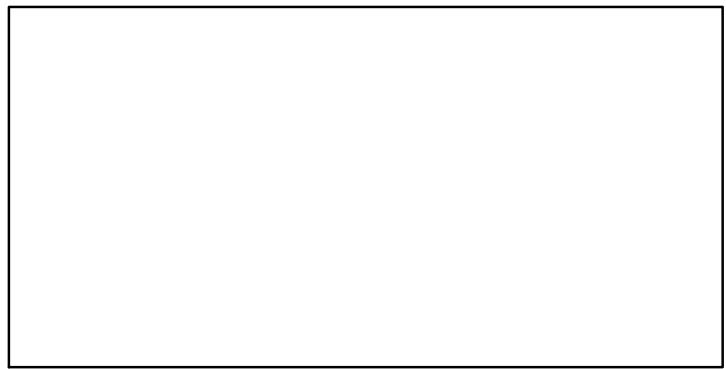
**F\***



**ER\***



**Recruits\***

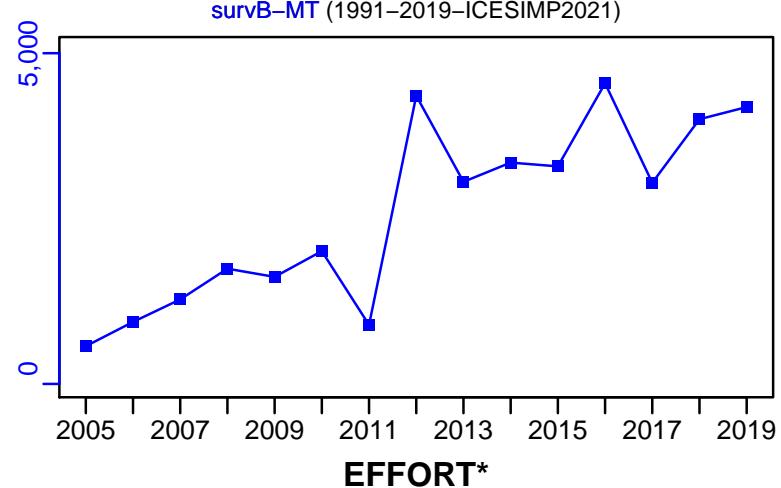
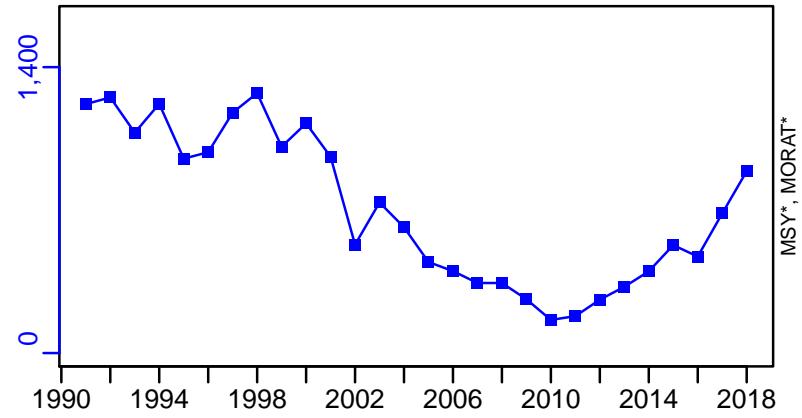


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | ··· Lim BRP  | * No Data |

Megrim spp Rockall Bank [MEGSPPVIb]

TL-MT, TC\*, RecC\* (1991–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



EFFORT\*

CPUE\*

CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Megrim ICES 7-8abd [MEGVII-VIIIabd]

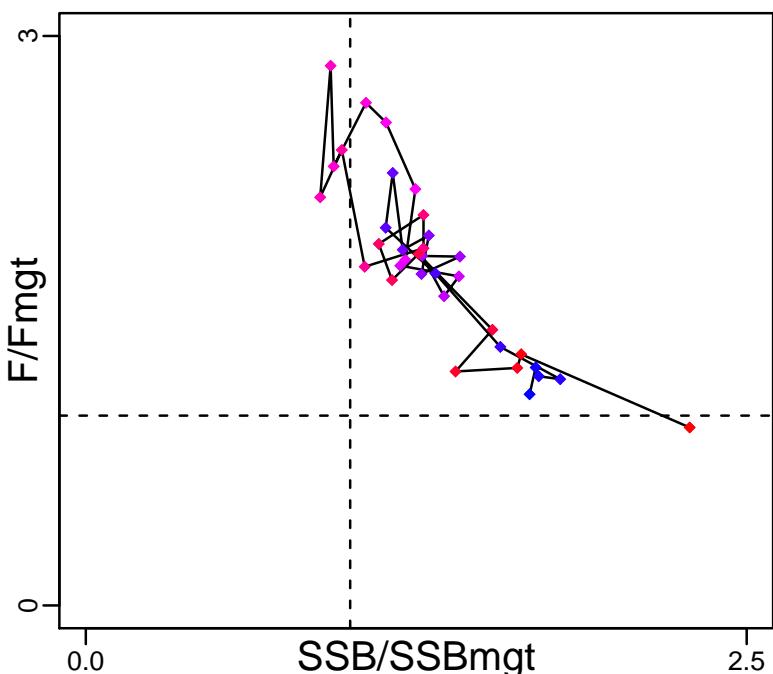
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Lepidorhombus whiffiagonis   |
| <b>Current Assess ID</b>    | WGBIE-MEGVII-VIIIabd-1983-2019-ICESIMP2021                           |
| <b>Area</b>                 | ICES 7-8abd  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                 |
| <b>Assessor</b>             | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion |
| <b>Asmts in RAM</b>         | 2014, 2015, 2016, 2017, 2018, 2019                                   |

| Reference Points |           |           |        |
|------------------|-----------|-----------|--------|
| Type             | ID        | Asmt Year | Value  |
| <b>TBmsy</b>     | -         | -         | -      |
| <b>SSBmsy</b>    | -         | -         | -      |
| <b>Fmsy</b>      | Fmsy-1/yr | 2018      | 0.191  |
| <b>ERmsy</b>     | -         | -         | -      |
| <b>TBmgt</b>     | -         | -         | -      |
| <b>SSBmgt</b>    | SSBmgt-MT | 2019      | 41,800 |
| <b>Fmgt</b>      | Fmgt-1/yr | 2019      | 0.191  |
| <b>ERmgt</b>     | -         | -         | -      |
| <b>TB0</b>       | -         | -         | -      |
| <b>SSB0</b>      | -         | -         | -      |
| <b>MSY</b>       | -         | -         | -      |
| <b>M</b>         | -         | -         | -      |
| <b>TBlim</b>     | -         | -         | -      |
| <b>SSBlim</b>    | SSBlim-MT | 2018      | 37,100 |
| <b>Flim</b>      | Flim-1/yr | 2018      | 0.53   |
| <b>ERlim</b>     | -         | -         | -      |

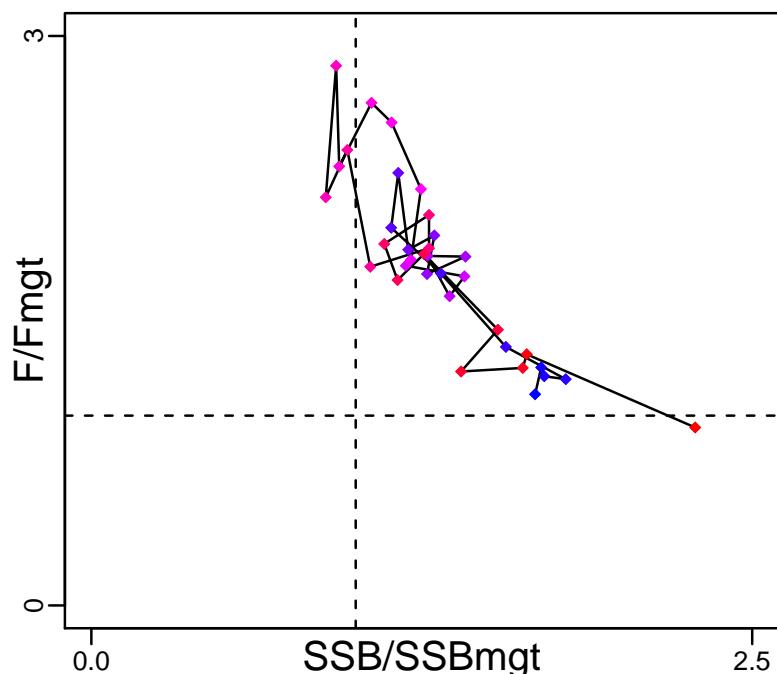
| Time Series       |                  |           |             |     |        |  |
|-------------------|------------------|-----------|-------------|-----|--------|--|
| Type              | ID               | Asmt Year | Curr Value  | Sex | Age    |  |
| <b>TB</b>         | TB-MT            | 2019      | 150,653     | -   | -      |  |
| <b>SSB</b>        | SSB-MT           | 2019      | 100,393     | -   | -      |  |
| <b>TN</b>         | -                | -         | -           | -   | -      |  |
| <b>R</b>          | R-E00            | 2019      | 223,736,000 | -   | 1      |  |
| <b>F</b>          | F-1/yr           | 2019      | 0.179       | -   | 3 to 6 |  |
| <b>ER</b>         | ER-calc-ratio    | 2019      | 0.094       | -   | -      |  |
| <b>TC</b>         | TC-MT            | 2019      | 14,133      |     |        |  |
| <b>TL</b>         | TL-MT            | 2019      | 12,279      |     |        |  |
| <b>TB/TBmsy</b>   | -                | -         | -           |     |        |  |
| <b>SSB/SSBmsy</b> | -                | -         | -           |     |        |  |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr | 2018      | 1.152       |     |        |  |
| <b>ER/ERmsy</b>   | -                | -         | -           |     |        |  |
| <b>TB/TBmgt</b>   | -                | -         | -           |     |        |  |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2019      | 2.402       |     |        |  |
| <b>F/Fmgt</b>     | F-1/yr/Fmgt-1/yr | 2019      | 0.937       |     |        |  |
| <b>ER/ERmgt</b>   | -                | -         | -           |     |        |  |

**Megrim ICES 7–8abd [MEGVII–VIIIab]**

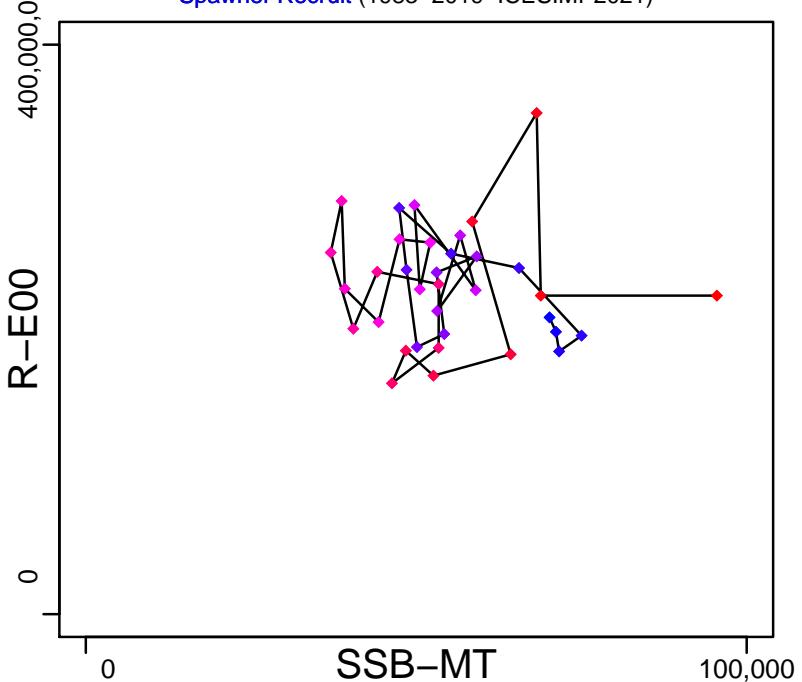
Kobe MSYpref (1983–2019–ICESIMP2021)



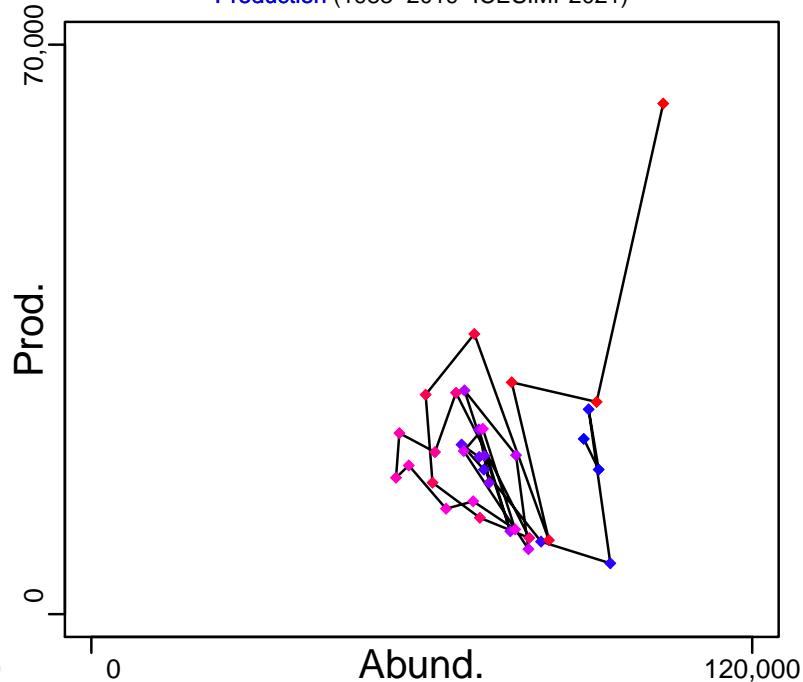
Kobe MGTpref (1983–2019–ICESIMP2021)



Spawner Recruit (1983–2019–ICESIMP2021)



Production (1983–2019–ICESIMP2021)

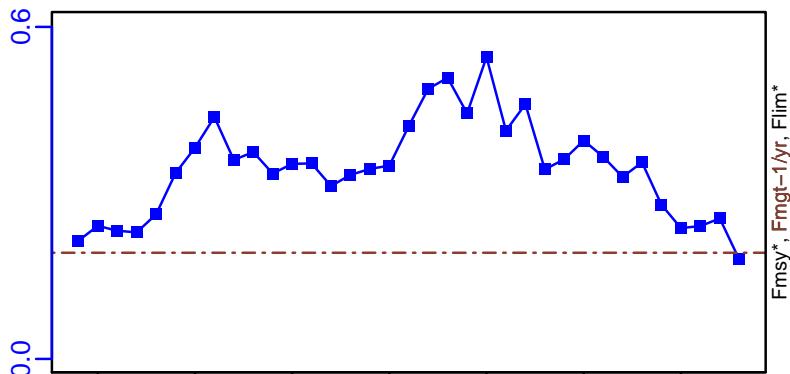
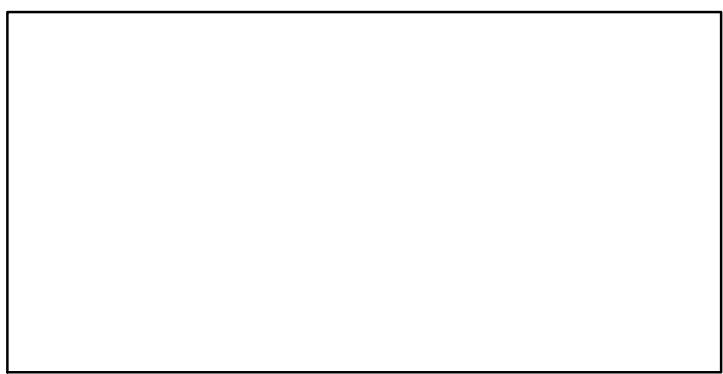
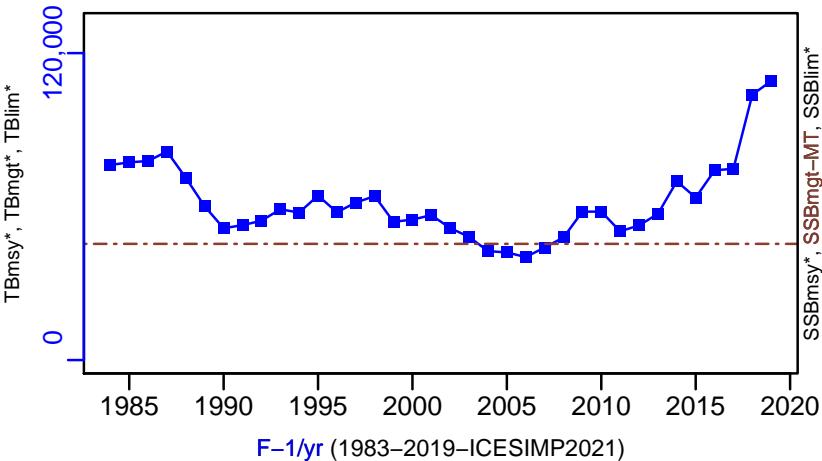
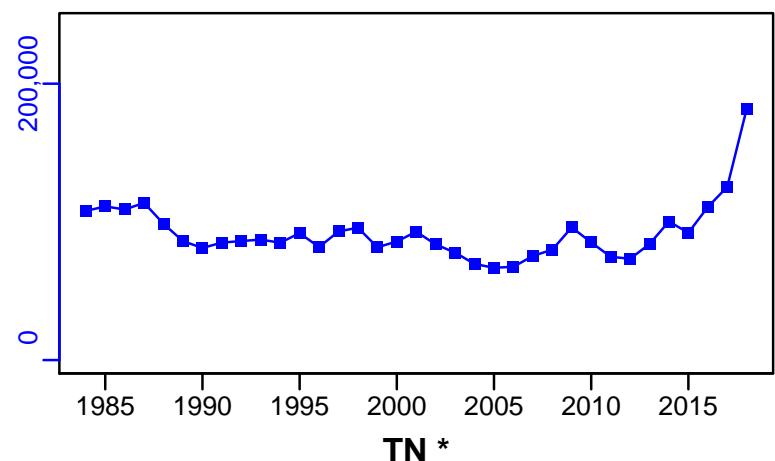


|              |            |   |         |
|--------------|------------|---|---------|
| ◆ Start Year | ◆ End Year | * | No Data |
|--------------|------------|---|---------|

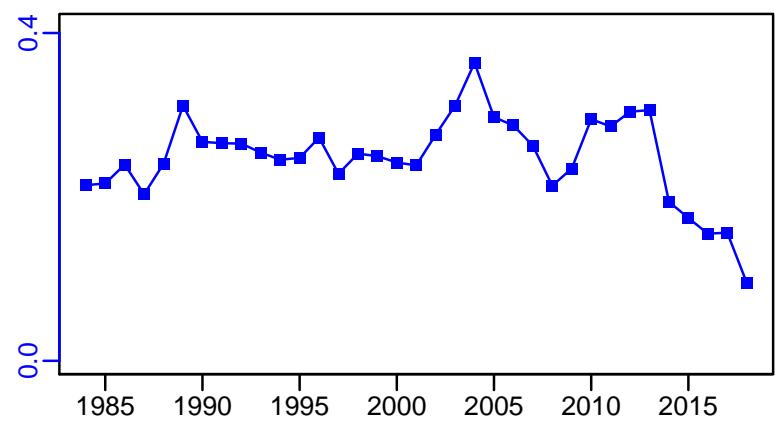
### Megrim ICES 7–8abd [MEGVII–VIIIab]

TB-MT (1983–2019–ICESIMP2021)

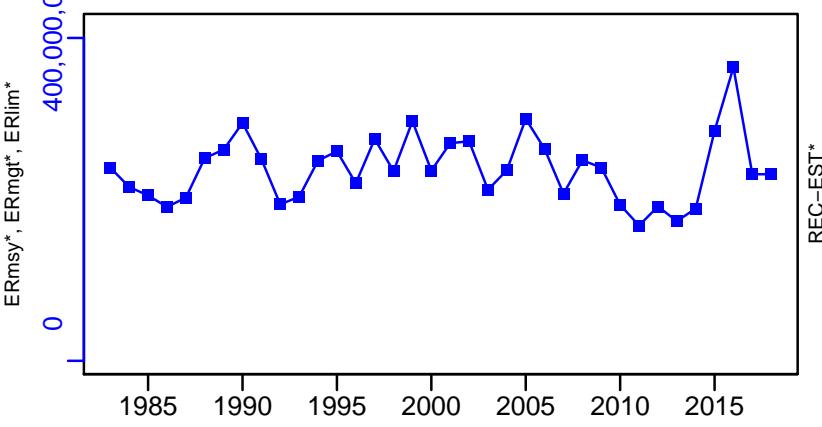
SSB-MT (1983–2019–ICESIMP2021)



ER-calc-ratio (1983–2019–ICESIMP2021)



R-E00 (1983–2019–ICESIMP2021)

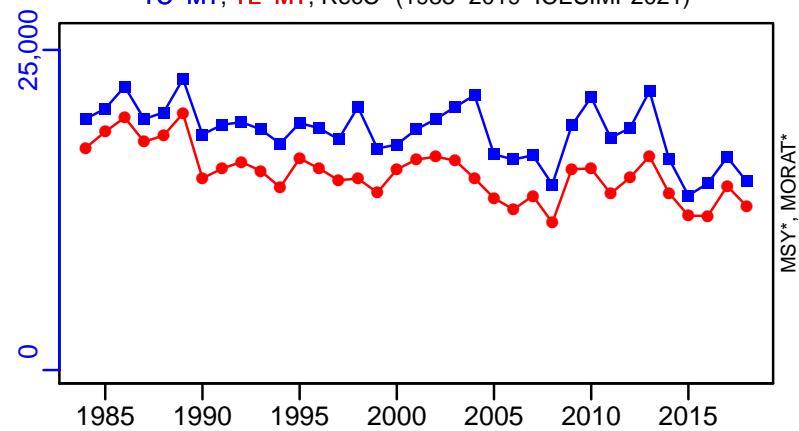


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

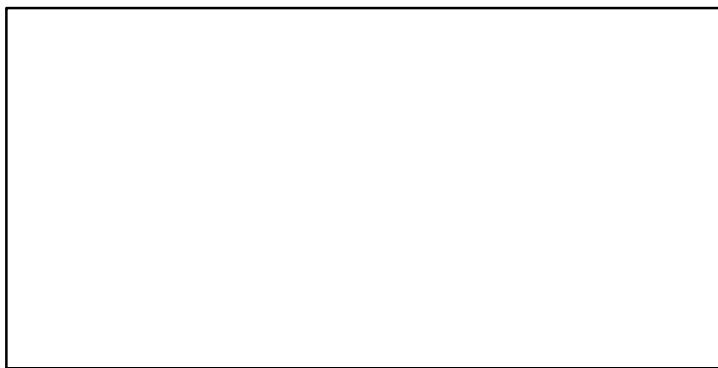
Megrim ICES 7–8abd [MEGVII–VIIIab*d*]

TC–MT, TL–MT, RecC\* (1983–2019–ICESIMP2021)

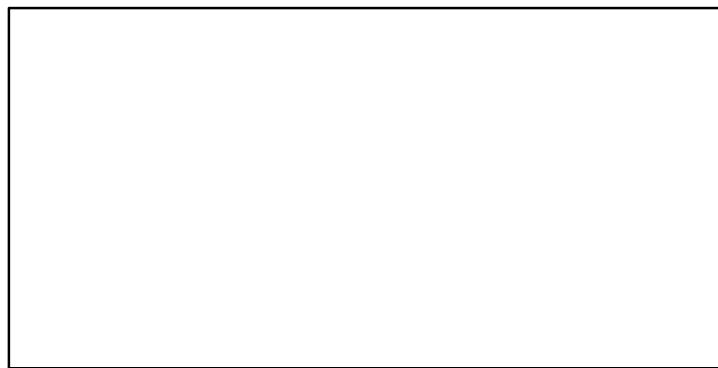
TAC\*, Cp*air*\*, Cd*adv*\*



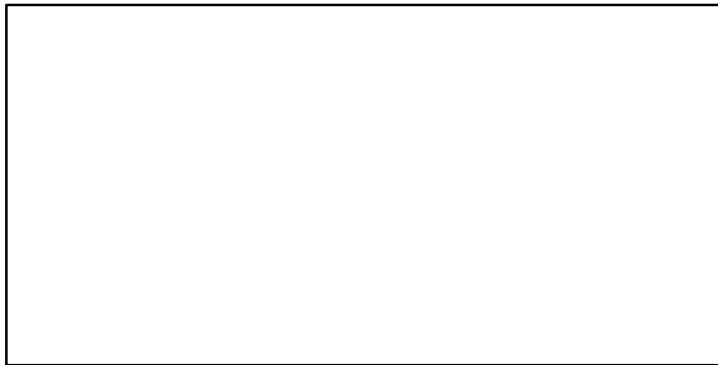
survB\*



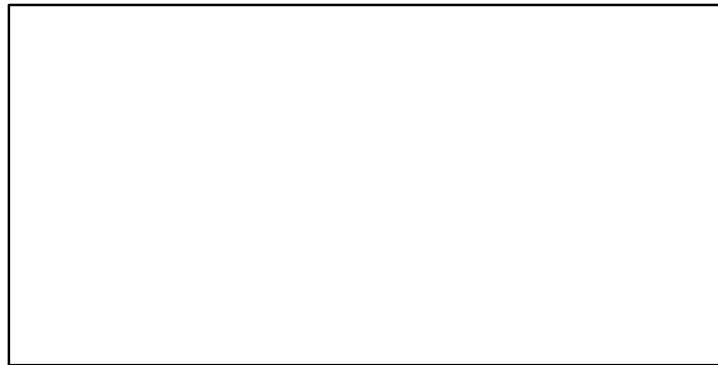
CPUE\*



EFFORT\*



C*div*MSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Norway lobster Noup (FU 10) [NEPHFU10]

| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Nephrops norvegicus   |
| <b>Current Assess ID</b>    | WGNSSK-NEPHFU10-1994-2017-ICESIMP2018   |
| <b>Area</b>                 | Noup (FU 10)  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2016, 2017  |

| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | -     | -         | -          |     |     |
| <b>TL</b>         | TL-MT | 2017      | 9          |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

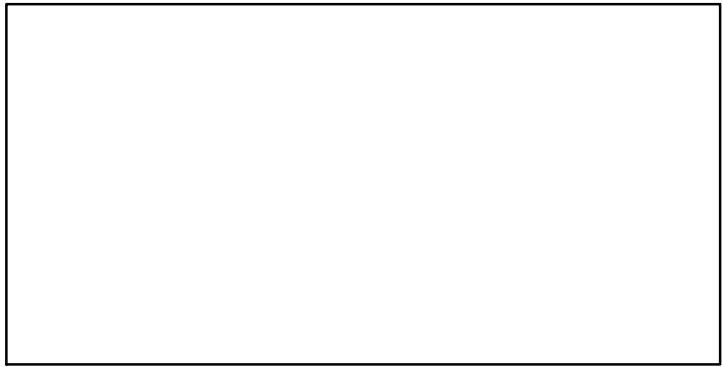
**Spawner Recruit\***

**Production\***

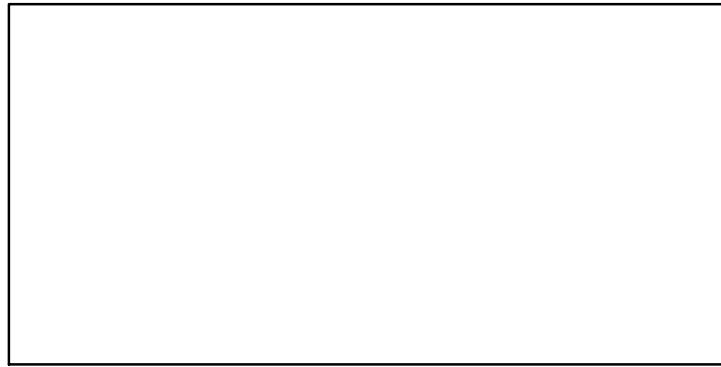
◆ Start Year ◆ End Year \* No Data

Norway lobster Noup (FU 10) [NEPHFU10]

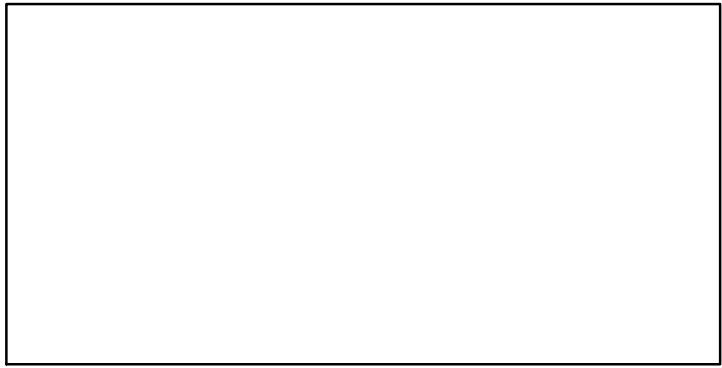
**TB\***



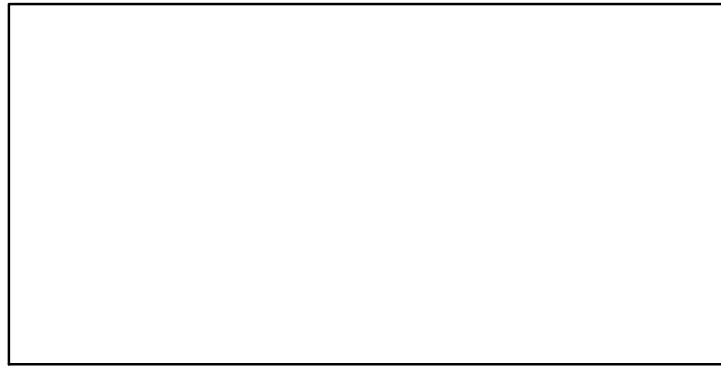
**SSB\***



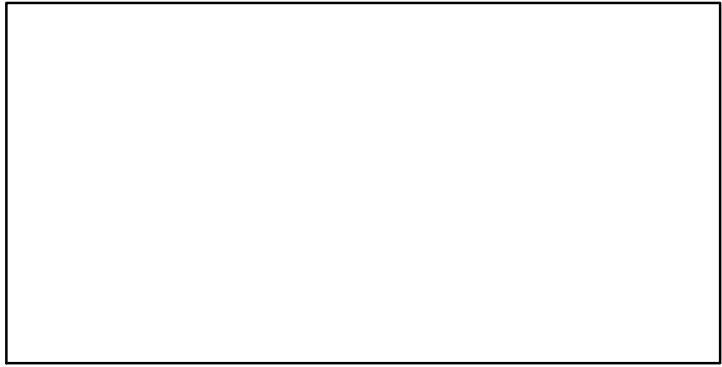
**TN \***



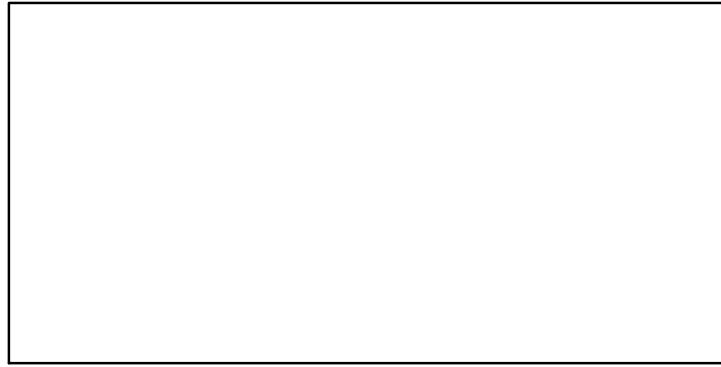
**F\***



**ER\***



**Recruits\***

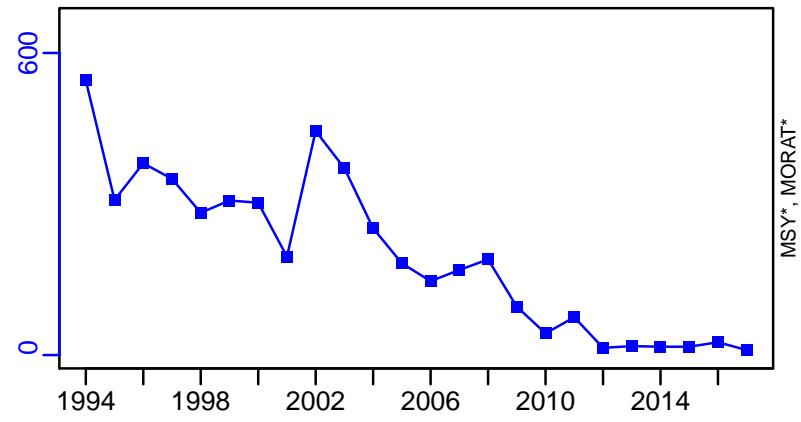


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

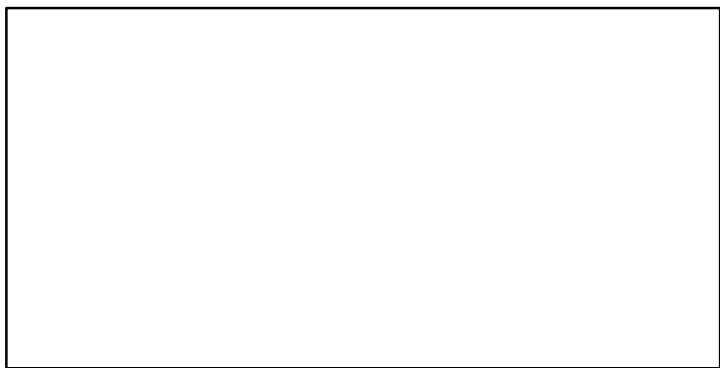
Norway lobster Noup (FU 10) [NEPHFU10]

TL-MT, TC\*, RecC\* (1994–2017–ICESIMP2018)

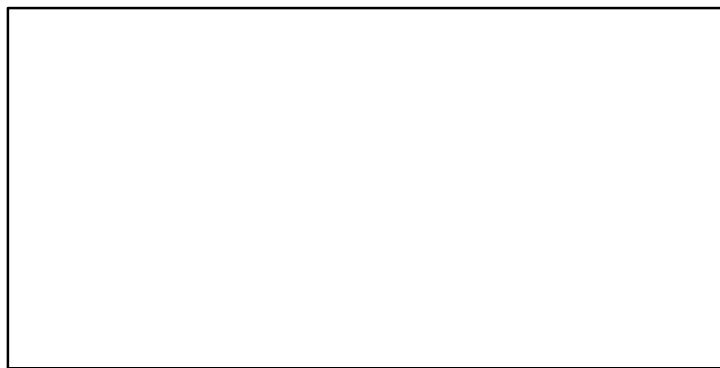
TAC\*, Cpair\*, Cadv\*



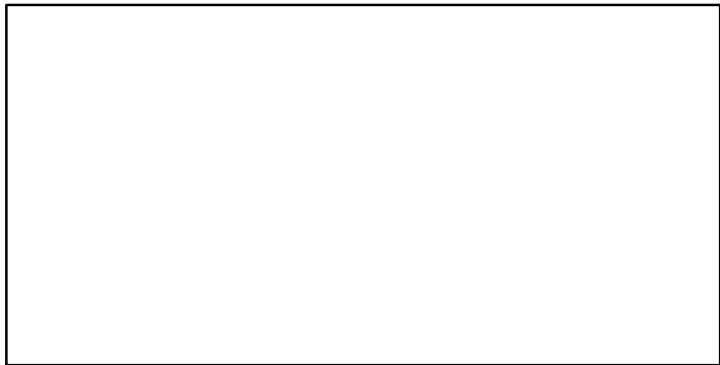
survB\*



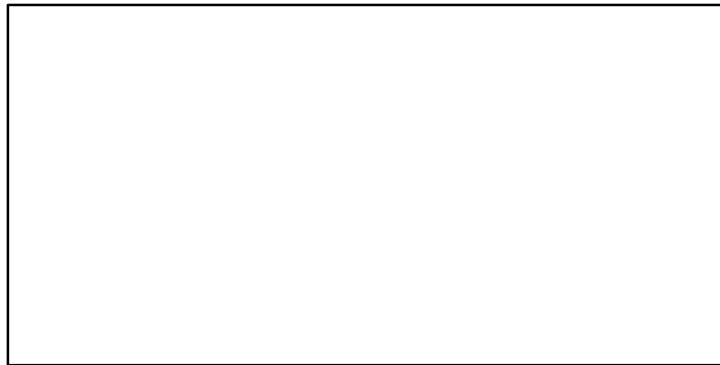
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

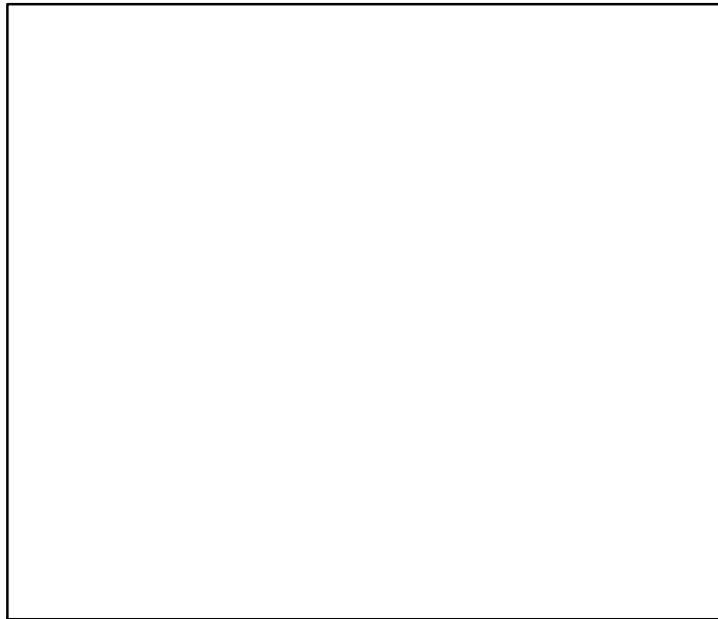
## Norway lobster North Minch (FU 11) [NEPHFU11]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Nephrops norvegicus                                  |
| <b>Current Assess ID</b>    | WGCSE-NEPHFU11-1981-2019-ICESIMP2021                 |
| <b>Area</b>                 | North Minch (FU 11)                                  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2015, 2016, 2019                                     |

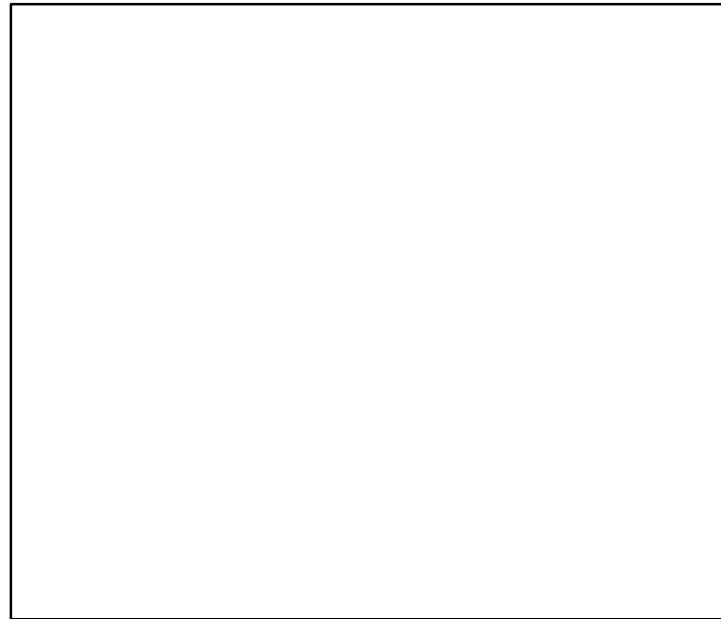
| Reference Points |             |           |       |
|------------------|-------------|-----------|-------|
| Type             | ID          | Asmt Year | Value |
| <b>TBmsy</b>     | -           | -         | -     |
| <b>SSBmsy</b>    | -           | -         | -     |
| <b>Fmsy</b>      | -           | -         | -     |
| <b>ERmsy</b>     | ERmsy-ratio | 2016      | 0.108 |
| <b>TBmgt</b>     | -           | -         | -     |
| <b>SSBmgt</b>    | -           | -         | -     |
| <b>Fmgt</b>      | -           | -         | -     |
| <b>ERmgt</b>     | ERmgt-ratio | 2019      | 0.108 |
| <b>TB0</b>       | -           | -         | -     |
| <b>SSB0</b>      | -           | -         | -     |
| <b>MSY</b>       | -           | -         | -     |
| <b>M</b>         | -           | -         | -     |
| <b>TBlim</b>     | -           | -         | -     |
| <b>SSBlim</b>    | -           | -         | -     |
| <b>Flim</b>      | -           | -         | -     |
| <b>ERlim</b>     | -           | -         | -     |

| Time Series       |                      |           |            |     |     |  |
|-------------------|----------------------|-----------|------------|-----|-----|--|
| Type              | ID                   | Asmt Year | Curr Value | Sex | Age |  |
| <b>TB</b>         | -                    | -         | -          | -   | -   |  |
| <b>SSB</b>        | -                    | -         | -          | -   | -   |  |
| <b>TN</b>         | -                    | -         | -          | -   | -   |  |
| <b>R</b>          | -                    | -         | -          | -   | -   |  |
| <b>F</b>          | -                    | -         | -          | -   | -   |  |
| <b>ER</b>         | ER-ratio             | 2019      | 0.064      | -   | -   |  |
| <b>TC</b>         | TC-MT                | 2019      | 2020       |     |     |  |
| <b>TL</b>         | TL-MT                | 2019      | 1961       |     |     |  |
| <b>TB/TBmsy</b>   | -                    | -         | -          |     |     |  |
| <b>SSB/SSBmsy</b> | -                    | -         | -          |     |     |  |
| <b>F/Fmsy</b>     | -                    | -         | -          |     |     |  |
| <b>ER/ERmsy</b>   | ER-ratio/ERmsy-ratio | 2016      | 0.991      |     |     |  |
| <b>TB/TBmgt</b>   | -                    | -         | -          |     |     |  |
| <b>SSB/SSBmgt</b> | -                    | -         | -          |     |     |  |
| <b>F/Fmgt</b>     | -                    | -         | -          |     |     |  |
| <b>ER/ERmgt</b>   | -                    | -         | -          |     |     |  |

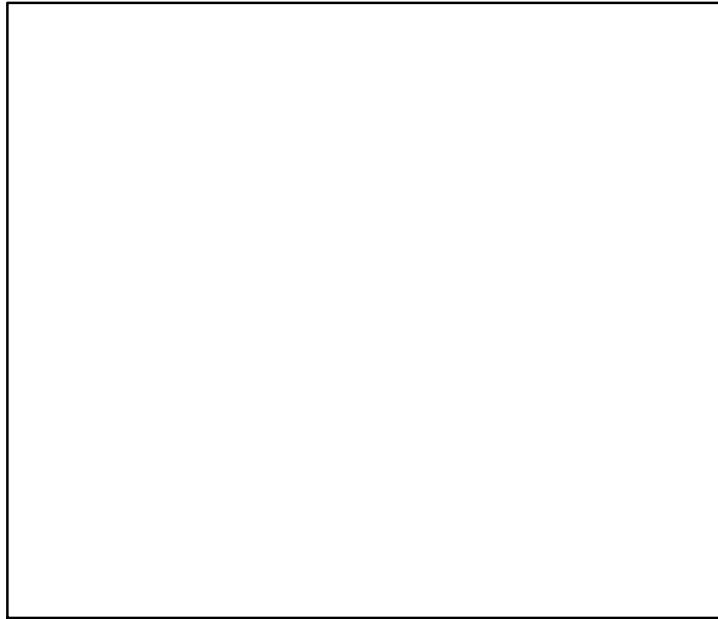
**Kobe MSY\***



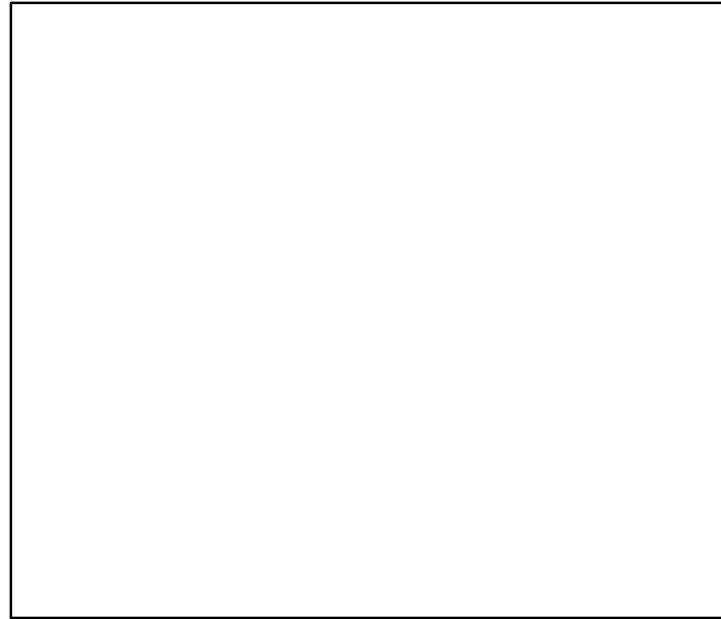
**Kobe MGT\***



**Spawner Recruit\***



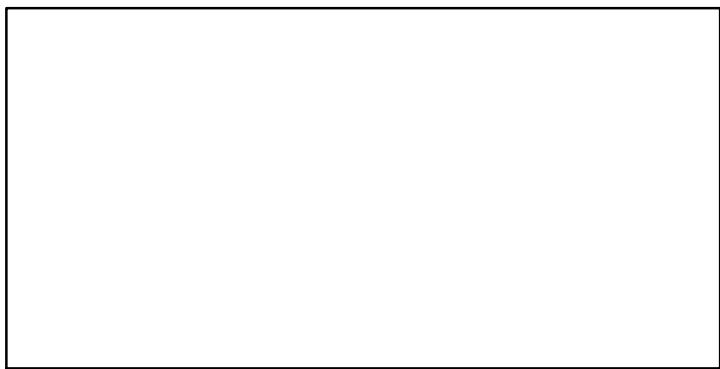
**Production\***



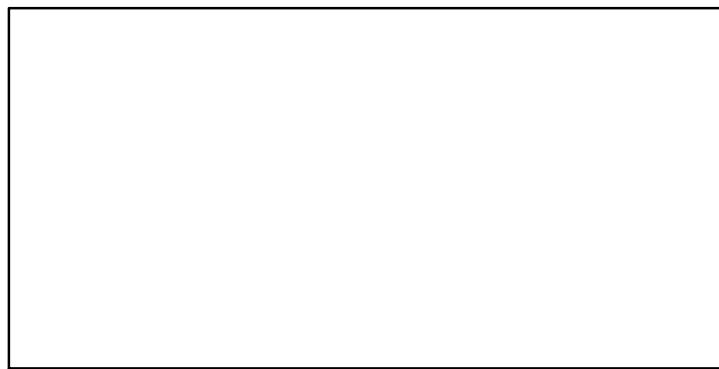
◆ Start Year ♦ End Year \* No Data

Norway lobster North Minch (FU 11) [NEPHFU11]

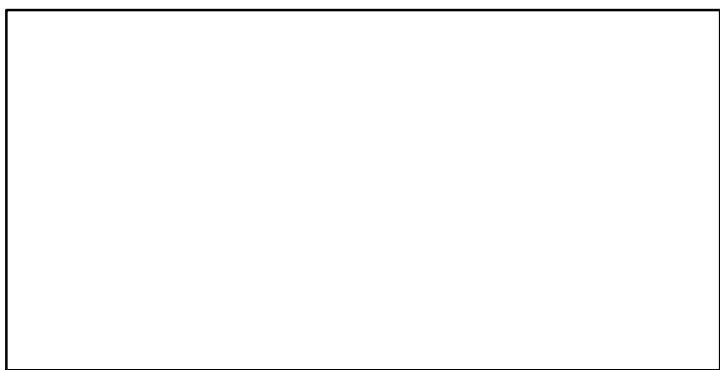
**TB\***



**SSB\***



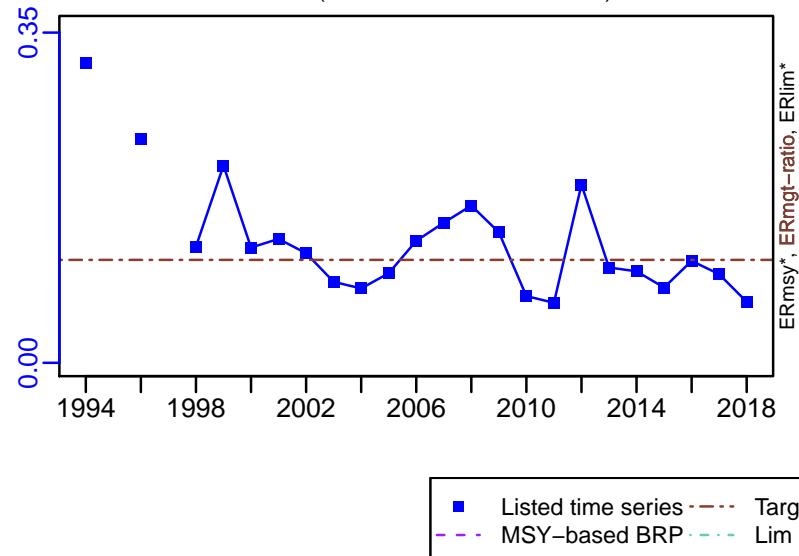
**TN \***



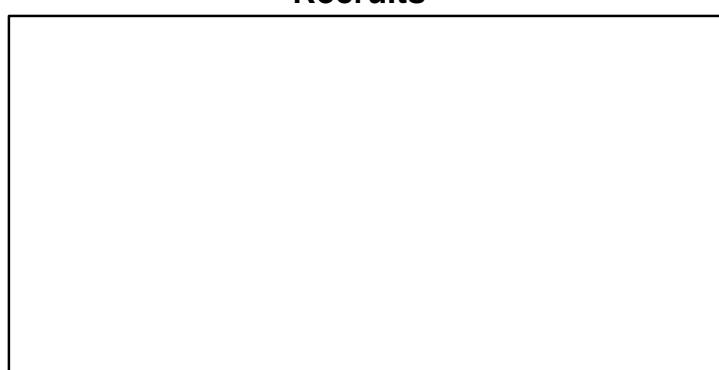
**F\***



**ER-ratio (1981–2019–ICESIMP2021)**



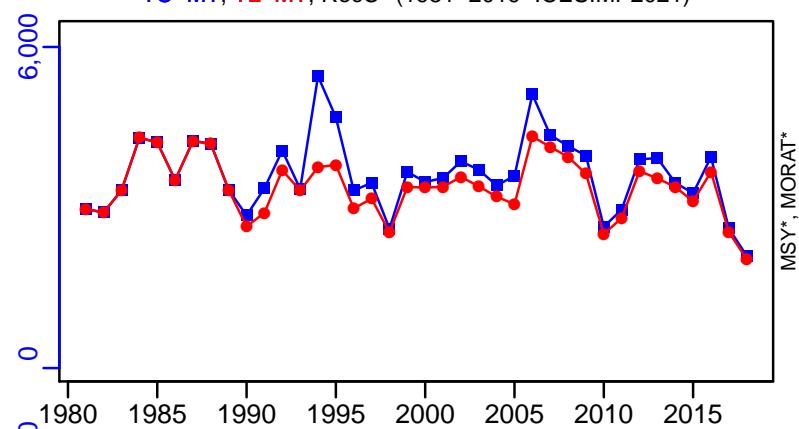
**Recruits\***



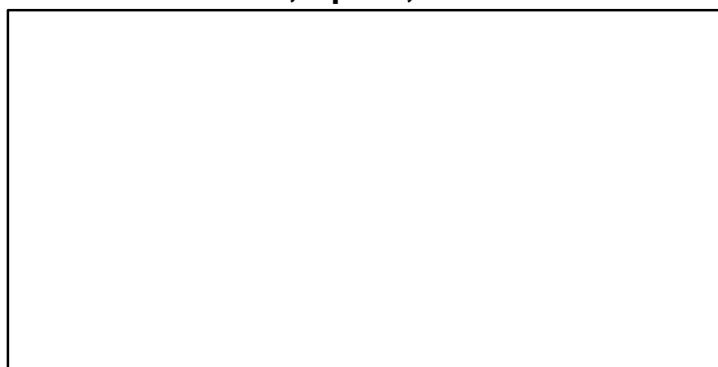
|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | --- Lim BRP  | * No Data |

Norway lobster North Minch (FU 11) [NEPHFU11]

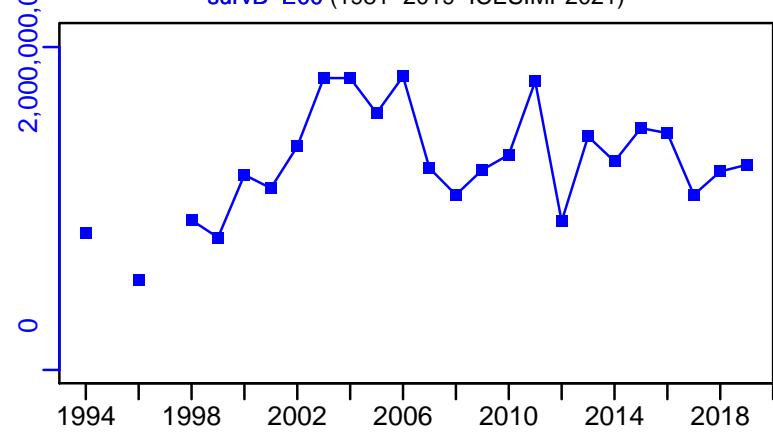
TC-MT, TL-MT, RecC\* (1981–2019–ICESIMP2021)



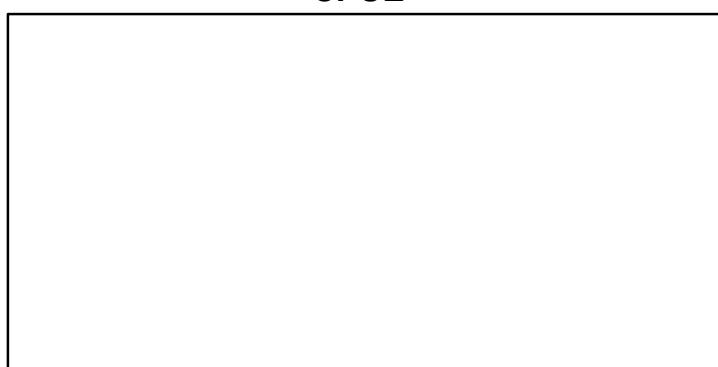
TAC\*, Cpair\*, Cadv\*



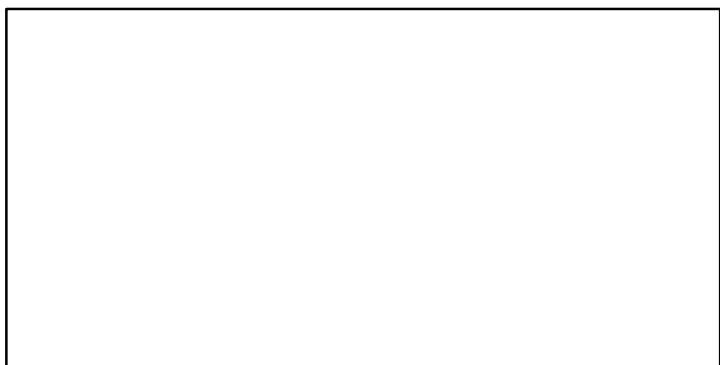
survB-E00 (1981–2019–ICESIMP2021)



CPUE\*



EFFORT\*



CdivMSY\*



|                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

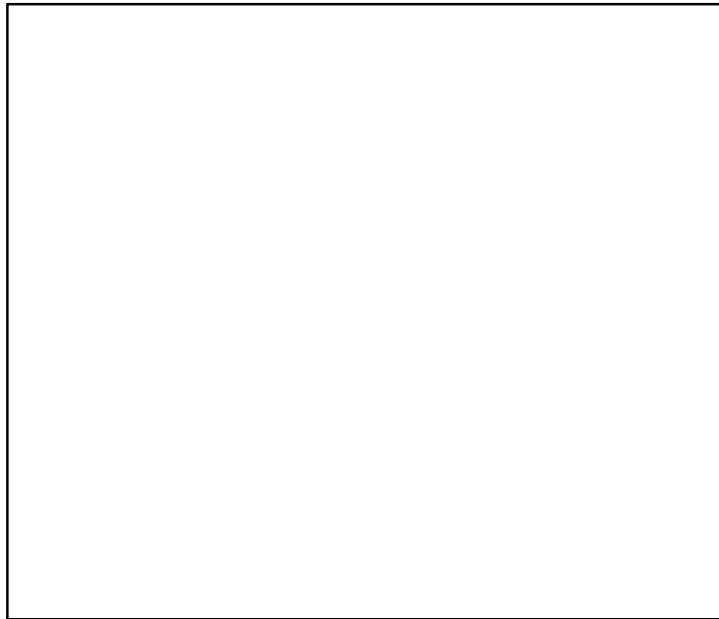
## Norway lobster South Minch (FU 12) [NEPHFU12]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Nephrops norvegicus                                  |
| <b>Current Assess ID</b>    | WGCSE-NEPHFU12-1979-2019-ICESIMP2021                 |
| <b>Area</b>                 | South Minch (FU 12)                                  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2019, 2015, 2016                                     |

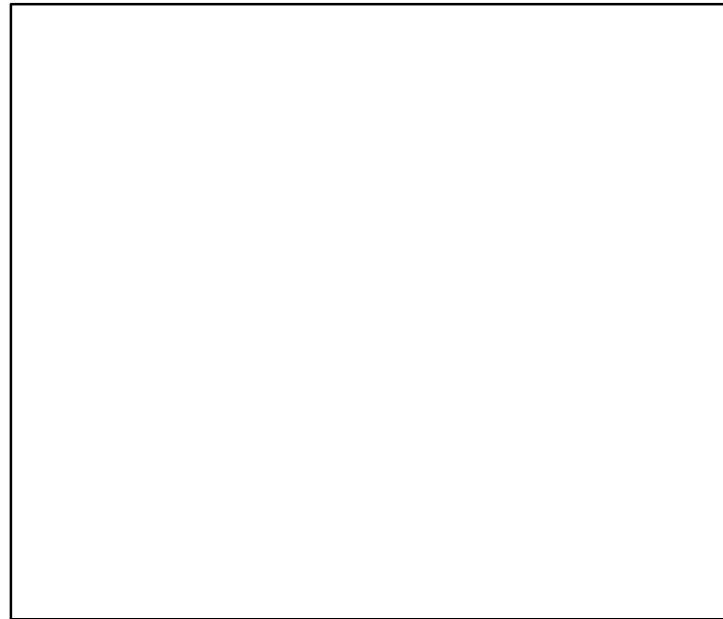
| Reference Points |             |           |       |
|------------------|-------------|-----------|-------|
| Type             | ID          | Asmt Year | Value |
| <b>TBmsy</b>     | -           | -         | -     |
| <b>SSBmsy</b>    | -           | -         | -     |
| <b>Fmsy</b>      | -           | -         | -     |
| <b>ERmsy</b>     | ERmsy-ratio | 2016      | 0.117 |
| <b>TBmgt</b>     | -           | -         | -     |
| <b>SSBmgt</b>    | -           | -         | -     |
| <b>Fmgt</b>      | -           | -         | -     |
| <b>ERmgt</b>     | ERmgt-ratio | 2019      | 0.117 |
| <b>TB0</b>       | -           | -         | -     |
| <b>SSB0</b>      | -           | -         | -     |
| <b>MSY</b>       | -           | -         | -     |
| <b>M</b>         | -           | -         | -     |
| <b>TBlim</b>     | -           | -         | -     |
| <b>SSBlim</b>    | -           | -         | -     |
| <b>Flim</b>      | -           | -         | -     |
| <b>ERlim</b>     | -           | -         | -     |

| Time Series       |                      |           |            |     |     |  |
|-------------------|----------------------|-----------|------------|-----|-----|--|
| Type              | ID                   | Asmt Year | Curr Value | Sex | Age |  |
| <b>TB</b>         | -                    | -         | -          | -   | -   |  |
| <b>SSB</b>        | -                    | -         | -          | -   | -   |  |
| <b>TN</b>         | -                    | -         | -          | -   | -   |  |
| <b>R</b>          | -                    | -         | -          | -   | -   |  |
| <b>F</b>          | -                    | -         | -          | -   | -   |  |
| <b>ER</b>         | ER-ratio             | 2019      | 0.048      | -   | -   |  |
| <b>TC</b>         | TC-MT                | 2019      | 2590       |     |     |  |
| <b>TL</b>         | TL-MT                | 2019      | 2536       |     |     |  |
| <b>TB/TBmsy</b>   | -                    | -         | -          |     |     |  |
| <b>SSB/SSBmsy</b> | -                    | -         | -          |     |     |  |
| <b>F/Fmsy</b>     | -                    | -         | -          |     |     |  |
| <b>ER/ERmsy</b>   | ER-ratio/ERmsy-ratio | 2016      | 0.812      |     |     |  |
| <b>TB/TBmgt</b>   | -                    | -         | -          |     |     |  |
| <b>SSB/SSBmgt</b> | -                    | -         | -          |     |     |  |
| <b>F/Fmgt</b>     | -                    | -         | -          |     |     |  |
| <b>ER/ERmgt</b>   | -                    | -         | -          |     |     |  |

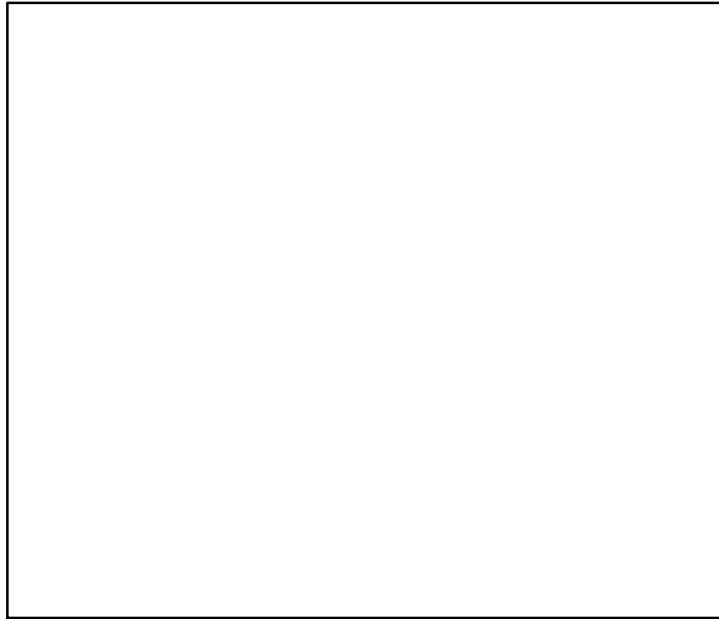
**Kobe MSY\***



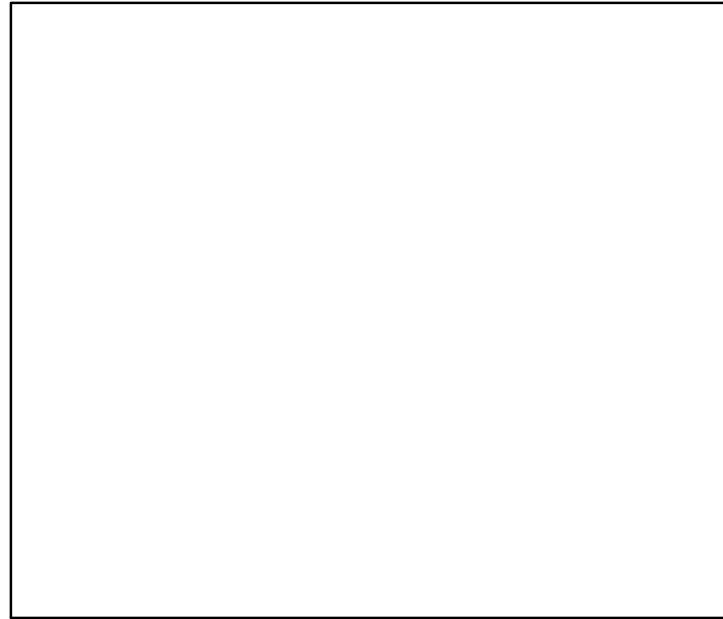
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

Norway lobster South Minch (FU 12) [NEPHFU12]

**TB\***



**SSB\***



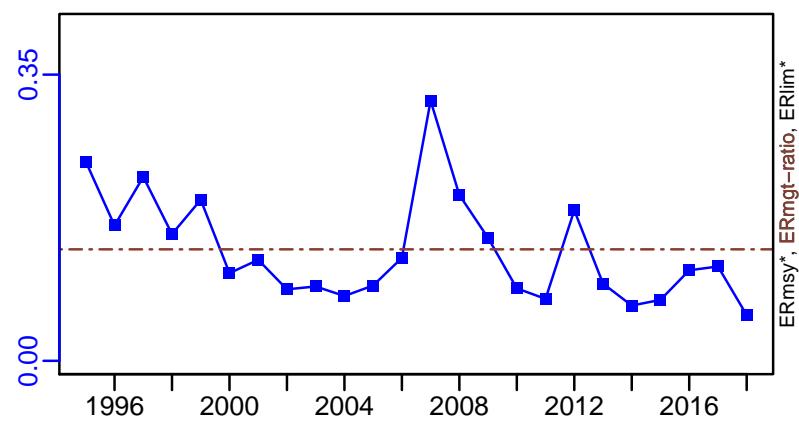
**TN \***



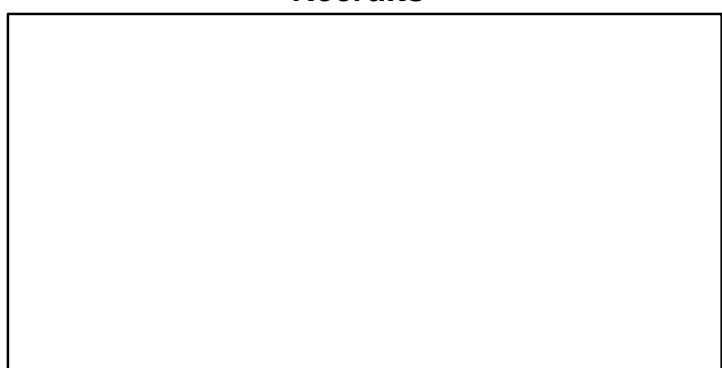
**F\***



**ER-ratio (1979–2019–ICESIMP2021)**



**Recruits\***

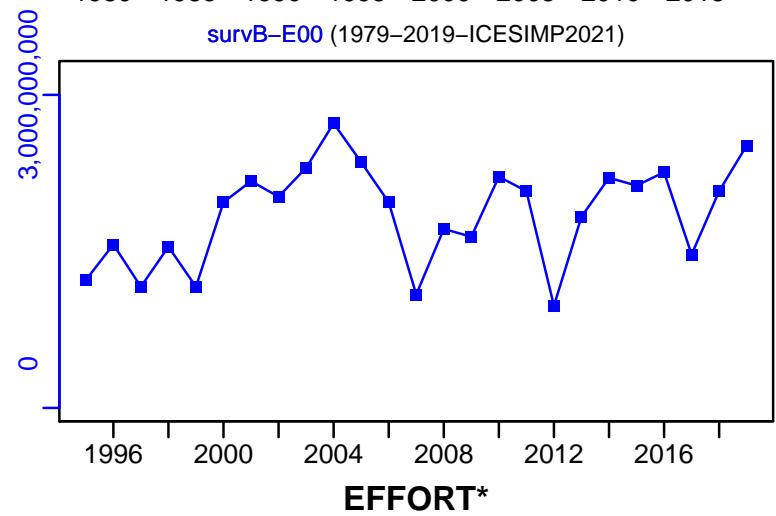
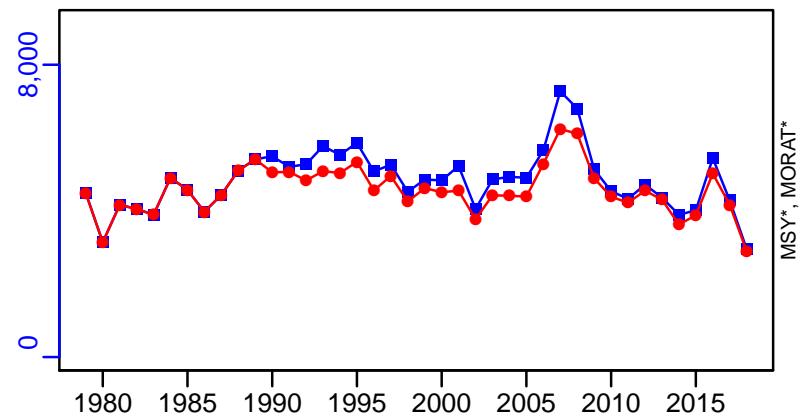


|                      |                |           |
|----------------------|----------------|-----------|
| ■ Listed time series | --- Target BRP | — Rec-Est |
| - - MSY-based BRP    | ... Lim BRP    | * No Data |

Norway lobster South Minch (FU 12) [NEPHFU12]

TC-MT, TL-MT, RecC\* (1979–2019–ICESIMP2021)

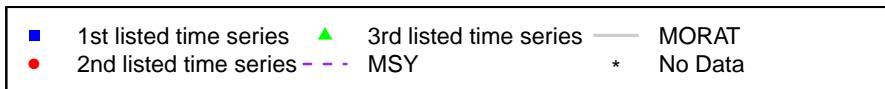
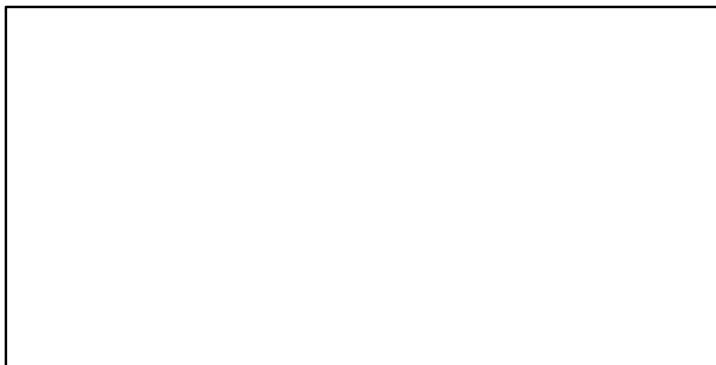
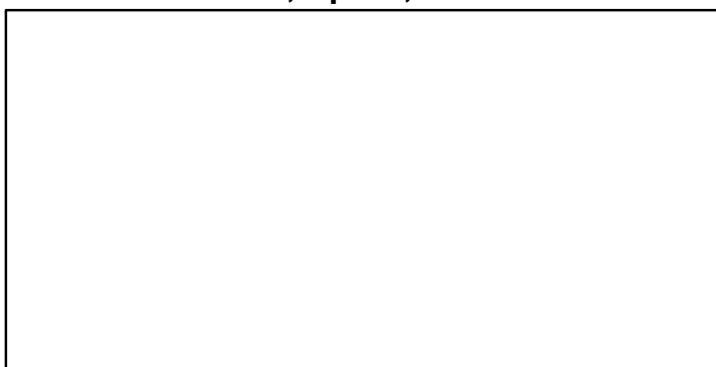
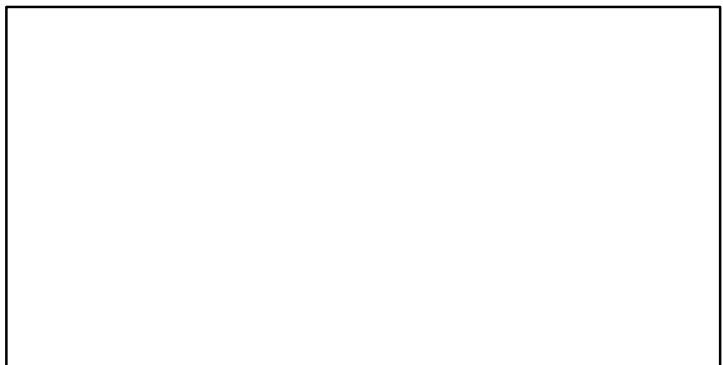
TAC\*, Cpair\*, Cadv\*



EFFORT\*

CPUE\*

CdivMSY\*



## Norway lobster Firth of Clyde and Sound of Jura (FU 13) [NEPHFU13]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Nephrops norvegicus                                  |
| <b>Current Assess ID</b>    | WGCSE-NEPHFU13-1981-2019-ICESIMP2021                 |
| <b>Area</b>                 | Firth of Clyde and Sound of Jura (FU 13)             |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2015, 2016, 2019                                     |

| Reference Points |             |           |       |
|------------------|-------------|-----------|-------|
| Type             | ID          | Asmt Year | Value |
| <b>TBmsy</b>     | -           | -         | -     |
| <b>SSBmsy</b>    | -           | -         | -     |
| <b>Fmsy</b>      | -           | -         | -     |
| <b>ERmsy</b>     | ERmsy-ratio | 2016      | 0.151 |
| <b>TBmgt</b>     | -           | -         | -     |
| <b>SSBmgt</b>    | -           | -         | -     |
| <b>Fmgt</b>      | -           | -         | -     |
| <b>ERmgt</b>     | ERmgt-ratio | 2019      | 0.12  |
| <b>TB0</b>       | -           | -         | -     |
| <b>SSB0</b>      | -           | -         | -     |
| <b>MSY</b>       | -           | -         | -     |
| <b>M</b>         | -           | -         | -     |
| <b>TBlim</b>     | -           | -         | -     |
| <b>SSBlim</b>    | -           | -         | -     |
| <b>Flim</b>      | -           | -         | -     |
| <b>ERlim</b>     | -           | -         | -     |

| Time Series       |                      |           |            |     |     |
|-------------------|----------------------|-----------|------------|-----|-----|
| Type              | ID                   | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -                    | -         | -          | -   | -   |
| <b>SSB</b>        | -                    | -         | -          | -   | -   |
| <b>TN</b>         | -                    | -         | -          | -   | -   |
| <b>R</b>          | -                    | -         | -          | -   | -   |
| <b>F</b>          | -                    | -         | -          | -   | -   |
| <b>ER</b>         | ER-ratio             | 2019      | 0.111      | -   | -   |
| <b>TC</b>         | TC-MT                | 2019      | 4209       |     |     |
| <b>TL</b>         | TL-MT                | 2019      | 4141       |     |     |
| <b>TB/TBmsy</b>   | -                    | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -                    | -         | -          |     |     |
| <b>F/Fmsy</b>     | -                    | -         | -          |     |     |
| <b>ER/ERmsy</b>   | ER-ratio/ERmsy-ratio | 2016      | 1.166      |     |     |
| <b>TB/TBmgt</b>   | -                    | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -                    | -         | -          |     |     |
| <b>F/Fmgt</b>     | -                    | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -                    | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

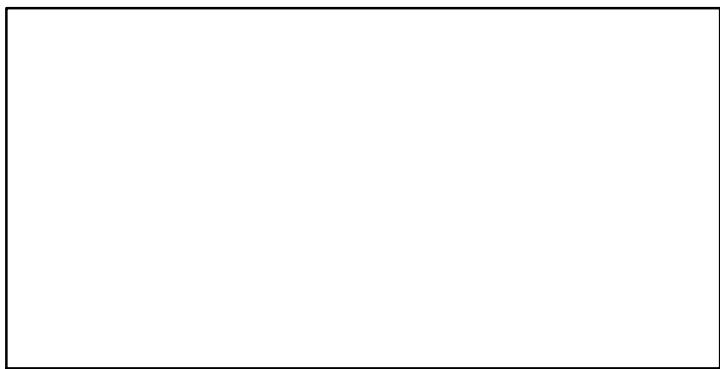
**Spawner Recruit\***

**Production\***

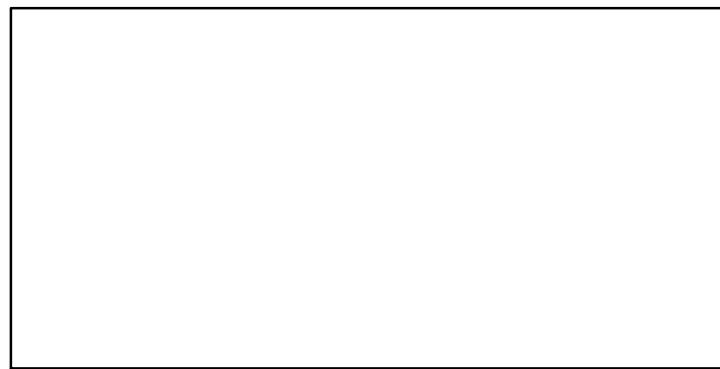
◆ Start Year ♦ End Year \* No Data

Norway lobster Firth of Clyde and Sound of Jura (FU 13) [NEPHFU13]

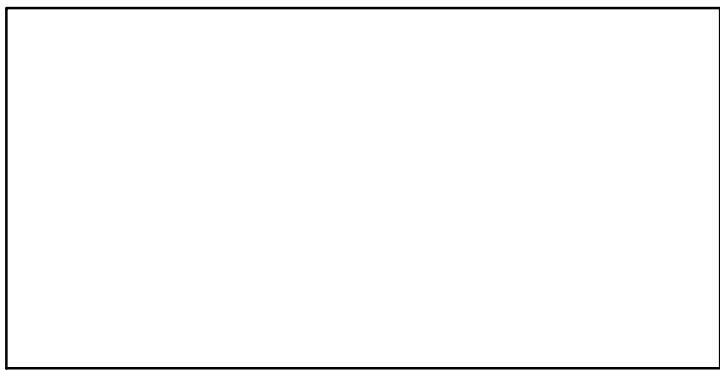
**TB\***



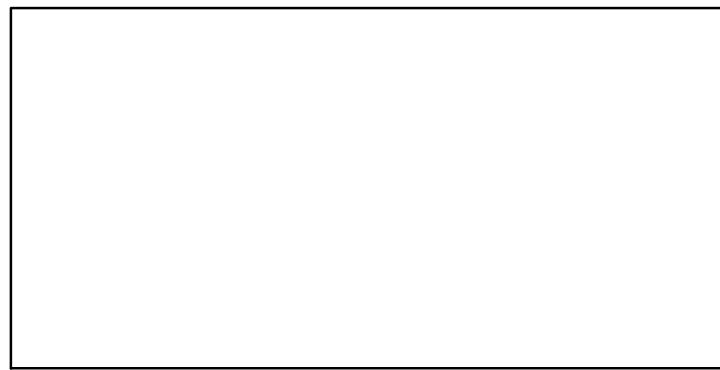
**SSB\***



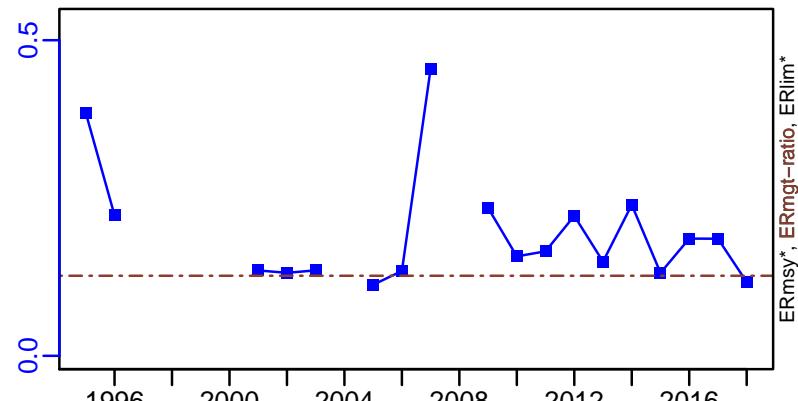
**TN \***



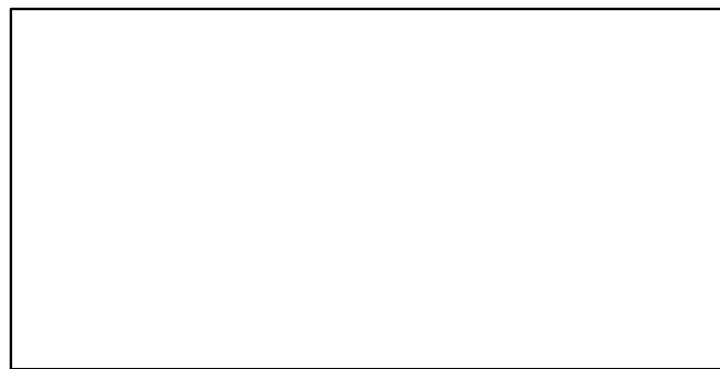
**F\***



**ER-ratio (1981–2019–ICESIMP2021)**



**Recruits\***

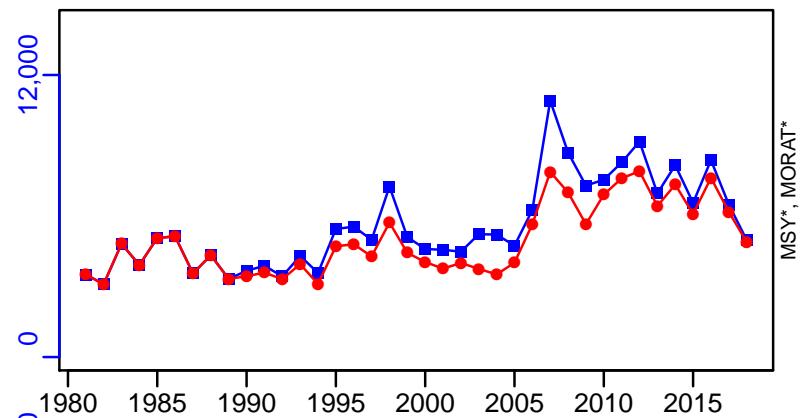


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | --- Lim BRP  | * No Data |

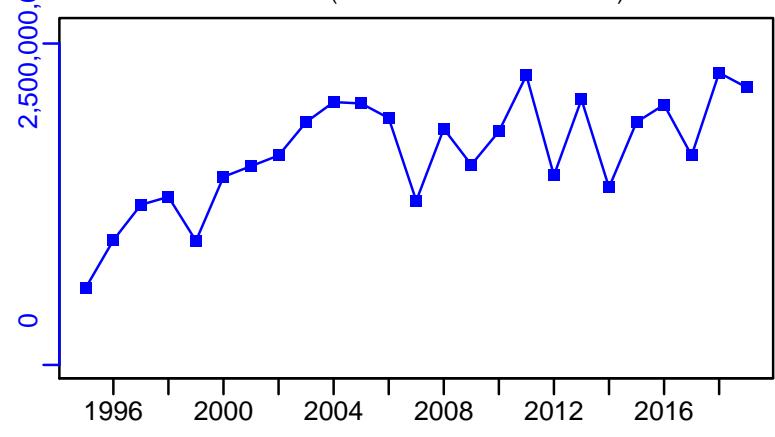
Norway lobster Firth of Clyde and Sound of Jura (FU 13) [NEPHFU13]

TC-MT, TL-MT, RecC\* (1981–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



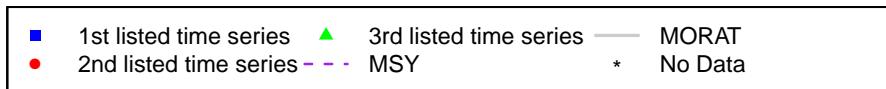
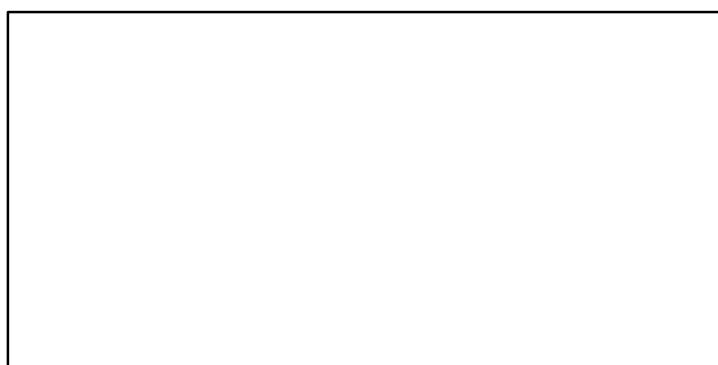
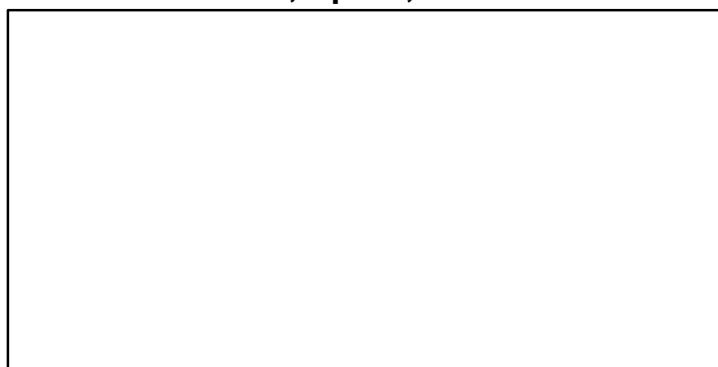
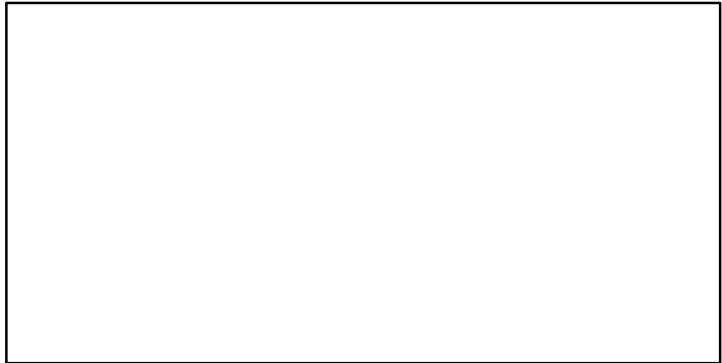
survB-E00 (1981–2019–ICESIMP2021)



EFFORT\*

CPUE\*

CdivMSY\*



## Norway lobster Irish Sea East (FU 14) [NEPHFU14]

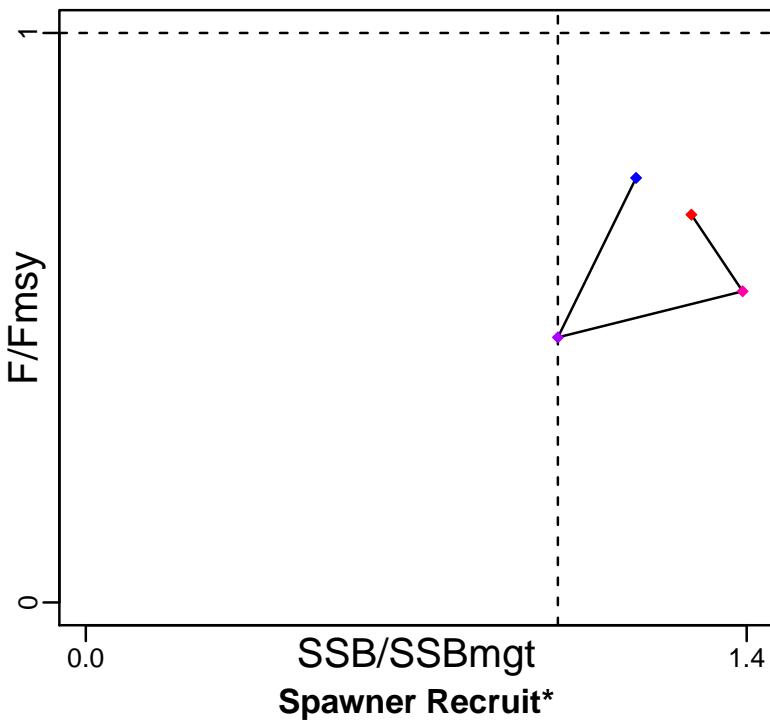
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Nephrops norvegicus                                  |
| <b>Current Assess ID</b>    | WGCSE-NEPHFU14-2000-2019-ICESIMP2021                 |
| <b>Area</b>                 | Irish Sea East (FU 14)                               |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2015, 2016, 2019                                     |

| Reference Points |             |           |       |
|------------------|-------------|-----------|-------|
| Type             | ID          | Asmt Year | Value |
| <b>TBmsy</b>     | -           | -         | -     |
| <b>SSBmsy</b>    | -           | -         | -     |
| <b>Fmsy</b>      | Fmsy-1/yr   | 2015      | 11    |
| <b>ERmsy</b>     | ERmsy-ratio | 2016      | 0.11  |
| <b>TBmgt</b>     | -           | -         | -     |
| <b>SSBmgt</b>    | SSBmgt-MT   | 2015      | 350   |
| <b>Fmgt</b>      | Fmgt-1/yr   | 2015      | 11    |
| <b>ERmgt</b>     | ERmgt-ratio | 2019      | 0.11  |
| <b>TB0</b>       | -           | -         | -     |
| <b>SSB0</b>      | -           | -         | -     |
| <b>MSY</b>       | -           | -         | -     |
| <b>M</b>         | -           | -         | -     |
| <b>TBlim</b>     | -           | -         | -     |
| <b>SSBlim</b>    | -           | -         | -     |
| <b>Flim</b>      | -           | -         | -     |
| <b>ERlim</b>     | -           | -         | -     |

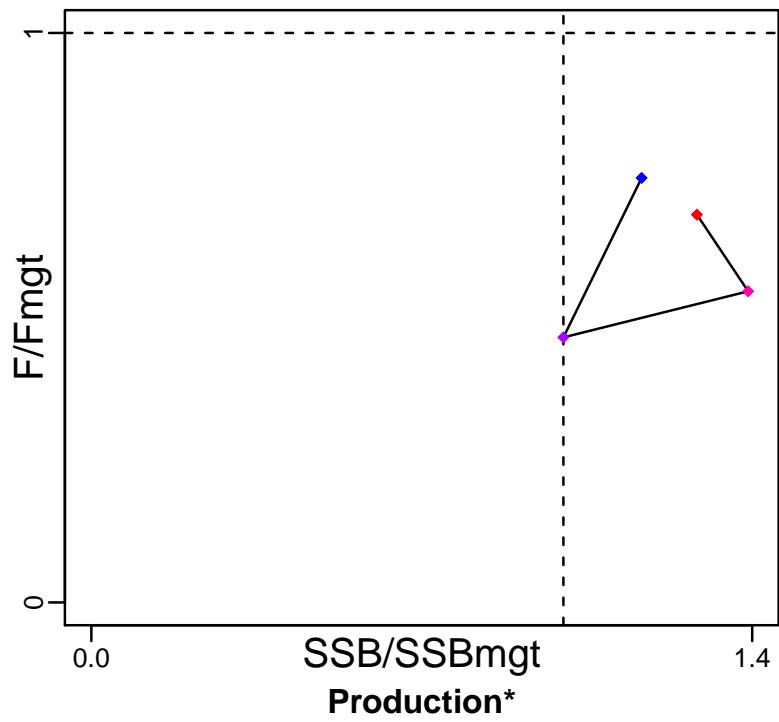
| Time Series       |                      |           |            |      |     |
|-------------------|----------------------|-----------|------------|------|-----|
| Type              | ID                   | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>         | -                    | -         | -          | -    | -   |
| <b>SSB</b>        | SSB-MT               | 2015      | 591        | Both | -   |
| <b>TN</b>         | -                    | -         | -          | -    | -   |
| <b>R</b>          | -                    | -         | -          | -    | -   |
| <b>F</b>          | F-1/yr               | 2015      | 7.49       | -    | -   |
| <b>ER</b>         | ER-ratio             | 2019      | 0.026      | -    | -   |
| <b>TC</b>         | -                    | -         | -          |      |     |
| <b>TL</b>         | TL-MT                | 2019      | 263        |      |     |
| <b>TB/TBmsy</b>   | -                    | -         | -          |      |     |
| <b>SSB/SSBmsy</b> | -                    | -         | -          |      |     |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr     | 2015      | 0.681      |      |     |
| <b>ER/ERmsy</b>   | ER-ratio/ERmsy-ratio | 2016      | 0.346      |      |     |
| <b>TB/TBmgt</b>   | -                    | -         | -          |      |     |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT     | 2015      | 1.689      |      |     |
| <b>F/Fmgt</b>     | F-1/yr/Fmgt-1/yr     | 2015      | 0.681      |      |     |
| <b>ER/ERmgt</b>   | -                    | -         | -          |      |     |

Norway lobster Irish Sea East (FU 14) [NEPHFU14]

Kobe MSYpref (2000–2015–ICESIMP2016)



Kobe MGTpref (2000–2015–ICESIMP2016)



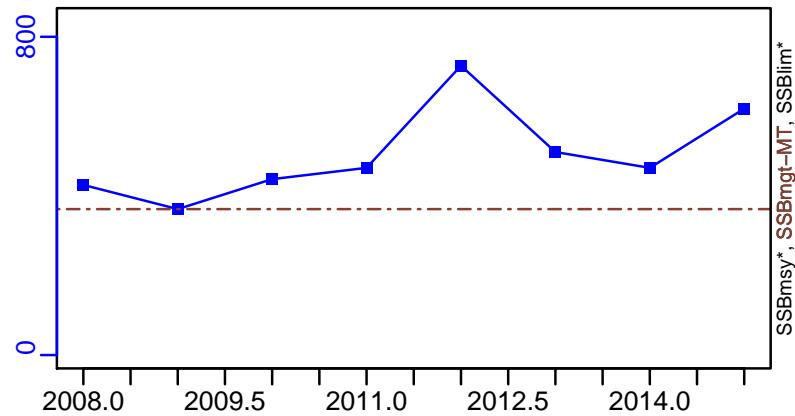
◆ Start Year   ◆ End Year   \* No Data

Norway lobster Irish Sea East (FU 14) [NEPHFU14]

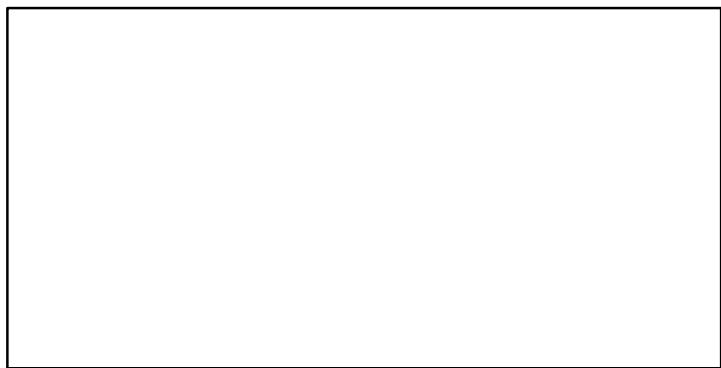
**TB\***



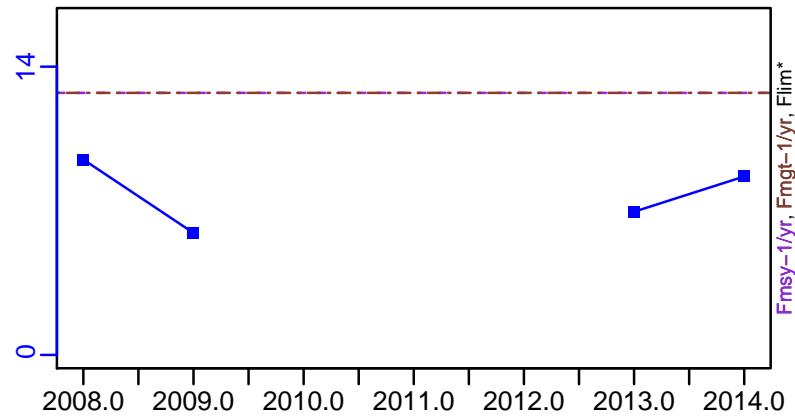
**SSB-MT** (2000–2015–ICESIMP2016)



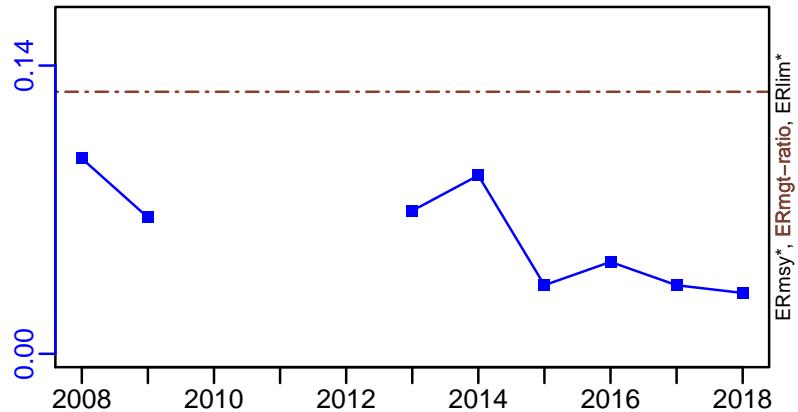
**TN \***



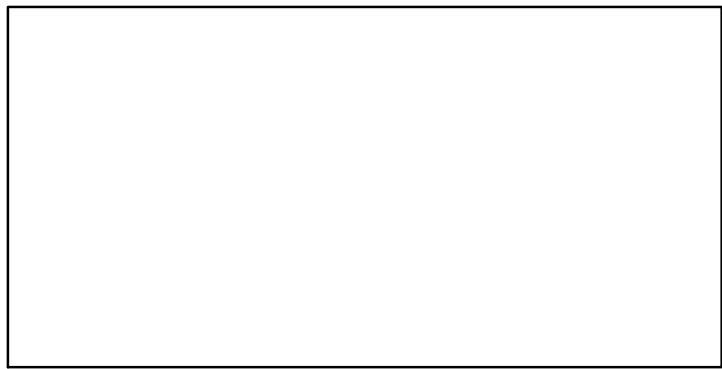
**F-1/yr** (2000–2015–ICESIMP2016)



**ER-ratio** (2000–2019–ICESIMP2021)



**Recruits\***

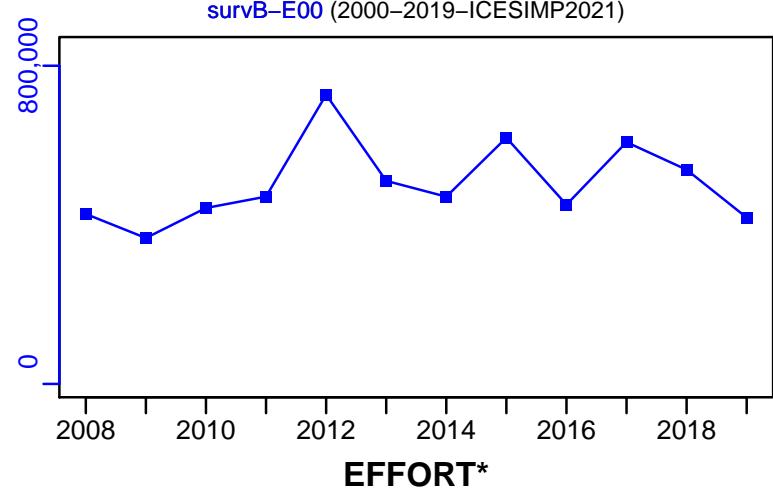
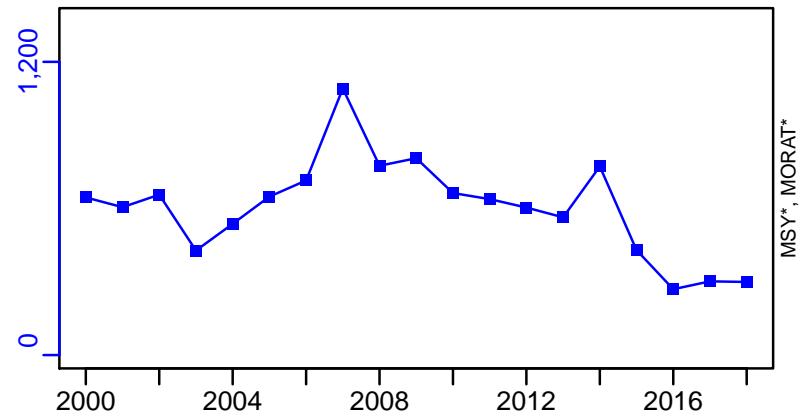


- Listed time series    - - - Target BRP    — Rec-Est
- - - MSY-based BRP    - - - Lim BRP    \* No Data

Norway lobster Irish Sea East (FU 14) [NEPHFU14]

TL-MT, TC\*, RecC\* (2000–2019–ICESIMP2021)

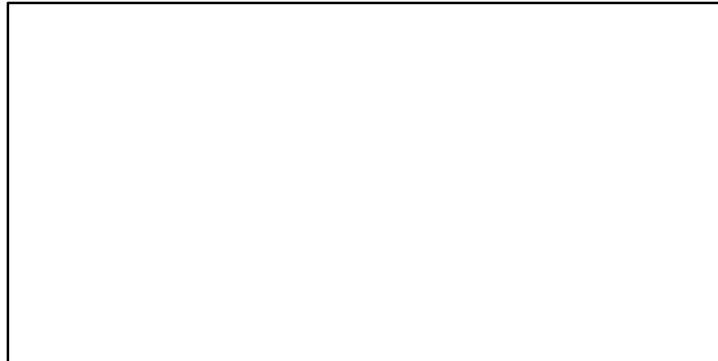
TAC\*, Cpair\*, Cadv\*



EFFORT\*

CPUE\*

CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Norway lobster Irish Sea West (FU 15) [NEPHFU15]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Nephrops norvegicus                                  |
| <b>Current Assess ID</b>    | WGCSE-NEPHFU15-1960-2019-ICESIMP2021                 |
| <b>Area</b>                 | Irish Sea West (FU 15)                               |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2015, 2016, 2019                                     |

| Reference Points |             |           |       |
|------------------|-------------|-----------|-------|
| Type             | ID          | Asmt Year | Value |
| <b>TBmsy</b>     | -           | -         | -     |
| <b>SSBmsy</b>    | -           | -         | -     |
| <b>Fmsy</b>      | -           | -         | -     |
| <b>ERmsy</b>     | ERmsy-ratio | 2016      | 18.2  |
| <b>TBmgt</b>     | -           | -         | -     |
| <b>SSBmgt</b>    | -           | -         | -     |
| <b>Fmgt</b>      | -           | -         | -     |
| <b>ERmgt</b>     | ERmgt-ratio | 2019      | 0.182 |
| <b>TB0</b>       | -           | -         | -     |
| <b>SSB0</b>      | -           | -         | -     |
| <b>MSY</b>       | -           | -         | -     |
| <b>M</b>         | -           | -         | -     |
| <b>TBlim</b>     | -           | -         | -     |
| <b>SSBlim</b>    | -           | -         | -     |
| <b>Flim</b>      | -           | -         | -     |
| <b>ERlim</b>     | -           | -         | -     |

| Time Series       |                      |           |            |     |     |
|-------------------|----------------------|-----------|------------|-----|-----|
| Type              | ID                   | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -                    | -         | -          | -   | -   |
| <b>SSB</b>        | -                    | -         | -          | -   | -   |
| <b>TN</b>         | -                    | -         | -          | -   | -   |
| <b>R</b>          | -                    | -         | -          | -   | -   |
| <b>F</b>          | -                    | -         | -          | -   | -   |
| <b>ER</b>         | ER-ratio             | 2019      | 0.1        | -   | -   |
| <b>TC</b>         | -                    | -         | -          |     |     |
| <b>TL</b>         | TL-MT                | 2019      | 5756       |     |     |
| <b>TB/TBmsy</b>   | -                    | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -                    | -         | -          |     |     |
| <b>F/Fmsy</b>     | -                    | -         | -          |     |     |
| <b>ER/ERmsy</b>   | ER-ratio/ERmsy-ratio | 2016      | 0.846      |     |     |
| <b>TB/TBmgt</b>   | -                    | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -                    | -         | -          |     |     |
| <b>F/Fmgt</b>     | -                    | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -                    | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

**Spawner Recruit\***

**Production\***

◆ Start Year ◆ End Year \* No Data

Norway lobster Irish Sea West (FU 15) [NEPHFU15]

**TB\***



**SSB\***



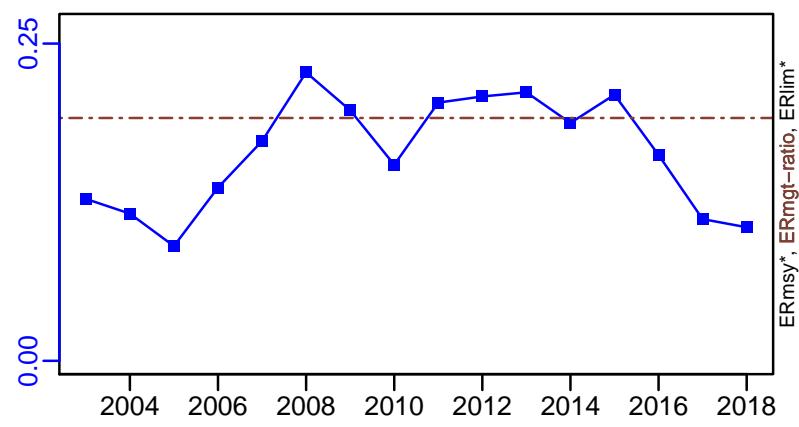
**TN \***



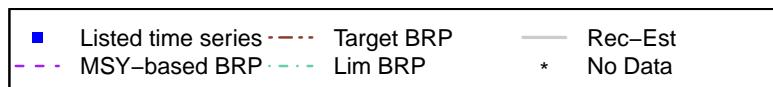
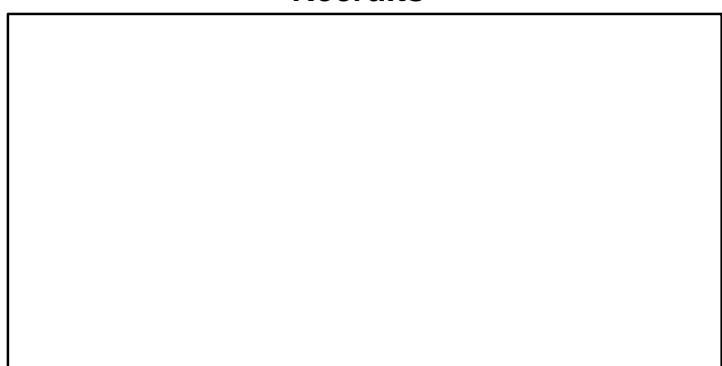
**F\***



**ER-ratio (1960–2019–ICESIMP2021)**



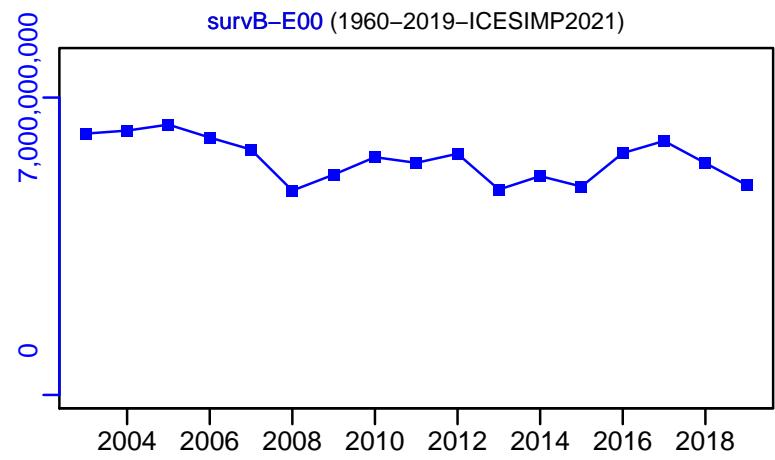
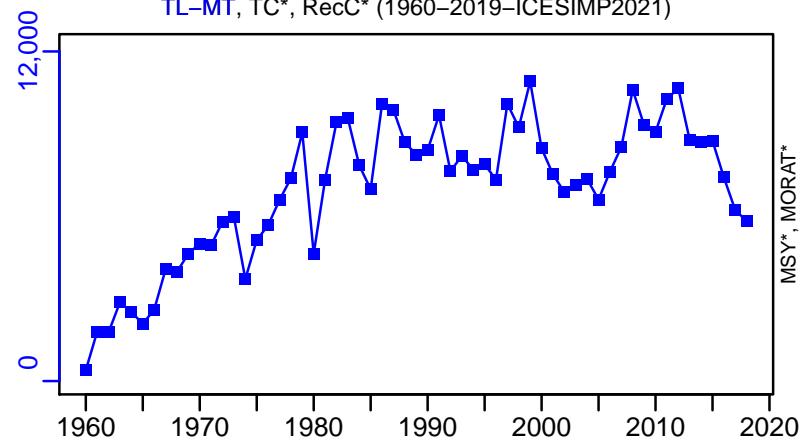
**Recruits\***



Norway lobster Irish Sea West (FU 15) [NEPHFU15]

TL-MT, TC\*, RecC\* (1960–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



EFFORT\*

CPUE\*

CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Norway lobster Porcupine Bank (FU 16) [NEPHFU16]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Nephrops norvegicus                                  |
| <b>Current Assess ID</b>    | WGCSE-NEPHFU16-1979-2019-ICESIMP2021                 |
| <b>Area</b>                 | Porcupine Bank (FU 16)                               |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2016, 2019, 2015, 2016                               |

| Reference Points |             |           |       |
|------------------|-------------|-----------|-------|
| Type             | ID          | Asmt Year | Value |
| <b>TBmsy</b>     | -           | -         | -     |
| <b>SSBmsy</b>    | -           | -         | -     |
| <b>Fmsy</b>      | Fmsy-1/yr   | 2016      | 6.2   |
| <b>ERmsy</b>     | ERmsy-ratio | 2016      | 0.062 |
| <b>TBmgt</b>     | -           | -         | -     |
| <b>SSBmgt</b>    | -           | -         | -     |
| <b>Fmgt</b>      | Fmgt-1/yr   | 2016      | 6.2   |
| <b>ERmgt</b>     | ERmgt-ratio | 2019      | 0.062 |
| <b>TB0</b>       | -           | -         | -     |
| <b>SSB0</b>      | -           | -         | -     |
| <b>MSY</b>       | -           | -         | -     |
| <b>M</b>         | -           | -         | -     |
| <b>TBlim</b>     | -           | -         | -     |
| <b>SSBlim</b>    | -           | -         | -     |
| <b>Flim</b>      | -           | -         | -     |
| <b>ERlim</b>     | -           | -         | -     |

| Time Series       |                      |           |            |      |     |  |
|-------------------|----------------------|-----------|------------|------|-----|--|
| Type              | ID                   | Asmt Year | Curr Value | Sex  | Age |  |
| <b>TB</b>         | -                    | -         | -          | -    | -   |  |
| <b>SSB</b>        | SSB-MT               | 2016      | 958        | Both | -   |  |
| <b>TN</b>         | -                    | -         | -          | -    | -   |  |
| <b>R</b>          | -                    | -         | -          | -    | -   |  |
| <b>F</b>          | F-1/yr               | 2016      | 3.3        | -    | -   |  |
| <b>ER</b>         | ER-ratio             | 2019      | 0.059      | -    | -   |  |
| <b>TC</b>         | -                    | -         | -          |      |     |  |
| <b>TL</b>         | TL-MT                | 2019      | 2751       |      |     |  |
| <b>TB/TBmsy</b>   | -                    | -         | -          |      |     |  |
| <b>SSB/SSBmsy</b> | -                    | -         | -          |      |     |  |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr     | 2016      | 0.532      |      |     |  |
| <b>ER/ERmsy</b>   | ER-ratio/ERmsy-ratio | 2016      | 0.902      |      |     |  |
| <b>TB/TBmgt</b>   | -                    | -         | -          |      |     |  |
| <b>SSB/SSBmgt</b> | -                    | -         | -          |      |     |  |
| <b>F/Fmgt</b>     | F-1/yr/Fmgt-1/yr     | 2016      | 0.532      |      |     |  |
| <b>ER/ERmgt</b>   | -                    | -         | -          |      |     |  |

**Kobe MSY\***

**Kobe MGT\***

**Spawner Recruit\***

**Production\***

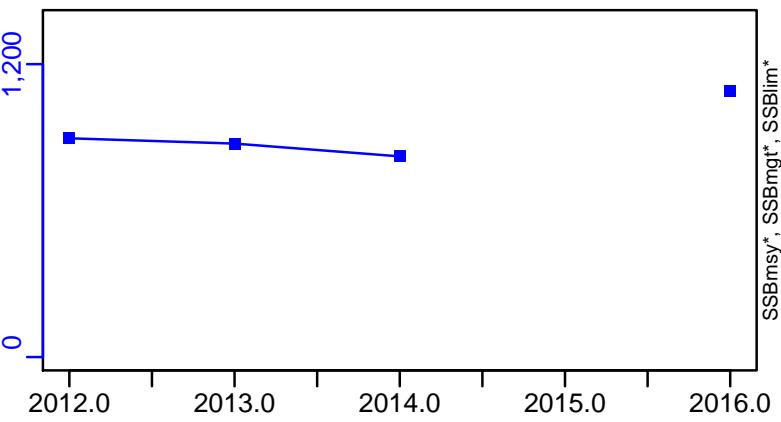
◆ Start Year ♦ End Year \* No Data

Norway lobster Porcupine Bank (FU 16) [NEPHFU16]

**TB\***



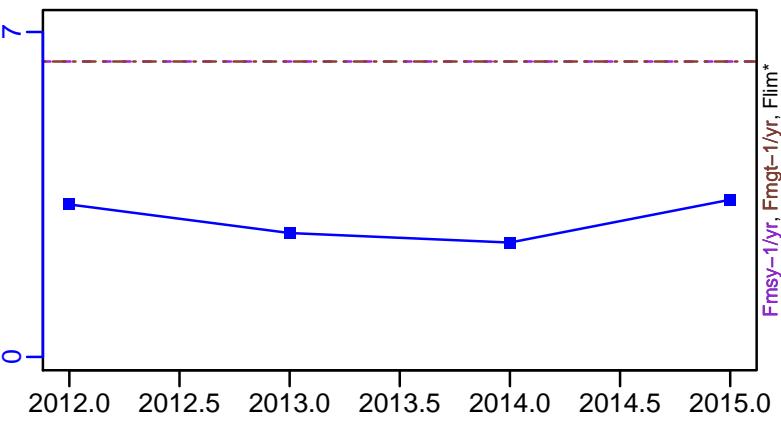
SSB-MT (1986–2016–ICESIMP2018)



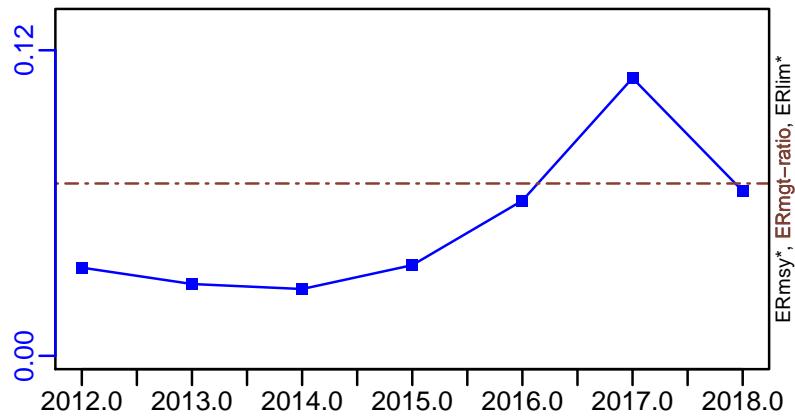
**TN \***



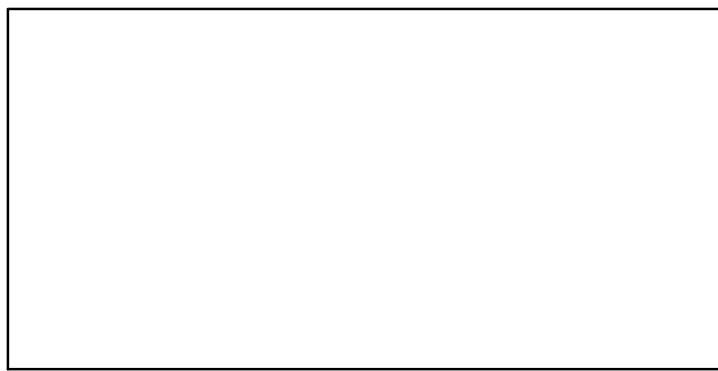
F-1/yr (1986–2016–ICESIMP2018)



ER-ratio (1979–2019–ICESIMP2021)



Recruits\*

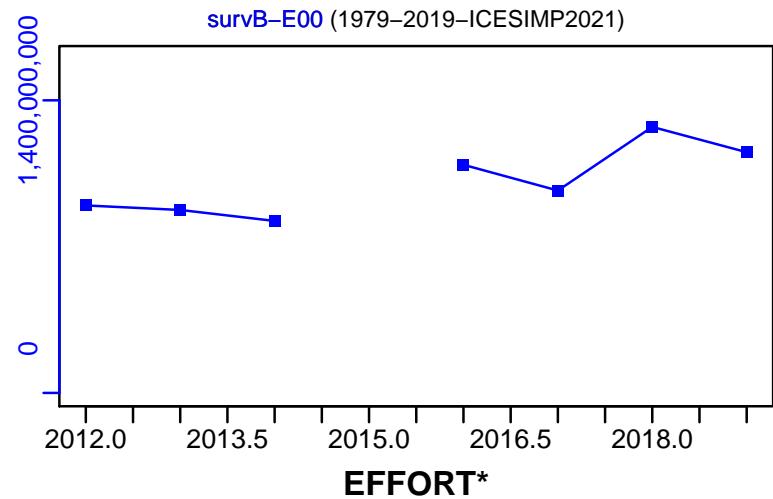
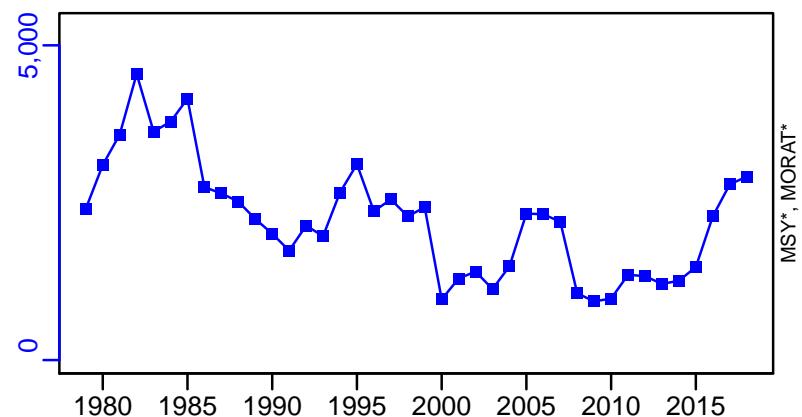


- Listed time series    - - - Target BRP    — Rec-Est
- - MSY-based BRP    - - Lim BRP    \* No Data

Norway lobster Porcupine Bank (FU 16) [NEPHFU16]

TL-MT, TC\*, RecC\* (1979–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



EFFORT\*

CPUE\*

CdivMSY\*

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Norway lobster Aran Grounds (FU 17) [NEPHFU17]

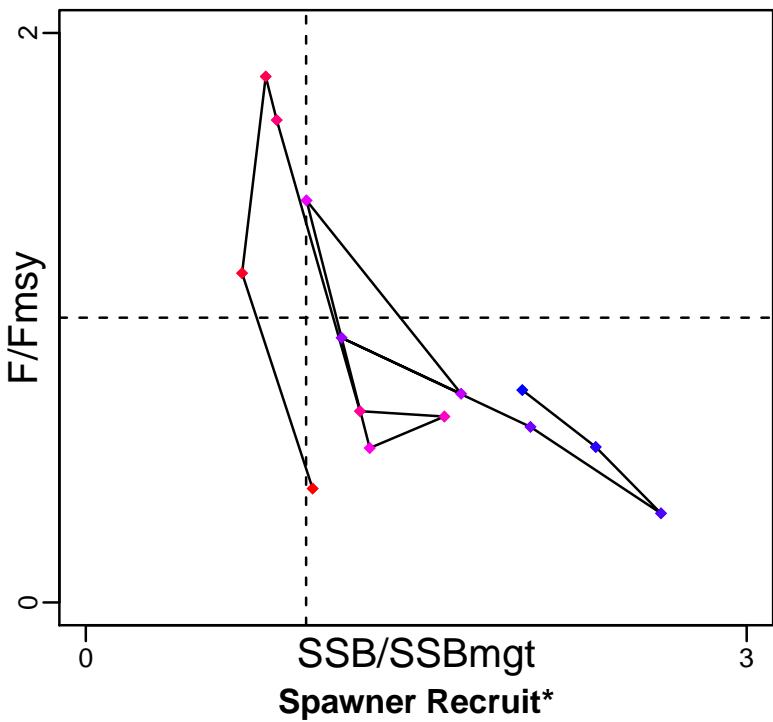
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Nephrops norvegicus                                  |
| <b>Current Assess ID</b>    | WGCSE-NEPHFU17-1974-2019-ICESIMP2021                 |
| <b>Area</b>                 | Aran Grounds (FU 17)                                 |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2015, 2016, 2019, 2016                               |

| Reference Points |             |           |       |
|------------------|-------------|-----------|-------|
| Type             | ID          | Asmt Year | Value |
| <b>TBmsy</b>     | -           | -         | -     |
| <b>SSBmsy</b>    | -           | -         | -     |
| <b>Fmsy</b>      | Fmsy-1/yr   | 2016      | 8.5   |
| <b>ERmsy</b>     | ERmsy-ratio | 2016      | 0.085 |
| <b>TBmgt</b>     | -           | -         | -     |
| <b>SSBmgt</b>    | SSBmgt-MT   | 2016      | 540   |
| <b>Fmgt</b>      | Fmgt-1/yr   | 2016      | 8.5   |
| <b>ERmgt</b>     | ERmgt-ratio | 2019      | 0.085 |
| <b>TB0</b>       | -           | -         | -     |
| <b>SSB0</b>      | -           | -         | -     |
| <b>MSY</b>       | -           | -         | -     |
| <b>M</b>         | -           | -         | -     |
| <b>TBlim</b>     | -           | -         | -     |
| <b>SSBlim</b>    | -           | -         | -     |
| <b>Flim</b>      | -           | -         | -     |
| <b>ERlim</b>     | -           | -         | -     |

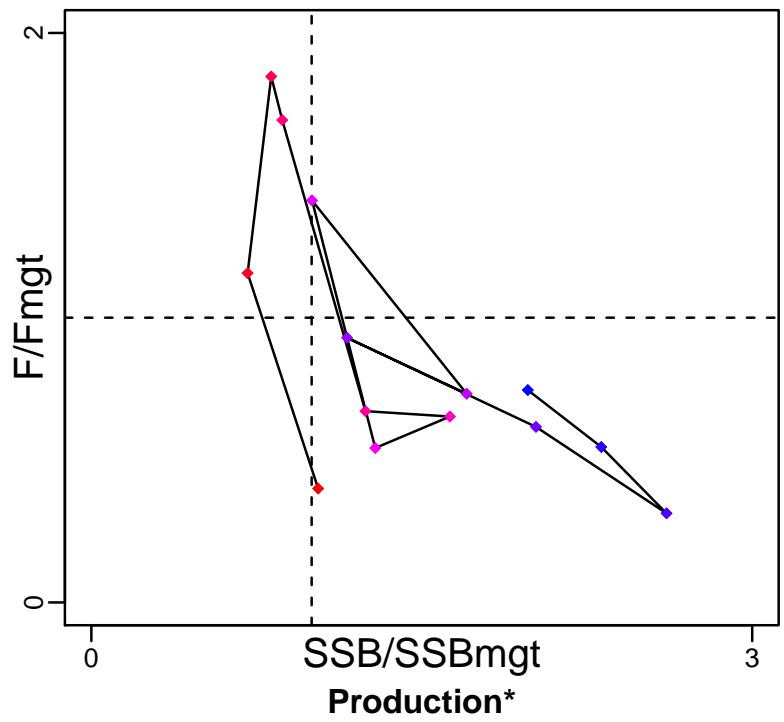
| Time Series       |                      |           |            |      |     |   |
|-------------------|----------------------|-----------|------------|------|-----|---|
| Type              | ID                   | Asmt Year | Curr Value | Sex  | Age |   |
| <b>TB</b>         | -                    | -         | -          | -    | -   | - |
| <b>SSB</b>        | SSB-MT               | 2016      | 379        | Both | -   |   |
| <b>TN</b>         | -                    | -         | -          | -    | -   |   |
| <b>R</b>          | -                    | -         | -          | -    | -   |   |
| <b>F</b>          | F-1/yr               | 2016      | 3.4        | -    | -   |   |
| <b>ER</b>         | ER-ratio             | 2019      | 0.054      | -    | -   |   |
| <b>TC</b>         | -                    | -         | -          |      |     |   |
| <b>TL</b>         | TL-MT                | 2019      | 536        |      |     |   |
| <b>TB/TBmsy</b>   | -                    | -         | -          |      |     |   |
| <b>SSB/SSBmsy</b> | -                    | -         | -          |      |     |   |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr     | 2016      | 0.4        |      |     |   |
| <b>ER/ERmsy</b>   | ER-ratio/ERmsy-ratio | 2016      | 1.086      |      |     |   |
| <b>TB/TBmgt</b>   | -                    | -         | -          |      |     |   |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT     | 2016      | 0.702      |      |     |   |
| <b>F/Fmgt</b>     | F-1/yr/Fmgt-1/yr     | 2016      | 0.4        |      |     |   |
| <b>ER/ERmgt</b>   | -                    | -         | -          |      |     |   |

Norway lobster Aran Grounds (FU 17) [NEPHFU17]

Kobe MSYpref (1974–2016–ICESIMP2018)



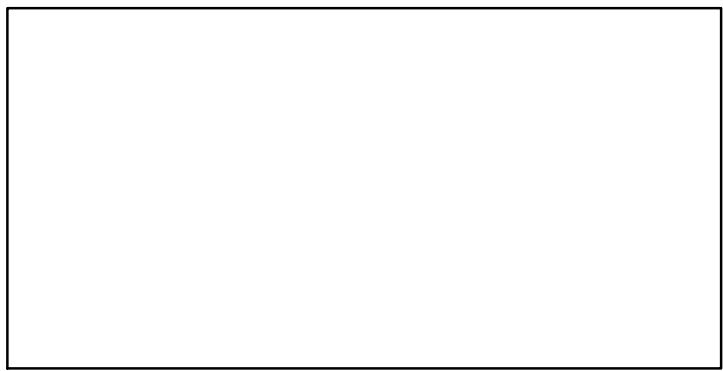
Kobe MGTpref (1974–2016–ICESIMP2018)



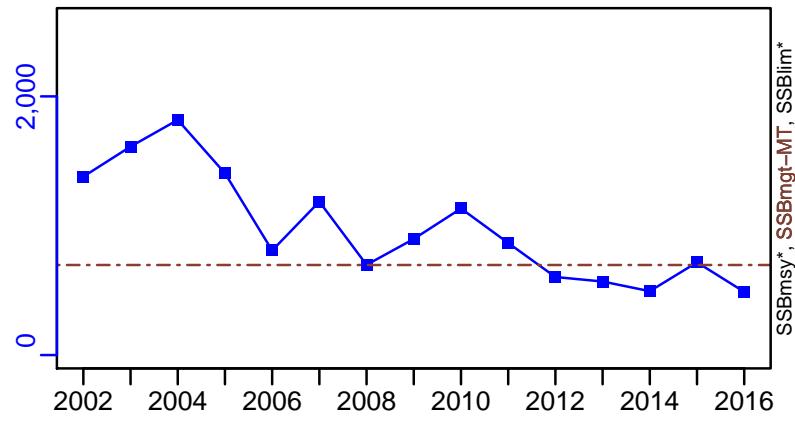
◆ Start Year    ♦ End Year    \* No Data

Norway lobster Aran Grounds (FU 17) [NEPHFU17]

**TB\***



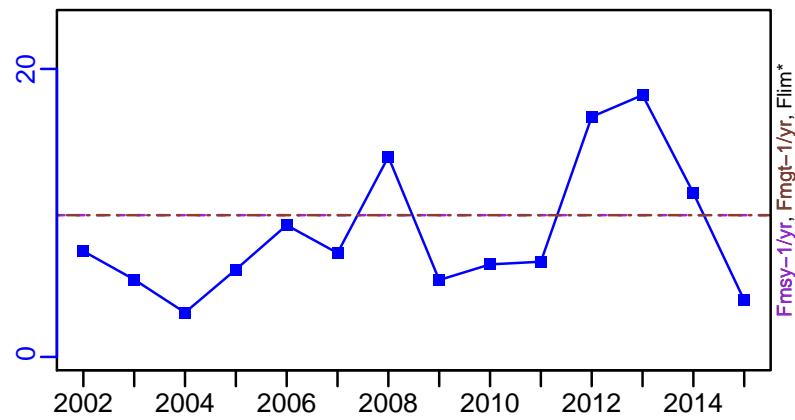
**SSB-MT** (1974–2016–ICESIMP2018)



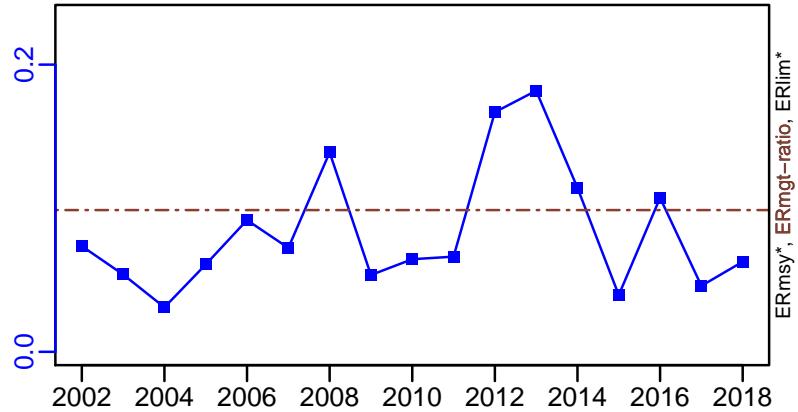
**TN \***



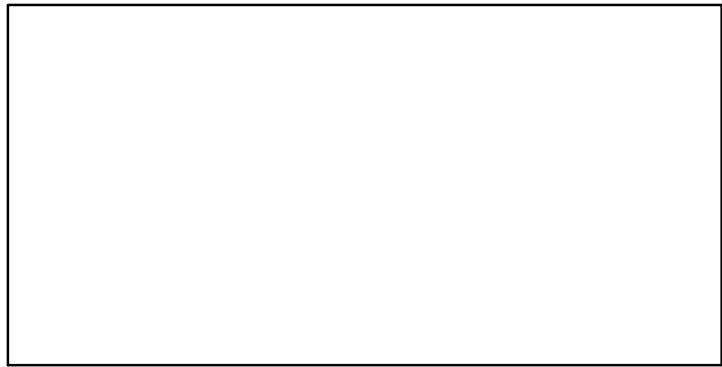
**F-1/yr** (1974–2016–ICESIMP2018)



**ER-ratio** (1974–2019–ICESIMP2021)



**Recruits\***

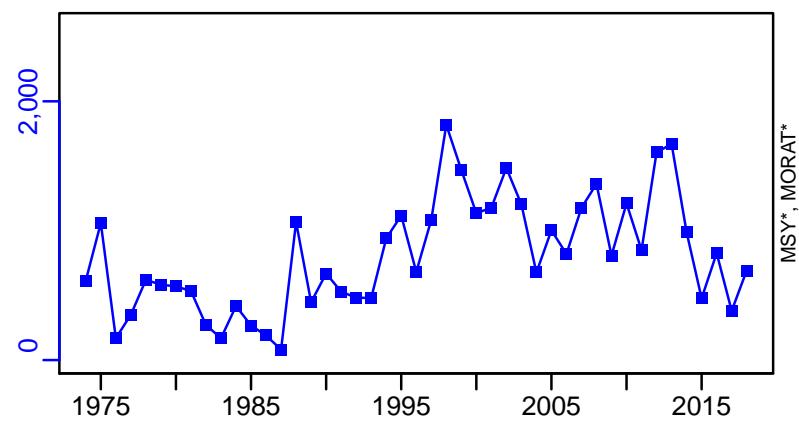


- Listed time series    - - - Target BRP    — Rec-Est
- - MSY-based BRP    - - Lim BRP    \* No Data

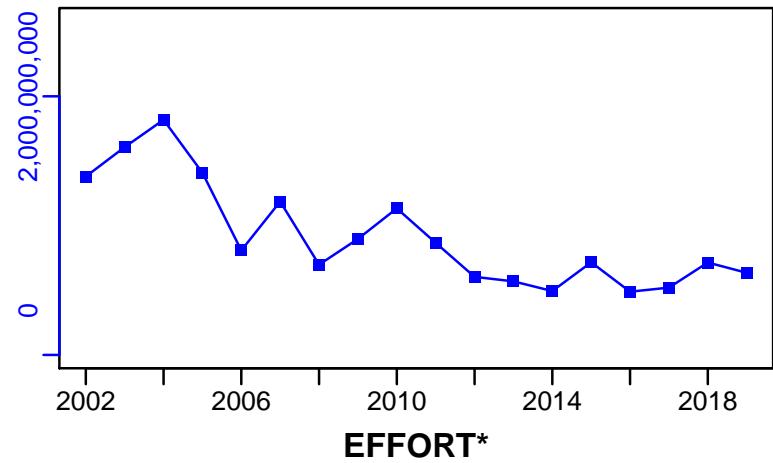
### Norway lobster Aran Grounds (FU 17) [NEPHFU17]

TL-MT, TC\*, RecC\* (1974–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



survB-E00 (1974–2019–ICESIMP2021)



EFFORT\*

CPUE\*

CdivMSY\*

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | — MSY                    | * No Data |

## Norway lobster South East and West of IRL (FU 19) [NEPHFU19]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Nephrops norvegicus                                  |
| <b>Current Assess ID</b>    | WGCSE-NEPHFU19-1989-2019-ICESIMP2021                 |
| <b>Area</b>                 | South East and West of IRL (FU 19)                   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2019, 2015, 2016                                     |

| Reference Points |             |           |       |
|------------------|-------------|-----------|-------|
| Type             | ID          | Asmt Year | Value |
| <b>TBmsy</b>     | -           | -         | -     |
| <b>SSBmsy</b>    | -           | -         | -     |
| <b>Fmsy</b>      | -           | -         | -     |
| <b>ERmsy</b>     | ERmsy-ratio | 2016      | 0.093 |
| <b>TBmgt</b>     | -           | -         | -     |
| <b>SSBmgt</b>    | -           | -         | -     |
| <b>Fmgt</b>      | -           | -         | -     |
| <b>ERmgt</b>     | ERmgt-ratio | 2019      | 0.093 |
| <b>TB0</b>       | -           | -         | -     |
| <b>SSB0</b>      | -           | -         | -     |
| <b>MSY</b>       | -           | -         | -     |
| <b>M</b>         | -           | -         | -     |
| <b>TBlim</b>     | -           | -         | -     |
| <b>SSBlim</b>    | -           | -         | -     |
| <b>Flim</b>      | -           | -         | -     |
| <b>ERlim</b>     | -           | -         | -     |

| Time Series       |                      |           |            |     |     |
|-------------------|----------------------|-----------|------------|-----|-----|
| Type              | ID                   | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -                    | -         | -          | -   | -   |
| <b>SSB</b>        | -                    | -         | -          | -   | -   |
| <b>TN</b>         | -                    | -         | -          | -   | -   |
| <b>R</b>          | -                    | -         | -          | -   | -   |
| <b>F</b>          | -                    | -         | -          | -   | -   |
| <b>ER</b>         | ER-ratio             | 2019      | 0.062      | -   | -   |
| <b>TC</b>         | -                    | -         | -          |     |     |
| <b>TL</b>         | TL-MT                | 2019      | 219        |     |     |
| <b>TB/TBmsy</b>   | -                    | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -                    | -         | -          |     |     |
| <b>F/Fmsy</b>     | -                    | -         | -          |     |     |
| <b>ER/ERmsy</b>   | ER-ratio/ERmsy-ratio | 2016      | 0.808      |     |     |
| <b>TB/TBmgt</b>   | -                    | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -                    | -         | -          |     |     |
| <b>F/Fmgt</b>     | -                    | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -                    | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

**Spawner Recruit\***

**Production\***

◆ Start Year ◆ End Year \* No Data

Norway lobster South East and West of IRL (FU 19) [NEPHFU19]

**TB\***



**SSB\***



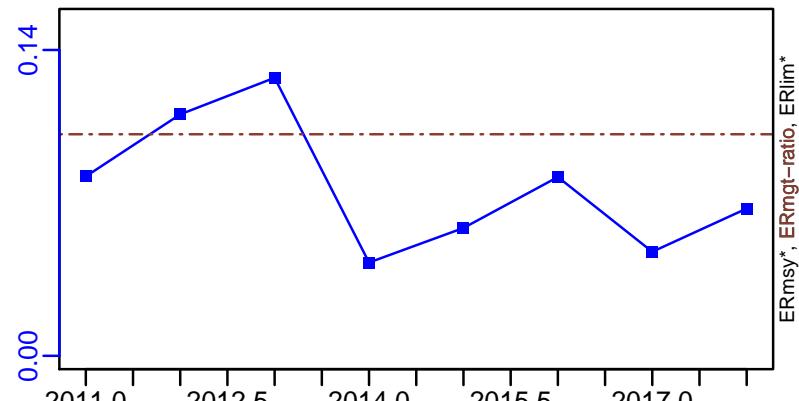
**TN \***



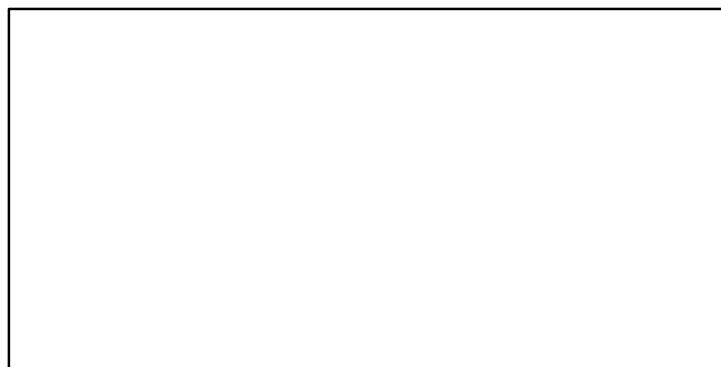
**F\***



**ER-ratio (1989–2019–ICESIMP2021)**



**Recruits\***

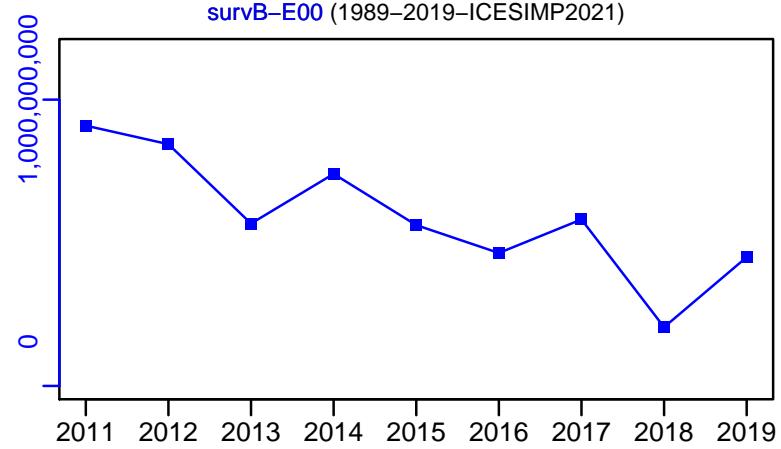
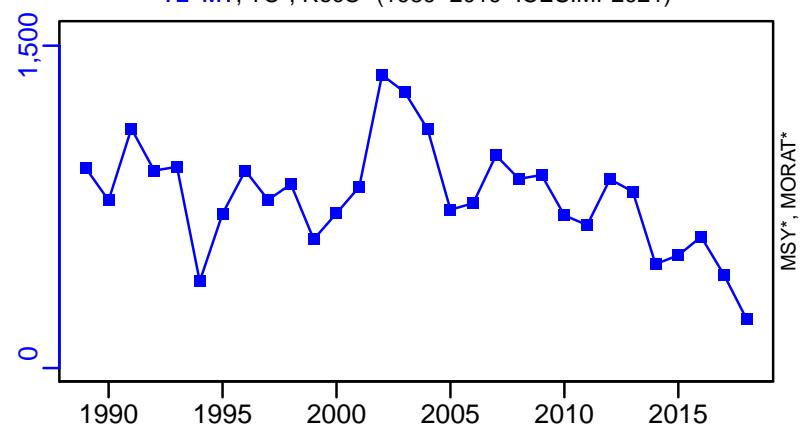


|                      |                |           |
|----------------------|----------------|-----------|
| ■ Listed time series | --- Target BRP | — Rec-Est |
| - - - MSY-based BRP  | ... Lim BRP    | * No Data |

Norway lobster South East and West of IRL (FU 19) [NEPHFU19]

TL-MT, TC\*, RecC\* (1989–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



EFFORT\*

CPUE\*

CdivMSY\*

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Norway lobster Labadie, Jones and Cockburn (FU 20-21) [NEPHFU2021]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Nephrops norvegicus                                  |
| <b>Current Assess ID</b>    | WGCSE-NEPHFU2021-1995-2019-ICESIMP2021               |
| <b>Area</b>                 | Labadie, Jones and Cockburn (FU 20-21)               |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2015, 2016, 2019                                     |

| Reference Points |             |           |       |
|------------------|-------------|-----------|-------|
| Type             | ID          | Asmt Year | Value |
| <b>TBmsy</b>     | -           | -         | -     |
| <b>SSBmsy</b>    | -           | -         | -     |
| <b>Fmsy</b>      | -           | -         | -     |
| <b>ERmsy</b>     | ERmsy-ratio | 2016      | 0.06  |
| <b>TBmgt</b>     | -           | -         | -     |
| <b>SSBmgt</b>    | -           | -         | -     |
| <b>Fmgt</b>      | -           | -         | -     |
| <b>ERmgt</b>     | ERmgt-ratio | 2019      | 0.06  |
| <b>TB0</b>       | -           | -         | -     |
| <b>SSB0</b>      | -           | -         | -     |
| <b>MSY</b>       | -           | -         | -     |
| <b>M</b>         | -           | -         | -     |
| <b>TBlim</b>     | -           | -         | -     |
| <b>SSBlim</b>    | -           | -         | -     |
| <b>Flim</b>      | -           | -         | -     |
| <b>ERlim</b>     | -           | -         | -     |

| Time Series       |                      |           |            |     |     |
|-------------------|----------------------|-----------|------------|-----|-----|
| Type              | ID                   | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -                    | -         | -          | -   | -   |
| <b>SSB</b>        | -                    | -         | -          | -   | -   |
| <b>TN</b>         | -                    | -         | -          | -   | -   |
| <b>R</b>          | -                    | -         | -          | -   | -   |
| <b>F</b>          | -                    | -         | -          | -   | -   |
| <b>ER</b>         | ER-ratio             | 2019      | 0.03       | -   | -   |
| <b>TC</b>         | -                    | -         | -          |     |     |
| <b>TL</b>         | TL-MT                | 2019      | 1803       |     |     |
| <b>TB/TBmsy</b>   | -                    | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -                    | -         | -          |     |     |
| <b>F/Fmsy</b>     | -                    | -         | -          |     |     |
| <b>ER/ERmsy</b>   | ER-ratio/ERmsy-ratio | 2016      | 0.783      |     |     |
| <b>TB/TBmgt</b>   | -                    | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -                    | -         | -          |     |     |
| <b>F/Fmgt</b>     | -                    | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -                    | -         | -          |     |     |

**Kobe MSY\***

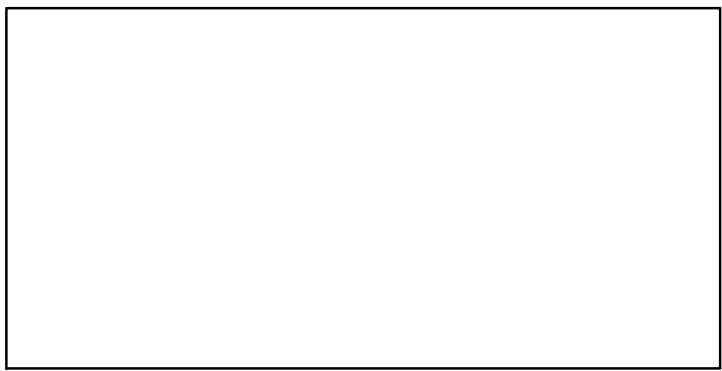
**Kobe MGT\***

**Spawner Recruit\***

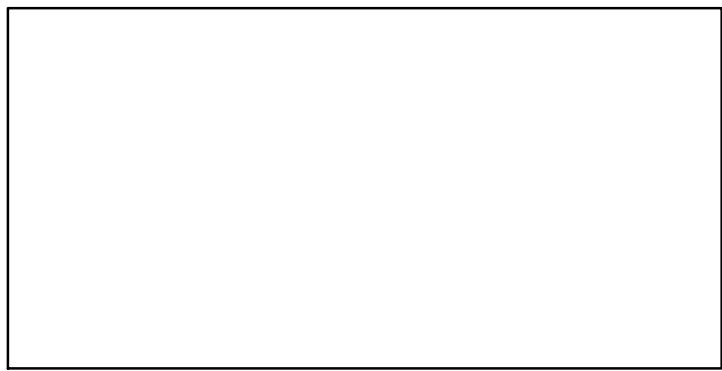
**Production\***

◆ Start Year ◆ End Year \* No Data

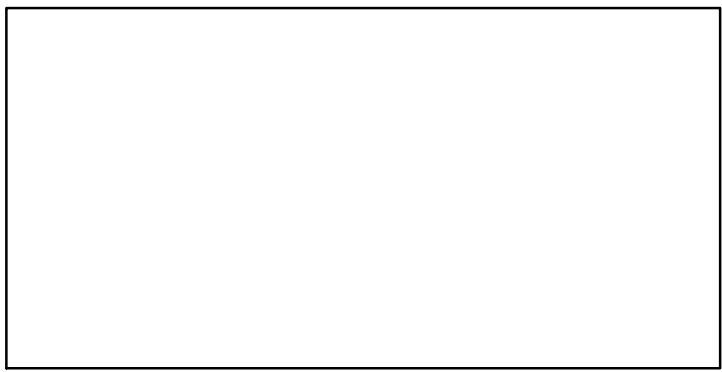
**TB\***



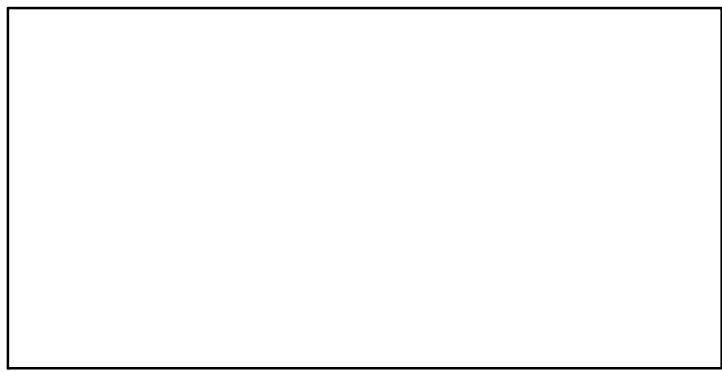
**SSB\***



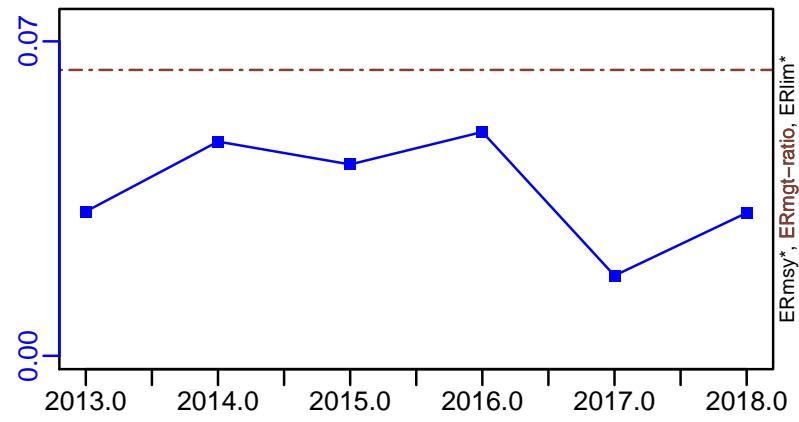
**TN \***



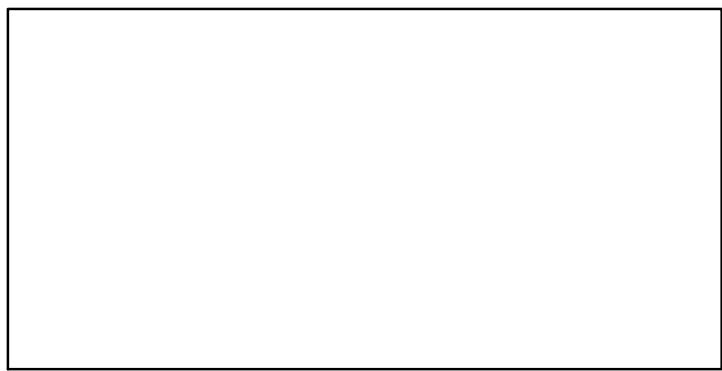
**F\***



**ER-ratio (1995–2019–ICESIMP2021)**



**Recruits\***

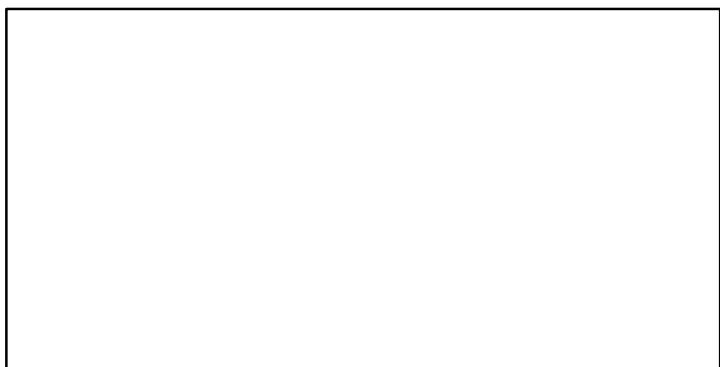
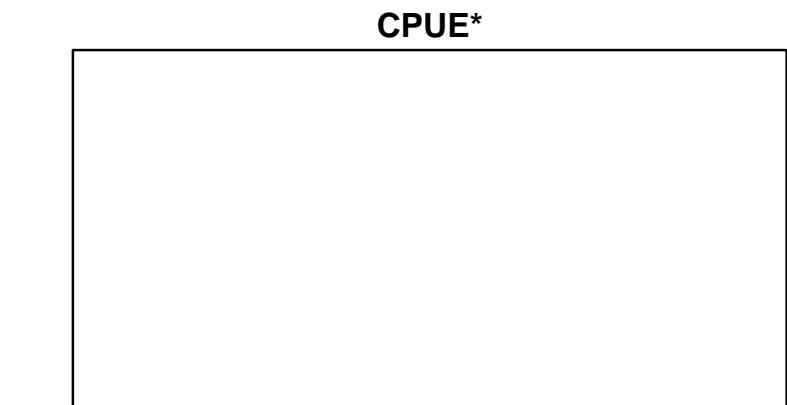
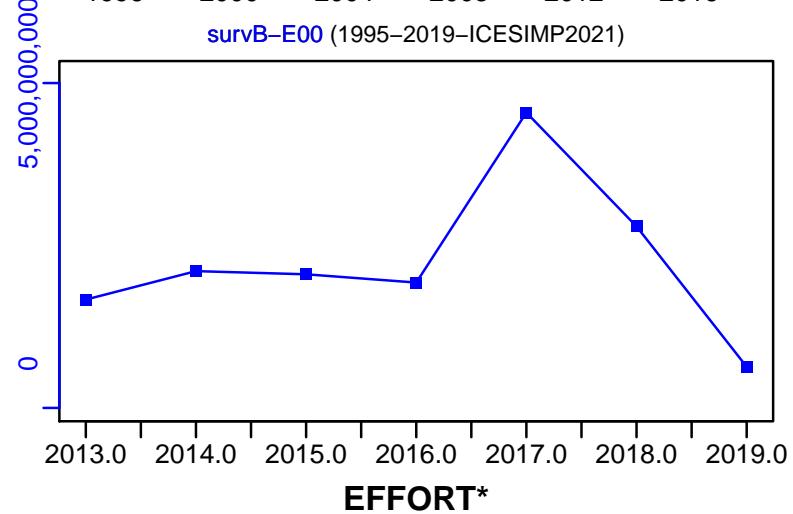
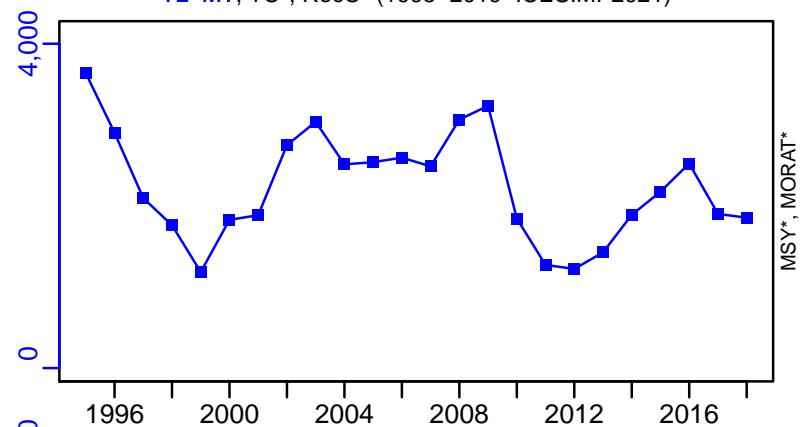


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

Norway lobster Labadie, Jones and Cockburn (FU 20–21) [NEPHFU2021]

TL-MT, TC\*, RecC\* (1995–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

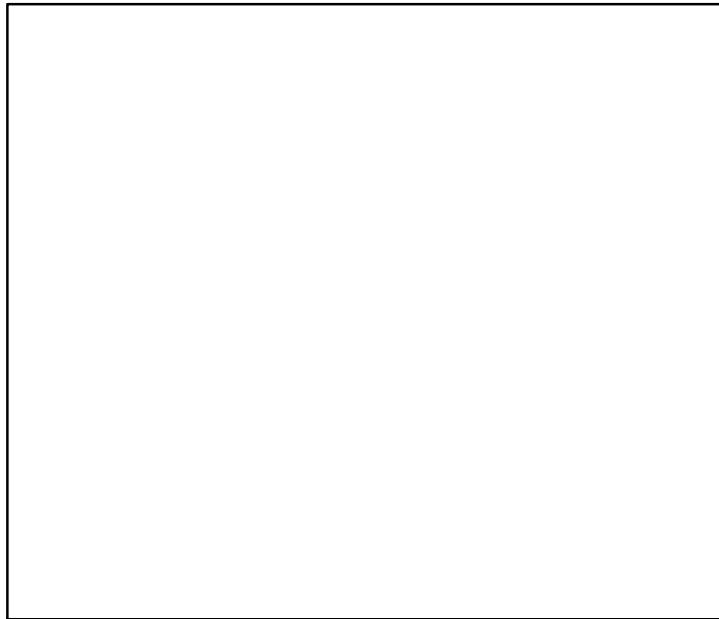
## Norway lobster Smalls (FU 22) [NEPHFU22]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Nephrops norvegicus                                  |
| <b>Current Assess ID</b>    | WGCSE-NEPHFU22-1999-2019-ICESIMP2021                 |
| <b>Area</b>                 | Smalls (FU 22)                                       |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2015, 2016, 2019                                     |

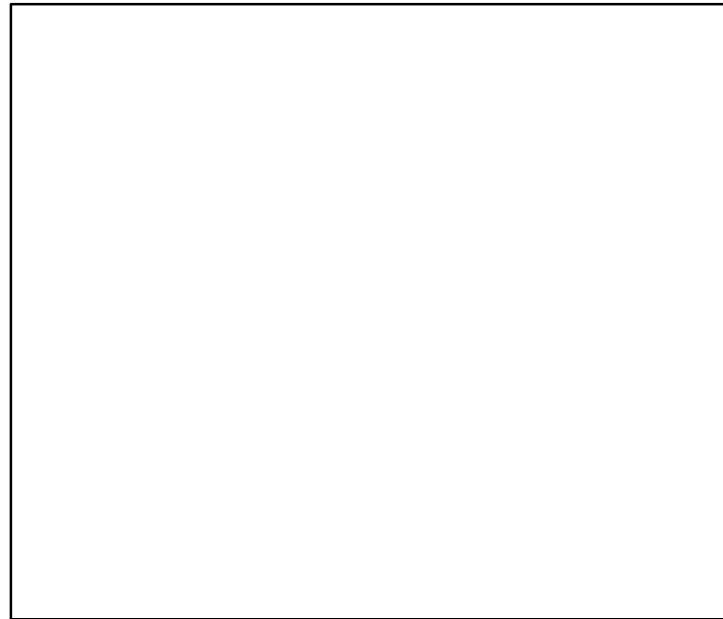
| Reference Points |             |           |       |
|------------------|-------------|-----------|-------|
| Type             | ID          | Asmt Year | Value |
| <b>TBmsy</b>     | -           | -         | -     |
| <b>SSBmsy</b>    | -           | -         | -     |
| <b>Fmsy</b>      | -           | -         | -     |
| <b>ERmsy</b>     | ERmsy-ratio | 2016      | 0.128 |
| <b>TBmgt</b>     | -           | -         | -     |
| <b>SSBmgt</b>    | -           | -         | -     |
| <b>Fmgt</b>      | -           | -         | -     |
| <b>ERmgt</b>     | ERmgt-ratio | 2019      | 0.128 |
| <b>TB0</b>       | -           | -         | -     |
| <b>SSB0</b>      | -           | -         | -     |
| <b>MSY</b>       | -           | -         | -     |
| <b>M</b>         | -           | -         | -     |
| <b>TBlim</b>     | -           | -         | -     |
| <b>SSBlim</b>    | -           | -         | -     |
| <b>Flim</b>      | -           | -         | -     |
| <b>ERlim</b>     | -           | -         | -     |

| Time Series       |                      |           |            |     |     |
|-------------------|----------------------|-----------|------------|-----|-----|
| Type              | ID                   | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -                    | -         | -          | -   | -   |
| <b>SSB</b>        | -                    | -         | -          | -   | -   |
| <b>TN</b>         | -                    | -         | -          | -   | -   |
| <b>R</b>          | -                    | -         | -          | -   | -   |
| <b>F</b>          | -                    | -         | -          | -   | -   |
| <b>ER</b>         | ER-ratio             | 2019      | 0.138      | -   | -   |
| <b>TC</b>         | -                    | -         | -          |     |     |
| <b>TL</b>         | TL-MT                | 2019      | 1974       |     |     |
| <b>TB/TBmsy</b>   | -                    | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -                    | -         | -          |     |     |
| <b>F/Fmsy</b>     | -                    | -         | -          |     |     |
| <b>ER/ERmsy</b>   | ER-ratio/ERmsy-ratio | 2016      | 1.781      |     |     |
| <b>TB/TBmgt</b>   | -                    | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -                    | -         | -          |     |     |
| <b>F/Fmgt</b>     | -                    | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -                    | -         | -          |     |     |

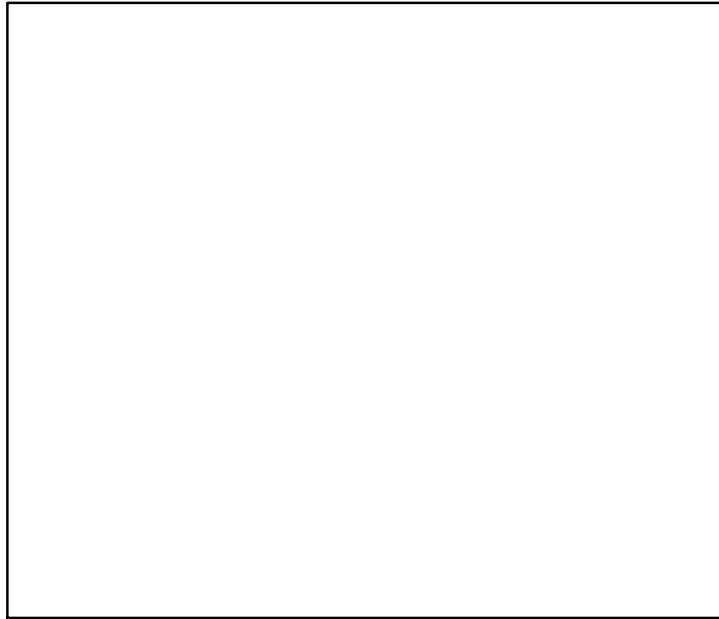
**Kobe MSY\***



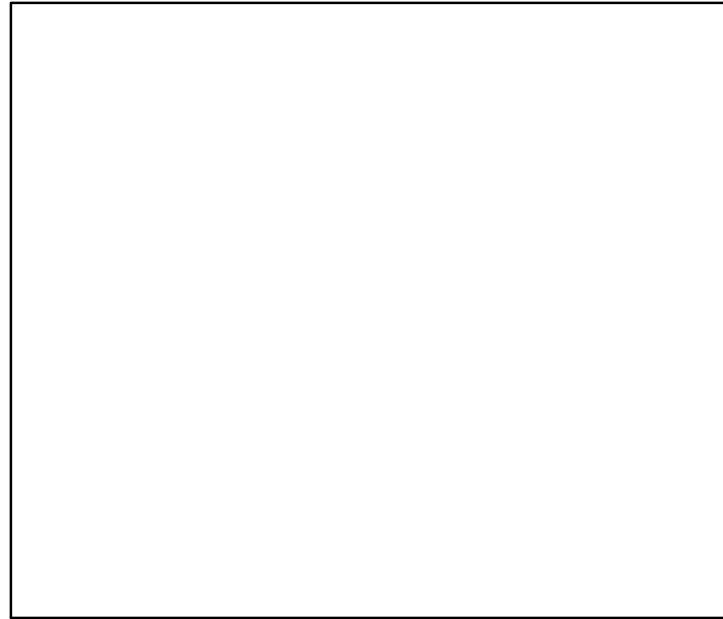
**Kobe MGT\***



**Spawner Recruit\***



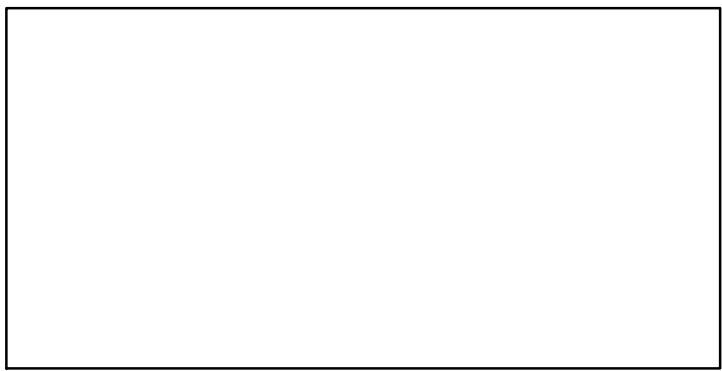
**Production\***



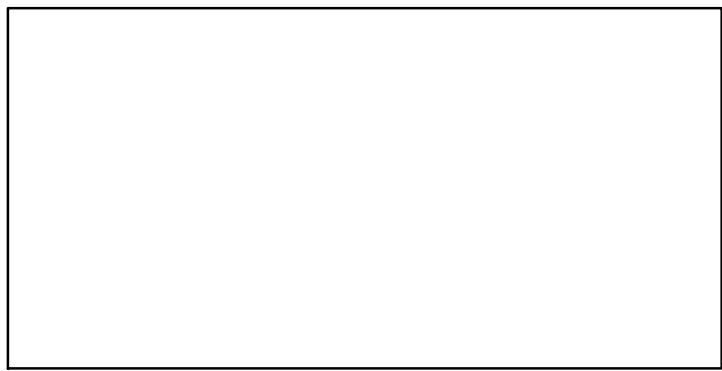
◆ Start Year ♦ End Year \* No Data

Norway lobster Small (FU 22) [NEPHFU22]

**TB\***



**SSB\***



**TN \***

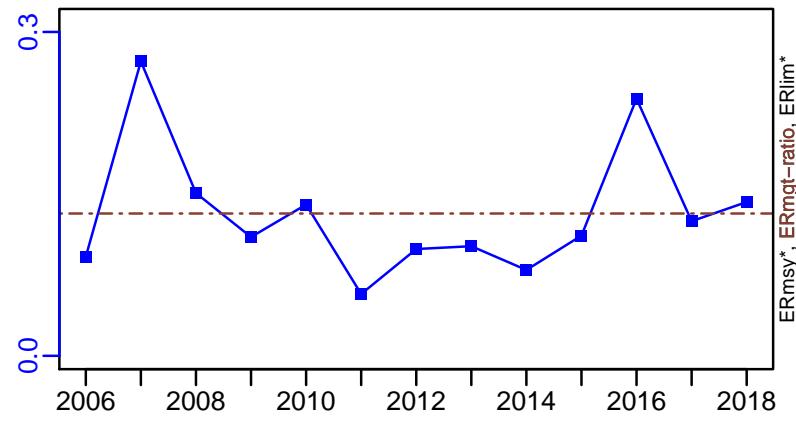


**F\***

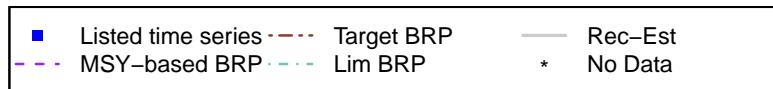
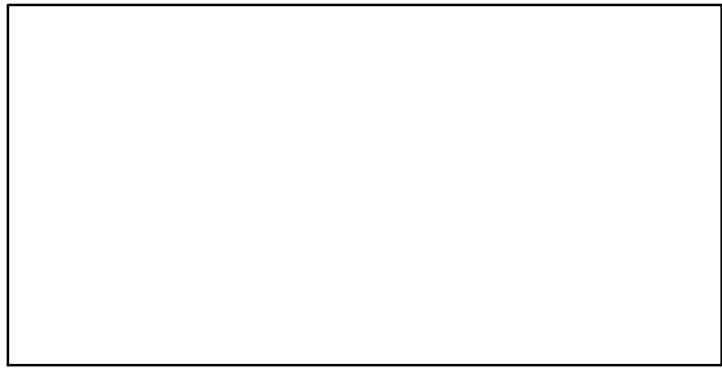


**ER-ratio (1999–2019–ICESIMP2021)**

ER<sub>MSY</sub>\*, ER<sub>mgt</sub>-ratio, ER<sub>lim</sub>\*

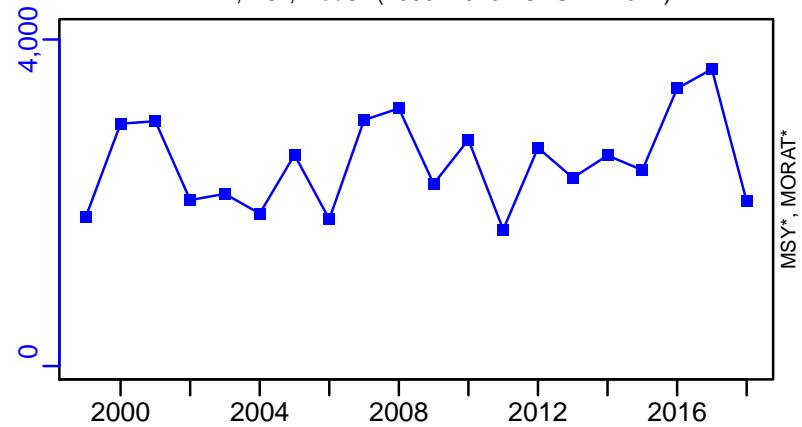


**Recruits\***

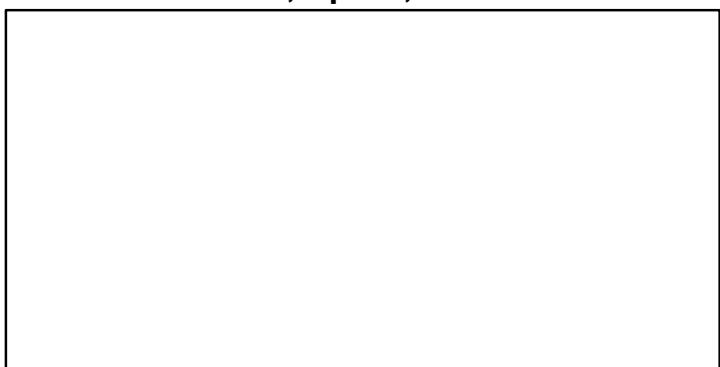


### Norway lobster Smalls (FU 22) [NEPHFU22]

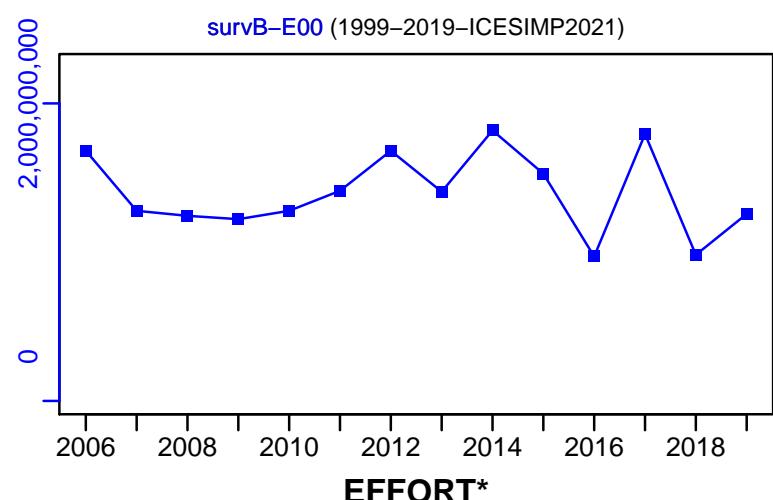
TL-MT, TC\*, RecC\* (1999–2019–ICESIMP2021)



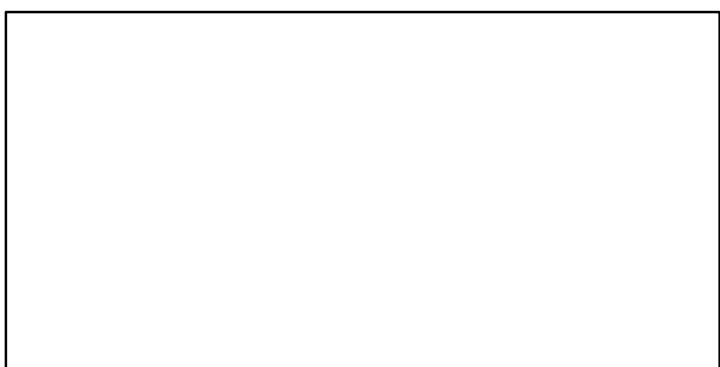
### TAC\*, Cpair\*, Cadv\*



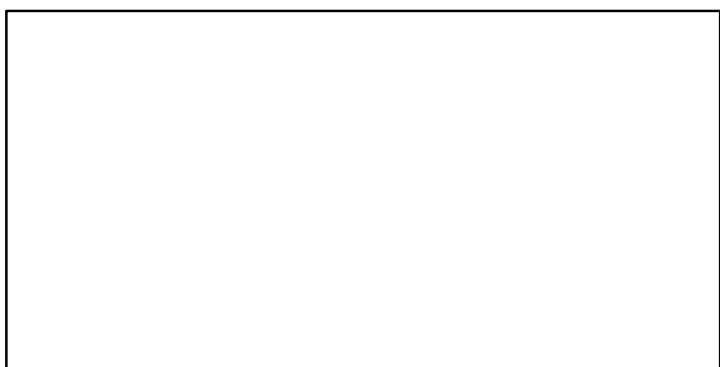
survB-E00 (1999–2019–ICESIMP2021)



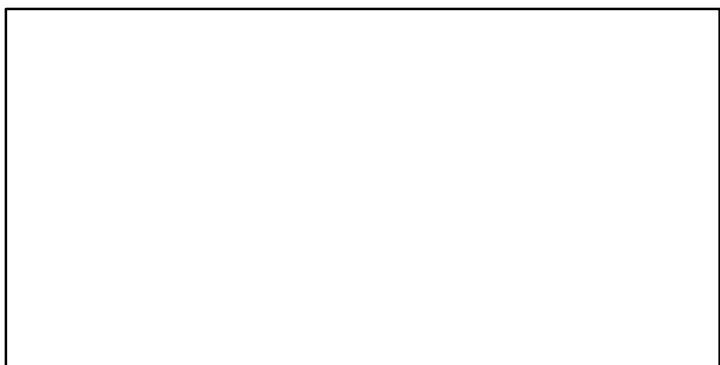
### CPUE\*



### EFFORT\*



### CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Norway lobster North Galicia (FU 25) [NEPHFU25]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Nephrops norvegicus  |
| <b>Current Assess ID</b>    | WGBIE-NEPHFU25-1975-2018-ICESIMP2021                                 |
| <b>Area</b>                 | North Galicia (FU 25)  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                 |
| <b>Assessor</b>             | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion |
| <b>Asmts in RAM</b>         | 2016, 2018   |

| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | -     | -         | -          |     |     |
| <b>TL</b>         | TL-MT | 2018      | 2          |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

**Spawner Recruit\***

**Production\***

◆ Start Year ♦ End Year \* No Data

Norway lobster North Galicia (FU 25) [NEPHFU25]

**TB\***



**SSB\***



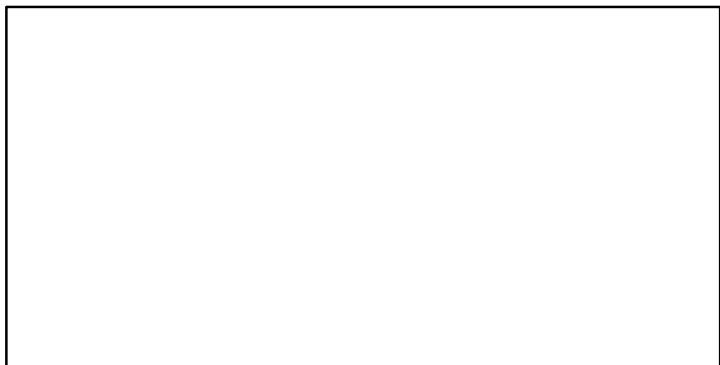
**TN \***



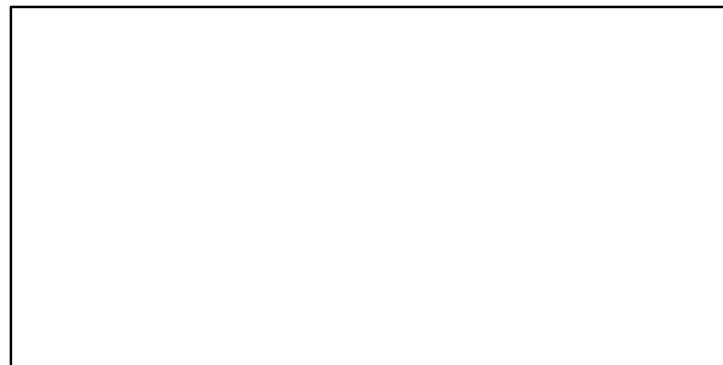
**F\***



**ER\***



**Recruits\***

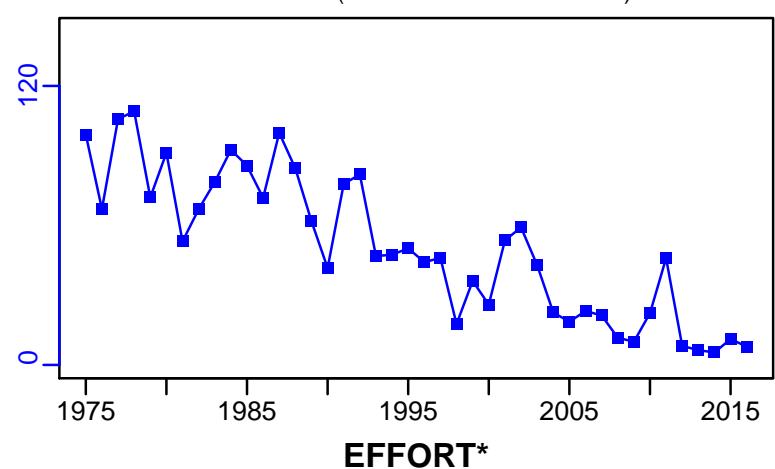
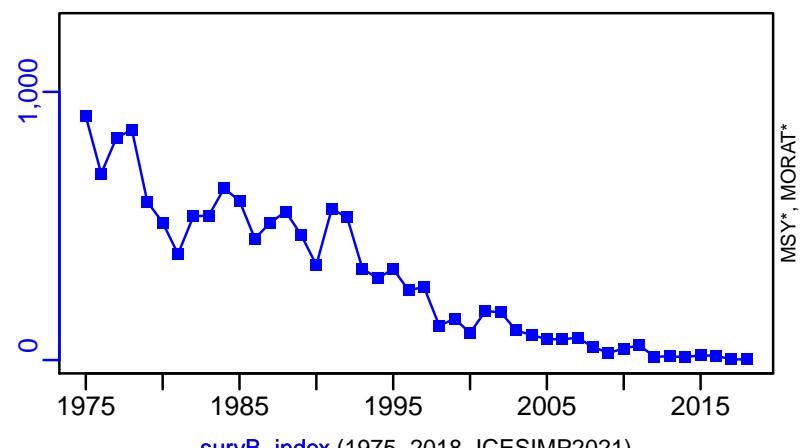


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Norway lobster North Galicia (FU 25) [NEPHFU25]

TL-MT, TC\*, RecC\* (1975–2018–ICESIMP2021)

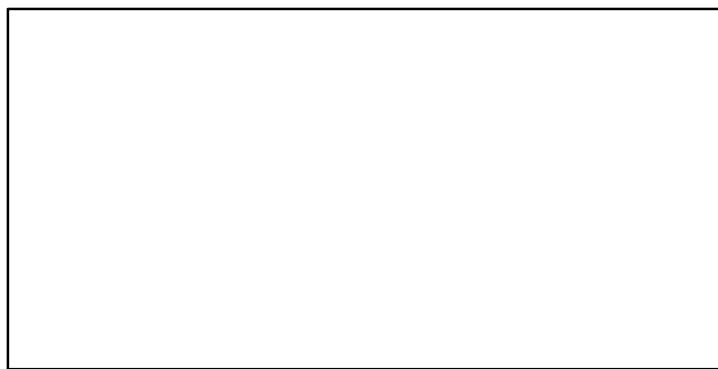
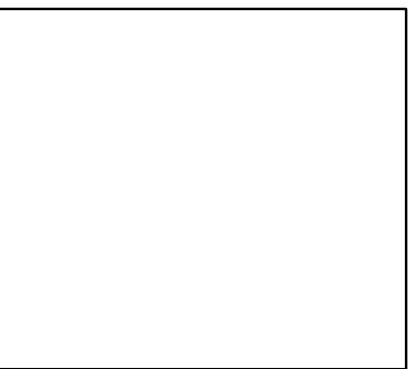
TAC\*, Cpair\*, Cadv\*



CPUE\*

EFFORT\*

\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Norway lobster West Galicia and North Portugal (FU 26-27) [NEPHFU2627]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Nephrops norvegicus  |
| <b>Current Assess ID</b>    | WGBIE-NEPHFU2627-1975-2018-ICESIMP2021                               |
| <b>Area</b>                 | West Galicia and North Portugal (FU 26-27)                           |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                 |
| <b>Assessor</b>             | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion |
| <b>Asmts in RAM</b>         | 2016, 2018   |

| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |        |           |            |     |     |
|-------------------|--------|-----------|------------|-----|-----|
| Type              | ID     | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -      | -         | -          | -   | -   |
| <b>SSB</b>        | -      | -         | -          | -   | -   |
| <b>TN</b>         | -      | -         | -          | -   | -   |
| <b>R</b>          | -      | -         | -          | -   | -   |
| <b>F</b>          | F-1/yr | 2018      | 0.051      | -   | -   |
| <b>ER</b>         | -      | -         | -          | -   | -   |
| <b>TC</b>         | -      | -         | -          |     |     |
| <b>TL</b>         | TL-MT  | 2018      | 2.01       |     |     |
| <b>TB/TBmsy</b>   | -      | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -      | -         | -          |     |     |
| <b>F/Fmsy</b>     | -      | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -      | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -      | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -      | -         | -          |     |     |
| <b>F/Fmgt</b>     | -      | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -      | -         | -          |     |     |

**Kobe MSY\***

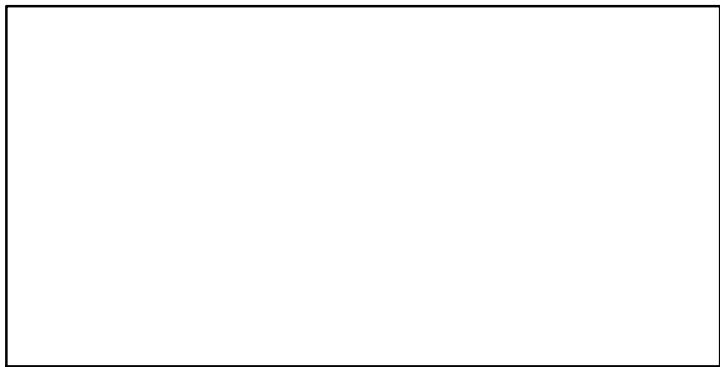
**Kobe MGT\***

**Spawner Recruit\***

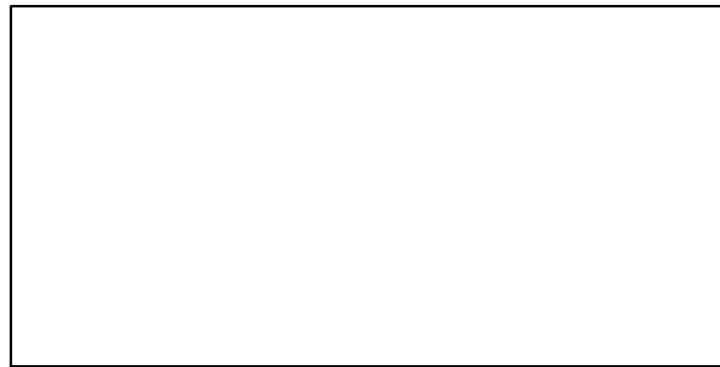
**Production\***

◆ Start Year ◆ End Year \* No Data

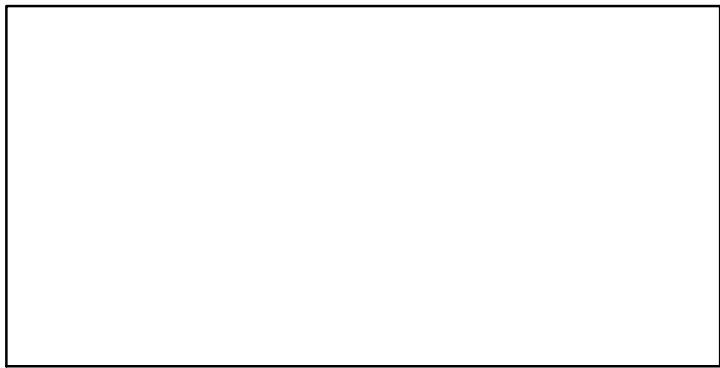
**TB\***



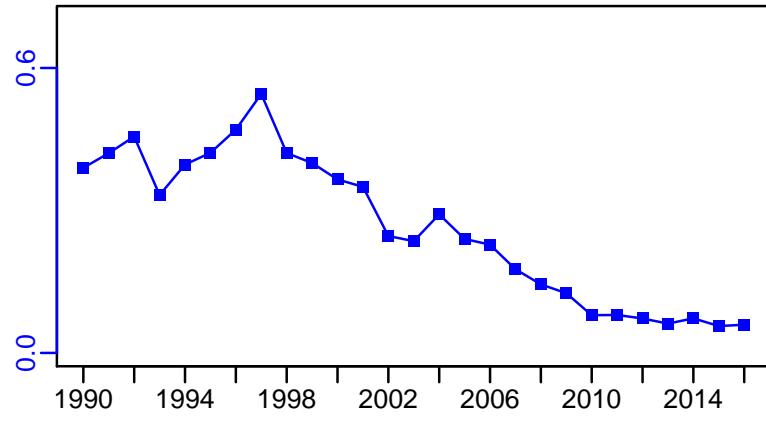
**SSB\***



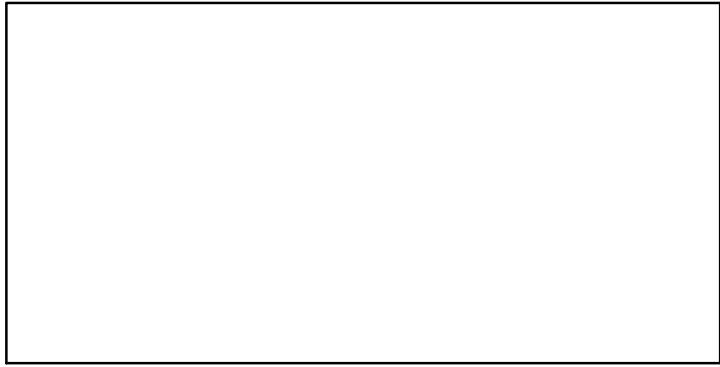
**TN \***



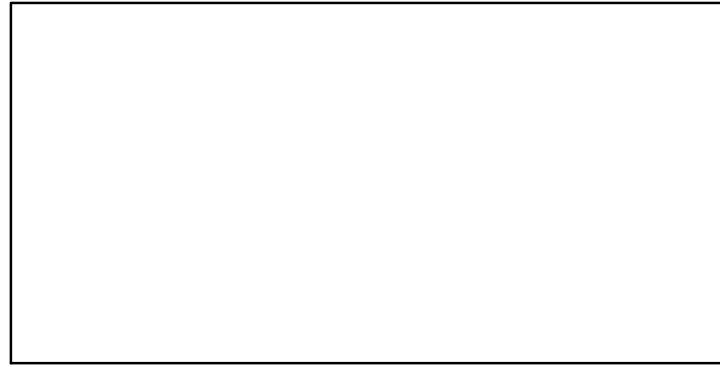
**F-1/yr (1975–2018–ICESIMP2021)**



**ER\***



**Recruits\***

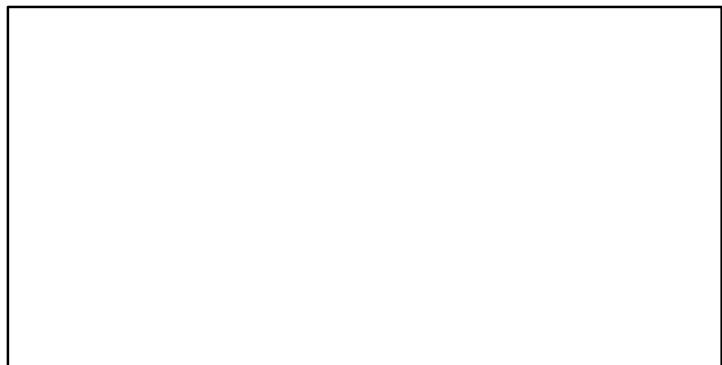
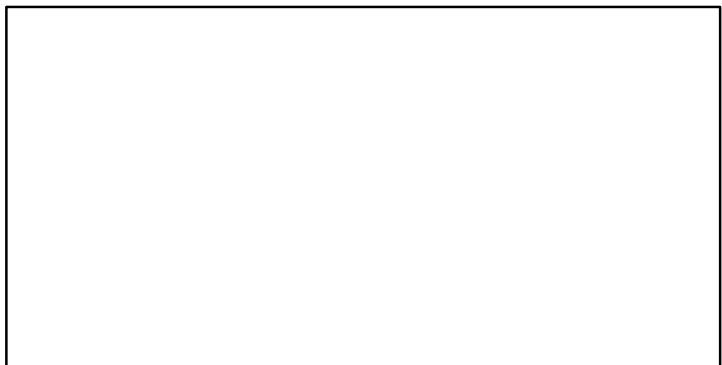
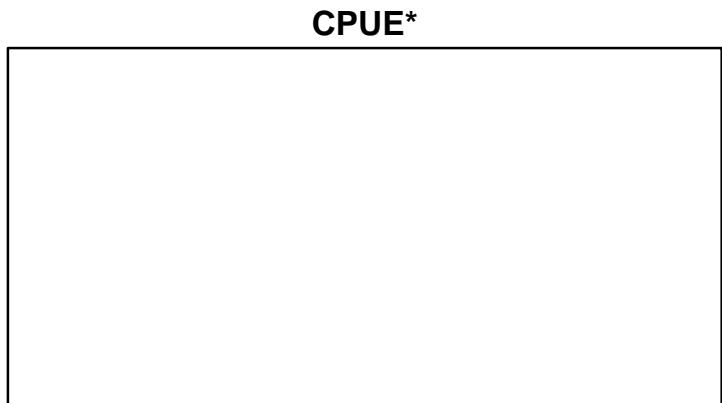
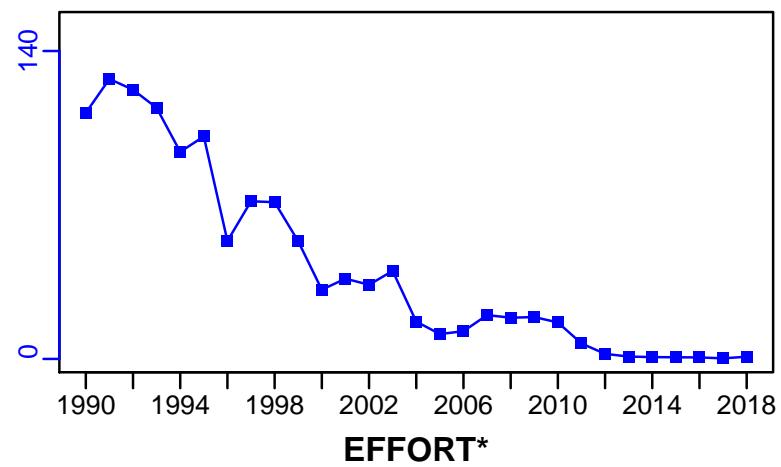
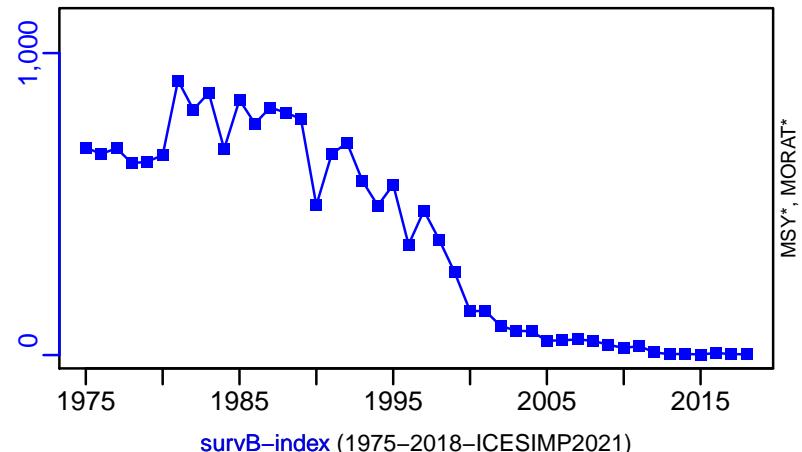


- Listed time series
- - - Target BRP
- - MSY-based BRP
- - Lim BRP
- Rec-Est
- \* No Data

Norway lobster West Galicia and North Portugal (FU 26–27) [NEPHFU2627]

TL-MT, TC\*, RecC\* (1975–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Norway lobster South-West and South Portugal (FU 28-29) [NEPHFU2829]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Nephrops norvegicus  |
| <b>Current Assess ID</b>    | WGBIE-NEPHFU2829-1984-2018-ICESIMP2021                               |
| <b>Area</b>                 | South-West and South Portugal (FU 28-29)                             |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                 |
| <b>Assessor</b>             | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion |
| <b>Asmts in RAM</b>         | 2016, 2016, 2018   |

| Reference Points |           |           |       |
|------------------|-----------|-----------|-------|
| Type             | ID        | Asmt Year | Value |
| <b>TBmsy</b>     | -         | -         | -     |
| <b>SSBmsy</b>    | -         | -         | -     |
| <b>Fmsy</b>      | Fmsy-1/yr | 2016      | 0.22  |
| <b>ERmsy</b>     | -         | -         | -     |
| <b>TBmgt</b>     | -         | -         | -     |
| <b>SSBmgt</b>    | -         | -         | -     |
| <b>Fmgt</b>      | -         | -         | -     |
| <b>ERmgt</b>     | -         | -         | -     |
| <b>TB0</b>       | -         | -         | -     |
| <b>SSB0</b>      | -         | -         | -     |
| <b>MSY</b>       | -         | -         | -     |
| <b>M</b>         | -         | -         | -     |
| <b>TBlim</b>     | -         | -         | -     |
| <b>SSBlim</b>    | -         | -         | -     |
| <b>Flim</b>      | -         | -         | -     |
| <b>ERlim</b>     | -         | -         | -     |

| Time Series       |                  |           |            |     |     |   |
|-------------------|------------------|-----------|------------|-----|-----|---|
| Type              | ID               | Asmt Year | Curr Value | Sex | Age |   |
| <b>TB</b>         | -                | -         | -          | -   | -   | - |
| <b>SSB</b>        | -                | -         | -          | -   | -   | - |
| <b>TN</b>         | -                | -         | -          | -   | -   | - |
| <b>R</b>          | -                | -         | -          | -   | -   | - |
| <b>F</b>          | F-1/yr           | 2018      | 0.461      | -   | -   |   |
| <b>ER</b>         | -                | -         | -          | -   | -   |   |
| <b>TC</b>         | -                | -         | -          |     |     |   |
| <b>TL</b>         | TL-MT            | 2018      | 299        |     |     |   |
| <b>TB/TBmsy</b>   | -                | -         | -          |     |     |   |
| <b>SSB/SSBmsy</b> | -                | -         | -          |     |     |   |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr | 2016      | 0.449      |     |     |   |
| <b>ER/ERmsy</b>   | -                | -         | -          |     |     |   |
| <b>TB/TBmgt</b>   | -                | -         | -          |     |     |   |
| <b>SSB/SSBmgt</b> | -                | -         | -          |     |     |   |
| <b>F/Fmgt</b>     | -                | -         | -          |     |     |   |
| <b>ER/ERmgt</b>   | -                | -         | -          |     |     |   |

**Kobe MSY\***

**Kobe MGT\***

**Spawner Recruit\***

**Production\***

◆ Start Year ♦ End Year \* No Data

**TB\***



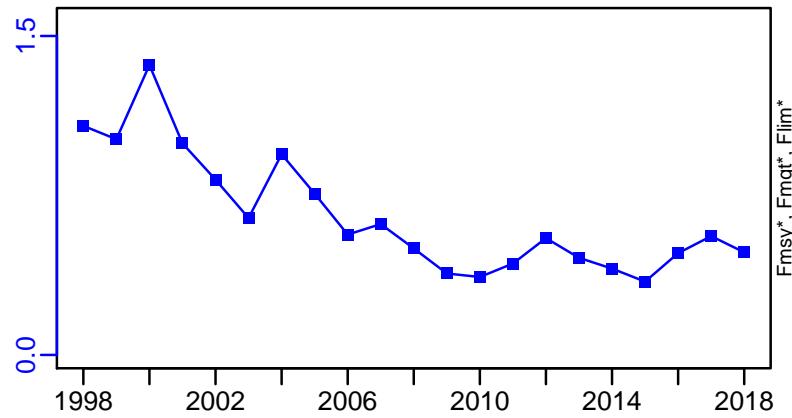
**SSB\***



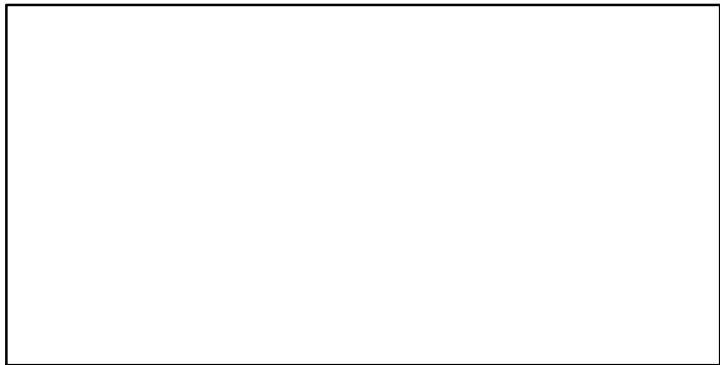
**TN \***



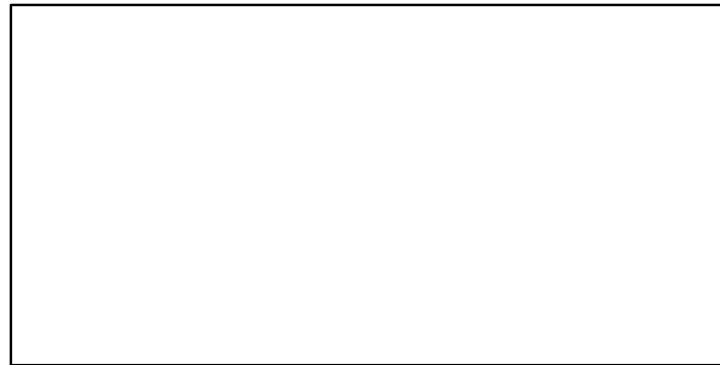
**F-1/yr (1984–2018–ICESIMP2021)**



**ER\***



**Recruits\***

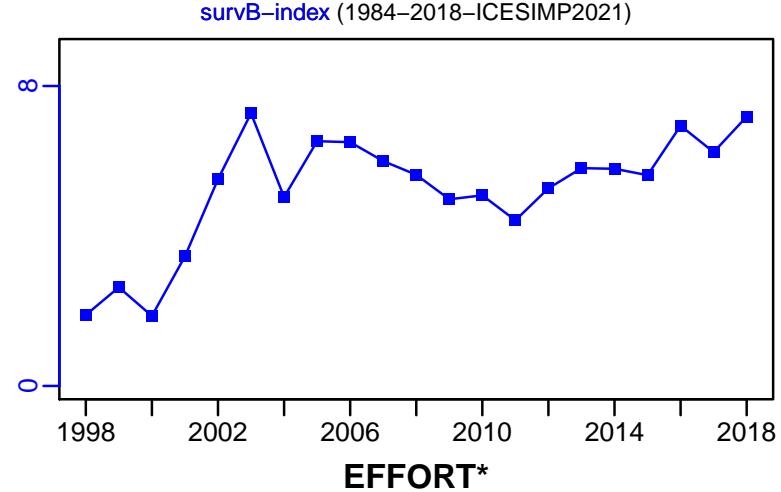
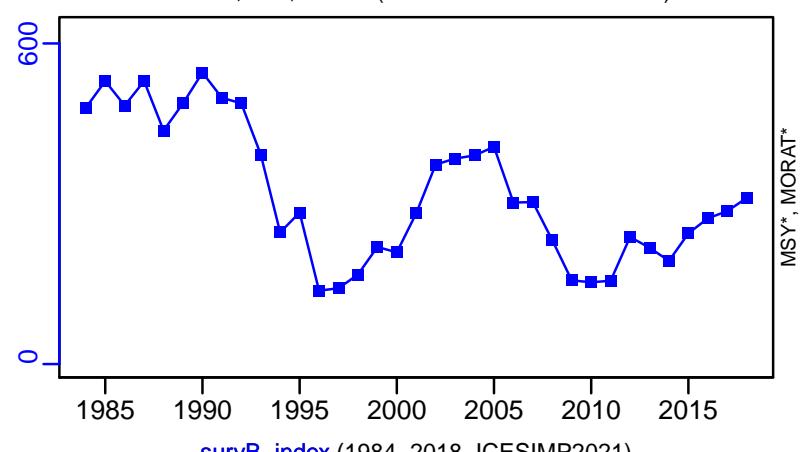


- Listed time series    - - - Target BRP    — Rec-Est
- - MSY-based BRP    - - Lim BRP    \* No Data

Norway lobster South-West and South Portugal (FU 28–29) [NEPHFU2829]

TL-MT, TC\*, RecC\* (1984–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



EFFORT\*

CPUE\*

CdivMSY\*

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Norway lobster Gulf of Cadiz (FU 30) [NEPHFU30]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Nephrops norvegicus  |
| <b>Current Assess ID</b>    | WGBIE-NEPHFU30-1994-2019-ICESIMP2021                                 |
| <b>Area</b>                 | Gulf of Cadiz (FU 30)  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                 |
| <b>Assessor</b>             | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion |
| <b>Asmts in RAM</b>         | 2016, 2017, 2019   |

| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERrmsy</b>    | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |          |           |            |      |     |
|-------------------|----------|-----------|------------|------|-----|
| Type              | ID       | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>         | -        | -         | -          | -    | -   |
| <b>SSB</b>        | SSB-E00  | 2017      | 370        | Both | -   |
| <b>TN</b>         | -        | -         | -          | -    | -   |
| <b>R</b>          | -        | -         | -          | -    | -   |
| <b>F</b>          | -        | -         | -          | -    | -   |
| <b>ER</b>         | ER-ratio | 2019      | 0.01       | -    | -   |
| <b>TC</b>         | TC-MT    | 2019      | 76         |      |     |
| <b>TL</b>         | TL-MT    | 2017      | 124        |      |     |
| <b>TB/TBmsy</b>   | -        | -         | -          |      |     |
| <b>SSB/SSBmsy</b> | -        | -         | -          |      |     |
| <b>F/Fmsy</b>     | -        | -         | -          |      |     |
| <b>ER/ERrmsy</b>  | -        | -         | -          |      |     |
| <b>TB/TBmgt</b>   | -        | -         | -          |      |     |
| <b>SSB/SSBmgt</b> | -        | -         | -          |      |     |
| <b>F/Fmgt</b>     | -        | -         | -          |      |     |
| <b>ER/ERmgt</b>   | -        | -         | -          |      |     |

**Kobe MSY\***

**Kobe MGT\***

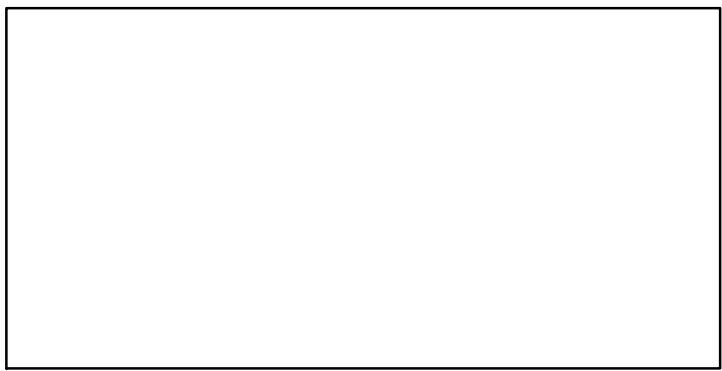
**Spawner Recruit\***

**Production\***

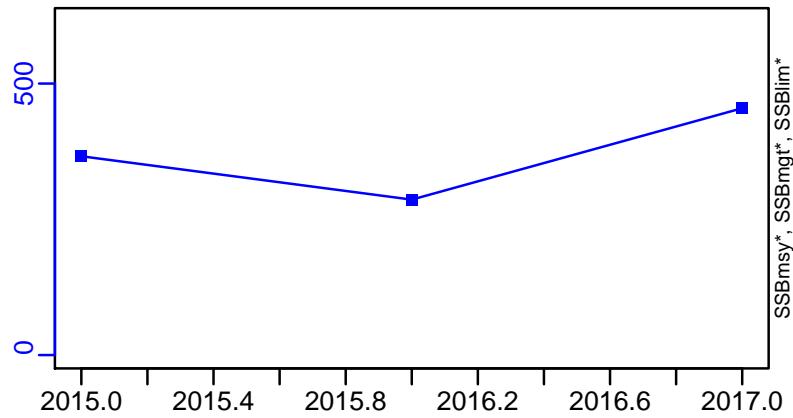
◆ Start Year ♦ End Year \* No Data

Norway lobster Gulf of Cadiz (FU 30) [NEPHFU30]

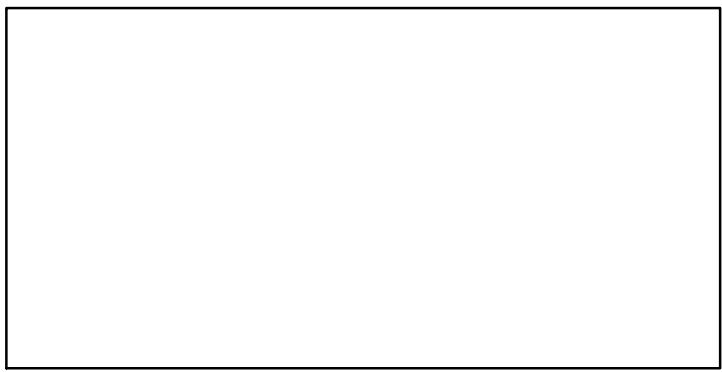
**TB\***



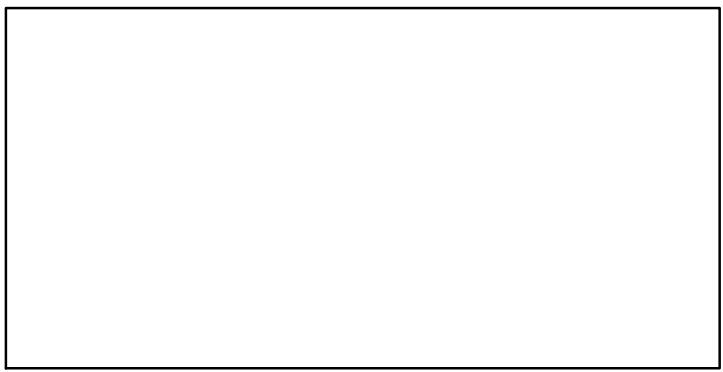
SSB-E00 (1994–2017–ICESIMP2018)



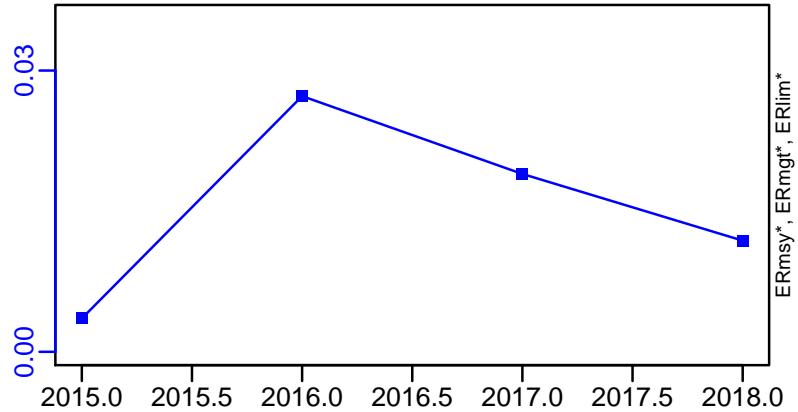
**TN \***



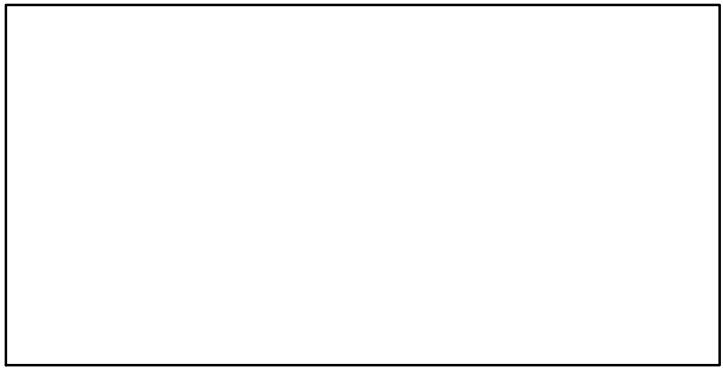
**F\***



ER-ratio (1994–2019–ICESIMP2021)



**Recruits\***

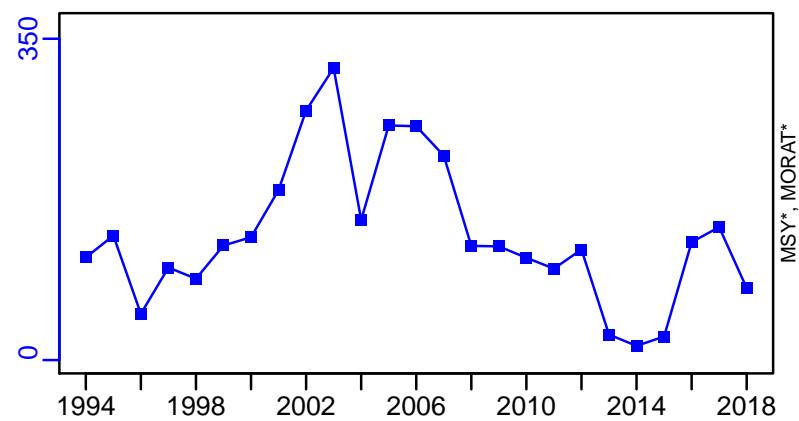


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | ··· Lim BRP  | * No Data |

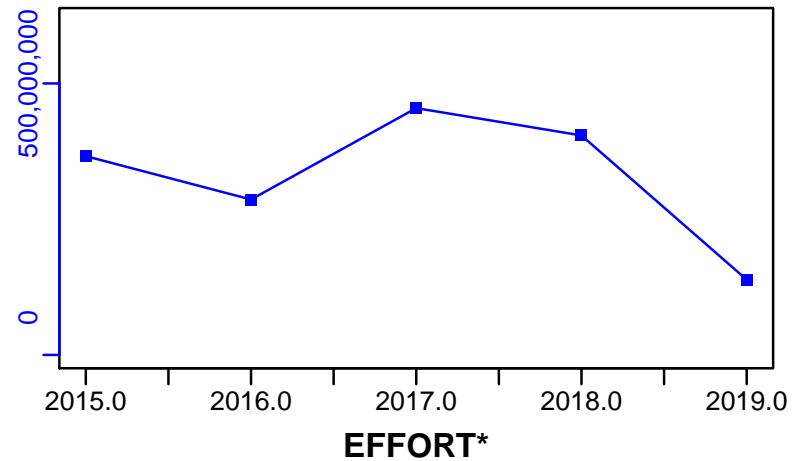
Norway lobster Gulf of Cadiz (FU 30) [NEPHFU30]

TC-MT, TL\*, RecC\* (1994–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



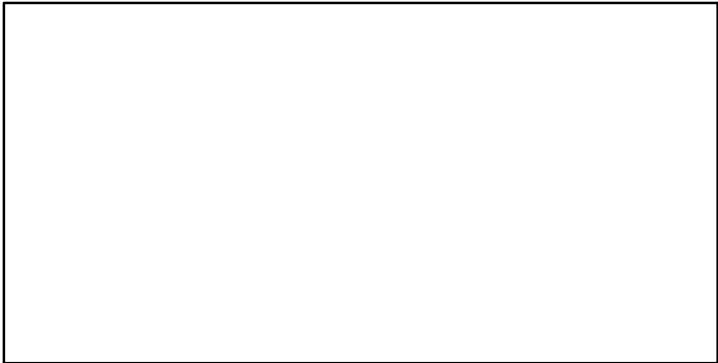
survB-E00 (1994–2019–ICESIMP2021)



CPUE\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Norway lobster Cantabrian Sea (FU 31) [NEPHFU31]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Nephrops norvegicus  |
| <b>Current Assess ID</b>    | WGBIE-NEPHFU31-1983-2018-ICESIMP2021                                 |
| <b>Area</b>                 | Cantabrian Sea (FU 31)   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                 |
| <b>Assessor</b>             | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion |
| <b>Asmts in RAM</b>         | 2016, 2018   |

| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | TC-MT | 2018      | 3          |     |     |
| <b>TL</b>         | TL-MT | 2016      | 4.26       |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

**Spawner Recruit\***

**Production\***

◆ Start Year ◆ End Year \* No Data

Norway lobster Cantabrian Sea (FU 31) [NEPHFU31]

**TB\***



**SSB\***



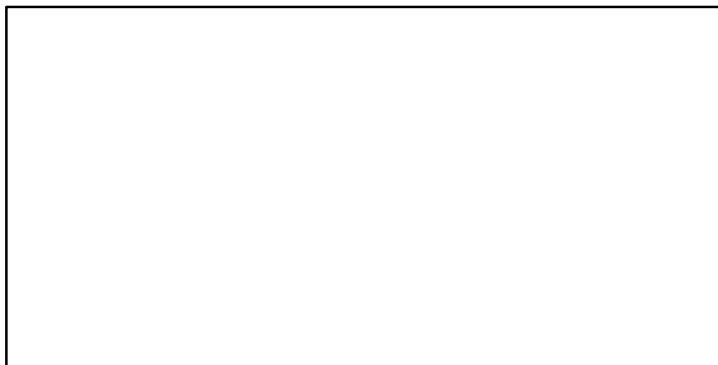
**TN \***



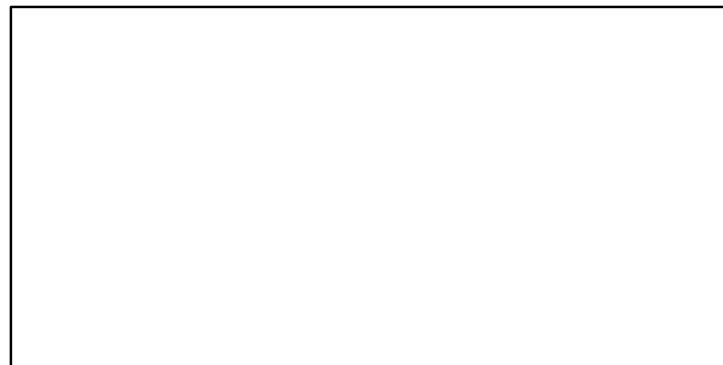
**F\***



**ER\***



**Recruits\***

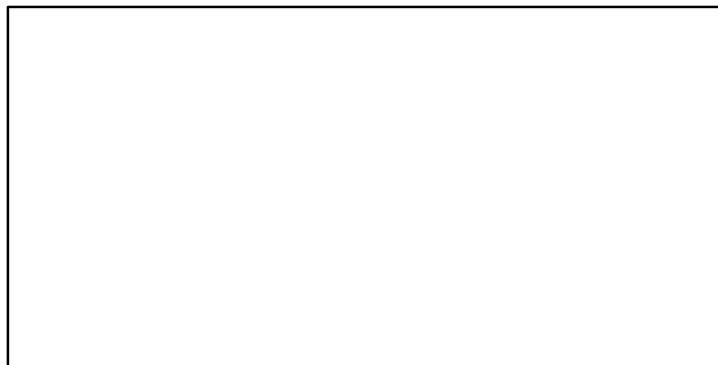
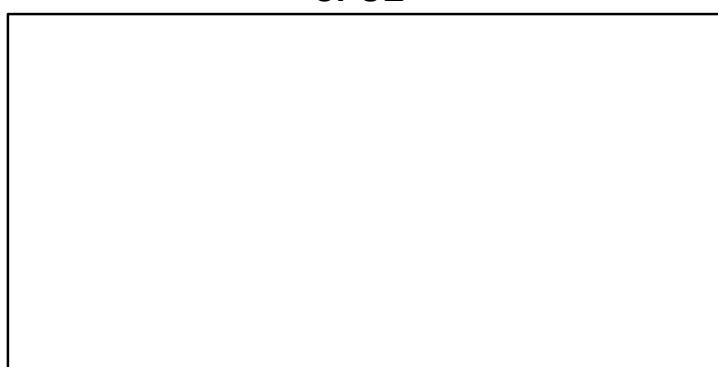
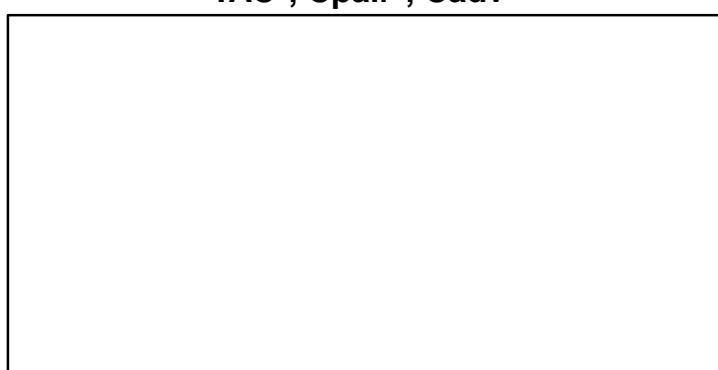
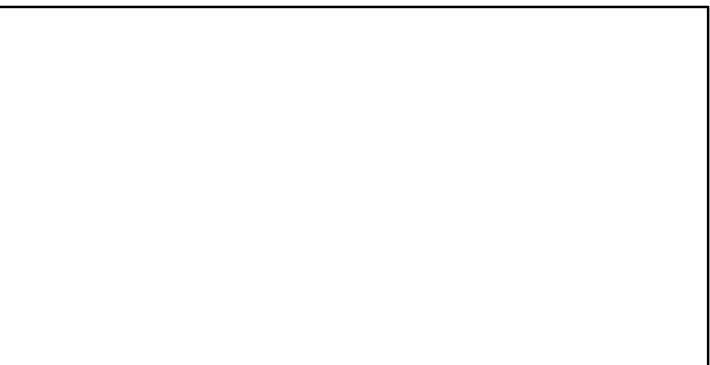
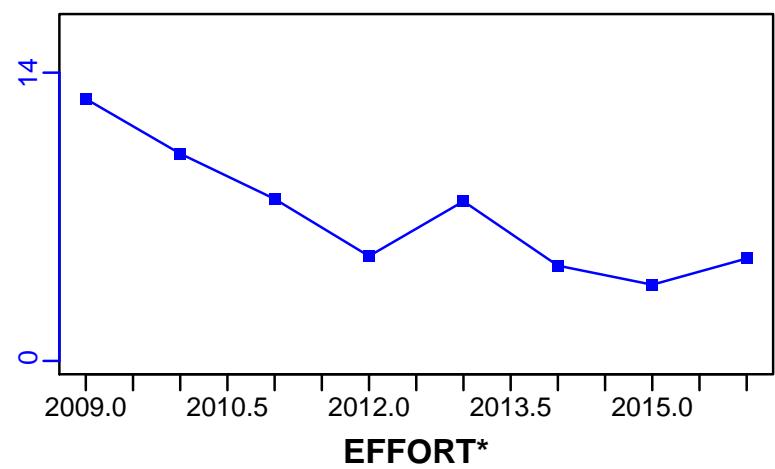
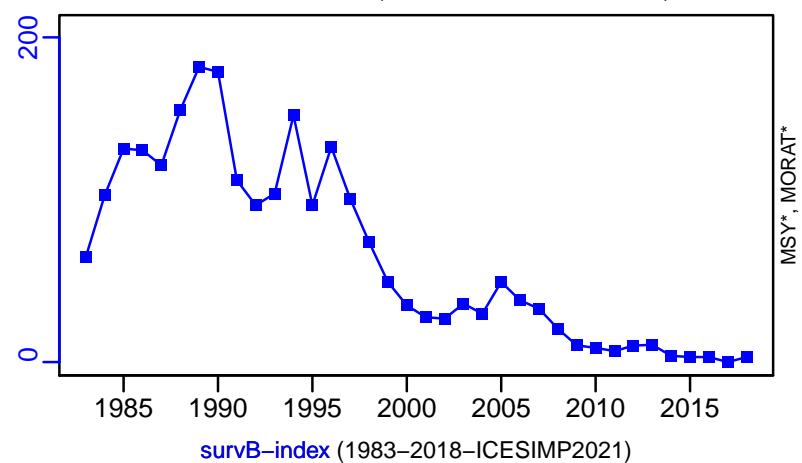


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Norway lobster Cantabrian Sea (FU 31) [NEPHFU31]

TC-MT, TL\*, RecC\* (1983–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



|                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Norway lobster Norwegian Deeps (FU 32) [NEPHFU32]

| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Nephrops norvegicus   |
| <b>Current Assess ID</b>    | WGNSSK-NEPHFU32-1987-2017-ICESIMP2018   |
| <b>Area</b>                 | Norwegian Deeps (FU 32)   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2016, 2017  |

| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | TC-MT | 2016      | 198        |     |     |
| <b>TL</b>         | TL-MT | 2017      | 53         |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

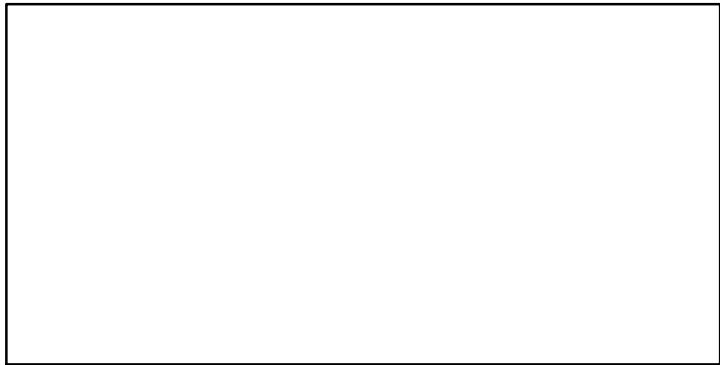
**Spawner Recruit\***

**Production\***

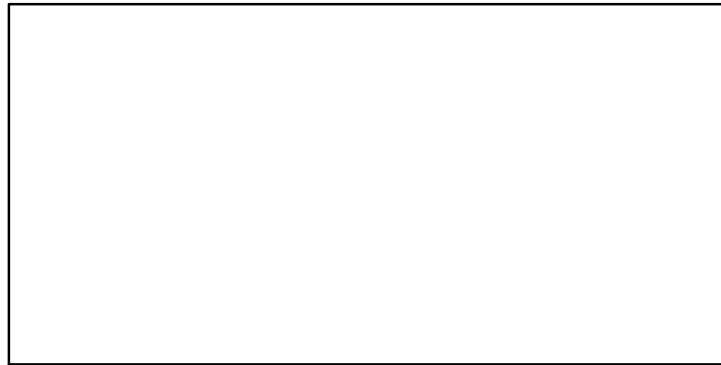
◆ Start Year   ◆ End Year   \* No Data

Norway lobster Norwegian Deep (FU 32) [NEPHFU32]

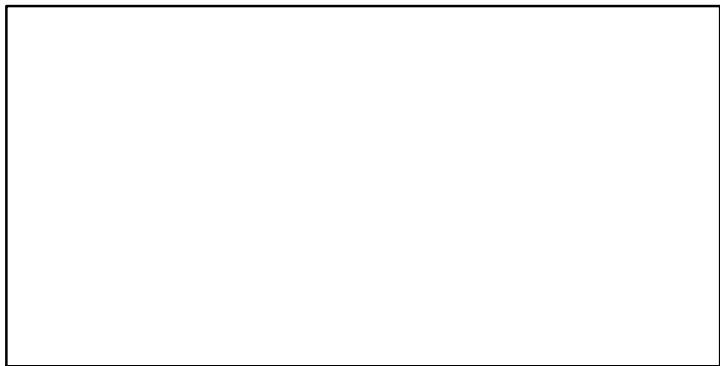
**TB\***



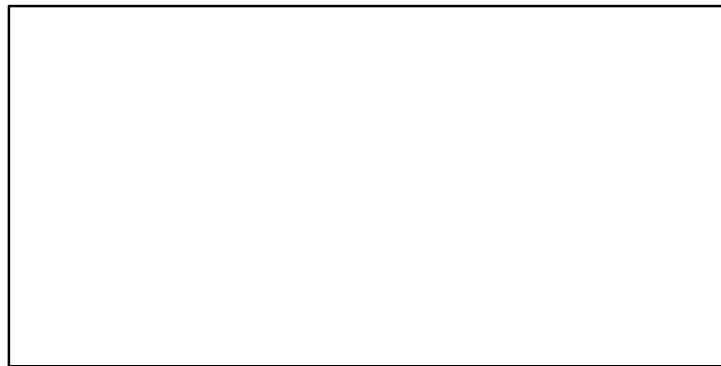
**SSB\***



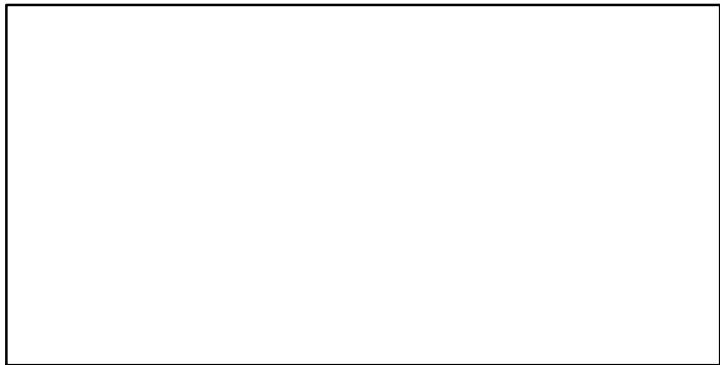
**TN \***



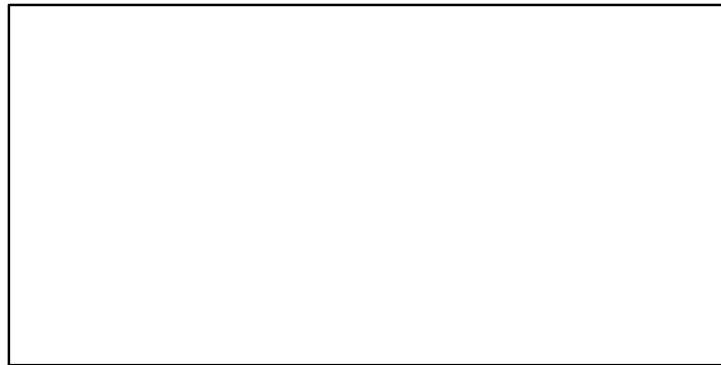
**F\***



**ER\***



**Recruits\***

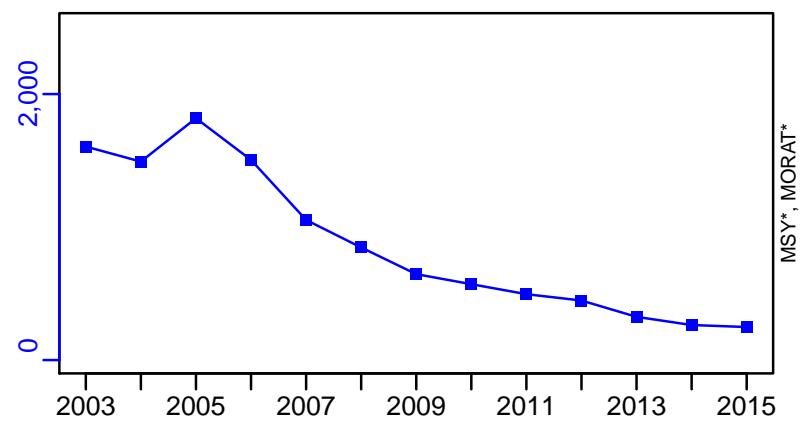


- |       |                    |       |            |   |         |
|-------|--------------------|-------|------------|---|---------|
| ■     | Listed time series | - - - | Target BRP | — | Rec-Est |
| - - - | MSY-based BRP      | - - - | Lim BRP    | * | No Data |

Norway lobster Norwegian Deeps (FU 32) [NEPHFU32]

TC-MT, TL\*, RecC\* (1987–2016–ICESIMP2016)

TAC\*, Cpair\*, Cadv\*

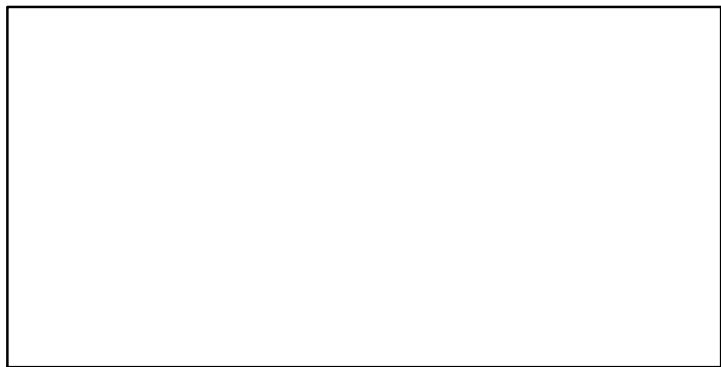


survB\*

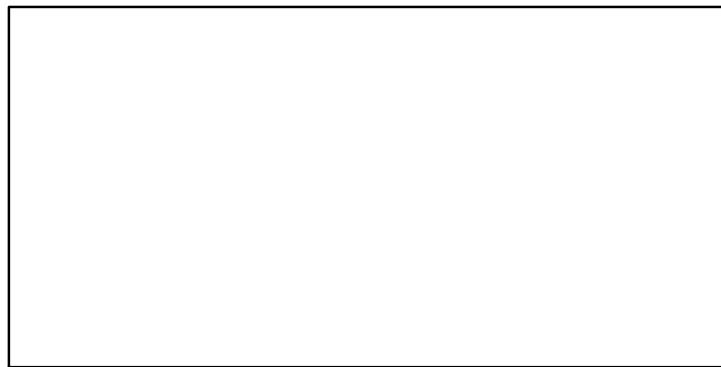


CPUE\*

EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Norway lobster Off Horn Reef (FU 33) [NEPHFU33]

| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Nephrops norvegicus   |
| <b>Current Assess ID</b>    | WGNSSK-NEPHFU33-1993-2018-ICESIMP2021   |
| <b>Area</b>                 | Off Horn Reef (FU 33)   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2016, 2017, 2018  |

| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | -     | -         | -          |     |     |
| <b>TL</b>         | TL-MT | 2018      | 776        |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

**Spawner Recruit\***

**Production\***

◆ Start Year ♦ End Year \* No Data

Norway lobster Off Horn Reef (FU 33) [NEPHFU33]

**TB\***



**SSB\***



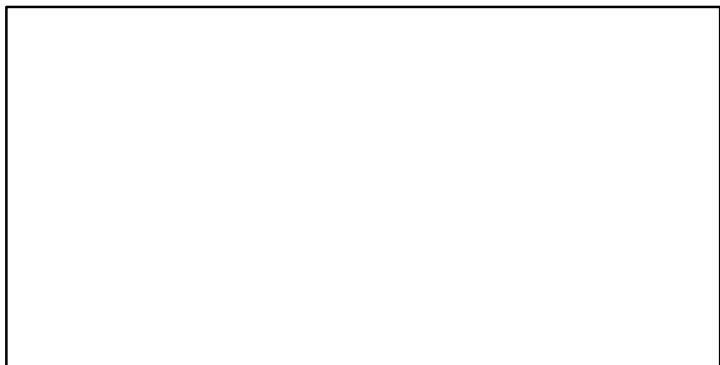
**TN \***



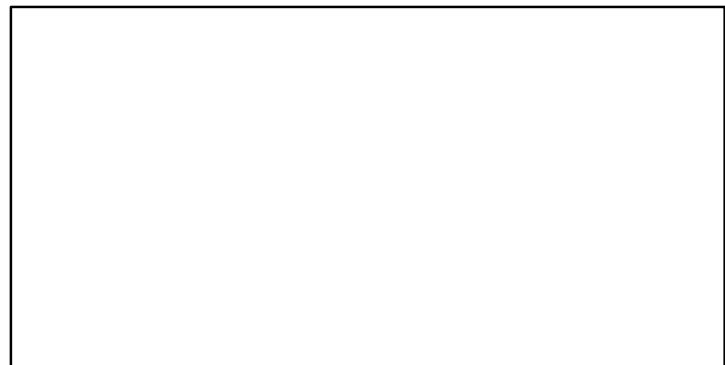
**F\***



**ER\***



**Recruits\***

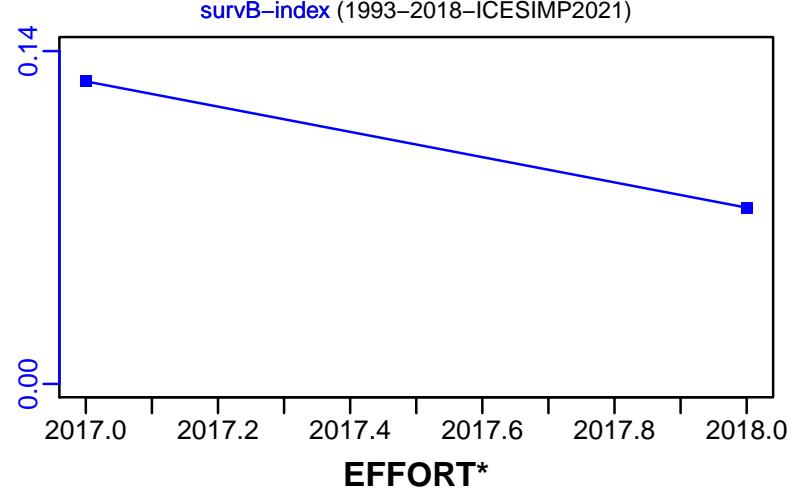
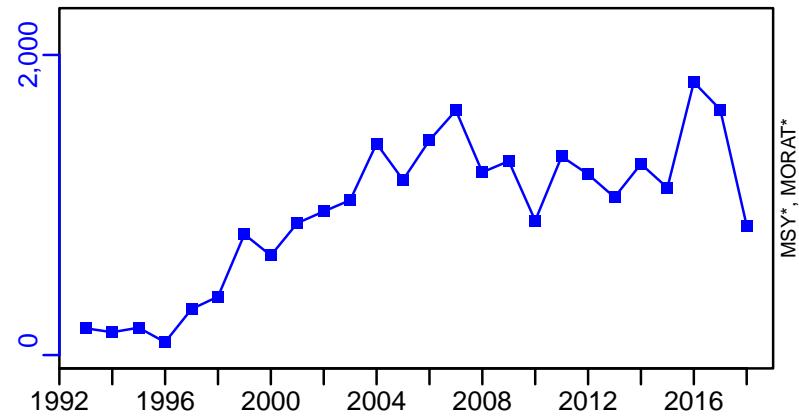


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Norway lobster Off Horn Reef (FU 33) [NEPHFU33]

TL-MT, TC\*, RecC\* (1993–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



EFFORT\*

CPUE\*

CdivMSY\*

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

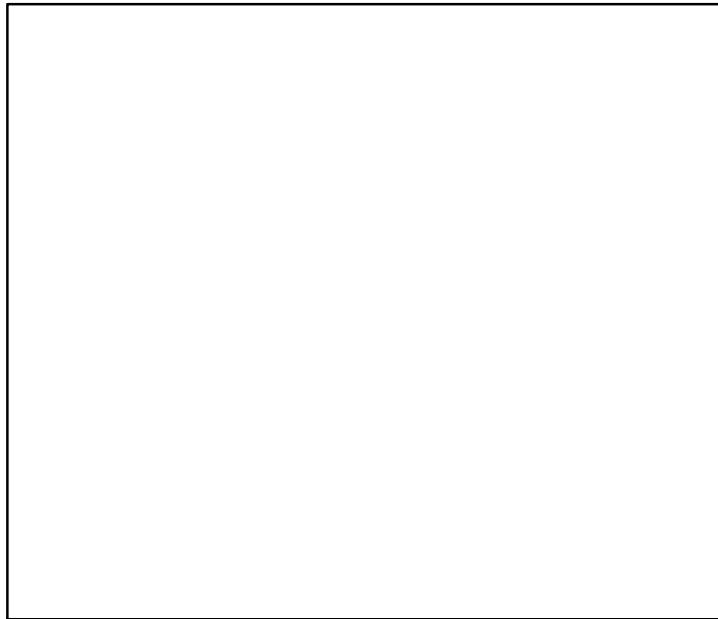
## Norway lobster Devils Hole (FU 34) [NEPHFU34]

| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Nephrops norvegicus   |
| <b>Current Assess ID</b>    | WGNSSK-NEPHFU34-2003-2017-ICESIMP2018   |
| <b>Area</b>                 | Devils Hole (FU 34)   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2016, 2017  |

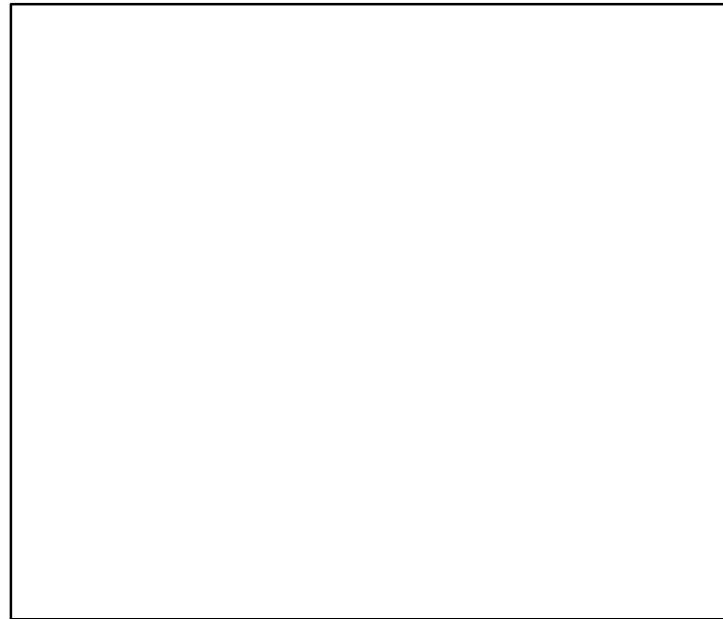
| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | -     | -         | -          |     |     |
| <b>TL</b>         | TL-MT | 2017      | 550        |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

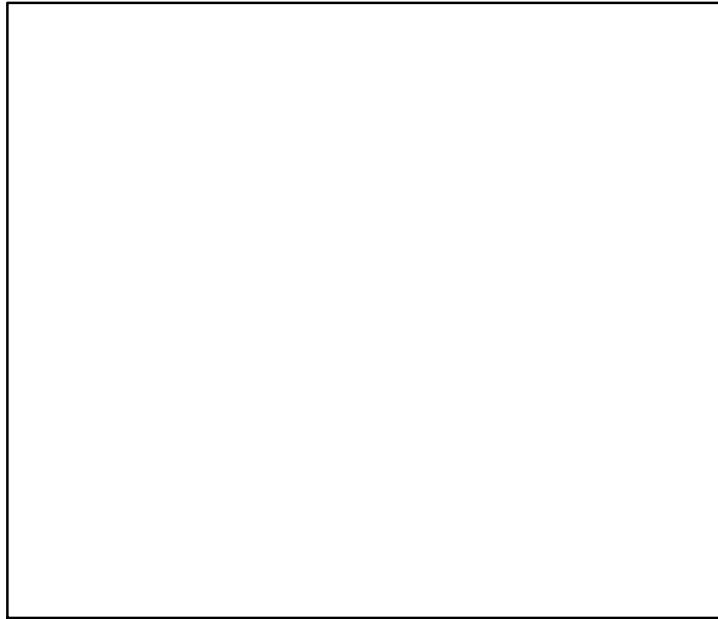
**Kobe MSY\***



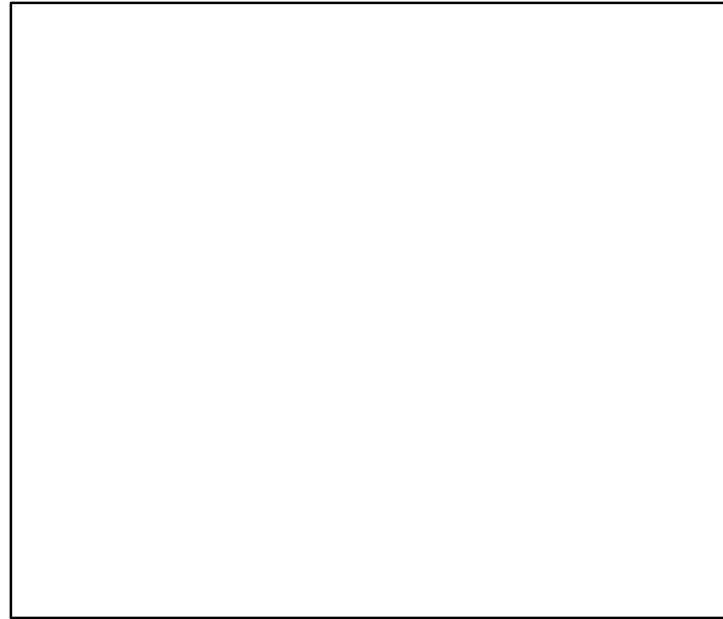
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

**Norway lobster Devils Hole (FU 34) [NEPHFU34]**

**TB\***



**SSB\***



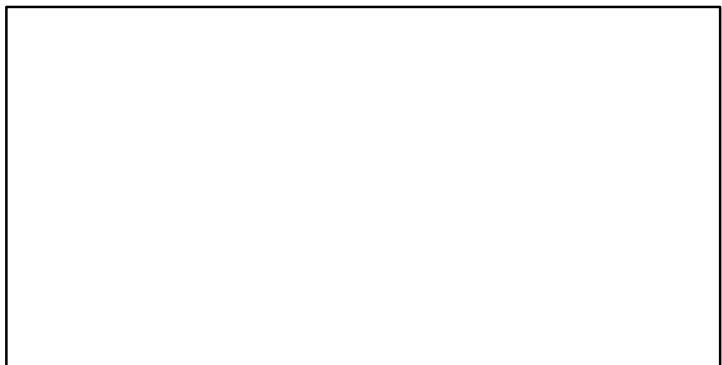
**TN \***



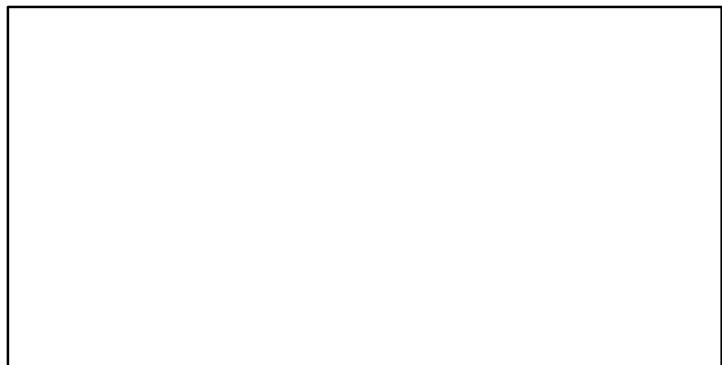
**F\***



**ER\***



**Recruits\***

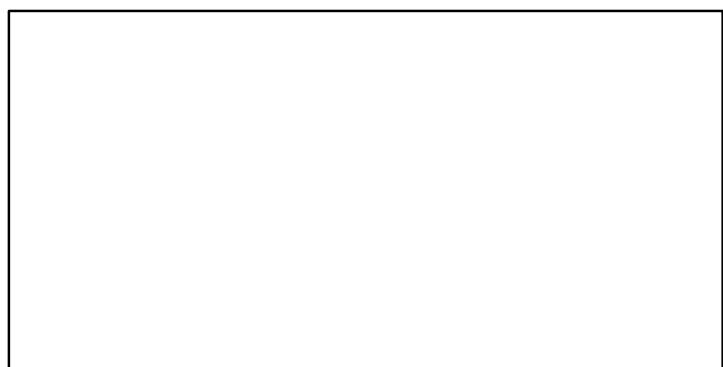
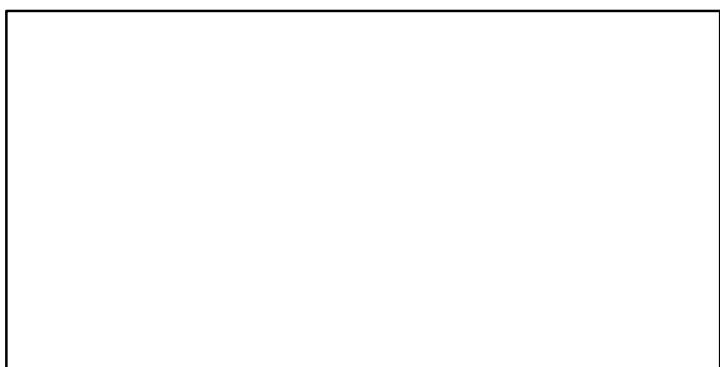
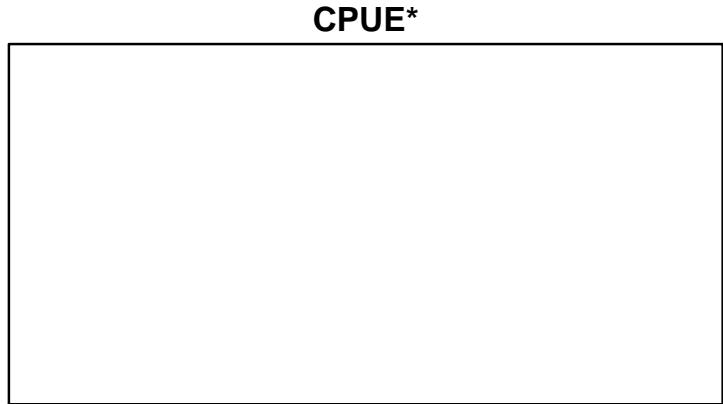
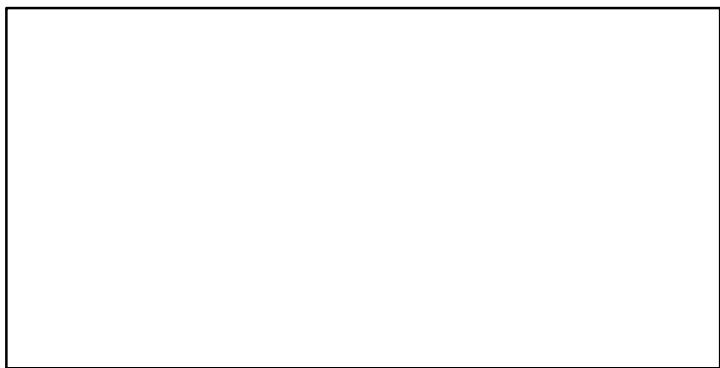
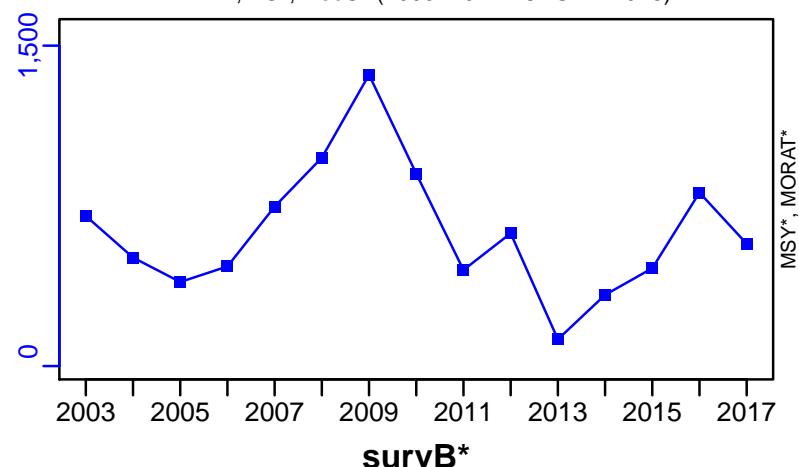


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Norway lobster Devils Hole (FU 34) [NEPHFU34]

TL-MT, TC\*, RecC\* (2003–2017–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Norway lobster Skagerak Kattegat (FU 3-4) [NEPHFU3-4]

| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Nephrops norvegicus   |
| <b>Current Assess ID</b>    | WGNSSK-NEPHFU3-4-1960-2018-ICESIMP2021  |
| <b>Area</b>                 | Skagerak Kattegat (FU 3-4)  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2016, 2016, 2017, 2018, 2015  |

| Reference Points |             |           |       |
|------------------|-------------|-----------|-------|
| Type             | ID          | Asmt Year | Value |
| <b>TBmsy</b>     | -           | -         | -     |
| <b>SSBmsy</b>    | -           | -         | -     |
| <b>Fmsy</b>      | -           | -         | -     |
| <b>ERmsy</b>     | ERmsy-ratio | 2016      | 0.079 |
| <b>TBmgt</b>     | -           | -         | -     |
| <b>SSBmgt</b>    | -           | -         | -     |
| <b>Fmgt</b>      | -           | -         | -     |
| <b>ERmgt</b>     | ERmgt-ratio | 2018      | 0.079 |
| <b>TB0</b>       | -           | -         | -     |
| <b>SSB0</b>      | -           | -         | -     |
| <b>MSY</b>       | -           | -         | -     |
| <b>M</b>         | -           | -         | -     |
| <b>TBlim</b>     | -           | -         | -     |
| <b>SSBlim</b>    | -           | -         | -     |
| <b>Flim</b>      | -           | -         | -     |
| <b>ERlim</b>     | -           | -         | -     |

| Time Series       |                      |           |            |     |     |   |
|-------------------|----------------------|-----------|------------|-----|-----|---|
| Type              | ID                   | Asmt Year | Curr Value | Sex | Age |   |
| <b>TB</b>         | -                    | -         | -          | -   | -   | - |
| <b>SSB</b>        | -                    | -         | -          | -   | -   | - |
| <b>TN</b>         | -                    | -         | -          | -   | -   | - |
| <b>R</b>          | -                    | -         | -          | -   | -   | - |
| <b>F</b>          | -                    | -         | -          | -   | -   | - |
| <b>ER</b>         | ER-ratio             | 2018      | 0.036      | -   | -   | - |
| <b>TC</b>         | TC-MT                | 2018      | 8435       |     |     |   |
| <b>TL</b>         | TL-MT                | 2018      | 7100       |     |     |   |
| <b>TB/TBmsy</b>   | -                    | -         | -          |     |     |   |
| <b>SSB/SSBmsy</b> | -                    | -         | -          |     |     |   |
| <b>F/Fmsy</b>     | -                    | -         | -          |     |     |   |
| <b>ER/ERmsy</b>   | ER-ratio/ERmsy-ratio | 2016      | 0.389      |     |     |   |
| <b>TB/TBmgt</b>   | -                    | -         | -          |     |     |   |
| <b>SSB/SSBmgt</b> | -                    | -         | -          |     |     |   |
| <b>F/Fmgt</b>     | -                    | -         | -          |     |     |   |
| <b>ER/ERmgt</b>   | -                    | -         | -          |     |     |   |

Norway lobster Skagerak Kattegat (FU 3–4) [NEPHFU3–4]

**Kobe MSY\***

**Kobe MGT\***

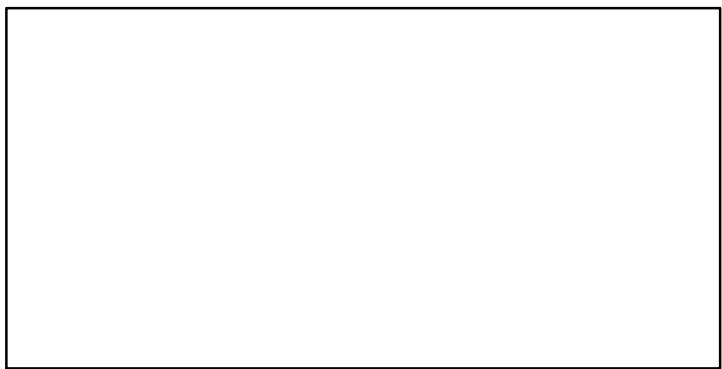
**Spawner Recruit\***

**Production\***

◆ Start Year ♦ End Year \* No Data

Norway lobster Skagerak Kattegat (FU 3–4) [NEPHFU3–4]

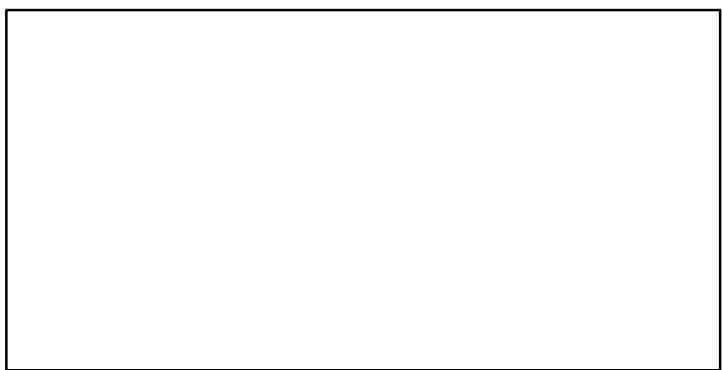
**TB\***



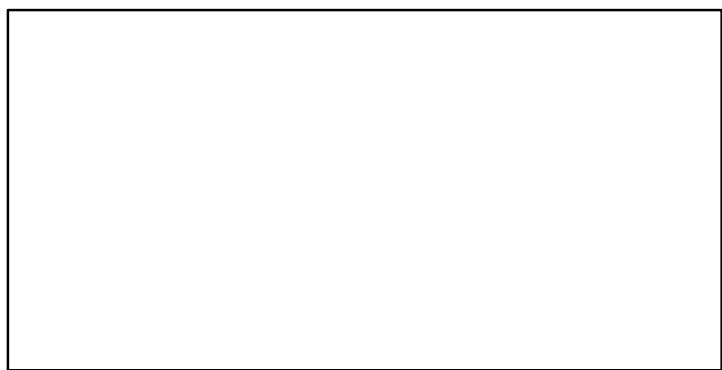
**SSB\***



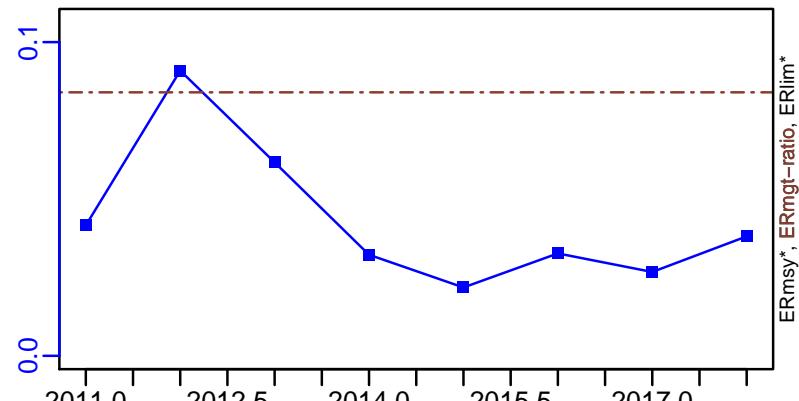
**TN \***



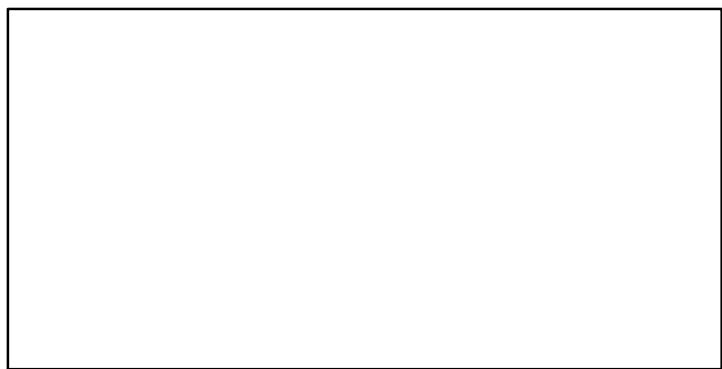
**F\***



**ER-ratio (1960–2018–ICESIMP2021)**



**Recruits\***

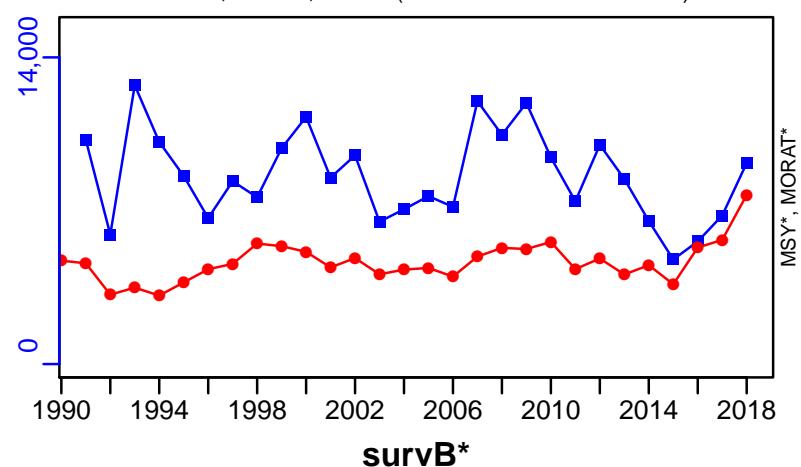


|                      |                |           |
|----------------------|----------------|-----------|
| ■ Listed time series | --- Target BRP | — Rec-Est |
| - - MSY-based BRP    | ·· Lim BRP     | * No Data |

Norway lobster Skagerak Kattegat (FU 3–4) [NEPHFU3–4]

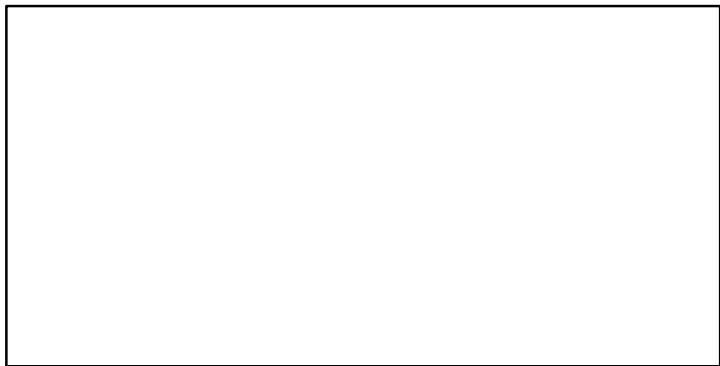
TC-MT, TL-MT, RecC\* (1960–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*

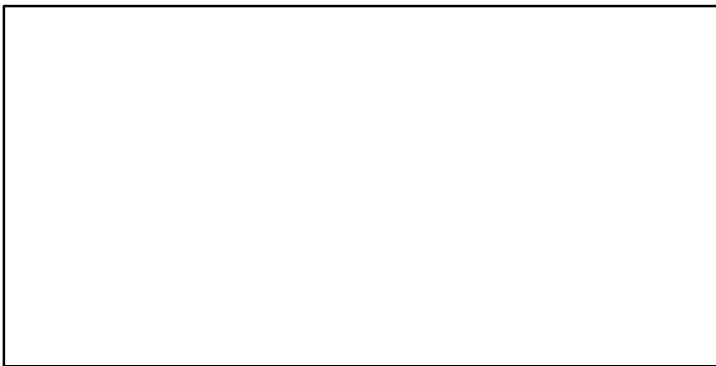


survB\*

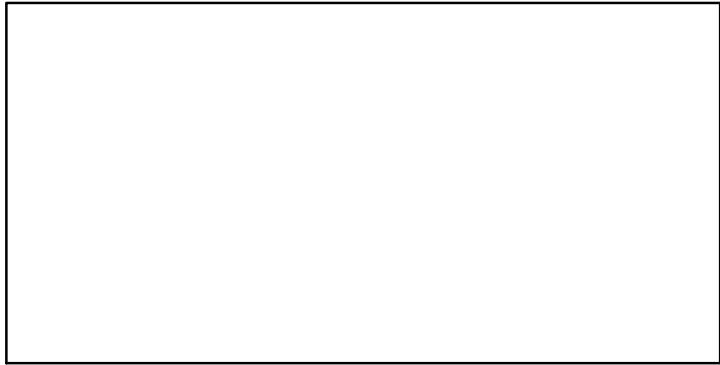
MSY\*, MORAT\*



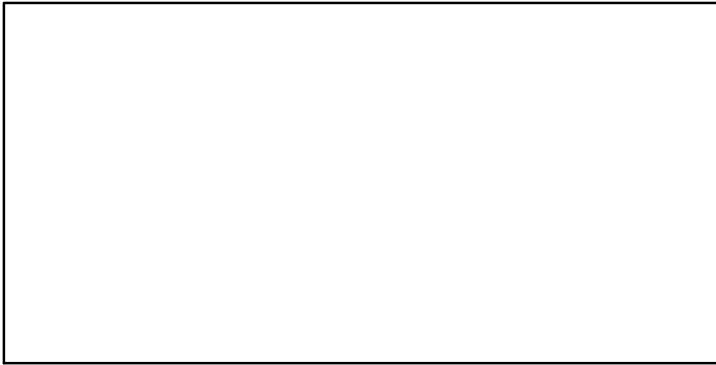
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Norway lobster Botney Cut - Silver Pit (FU 5) [NEPHFU5]

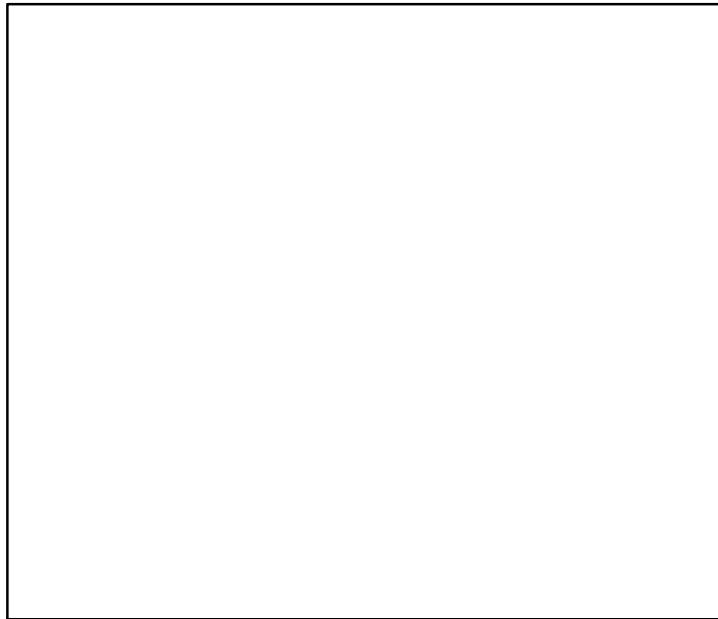
| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Nephrops norvegicus   |
| <b>Current Assess ID</b>    | WGNSSK-NEPHFU5-1991-2017-ICESIMP2018  |
| <b>Area</b>                 | Botney Cut - Silver Pit (FU 5)  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2016, 2017  |

| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

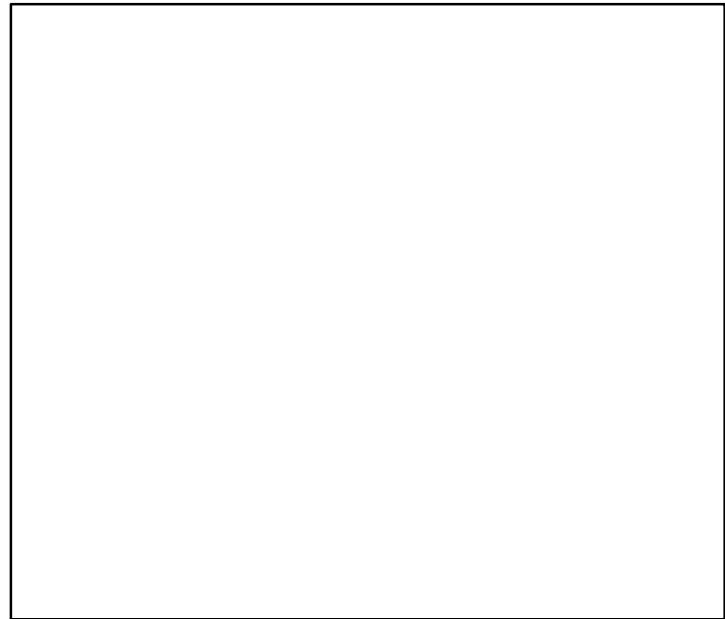
| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | -     | -         | -          |     |     |
| <b>TL</b>         | TL-MT | 2017      | 2110       |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

Norway lobster Botney Cut – Silver Pit (FU 5) [NEPHFU5]

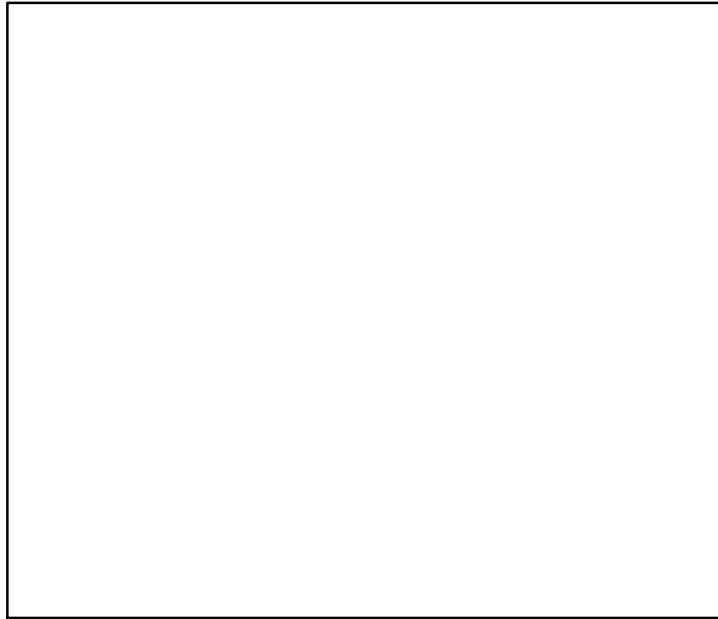
**Kobe MSY\***



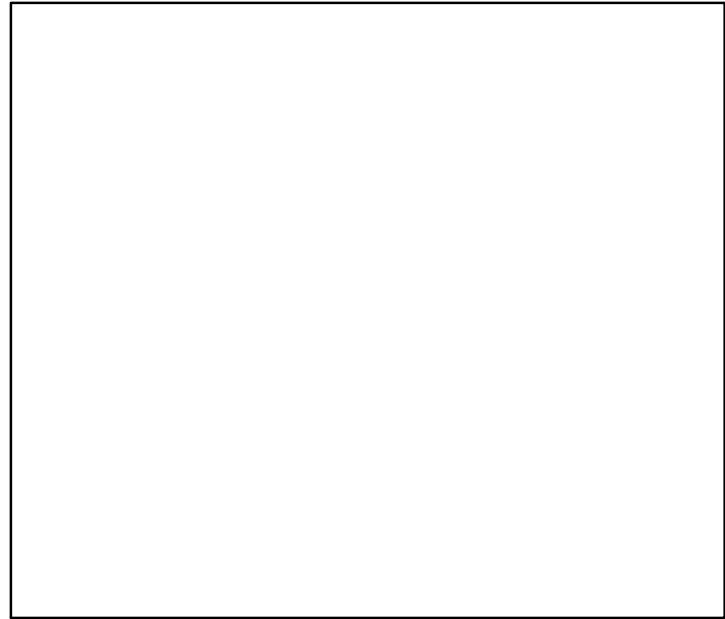
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

Norway lobster Botney Cut – Silver Pit (FU 5) [NEPHFU5]

**TB\***



**SSB\***



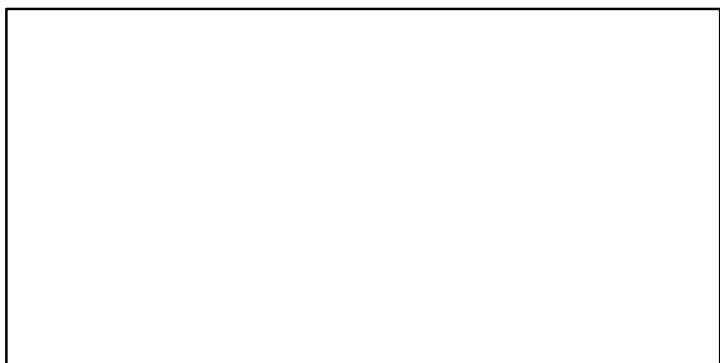
**TN \***



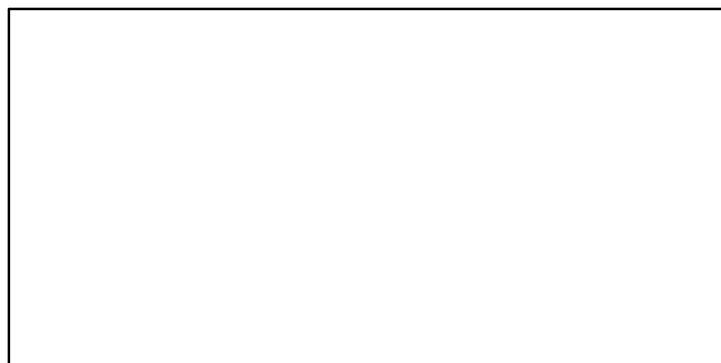
**F\***



**ER\***



**Recruits\***

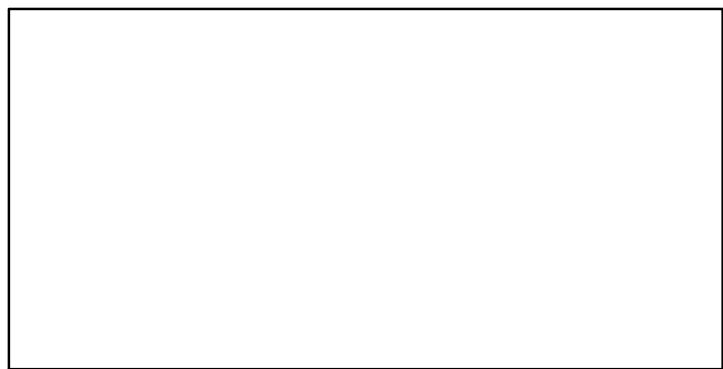
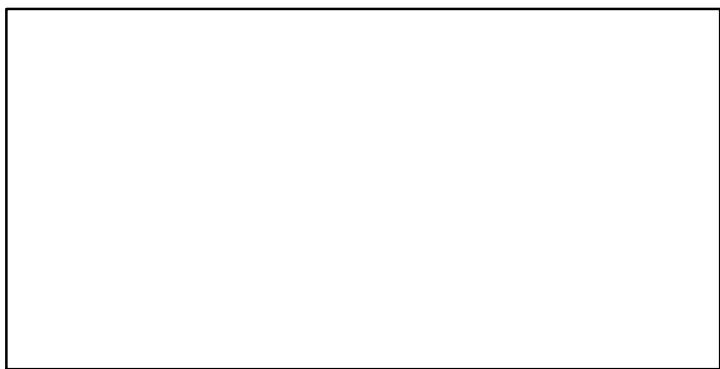
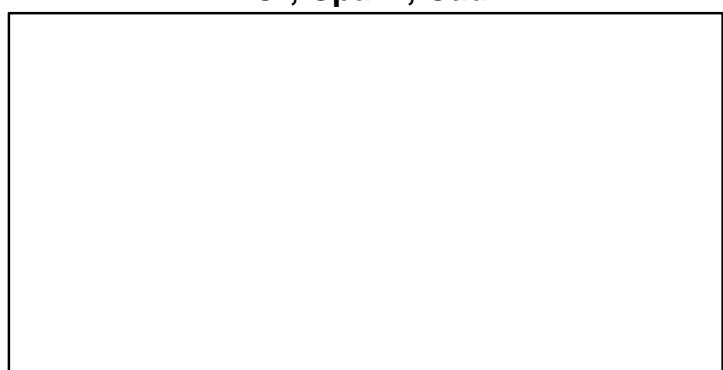
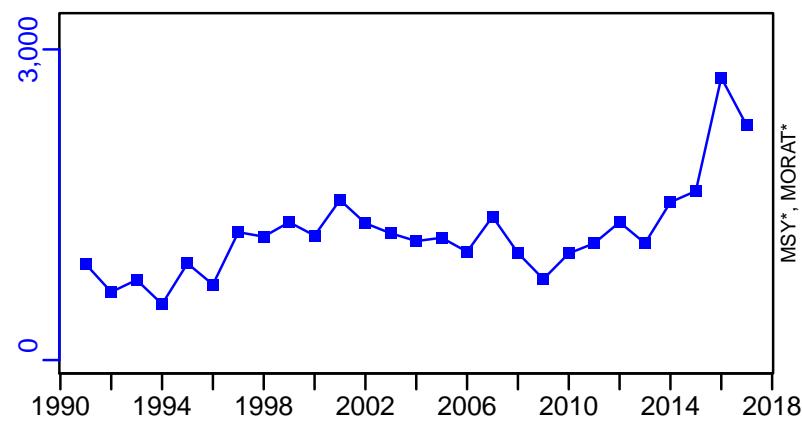


- |       |                    |       |            |   |         |
|-------|--------------------|-------|------------|---|---------|
| ■     | Listed time series | - - - | Target BRP | — | Rec-Est |
| - - - | MSY-based BRP      | - - - | Lim BRP    | * | No Data |

Norway lobster Botney Cut – Silver Pit (FU 5) [NEPHFU5]

TL-MT, TC\*, RecC\* (1991–2017–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Norway lobster Farm Deeps (FU 6) [NEPHFU6]

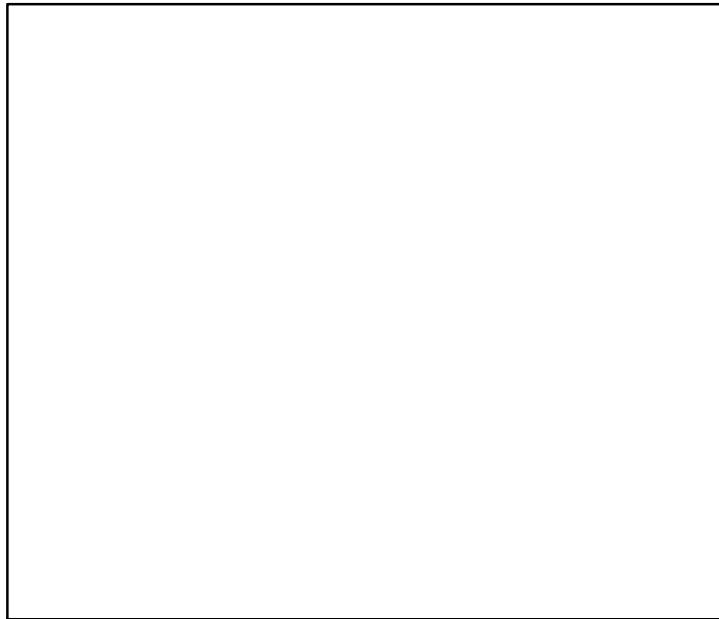
| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Nephrops norvegicus   |
| <b>Current Assess ID</b>    | WGNSSK-NEPHFU6-1981-2016-ICESIMP2018  |
| <b>Area</b>                 | Farn Deeps (FU 6)   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2015, 2016, 2016  |

| Reference Points |             |           |       |
|------------------|-------------|-----------|-------|
| Type             | ID          | Asmt Year | Value |
| <b>TBmsy</b>     | -           | -         | -     |
| <b>SSBmsy</b>    | -           | -         | -     |
| <b>Fmsy</b>      | -           | -         | -     |
| <b>ERmsy</b>     | ERmsy-ratio | 2016      | 0.081 |
| <b>TBmgt</b>     | -           | -         | -     |
| <b>SSBmgt</b>    | -           | -         | -     |
| <b>Fmgt</b>      | -           | -         | -     |
| <b>ERmgt</b>     | ERmgt-ratio | 2016      | 0.081 |
| <b>TB0</b>       | -           | -         | -     |
| <b>SSB0</b>      | -           | -         | -     |
| <b>MSY</b>       | -           | -         | -     |
| <b>M</b>         | -           | -         | -     |
| <b>TBlim</b>     | -           | -         | -     |
| <b>SSBlim</b>    | -           | -         | -     |
| <b>Flim</b>      | -           | -         | -     |
| <b>ERlim</b>     | -           | -         | -     |

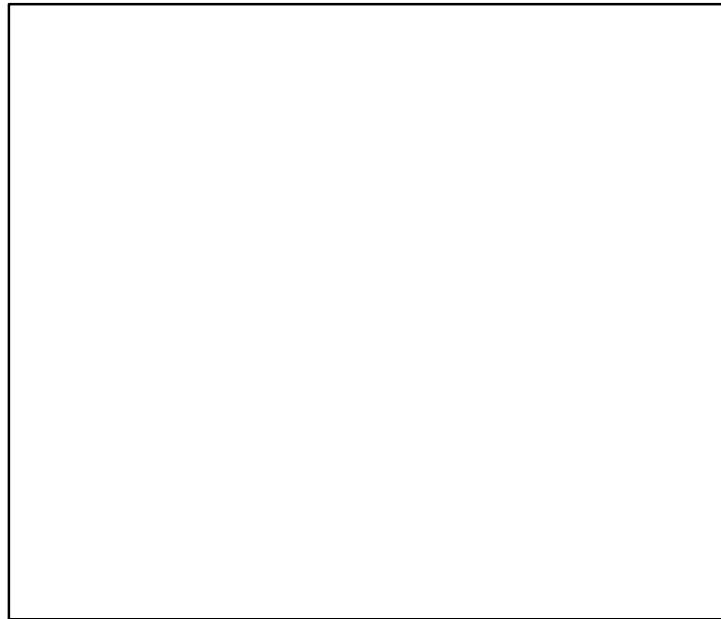
| Time Series       |                      |           |            |     |     |   |
|-------------------|----------------------|-----------|------------|-----|-----|---|
| Type              | ID                   | Asmt Year | Curr Value | Sex | Age |   |
| <b>TB</b>         | -                    | -         | -          | -   | -   | - |
| <b>SSB</b>        | -                    | -         | -          | -   | -   | - |
| <b>TN</b>         | -                    | -         | -          | -   | -   | - |
| <b>R</b>          | -                    | -         | -          | -   | -   | - |
| <b>F</b>          | -                    | -         | -          | -   | -   | - |
| <b>ER</b>         | ER-ratio             | 2016      | 0.116      | -   | -   | - |
| <b>TC</b>         | TC-MT                | 2016      | 2130       |     |     |   |
| <b>TL</b>         | TL-MT                | 2016      | 1370       |     |     |   |
| <b>TB/TBmsy</b>   | -                    | -         | -          |     |     |   |
| <b>SSB/SSBmsy</b> | -                    | -         | -          |     |     |   |
| <b>F/Fmsy</b>     | -                    | -         | -          |     |     |   |
| <b>ER/ERmsy</b>   | ER-ratio/ERmsy-ratio | 2016      | 1.432      |     |     |   |
| <b>TB/TBmgt</b>   | -                    | -         | -          |     |     |   |
| <b>SSB/SSBmgt</b> | -                    | -         | -          |     |     |   |
| <b>F/Fmgt</b>     | -                    | -         | -          |     |     |   |
| <b>ER/ERmgt</b>   | -                    | -         | -          |     |     |   |

Norway lobster Farm Deeps (FU 6) [NEPHFU6]

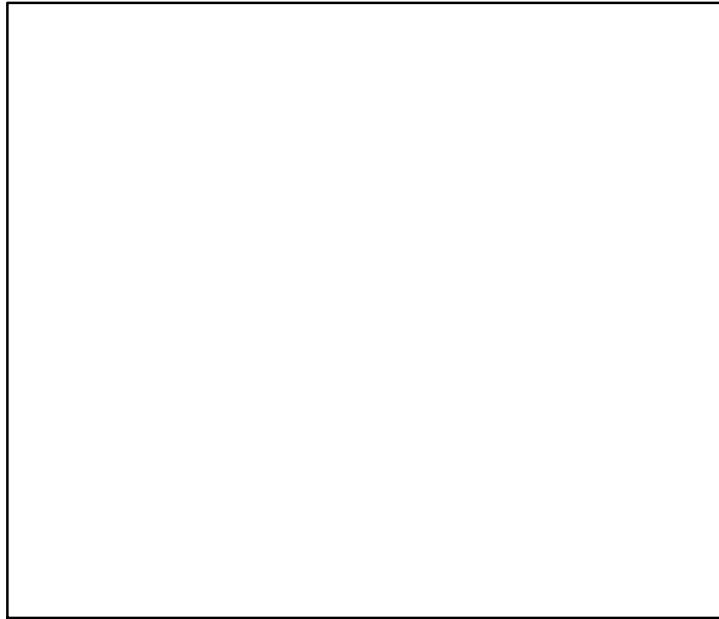
**Kobe MSY\***



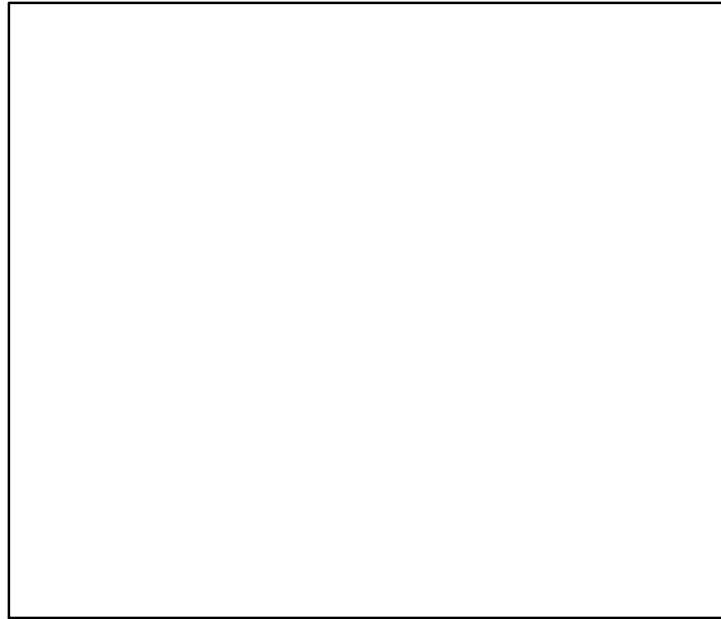
**Kobe MGT\***



**Spawner Recruit\***



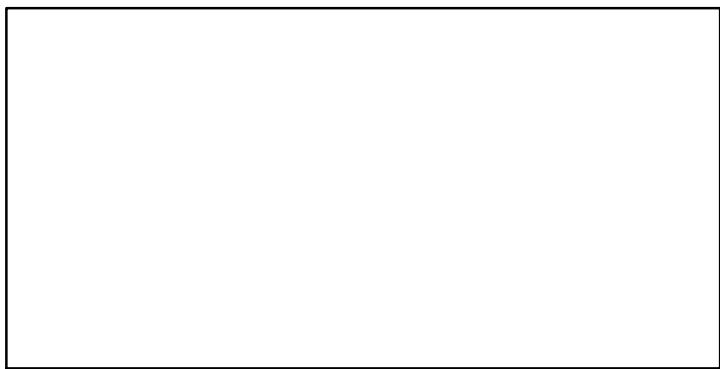
**Production\***



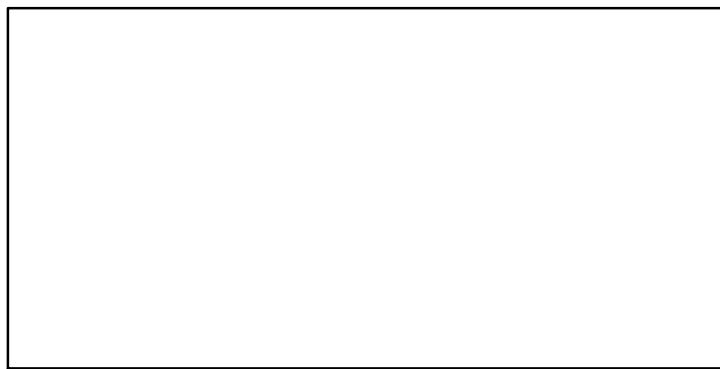
◆ Start Year ♦ End Year \* No Data

Norway lobster Farm Deeps (FU 6) [NEPHFU6]

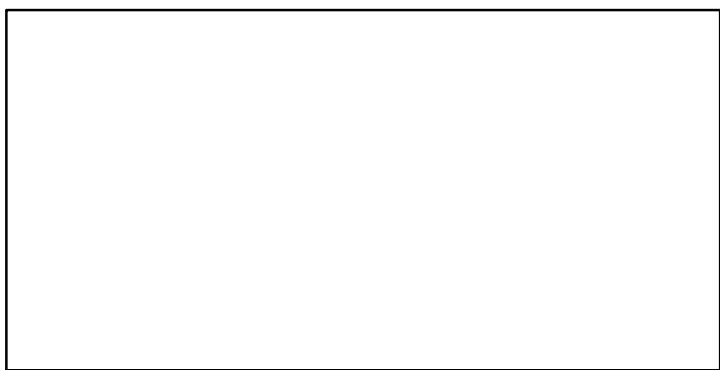
**TB\***



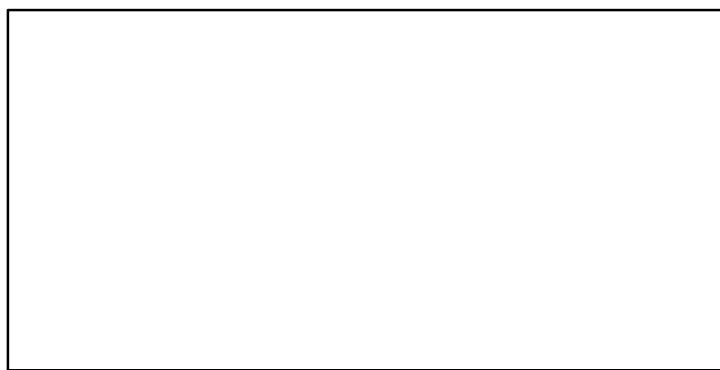
**SSB\***



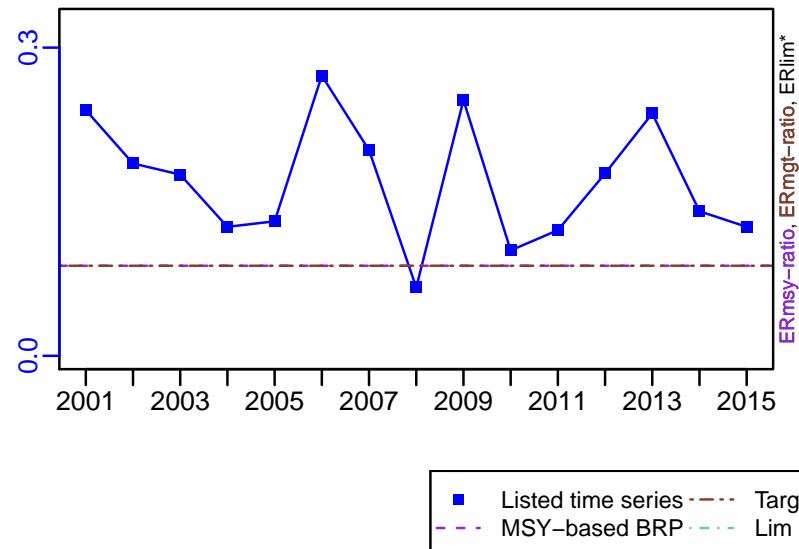
**TN \***



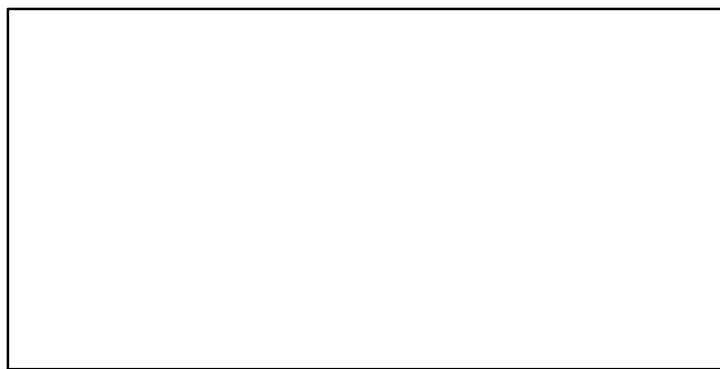
**F\***



**ER-ratio (1981–2016–ICESIMP2016)**



**Recruits\***

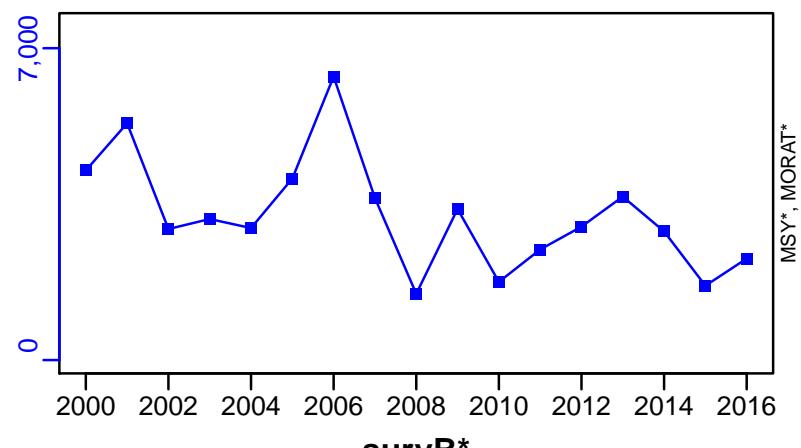


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | ·· Lim BRP   | * No Data |

Norway lobster Farm Deeps (FU 6) [NEPHFU6]

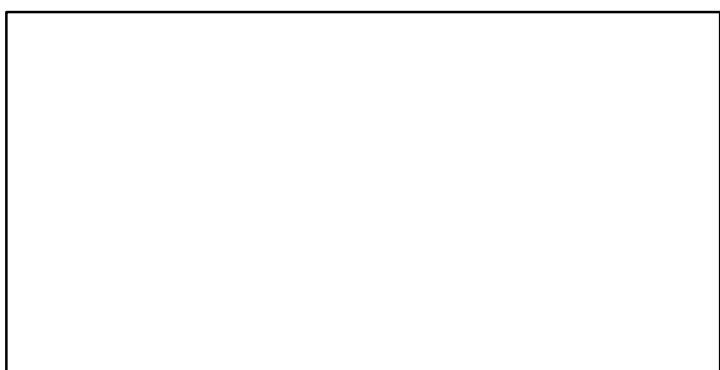
TC-MT, TL\*, RecC\* (1981–2016–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*

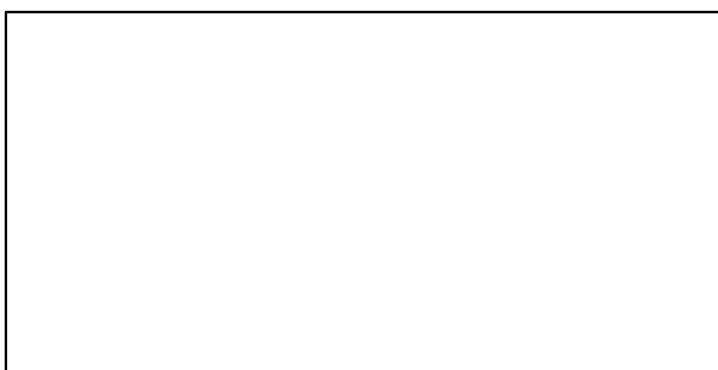


survB\*

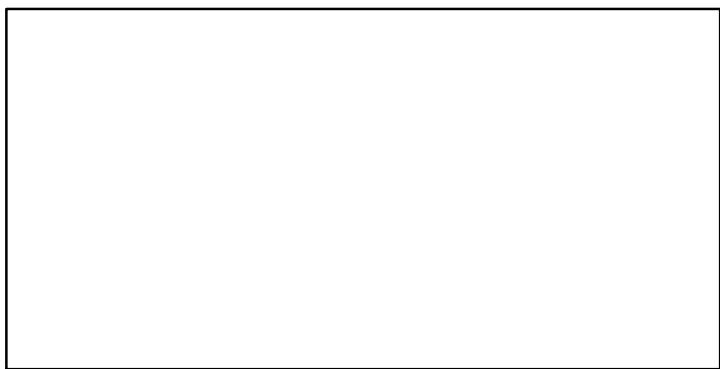
MSY\*, MORAT\*



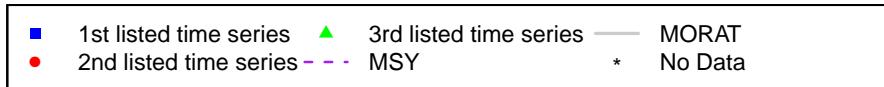
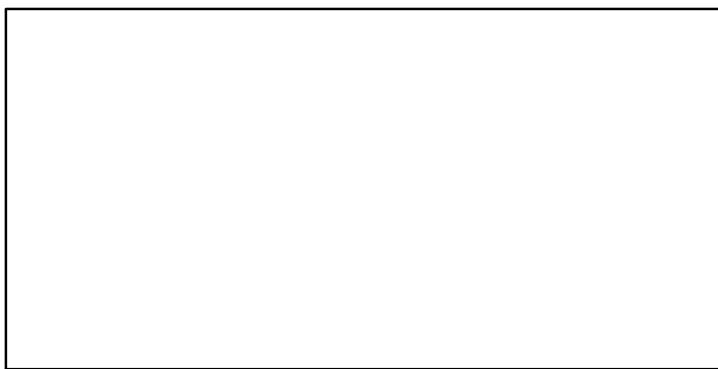
CPUE\*



EFFORT\*



CdivMSY\*



## Norway lobster Fladen Ground (FU 7) [NEPHFU7]

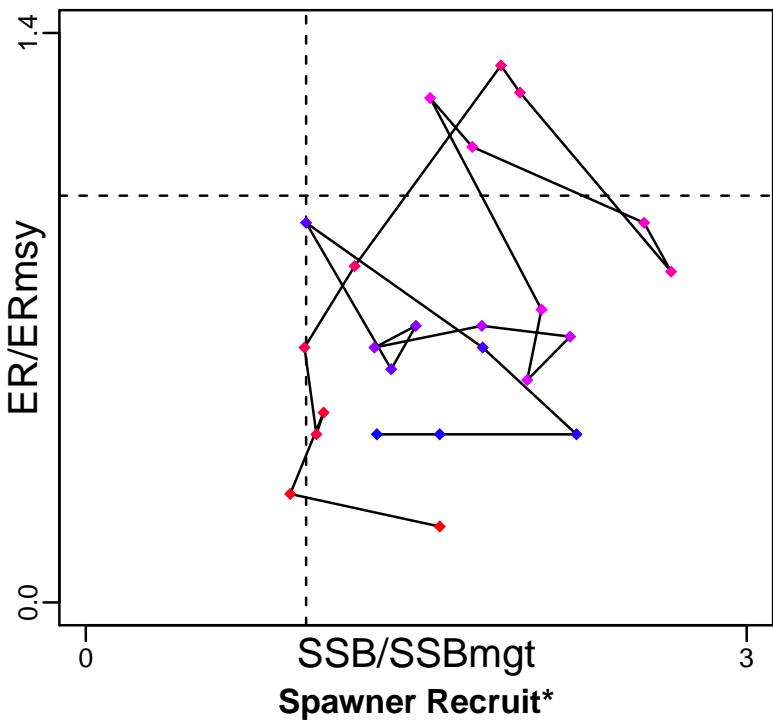
| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Nephrops norvegicus   |
| <b>Current Assess ID</b>    | WGNSSK-NEPHFU7-1992-2019-ICESIMP2021  |
| <b>Area</b>                 | Fladen Ground (FU 7)  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2015, 2016, 2016, 2017, 2019  |

| Reference Points |             |           |                    |
|------------------|-------------|-----------|--------------------|
| Type             | ID          | Asmt Year | Value              |
| <b>TBmsy</b>     | -           | -         | -                  |
| <b>SSBmsy</b>    | -           | -         | -                  |
| <b>Fmsy</b>      | Fmsy-1/yr   | 2016      | 7.5                |
| <b>ERmsy</b>     | ERmsy-ratio | 2017      | 0.075              |
| <b>TBmgt</b>     | -           | -         | -                  |
| <b>SSBmgt</b>    | SSBmgt-E00  | 2017      | $2.77 \times 10^9$ |
| <b>Fmgt</b>      | Fmgt-1/yr   | 2016      | 7.5                |
| <b>ERmgt</b>     | ERmgt-ratio | 2019      | 0.075              |
| <b>TB0</b>       | -           | -         | -                  |
| <b>SSB0</b>      | -           | -         | -                  |
| <b>MSY</b>       | -           | -         | -                  |
| <b>M</b>         | -           | -         | -                  |
| <b>TBlim</b>     | -           | -         | -                  |
| <b>SSBlim</b>    | -           | -         | -                  |
| <b>Flim</b>      | -           | -         | -                  |
| <b>ERlim</b>     | -           | -         | -                  |

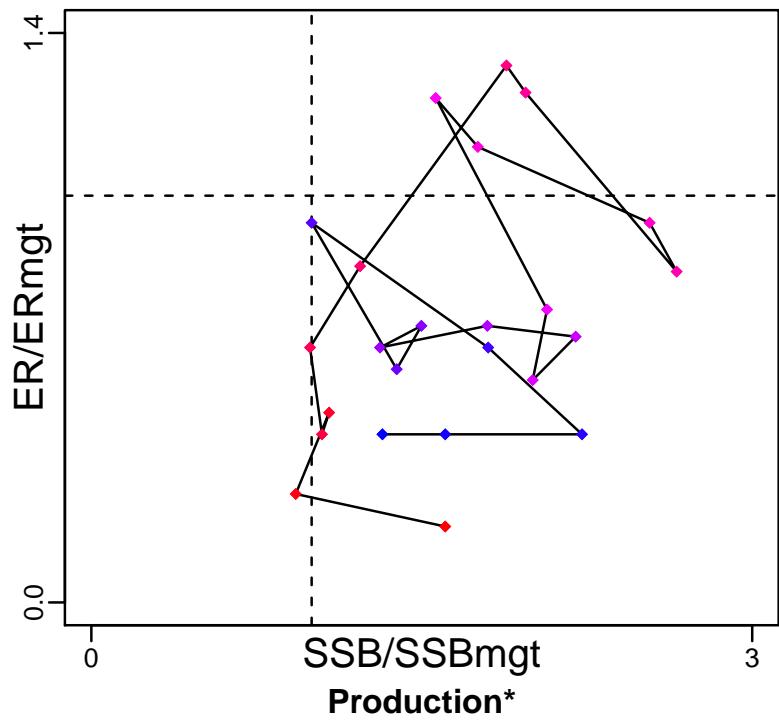
| Time Series       |                      |           |                    |      |     |  |
|-------------------|----------------------|-----------|--------------------|------|-----|--|
| Type              | ID                   | Asmt Year | Curr Value         | Sex  | Age |  |
| <b>TB</b>         | -                    | -         | -                  | -    | -   |  |
| <b>SSB</b>        | SSB-E00              | 2017      | $7.04 \times 10^9$ | Both | -   |  |
| <b>TN</b>         | -                    | -         | -                  | -    | -   |  |
| <b>R</b>          | -                    | -         | -                  | -    | -   |  |
| <b>F</b>          | F-1/yr               | 2016      | 2                  | -    | -   |  |
| <b>ER</b>         | ER-ratio             | 2019      | 0.028              | -    | -   |  |
| <b>TC</b>         | -                    | -         | -                  |      |     |  |
| <b>TL</b>         | TL-MT                | 2019      | 4418               |      |     |  |
| <b>TB/TBmsy</b>   | -                    | -         | -                  |      |     |  |
| <b>SSB/SSBmsy</b> | -                    | -         | -                  |      |     |  |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr     | 2016      | 0.267              |      |     |  |
| <b>ER/ERmsy</b>   | ER-ratio/ERmsy-ratio | 2017      | 0.187              |      |     |  |
| <b>TB/TBmgt</b>   | -                    | -         | -                  |      |     |  |
| <b>SSB/SSBmgt</b> | SSB-E00/SSBmgt-E00   | 2017      | 2.542              |      |     |  |
| <b>F/Fmgt</b>     | F-1/yr/Fmgt-1/yr     | 2016      | 0.267              |      |     |  |
| <b>ER/ERmgt</b>   | -                    | -         | -                  |      |     |  |

Norway lobster Fladen Ground (FU 7) [NEPHFU7]

Kobe MSYpref (1992–2017–ICESIMP2018)



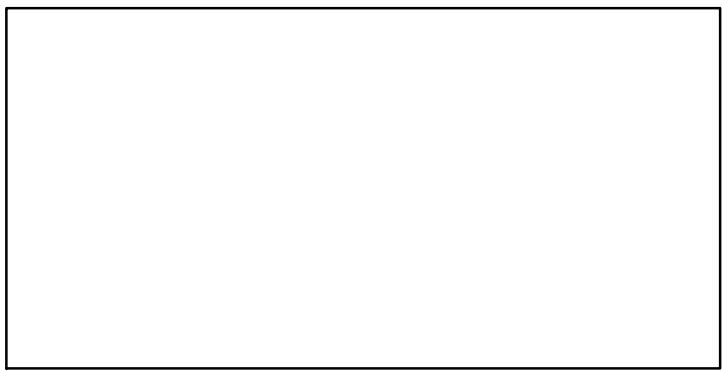
Kobe MGTpref (1992–2017–ICESIMP2018)



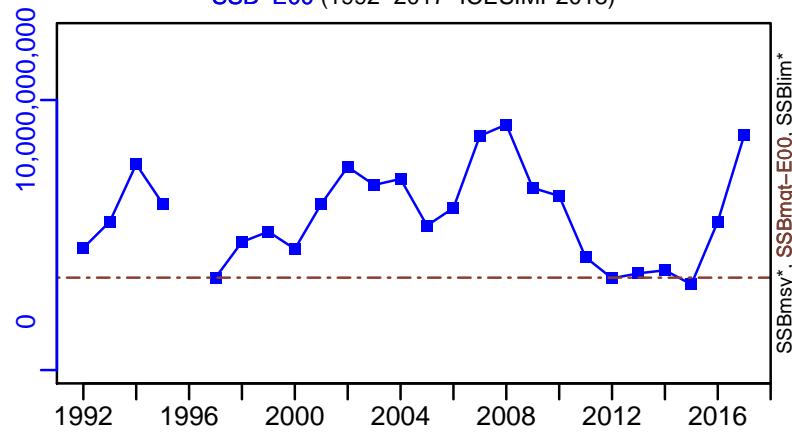
◆ Start Year   ◆ End Year   \* No Data

Norway lobster Fladen Ground (FU 7) [NEPHFU7]

**TB\***



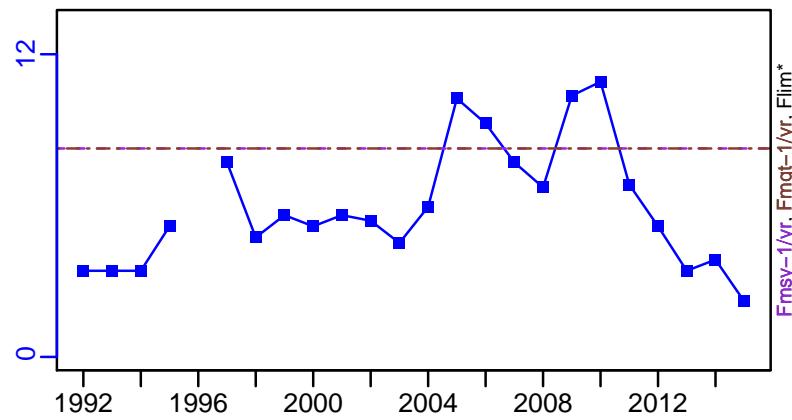
SSB-E00 (1992–2017–ICESIMP2018)



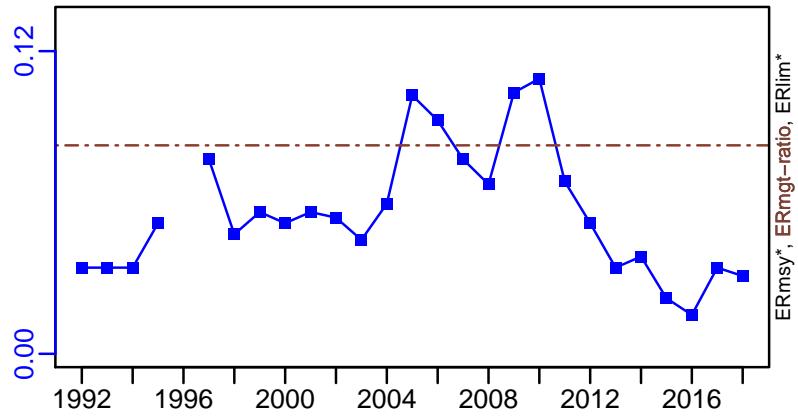
**TN \***



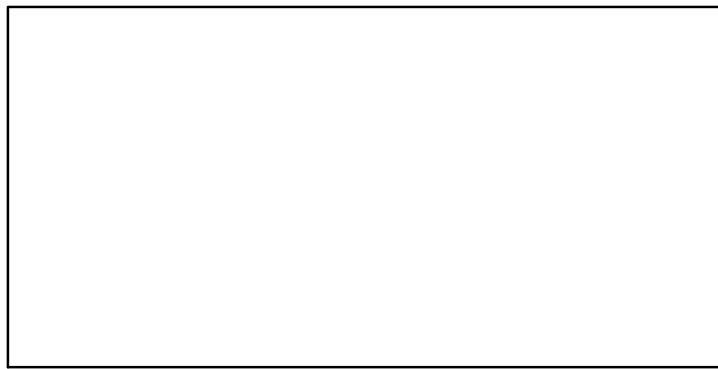
F-1/yr (1992–2016–ICESIMP2018)



ER-ratio (1992–2019–ICESIMP2021)



**Recruits\***

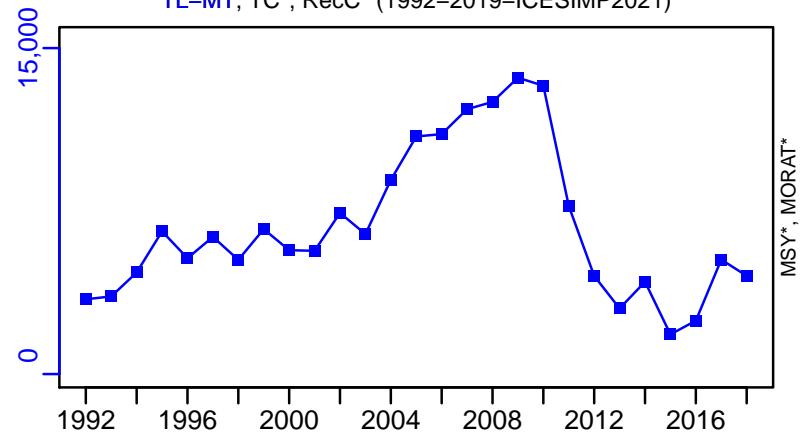


- Listed time series    - - - Target BRP
- - - MSY-based BRP    - - Lim BRP
- Rec-Est
- \* No Data

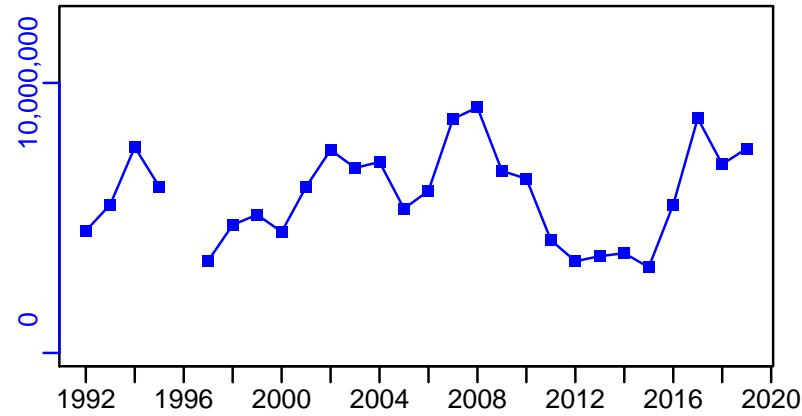
### Norway lobster Fladen Ground (FU 7) [NEPHFU7]

TL-MT, TC\*, RecC\* (1992–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



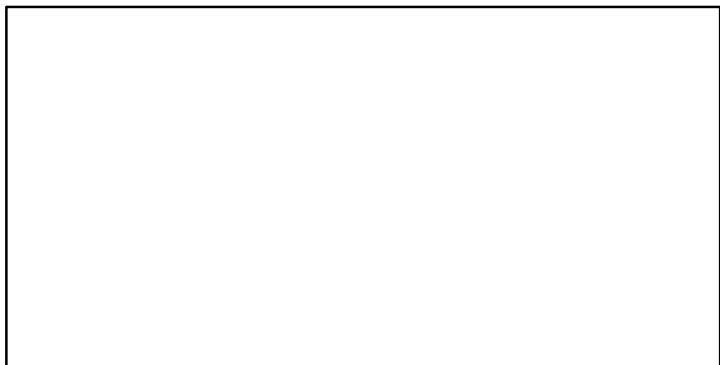
survB-E00 (1992–2019–ICESIMP2021)



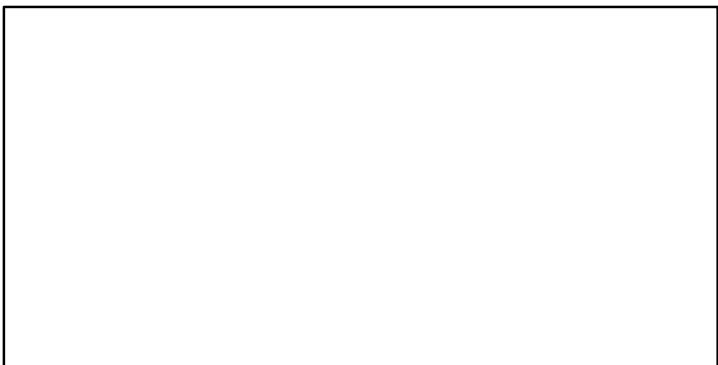
CPUE\*



EFFORT\*



CdivMSY\*



- |   |   |  |  |
|---|---|--|--|
| <span style="color: blue;">■</span> 1st listed time series<br><span style="color: red;">●</span> 2nd listed time series | <span style="color: green;">▲</span> 3rd listed time series<br><span style="color: purple;">●</span> 2nd listed time series | <span style="color: grey;">—</span> MORAT<br><span style="color: purple;">- - -</span> MSY | <span style="color: black;">*</span> No Data |
|---|---|--|--|

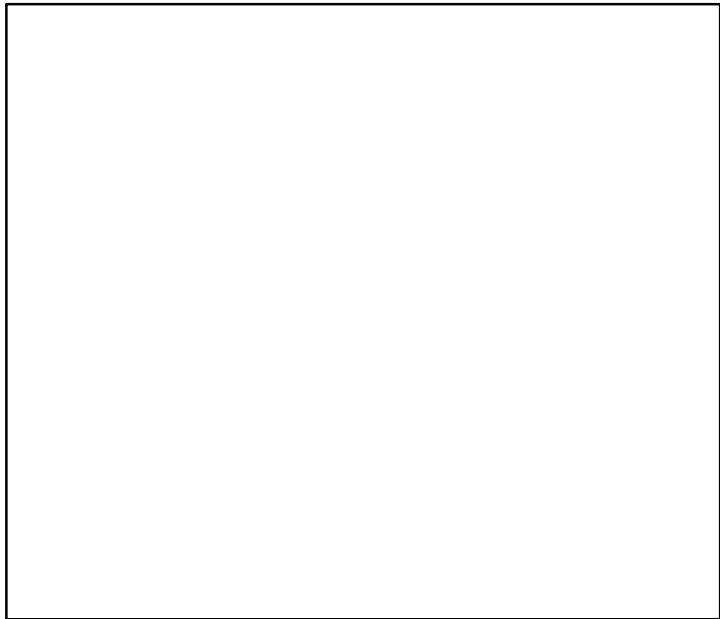
## Norway lobster Firth of Forth (FU 8) [NEPHFU8]

| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Nephrops norvegicus   |
| <b>Current Assess ID</b>    | WGNSSK-NEPHFU8-1993-2019-ICESIMP2021  |
| <b>Area</b>                 | Firth of Forth (FU 8)   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2015, 2016, 2016, 2019  |

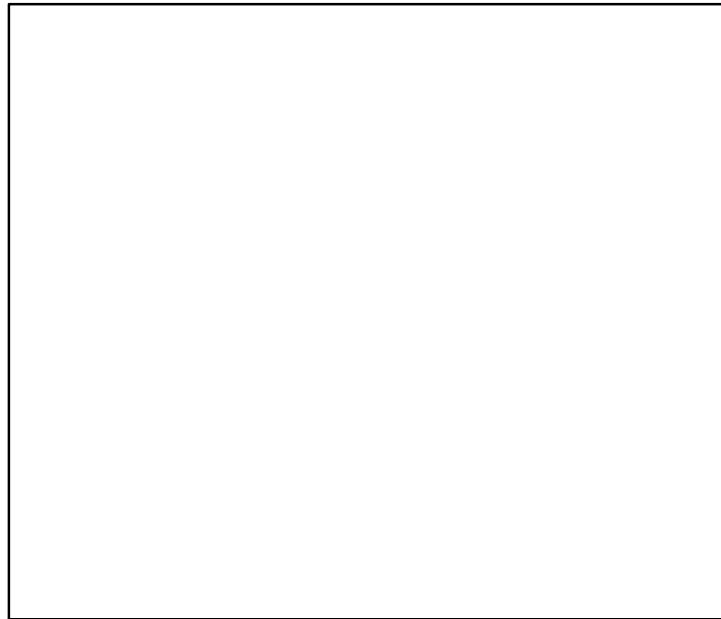
| Reference Points |             |           |       |
|------------------|-------------|-----------|-------|
| Type             | ID          | Asmt Year | Value |
| <b>TBmsy</b>     | -           | -         | -     |
| <b>SSBmsy</b>    | -           | -         | -     |
| <b>Fmsy</b>      | -           | -         | -     |
| <b>ERmsy</b>     | ERmsy-ratio | 2016      | 0.163 |
| <b>TBmgt</b>     | -           | -         | -     |
| <b>SSBmgt</b>    | -           | -         | -     |
| <b>Fmgt</b>      | -           | -         | -     |
| <b>ERmgt</b>     | ERmgt-ratio | 2019      | 0.163 |
| <b>TB0</b>       | -           | -         | -     |
| <b>SSB0</b>      | -           | -         | -     |
| <b>MSY</b>       | -           | -         | -     |
| <b>M</b>         | -           | -         | -     |
| <b>TBlim</b>     | -           | -         | -     |
| <b>SSBlim</b>    | -           | -         | -     |
| <b>Flim</b>      | -           | -         | -     |
| <b>ERlim</b>     | -           | -         | -     |

| Time Series       |                      |           |            |     |     |   |
|-------------------|----------------------|-----------|------------|-----|-----|---|
| Type              | ID                   | Asmt Year | Curr Value | Sex | Age |   |
| <b>TB</b>         | -                    | -         | -          | -   | -   | - |
| <b>SSB</b>        | -                    | -         | -          | -   | -   | - |
| <b>TN</b>         | -                    | -         | -          | -   | -   | - |
| <b>R</b>          | -                    | -         | -          | -   | -   | - |
| <b>F</b>          | -                    | -         | -          | -   | -   | - |
| <b>ER</b>         | ER-ratio             | 2019      | 0.129      | -   | -   | - |
| <b>TC</b>         | -                    | -         | -          |     |     |   |
| <b>TL</b>         | TL-MT                | 2019      | 2690       |     |     |   |
| <b>TB/TBmsy</b>   | -                    | -         | -          |     |     |   |
| <b>SSB/SSBmsy</b> | -                    | -         | -          |     |     |   |
| <b>F/Fmsy</b>     | -                    | -         | -          |     |     |   |
| <b>ER/ERmsy</b>   | ER-ratio/ERmsy-ratio | 2016      | 1.031      |     |     |   |
| <b>TB/TBmgt</b>   | -                    | -         | -          |     |     |   |
| <b>SSB/SSBmgt</b> | -                    | -         | -          |     |     |   |
| <b>F/Fmgt</b>     | -                    | -         | -          |     |     |   |
| <b>ER/ERmgt</b>   | -                    | -         | -          |     |     |   |

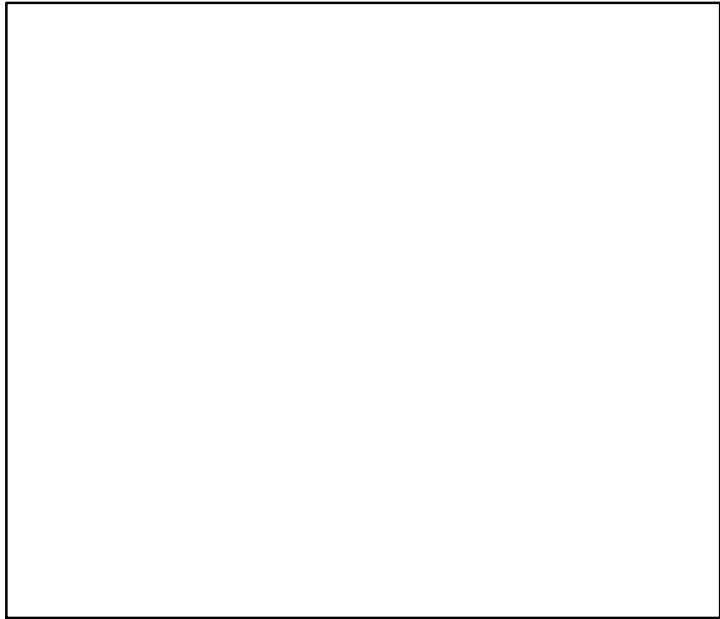
**Kobe MSY\***



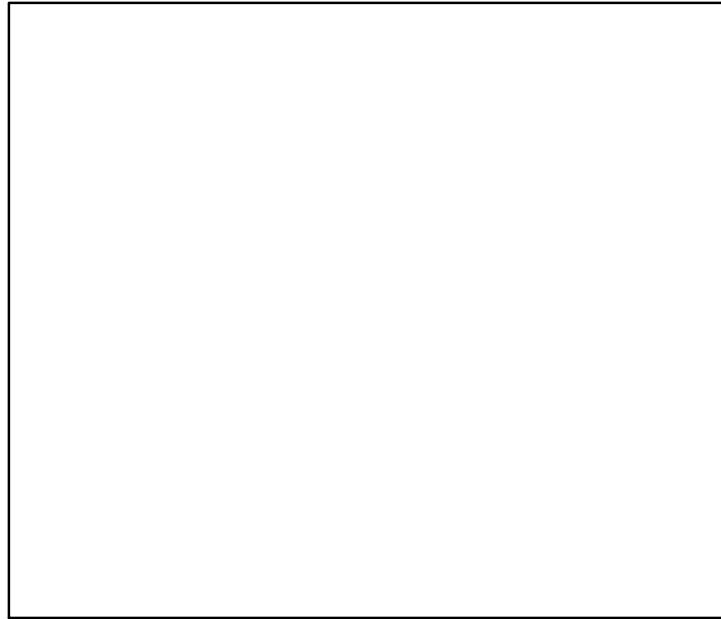
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

Norway lobster Firth of Forth (FU 8) [NEPHFU8]

**TB\***



**SSB\***



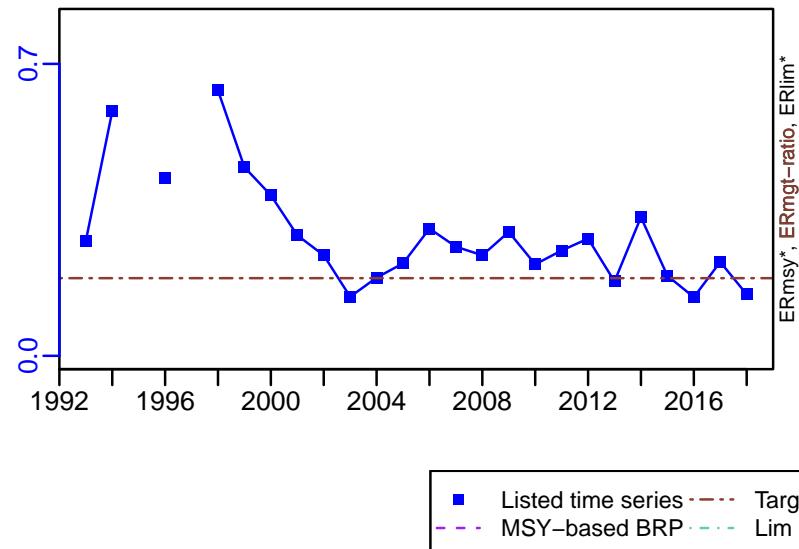
**TN \***



**F\***



**ER-ratio (1993–2019–ICESIMP2021)**



**Recruits\***

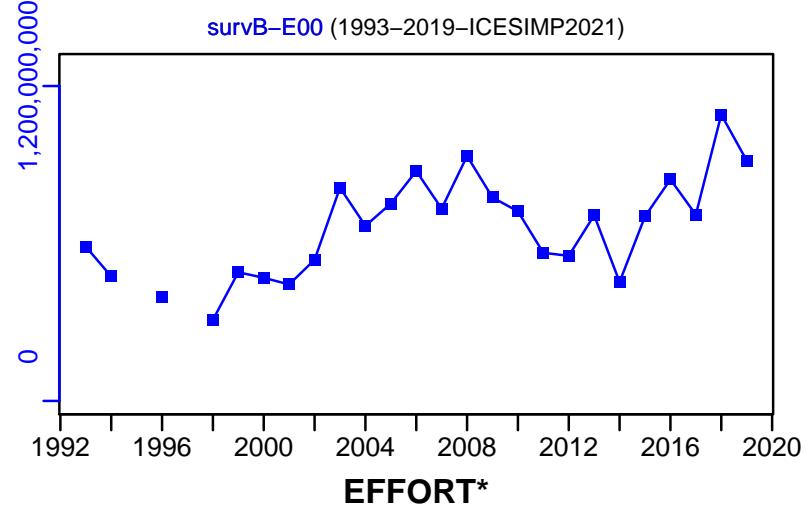
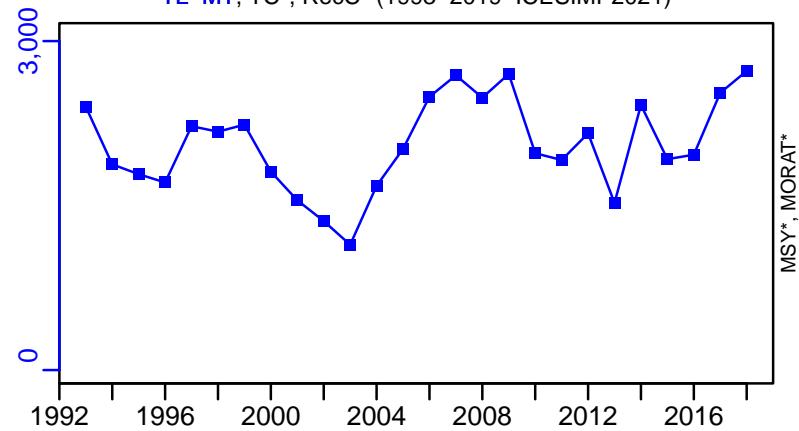


|                      |                |           |
|----------------------|----------------|-----------|
| ■ Listed time series | --- Target BRP | — Rec-Est |
| - - MSY-based BRP    | ·· Lim BRP     | * No Data |

Norway lobster Firth of Forth (FU 8) [NEPHFU8]

TL-MT, TC\*, RecC\* (1993–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



EFFORT\*

CPUE\*

CdivMSY\*

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Norway lobster Moray Firth (FU 9) [NEPHFU9]

| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Nephrops norvegicus   |
| <b>Current Assess ID</b>    | WGNSSK-NEPHFU9-1993-2018-ICESIMP2021  |
| <b>Area</b>                 | Moray Firth (FU 9)  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2015, 2016, 2016, 2017, 2018  |

| Reference Points |             |           |       |
|------------------|-------------|-----------|-------|
| Type             | ID          | Asmt Year | Value |
| <b>TBmsy</b>     | -           | -         | -     |
| <b>SSBmsy</b>    | -           | -         | -     |
| <b>Fmsy</b>      | -           | -         | -     |
| <b>ERmsy</b>     | ERmsy-ratio | 2017      | 0.118 |
| <b>TBmgt</b>     | -           | -         | -     |
| <b>SSBmgt</b>    | -           | -         | -     |
| <b>Fmgt</b>      | -           | -         | -     |
| <b>ERmgt</b>     | ERmgt-ratio | 2018      | 0.118 |
| <b>TB0</b>       | -           | -         | -     |
| <b>SSB0</b>      | -           | -         | -     |
| <b>MSY</b>       | -           | -         | -     |
| <b>M</b>         | -           | -         | -     |
| <b>TBlim</b>     | -           | -         | -     |
| <b>SSBlim</b>    | -           | -         | -     |
| <b>Flim</b>      | -           | -         | -     |
| <b>ERlim</b>     | -           | -         | -     |

| Time Series       |                      |           |            |     |     |
|-------------------|----------------------|-----------|------------|-----|-----|
| Type              | ID                   | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -                    | -         | -          | -   | -   |
| <b>SSB</b>        | -                    | -         | -          | -   | -   |
| <b>TN</b>         | -                    | -         | -          | -   | -   |
| <b>R</b>          | -                    | -         | -          | -   | -   |
| <b>F</b>          | -                    | -         | -          | -   | -   |
| <b>ER</b>         | ER-ratio             | 2018      | 0.117      | -   | -   |
| <b>TC</b>         | -                    | -         | -          |     |     |
| <b>TL</b>         | TL-MT                | 2018      | 1399       |     |     |
| <b>TB/TBmsy</b>   | -                    | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -                    | -         | -          |     |     |
| <b>F/Fmsy</b>     | -                    | -         | -          |     |     |
| <b>ER/ERmsy</b>   | ER-ratio/ERmsy-ratio | 2017      | 0.89       |     |     |
| <b>TB/TBmgt</b>   | -                    | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -                    | -         | -          |     |     |
| <b>F/Fmgt</b>     | -                    | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -                    | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

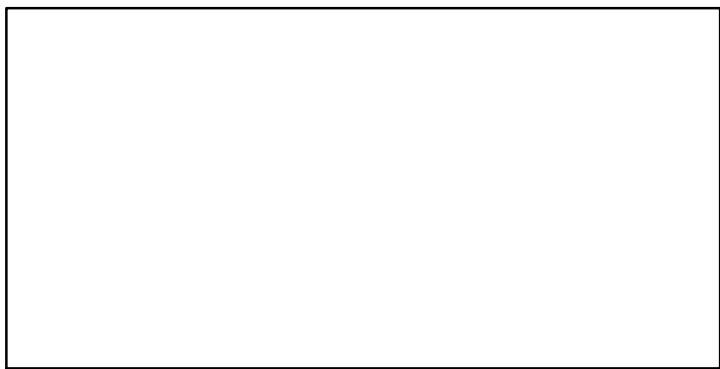
**Spawner Recruit\***

**Production\***

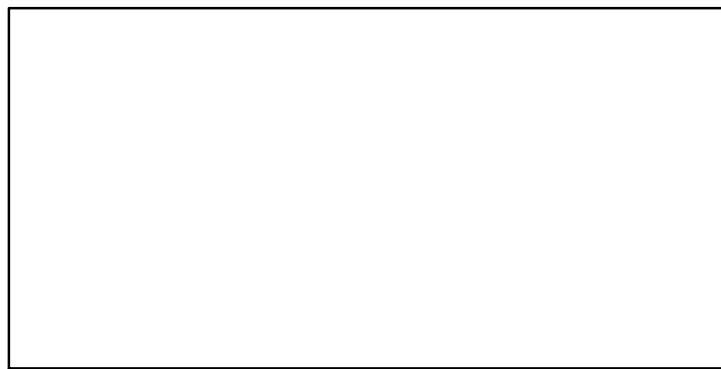
◆ Start Year ♦ End Year \* No Data

Norway lobster Moray Firth (FU 9) [NEPHFU9]

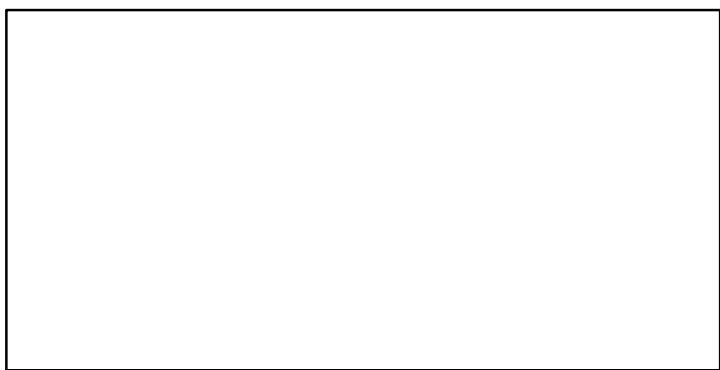
**TB\***



**SSB\***



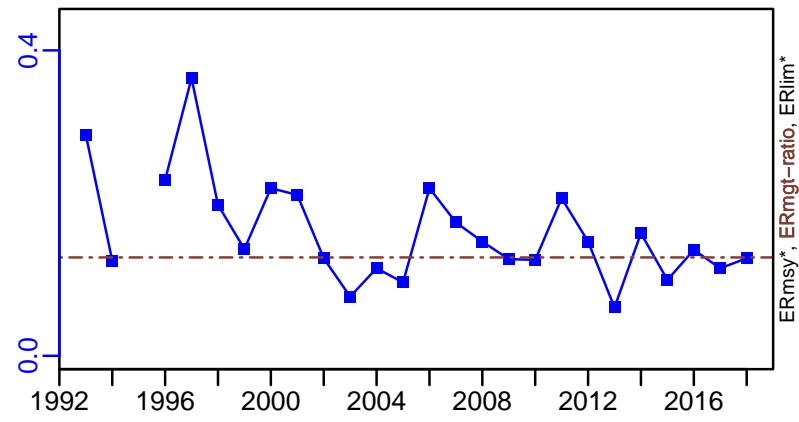
**TN \***



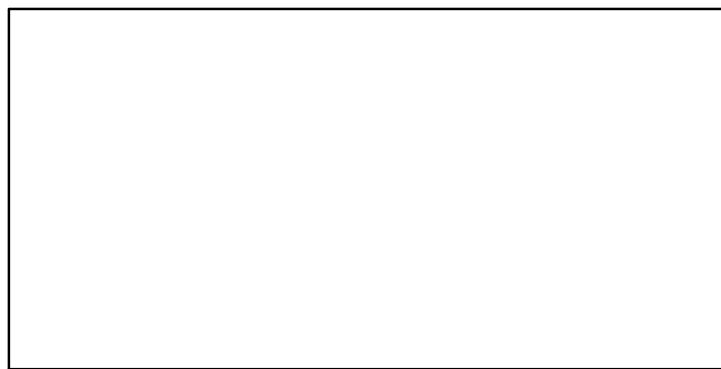
**F\***



**ER-ratio (1993–2018–ICESIMP2021)**



**Recruits\***

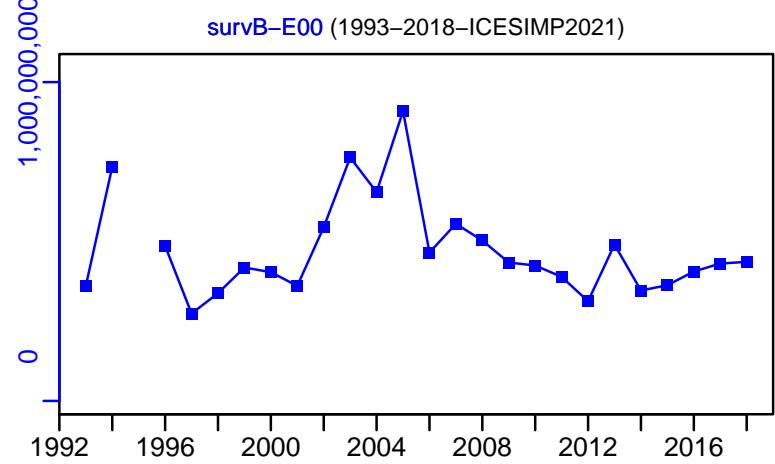
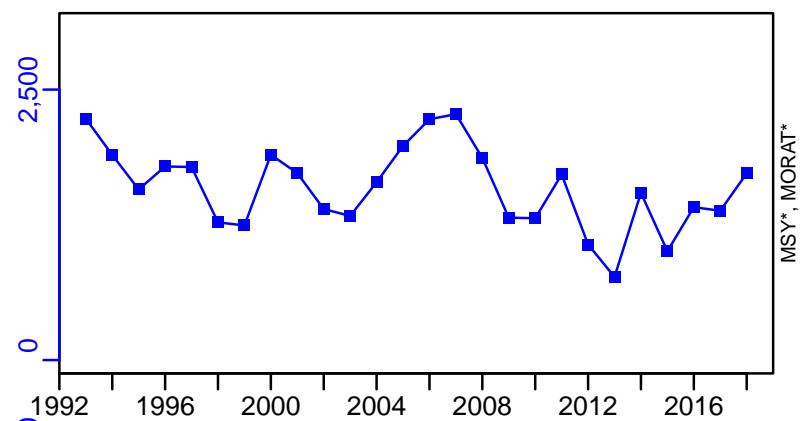


|                      |                |           |
|----------------------|----------------|-----------|
| ■ Listed time series | --- Target BRP | — Rec-Est |
| - - MSY-based BRP    | ·· Lim BRP     | * No Data |

Norway lobster Moray Firth (FU 9) [NEPHFU9]

TL-MT, TC\*, RecC\* (1993–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



EFFORT\*

CPUE\*

CdivMSY\*

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

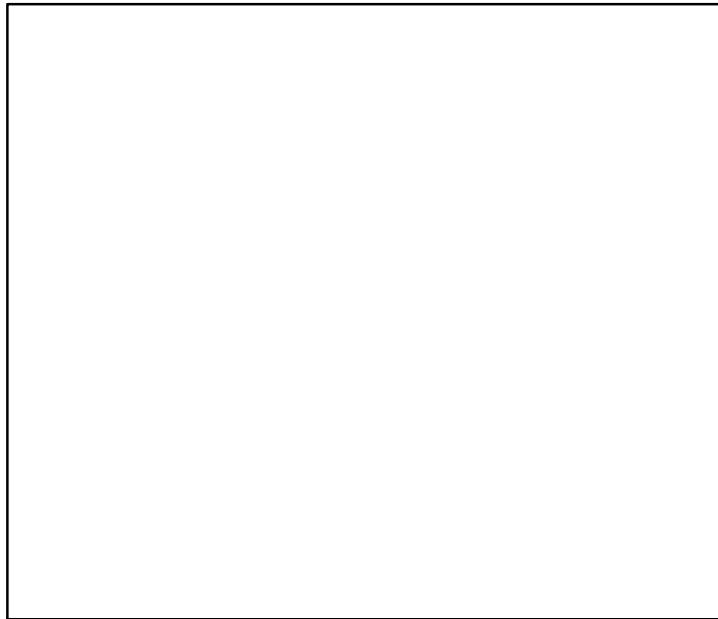
## Norway lobster North Sea [NEPHIV]

| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Nephrops norvegicus   |
| <b>Current Assess ID</b>    | WGNSSK-NEPHIV-2010-2016-ICESIMP2018   |
| <b>Area</b>                 | North Sea   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2014, 2016  |

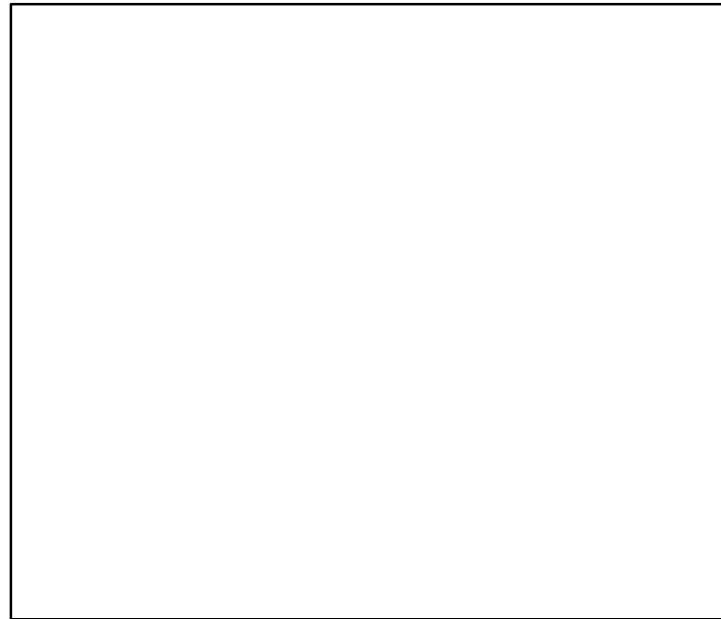
| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | -     | -         | -          |     |     |
| <b>TL</b>         | TL-MT | 2016      | 966        |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

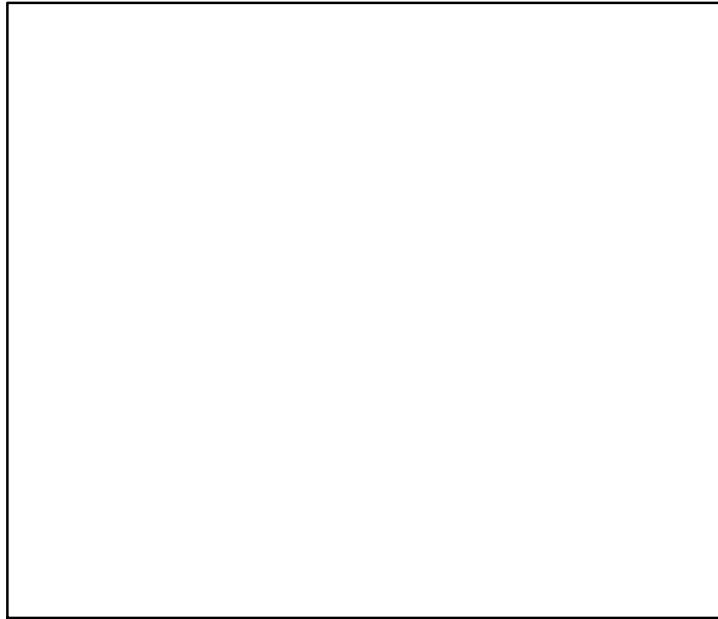
**Kobe MSY\***



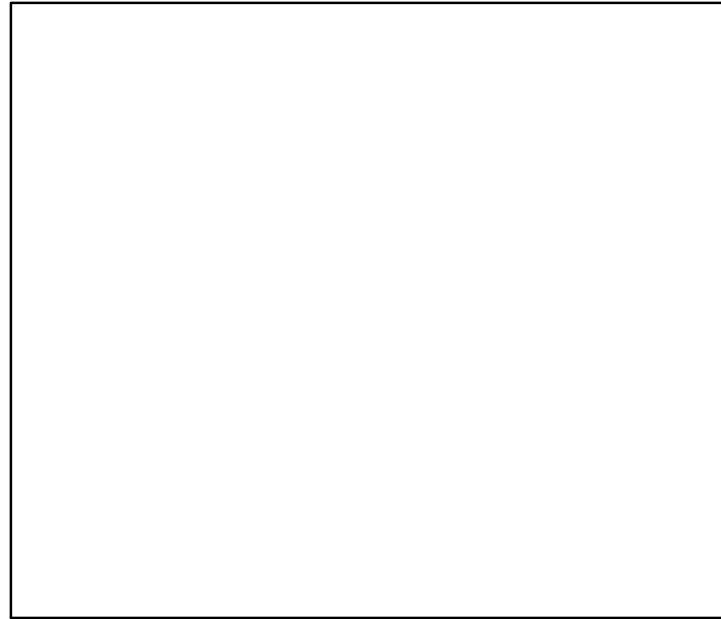
**Kobe MGT\***



**Spawner Recruit\***



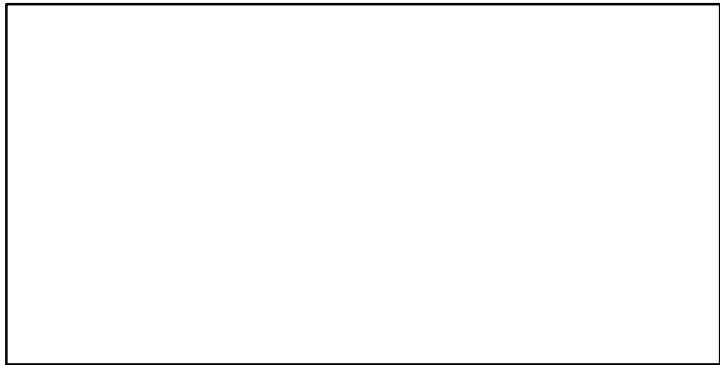
**Production\***



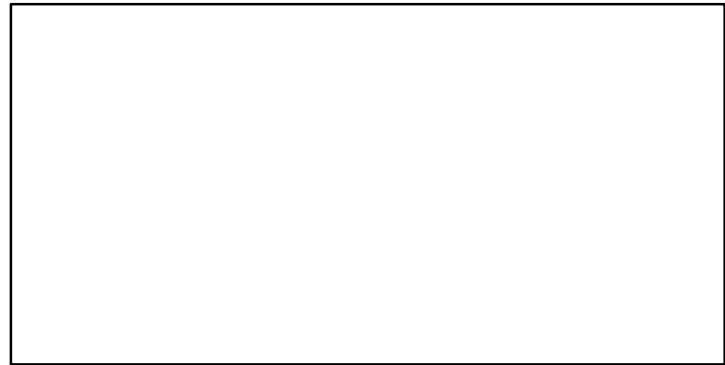
◆ Start Year ♦ End Year \* No Data

Norway lobster North Sea [NEPHIV]

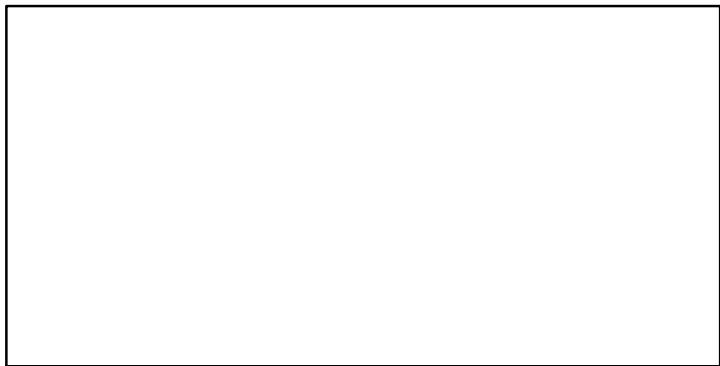
**TB\***



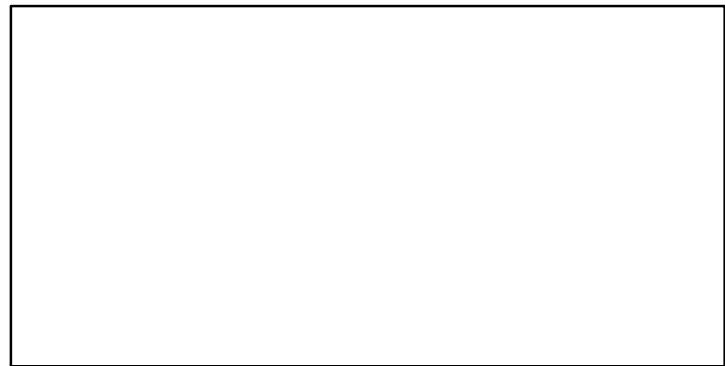
**SSB\***



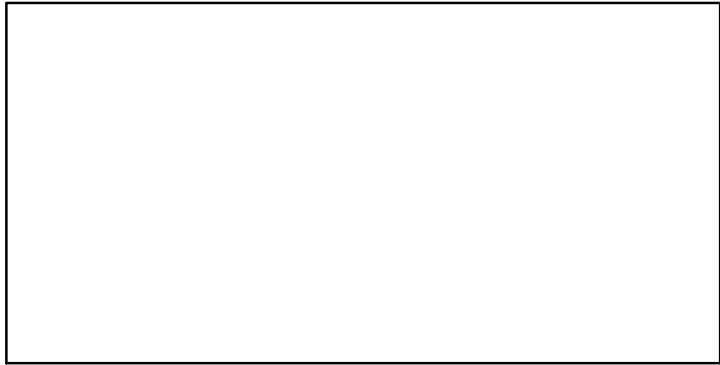
**TN \***



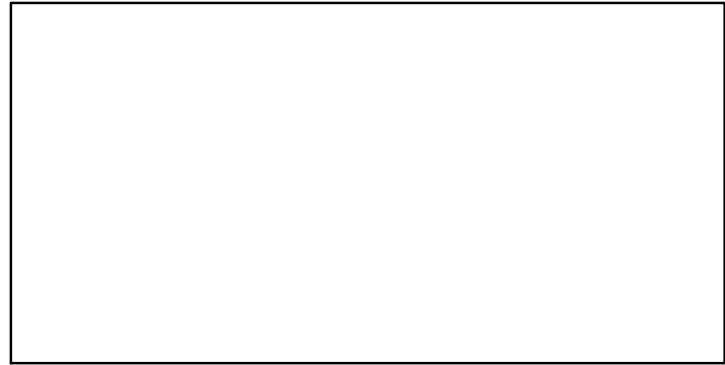
**F\***



**ER\***



**Recruits\***

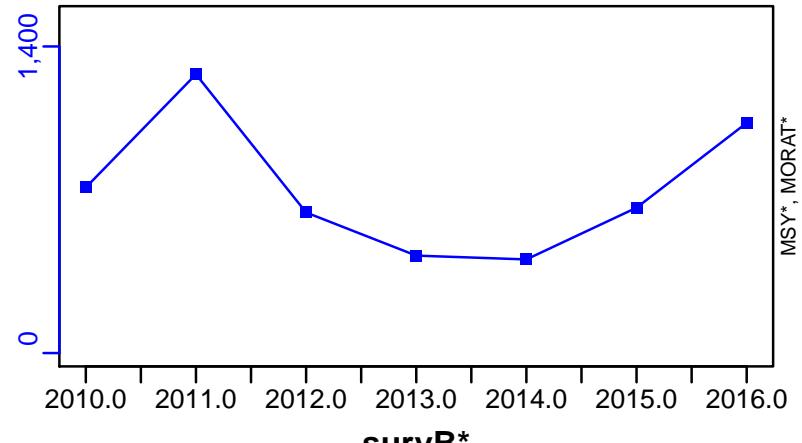


- |       |                    |       |            |   |         |
|-------|--------------------|-------|------------|---|---------|
| ■     | Listed time series | - - - | Target BRP | — | Rec-Est |
| - - - | MSY-based BRP      | - - - | Lim BRP    | * | No Data |

Norway lobster North Sea [NEPHIV]

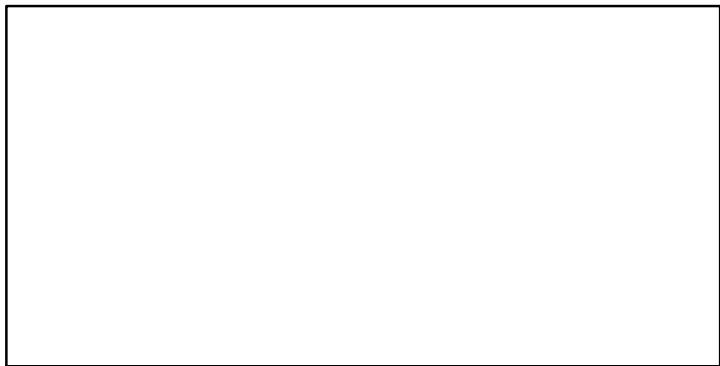
TL-MT, TC\*, RecC\* (2010–2016–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*

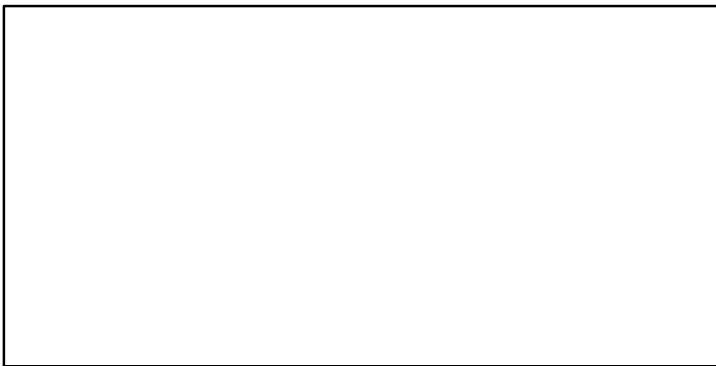


survB\*

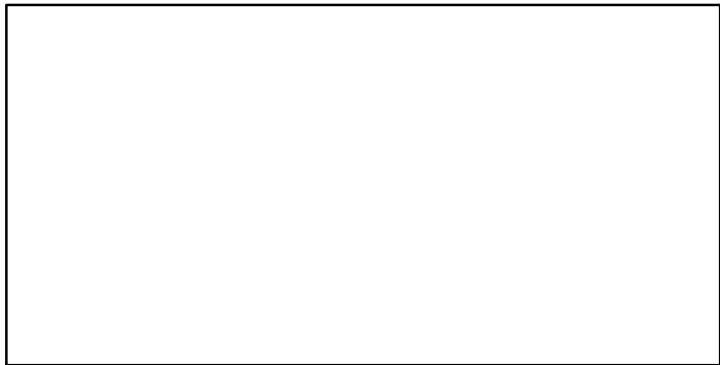
MSY\*, MORAT\*



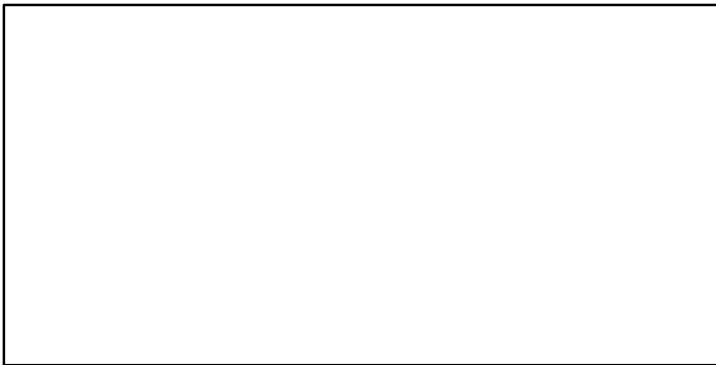
CPUE\*



EFFORT\*



CdivMSY\*



## Norway lobster West of Scotland [NEPHV1a]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Nephrops norvegicus                                  |
| <b>Current Assess ID</b>    | WGCSE-NEPHV1a-1981-2016-ICESIMP2018                  |
| <b>Area</b>                 | West of Scotland                                     |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2014, 2016   |

| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | -     | -         | -          |     |     |
| <b>TL</b>         | TL-MT | 2016      | 236        |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

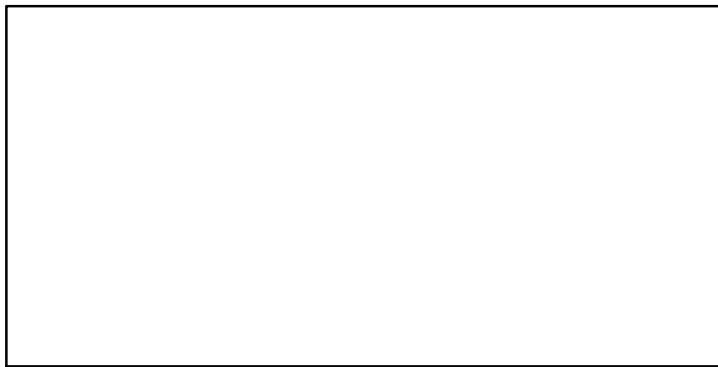
**Spawner Recruit\***

**Production\***

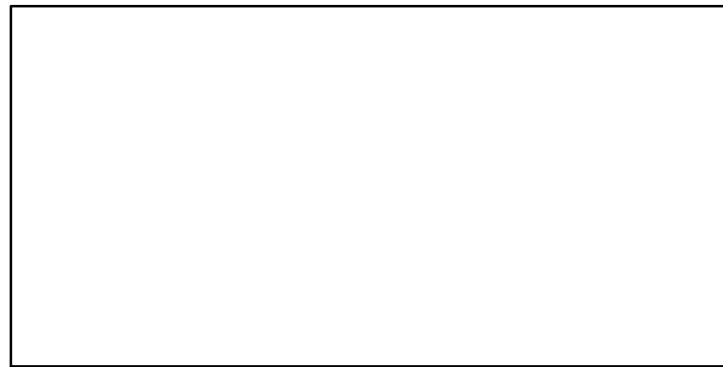
◆ Start Year ♦ End Year \* No Data

Norway lobster West of Scotland [NEPHVla]

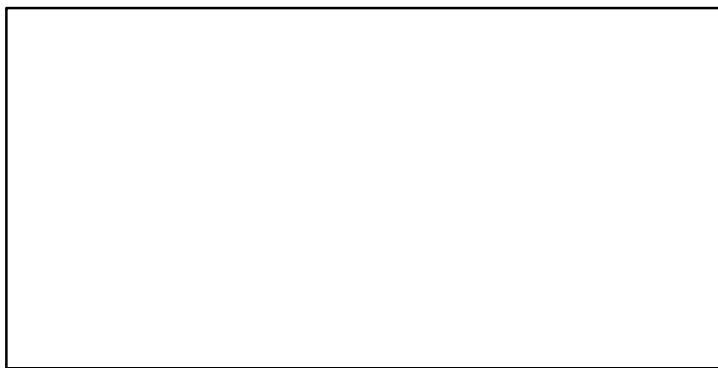
**TB\***



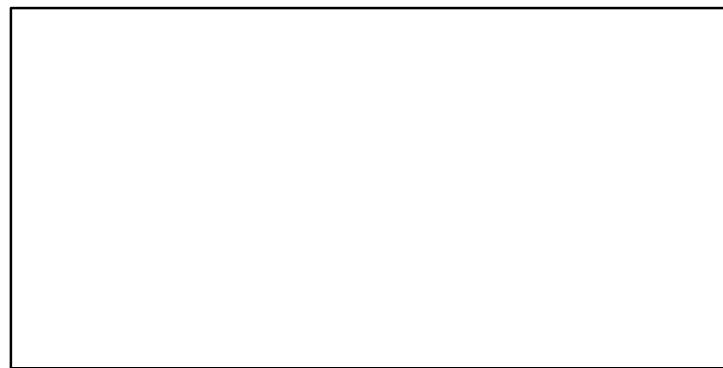
**SSB\***



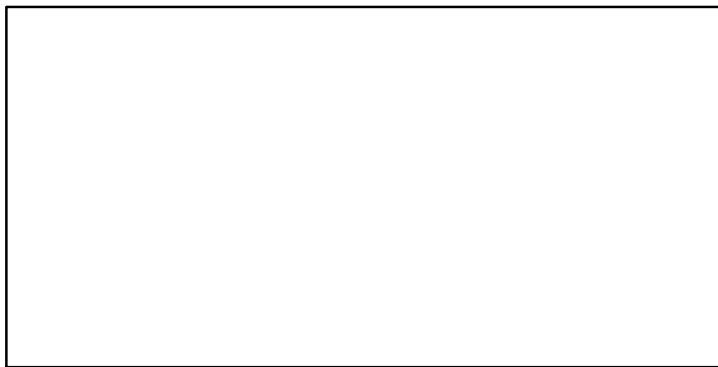
**TN \***



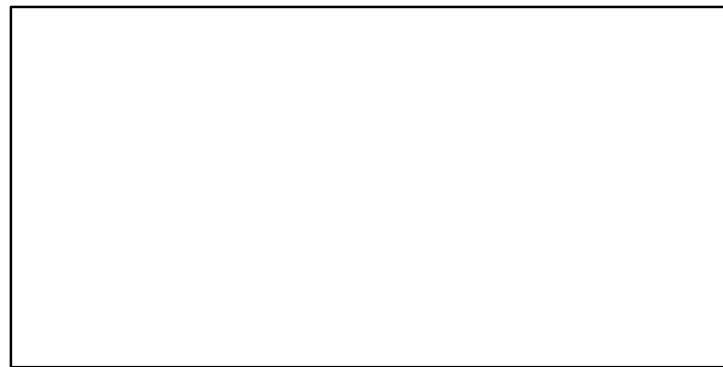
**F\***



**ER\***



**Recruits\***

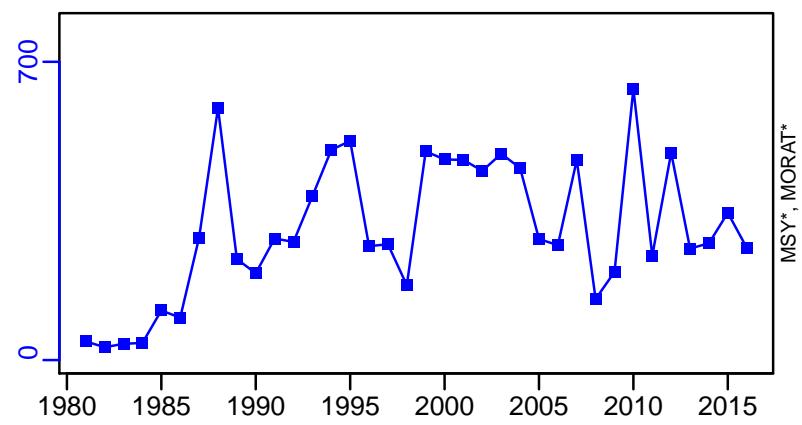


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Norway lobster West of Scotland [NEPHVla]

TL-MT, TC\*, RecC\* (1981–2016–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



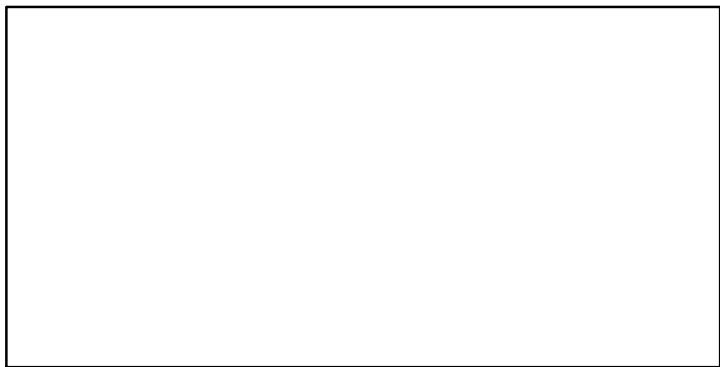
survB\*



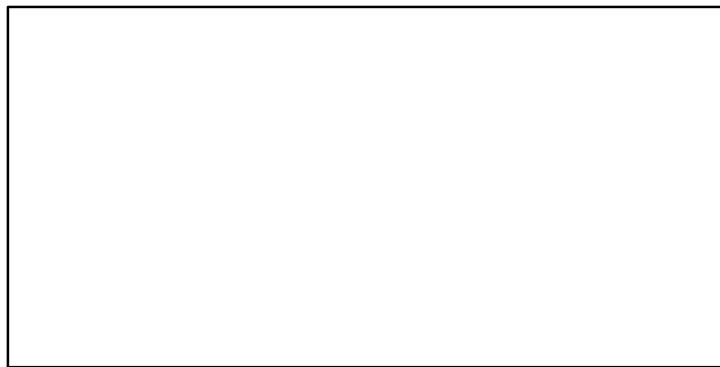
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

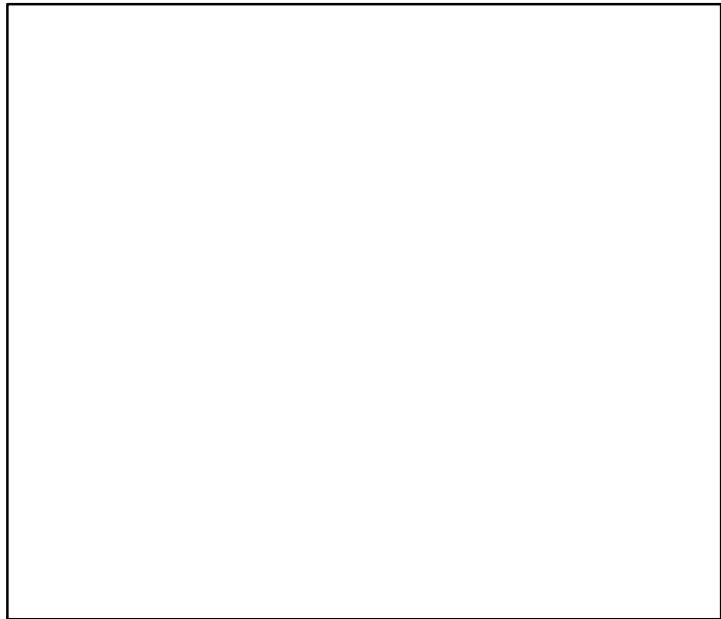
## Norway lobster ICES 7 [NEPHVII]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Nephrops norvegicus                                  |
| <b>Current Assess ID</b>    | WGCSE-NEPHVII-1978-2016-ICESIMP2018                  |
| <b>Area</b>                 | ICES 7   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2016, 2014   |

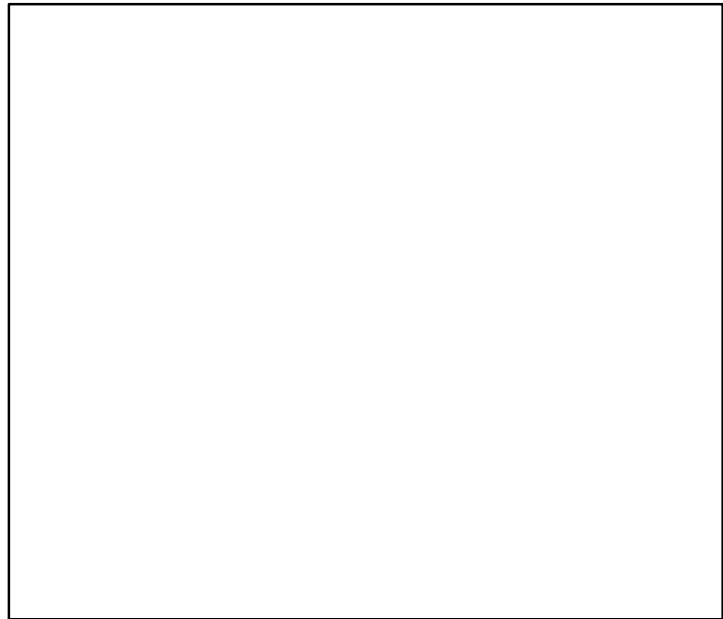
| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | -     | -         | -          |     |     |
| <b>TL</b>         | TL-MT | 2016      | 119        |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

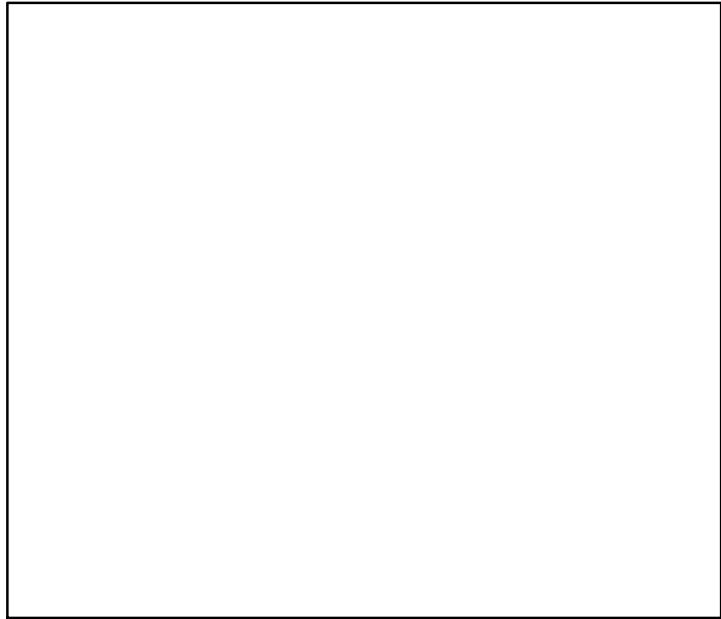
**Kobe MSY\***



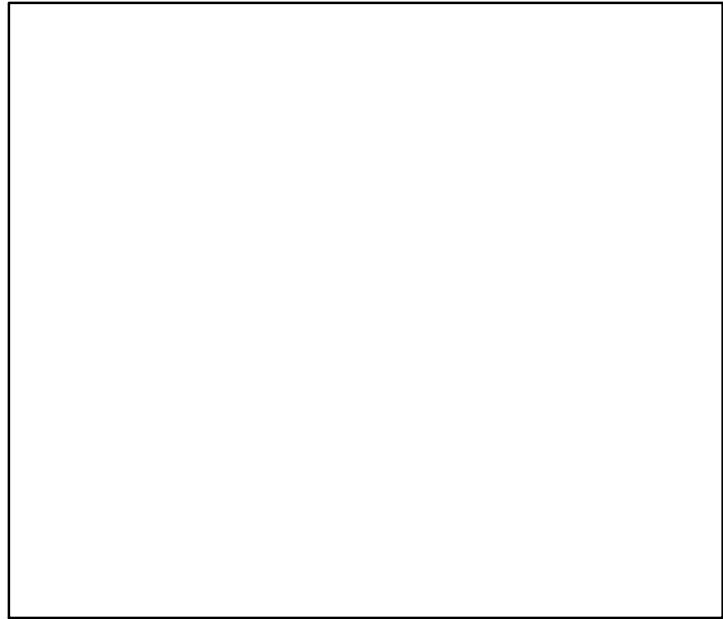
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

**TB\***



**SSB\***



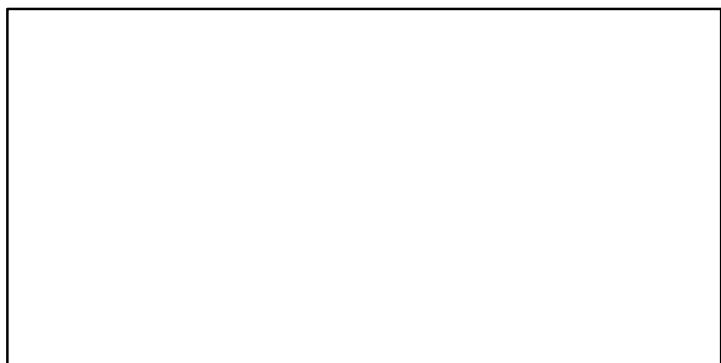
**TN \***



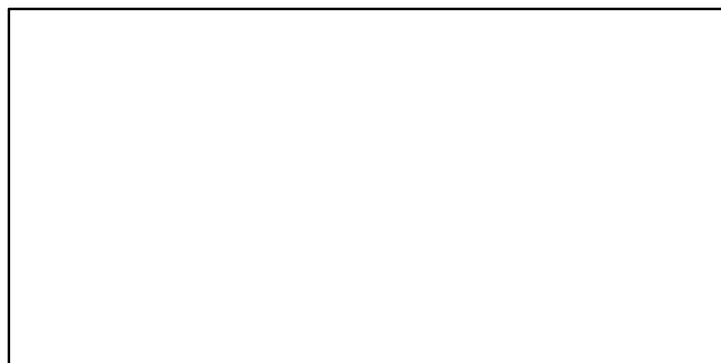
**F\***



**ER\***



**Recruits\***

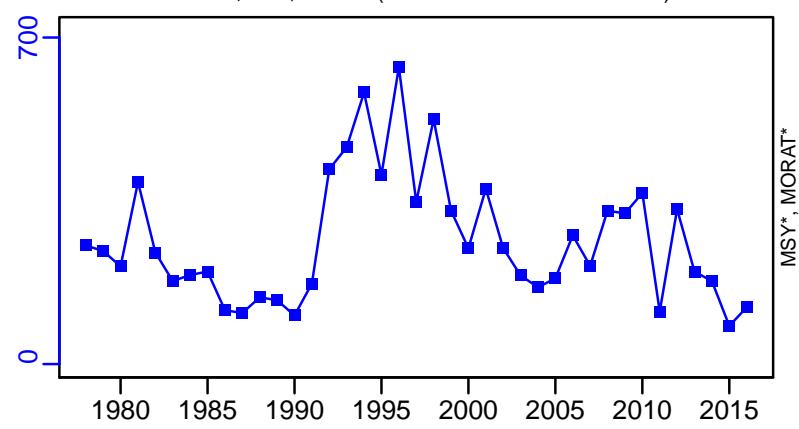


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Norway lobster ICES 7 [NEPHVII]

TL-MT, TC\*, RecC\* (1978–2016–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



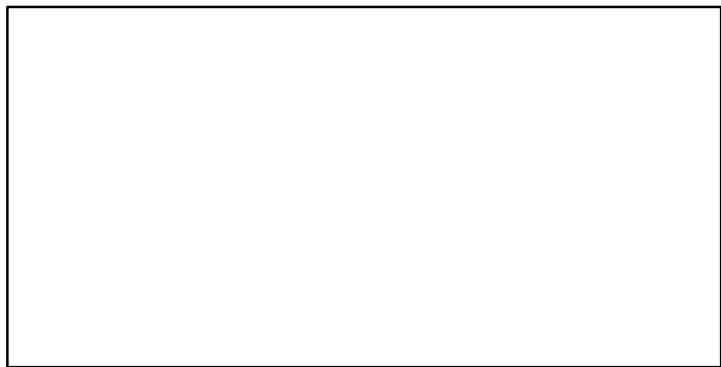
survB\*



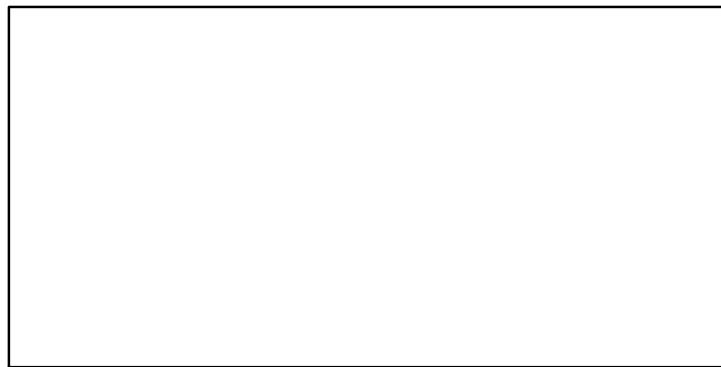
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

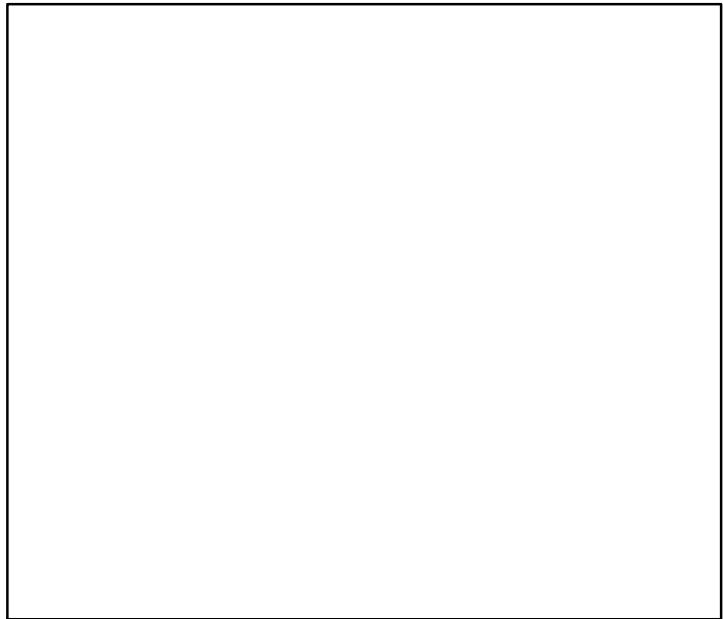
## Norway lobster ICES 8ab [NEPHVIIlab]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Nephrops norvegicus  |
| <b>Current Assess ID</b>    | WGBIE-NEPHVIIlab-1987-2019-ICESIMP2021                               |
| <b>Area</b>                 | ICES 8ab   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                 |
| <b>Assessor</b>             | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion |
| <b>Asmts in RAM</b>         | 2016, 2017, 2019   |

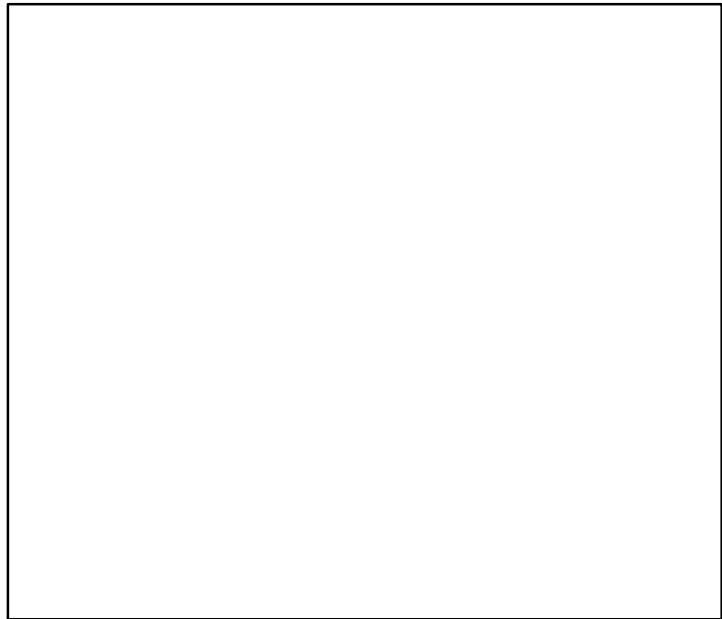
| Reference Points |             |           |       |
|------------------|-------------|-----------|-------|
| Type             | ID          | Asmt Year | Value |
| <b>TBmsy</b>     | -           | -         | -     |
| <b>SSBmsy</b>    | -           | -         | -     |
| <b>Fmsy</b>      | Fmsy-1/yr   | 2016      | 7.7   |
| <b>ERmsy</b>     | ERmsy-ratio | 2019      | 0.077 |
| <b>TBmgt</b>     | -           | -         | -     |
| <b>SSBmgt</b>    | -           | -         | -     |
| <b>Fmgt</b>      | Fmgt-1/yr   | 2016      | 7.7   |
| <b>ERmgt</b>     | ERmgt-ratio | 2019      | 0.077 |
| <b>TB0</b>       | -           | -         | -     |
| <b>SSB0</b>      | -           | -         | -     |
| <b>MSY</b>       | -           | -         | -     |
| <b>M</b>         | -           | -         | -     |
| <b>TBlim</b>     | -           | -         | -     |
| <b>SSBlim</b>    | -           | -         | -     |
| <b>Flim</b>      | -           | -         | -     |
| <b>ERlim</b>     | -           | -         | -     |

| Time Series       |                      |           |            |      |     |
|-------------------|----------------------|-----------|------------|------|-----|
| Type              | ID                   | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>         | -                    | -         | -          | -    | -   |
| <b>SSB</b>        | SSB-E00              | 2017      | 3370       | Both | -   |
| <b>TN</b>         | -                    | -         | -          | -    | -   |
| <b>R</b>          | -                    | -         | -          | -    | -   |
| <b>F</b>          | F-1/yr               | 2016      | 6          | -    | -   |
| <b>ER</b>         | ER-ratio             | 2019      | 0.05       | -    | -   |
| <b>TC</b>         | TC-MT                | 2017      | 6620       |      |     |
| <b>TL</b>         | TL-MT                | 2019      | 2125       |      |     |
| <b>TB/TBmsy</b>   | -                    | -         | -          |      |     |
| <b>SSB/SSBmsy</b> | -                    | -         | -          |      |     |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr     | 2016      | 0.779      |      |     |
| <b>ER/ERmsy</b>   | ER-ratio/ERmsy-ratio | 2019      | 0.652      |      |     |
| <b>TB/TBmgt</b>   | -                    | -         | -          |      |     |
| <b>SSB/SSBmgt</b> | -                    | -         | -          |      |     |
| <b>F/Fmgt</b>     | F-1/yr/Fmgt-1/yr     | 2016      | 0.779      |      |     |
| <b>ER/ERmgt</b>   | -                    | -         | -          |      |     |

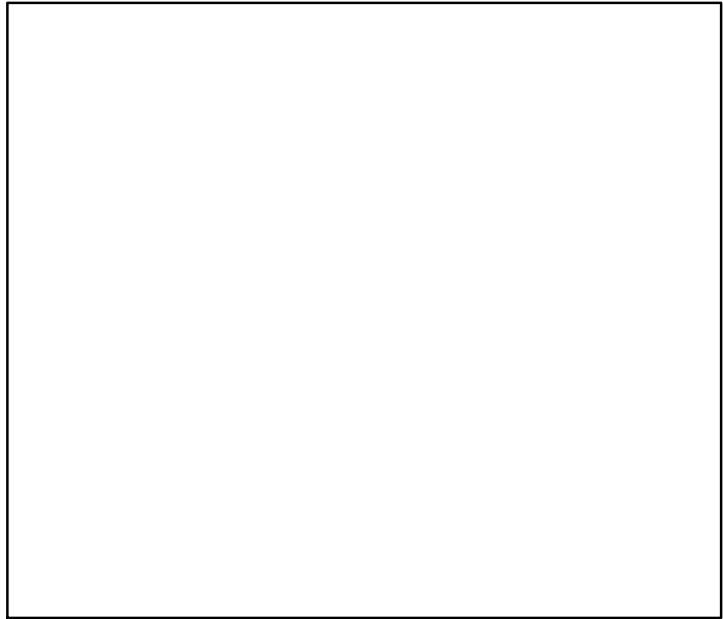
**Kobe MSY\***



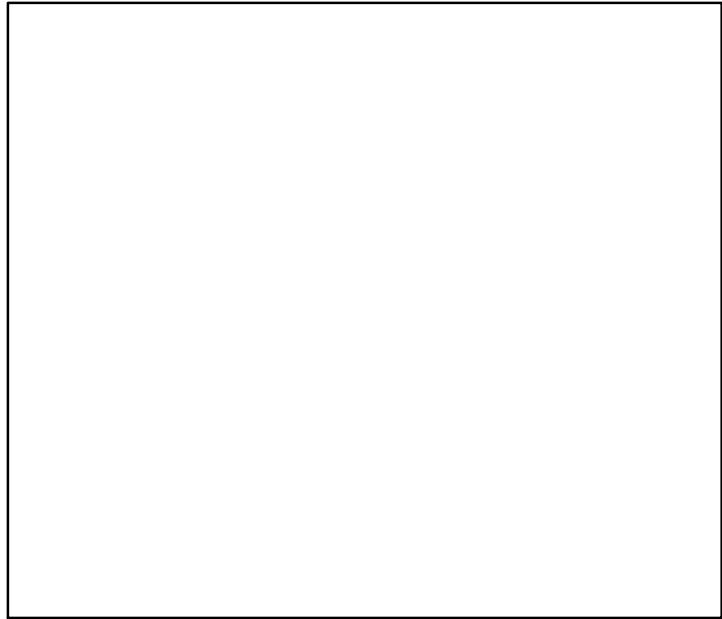
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



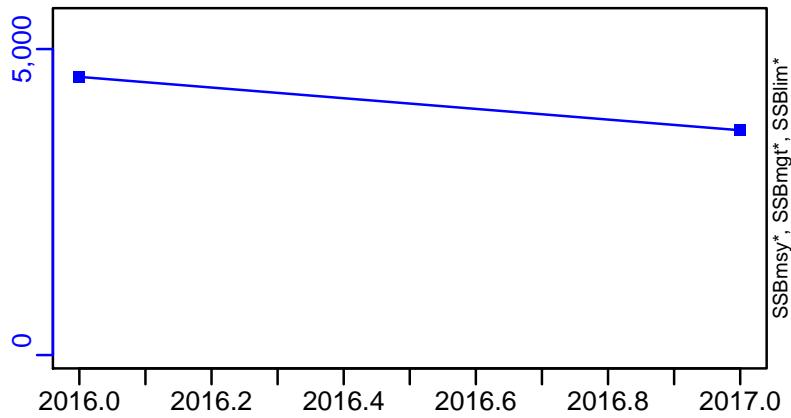
◆ Start Year ♦ End Year \* No Data

Norway lobster ICES 8ab [NEPHVIIlab]

**TB\***



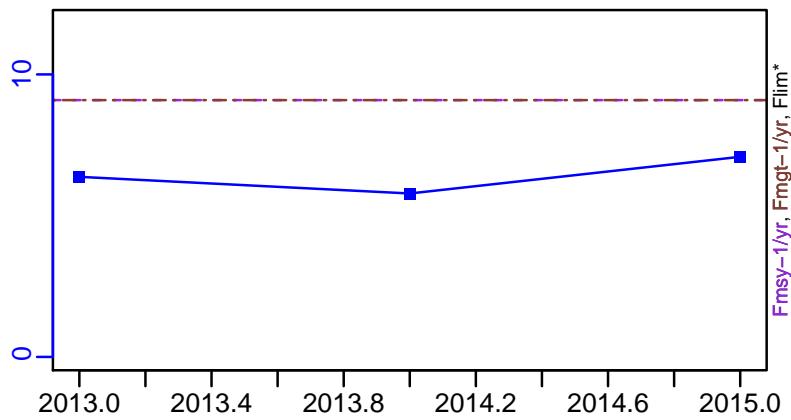
SSB-E00 (1987–2017–ICESIMP2018)



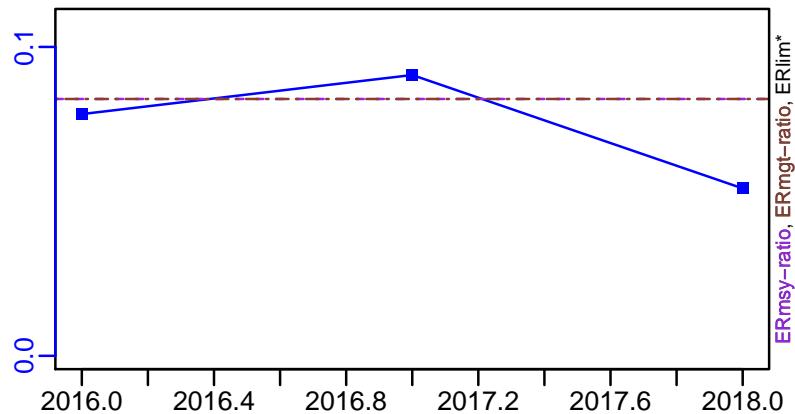
**TN \***



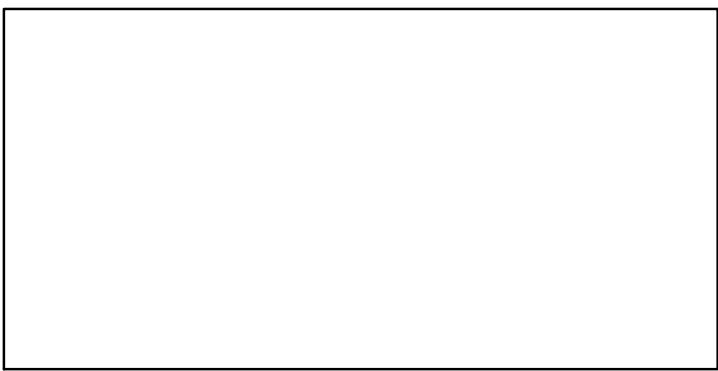
F-1/yr (1987–2016–ICESIMP2018)



ER-ratio (1987–2019–ICESIMP2021)



**Recruits\***

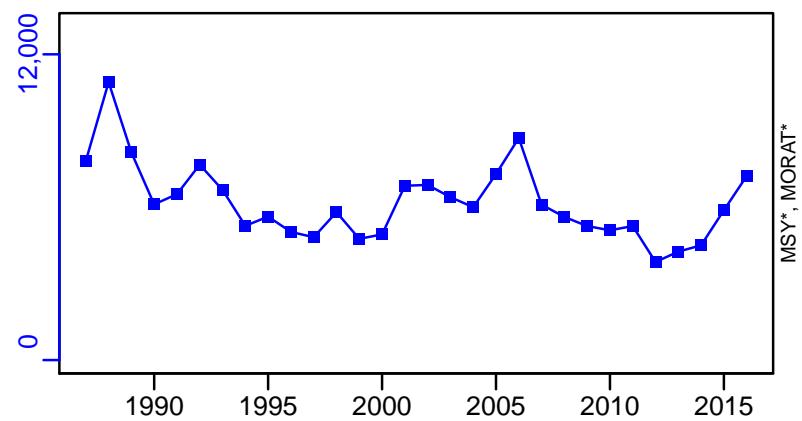


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | --- Lim BRP  | * No Data |

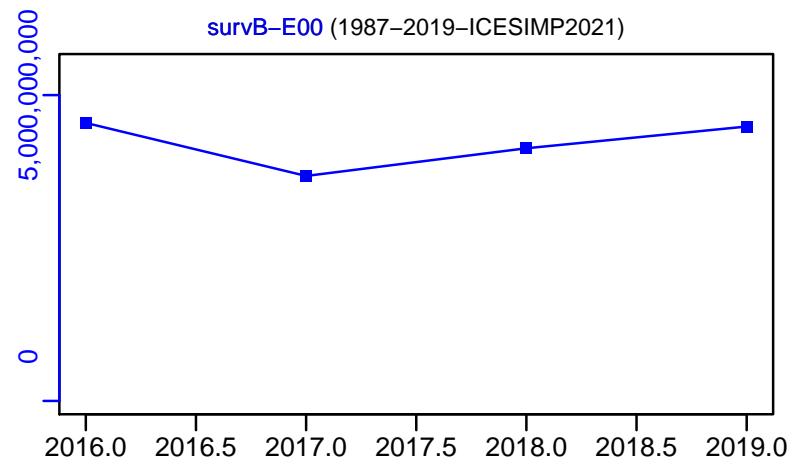
Norway lobster ICES 8ab [NEPHVIIlab]

TC-MT, TL\*, RecC\* (1987–2017–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



survB-E00 (1987–2019–ICESIMP2021)



EFFORT\*

CPUE\*

CdivMSY\*

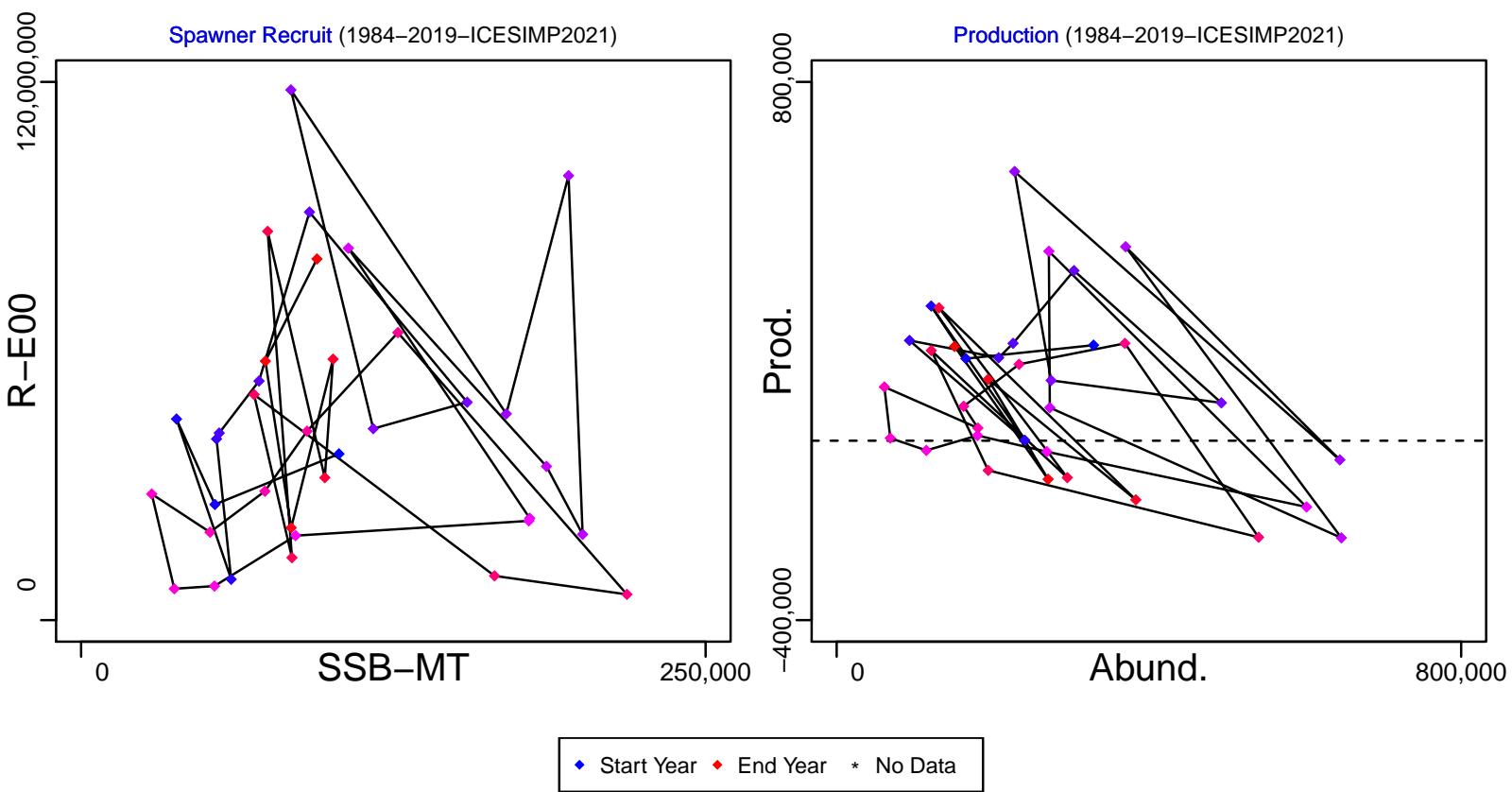
- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Norway pout ICES 3a-4 [NPOUTIIla-IV]

| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Trisopterus esmarkii  |
| <b>Current Assess ID</b>    | WGNSSK-NPOUTIIla-IV-1984-2019-ICESIMP2021   |
| <b>Area</b>                 | ICES 3a-4   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2011, 2013, 2014, 2017, 2019  |

| Reference Points |           |           |                 |
|------------------|-----------|-----------|-----------------|
| Type             | ID        | Asmt Year | Value           |
| <b>TBmsy</b>     | -         | -         | -               |
| <b>SSBmsy</b>    | -         | -         | -               |
| <b>Fmsy</b>      | -         | -         | -               |
| <b>ERmsy</b>     | -         | -         | -               |
| <b>TBmgt</b>     | -         | -         | -               |
| <b>SSBmgt</b>    | SSBmgt-MT | 2017      | 65,000          |
| <b>Fmgt</b>      | -         | -         | -               |
| <b>ERmgt</b>     | -         | -         | -               |
| <b>TB0</b>       | -         | -         | -               |
| <b>SSB0</b>      | -         | -         | -               |
| <b>MSY</b>       | -         | -         | -               |
| <b>M</b>         | -         | -         | -               |
| <b>TBlim</b>     | TBlim-MT  | 2011      | $1 \times 10^5$ |
| <b>SSBlim</b>    | SSBlim-MT | 2017      | 39,450          |
| <b>Flim</b>      | -         | -         | -               |
| <b>ERlim</b>     | -         | -         | -               |

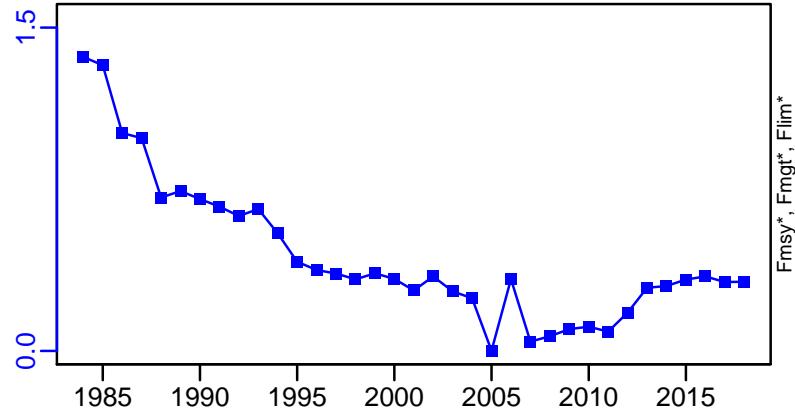
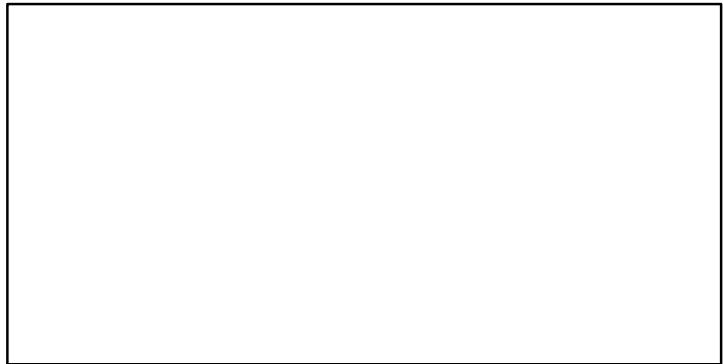
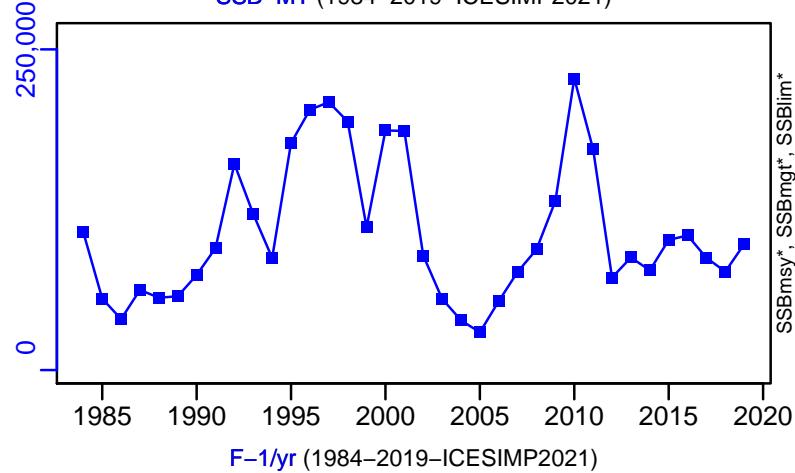
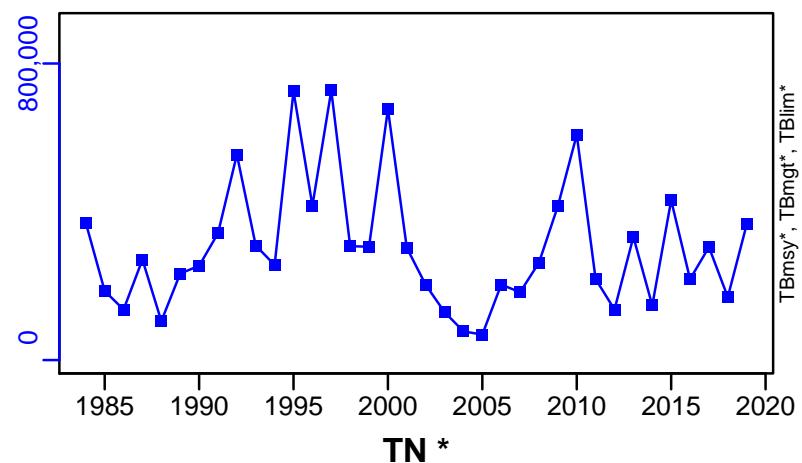
| Time Series       |                  |           |            |     |        |  |
|-------------------|------------------|-----------|------------|-----|--------|--|
| Type              | ID               | Asmt Year | Curr Value | Sex | Age    |  |
| <b>TB</b>         | TB-MT            | 2019      | 325,157    | -   | -      |  |
| <b>SSB</b>        | SSB-MT           | 2019      | 94,420     | -   | -      |  |
| <b>TN</b>         | -                | -         | -          | -   | -      |  |
| <b>R</b>          | R-E00            | 2019      | 80,528,000 | -   | 0      |  |
| <b>F</b>          | F-1/yr           | 2019      | 0.311      | -   | 1 to 2 |  |
| <b>ER</b>         | ER-calc-ratio    | 2019      | 0.159      | -   | -      |  |
| <b>TC</b>         | TC-MT            | 2017      | 30,100     |     |        |  |
| <b>TL</b>         | TL-MT            | 2019      | 51,613     |     |        |  |
| <b>TB/TBmsy</b>   | -                | -         | -          |     |        |  |
| <b>SSB/SSBmsy</b> | -                | -         | -          |     |        |  |
| <b>F/Fmsy</b>     | -                | -         | -          |     |        |  |
| <b>ER/ERmsy</b>   | -                | -         | -          |     |        |  |
| <b>TB/TBmgt</b>   | -                | -         | -          |     |        |  |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2017      | 2.338      |     |        |  |
| <b>F/Fmgt</b>     | -                | -         | -          |     |        |  |
| <b>ER/ERmgt</b>   | -                | -         | -          |     |        |  |

**Kobe MSY\*****Kobe MGT\***

### Norway pout ICES 3a–4 [NPOUTIIIa–IV]

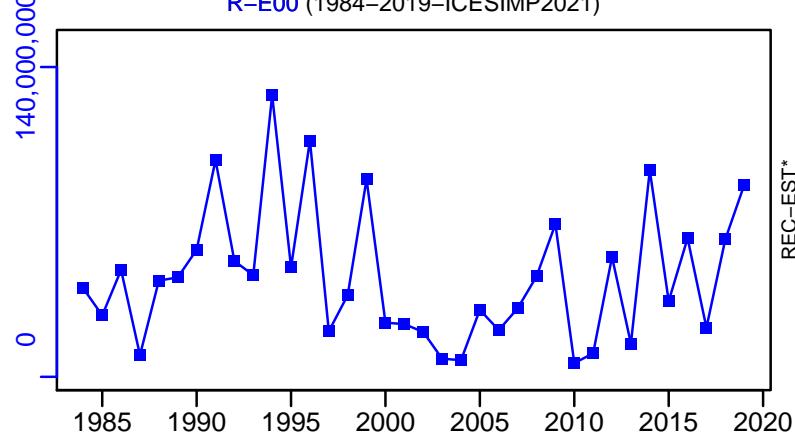
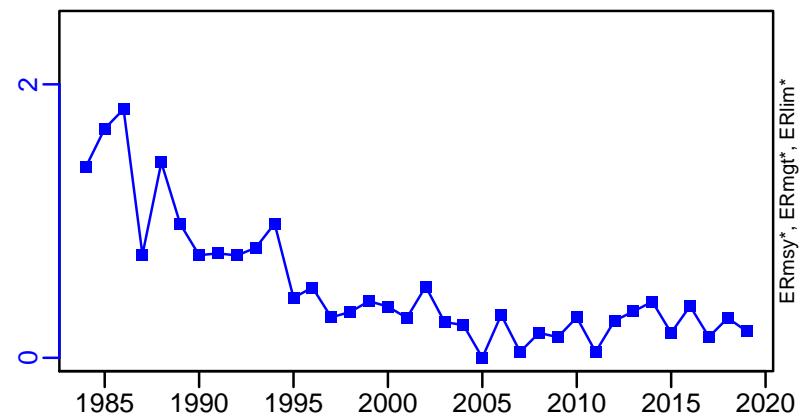
TB-MT (1984–2019–ICESIMP2021)

SSB-MT (1984–2019–ICESIMP2021)



ER-calc-ratio (1984–2019–ICESIMP2021)

R-E00 (1984–2019–ICESIMP2021)

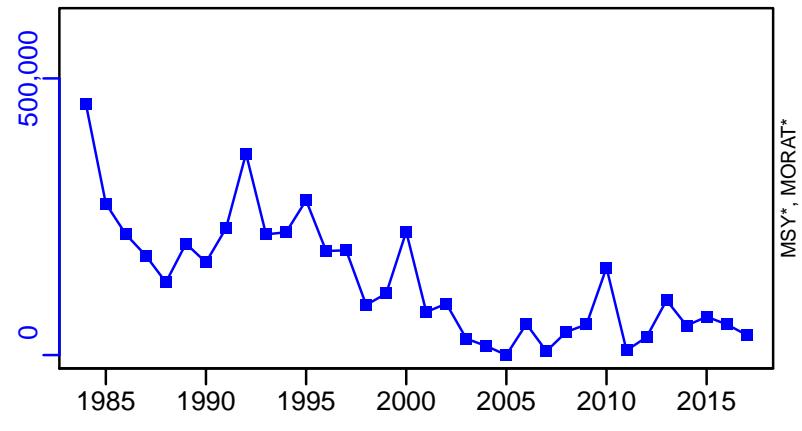


|  |   |   |
|--|---|---|
| <span style="color: blue;">■</span> Listed time series | <span style="color: brown;">—</span> Target BRP | <span style="color: gray;">—</span> Rec-Est |
| <span style="color: purple;">—</span> MSY-based BRP    | <span style="color: cyan;">---</span> Lim BRP   | * No Data                                   |

Norway pout ICES 3a–4 [NPOUTIIIa–IV]

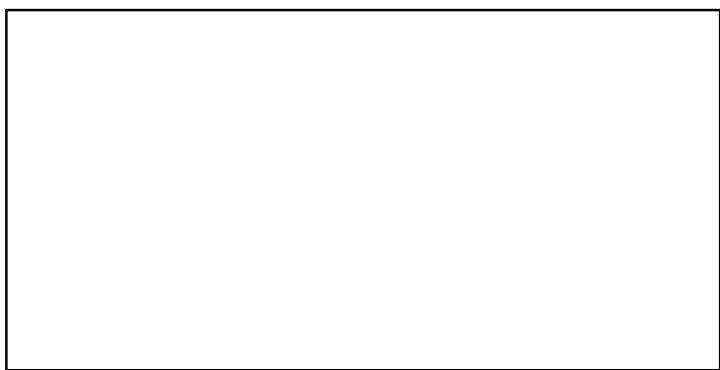
TC–MT, TL\*, RecC\* (1984–2017–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



survB\*

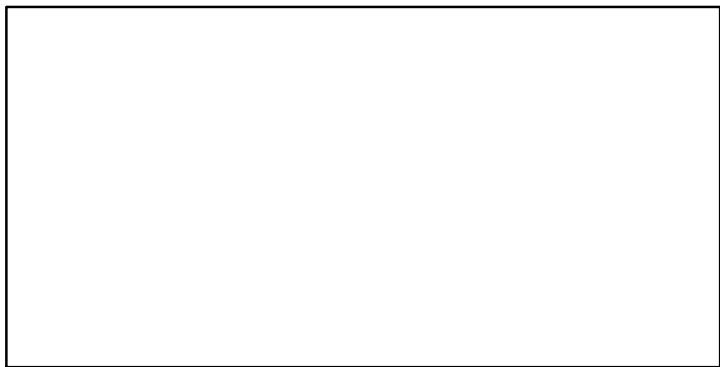
MSY\*, MORAT\*



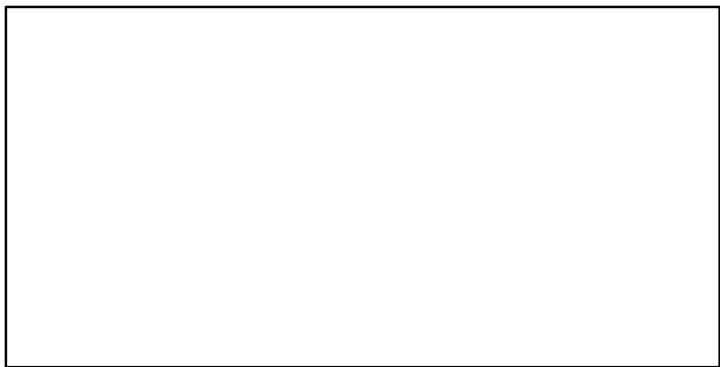
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

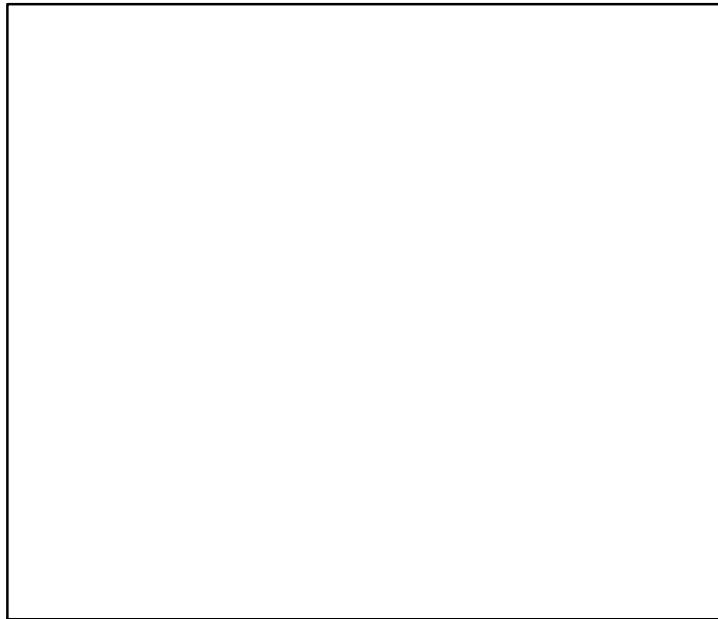
## Norway pout West of Scotland [NPOUTVla]

| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Trisopterus esmarkii  |
| <b>Current Assess ID</b>    | WGNSSK-NPOUTVla-1970-2017-ICESIMP2021   |
| <b>Area</b>                 | West of Scotland  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2015, 2017  |

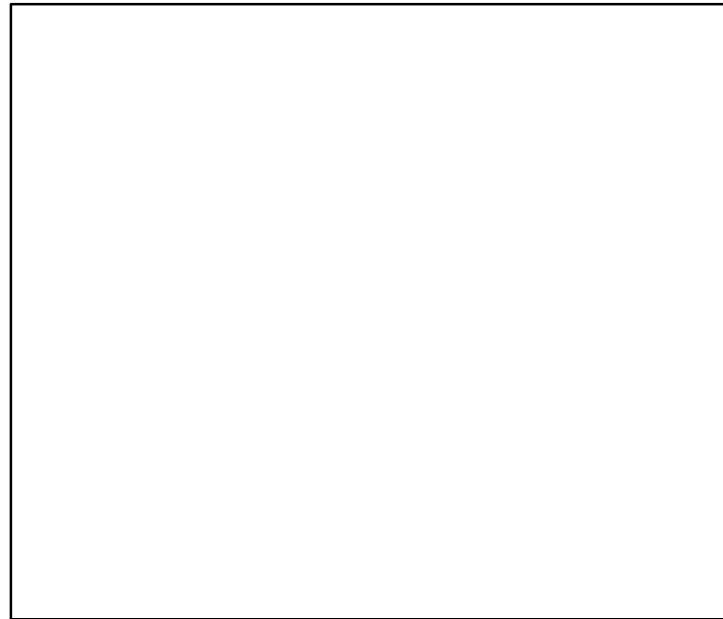
| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | -     | -         | -          |     |     |
| <b>TL</b>         | TL-MT | 2017      | 13         |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

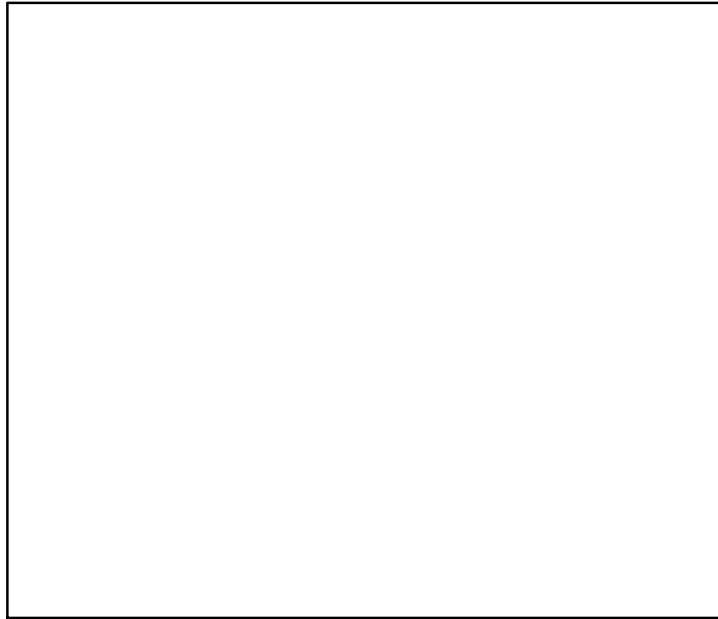
**Kobe MSY\***



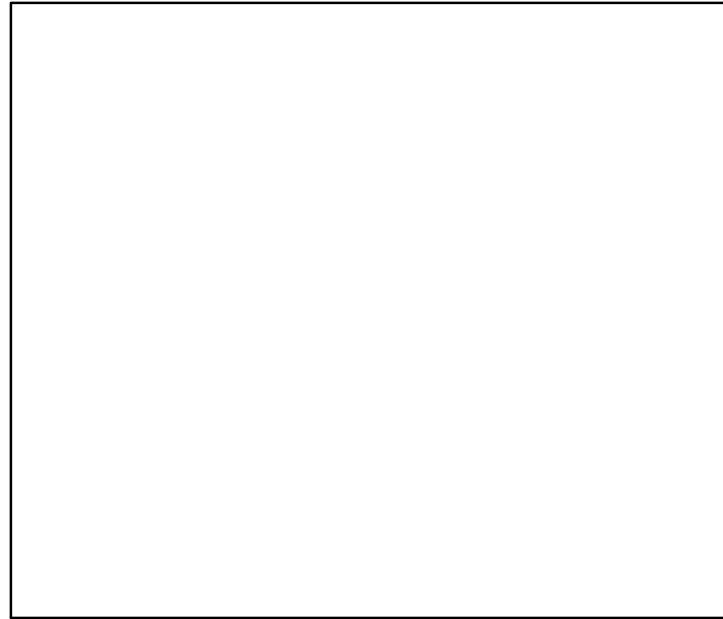
**Kobe MGT\***



**Spawner Recruit\***



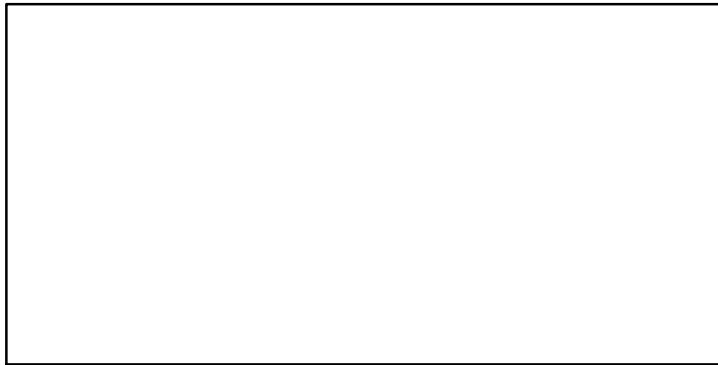
**Production\***



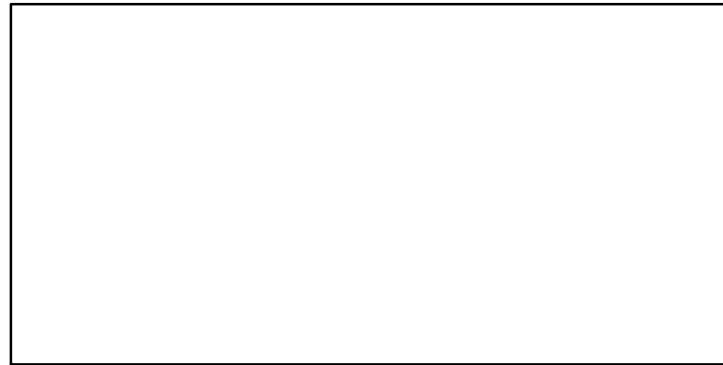
◆ Start Year ♦ End Year \* No Data

Norway pout West of Scotland [NPOUTVla]

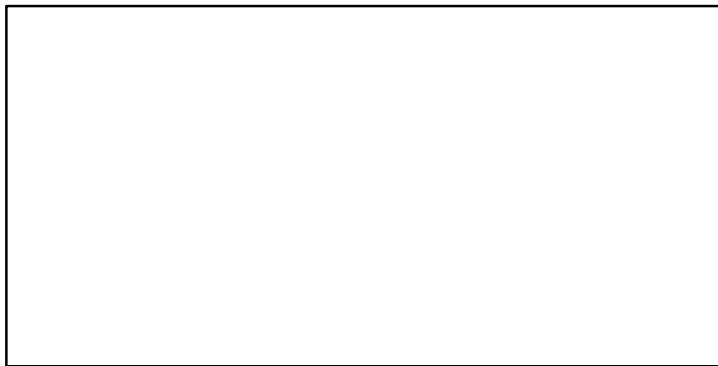
**TB\***



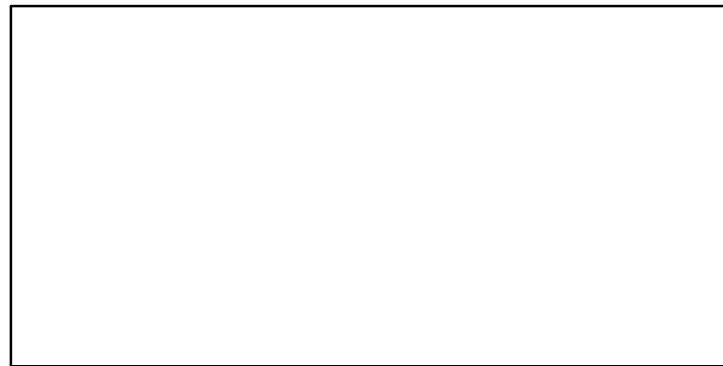
**SSB\***



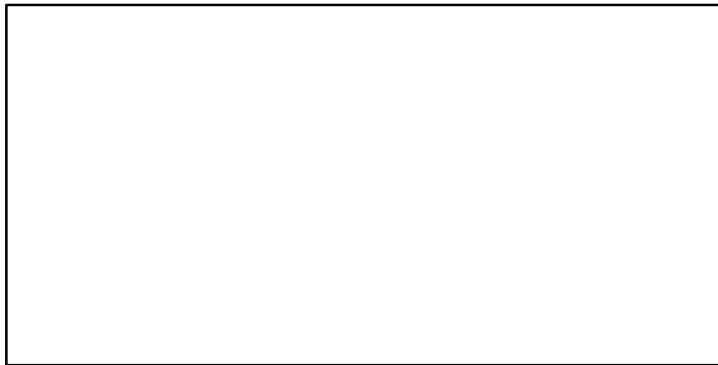
**TN \***



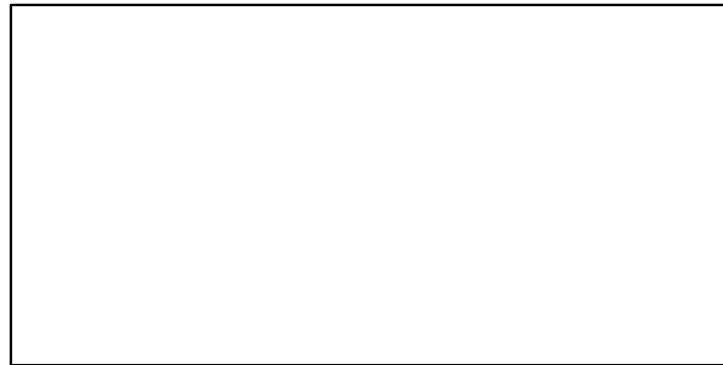
**F\***



**ER\***



**Recruits\***

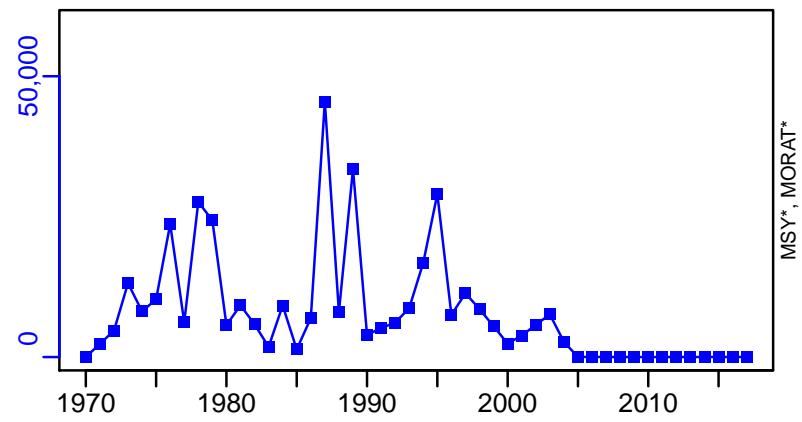


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

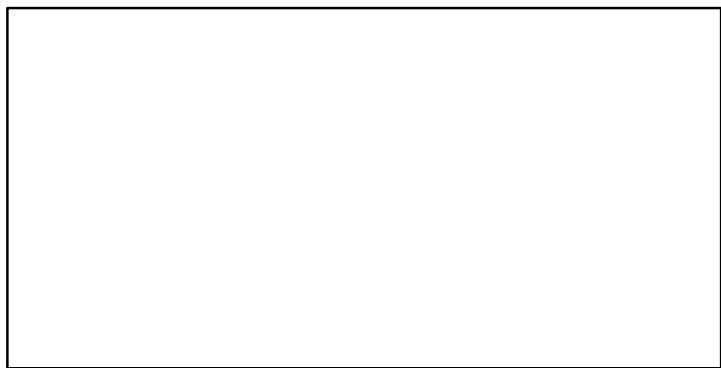
Norway pout West of Scotland [NPOUTVla]

TL-MT, TC\*, RecC\* (1970–2017–ICESIMP2021)

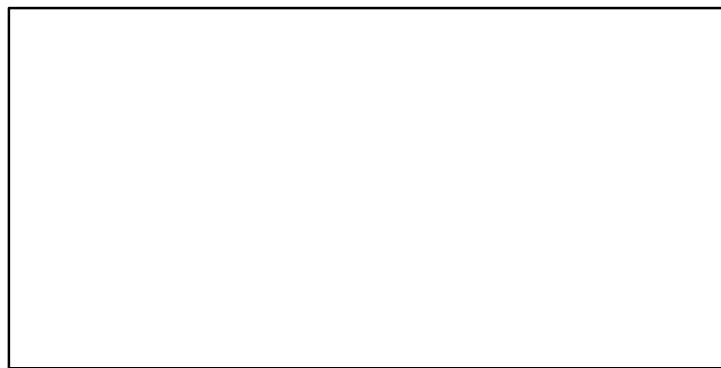
TAC\*, Cpair\*, Cadv\*



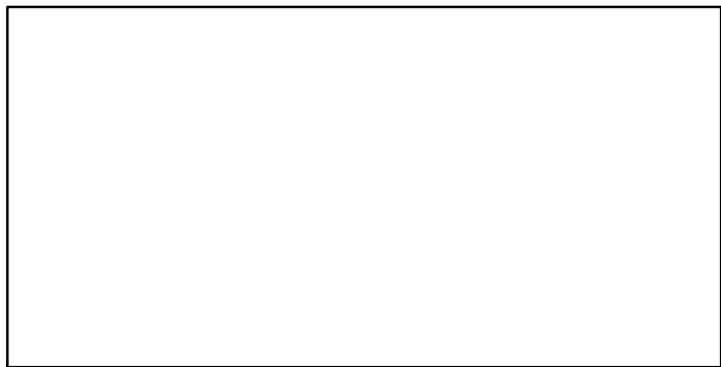
**survB\***



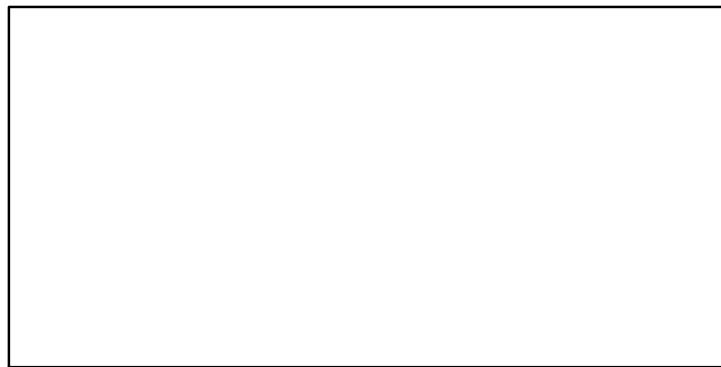
**CPUE\***



**EFFORT\***



**CdivMSY\***



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Orange roughy Northeast Atlantic [OROUGHYNEATL]

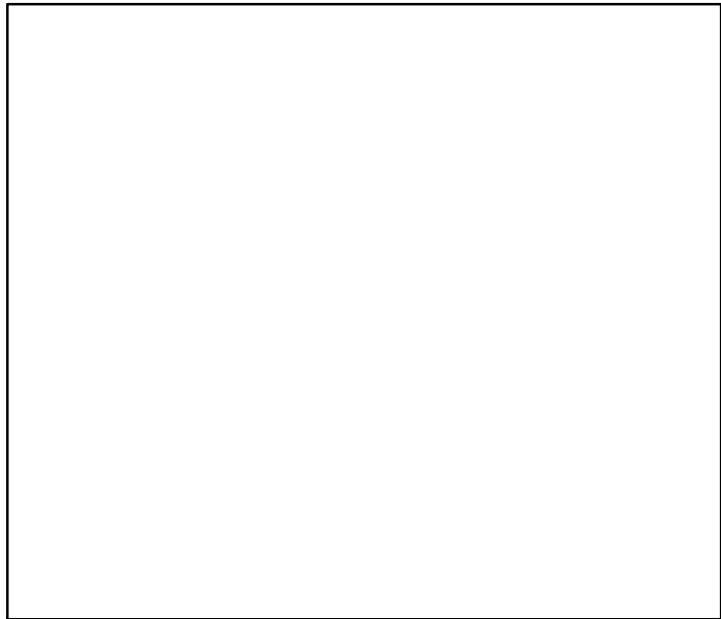
| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Hoplostethus atlanticus   |
| <b>Current Assess ID</b>    | WGDEEP-OROUGHYNEATL-1988-2016-ICESIMP2016                                   |
| <b>Area</b>                 | Northeast Atlantic  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                        |
| <b>Assessor</b>             | Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources |
| <b>Asmts in RAM</b>         | 2016  |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

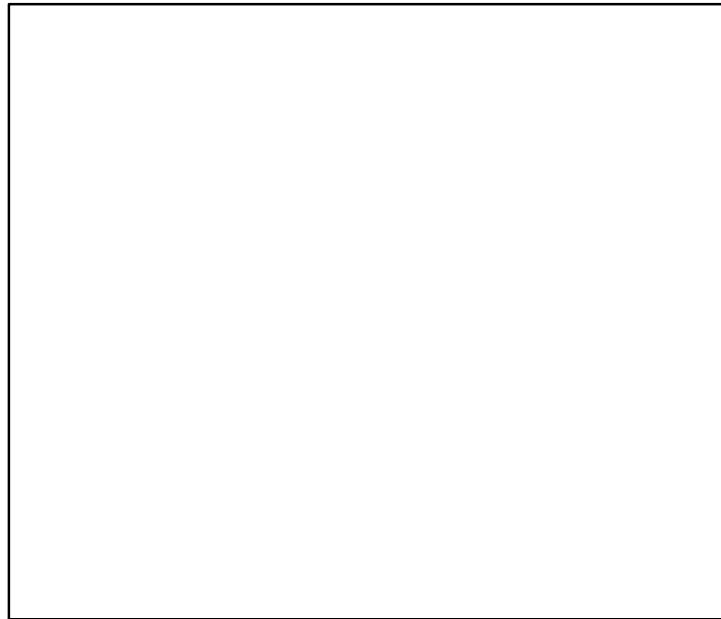
| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | -     | -         | -          |     |     |
| <b>TL</b>          | TL-MT | 2016      | 48         |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

Orange roughy Northeast Atlantic [OROUGHYNEATL]

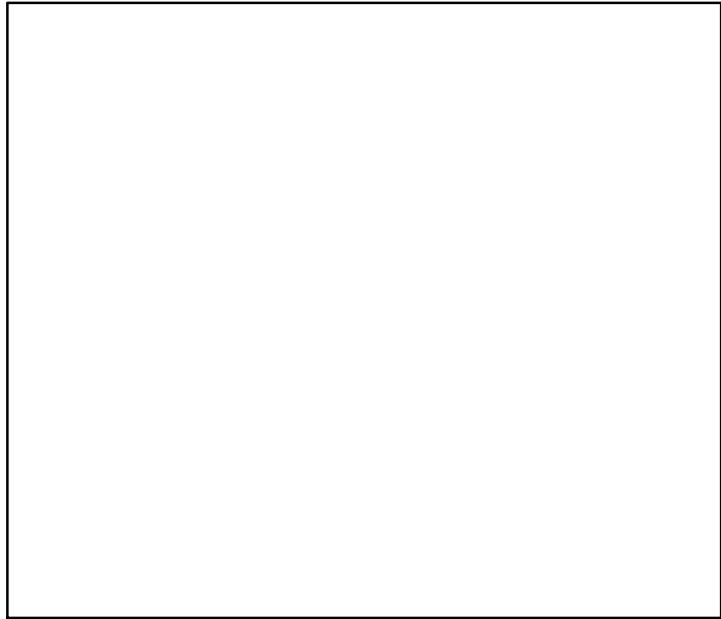
Kobe MSY\*



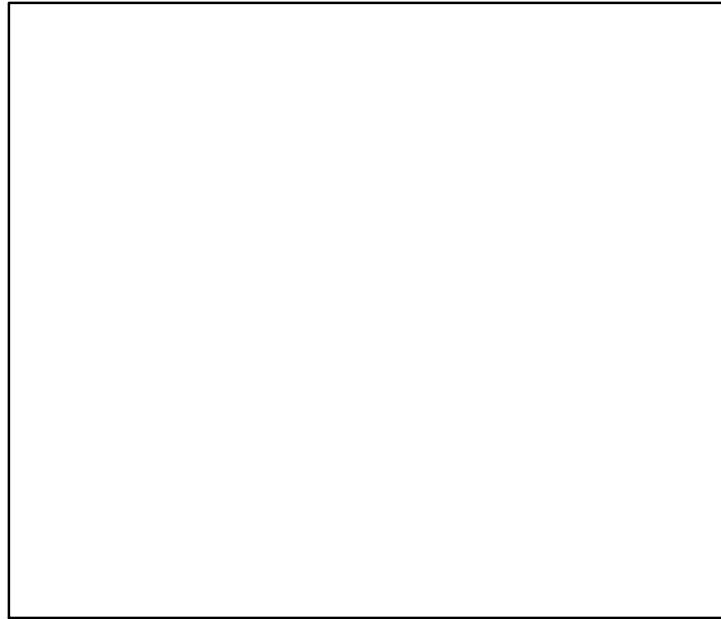
Kobe MGT\*



Spawner Recruit\*



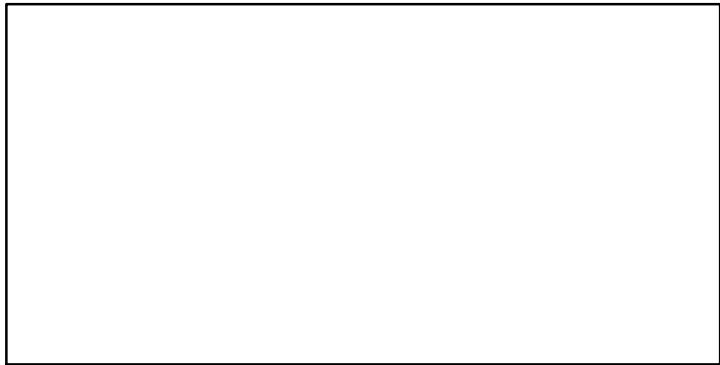
Production\*



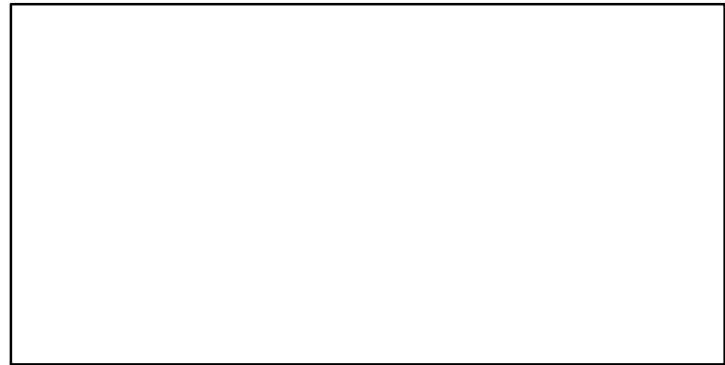
♦ Start Year ♦ End Year \* No Data

**Orange roughy Northeast Atlantic [OROUGHYNEATL]**

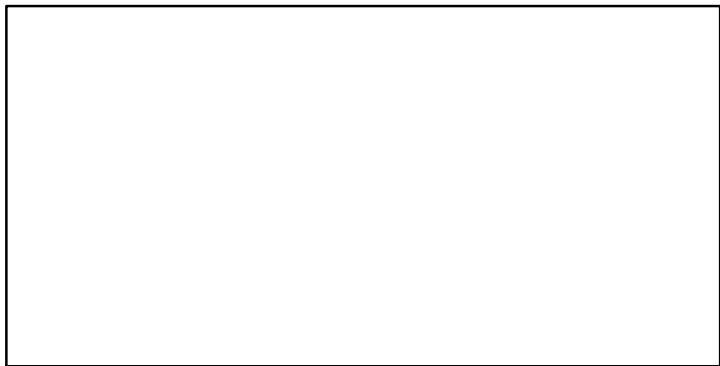
**TB\***



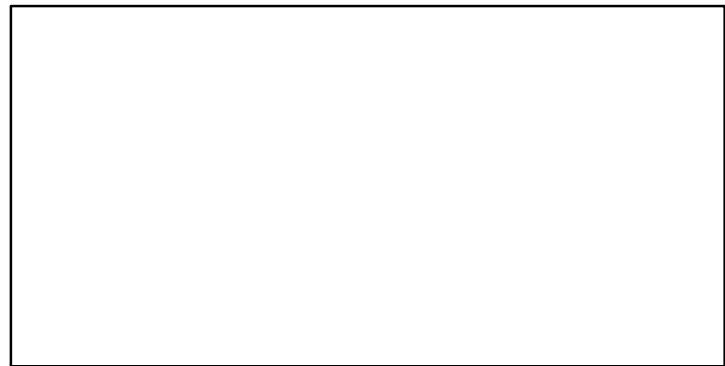
**SSB\***



**TN \***



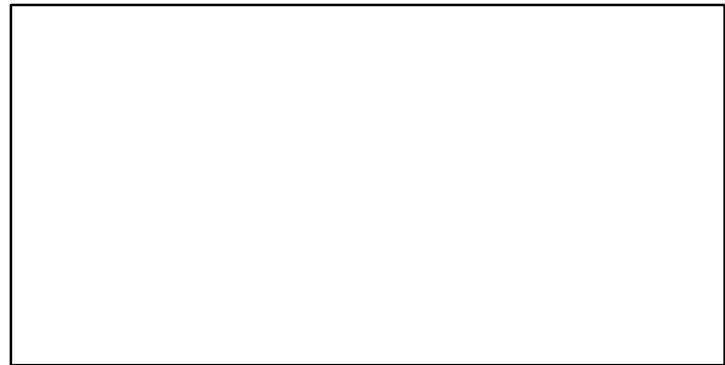
**F\***



**ER\***



**Recruits\***

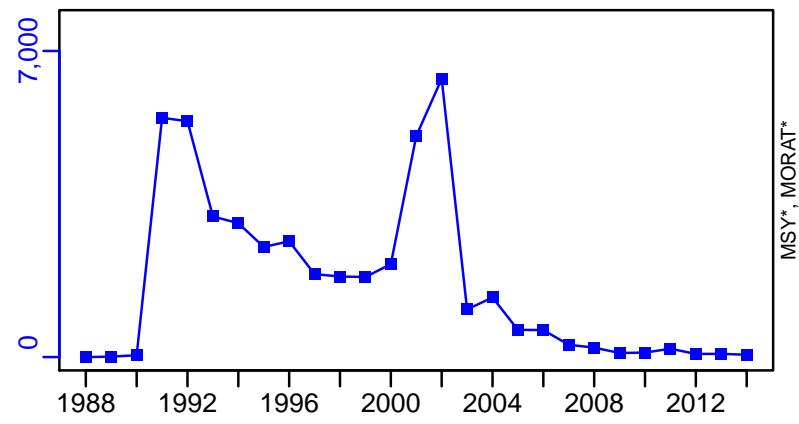


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Orange roughy Northeast Atlantic [OROUGHYNEATL]

TL-MT, TC\*, RecC\* (1988–2016—ICESIMP2016)

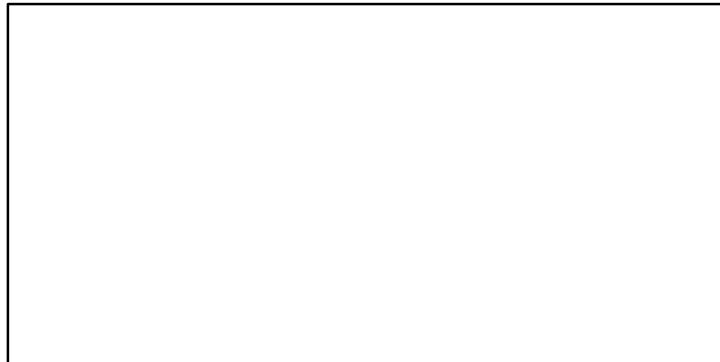
TAC\*, Cpair\*, Cadv\*



survB\*



CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Northern shrimp ICES 3a(west)-4a(east) [PANDALIIIaW-IVaE]

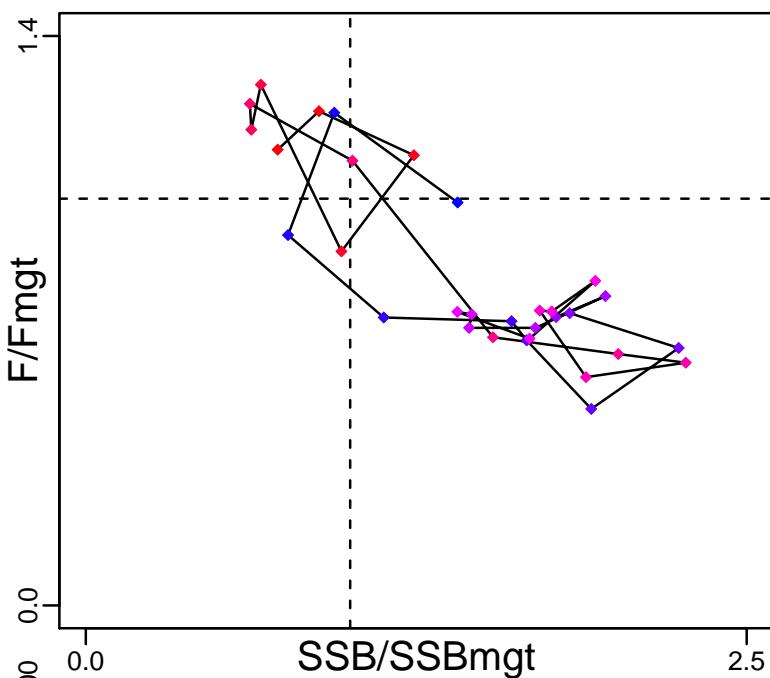
| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Pandalus borealis                                     |
| <b>Current Assess ID</b>    | NIPAG-PANDALIIIaW-IVaE-1988-2019-ICESIMP2021          |
| <b>Area</b>                 | ICES 3a(west)-4a(east)                                |
| <b>Management Authority</b> | International Council for the Exploration of the Sea  |
| <b>Assessor</b>             | Joint NAFO and ICES Pandalus Assessment Working Group |
| <b>Asmts in RAM</b>         | 2013, 2014, 2015, 2019                                |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2015             | 0.62         |
| <b>ERrmsy</b>           | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019             | 9900         |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019             | 0.59         |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | SSBlim-MT | 2015             | 6300         |
| <b>Flim</b>             | Flim-1/yr | 2015             | 1            |
| <b>ERlim</b>            | -         | -                | -            |

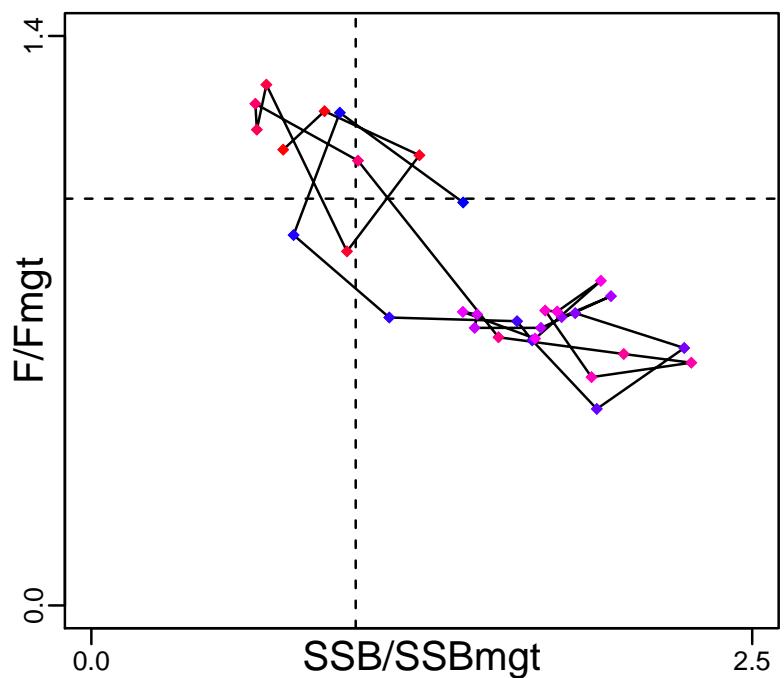
| <b>Time Series</b> |                            |                  |                   |            |            |  |
|--------------------|----------------------------|------------------|-------------------|------------|------------|--|
| <b>Type</b>        | <b>ID</b>                  | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |  |
| <b>TB</b>          | TB-MT                      | 2015             | 29,400            | Both       | -          |  |
| <b>SSB</b>         | SSB-MT                     | 2019             | 6377              | -          | -          |  |
| <b>TN</b>          | -                          | -                | -                 | -          | -          |  |
| <b>R</b>           | R-E00                      | 2019             | 7,339,340,000     | -          | 0          |  |
| <b>F</b>           | F-1/yr                     | 2019             | 0.661             | -          | 1 to 3     |  |
| <b>ER</b>          | ER-calc-ratio              | 2015             | 0.412             | -          | -          |  |
| <b>TC</b>          | TC-MT                      | 2019             | 8971              |            |            |  |
| <b>TL</b>          | TL-MT                      | 2019             | 8730              |            |            |  |
| <b>TB/TBmsy</b>    | -                          | -                | -                 |            |            |  |
| <b>SSB/SSBmsy</b>  | SSBdivSSBmsy-dimensionless | 2014             | 1.1               |            |            |  |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr           | 2015             | 1.016             |            |            |  |
| <b>ER/ERrmsy</b>   | -                          | -                | -                 |            |            |  |
| <b>TB/TBmgt</b>    | -                          | -                | -                 |            |            |  |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT           | 2019             | 0.644             |            |            |  |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr           | 2019             | 1.12              |            |            |  |
| <b>ER/ERmgt</b>    | -                          | -                | -                 |            |            |  |

Northern shrimp ICES 3a(west)–4a(east) [PANDALIIaW–IVaE]

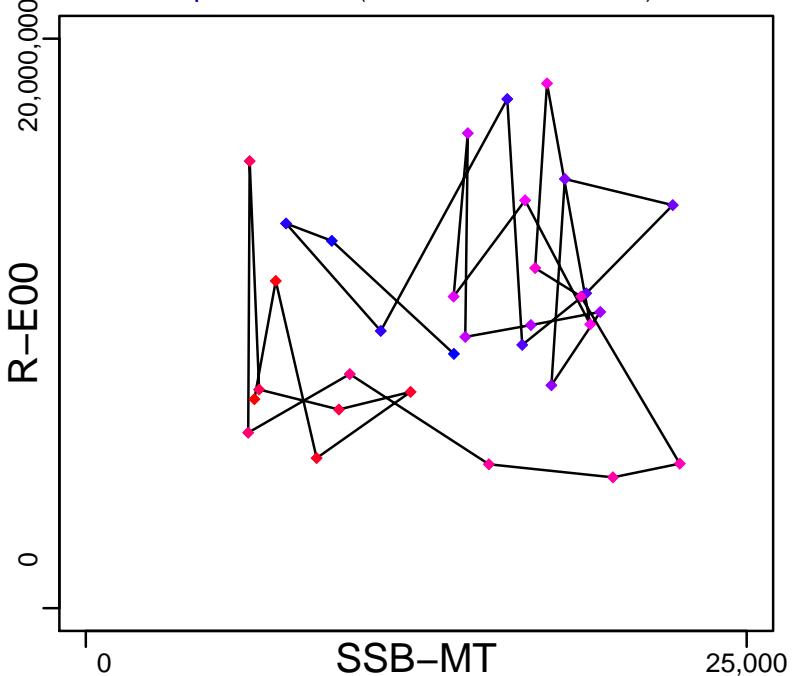
Kobe MSYpref (1988–2019–ICESIMP2021)



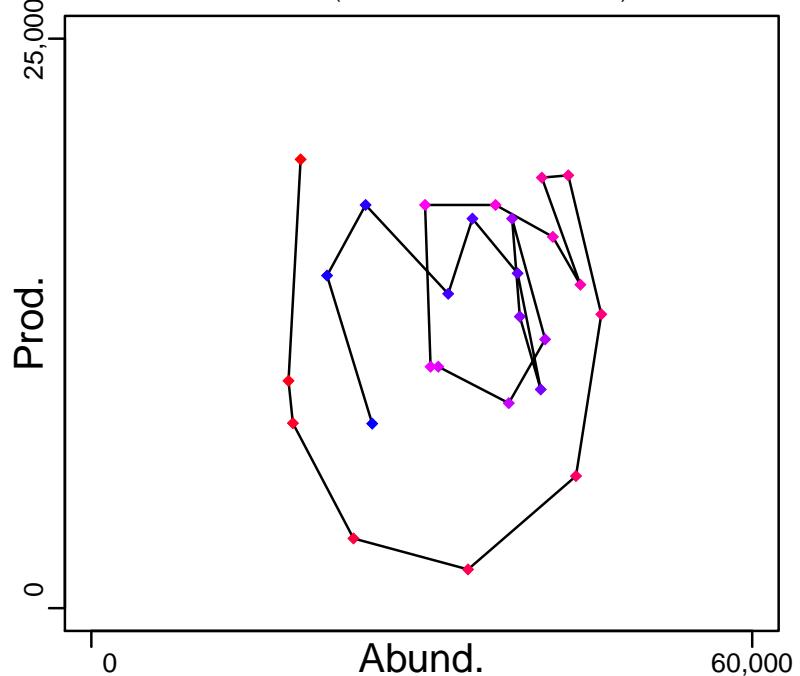
Kobe MGTpref (1988–2019–ICESIMP2021)



Spawner Recruit (1988–2019–ICESIMP2021)



Production (1988–2015–ICESIMP2016)

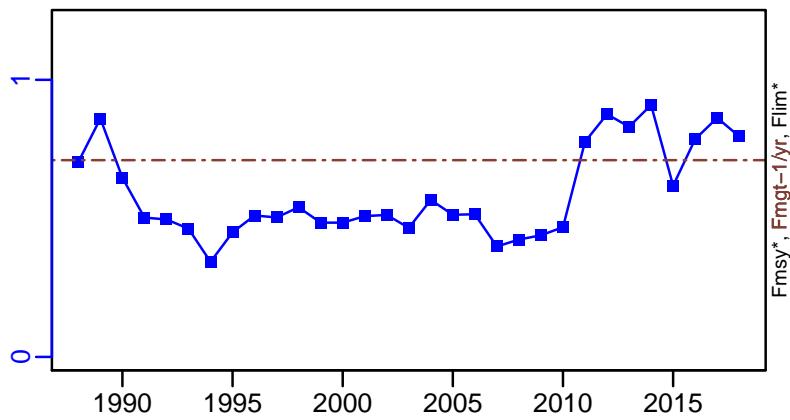
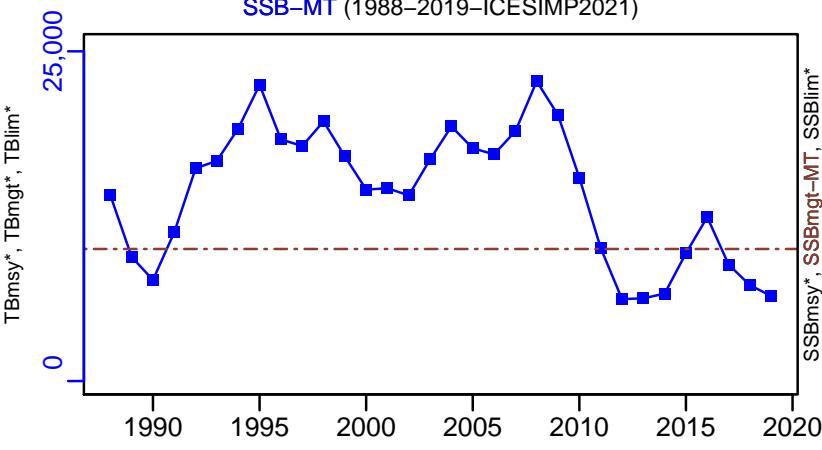
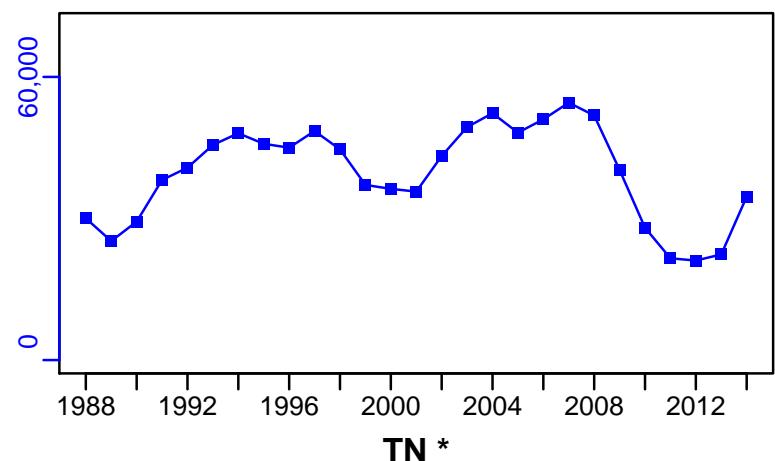


◆ Start Year   ◆ End Year   \* No Data

Northern shrimp ICES 3a(west)–4a(east) [PANDALIIIaW–IVaE]

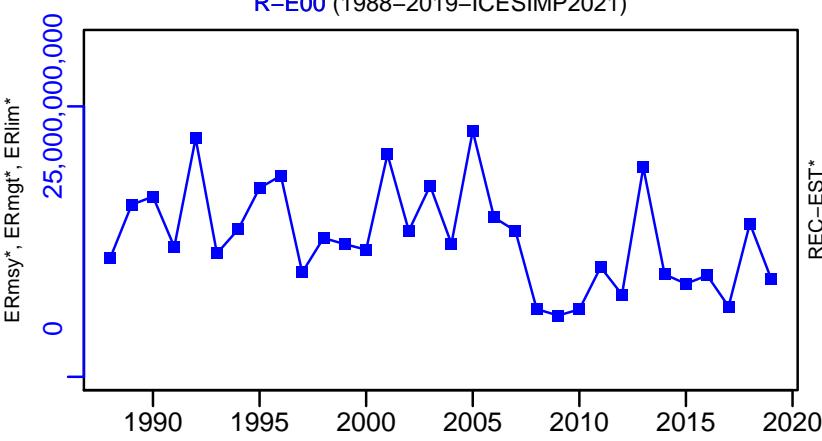
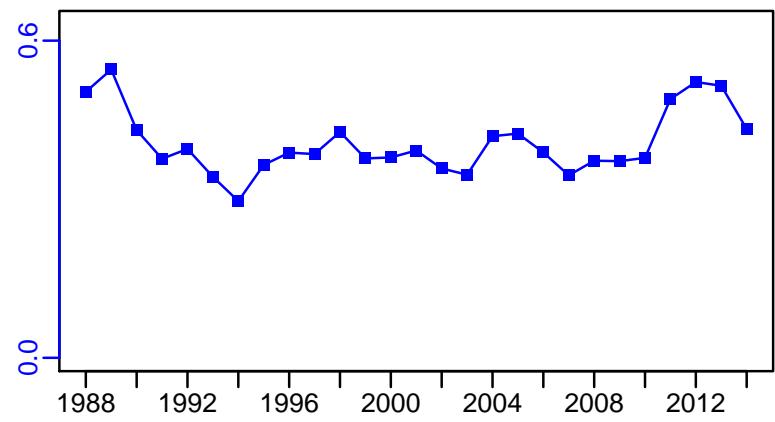
TB-MT (1988–2015–ICESIMP2016)

SSB-MT (1988–2019–ICESIMP2021)



ER-calc-ratio (1988–2015–ICESIMP2016)

R-E00 (1988–2019–ICESIMP2021)

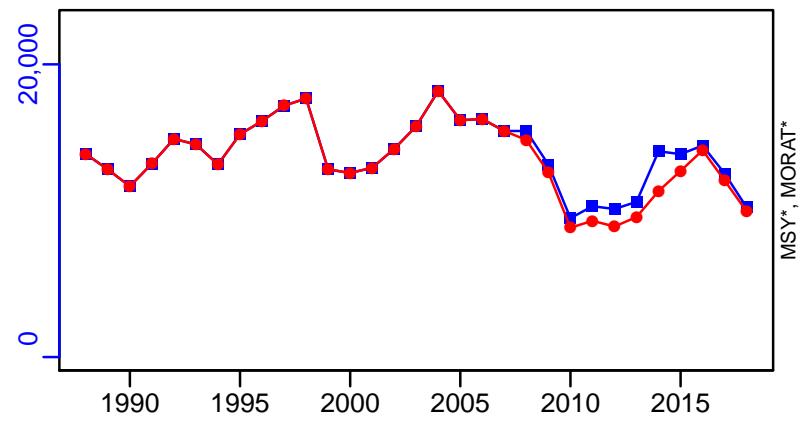


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | --- Lim BRP  | * No Data |

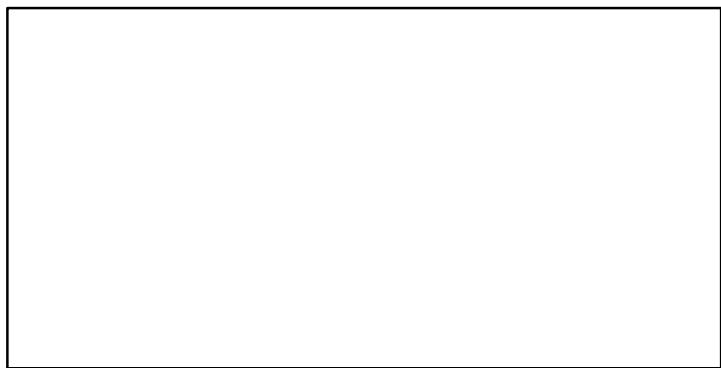
Northern shrimp ICES 3a(west)–4a(east) [PANDALIIIaW–IVaE]

TC–MT, TL–MT, RecC\* (1988–2019–ICESIMP2021)

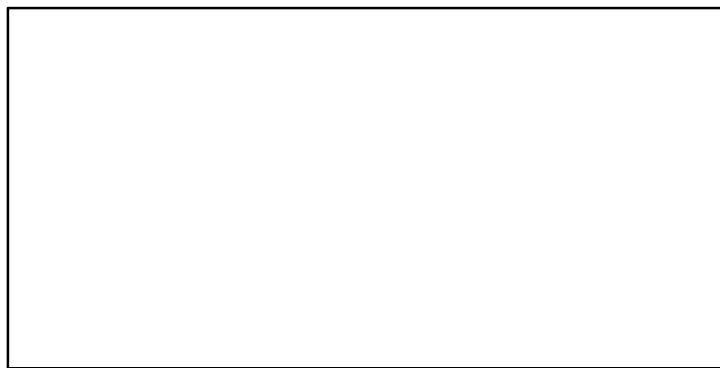
TAC\*, Cpair\*, Cadv\*



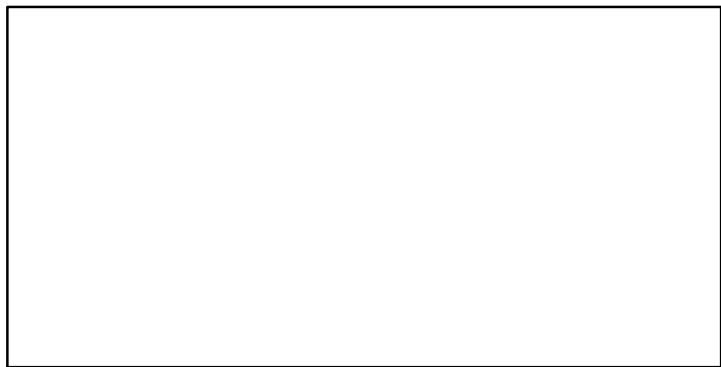
survB\*



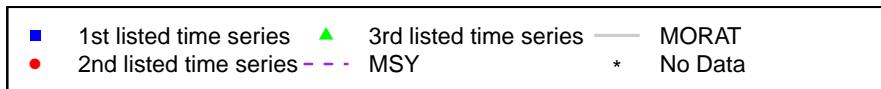
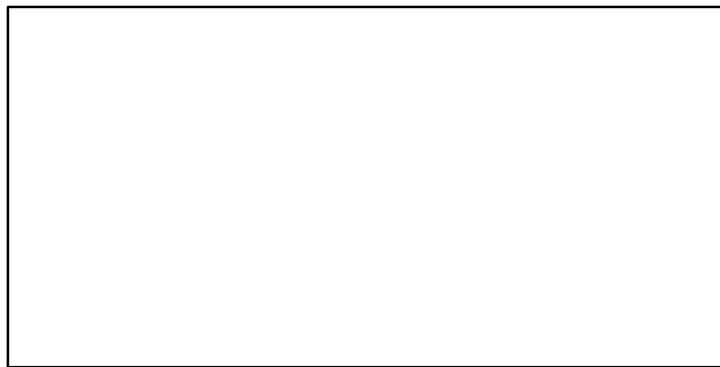
CPUE\*



EFFORT\*



CdivMSY\*



## Northern shrimp Northern North Sea [PANDALIVa]

| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Pandalus borealis                                     |
| <b>Current Assess ID</b>    | NIPAG-PANDALIVa-1970-2019-ICESIMP2021                 |
| <b>Area</b>                 | Northern North Sea                                    |
| <b>Management Authority</b> | International Council for the Exploration of the Sea  |
| <b>Assessor</b>             | Joint NAFO and ICES Pandalus Assessment Working Group |
| <b>Asmts in RAM</b>         | 2015, 2019  |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | -     | -         | -          |     |     |
| <b>TL</b>          | TL-MT | 2019      | 1.4        |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

**Spawner Recruit\***

**Production\***

◆ Start Year ♦ End Year \* No Data

**Northern shrimp Northern North Sea [PANDALIVa]**

**TB\***



**SSB\***



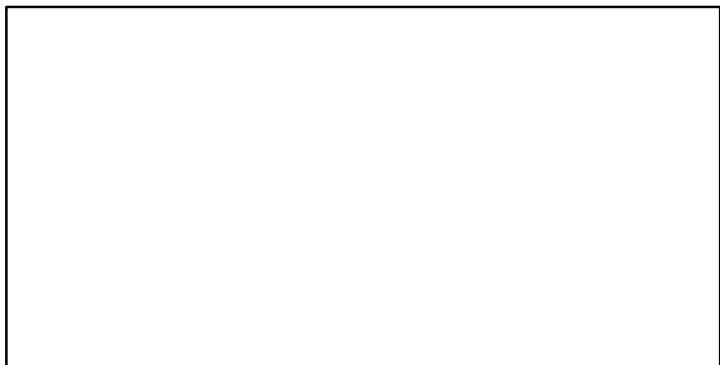
**TN \***



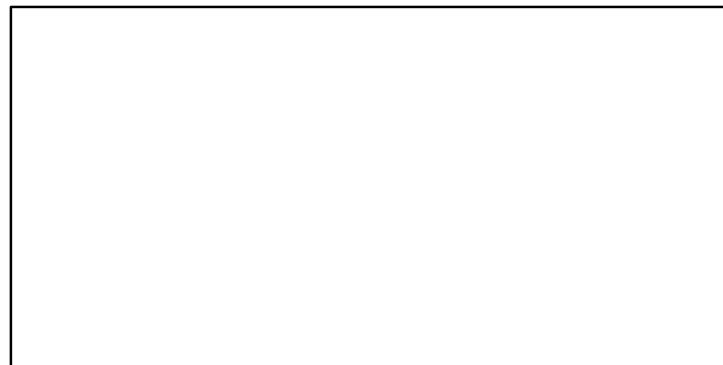
**F\***



**ER\***



**Recruits\***

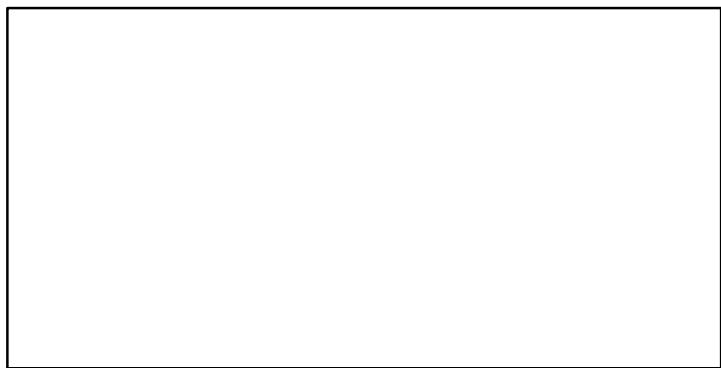
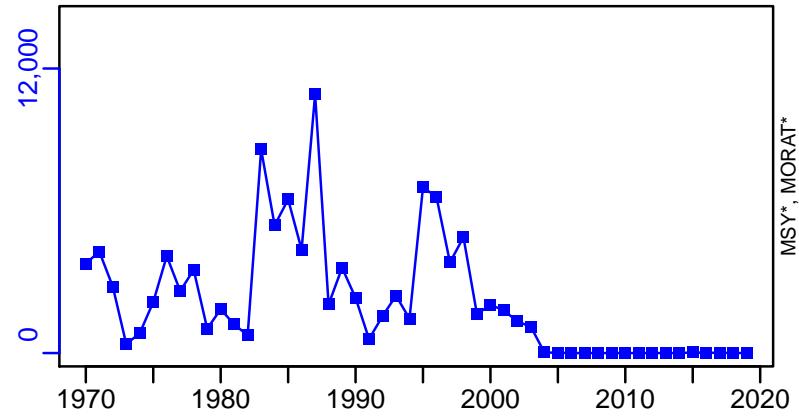


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

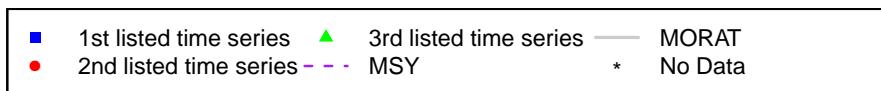
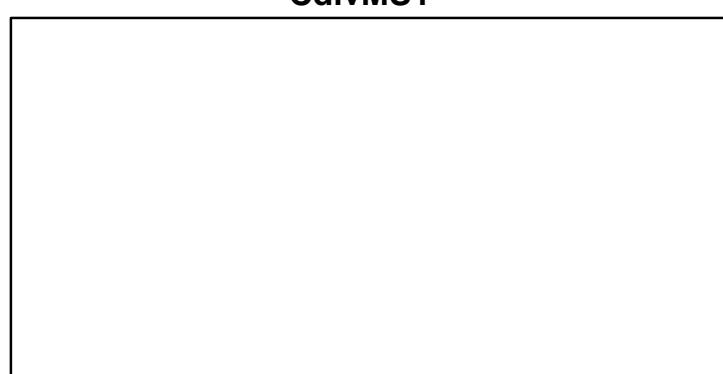
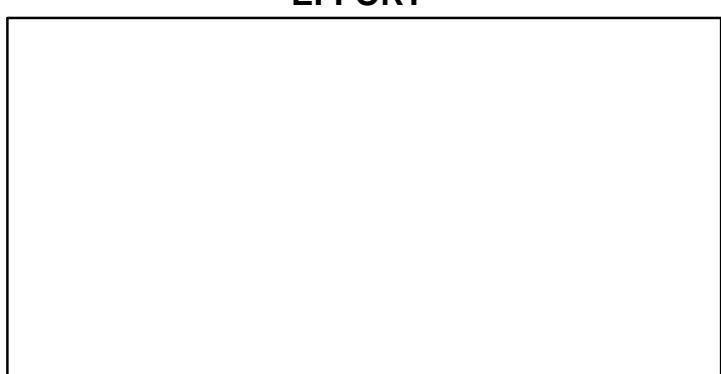
Northern shrimp Northern North Sea [PANDALIVa]

TL-MT, TC\*, RecC\* (1970–2019—ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



CPUE\*



## European plaice Subdivisions 21-23 [PLAIC2123]

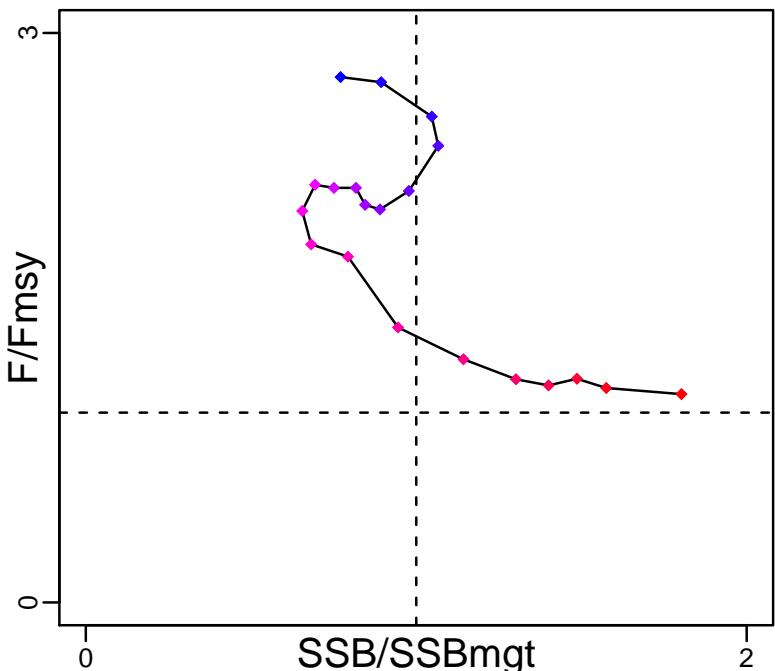
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Pleuronectes platessa                                |
| <b>Current Assess ID</b>    | WGBFAS-PLAIC2123-1998-2019-ICESIMP2021               |
| <b>Area</b>                 | Subdivisions 21-23                                   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Baltic Fisheries Assessment Working Group            |
| <b>Asmts in RAM</b>         | 2014, 2015, 2016, 2017, 2018, 2019                   |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2019             | 0.37         |
| <b>ERrmsy</b>           | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019             | 5550         |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019             | 0.37         |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | SSBlim-MT | 2018             | 4077         |
| <b>Flim</b>             | Flim-1/yr | 2018             | 1.01         |
| <b>ERlim</b>            | -         | -                | -            |

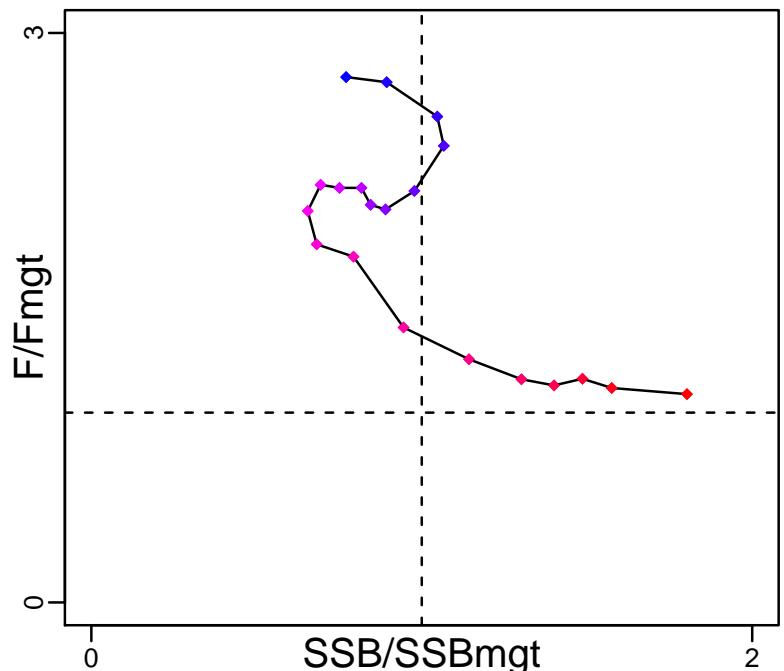
| <b>Time Series</b> |                  |                  |                   |            |            |  |
|--------------------|------------------|------------------|-------------------|------------|------------|--|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |  |
| <b>TB</b>          | TB-MT            | 2019             | 14,245            | -          | -          |  |
| <b>SSB</b>         | SSB-MT           | 2019             | 11,907            | -          | -          |  |
| <b>TN</b>          | -                | -                | -                 | -          | -          |  |
| <b>R</b>           | R-E00            | 2019             | 29,103            | -          | 1          |  |
| <b>F</b>           | F-1/yr           | 2019             | 0.406             | -          | 3 to 5     |  |
| <b>ER</b>          | ER-calc-ratio    | 2019             | 0.243             | -          | -          |  |
| <b>TC</b>          | TC-MT            | 2018             | 4240              |            |            |  |
| <b>TL</b>          | TL-MT            | 2019             | 3459              |            |            |  |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |  |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2019             | 1.097             |            |            |  |
| <b>ER/ERrmsy</b>   | -                | -                | -                 |            |            |  |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019             | 2.145             |            |            |  |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019             | 1.097             |            |            |  |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |  |

European plaice Subdivisions 21–23 [PLAIC2123]

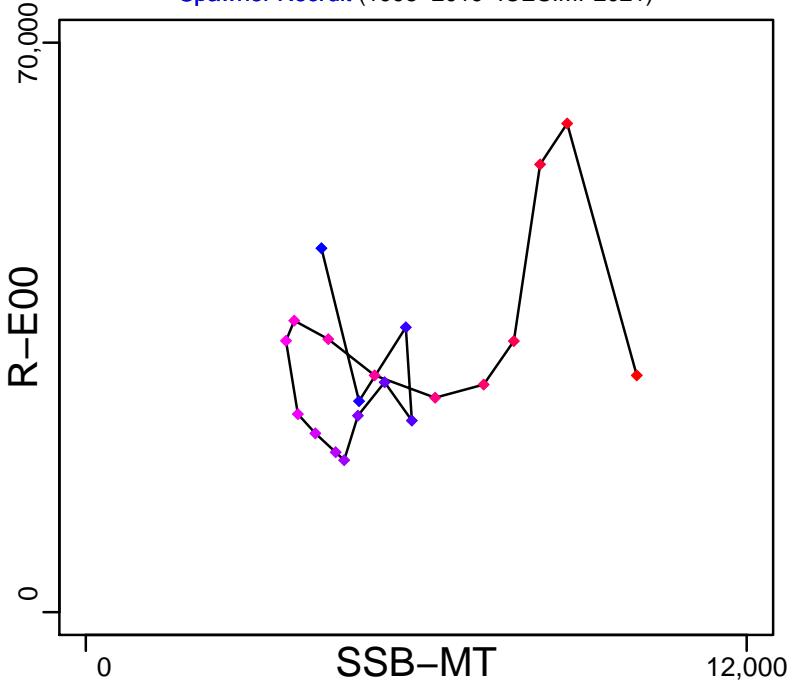
Kobe MSYpref (1998–2019–ICESIMP2021)



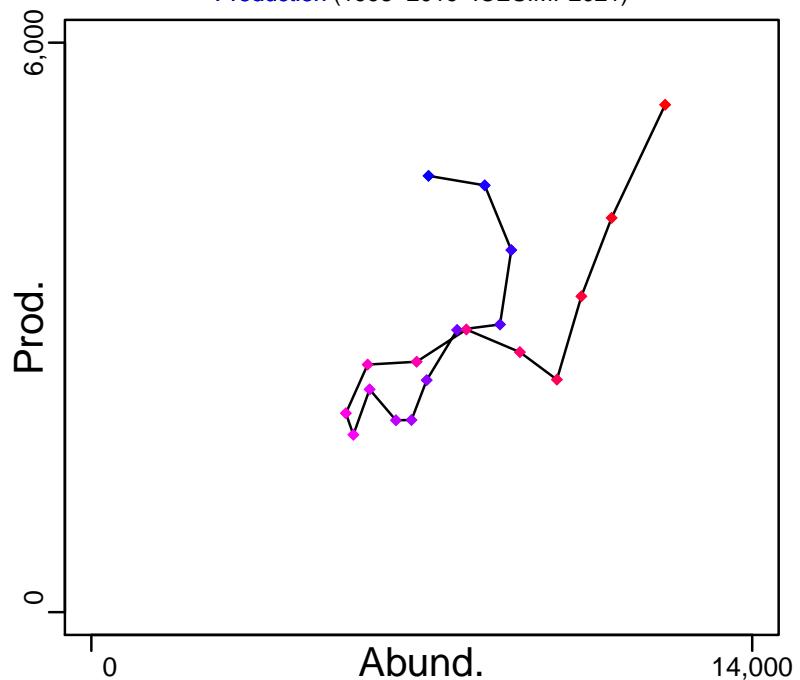
Kobe MGTpref (1998–2019–ICESIMP2021)



Spawner Recruit (1998–2019–ICESIMP2021)



Production (1998–2019–ICESIMP2021)

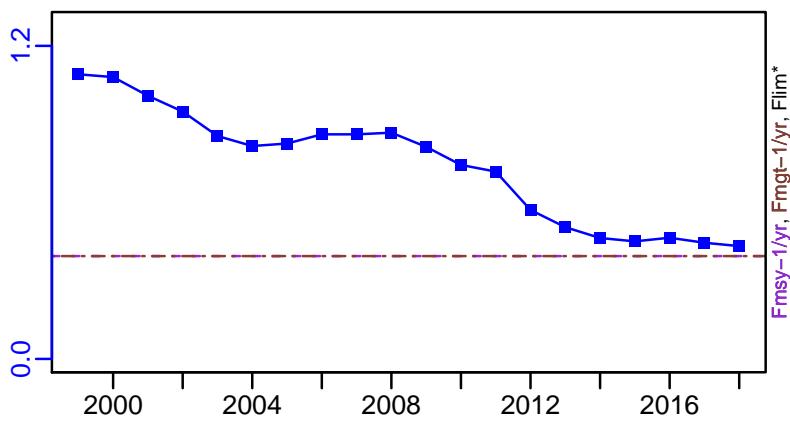
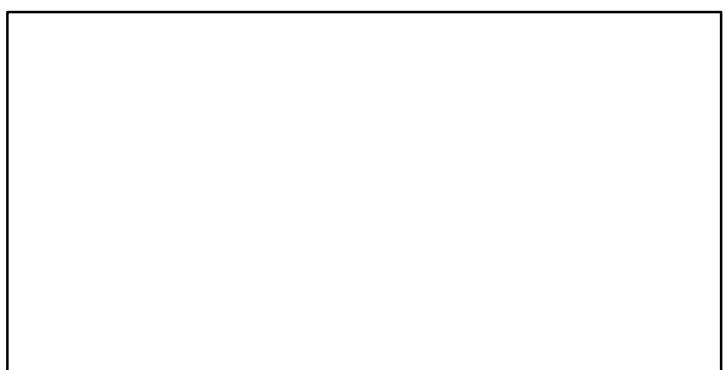
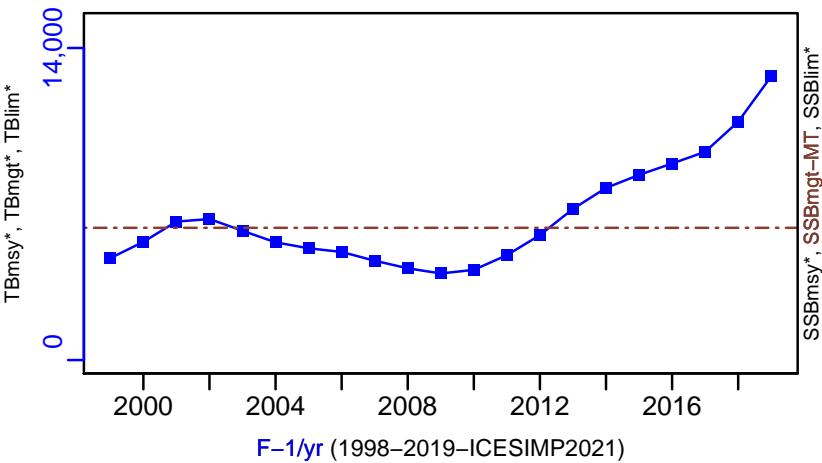
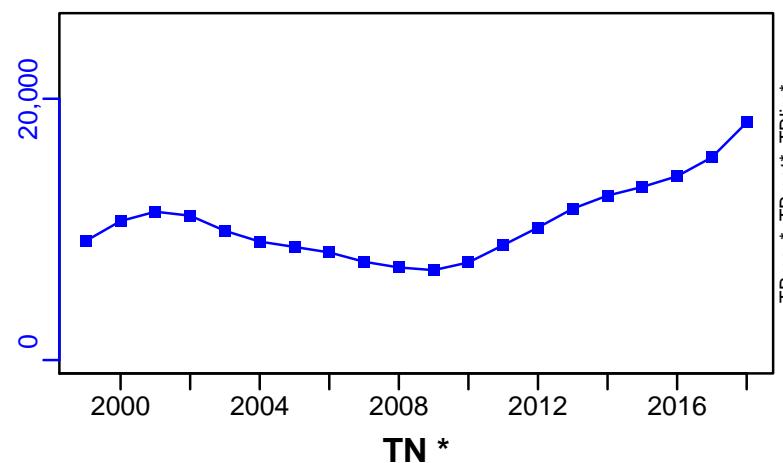


◆ Start Year   ◆ End Year   \* No Data

### European plaice Subdivisions 21–23 [PLAIC2123]

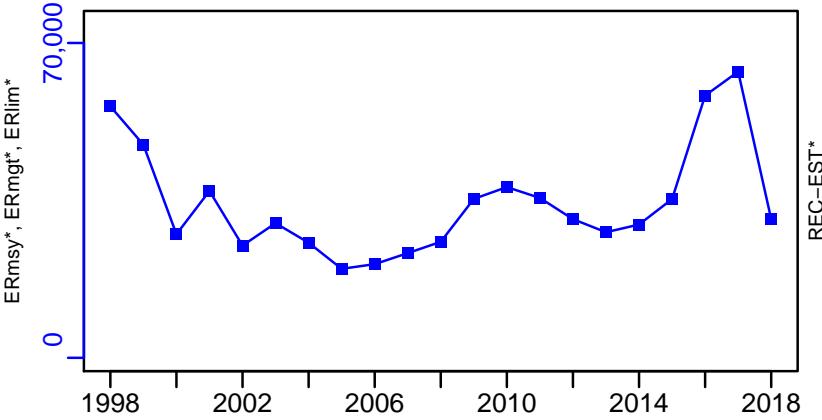
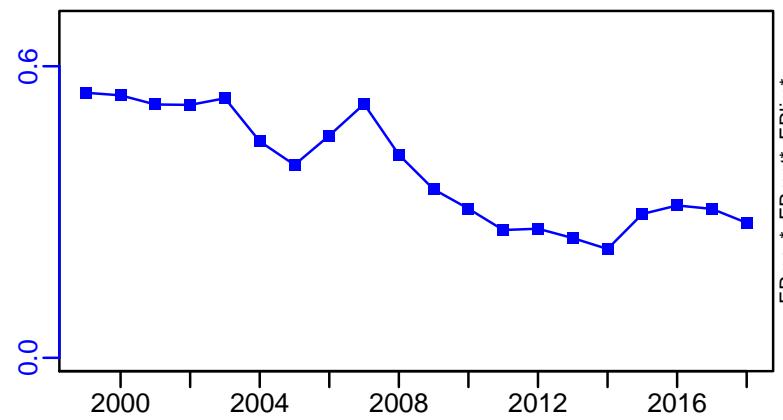
TB-MT (1998–2019–ICESIMP2021)

SSB-MT (1998–2019–ICESIMP2021)



ER-calc-ratio (1998–2019–ICESIMP2021)

R-E00 (1998–2019–ICESIMP2021)

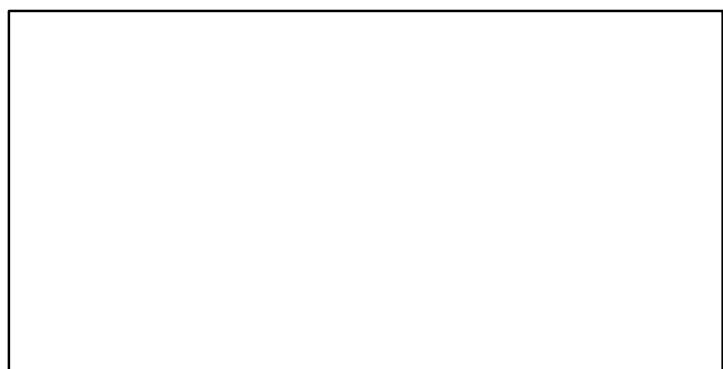
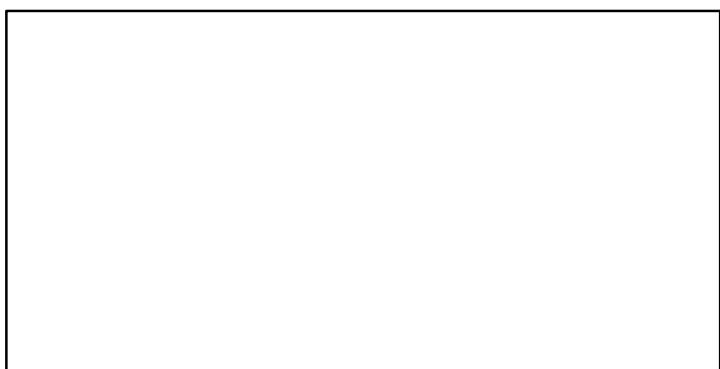
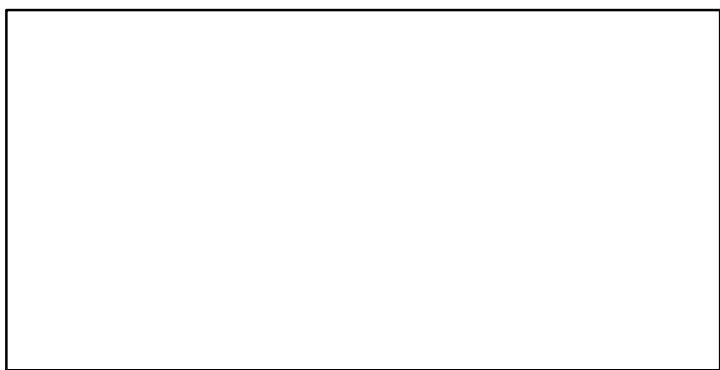
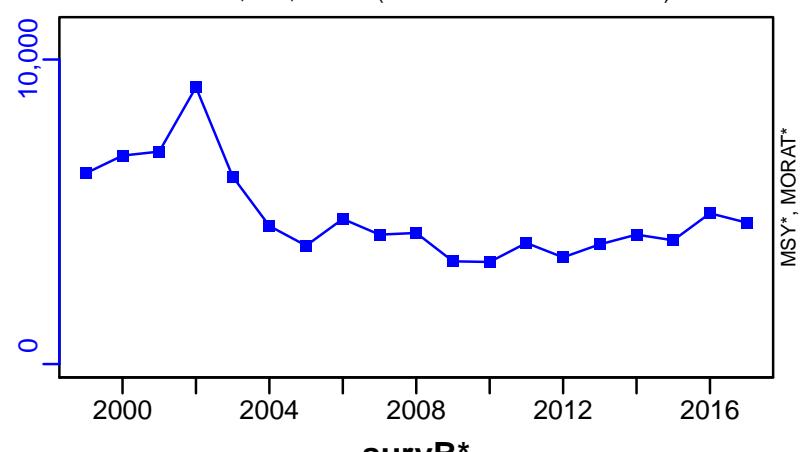


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - MSY-based BRP      | --- Lim BRP  | * No Data |

European plaice Subdivisions 21–23 [PLAIC2123]

TC-MT, TL\*, RecC\* (1998–2018–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

## European plaice Subdivisions 24-32 [PLAIC2432]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Pleuronectes platessa                                |
| <b>Current Assess ID</b>    | WGBFAS-PLAIC2432-2001-2019-ICESIMP2021               |
| <b>Area</b>                 | Subdivisions 24-32                                   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Baltic Fisheries Assessment Working Group            |
| <b>Asmts in RAM</b>         | 2015, 2016, 2017, 2018, 2019                         |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | -         | -                | -            |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | -         | -                | -            |
| <b>Fmgt</b>             | -         | -                | -            |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | -         | -                | -            |
| <b>Flim</b>             | -         | -                | -            |
| <b>ERlim</b>            | -         | -                | -            |

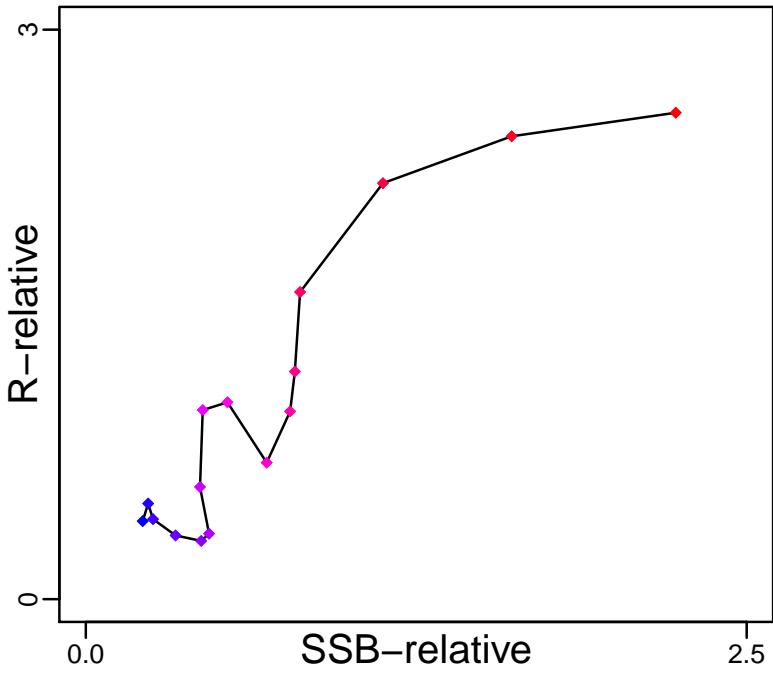
| <b>Time Series</b> |              |                  |                   |            |            |  |
|--------------------|--------------|------------------|-------------------|------------|------------|--|
| <b>Type</b>        | <b>ID</b>    | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |  |
| <b>TB</b>          | TB-relative  | 2019             | 3.224             | -          | -          |  |
| <b>SSB</b>         | SSB-relative | 2019             | 3.579             | -          | -          |  |
| <b>TN</b>          | -            | -                | -                 | -          | -          |  |
| <b>R</b>           | R-relative   | 2019             | 2.562             | -          | 1          |  |
| <b>F</b>           | F-relative   | 2019             | 0.541             | -          | 2 to 5     |  |
| <b>ER</b>          | -            | -                | -                 | -          | -          |  |
| <b>TC</b>          | TC-MT        | 2019             | 2355              |            |            |  |
| <b>TL</b>          | TL-MT        | 2019             | 1644              |            |            |  |
| <b>TB/TBmsy</b>    | -            | -                | -                 |            |            |  |
| <b>SSB/SSBmsy</b>  | -            | -                | -                 |            |            |  |
| <b>F/Fmsy</b>      | -            | -                | -                 |            |            |  |
| <b>ER/ERmsy</b>    | -            | -                | -                 |            |            |  |
| <b>TB/TBmgt</b>    | -            | -                | -                 |            |            |  |
| <b>SSB/SSBmgt</b>  | -            | -                | -                 |            |            |  |
| <b>F/Fmgt</b>      | -            | -                | -                 |            |            |  |
| <b>ER/ERmgt</b>    | -            | -                | -                 |            |            |  |

Kobe MSY\*

Kobe MGT\*

Spawner Recruit (2001–2019–ICESIMP2021)

Production\*

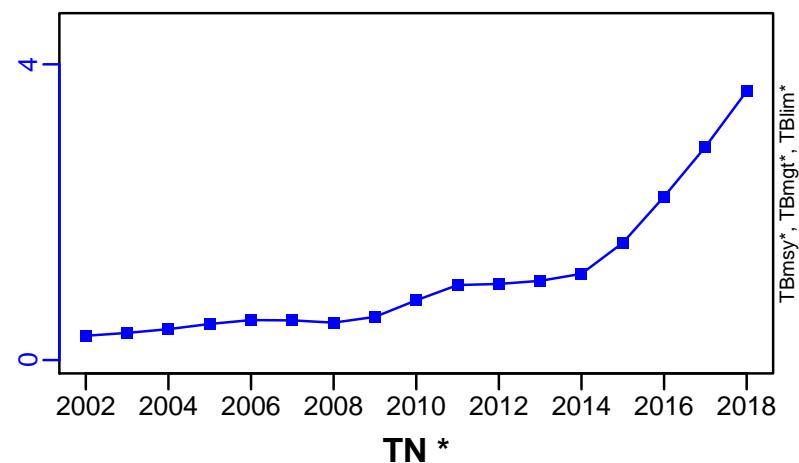


◆ Start Year   ◆ End Year   \* No Data

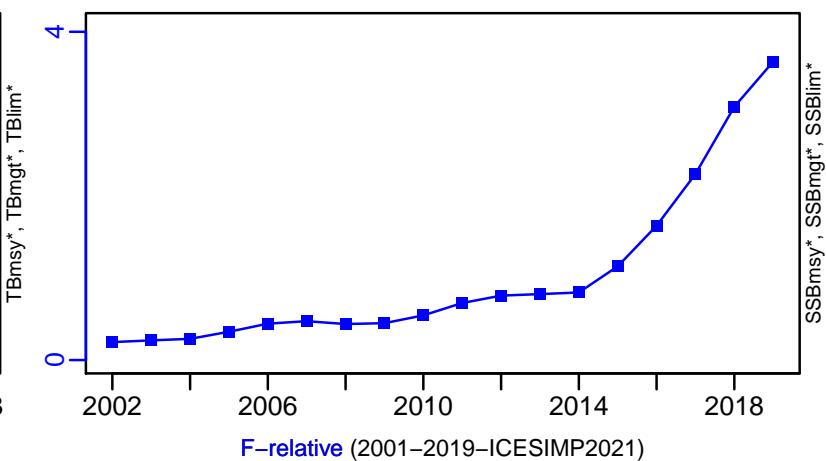
European plaice Subdivisions 24–32 [PLAIC2432]

TB-relative (2001–2019–ICESIMP2021)

SSB-relative (2001–2019–ICESIMP2021)



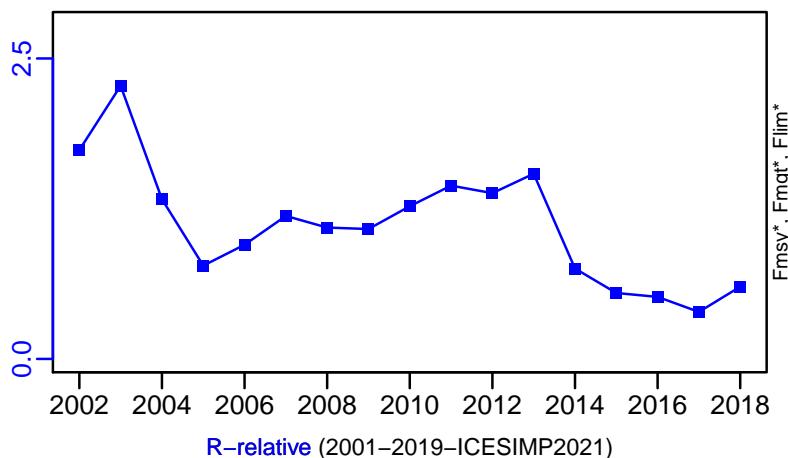
TN \*



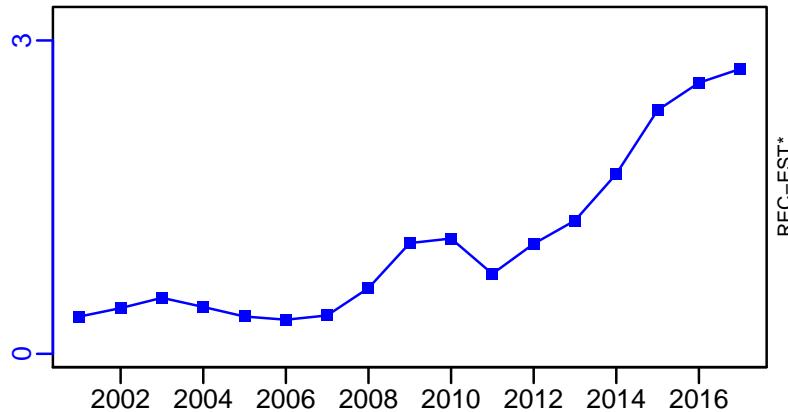
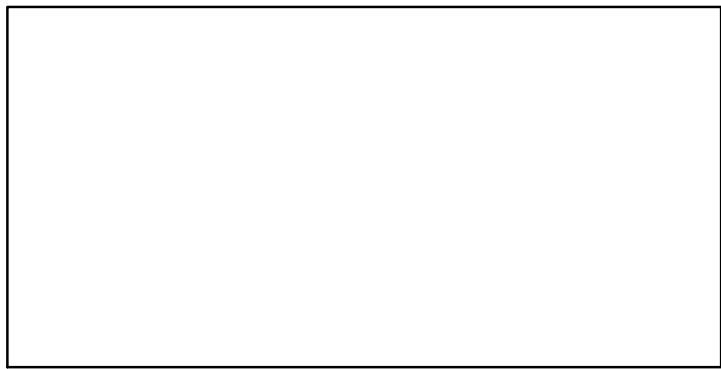
SSB<sub>m</sub>s<sup>y</sup>, SSB<sub>m</sub>gt<sup>\*</sup>, SSB<sub>lim</sub><sup>\*</sup>



ER\*



F<sub>m</sub>s<sup>y</sup>, F<sub>m</sub>gt<sup>\*</sup>, F<sub>lim</sub><sup>\*</sup>



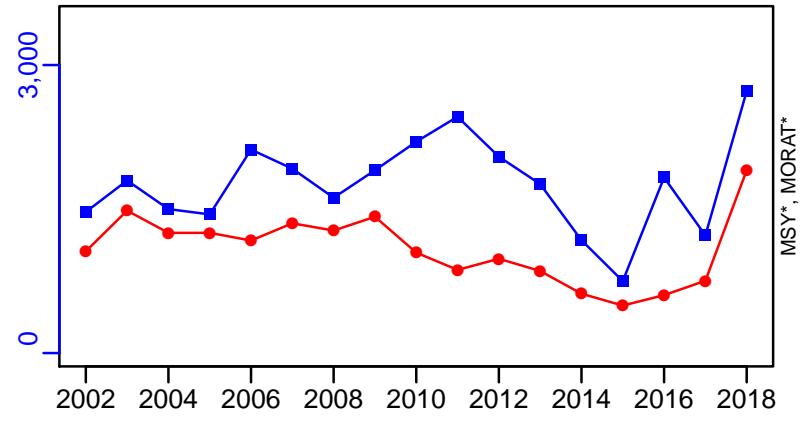
R<sub>m</sub>s<sup>y</sup>, R<sub>m</sub>gt<sup>\*</sup>, R<sub>lim</sub><sup>\*</sup>

- Listed time series
- Target BRP
- MSY-based BRP
- Lim BRP
- Rec-Est
- \* No Data

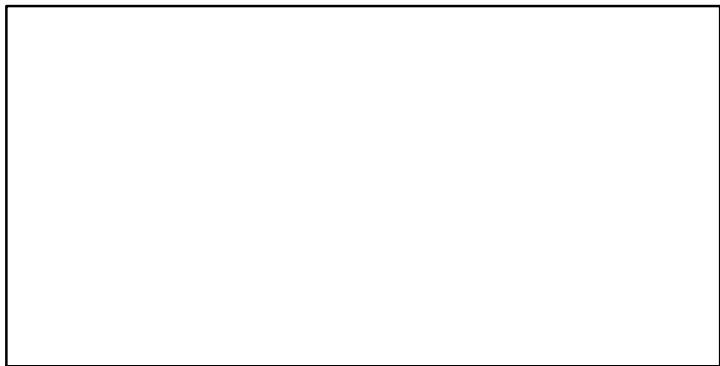
European plaice Subdivisions 24–32 [PLAIC2432]

TC-MT, TL-MT, RecC\* (2001–2019–ICESIMP2021)

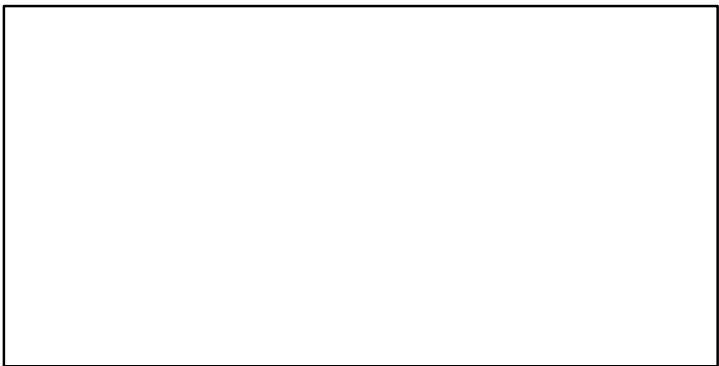
TAC\*, Cpair\*, Cadv\*



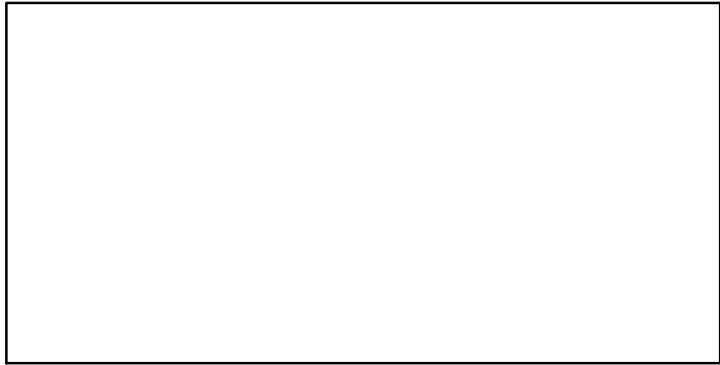
survB\*



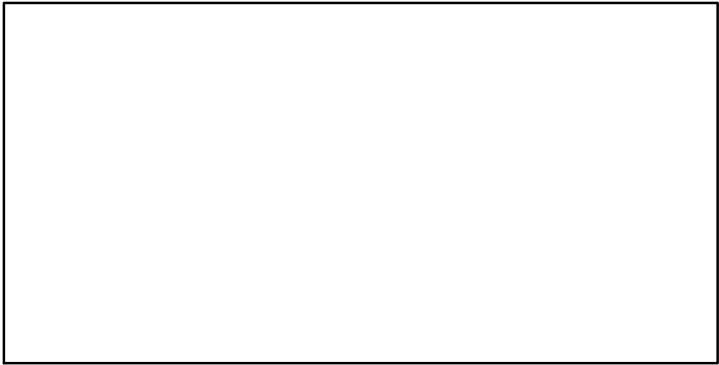
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## European plaice Eastern English Channel [PLAIC7d]

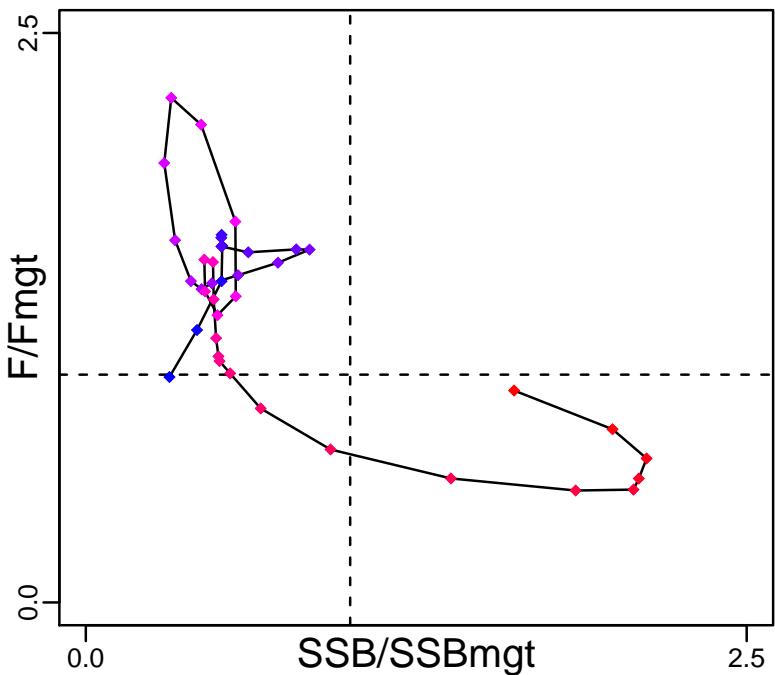
| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Pleuronectes platessa   |
| <b>Current Assess ID</b>    | WGNSSK-PLAIC7d-1979-2019-ICESIMP2021  |
| <b>Area</b>                 | Eastern English Channel   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2010, 2013, 2014, 2015, 2016, 2017, 2018, 2019                                    |

| <b>Reference Points</b> |           |           |        |  |
|-------------------------|-----------|-----------|--------|--|
| Type                    | ID        | Asmt Year | Value  |  |
| <b>TBmsy</b>            | -         | -         | -      |  |
| <b>SSBmsy</b>           | -         | -         | -      |  |
| <b>Fmsy</b>             | Fmsy-1/yr | 2018      | 0.25   |  |
| <b>ERmsy</b>            | -         | -         | -      |  |
| <b>TBmgt</b>            | -         | -         | -      |  |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019      | 25,826 |  |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019      | 0.25   |  |
| <b>ERmgt</b>            | -         | -         | -      |  |
| <b>TB0</b>              | -         | -         | -      |  |
| <b>SSB0</b>             | -         | -         | -      |  |
| <b>MSY</b>              | -         | -         | -      |  |
| <b>M</b>                | M-1/yr    | 2010      | 0.1    |  |
| <b>TBlim</b>            | -         | -         | -      |  |
| <b>SSBlim</b>           | SSBlim-MT | 2018      | 18,448 |  |
| <b>Flim</b>             | Flim-1/yr | 2018      | 0.5    |  |
| <b>ERlim</b>            | -         | -         | -      |  |

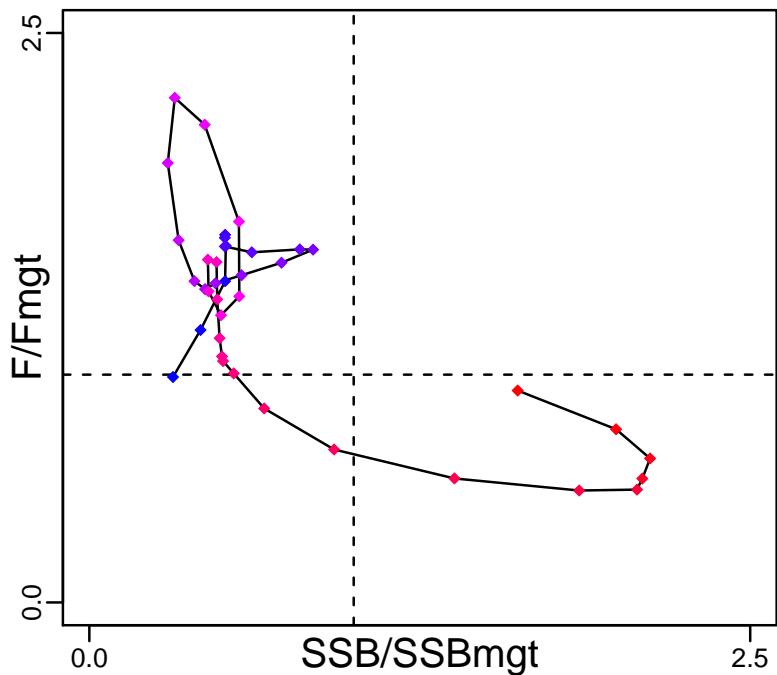
| <b>Time Series</b> |                  |           |             |      |        |  |
|--------------------|------------------|-----------|-------------|------|--------|--|
| Type               | ID               | Asmt Year | Curr Value  | Sex  | Age    |  |
| <b>TB</b>          | TB-MT            | 2010      | 9230        | Both | 1+     |  |
| <b>SSB</b>         | SSB-MT           | 2019      | 41,483      | -    | -      |  |
| <b>TN</b>          | -                | -         | -           | -    | -      |  |
| <b>R</b>           | R-E00            | 2019      | 125,133,500 | -    | 1      |  |
| <b>F</b>           | F-1/yr           | 2019      | 0.233       | -    | 3 to 6 |  |
| <b>ER</b>          | ER-ratio         | 2010      | 0.344       | -    | -      |  |
| <b>TC</b>          | TC-MT            | 2019      | 6826        |      |        |  |
| <b>TL</b>          | TL-MT            | 2019      | 3980        |      |        |  |
| <b>TB/TBmsy</b>    | -                | -         | -           |      |        |  |
| <b>SSB/SSBmgt</b>  | -                | -         | -           |      |        |  |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2018      | 0.804       |      |        |  |
| <b>ER/ERmsy</b>    | -                | -         | -           |      |        |  |
| <b>TB/TBmgt</b>    | -                | -         | -           |      |        |  |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019      | 1.606       |      |        |  |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019      | 0.93        |      |        |  |
| <b>ER/ERmgt</b>    | -                | -         | -           |      |        |  |

European plaice Eastern English Channel [PLAIC7d]

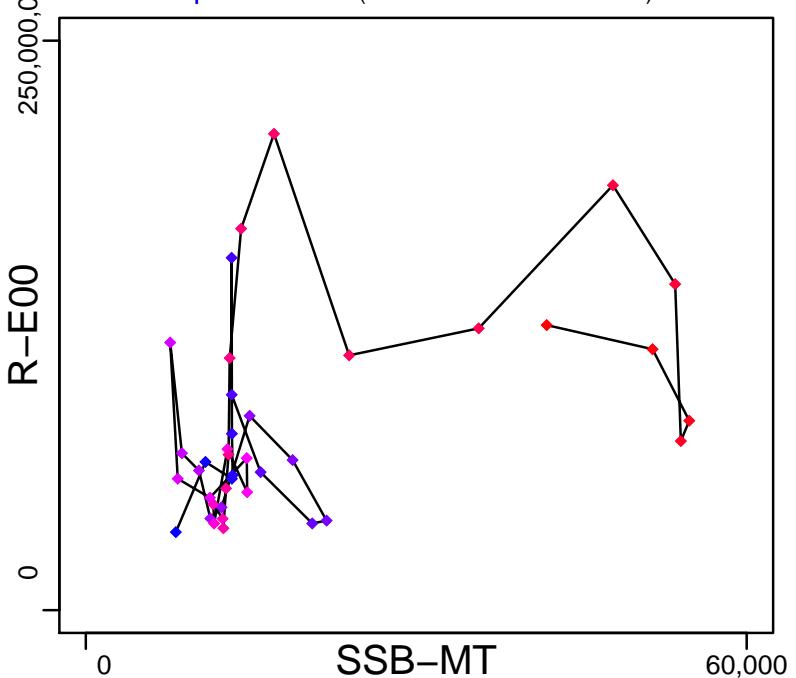
Kobe MSYpref (1979–2019–ICESIMP2021)



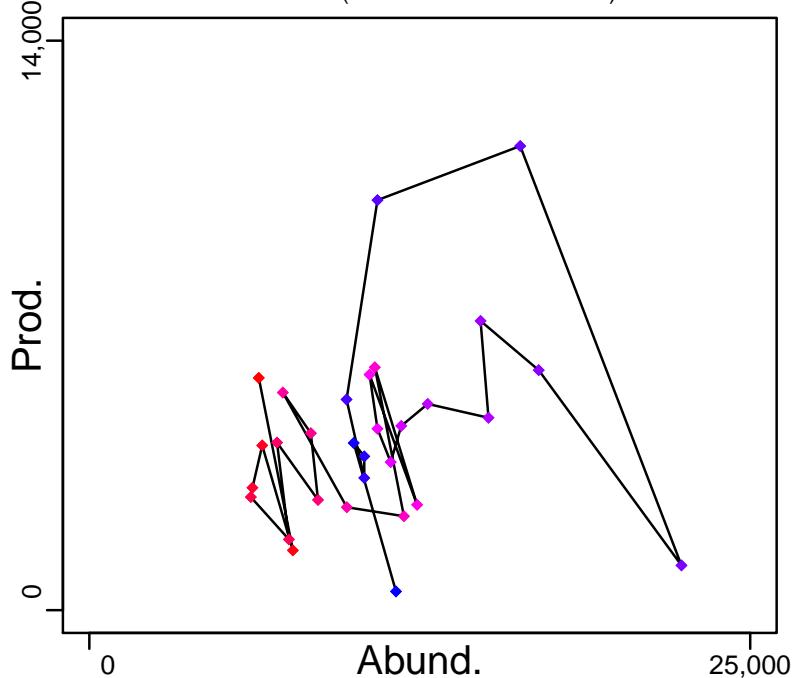
Kobe MGTpref (1979–2019–ICESIMP2021)



Spawner Recruit (1979–2019–ICESIMP2021)



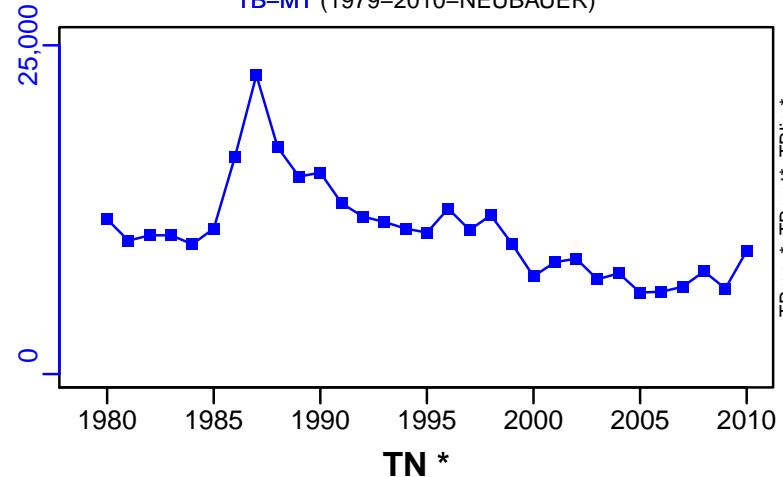
Production (1979–2010–NEUBAUER)



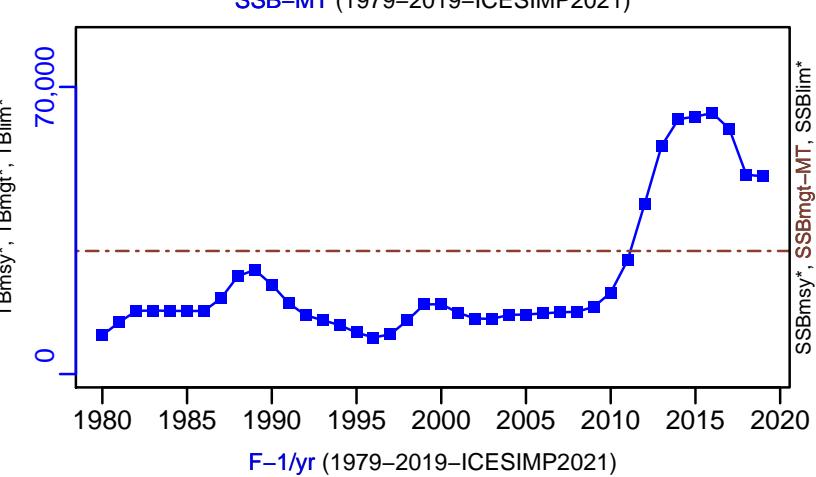
◆ Start Year ◆ End Year \* No Data

### European plaice Eastern English Channel [PLAIC7d]

TB-MT (1979–2010–NEUBAUER)

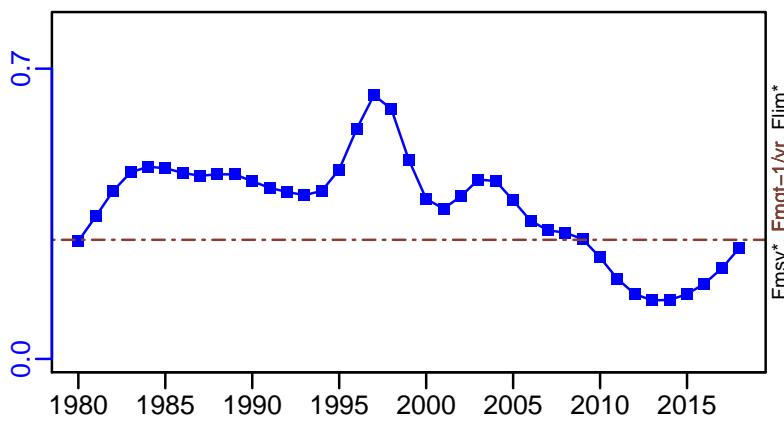
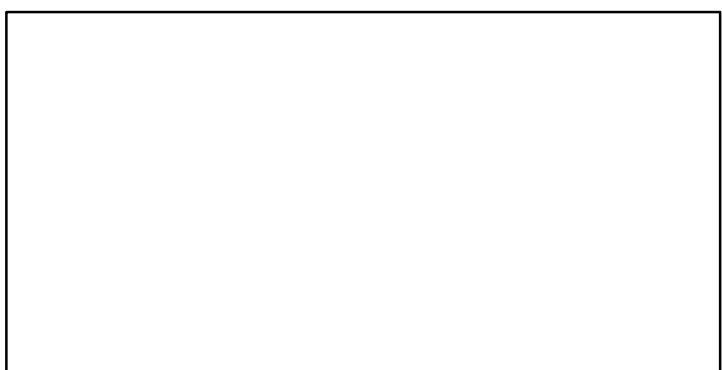


SSB-MT (1979–2019–ICESIMP2021)



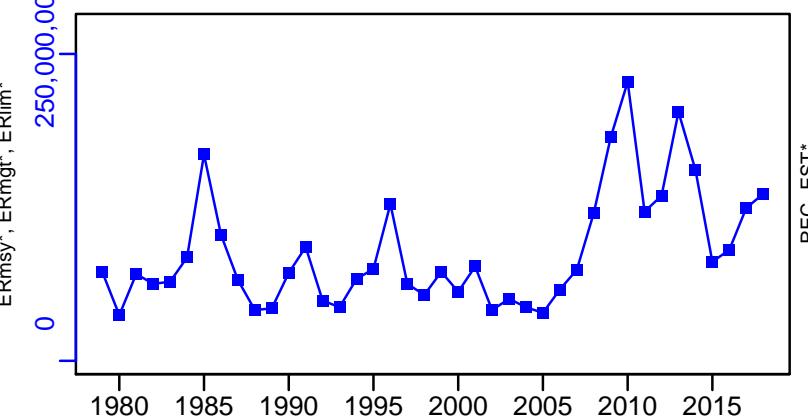
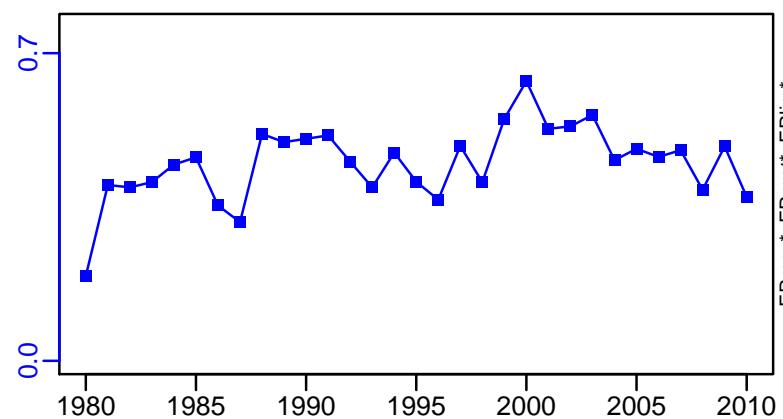
TN \*

F-1/yr (1979–2019–ICESIMP2021)



ER-ratio (1979–2010–NEUBAUER)

R-E00 (1979–2019–ICESIMP2021)

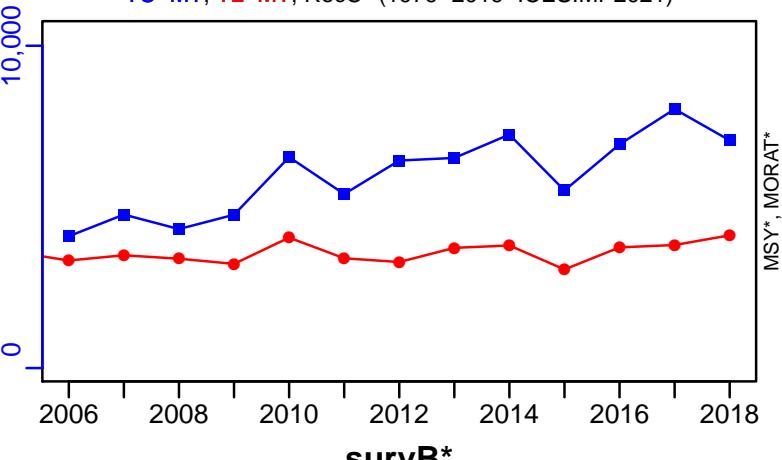


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | --- Lim BRP  | * No Data |

European plaice Eastern English Channel [PLAIC7d]

TC-MT, TL-MT, RecC\* (1979–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*

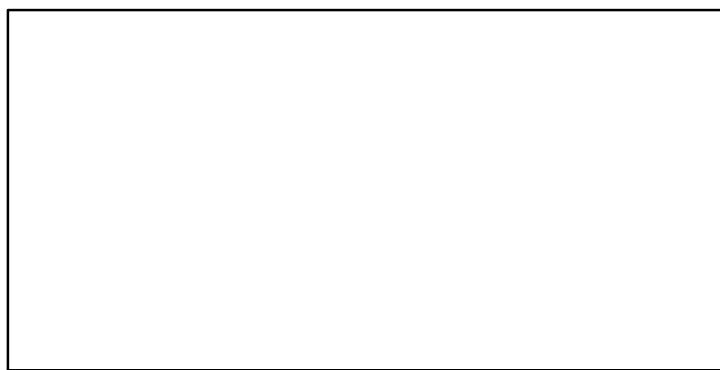


survB\*

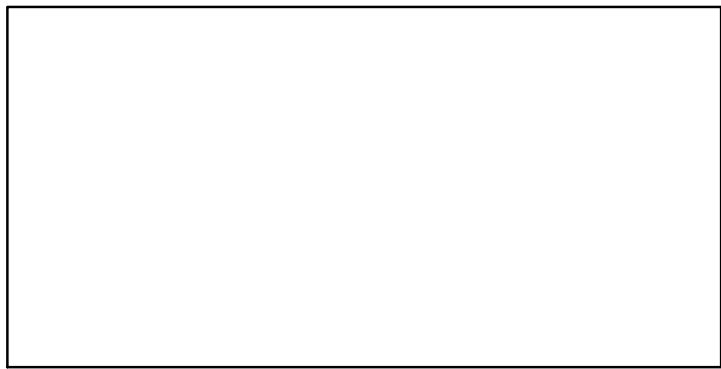
MSY\*, MORAT\*



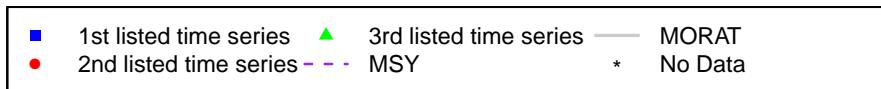
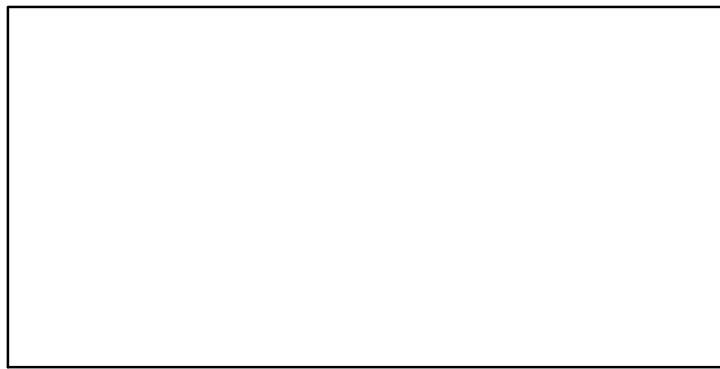
CPUE\*



EFFORT\*



CdivMSY\*



## European plaice Celtic Sea [PLAICCELT]

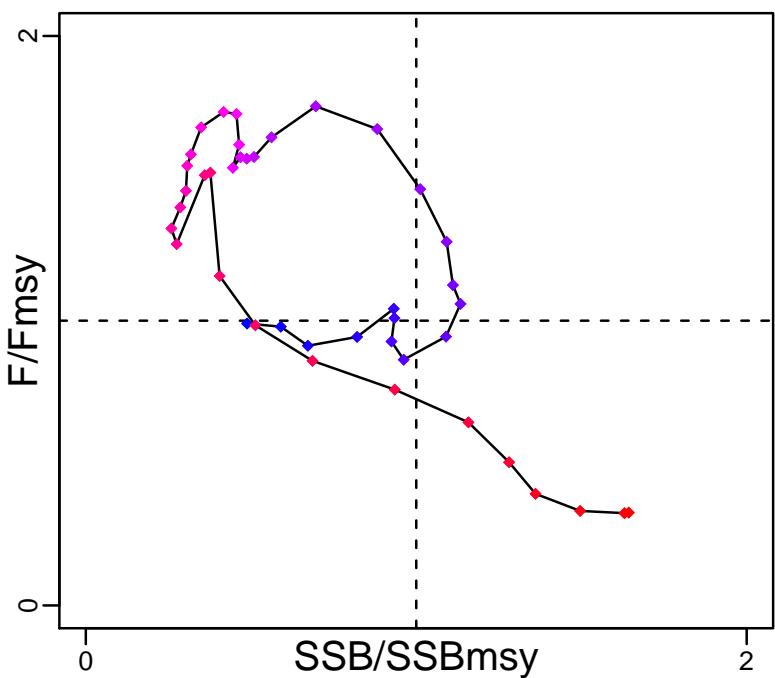
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Pleuronectes platessa                                |
| <b>Current Assess ID</b>    | WGCSE-PLAICCELT-1977-2019-ICESIMP2021                |
| <b>Area</b>                 | Celtic Sea   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2017, 2019, 2016, 2014, 2016, 2010                   |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | -         | -                | -            |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | -         | -                | -            |
| <b>Fmgt</b>             | -         | -                | -            |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | M-1/yr    | 2010             | 0.12         |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | -         | -                | -            |
| <b>Flim</b>             | -         | -                | -            |
| <b>ERlim</b>            | -         | -                | -            |

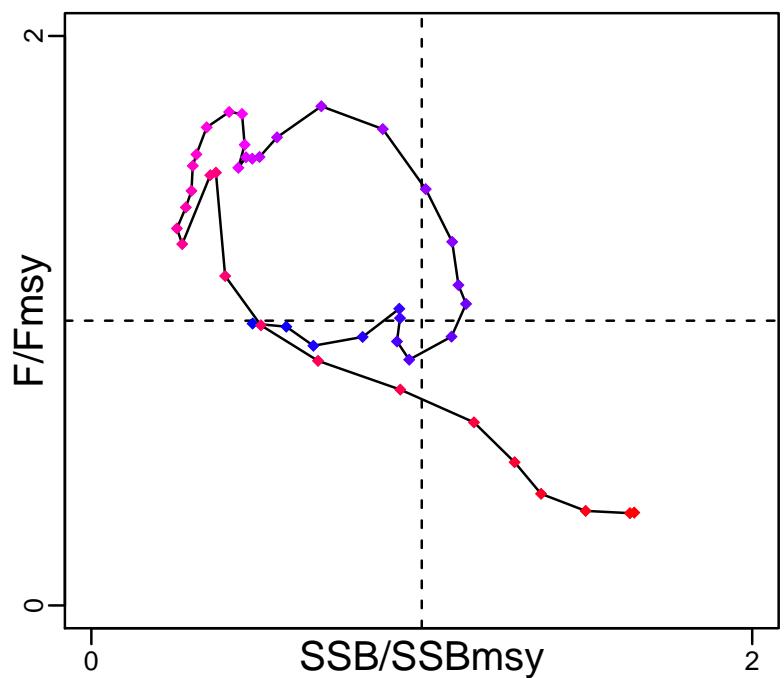
| <b>Time Series</b> |                            |                  |                   |            |            |  |
|--------------------|----------------------------|------------------|-------------------|------------|------------|--|
| <b>Type</b>        | <b>ID</b>                  | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |  |
| <b>TB</b>          | TB-MT                      | 2019             | 7515              | -          | -          |  |
| <b>SSB</b>         | SSB-relative               | 2014             | 1.33              | Both       | -          |  |
| <b>TN</b>          | -                          | -                | -                 | -          | -          |  |
| <b>R</b>           | R-relative                 | 2014             | 0.393             | -          | 1          |  |
| <b>F</b>           | F-relative                 | 2014             | 1.29              | -          | 3 to 6     |  |
| <b>ER</b>          | ER-calc-ratio              | 2019             | 0.117             | -          | -          |  |
| <b>TC</b>          | TC-MT                      | 2019             | 930               |            |            |  |
| <b>TL</b>          | TL-MT                      | 2019             | 422               |            |            |  |
| <b>TB/TBmsy</b>    | -                          | -                | -                 |            |            |  |
| <b>SSB/SSBmsy</b>  | SSBdivSSBmsy-dimensionless | 2019             | 1.551             |            |            |  |
| <b>F/Fmsy</b>      | FdivFmsy-dimensionless     | 2019             | 0.326             |            |            |  |
| <b>ER/ERmsy</b>    | -                          | -                | -                 |            |            |  |
| <b>TB/TBmgt</b>    | -                          | -                | -                 |            |            |  |
| <b>SSB/SSBmgt</b>  | -                          | -                | -                 |            |            |  |
| <b>F/Fmgt</b>      | -                          | -                | -                 |            |            |  |
| <b>ER/ERmgt</b>    | -                          | -                | -                 |            |            |  |

European plaice Celtic Sea [PLAICCELT]

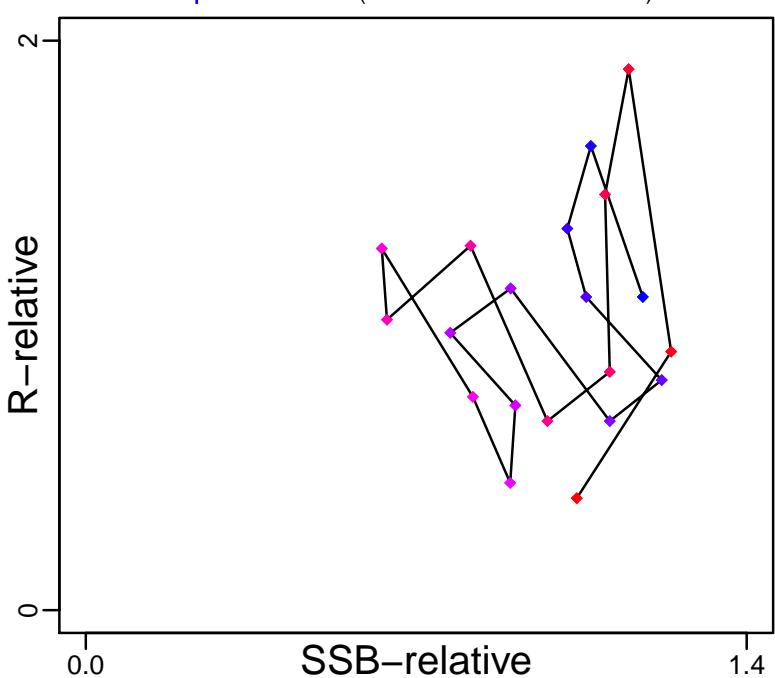
Kobe MSYpref (1977–2019–ICESIMP2021)



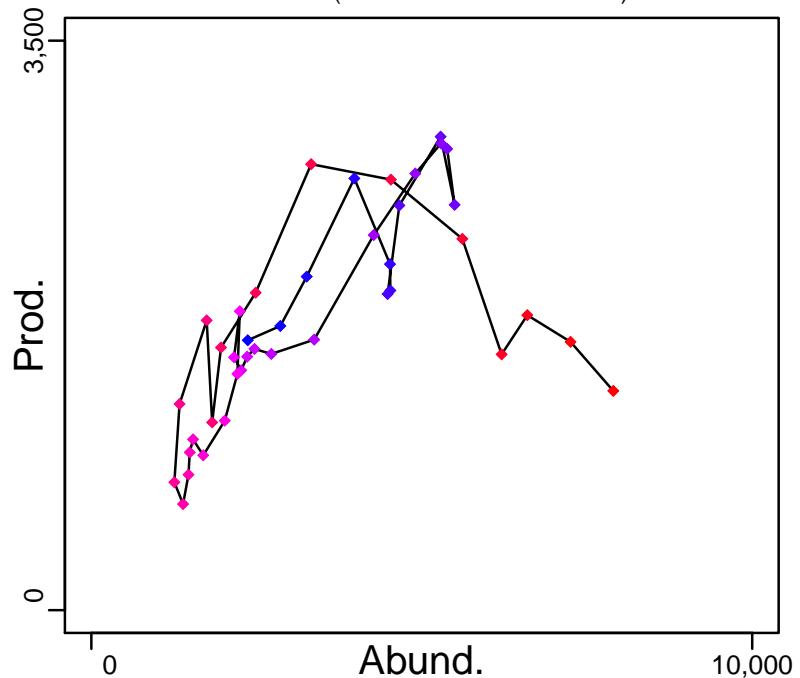
Kobe MGTpref (1977–2019–ICESIMP2021)



Spawner Recruit (1992–2014–ICESIMP2016)



Production (1977–2019–ICESIMP2021)

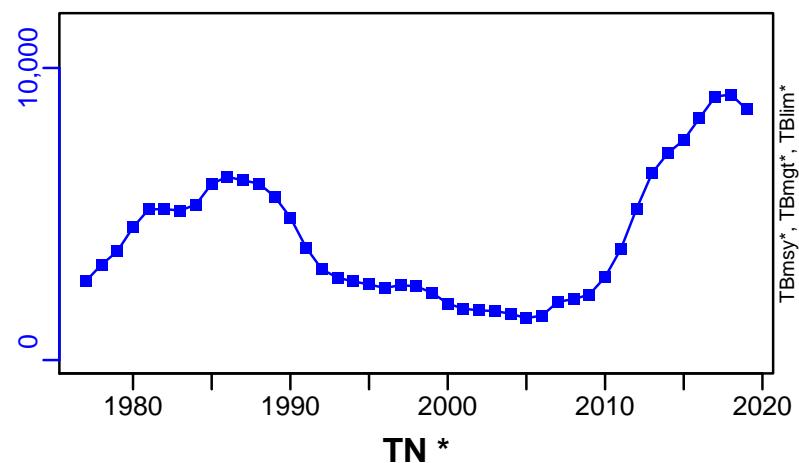


|              |            |   |         |
|--------------|------------|---|---------|
| ◆ Start Year | ◆ End Year | * | No Data |
|--------------|------------|---|---------|

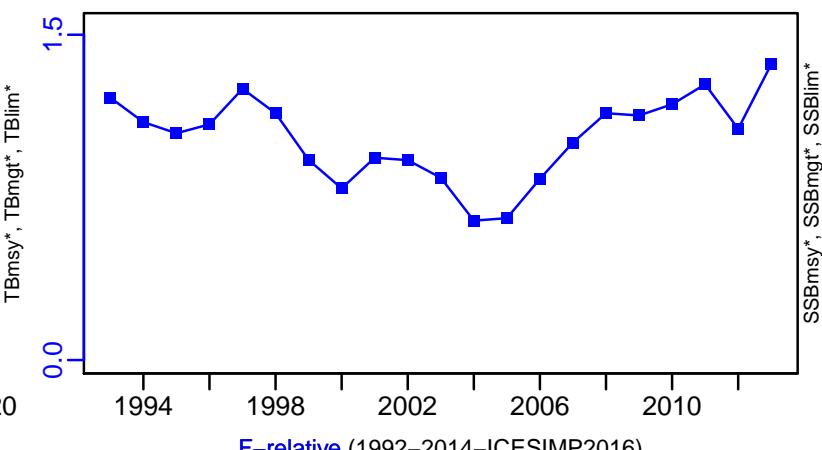
### European plaice Celtic Sea [PLAICCELT]

TB-MT (1977–2019–ICESIMP2021)

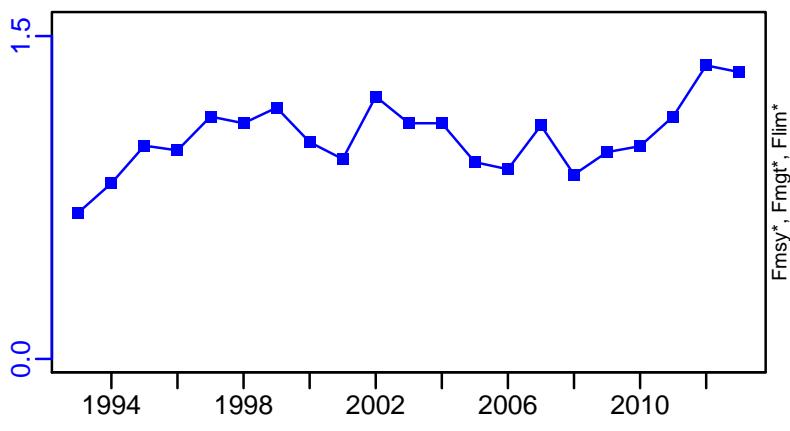
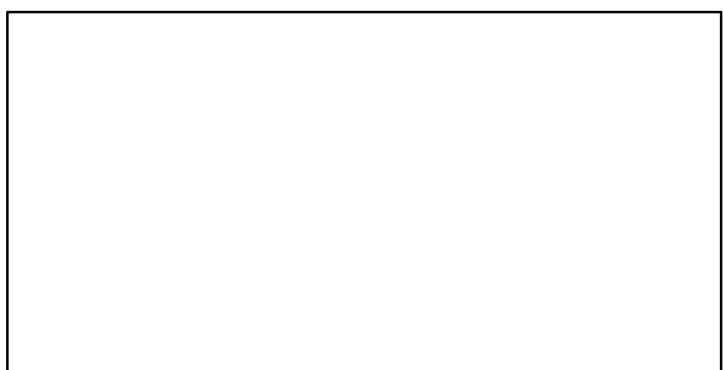
SSB-relative (1992–2014–ICESIMP2016)



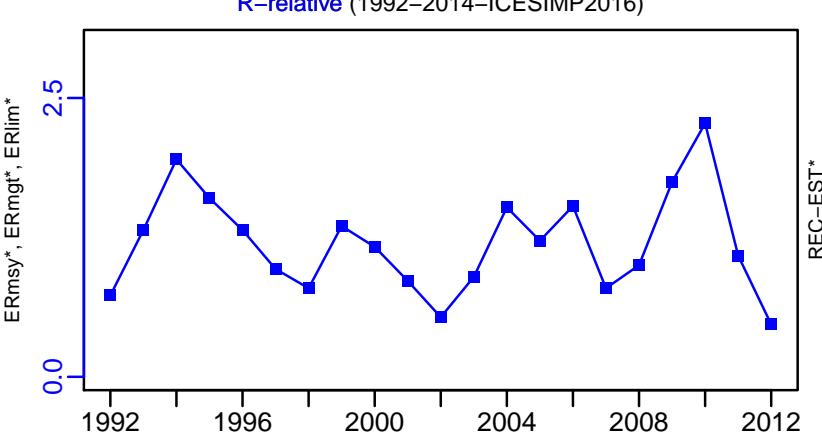
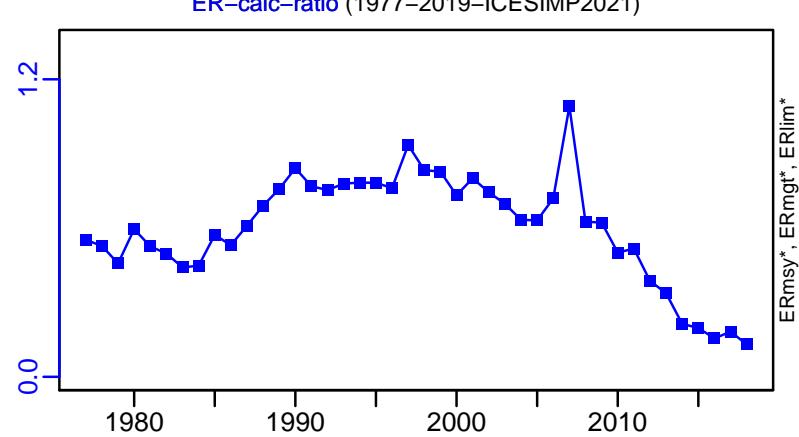
TN \*



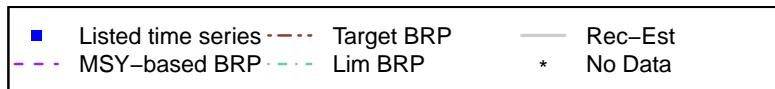
SSB<sub>m</sub>, SSB<sub>mg</sub>, SSB<sub>lim</sub>\*



F<sub>m</sub>, F<sub>mg</sub>, F<sub>lim</sub>\*



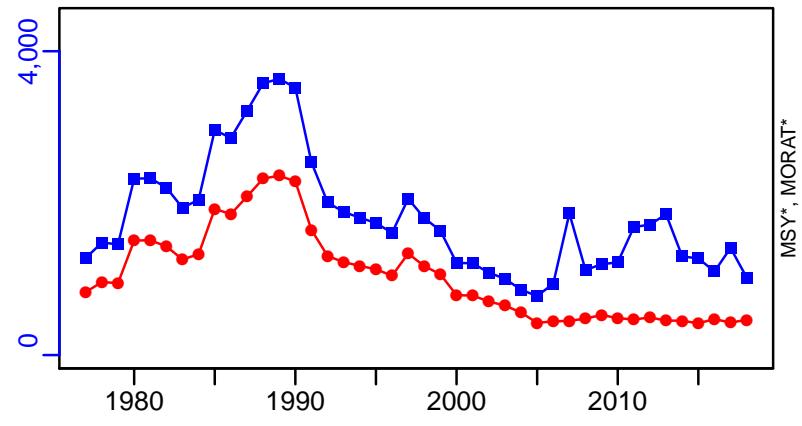
R<sub>rec</sub>, R<sub>est</sub>\*



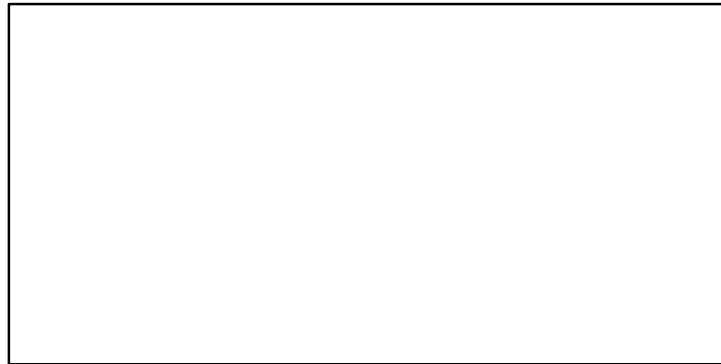
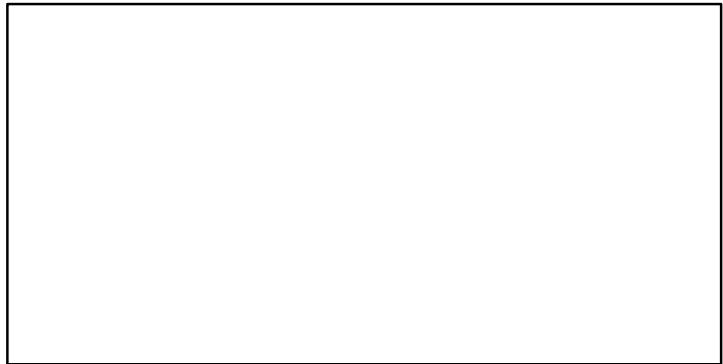
European plaice Celtic Sea [PLAICCELT]

TC-MT, TL-MT, RecC\* (1977–2019–ICESIMP2021)

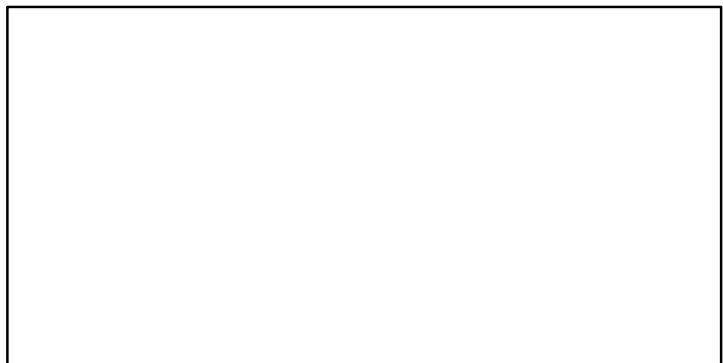
TAC\*, Cpair\*, Cadv\*



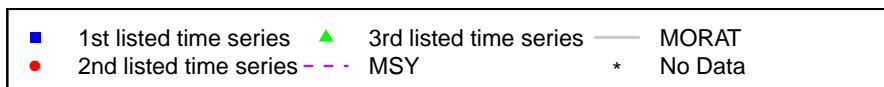
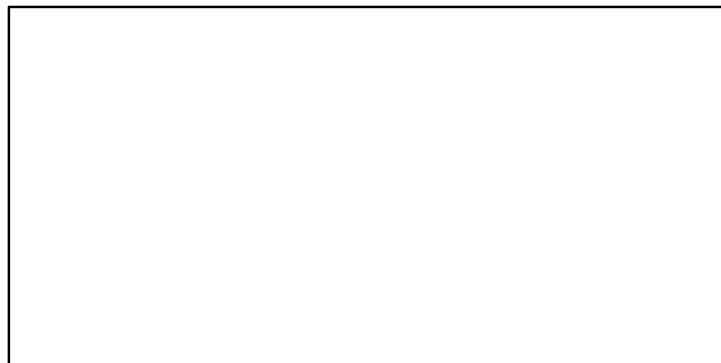
TAC\*, Cpair\*, Cadv\*



EFFORT\*



CdivMSY\*



## European plaice Western English Channel [PLAICECHW]

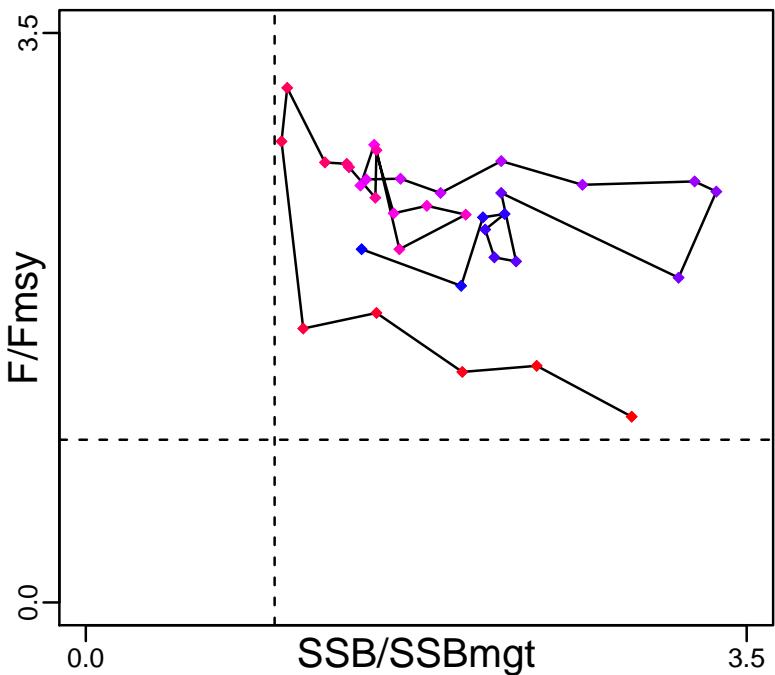
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Pleuronectes platessa                                |
| <b>Current Assess ID</b>    | WGCSE-PLAICECHW-1978-2019-ICESIMP2021                |
| <b>Area</b>                 | Western English Channel                              |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2015, 2016, 2016, 2018, 2019, 2013, 2014, 2010       |

| Reference Points |                 |           |       |
|------------------|-----------------|-----------|-------|
| Type             | ID              | Asmt Year | Value |
| <b>TBmsy</b>     | -               | -         | -     |
| <b>SSBmsy</b>    | -               | -         | -     |
| <b>Fmsy</b>      | Fmsy-relative   | 2018      | 0.238 |
| <b>ERmsy</b>     | -               | -         | -     |
| <b>TBmgt</b>     | -               | -         | -     |
| <b>SSBmgt</b>    | SSBmgt-relative | 2019      | 0.66  |
| <b>Fmgt</b>      | Fmgt-relative   | 2019      | 1.268 |
| <b>ERmgt</b>     | -               | -         | -     |
| <b>TB0</b>       | -               | -         | -     |
| <b>SSB0</b>      | -               | -         | -     |
| <b>MSY</b>       | -               | -         | -     |
| <b>M</b>         | M-1/yr          | 2010      | 0.12  |
| <b>TBlim</b>     | TBlim-MT        | 2010      | 1300  |
| <b>SSBlim</b>    | -               | -         | -     |
| <b>Flim</b>      | Flim-relative   | 2018      | 0.88  |
| <b>ERlim</b>     | -               | -         | -     |

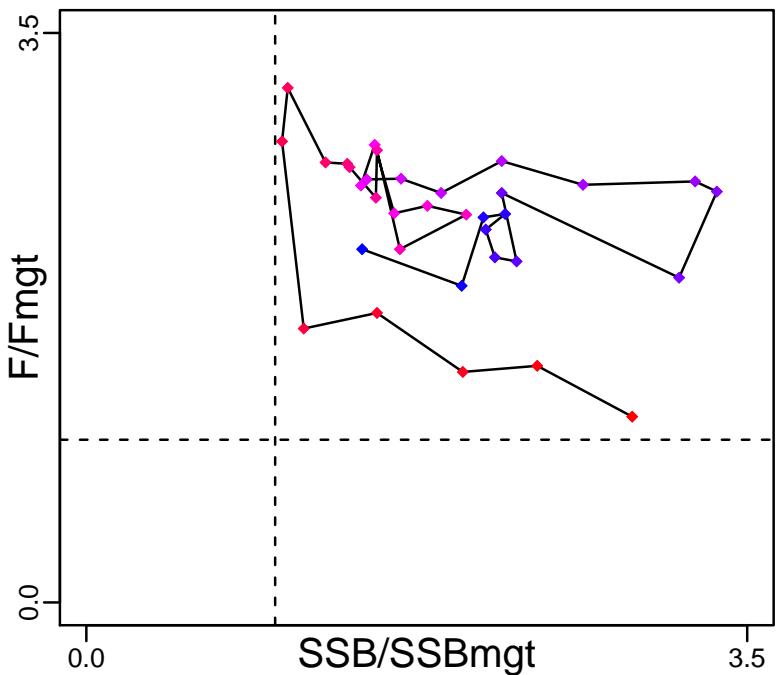
| Time Series       |                  |           |            |     |        |  |
|-------------------|------------------|-----------|------------|-----|--------|--|
| Type              | ID               | Asmt Year | Curr Value | Sex | Age    |  |
| <b>TB</b>         | TB-relative      | 2019      | 1.545      | -   | -      |  |
| <b>SSB</b>        | SSB-relative     | 2019      | 1.875      | -   | -      |  |
| <b>TN</b>         | -                | -         | -          | -   | -      |  |
| <b>R</b>          | R-relative       | 2019      | 0.901      | -   | 2      |  |
| <b>F</b>          | F-relative       | 2019      | 0.613      | -   | 3 to 6 |  |
| <b>ER</b>         | ER-calc-ratio    | 2014      | 0.227      | -   | -      |  |
| <b>TC</b>         | TC-MT            | 2016      | 2940       |     |        |  |
| <b>TL</b>         | TL-MT            | 2019      | 1880       |     |        |  |
| <b>TB/TBmsy</b>   | -                | -         | -          |     |        |  |
| <b>SSB/SSBmsy</b> | -                | -         | -          |     |        |  |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr | 2014      | 1.142      |     |        |  |
| <b>ER/ERmsy</b>   | -                | -         | -          |     |        |  |
| <b>TB/TBmgt</b>   | -                | -         | -          |     |        |  |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2014      | 3.352      |     |        |  |
| <b>F/Fmgt</b>     | F-1/yr/Fmgt-1/yr | 2014      | 1.142      |     |        |  |
| <b>ER/ERmgt</b>   | -                | -         | -          |     |        |  |

### European plaice Western English Channel [PLAICECHW]

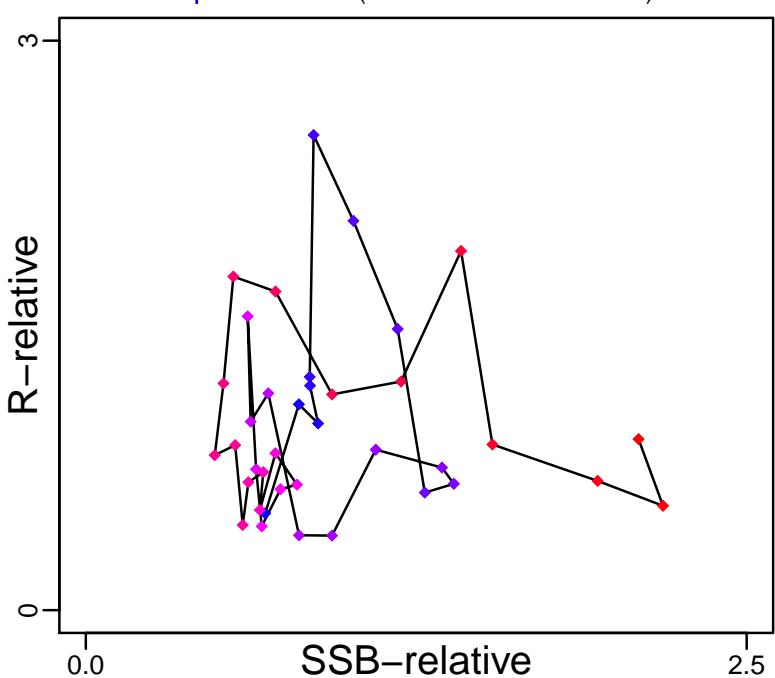
Kobe MSYpref (1979–2014–ICESIMP2016)



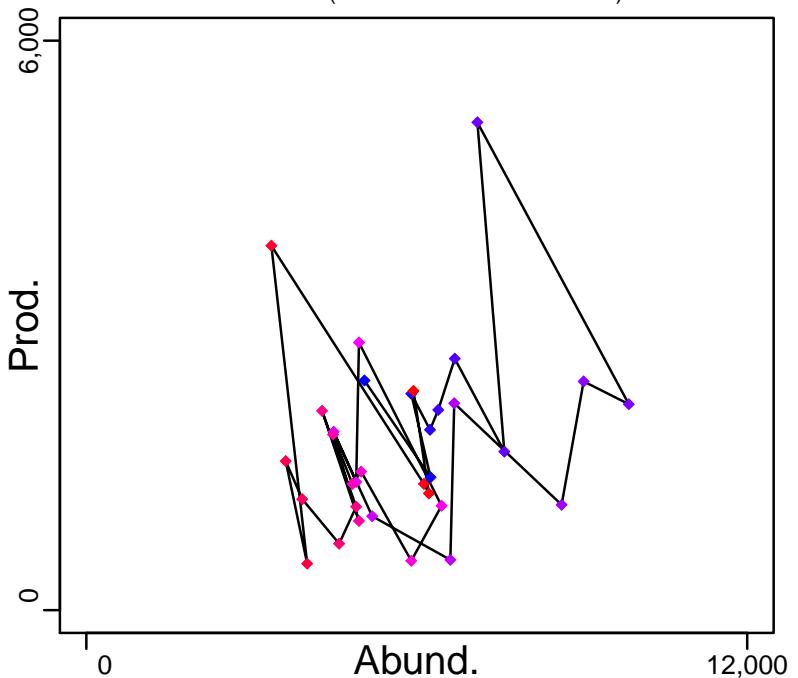
Kobe MGTpref (1979–2014–ICESIMP2016)



Spawner Recruit (1978–2019–ICESIMP2021)



Production (1979–2014–ICESIMP2016)

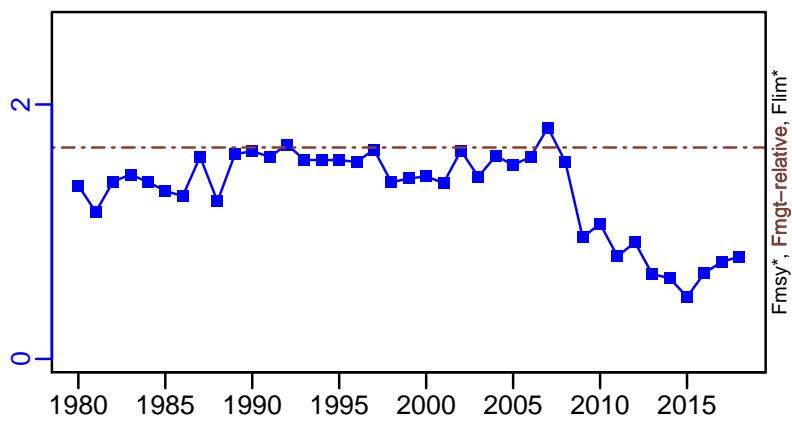
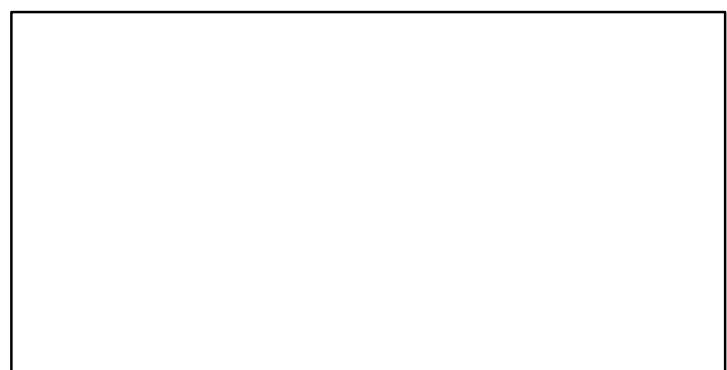
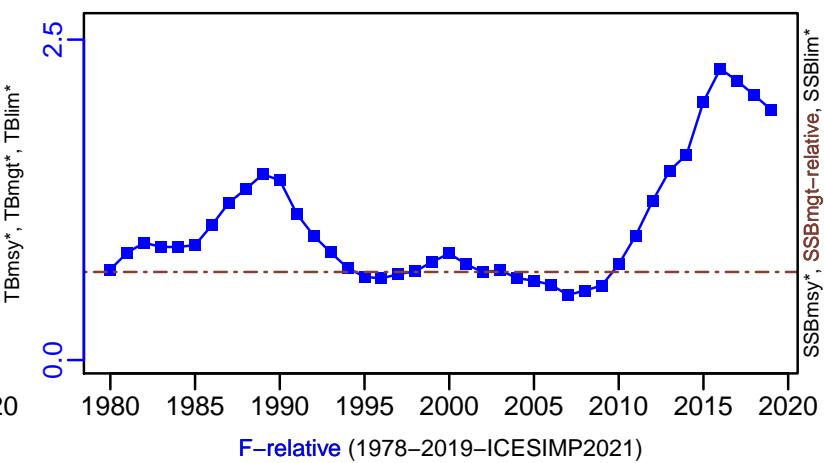
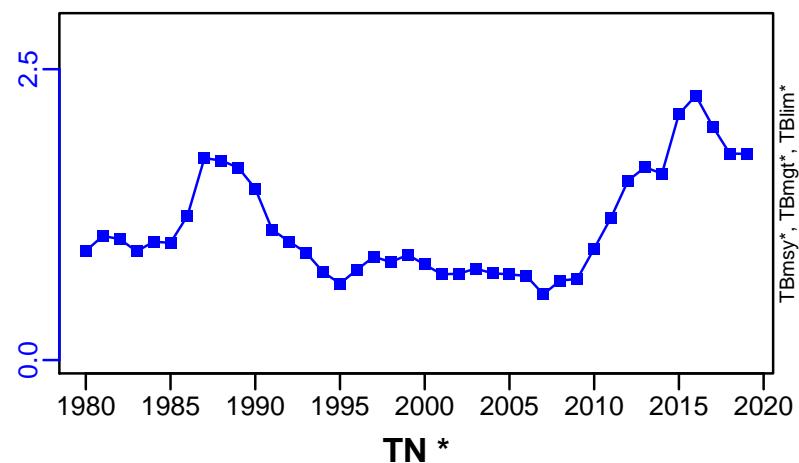


◆ Start Year ♦ End Year \* No Data

### European plaice Western English Channel [PLAICECHW]

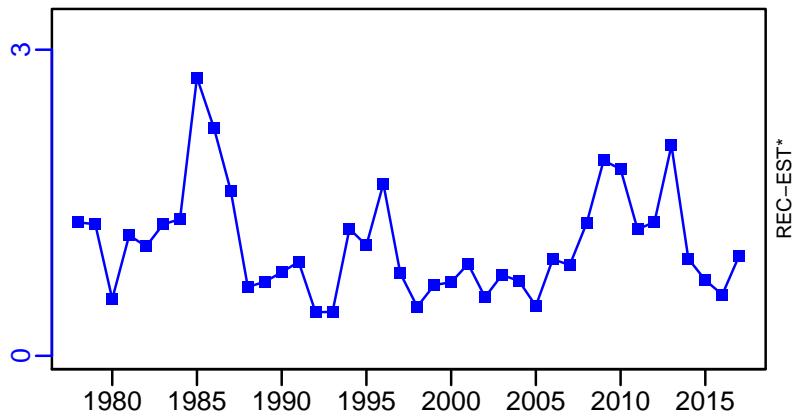
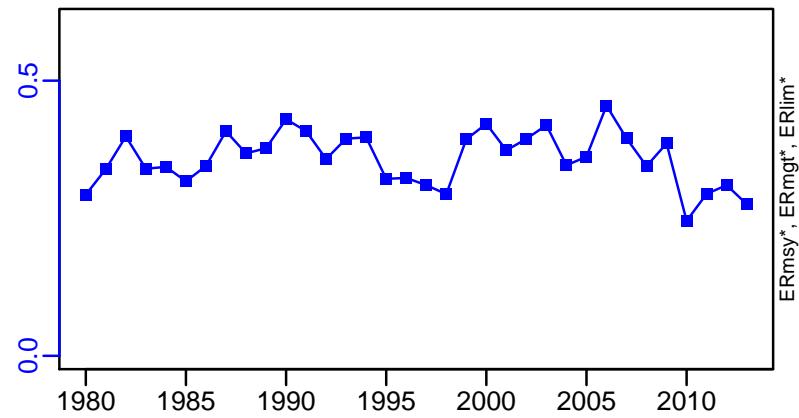
TB-relative (1978–2019–ICESIMP2021)

SSB-relative (1978–2019–ICESIMP2021)



ER-calc-ratio (1979–2014–ICESIMP2016)

R-relative (1978–2019–ICESIMP2021)

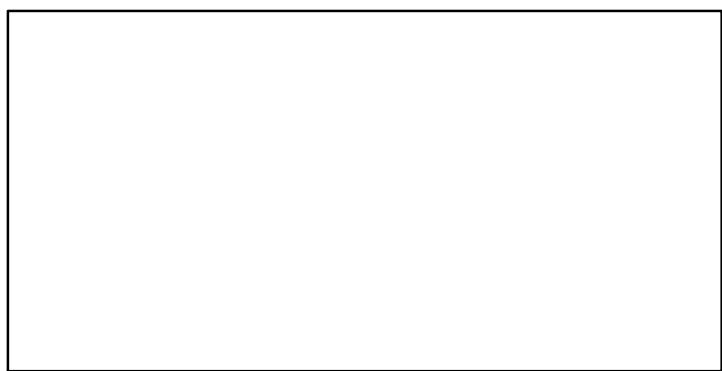
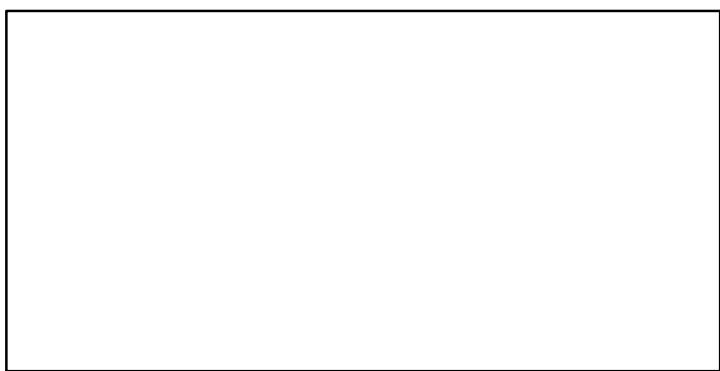
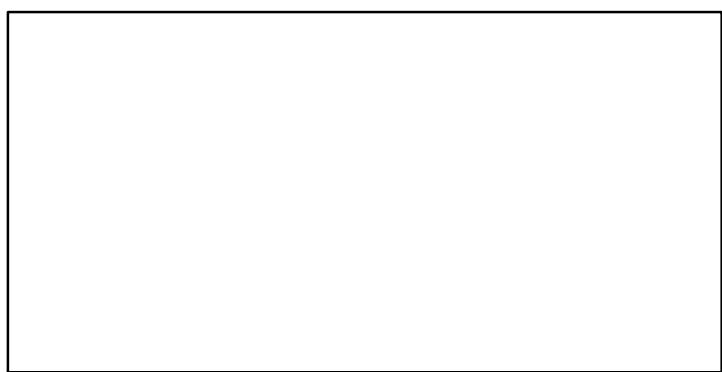
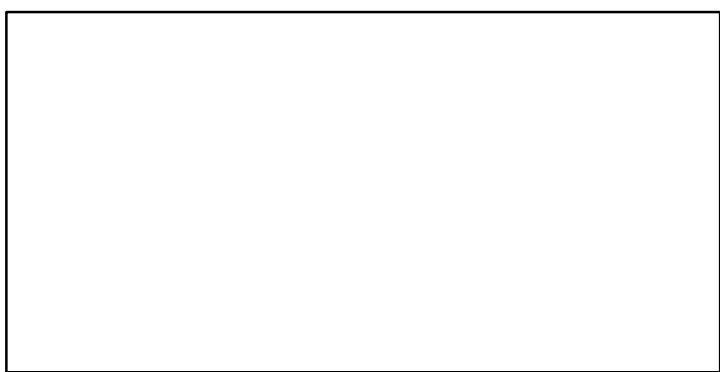
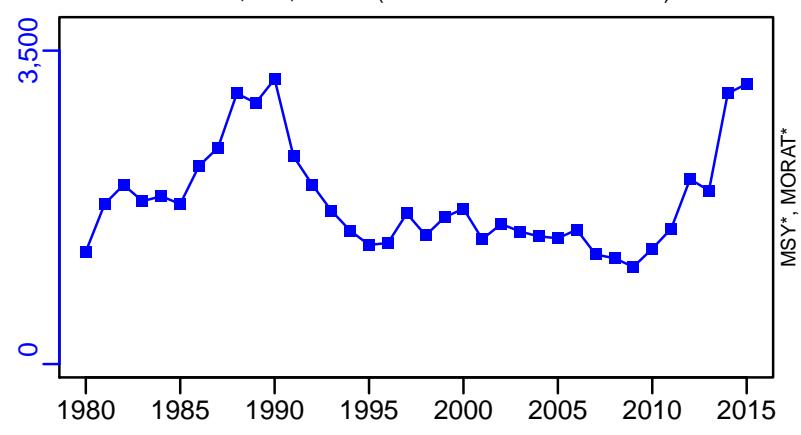


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | --- Lim BRP  | * No Data |

European plaice Western English Channel [PLAICECHW]

TC-MT, TL\*, RecC\* (1978–2016—ICESIMP2016)

TAC\*, Cpair\*, Cadv\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## European plaice Irish Sea [PLAICIS]

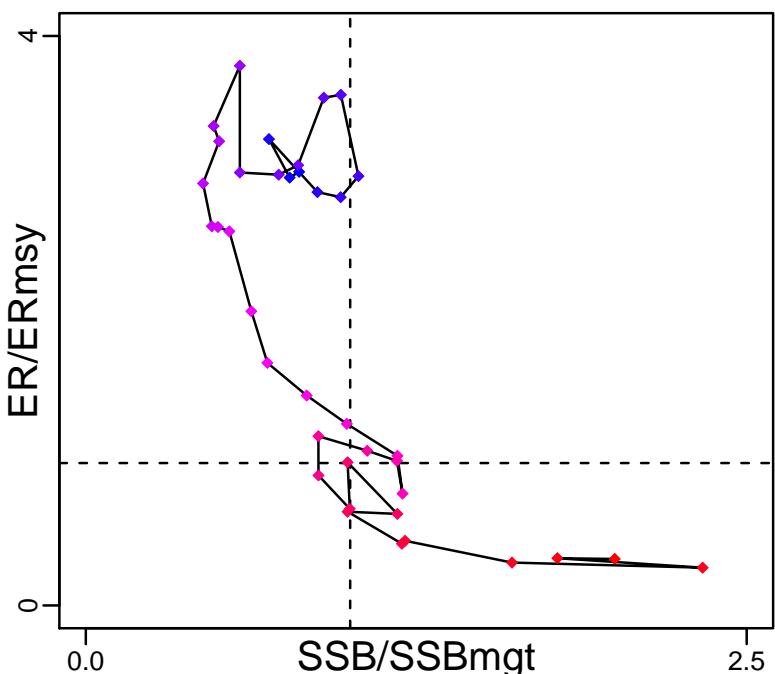
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Pleuronectes platessa                                |
| <b>Current Assess ID</b>    | WGCSE-PLAICIS-1980-2019-ICESIMP2021                  |
| <b>Area</b>                 | Irish Sea  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2015, 2016, 2017, 2018, 2019, 2014, 2010             |

| <b>Reference Points</b> |             |                  |              |
|-------------------------|-------------|------------------|--------------|
| <b>Type</b>             | <b>ID</b>   | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -           | -                | -            |
| <b>SSBmsy</b>           | -           | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr   | 2018             | 0.169        |
| <b>ERmsy</b>            | ERmsy-ratio | 2019             | 0.196        |
| <b>TBmgt</b>            | -           | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT   | 2019             | 8757         |
| <b>Fmgt</b>             | Fmgt-1/yr   | 2018             | 0.169        |
| <b>ERmgt</b>            | ERmgt-ratio | 2019             | 0.196        |
| <b>TB0</b>              | -           | -                | -            |
| <b>SSB0</b>             | -           | -                | -            |
| <b>MSY</b>              | -           | -                | -            |
| <b>M</b>                | M-1/yr      | 2010             | 0.12         |
| <b>TBlim</b>            | -           | -                | -            |
| <b>SSBlim</b>           | SSBlim-MT   | 2018             | 4250         |
| <b>Flim</b>             | Flim-1/yr   | 2018             | 0.481        |
| <b>ERlim</b>            | -           | -                | -            |

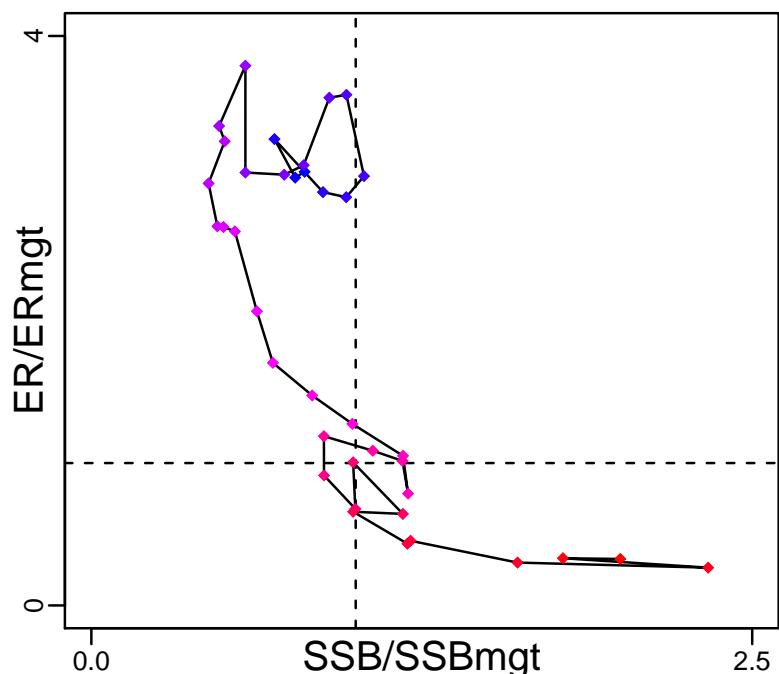
| <b>Time Series</b> |                      |                  |                   |            |            |  |
|--------------------|----------------------|------------------|-------------------|------------|------------|--|
| <b>Type</b>        | <b>ID</b>            | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |  |
| <b>TB</b>          | TB-MT                | 2019             | 19,350            | -          | -          |  |
| <b>SSB</b>         | SSB-MT               | 2019             | 19,160            | -          | -          |  |
| <b>TN</b>          | -                    | -                | -                 | -          | -          |  |
| <b>R</b>           | R-E00                | 2019             | 14,709,000        | -          | 1          |  |
| <b>F</b>           | F-1/yr               | 2018             | 0.066             | -          | 3 to 6     |  |
| <b>ER</b>          | ER-ratio             | 2019             | 0.064             | -          | 3 to 6     |  |
| <b>TC</b>          | TC-MT                | 2019             | 830               |            |            |  |
| <b>TL</b>          | TL-MT                | 2019             | 435               |            |            |  |
| <b>TB/TBmsy</b>    | -                    | -                | -                 |            |            |  |
| <b>SSB/SSBmsy</b>  | -                    | -                | -                 |            |            |  |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr     | 2018             | 0.39              |            |            |  |
| <b>ER/ERmsy</b>    | ER-ratio/ERmsy-ratio | 2019             | 0.327             |            |            |  |
| <b>TB/TBmgt</b>    | -                    | -                | -                 |            |            |  |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT     | 2019             | 2.188             |            |            |  |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr     | 2018             | 0.39              |            |            |  |
| <b>ER/ERmgt</b>    | -                    | -                | -                 |            |            |  |

European plaice Irish Sea [PLAICIS]

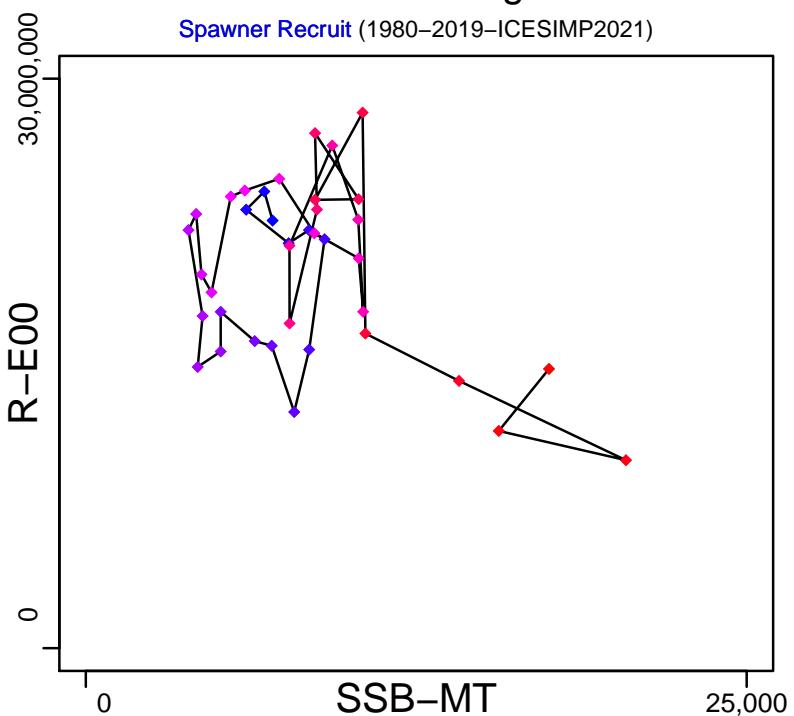
Kobe MSYpref (1980–2019–ICESIMP2021)



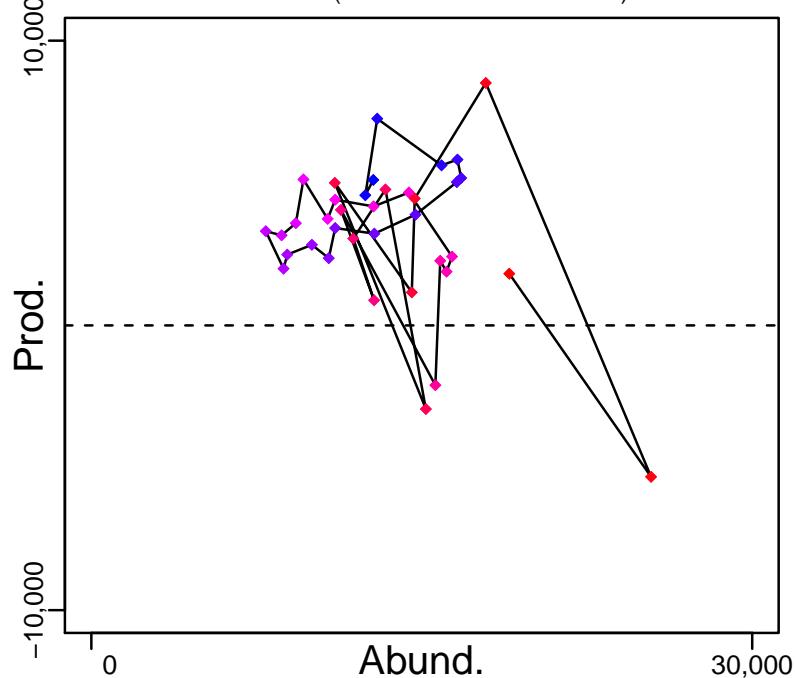
Kobe MGTpref (1980–2019–ICESIMP2021)



Spawner Recruit (1980–2019–ICESIMP2021)



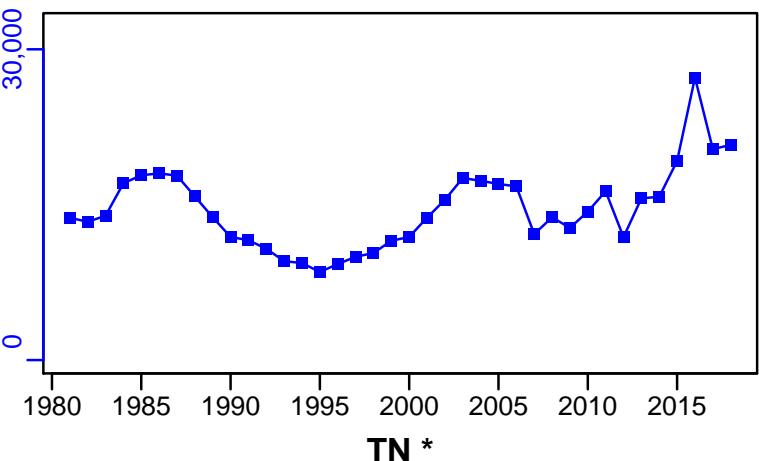
Production (1980–2019–ICESIMP2021)



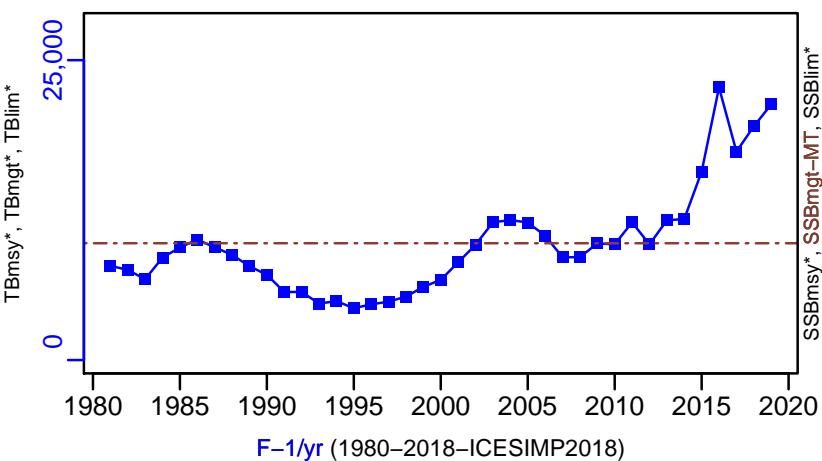
◆ Start Year   ◆ End Year   \* No Data

### European plaice Irish Sea [PLAICIS]

TB-MT (1980–2019–ICESIMP2021)



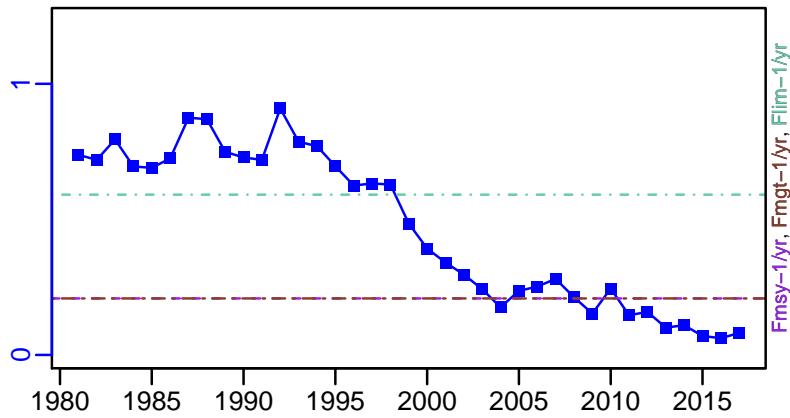
SSB-MT (1980–2019–ICESIMP2021)



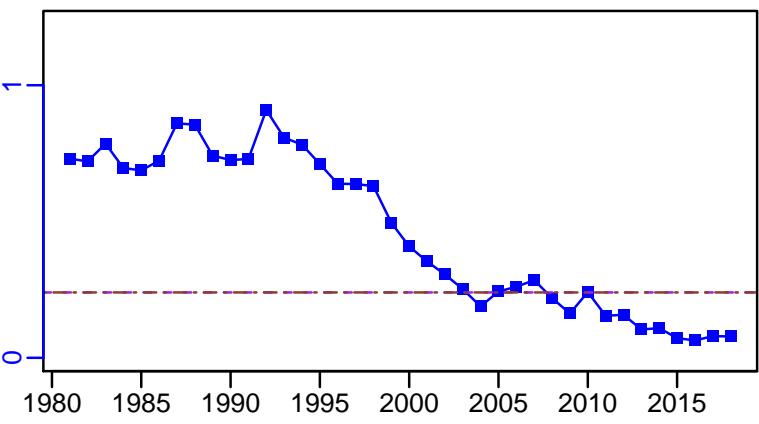
TN \*



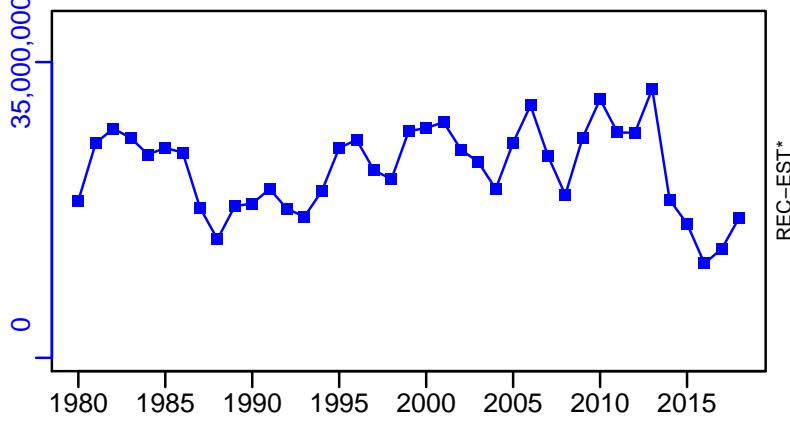
F-1/yr (1980–2018–ICESIMP2018)



ER-ratio (1980–2019–ICESIMP2021)



R-E00 (1980–2019–ICESIMP2021)

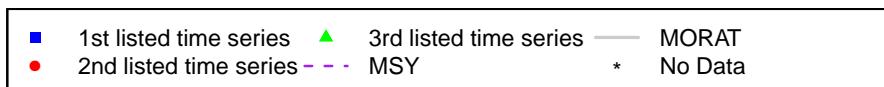
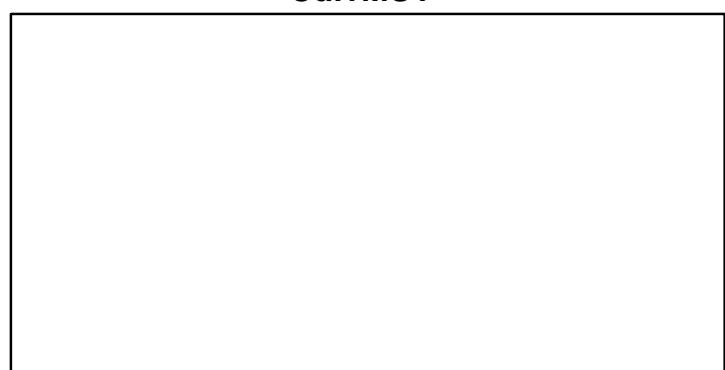
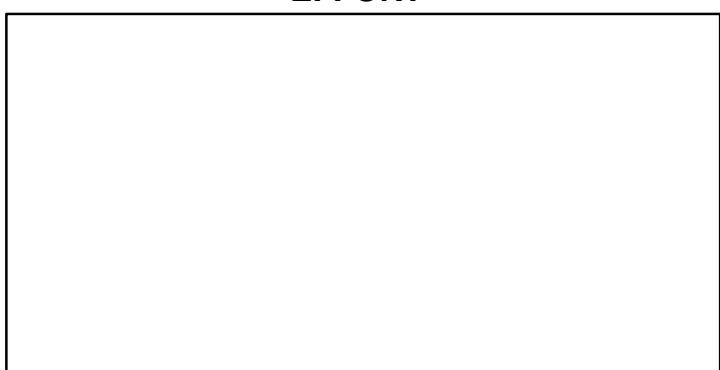
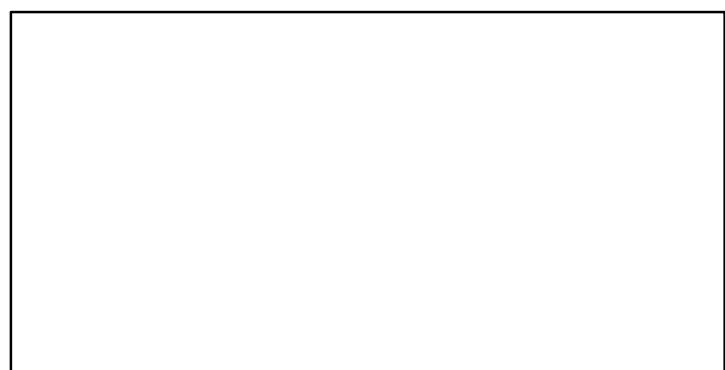
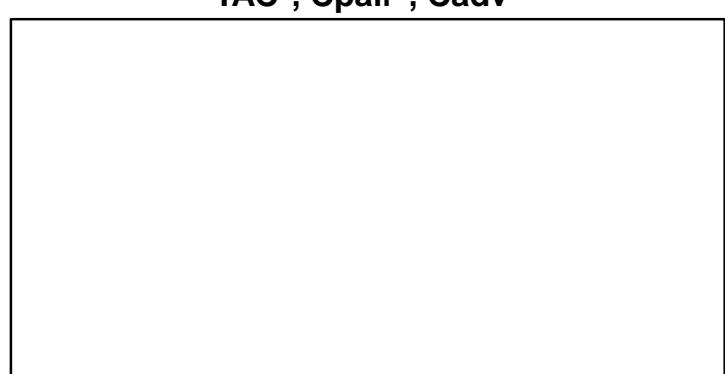
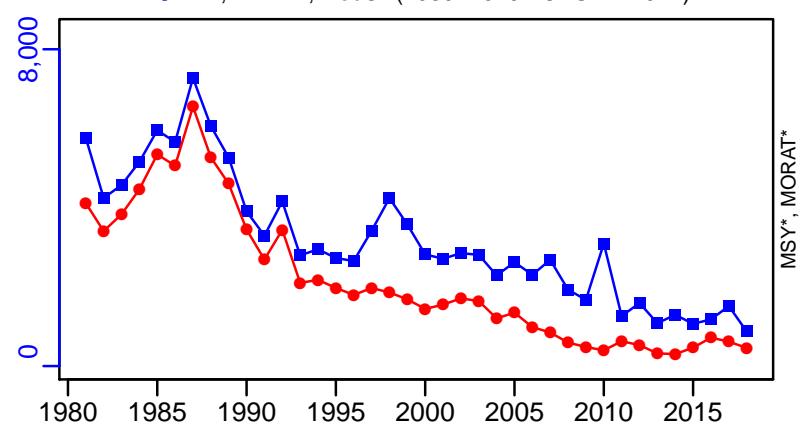


|                      |               |           |
|----------------------|---------------|-----------|
| ■ Listed time series | — Target BRP  | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP | * No Data |

European plaice Irish Sea [PLAICIS]

TC-MT, TL-MT, RecC\* (1980–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



## European plaice North Sea [PLAICNS]

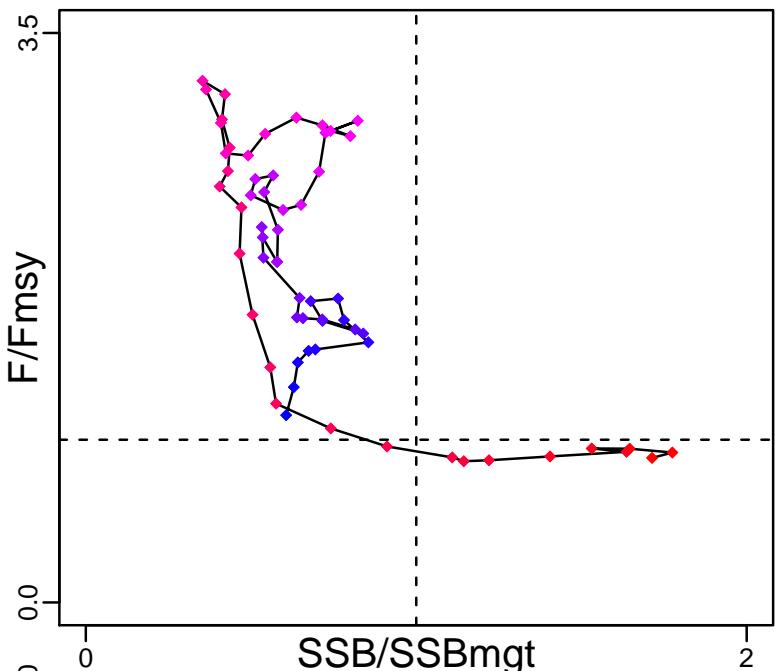
| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Pleuronectes platessa   |
| <b>Current Assess ID</b>    | WGNSSK-PLAICNS-1956-2019-ICESIMP2021  |
| <b>Area</b>                 | North Sea   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2010, 2013, 2014, 2015, 2016, 2017, 2018, 2019                                    |

| <b>Reference Points</b> |           |           |         |
|-------------------------|-----------|-----------|---------|
| Type                    | ID        | Asmt Year | Value   |
| <b>TBmsy</b>            | -         | -         | -       |
| <b>SSBmsy</b>           | -         | -         | -       |
| <b>Fmsy</b>             | Fmsy-1/yr | 2019      | 0.21    |
| <b>ERmsy</b>            | -         | -         | -       |
| <b>TBmgt</b>            | -         | -         | -       |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019      | 564,599 |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019      | 0.21    |
| <b>ERmgt</b>            | -         | -         | -       |
| <b>TB0</b>              | -         | -         | -       |
| <b>SSB0</b>             | -         | -         | -       |
| <b>MSY</b>              | -         | -         | -       |
| <b>M</b>                | M-1/yr    | 2010      | 0.1     |
| <b>TBlim</b>            | TBlim-MT  | 2010      | 160,000 |
| <b>SSBlim</b>           | SSBlim-MT | 2018      | 207,288 |
| <b>Flim</b>             | Flim-1/yr | 2018      | 0.516   |
| <b>ERlim</b>            | -         | -         | -       |

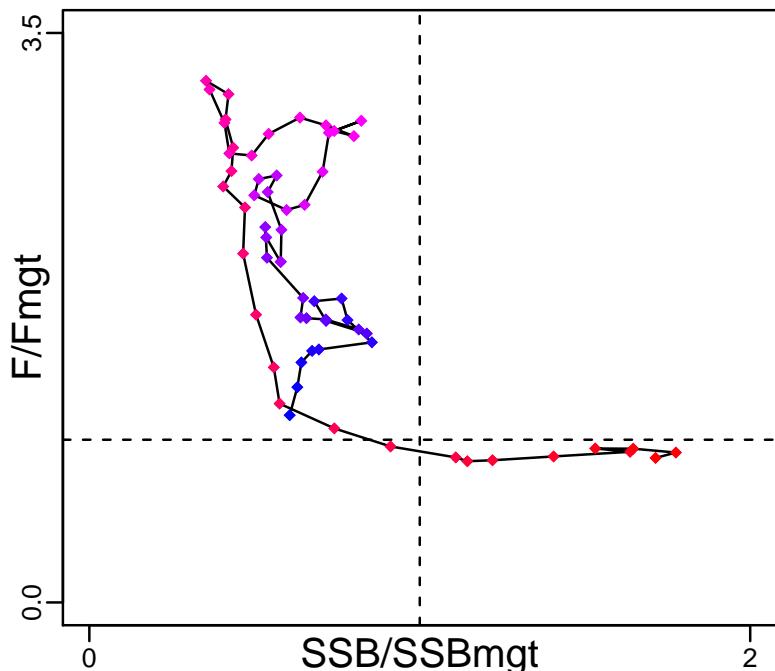
| <b>Time Series</b> |                  |           |               |     |        |
|--------------------|------------------|-----------|---------------|-----|--------|
| Type               | ID               | Asmt Year | Curr Value    | Sex | Age    |
| <b>TB</b>          | TB-MT            | 2019      | 1,087,280     | -   | -      |
| <b>SSB</b>         | SSB-MT           | 2019      | 1,052,266     | -   | -      |
| <b>TN</b>          | -                | -         | -             | -   | -      |
| <b>R</b>           | R-E00            | 2019      | 3,413,221,000 | -   | 1      |
| <b>F</b>           | F-1/yr           | 2019      | 0.187         | -   | 2 to 6 |
| <b>ER</b>          | ER-calc-ratio    | 2019      | 0.097         | -   | -      |
| <b>TC</b>          | TC-MT            | 2019      | 105,787       |     |        |
| <b>TL</b>          | TL-MT            | 2019      | 57,800        |     |        |
| <b>TB/TBmsy</b>    | -                | -         | -             |     |        |
| <b>SSB/SSBmsy</b>  | -                | -         | -             |     |        |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2019      | 0.888         |     |        |
| <b>ER/ERmsy</b>    | -                | -         | -             |     |        |
| <b>TB/TBmgt</b>    | -                | -         | -             |     |        |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019      | 1.864         |     |        |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019      | 0.888         |     |        |
| <b>ER/ERmgt</b>    | -                | -         | -             |     |        |

### European plaice North Sea [PLAICNS]

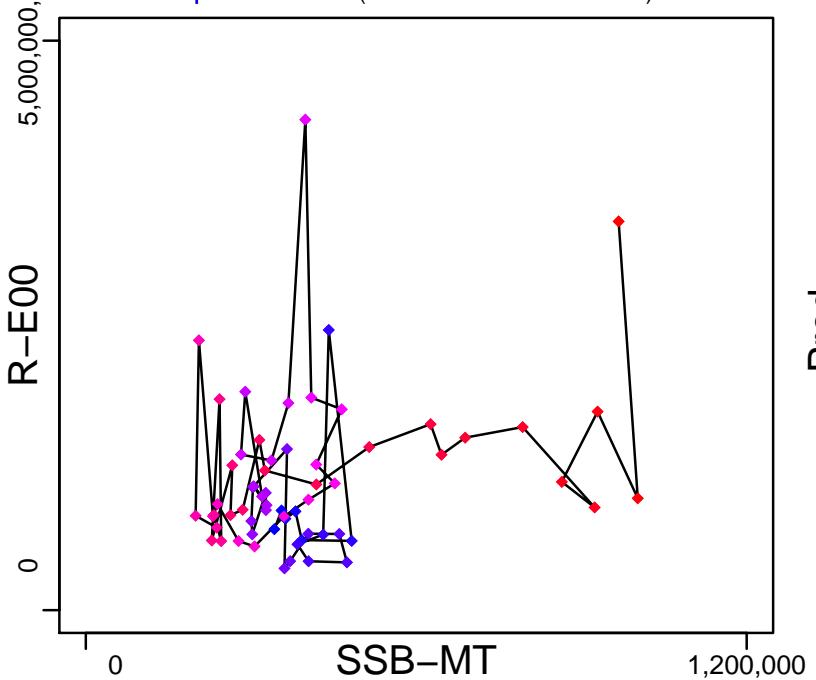
Kobe MSYpref (1956–2019–ICESIMP2021)



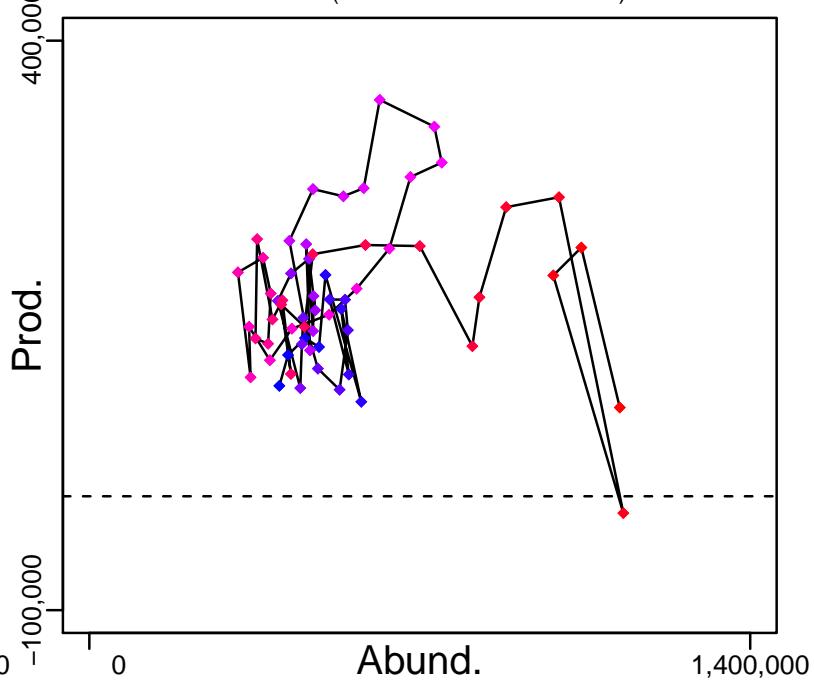
Kobe MGTpref (1956–2019–ICESIMP2021)



Spawner Recruit (1956–2019–ICESIMP2021)



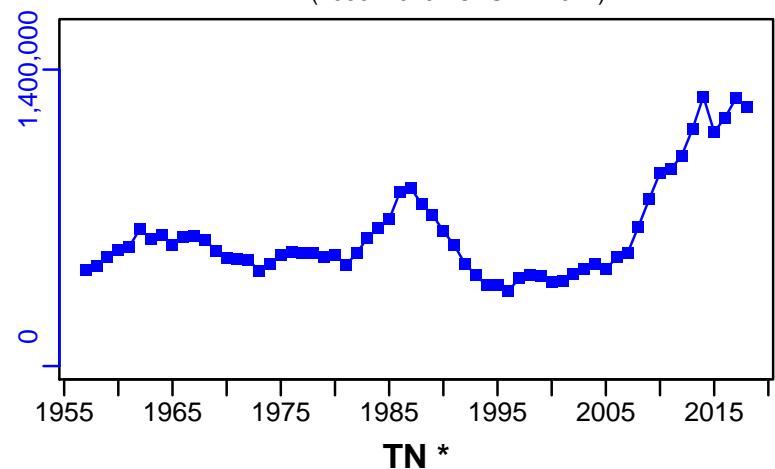
Production (1956–2019–ICESIMP2021)



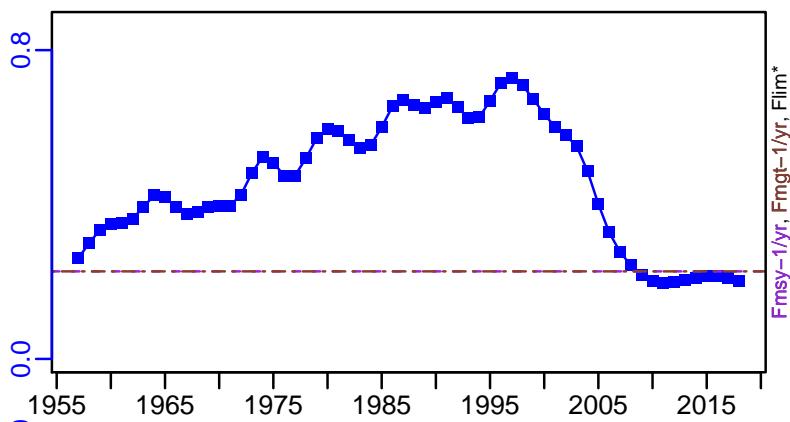
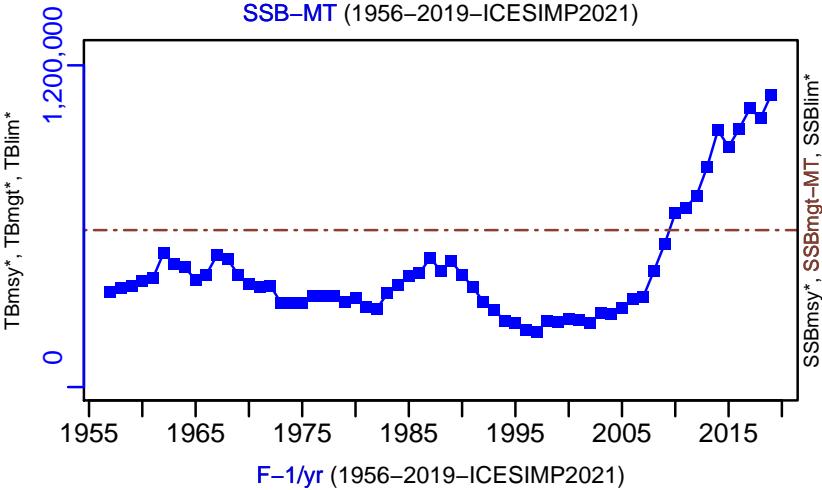
◆ Start Year ♦ End Year \* No Data

### European plaice North Sea [PLAICNS]

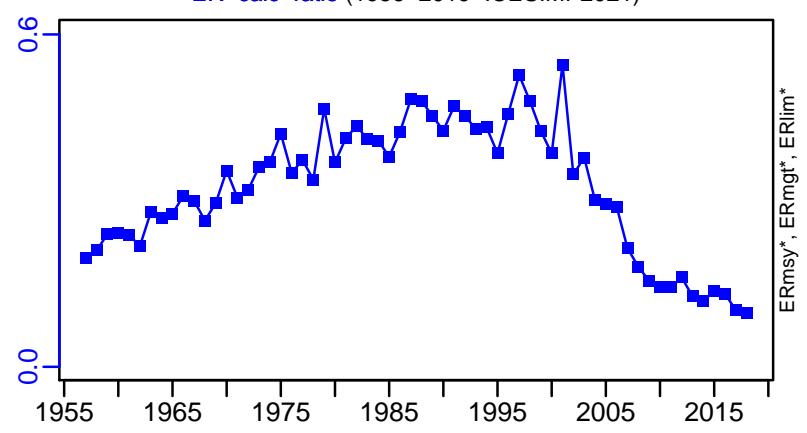
TB-MT (1956–2019–ICESIMP2021)



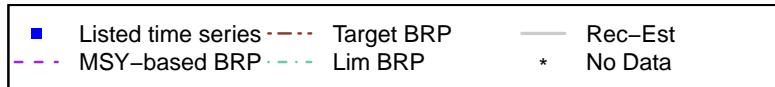
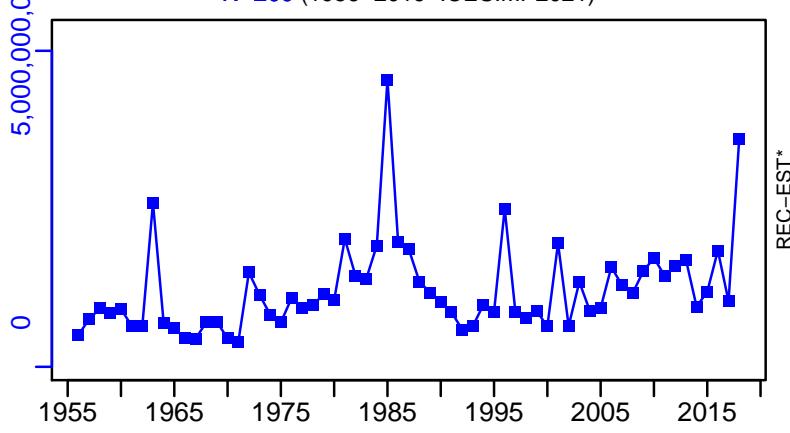
SSB-MT (1956–2019–ICESIMP2021)



ER-calc-ratio (1956–2019–ICESIMP2021)



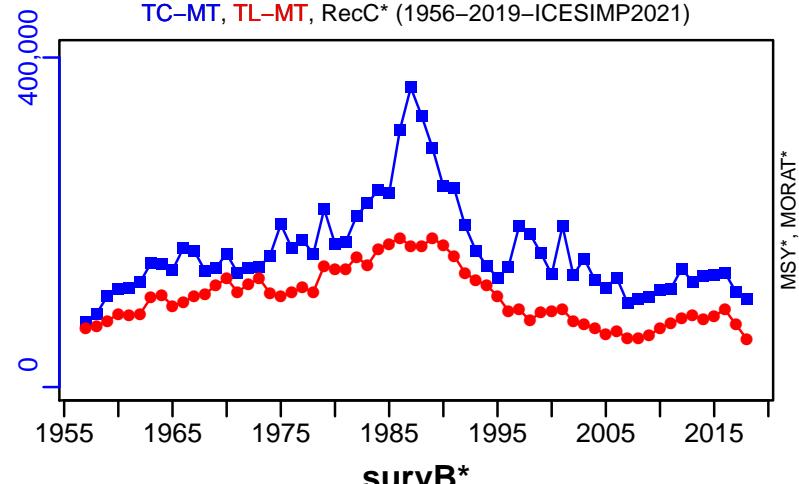
R-E00 (1956–2019–ICESIMP2021)



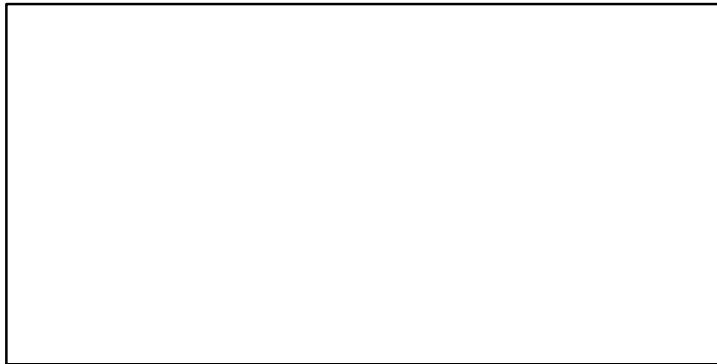
European plaice North Sea [PLAICNS]

TC-MT, TL-MT, RecC\* (1956–2019–ICESIMP2021)

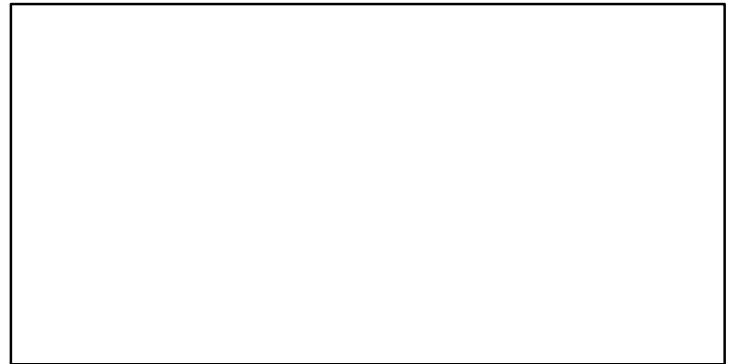
TAC\*, Cpair\*, Cadv\*



survB\*



CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

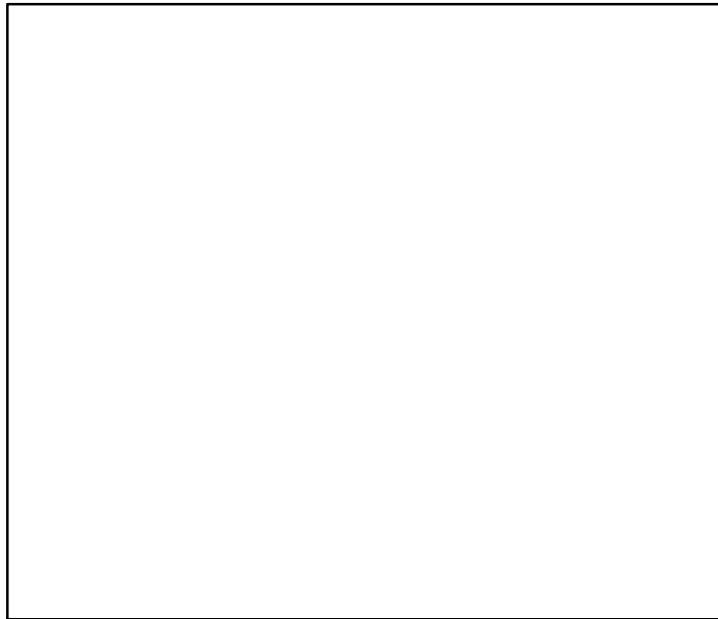
## European plaice ICES 7bc [PLAICVIIbc]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Pleuronectes platessa                                |
| <b>Current Assess ID</b>    | WGCSE-PLAICVIIbc-1908-2016-ICESIMP2018               |
| <b>Area</b>                 | ICES 7bc   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2016, 2015   |

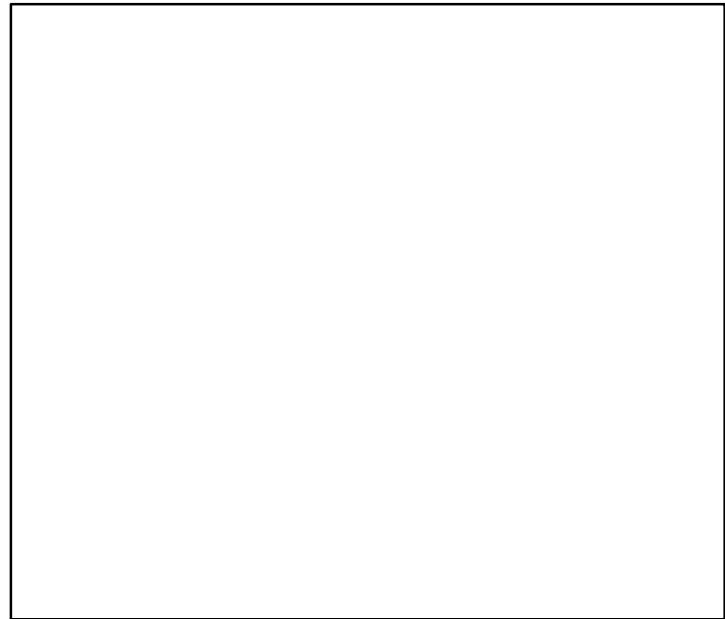
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | -     | -         | -          |     |     |
| <b>TL</b>          | TL-MT | 2016      | 29         |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

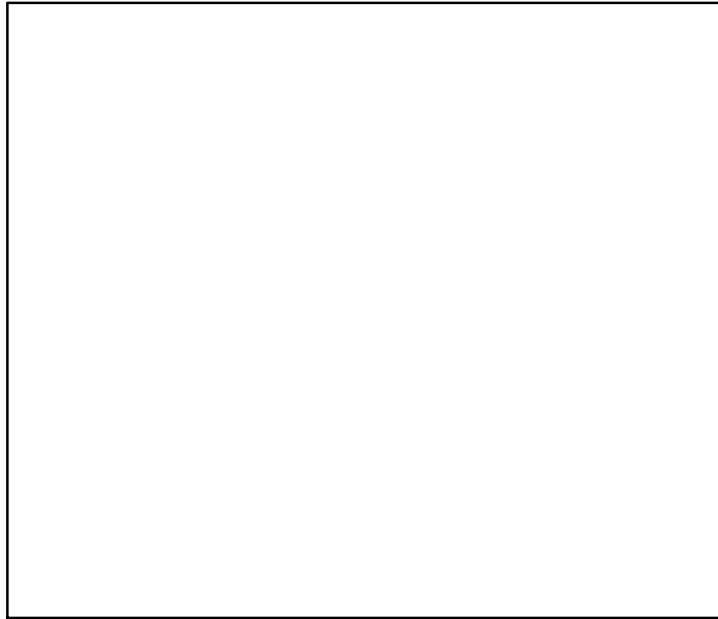
**Kobe MSY\***



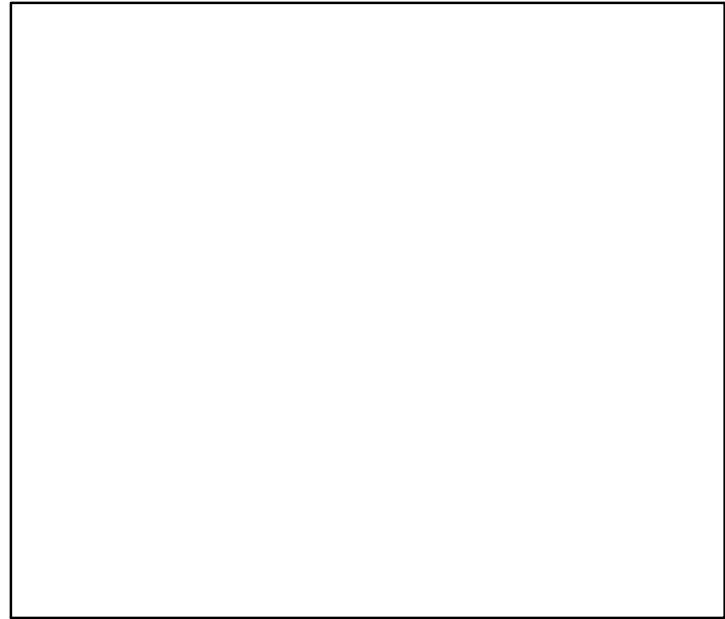
**Kobe MGT\***



**Spawner Recruit\***



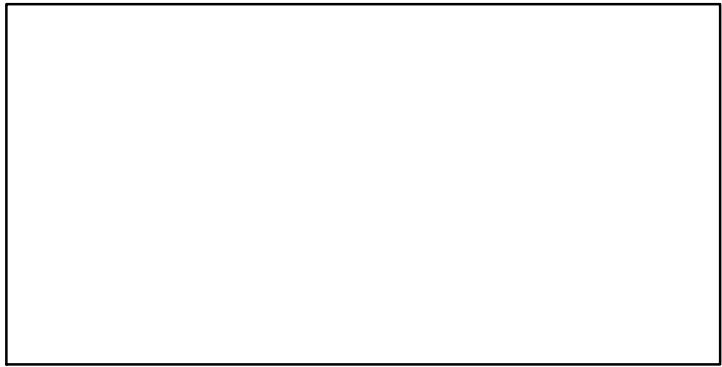
**Production\***



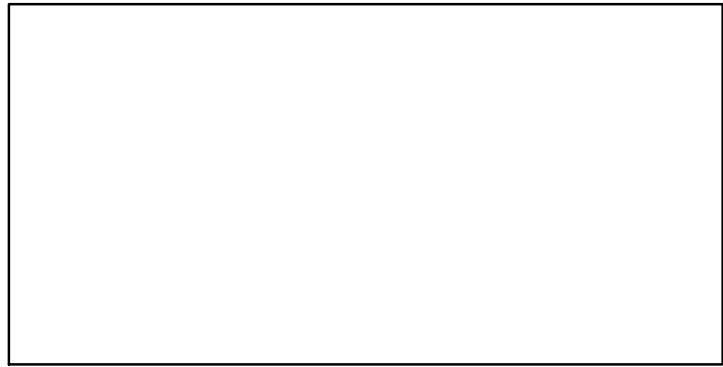
◆ Start Year ♦ End Year \* No Data

European plaice ICES 7bc [PLAICVIIbc]

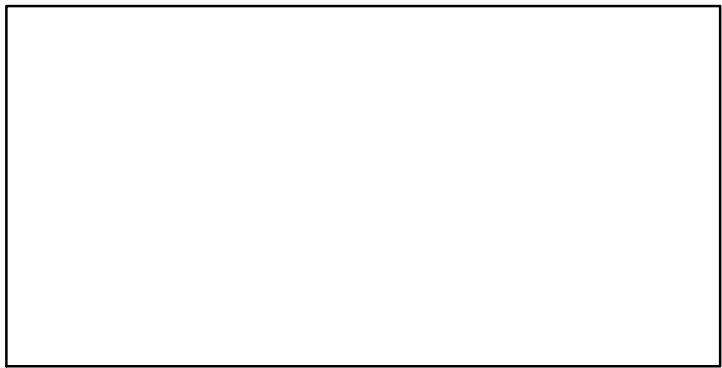
**TB\***



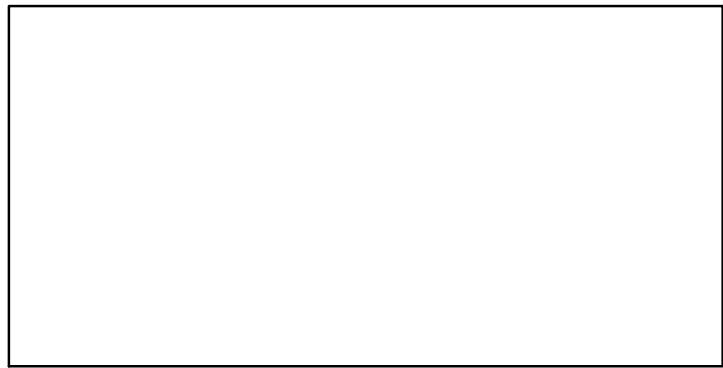
**SSB\***



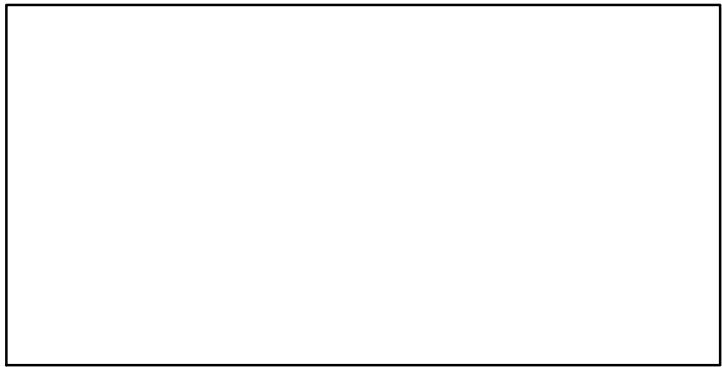
**TN \***



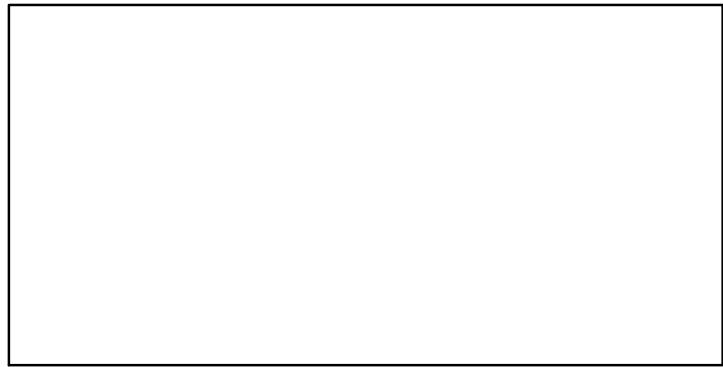
**F\***



**ER\***



**Recruits\***

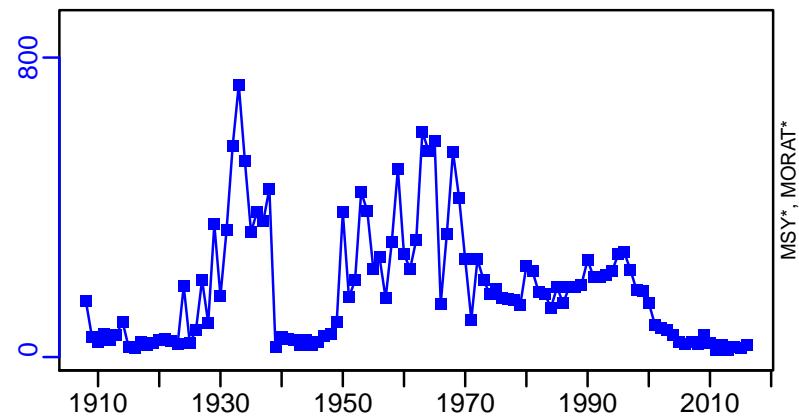


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

European plaice ICES 7bc [PLAICVIIbc]

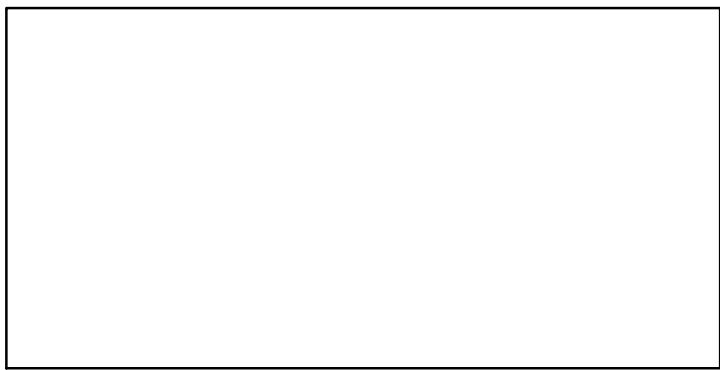
TL-MT, TC\*, RecC\* (1908–2016–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*

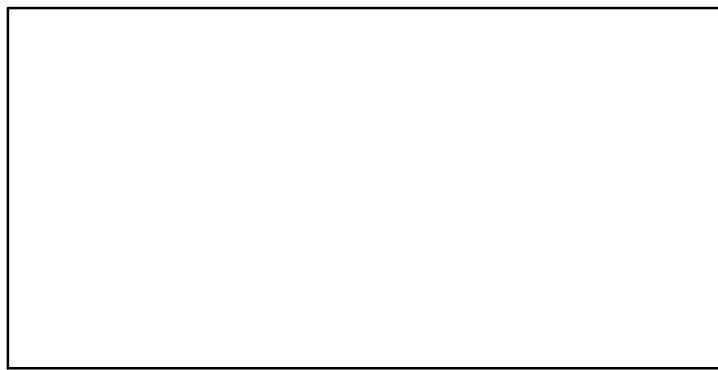


**survB\***

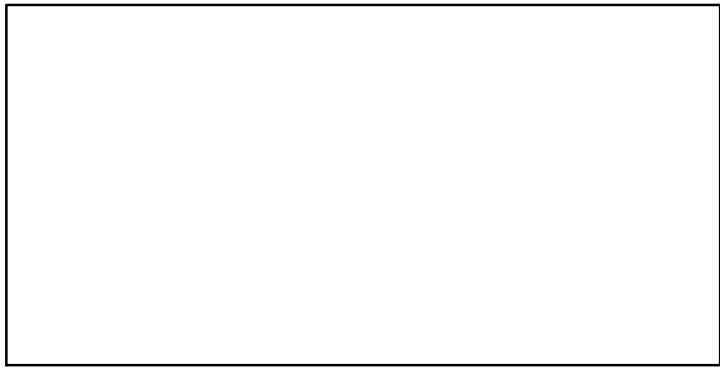
MSY\*, MORAT\*



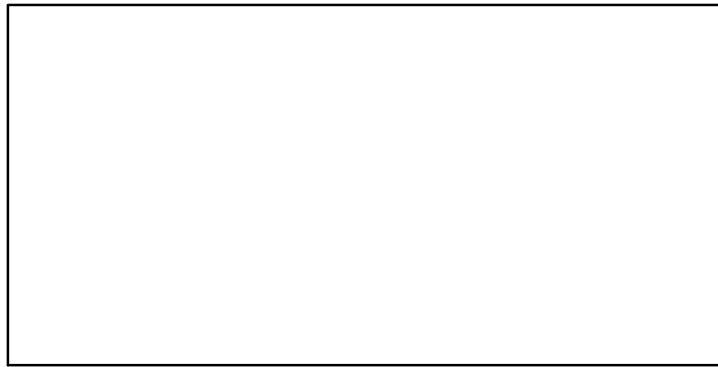
**CPUE\***



**EFFORT\***



**CdivMSY\***



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## European plaice ICES 7h-k [PLAICVIIh-k]

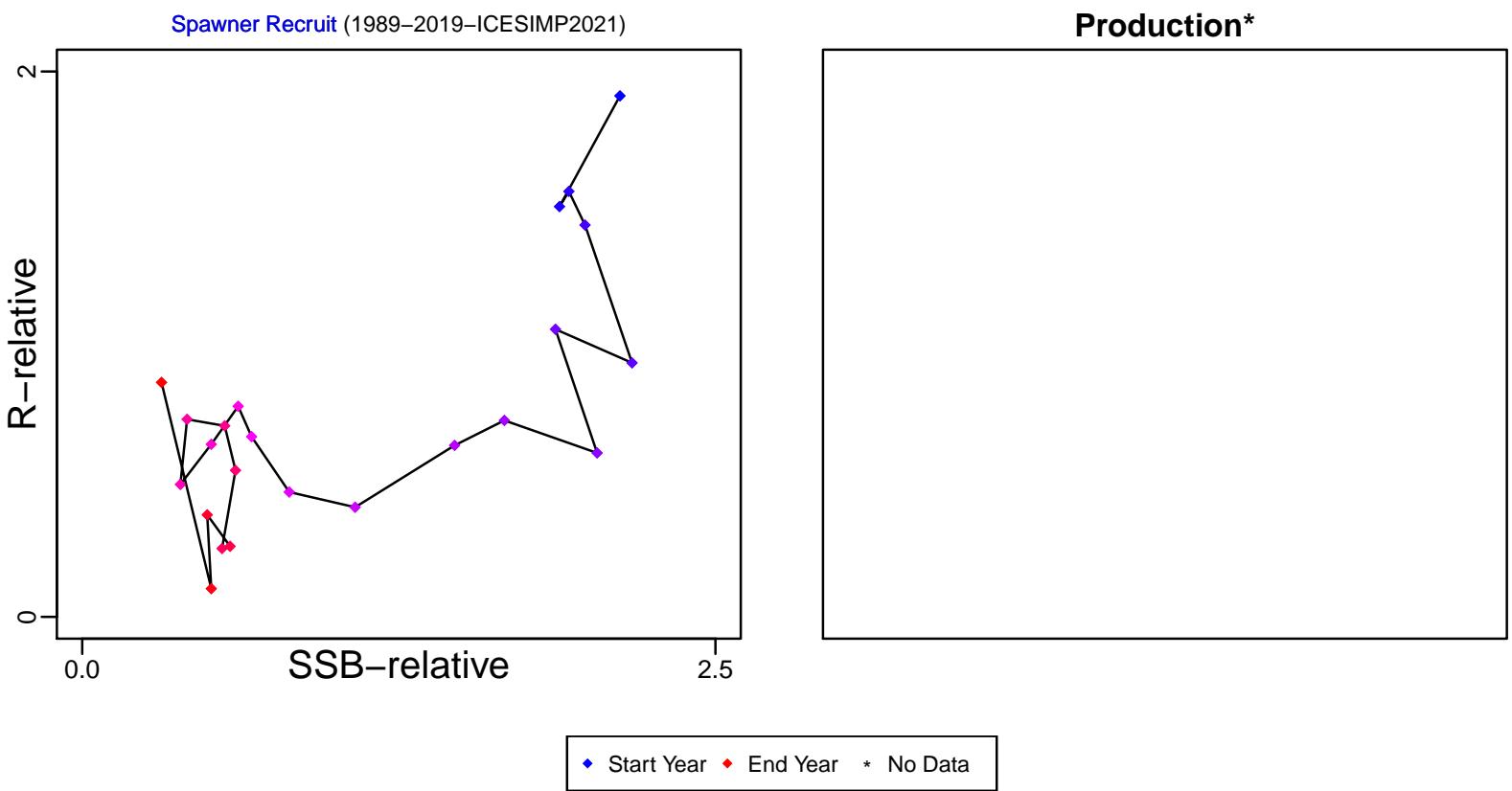
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Pleuronectes platessa                                |
| <b>Current Assess ID</b>    | WGCSE-PLAICVIIh-k-1989-2019-ICESIMP2021              |
| <b>Area</b>                 | ICES 7h-k  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2014, 2015, 2016, 2018, 2019                         |

| Reference Points |                 |           |       |
|------------------|-----------------|-----------|-------|
| Type             | ID              | Asmt Year | Value |
| <b>TBmsy</b>     | -               | -         | -     |
| <b>SSBmsy</b>    | -               | -         | -     |
| <b>Fmsy</b>      | Fmsy-relative   | 2018      | 0.261 |
| <b>ERmsy</b>     | -               | -         | -     |
| <b>TBmgt</b>     | -               | -         | -     |
| <b>SSBmgt</b>    | SSBmgt-relative | 2019      | 1.743 |
| <b>Fmgt</b>      | Fmgt-relative   | 2019      | 0.415 |
| <b>ERmgt</b>     | -               | -         | -     |
| <b>TB0</b>       | -               | -         | -     |
| <b>SSB0</b>      | -               | -         | -     |
| <b>MSY</b>       | -               | -         | -     |
| <b>M</b>         | -               | -         | -     |
| <b>TBlim</b>     | -               | -         | -     |
| <b>SSBlim</b>    | SSBlim-relative | 2018      | 236   |
| <b>Flim</b>      | Flim-relative   | 2018      | 0.436 |
| <b>ERlim</b>     | -               | -         | -     |

| Time Series       |              |           |            |     |        |  |
|-------------------|--------------|-----------|------------|-----|--------|--|
| Type              | ID           | Asmt Year | Curr Value | Sex | Age    |  |
| <b>TB</b>         | -            | -         | -          | -   | -      |  |
| <b>SSB</b>        | SSB-relative | 2019      | 0.579      | -   | -      |  |
| <b>TN</b>         | -            | -         | -          | -   | -      |  |
| <b>R</b>          | R-relative   | 2019      | 0.86       | -   | 4      |  |
| <b>F</b>          | F-relative   | 2019      | 0.91       | -   | 4 to 6 |  |
| <b>ER</b>         | -            | -         | -          | -   | -      |  |
| <b>TC</b>         | -            | -         | -          |     |        |  |
| <b>TL</b>         | TL-MT        | 2019      | 38         |     |        |  |
| <b>TB/TBmsy</b>   | -            | -         | -          |     |        |  |
| <b>SSB/SSBmsy</b> | -            | -         | -          |     |        |  |
| <b>F/Fmsy</b>     | -            | -         | -          |     |        |  |
| <b>ER/ERmsy</b>   | -            | -         | -          |     |        |  |
| <b>TB/TBmgt</b>   | -            | -         | -          |     |        |  |
| <b>SSB/SSBmgt</b> | -            | -         | -          |     |        |  |
| <b>F/Fmgt</b>     | -            | -         | -          |     |        |  |
| <b>ER/ERmgt</b>   | -            | -         | -          |     |        |  |

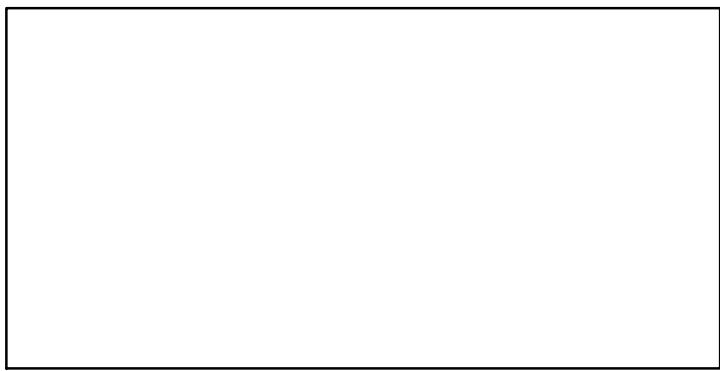
**Kobe MSY\***

**Kobe MGT\***

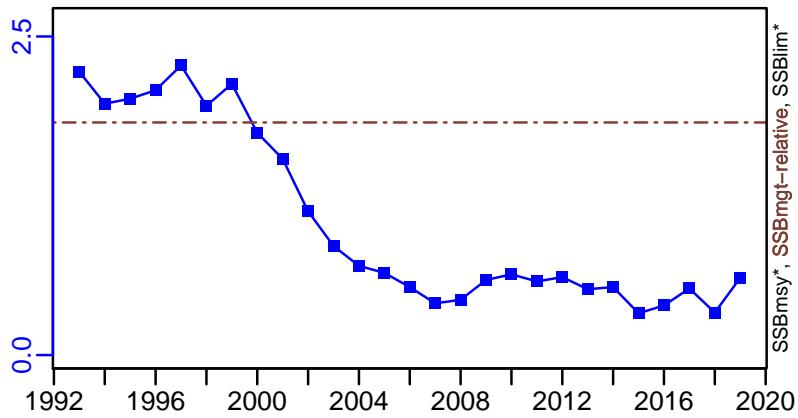


European plaice ICES 7h–k [PLAICVIIh–k]

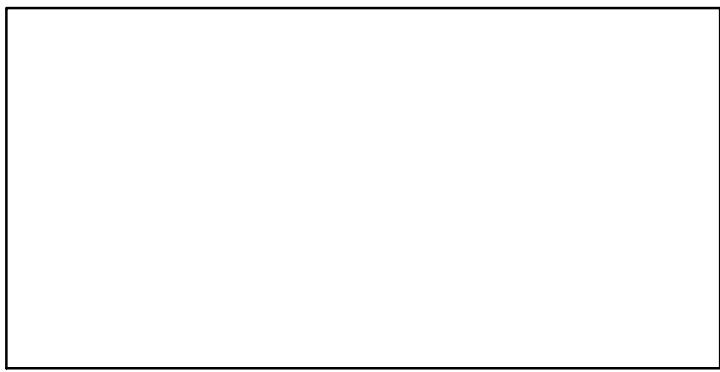
**TB\***



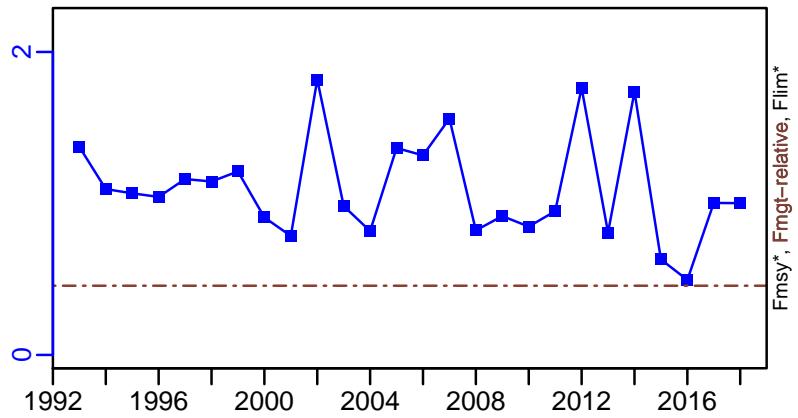
SSB-relative (1989–2019–ICESIMP2021)



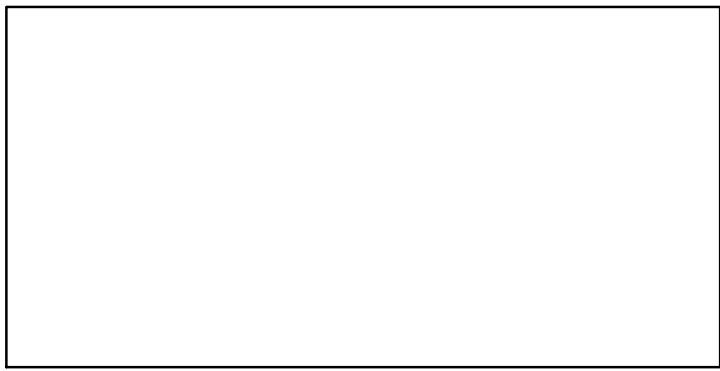
**TN \***



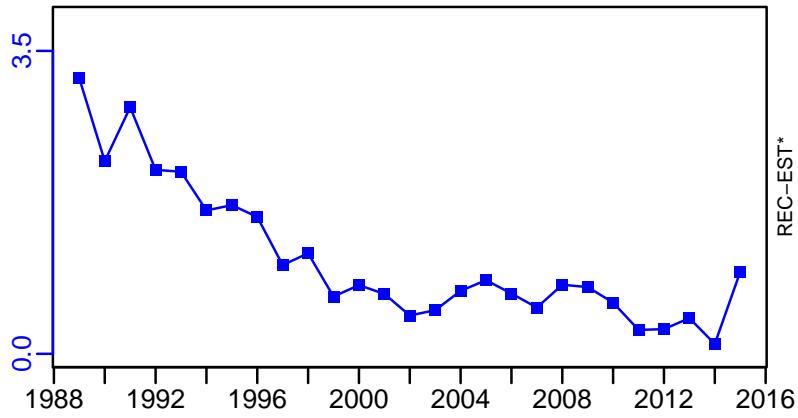
F-relative (1989–2019–ICESIMP2021)



**ER\***



R-relative (1989–2019–ICESIMP2021)

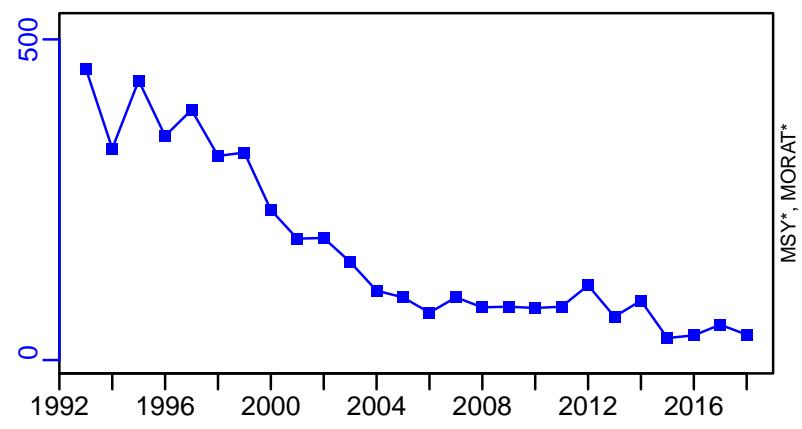


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | - - Lim BRP  | * No Data |

European plaice ICES 7h–k [PLAICVIIh–k]

TL–MT, TC\*, RecC\* (1989–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



survB\*

MSY\*, MORAT\*

CPUE\*

EFFORT\*

CdivMSY\*

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

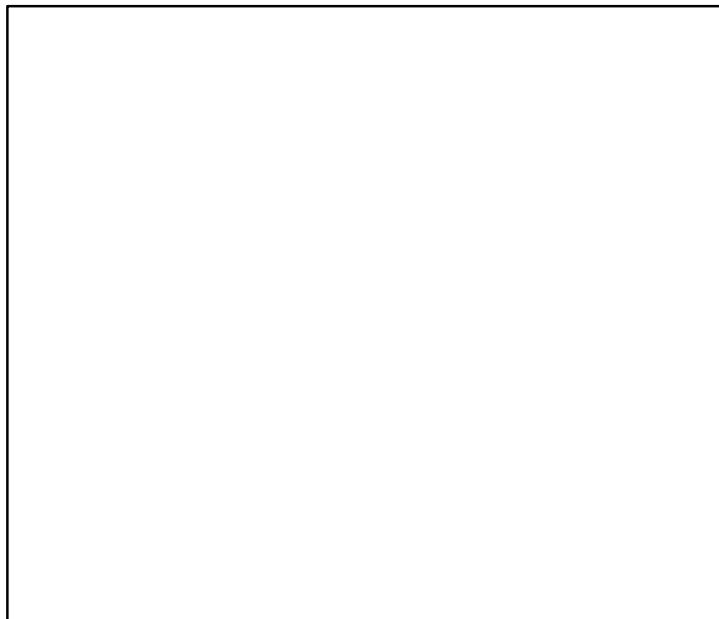
## European plaice ICES 8-9a [PLAICVIII-IXa]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Pleuronectes platessa  |
| <b>Current Assess ID</b>    | WGBIE-PLAICVIII-IXa-1994-2018-ICESIMP2021                            |
| <b>Area</b>                 | ICES 8-9a  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                 |
| <b>Assessor</b>             | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion |
| <b>Asmts in RAM</b>         | 2015, 2016, 2018   |

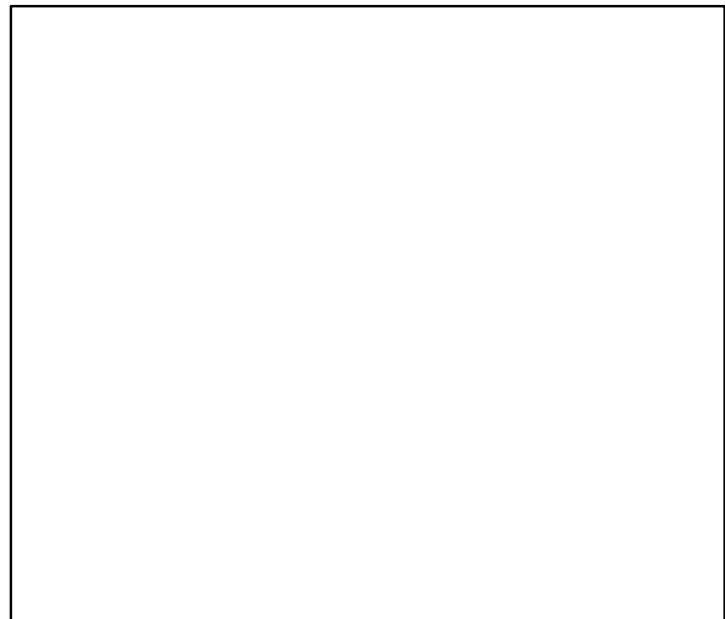
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | -     | -         | -          |     |     |
| <b>TL</b>          | TL-MT | 2018      | 133        |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

**Kobe MSY\***



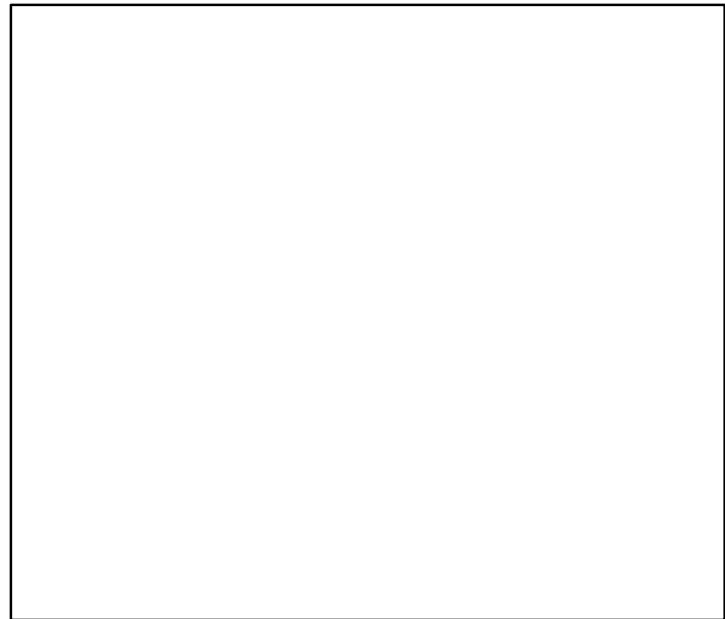
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

European plaice ICES 8–9a [PLAICVIII–IXa]

**TB\***



**SSB\***



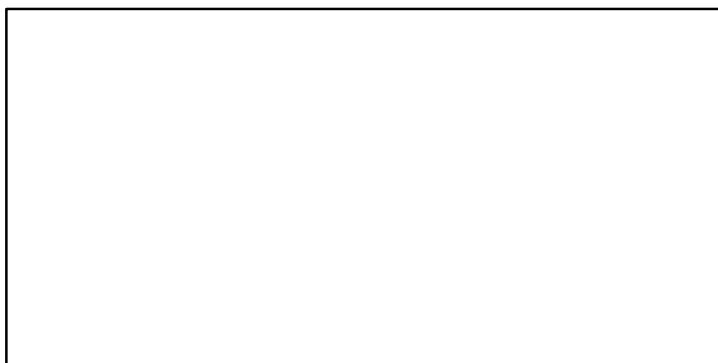
**TN \***



**F\***



**ER\***



**Recruits\***

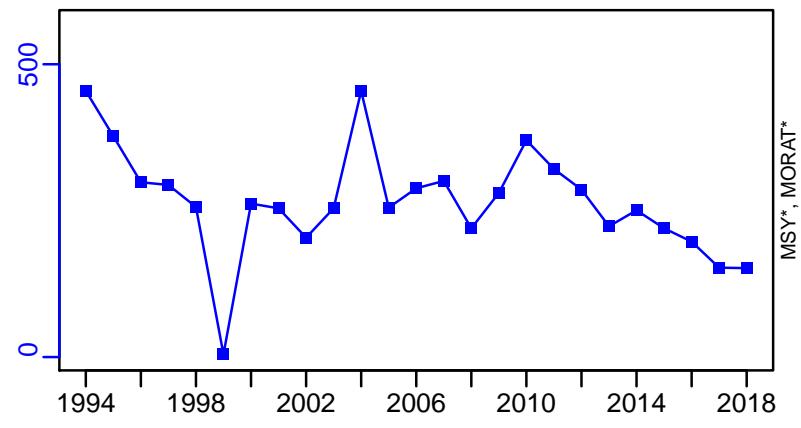


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

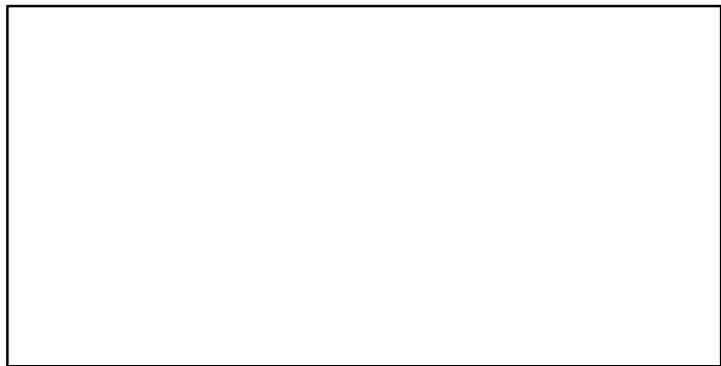
European plaice ICES 8–9a [PLAICVIII–IXa]

TL–MT, TC\*, RecC\* (1994–2018–ICESIMP2021)

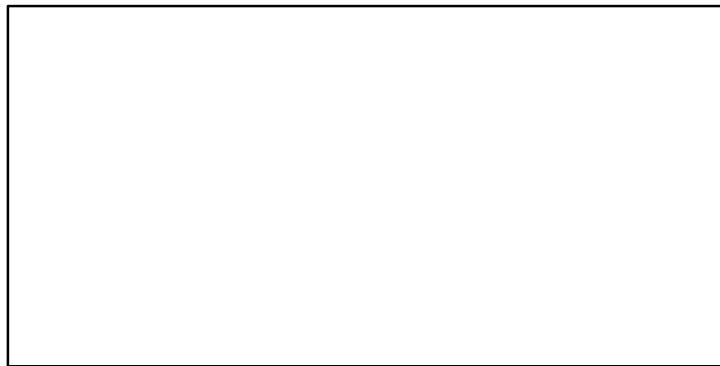
TAC\*, Cpair\*, Cadv\*



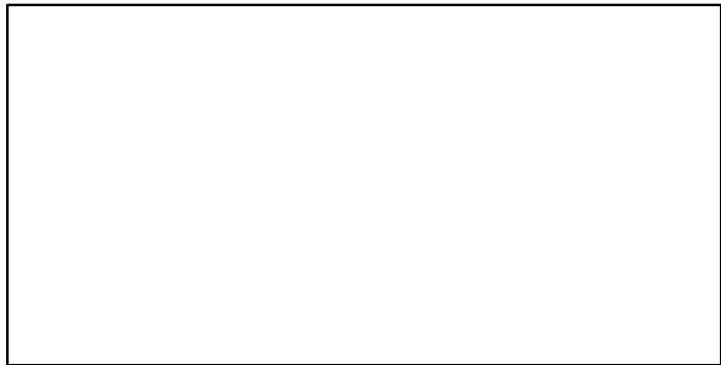
survB\*



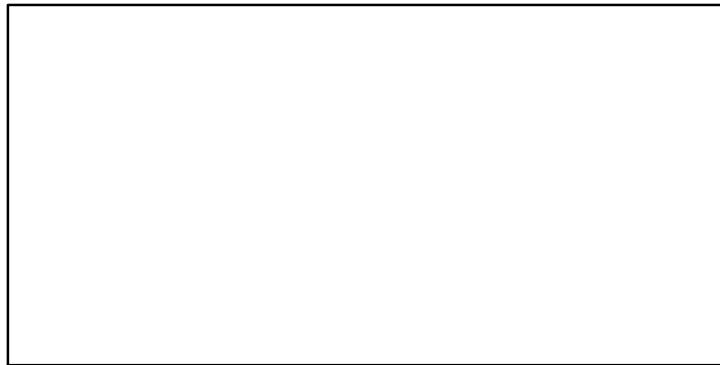
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Pollock ICES 3a-4-6 [POLLNS-VI-IIIA]

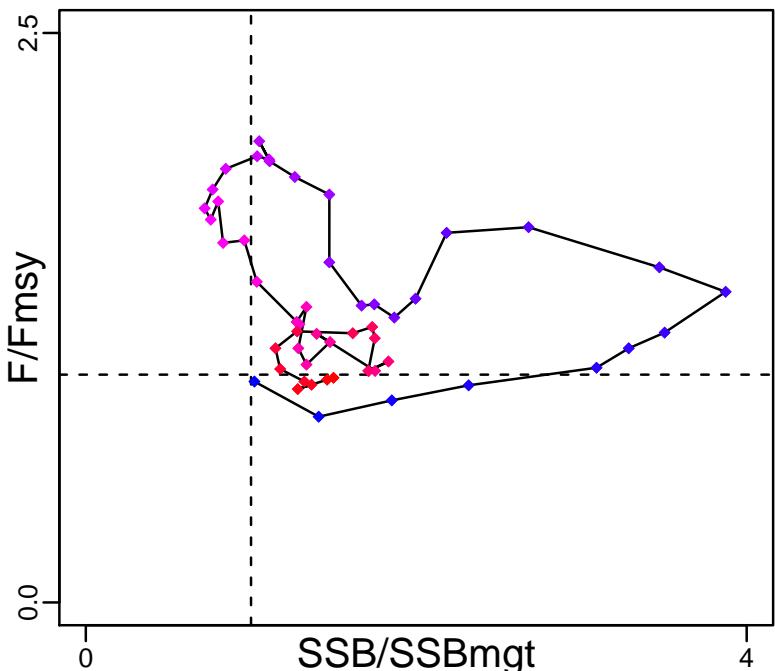
| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Pollachius virens   |
| <b>Current Assess ID</b>    | WGNSSK-POLLNS-VI-IIIA-1964-2019-ICESIMP2021                                       |
| <b>Area</b>                 | ICES 3a-4-6   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2012, 2013, 2014, 2015, 2016, 2016, 2017, 2018, 2019                              |

| <b>Reference Points</b> |           |                  |                 |
|-------------------------|-----------|------------------|-----------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b>    |
| <b>TBmsy</b>            | -         | -                | -               |
| <b>SSBmsy</b>           | -         | -                | -               |
| <b>Fmsy</b>             | Fmsy-1/yr | 2019             | 0.363           |
| <b>ERmsy</b>            | -         | -                | -               |
| <b>TBmgt</b>            | -         | -                | -               |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019             | 149,098         |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019             | 0.363           |
| <b>ERmgt</b>            | -         | -                | -               |
| <b>TB0</b>              | -         | -                | -               |
| <b>SSB0</b>             | -         | -                | -               |
| <b>MSY</b>              | MSY-MT    | 2012             | $2 \times 10^5$ |
| <b>M</b>                | -         | -                | -               |
| <b>TBlim</b>            | -         | -                | -               |
| <b>SSBlim</b>           | SSBlim-MT | 2018             | 107,000         |
| <b>Flim</b>             | Flim-1/yr | 2018             | 0.56            |
| <b>ERlim</b>            | -         | -                | -               |

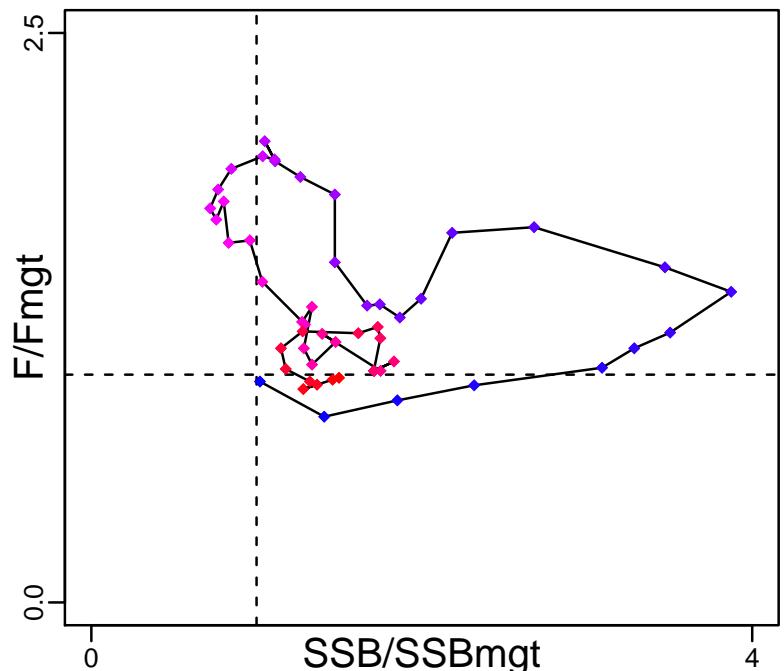
| <b>Time Series</b> |                  |                  |                   |            |            |
|--------------------|------------------|------------------|-------------------|------------|------------|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |
| <b>TB</b>          | TB-MT            | 2019             | 383,325           | -          | -          |
| <b>SSB</b>         | SSB-MT           | 2019             | 228,110           | -          | -          |
| <b>TN</b>          | -                | -                | -                 | -          | -          |
| <b>R</b>           | R-E00            | 2019             | 83,040,000        | -          | 3          |
| <b>F</b>           | F-1/yr           | 2019             | 0.358             | -          | 4 to 7     |
| <b>ER</b>          | ER-calc-ratio    | 2019             | 0.246             | -          | -          |
| <b>TC</b>          | TC-MT            | 2019             | 94,334            |            |            |
| <b>TL</b>          | TL-MT            | 2019             | 86,540            |            |            |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2019             | 0.986             |            |            |
| <b>ER/ERmsy</b>    | -                | -                | -                 |            |            |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019             | 1.53              |            |            |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019             | 0.986             |            |            |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |

Pollock ICES 3a–4–6 [POLLNS–VI–IIIa]

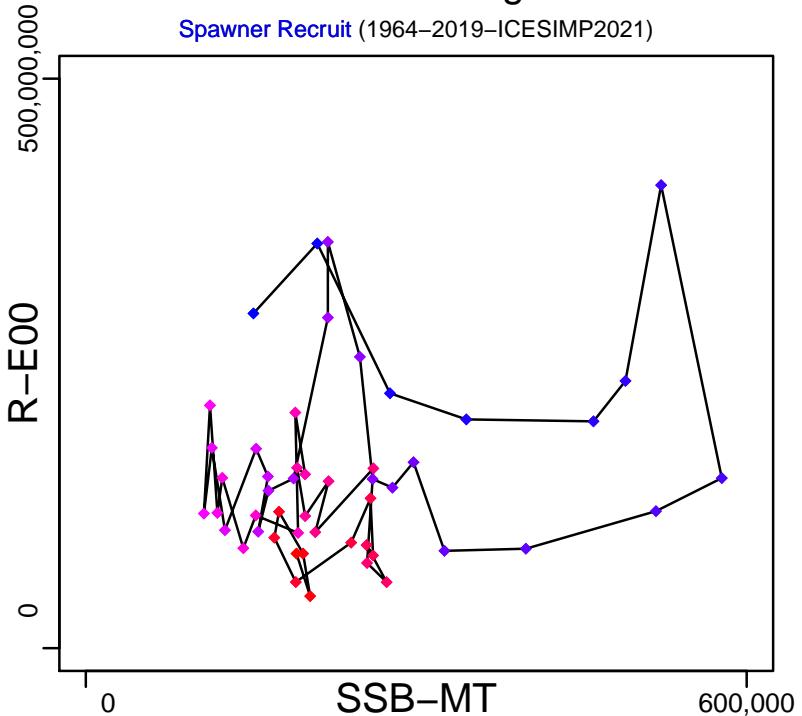
Kobe MSYpref (1964–2019–ICESIMP2021)



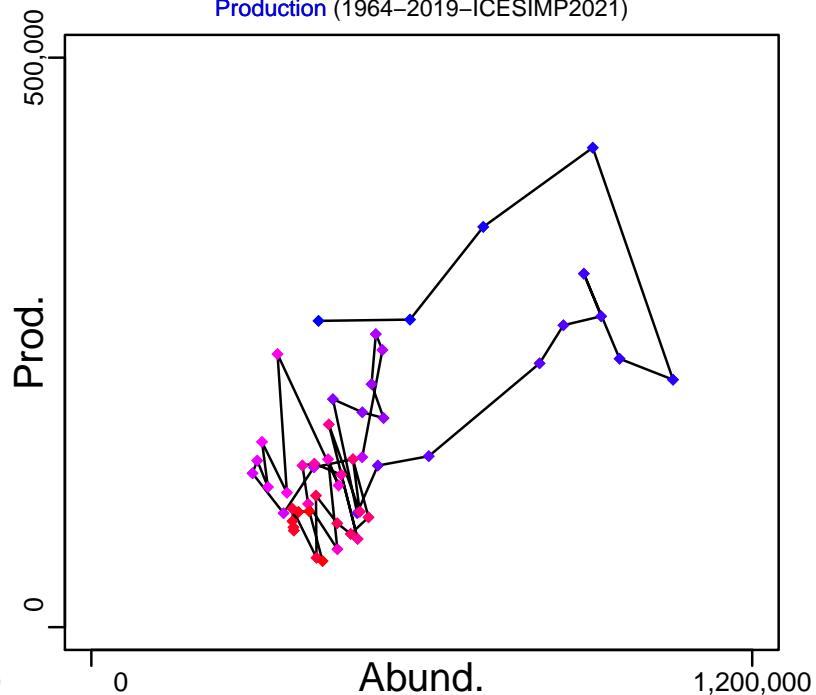
Kobe MGTpref (1964–2019–ICESIMP2021)



Spawner Recruit (1964–2019–ICESIMP2021)



Production (1964–2019–ICESIMP2021)

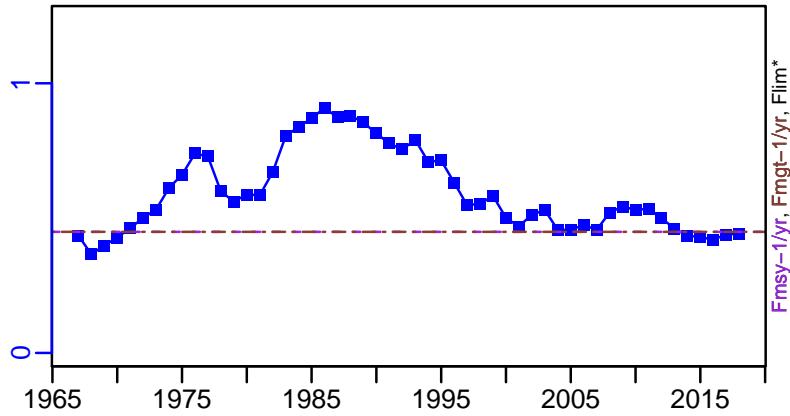
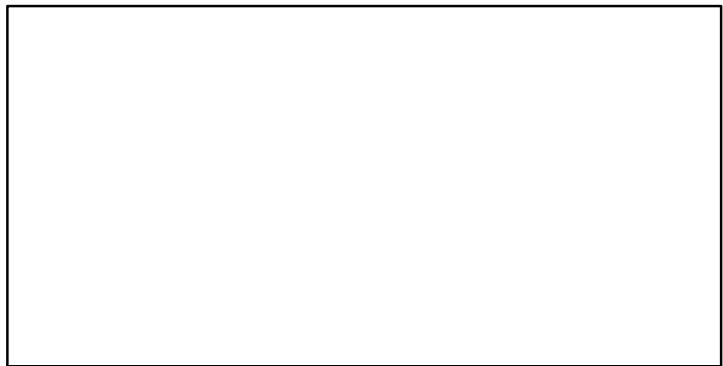
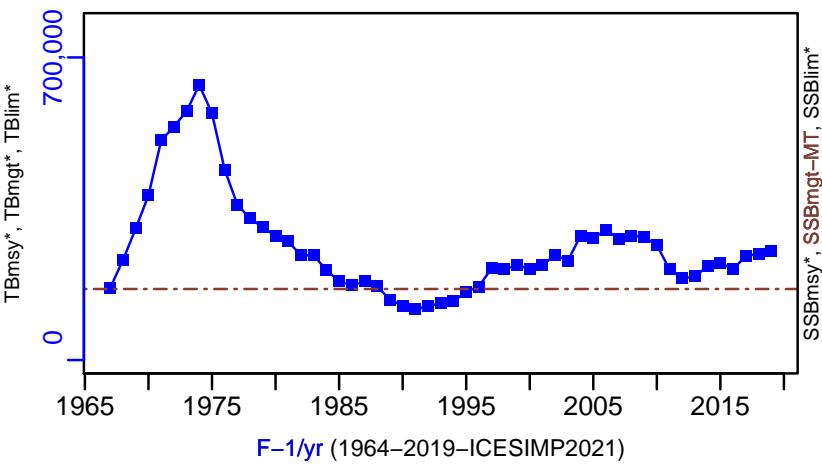
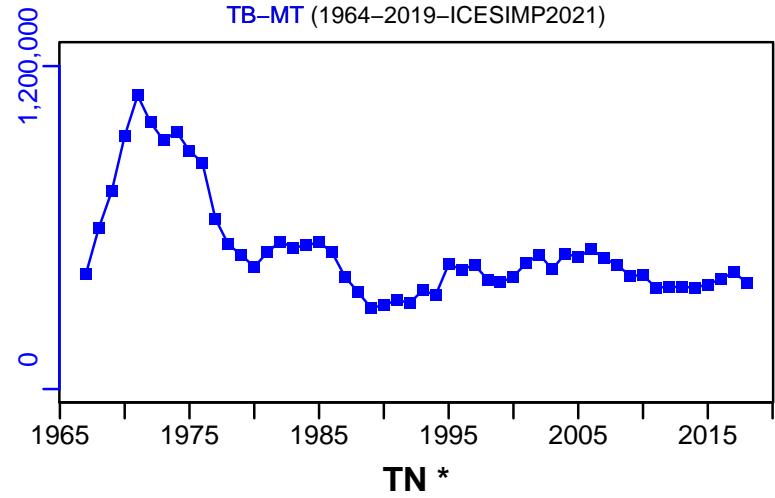


|              |            |   |         |
|--------------|------------|---|---------|
| ◆ Start Year | ◆ End Year | * | No Data |
|--------------|------------|---|---------|

Pollock ICES 3a–4–6 [POLLNS–VI–IIIa]

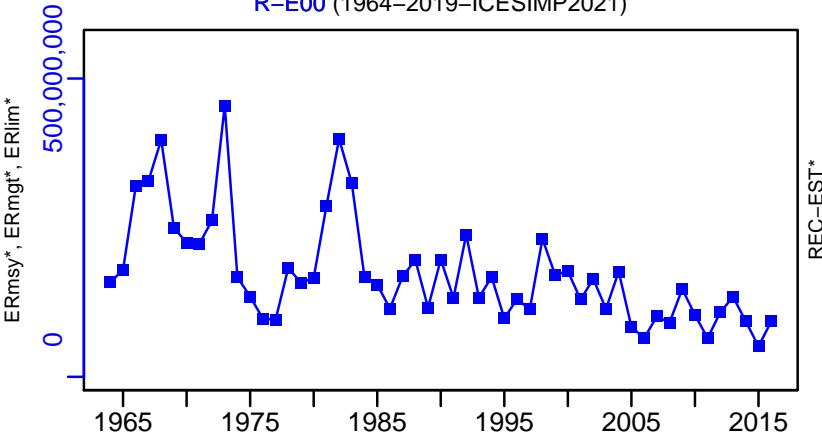
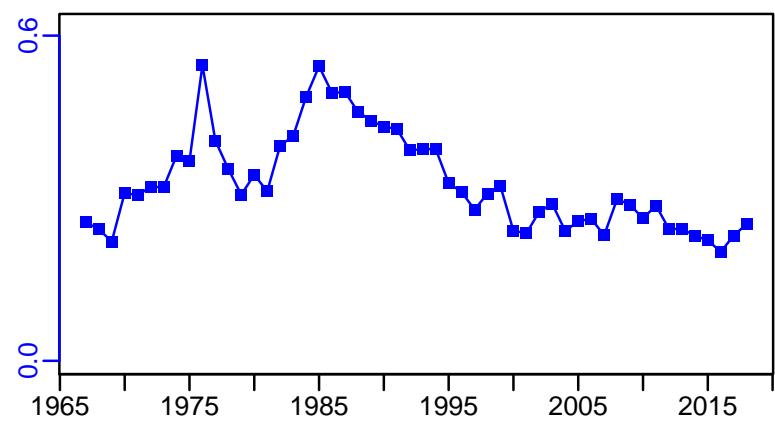
TB-MT (1964–2019–ICESIMP2021)

SSB-MT (1964–2019–ICESIMP2021)



ER-calc-ratio (1964–2019–ICESIMP2021)

R-E00 (1964–2019–ICESIMP2021)

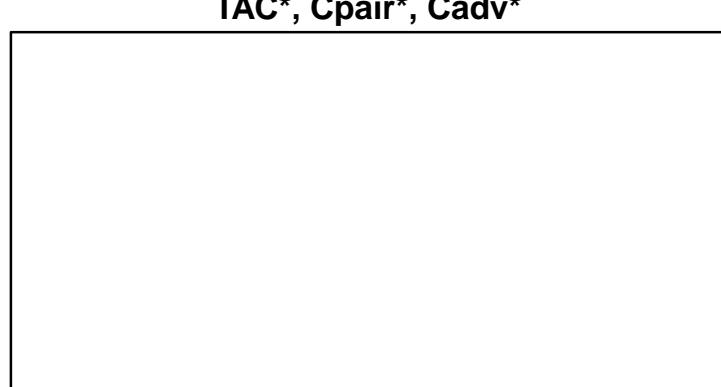
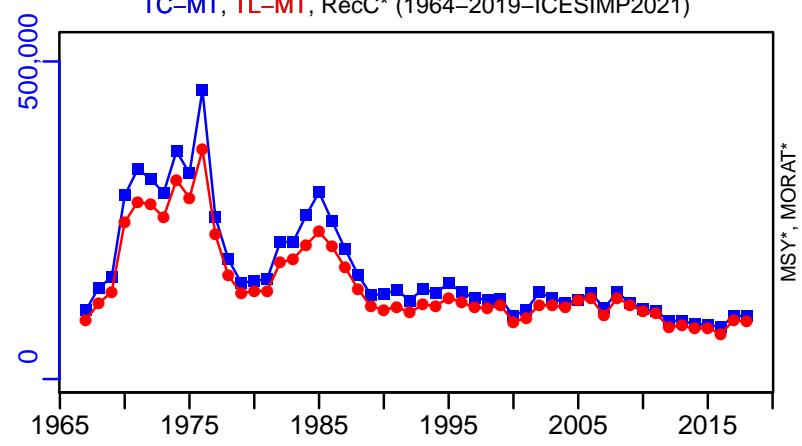


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - - MSY-based BRP  | --- Lim BRP  | * No Data |

Pollock ICES 3a–4–6 [POLLNS–VI–IIIa]

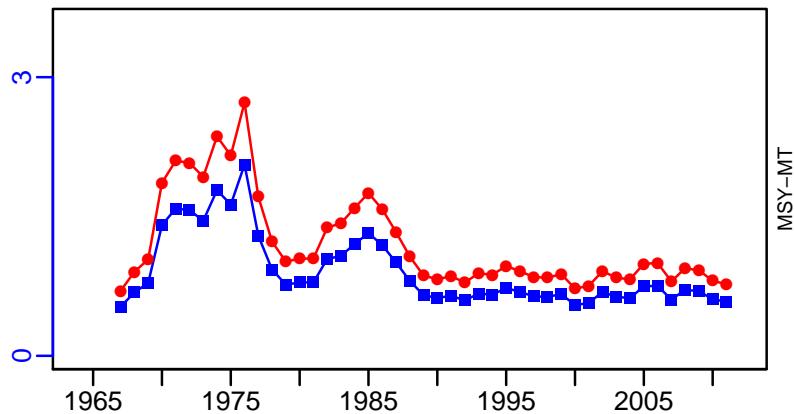
TC–MT, TL–MT, RecC\* (1964–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



EFFORT\*

TL–MT/MSY–MT, CdiveMEANC–ratio, (1964–2012–CHING)



|                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Porbeagle shark Northeast Atlantic [PORSHARNEATL]

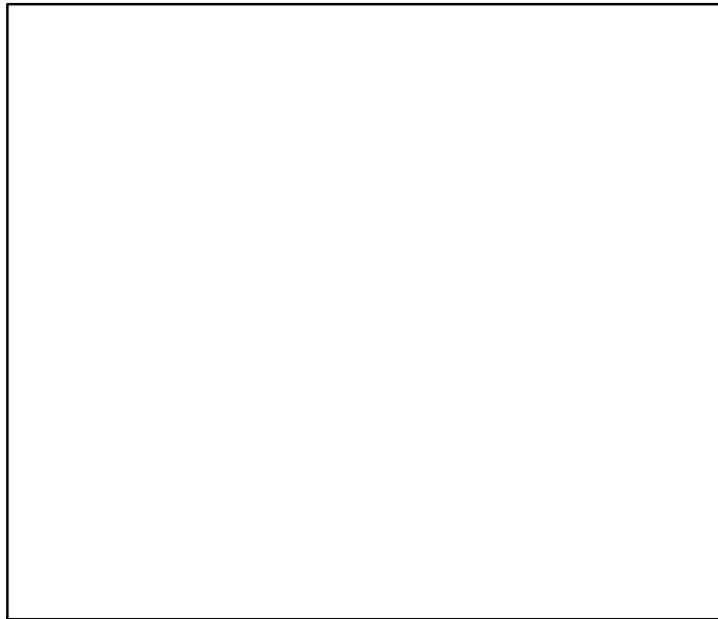
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Lamna nasus  |
| <b>Current Assess ID</b>    | WGEF-PORSHARNEATL-1926-2018-ICESIMP2021              |
| <b>Area</b>                 | Northeast Atlantic                                   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2014, 2018   |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

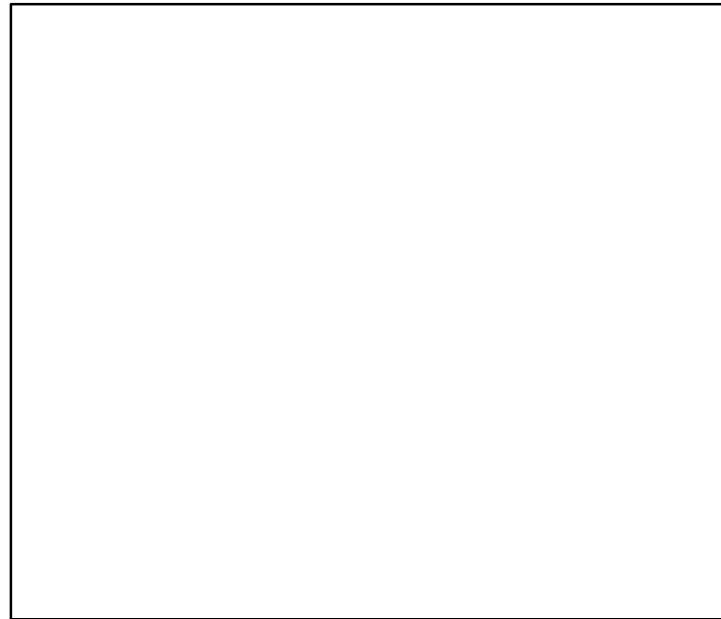
| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | -     | -         | -          |     |     |
| <b>TL</b>          | TL-MT | 2018      | 7          |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

Porbeagle shark Northeast Atlantic [PORSHARNEATL]

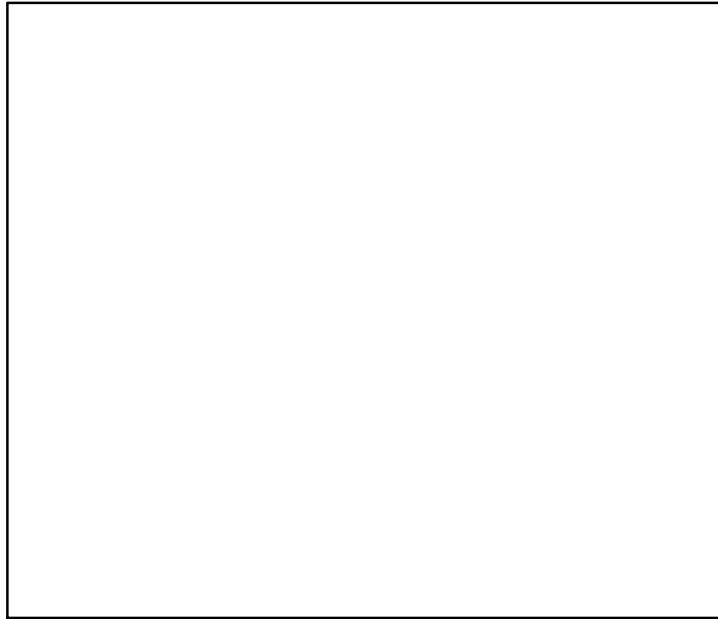
Kobe MSY\*



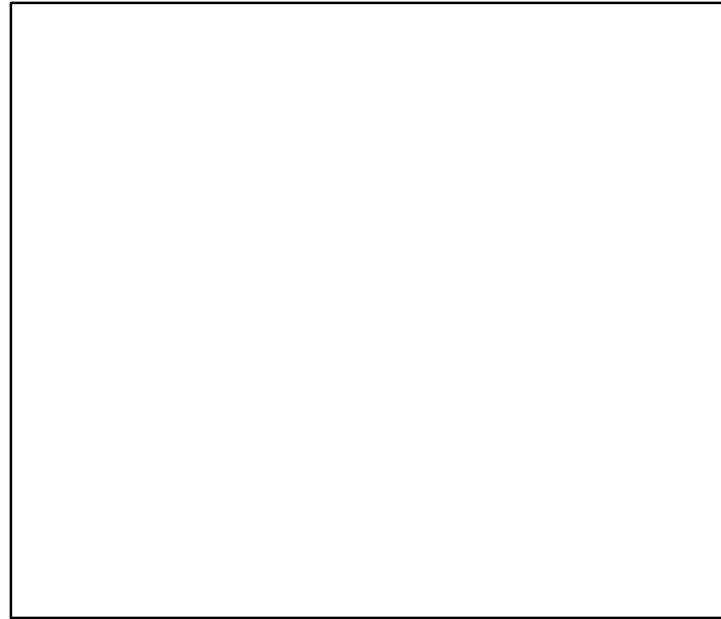
Kobe MGT\*



Spawner Recruit\*



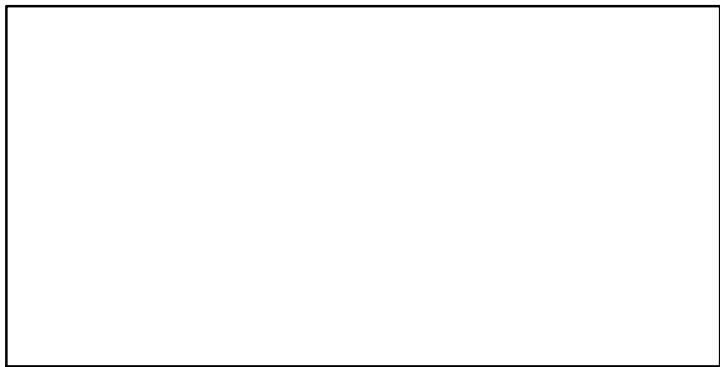
Production\*



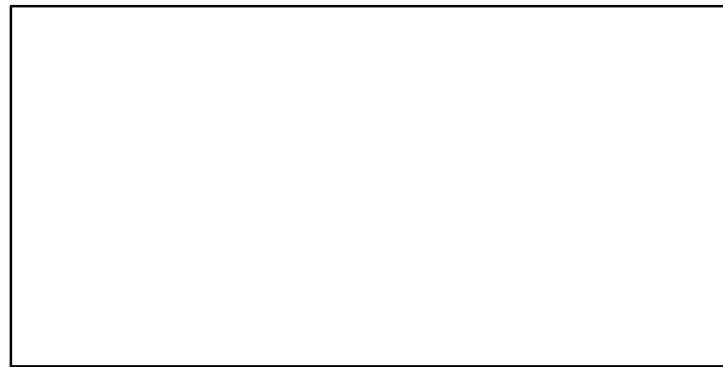
◆ Start Year ◆ End Year \* No Data

**Porbeagle shark Northeast Atlantic [PORSHARNEATL]**

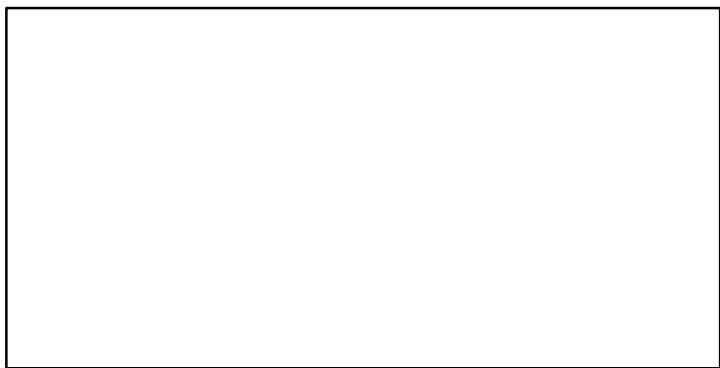
**TB\***



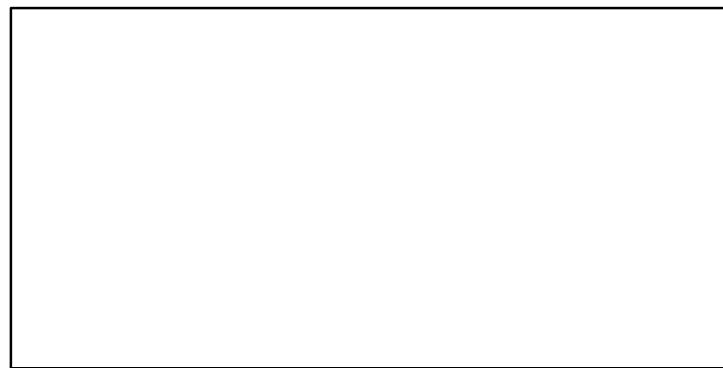
**SSB\***



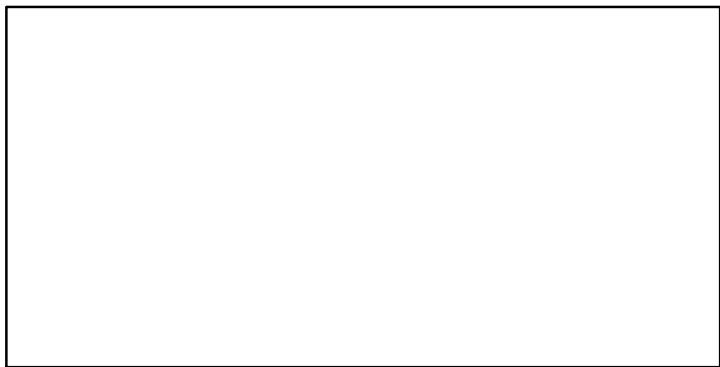
**TN \***



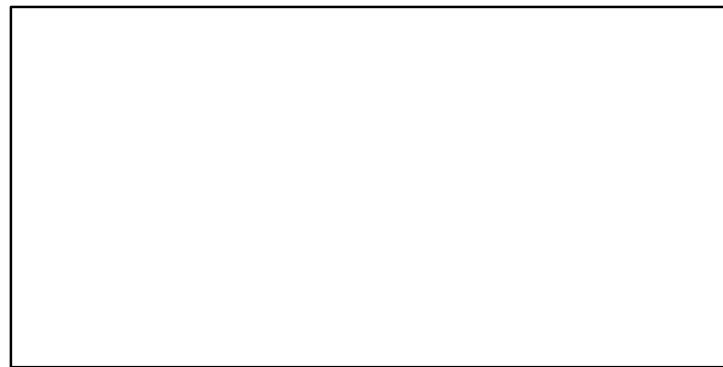
**F\***



**ER\***



**Recruits\***

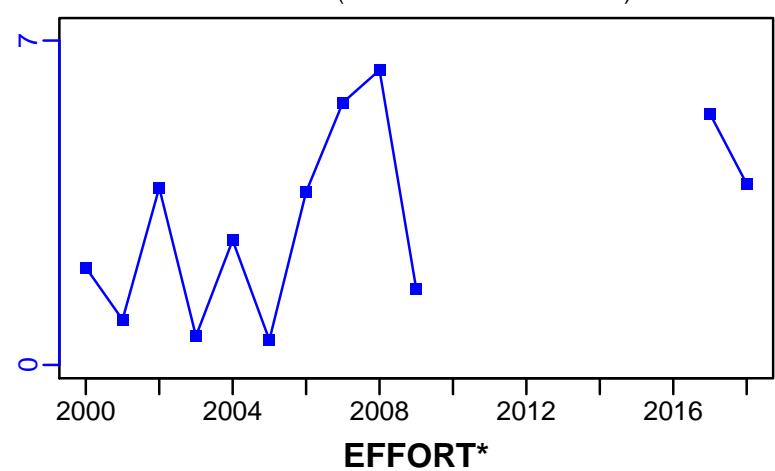
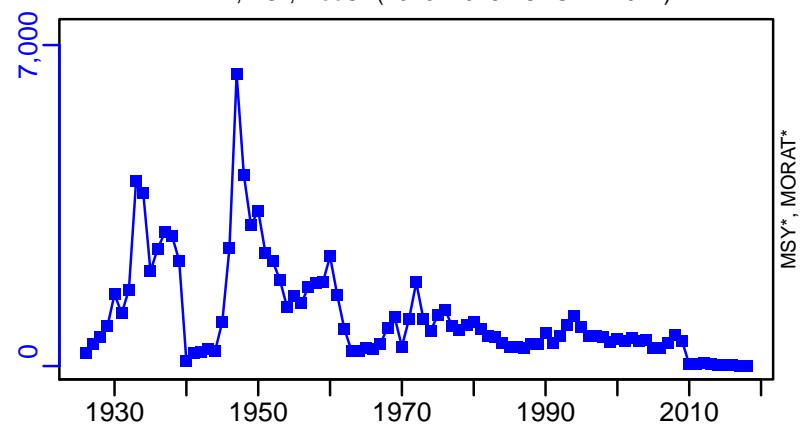


- |       |                    |       |            |   |         |
|-------|--------------------|-------|------------|---|---------|
| ■     | Listed time series | - - - | Target BRP | — | Rec-Est |
| - - - | MSY-based BRP      | - - - | Lim BRP    | * | No Data |

Porbeagle shark Northeast Atlantic [PORSHARNEATL]

TL-MT, TC\*, RecC\* (1926–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



EFFORT\*

CPUE\*

CdivMSY\*

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

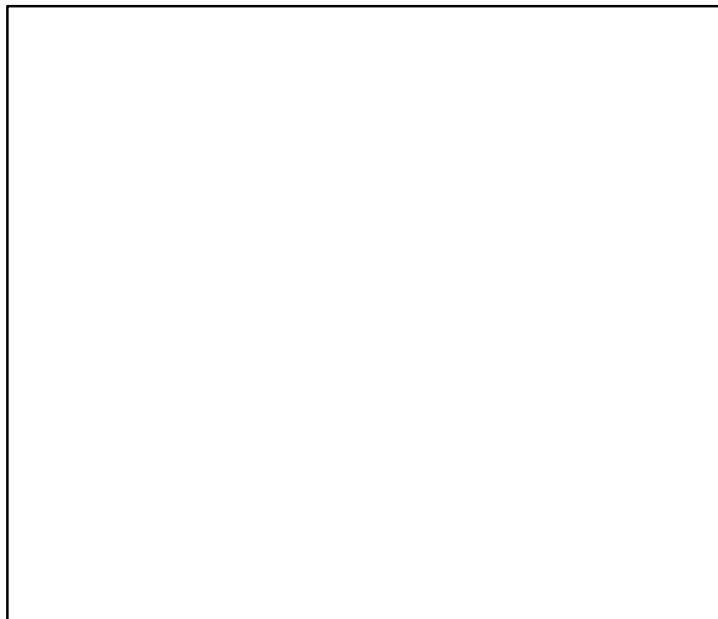
## Red seabream ICES 9 [RBRMIX]

| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Pagellus bogaraveo  |
| <b>Current Assess ID</b>    | WGDEEP-RBRMIX-1988-2017-ICESIMP2018   |
| <b>Area</b>                 | ICES 9  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                        |
| <b>Assessor</b>             | Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources |
| <b>Asmts in RAM</b>         | 2016, 2017  |

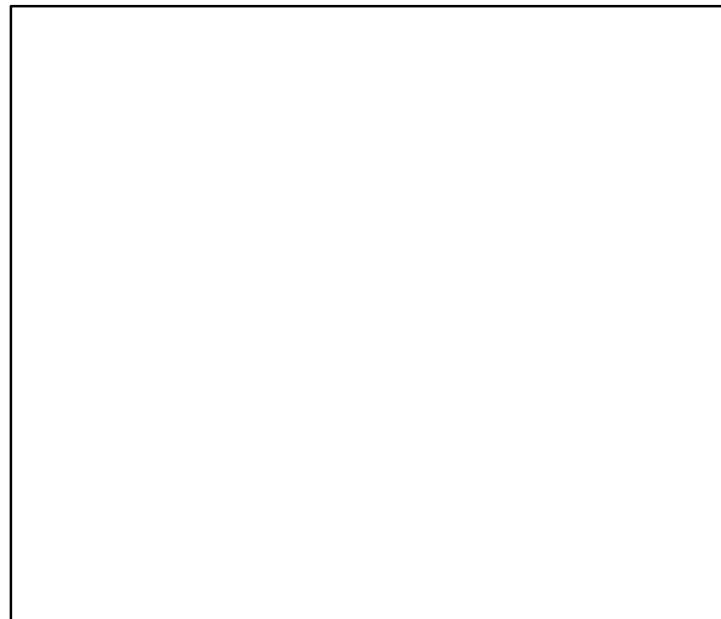
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | TC-MT | 2016      | 295        |     |     |
| <b>TL</b>          | TL-MT | 2017      | 336        |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

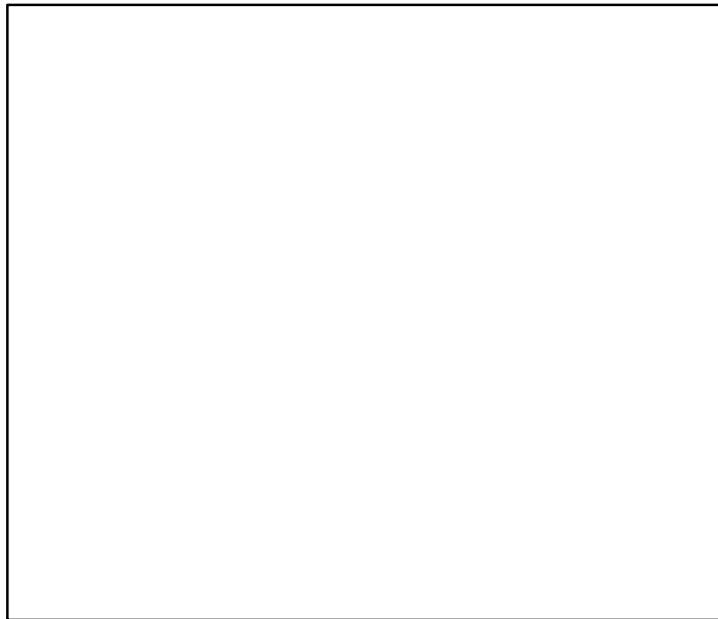
**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



**Production\***



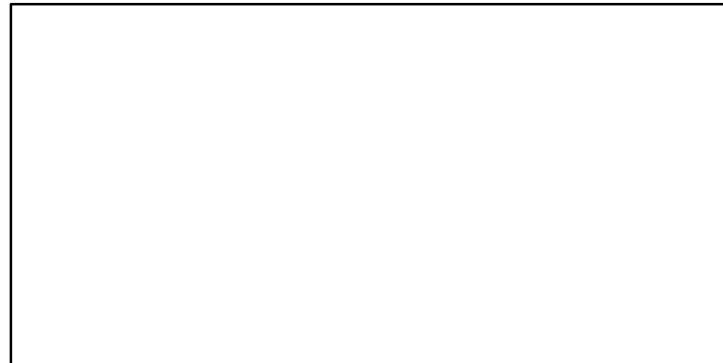
◆ Start Year ♦ End Year \* No Data

**Red seabream ICES 9 [RBRMIX]**

**TB\***



**SSB\***



**TN \***



**F\***



**ER\***



**Recruits\***

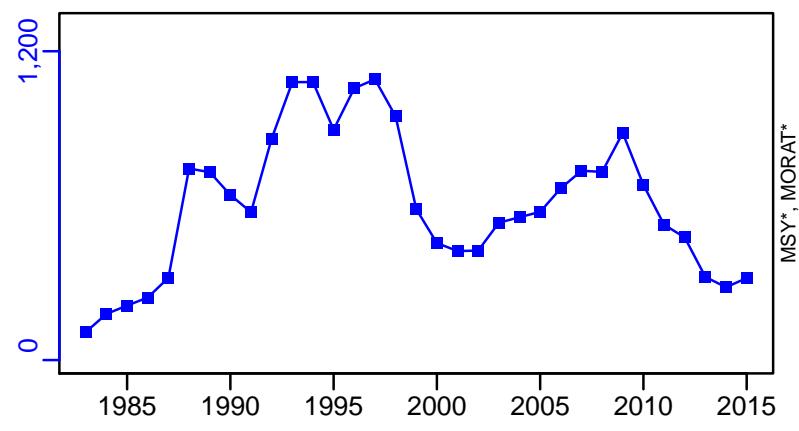


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

**Red seabream ICES 9 [RBRMIX]**

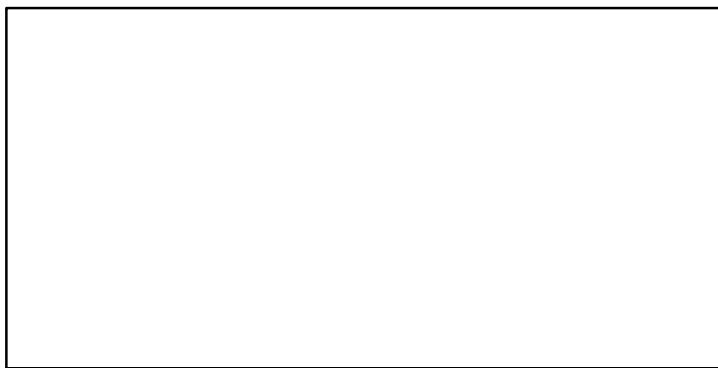
TC-MT, TL\*, RecC\* (1983–2016—ICESIMP2016)

TAC\*, Cpair\*, Cadv\*

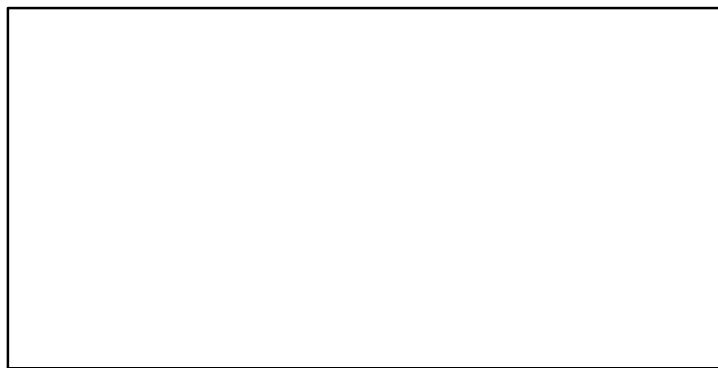


**survB\***

MSY\*, MORAT\*



**CPUE\***



**EFFORT\***



**CdivMSY\***



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

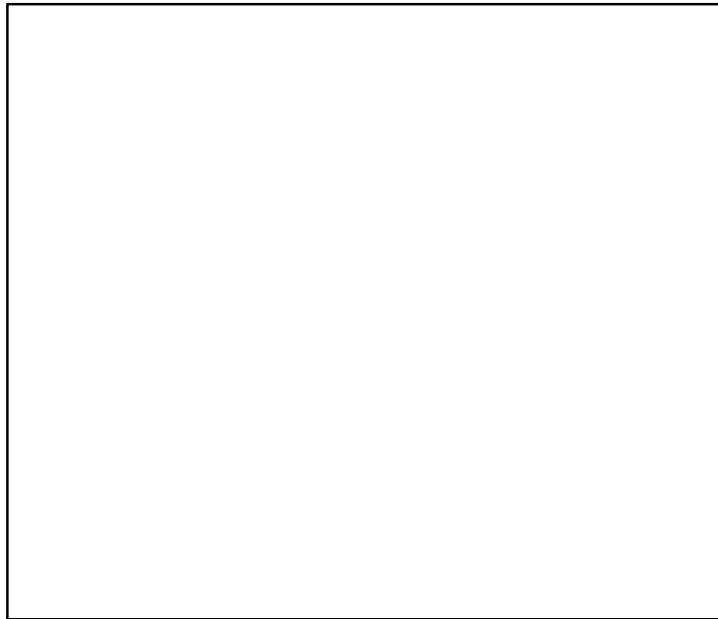
## Red seabream ICES 6-7-8 [RBRMVI-VII-VIII]

| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Pagellus bogaraveo  |
| <b>Current Assess ID</b>    | WGDEEP-RBRMVI-VII-VIII-1948-2017-ICESIMP2018                                |
| <b>Area</b>                 | ICES 6-7-8  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                        |
| <b>Assessor</b>             | Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources |
| <b>Asmts in RAM</b>         | 2016, 2017  |

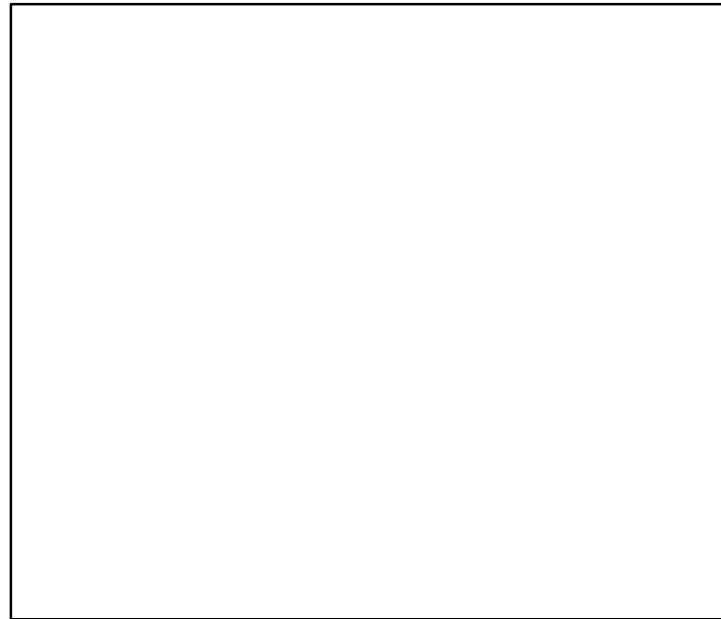
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | TC-MT | 2017      | 125        |     |     |
| <b>TL</b>          | TL-MT | 2017      | 124        |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

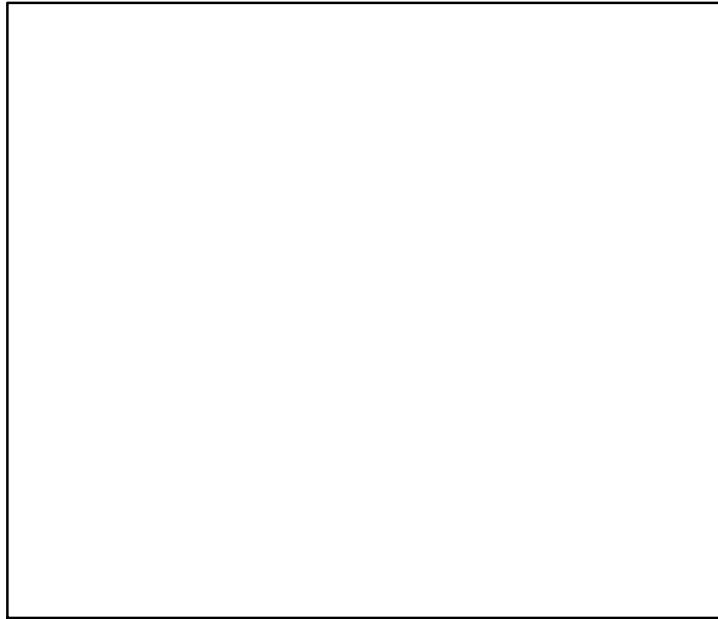
**Kobe MSY\***



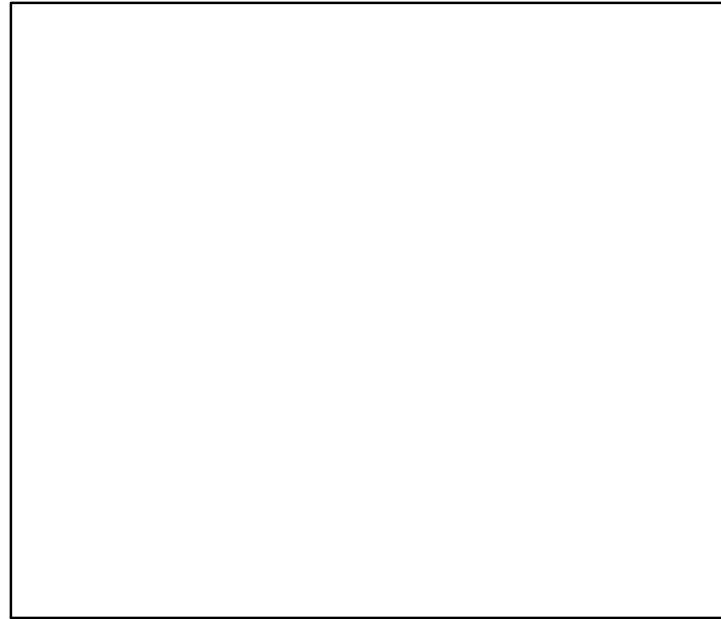
**Kobe MGT\***



**Spawner Recruit\***

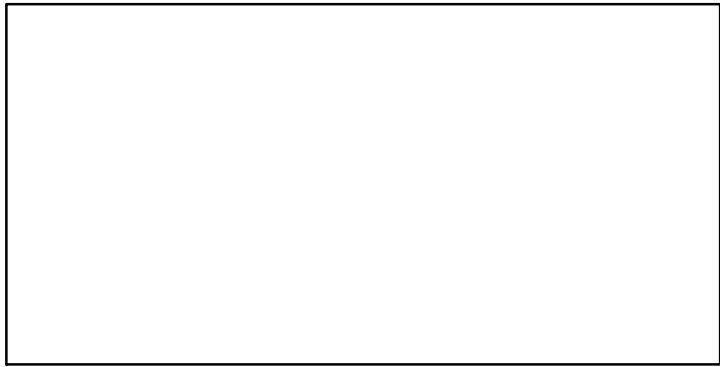


**Production\***

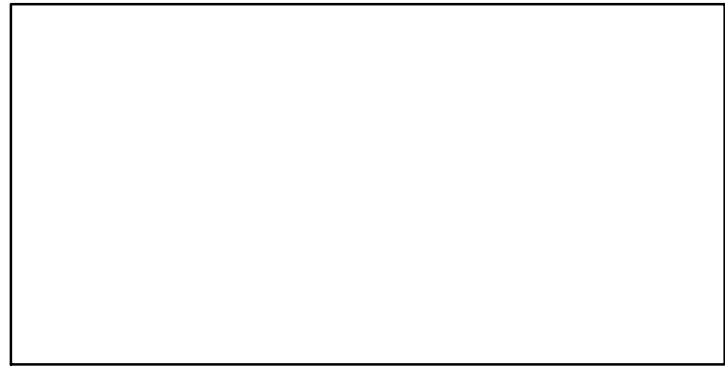


◆ Start Year ♦ End Year \* No Data

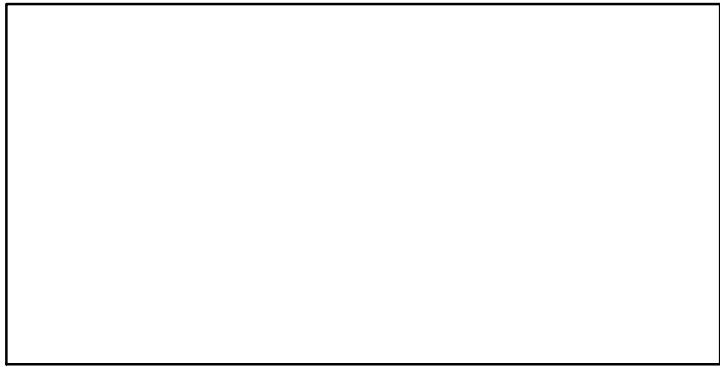
**TB\***



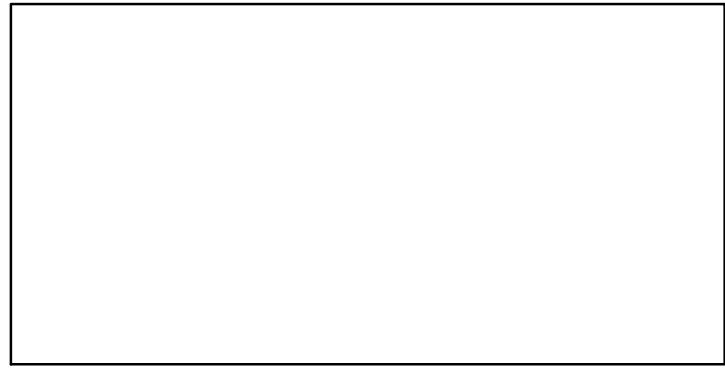
**SSB\***



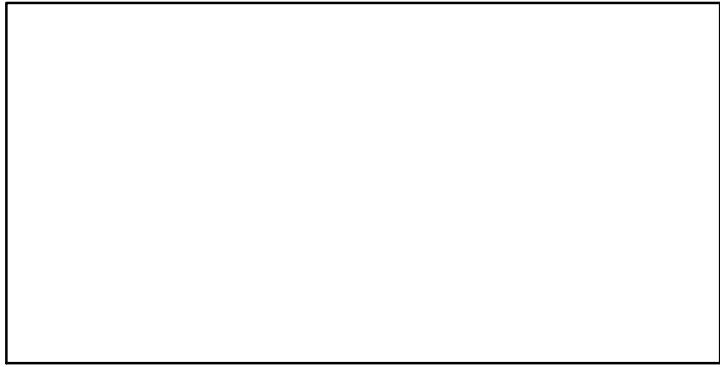
**TN \***



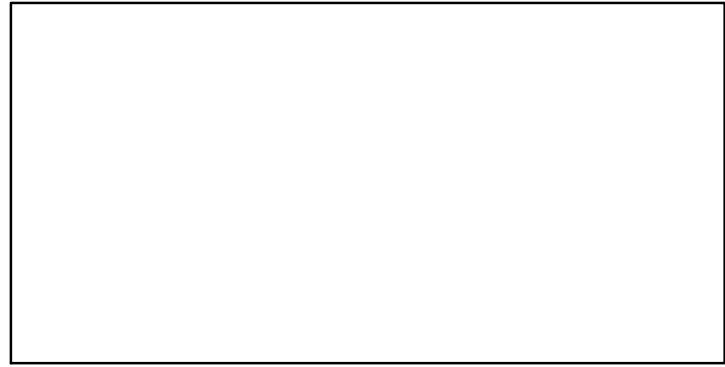
**F\***



**ER\***



**Recruits\***

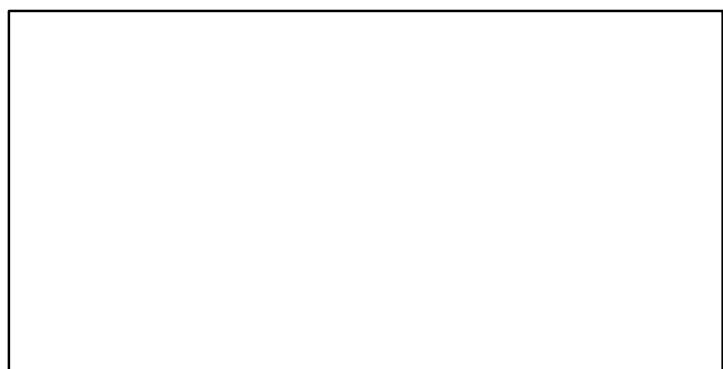
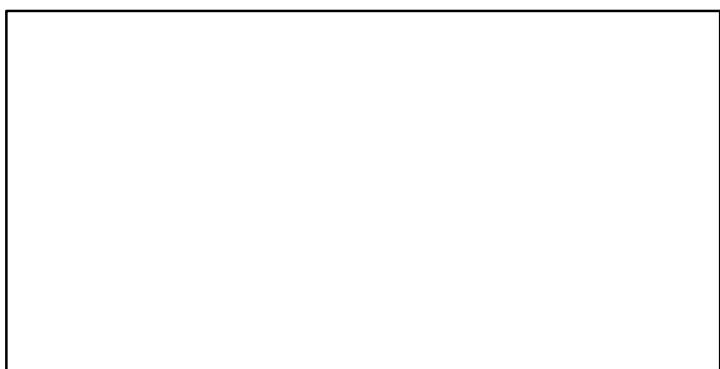
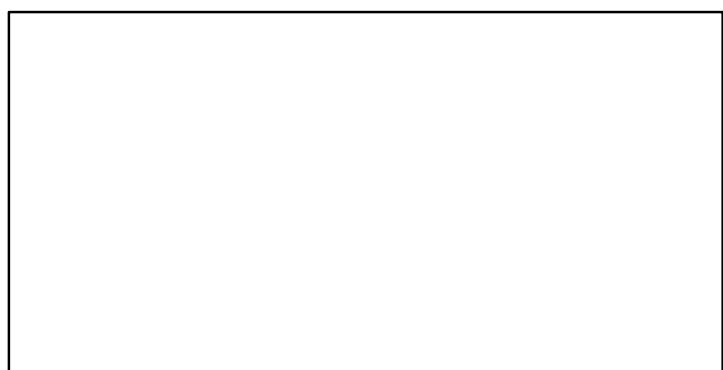
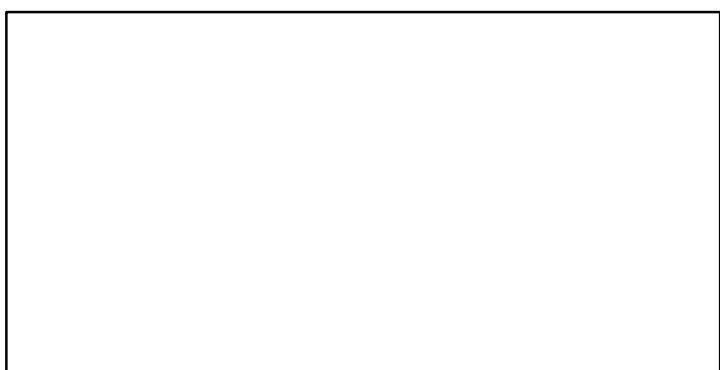
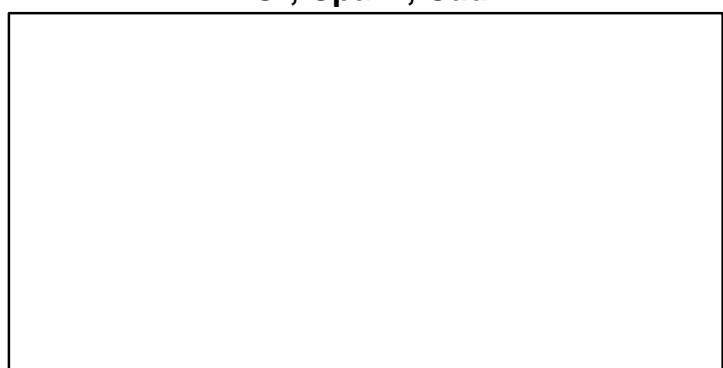
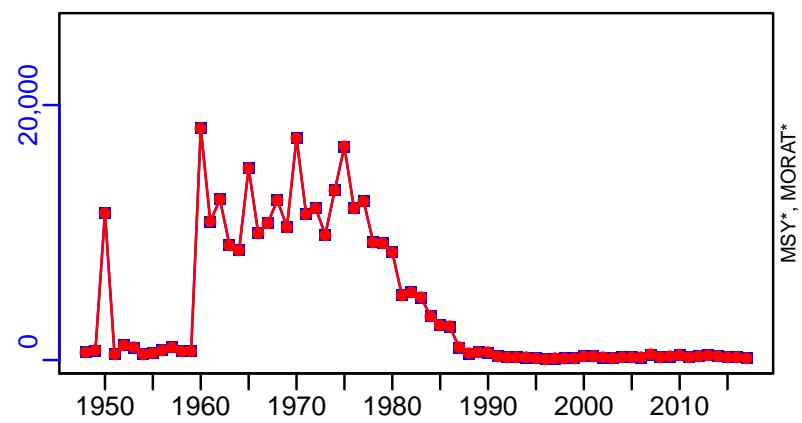


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Red seabream ICES 6–7–8 [RBRMVI–VII–VIII]

TC–MT, TL–MT, RecC\* (1948–2017–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



|                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Red seabream Azores Grounds [RBRMX]

| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Pagellus bogaraveo  |
| <b>Current Assess ID</b>    | WGDEEP-RBRMX-1980-2018-ICESIMP2021  |
| <b>Area</b>                 | Azores Grounds  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                        |
| <b>Assessor</b>             | Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources |
| <b>Asmts in RAM</b>         | 2016, 2016, 2017, 2018  |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | TC-MT | 2018      | 445        |     |     |
| <b>TL</b>          | TL-MT | 2018      | 445        |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

**Spawner Recruit\***

**Production\***

◆ Start Year ♦ End Year \* No Data

Red seabream Azores Grounds [RBRMX]

**TB\***



**SSB\***



**TN \***



**F\***



**ER\***



**Recruits\***

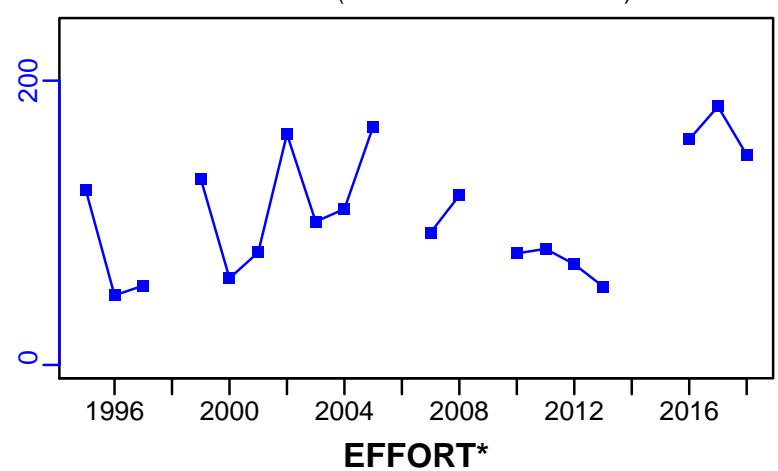
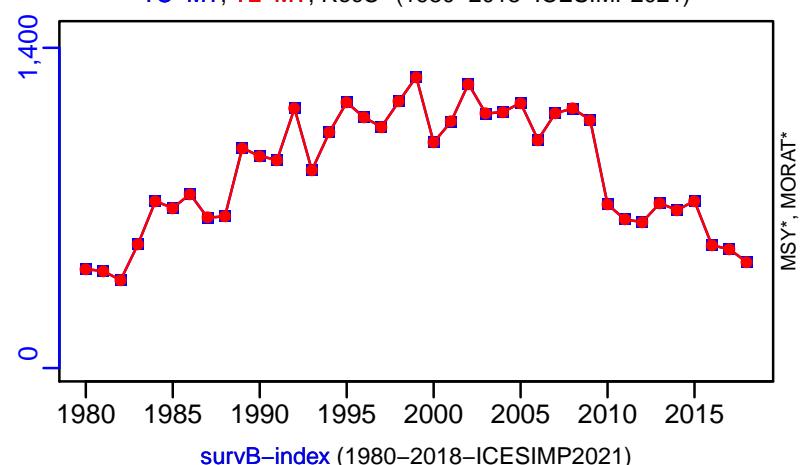


- |       |                    |       |            |   |         |
|-------|--------------------|-------|------------|---|---------|
| ■     | Listed time series | - - - | Target BRP | — | Rec-Est |
| - - - | MSY-based BRP      | - - - | Lim BRP    | * | No Data |

Red seabream Azores Grounds [RBRMX]

TC-MT, TL-MT, RecC\* (1980–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



EFFORT\*

CPUE\*

CdivMSY\*

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

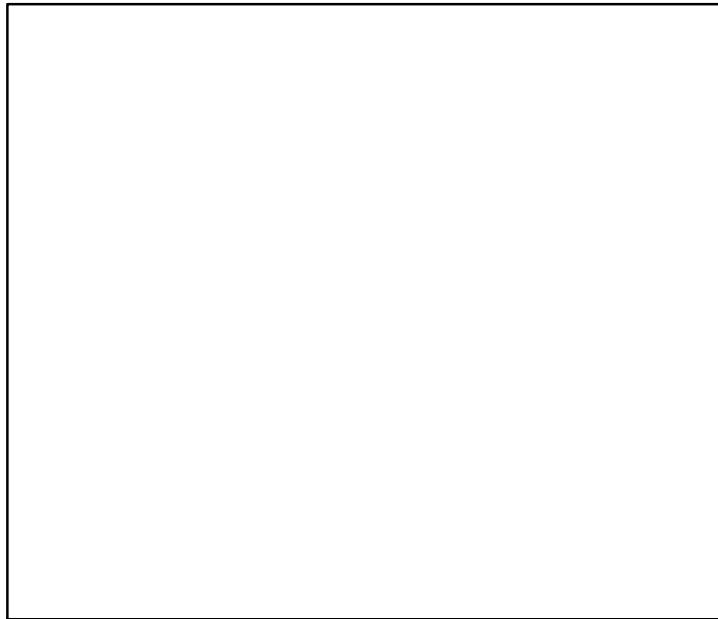
## Beaked redfish Southeast Greenland [REDDEEPXIVb]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Sebastes mentella                                    |
| <b>Current Assess ID</b>    | NWWG-REDDEEPXIVb-1974-2017-ICESIMP2018               |
| <b>Area</b>                 | Southeast Greenland                                  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | North-Western Working Group                          |
| <b>Asmts in RAM</b>         | 2016, 2016, 2017                                     |

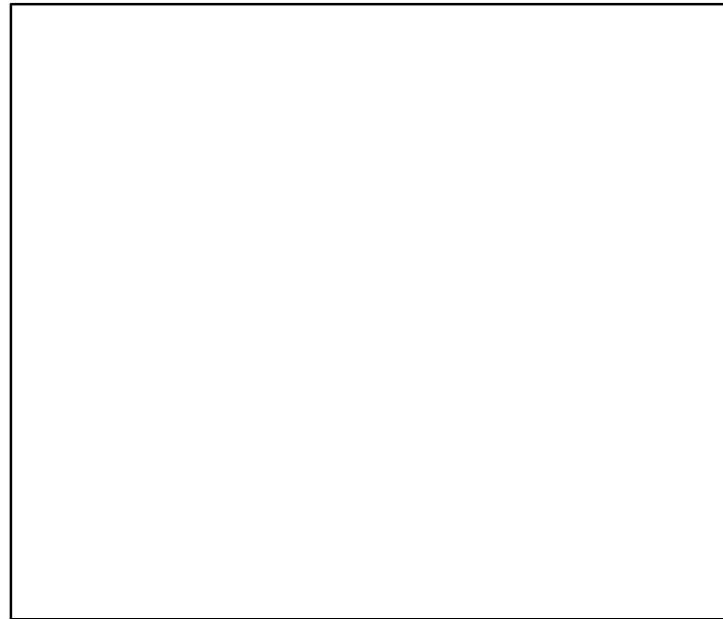
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | TC-MT | 2016      | 5980       |     |     |
| <b>TL</b>          | TL-MT | 2017      | 3030       |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

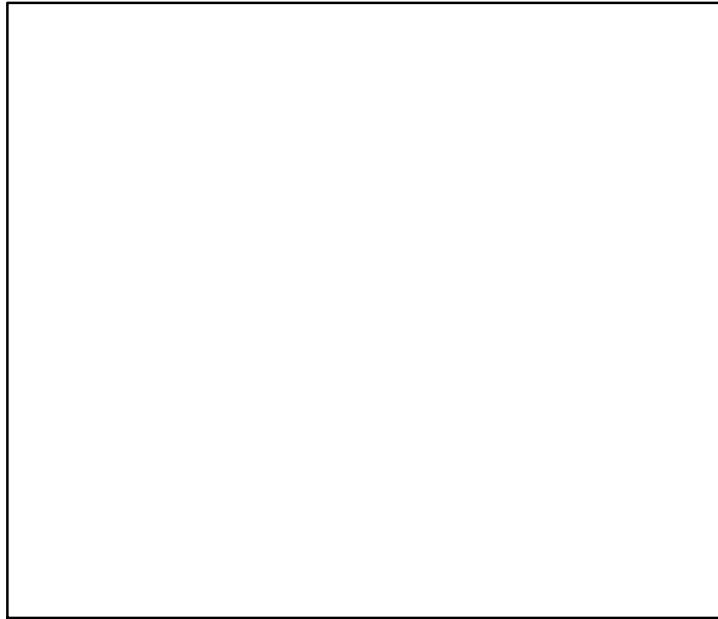
**Kobe MSY\***



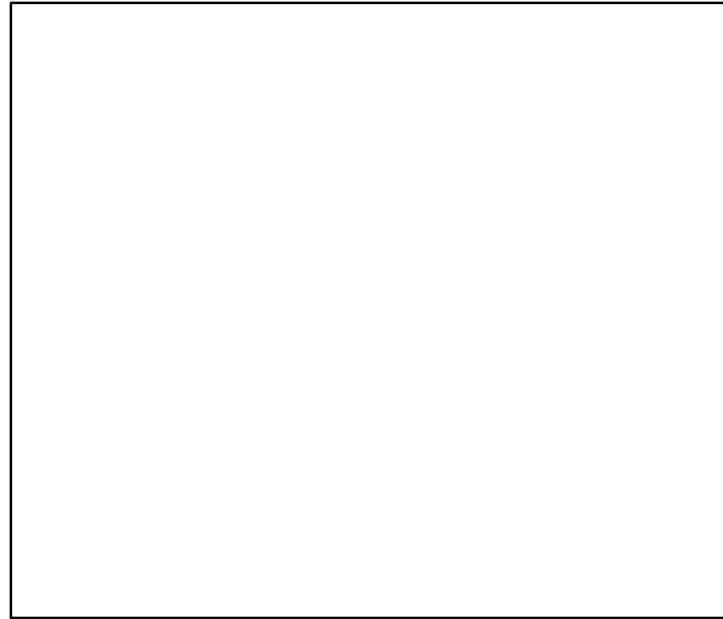
**Kobe MGT\***



**Spawner Recruit\***



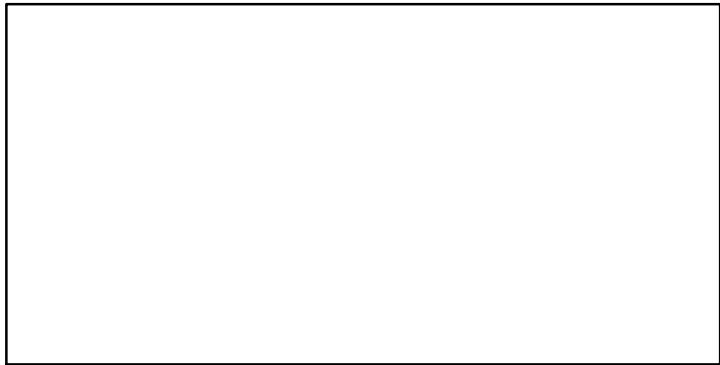
**Production\***



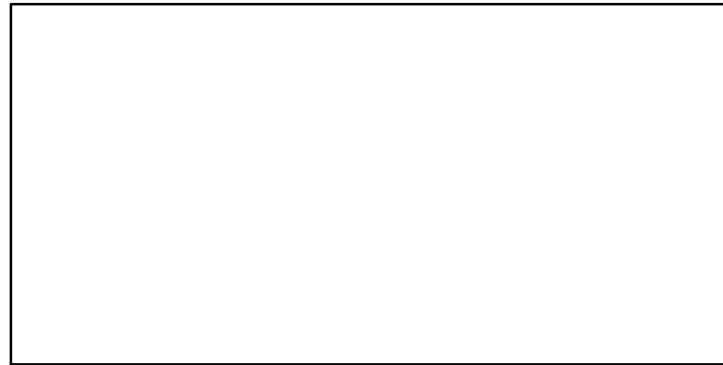
◆ Start Year ♦ End Year \* No Data

**Beaked redfish Southeast Greenland [REDDEEPXIVb]**

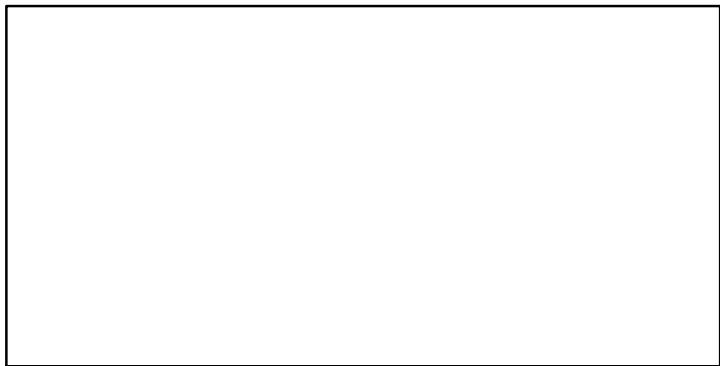
**TB\***



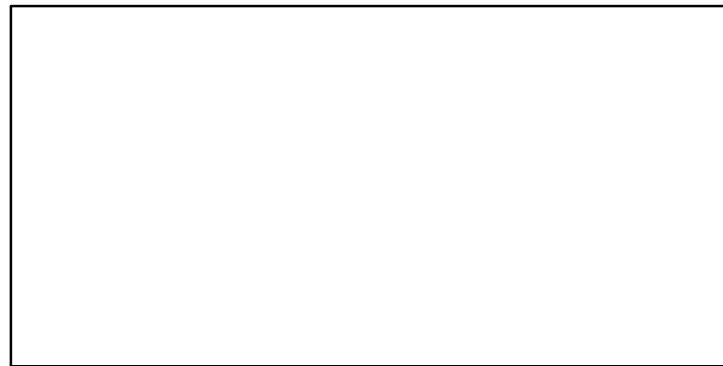
**SSB\***



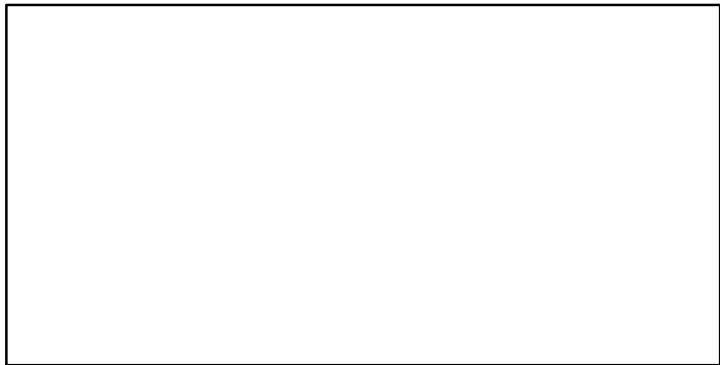
**TN \***



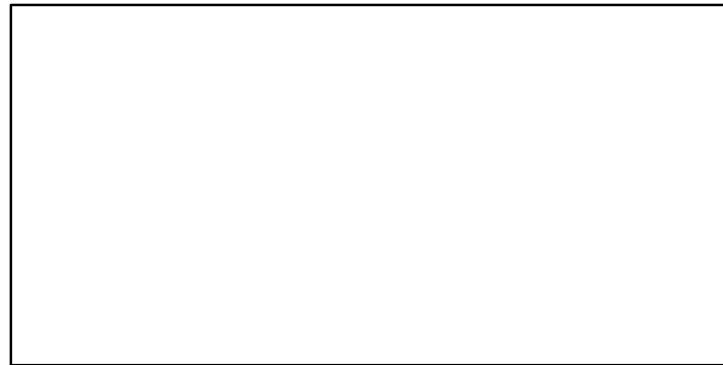
**F\***



**ER\***



**Recruits\***

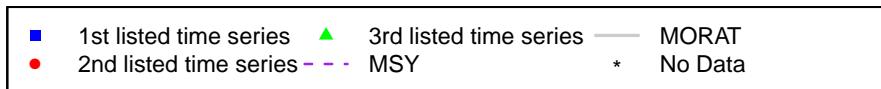
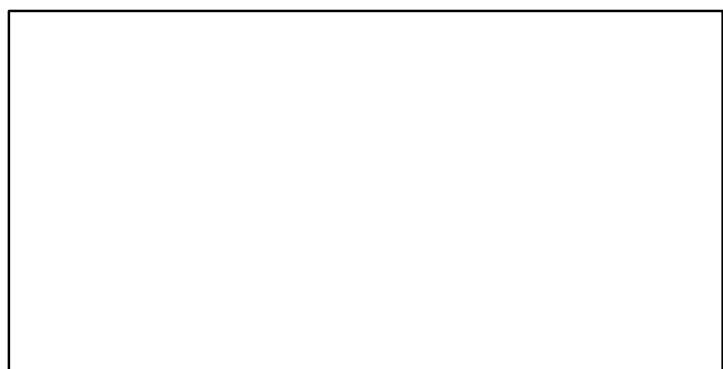
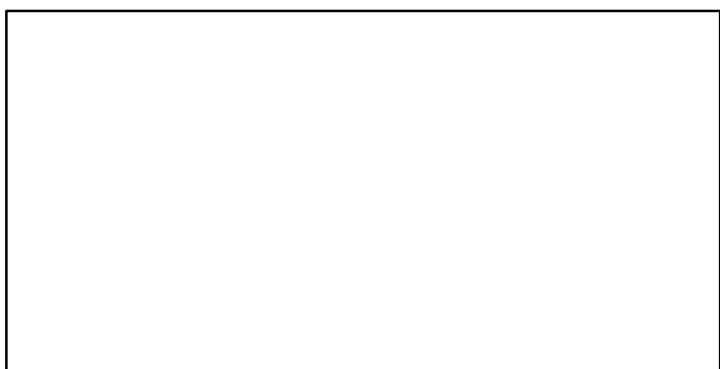
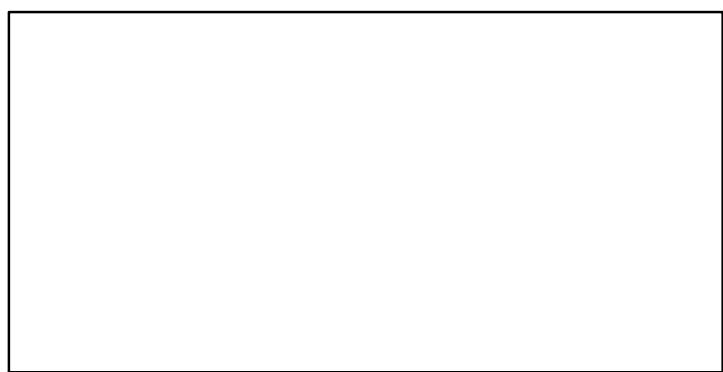
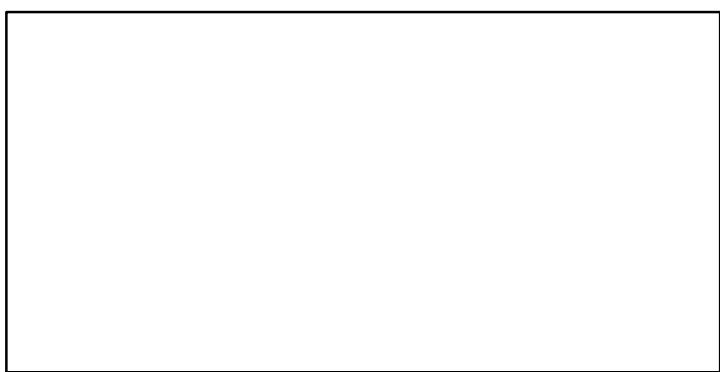
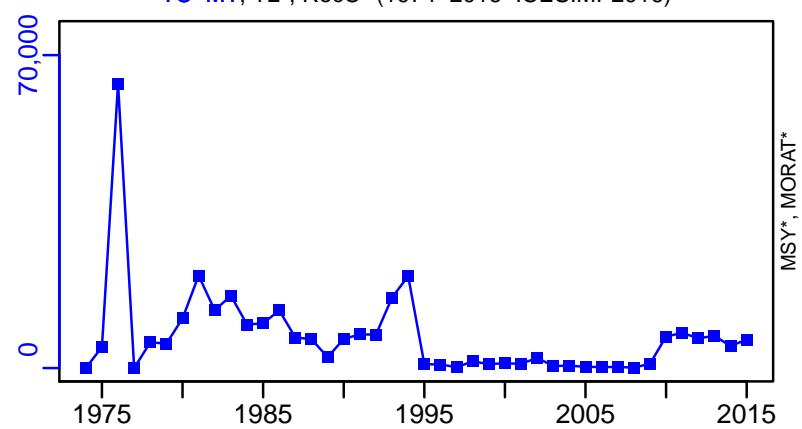


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

**Beaked redfish Southeast Greenland [REDDEEPXIVb]**

TC-MT, TL\*, RecC\* (1974–2016—ICESIMP2016)

TAC\*, Cpair\*, Cadv\*



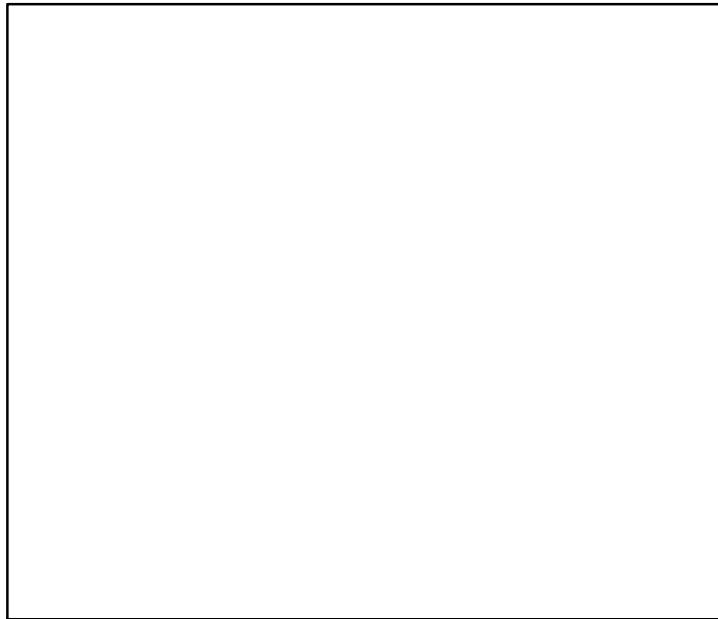
## Red gurnard Northeast Atlantic [RGURNNEATL]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Chelidonichthys cuculus                              |
| <b>Current Assess ID</b>    | WGWISE-RGURNNEATL-2006-2018-ICESIMP2021              |
| <b>Area</b>                 | Northeast Atlantic                                   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Widely Distributed Stocks           |
| <b>Asmts in RAM</b>         | 2014, 2016, 2018                                     |

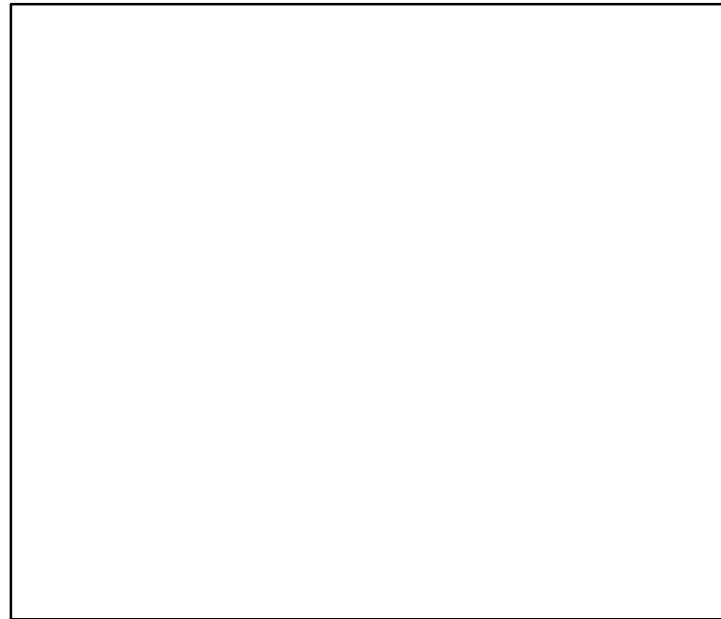
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | -     | -         | -          |     |     |
| <b>TL</b>          | TL-MT | 2018      | 4018       |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

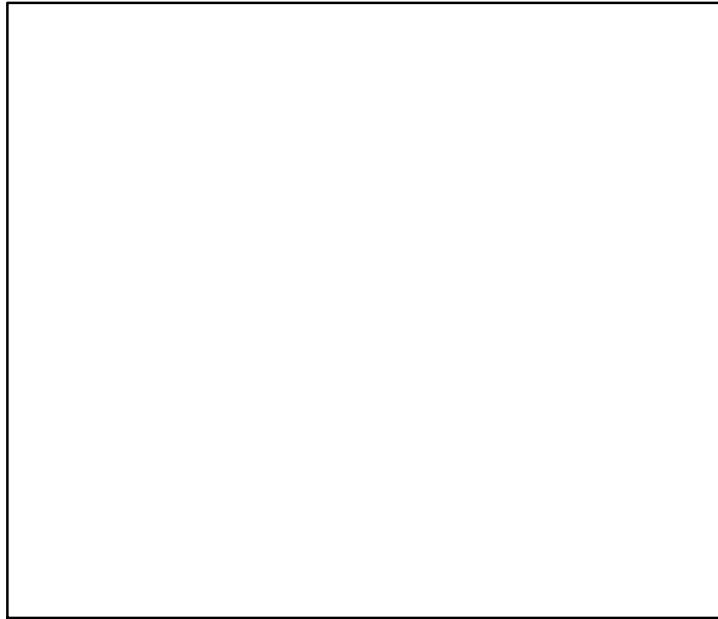
**Kobe MSY\***



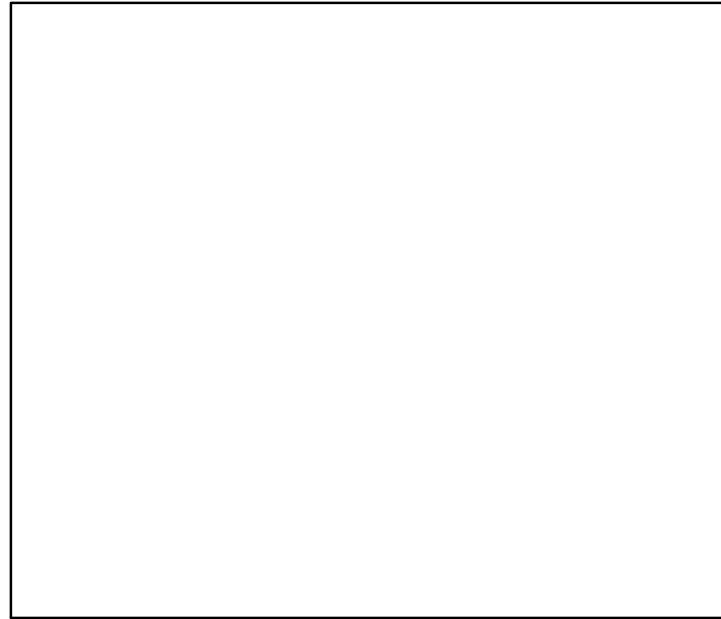
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

**Red gurnard Northeast Atlantic [RGURNNEATL]**

**TB\***



**SSB\***



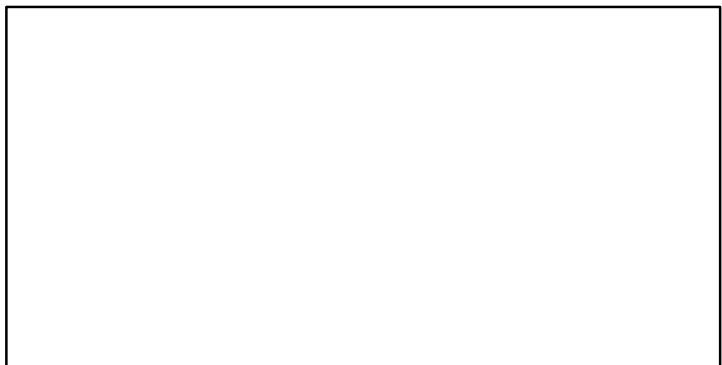
**TN \***



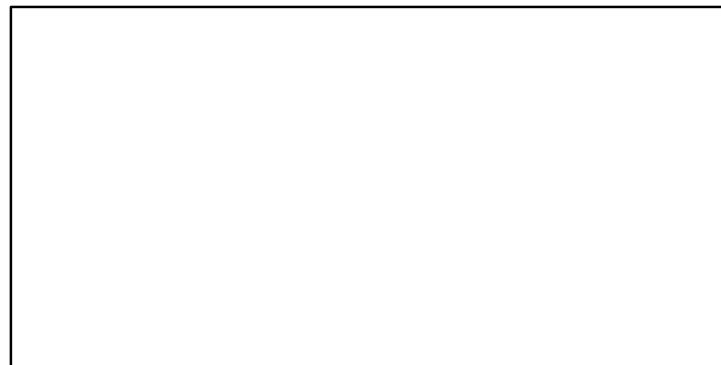
**F\***



**ER\***



**Recruits\***

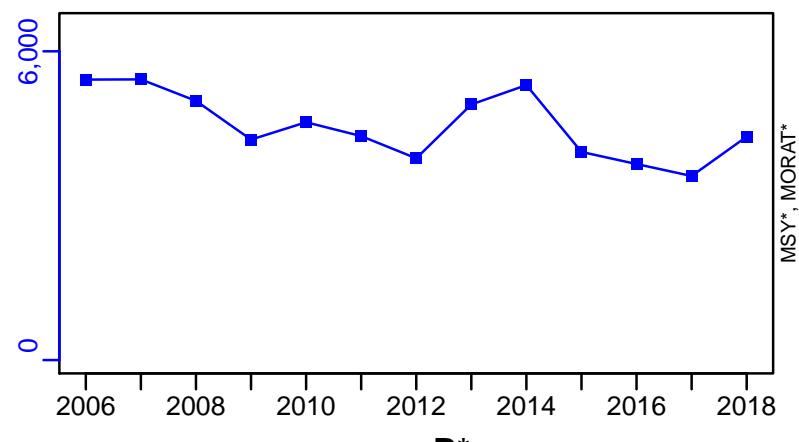


- |       |                    |       |            |   |         |
|-------|--------------------|-------|------------|---|---------|
| ■     | Listed time series | - - - | Target BRP | — | Rec-Est |
| - - - | MSY-based BRP      | - - - | Lim BRP    | * | No Data |

**Red gurnard Northeast Atlantic [RGURNNEATL]**

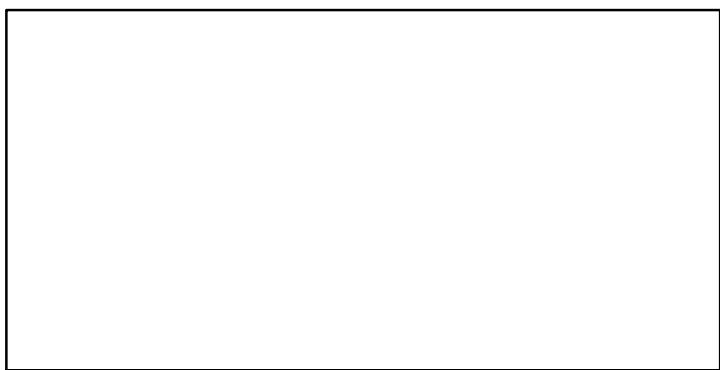
TL-MT, TC\*, RecC\* (2006–2018–ICESIMP2021)

**TAC\*, Cpair\*, Cadv\***



**survB\***

MSY\*, MORAT\*



**CPUE\***



**EFFORT\***



**CdivMSY\***



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Roughhead grenadier Northeast Atlantic [RHGRENNEATL]

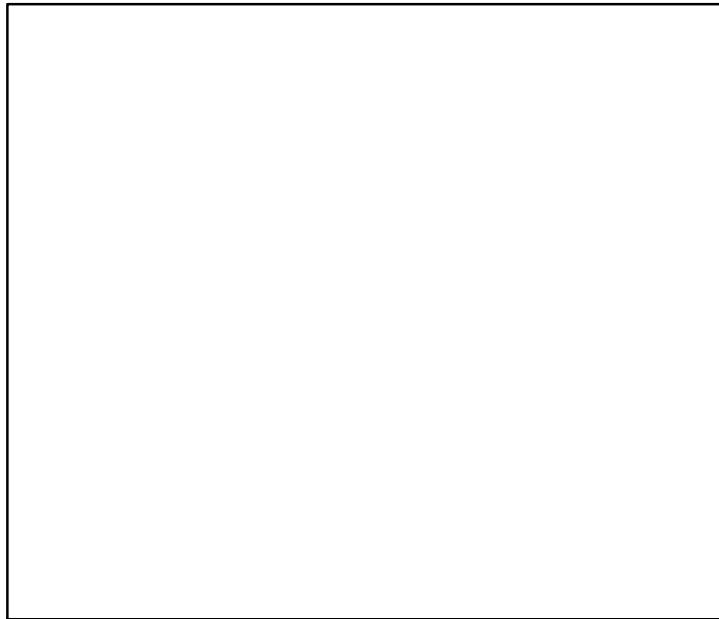
| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Macrourus berglax   |
| <b>Current Assess ID</b>    | WGDEEP-RHGRENNEATL-1990-2015-ICESIMP2016                                    |
| <b>Area</b>                 | Northeast Atlantic  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                        |
| <b>Assessor</b>             | Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources |
| <b>Asmts in RAM</b>         | 2015  |

| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

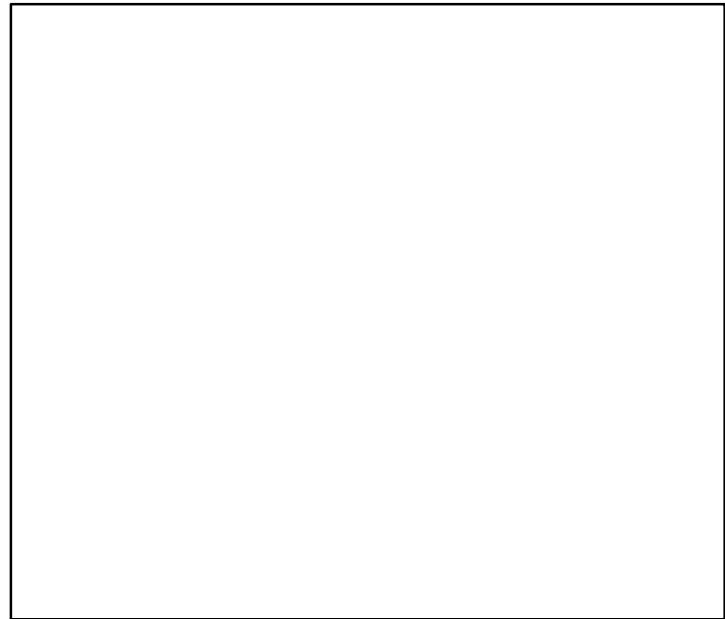
| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | -     | -         | -          |     |     |
| <b>TL</b>         | TL-MT | 2015      | 654        |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

Roughhead grenadier Northeast Atlantic [RHGRENNEATL]

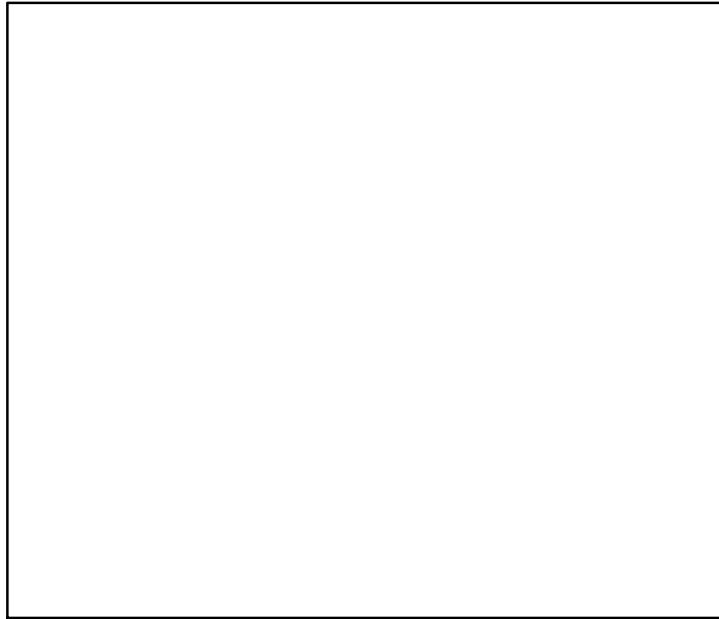
**Kobe MSY\***



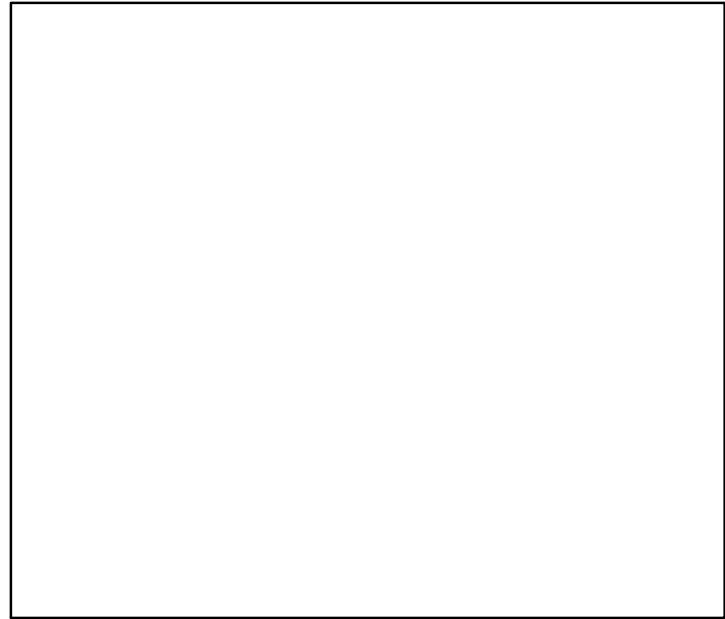
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

Roughhead grenadier Northeast Atlantic [RHGRENNEATL]

**TB\***



**SSB\***



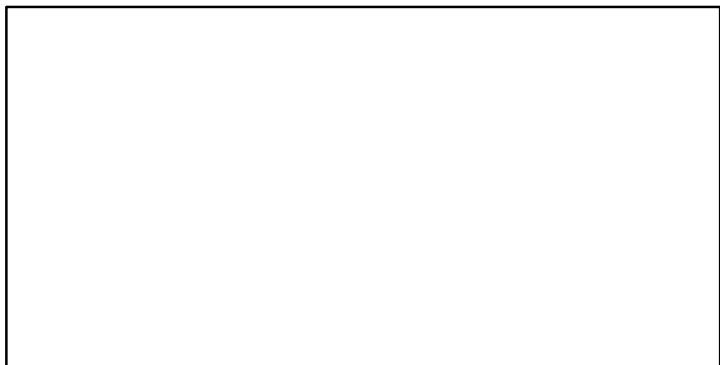
**TN \***



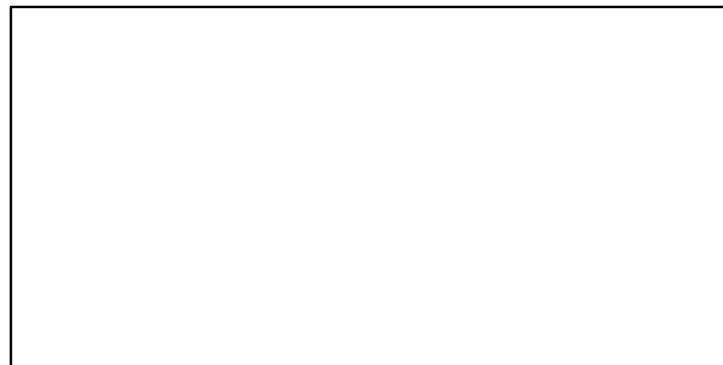
**F\***



**ER\***



**Recruits\***

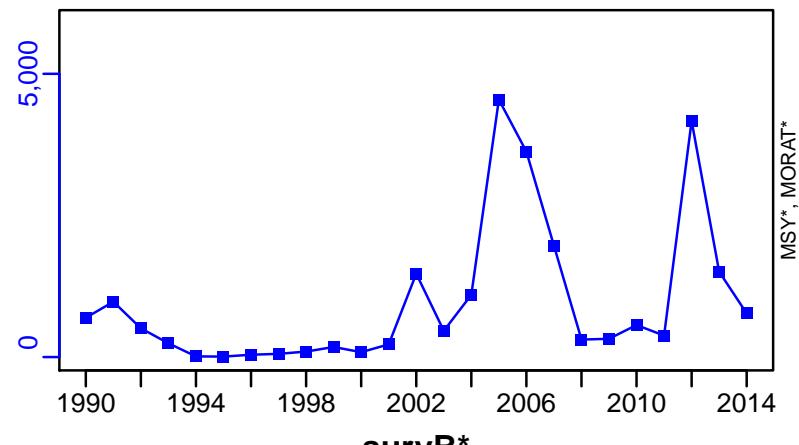


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Roughhead grenadier Northeast Atlantic [RHGRENNEATL]

TL-MT, TC\*, RecC\* (1990–2015–ICESIMP2016)

TAC\*, Cpair\*, Cadv\*



survB\*



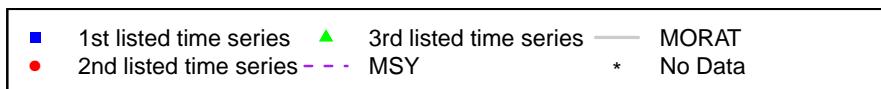
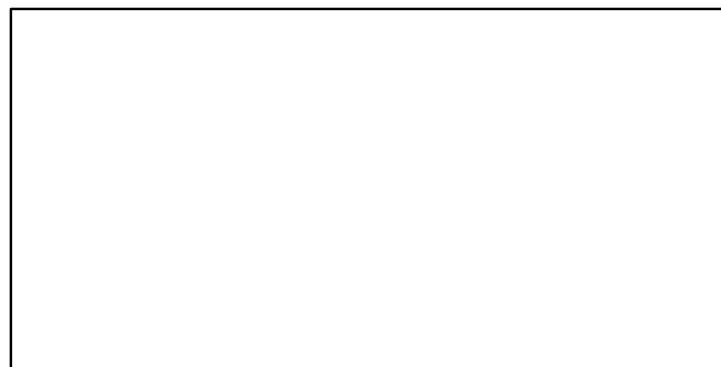
CPUE\*



EFFORT\*



CdivMSY\*



**Roundnose grenadier ICES 1-2-4-5a2-8-9-14ab2 [RNGENI-II-IV-Va2-VIII-IX-XIVab2]**

| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Coryphaenoides rupestris  |
| <b>Current Assess ID</b>    | WGDEEP-RNGENI-II-IV-Va2-VIII-IX-XIVab2-1990-2018-ICESIMP2021                |
| <b>Area</b>                 | ICES 1-2-4-5a2-8-9-14ab2  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                        |
| <b>Assessor</b>             | Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources |
| <b>Asmts in RAM</b>         | 2015, 2016, 2018  |

| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | -     | -         | -          |     |     |
| <b>TL</b>         | TL-MT | 2018      | 240        |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

**Spawner Recruit\***

**Production\***

◆ Start Year   ◆ End Year   \* No Data

**TB\***



**SSB\***



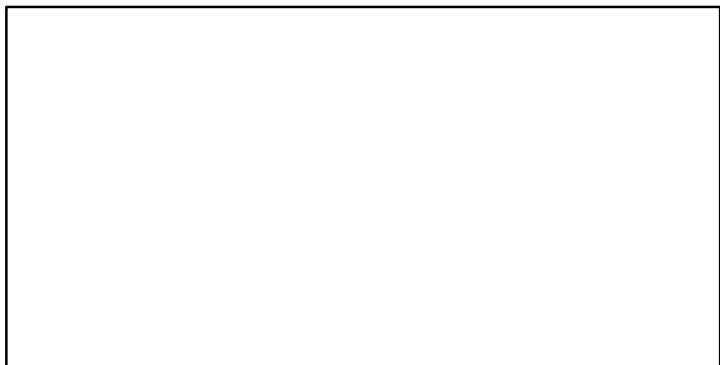
**TN \***



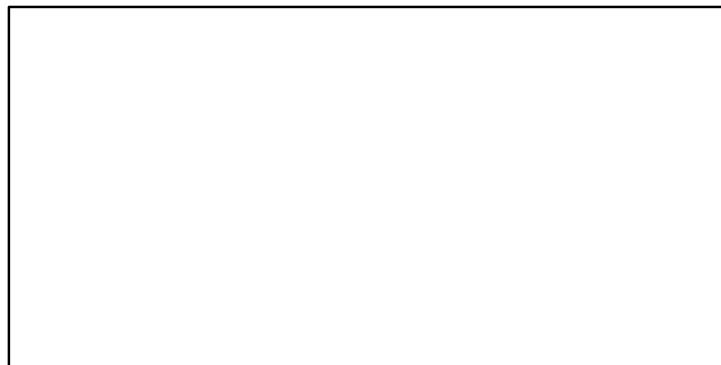
**F\***



**ER\***



**Recruits\***

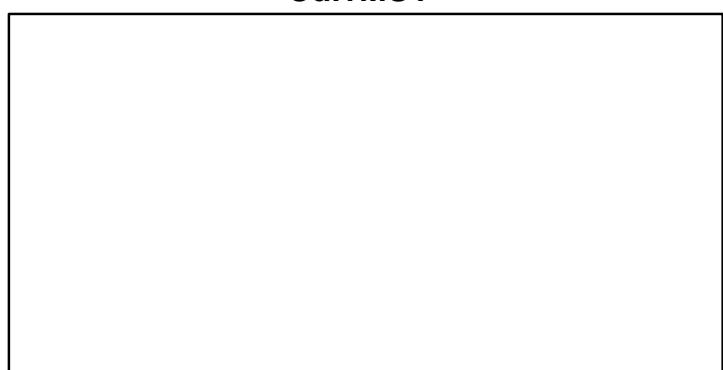
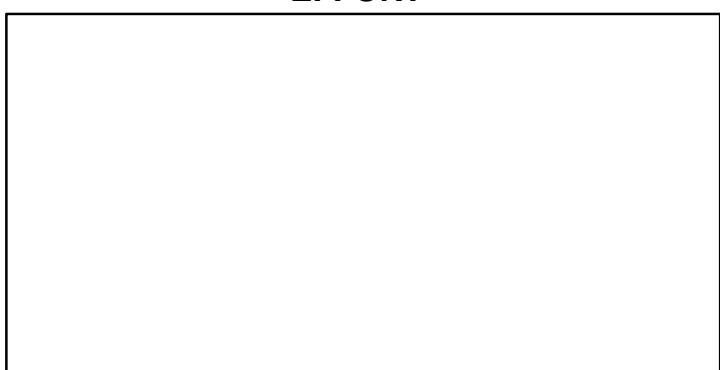
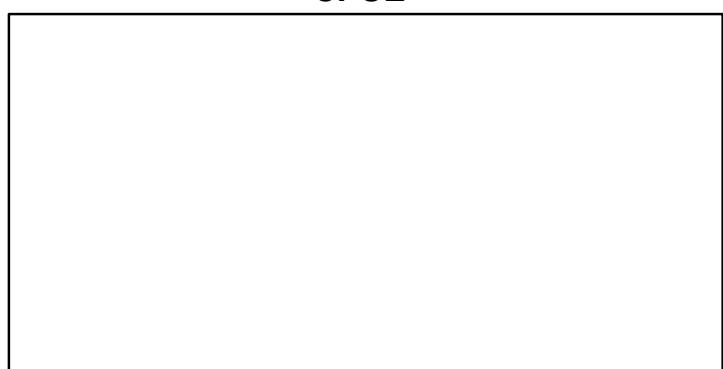
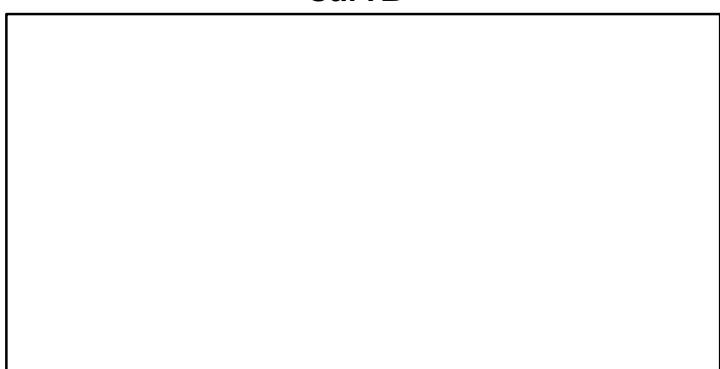
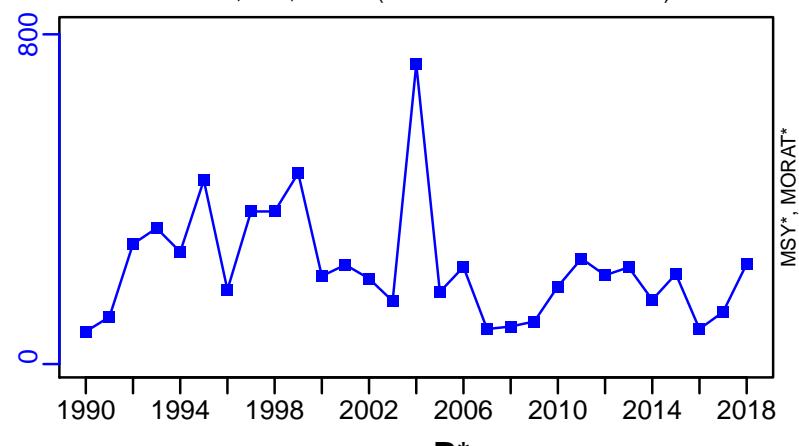


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Roundnose grenadier ICES 1–2–4–5a2–8–9–14ab2 [RNGENI–II–IV–Va2–VIII–IX–XIVab2]

TL–MT, TC\*, RecC\* (1990–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



|                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

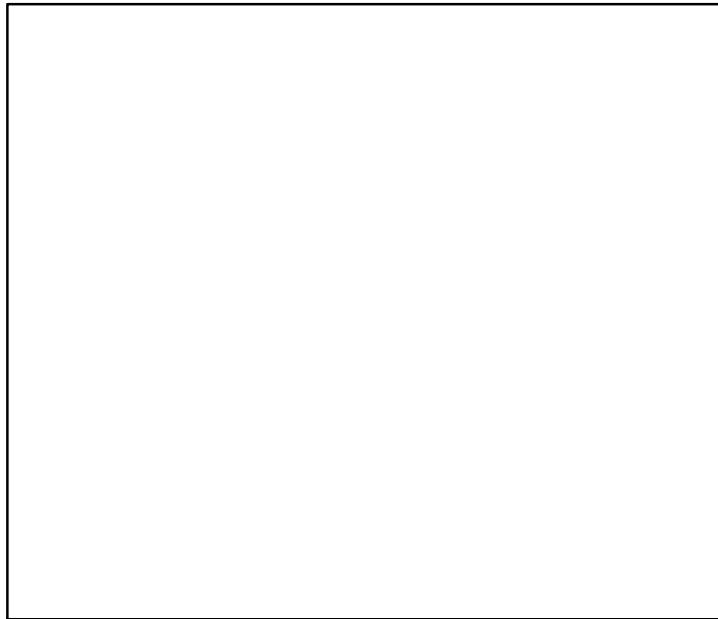
## Roundnose grenadier Mid-Atlantic Ridge [RNGENMATLR]

| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Coryphaenoides rupestris  |
| <b>Current Assess ID</b>    | WGDEEP-RNGENMATLR-1973-2018-ICESIMP2021                                     |
| <b>Area</b>                 | Mid-Atlantic Ridge  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                        |
| <b>Assessor</b>             | Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources |
| <b>Asmts in RAM</b>         | 2016, 2018, 2015  |

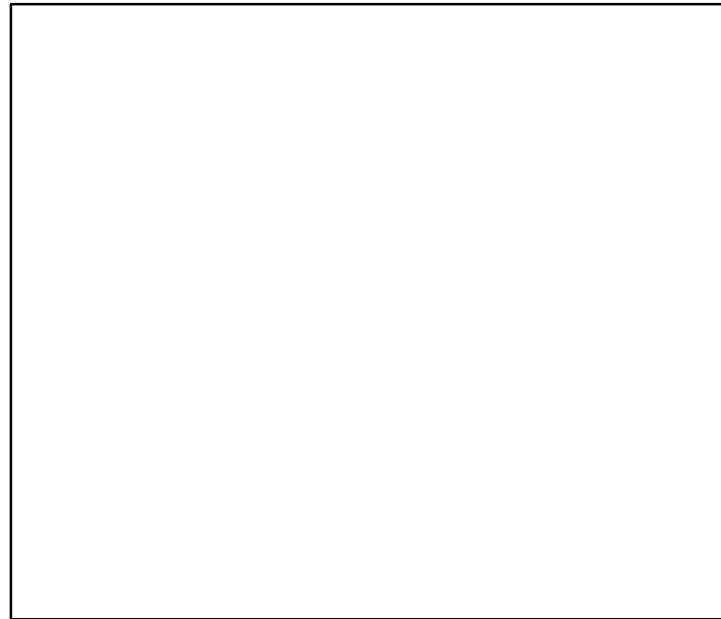
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | -     | -         | -          |     |     |
| <b>TL</b>          | TL-MT | 2018      | 27         |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

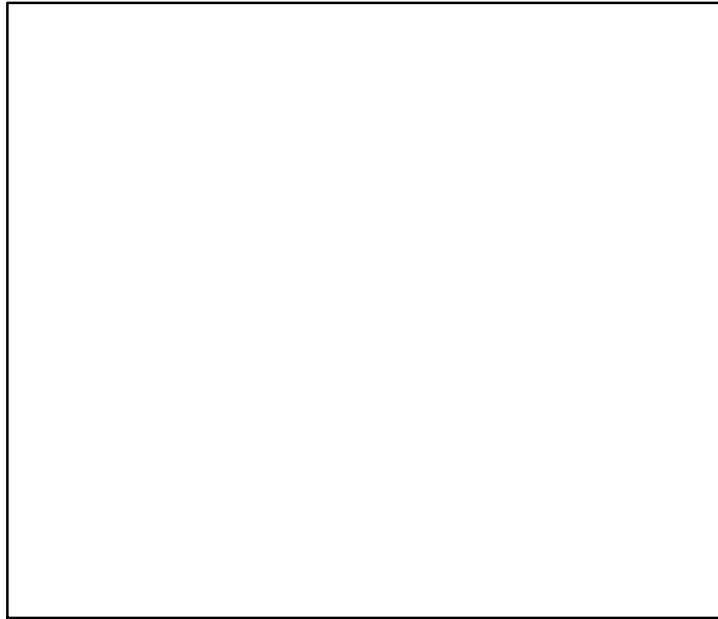
**Kobe MSY\***



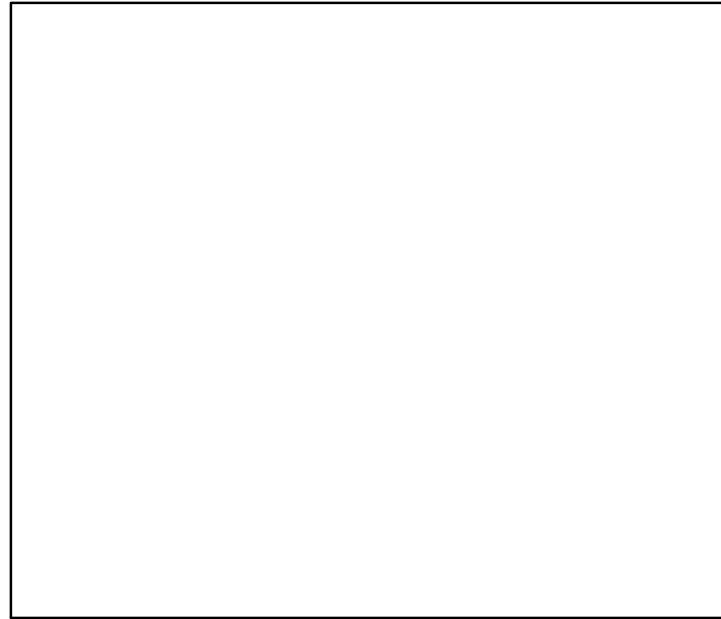
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

Roundnose grenadier Mid-Atlantic Ridge [RNGENMATLR]

**TB\***



**SSB\***



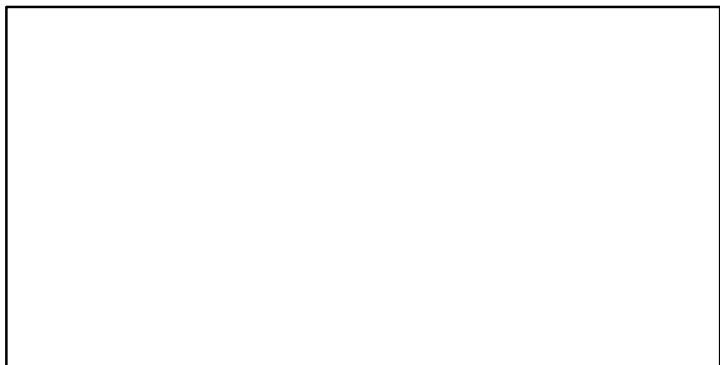
**TN \***



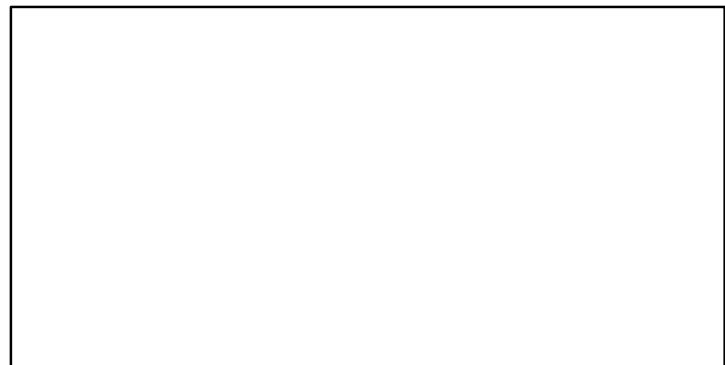
**F\***



**ER\***



**Recruits\***

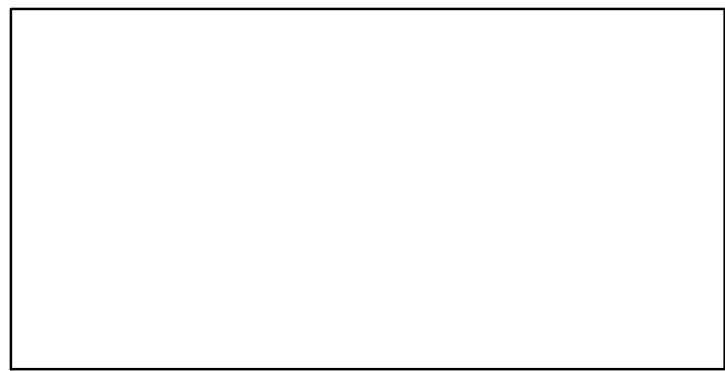
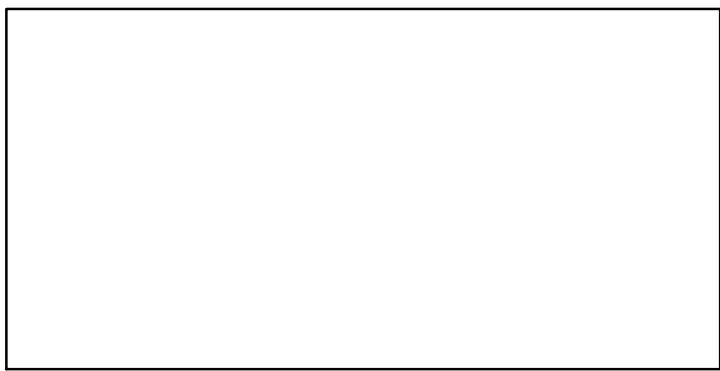
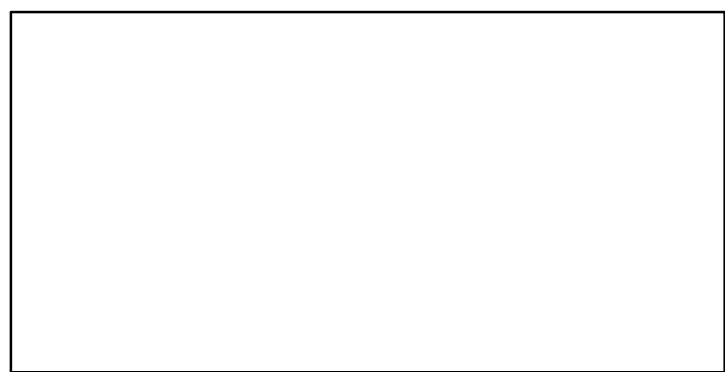
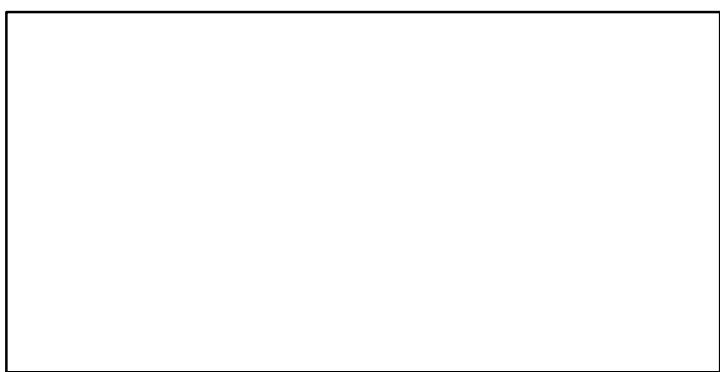
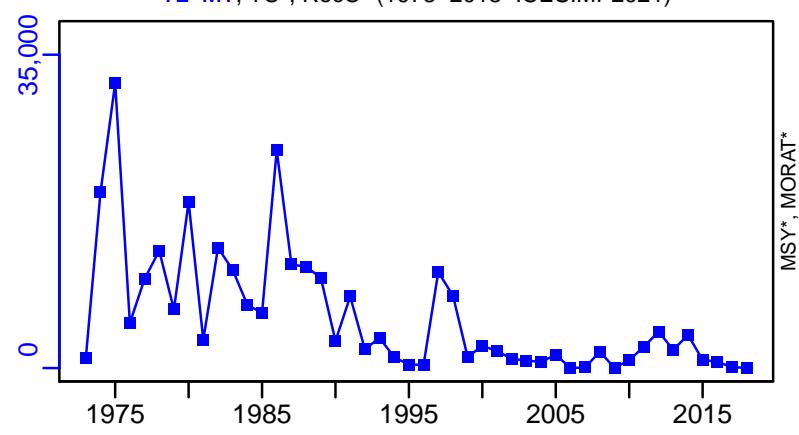


- |       |                    |       |            |   |         |
|-------|--------------------|-------|------------|---|---------|
| ■     | Listed time series | - - - | Target BRP | — | Rec-Est |
| - - - | MSY-based BRP      | - - - | Lim BRP    | * | No Data |

Roundnose grenadier Mid-Atlantic Ridge [RNGENMATLR]

TL-MT, TC\*, RecC\* (1973–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Roundnose grenadier ICES 5b-6-7-12b [RNGENVb-VI-VII-XIIb]

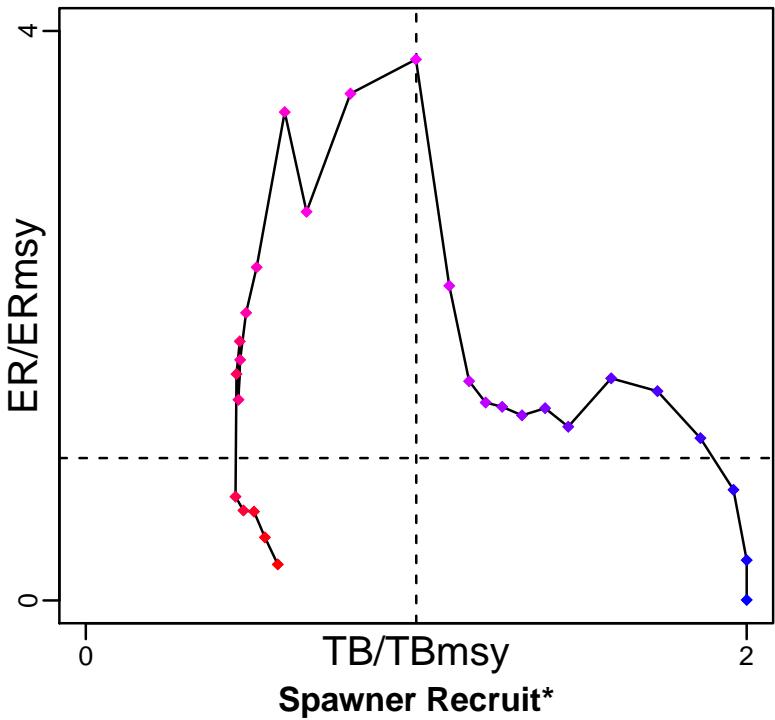
| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Coryphaenoides rupestris  |
| <b>Current Assess ID</b>    | WGDEEP-RNGENVb-VI-VII-XIIb-1988-2017-ICESIMP2018                            |
| <b>Area</b>                 | ICES 5b-6-7-12b   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                        |
| <b>Assessor</b>             | Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources |
| <b>Asmts in RAM</b>         | 2016, 2017  |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | -         | -                | -            |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | -         | -                | -            |
| <b>Fmgt</b>             | -         | -                | -            |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | -         | -                | -            |
| <b>Flim</b>             | -         | -                | -            |
| <b>ERlim</b>            | -         | -                | -            |

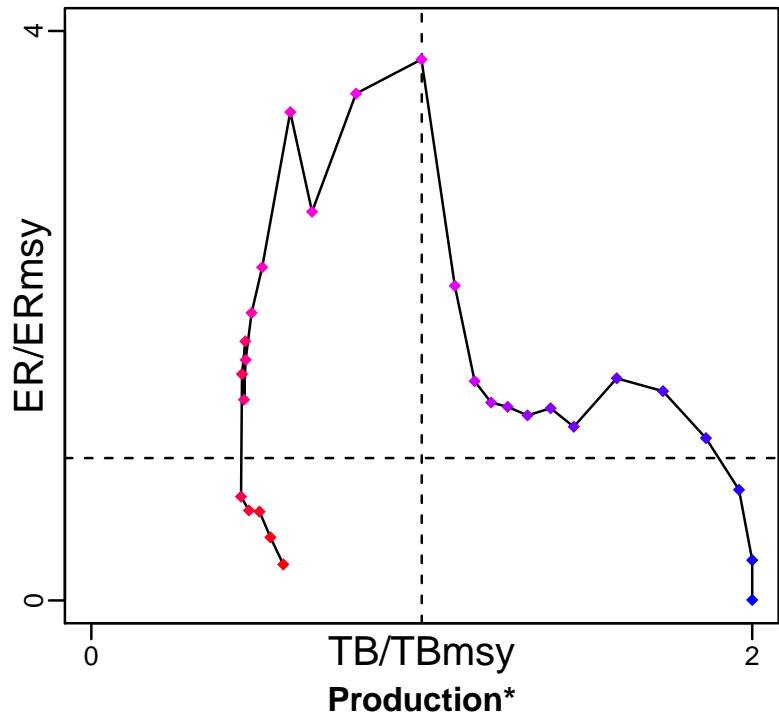
| <b>Time Series</b> |                          |                  |                   |            |            |   |
|--------------------|--------------------------|------------------|-------------------|------------|------------|---|
| <b>Type</b>        | <b>ID</b>                | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |   |
| <b>TB</b>          | -                        | -                | -                 | -          | -          | - |
| <b>SSB</b>         | -                        | -                | -                 | -          | -          | - |
| <b>TN</b>          | -                        | -                | -                 | -          | -          | - |
| <b>R</b>           | -                        | -                | -                 | -          | -          | - |
| <b>F</b>           | -                        | -                | -                 | -          | -          | - |
| <b>ER</b>          | -                        | -                | -                 | -          | -          | - |
| <b>TC</b>          | -                        | -                | -                 |            |            |   |
| <b>TL</b>          | TL-MT                    | 2017             | 1660              |            |            |   |
| <b>TB/TBmsy</b>    | TBdivTBmsy-dimensionless | 2016             | 0.581             |            |            |   |
| <b>SSB/SSBmsy</b>  | -                        | -                | -                 |            |            |   |
| <b>F/Fmsy</b>      | -                        | -                | -                 |            |            |   |
| <b>ER/ERmsy</b>    | ERdivERmsy-dimensionless | 2016             | 0.253             |            |            |   |
| <b>TB/TBmgt</b>    | -                        | -                | -                 |            |            |   |
| <b>SSB/SSBmgt</b>  | -                        | -                | -                 |            |            |   |
| <b>F/Fmgt</b>      | -                        | -                | -                 |            |            |   |
| <b>ER/ERmgt</b>    | -                        | -                | -                 |            |            |   |

Roundnose grenadier ICES 5b–6–7–12b [RNGENVb–VI–VII–XIIb]

Kobe MSYpref (1988–2016–ICESIMP2016)



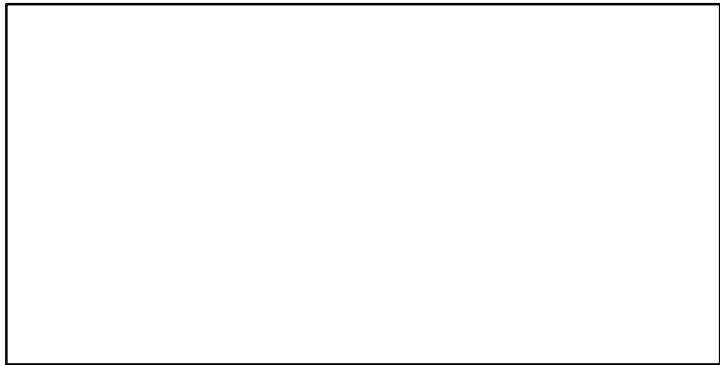
Kobe MGTpref (1988–2016–ICESIMP2016)



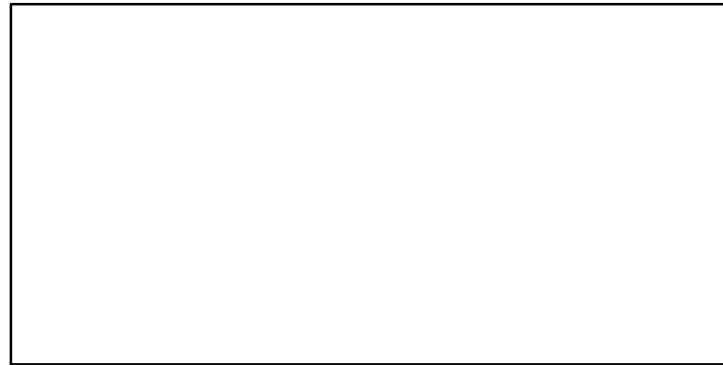
◆ Start Year   ◆ End Year   \* No Data

**Roundnose grenadier ICES 5b–6–7–12b [RNGENVb–VI–VII–XIIb]**

**TB\***



**SSB\***



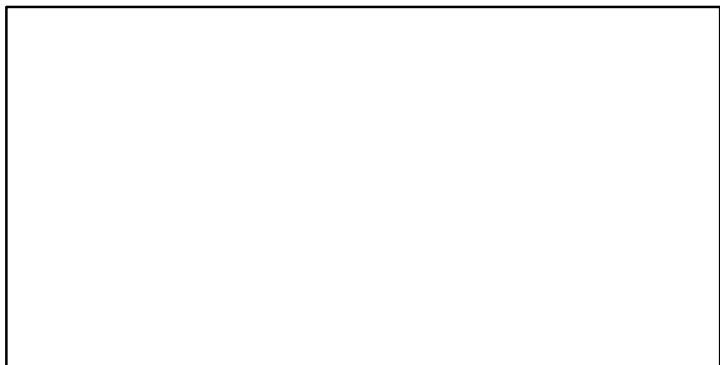
**TN \***



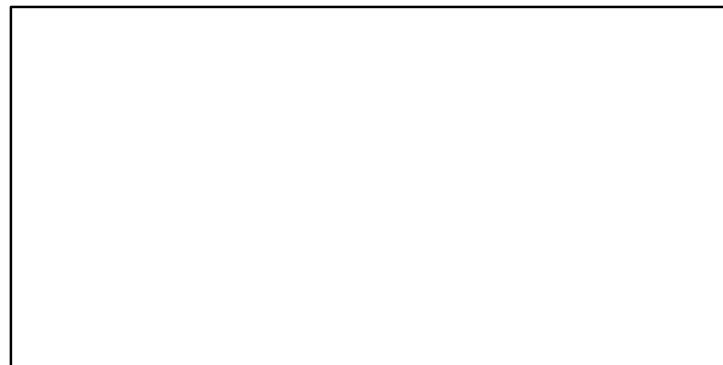
**F\***



**ER\***



**Recruits\***

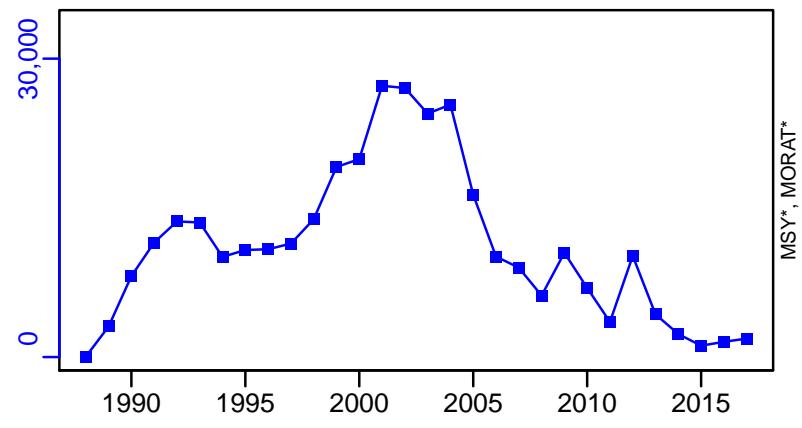


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

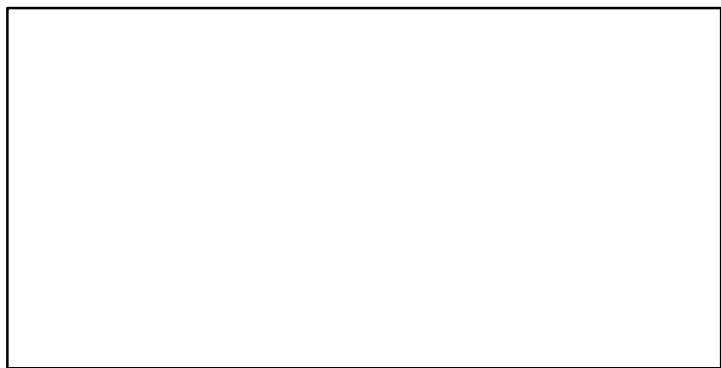
**Roundnose grenadier ICES 5b–6–7–12b [RNGENVb–VI–VII–XIIb]**

TL–MT, TC\*, RecC\* (1988–2017–ICESIMP2018)

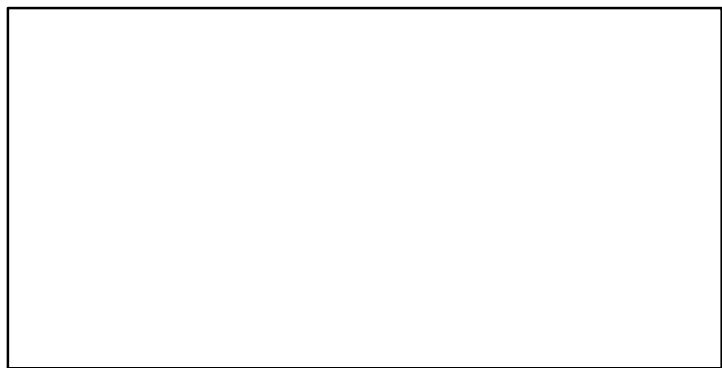
**TAC\*, Cpair\*, Cadv\***



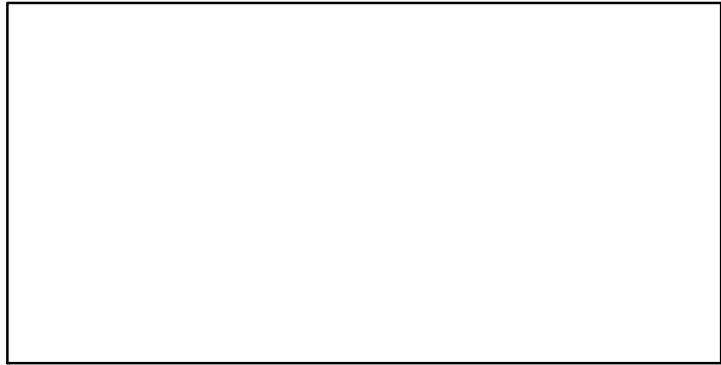
**survB\***



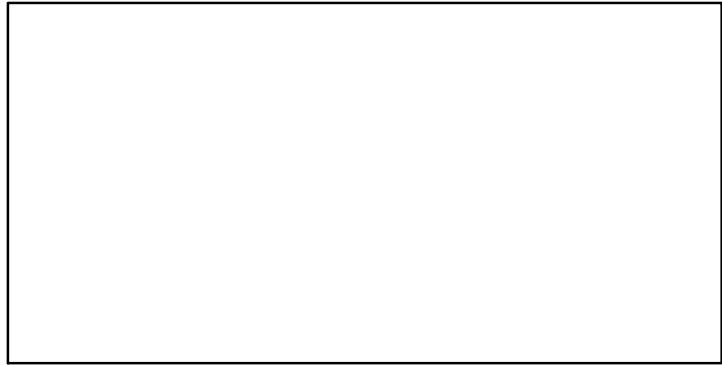
**CPUE\***



**EFFORT\***



**CdivMSY\***



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Roundnose grenadier Kattegat and Skagerrak [RNGRENIIla]

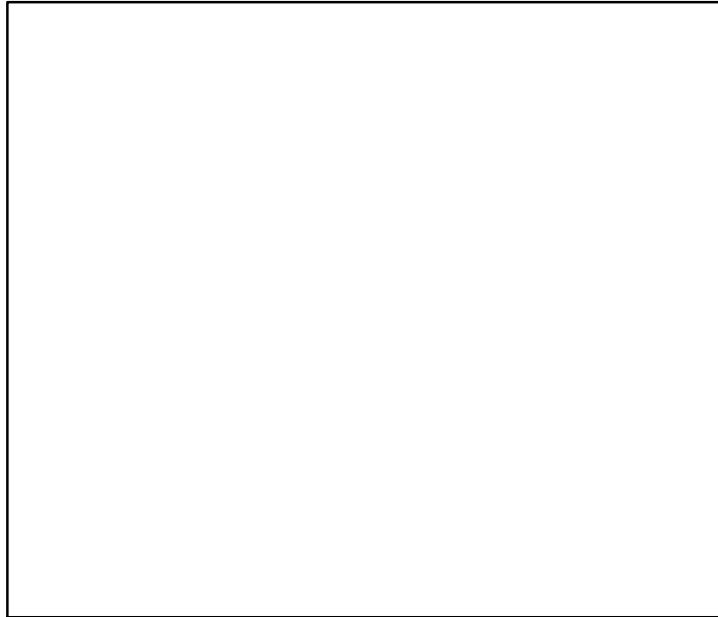
| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Coryphaenoides rupestris  |
| <b>Current Assess ID</b>    | WGDEEP-RNGRENIIla-1988-2017-ICESIMP2018                                     |
| <b>Area</b>                 | Kattegat and Skagerrak  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                        |
| <b>Assessor</b>             | Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources |
| <b>Asmts in RAM</b>         | 2016, 2017  |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

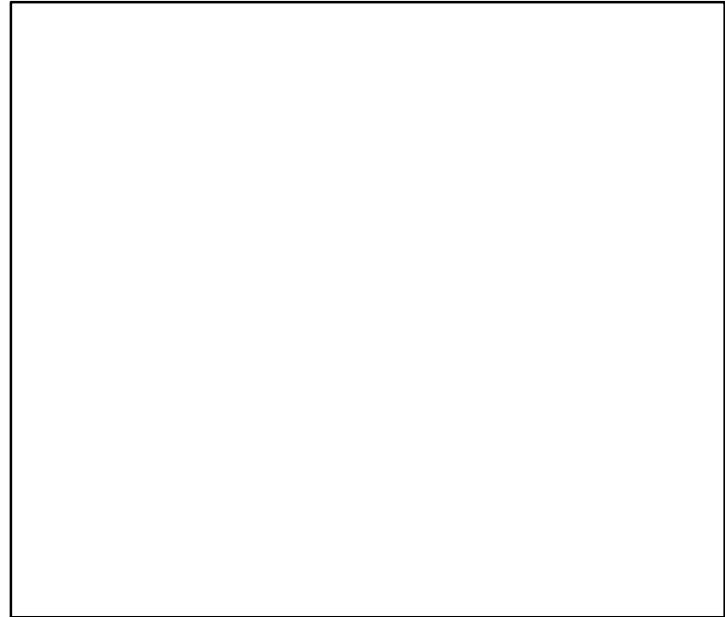
| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | TC-MT | 2016      | 2          |     |     |
| <b>TL</b>          | TL-MT | 2017      | 1          |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

Roundnose grenadier Kattegat and Skagerrak [RNGRENIIla]

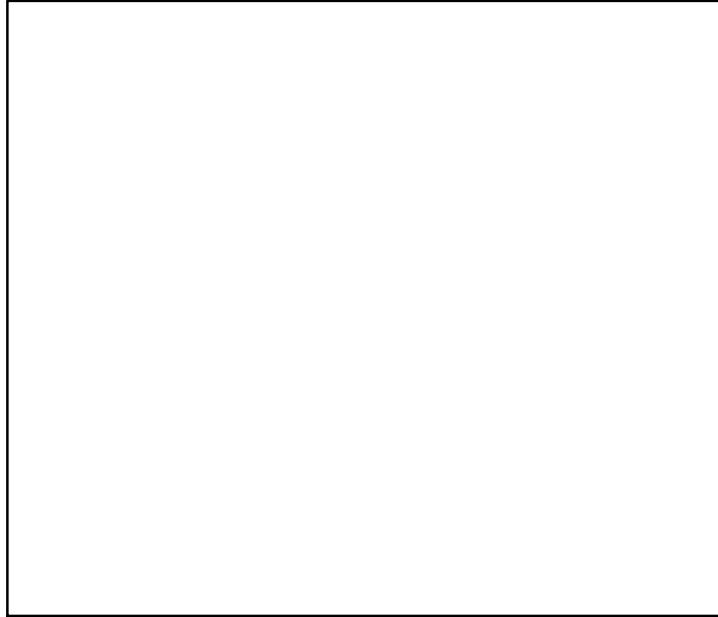
**Kobe MSY\***



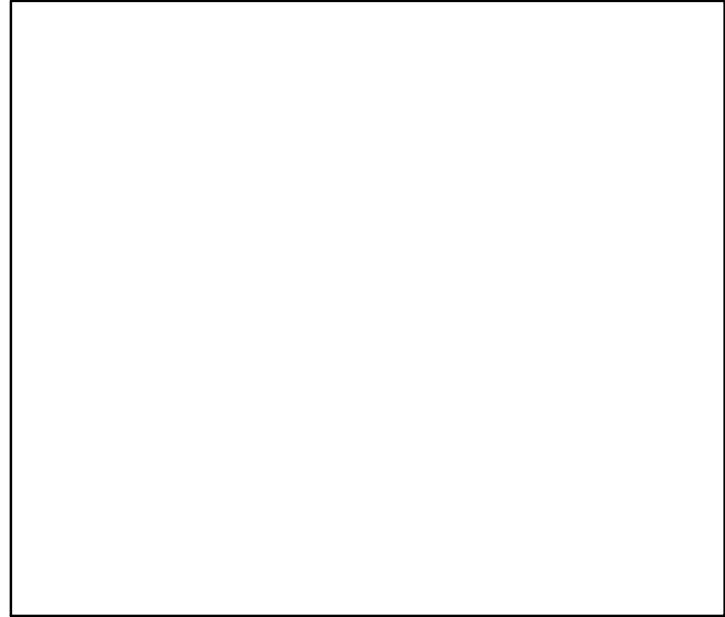
**Kobe MGT\***



**Spawner Recruit\***



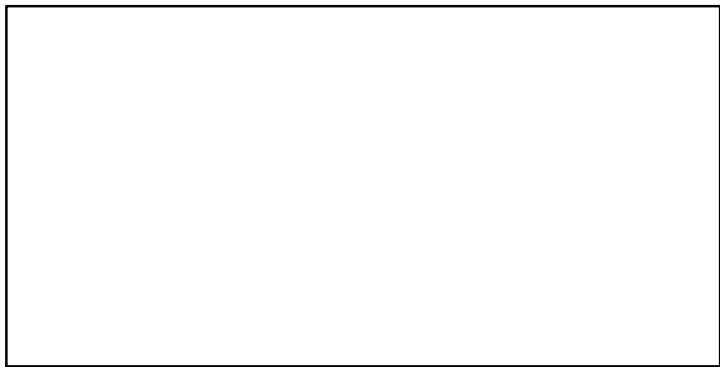
**Production\***



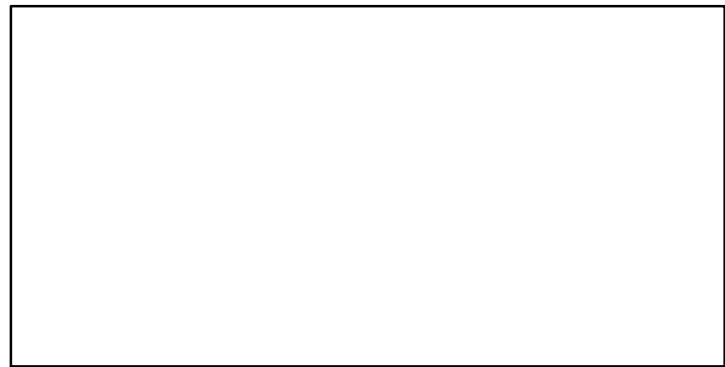
◆ Start Year ♦ End Year \* No Data

Roundnose grenadier Kattegat and Skagerrak [RNGRENIIla]

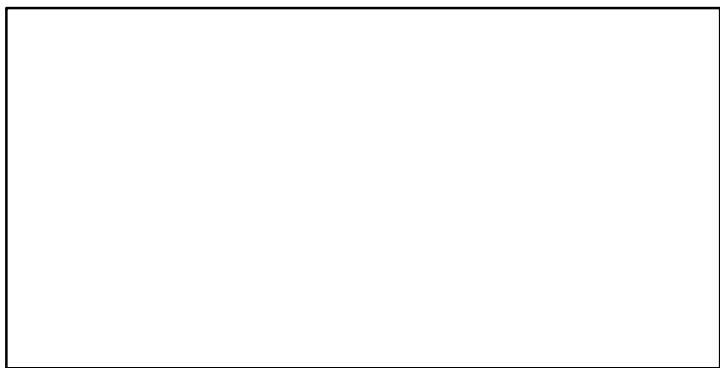
**TB\***



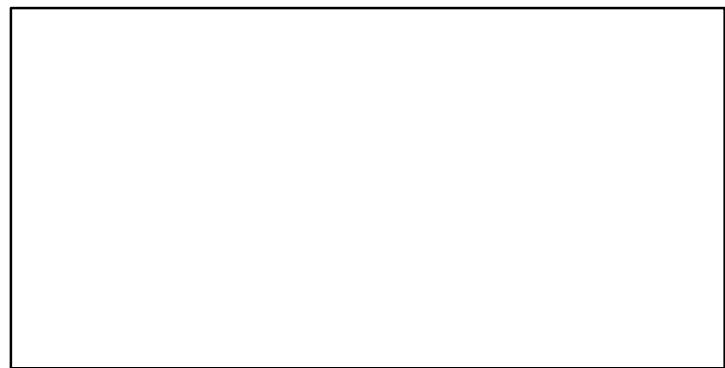
**SSB\***



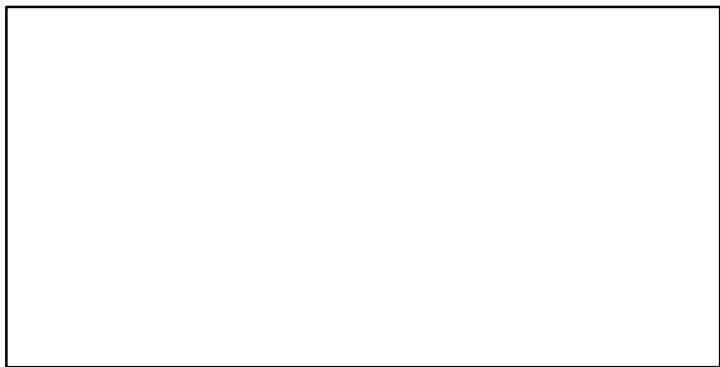
**TN \***



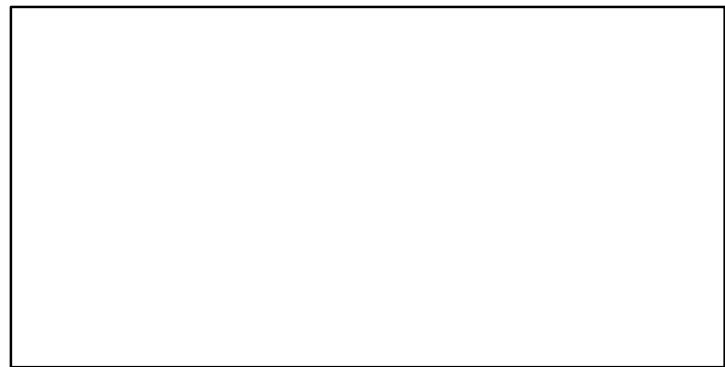
**F\***



**ER\***



**Recruits\***

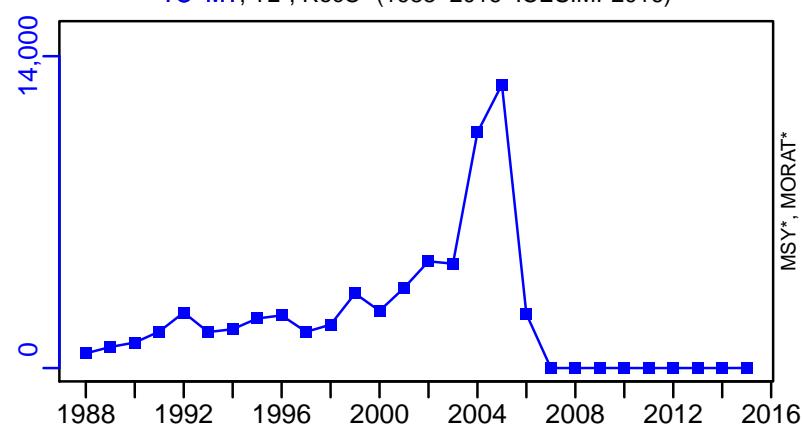


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

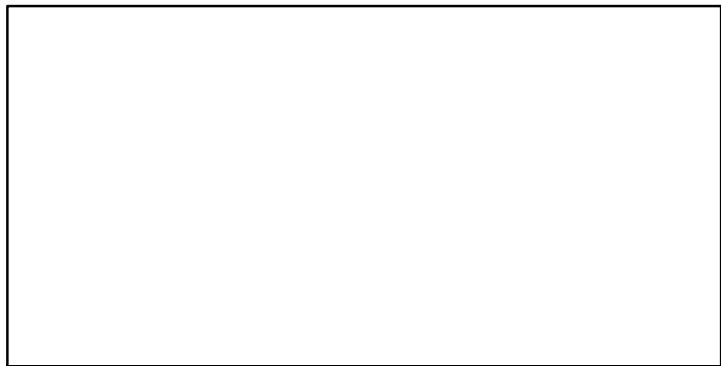
Roundnose grenadier Kattegat and Skagerrak [RNGRENIIla]

TC-MT, TL\*, RecC\* (1988–2016—ICESIMP2016)

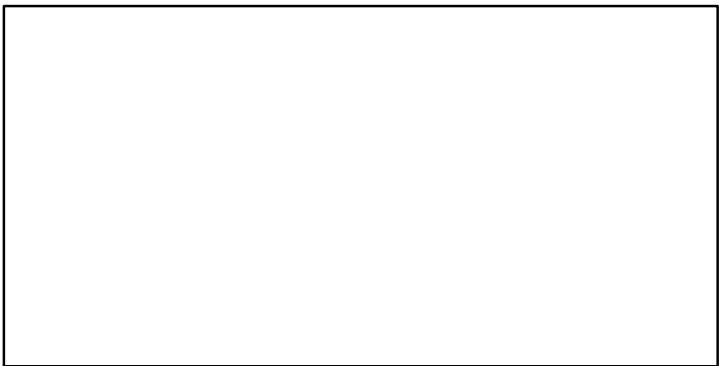
TAC\*, Cpair\*, Cadv\*



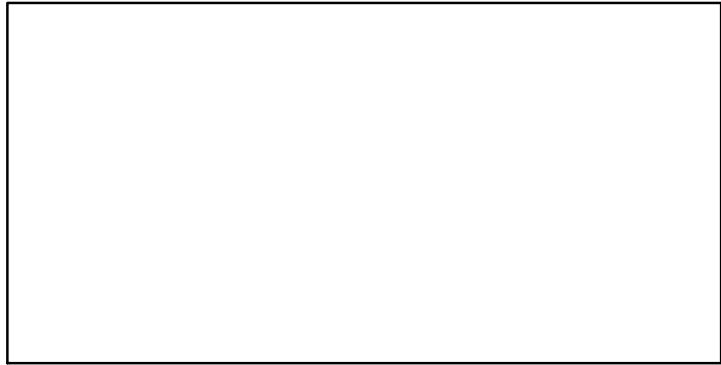
survB\*



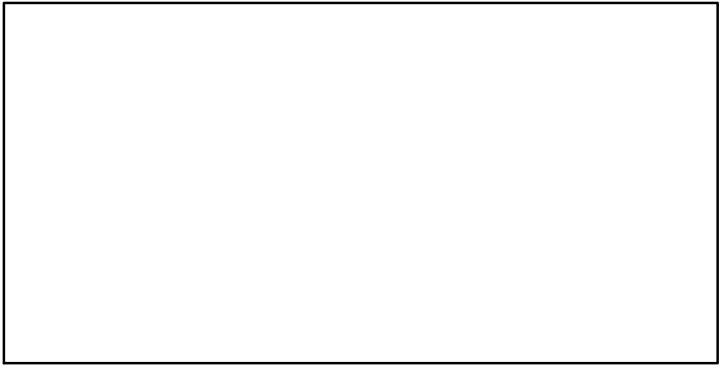
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Sardine ICES 8c-9a [SARDPVIIIC-IXa]

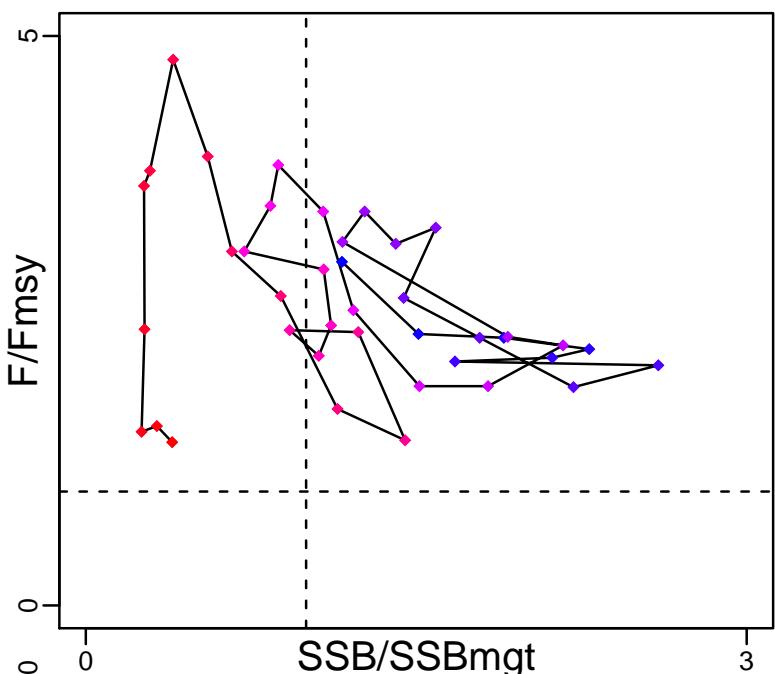
| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Sardina pilchardus  |
| <b>Current Assess ID</b>    | WGHANSA-SARDPVIIIC-IXa-1978-2018-ICESIMP2018                  |
| <b>Area</b>                 | ICES 8c-9a  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea          |
| <b>Assessor</b>             | Working Group on Southern Horse Mackerel, Anchovy and Sardine |
| <b>Asmts in RAM</b>         | 2013, 2014, 2015, 2016, 2017, 2018, 2011                      |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2018             | 0.12         |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | TBmgt-MT  | 2016             | 368,400      |
| <b>SSBmgt</b>           | SSBmgt-MT | 2018             | 446,331      |
| <b>Fmgt</b>             | Fmgt-1/yr | 2018             | 0.12         |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | M-1/yr    | 2011             | 0.33         |
| <b>TBlim</b>            | TBlim-MT  | 2015             | 135,000      |
| <b>SSBlim</b>           | SSBlim-MT | 2018             | 337,448      |
| <b>Flim</b>             | Flim-1/yr | 2018             | 0.25         |
| <b>ERlim</b>            | -         | -                | -            |

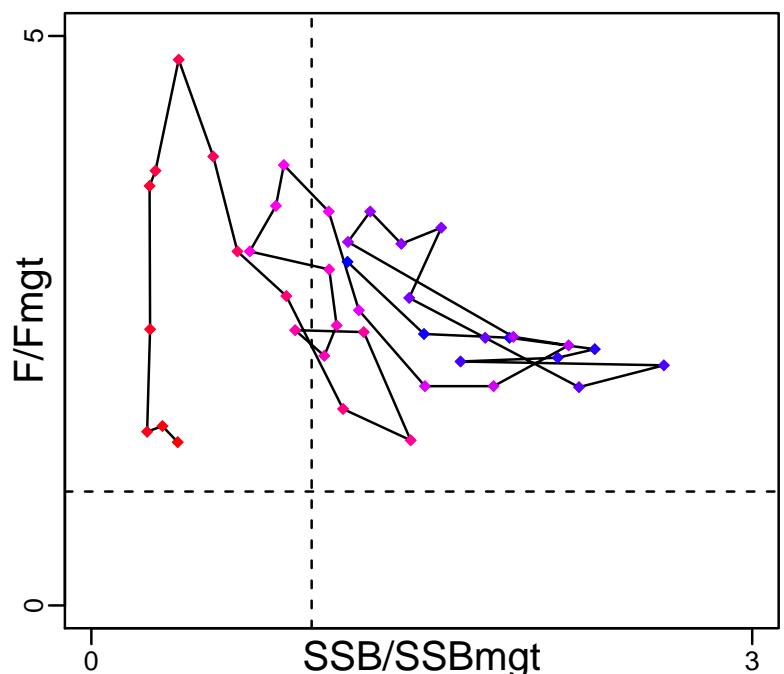
| <b>Time Series</b> |                  |                  |                    |            |            |
|--------------------|------------------|------------------|--------------------|------------|------------|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b>  | <b>Sex</b> | <b>Age</b> |
| <b>TB</b>          | TB-MT            | 2017             | 147,000            | Both       | -          |
| <b>SSB</b>         | SSB-MT           | 2018             | 149,000            | Both       | -          |
| <b>TN</b>          | -                | -                | -                  | -          | -          |
| <b>R</b>           | R-E00            | 2018             | $4.19 \times 10^9$ | -          | 0          |
| <b>F</b>           | F-1/yr           | 2018             | 0.172              | -          | 2 to 5     |
| <b>ER</b>          | ER-calc-ratio    | 2017             | 0.166              | -          | -          |
| <b>TC</b>          | TC-MT            | 2018             | 21,900             |            |            |
| <b>TL</b>          | TL-MT            | 2018             | 21,900             |            |            |
| <b>TB/TBmsy</b>    | -                | -                | -                  |            |            |
| <b>SSB/SSBmsy</b>  | -                | -                | -                  |            |            |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2018             | 1.433              |            |            |
| <b>ER/ERmsy</b>    | -                | -                | -                  |            |            |
| <b>TB/TBmgt</b>    | TB-MT/TBmgt-MT   | 2016             | 0.54               |            |            |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2018             | 0.334              |            |            |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2018             | 1.433              |            |            |
| <b>ER/ERmgt</b>    | -                | -                | -                  |            |            |

Sardine ICES 8c–9a [SARDPVIIlc–IXa]

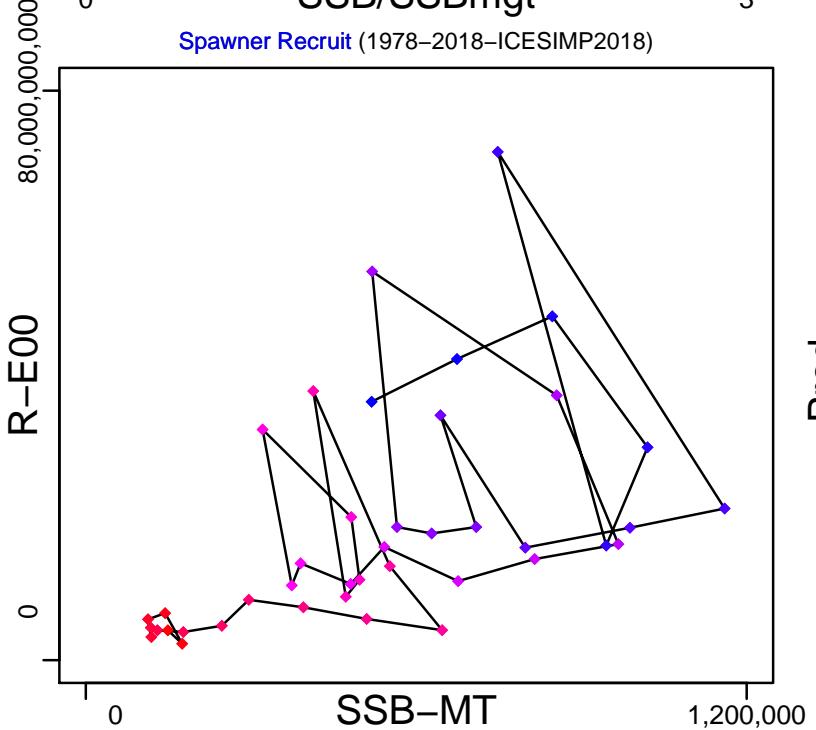
Kobe MSYpref (1978–2018–ICESIMP2018)



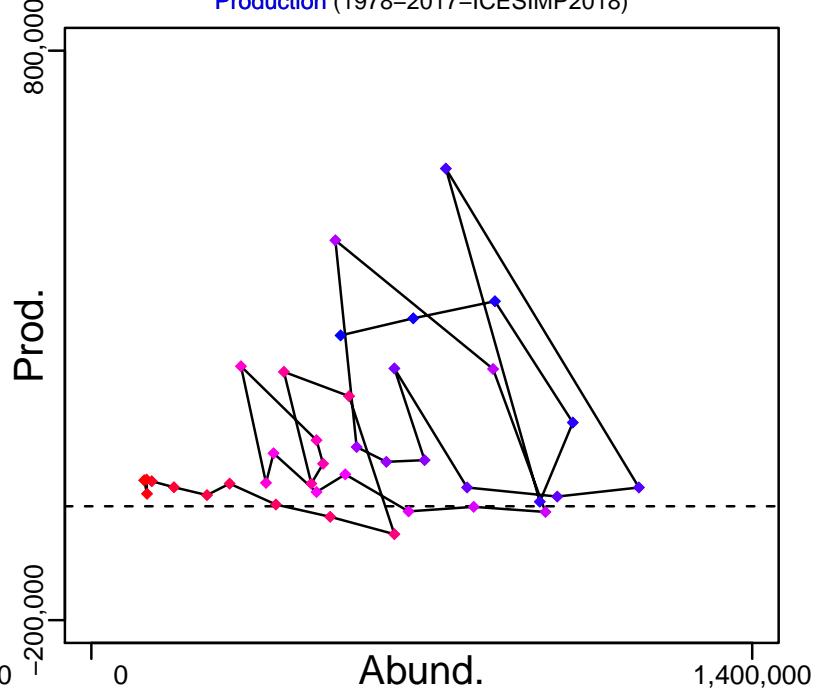
Kobe MGTpref (1978–2018–ICESIMP2018)



Spawner Recruit (1978–2018–ICESIMP2018)



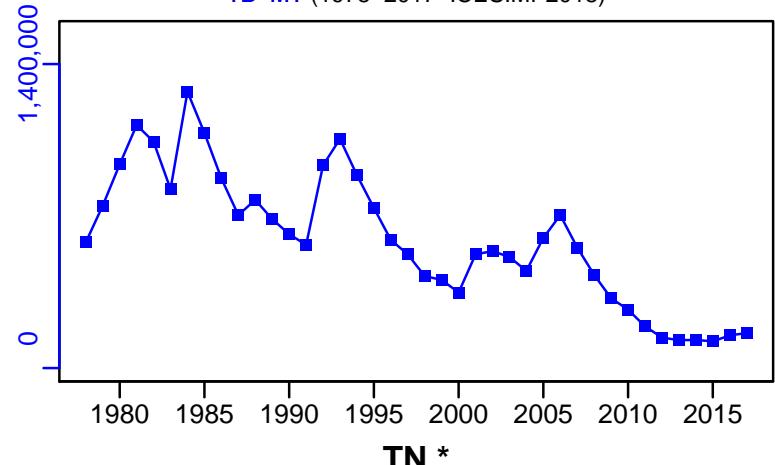
Production (1978–2017–ICESIMP2018)



|              |            |   |         |
|--------------|------------|---|---------|
| ◆ Start Year | ◆ End Year | * | No Data |
|--------------|------------|---|---------|

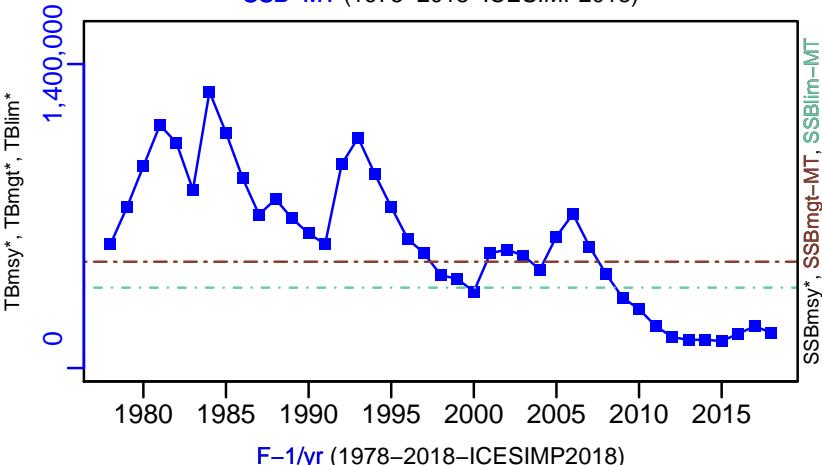
Sardine ICES 8c–9a [SARDPVIIc–IXa]

TB-MT (1978–2017–ICESIMP2018)

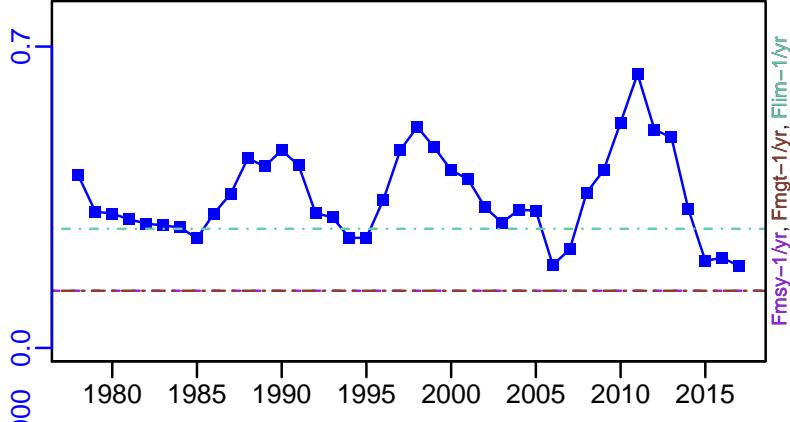


TN \*

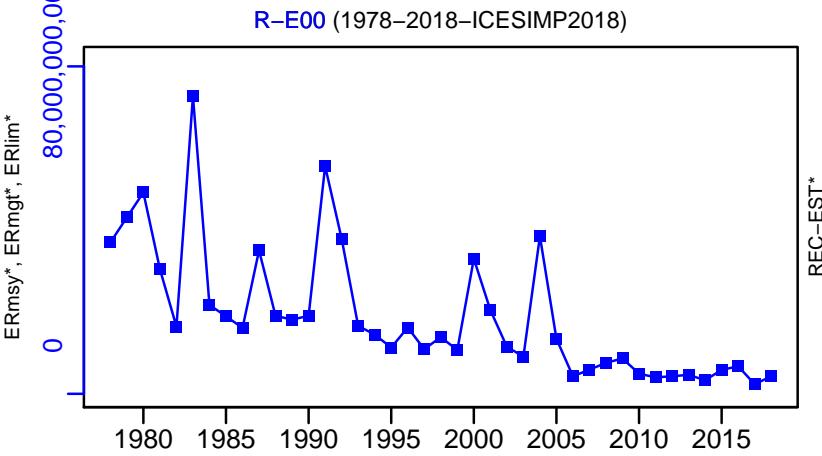
SSB-MT (1978–2018–ICESIMP2018)



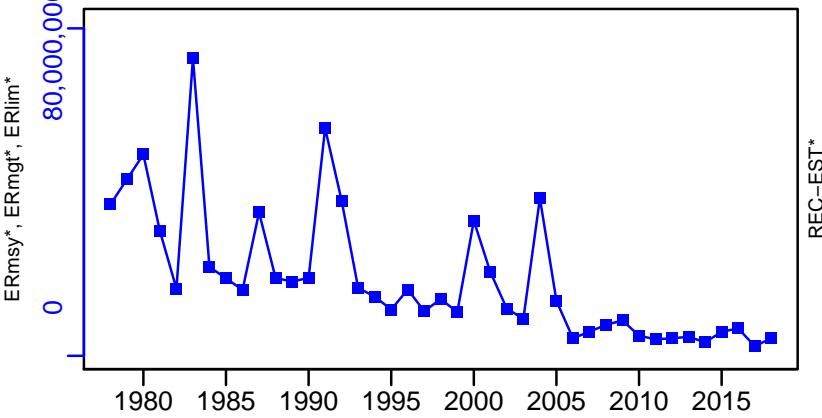
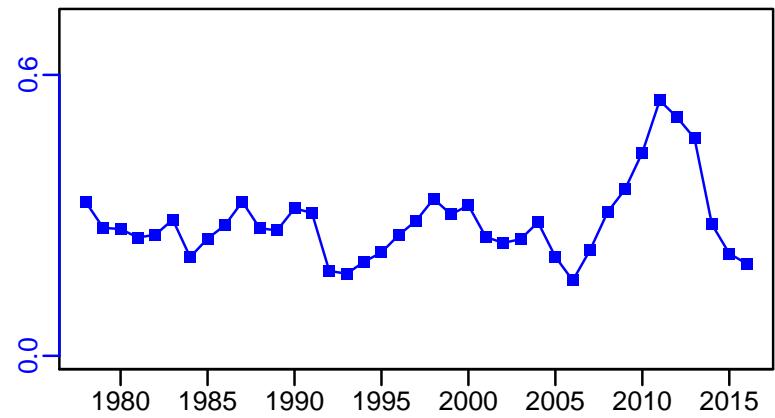
F-1/yr (1978–2018–ICESIMP2018)



ER-calc-ratio (1978–2017–ICESIMP2018)



R-E00 (1978–2018–ICESIMP2018)

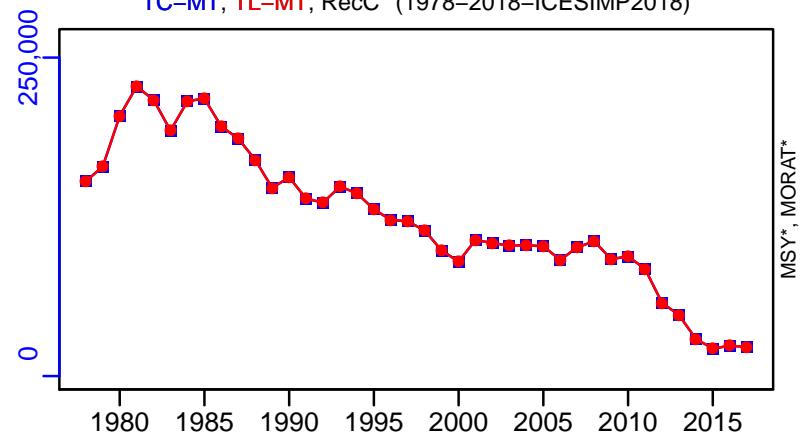


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | - - Lim BRP  | * No Data |

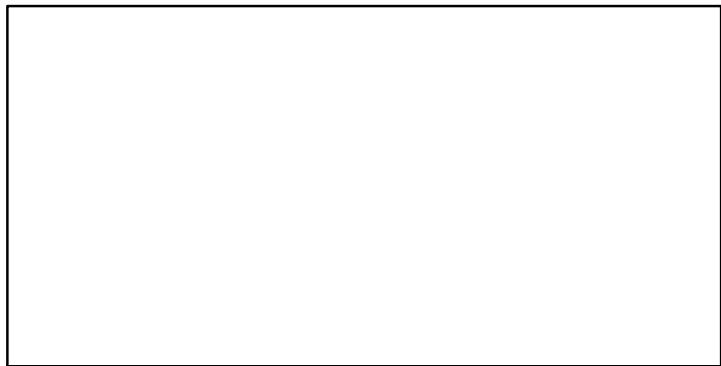
Sardine ICES 8c–9a [SARDPVIIlc–IXa]

TC–MT, TL–MT, RecC\* (1978–2018–ICESIMP2018)

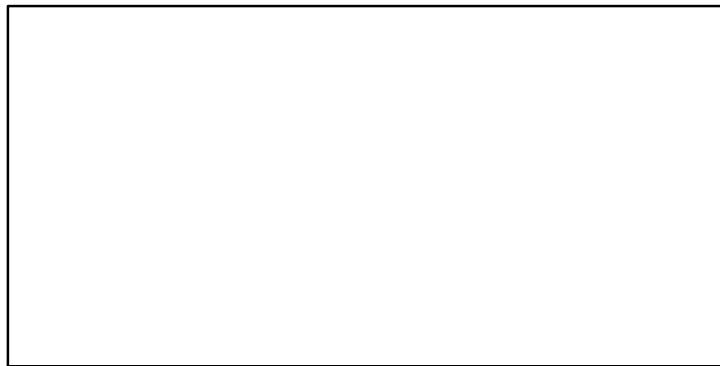
TAC\*, Cpair\*, Cadv\*



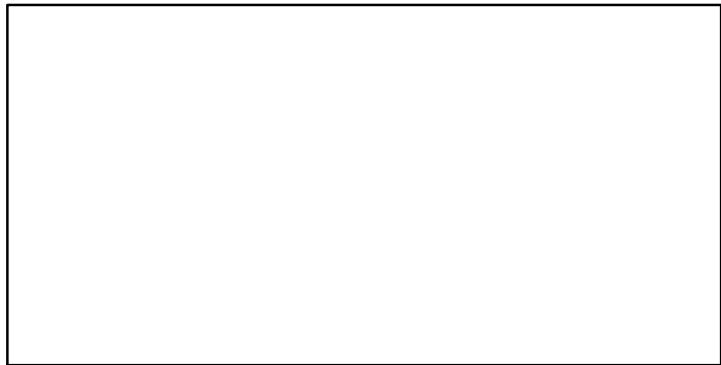
survB\*



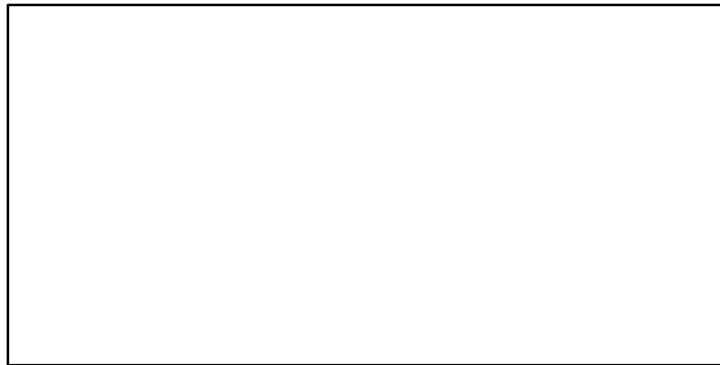
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

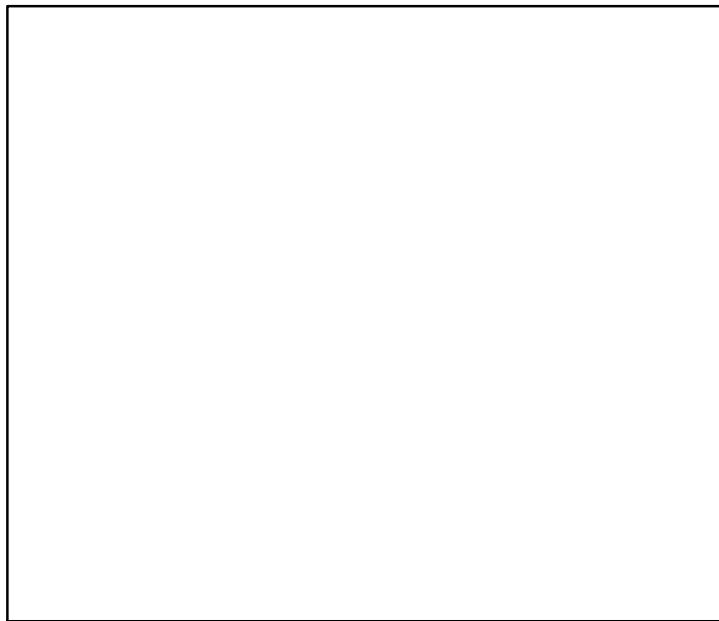
## Sardine ICES 7 [SARDVII]

| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Sardina pilchardus  |
| <b>Current Assess ID</b>    | WGHANSA-SARDVII-1970-2018-ICESIMP2021                         |
| <b>Area</b>                 | ICES 7  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea          |
| <b>Assessor</b>             | Working Group on Southern Horse Mackerel, Anchovy and Sardine |
| <b>Asmts in RAM</b>         | 2016, 2018  |

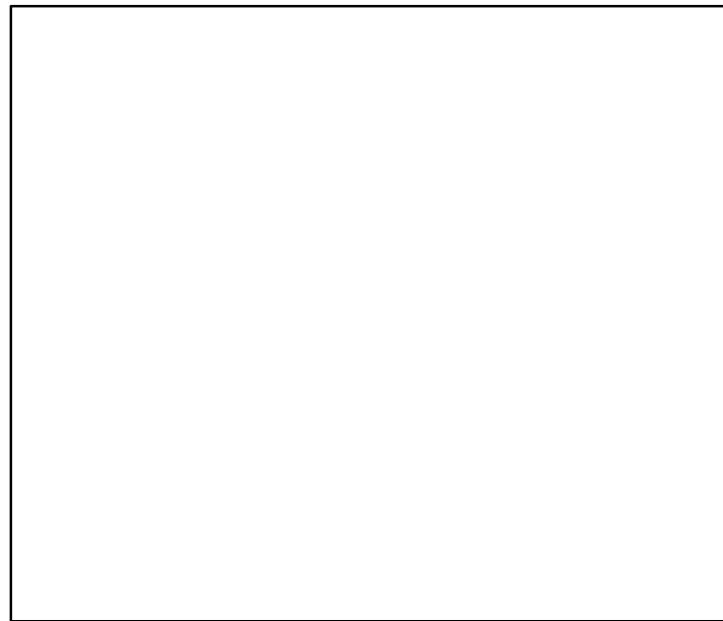
| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | -     | -         | -          |     |     |
| <b>TL</b>         | TL-MT | 2018      | 10,412     |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

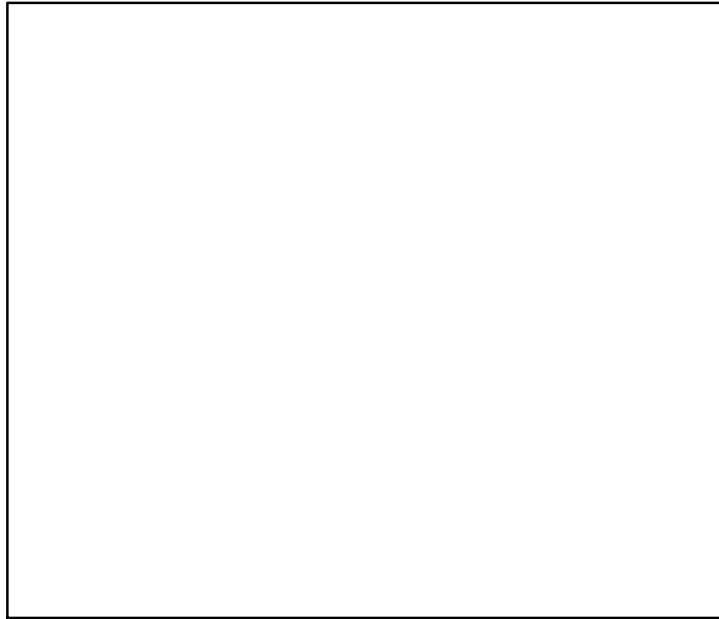
**Kobe MSY\***



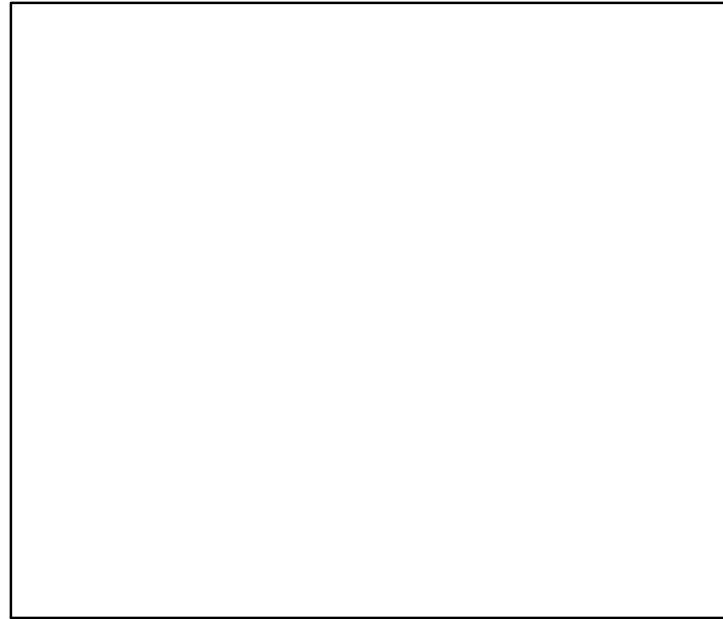
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

Sardine ICES 7 [SARDVII]

**TB\***



**SSB\***



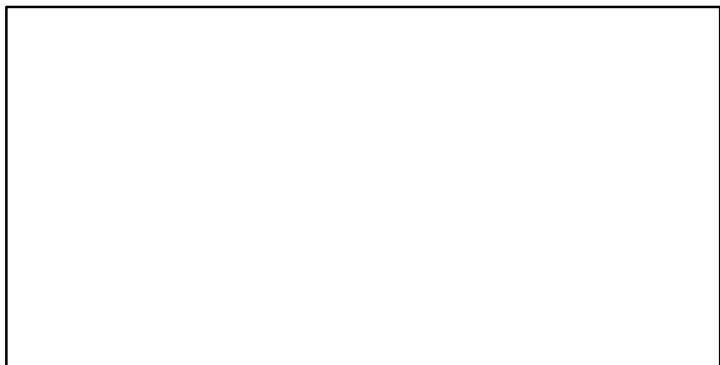
**TN \***



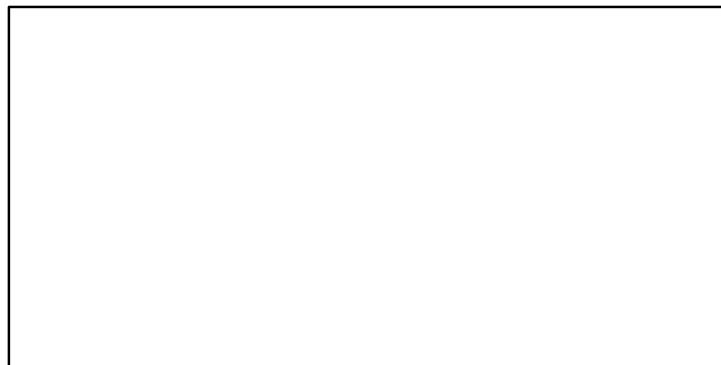
**F\***



**ER\***



**Recruits\***

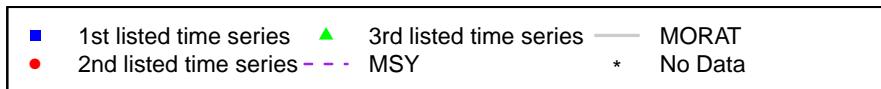
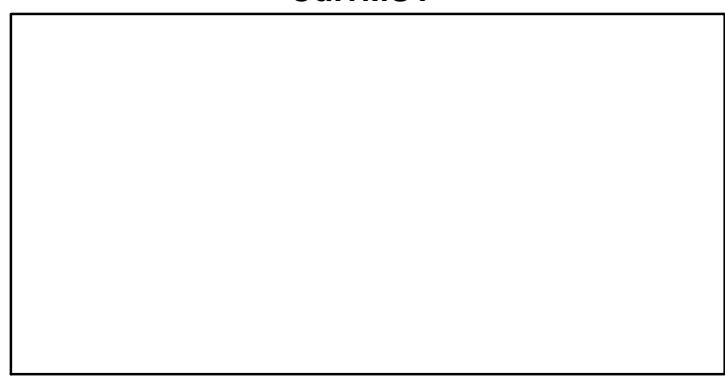
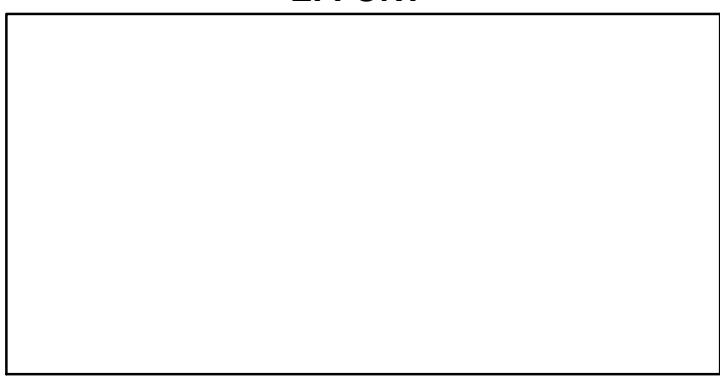
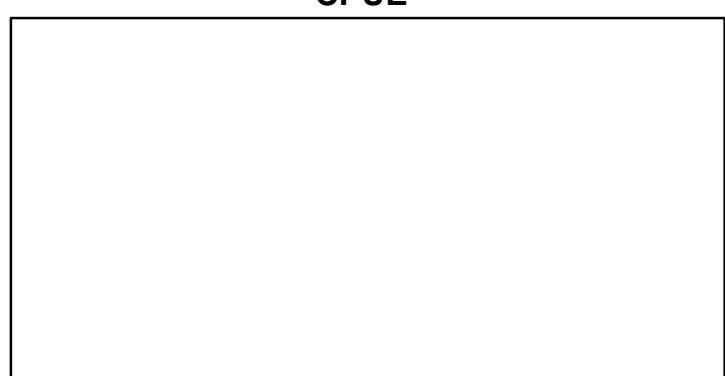
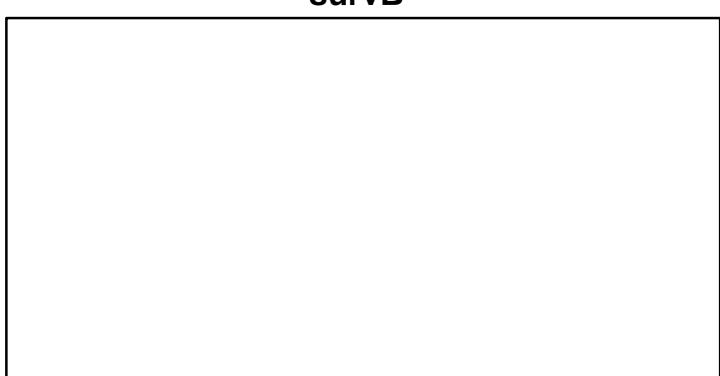
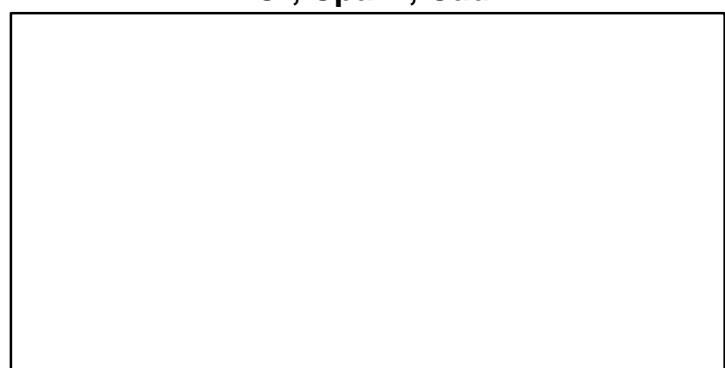
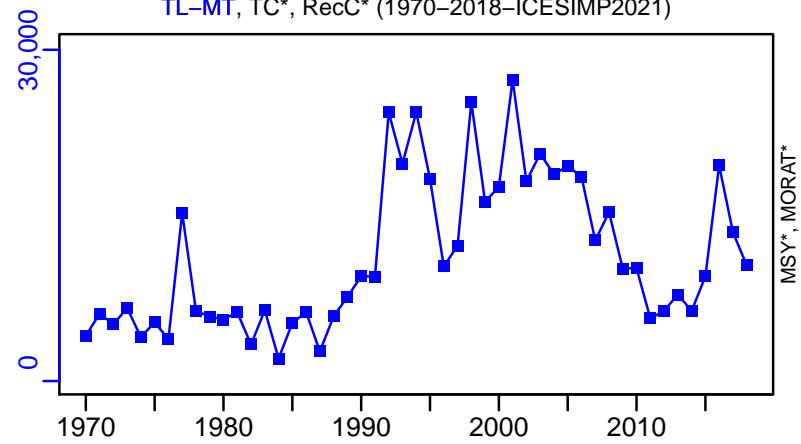


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Sardine ICES 7 [SARDVII]

TL-MT, TC\*, RecC\* (1970–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



## Sardine ICES 8abd [SARDVIIIabd]

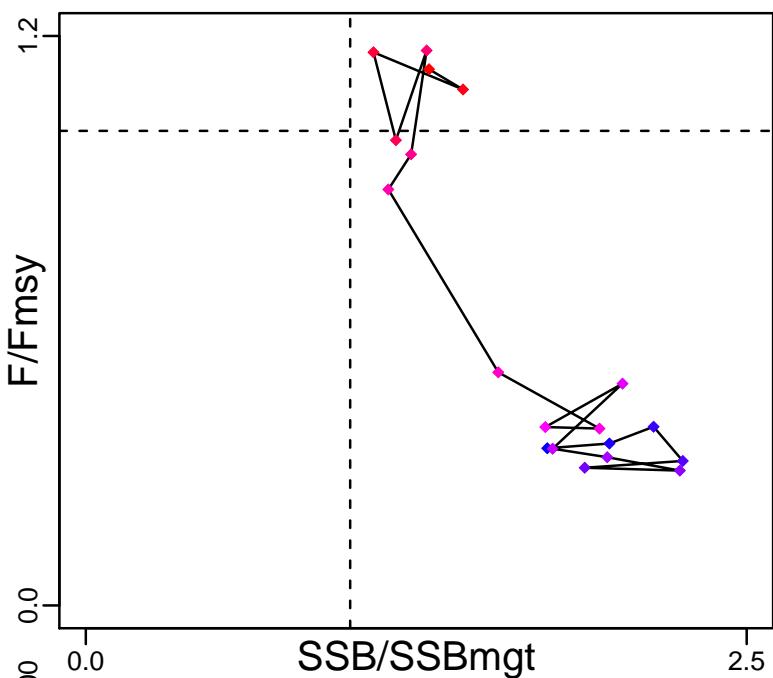
| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Sardina pilchardus  |
| <b>Current Assess ID</b>    | WGHANSA-SARDVIIIabd-2000-2019-ICESIMP2021                     |
| <b>Area</b>                 | ICES 8abd   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea          |
| <b>Assessor</b>             | Working Group on Southern Horse Mackerel, Anchovy and Sardine |
| <b>Asmts in RAM</b>         | 2019, 2017, 2018  |

| Reference Points |                 |           |        |
|------------------|-----------------|-----------|--------|
| Type             | ID              | Asmt Year | Value  |
| <b>TBmsy</b>     | -               | -         | -      |
| <b>SSBmsy</b>    | -               | -         | -      |
| <b>Fmsy</b>      | Fmsy-1/yr       | 2019      | 0.453  |
| <b>ERmsy</b>     | -               | -         | -      |
| <b>TBmgt</b>     | -               | -         | -      |
| <b>SSBmgt</b>    | SSBmgt-MT       | 2019      | 78,700 |
| <b>Fmgt</b>      | Fmgt-1/yr       | 2019      | 0.453  |
| <b>ERmgt</b>     | -               | -         | -      |
| <b>TB0</b>       | -               | -         | -      |
| <b>SSB0</b>      | -               | -         | -      |
| <b>MSY</b>       | -               | -         | -      |
| <b>M</b>         | -               | -         | -      |
| <b>TBlim</b>     | -               | -         | -      |
| <b>SSBlim</b>    | SSBlim-relative | 2018      | 63,328 |
| <b>Flim</b>      | Flim-relative   | 2018      | 0.478  |
| <b>ERlim</b>     | -               | -         | -      |

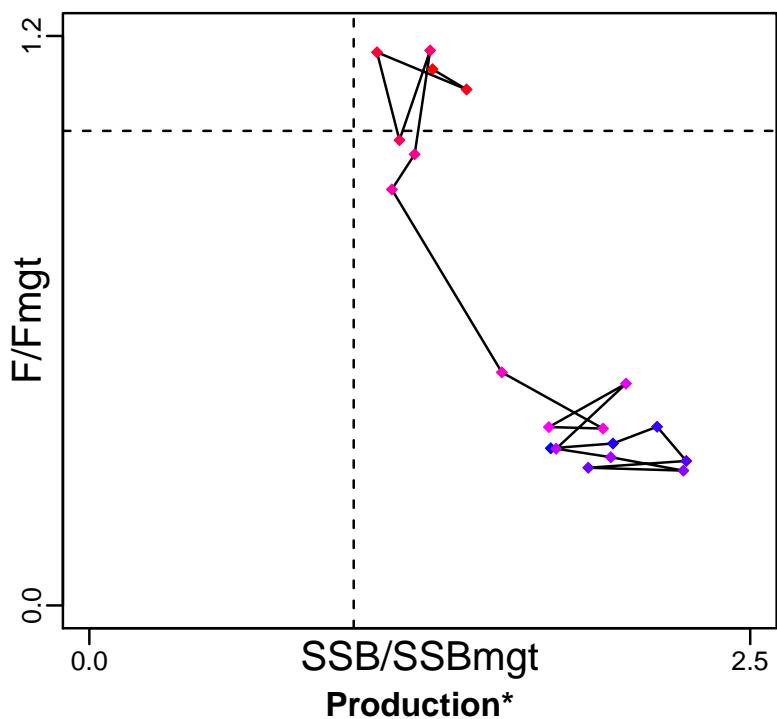
| Time Series       |                  |           |               |     |        |
|-------------------|------------------|-----------|---------------|-----|--------|
| Type              | ID               | Asmt Year | Curr Value    | Sex | Age    |
| <b>TB</b>         | -                | -         | -             | -   | -      |
| <b>SSB</b>        | SSB-MT           | 2019      | 100,828       | -   | -      |
| <b>TN</b>         | -                | -         | -             | -   | -      |
| <b>R</b>          | R-E00            | 2019      | 4,899,952,193 | -   | 0      |
| <b>F</b>          | F-1/yr           | 2019      | 0.512         | -   | 2 to 5 |
| <b>ER</b>         | -                | -         | -             | -   | -      |
| <b>TC</b>         | TC-MT            | 2019      | 32,299        |     |        |
| <b>TL</b>         | TL-MT            | 2018      | 30,300        |     |        |
| <b>TB/TBmsy</b>   | -                | -         | -             |     |        |
| <b>SSB/SSBmsy</b> | -                | -         | -             |     |        |
| <b>F/Fmsy</b>     | F-1/yr/Fmsy-1/yr | 2019      | 1.13          |     |        |
| <b>ER/ERmsy</b>   | -                | -         | -             |     |        |
| <b>TB/TBmgt</b>   | -                | -         | -             |     |        |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2019      | 1.281         |     |        |
| <b>F/Fmgt</b>     | F-1/yr/Fmgt-1/yr | 2019      | 1.13          |     |        |
| <b>ER/ERmgt</b>   | -                | -         | -             |     |        |

Sardine ICES 8abd [SARDVIIabbd]

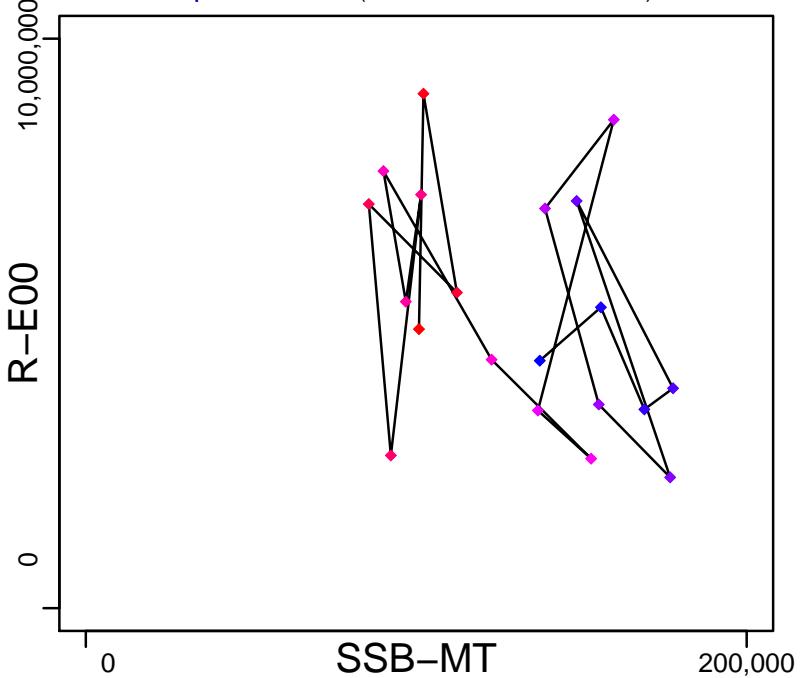
Kobe MSYpref (2000–2019–ICESIMP2021)



Kobe MGTpref (2000–2019–ICESIMP2021)



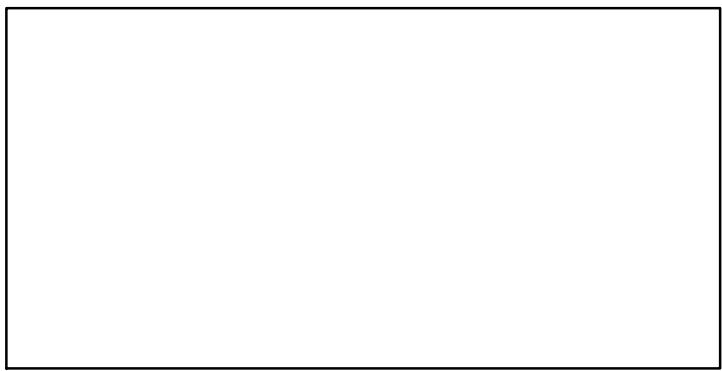
Spawner Recruit (2000–2019–ICESIMP2021)



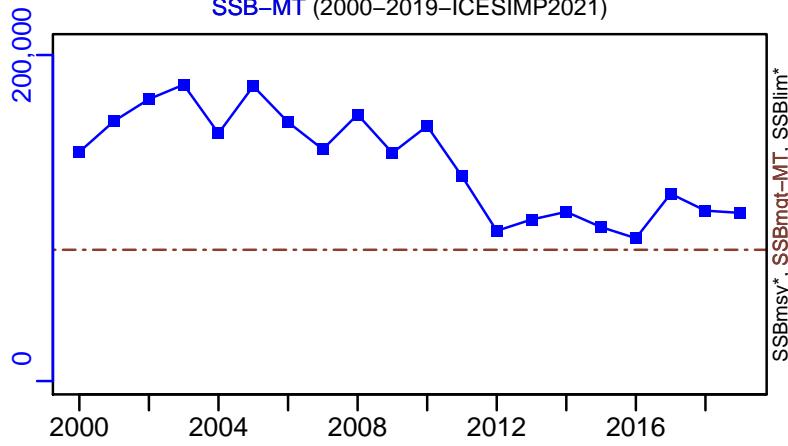
|              |            |   |         |
|--------------|------------|---|---------|
| ◆ Start Year | ◆ End Year | * | No Data |
|--------------|------------|---|---------|

Sardine ICES 8abd [SARDVIIabbd]

**TB\***



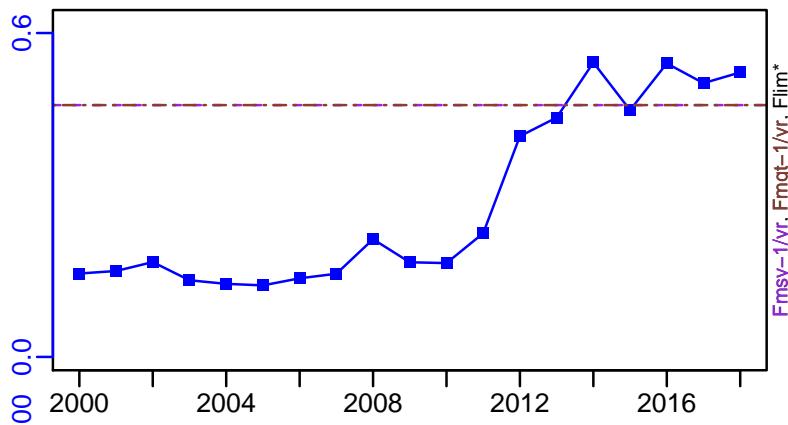
**SSB-MT (2000–2019–ICESIMP2021)**



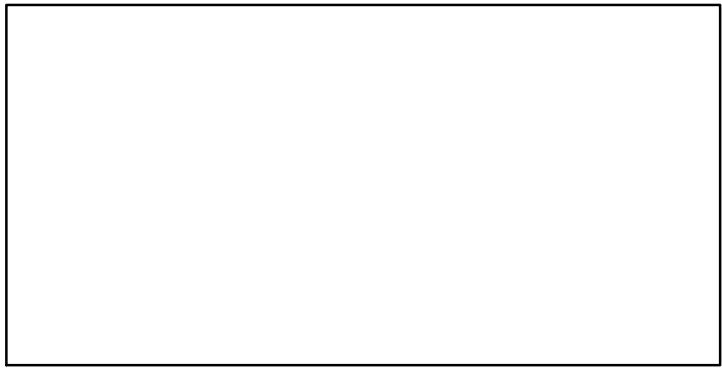
**TN \***



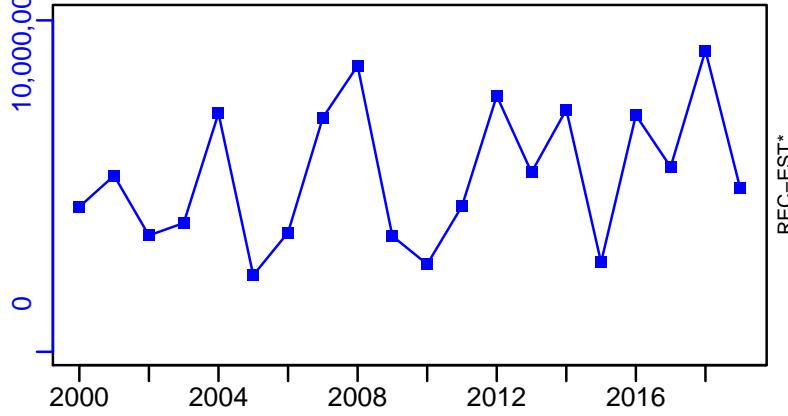
**F-1/yr (2000–2019–ICESIMP2021)**



**ER\***



**R-E00 (2000–2019–ICESIMP2021)**

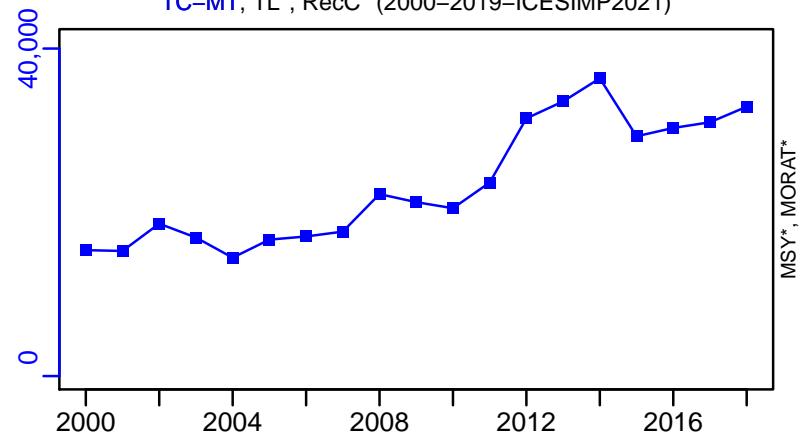


- Listed time series    - - - Target BRP    — Rec-Est
- - - MSY-based BRP    - - - Lim BRP    \* No Data

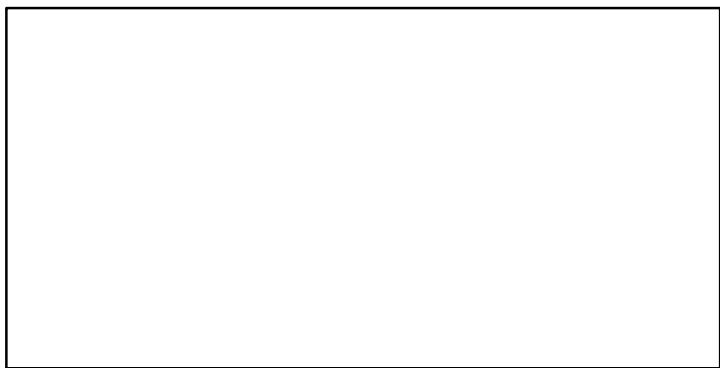
Sardine ICES 8abd [SARDVIIabbd]

TC-MT, TL\*, RecC\* (2000–2019—ICESIMP2021)

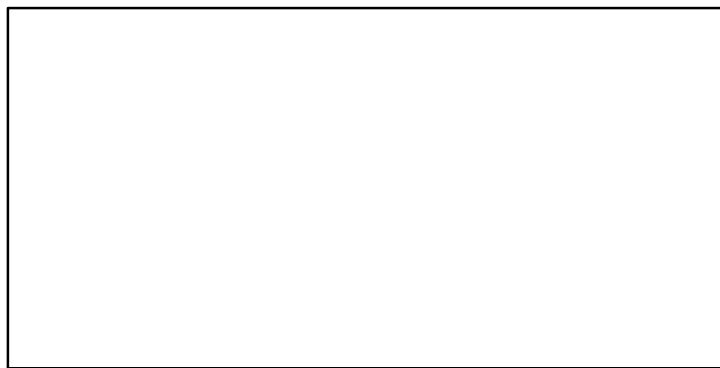
TAC\*, Cpair\*, Cadv\*



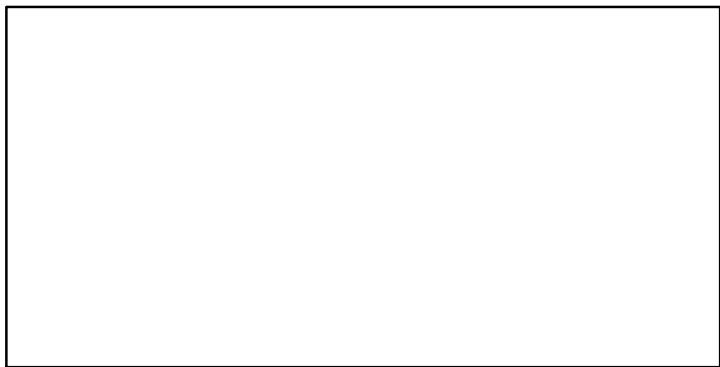
survB\*



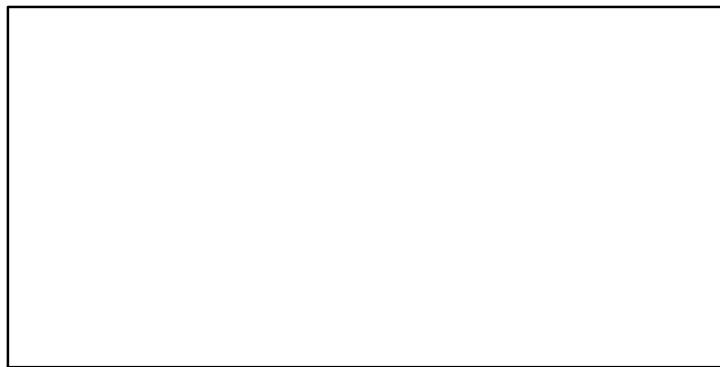
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

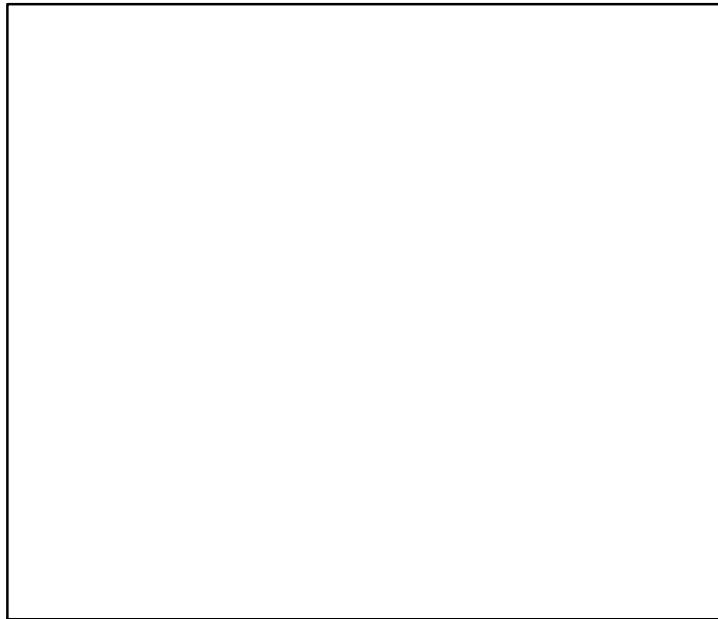
## Sandy ray ICES 6-7 [SDRAYVI-VII]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Leucoraja circularis                                 |
| <b>Current Assess ID</b>    | WGEF-SDRAYVI-VII-2009-2015-ICESIMP2018               |
| <b>Area</b>                 | ICES 6-7   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2015   |

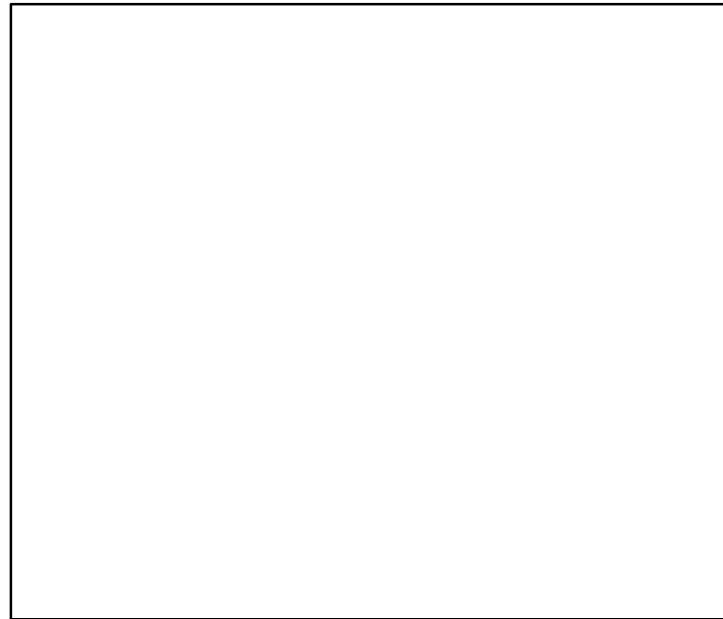
| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | -     | -         | -          |     |     |
| <b>TL</b>         | TL-MT | 2015      | 63         |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

Sandy ray ICES 6–7 [SDRAYVI–VII]

**TB\***



**SSB\***



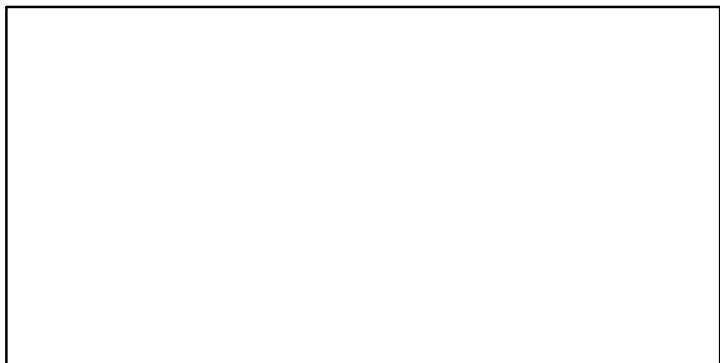
**TN \***



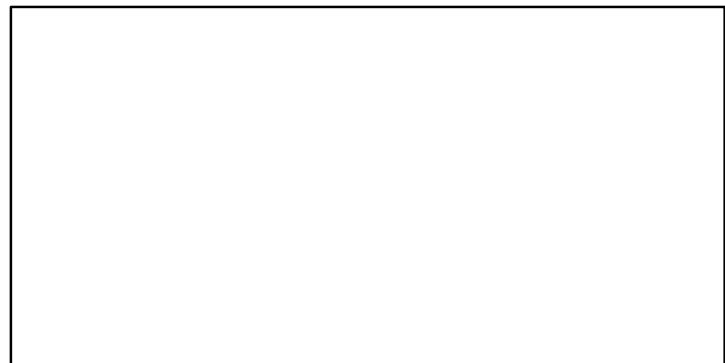
**F\***



**ER\***



**Recruits\***

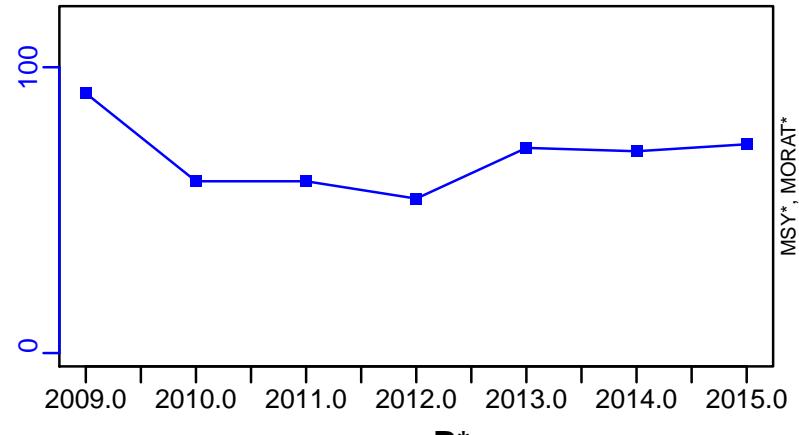


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Sandy ray ICES 6–7 [SDRAYVI–VII]

TL–MT, TC\*, RecC\* (2009–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



survB\*

MSY\*, MORAT\*

CPUE\*

EFFORT\*

CdivMSY\*

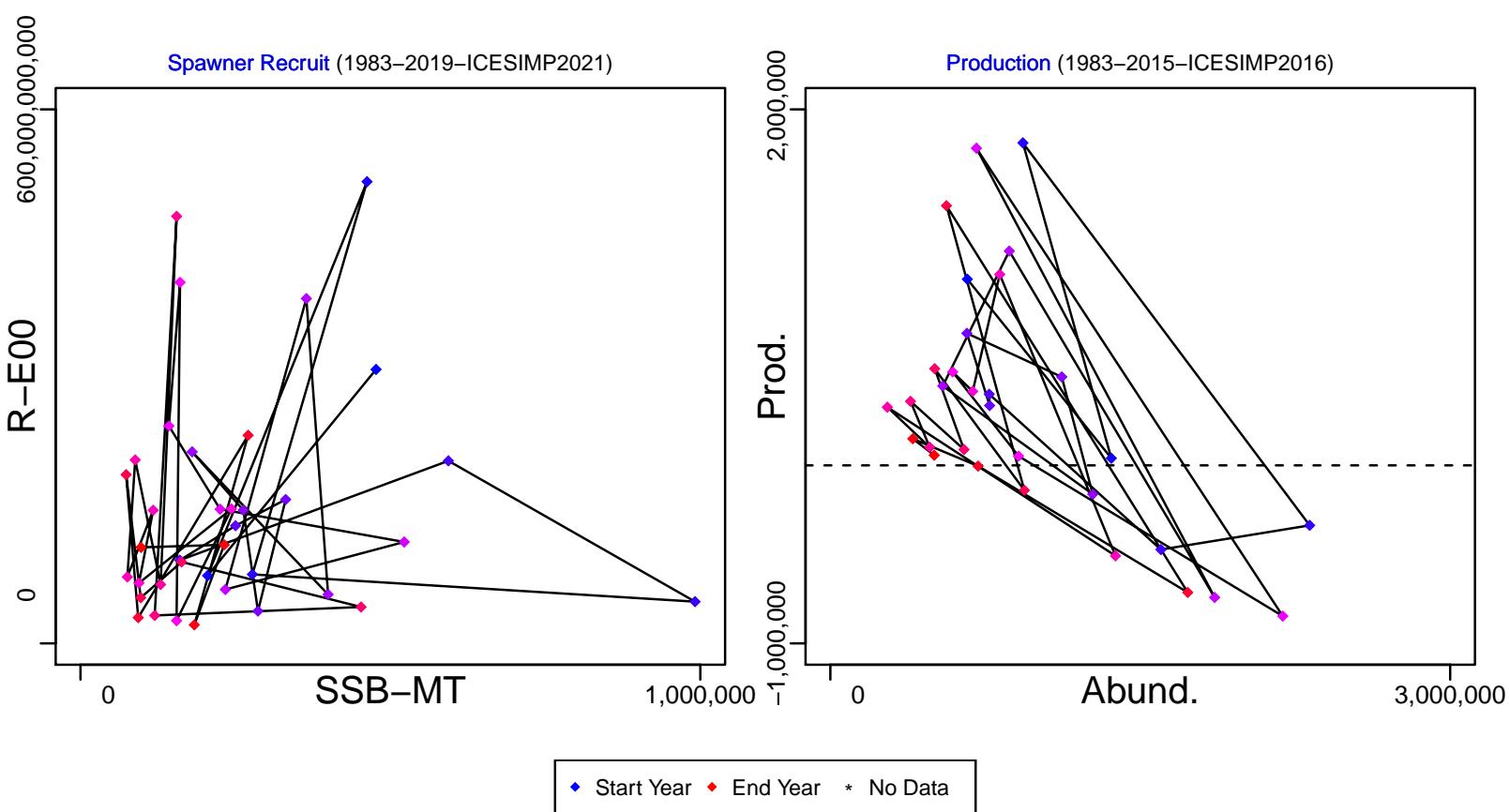
- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Sand eel Sandeel Area 1 [SEELNSSA1]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Ammodytes spp  |
| <b>Current Assess ID</b>    | HAWG-SEELNSSA1-1983-2019-ICESIMP2021                       |
| <b>Area</b>                 | Sandeel Area 1   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea       |
| <b>Assessor</b>             | Herring Assessment Working Group for the Area South of 62N |
| <b>Asmts in RAM</b>         | 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2011             |

| Reference Points |           |           |         |
|------------------|-----------|-----------|---------|
| Type             | ID        | Asmt Year | Value   |
| <b>TBmsy</b>     | -         | -         | -       |
| <b>SSBmsy</b>    | -         | -         | -       |
| <b>Fmsy</b>      | -         | -         | -       |
| <b>ERmsy</b>     | -         | -         | -       |
| <b>TBmgt</b>     | -         | -         | -       |
| <b>SSBmgt</b>    | SSBmgt-MT | 2018      | 145,000 |
| <b>Fmgt</b>      | -         | -         | -       |
| <b>ERmgt</b>     | -         | -         | -       |
| <b>TB0</b>       | -         | -         | -       |
| <b>SSB0</b>      | -         | -         | -       |
| <b>MSY</b>       | -         | -         | -       |
| <b>M</b>         | -         | -         | -       |
| <b>TBlim</b>     | TBlim-MT  | 2011      | 160,000 |
| <b>SSBlim</b>    | SSBlim-MT | 2018      | 110,000 |
| <b>Flim</b>      | -         | -         | -       |
| <b>ERlim</b>     | -         | -         | -       |

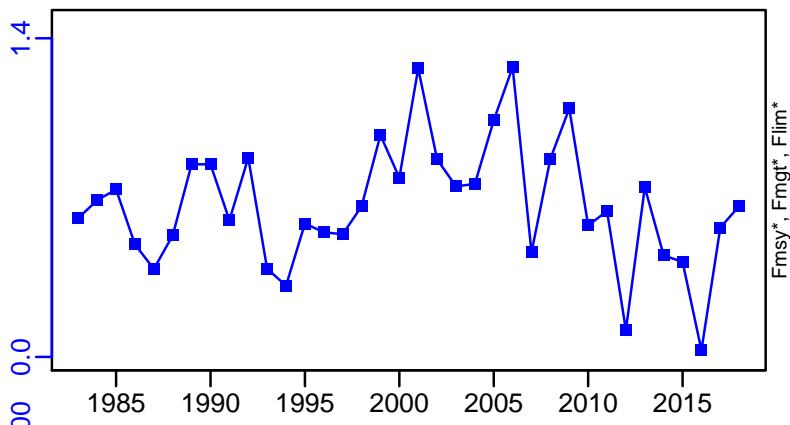
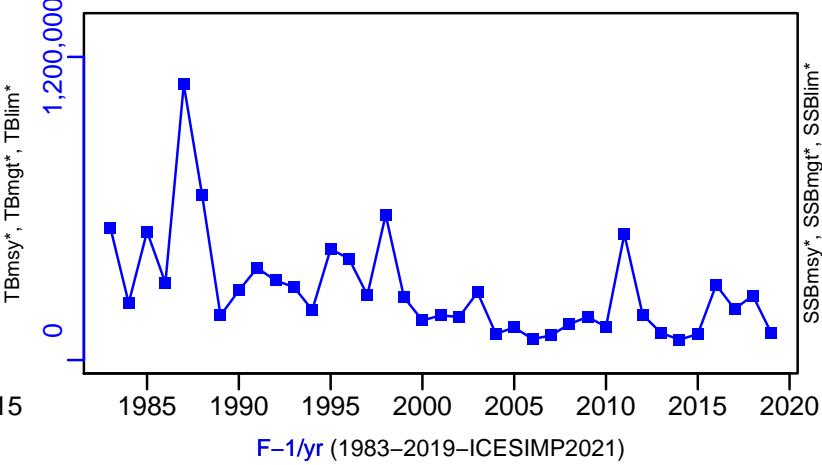
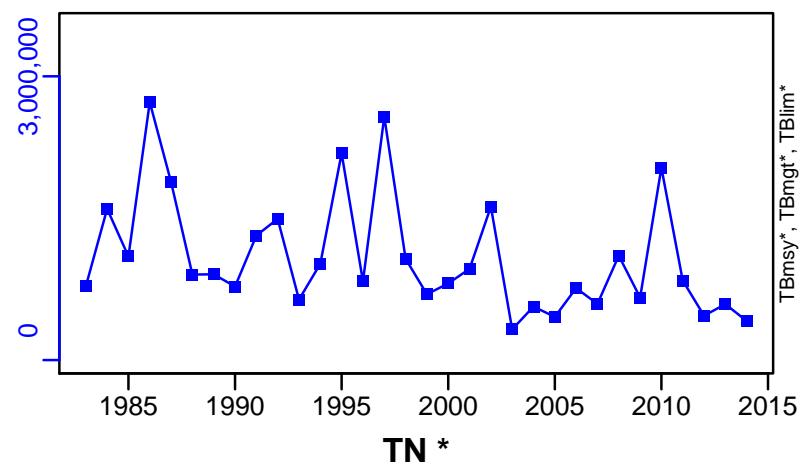
| Time Series       |                  |           |                         |      |        |
|-------------------|------------------|-----------|-------------------------|------|--------|
| Type              | ID               | Asmt Year | Curr Value              | Sex  | Age    |
| <b>TB</b>         | TB-MT            | 2015      | 351,000                 | Both | -      |
| <b>SSB</b>        | SSB-MT           | 2019      | 97,636                  | -    | -      |
| <b>TN</b>         | -                | -         | -                       | -    | -      |
| <b>R</b>          | R-E00            | 2019      | $1.0787 \times 10^{11}$ | -    | 0      |
| <b>F</b>          | F-1/yr           | 2019      | 0.633                   | -    | 1 to 2 |
| <b>ER</b>         | ER-calc-ratio    | 2015      | 0.217                   | -    | -      |
| <b>TC</b>         | TC-MT            | 2019      | 130,460                 |      |        |
| <b>TL</b>         | TL-MT            | 2019      | 130,460                 |      |        |
| <b>TB/TBmsy</b>   | -                | -         | -                       |      |        |
| <b>SSB/SSBmsy</b> | -                | -         | -                       |      |        |
| <b>F/Fmsy</b>     | -                | -         | -                       |      |        |
| <b>ER/ERmsy</b>   | -                | -         | -                       |      |        |
| <b>TB/TBmgt</b>   | -                | -         | -                       |      |        |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2018      | 1.917                   |      |        |
| <b>F/Fmgt</b>     | -                | -         | -                       |      |        |
| <b>ER/ERmgt</b>   | -                | -         | -                       |      |        |

**Kobe MSY\*****Kobe MGT\***

### Sand eel Sandeel Area 1 [SEELNSSA1]

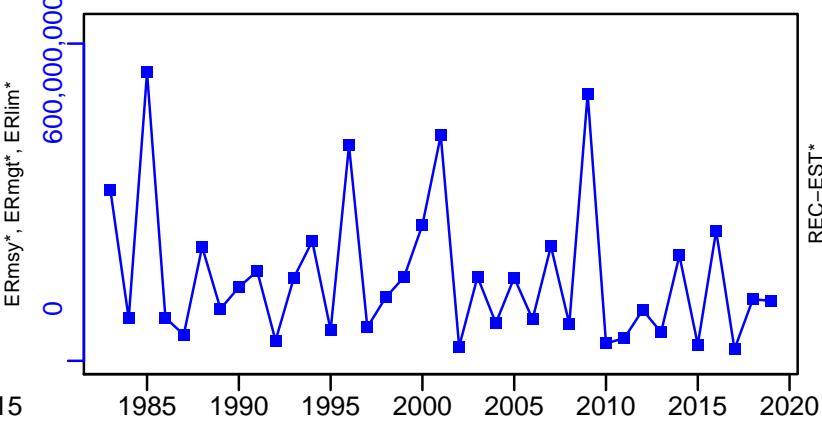
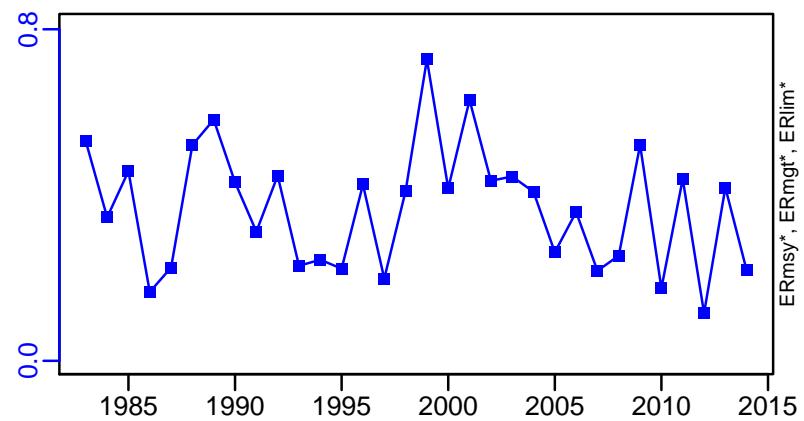
TB-MT (1983–2015–ICESIMP2016)

SSB-MT (1983–2019–ICESIMP2021)



ER-calc-ratio (1983–2015–ICESIMP2016)

R-E00 (1983–2019–ICESIMP2021)

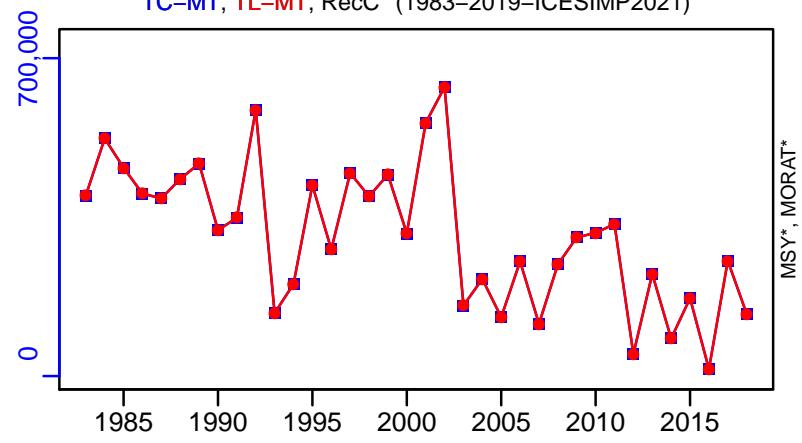


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | ··· Lim BRP  | * No Data |

Sand eel Sandeel Area 1 [SEELNSSA1]

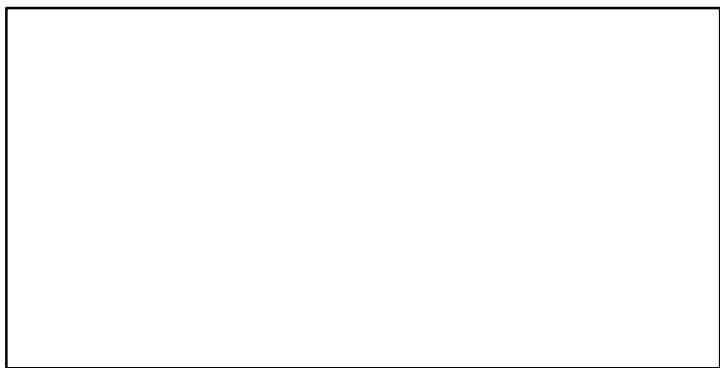
TC-MT, TL-MT, RecC\* (1983–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*

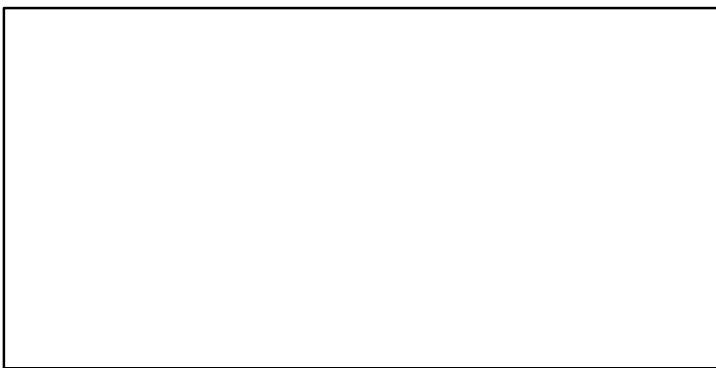


survB\*

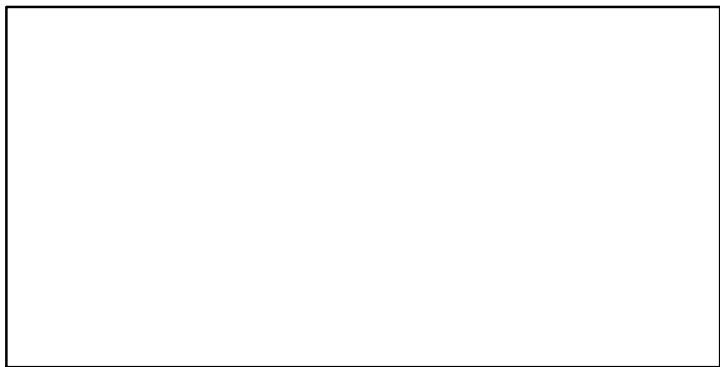
MSY\*, MORAT\*



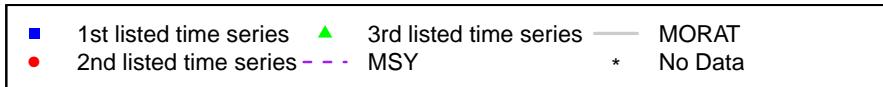
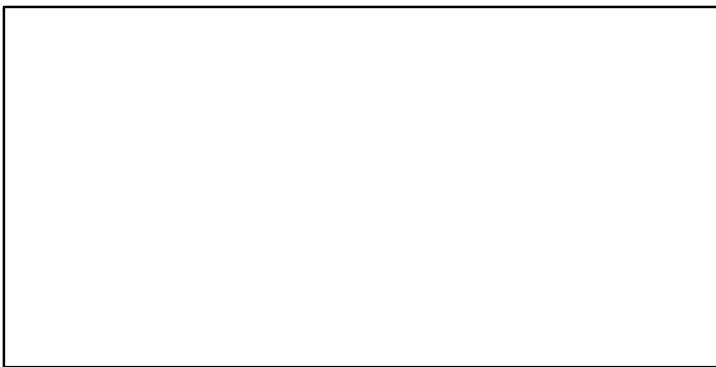
CPUE\*



EFFORT\*



CdivMSY\*

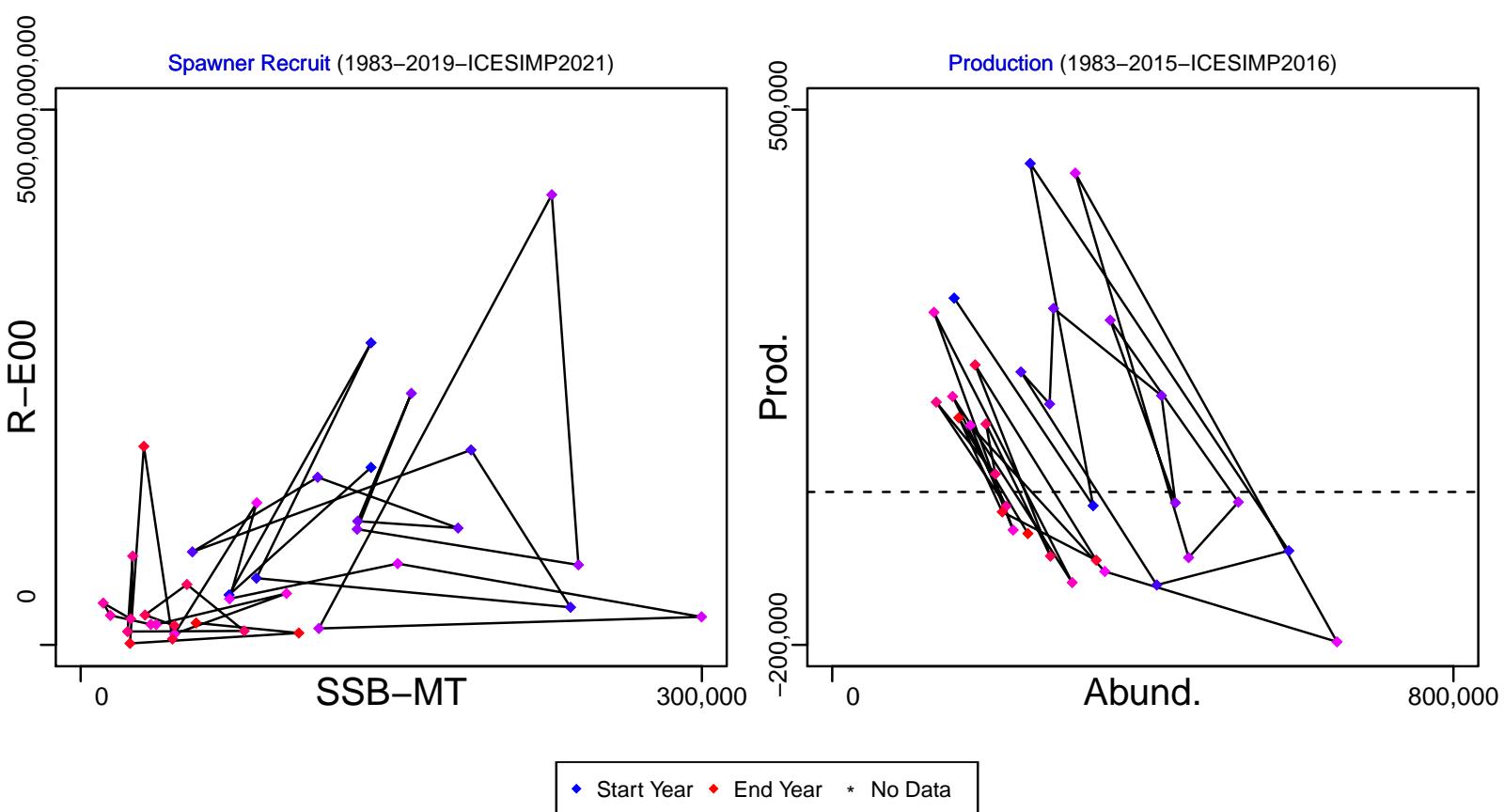


## Sand eel Sandeel Area 2 [SEELNSSA2]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Ammodytes spp  |
| <b>Current Assess ID</b>    | HAWG-SEELNSSA2-1983-2019-ICESIMP2021                       |
| <b>Area</b>                 | Sandeel Area 2   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea       |
| <b>Assessor</b>             | Herring Assessment Working Group for the Area South of 62N |
| <b>Asmts in RAM</b>         | 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2011             |

| Reference Points |           |           |        |
|------------------|-----------|-----------|--------|
| Type             | ID        | Asmt Year | Value  |
| <b>TBmsy</b>     | -         | -         | -      |
| <b>SSBmsy</b>    | -         | -         | -      |
| <b>Fmsy</b>      | -         | -         | -      |
| <b>ERmsy</b>     | -         | -         | -      |
| <b>TBmgt</b>     | -         | -         | -      |
| <b>SSBmgt</b>    | SSBmgt-MT | 2018      | 84,000 |
| <b>Fmgt</b>      | -         | -         | -      |
| <b>ERmgt</b>     | -         | -         | -      |
| <b>TB0</b>       | -         | -         | -      |
| <b>SSB0</b>      | -         | -         | -      |
| <b>MSY</b>       | -         | -         | -      |
| <b>M</b>         | -         | -         | -      |
| <b>TBlim</b>     | TBlim-MT  | 2011      | 70,000 |
| <b>SSBlim</b>    | SSBlim-MT | 2018      | 56,000 |
| <b>Flim</b>      | -         | -         | -      |
| <b>ERlim</b>     | -         | -         | -      |

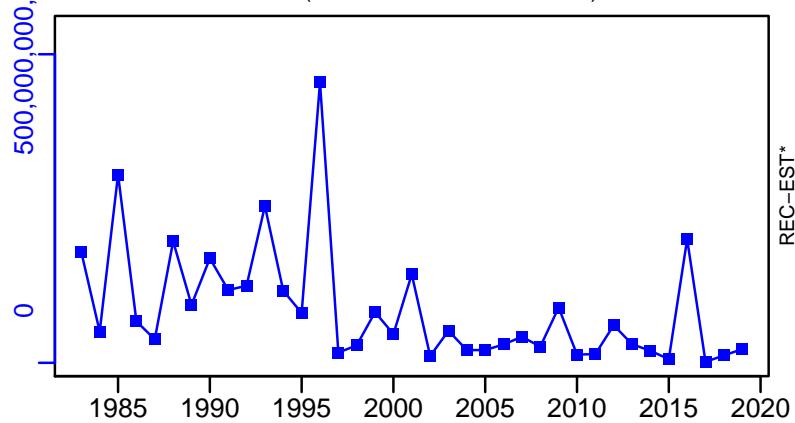
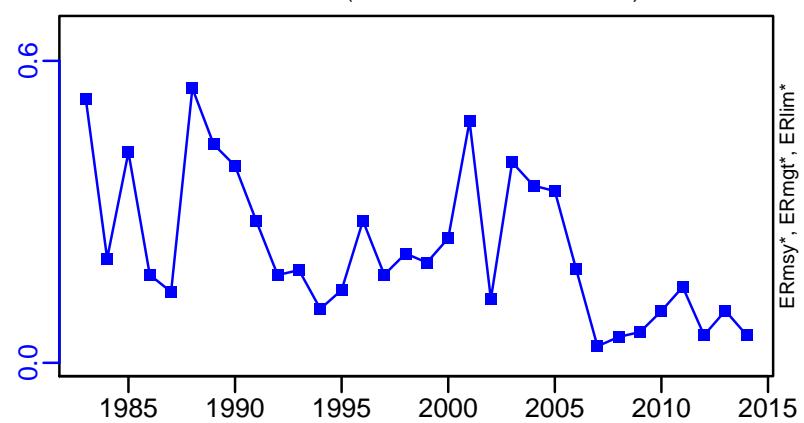
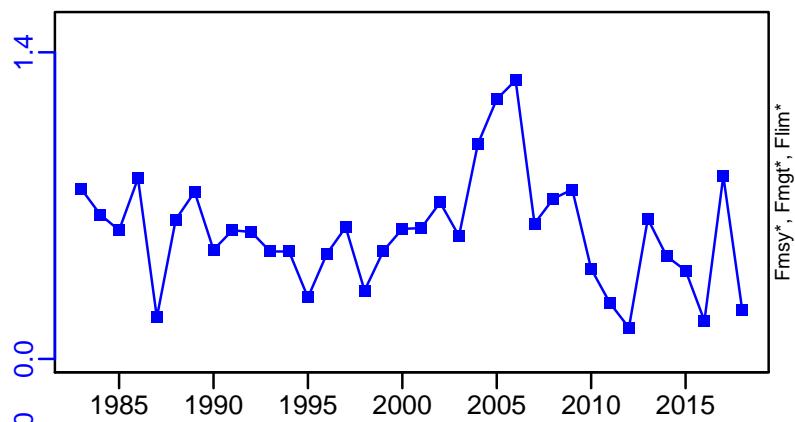
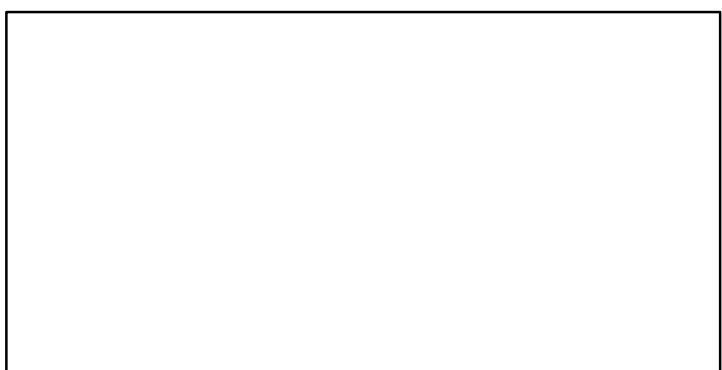
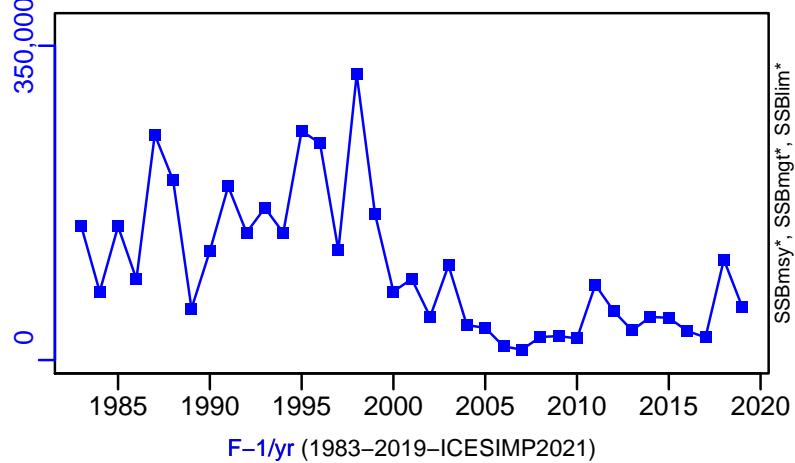
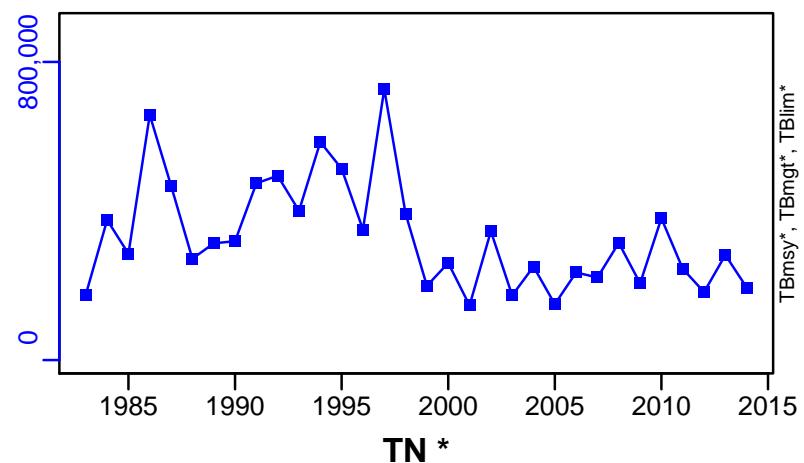
| Time Series       |                  |           |                |      |        |
|-------------------|------------------|-----------|----------------|------|--------|
| Type              | ID               | Asmt Year | Curr Value     | Sex  | Age    |
| <b>TB</b>         | TB-MT            | 2015      | 174,000        | Both | -      |
| <b>SSB</b>        | SSB-MT           | 2019      | 55,770         | -    | -      |
| <b>TN</b>         | -                | -         | -              | -    | -      |
| <b>R</b>          | R-E00            | 2019      | 20,477,415,000 | -    | 0      |
| <b>F</b>          | F-1/yr           | 2019      | 0.206          | -    | 1 to 2 |
| <b>ER</b>         | ER-calc-ratio    | 2015      | 0.05           | -    | -      |
| <b>TC</b>         | TC-MT            | 2019      | 20,568         |      |        |
| <b>TL</b>         | TL-MT            | 2019      | 20,568         |      |        |
| <b>TB/TBmsy</b>   | -                | -         | -              |      |        |
| <b>SSB/SSBmsy</b> | -                | -         | -              |      |        |
| <b>F/Fmsy</b>     | -                | -         | -              |      |        |
| <b>ER/ERmsy</b>   | -                | -         | -              |      |        |
| <b>TB/TBmgt</b>   | -                | -         | -              |      |        |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2018      | 1.274          |      |        |
| <b>F/Fmgt</b>     | -                | -         | -              |      |        |
| <b>ER/ERmgt</b>   | -                | -         | -              |      |        |

**Kobe MSY\*****Kobe MGT\***

### Sand eel Sandeel Area 2 [SEELNSSA2]

TB-MT (1983–2015–ICESIMP2016)

SSB-MT (1983–2019–ICESIMP2021)

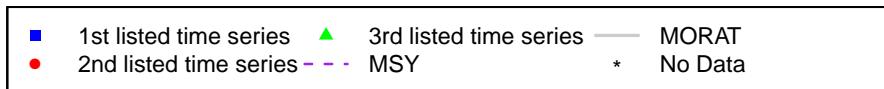
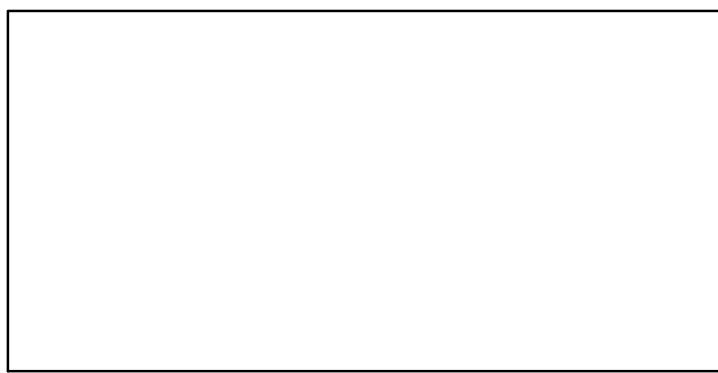
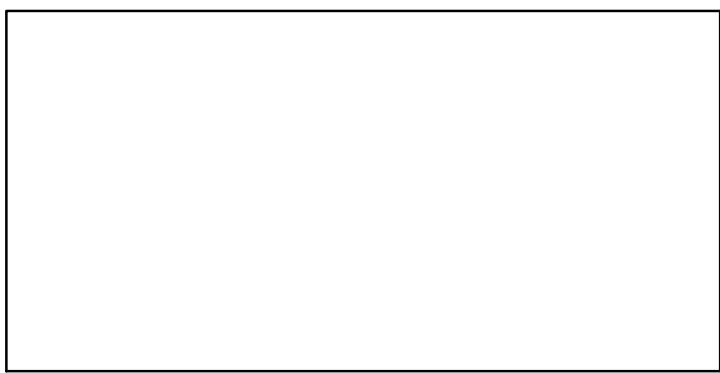
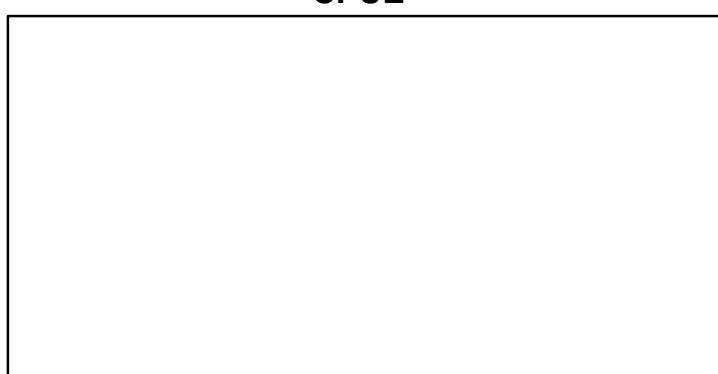
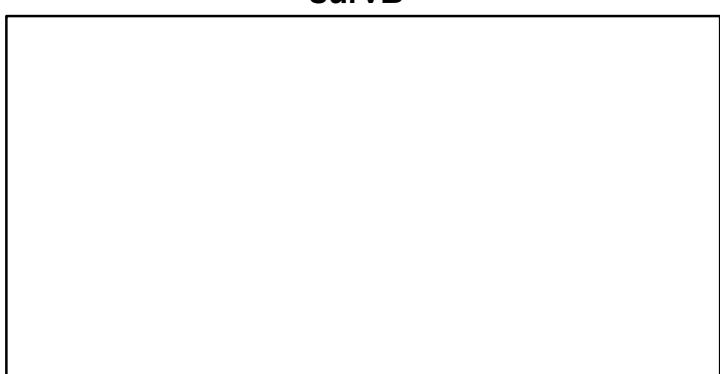
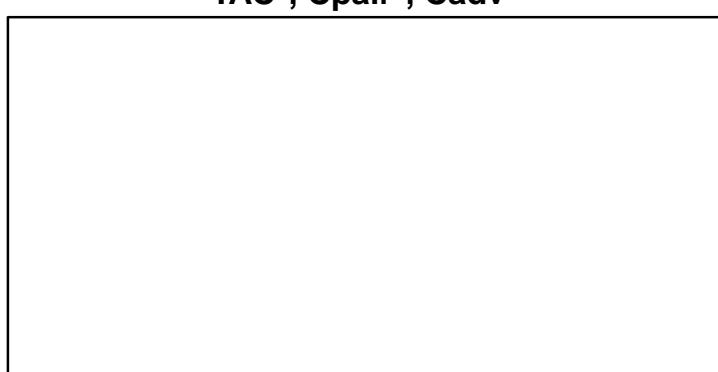
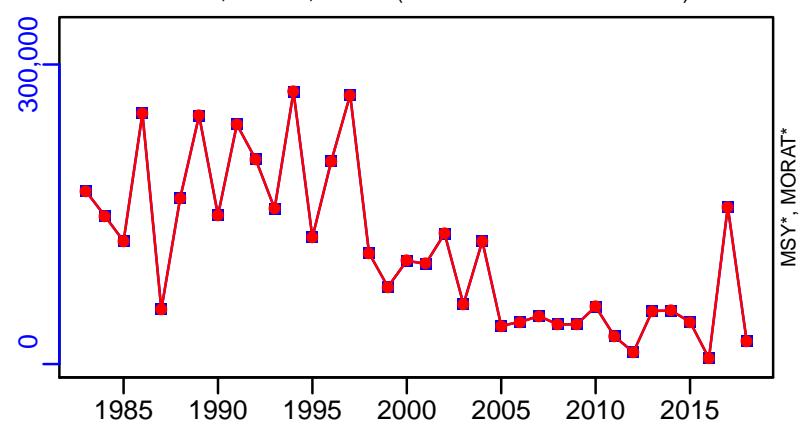


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | - - Lim BRP  | * No Data |

Sand eel Sandeel Area 2 [SEELNSSA2]

TC-MT, TL-MT, RecC\* (1983–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*

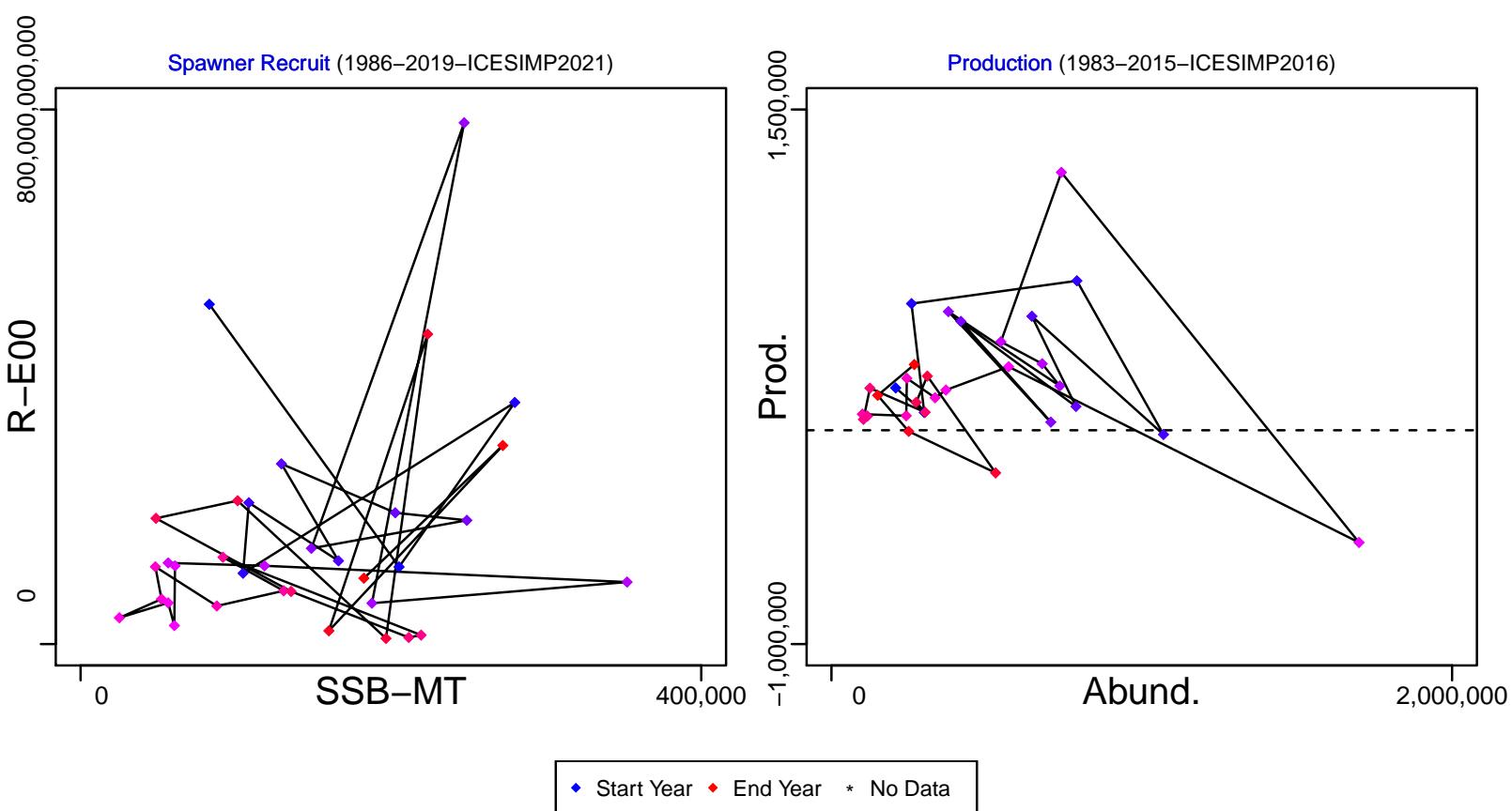


### Sand eel Sandeel Area 3 [SEELNSSA3]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Ammodytes spp  |
| <b>Current Assess ID</b>    | HAWG-SEELNSSA3-1986-2019-ICESIMP2021                       |
| <b>Area</b>                 | Sandeel Area 3   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea       |
| <b>Assessor</b>             | Herring Assessment Working Group for the Area South of 62N |
| <b>Asmts in RAM</b>         | 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2011             |

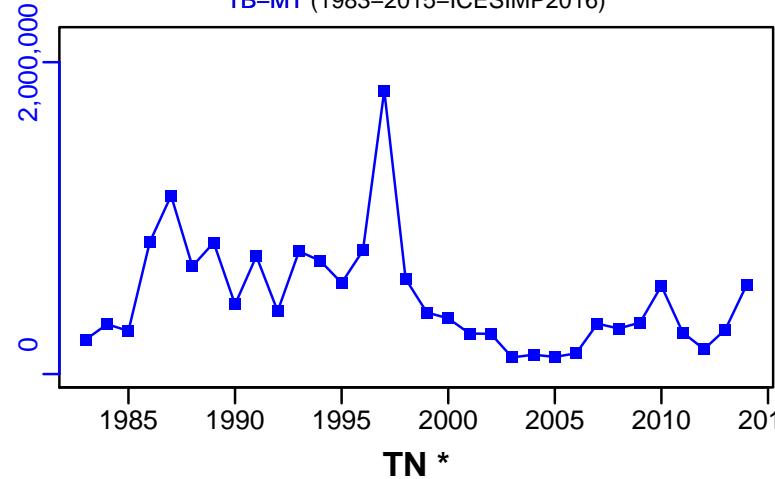
| Reference Points |           |           |                 |
|------------------|-----------|-----------|-----------------|
| Type             | ID        | Asmt Year | Value           |
| <b>TBmsy</b>     | -         | -         | -               |
| <b>SSBmsy</b>    | -         | -         | -               |
| <b>Fmsy</b>      | -         | -         | -               |
| <b>ERmsy</b>     | -         | -         | -               |
| <b>TBmgt</b>     | -         | -         | -               |
| <b>SSBmgt</b>    | SSBmgt-MT | 2018      | 129,000         |
| <b>Fmgt</b>      | -         | -         | -               |
| <b>ERmgt</b>     | -         | -         | -               |
| <b>TB0</b>       | -         | -         | -               |
| <b>SSB0</b>      | -         | -         | -               |
| <b>MSY</b>       | -         | -         | -               |
| <b>M</b>         | -         | -         | -               |
| <b>TBlim</b>     | TBlim-MT  | 2011      | $1 \times 10^5$ |
| <b>SSBlim</b>    | SSBlim-MT | 2018      | 80,000          |
| <b>Flim</b>      | -         | -         | -               |
| <b>ERlim</b>     | -         | -         | -               |

| Time Series       |                  |           |                |      |        |
|-------------------|------------------|-----------|----------------|------|--------|
| Type              | ID               | Asmt Year | Curr Value     | Sex  | Age    |
| <b>TB</b>         | TB-MT            | 2015      | 535,000        | Both | -      |
| <b>SSB</b>        | SSB-MT           | 2019      | 182,590        | -    | -      |
| <b>TN</b>         | -                | -         | -              | -    | -      |
| <b>R</b>          | R-E00            | 2019      | 98,516,876,000 | -    | 0      |
| <b>F</b>          | F-1/yr           | 2019      | 0.342          | -    | 1 to 2 |
| <b>ER</b>         | ER-calc-ratio    | 2015      | 0.269          | -    | -      |
| <b>TC</b>         | TC-MT            | 2019      | 74,933         |      |        |
| <b>TL</b>         | TL-MT            | 2019      | 74,933         |      |        |
| <b>TB/TBmsy</b>   | -                | -         | -              |      |        |
| <b>SSB/SSBmsy</b> | -                | -         | -              |      |        |
| <b>F/Fmsy</b>     | -                | -         | -              |      |        |
| <b>ER/ERmsy</b>   | -                | -         | -              |      |        |
| <b>TB/TBmgt</b>   | -                | -         | -              |      |        |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2018      | 2.636          |      |        |
| <b>F/Fmgt</b>     | -                | -         | -              |      |        |
| <b>ER/ERmgt</b>   | -                | -         | -              |      |        |

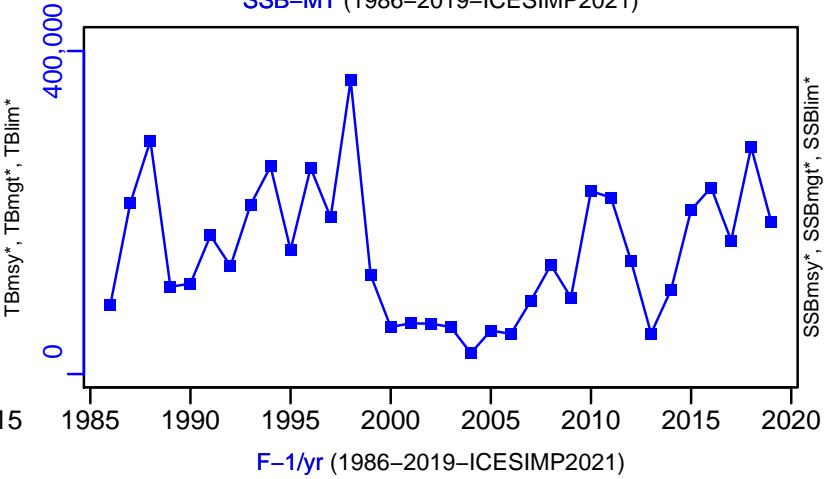
**Kobe MSY\*****Kobe MGT\***

### Sand eel Sandeel Area 3 [SEELNSSA3]

TB-MT (1983–2015–ICESIMP2016)

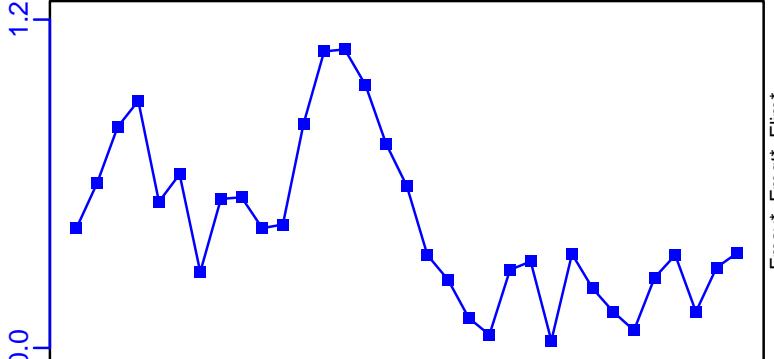


SSB-MT (1986–2019–ICESIMP2021)

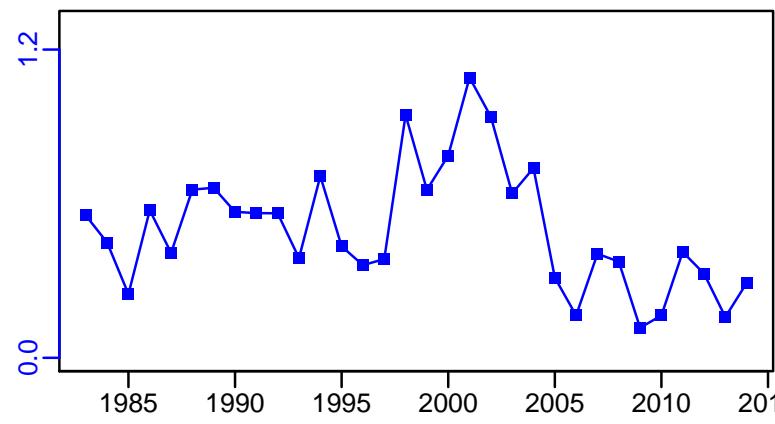


TN \*

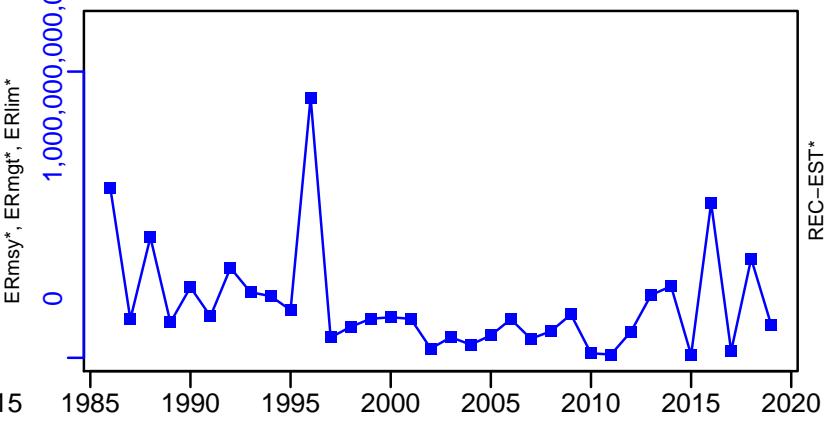
F-1/yr (1986–2019–ICESIMP2021)



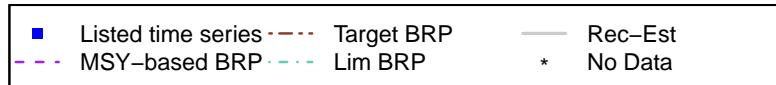
ER-calc-ratio (1983–2015–ICESIMP2016)



R-E00 (1986–2019–ICESIMP2021)



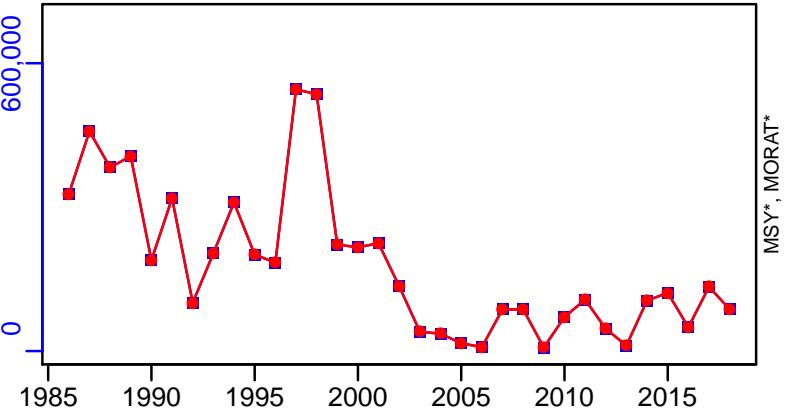
REC-EST\*



Sand eel Sandeel Area 3 [SEELNSSA3]

TC-MT, TL-MT, RecC\* (1986–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



survB\*

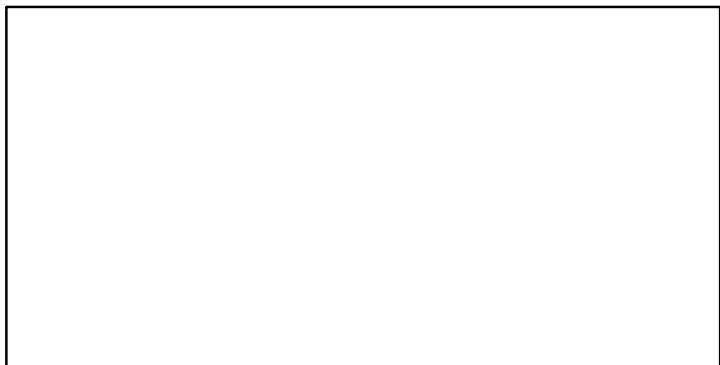
MSY\*, MORAT\*



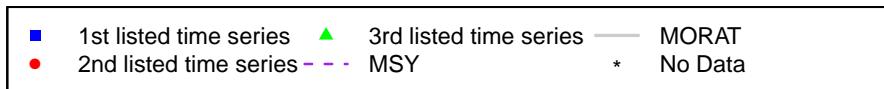
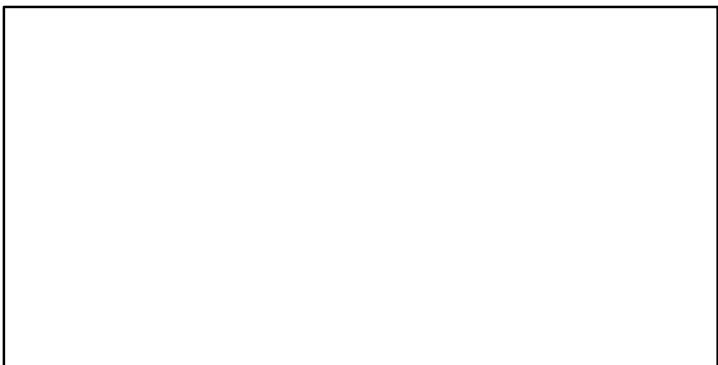
CPUE\*



EFFORT\*



CdivMSY\*

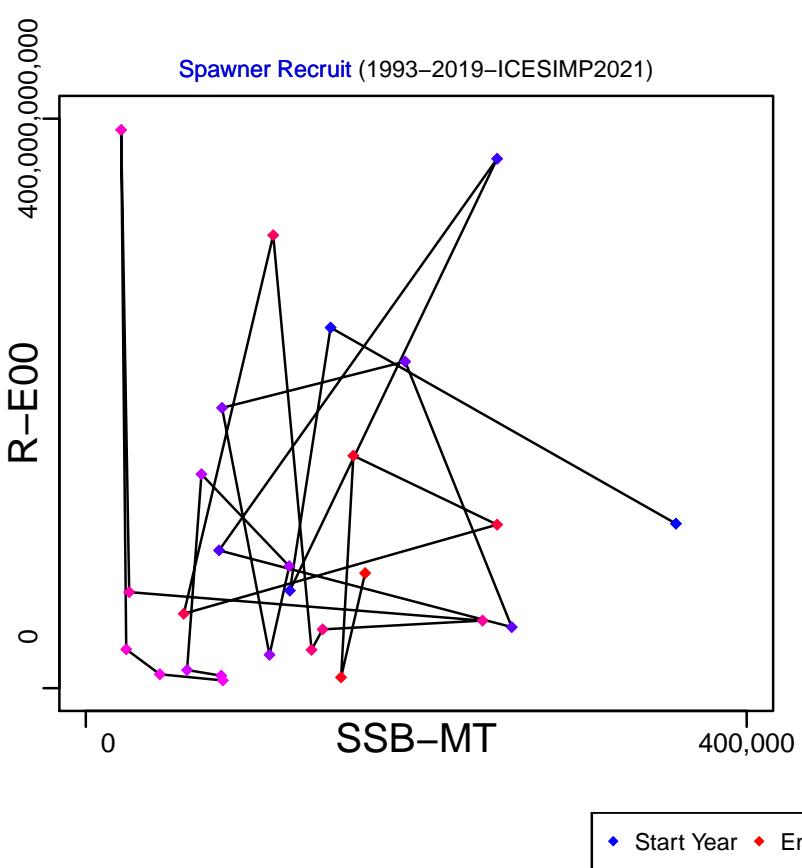


## Sand eel Sandeel Area 4 [SEELNSSA4]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Ammodytes spp  |
| <b>Current Assess ID</b>    | HAWG-SEELNSSA4-1993-2019-ICESIMP2021                       |
| <b>Area</b>                 | Sandeel Area 4   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea       |
| <b>Assessor</b>             | Herring Assessment Working Group for the Area South of 62N |
| <b>Asmts in RAM</b>         | 2015, 2017, 2018, 2019                                     |

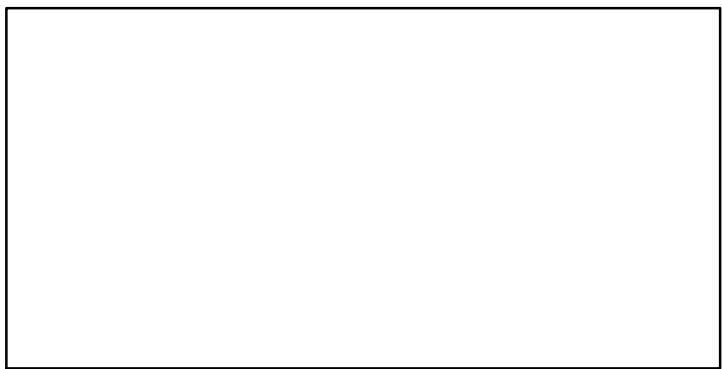
| Reference Points |           |           |         |
|------------------|-----------|-----------|---------|
| Type             | ID        | Asmt Year | Value   |
| <b>TBmsy</b>     | -         | -         | -       |
| <b>SSBmsy</b>    | -         | -         | -       |
| <b>Fmsy</b>      | -         | -         | -       |
| <b>ERmsy</b>     | -         | -         | -       |
| <b>TBmgt</b>     | -         | -         | -       |
| <b>SSBmgt</b>    | SSBmgt-MT | 2018      | 102,000 |
| <b>Fmgt</b>      | -         | -         | -       |
| <b>ERmgt</b>     | -         | -         | -       |
| <b>TB0</b>       | -         | -         | -       |
| <b>SSB0</b>      | -         | -         | -       |
| <b>MSY</b>       | -         | -         | -       |
| <b>M</b>         | -         | -         | -       |
| <b>TBlim</b>     | -         | -         | -       |
| <b>SSBlim</b>    | SSBlim-MT | 2018      | 48,000  |
| <b>Flim</b>      | -         | -         | -       |
| <b>ERlim</b>     | -         | -         | -       |

| Time Series       |                  |           |                |     |        |  |
|-------------------|------------------|-----------|----------------|-----|--------|--|
| Type              | ID               | Asmt Year | Curr Value     | Sex | Age    |  |
| <b>TB</b>         | -                | -         | -              | -   | -      |  |
| <b>SSB</b>        | SSB-MT           | 2019      | 169,058        | -   | -      |  |
| <b>TN</b>         | -                | -         | -              | -   | -      |  |
| <b>R</b>          | R-E00            | 2019      | 80,801,275,000 | -   | 0      |  |
| <b>F</b>          | F-1/yr           | 2019      | 0.152          | -   | 1 to 2 |  |
| <b>ER</b>         | -                | -         | -              | -   | -      |  |
| <b>TC</b>         | TC-MT            | 2019      | 42,526         |     |        |  |
| <b>TL</b>         | TL-MT            | 2019      | 42,526         |     |        |  |
| <b>TB/TBmsy</b>   | -                | -         | -              |     |        |  |
| <b>SSB/SSBmsy</b> | -                | -         | -              |     |        |  |
| <b>F/Fmsy</b>     | -                | -         | -              |     |        |  |
| <b>ER/ERmsy</b>   | -                | -         | -              |     |        |  |
| <b>TB/TBmgt</b>   | -                | -         | -              |     |        |  |
| <b>SSB/SSBmgt</b> | SSB-MT/SSBmgt-MT | 2018      | 1.912          |     |        |  |
| <b>F/Fmgt</b>     | -                | -         | -              |     |        |  |
| <b>ER/ERmgt</b>   | -                | -         | -              |     |        |  |

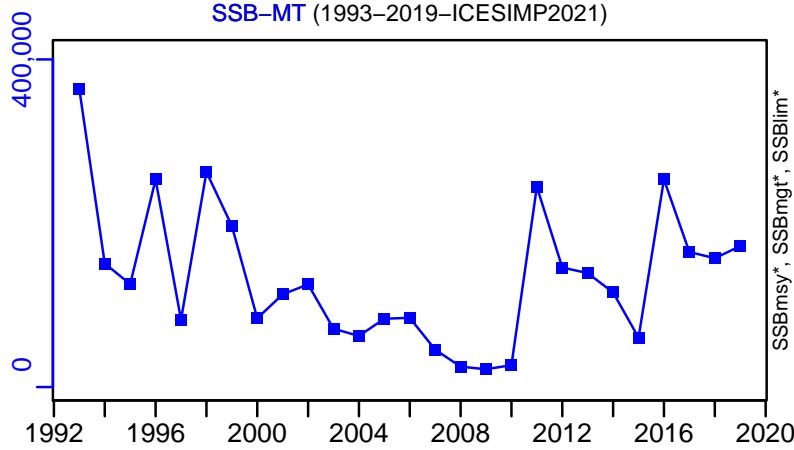
**Kobe MSY\*****Kobe MGT\***

Sand eel Sandeel Area 4 [SEELNSSA4]

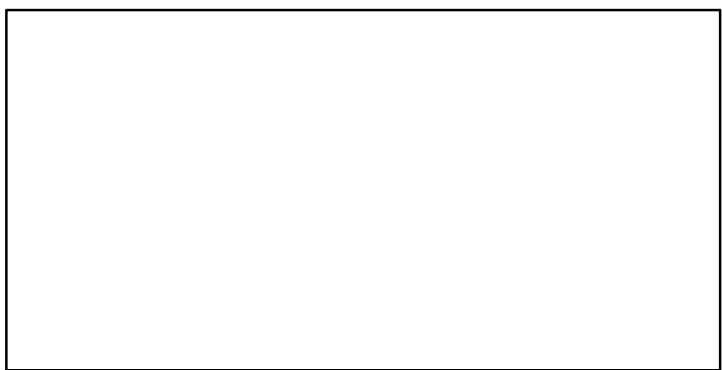
**TB\***



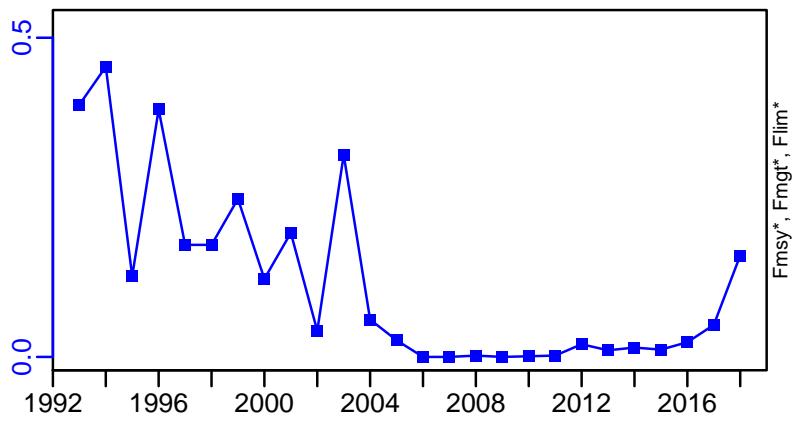
SSB-MT (1993–2019–ICESIMP2021)



**TN \***



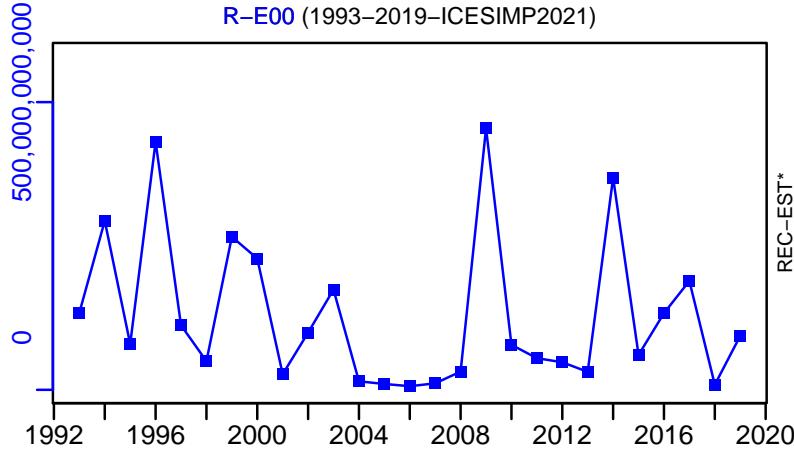
F-1/yr (1993–2019–ICESIMP2021)



**ER\***



R-E00 (1993–2019–ICESIMP2021)

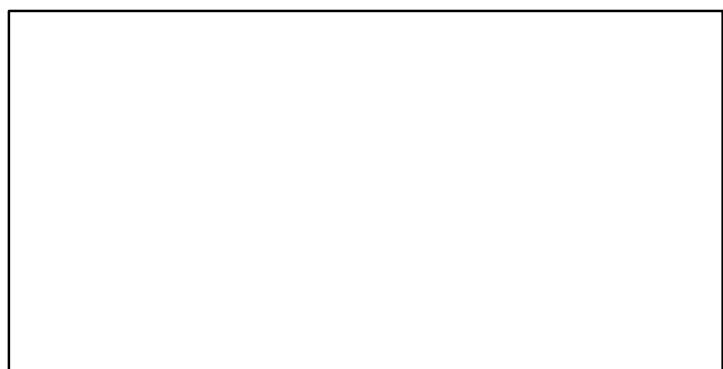
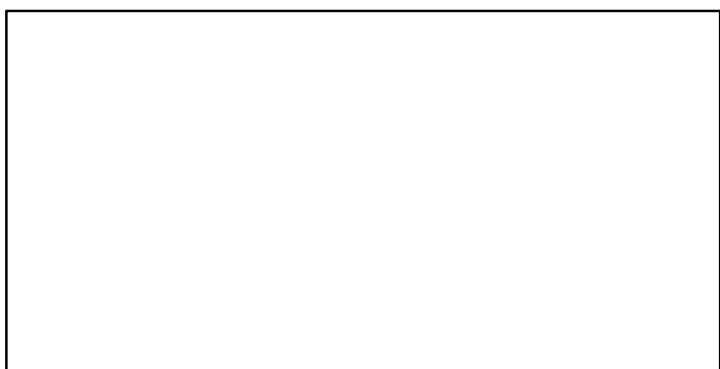
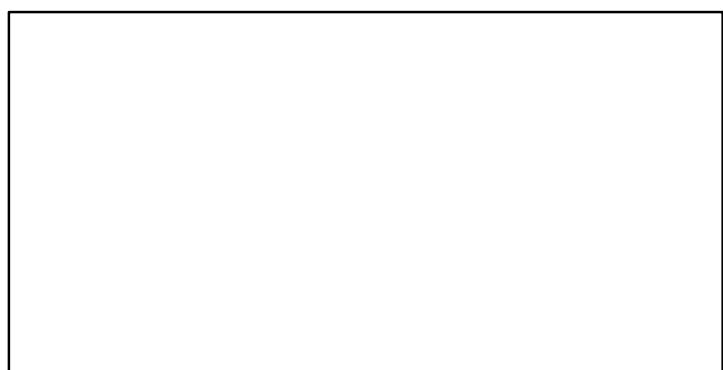
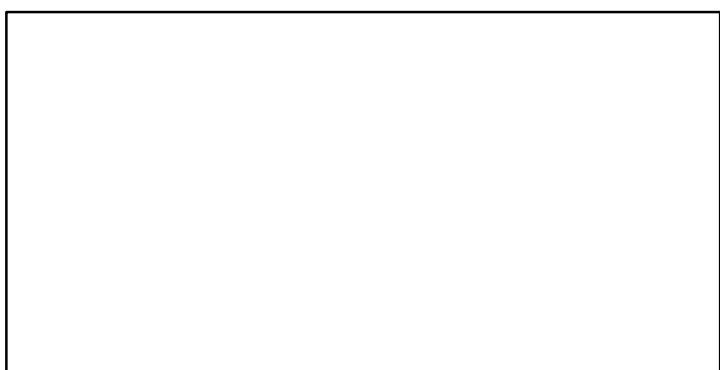
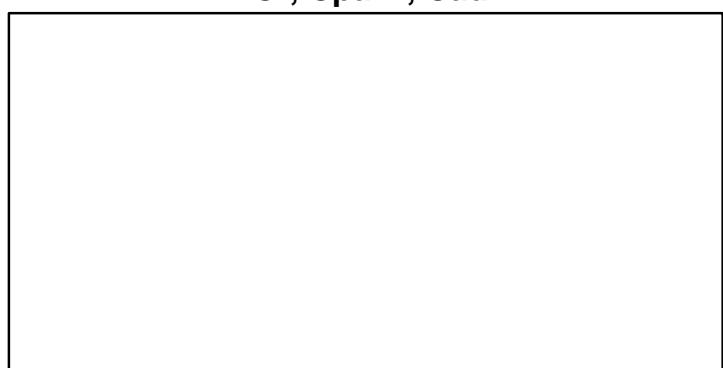
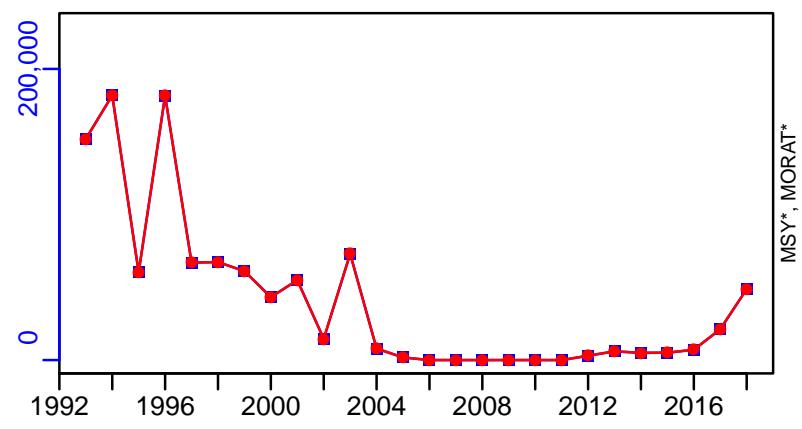


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | ·· Lim BRP   | * No Data |

Sand eel Sandeel Area 4 [SEELNSSA4]

TC-MT, TL-MT, RecC\* (1993–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



|                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

## Sand eel Sandeel Area 5 [SEELNSSA5]

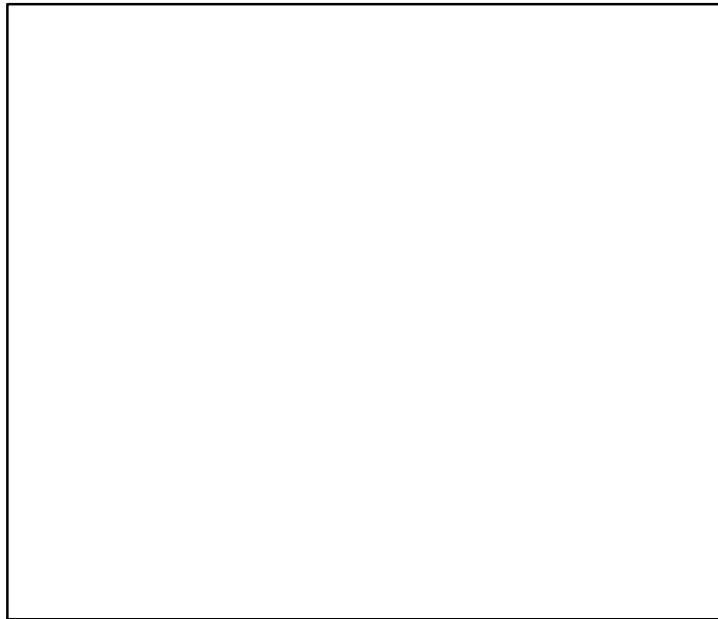
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Ammodytes spp  |
| <b>Current Assess ID</b>    | HAWG-SEELNSSA5-1982-2018-ICESIMP2021                       |
| <b>Area</b>                 | Sandeel Area 5   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea       |
| <b>Assessor</b>             | Herring Assessment Working Group for the Area South of 62N |
| <b>Asmts in RAM</b>         | 2016, 2018, 2015, 2015                                     |

| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

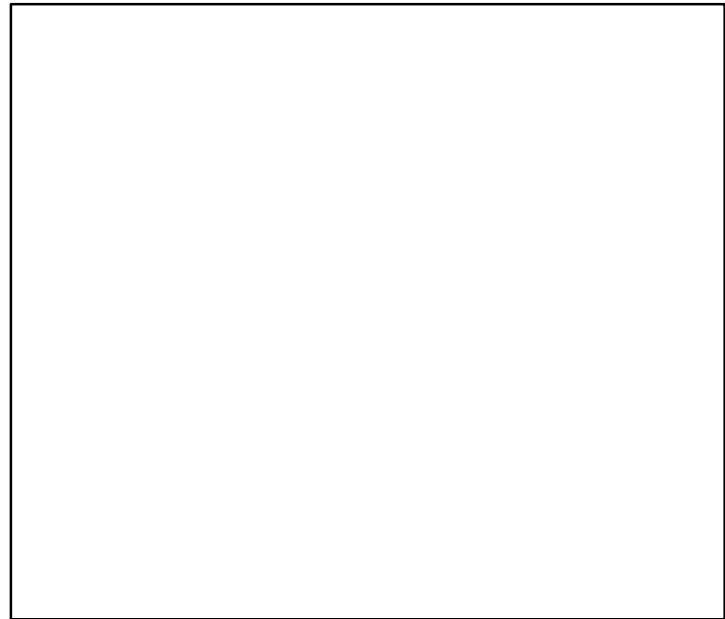
| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | TC-MT | 2018      | 0          |     |     |
| <b>TL</b>         | TL-MT | 2015      | 0          |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

Sand eel Sandeel Area 5 [SEELNSSA5]

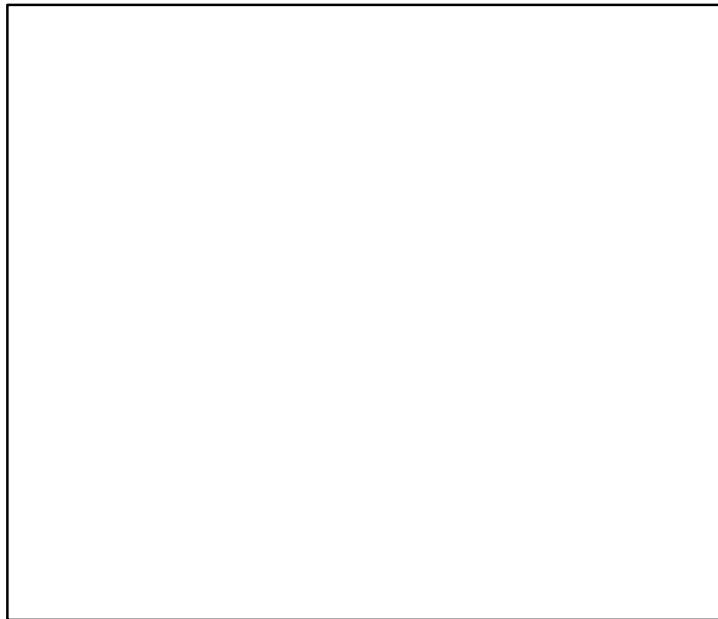
**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



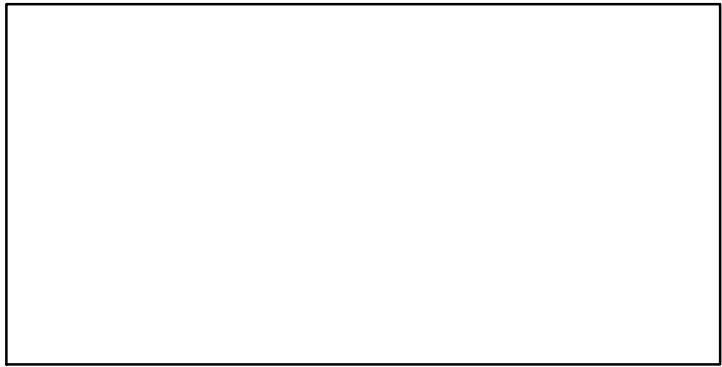
**Production\***



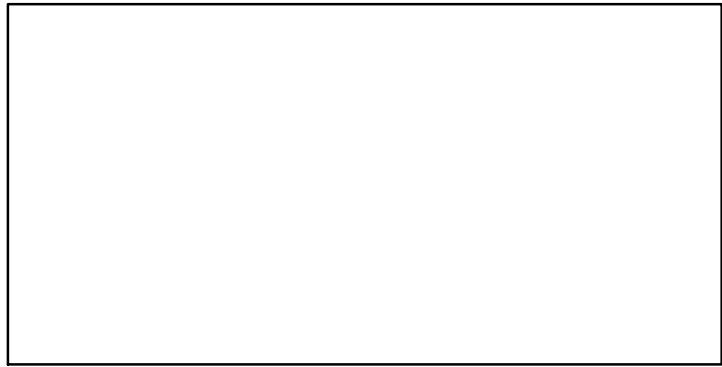
◆ Start Year ♦ End Year \* No Data

Sand eel Sandeel Area 5 [SEELNSSA5]

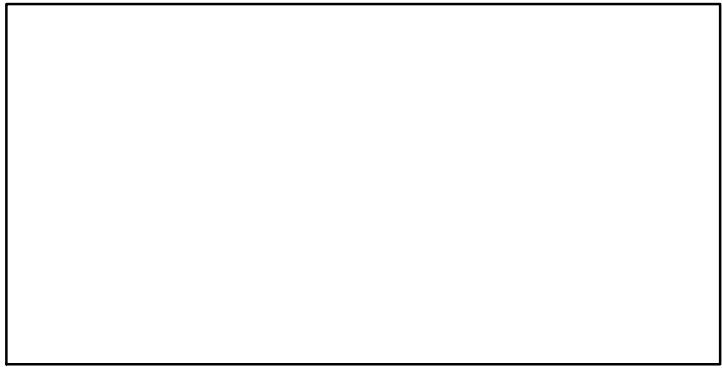
**TB\***



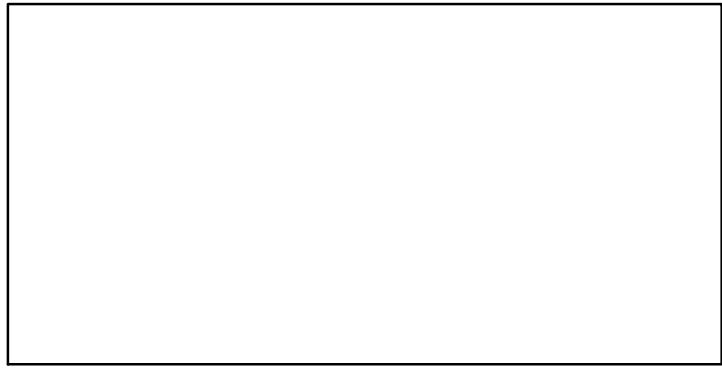
**SSB\***



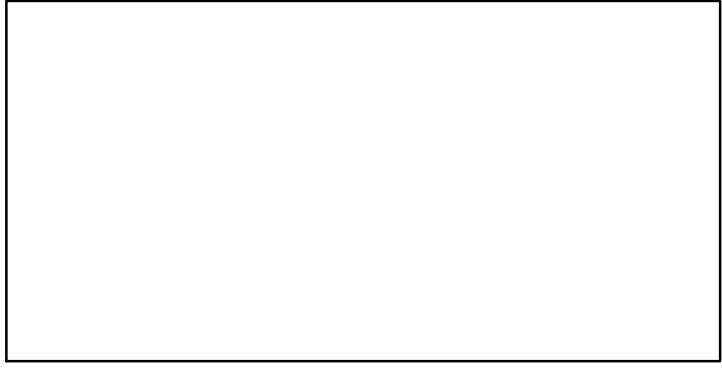
**TN \***



**F\***



**ER\***



**Recruits\***

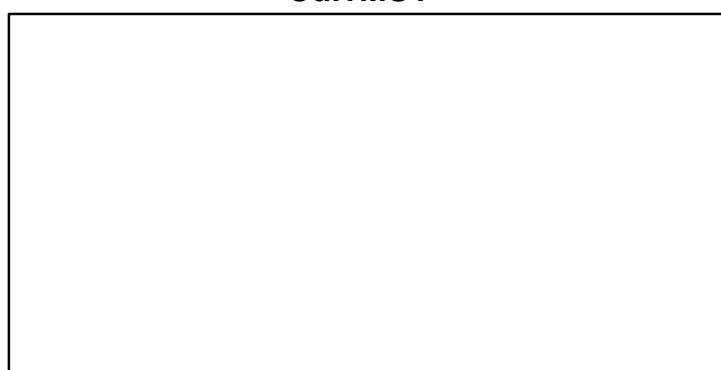
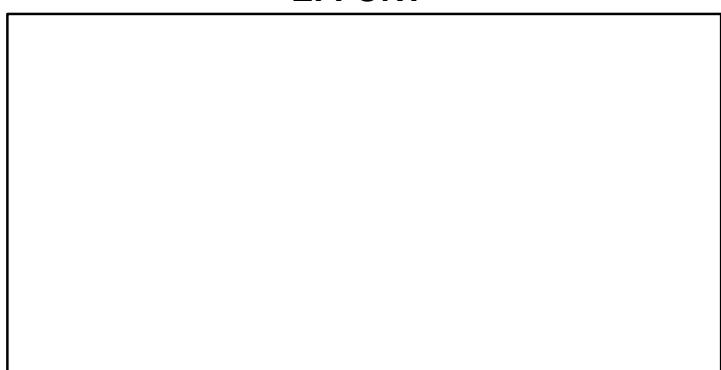
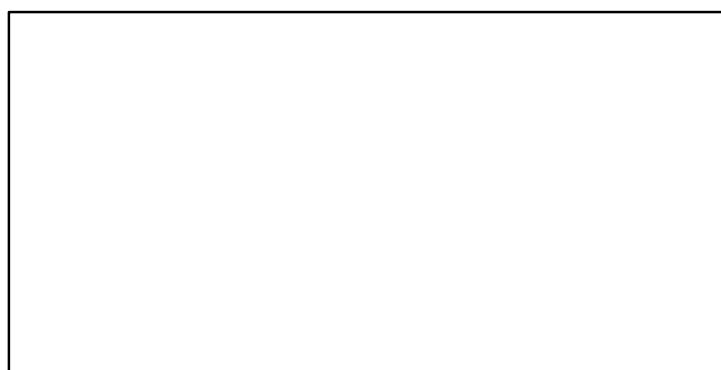
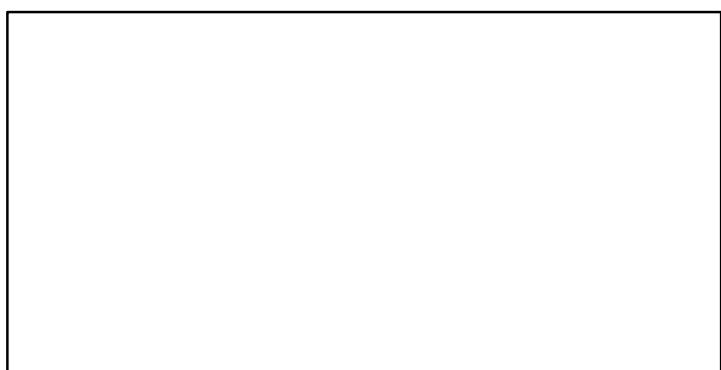
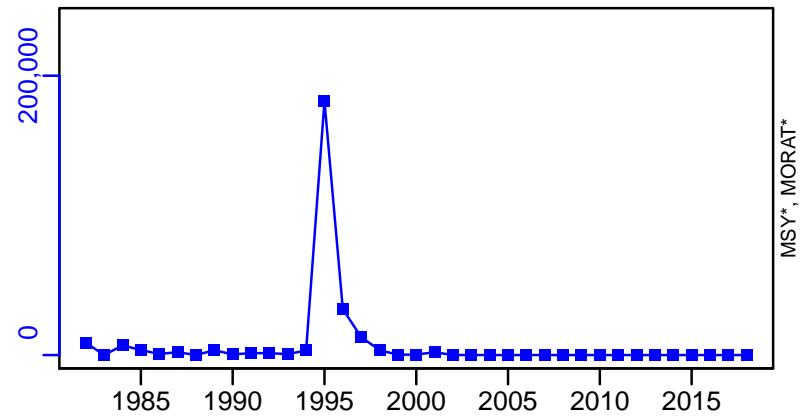


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Sand eel Sandeel Area 5 [SEELNSSA5]

TC-MT, TL\*, RecC\* (1982–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Sand eel Sandeel Area 6 [SEELNSSA6]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Ammodytes spp  |
| <b>Current Assess ID</b>    | HAWG-SEELNSSA6-1983-2018-ICESIMP2021                       |
| <b>Area</b>                 | Sandeel Area 6   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea       |
| <b>Assessor</b>             | Herring Assessment Working Group for the Area South of 62N |
| <b>Asmts in RAM</b>         | 2015, 2015, 2016, 2018                                     |

| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | TC-MT | 2018      | 0          |     |     |
| <b>TL</b>         | TL-MT | 2016      | 123        |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

**Spawner Recruit\***

**Production\***

◆ Start Year ♦ End Year \* No Data

Sand eel Sandeel Area 6 [SEELNSSA6]

**TB\***



**SSB\***



**TN \***



**F\***



**ER\***



**Recruits\***

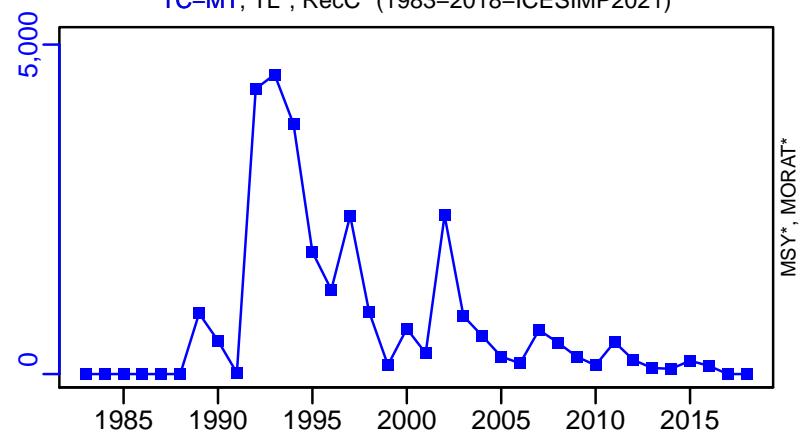


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Sand eel Sandeel Area 6 [SEELNSSA6]

TC-MT, TL\*, RecC\* (1983–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



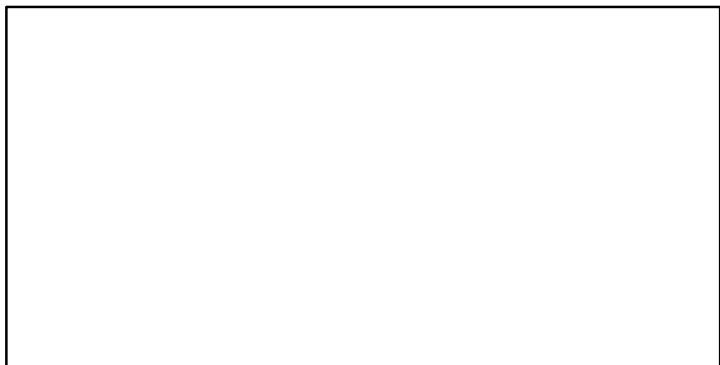
survB\*



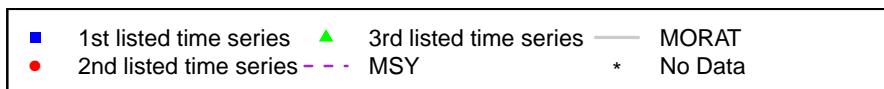
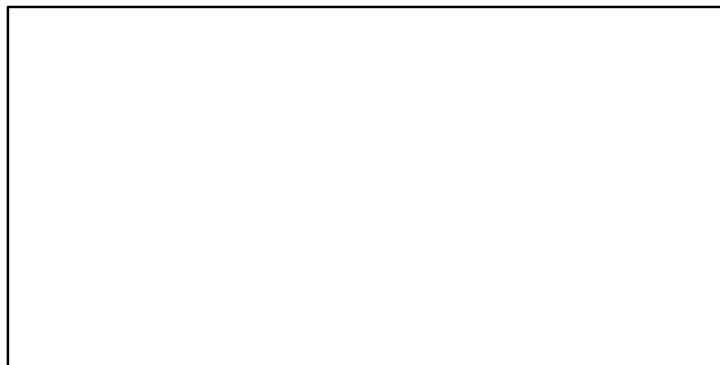
CPUE\*



EFFORT\*



CdivMSY\*



## Sand eel Sandeel Area 7 [SEELNSSA7]

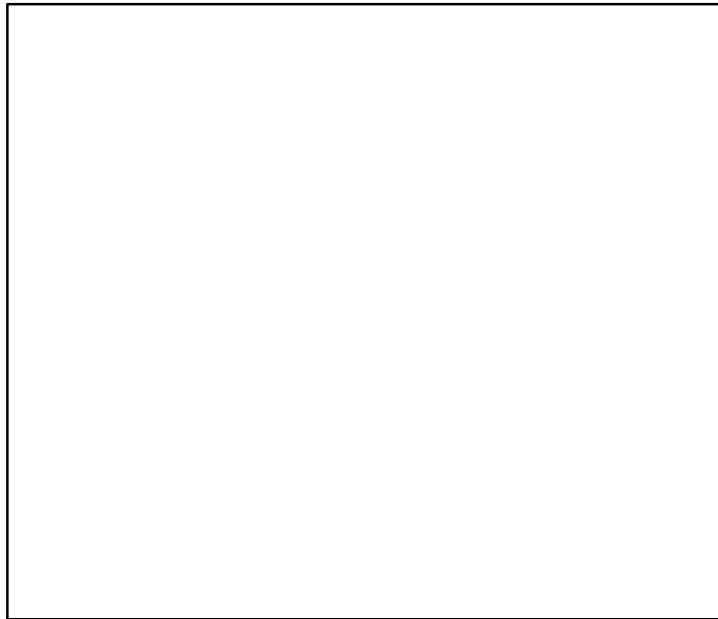
| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Ammodytes spp  |
| <b>Current Assess ID</b>    | HAWG-SEELNSSA7-1983-2018-ICESIMP2021                       |
| <b>Area</b>                 | Sandeel Area 7   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea       |
| <b>Assessor</b>             | Herring Assessment Working Group for the Area South of 62N |
| <b>Asmts in RAM</b>         | 2015, 2015, 2016, 2018                                     |

| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

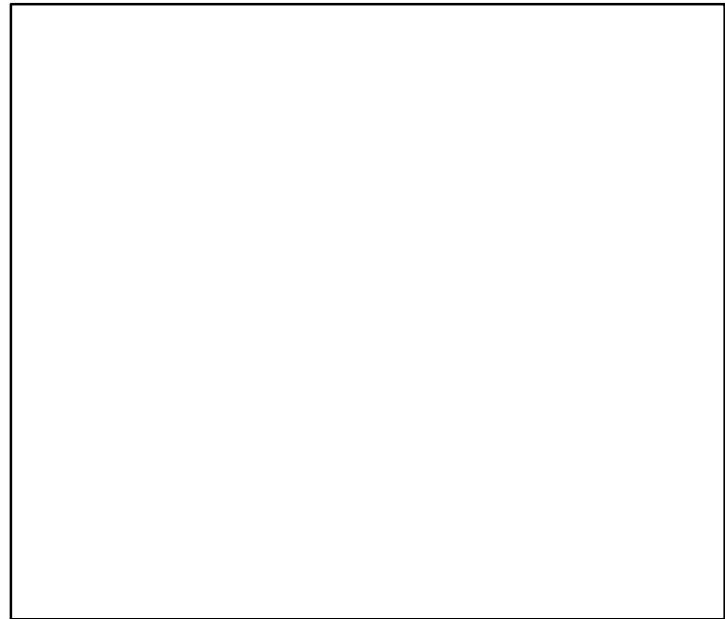
| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | TC-MT | 2018      | 0          |     |     |
| <b>TL</b>         | TL-MT | 2015      | 0          |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

Sand eel Sandeel Area 7 [SEELNSSA7]

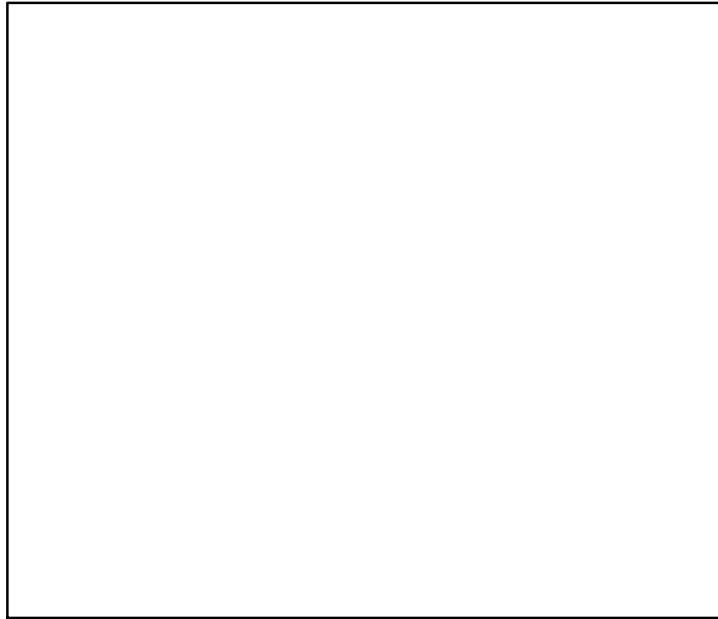
**Kobe MSY\***



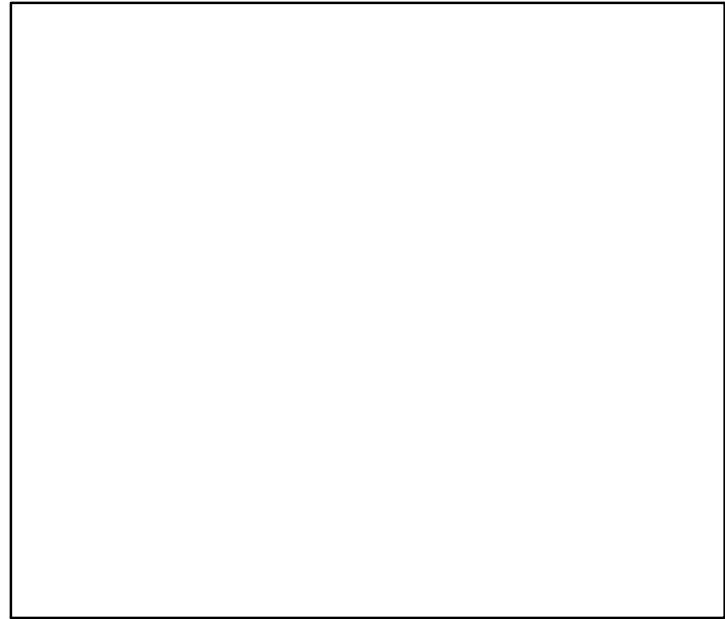
**Kobe MGT\***



**Spawner Recruit\***



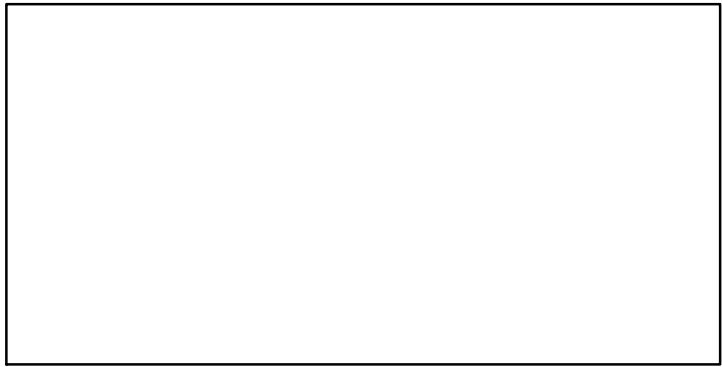
**Production\***



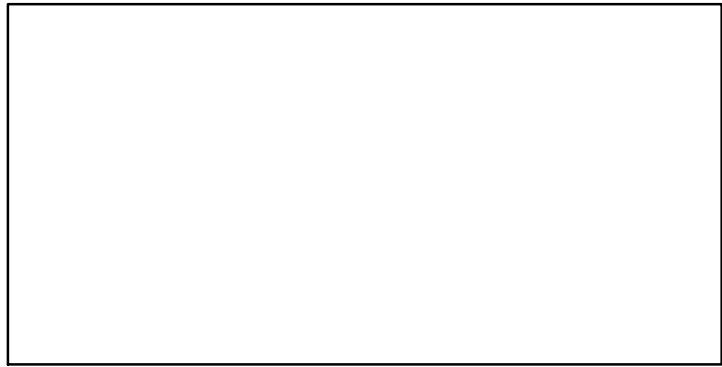
◆ Start Year ♦ End Year \* No Data

Sand eel Sandeel Area 7 [SEELNSSA7]

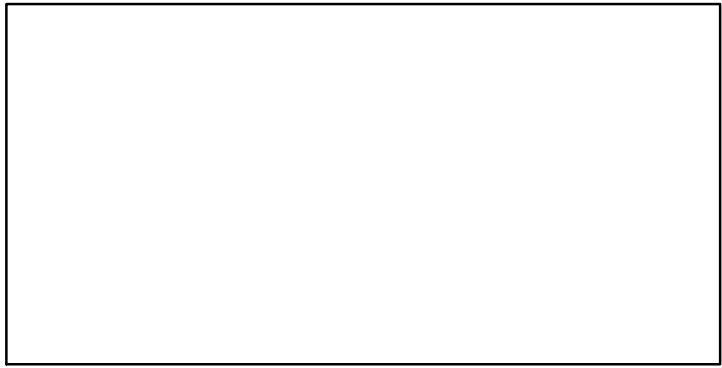
**TB\***



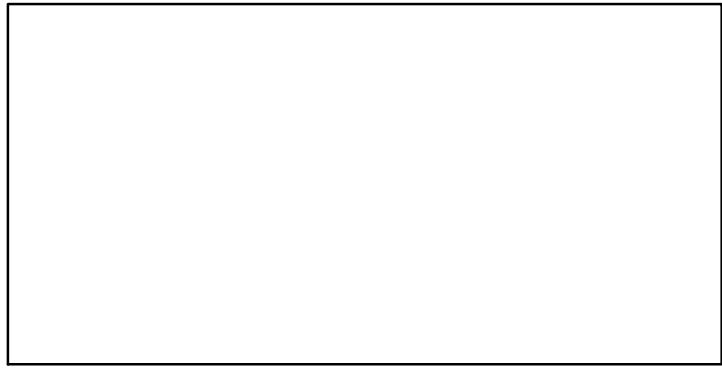
**SSB\***



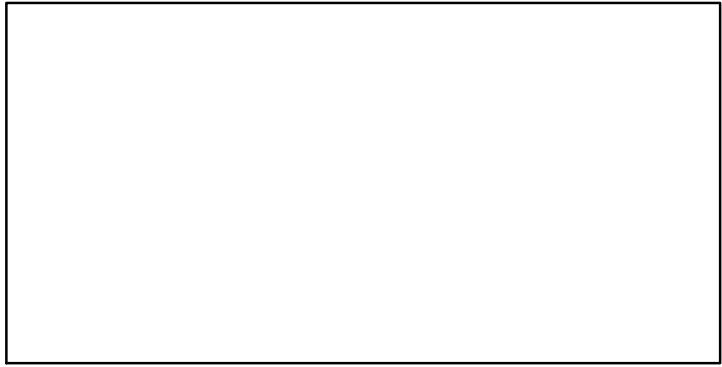
**TN \***



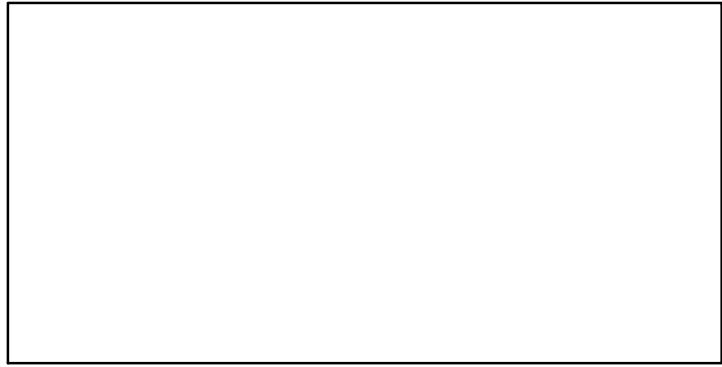
**F\***



**ER\***



**Recruits\***

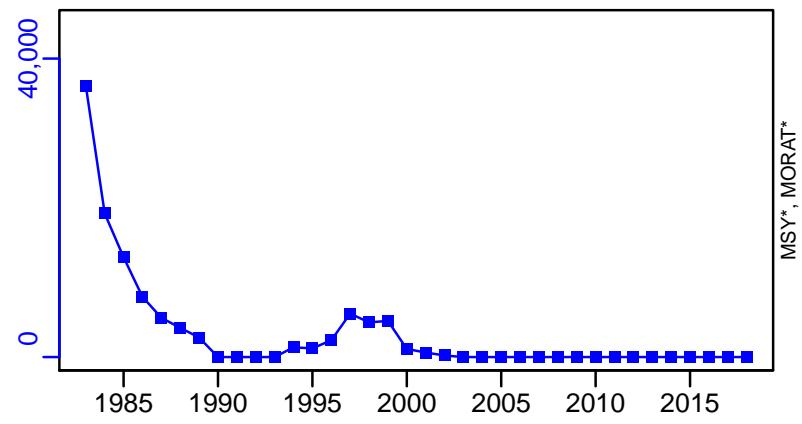


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Sand eel Sandeel Area 7 [SEELNSSA7]

TC-MT, TL\*, RecC\* (1983–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



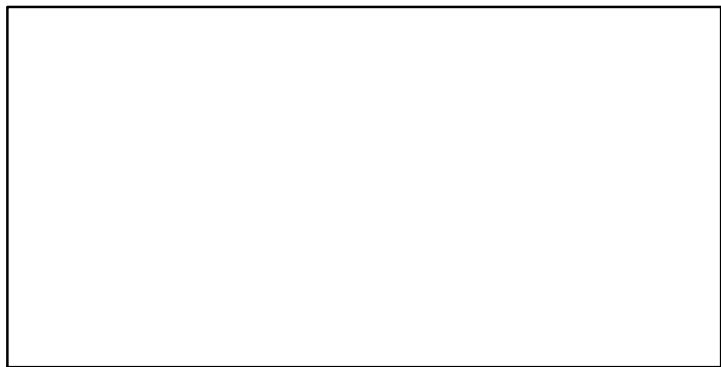
survB\*



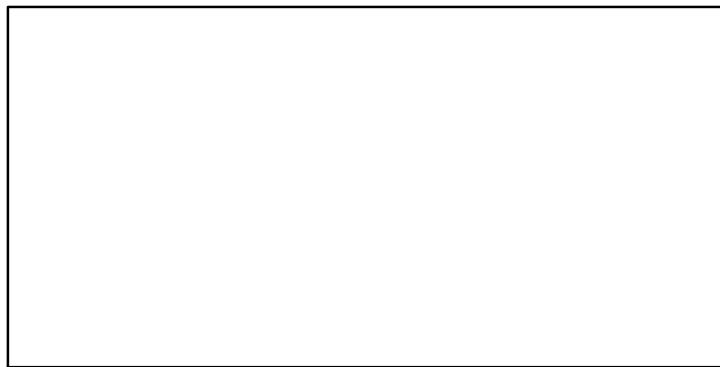
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Sand eel West of Scotland [SEELVla]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Ammodytes spp  |
| <b>Current Assess ID</b>    | HAWG-SEELVla-1970-2017-ICESIMP2021                         |
| <b>Area</b>                 | West of Scotland   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea       |
| <b>Assessor</b>             | Herring Assessment Working Group for the Area South of 62N |
| <b>Asmts in RAM</b>         | 2015, 2017   |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | -         | -                | -            |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | -         | -                | -            |
| <b>Fmgt</b>             | -         | -                | -            |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | -         | -                | -            |
| <b>Flim</b>             | -         | -                | -            |
| <b>ERlim</b>            | -         | -                | -            |

| <b>Time Series</b> |           |                  |                   |            |            |
|--------------------|-----------|------------------|-------------------|------------|------------|
| <b>Type</b>        | <b>ID</b> | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |
| <b>TB</b>          | -         | -                | -                 | -          | -          |
| <b>SSB</b>         | -         | -                | -                 | -          | -          |
| <b>TN</b>          | -         | -                | -                 | -          | -          |
| <b>R</b>           | -         | -                | -                 | -          | -          |
| <b>F</b>           | -         | -                | -                 | -          | -          |
| <b>ER</b>          | -         | -                | -                 | -          | -          |
| <b>TC</b>          | -         | -                | -                 |            |            |
| <b>TL</b>          | TL-MT     | 2017             | 0                 |            |            |
| <b>TB/TBmsy</b>    | -         | -                | -                 |            |            |
| <b>SSB/SSBmsy</b>  | -         | -                | -                 |            |            |
| <b>F/Fmsy</b>      | -         | -                | -                 |            |            |
| <b>ER/ERmsy</b>    | -         | -                | -                 |            |            |
| <b>TB/TBmgt</b>    | -         | -                | -                 |            |            |
| <b>SSB/SSBmgt</b>  | -         | -                | -                 |            |            |
| <b>F/Fmgt</b>      | -         | -                | -                 |            |            |
| <b>ER/ERmgt</b>    | -         | -                | -                 |            |            |

**Kobe MSY\***

**Kobe MGT\***

**Spawner Recruit\***

**Production\***

◆ Start Year ♦ End Year \* No Data

**Sand eel West of Scotland [SEELVla]**

**TB\***



**SSB\***



**TN \***



**F\***



**ER\***



**Recruits\***

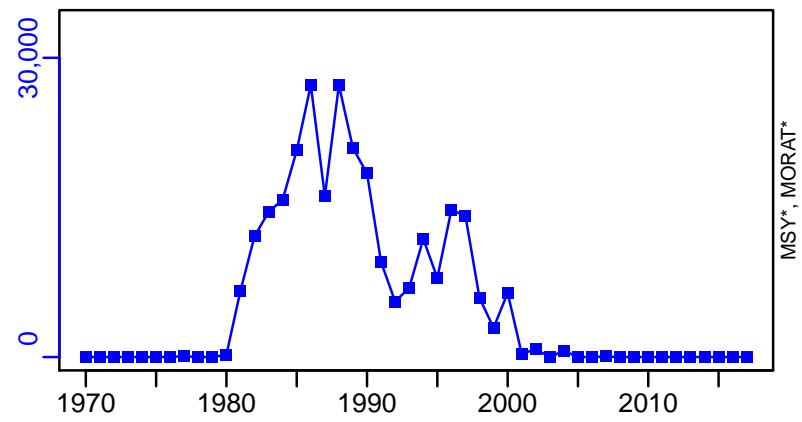


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

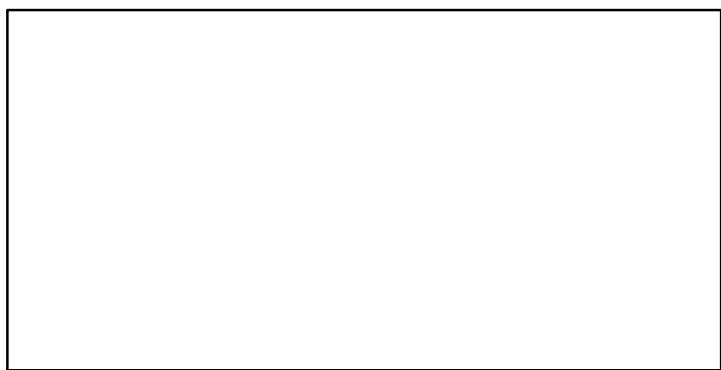
Sand eel West of Scotland [SEELVla]

TL-MT, TC\*, RecC\* (1970–2017–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



survB\*



CPUE\*

EFFORT\*



CdivMSY\*

■ 1st listed time series    ▲ 3rd listed time series    — MORAT  
● 2nd listed time series    - - - MSY                         \* No Data

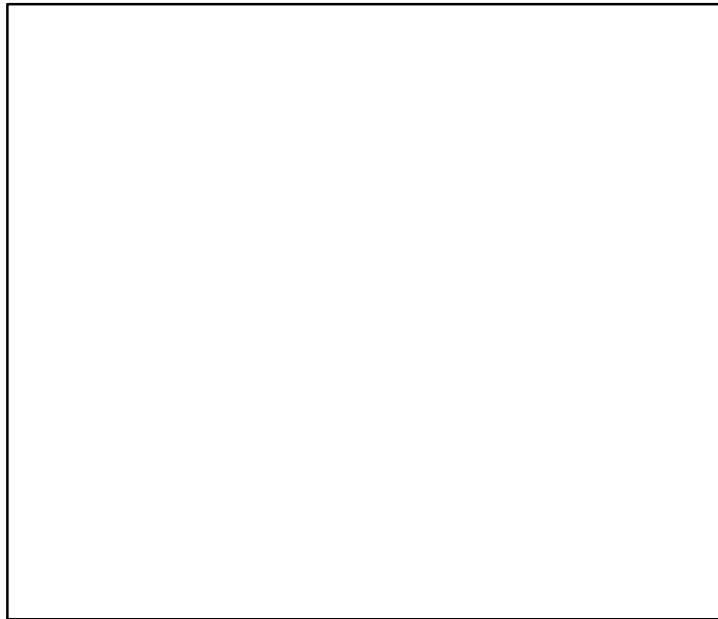
## Smalleyed ray ICES 7de [SERAYVIIde]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Raja microcellata                                    |
| <b>Current Assess ID</b>    | WGEF-SERAYVIIde-2009-2015-ICESIMP2018                |
| <b>Area</b>                 | ICES 7de   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2015   |

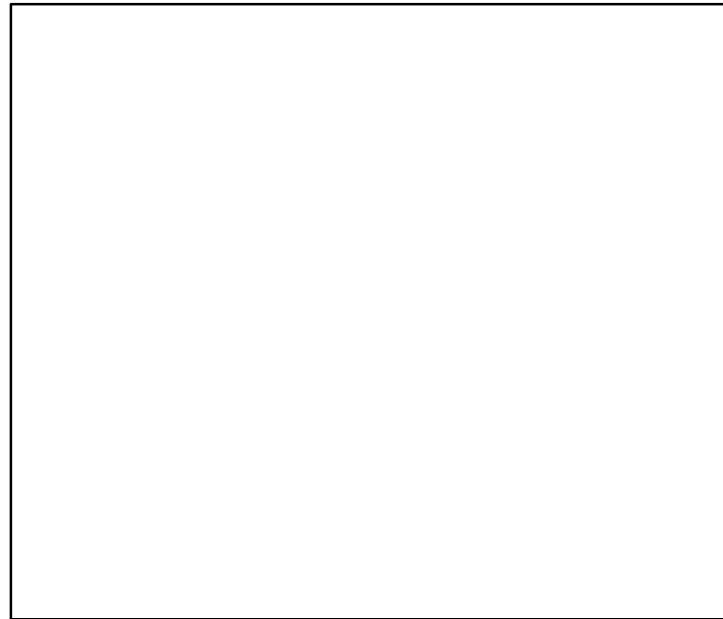
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | -     | -         | -          |     |     |
| <b>TL</b>          | TL-MT | 2015      | 56         |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

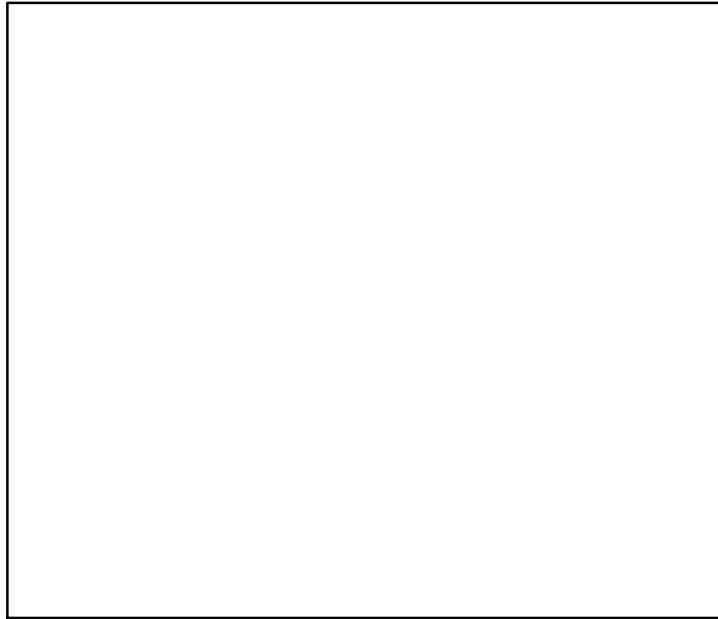
**Kobe MSY\***



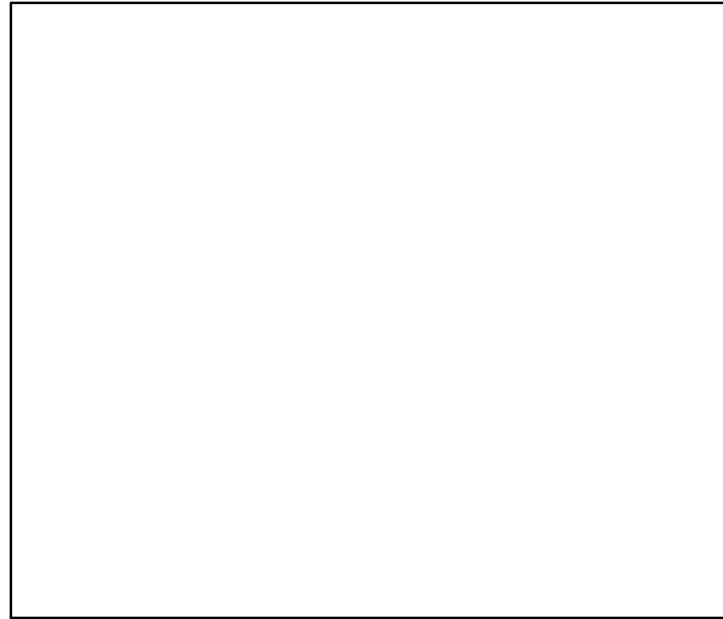
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

**TB\***



**SSB\***



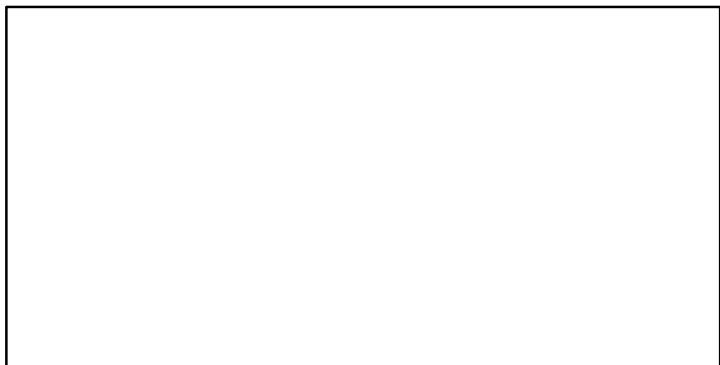
**TN \***



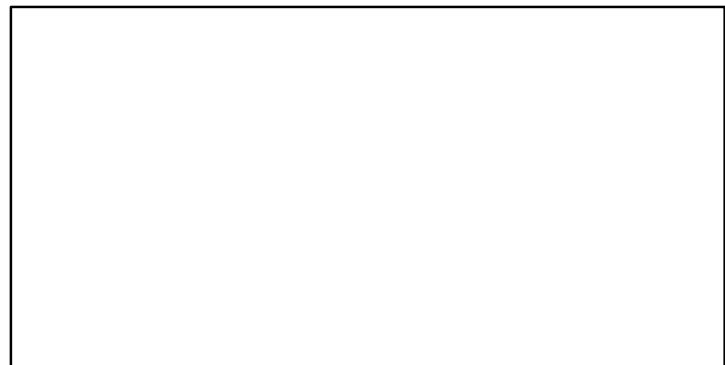
**F\***



**ER\***



**Recruits\***

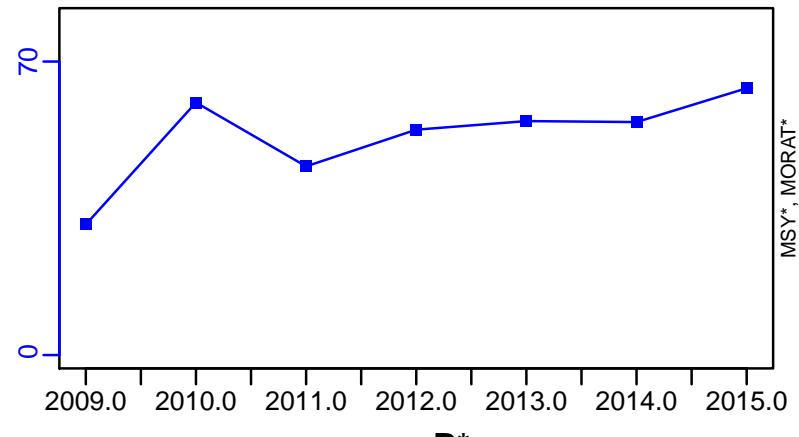


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Smalleyed ray ICES 7de [SERAYVIIde]

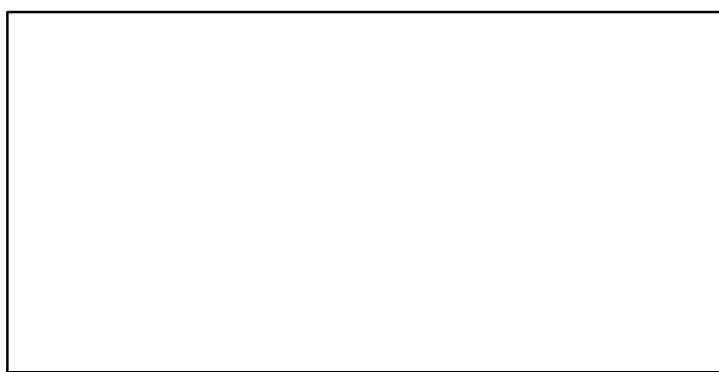
TL-MT, TC\*, RecC\* (2009–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*

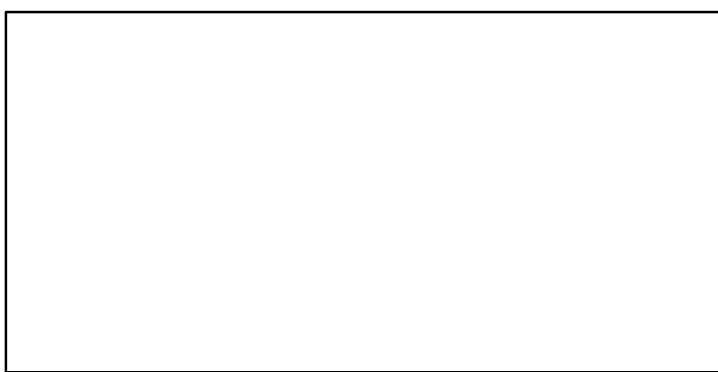


survB\*

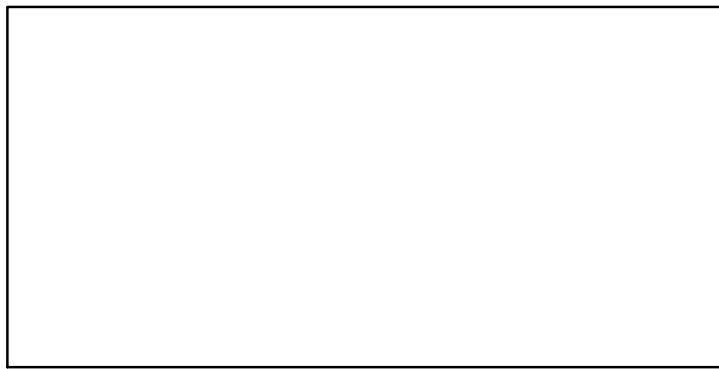
MSY\*, MORAT\*



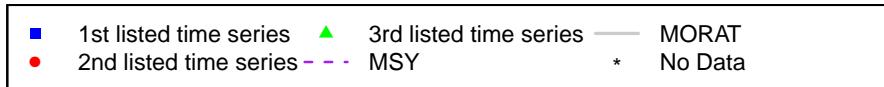
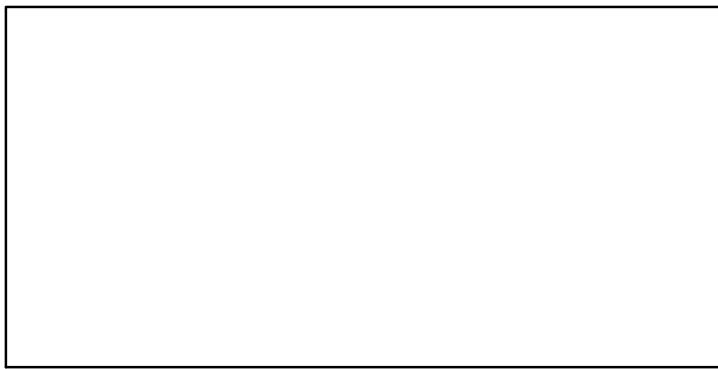
CPUE\*



EFFORT\*



CdivMSY\*



## Smalleyed ray Celtic Sea [SERAYVIIIf-g]

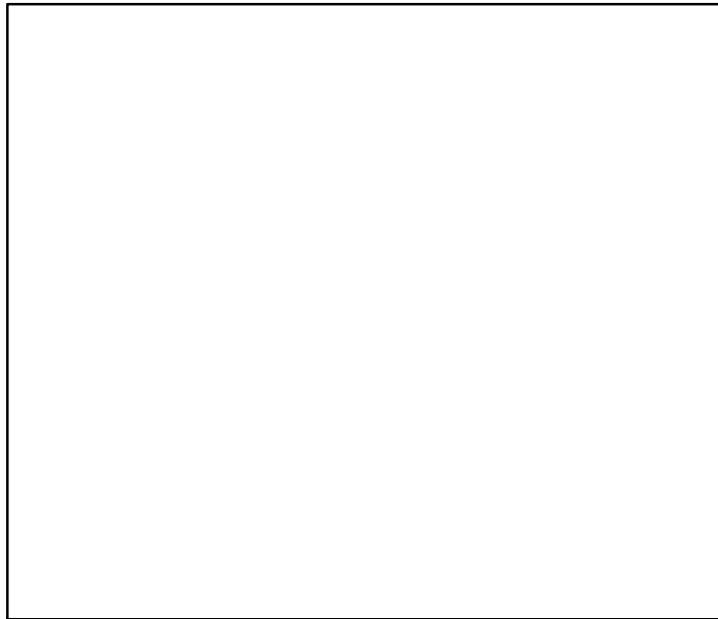
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Raja microcellata                                    |
| <b>Current Assess ID</b>    | WGEF-SERAYVIIIf-g-1993-2015-ICESIMP2018              |
| <b>Area</b>                 | Celtic Sea   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2015   |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

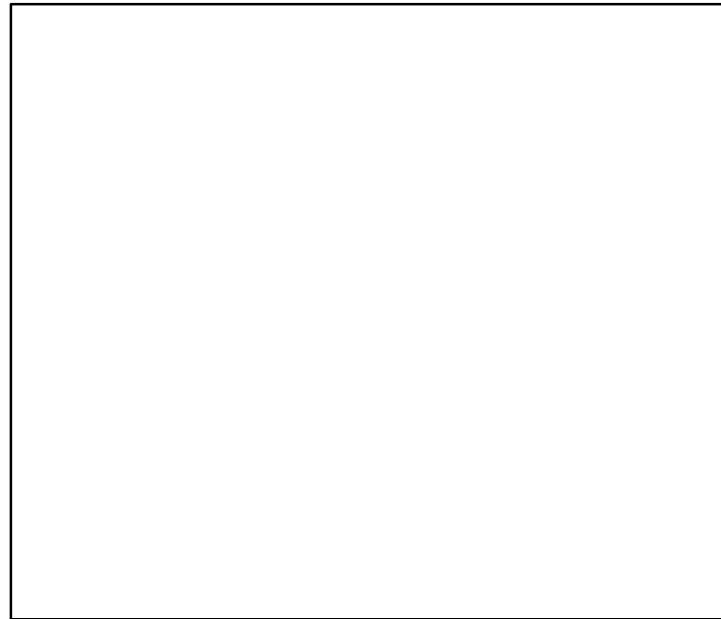
| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2015      | 2.03       | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | -         | -         | -          |      |     |
| <b>TL</b>          | TL-MT     | 2015      | 208        |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

**Smalleyed ray Celtic Sea [SERAYVIIIf-g]**

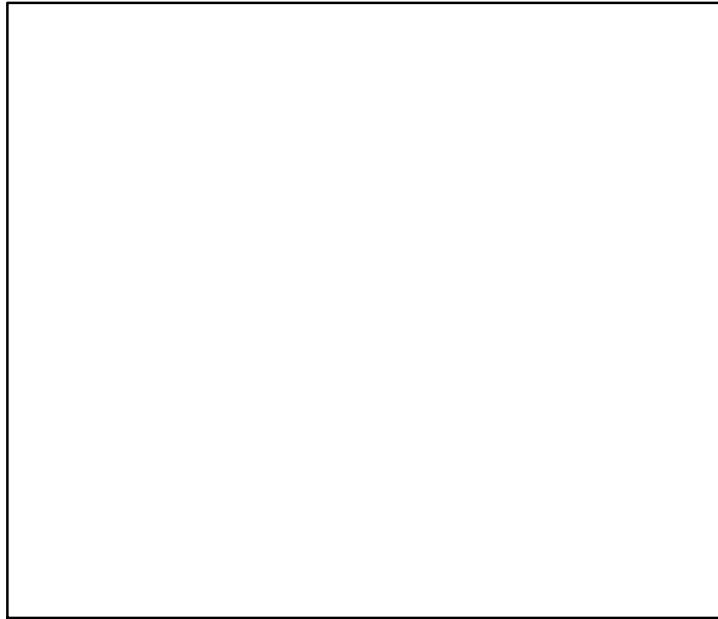
**Kobe MSY\***



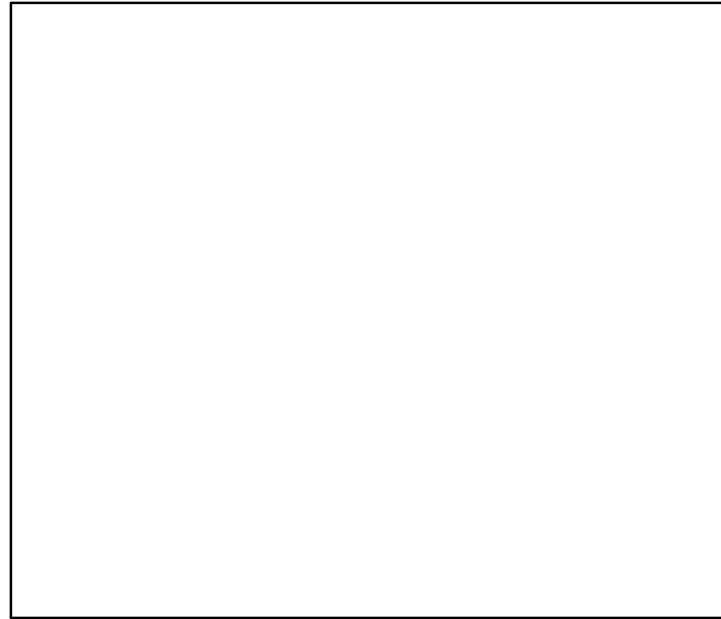
**Kobe MGT\***



**Spawner Recruit\***



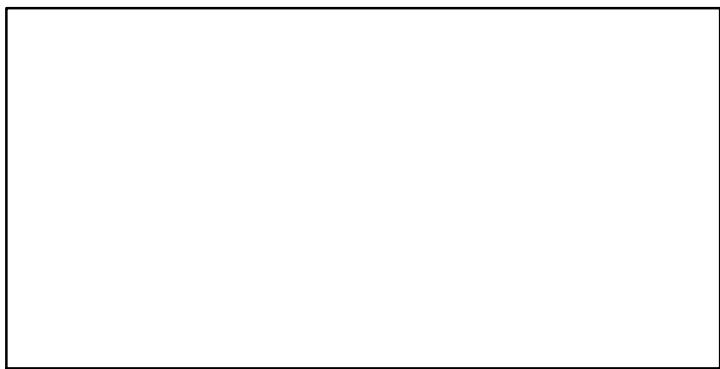
**Production\***



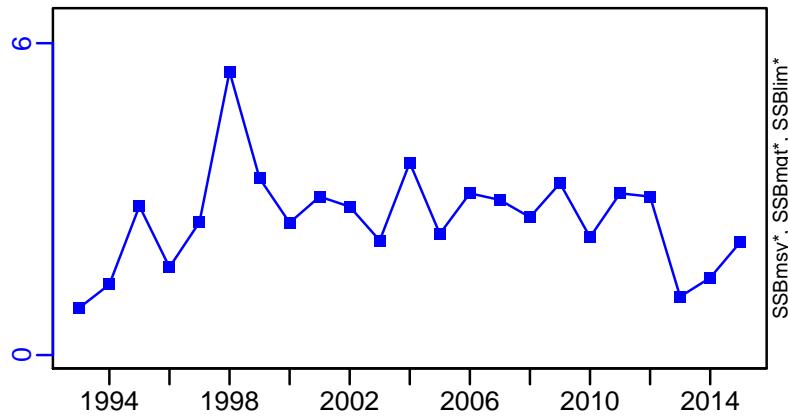
◆ Start Year ♦ End Year \* No Data

**Smalleyed ray Celtic Sea [SERAYVIIIf-g]**

**TB\***



**SSB-index (1993–2015–ICESIMP2018)**

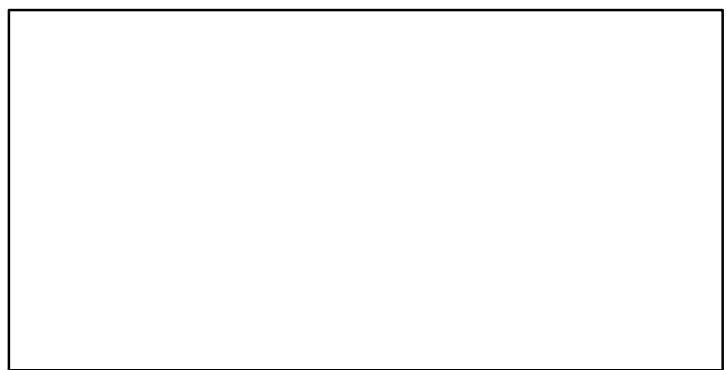


SSBmsy\*, SSBmgt\*, SSBLim\*

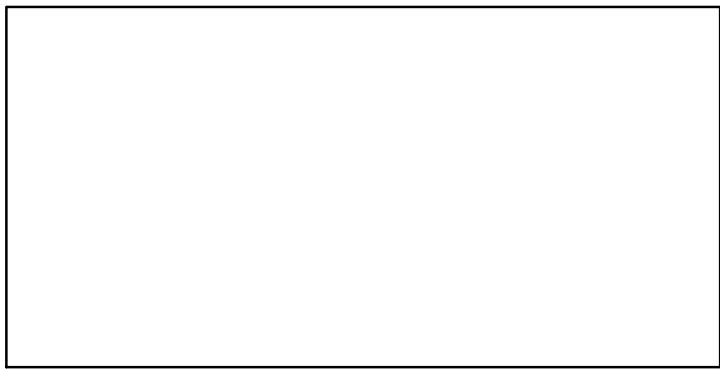
**TN \***



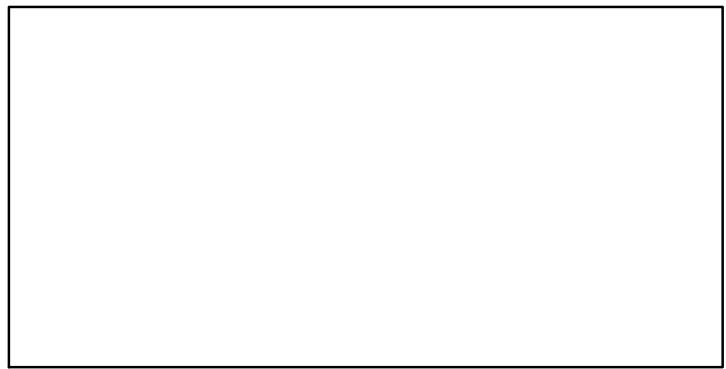
**F\***



**ER\***



**Recruits\***

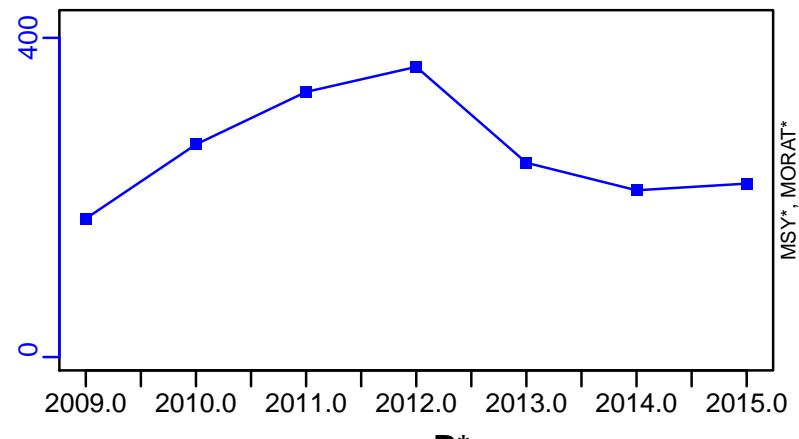


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

**Smalleyed ray Celtic Sea [SERAYVIIIf-g]**

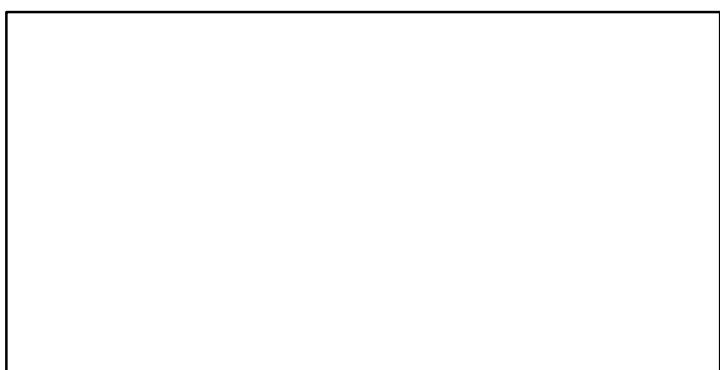
TL-MT, TC\*, RecC\* (1993–2015–ICESIMP2018)

**TAC\*, Cpair\*, Cadv\***

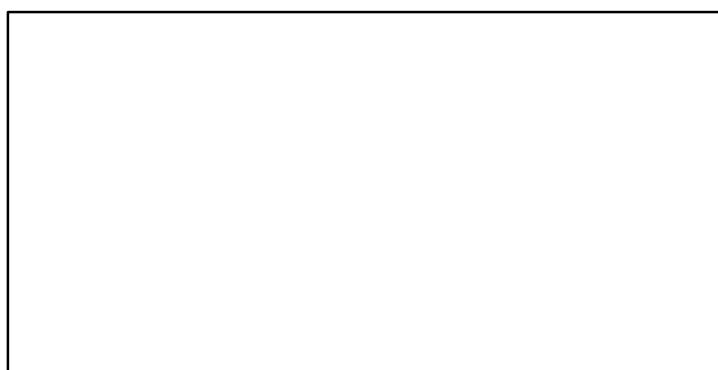


**survB\***

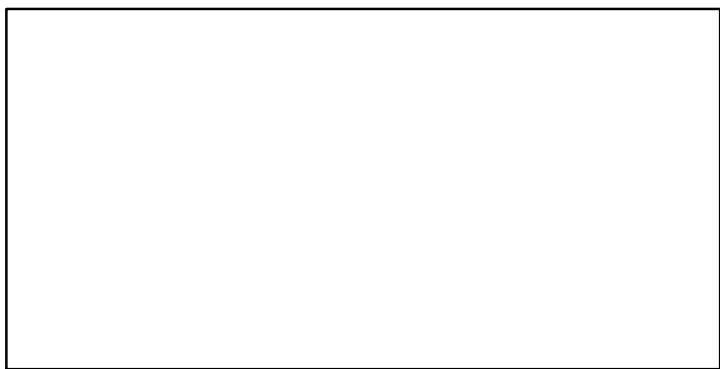
MSY\*, MORAT\*



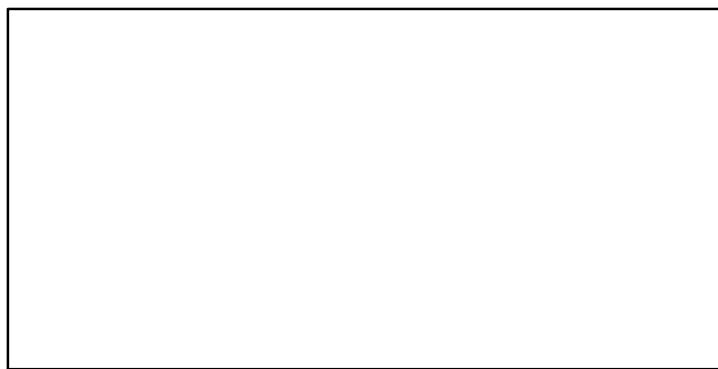
**CPUE\***



**EFFORT\***



**CdivMSY\***



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

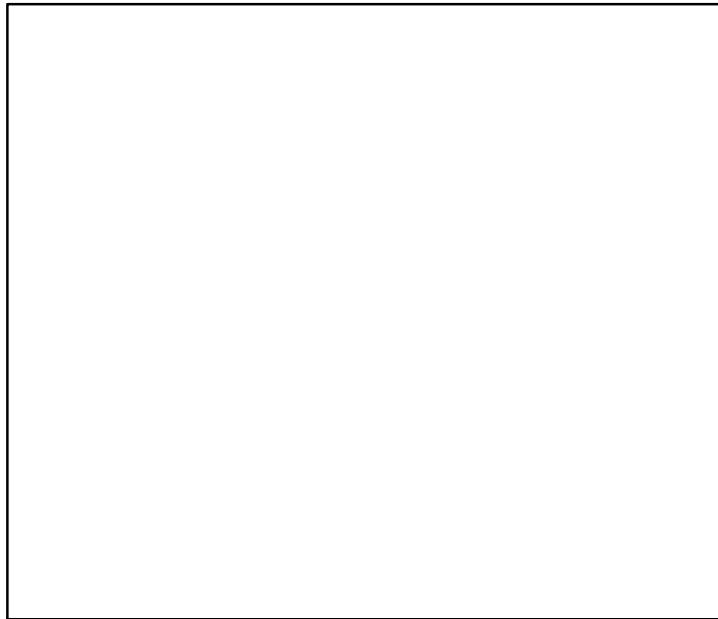
## Shagreen ray ICES 6-7 [SGRAYVI-VII]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Leucoraja fullonica                                  |
| <b>Current Assess ID</b>    | WGEF-SGRAYVI-VII-2009-2015-ICESIMP2018               |
| <b>Area</b>                 | ICES 6-7   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2015   |

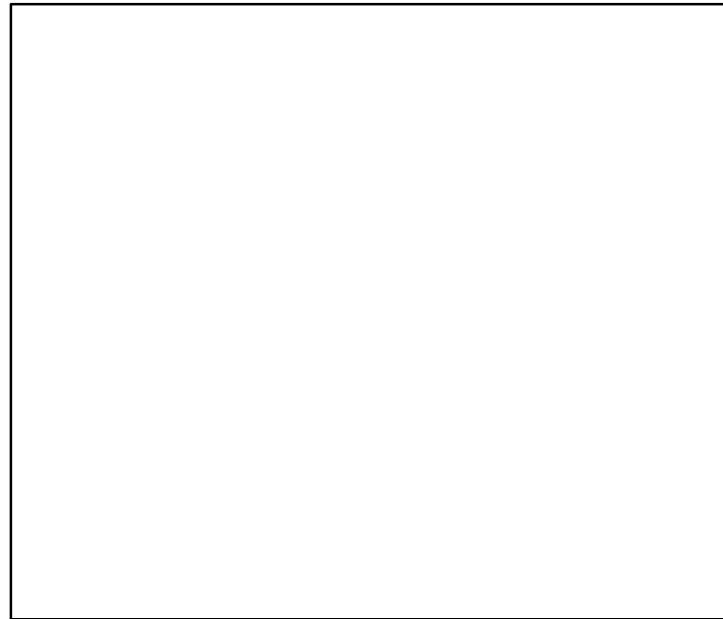
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | -     | -         | -          |     |     |
| <b>TL</b>          | TL-MT | 2015      | 196        |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

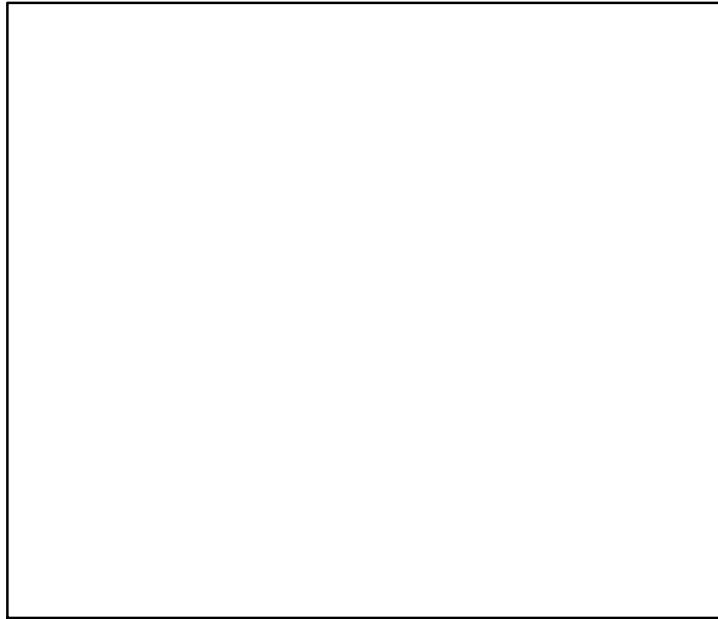
**Kobe MSY\***



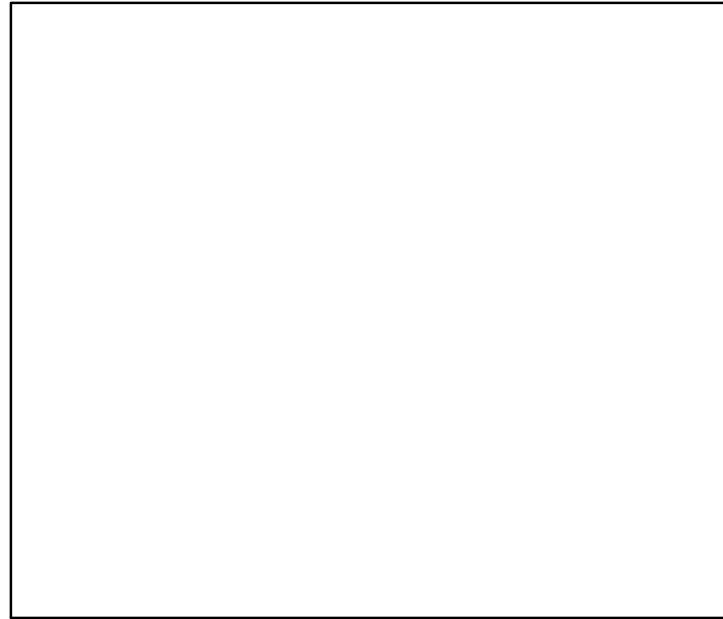
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

**Shagreen ray ICES 6–7 [SGRAYVI–VII]**

**TB\***



**SSB\***



**TN \***



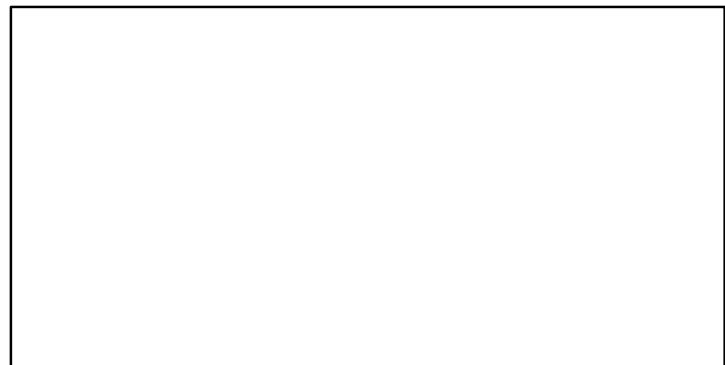
**F\***



**ER\***



**Recruits\***

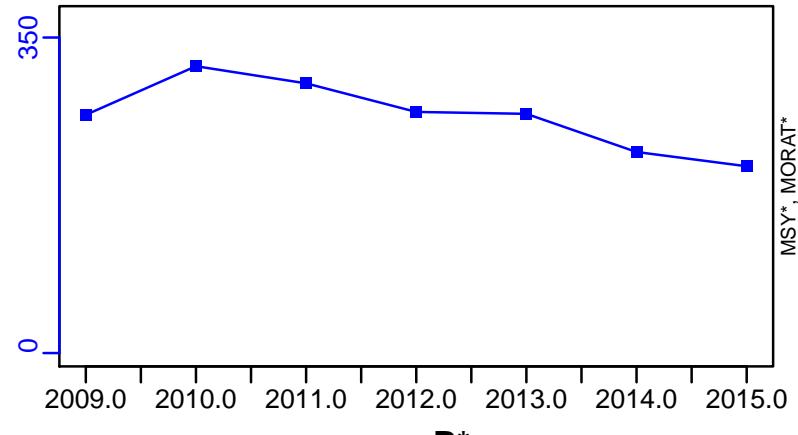


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

**Shagreen ray ICES 6–7 [SGRAYVI–VII]**

TL–MT, TC\*, RecC\* (2009–2015–ICESIMP2018)

**TAC\*, Cpair\*, Cadv\***



**survB\***

MSY\*, MORAT\*

**CPUE\***

**EFFORT\***

**CdivMSY\***



## Smooth hound Northeast Atlantic [SHSPPNEATL]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Mustelus spp   |
| <b>Current Assess ID</b>    | WGEF-SHSPPNEATL-1997-2018-ICESIMP2021                |
| <b>Area</b>                 | Northeast Atlantic                                   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2014, 2018, 2016                                     |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2014      | 2.33       | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | -         | -         | -          |      |     |
| <b>TL</b>          | TL-MT     | 2018      | 3684       |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

**Kobe MSY\***

**Kobe MGT\***

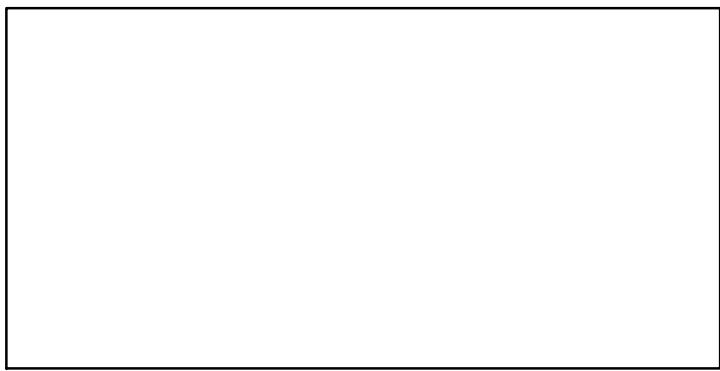
**Spawner Recruit\***

**Production\***

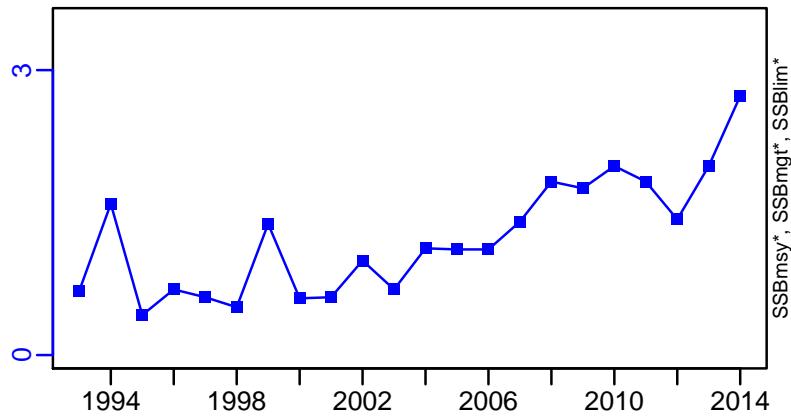
◆ Start Year   ◆ End Year   \* No Data

**Smooth hound Northeast Atlantic [SHSPPNEATL]**

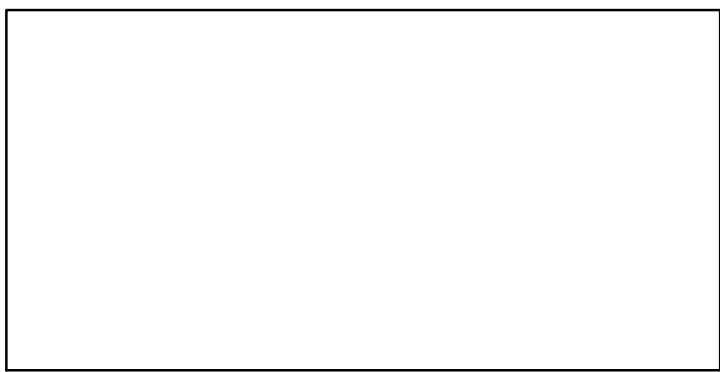
**TB\***



**SSB-index (1993–2014–ICESIMP2018)**



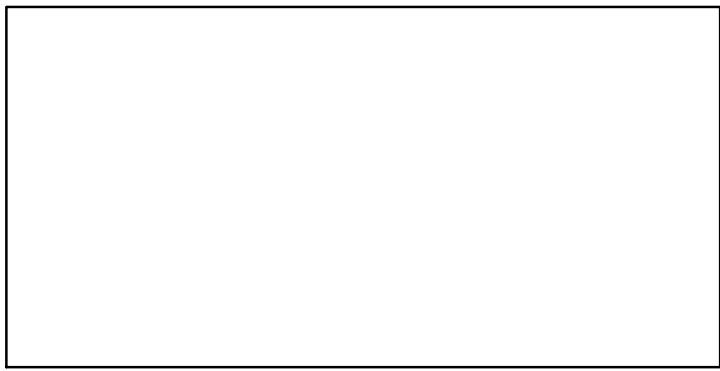
**TN \***



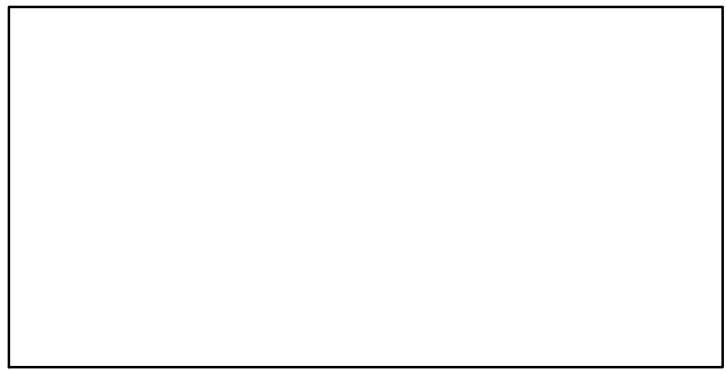
**F\***



**ER\***



**Recruits\***

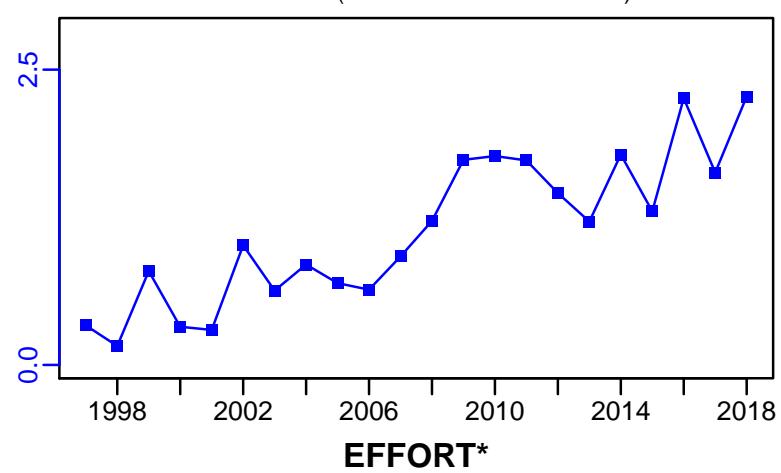
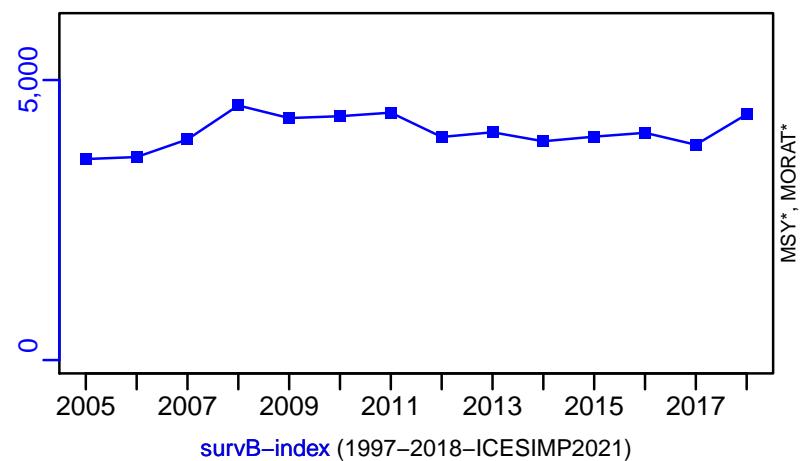


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

**Smooth hound Northeast Atlantic [SHSPPNEATL]**

TL-MT, TC\*, RecC\* (1997–2018–ICESIMP2021)

**TAC\*, Cpair\*, Cadv\***



**EFFORT\***

**CPUE\***

**CdivMSY\***



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Common sole Celtic Sea [SOLECS]

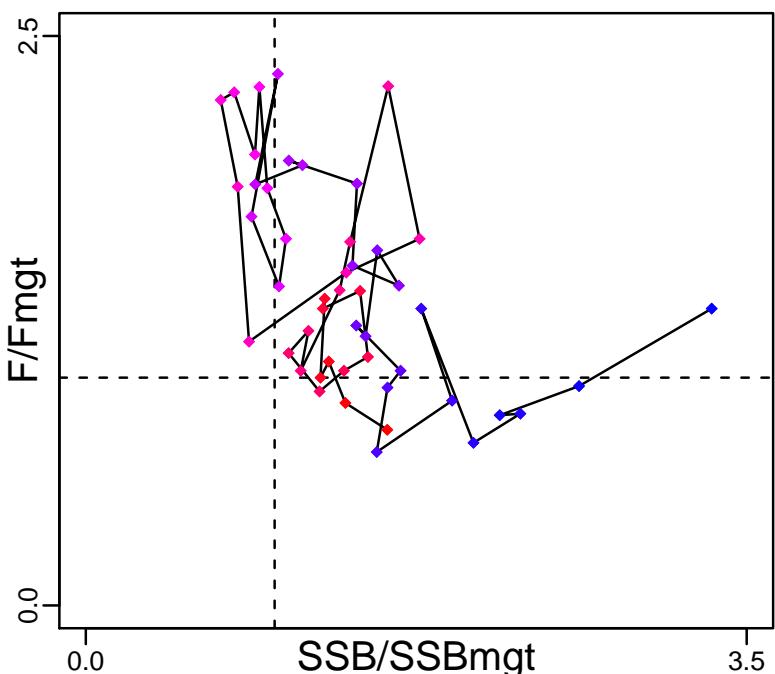
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Solea solea  |
| <b>Current Assess ID</b>    | WGCSE-SOLECS-1970-2019-ICESIMP2021                   |
| <b>Area</b>                 | Celtic Sea   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2011       |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2018             | 0.274        |
| <b>ERrmsy</b>           | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019             | 2228         |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019             | 0.297        |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | M-1/yr    | 2011             | 0.1          |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | SSBlim-MT | 2018             | 1700         |
| <b>Flim</b>             | Flim-1/yr | 2018             | 0.488        |
| <b>ERlim</b>            | -         | -                | -            |

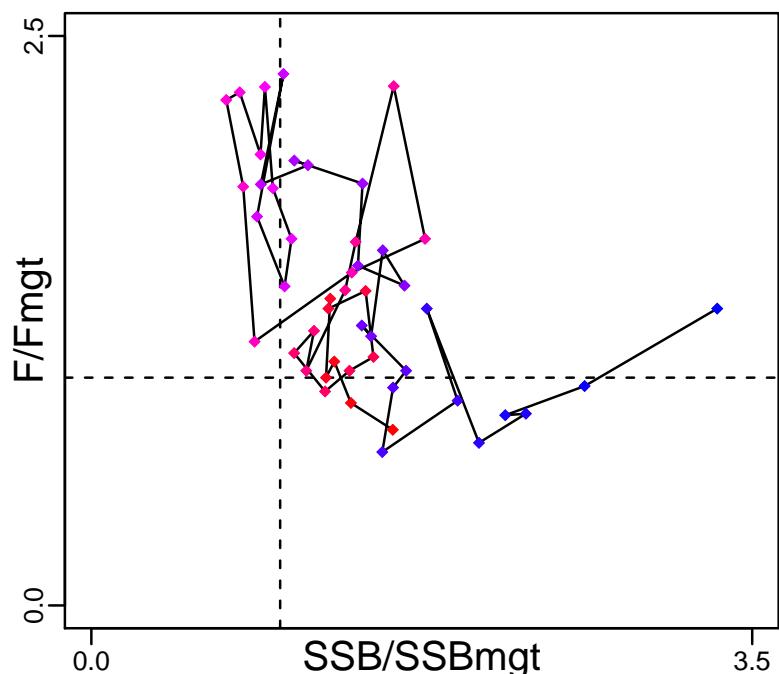
| <b>Time Series</b> |                  |                  |                   |            |            |  |
|--------------------|------------------|------------------|-------------------|------------|------------|--|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |  |
| <b>TB</b>          | TB-MT            | 2019             | 6924              | -          | -          |  |
| <b>SSB</b>         | SSB-MT           | 2019             | 4420              | -          | -          |  |
| <b>TN</b>          | -                | -                | -                 | -          | -          |  |
| <b>R</b>           | R-E00            | 2019             | 4,975,000         | -          | 1          |  |
| <b>F</b>           | F-1/yr           | 2019             | 0.229             | -          | 4 to 8     |  |
| <b>ER</b>          | ER-calc-ratio    | 2019             | 0.156             | -          | -          |  |
| <b>TC</b>          | TC-MT            | 2019             | 997               |            |            |  |
| <b>TL</b>          | TL-MT            | 2019             | 850               |            |            |  |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |  |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2018             | 1.456             |            |            |  |
| <b>ER/ERrmsy</b>   | -                | -                | -                 |            |            |  |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019             | 1.984             |            |            |  |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019             | 0.771             |            |            |  |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |  |

Common sole Celtic Sea [SOLECS]

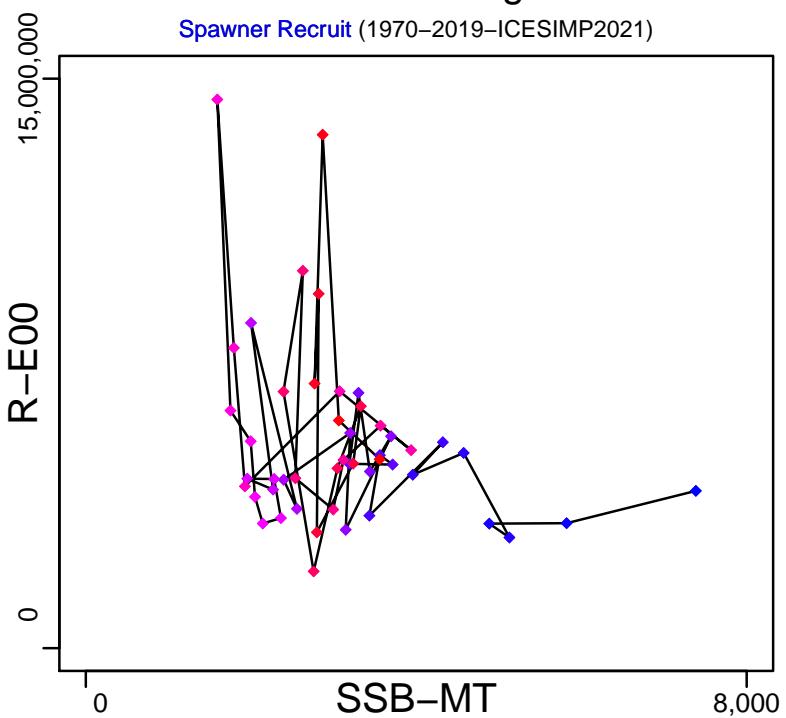
Kobe MSYpref (1970–2019–ICESIMP2021)



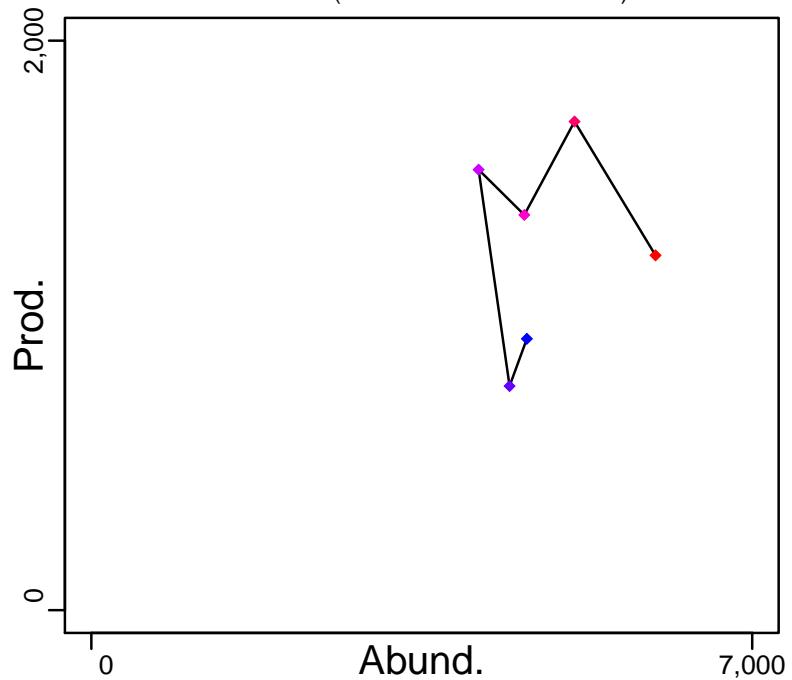
Kobe MGTpref (1970–2019–ICESIMP2021)



Spawner Recruit (1970–2019–ICESIMP2021)



Production (1970–2019–ICESIMP2021)

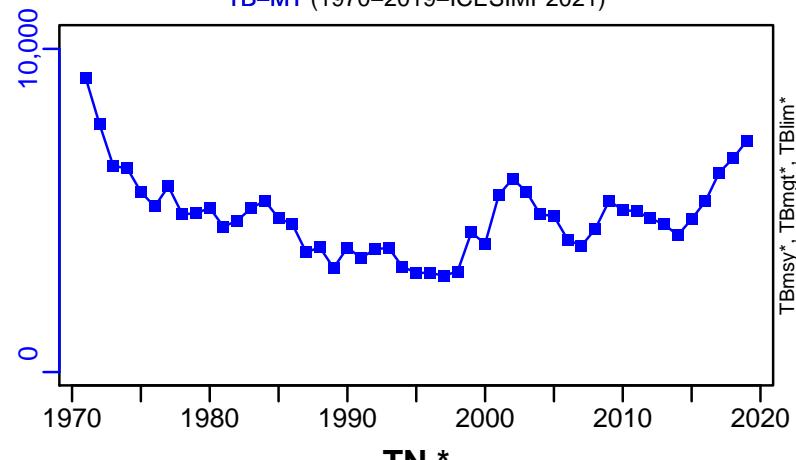


|              |            |   |         |
|--------------|------------|---|---------|
| ◆ Start Year | ◆ End Year | * | No Data |
|--------------|------------|---|---------|

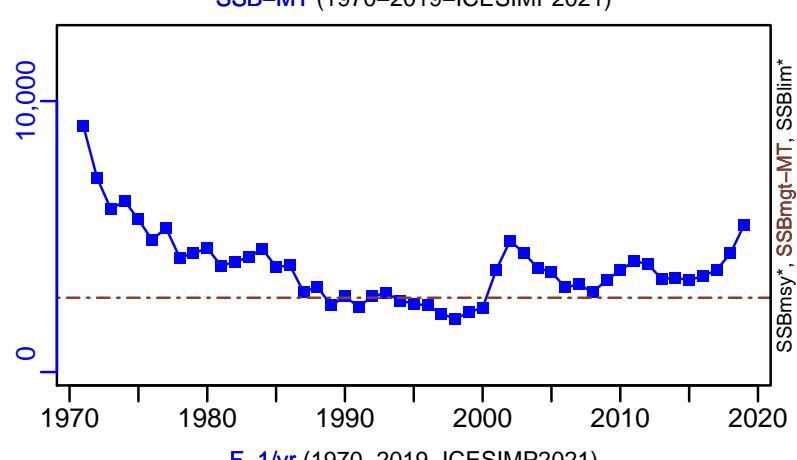
Common sole Celtic Sea [SOLECS]

TB-MT (1970–2019–ICESIMP2021)

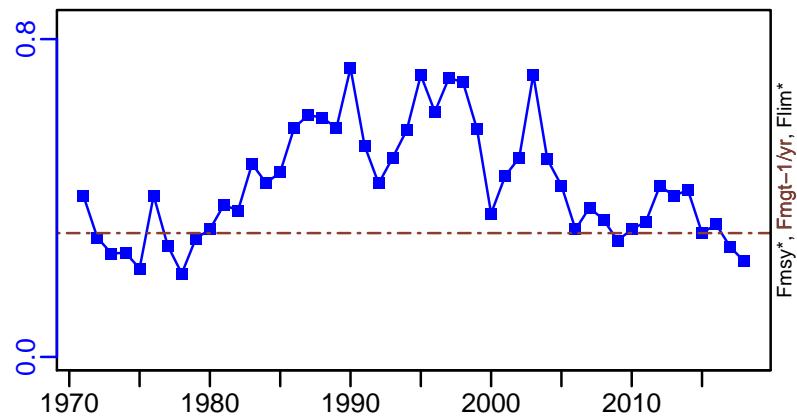
SSB-MT (1970–2019–ICESIMP2021)



TN \*

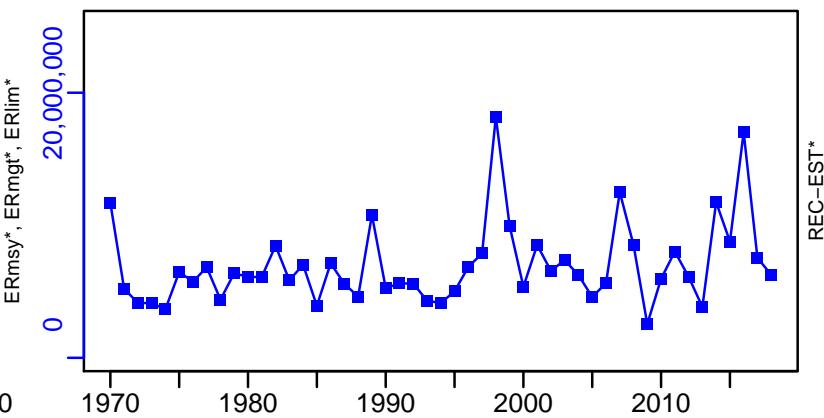
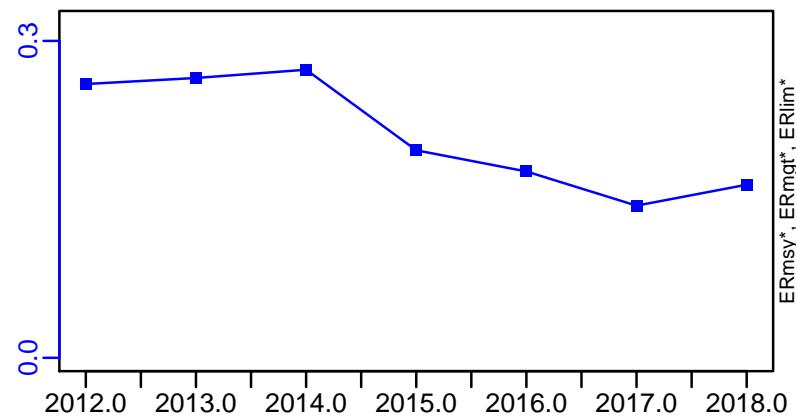


F-1/yr (1970–2019–ICESIMP2021)



ER-calc-ratio (1970–2019–ICESIMP2021)

R-E00 (1970–2019–ICESIMP2021)

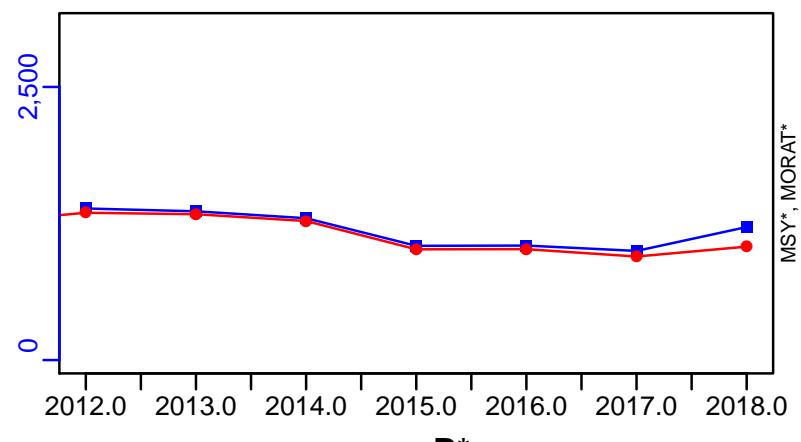


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | --- Lim BRP  | * No Data |

Common sole Celtic Sea [SOLECS]

TC-MT, TL-MT, RecC\* (1970–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



survB\*

MSY\*, MORAT\*

CPUE\*

EFFORT\*

CdivMSY\*

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

## Common sole ICES 22-24-3a [SOLEIIIa-2224]

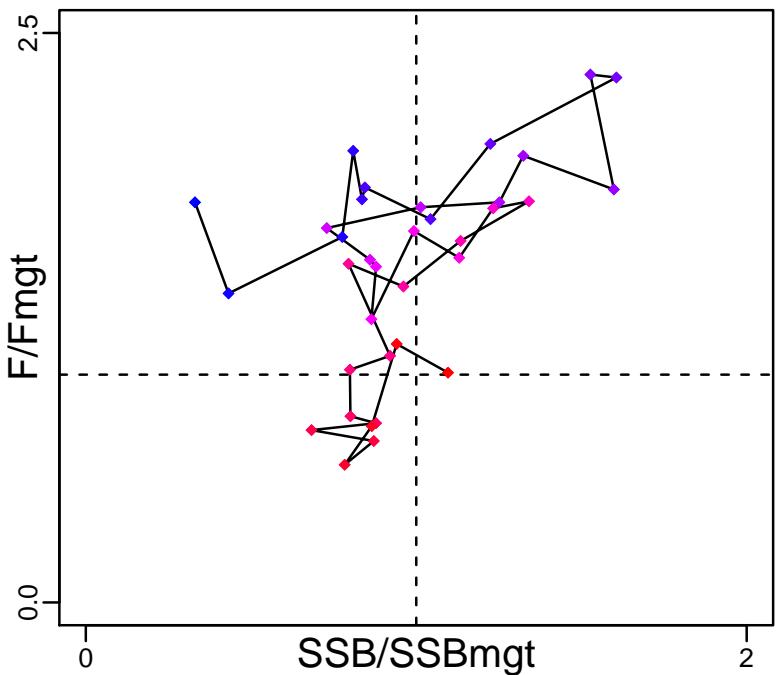
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Solea solea  |
| <b>Current Assess ID</b>    | WGBFAS-SOLEIIIa-2224-1983-2019-ICESIMP2021           |
| <b>Area</b>                 | ICES 22-24-3a  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Baltic Fisheries Assessment Working Group            |
| <b>Asmts in RAM</b>         | 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2011       |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2018             | 0.23         |
| <b>ERrmsy</b>           | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019             | 2600         |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019             | 0.23         |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | M-1/yr    | 2011             | 0.1          |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | SSBlim-MT | 2018             | 1850         |
| <b>Flim</b>             | Flim-1/yr | 2018             | 0.315        |
| <b>ERlim</b>            | -         | -                | -            |

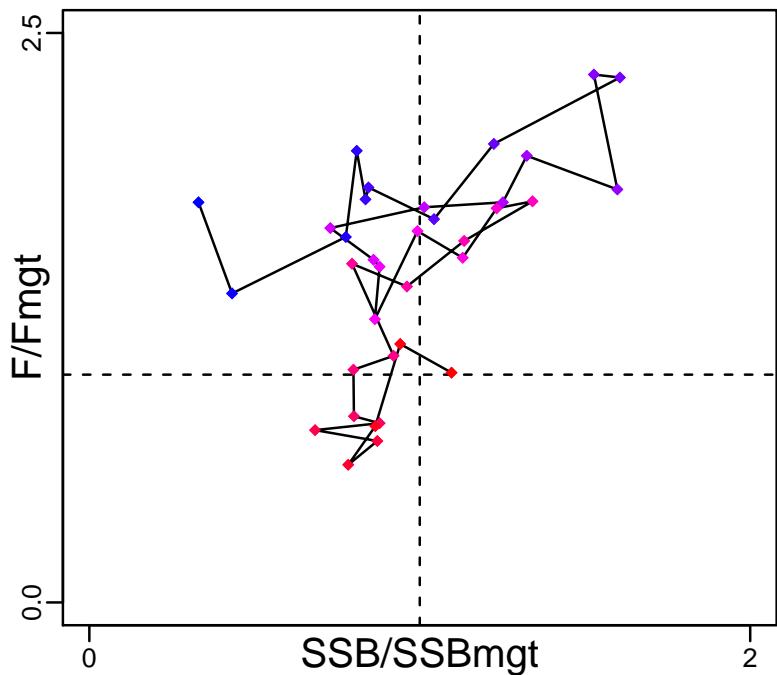
| <b>Time Series</b> |                  |                  |                   |            |            |
|--------------------|------------------|------------------|-------------------|------------|------------|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |
| <b>TB</b>          | TB-MT            | 2018             | 3460              | Both       | -          |
| <b>SSB</b>         | SSB-MT           | 2019             | 2802              | -          | -          |
| <b>TN</b>          | -                | -                | -                 | -          | -          |
| <b>R</b>           | R-E00            | 2019             | 2618              | -          | 1          |
| <b>F</b>           | F-1/yr           | 2019             | 0.232             | -          | 4 to 8     |
| <b>ER</b>          | ER-calc-ratio    | 2018             | 0.15              | -          | -          |
| <b>TC</b>          | TC-MT            | 2011             | 538               |            |            |
| <b>TL</b>          | TL-MT            | 2019             | 434               |            |            |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2018             | 1.213             |            |            |
| <b>ER/ERrmsy</b>   | -                | -                | -                 |            |            |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019             | 1.078             |            |            |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019             | 1.009             |            |            |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |

Common sole ICES 22–24–3a [SOLEIIIa-2224]

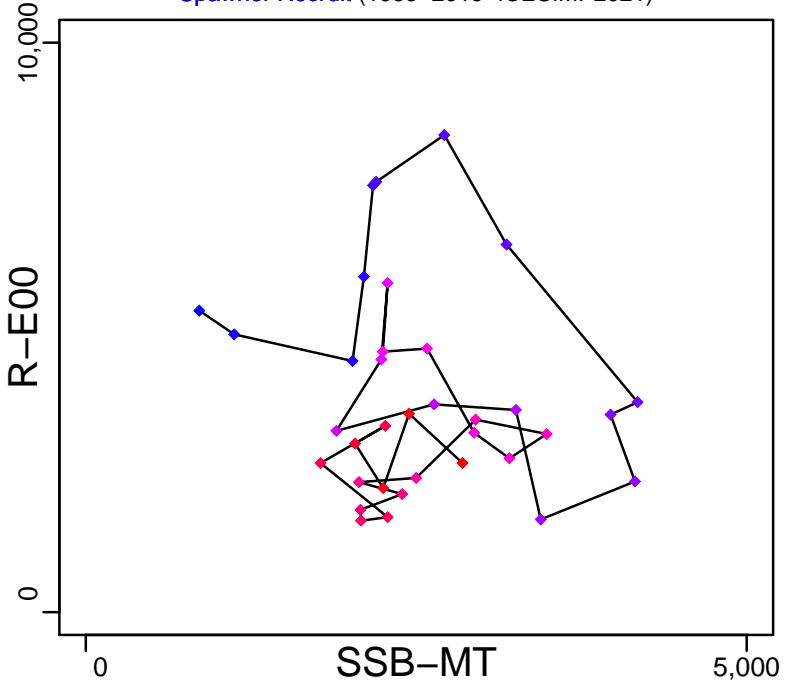
Kobe MSYpref (1983–2019–ICESIMP2021)



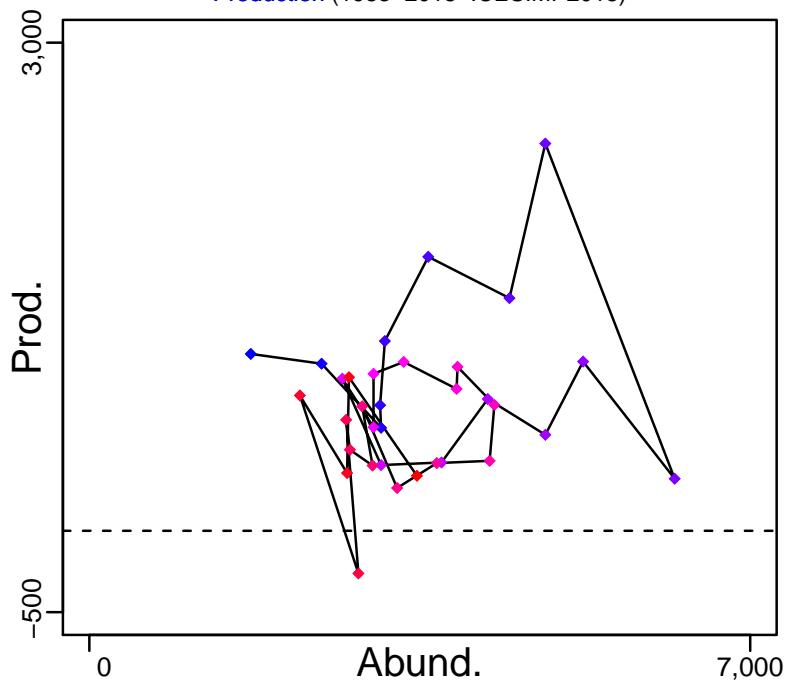
Kobe MGTpref (1983–2019–ICESIMP2021)



Spawner Recruit (1983–2019–ICESIMP2021)



Production (1983–2018–ICESIMP2018)

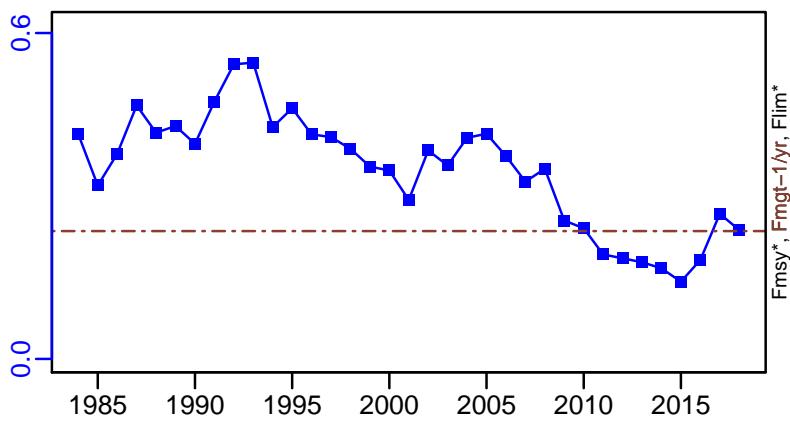
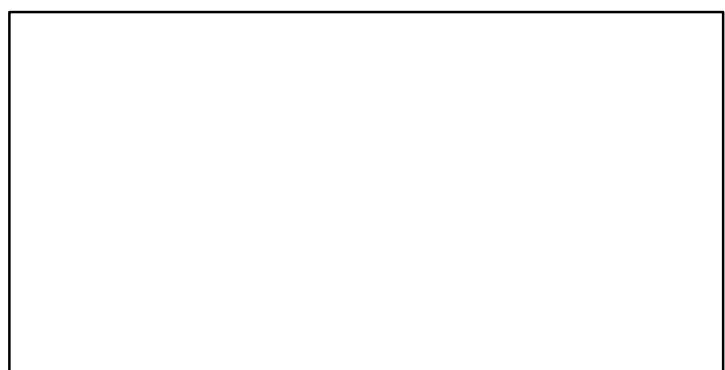
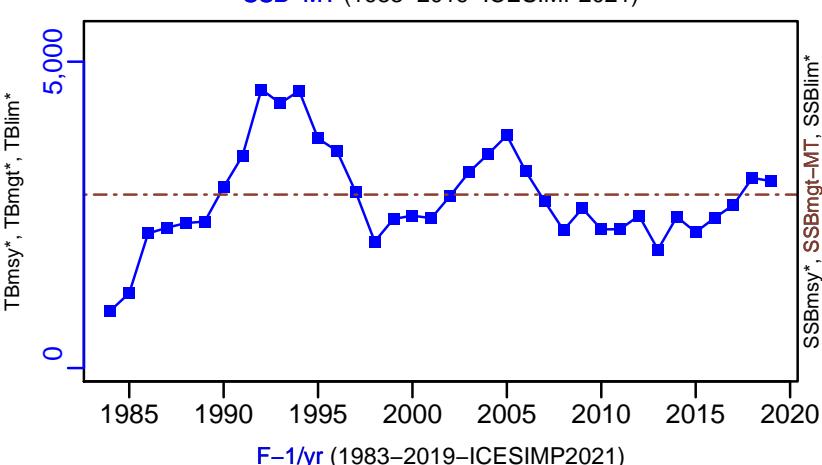
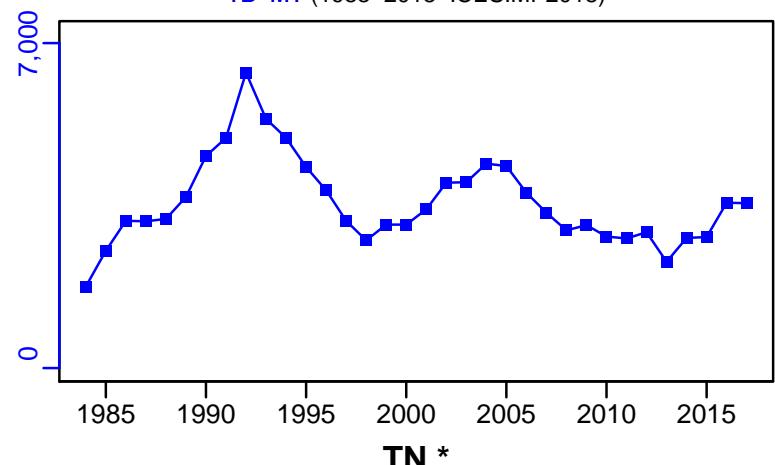


◆ Start Year ◆ End Year \* No Data

Common sole ICES 22–24–3a [SOLEIIIa-2224]

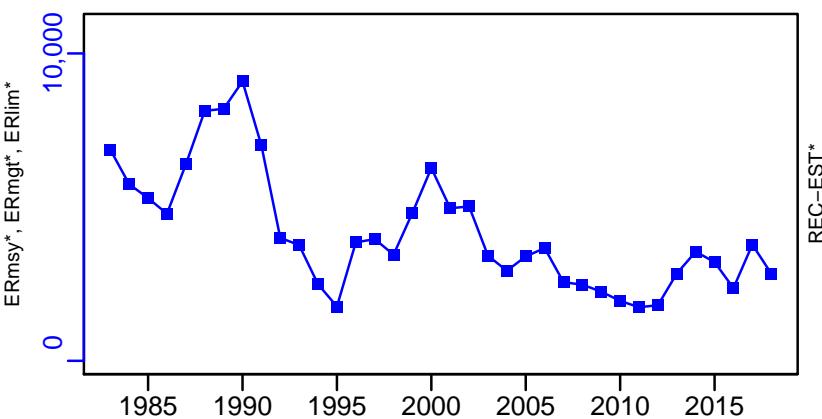
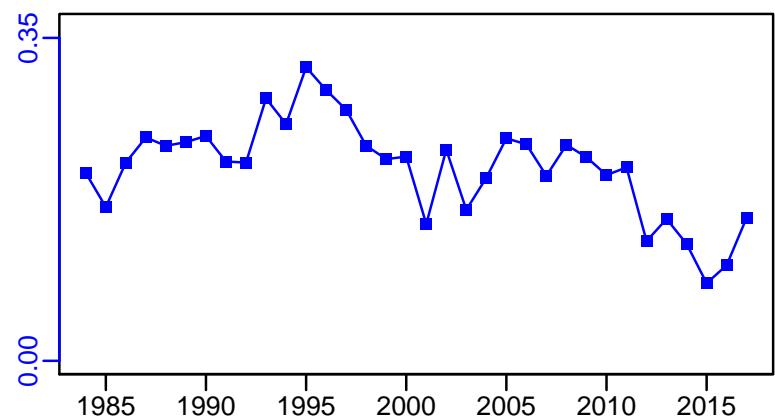
TB-MT (1983–2018–ICESIMP2018)

SSB-MT (1983–2019–ICESIMP2021)



ER-calc-ratio (1983–2018–ICESIMP2018)

R-E00 (1983–2019–ICESIMP2021)

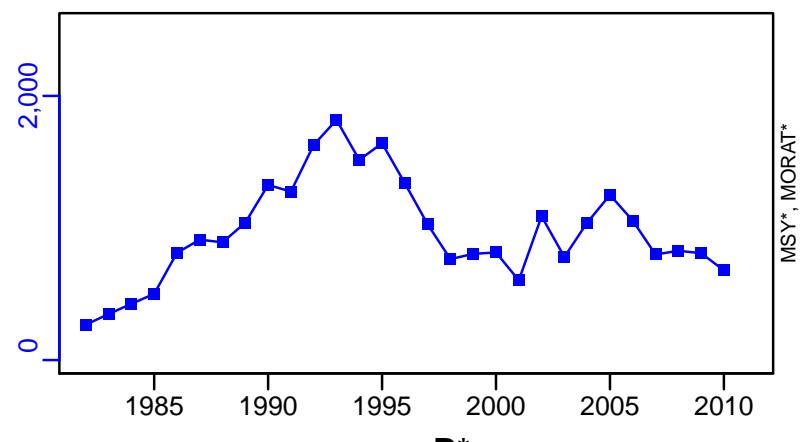


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - MSY-based BRP      | --- Lim BRP  | * No Data |

Common sole ICES 22–24–3a [SOLEIIIa-2224]

TC-MT, TL\*, RecC\* (1982–2011-NEUBAUER)

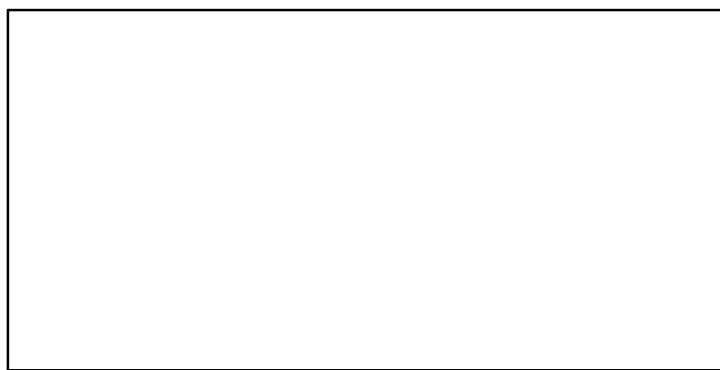
TAC\*, Cpair\*, Cadv\*



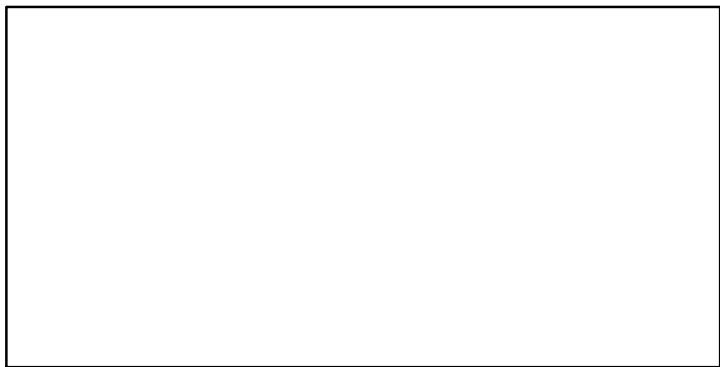
survB\*



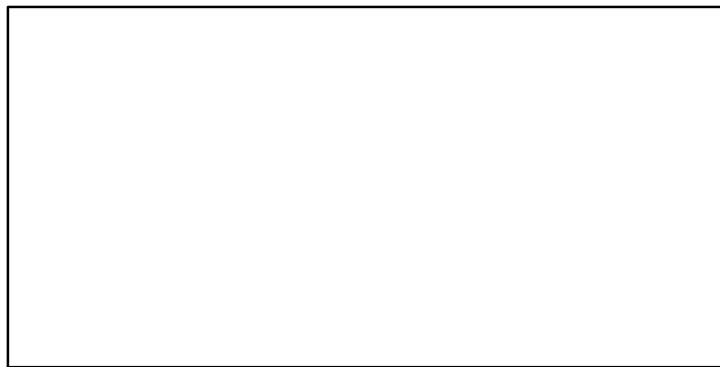
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Common sole Irish Sea [SOLEIS]

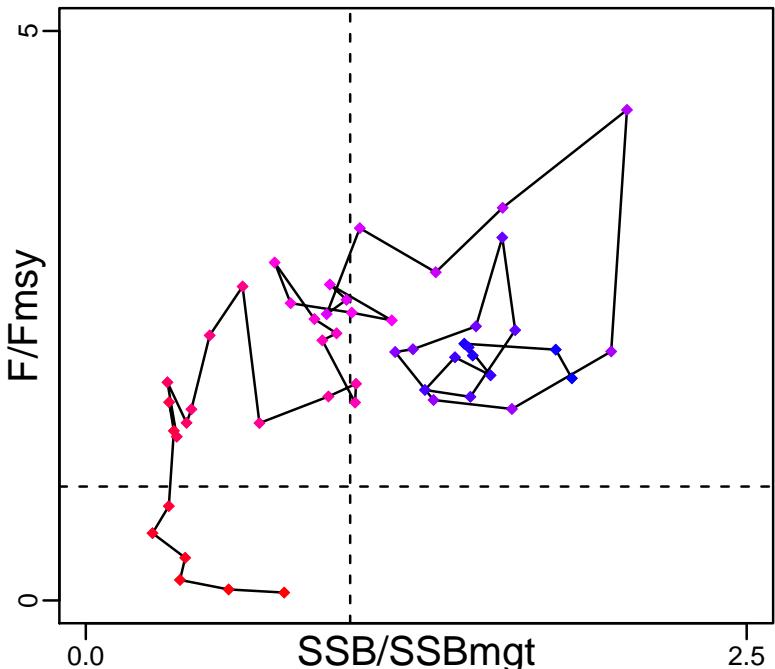
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Solea solea  |
| <b>Current Assess ID</b>    | WGCSE-SOLEIS-1968-2019-ICESIMP2021                   |
| <b>Area</b>                 | Irish Sea  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2011       |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2019             | 0.2          |
| <b>ERrmsy</b>           | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019             | 3500         |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019             | 0.2          |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | M-1/yr    | 2011             | 0.1          |
| <b>TBlim</b>            | TBlim-MT  | 2011             | 2200         |
| <b>SSBlim</b>           | SSBlim-MT | 2018             | 2500         |
| <b>Flim</b>             | Flim-1/yr | 2018             | 0.29         |
| <b>ERlim</b>            | -         | -                | -            |

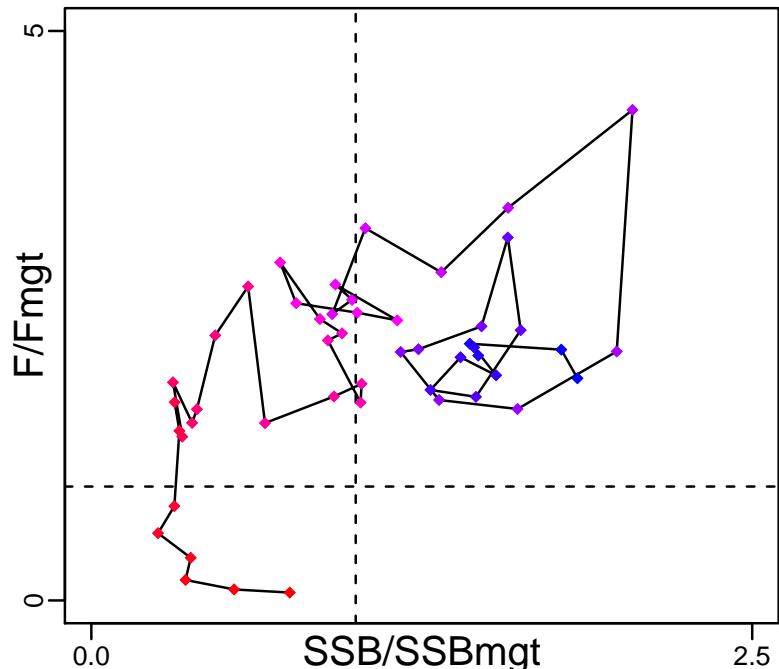
| <b>Time Series</b> |                  |                  |                   |            |            |  |
|--------------------|------------------|------------------|-------------------|------------|------------|--|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |  |
| <b>TB</b>          | TB-MT            | 2019             | 3427              | -          | -          |  |
| <b>SSB</b>         | SSB-MT           | 2019             | 3079              | -          | -          |  |
| <b>TN</b>          | -                | -                | -                 | -          | -          |  |
| <b>R</b>           | R-E00            | 2019             | 1339              | -          | 2          |  |
| <b>F</b>           | F-1/yr           | 2019             | 0.014             | -          | 4 to 7     |  |
| <b>ER</b>          | ER-calc-ratio    | 2019             | 0.012             | -          | -          |  |
| <b>TC</b>          | TC-MT            | 2019             | 38                |            |            |  |
| <b>TL</b>          | TL-MT            | 2019             | 36                |            |            |  |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |  |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2019             | 0.069             |            |            |  |
| <b>ER/ERrmsy</b>   | -                | -                | -                 |            |            |  |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019             | 0.88              |            |            |  |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019             | 0.069             |            |            |  |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |  |

### Common sole Irish Sea [SOLEIS]

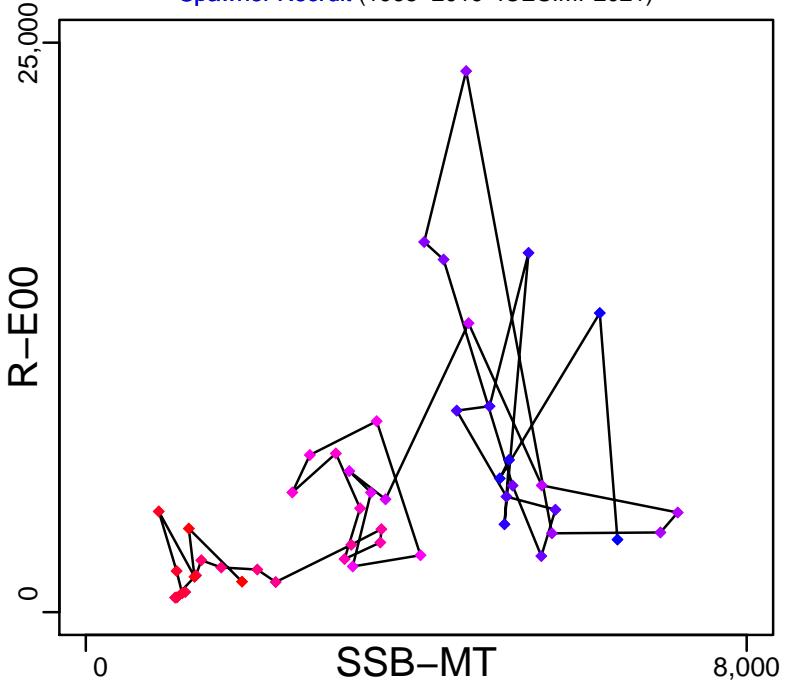
Kobe MSYpref (1968–2019–ICESIMP2021)



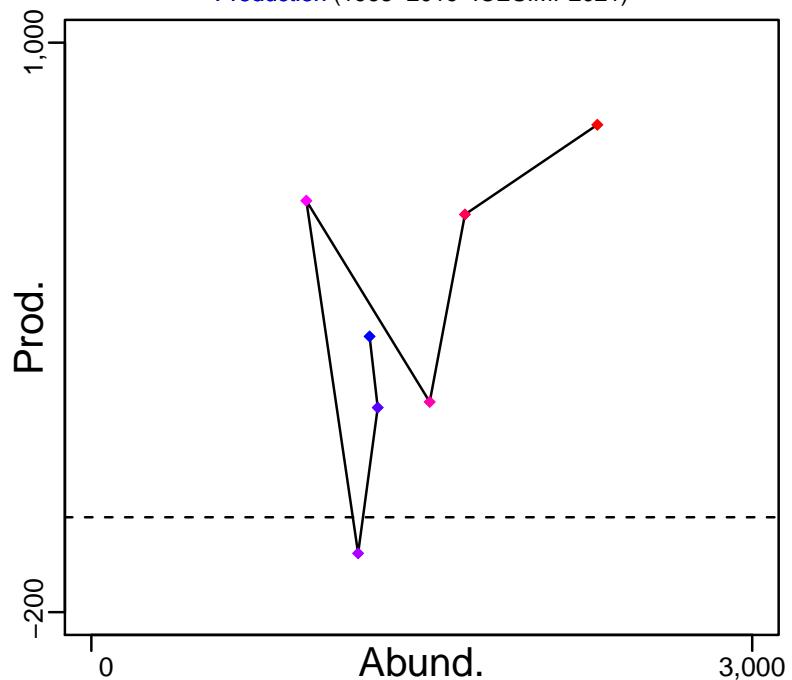
Kobe MGTpref (1968–2019–ICESIMP2021)



Spawner Recruit (1968–2019–ICESIMP2021)



Production (1968–2019–ICESIMP2021)

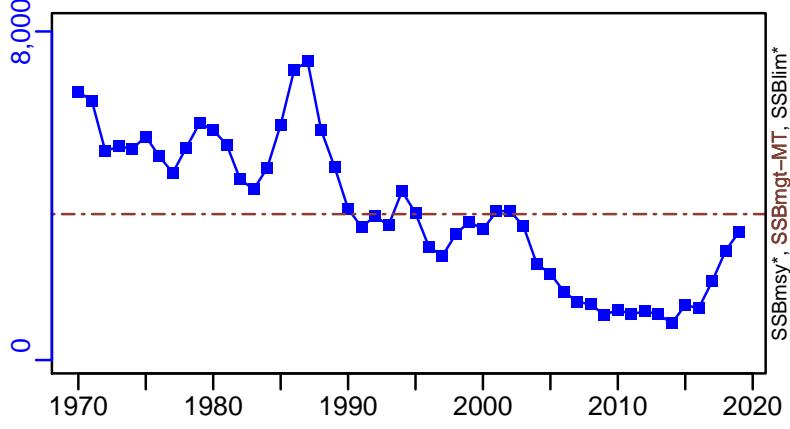
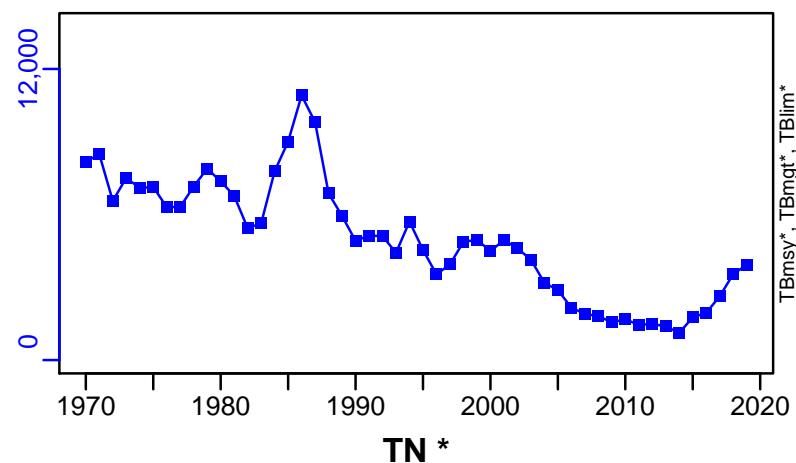


◆ Start Year ♦ End Year \* No Data

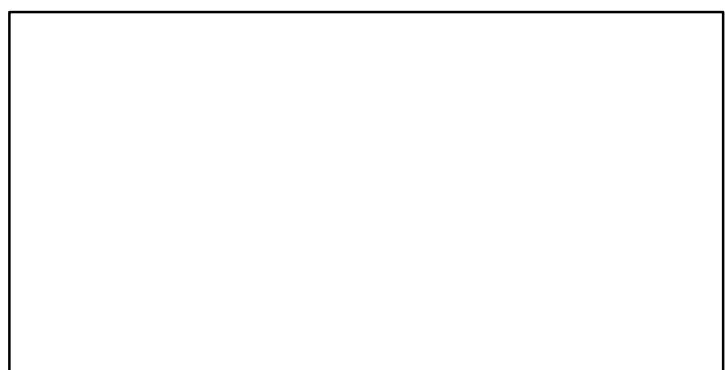
### Common sole Irish Sea [SOLEIS]

TB-MT (1968–2019–ICESIMP2021)

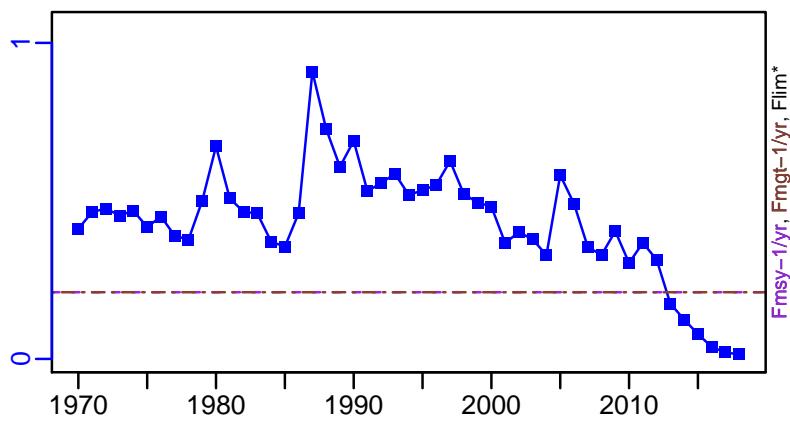
SSB-MT (1968–2019–ICESIMP2021)



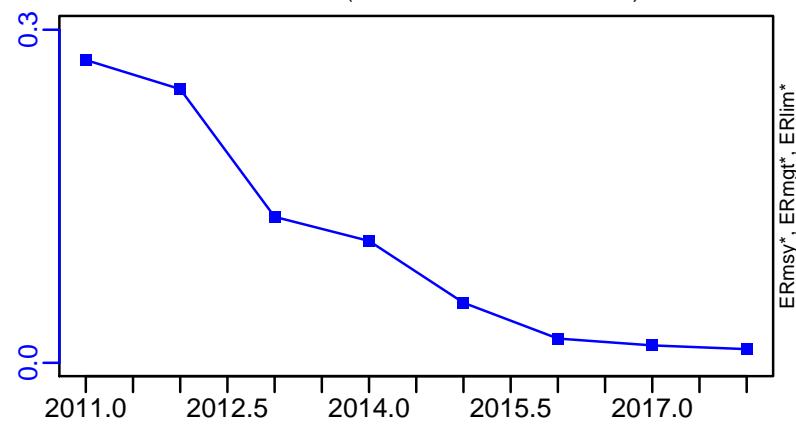
**TN \***



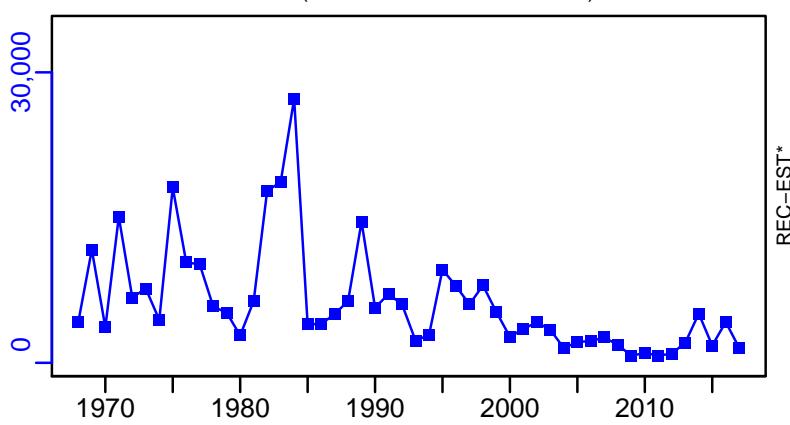
**F-1/yr (1968–2019–ICESIMP2021)**



**ER-calc-ratio (1968–2019–ICESIMP2021)**



**R-E00 (1968–2019–ICESIMP2021)**

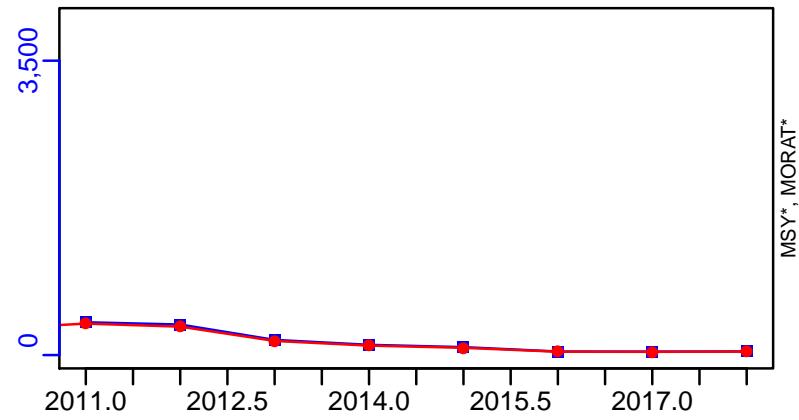


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | ··· Lim BRP  | * No Data |

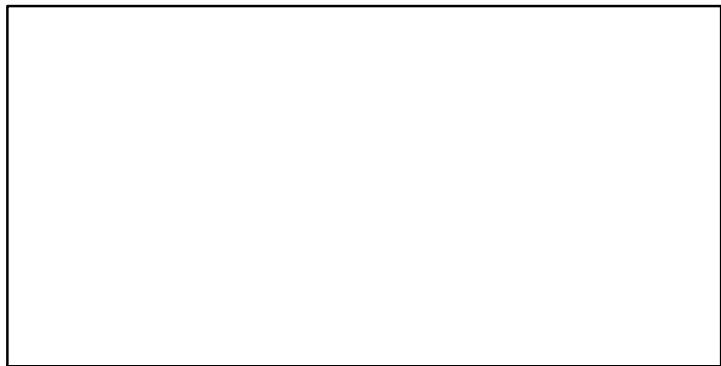
**Common sole Irish Sea [SOLEIS]**

TC-MT, TL-MT, RecC\* (1968–2019–ICESIMP2021)

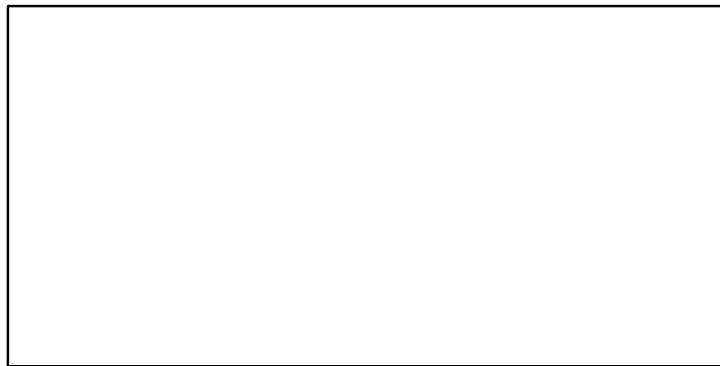
TAC\*, Cpair\*, Cadv\*



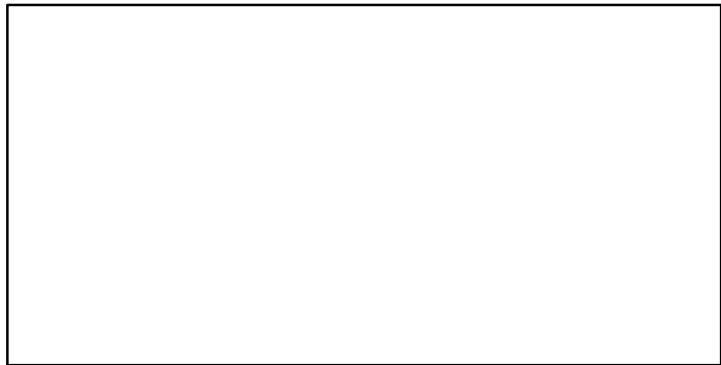
**survB\***



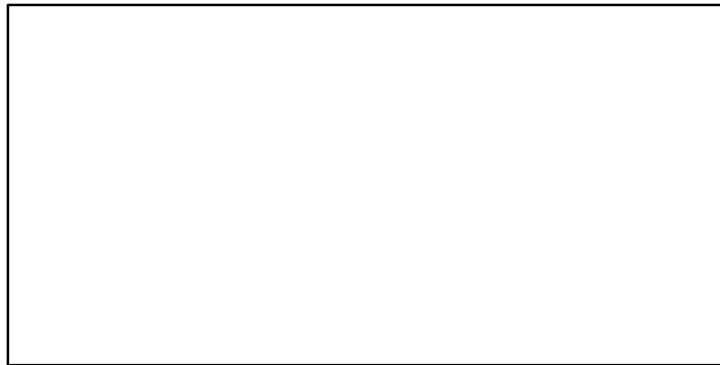
**CPUE\***



**EFFORT\***



**CdivMSY\***



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Common sole North Sea [SOLENS]

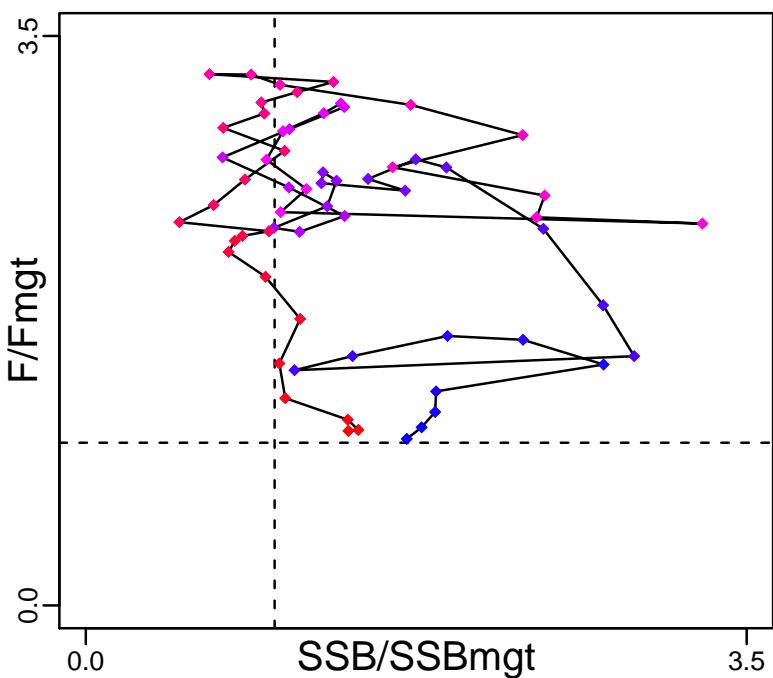
| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Solea solea   |
| <b>Current Assess ID</b>    | WGNSSK-SOLENS-1956-2019-ICESIMP2021   |
| <b>Area</b>                 | North Sea   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2010, 2013, 2014, 2015, 2016, 2017, 2018, 2019                                    |

| <b>Reference Points</b> |           |           |        |  |
|-------------------------|-----------|-----------|--------|--|
| Type                    | ID        | Asmt Year | Value  |  |
| <b>TBmsy</b>            | -         | -         | -      |  |
| <b>SSBmsy</b>           | -         | -         | -      |  |
| <b>Fmsy</b>             | Fmsy-1/yr | 2018      | 0.2    |  |
| <b>ERmsy</b>            | -         | -         | -      |  |
| <b>TBmgt</b>            | -         | -         | -      |  |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019      | 37,000 |  |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019      | 0.202  |  |
| <b>ERmgt</b>            | -         | -         | -      |  |
| <b>TB0</b>              | -         | -         | -      |  |
| <b>SSB0</b>             | -         | -         | -      |  |
| <b>MSY</b>              | -         | -         | -      |  |
| <b>M</b>                | M-1/yr    | 2010      | 0.1    |  |
| <b>TBlim</b>            | TBlim-MT  | 2010      | 25,000 |  |
| <b>SSBlim</b>           | SSBlim-MT | 2018      | 26,300 |  |
| <b>Flim</b>             | Flim-1/yr | 2018      | 0.62   |  |
| <b>ERlim</b>            | -         | -         | -      |  |

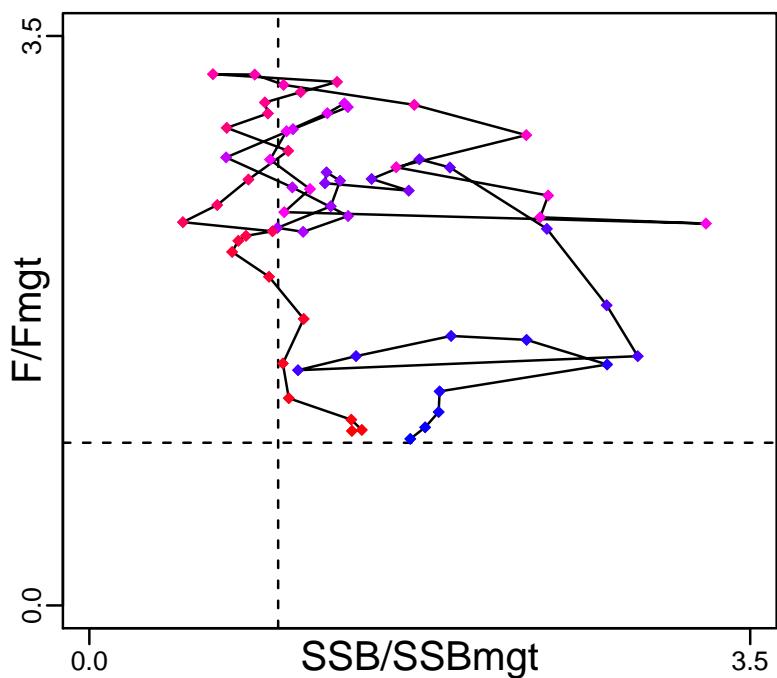
| <b>Time Series</b> |                  |           |             |      |        |  |
|--------------------|------------------|-----------|-------------|------|--------|--|
| Type               | ID               | Asmt Year | Curr Value  | Sex  | Age    |  |
| <b>TB</b>          | TB-MT            | 2018      | 64,800      | Both | -      |  |
| <b>SSB</b>         | SSB-MT           | 2019      | 55,591      | -    | -      |  |
| <b>TN</b>          | -                | -         | -           | -    | -      |  |
| <b>R</b>           | R-E00            | 2019      | 476,477,000 | -    | 1      |  |
| <b>F</b>           | F-1/yr           | 2019      | 0.217       | -    | 2 to 6 |  |
| <b>ER</b>          | ER-calc-ratio    | 2018      | 0.191       | -    | -      |  |
| <b>TC</b>          | TC-MT            | 2017      | 15,400      |      |        |  |
| <b>TL</b>          | TL-MT            | 2019      | 11,199      |      |        |  |
| <b>TB/TBmsy</b>    | -                | -         | -           |      |        |  |
| <b>SSB/SSBmsy</b>  | -                | -         | -           |      |        |  |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2018      | 1.09        |      |        |  |
| <b>ER/ERmsy</b>    | -                | -         | -           |      |        |  |
| <b>TB/TBmgt</b>    | -                | -         | -           |      |        |  |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019      | 1.502       |      |        |  |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019      | 1.073       |      |        |  |
| <b>ER/ERmgt</b>    | -                | -         | -           |      |        |  |

**Common sole North Sea [SOLENS]**

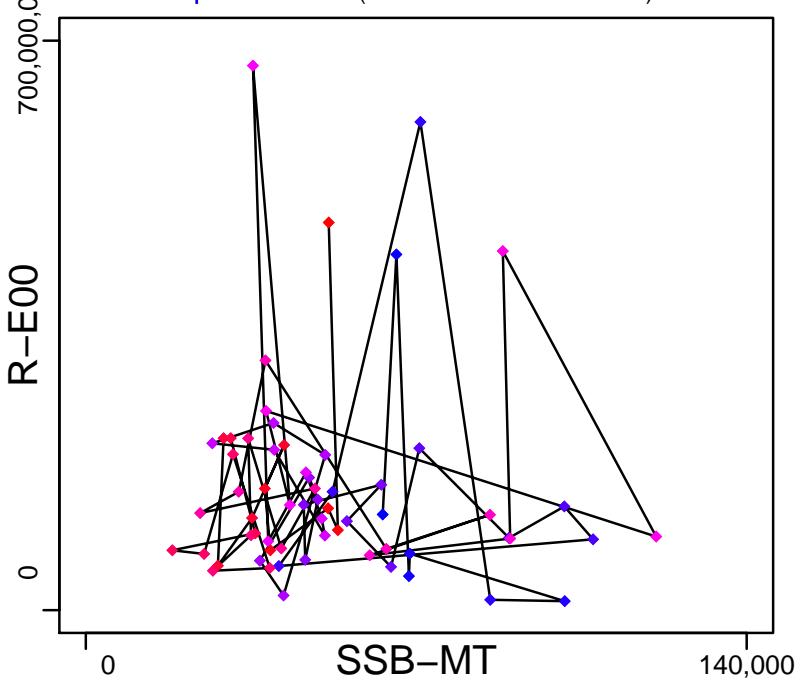
Kobe MSYpref (1956–2019–ICESIMP2021)



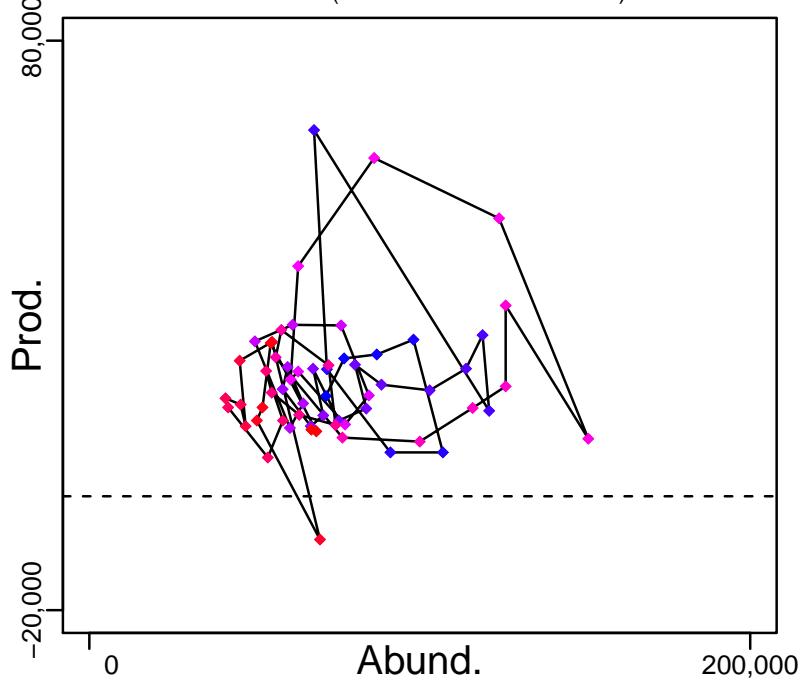
Kobe MGTpref (1956–2019–ICESIMP2021)



Spawner Recruit (1956–2019–ICESIMP2021)



Production (1956–2018–ICESIMP2018)

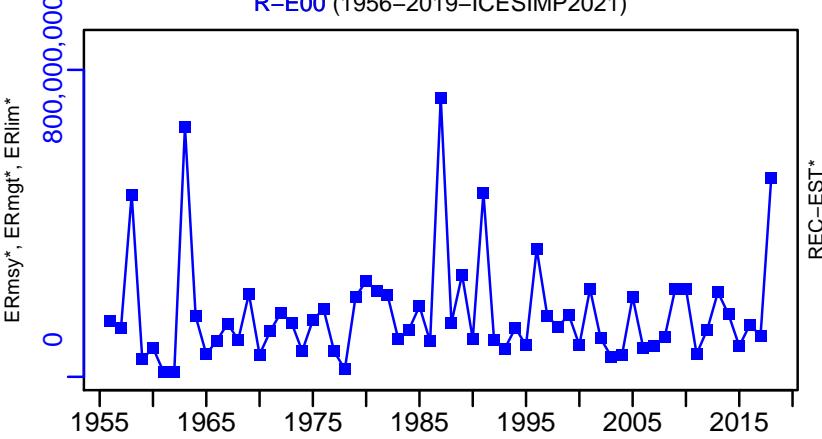
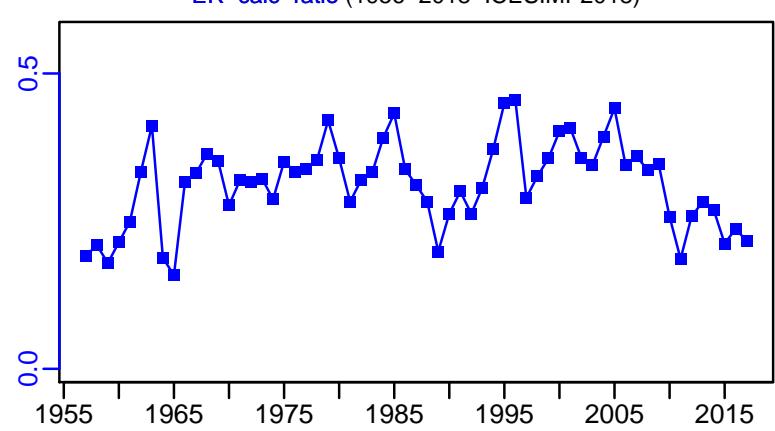
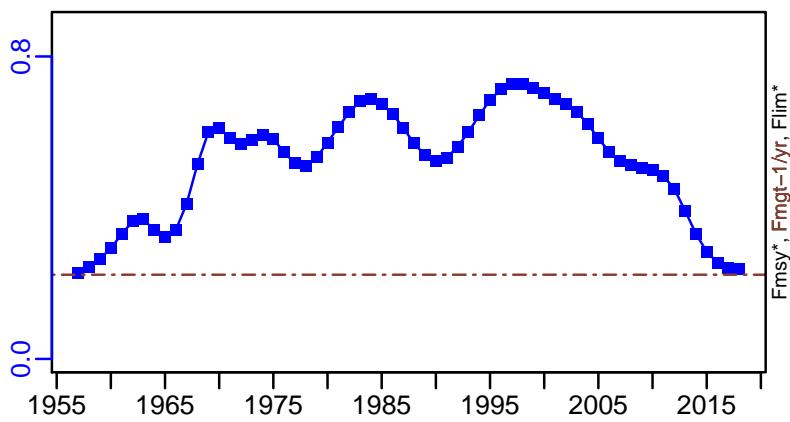
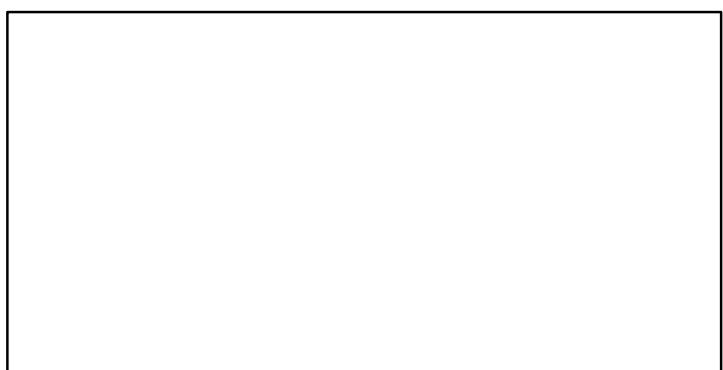
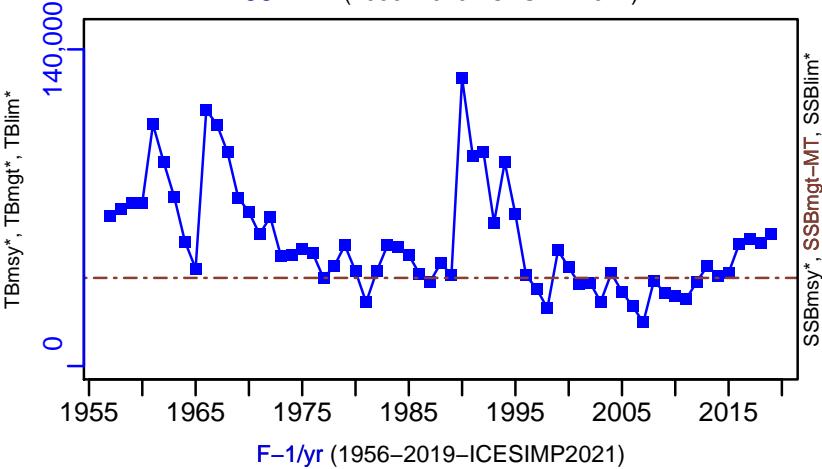
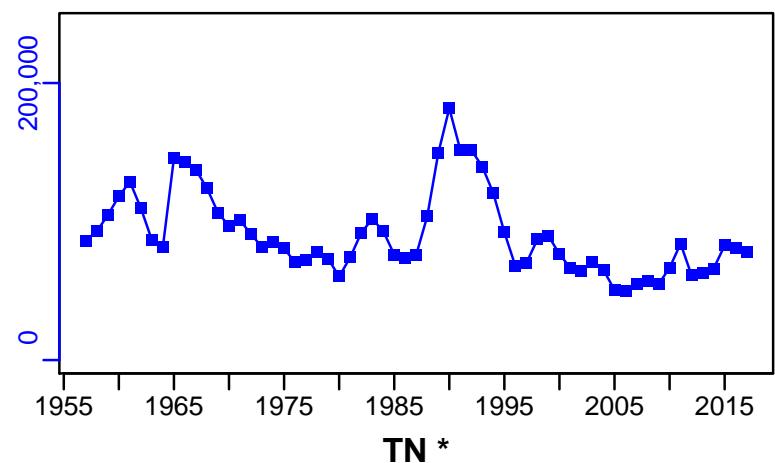


◆ Start Year   ◆ End Year   \* No Data

### Common sole North Sea [SOLENS]

TB-MT (1956–2018–ICESIMP2018)

SSB-MT (1956–2019–ICESIMP2021)

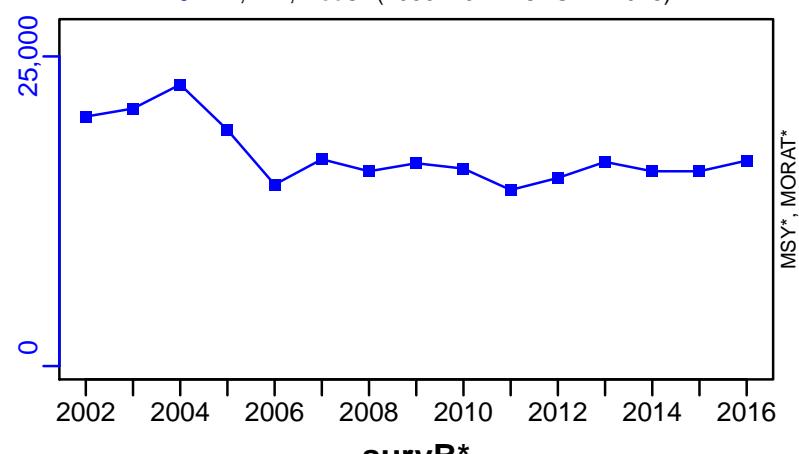


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | --- Lim BRP  | * No Data |

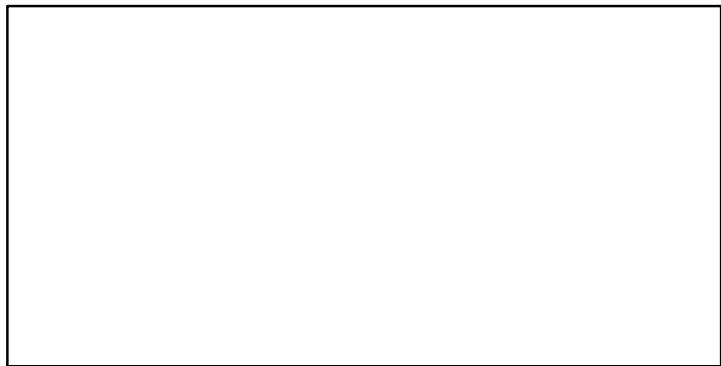
Common sole North Sea [SOLENS]

TC-MT, TL\*, RecC\* (1956–2017–ICESIMP2018)

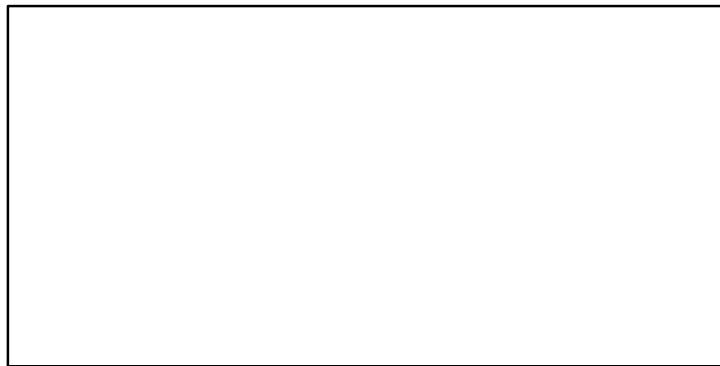
TAC\*, Cpair\*, Cadv\*



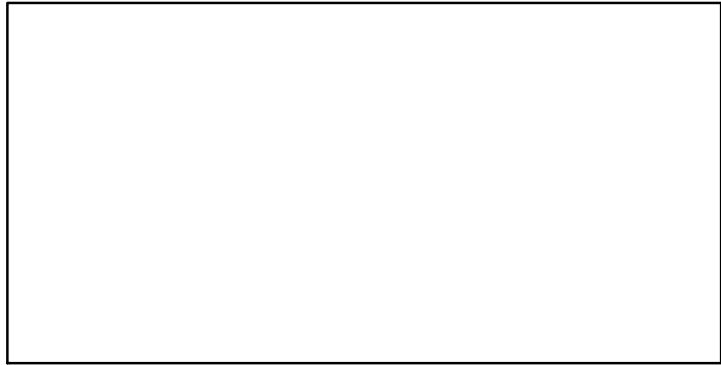
survB\*



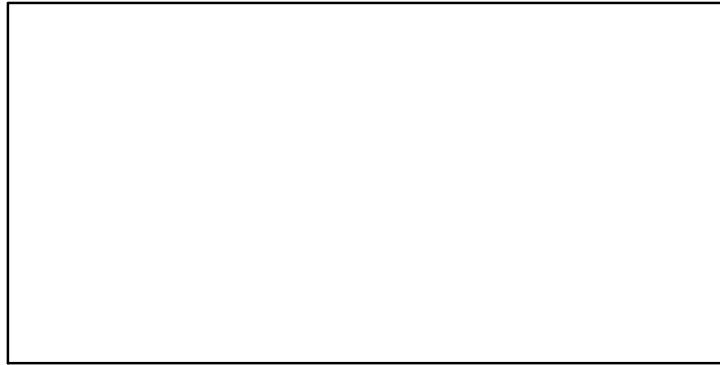
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

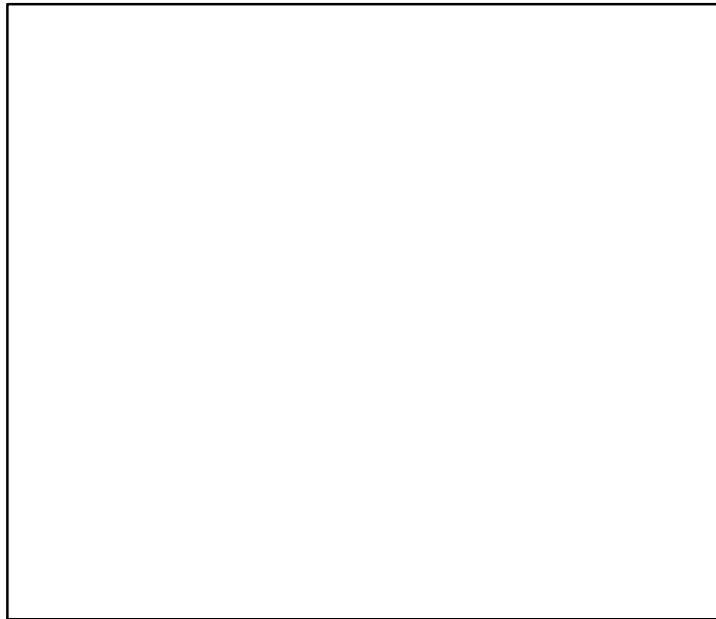
## Common sole ICES 7bc [SOLEVIIbc]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Solea solea  |
| <b>Current Assess ID</b>    | WGCSSE-SOLEVIIbc-1908-2016-ICESIMP2018               |
| <b>Area</b>                 | ICES 7bc   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2016, 2015   |

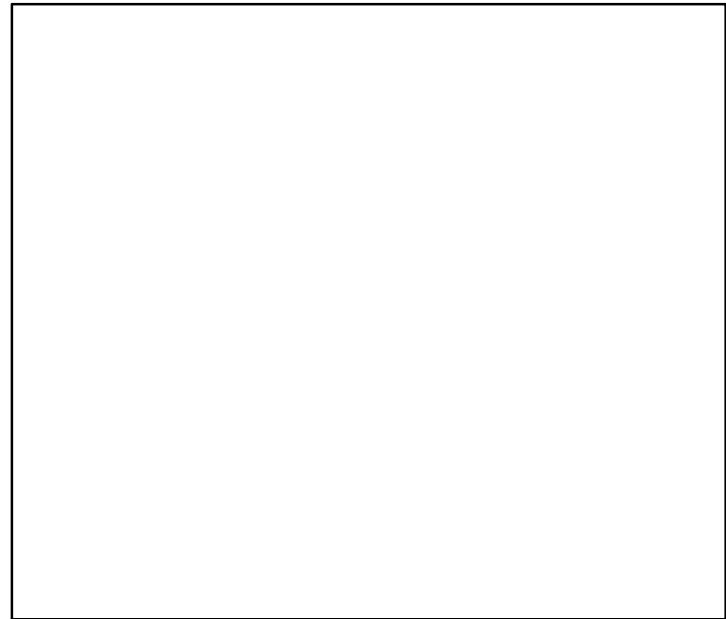
| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | -         | -                | -            |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | -         | -                | -            |
| <b>Fmgt</b>             | -         | -                | -            |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | -         | -                | -            |
| <b>Flim</b>             | -         | -                | -            |
| <b>ERlim</b>            | -         | -                | -            |

| <b>Time Series</b> |           |                  |                   |            |            |
|--------------------|-----------|------------------|-------------------|------------|------------|
| <b>Type</b>        | <b>ID</b> | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |
| <b>TB</b>          | -         | -                | -                 | -          | -          |
| <b>SSB</b>         | -         | -                | -                 | -          | -          |
| <b>TN</b>          | -         | -                | -                 | -          | -          |
| <b>R</b>           | -         | -                | -                 | -          | -          |
| <b>F</b>           | -         | -                | -                 | -          | -          |
| <b>ER</b>          | -         | -                | -                 | -          | -          |
| <b>TC</b>          | -         | -                | -                 |            |            |
| <b>TL</b>          | TL-MT     | 2016             | 43                |            |            |
| <b>TB/TBmsy</b>    | -         | -                | -                 |            |            |
| <b>SSB/SSBmsy</b>  | -         | -                | -                 |            |            |
| <b>F/Fmsy</b>      | -         | -                | -                 |            |            |
| <b>ER/ERmsy</b>    | -         | -                | -                 |            |            |
| <b>TB/TBmgt</b>    | -         | -                | -                 |            |            |
| <b>SSB/SSBmgt</b>  | -         | -                | -                 |            |            |
| <b>F/Fmgt</b>      | -         | -                | -                 |            |            |
| <b>ER/ERmgt</b>    | -         | -                | -                 |            |            |

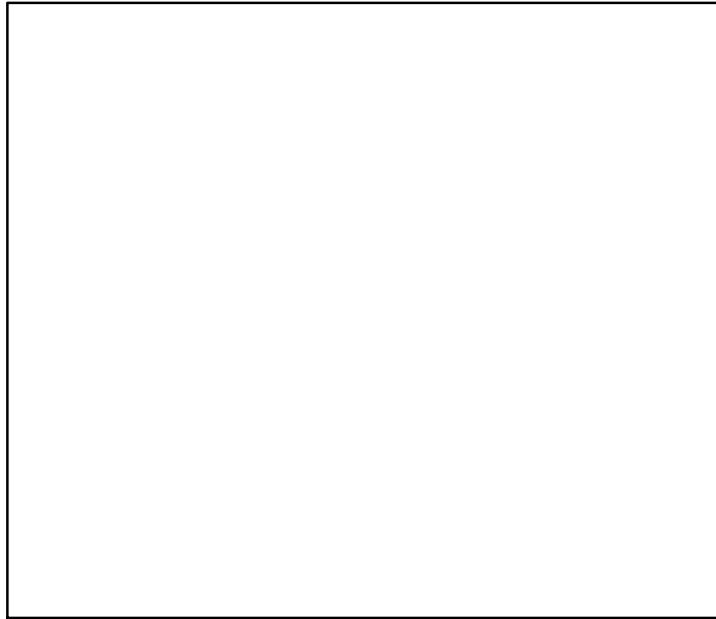
**Kobe MSY\***



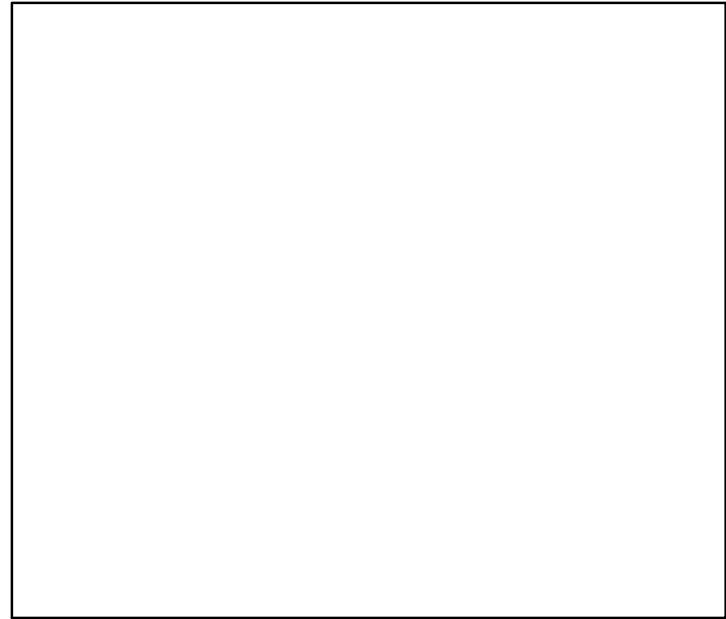
**Kobe MGT\***



**Spawner Recruit\***



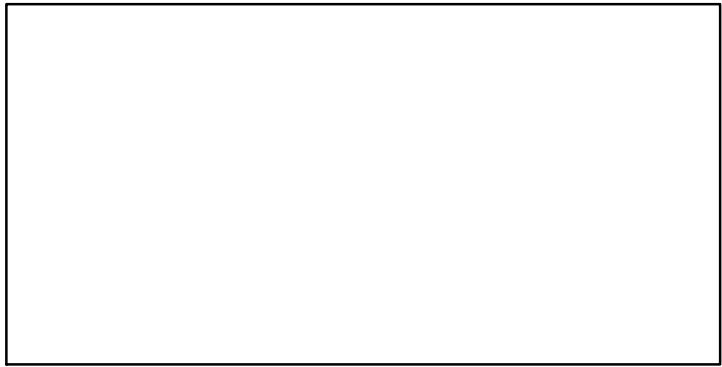
**Production\***



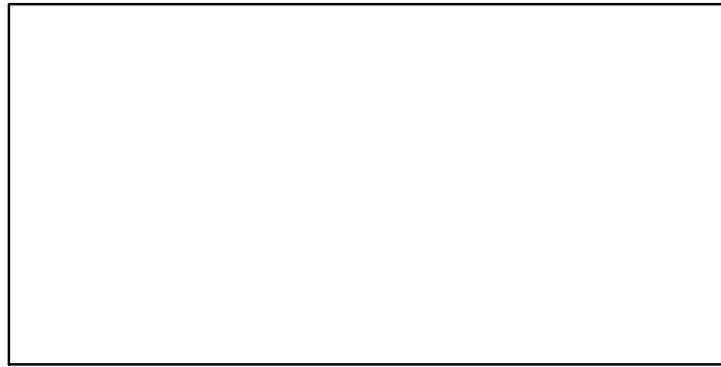
◆ Start Year ♦ End Year \* No Data

Common sole ICES 7bc [SOLEVIIbc]

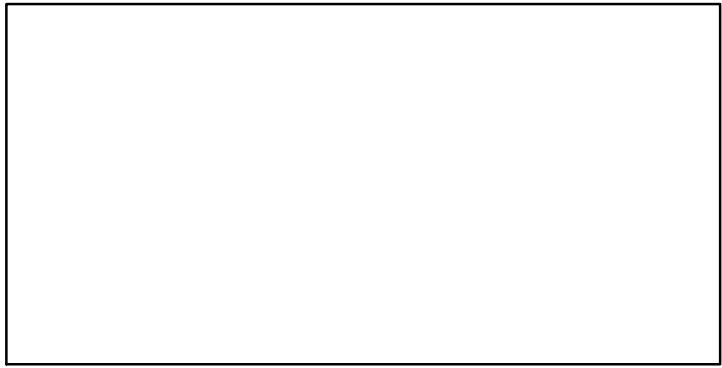
**TB\***



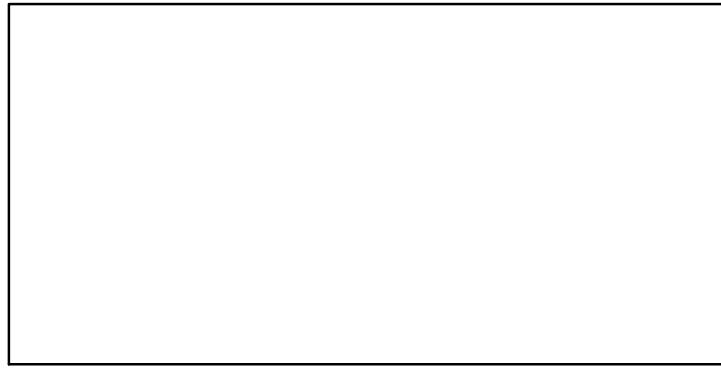
**SSB\***



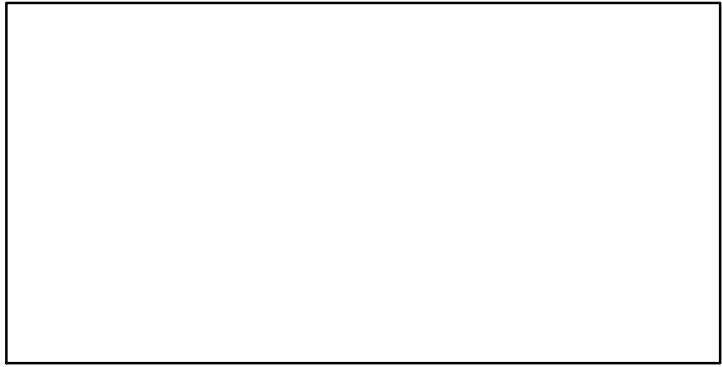
**TN \***



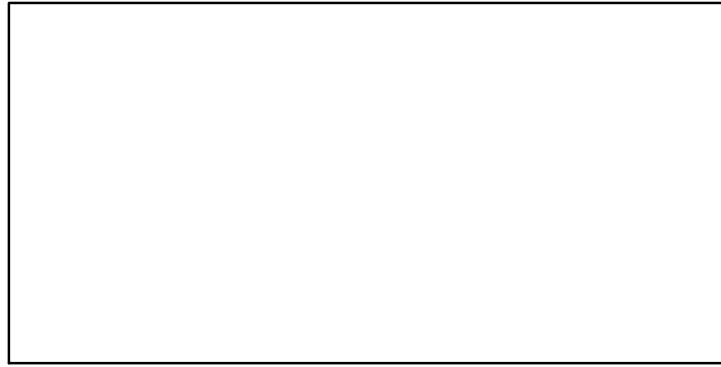
**F\***



**ER\***



**Recruits\***

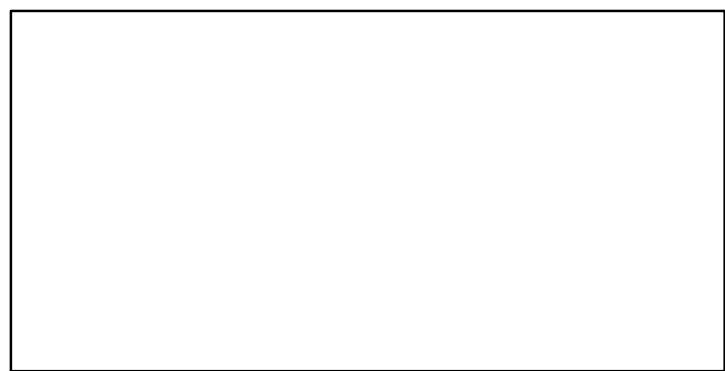
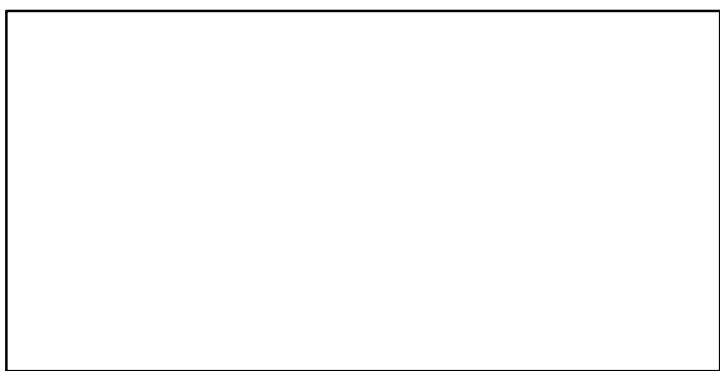
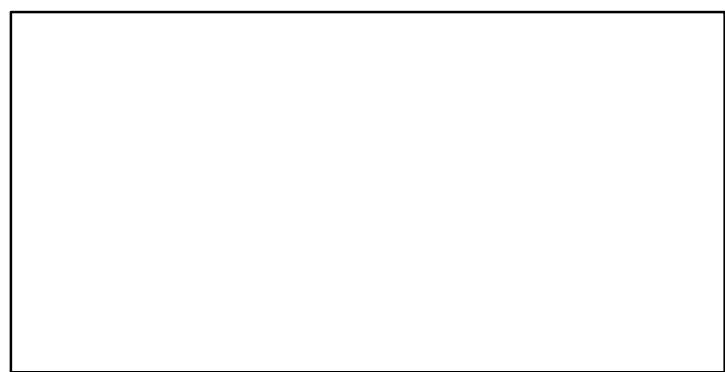
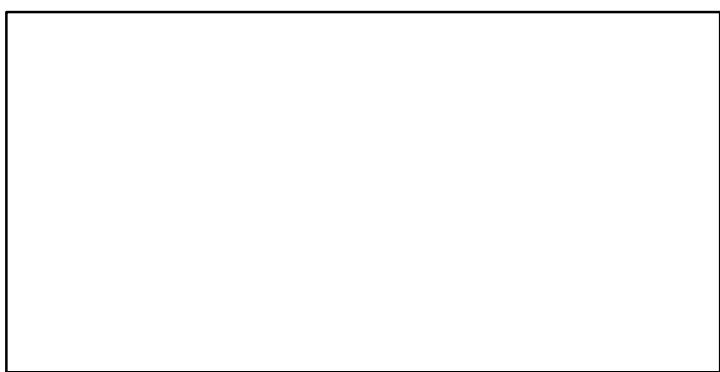
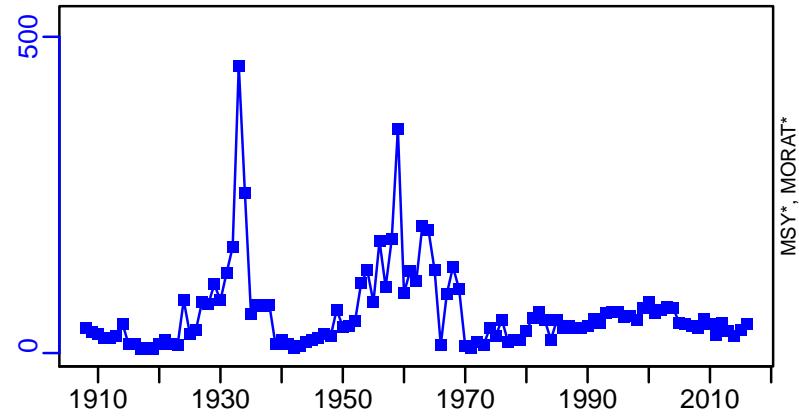


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Common sole ICES 7bc [SOLEVIIbc]

TL-MT, TC\*, RecC\* (1908–2016–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

## Common sole Eastern English Channel [SOLEVIIId]

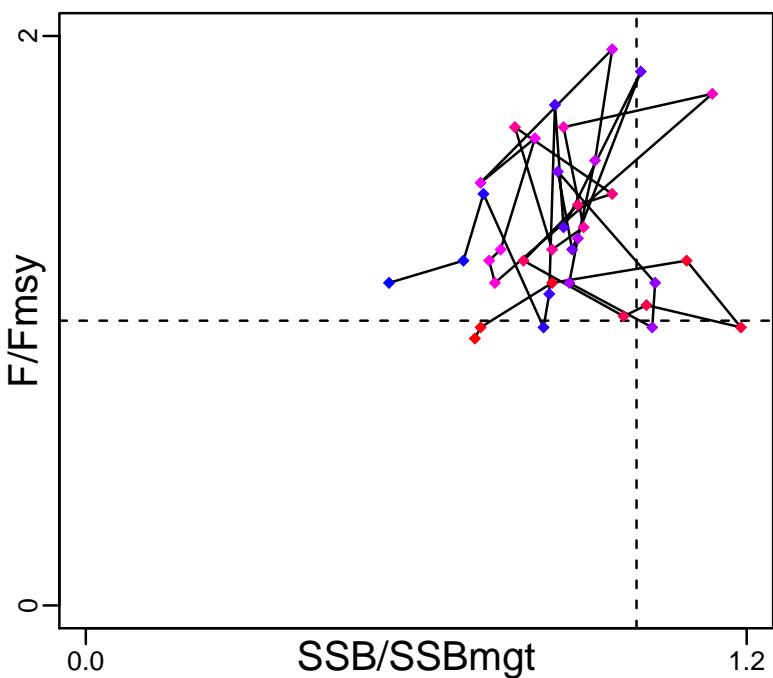
| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Solea solea   |
| <b>Current Assess ID</b>    | WGNSSK-SOLEVIIId-1981-2018-ICESIMP2021  |
| <b>Area</b>                 | Eastern English Channel   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2011, 2013, 2014, 2015, 2016, 2017, 2018, 2018                                    |

| <b>Reference Points</b> |           |           |        |  |
|-------------------------|-----------|-----------|--------|--|
| Type                    | ID        | Asmt Year | Value  |  |
| <b>TBmsy</b>            | -         | -         | -      |  |
| <b>SSBmsy</b>           | -         | -         | -      |  |
| <b>Fmsy</b>             | Fmsy-1/yr | 2018      | 0.256  |  |
| <b>ERmsy</b>            | -         | -         | -      |  |
| <b>TBmgt</b>            | -         | -         | -      |  |
| <b>SSBmgt</b>           | SSBmgt-MT | 2018      | 19,251 |  |
| <b>Fmgt</b>             | Fmgt-1/yr | 2018      | 0.256  |  |
| <b>ERmgt</b>            | -         | -         | -      |  |
| <b>TB0</b>              | -         | -         | -      |  |
| <b>SSB0</b>             | -         | -         | -      |  |
| <b>MSY</b>              | -         | -         | -      |  |
| <b>M</b>                | M-1/yr    | 2011      | 0.1    |  |
| <b>TBlim</b>            | -         | -         | -      |  |
| <b>SSBlim</b>           | SSBlim-MT | 2018      | 13,751 |  |
| <b>Flim</b>             | Flim-1/yr | 2018      | 0.359  |  |
| <b>ERlim</b>            | -         | -         | -      |  |

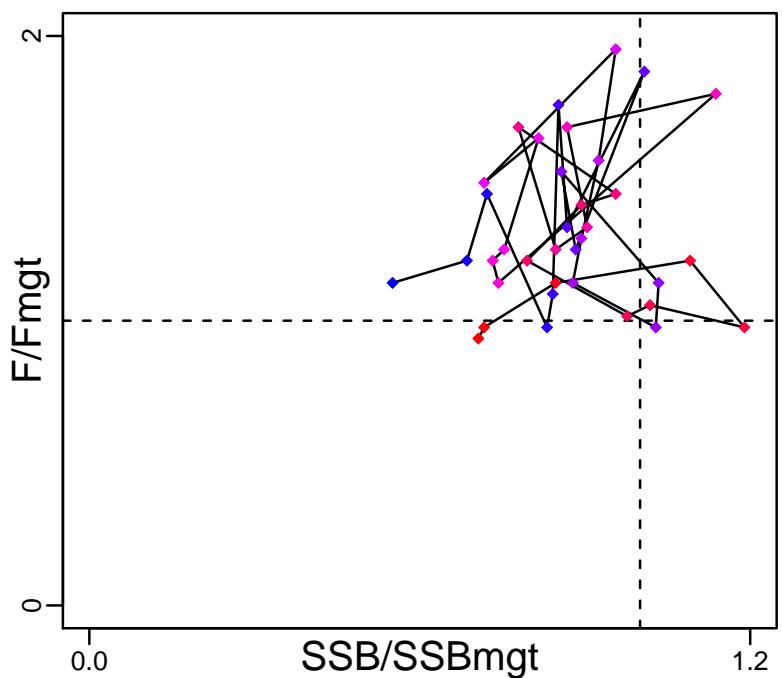
| <b>Time Series</b> |                  |           |            |      |        |  |
|--------------------|------------------|-----------|------------|------|--------|--|
| Type               | ID               | Asmt Year | Curr Value | Sex  | Age    |  |
| <b>TB</b>          | TB-MT            | 2018      | 17,300     | Both | -      |  |
| <b>SSB</b>         | SSB-MT           | 2018      | 14,300     | Both | -      |  |
| <b>TN</b>          | -                | -         | -          | -    | -      |  |
| <b>R</b>           | R-E00            | 2018      | 24,900,000 | -    | 1      |  |
| <b>F</b>           | F-1/yr           | 2018      | 0.24       | -    | 3 to 7 |  |
| <b>ER</b>          | ER-calc-ratio    | 2018      | 0.14       | -    | -      |  |
| <b>TC</b>          | TC-MT            | 2018      | 2430       |      |        |  |
| <b>TL</b>          | TL-MT            | 2018      | 2230       |      |        |  |
| <b>TB/TBmsy</b>    | -                | -         | -          |      |        |  |
| <b>SSB/SSBmsy</b>  | -                | -         | -          |      |        |  |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2018      | 0.938      |      |        |  |
| <b>ER/ERmsy</b>    | -                | -         | -          |      |        |  |
| <b>TB/TBmgt</b>    | -                | -         | -          |      |        |  |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2018      | 0.743      |      |        |  |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2018      | 0.938      |      |        |  |
| <b>ER/ERmgt</b>    | -                | -         | -          |      |        |  |

**Common sole Eastern English Channel [SOLEVId]**

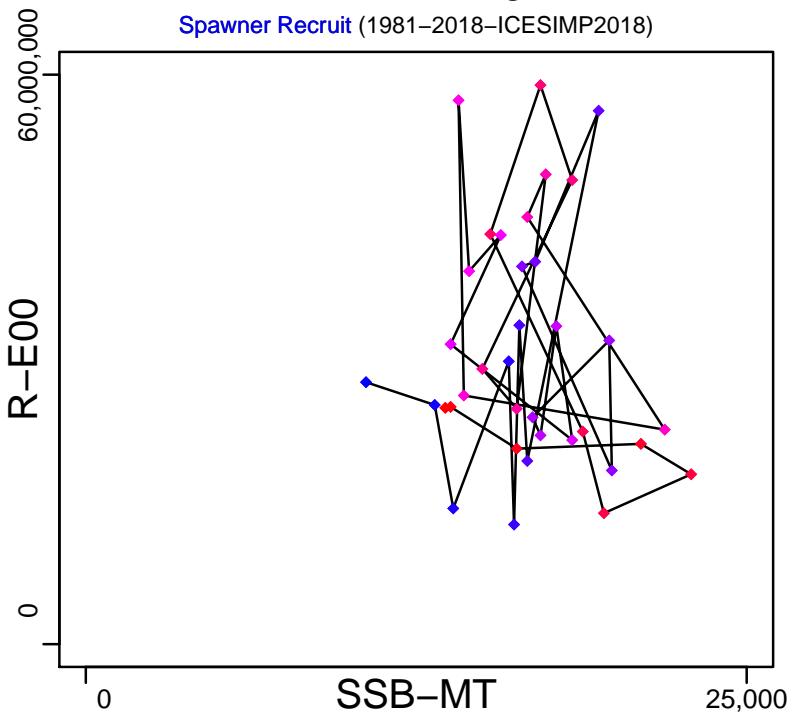
Kobe MSYpref (1981–2018–ICESIMP2018)



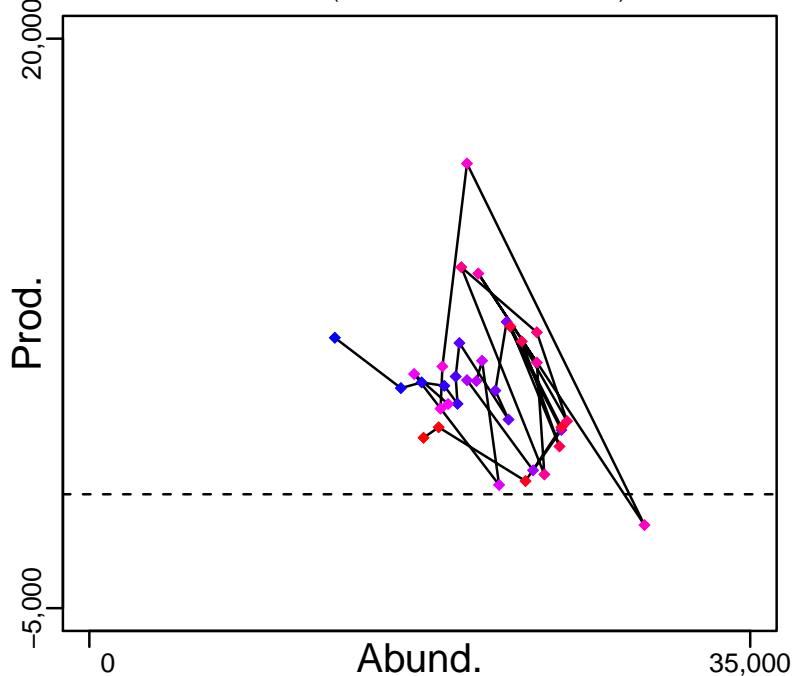
Kobe MGTpref (1981–2018–ICESIMP2018)



Spawner Recruit (1981–2018–ICESIMP2018)



Production (1981–2018–ICESIMP2018)

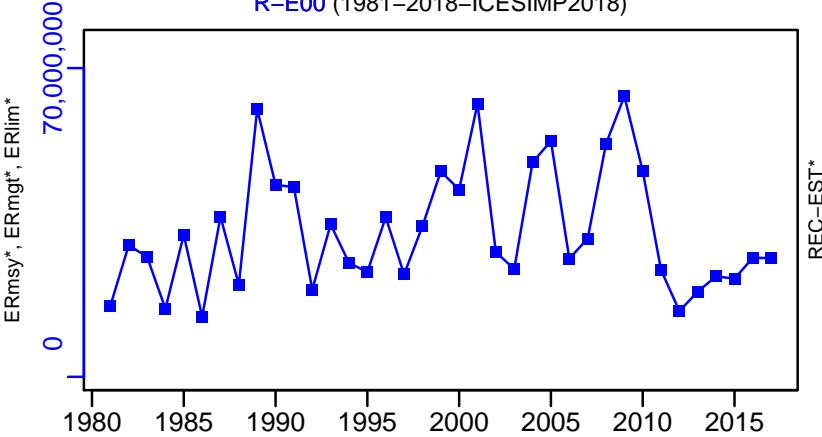
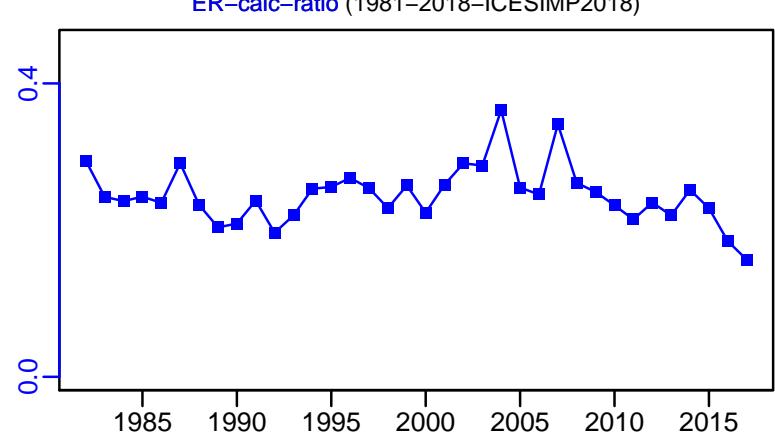
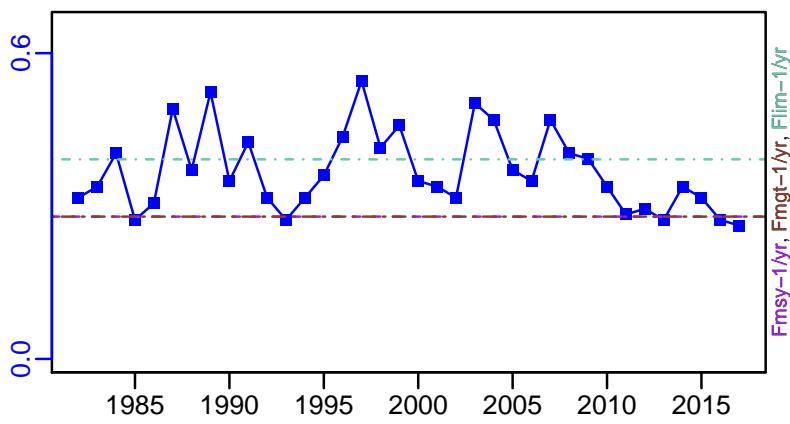
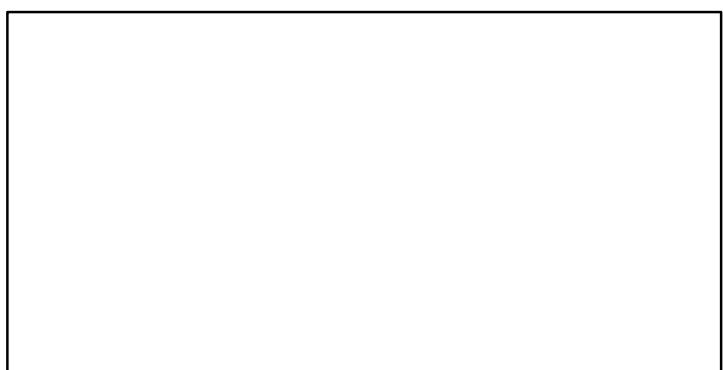
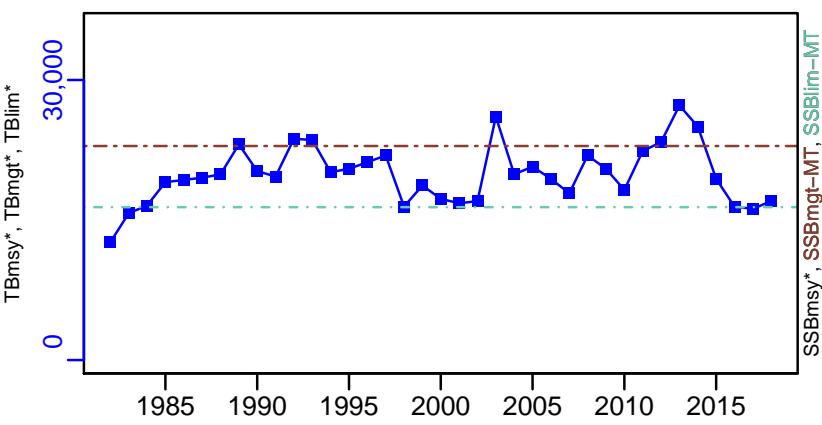
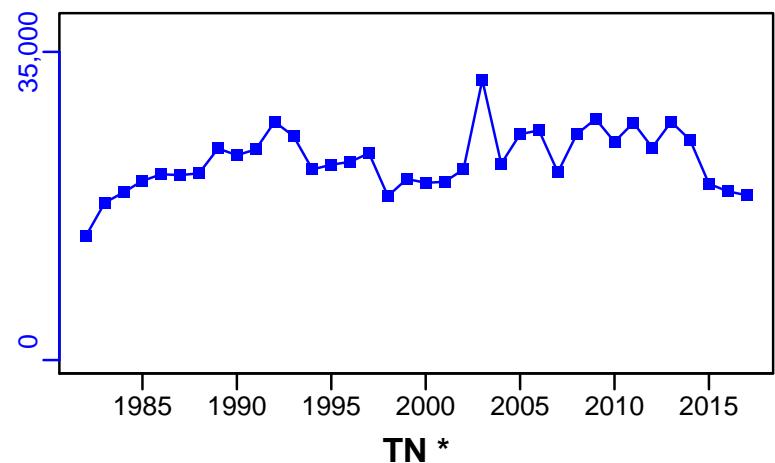


◆ Start Year   ◆ End Year   \* No Data

Common sole Eastern English Channel [SOLEVId]

TB-MT (1981–2018–ICESIMP2018)

SSB-MT (1981–2018–ICESIMP2018)

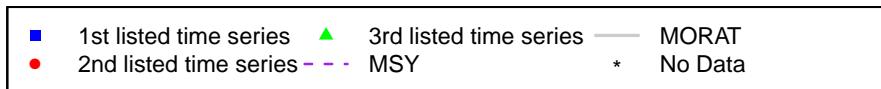
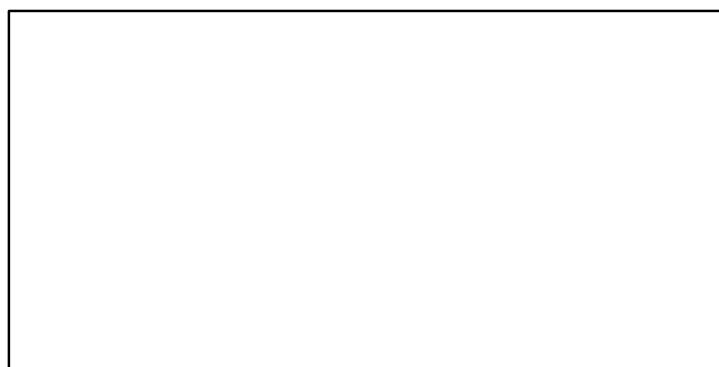
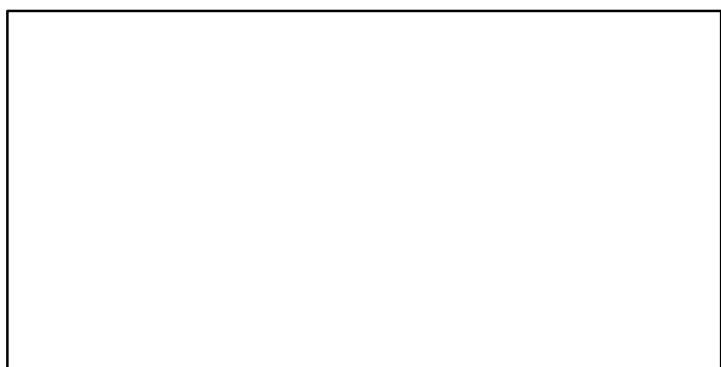
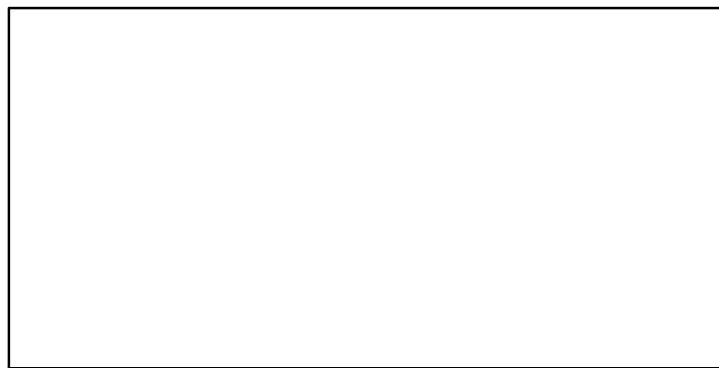
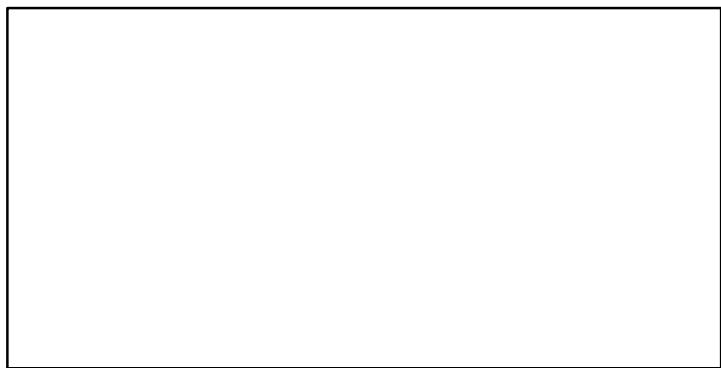
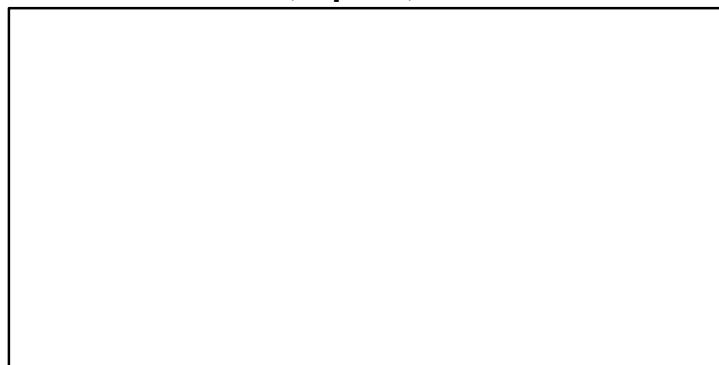
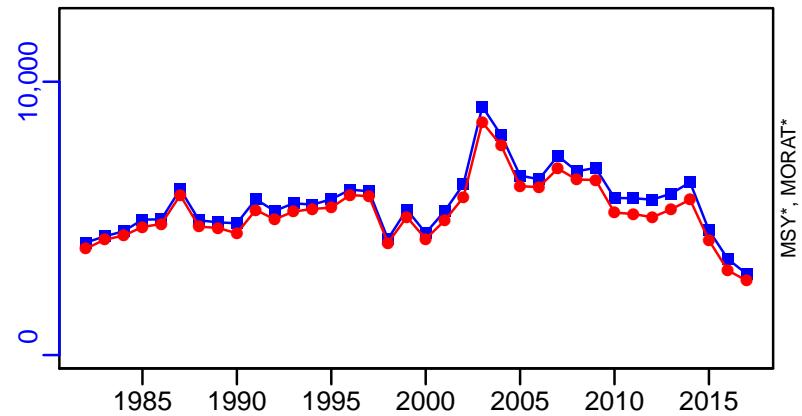


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - MSY-based BRP      | - Lim BRP    | * No Data |

Common sole Eastern English Channel [SOLEVId]

TC-MT, TL-MT, RecC\* (1981–2018–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



## Common sole Western English Channel [SOLEVIIe]

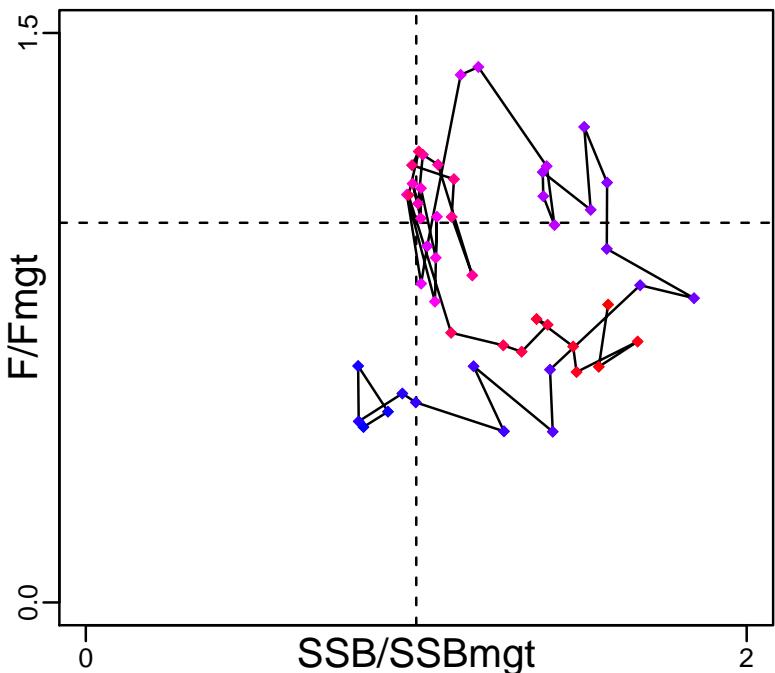
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Solea solea  |
| <b>Current Assess ID</b>    | WGCSE-SOLEVIIe-1967-2019-ICESIMP2021                 |
| <b>Area</b>                 | Western English Channel                              |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2015, 2016, 2017, 2018, 2019, 2013, 2014, 2010       |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2018             | 0.291        |
| <b>ERrmsy</b>           | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019             | 2900         |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019             | 0.29         |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | M-1/yr    | 2010             | 0.1          |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | SSBlim-MT | 2018             | 2039         |
| <b>Flim</b>             | Flim-1/yr | 2018             | 0.44         |
| <b>ERlim</b>            | -         | -                | -            |

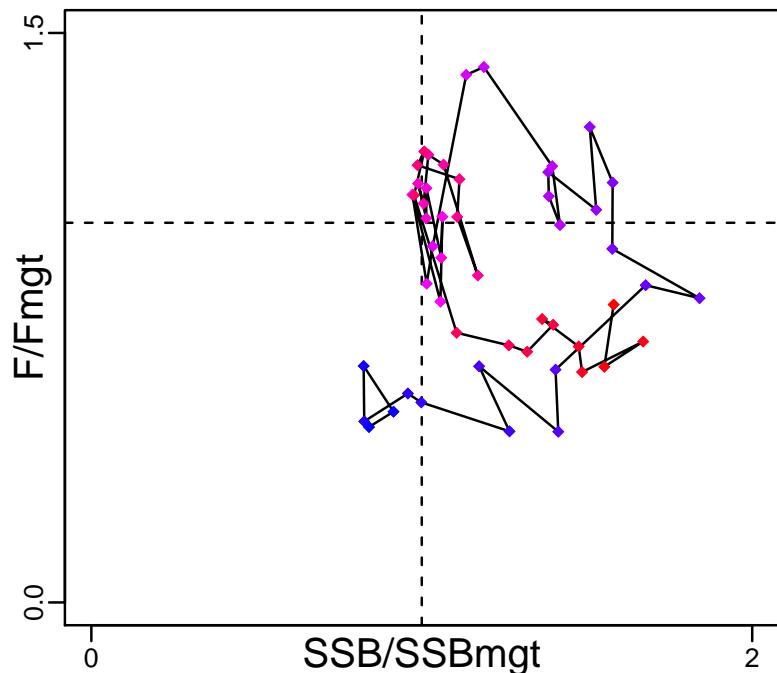
| <b>Time Series</b> |                  |                  |                   |            |            |  |
|--------------------|------------------|------------------|-------------------|------------|------------|--|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |  |
| <b>TB</b>          | TB-MT            | 2019             | 5934              | -          | -          |  |
| <b>SSB</b>         | SSB-MT           | 2019             | 4756              | -          | -          |  |
| <b>TN</b>          | -                | -                | -                 | -          | -          |  |
| <b>R</b>           | R-E00            | 2019             | 3,973,000         | -          | 2          |  |
| <b>F</b>           | F-1/yr           | 2019             | 0.228             | -          | 3 to 9     |  |
| <b>ER</b>          | ER-calc-ratio    | 2019             | 0.181             | -          | -          |  |
| <b>TC</b>          | TC-MT            | 2017             | 924               |            |            |  |
| <b>TL</b>          | TL-MT            | 2019             | 1075              |            |            |  |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |  |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2018             | 0.739             |            |            |  |
| <b>ER/ERrmsy</b>   | -                | -                | -                 |            |            |  |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019             | 1.64              |            |            |  |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019             | 0.784             |            |            |  |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |  |

**Common sole Western English Channel [SOLEVII]**

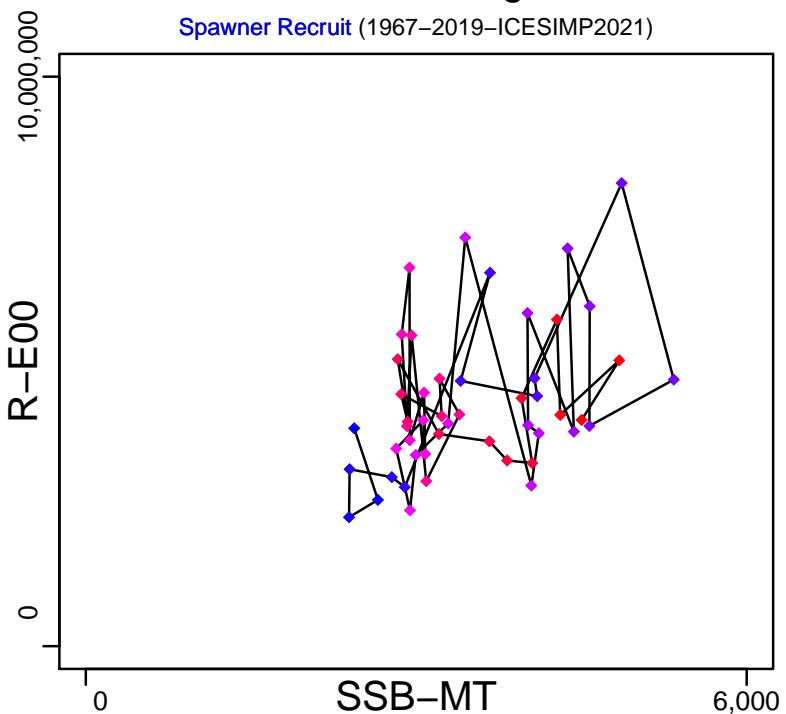
Kobe MSYpref (1967–2019–ICESIMP2021)



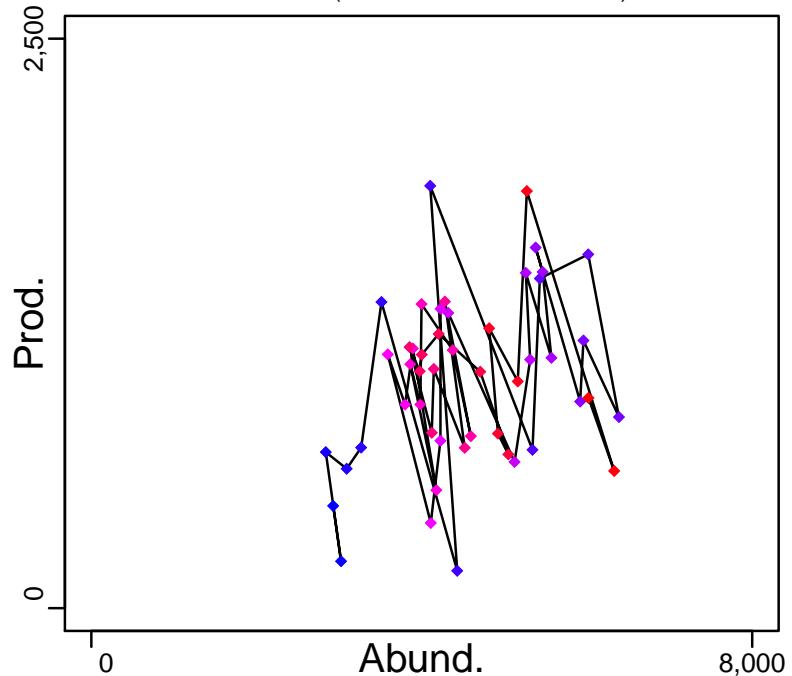
Kobe MGTpref (1967–2019–ICESIMP2021)



Spawner Recruit (1967–2019–ICESIMP2021)



Production (1967–2019–ICESIMP2021)

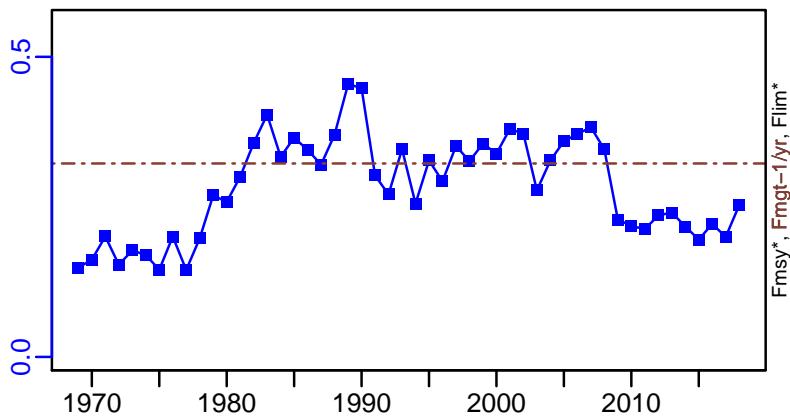
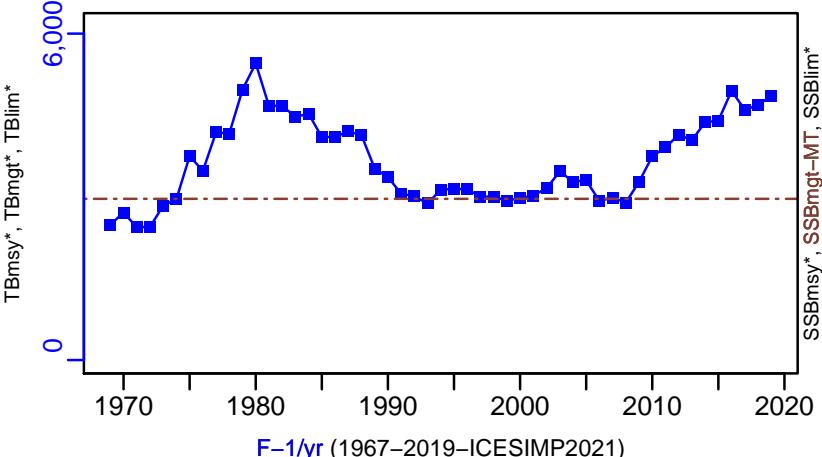
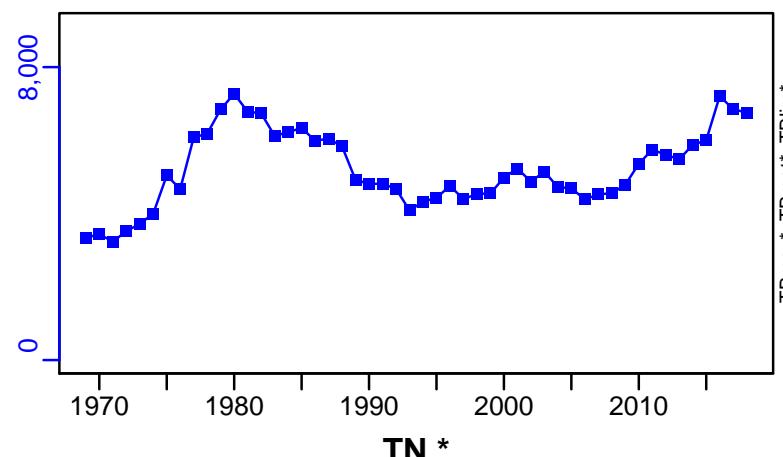


|              |            |   |         |
|--------------|------------|---|---------|
| ◆ Start Year | ◆ End Year | * | No Data |
|--------------|------------|---|---------|

### Common sole Western English Channel [SOLEVille]

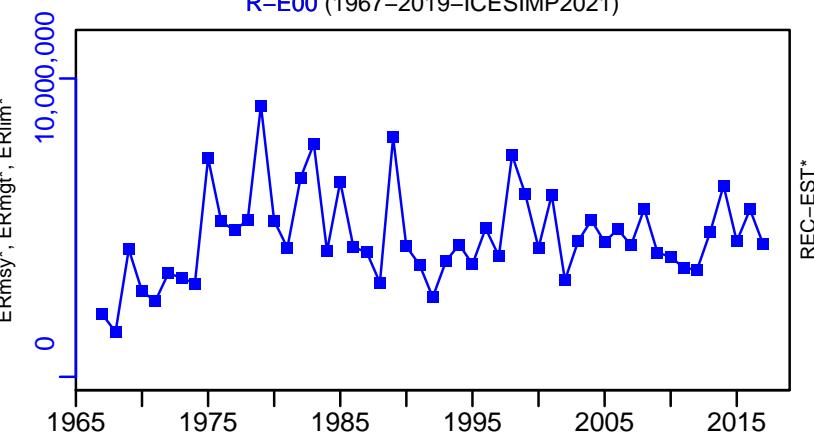
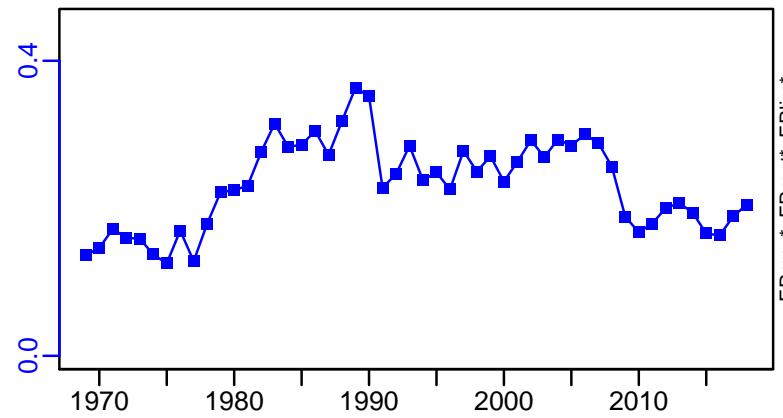
TB-MT (1967–2019–ICESIMP2021)

SSB-MT (1967–2019–ICESIMP2021)



ER-calc-ratio (1967–2019–ICESIMP2021)

R-E00 (1967–2019–ICESIMP2021)

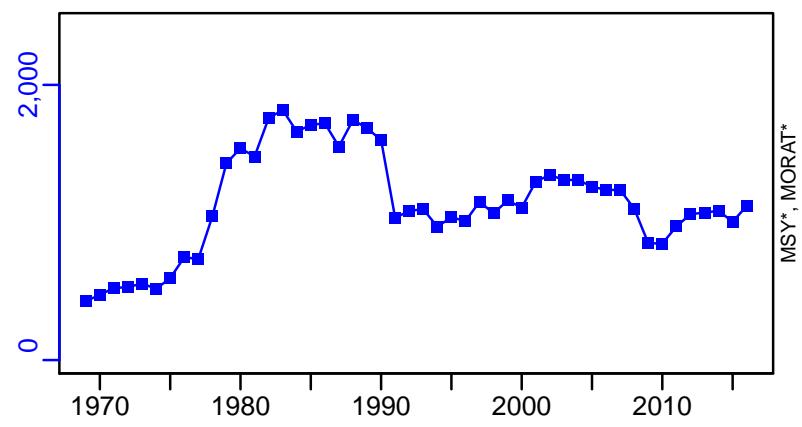


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | --- Lim BRP  | * No Data |

Common sole Western English Channel [SOLEVIIe]

TC-MT, TL\*, RecC\* (1967–2017–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



survB\*

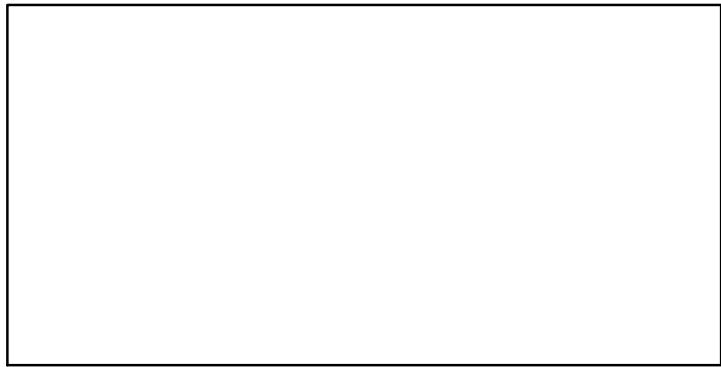
MSY\*, MORAT\*



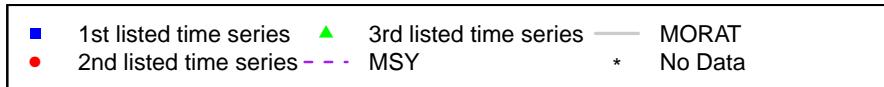
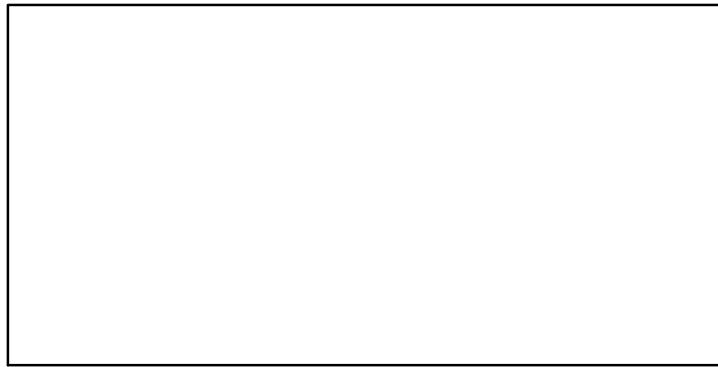
CPUE\*



EFFORT\*



CdivMSY\*

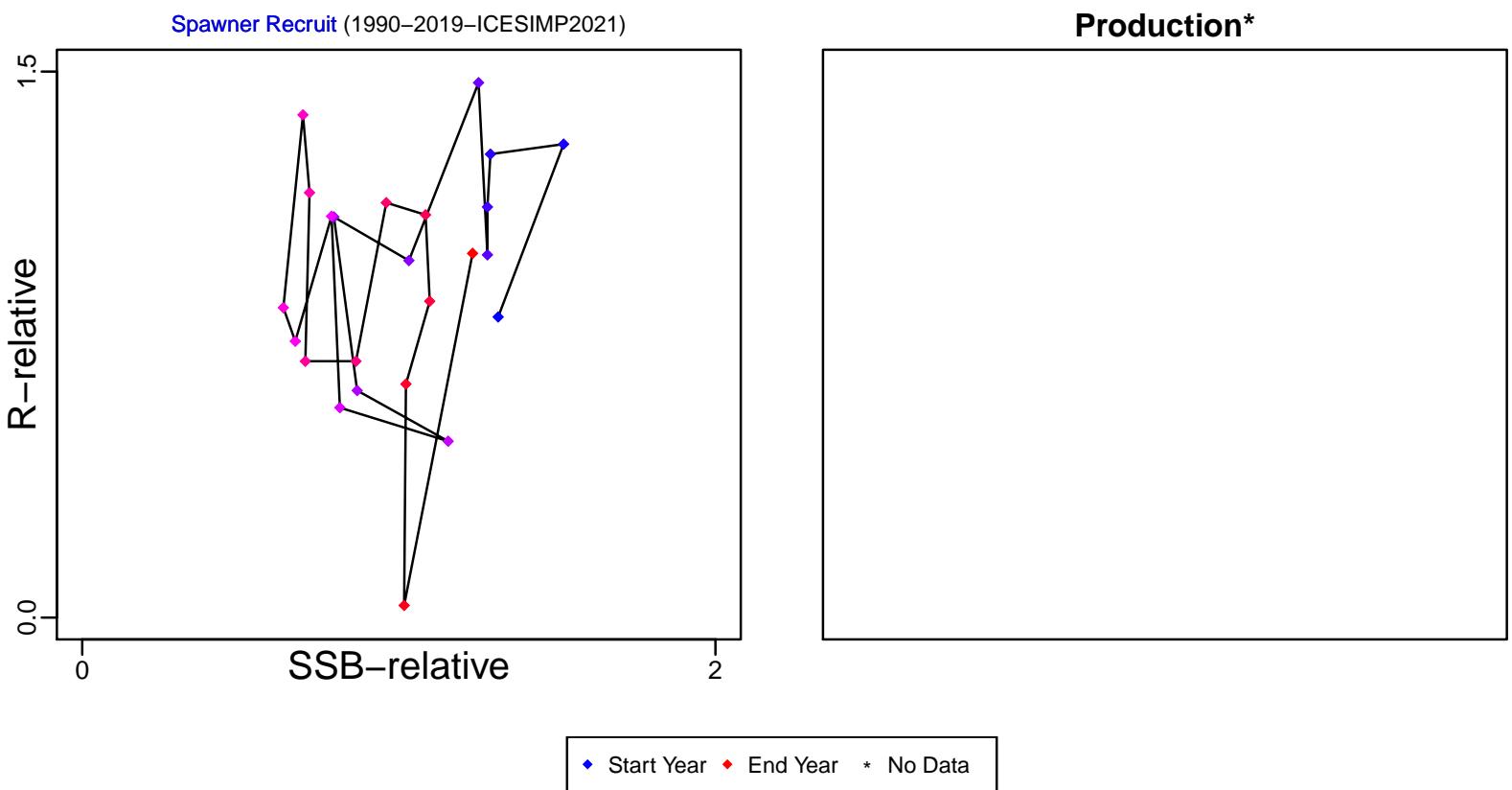


## Common sole ICES 7h-k [SOLEVIIh-k]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Solea solea  |
| <b>Current Assess ID</b>    | WGCSE-SOLEVIIh-k-1990-2019-ICESIMP2021               |
| <b>Area</b>                 | ICES 7h-k  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2014, 2015, 2016, 2018, 2019                         |

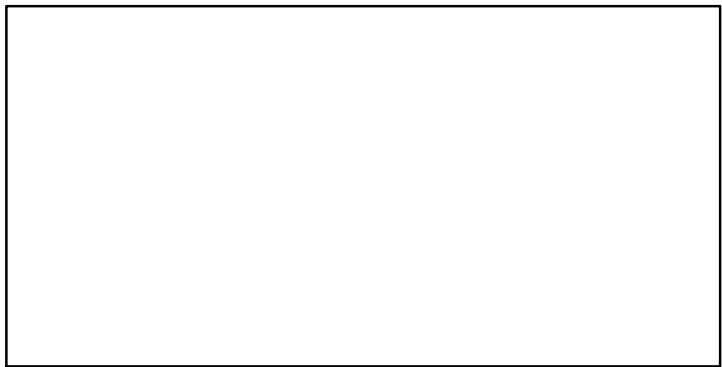
| <b>Reference Points</b> |                 |                  |              |
|-------------------------|-----------------|------------------|--------------|
| <b>Type</b>             | <b>ID</b>       | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -               | -                | -            |
| <b>SSBmsy</b>           | -               | -                | -            |
| <b>Fmsy</b>             | Fmsy-relative   | 2018             | 0.161        |
| <b>ERmsy</b>            | -               | -                | -            |
| <b>TBmgt</b>            | -               | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-relative | 2019             | 1.109        |
| <b>Fmgt</b>             | Fmgt-relative   | 2019             | 0.675        |
| <b>ERmgt</b>            | -               | -                | -            |
| <b>TB0</b>              | -               | -                | -            |
| <b>SSB0</b>             | -               | -                | -            |
| <b>MSY</b>              | -               | -                | -            |
| <b>M</b>                | -               | -                | -            |
| <b>TBlim</b>            | -               | -                | -            |
| <b>SSBlim</b>           | SSBlim-relative | 2018             | 425          |
| <b>Flim</b>             | Flim-relative   | 2018             | 0.222        |
| <b>ERlim</b>            | -               | -                | -            |

| <b>Time Series</b> |              |                  |                   |            |            |  |
|--------------------|--------------|------------------|-------------------|------------|------------|--|
| <b>Type</b>        | <b>ID</b>    | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |  |
| <b>TB</b>          | -            | -                | -                 | -          | -          |  |
| <b>SSB</b>         | SSB-relative | 2019             | 0.865             | -          | -          |  |
| <b>TN</b>          | -            | -                | -                 | -          | -          |  |
| <b>R</b>           | R-relative   | 2019             | 1.001             | -          | 3          |  |
| <b>F</b>           | F-relative   | 2019             | 0.468             | -          | 3 to 6     |  |
| <b>ER</b>          | -            | -                | -                 | -          | -          |  |
| <b>TC</b>          | -            | -                | -                 |            |            |  |
| <b>TL</b>          | TL-MT        | 2019             | 75                |            |            |  |
| <b>TB/TBmsy</b>    | -            | -                | -                 |            |            |  |
| <b>SSB/SSBmsy</b>  | -            | -                | -                 |            |            |  |
| <b>F/Fmsy</b>      | -            | -                | -                 |            |            |  |
| <b>ER/ERmsy</b>    | -            | -                | -                 |            |            |  |
| <b>TB/TBmgt</b>    | -            | -                | -                 |            |            |  |
| <b>SSB/SSBmgt</b>  | -            | -                | -                 |            |            |  |
| <b>F/Fmgt</b>      | -            | -                | -                 |            |            |  |
| <b>ER/ERmgt</b>    | -            | -                | -                 |            |            |  |

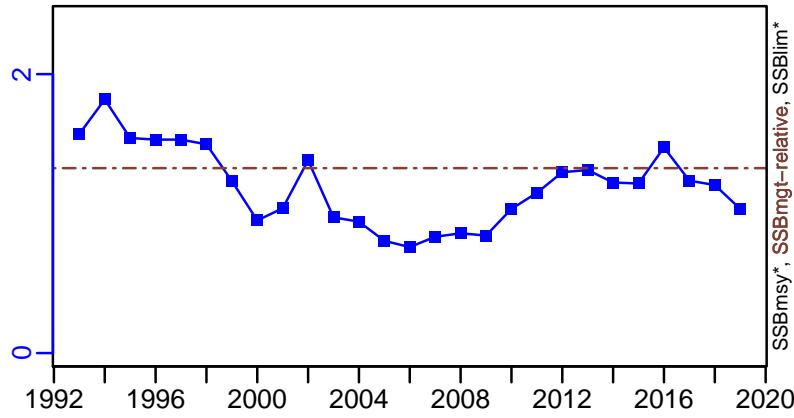
**Kobe MSY\*****Kobe MGT\***

Common sole ICES 7h–k [SOLEVIIh–k]

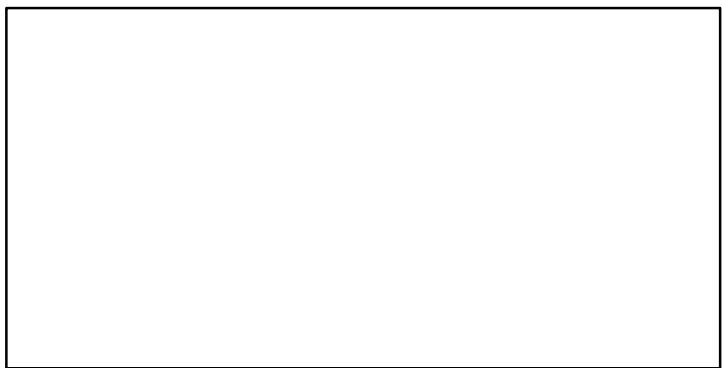
**TB\***



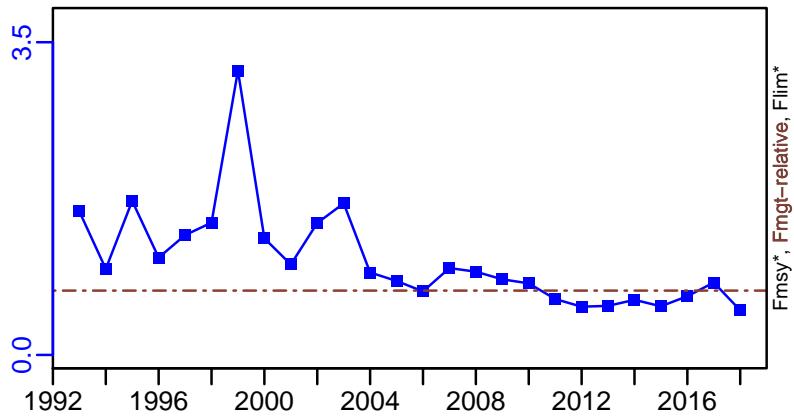
SSB-relative (1990–2019–ICESIMP2021)



**TN \***



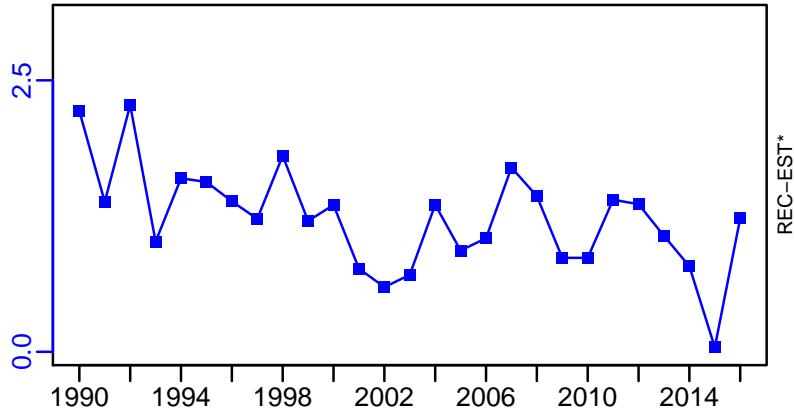
F-relative (1990–2019–ICESIMP2021)



**ER\***



R-relative (1990–2019–ICESIMP2021)

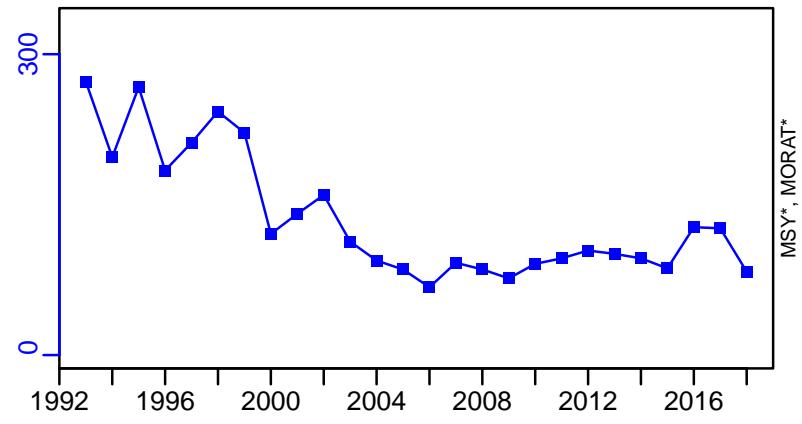


- Listed time series    - - - Target BRP    — Rec-Est
- - MSY-based BRP    - - Lim BRP    \* No Data

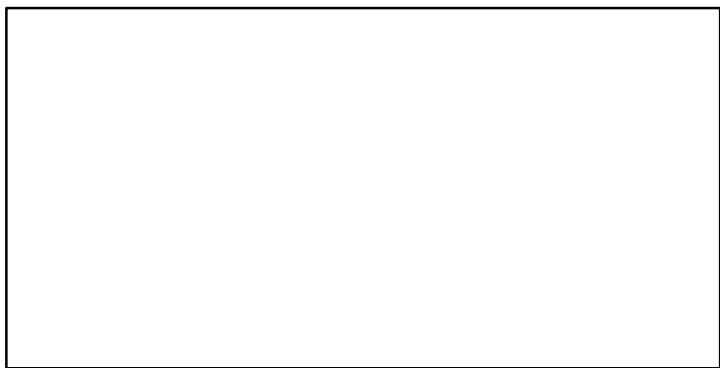
Common sole ICES 7h–k [SOLEVIIh–k]

TL–MT, TC\*, RecC\* (1990–2019–ICESIMP2021)

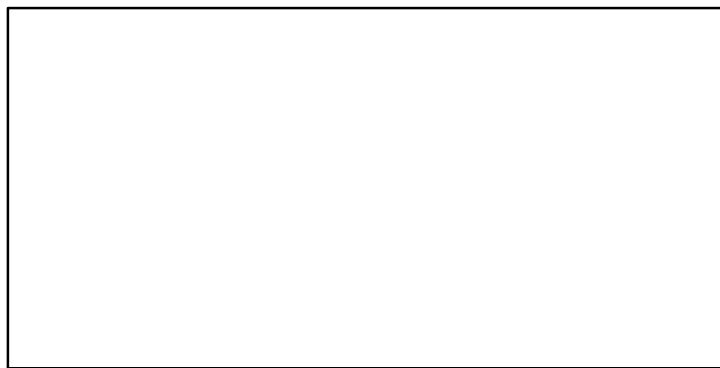
TAC\*, Cpair\*, Cadv\*



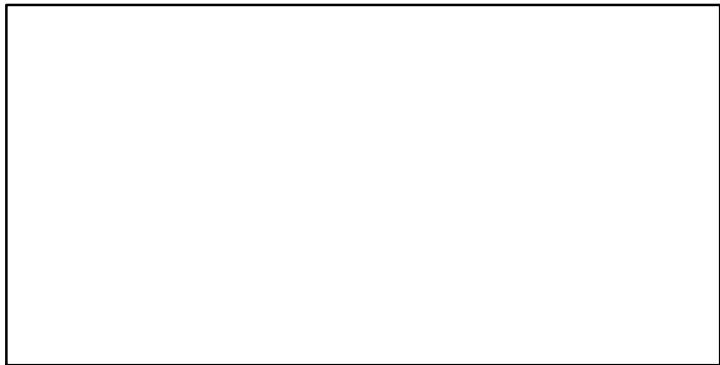
survB\*



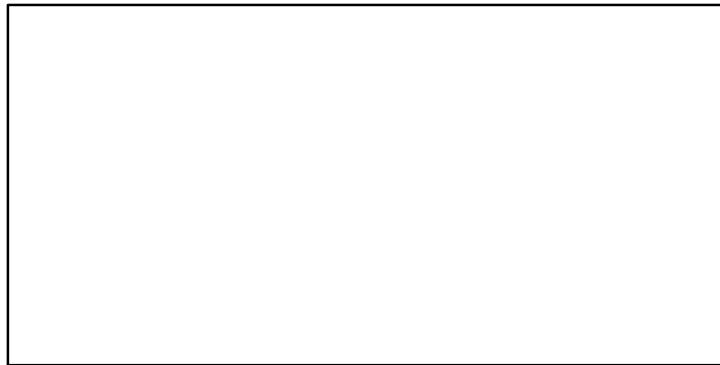
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

## Common sole ICES 8ab [SOLEVIIIab]

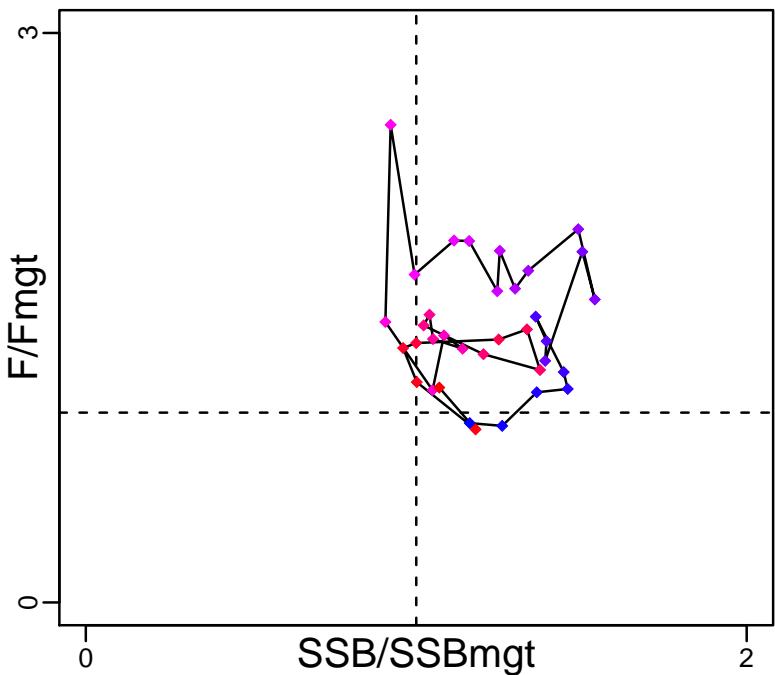
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Solea solea  |
| <b>Current Assess ID</b>    | WGBIE-SOLEVIIIab-1982-2019-ICESIMP2021                               |
| <b>Area</b>                 | ICES 8ab   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                 |
| <b>Assessor</b>             | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion |
| <b>Asmts in RAM</b>         | 2016, 2017, 2018, 2019, 2014, 2015, 2011, 2013                       |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2017             | 0.33         |
| <b>ERrmsy</b>           | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019             | 10,600       |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019             | 0.33         |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | M-1/yr    | 2011             | 0.1          |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | SSBlim-MT | 2018             | 7600         |
| <b>Flim</b>             | Flim-1/yr | 2017             | 0.6          |
| <b>ERlim</b>            | -         | -                | -            |

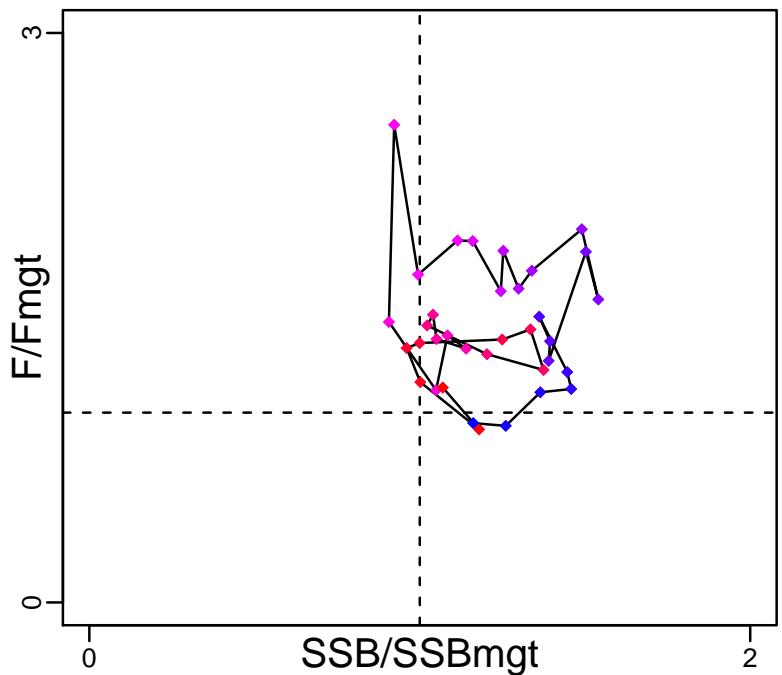
| <b>Time Series</b> |                  |                  |                   |            |            |  |
|--------------------|------------------|------------------|-------------------|------------|------------|--|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |  |
| <b>TB</b>          | TB-MT            | 2018             | 16,000            | Both       | -          |  |
| <b>SSB</b>         | SSB-MT           | 2019             | 12,653            | -          | -          |  |
| <b>TN</b>          | -                | -                | -                 | -          | -          |  |
| <b>R</b>           | R-E00            | 2019             | 20,828,590        | -          | 2          |  |
| <b>F</b>           | F-1/yr           | 2019             | 0.374             | -          | 3 to 6     |  |
| <b>ER</b>          | ER-calc-ratio    | 2018             | 0.206             | -          | -          |  |
| <b>TC</b>          | TC-MT            | 2018             | 3300              |            |            |  |
| <b>TL</b>          | TL-MT            | 2019             | 3469              |            |            |  |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |  |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2017             | 1.103             |            |            |  |
| <b>ER/ERrmsy</b>   | -                | -                | -                 |            |            |  |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019             | 1.194             |            |            |  |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019             | 1.132             |            |            |  |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |  |

Common sole ICES 8ab [SOLEVIIlab]

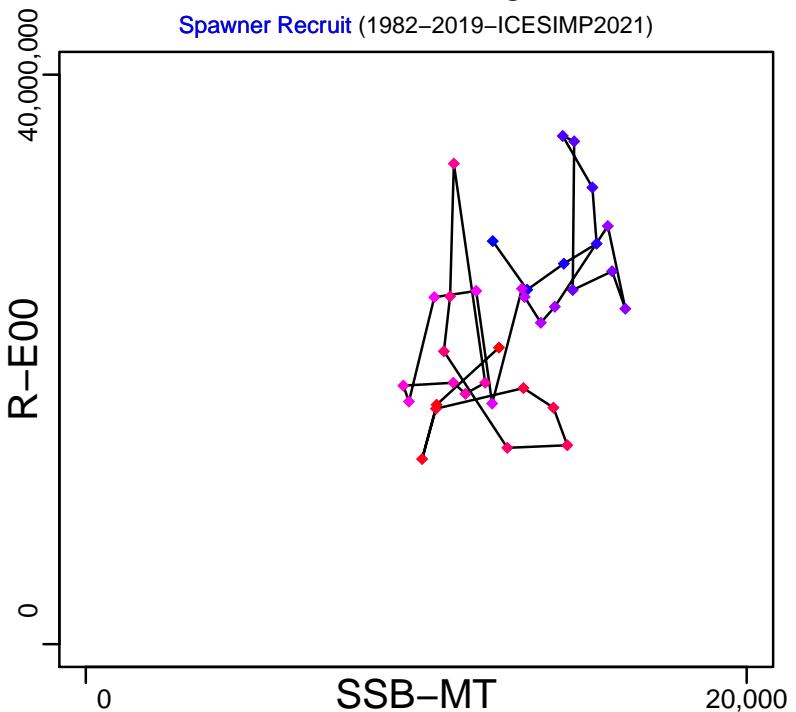
Kobe MSYpref (1982–2019–ICESIMP2021)



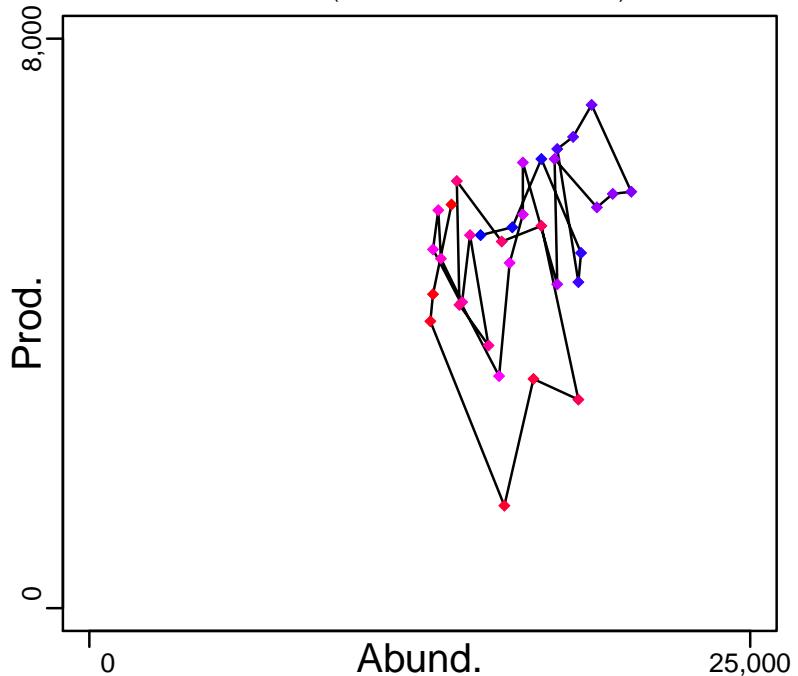
Kobe MGTpref (1982–2019–ICESIMP2021)



Spawner Recruit (1982–2019–ICESIMP2021)



Production (1982–2018–ICESIMP2018)

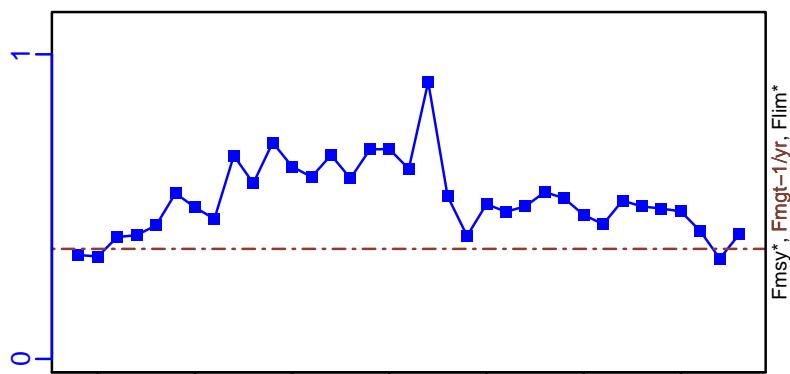
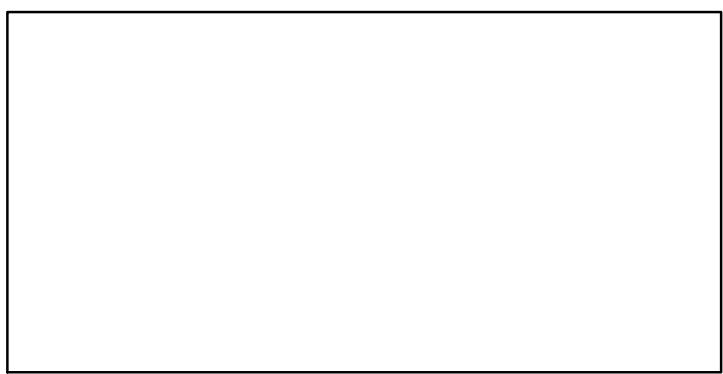
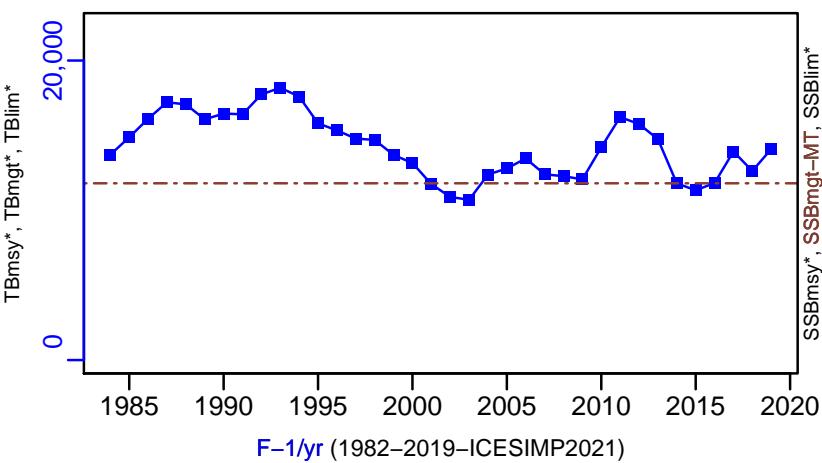
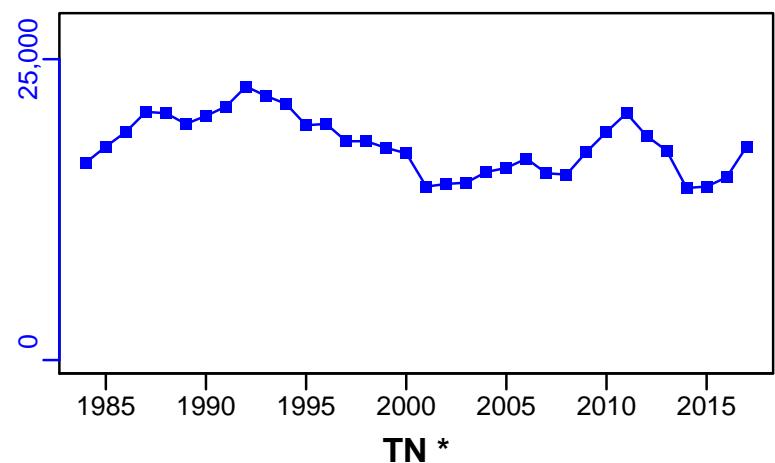


◆ Start Year ♦ End Year \* No Data

Common sole ICES 8ab [SOLEVIIIab]

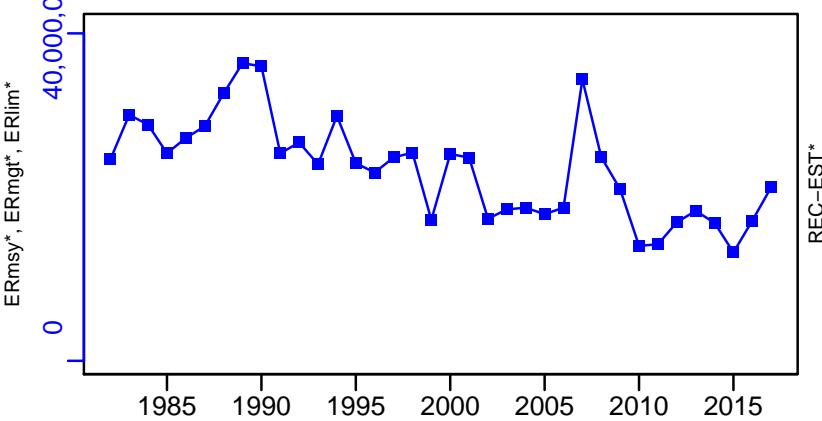
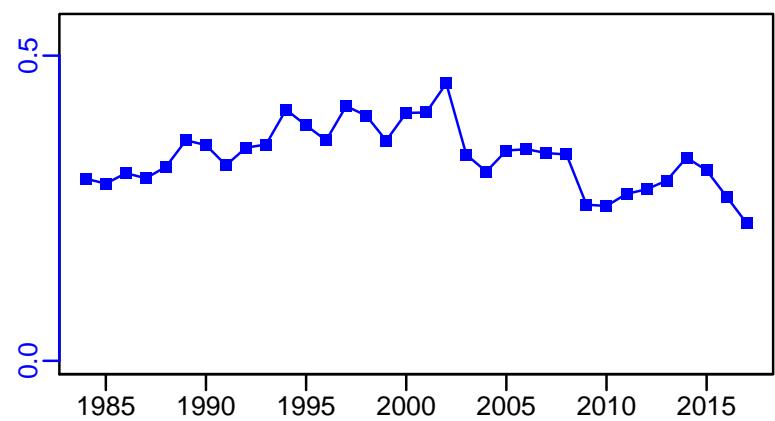
TB-MT (1982–2018–ICESIMP2018)

SSB-MT (1982–2019–ICESIMP2021)



ER-calc-ratio (1982–2018–ICESIMP2018)

R-E00 (1982–2019–ICESIMP2021)

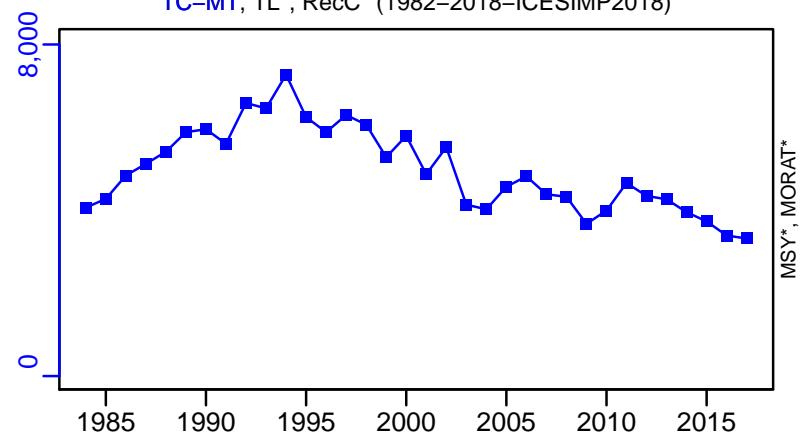


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - MSY-based BRP      | --- Lim BRP  | * No Data |

Common sole ICES 8ab [SOLEVIIlab]

TC-MT, TL\*, RecC\* (1982–2018—ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



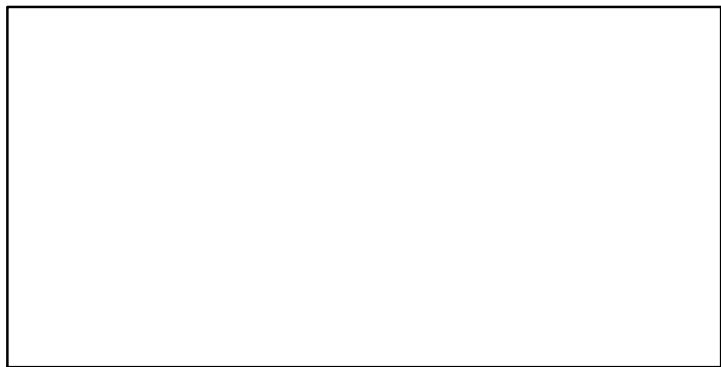
survB\*



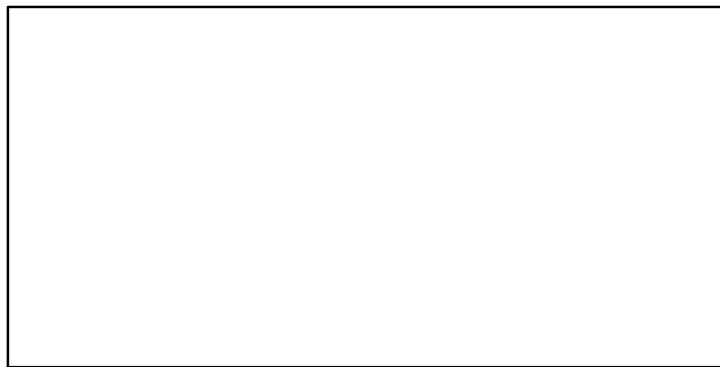
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

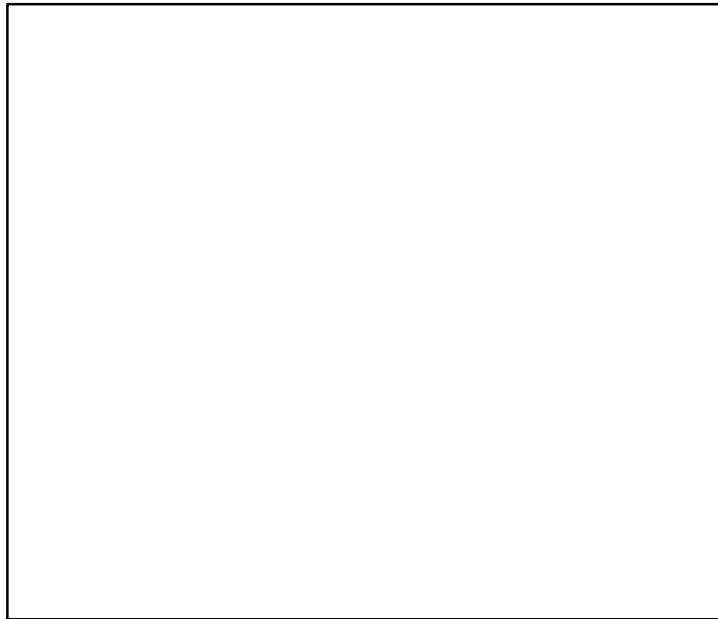
## Common sole ICES 8c-9a [SOLEVIIIC-IXa]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Solea solea  |
| <b>Current Assess ID</b>    | WGBIE-SOLEVIIIC-IXa-2000-2018-ICESIMP2021                            |
| <b>Area</b>                 | ICES 8c-9a   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                 |
| <b>Assessor</b>             | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion |
| <b>Asmts in RAM</b>         | 2011, 2018   |

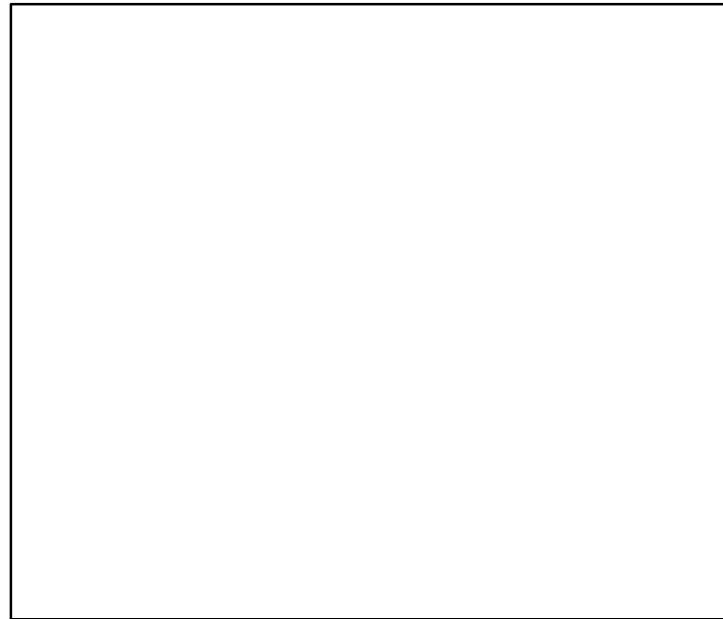
| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | -         | -                | -            |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | -         | -                | -            |
| <b>Fmgt</b>             | -         | -                | -            |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | -         | -                | -            |
| <b>Flim</b>             | -         | -                | -            |
| <b>ERlim</b>            | -         | -                | -            |

| <b>Time Series</b> |           |                  |                   |            |            |
|--------------------|-----------|------------------|-------------------|------------|------------|
| <b>Type</b>        | <b>ID</b> | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |
| <b>TB</b>          | -         | -                | -                 | -          | -          |
| <b>SSB</b>         | -         | -                | -                 | -          | -          |
| <b>TN</b>          | -         | -                | -                 | -          | -          |
| <b>R</b>           | -         | -                | -                 | -          | -          |
| <b>F</b>           | -         | -                | -                 | -          | -          |
| <b>ER</b>          | -         | -                | -                 | -          | -          |
| <b>TC</b>          | -         | -                | -                 |            |            |
| <b>TL</b>          | TL-MT     | 2018             | 579               |            |            |
| <b>TB/TBmsy</b>    | -         | -                | -                 |            |            |
| <b>SSB/SSBmsy</b>  | -         | -                | -                 |            |            |
| <b>F/Fmsy</b>      | -         | -                | -                 |            |            |
| <b>ER/ERmsy</b>    | -         | -                | -                 |            |            |
| <b>TB/TBmgt</b>    | -         | -                | -                 |            |            |
| <b>SSB/SSBmgt</b>  | -         | -                | -                 |            |            |
| <b>F/Fmgt</b>      | -         | -                | -                 |            |            |
| <b>ER/ERmgt</b>    | -         | -                | -                 |            |            |

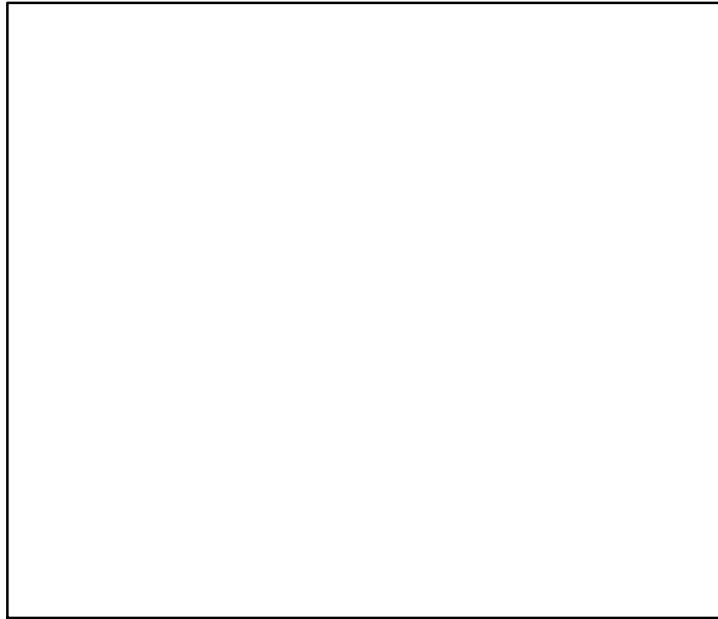
**Kobe MSY\***



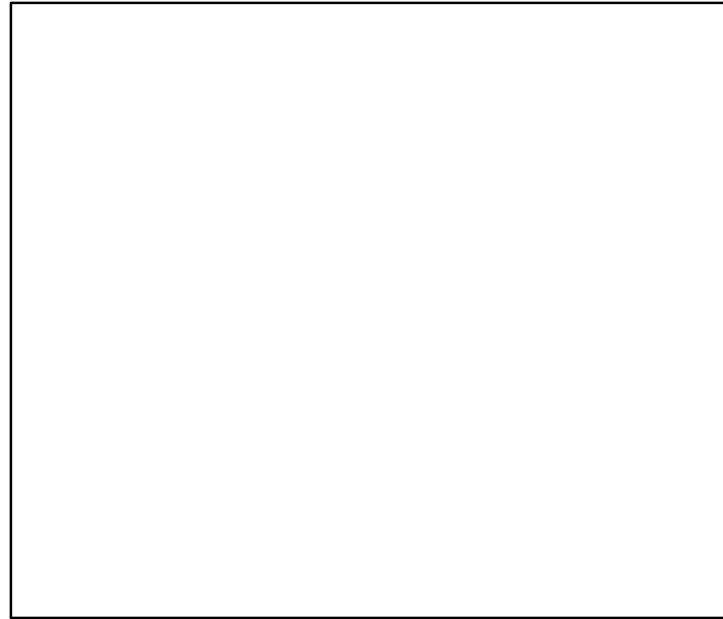
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

**Common sole ICES 8c–9a [SOLEVIIIC–IXa]**

**TB\***



**SSB\***



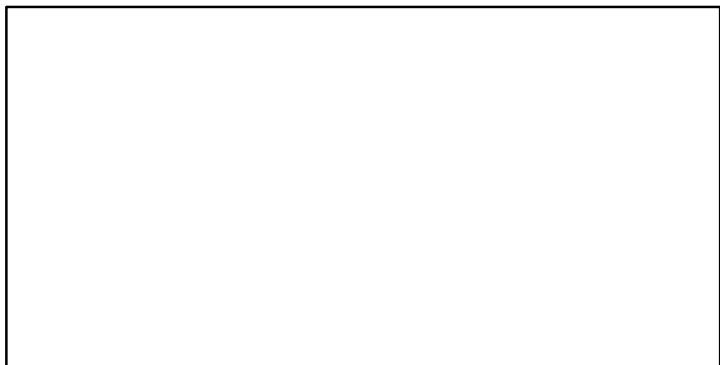
**TN \***



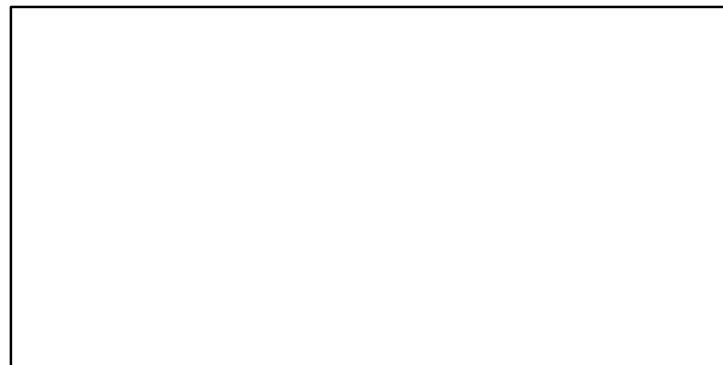
**F\***



**ER\***



**Recruits\***

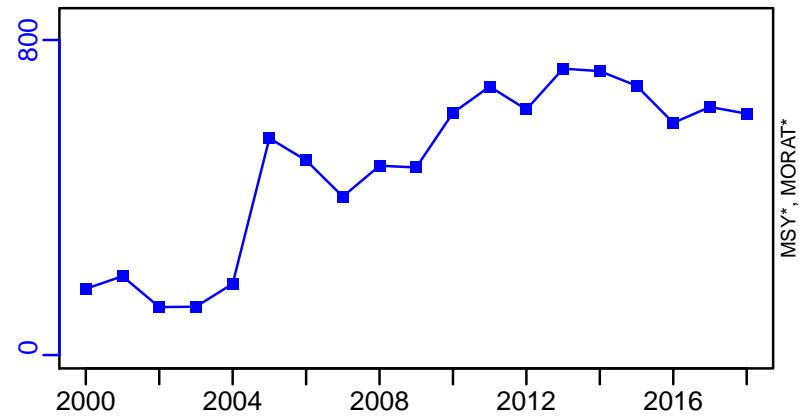


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

**Common sole ICES 8c–9a [SOLEVIIIC–IXa]**

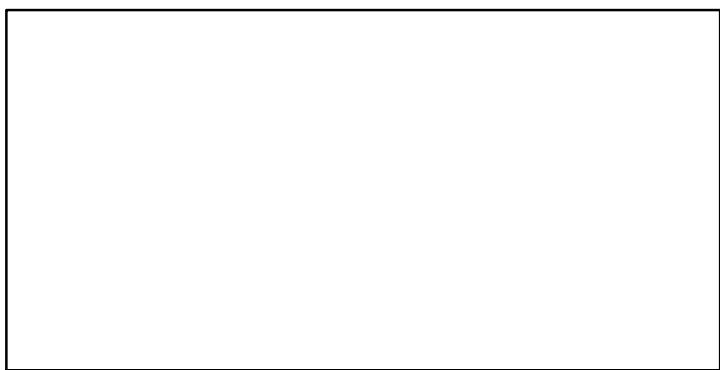
TL–MT, TC\*, RecC\* (2000–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*

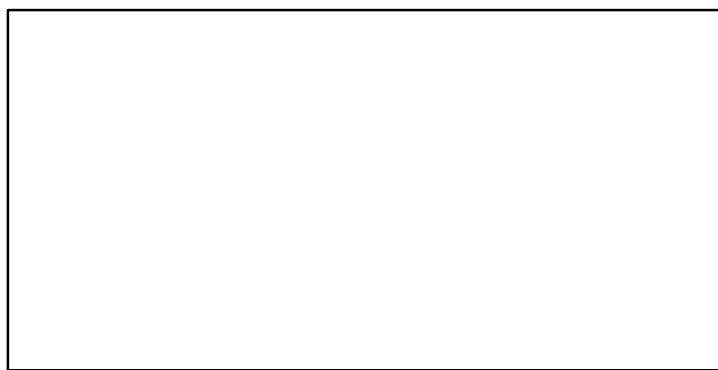


**survB\***

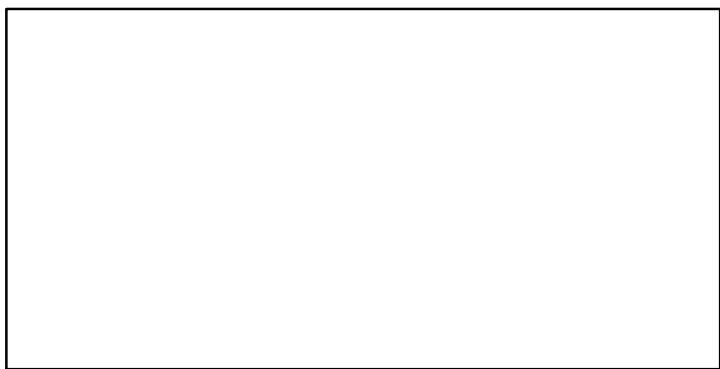
MSY\*, MORAT\*



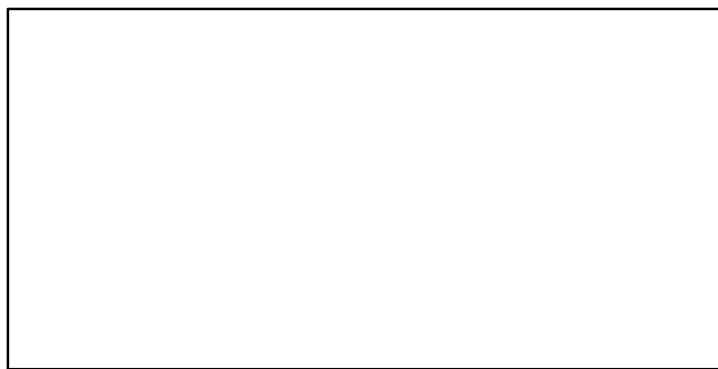
**CPUE\***



**EFFORT\***



**CdivMSY\***



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Sprat Baltic Areas 22-32 [SPRAT22-32]

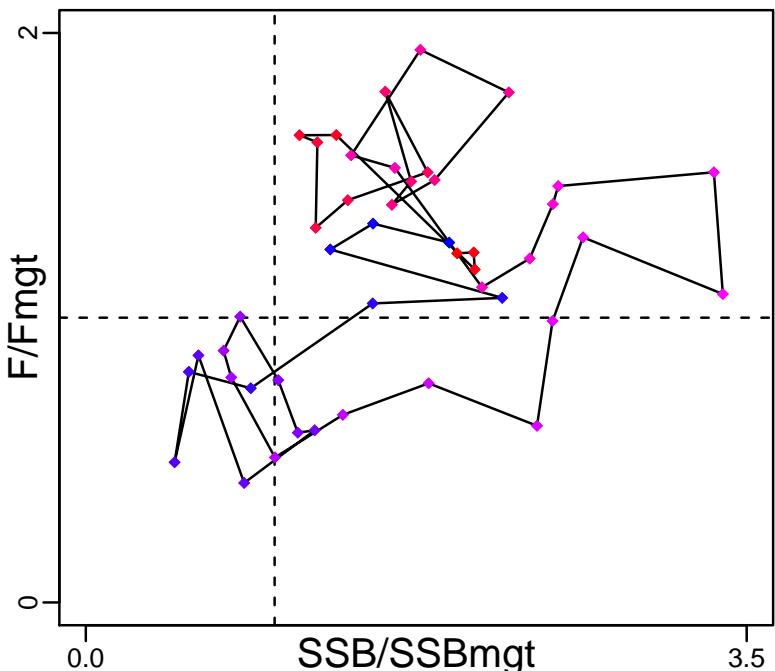
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Sprattus sprattus                                    |
| <b>Current Assess ID</b>    | WGBFAS-SPRAT22-32-1973-2019-ICESIMP2021              |
| <b>Area</b>                 | Baltic Areas 22-32                                   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Baltic Fisheries Assessment Working Group            |
| <b>Asmts in RAM</b>         | 2011, 2013, 2014, 2015, 2016, 2017, 2018, 2019       |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2018             | 0.26         |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019             | 570,000      |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019             | 0.26         |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | SSBlim-MT | 2018             | 410,000      |
| <b>Flim</b>             | Flim-1/yr | 2018             | 0.39         |
| <b>ERlim</b>            | -         | -                | -            |

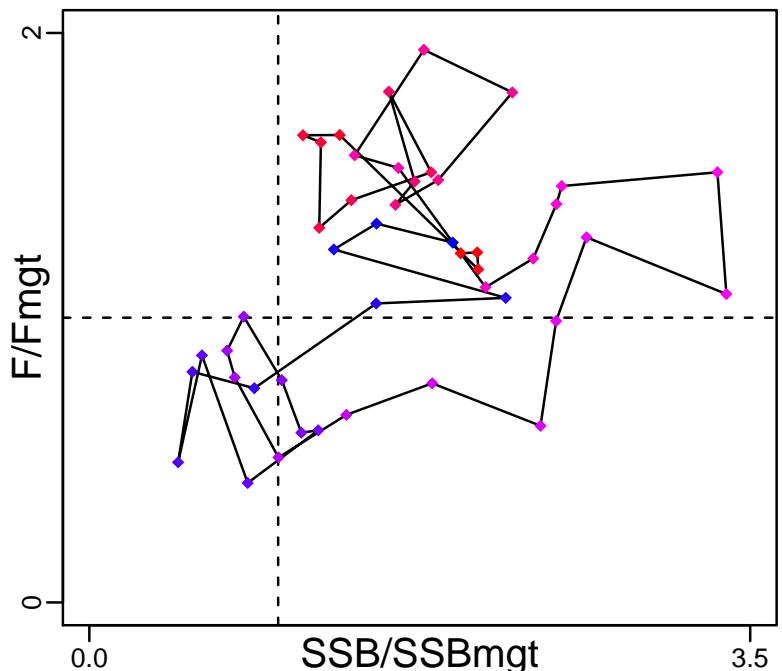
| <b>Time Series</b> |                  |                  |                   |            |            |  |
|--------------------|------------------|------------------|-------------------|------------|------------|--|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |  |
| <b>TB</b>          | TB-MT            | 2019             | 1,664,000         | -          | -          |  |
| <b>SSB</b>         | SSB-MT           | 2019             | 1,103,000         | -          | -          |  |
| <b>TN</b>          | -                | -                | -                 | -          | -          |  |
| <b>R</b>           | R-E00            | 2019             | 59,567,000        | -          | 1          |  |
| <b>F</b>           | F-1/yr           | 2019             | 0.319             | -          | 3 to 5     |  |
| <b>ER</b>          | ER-calc-ratio    | 2019             | 0.176             | -          | -          |  |
| <b>TC</b>          | TC-MT            | 2019             | 308,827           |            |            |  |
| <b>TL</b>          | TL-MT            | 2019             | 308,827           |            |            |  |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |  |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2018             | 1.065             |            |            |  |
| <b>ER/ERmsy</b>    | -                | -                | -                 |            |            |  |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019             | 1.935             |            |            |  |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019             | 1.226             |            |            |  |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |  |

Sprat Baltic Areas 22–32 [SPRAT22–32]

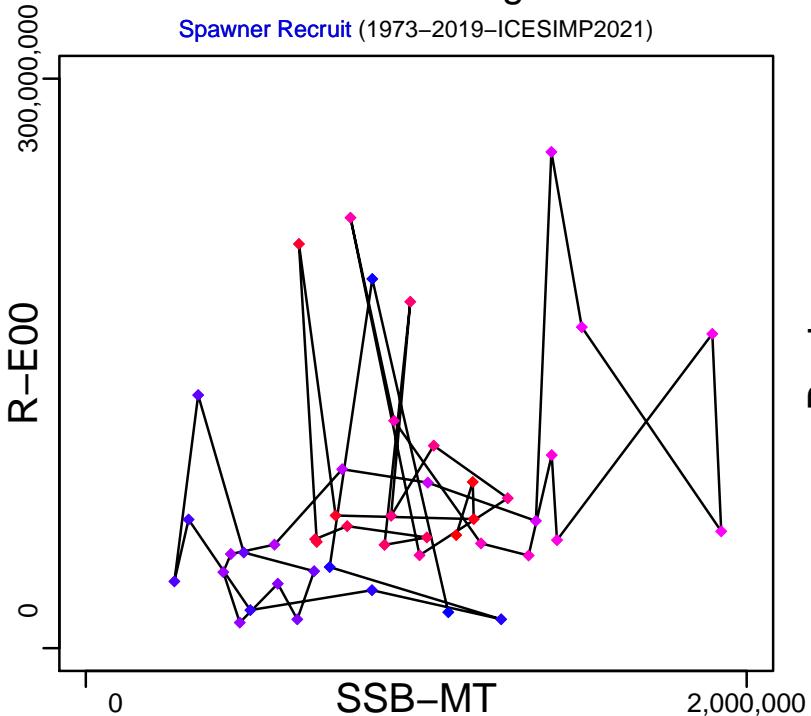
Kobe MSYpref (1973–2019–ICESIMP2021)



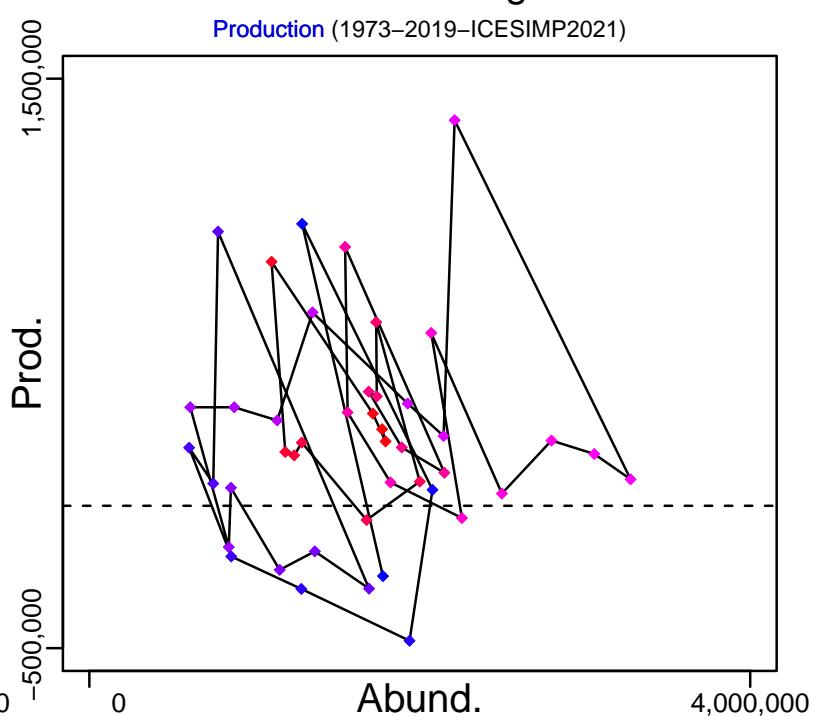
Kobe MGTpref (1973–2019–ICESIMP2021)



Spawner Recruit (1973–2019–ICESIMP2021)



Production (1973–2019–ICESIMP2021)

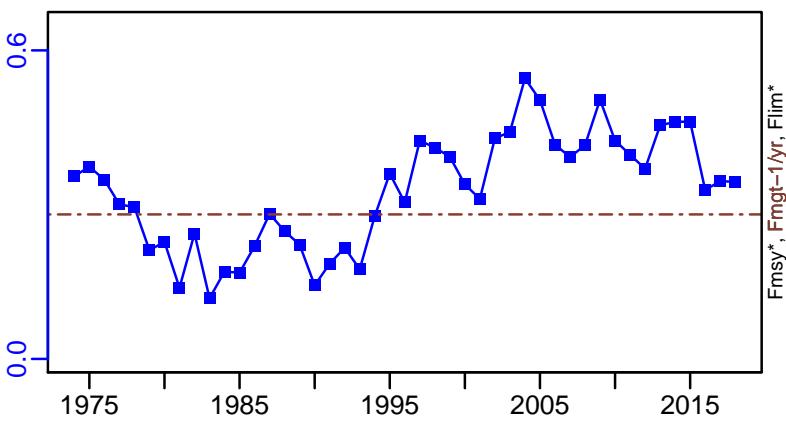
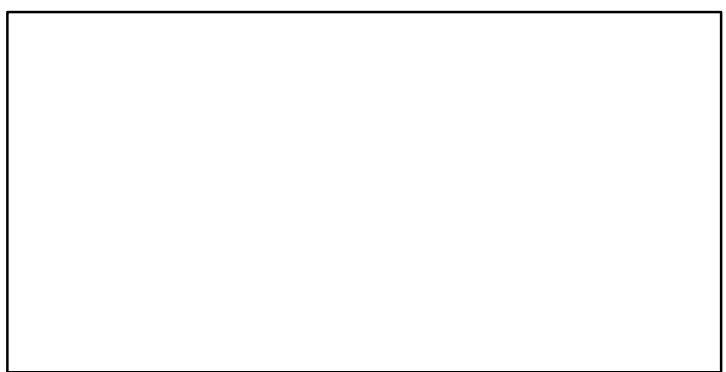
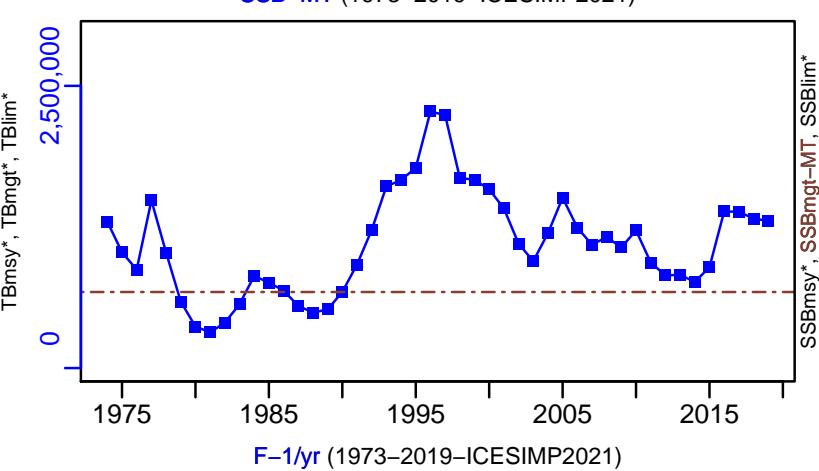
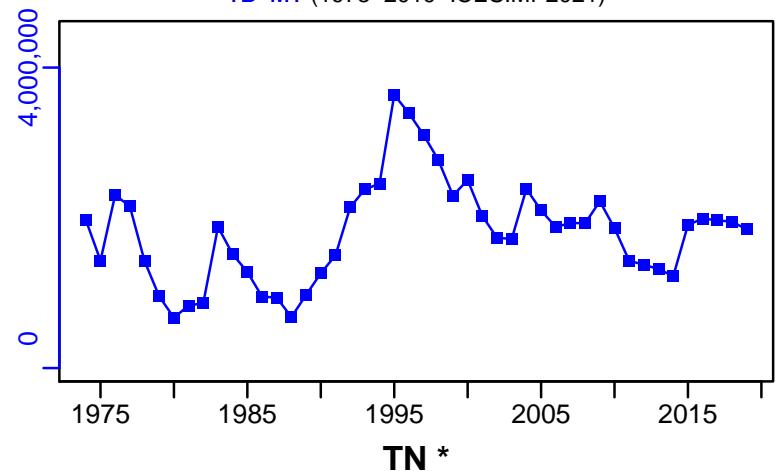


◆ Start Year ◆ End Year \* No Data

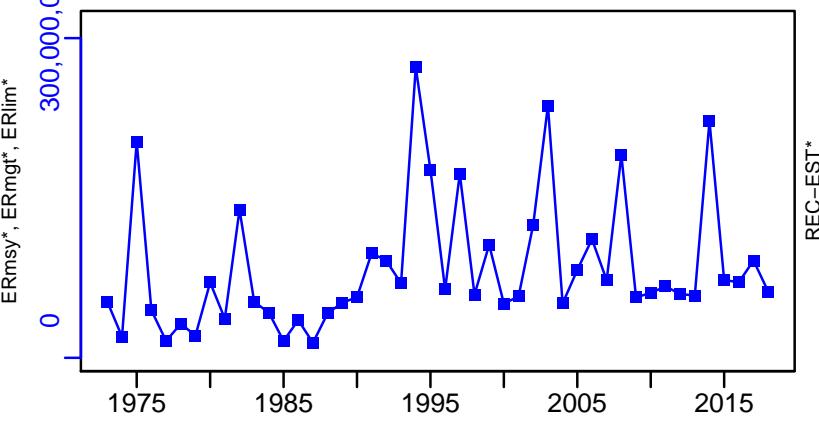
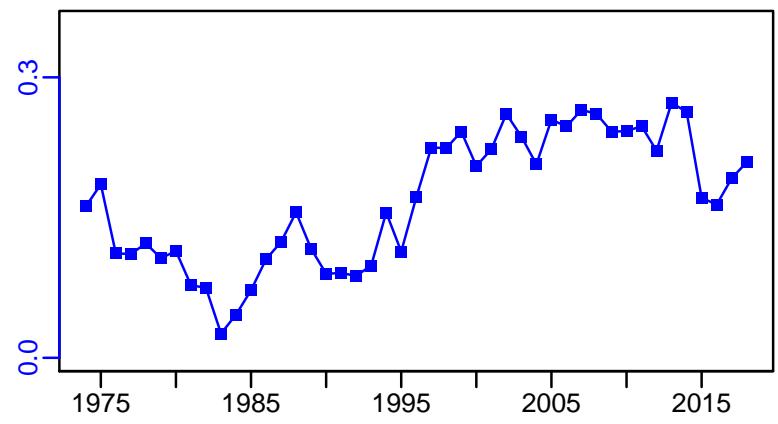
Sprat Baltic Areas 22–32 [SPRAT22–32]

TB-MT (1973–2019–ICESIMP2021)

SSB-MT (1973–2019–ICESIMP2021)



ER-calc-ratio (1973–2019–ICESIMP2021)

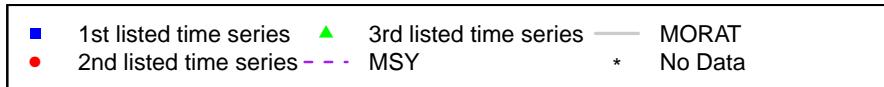
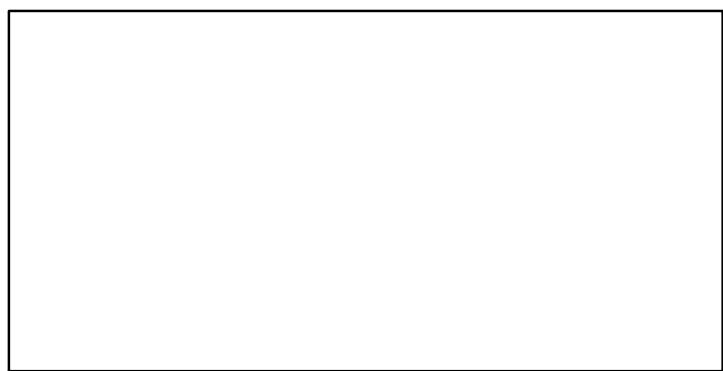
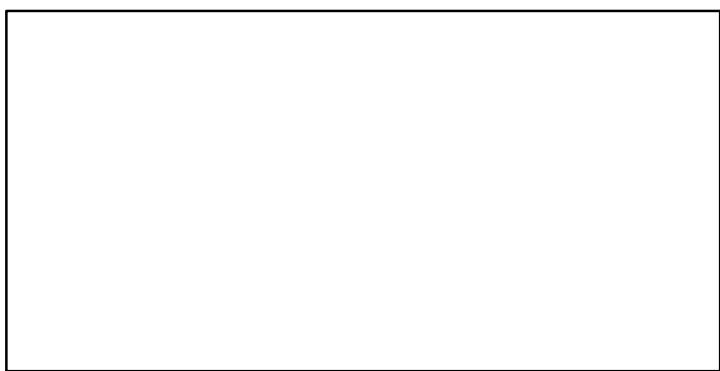
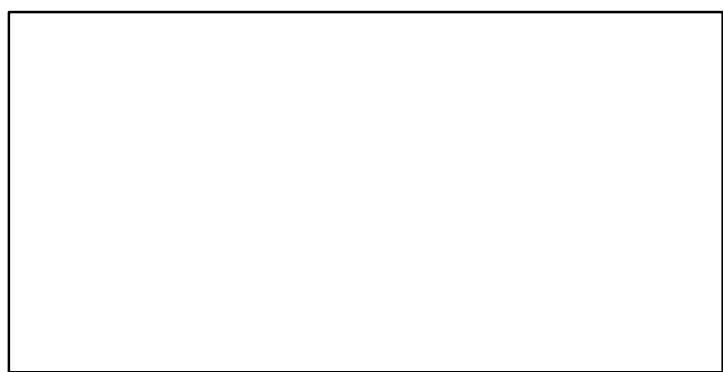
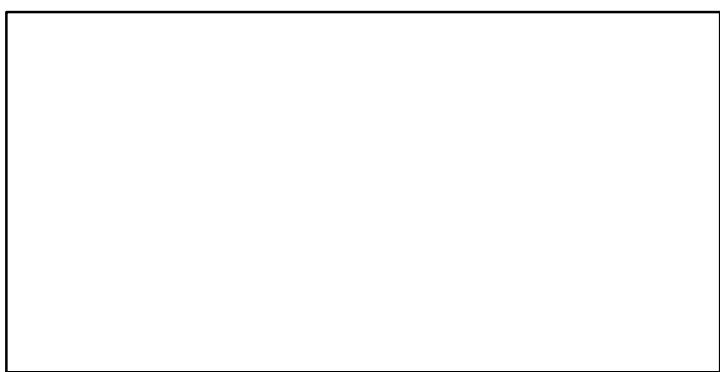
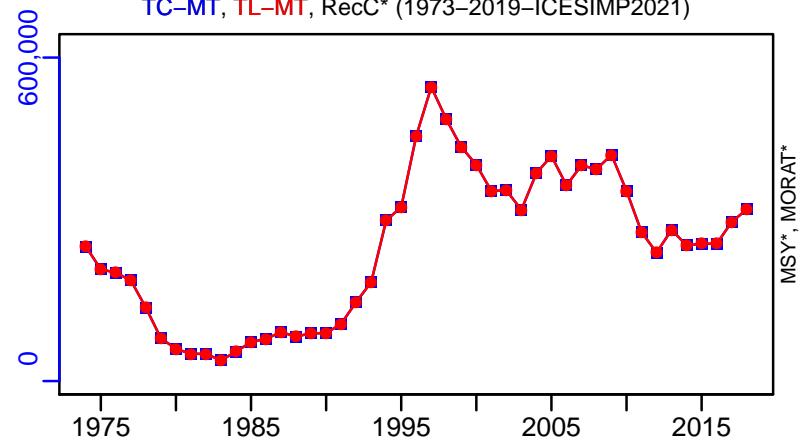


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - MSY-based BRP      | --- Lim BRP  | * No Data |

Sprat Baltic Areas 22–32 [SPRAT22–32]

TC-MT, TL-MT, RecC\* (1973–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*

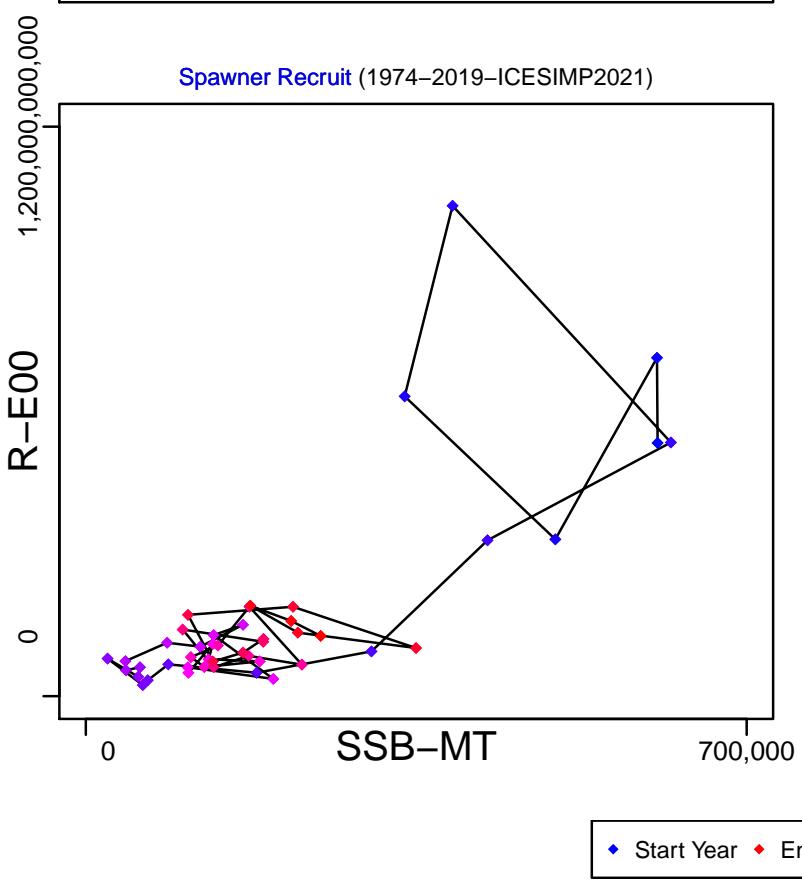


## Sprat ICES 3a-4 [SPRATIIIa-IV]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Sprattus sprattus  |
| <b>Current Assess ID</b>    | HAWG-SPRATIIIa-IV-1974-2019-ICESIMP2021                    |
| <b>Area</b>                 | ICES 3a-4  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea       |
| <b>Assessor</b>             | Herring Assessment Working Group for the Area South of 62N |
| <b>Asmts in RAM</b>         | 2019   |

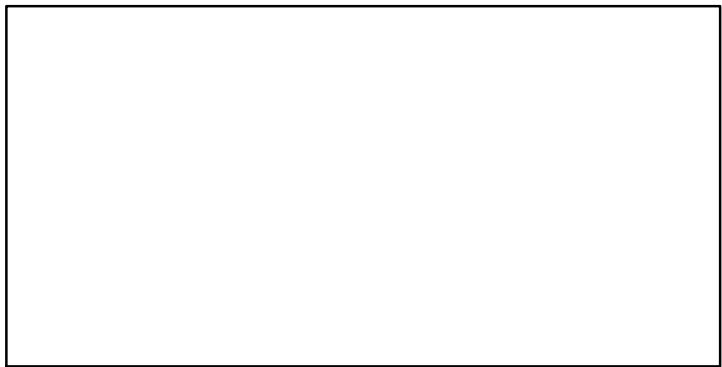
| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |        |           |                         |     |        |  |
|-------------------|--------|-----------|-------------------------|-----|--------|--|
| Type              | ID     | Asmt Year | Curr Value              | Sex | Age    |  |
| <b>TB</b>         | -      | -         | -                       | -   | -      |  |
| <b>SSB</b>        | SSB-MT | 2019      | 248,824                 | -   | -      |  |
| <b>TN</b>         | -      | -         | -                       | -   | -      |  |
| <b>R</b>          | R-E00  | 2019      | $1.2695 \times 10^{11}$ | -   | 0      |  |
| <b>F</b>          | F-1/yr | 2019      | 1.4                     | -   | 1 to 2 |  |
| <b>ER</b>         | -      | -         | -                       | -   | -      |  |
| <b>TC</b>         | TC-MT  | 2019      | 190,052                 |     |        |  |
| <b>TL</b>         | TL-MT  | 2019      | 190,052                 |     |        |  |
| <b>TB/TBmsy</b>   | -      | -         | -                       |     |        |  |
| <b>SSB/SSBmsy</b> | -      | -         | -                       |     |        |  |
| <b>F/Fmsy</b>     | -      | -         | -                       |     |        |  |
| <b>ER/ERmsy</b>   | -      | -         | -                       |     |        |  |
| <b>TB/TBmgt</b>   | -      | -         | -                       |     |        |  |
| <b>SSB/SSBmgt</b> | -      | -         | -                       |     |        |  |
| <b>F/Fmgt</b>     | -      | -         | -                       |     |        |  |
| <b>ER/ERmgt</b>   | -      | -         | -                       |     |        |  |

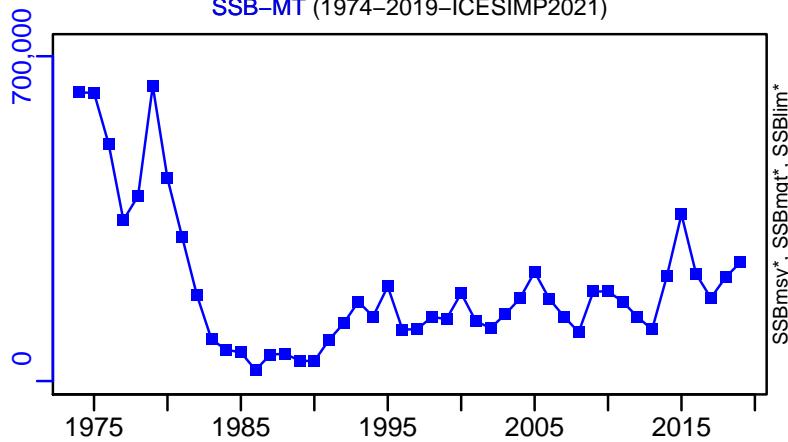
**Kobe MSY\*****Kobe MGT\***

Sprat ICES 3a–4 [SPRATIIIa–IV]

**TB\***



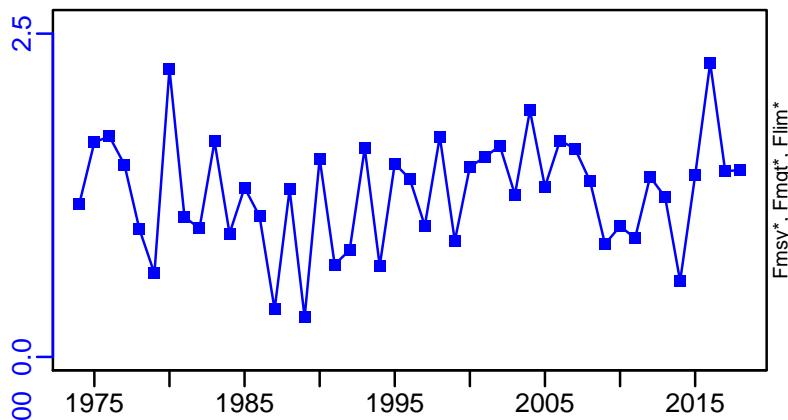
**SSB-MT (1974–2019–ICESIMP2021)**



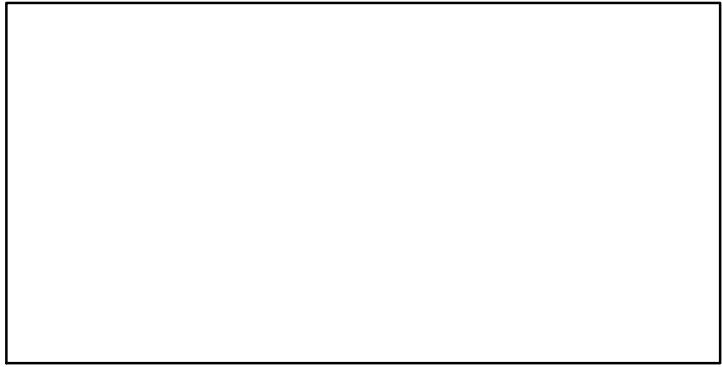
**TN \***



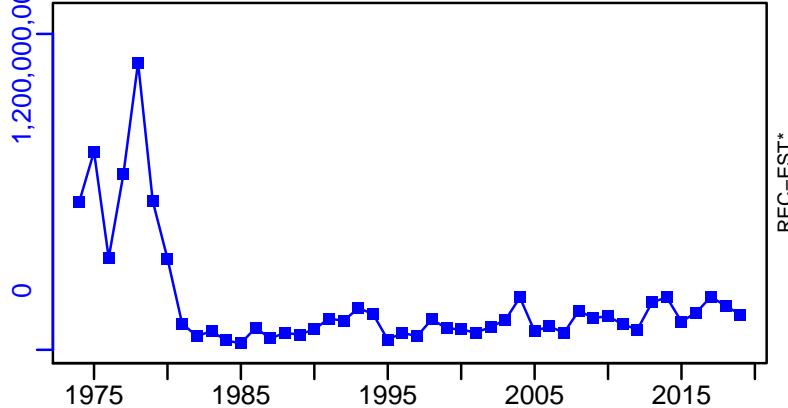
**F-1/yr (1974–2019–ICESIMP2021)**



**ER\***



**R-E00 (1974–2019–ICESIMP2021)**

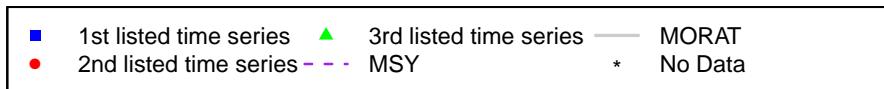
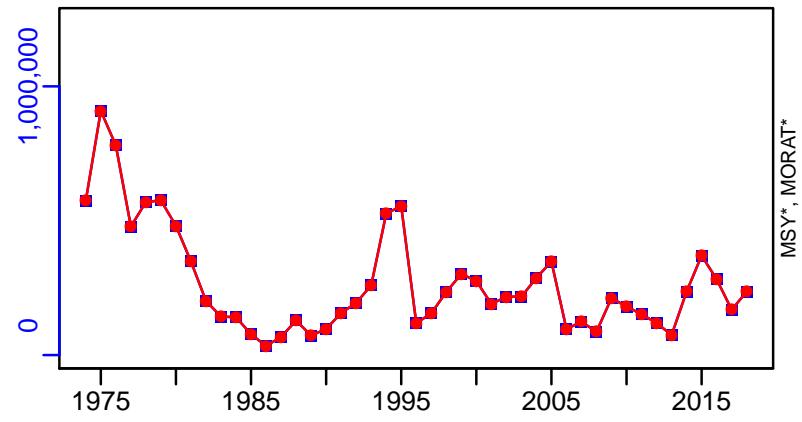


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | ··· Lim BRP  | * No Data |

Sprat ICES 3a–4 [SPRATIIIa–IV]

TC–MT, TL–MT, RecC\* (1974–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



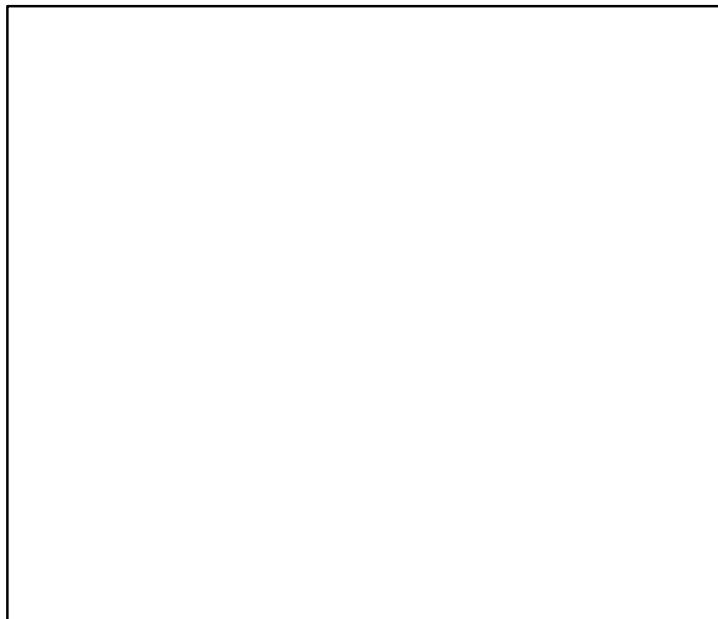
## Sprat ICES 7de [SPRATVIIde]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Sprattus sprattus  |
| <b>Current Assess ID</b>    | HAWG-SPRATVIIde-1977-2018-ICESIMP2021                      |
| <b>Area</b>                 | ICES 7de   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea       |
| <b>Assessor</b>             | Herring Assessment Working Group for the Area South of 62N |
| <b>Asmts in RAM</b>         | 2018, 2016, 2016, 2017                                     |

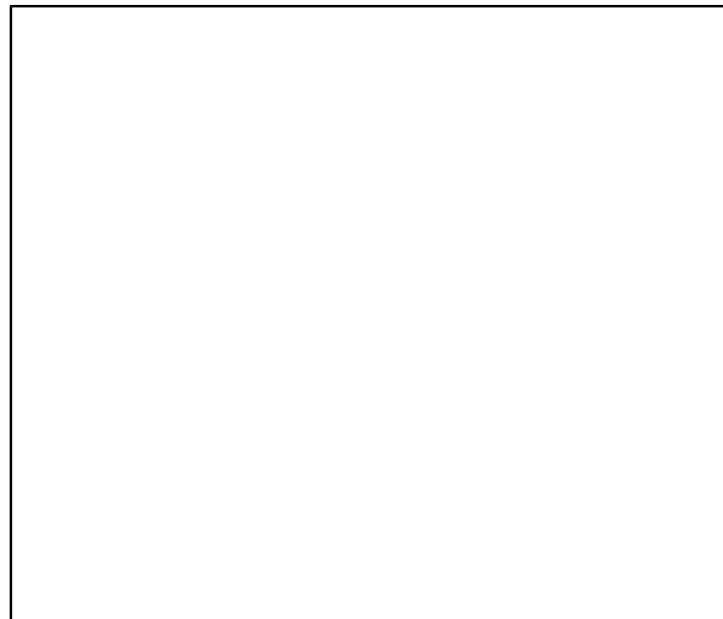
| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |          |           |            |     |     |   |
|-------------------|----------|-----------|------------|-----|-----|---|
| Type              | ID       | Asmt Year | Curr Value | Sex | Age |   |
| <b>TB</b>         | -        | -         | -          | -   | -   | - |
| <b>SSB</b>        | SSB-MT   | 2018      | 17,091     | -   | -   | - |
| <b>TN</b>         | -        | -         | -          | -   | -   | - |
| <b>R</b>          | -        | -         | -          | -   | -   | - |
| <b>F</b>          | F-1/yr   | 2018      | 0.11       | -   | -   | - |
| <b>ER</b>         | ER-ratio | 2017      | 0.001      | -   | -   | - |
| <b>TC</b>         | -        | -         | -          |     |     |   |
| <b>TL</b>         | TL-MT    | 2018      | 2252       |     |     |   |
| <b>TB/TBmsy</b>   | -        | -         | -          |     |     |   |
| <b>SSB/SSBmsy</b> | -        | -         | -          |     |     |   |
| <b>F/Fmsy</b>     | -        | -         | -          |     |     |   |
| <b>ER/ERmsy</b>   | -        | -         | -          |     |     |   |
| <b>TB/TBmgt</b>   | -        | -         | -          |     |     |   |
| <b>SSB/SSBmgt</b> | -        | -         | -          |     |     |   |
| <b>F/Fmgt</b>     | -        | -         | -          |     |     |   |
| <b>ER/ERmgt</b>   | -        | -         | -          |     |     |   |

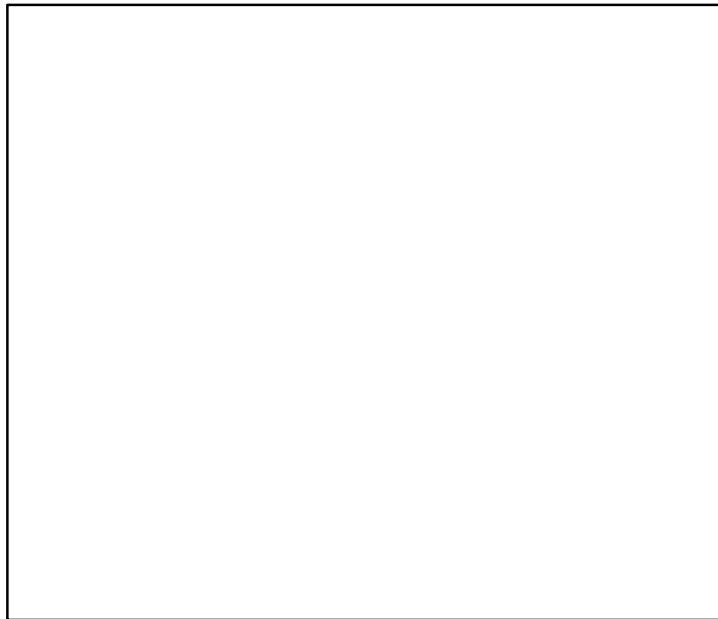
**Kobe MSY\***



**Kobe MGT\***



**Spawner Recruit\***



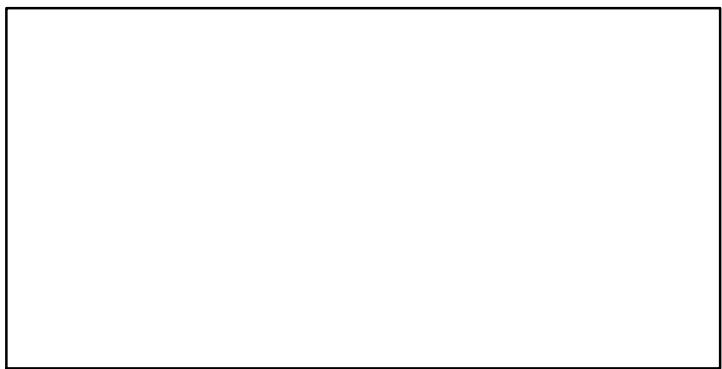
**Production\***



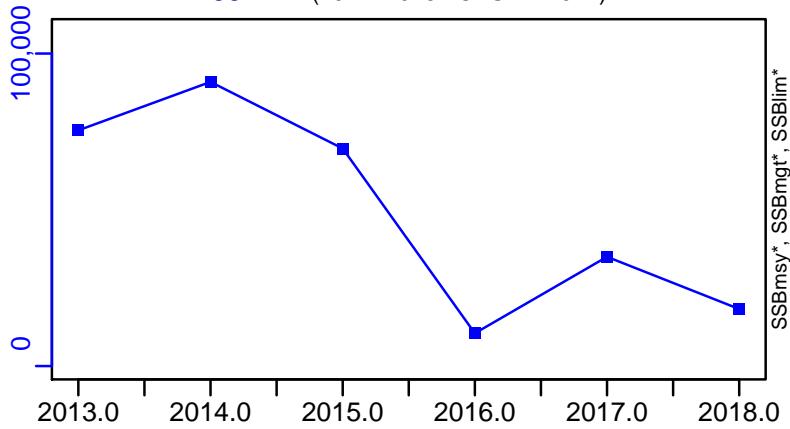
◆ Start Year ♦ End Year \* No Data

Sprat ICES 7de [SPRATVIIde]

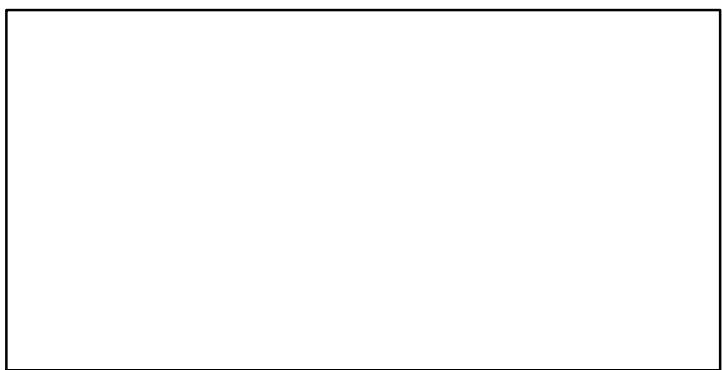
**TB\***



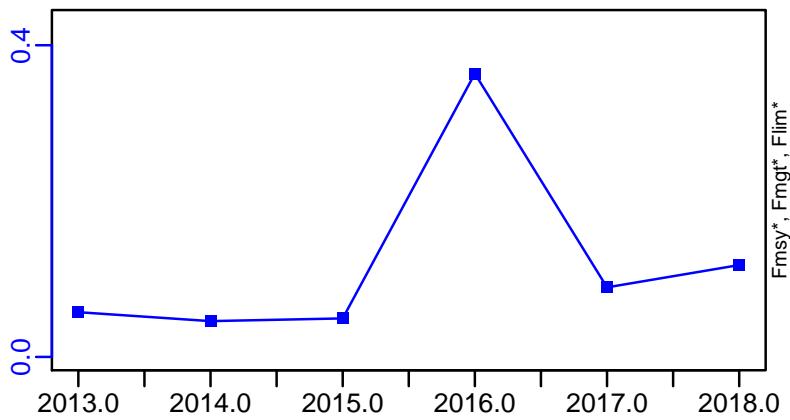
**SSB-MT (1977–2018–ICESIMP2021)**



**TN \***

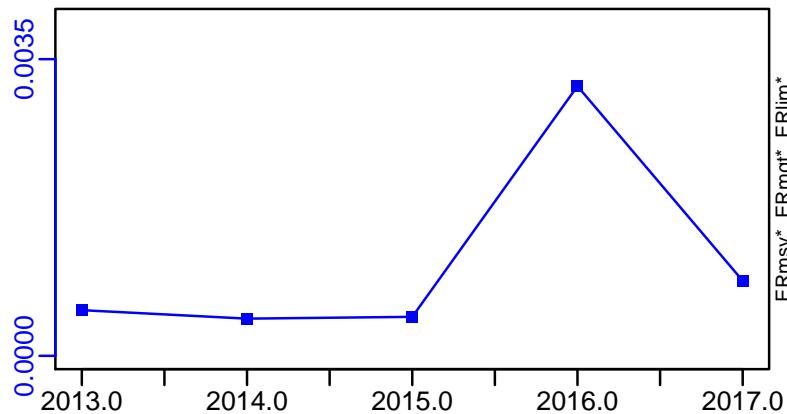


**F-1/yr (1977–2018–ICESIMP2021)**

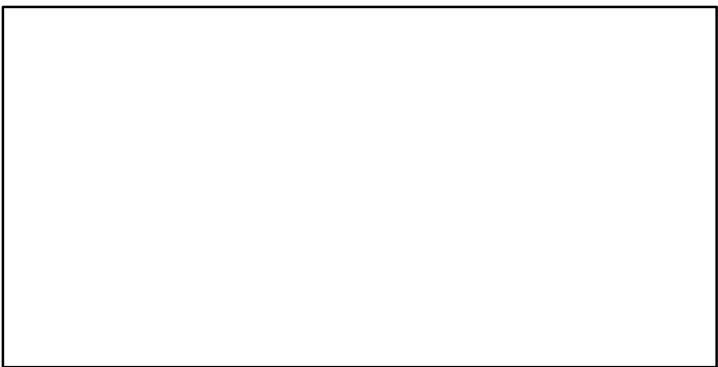


**ER-ratio (1985–2017–ICESIMP2018)**

ER<sub>msy</sub>\* , ER<sub>mgt</sub>\* , ER<sub>lim</sub>\*



**Recruits\***

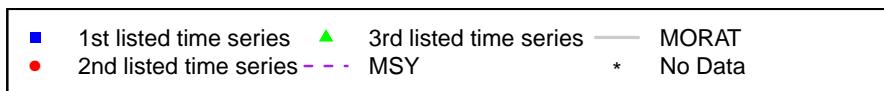
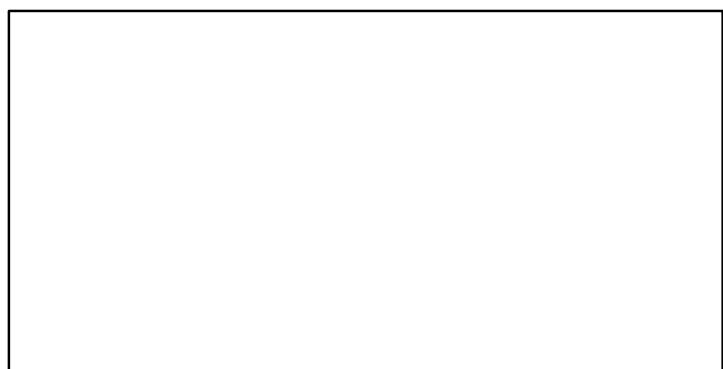
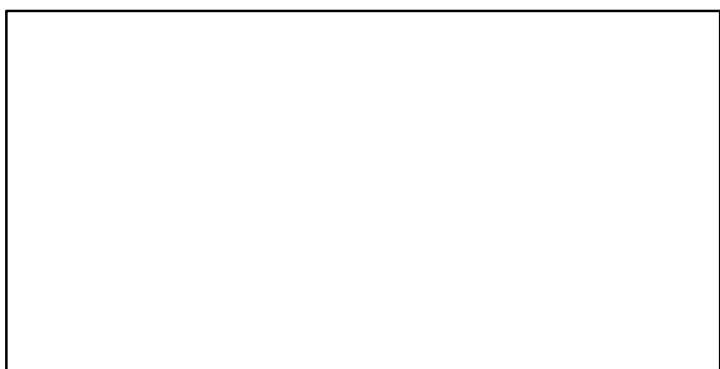
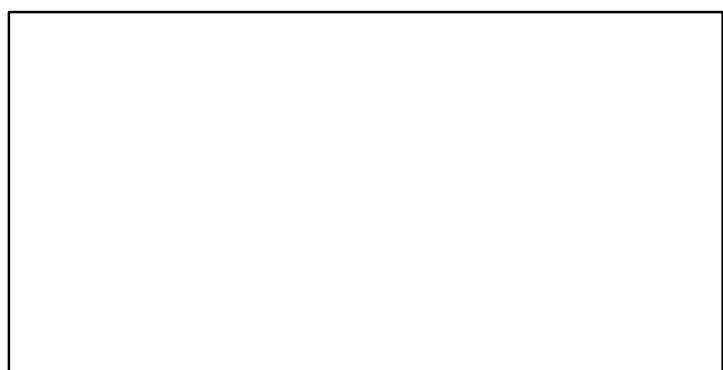
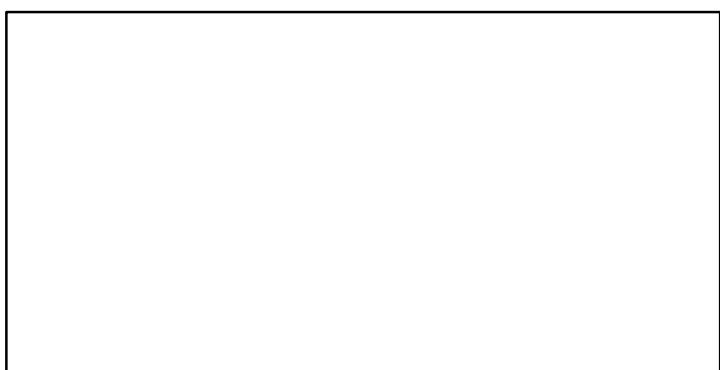
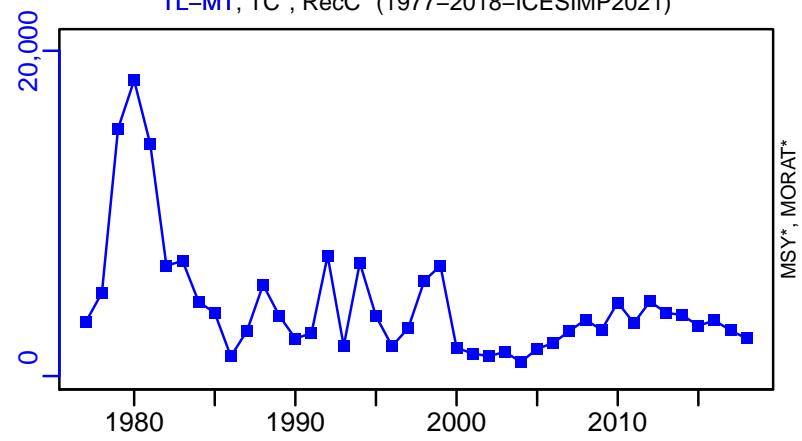


- Listed time series
- Target BRP
- MSY-based BRP
- Lim BRP
- Rec-Est
- \* No Data

Sprat ICES 7de [SPRATVIIde]

TL-MT, TC\*, RecC\* (1977–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



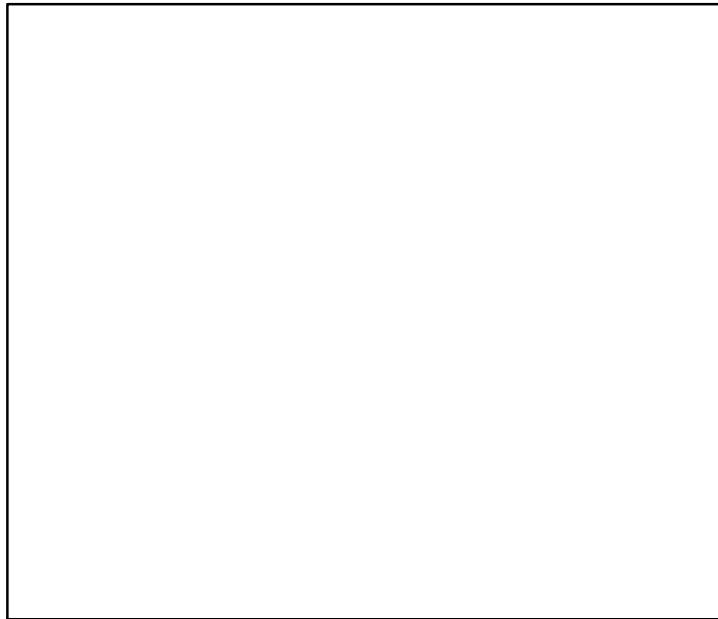
## Sprat ICES 6-7abcfghijk [SPRATVI-VIIabcfghijk]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Sprattus sprattus  |
| <b>Current Assess ID</b>    | HAWG-SPRATVI-VIIabcfghijk-1985-2018-ICESIMP2021            |
| <b>Area</b>                 | ICES 6-7abcfghijk  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea       |
| <b>Assessor</b>             | Herring Assessment Working Group for the Area South of 62N |
| <b>Asmts in RAM</b>         | 2016, 2015, 2018   |

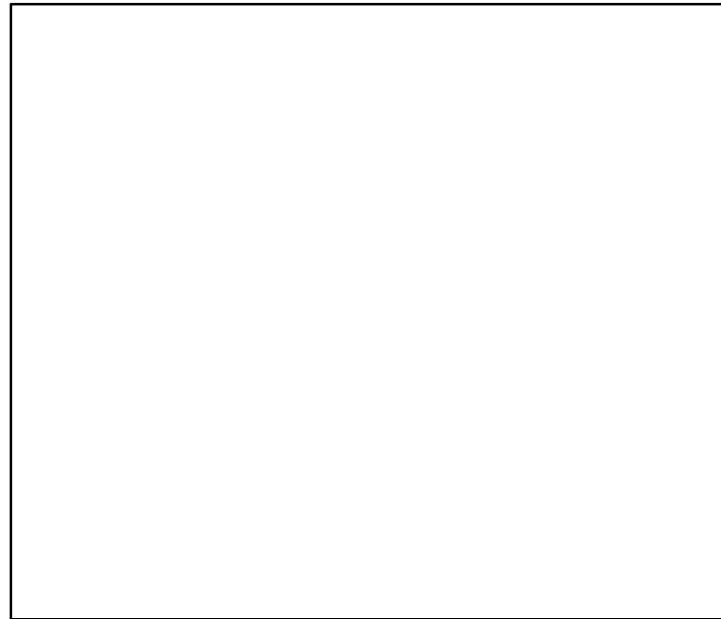
| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | -         | -                | -            |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | -         | -                | -            |
| <b>Fmgt</b>             | -         | -                | -            |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | -         | -                | -            |
| <b>Flim</b>             | -         | -                | -            |
| <b>ERlim</b>            | -         | -                | -            |

| <b>Time Series</b> |           |                  |                   |            |            |
|--------------------|-----------|------------------|-------------------|------------|------------|
| <b>Type</b>        | <b>ID</b> | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |
| <b>TB</b>          | -         | -                | -                 | -          | -          |
| <b>SSB</b>         | -         | -                | -                 | -          | -          |
| <b>TN</b>          | -         | -                | -                 | -          | -          |
| <b>R</b>           | -         | -                | -                 | -          | -          |
| <b>F</b>           | -         | -                | -                 | -          | -          |
| <b>ER</b>          | -         | -                | -                 | -          | -          |
| <b>TC</b>          | -         | -                | -                 |            |            |
| <b>TL</b>          | TL-MT     | 2018             | 3590              |            |            |
| <b>TB/TBmsy</b>    | -         | -                | -                 |            |            |
| <b>SSB/SSBmsy</b>  | -         | -                | -                 |            |            |
| <b>F/Fmsy</b>      | -         | -                | -                 |            |            |
| <b>ER/ERmsy</b>    | -         | -                | -                 |            |            |
| <b>TB/TBmgt</b>    | -         | -                | -                 |            |            |
| <b>SSB/SSBmgt</b>  | -         | -                | -                 |            |            |
| <b>F/Fmgt</b>      | -         | -                | -                 |            |            |
| <b>ER/ERmgt</b>    | -         | -                | -                 |            |            |

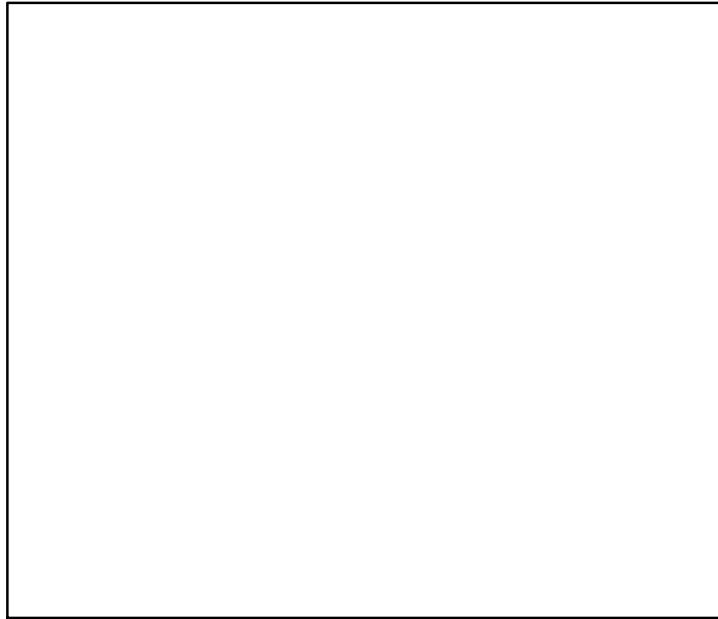
**Kobe MSY\***



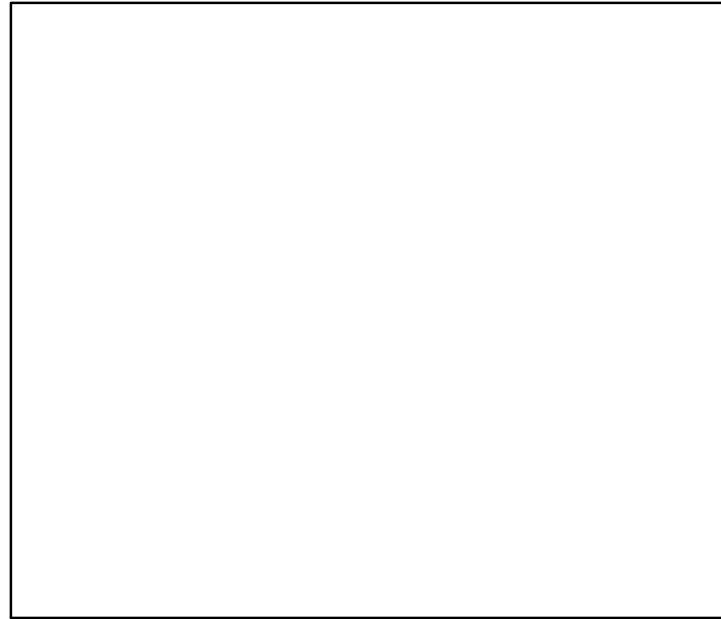
**Kobe MGT\***



**Spawner Recruit\***



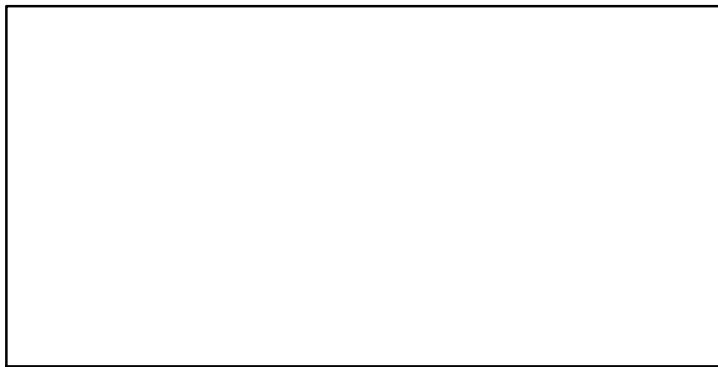
**Production\***



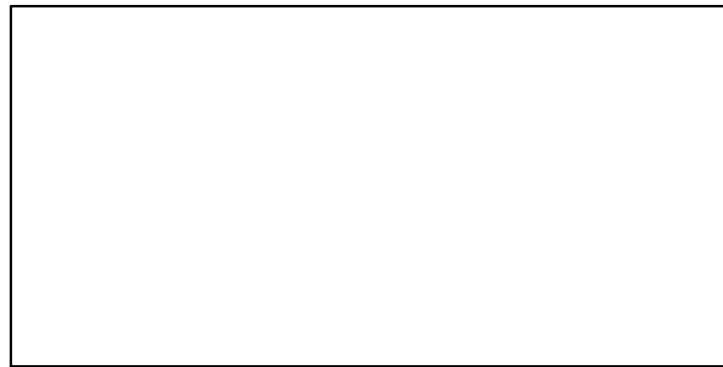
◆ Start Year ♦ End Year \* No Data

**Sprat ICES 6–7abcfghijk [SPRATVI–VIIabcfghijk]**

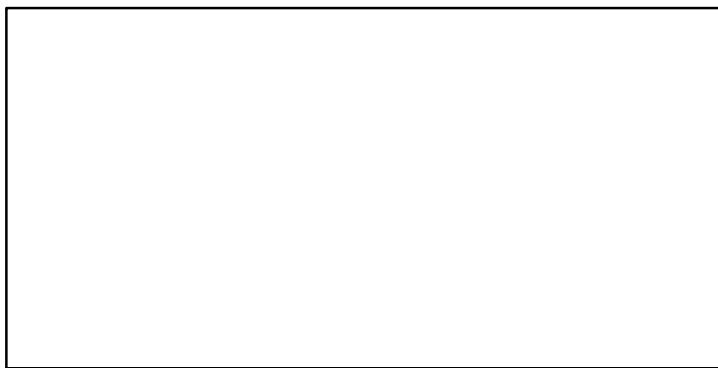
**TB\***



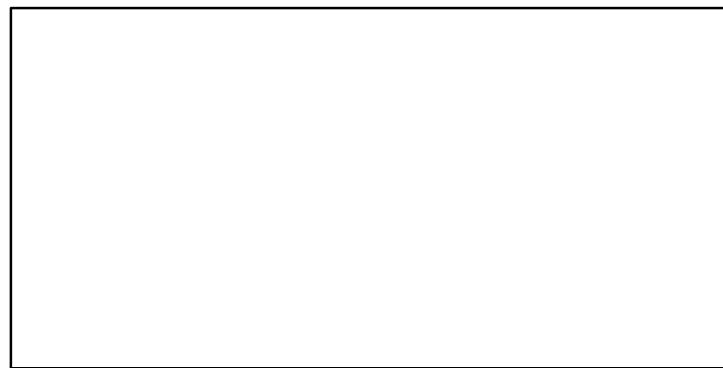
**SSB\***



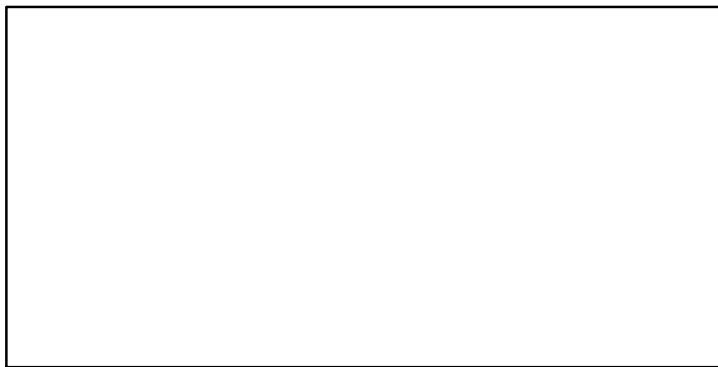
**TN \***



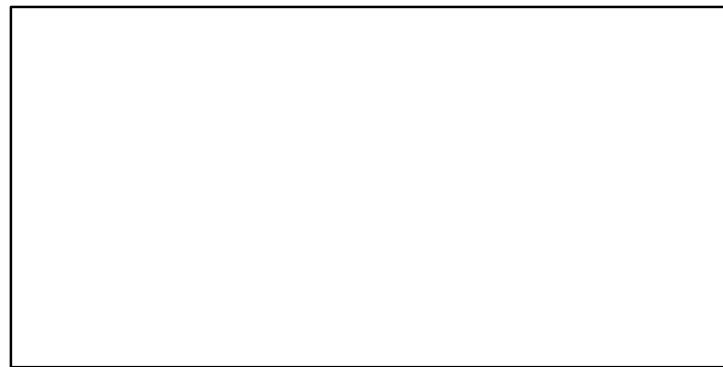
**F\***



**ER\***



**Recruits\***

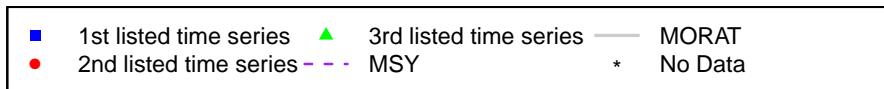
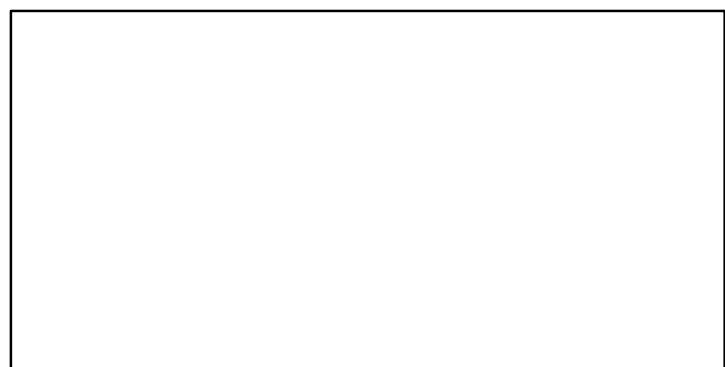
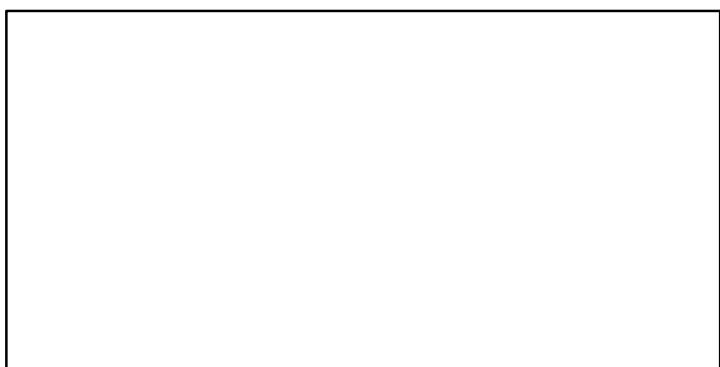
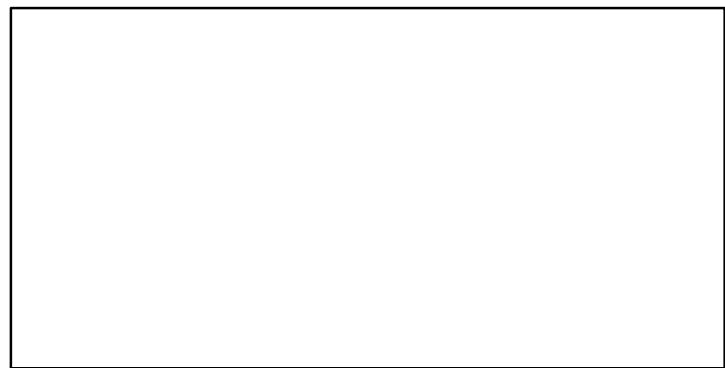
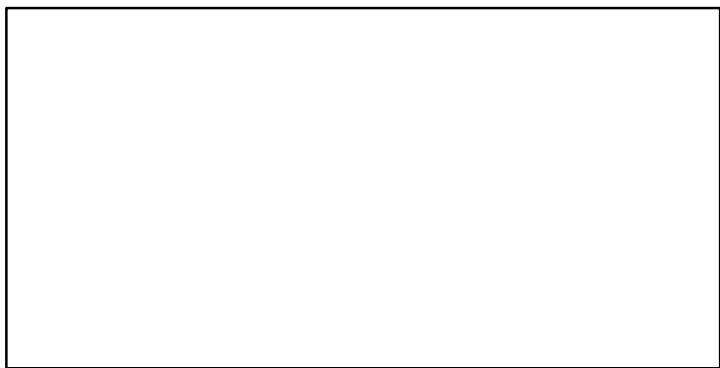
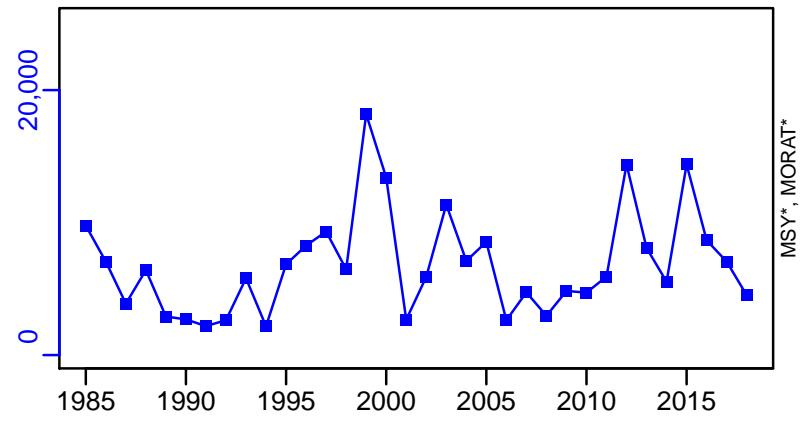


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

**Sprat ICES 6–7abcfghijk [SPRATVI–VIIabcfghijk]**

TL–MT, TC\*, RecC\* (1985–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



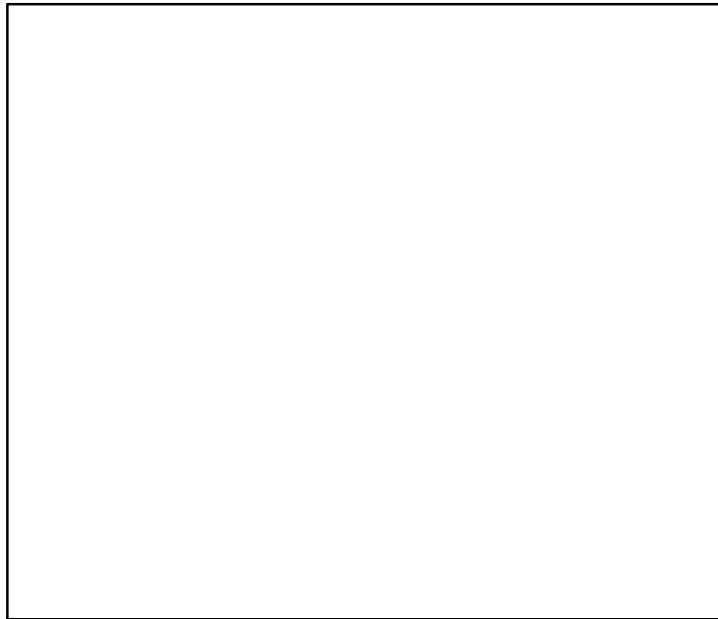
## Spotted ray ICES 3a-4-7d [SPRAYIIla-IV-VIId]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Raja montagui  |
| <b>Current Assess ID</b>    | WGEF-SPRAYIIla-IV-VIId-1993-2018-ICESIMP2021         |
| <b>Area</b>                 | ICES 3a-4-7d   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2014, 2018, 2016                                     |

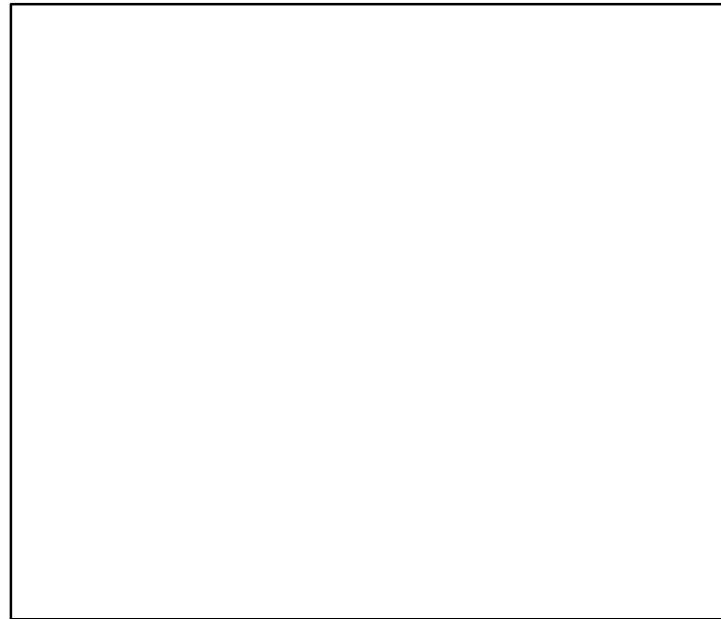
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2014      | 2.05       | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | -         | -         | -          |      |     |
| <b>TL</b>          | TL-MT     | 2018      | 355        |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

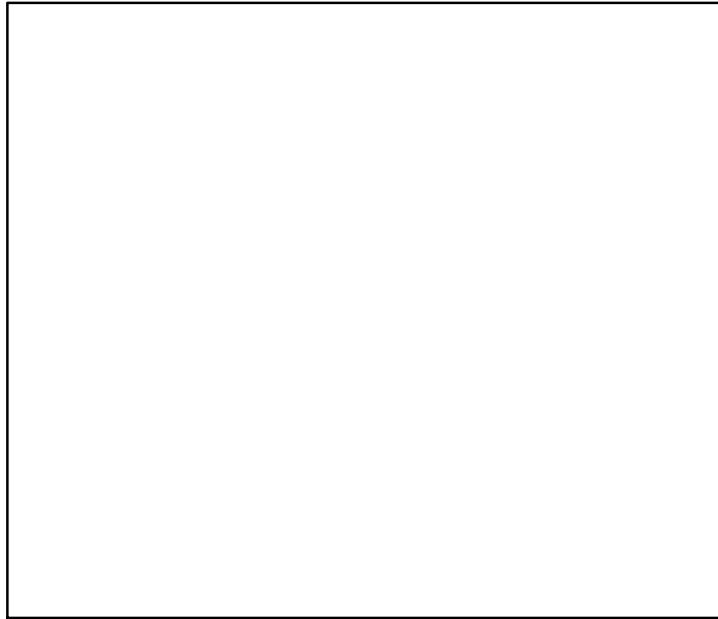
Kobe MSY\*



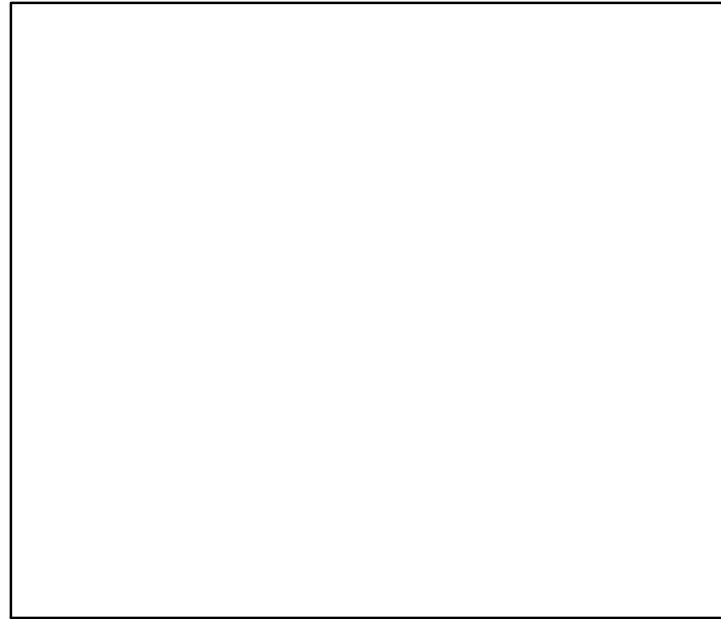
Kobe MGT\*



Spawner Recruit\*



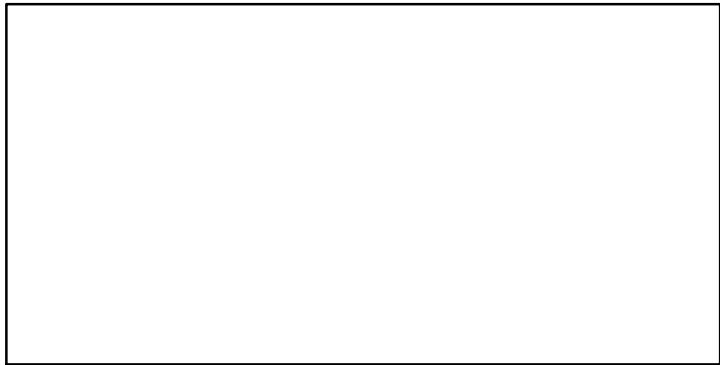
Production\*



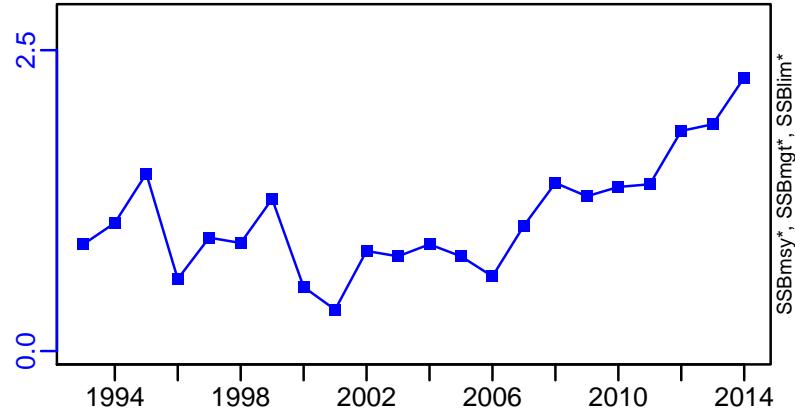
◆ Start Year ♦ End Year \* No Data

Spotted ray ICES 3a–4–7d [SPRAYIIIa–IV–VIId]

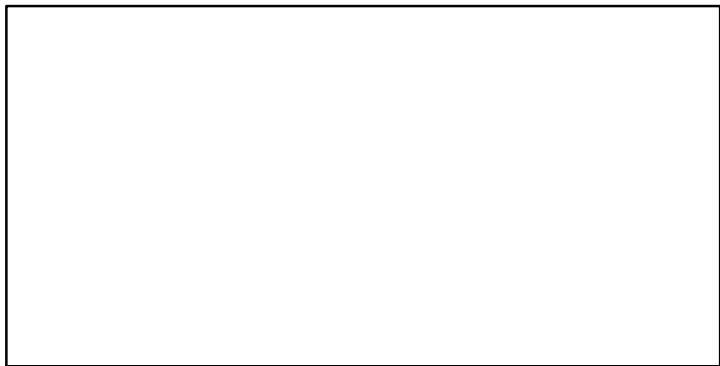
**TB\***



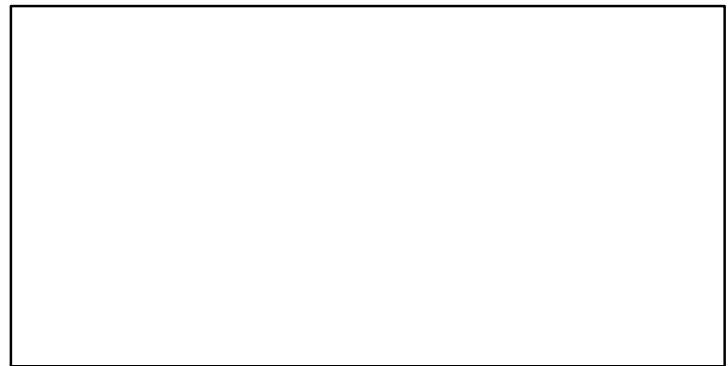
SSB-index (1993–2014–ICESIMP2018)



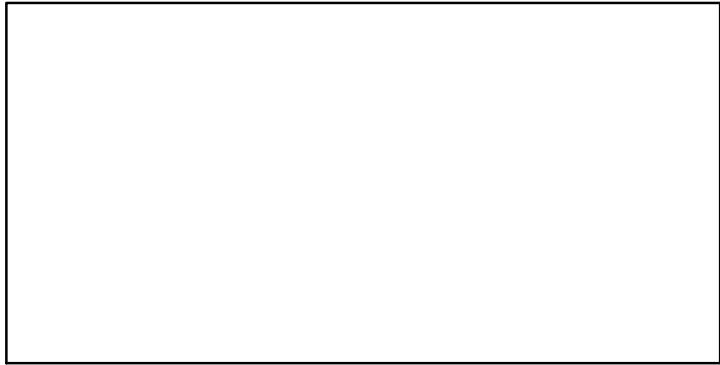
**TN \***



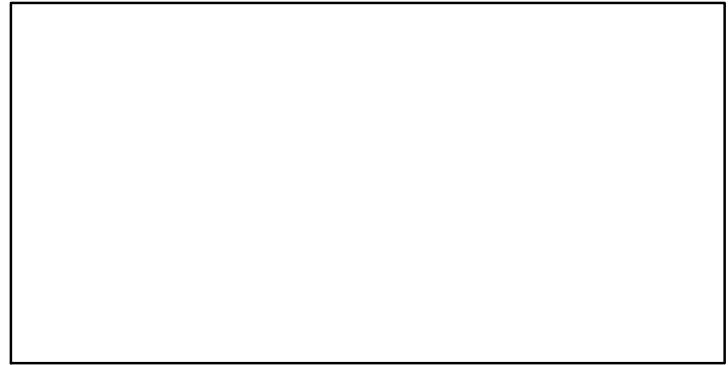
**F\***



**ER\***



**Recruits\***

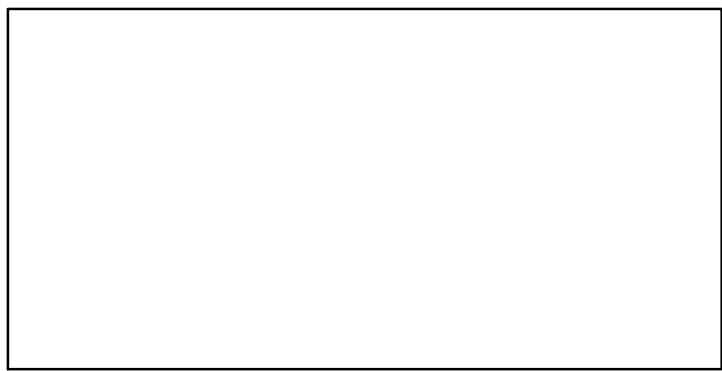
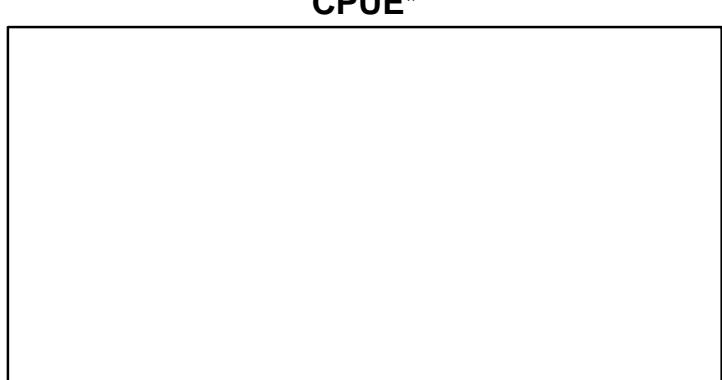
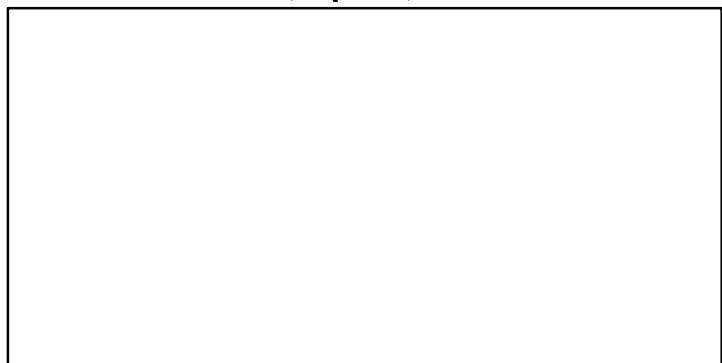
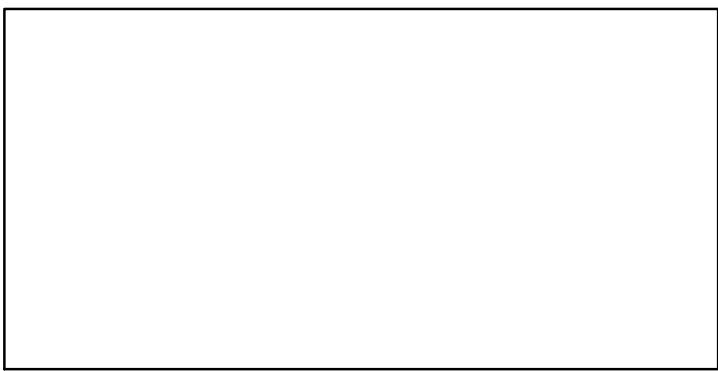
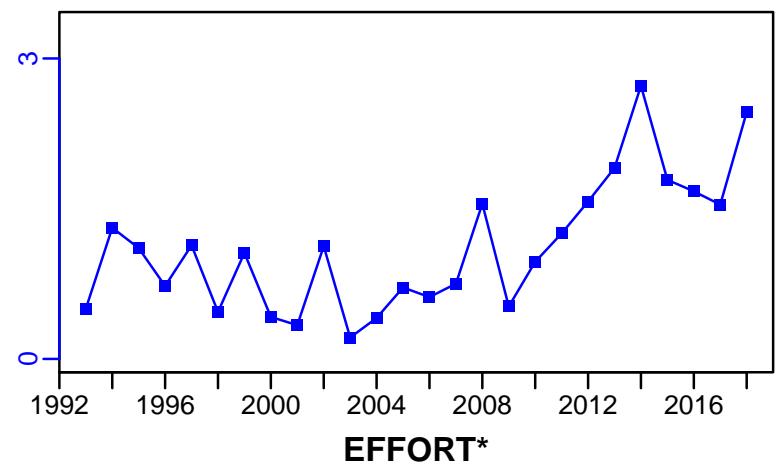
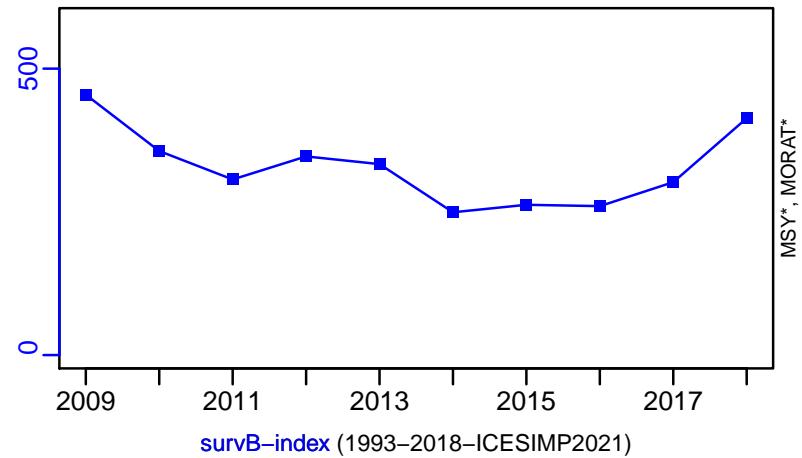


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

**Spotted ray ICES 3a–4–7d [SPRAYIIla–IV–VIId]**

TL–MT, TC\*, RecC\* (1993–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



|                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

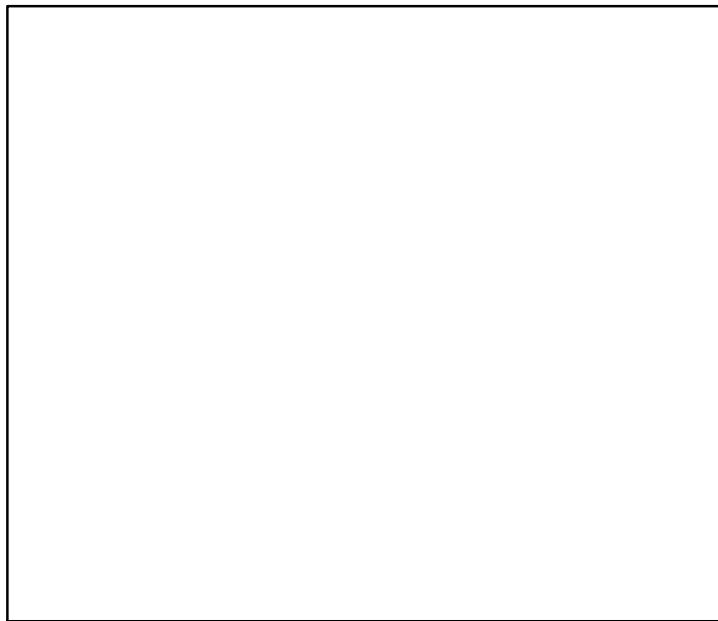
## Spotted ray Portugese Waters -East [SPRAYIXa]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Raja montagui  |
| <b>Current Assess ID</b>    | WGEF-SPRAYIXa-2003-2015-ICESIMP2018                  |
| <b>Area</b>                 | Portugese Waters -East                               |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2015   |

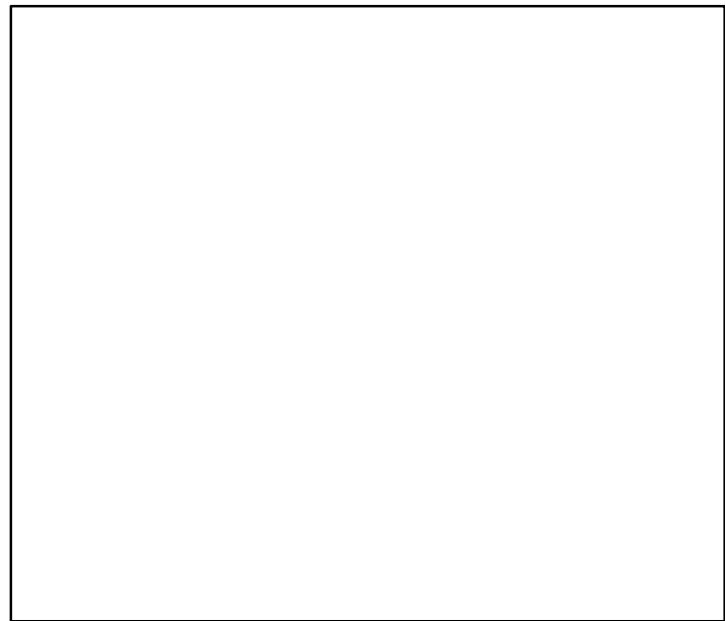
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2015      | 2.35       | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | -         | -         | -          |      |     |
| <b>TL</b>          | TL-MT     | 2015      | 68         |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

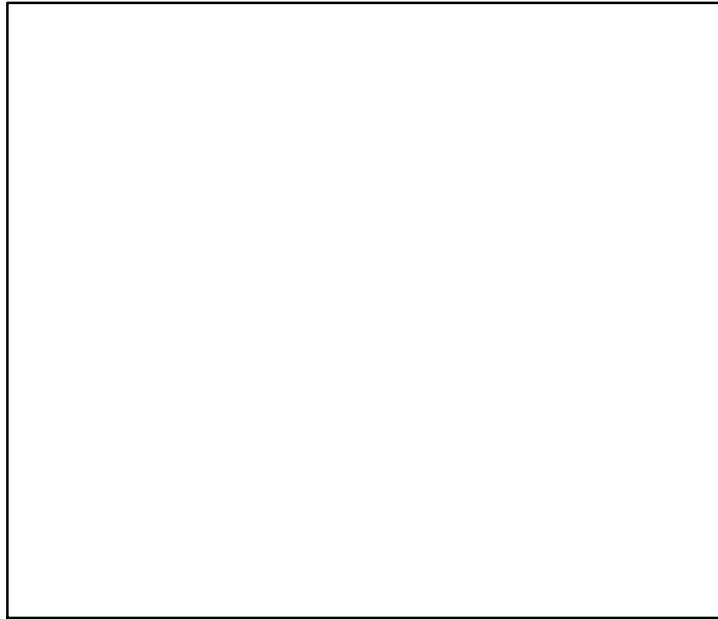
**Kobe MSY\***



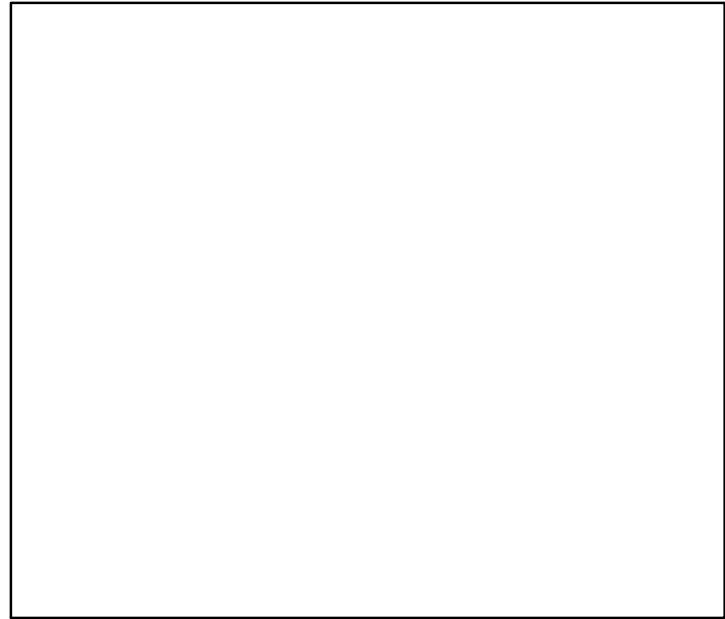
**Kobe MGT\***



**Spawner Recruit\***



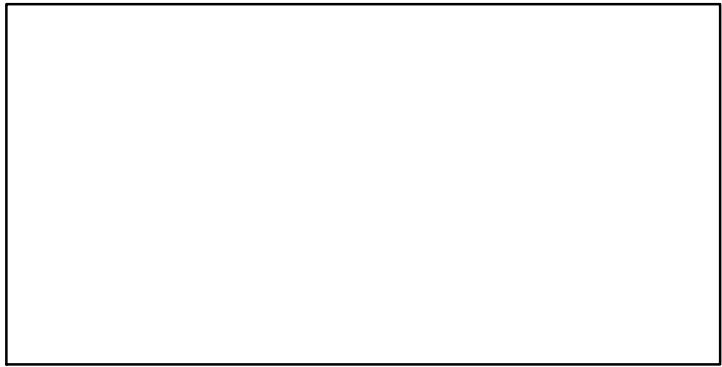
**Production\***



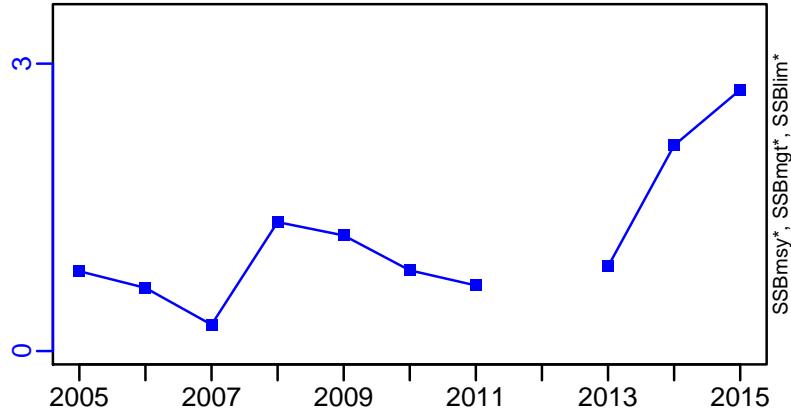
◆ Start Year ♦ End Year \* No Data

**Spotted ray Portuguese Waters –East [SPRAYIXa]**

**TB\***



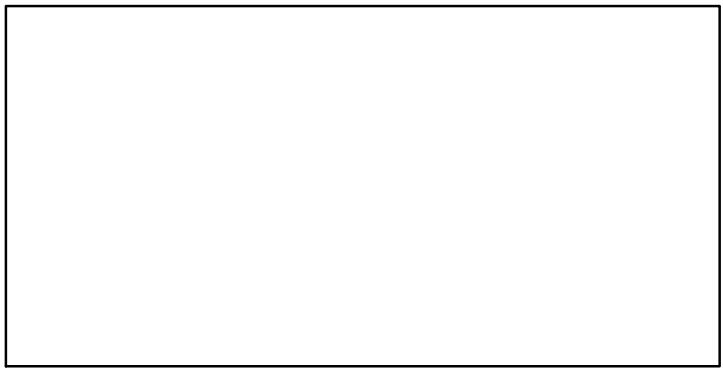
**SSB–index (2003–2015–ICESIMP2018)**



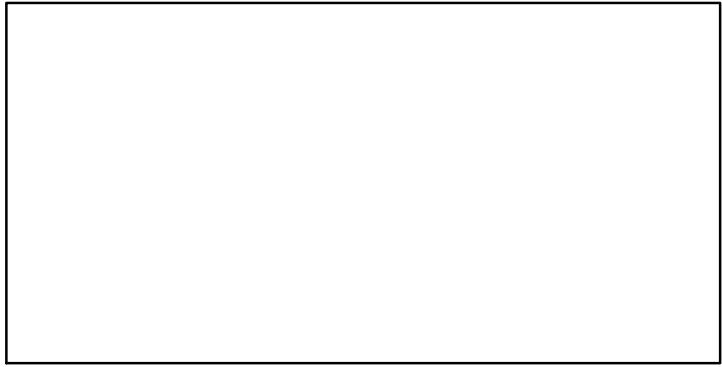
**TN \***



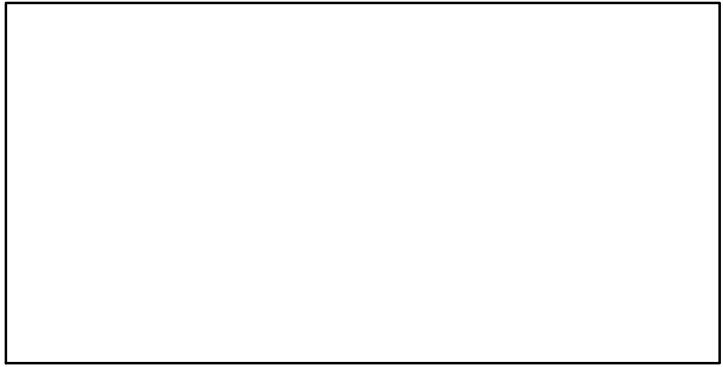
**F\***



**ER\***



**Recruits\***

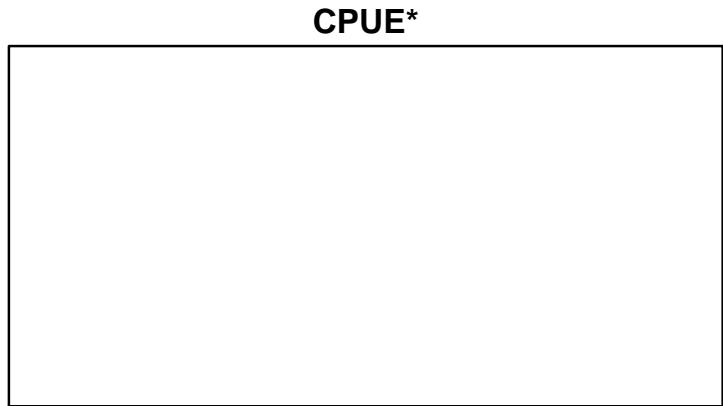
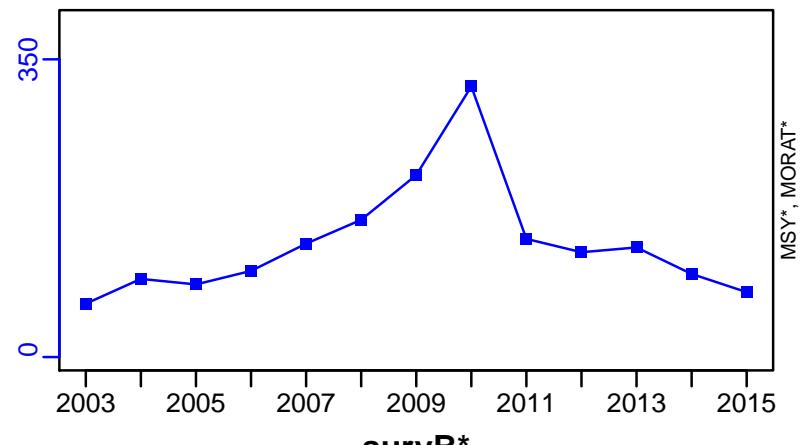


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

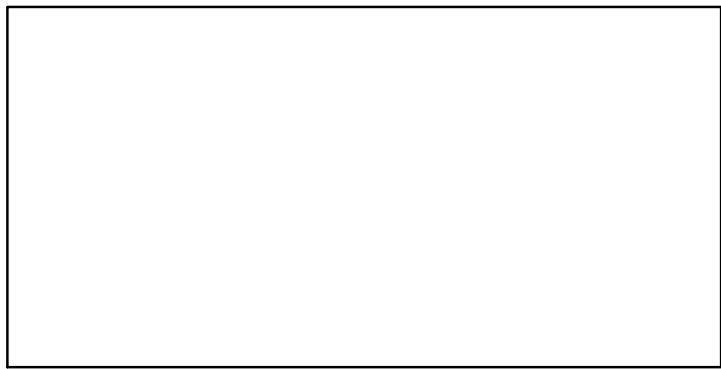
**Spotted ray Portuguese Waters –East [SPRAYIXa]**

TL-MT, TC\*, RecC\* (2003–2015–ICESIMP2018)

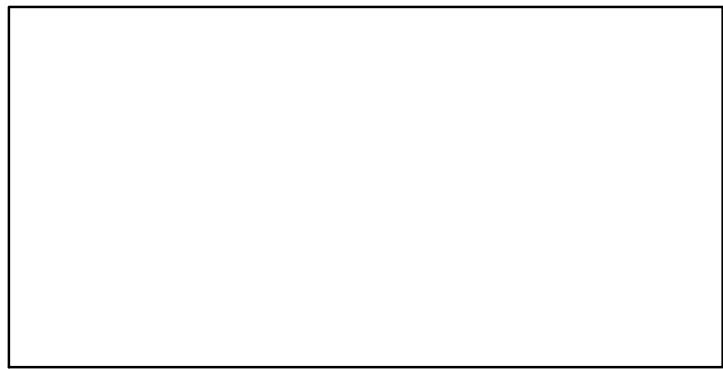
**TAC\*, Cpair\*, Cadv\***



**EFFORT\***



**CdivMSY\***



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

## Spotted ray ICES 7aefgh [SPRAYVIIaefgh]

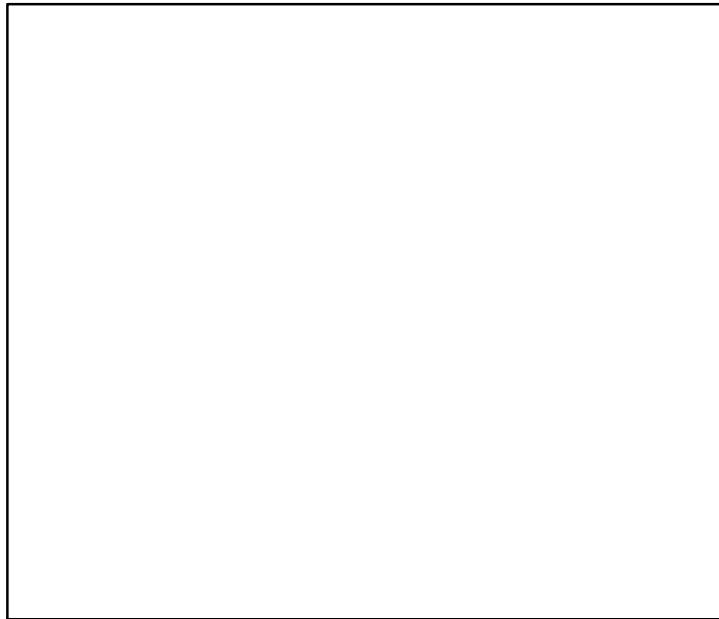
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Raja montagui  |
| <b>Current Assess ID</b>    | WGEF-SPRAYVIIaefgh-1993-2015-ICESIMP2018             |
| <b>Area</b>                 | ICES 7aefgh  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2015   |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

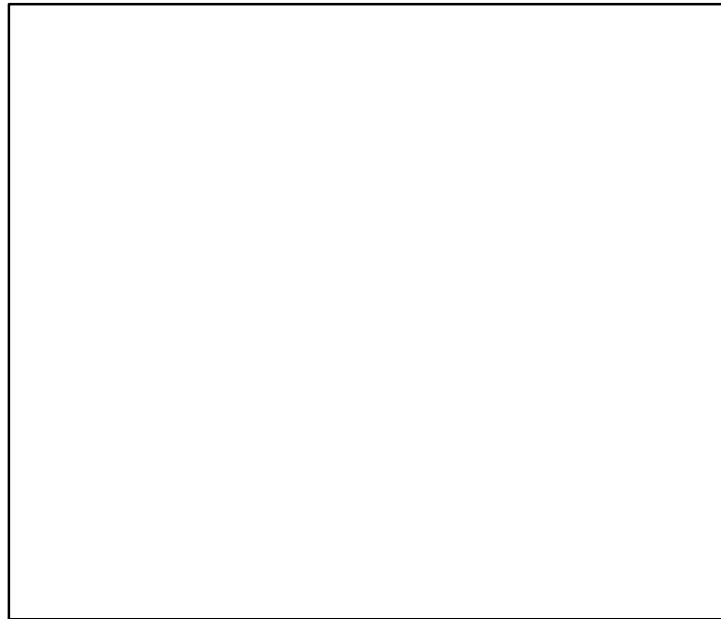
| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2015      | 7          | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | -         | -         | -          |      |     |
| <b>TL</b>          | TL-MT     | 2015      | 837        |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

**Spotted ray ICES 7aefgh [SPRAYVIIaefgh]**

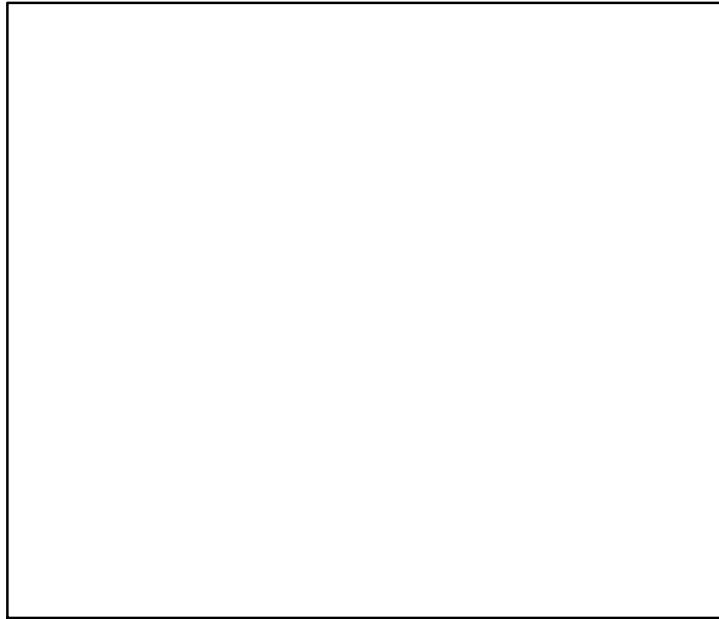
**Kobe MSY\***



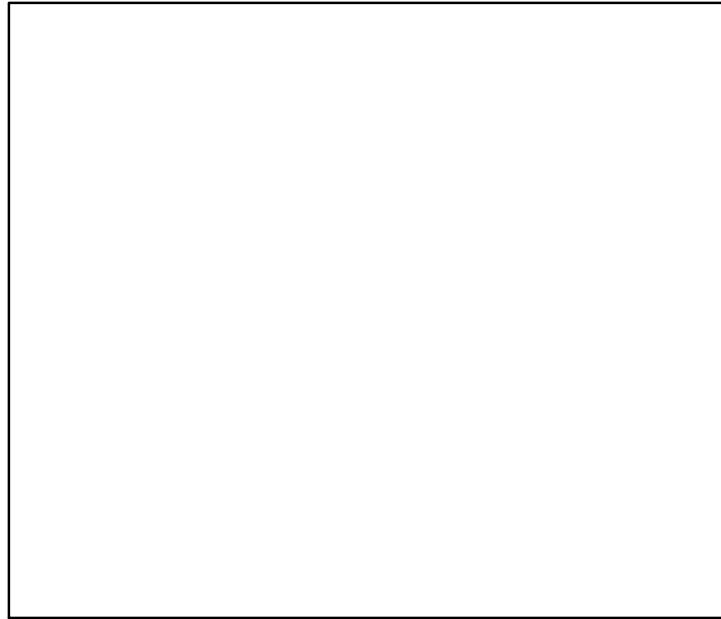
**Kobe MGT\***



**Spawner Recruit\***



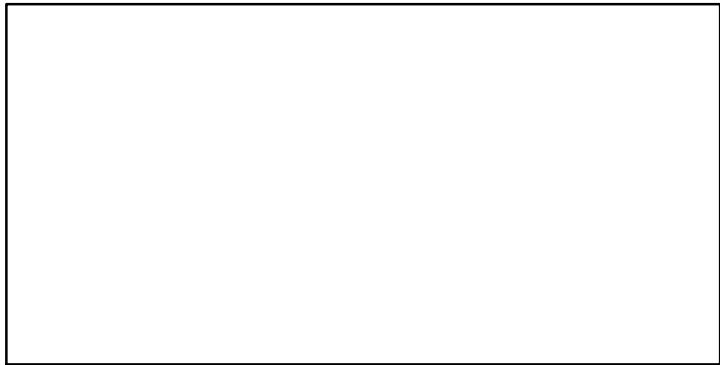
**Production\***



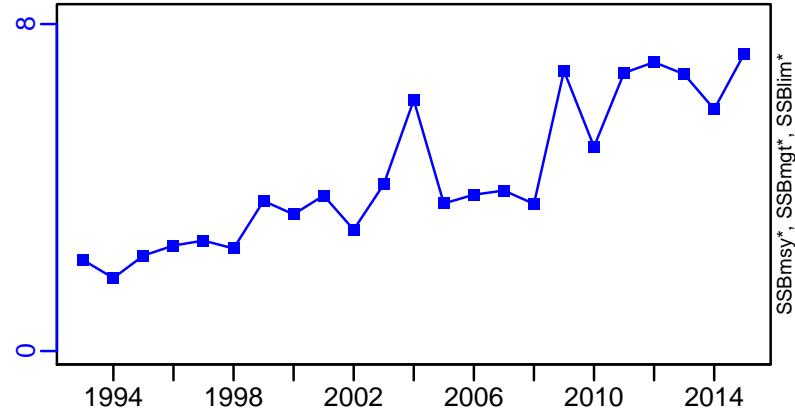
◆ Start Year ♦ End Year \* No Data

Spotted ray ICES 7aefgh [SPRAYVIIaefgh]

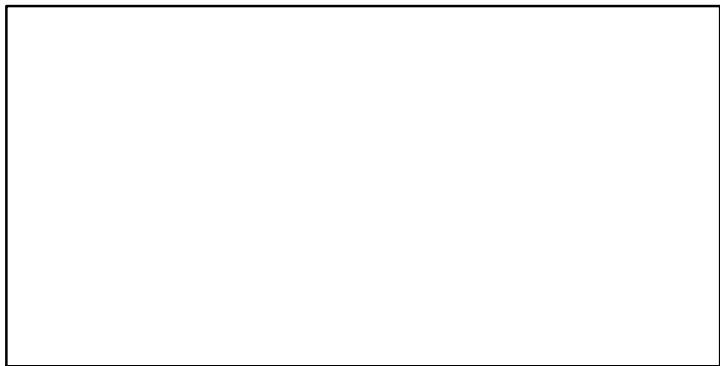
**TB\***



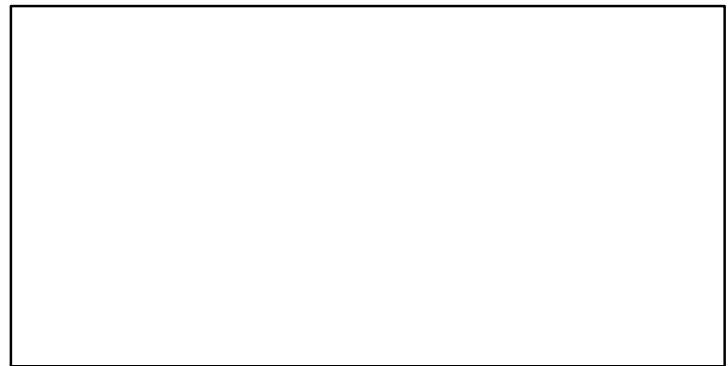
SSB-index (1993–2015–ICESIMP2018)



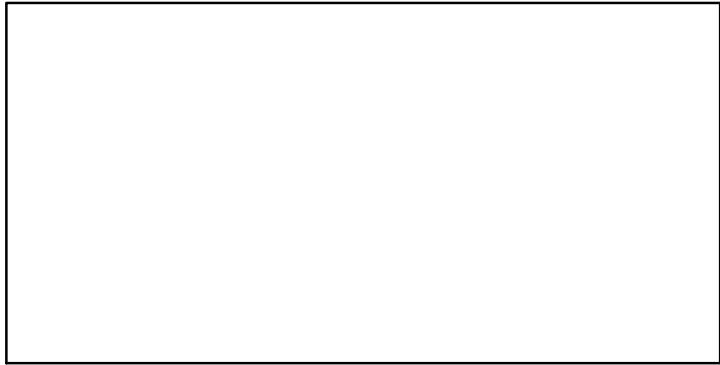
**TN \***



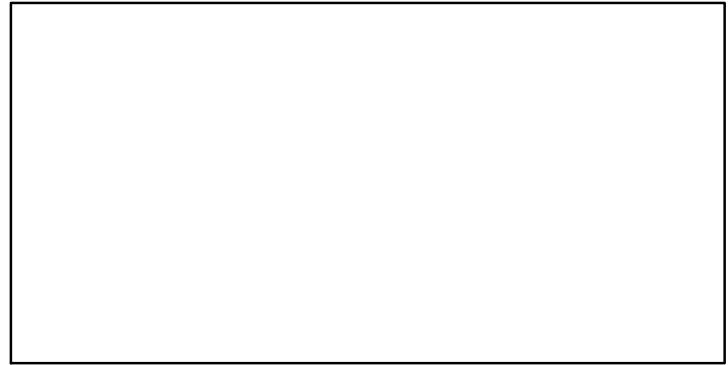
**F\***



**ER\***



**Recruits\***

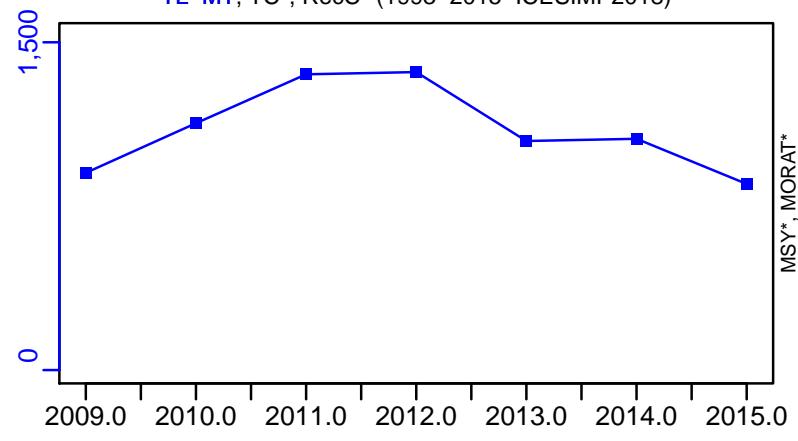


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

**Spotted ray ICES 7aefgh [SPRAYVIIaefgh]**

TL-MT, TC\*, RecC\* (1993–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



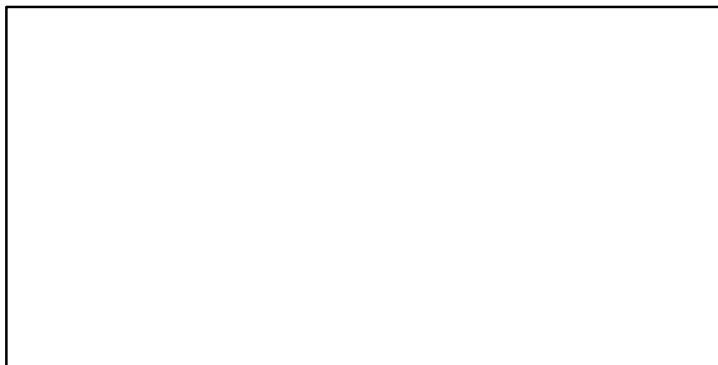
**survB\***



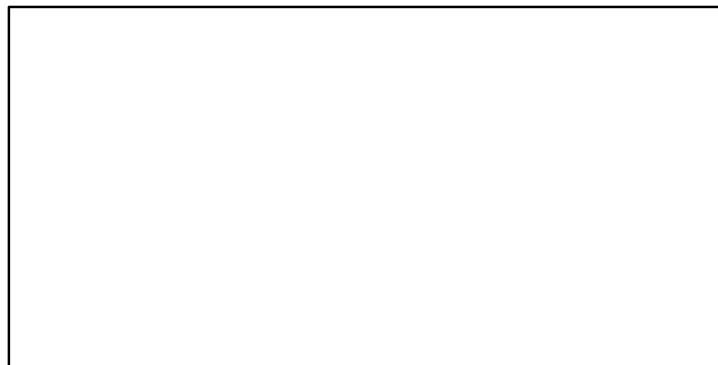
**CPUE\***



**EFFORT\***



**CdivMSY\***



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Spotted ray Bay of Biscay [SPRAYVIII]

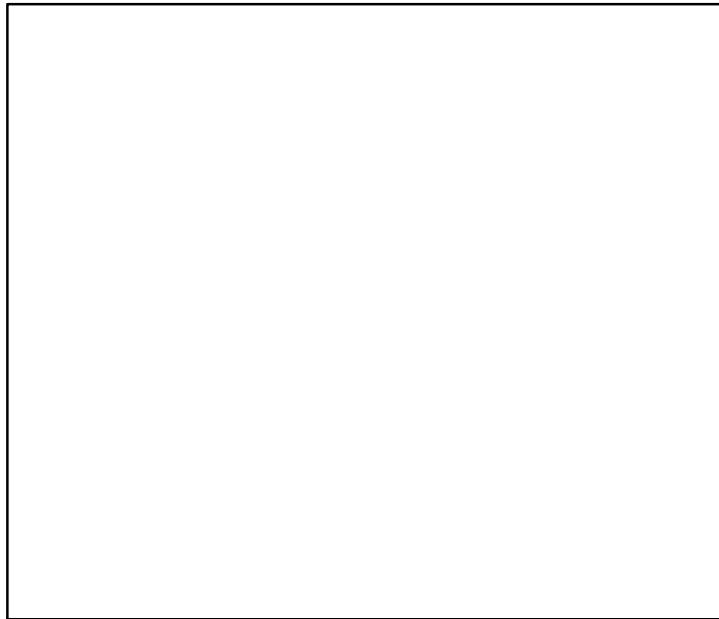
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Raja montagui  |
| <b>Current Assess ID</b>    | WGEF-SPRAYVIII-1999-2015-ICESIMP2018                 |
| <b>Area</b>                 | Bay of Biscay  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2015   |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

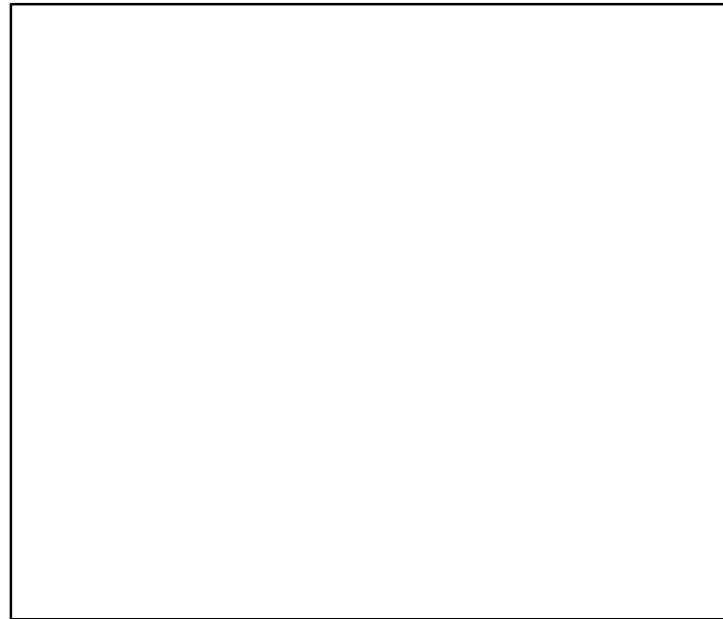
| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2015      | 1.29       | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | -         | -         | -          |      |     |
| <b>TL</b>          | TL-MT     | 2015      | 176        |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

**Spotted ray Bay of Biscay [SPRAYVIII]**

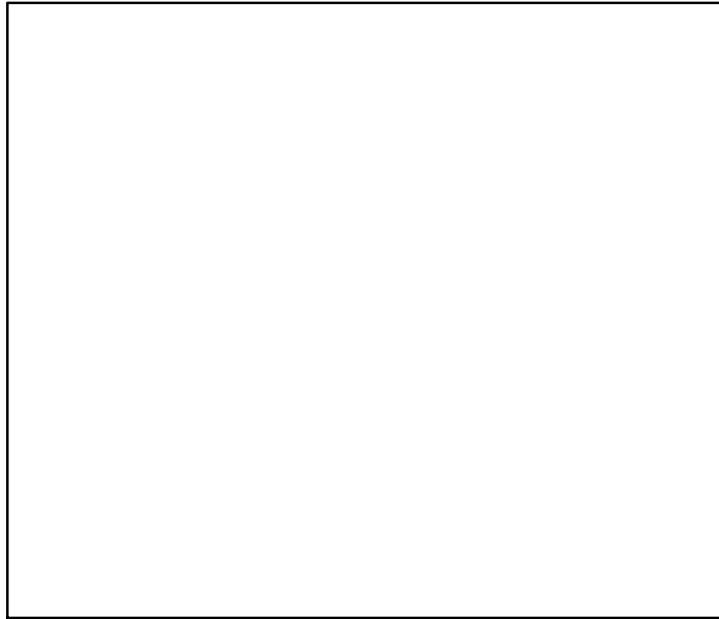
**Kobe MSY\***



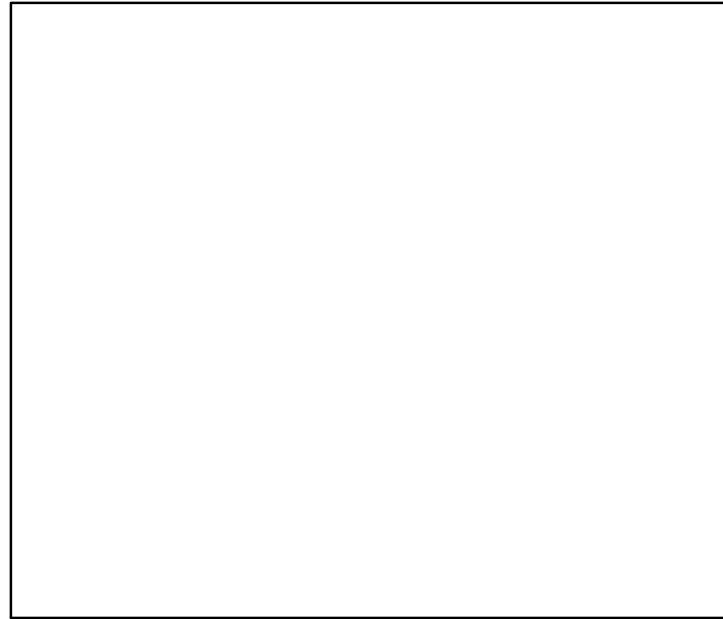
**Kobe MGT\***



**Spawner Recruit\***



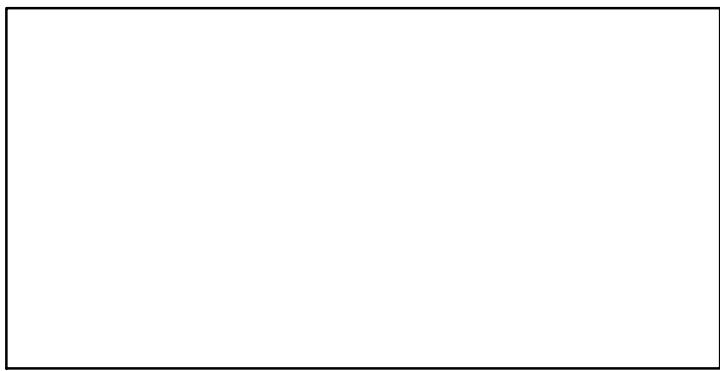
**Production\***



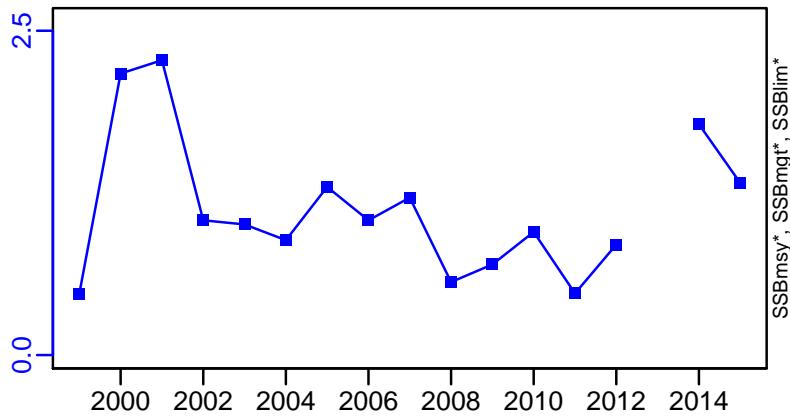
◆ Start Year ♦ End Year \* No Data

**Spotted ray Bay of Biscay [SPRAYVIII]**

**TB\***



**SSB-index (1999–2015–ICESIMP2018)**



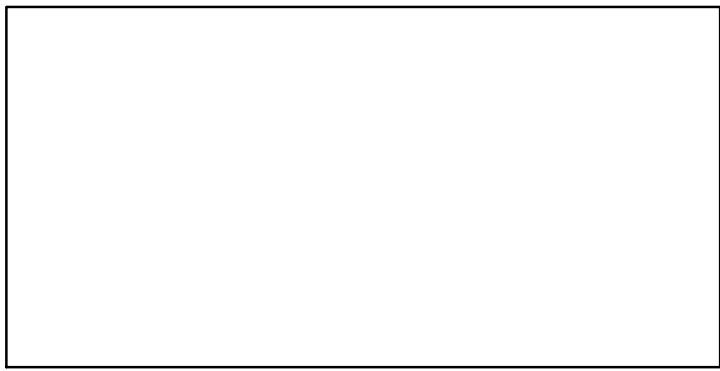
**TN \***



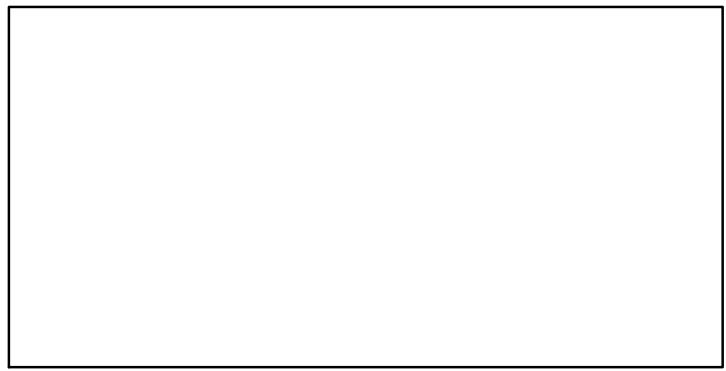
**F\***



**ER\***



**Recruits\***

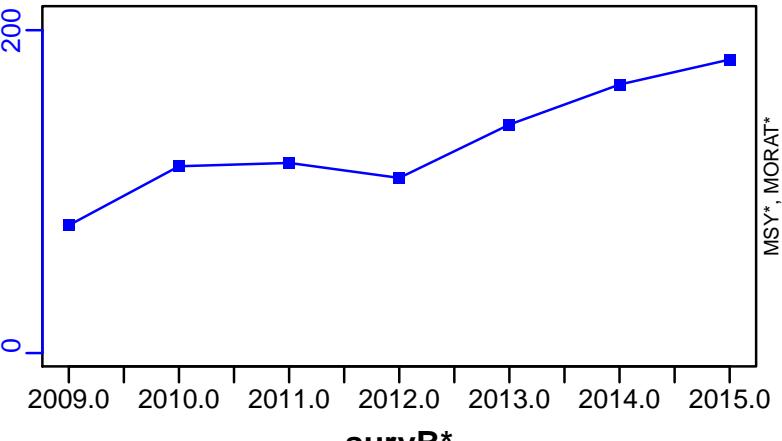


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

**Spotted ray Bay of Biscay [SPRAYVIII]**

TL-MT, TC\*, RecC\* (1999–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



**survB\***



**CPUE\***



**EFFORT\***



**CdivMSY\***



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Spotted ray ICES 6-7bj [SPRAYVI-VIIbj]

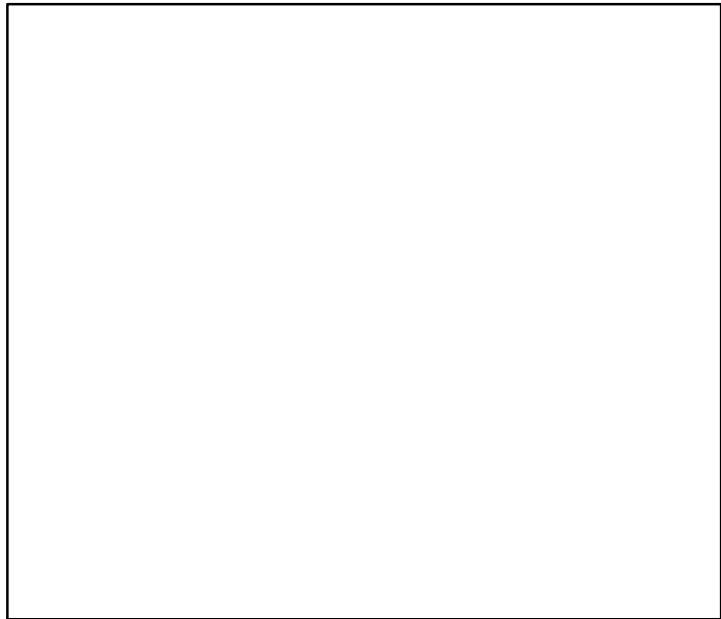
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Raja montagui  |
| <b>Current Assess ID</b>    | WGEF-SPRAYVI-VIIbj-2005-2015-ICESIMP2018             |
| <b>Area</b>                 | ICES 6-7bj   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2015   |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

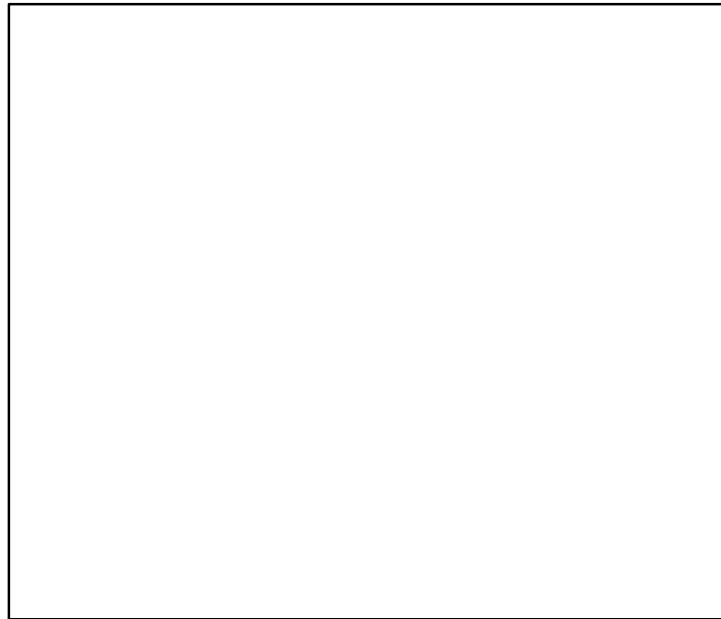
| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2015      | 9          | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | -         | -         | -          |      |     |
| <b>TL</b>          | TL-MT     | 2015      | 119        |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

**Spotted ray ICES 6–7bj [SPRAYVI–VIIbj]**

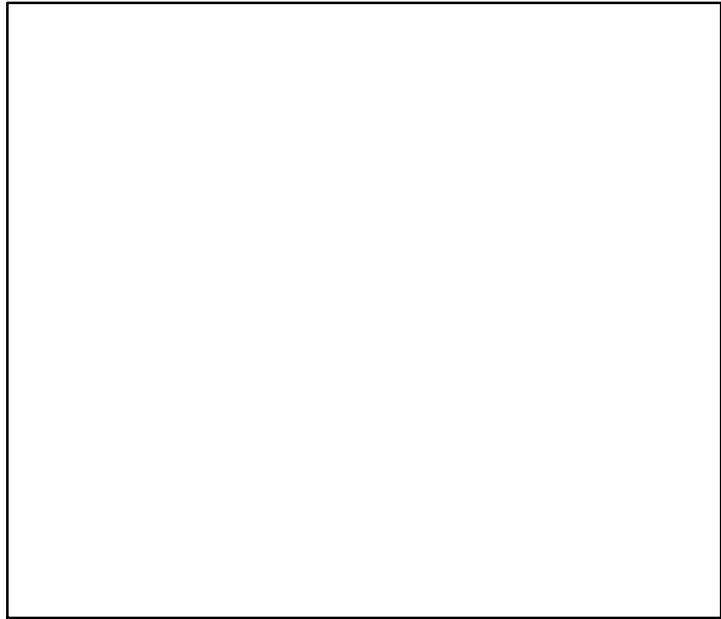
**Kobe MSY\***



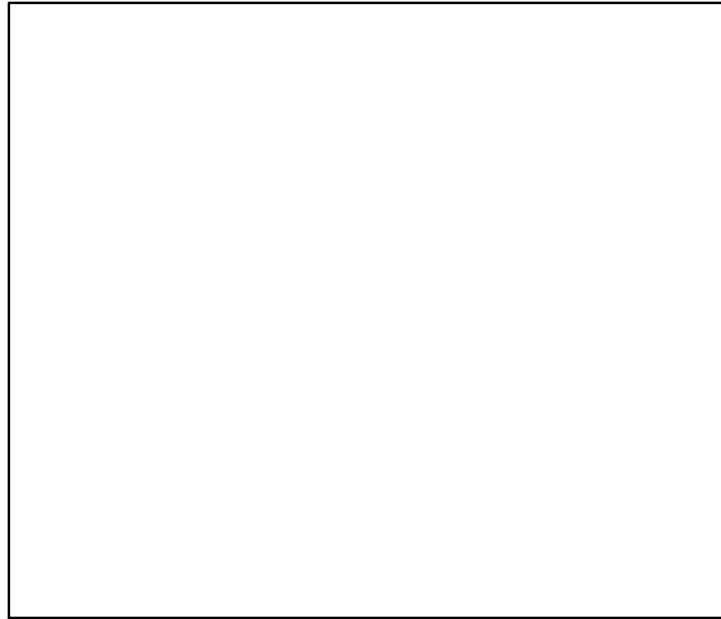
**Kobe MGT\***



**Spawner Recruit\***



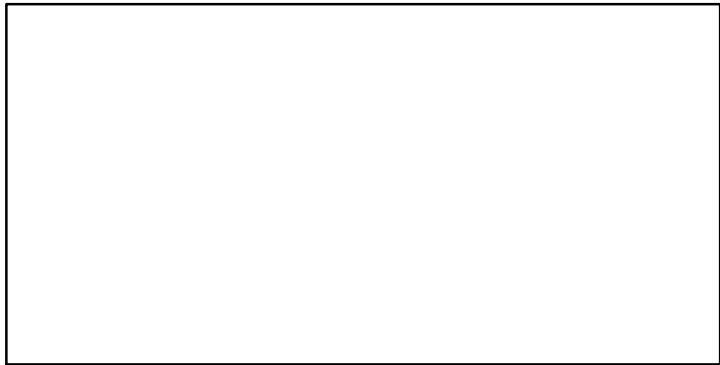
**Production\***



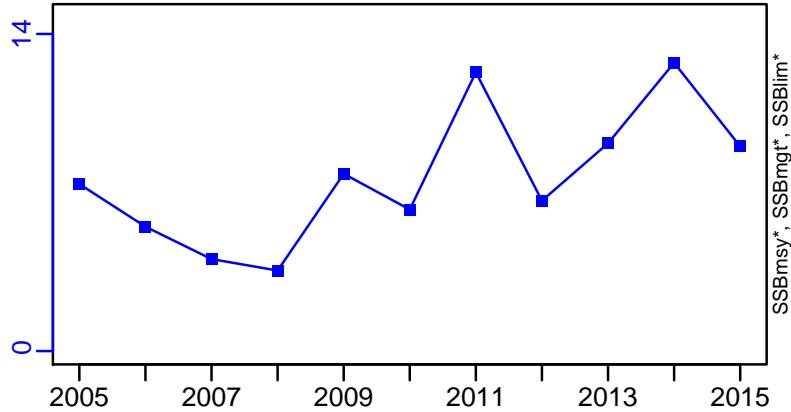
◆ Start Year ♦ End Year \* No Data

**Spotted ray ICES 6–7bj [SPRAYVI–VIIbj]**

**TB\***

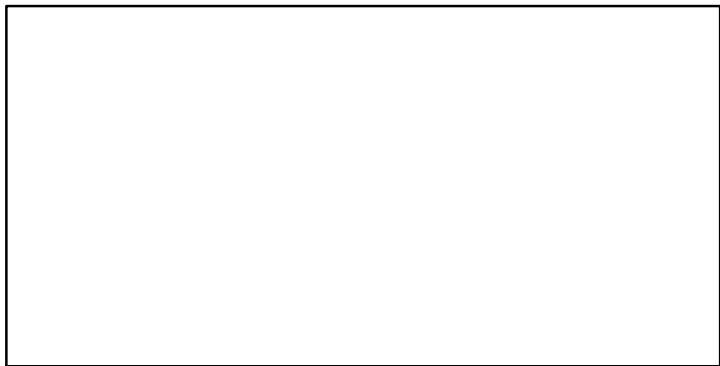


**SSB–index (2005–2015–ICESIMP2018)**

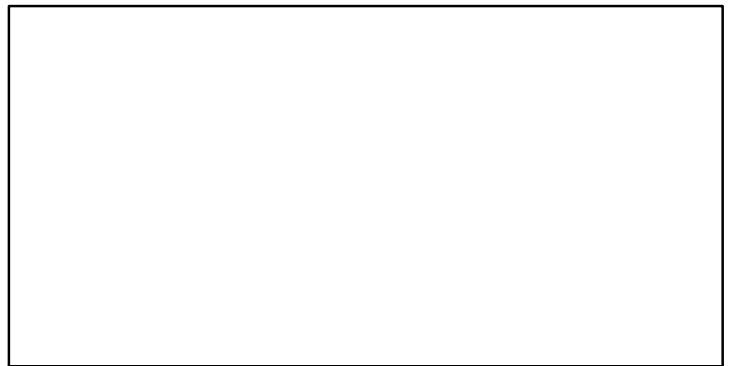


SSB<sub>m</sub>s\*, SSB<sub>mgt</sub>\* , SSB<sub>lim</sub>\*

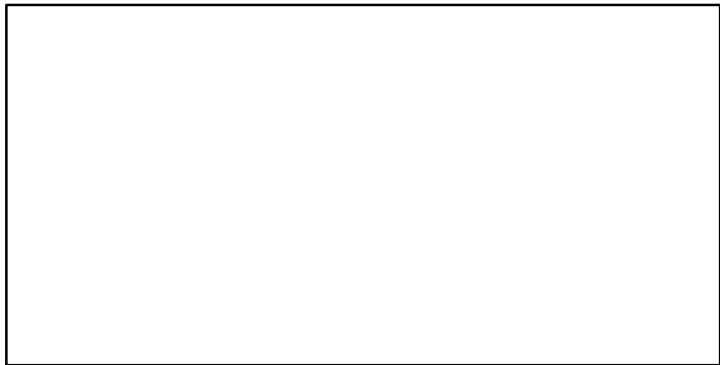
**TN \***



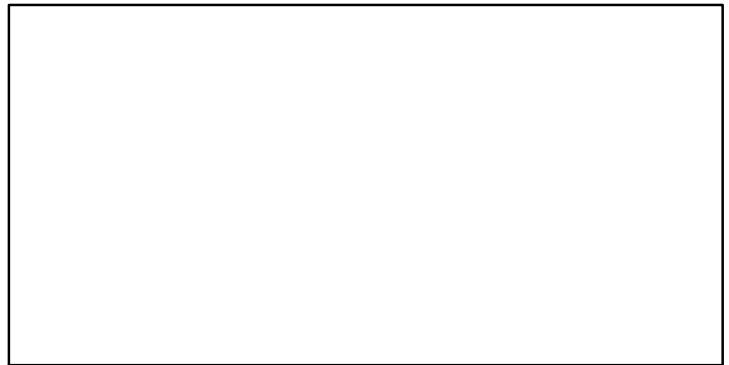
**F\***



**ER\***



**Recruits\***

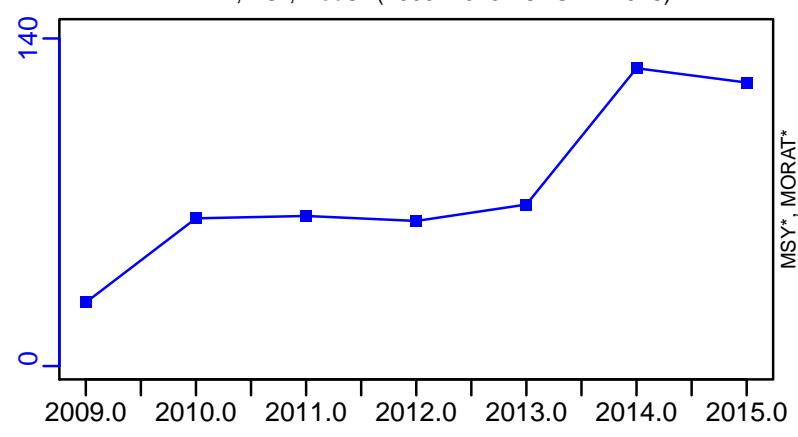


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

**Spotted ray ICES 6–7bj [SPRAYVI–VIIbj]**

TL–MT, TC\*, RecC\* (2005–2015–ICESIMP2018)

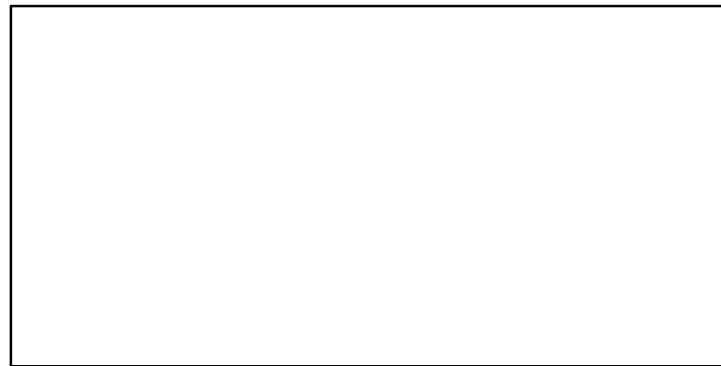
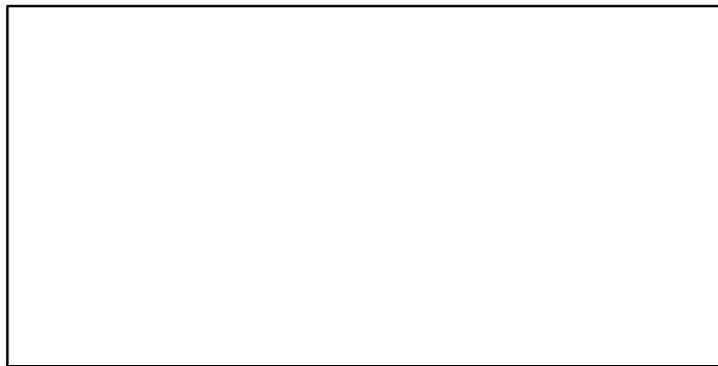
TAC\*, Cpair\*, Cadv\*



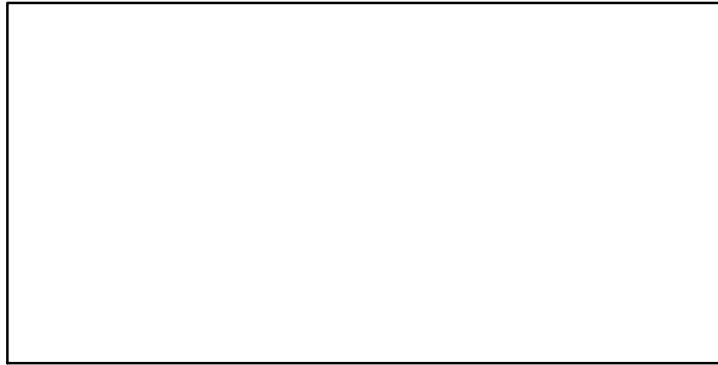
**survB\***

MSY\*, MORAT\*

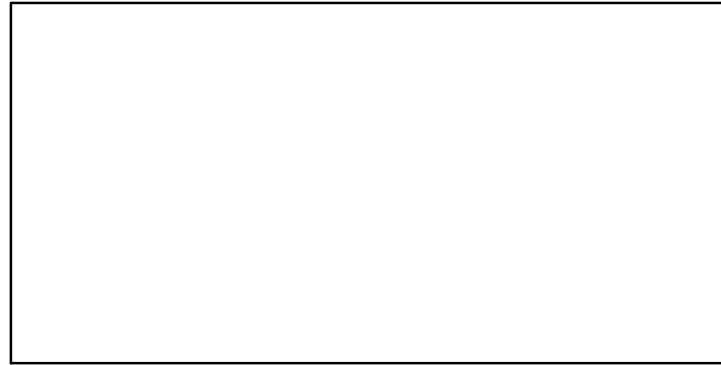
**CPUE\***



**EFFORT\***



**CdivMSY\***



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Spurdog Northeast Atlantic [SPURDNEATL]

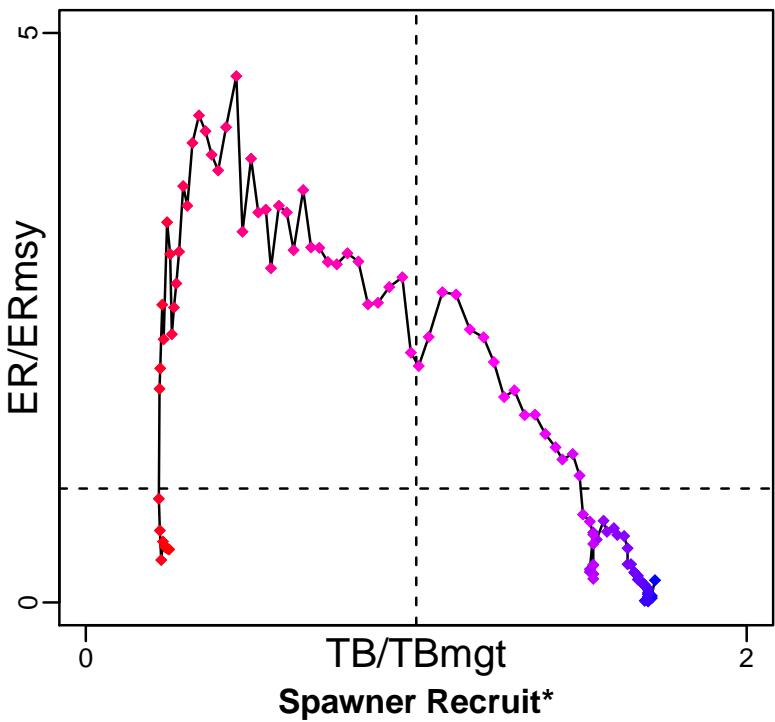
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Squalus acanthias                                    |
| <b>Current Assess ID</b>    | WGEF-SPURDNEATL-1905-2016-ICESIMP2018                |
| <b>Area</b>                 | Northeast Atlantic                                   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2014, 2016   |

| <b>Reference Points</b> |             |           |         |
|-------------------------|-------------|-----------|---------|
| Type                    | ID          | Asmt Year | Value   |
| <b>TBmsy</b>            | -           | -         | -       |
| <b>SSBmsy</b>           | -           | -         | -       |
| <b>Fmsy</b>             | -           | -         | -       |
| <b>ERmsy</b>            | ERmsy-ratio | 2014      | 0.029   |
| <b>TBmgt</b>            | TBmgt-MT    | 2016      | 964,563 |
| <b>SSBmgt</b>           | -           | -         | -       |
| <b>Fmgt</b>             | -           | -         | -       |
| <b>ERmgt</b>            | ERmgt-ratio | 2014      | 0.029   |
| <b>TB0</b>              | -           | -         | -       |
| <b>SSB0</b>             | -           | -         | -       |
| <b>MSY</b>              | -           | -         | -       |
| <b>M</b>                | -           | -         | -       |
| <b>TBlim</b>            | -           | -         | -       |
| <b>SSBlim</b>           | -           | -         | -       |
| <b>Flim</b>             | -           | -         | -       |
| <b>ERlim</b>            | -           | -         | -       |

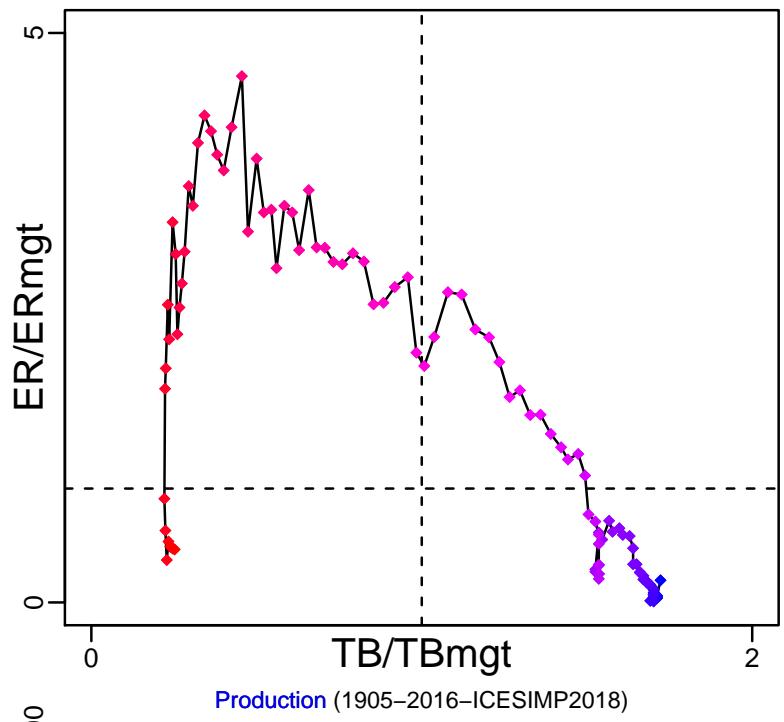
| <b>Time Series</b> |                      |           |            |      |     |  |
|--------------------|----------------------|-----------|------------|------|-----|--|
| Type               | ID                   | Asmt Year | Curr Value | Sex  | Age |  |
| <b>TB</b>          | TB-MT                | 2016      | 296,000    | Both | -   |  |
| <b>SSB</b>         | -                    | -         | -          | -    | -   |  |
| <b>TN</b>          | -                    | -         | -          | -    | -   |  |
| <b>R</b>           | R-E00                | 2016      | 121,000    | -    | 0   |  |
| <b>F</b>           | F-1/yr               | 2016      | 0.012      | -    | -   |  |
| <b>ER</b>          | ER-calc-ratio        | 2016      | 0.01       | -    | -   |  |
| <b>TC</b>          | TC-MT                | 2014      | 2380       |      |     |  |
| <b>TL</b>          | TL-MT                | 2016      | 2640       |      |     |  |
| <b>TB/TBmsy</b>    | -                    | -         | -          |      |     |  |
| <b>SSB/SSBmsy</b>  | -                    | -         | -          |      |     |  |
| <b>F/Fmsy</b>      | -                    | -         | -          |      |     |  |
| <b>ER/ERmsy</b>    | ER-ratio/ERmsy-ratio | 2014      | 0.466      |      |     |  |
| <b>TB/TBmgt</b>    | TB-MT/TBmgt-MT       | 2016      | 0.307      |      |     |  |
| <b>SSB/SSBmgt</b>  | -                    | -         | -          |      |     |  |
| <b>F/Fmgt</b>      | -                    | -         | -          |      |     |  |
| <b>ER/ERmgt</b>    | -                    | -         | -          |      |     |  |

**Spurdog Northeast Atlantic [SPURDNEATL]**

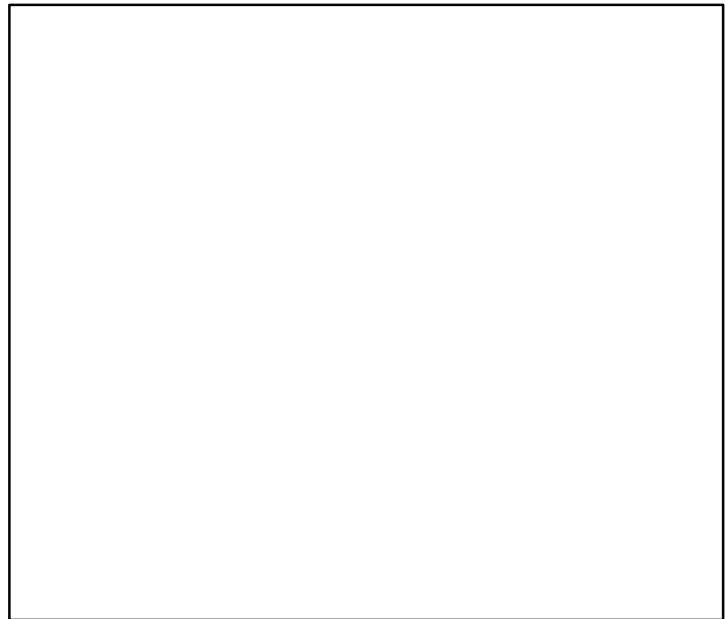
Kobe MSYpref (1905–2014–ICESIMP2016)



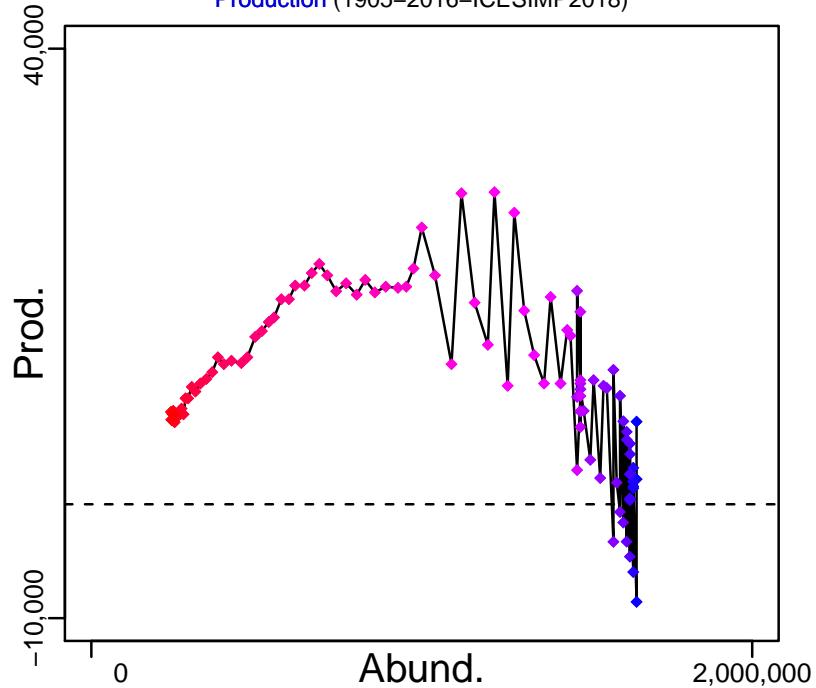
Kobe MGTpref (1905–2014–ICESIMP2016)



**Spawner Recruit\***



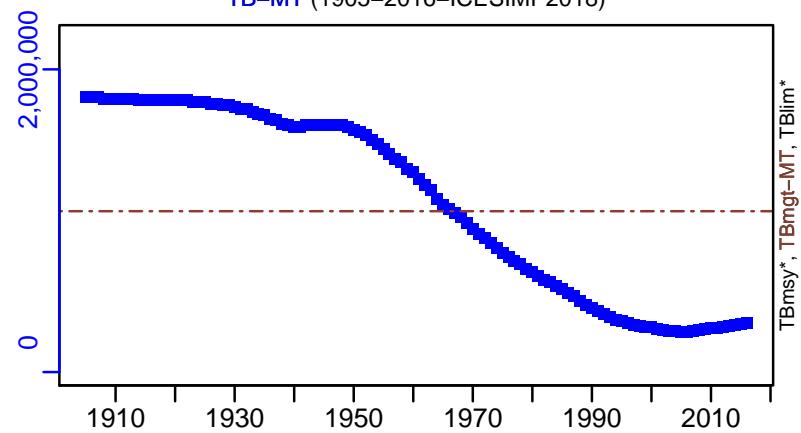
Production (1905–2016–ICESIMP2018)



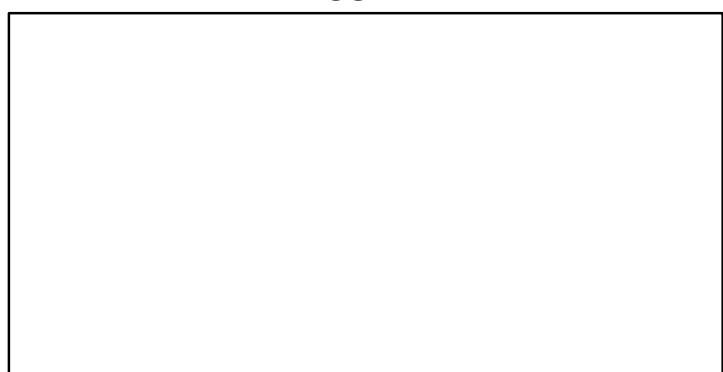
◆ Start Year ♦ End Year \* No Data

Spurdog Northeast Atlantic [SPURDNEATL]

TB-MT (1905–2016–ICESIMP2018)



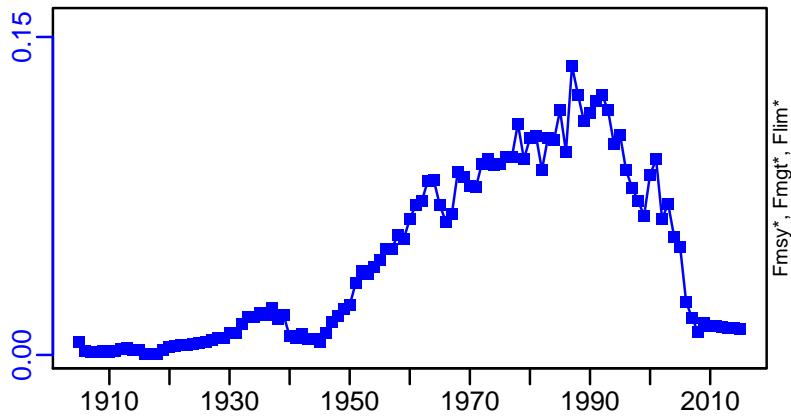
SSB\*



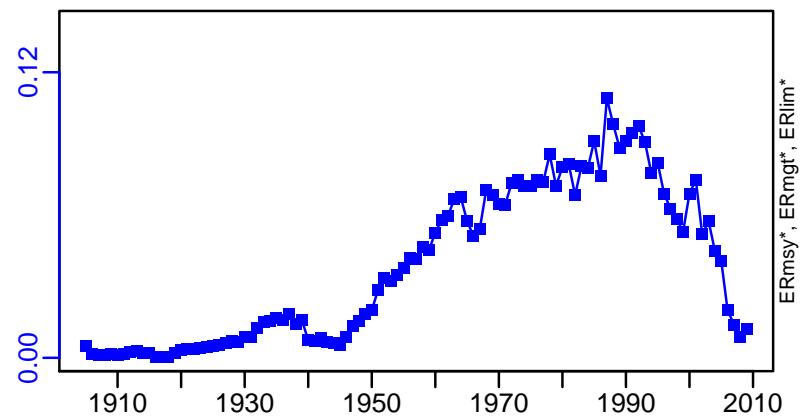
TN \*



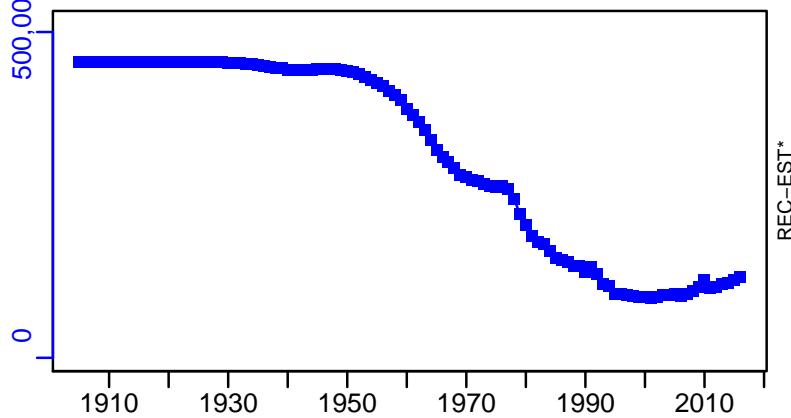
F-1/yr (1905–2016–ICESIMP2018)



ER-calc-ratio (1905–2016–ICESIMP2018)



R-E00 (1905–2016–ICESIMP2018)

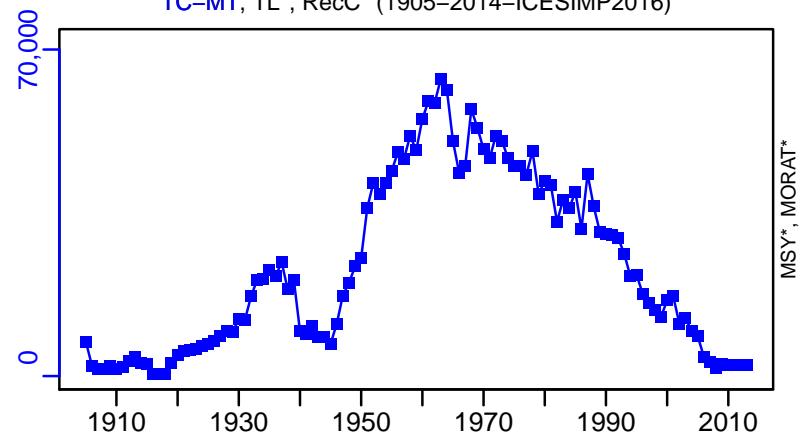


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | --- Lim BRP  | * No Data |

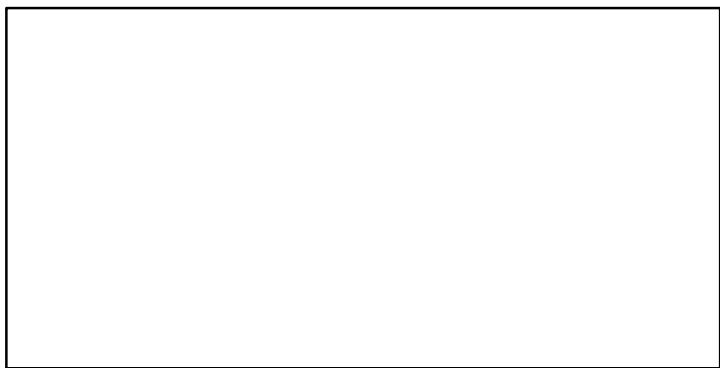
**Spurdog Northeast Atlantic [SPURDNEATL]**

TC-MT, TL\*, RecC\* (1905–2014–ICESIMP2016)

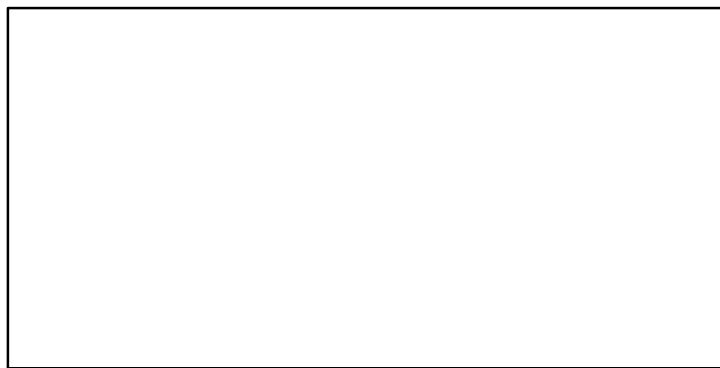
TAC\*, Cpair\*, Cadv\*



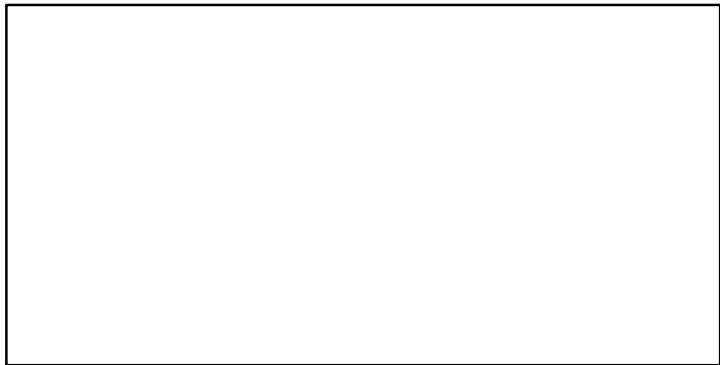
**survB\***



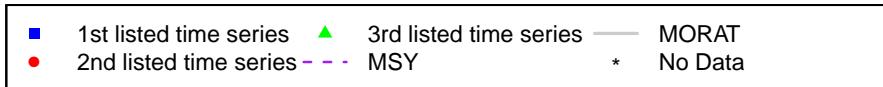
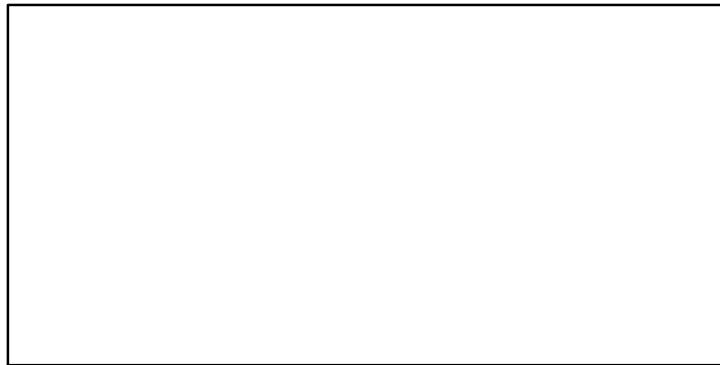
**CPUE\***



**EFFORT\***



**CdivMSY\***



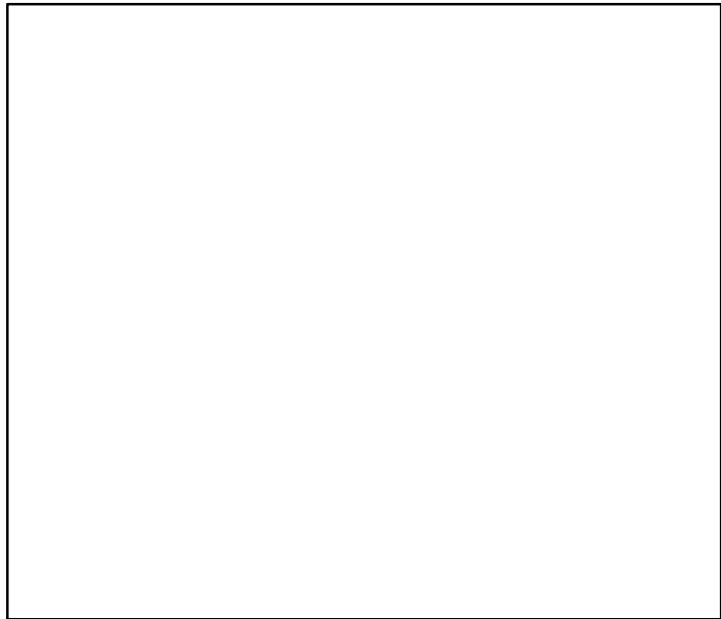
## Starry ray ICES 2-3a-4 [STRAYII-IIIA-IV]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Amblyraja radiata                                    |
| <b>Current Assess ID</b>    | WGEF-STRAYII-IIIA-IV-1991-2018-ICESIMP2021           |
| <b>Area</b>                 | ICES 2-3a-4  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2014, 2018   |

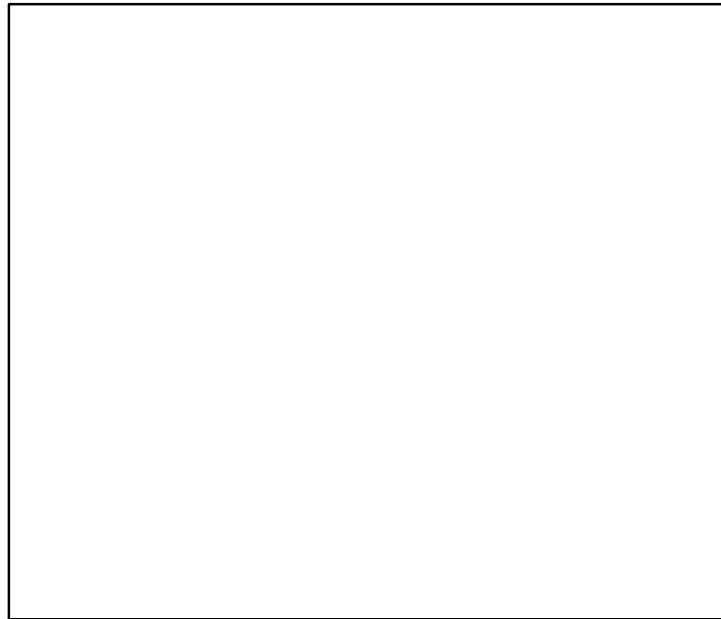
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2014      | 0.41       | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | -         | -         | -          |      |     |
| <b>TL</b>          | TL-MT     | 2018      | 1.341      |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

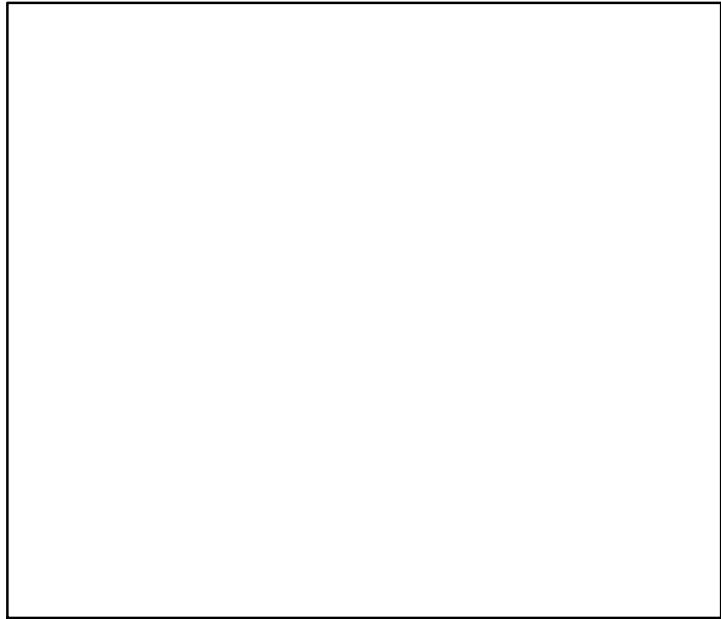
**Kobe MSY\***



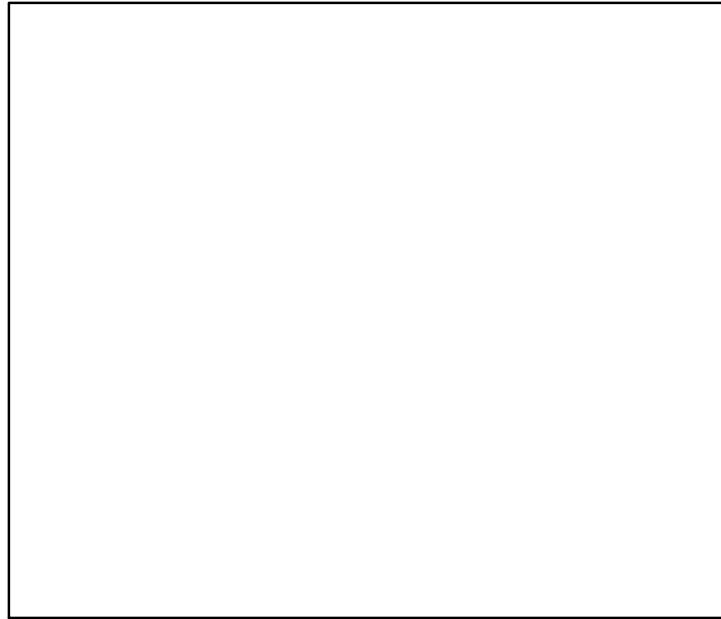
**Kobe MGT\***



**Spawner Recruit\***



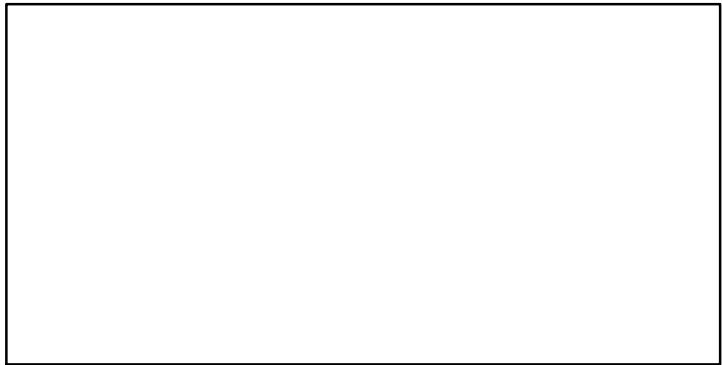
**Production\***



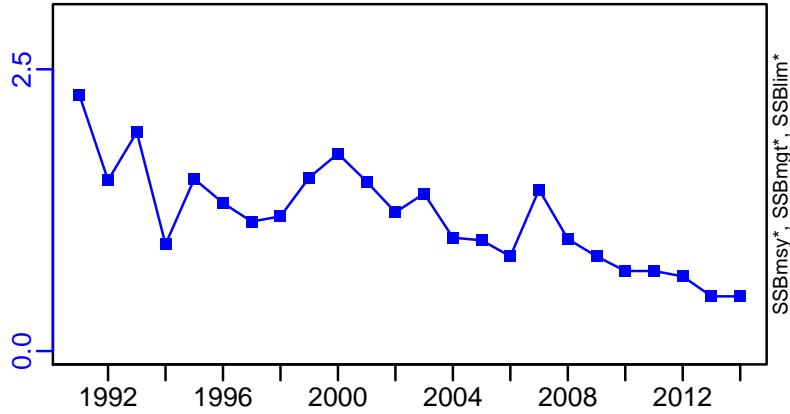
◆ Start Year ♦ End Year \* No Data

**Starry ray ICES 2–3a–4 [STRAYII–IIIa–IV]**

**TB\***

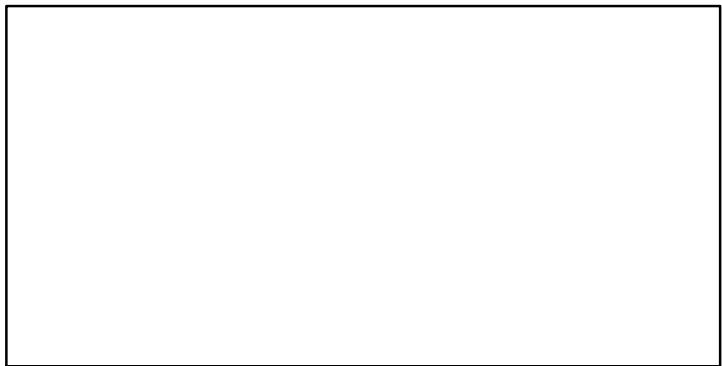


**SSB–index (1991–2014–ICESIMP2018)**

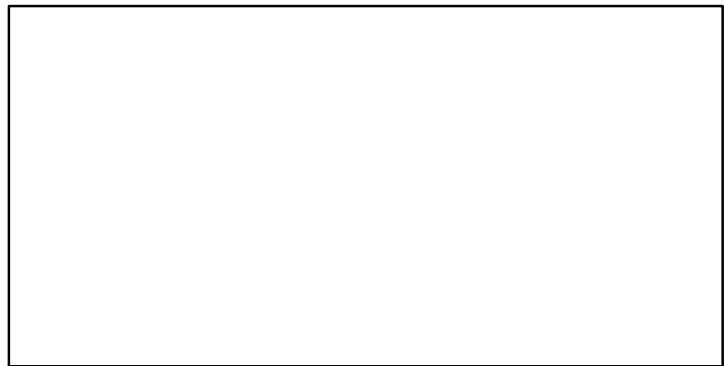


SSBm<sup>sy</sup>, SSBm<sup>gt</sup>, SSBlim<sup>\*</sup>

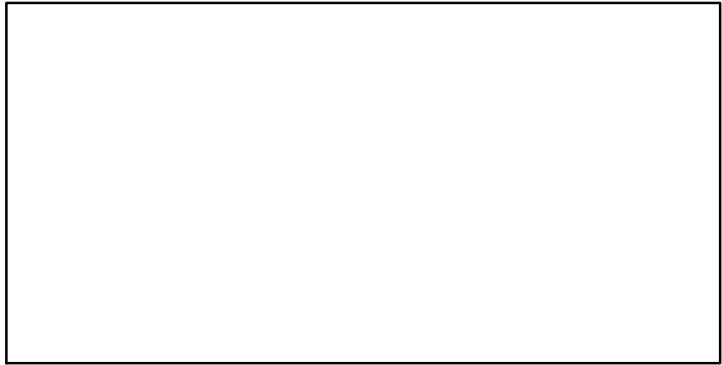
**TN \***



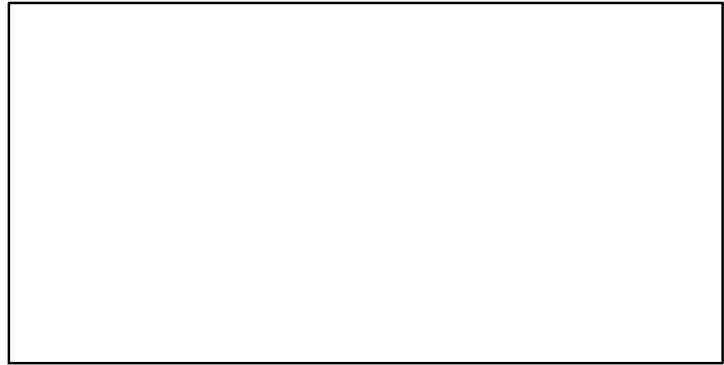
**F\***



**ER\***



**Recruits\***

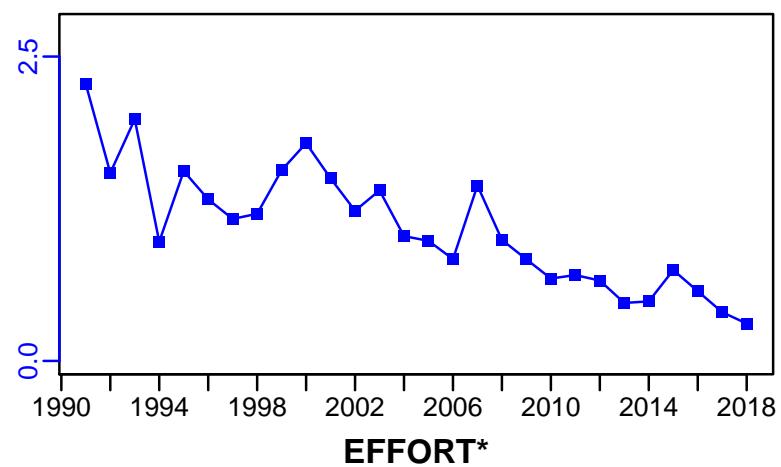
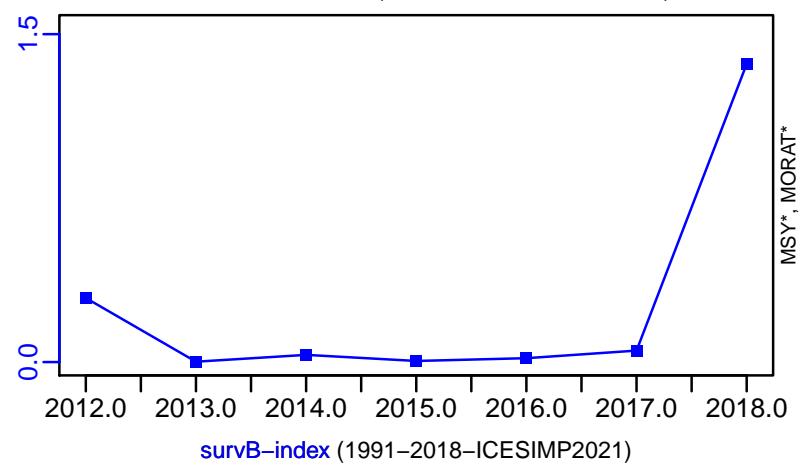


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

**Starry ray ICES 2-3a-4 [STRAYII-IIla-IV]**

TL-MT, TC\*, RecC\* (1991–2018–ICESIMP2021)

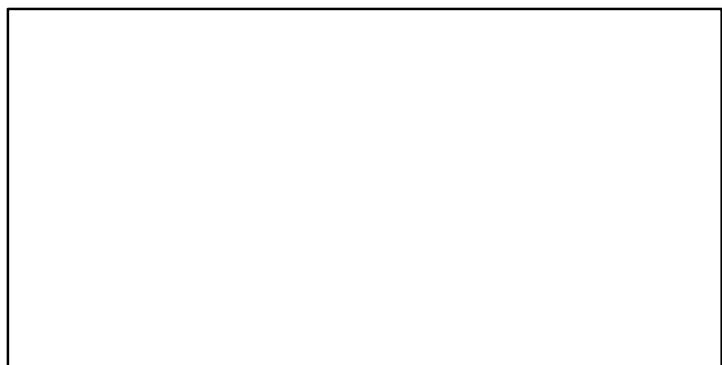
TAC\*, Cpair\*, Cadv\*



CPUE\*



CdivMSY\*



|                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

### Striped red mullet ICES 3a-4-7d [STRMULLIlla-IV-VIId]

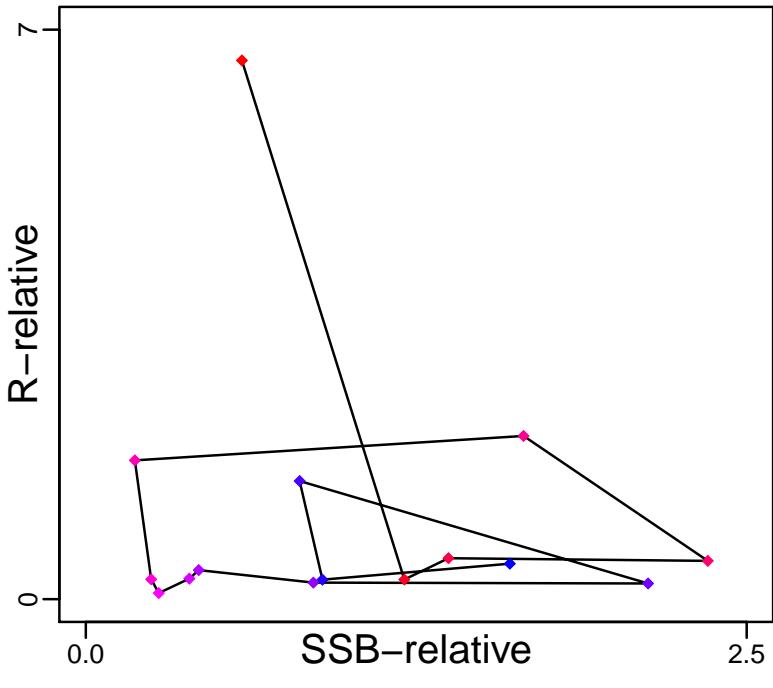
| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Mullus surmuletus   |
| <b>Current Assess ID</b>    | WGNSSK-STRMULLIlla-IV-VIId-2004-2018-ICESIMP2021                                  |
| <b>Area</b>                 | ICES 3a-4-7d  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2014, 2016, 2018  |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |              |           |            |     |        |  |
|--------------------|--------------|-----------|------------|-----|--------|--|
| Type               | ID           | Asmt Year | Curr Value | Sex | Age    |  |
| <b>TB</b>          | -            | -         | -          | -   | -      |  |
| <b>SSB</b>         | SSB-relative | 2018      | 0.59       | -   | -      |  |
| <b>TN</b>          | -            | -         | -          | -   | -      |  |
| <b>R</b>           | R-relative   | 2018      | 7          | -   | -      |  |
| <b>F</b>           | F-relative   | 2018      | 2.077      | -   | 1 to 2 |  |
| <b>ER</b>          | -            | -         | -          | -   | -      |  |
| <b>TC</b>          | TC-MT        | 2018      | 1648       |     |        |  |
| <b>TL</b>          | TL-MT        | 2018      | 1648       |     |        |  |
| <b>TB/TBmsy</b>    | -            | -         | -          |     |        |  |
| <b>SSB/SSBmsy</b>  | -            | -         | -          |     |        |  |
| <b>F/Fmsy</b>      | -            | -         | -          |     |        |  |
| <b>ER/ERmsy</b>    | -            | -         | -          |     |        |  |
| <b>TB/TBmgt</b>    | -            | -         | -          |     |        |  |
| <b>SSB/SSBmgt</b>  | -            | -         | -          |     |        |  |
| <b>F/Fmgt</b>      | -            | -         | -          |     |        |  |
| <b>ER/ERmgt</b>    | -            | -         | -          |     |        |  |

**Kobe MSY\*****Kobe MGT\***

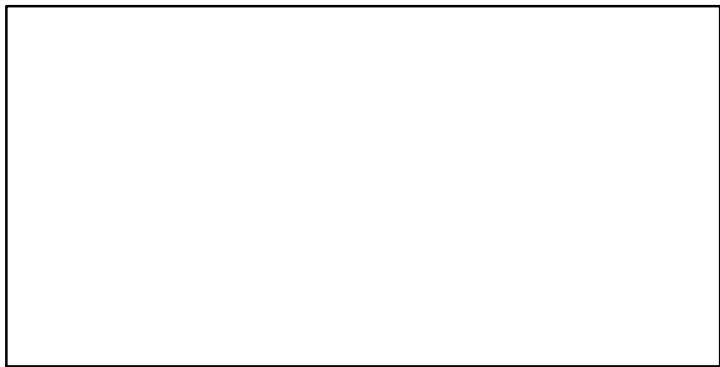
Spawner Recruit (2004–2018–ICESIMP2021)

**Production\***

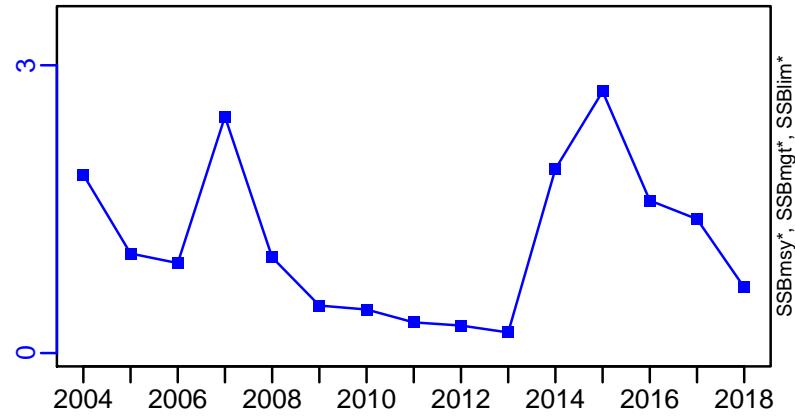
◆ Start Year   ◆ End Year   \* No Data

Striped red mullet ICES 3a-4-7d [STRMULLIa-IV-VIId]

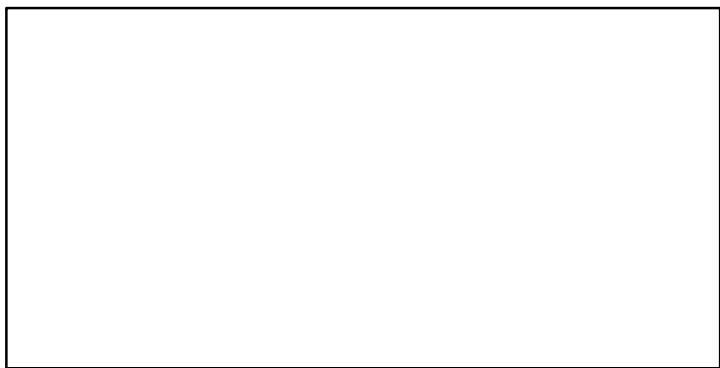
**TB\***



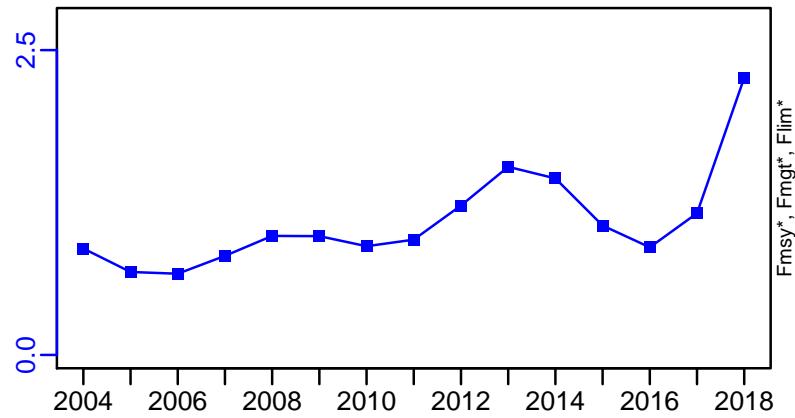
SSB-relative (2004–2018–ICESIMP2021)



**TN \***



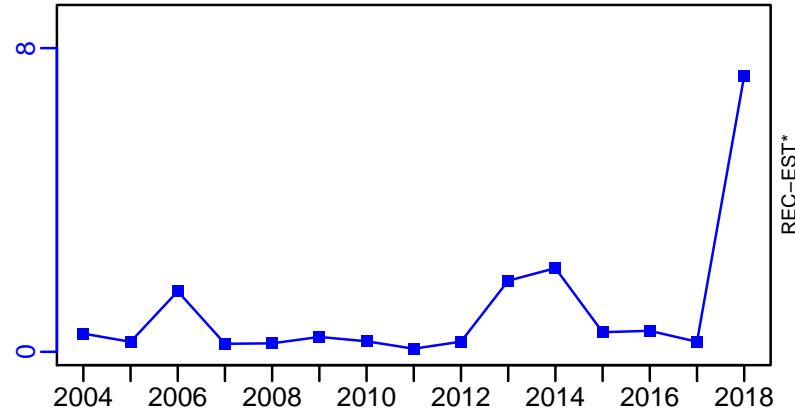
F-relative (2004–2018–ICESIMP2021)



**ER\***



R-relative (2004–2018–ICESIMP2021)

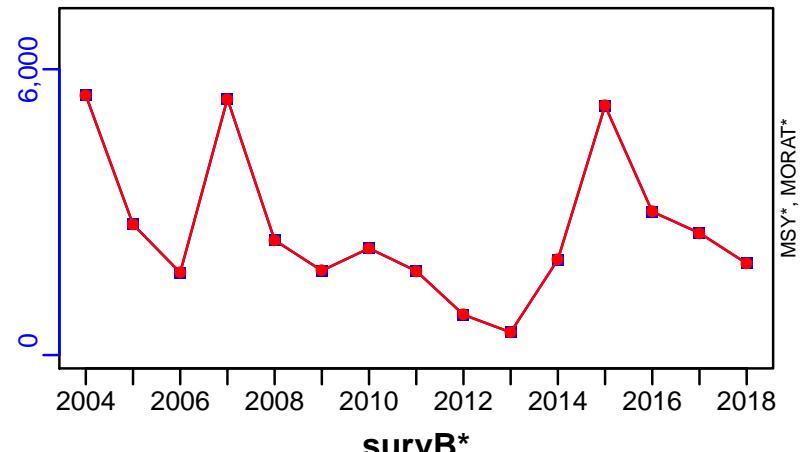


- Listed time series    - - - Target BRP    — Rec-Est
- - MSY-based BRP    - - Lim BRP    \* No Data

Striped red mullet ICES 3a-4-7d [STRMULLIlla-IV-VIId]

TC-MT, TL-MT, RecC\* (2004–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



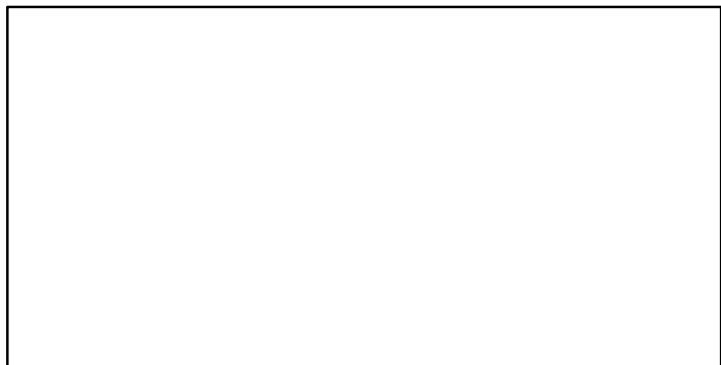
survB\*



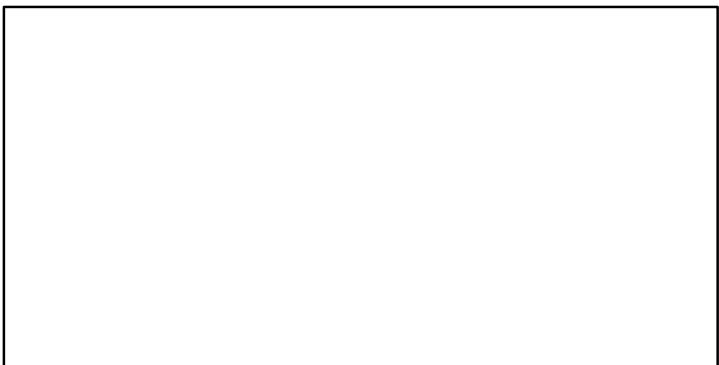
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

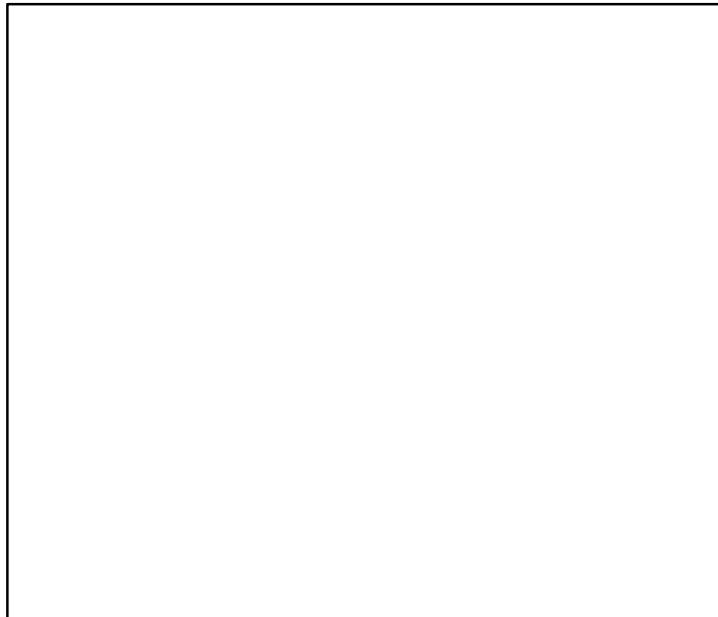
**Striped red mullet ICES 6-7abcefghijk-8-9a [STRMULLVI-VIIabcefghijk-VIII-IXa]**

| Metadata                    |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Mullus surmuletus   |
| <b>Current Assess ID</b>    | WGWISE-STRMULLVI-VIIabcefghijk-VIII-IXa-1975-2016-ICESIMP2018 |
| <b>Area</b>                 | ICES 6-7abcefghijk-8-9a                                       |
| <b>Management Authority</b> | International Council for the Exploration of the Sea          |
| <b>Assessor</b>             | Working Group on Widely Distributed Stocks                    |
| <b>Asmts in RAM</b>         | 2014, 2016  |

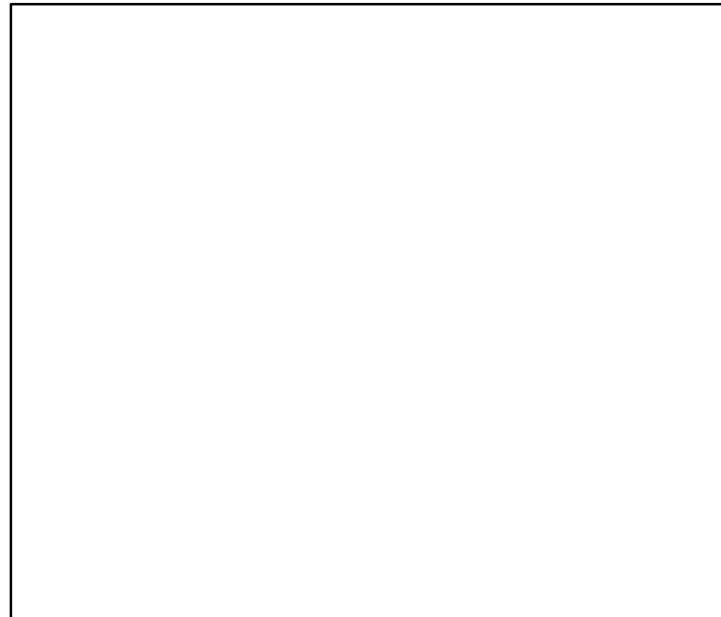
| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | -     | -         | -          |     |     |
| <b>TL</b>         | TL-MT | 2016      | 1730       |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

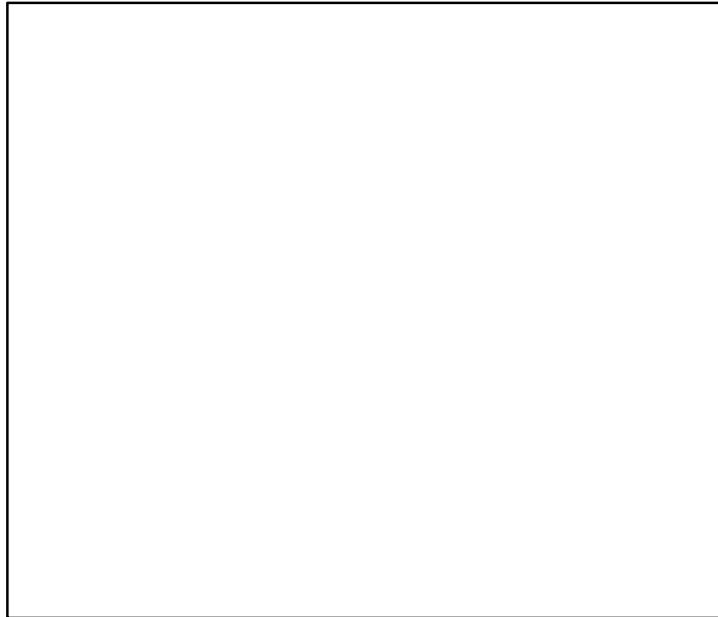
**Kobe MSY\***



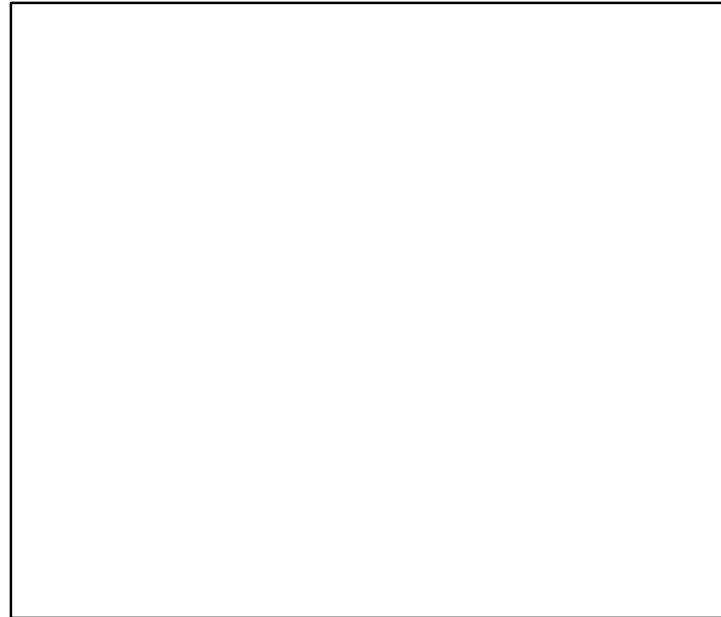
**Kobe MGT\***



**Spawner Recruit\***



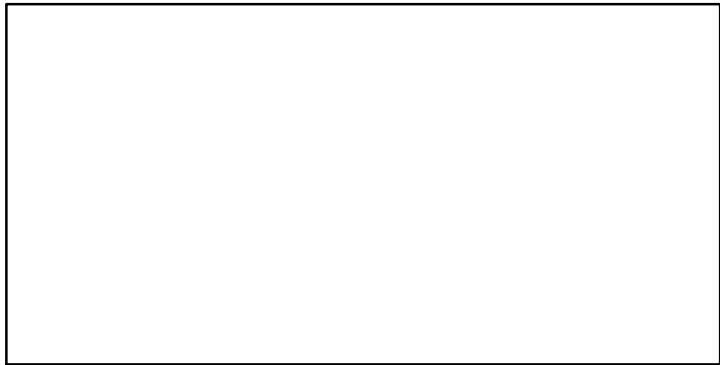
**Production\***



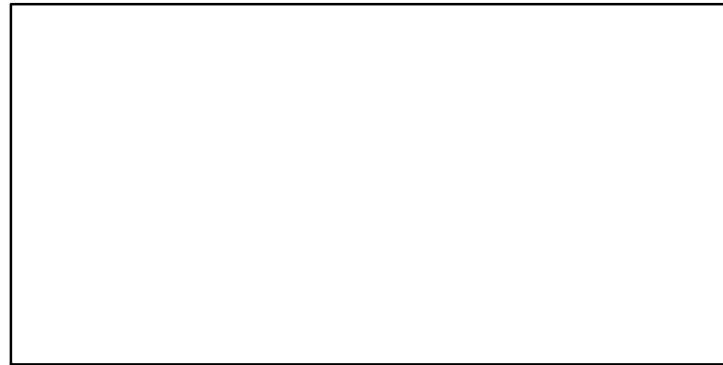
◆ Start Year ♦ End Year \* No Data

**Striped red mullet ICES 6–7abcefghijk–8–9a [STRMULLVI–VIIabcefghijk–VIII–IXa]**

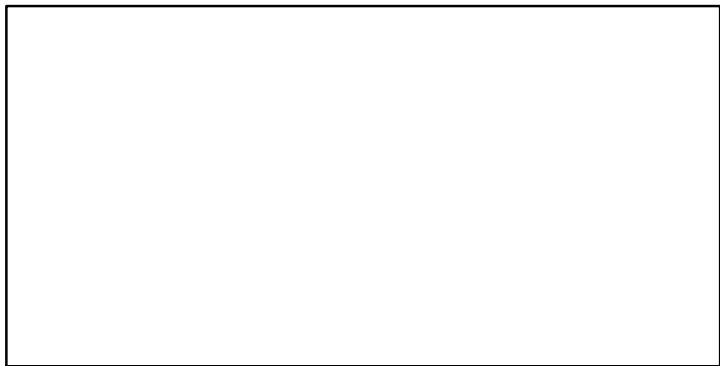
**TB\***



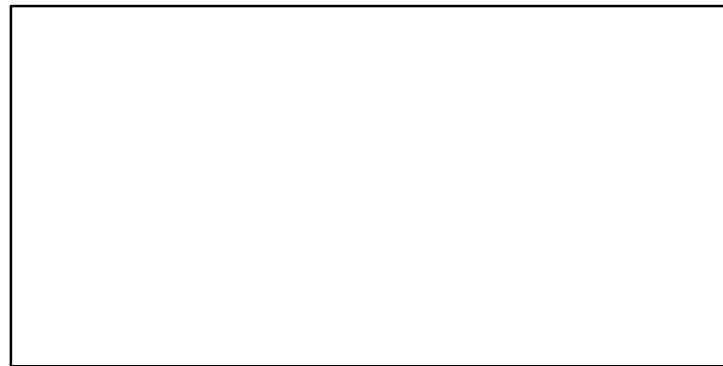
**SSB\***



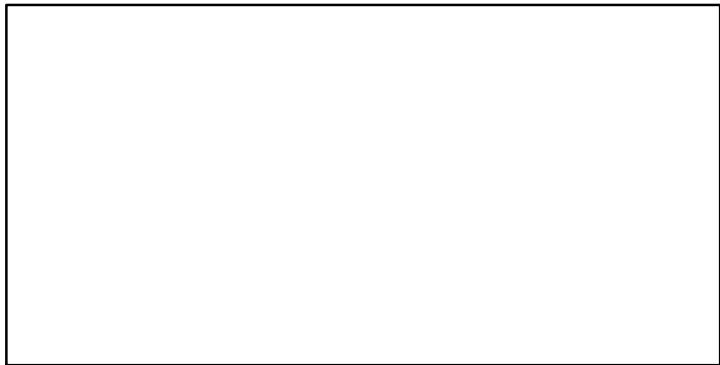
**TN \***



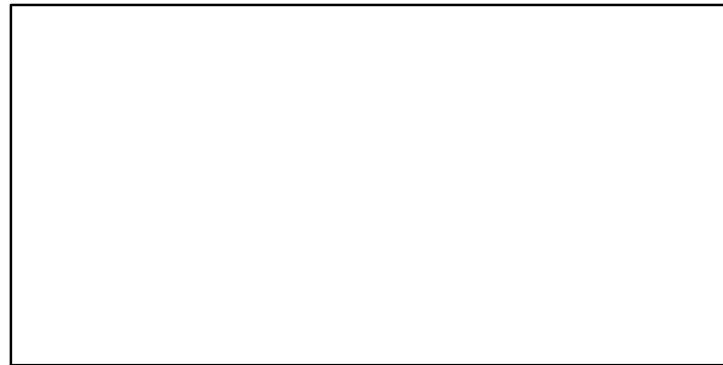
**F\***



**ER\***



**Recruits\***

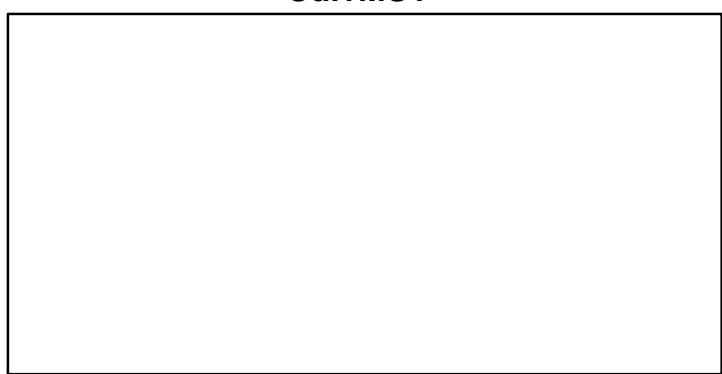
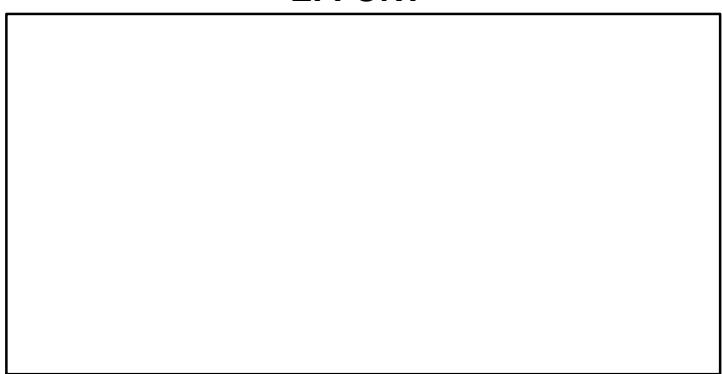
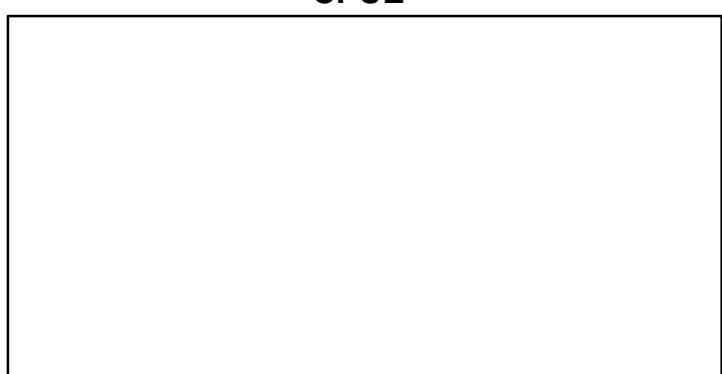
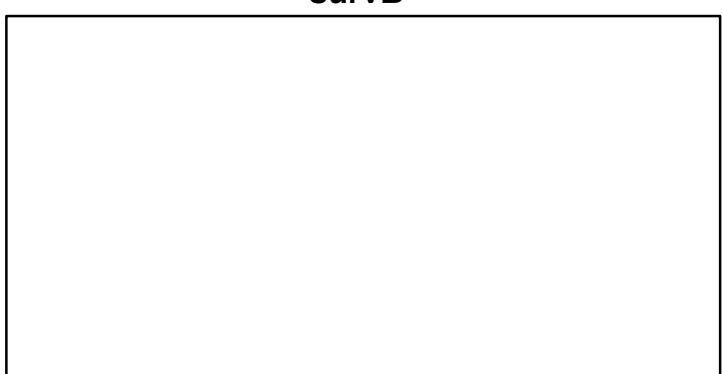
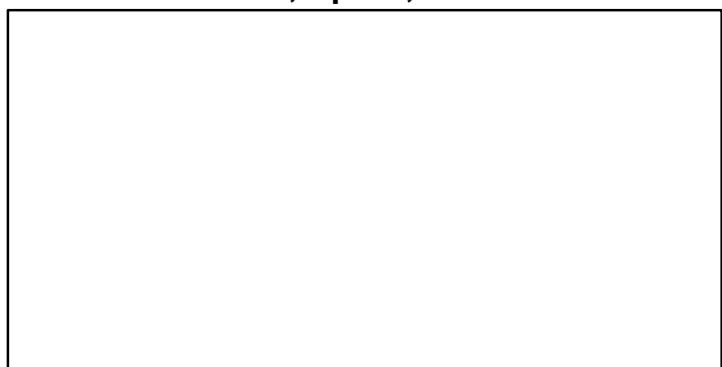
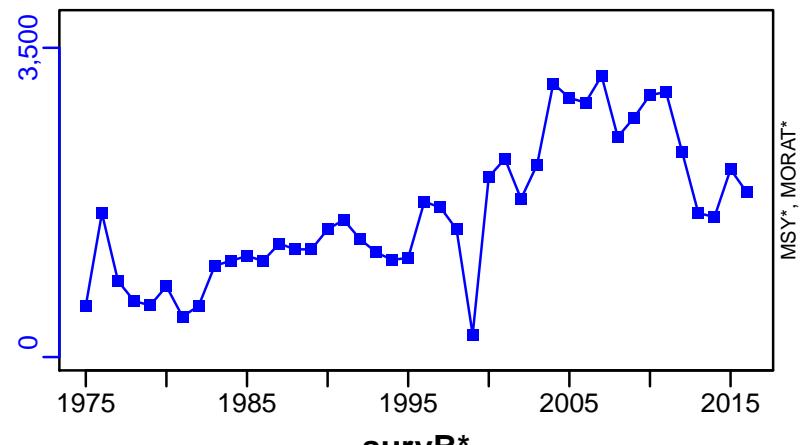


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Striped red mullet ICES 6–7abcefghijk–8–9a [STRMULLVI–VIIabcefghijk–VIII–IXa]

TL–MT, TC\*, RecC\* (1975–2016–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

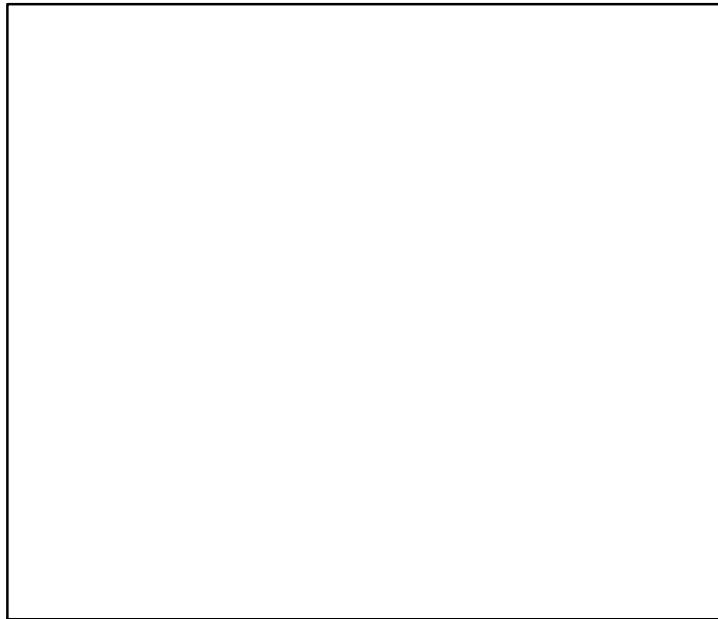
## Sea trout Baltic Areas 22-32 [STROUT22-32]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Salmo trutta   |
| <b>Current Assess ID</b>    | WGBAST-STROUT22-32-2001-2016-ICESIMP2018             |
| <b>Area</b>                 | Baltic Areas 22-32                                   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Assessment Working Group on Baltic Salmon and Trout  |
| <b>Asmts in RAM</b>         | 2016   |

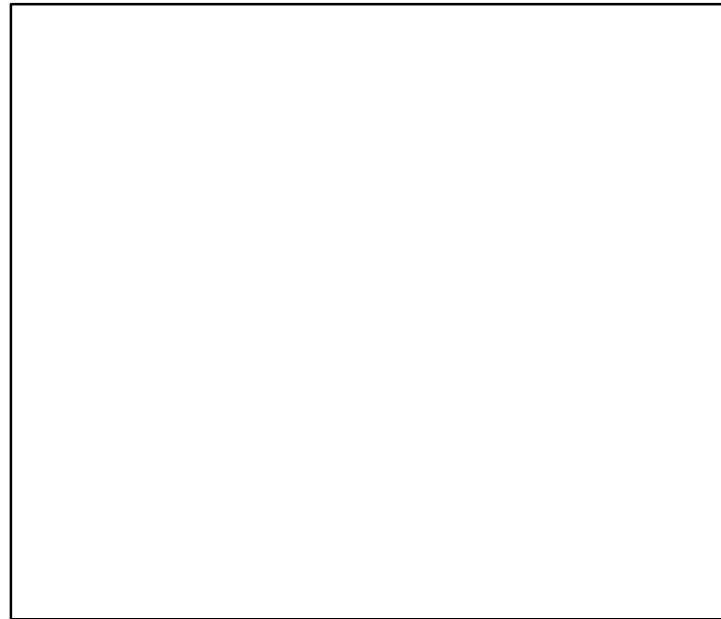
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | TC-MT | 2016      | 232        |     |     |
| <b>TL</b>          | -     | -         | -          |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

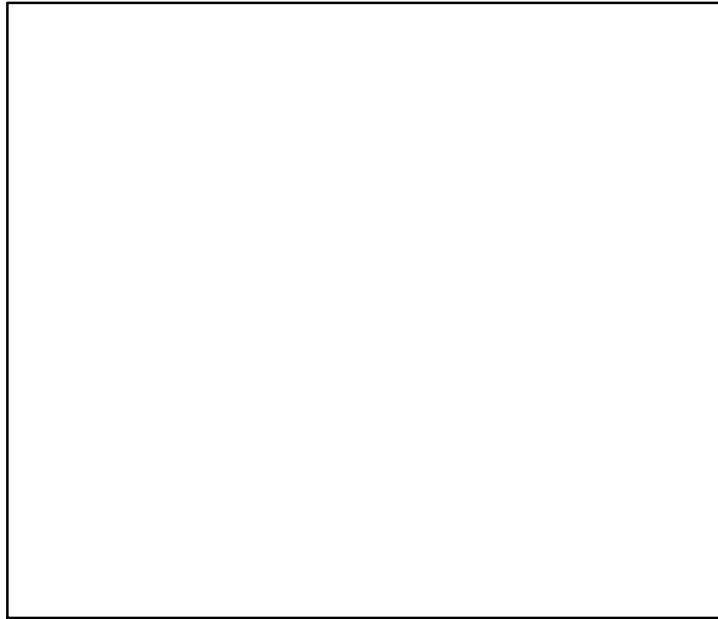
**Kobe MSY\***



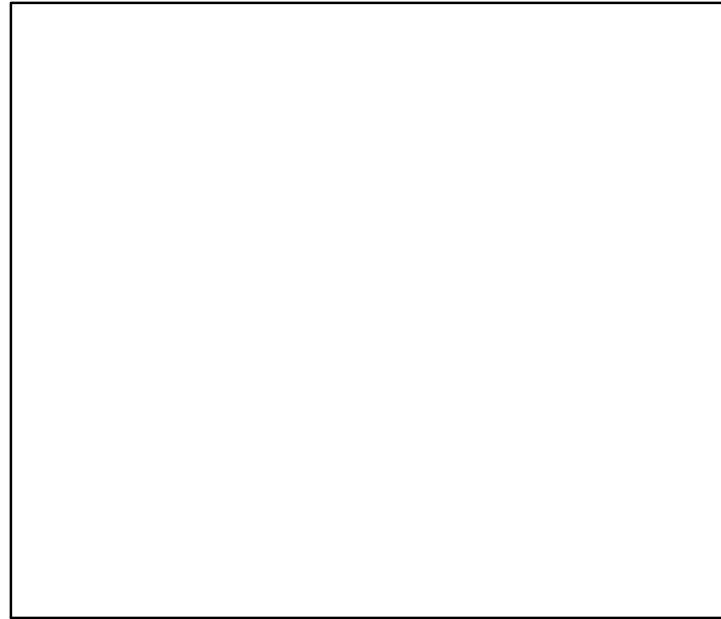
**Kobe MGT\***



**Spawner Recruit\***



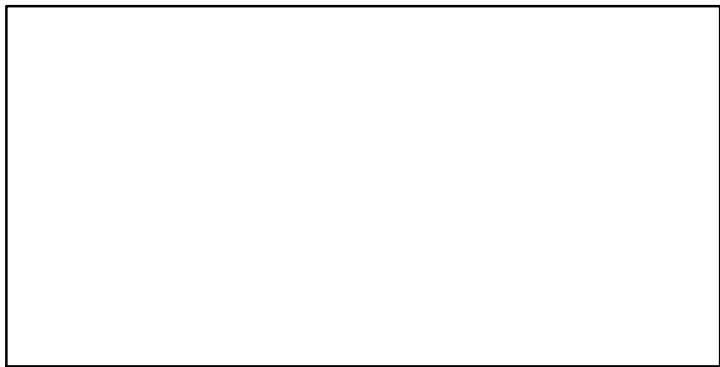
**Production\***



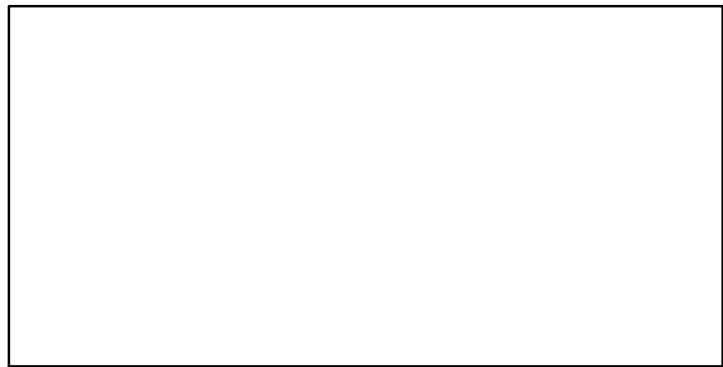
◆ Start Year ♦ End Year \* No Data

Sea trout Baltic Areas 22–32 [STROUT22–32]

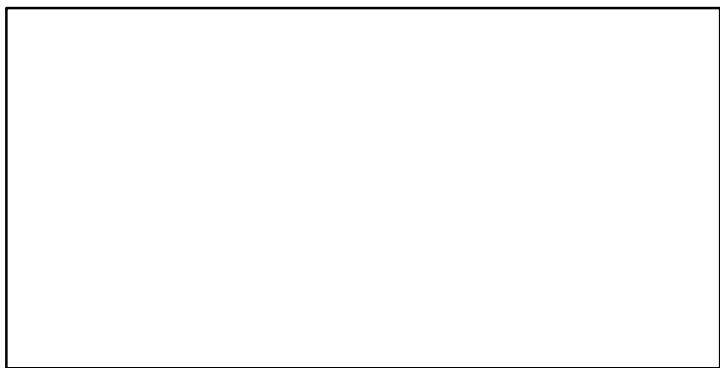
**TB\***



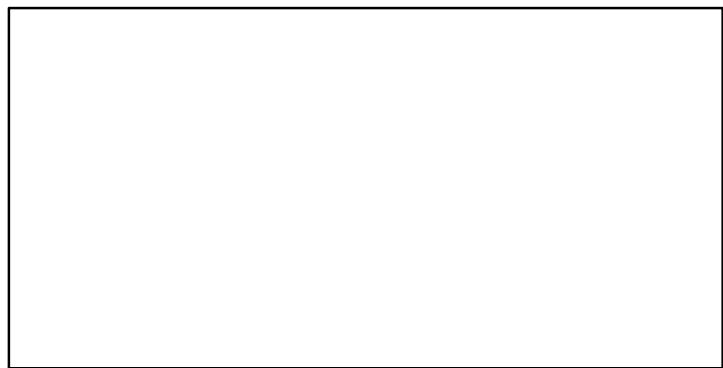
**SSB\***



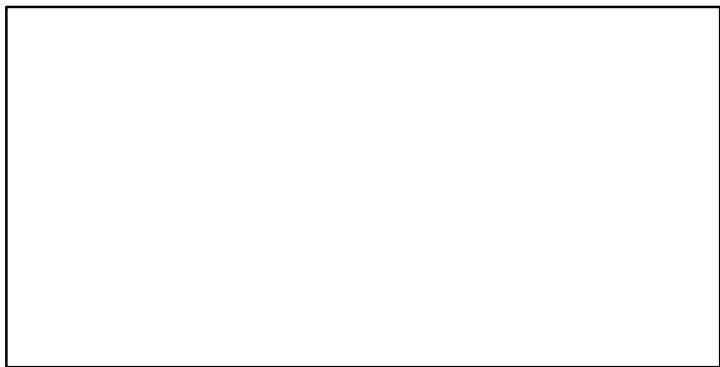
**TN \***



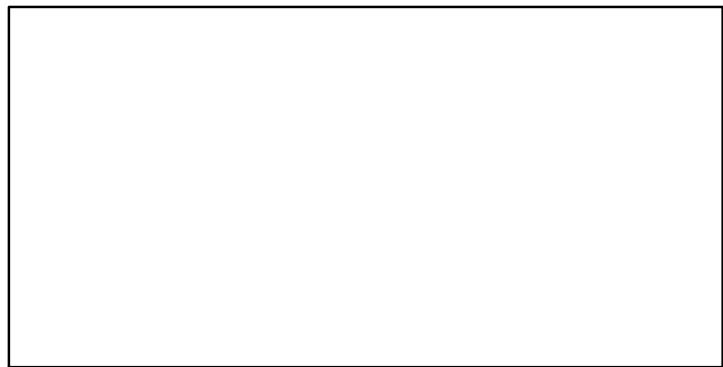
**F\***



**ER\***



**Recruits\***

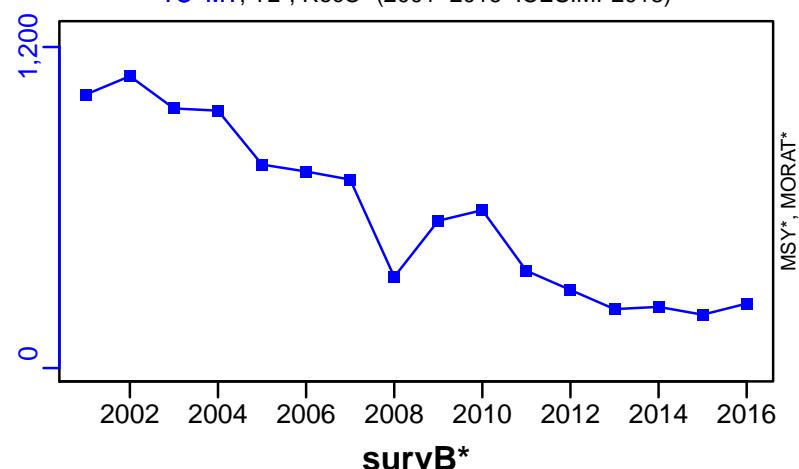


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Sea trout Baltic Areas 22–32 [STROUT22–32]

TC-MT, TL\*, RecC\* (2001–2016—ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



survB\*

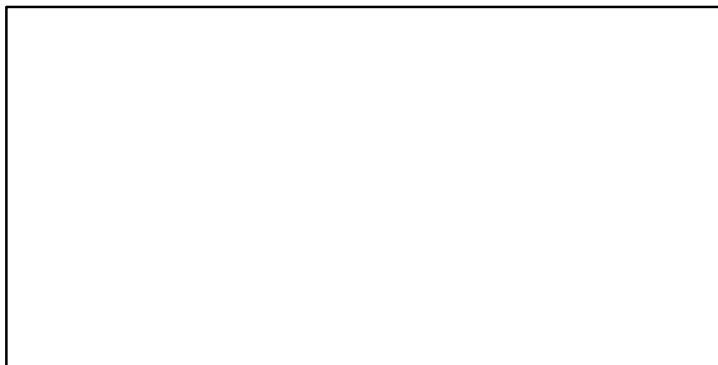
MSY\*, MORAT\*



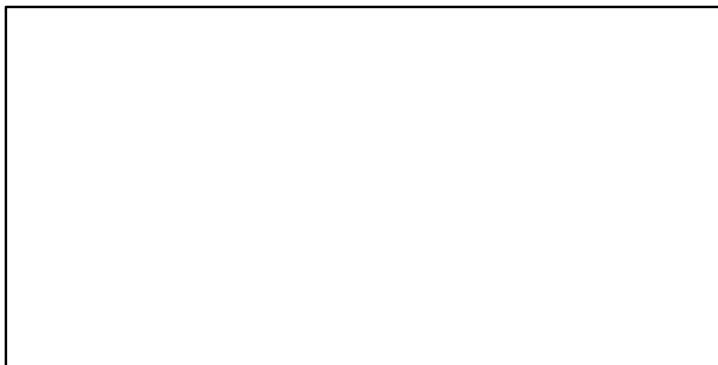
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

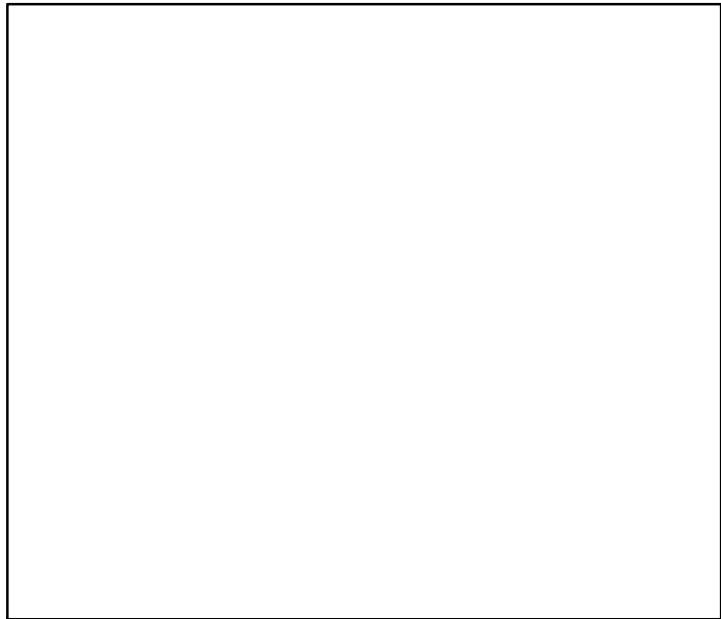
## Thornback skate ICES 3a-4-7d [TBSKAIIla-IV-VIId]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Raja clavata   |
| <b>Current Assess ID</b>    | WGEF-TBSKAIIla-IV-VIId-1993-2018-ICESIMP2021         |
| <b>Area</b>                 | ICES 3a-4-7d   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2014, 2018, 2016                                     |

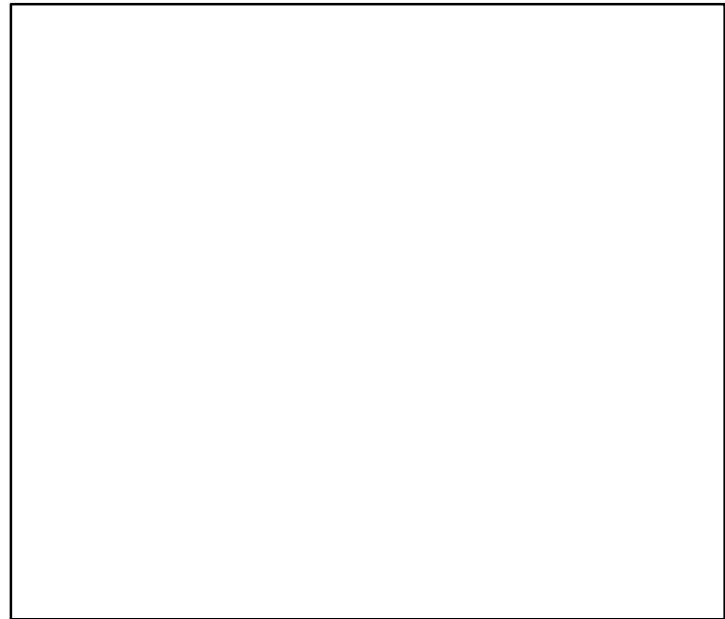
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2014      | 2.84       | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | -         | -         | -          |      |     |
| <b>TL</b>          | TL-MT     | 2018      | 2219       |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

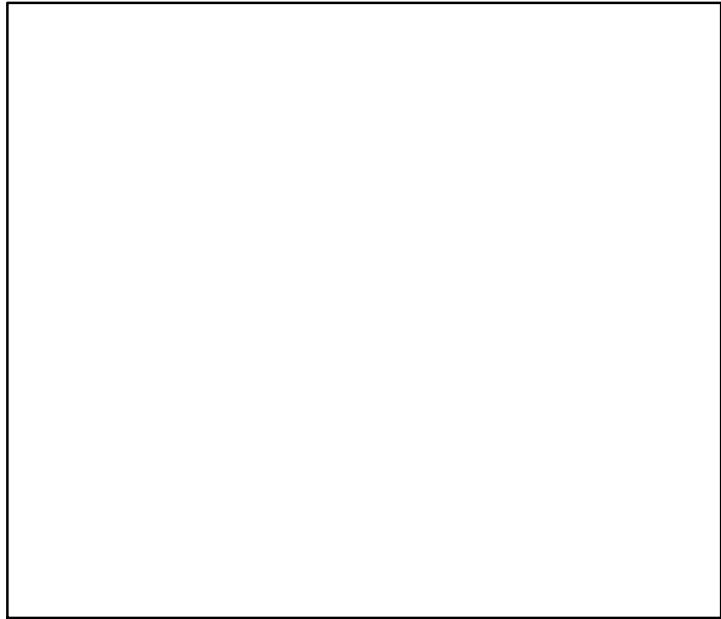
**Kobe MSY\***



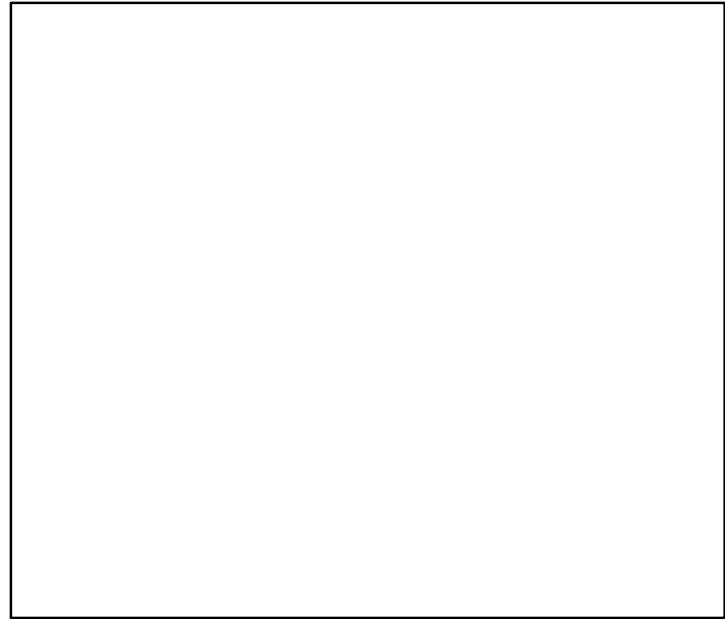
**Kobe MGT\***



**Spawner Recruit\***



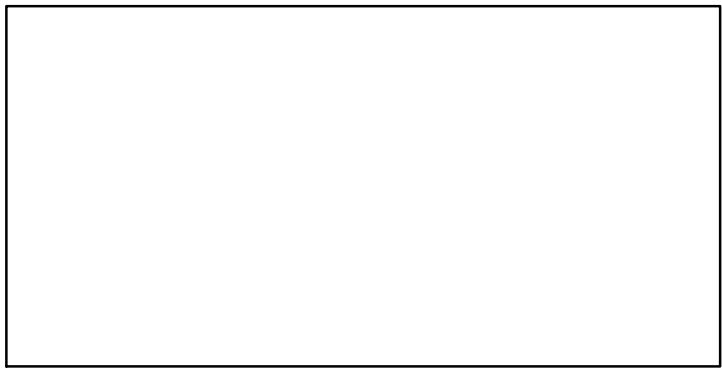
**Production\***



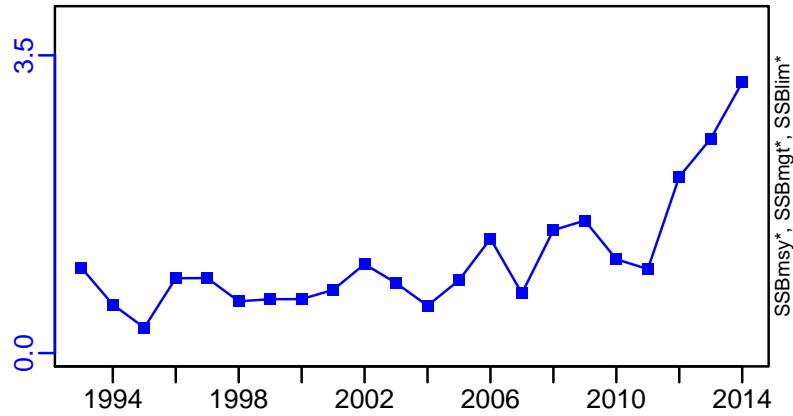
◆ Start Year ♦ End Year \* No Data

Thornback skate ICES 3a–4–7d [TBSKAIIla–IV–VIIId]

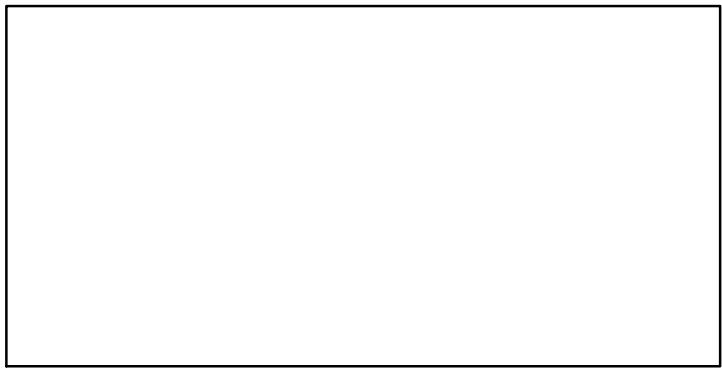
**TB\***



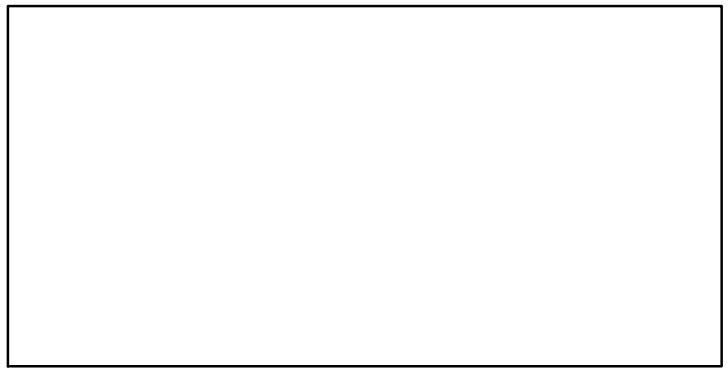
SSB-index (1993–2014–ICESIMP2018)



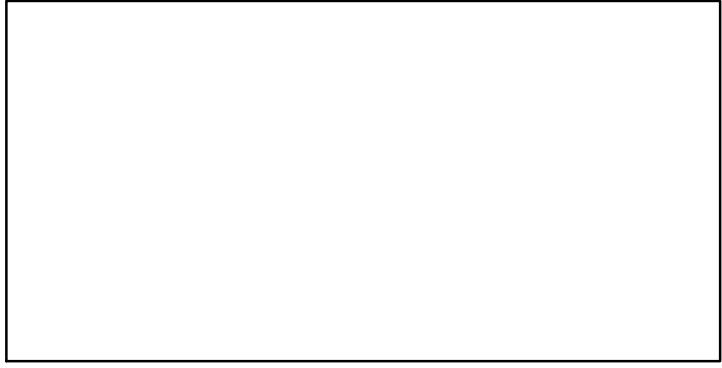
**TN \***



**F\***



**ER\***



**Recruits\***

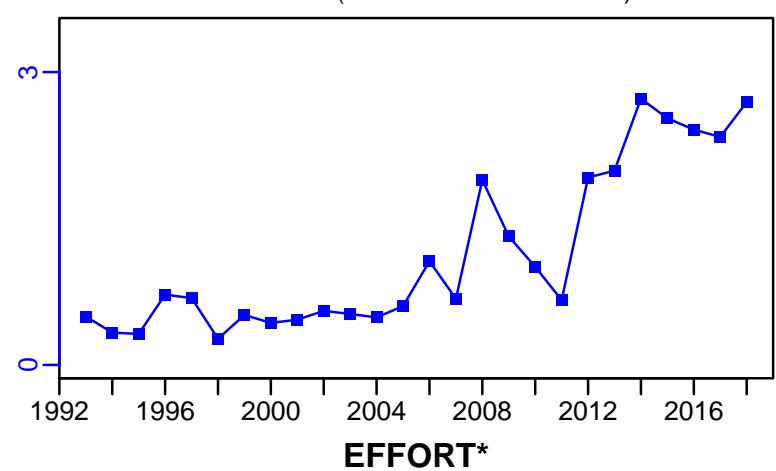
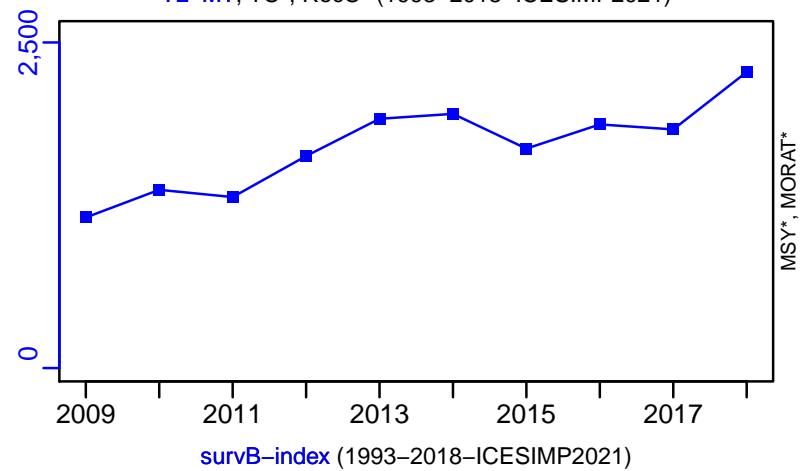


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | ··· Lim BRP  | * No Data |

Thornback skate ICES 3a–4–7d [TBSKAIIla–IV–VIIId]

TL–MT, TC\*, RecC\* (1993–2018–ICESIMP2021)

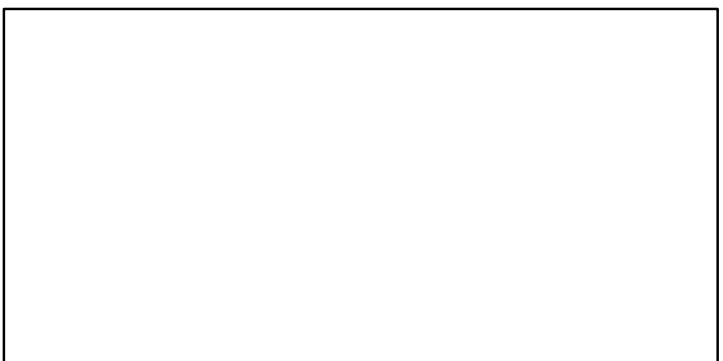
TAC\*, Cpair\*, Cadv\*



CPUE\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

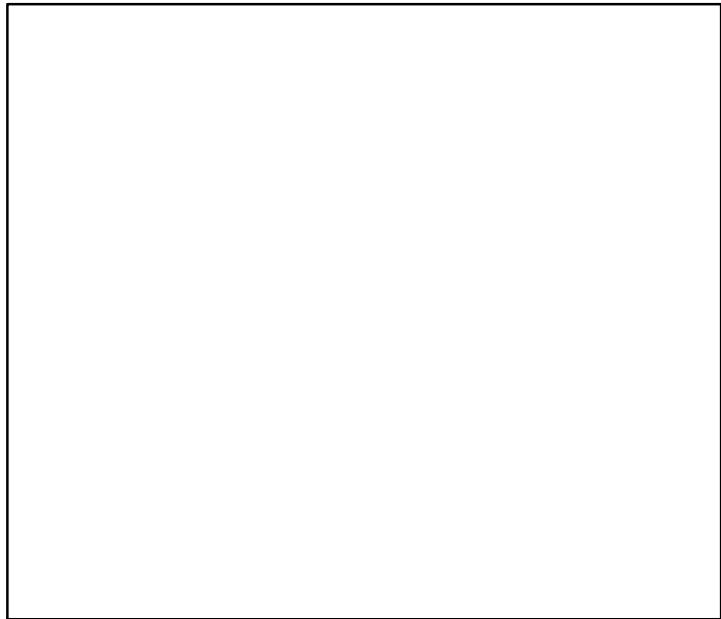
## Thornback skate Portugese Waters -East [TBSKAIxa]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Raja clavata   |
| <b>Current Assess ID</b>    | WGEF-TBSKAIxa-1997-2015-ICESIMP2018                  |
| <b>Area</b>                 | Portugese Waters -East                               |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2015   |

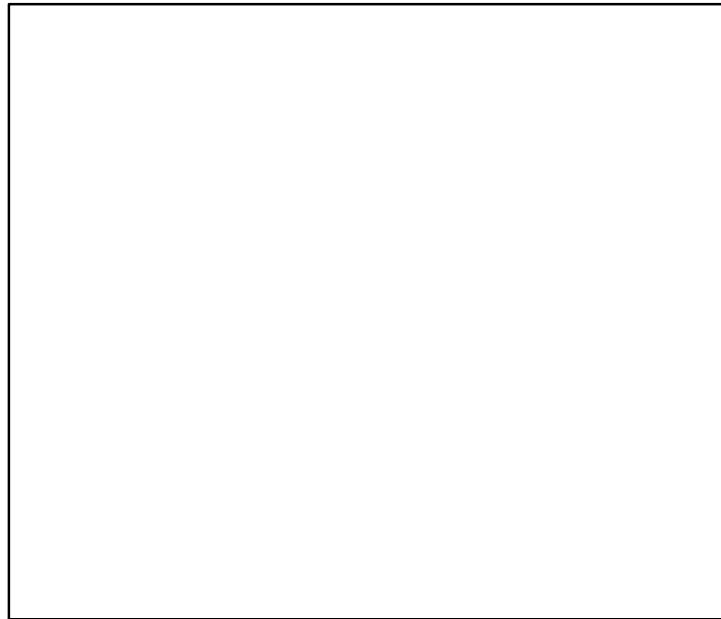
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2015      | 1.93       | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | -         | -         | -          |      |     |
| <b>TL</b>          | TL-MT     | 2015      | 724        |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

**Kobe MSY\***



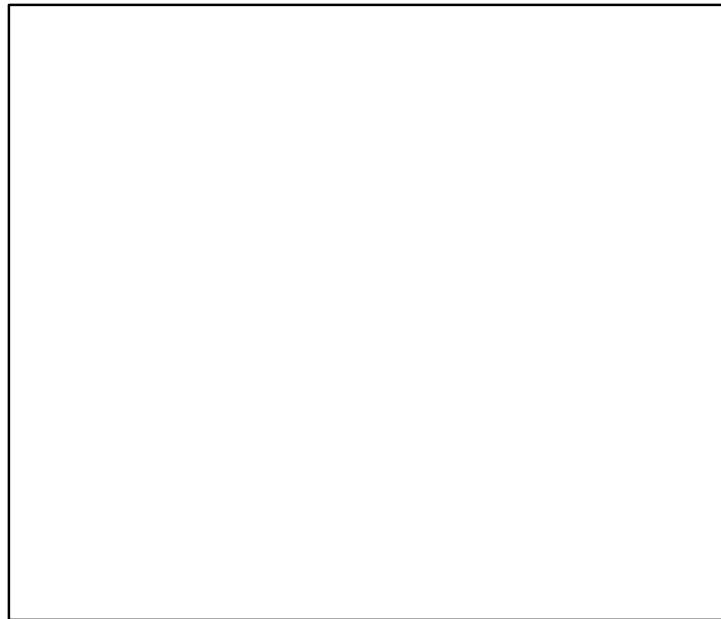
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



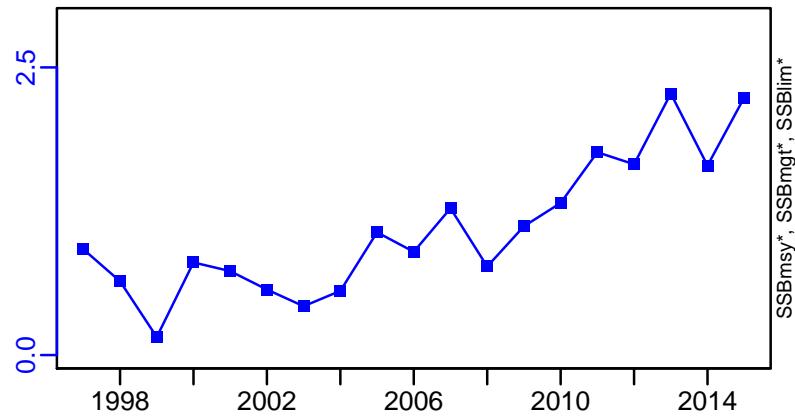
◆ Start Year ♦ End Year \* No Data

Thornback skate Portuguese Waters –East [TBSKAIxa]

**TB\***



SSB–index (1997–2015–ICESIMP2018)



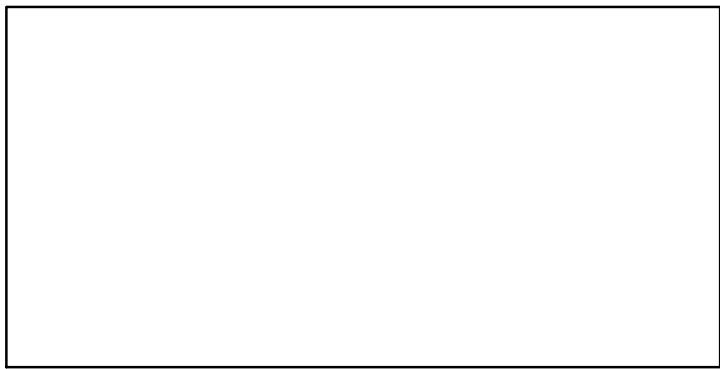
**TN \***



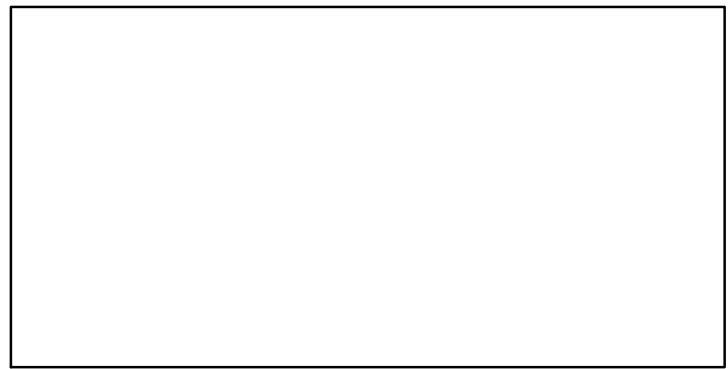
**F\***



**ER\***



**Recruits\***

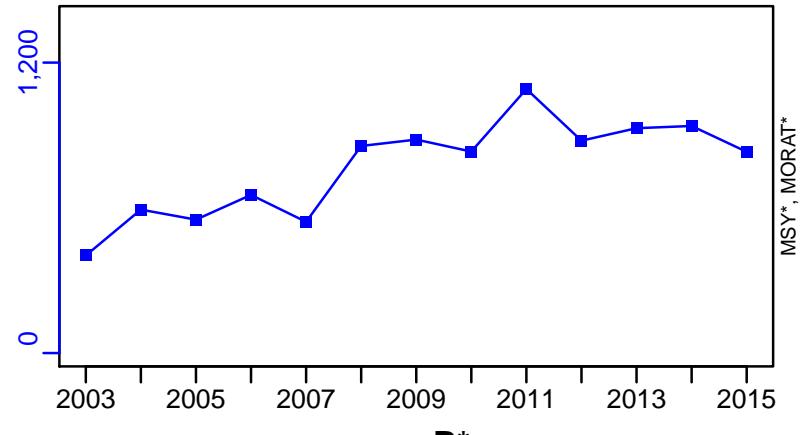


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

Thornback skate Portuguese Waters –East [TBSKAIxa]

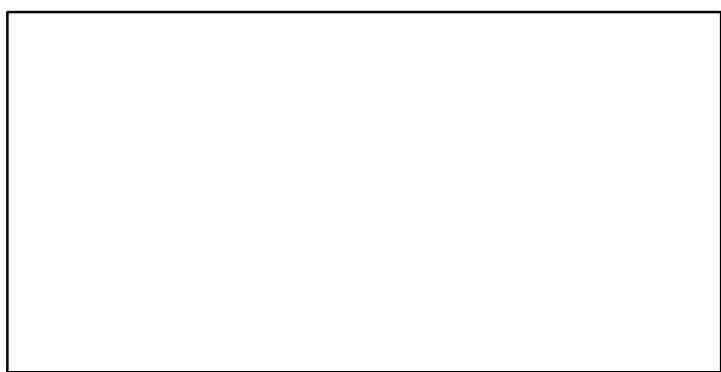
TL–MT, TC\*, RecC\* (1997–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



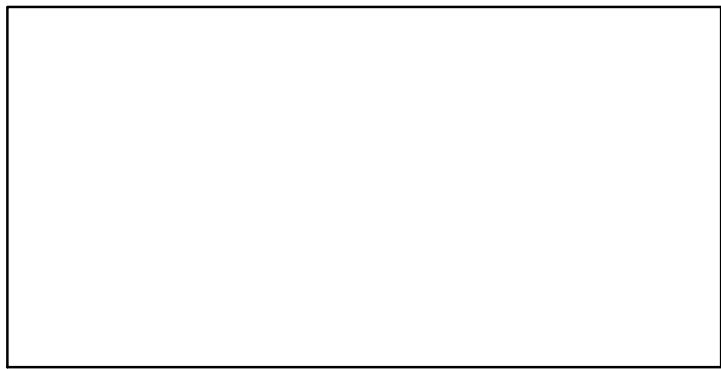
MSY\*, MORAT\*

TAC\*, Cpair\*, Cadv\*

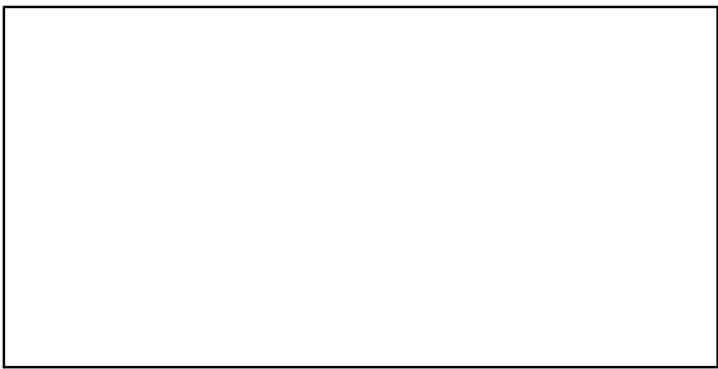


CPUE\*

EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

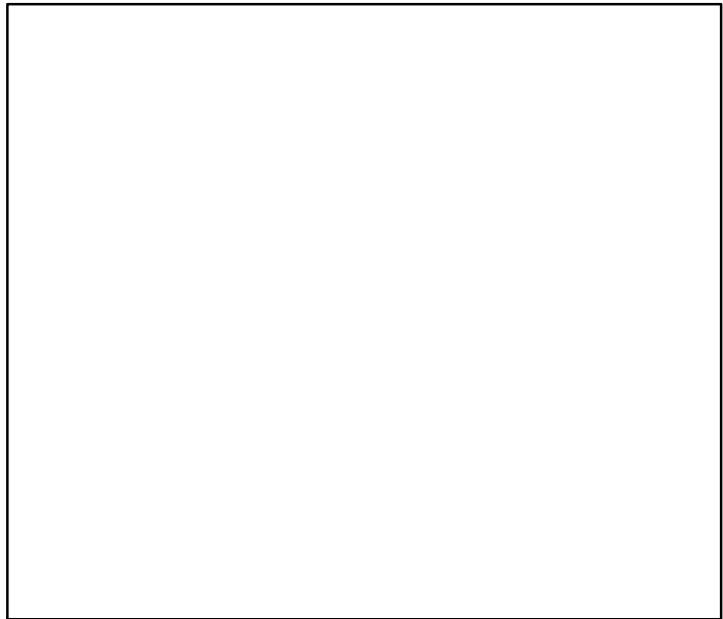
## Thornback skate ICES 6 [TBSKAVI]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Raja clavata   |
| <b>Current Assess ID</b>    | WGEF-TBSKAVI-2005-2015-ICESIMP2018                   |
| <b>Area</b>                 | ICES 6   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2015   |

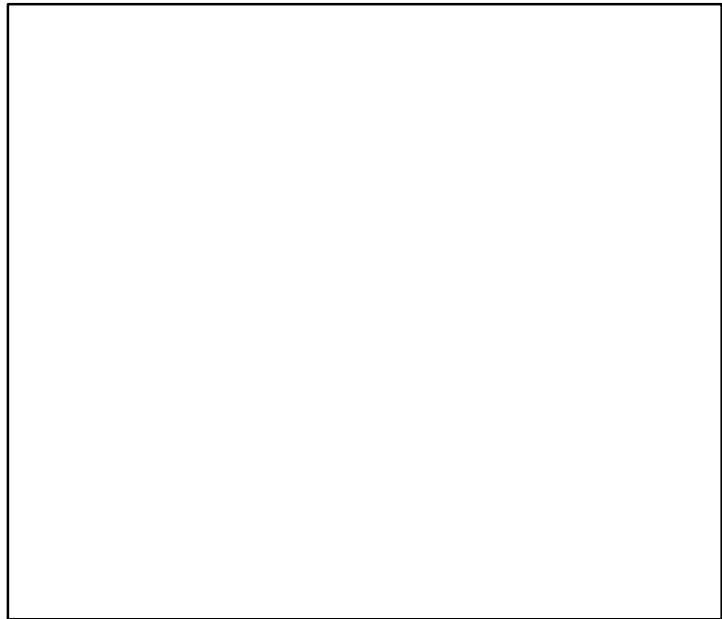
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2015      | 8          | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | -         | -         | -          |      |     |
| <b>TL</b>          | TL-MT     | 2015      | 241        |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

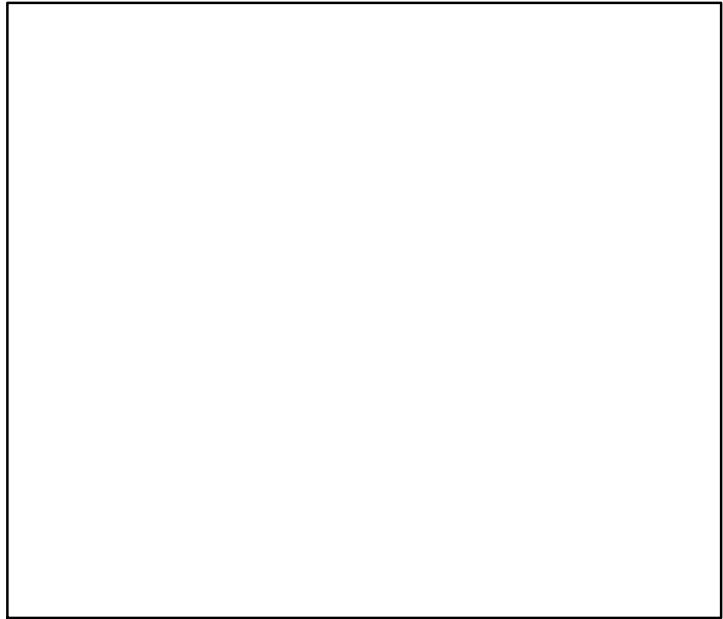
**Kobe MSY\***



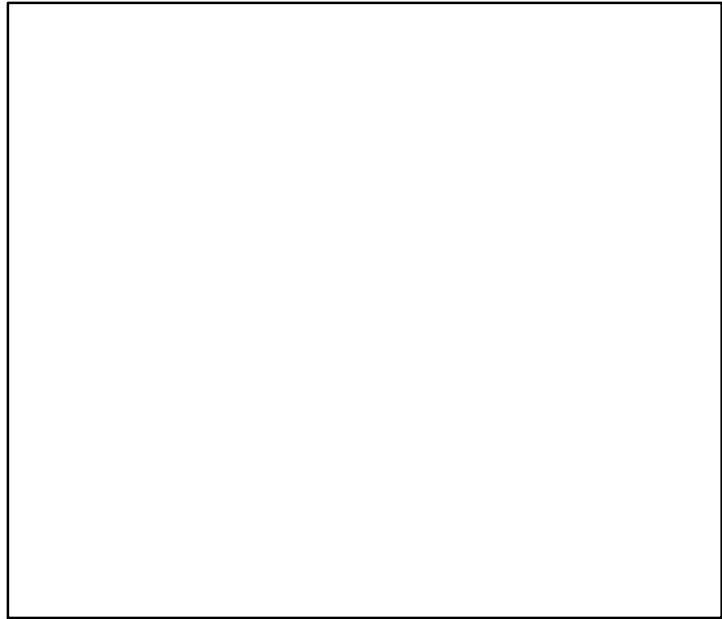
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



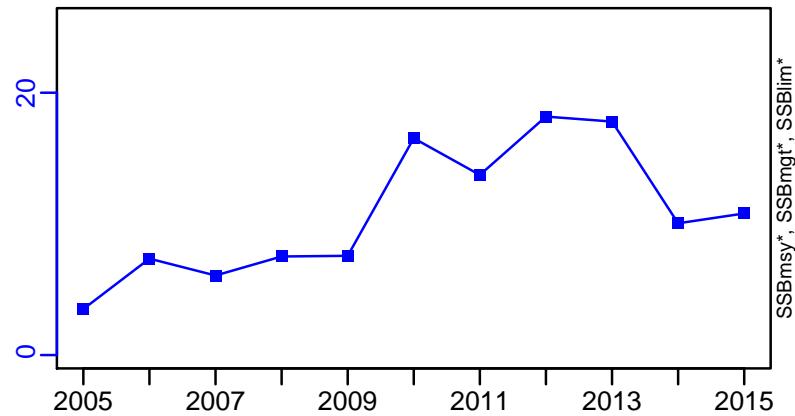
◆ Start Year ♦ End Year \* No Data

Thornback skate ICES 6 [TBSKAVI]

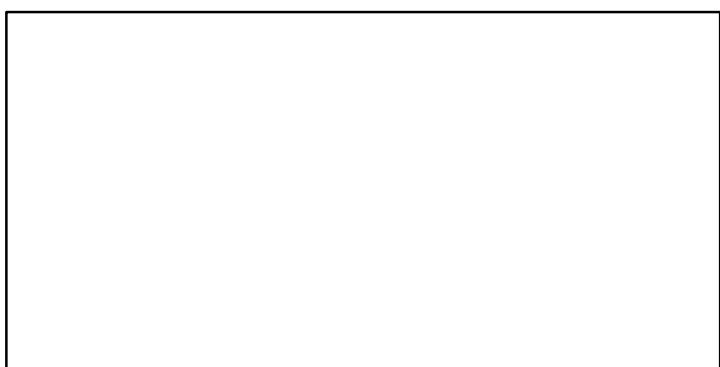
**TB\***



SSB-index (2005–2015–ICESIMP2018)



**TN \***



**F\***



**ER\***



**Recruits\***

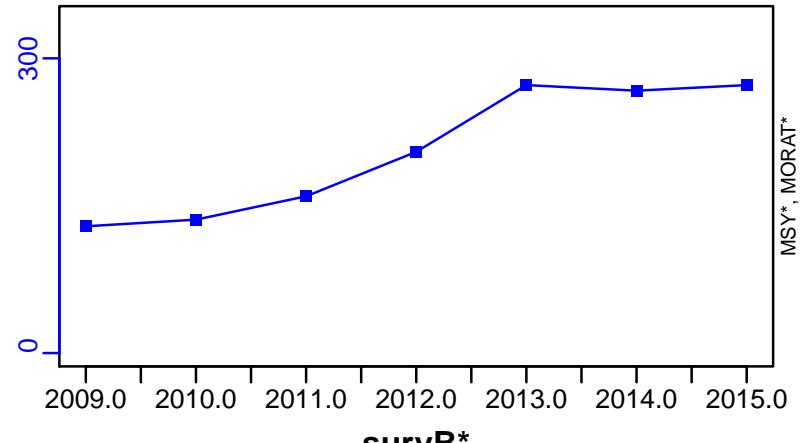


- |   |  |   |
|---|--|---|
| <span style="color: blue;">■</span> Listed time series<br><span style="color: purple;">—</span> MSY-based BRP | <span style="color: brown;">—</span> Target BRP<br><span style="color: cyan;">—</span> Lim BRP | <span style="color: gray;">—</span> Rec-Est<br><span style="color: black;">*</span> No Data |
|---|--|---|

**Thornback skate ICES 6 [TBSKAVI]**

TL-MT, TC\*, RecC\* (2005–2015–ICESIMP2018)

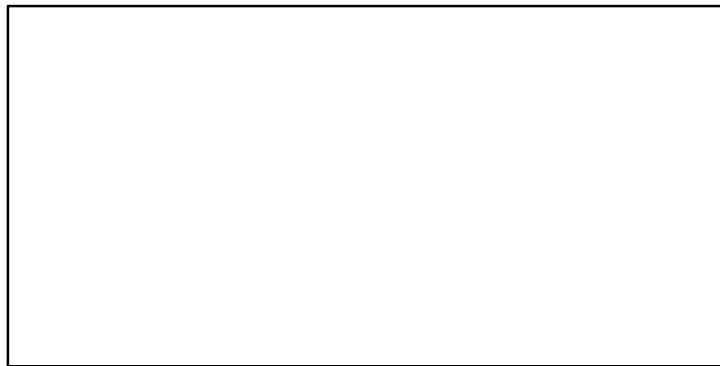
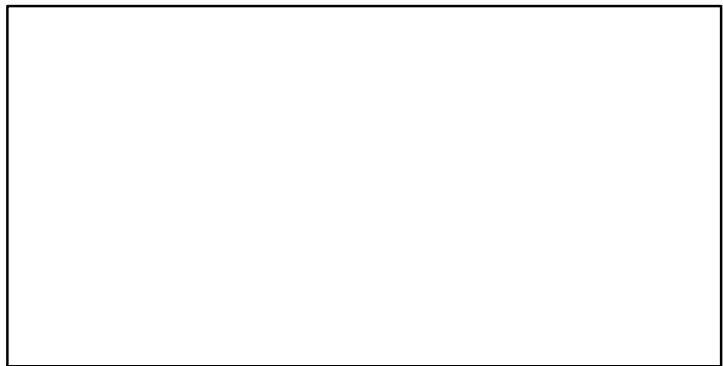
**TAC\*, Cpair\*, Cadv\***



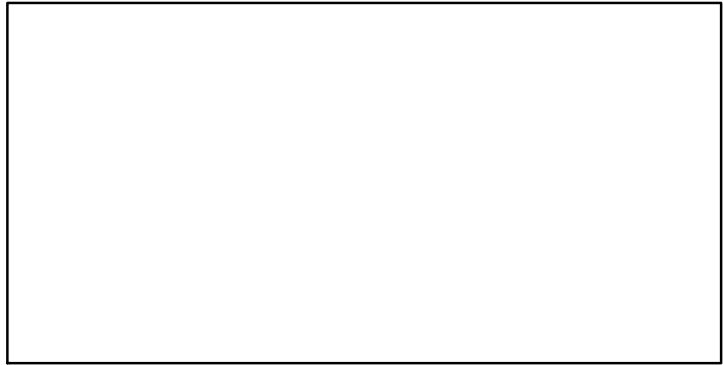
**survB\***

MSY\*, MORAT\*

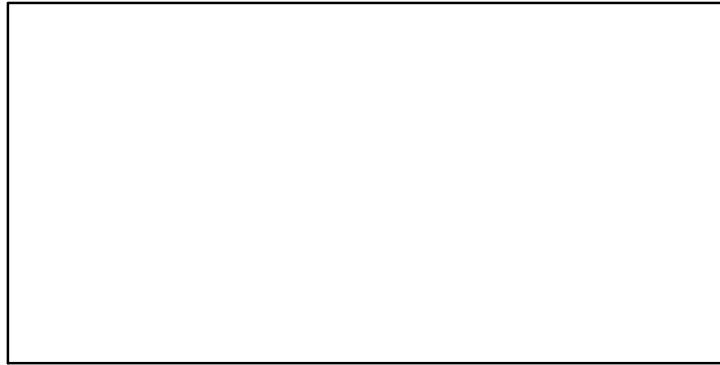
**CPUE\***



**EFFORT\***



**CdivMSY\***



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Thornback skate ICES 7afg [TBSKAVIIafg]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Raja clavata   |
| <b>Current Assess ID</b>    | WGEF-TBSKAVIIafg-1993-2015-ICESIMP2018               |
| <b>Area</b>                 | ICES 7afg  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2015   |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2015      | 9          | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | -         | -         | -          |      |     |
| <b>TL</b>          | TL-MT     | 2015      | 893        |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

**Kobe MSY\***

**Kobe MGT\***

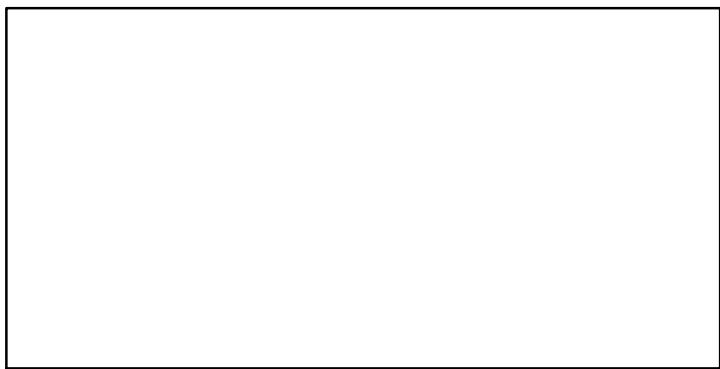
**Spawner Recruit\***

**Production\***

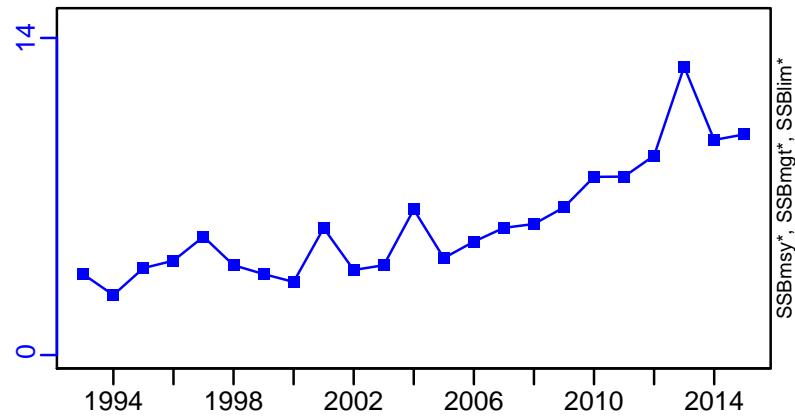
◆ Start Year ♦ End Year \* No Data

Thornback skate ICES 7afg [TBSKAVIIafg]

**TB\***



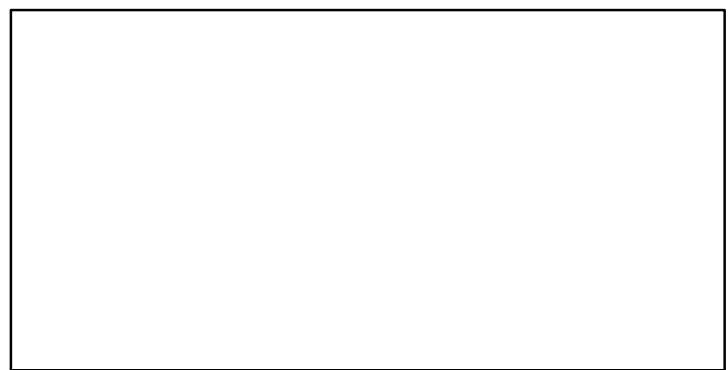
SSB-index (1993–2015–ICESIMP2018)



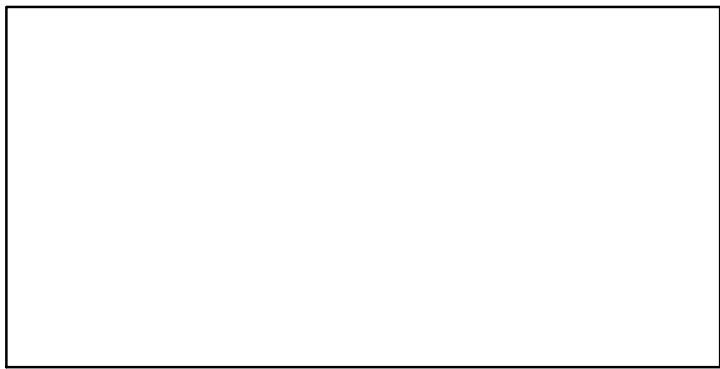
**TN \***



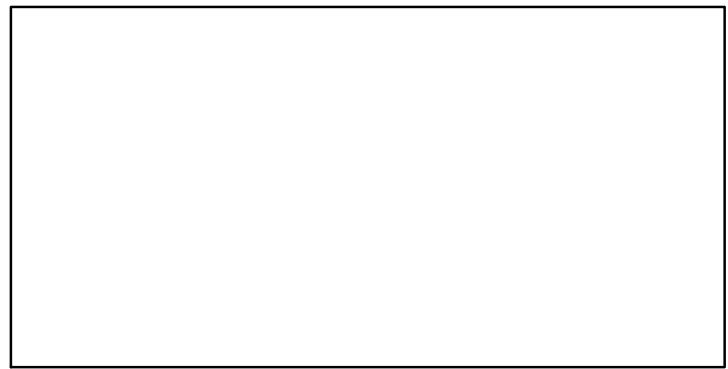
**F\***



**ER\***



**Recruits\***

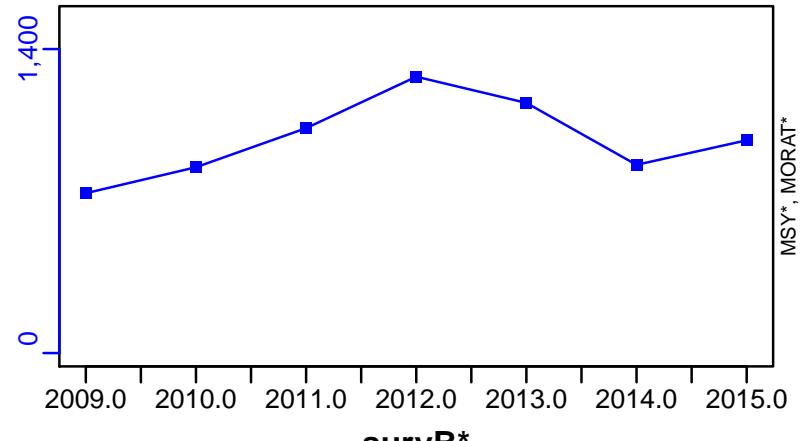


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

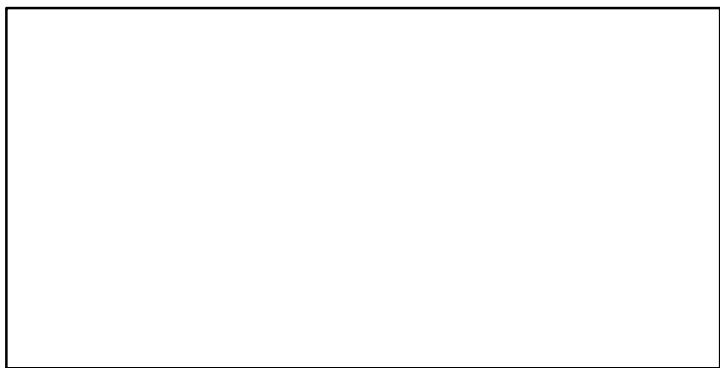
Thornback skate ICES 7afg [TBSKAVIIafg]

TL-MT, TC\*, RecC\* (1993–2015–ICESIMP2018)

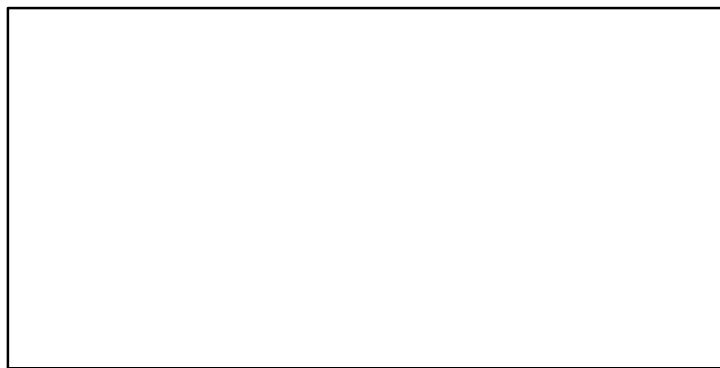
TAC\*, Cpair\*, Cadv\*



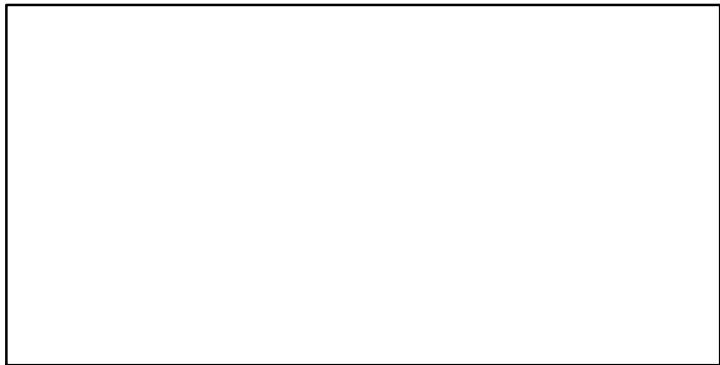
survB\*



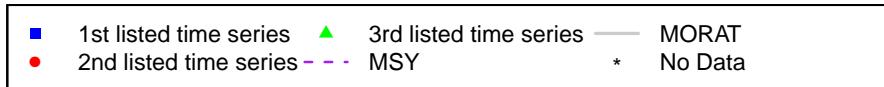
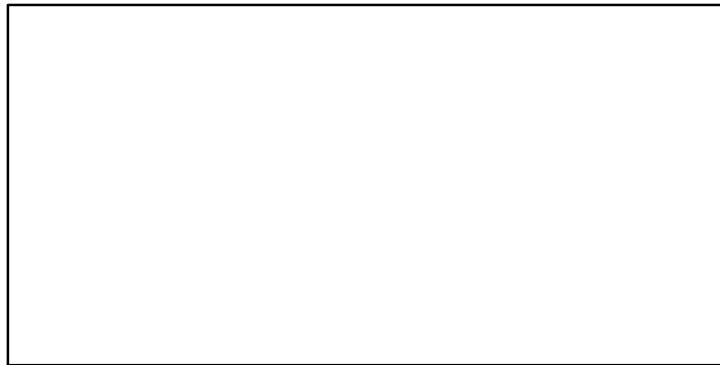
CPUE\*



EFFORT\*



CdivMSY\*



## Thornback skate Western English Channel [TBSKAVIle]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Raja clavata   |
| <b>Current Assess ID</b>    | WGEF-TBSKAVIle-2009-2015-ICESIMP2018                 |
| <b>Area</b>                 | Western English Channel                              |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2015   |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | -     | -         | -          |     |     |
| <b>TL</b>          | TL-MT | 2015      | 391        |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

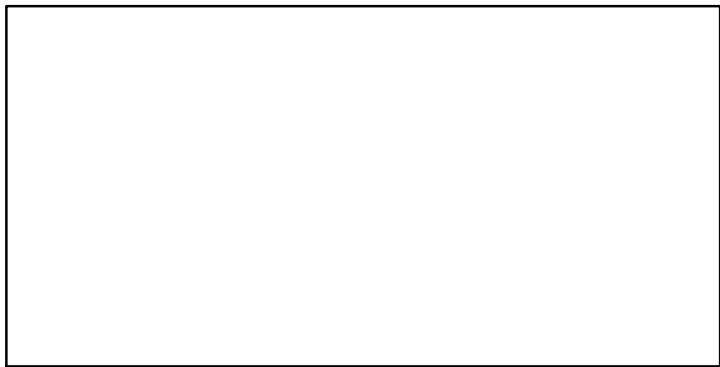
**Spawner Recruit\***

**Production\***

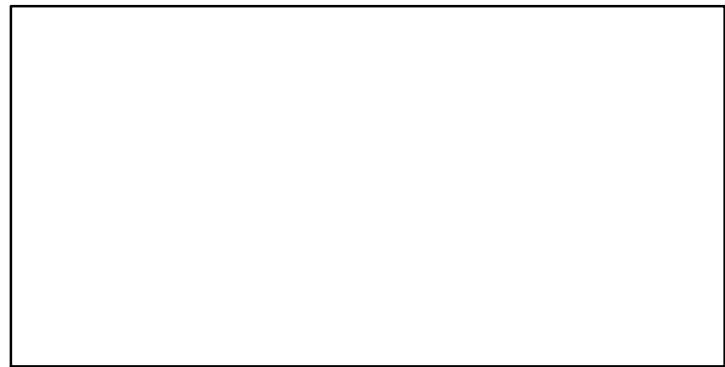
◆ Start Year ♦ End Year \* No Data

Thornback skate Western English Channel [TBSKAVIle]

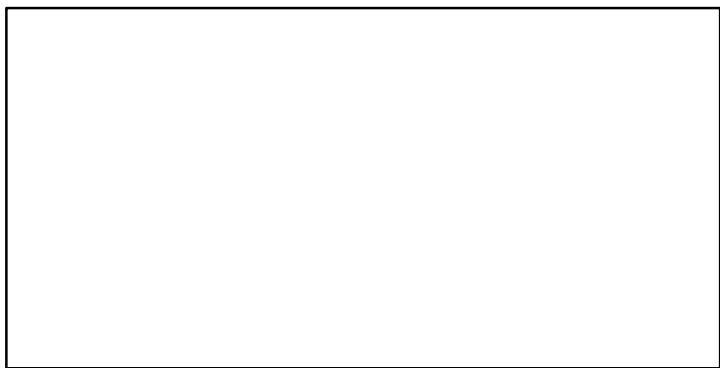
**TB\***



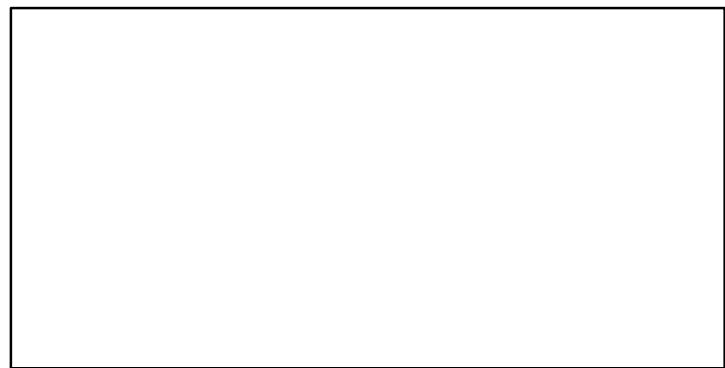
**SSB\***



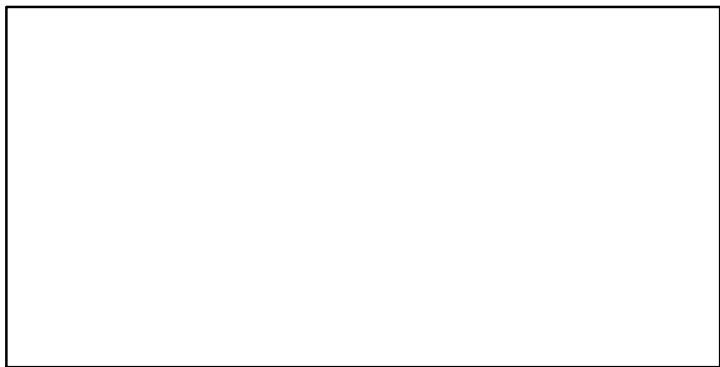
**TN \***



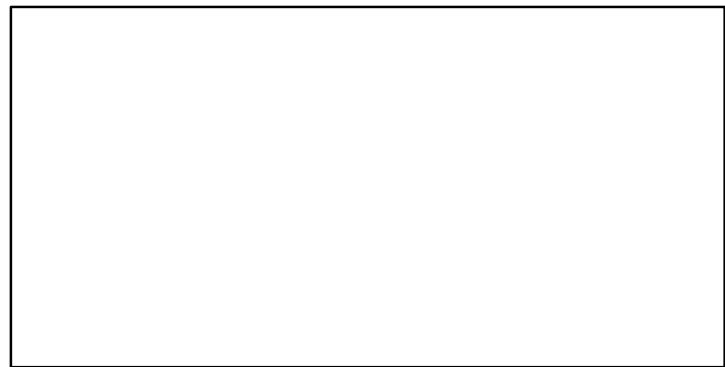
**F\***



**ER\***



**Recruits\***

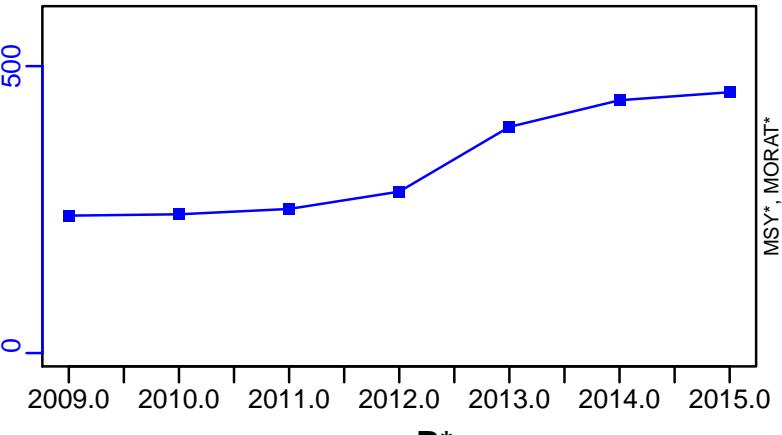


- |       |                    |       |            |   |         |
|-------|--------------------|-------|------------|---|---------|
| ■     | Listed time series | - - - | Target BRP | — | Rec-Est |
| - - - | MSY-based BRP      | - - - | Lim BRP    | * | No Data |

Thornback skate Western English Channel [TBSKAVIle]

TL-MT, TC\*, RecC\* (2009–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



survB\*

MSY\*, MORAT\*

CPUE\*

EFFORT\*

CdivMSY\*

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Thornback skate Bay of Biscay [TBSKAVIII]

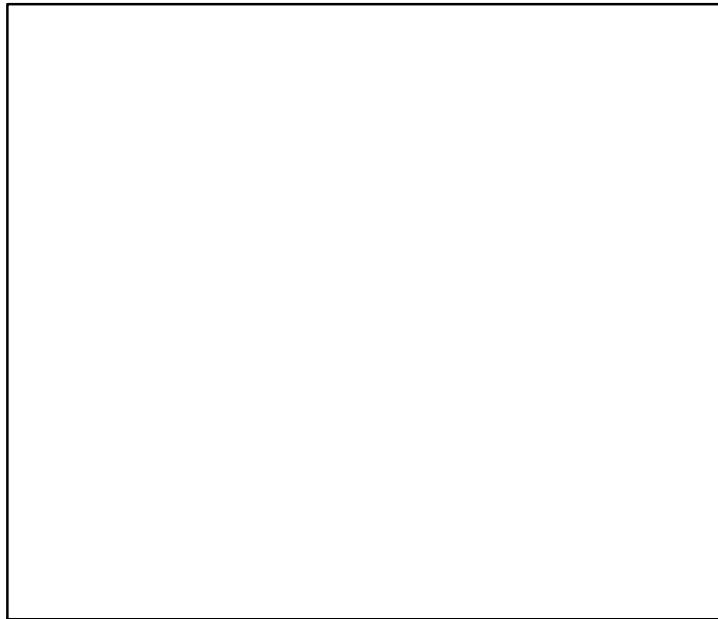
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Raja clavata   |
| <b>Current Assess ID</b>    | WGEF-TBSKAVIII-1999-2015-ICESIMP2018                 |
| <b>Area</b>                 | Bay of Biscay  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2015   |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

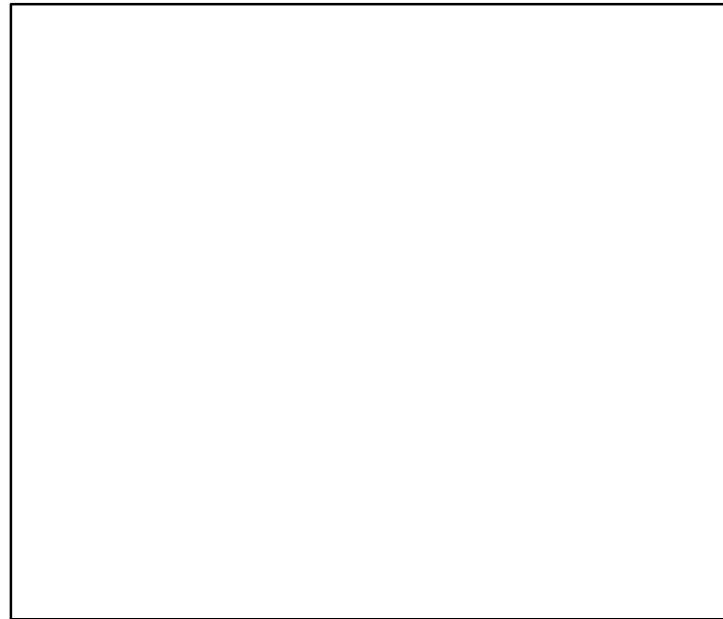
| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2015      | 1.04       | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | TC-MT     | 2015      | 400        |      |     |
| <b>TL</b>          | TL-MT     | 2015      | 395        |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

Thornback skate Bay of Biscay [TBSKAVIII]

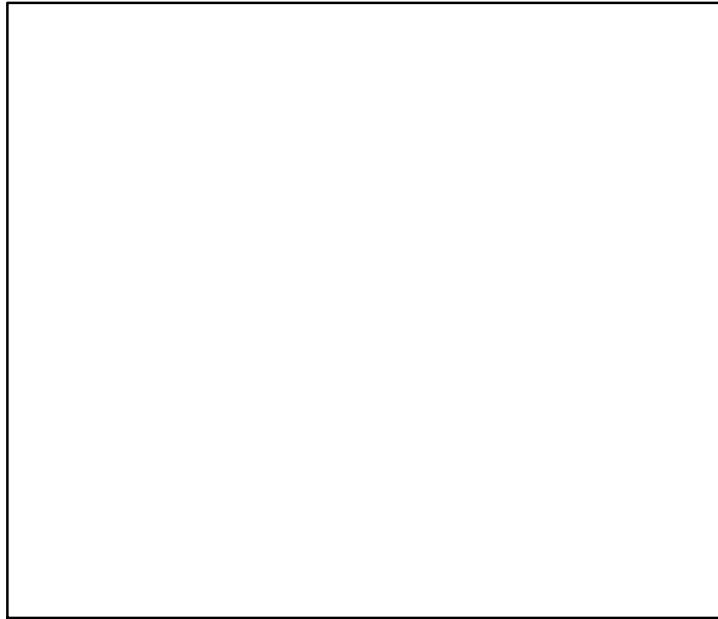
**Kobe MSY\***



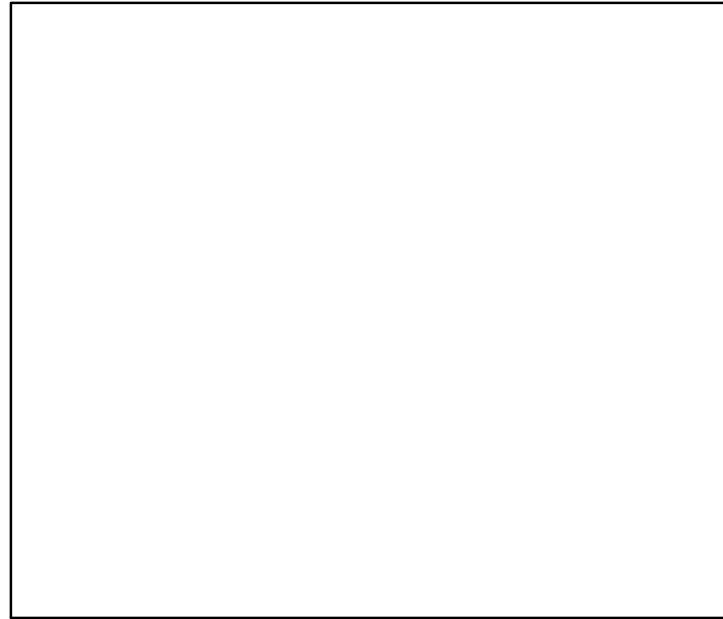
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



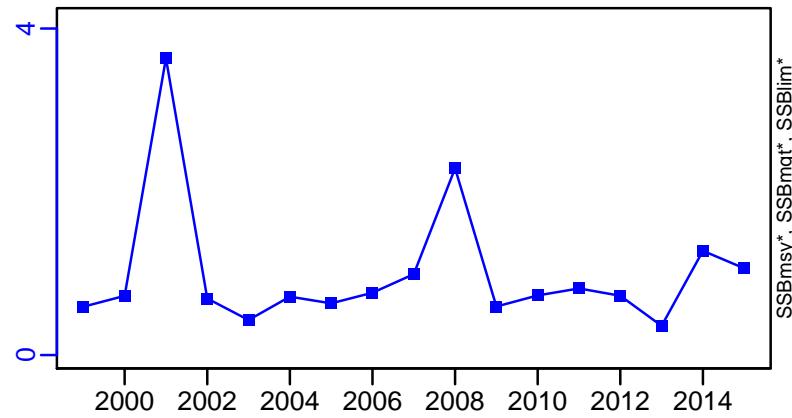
◆ Start Year ♦ End Year \* No Data

Thornback skate Bay of Biscay [TBSKAVIII]

**TB\***

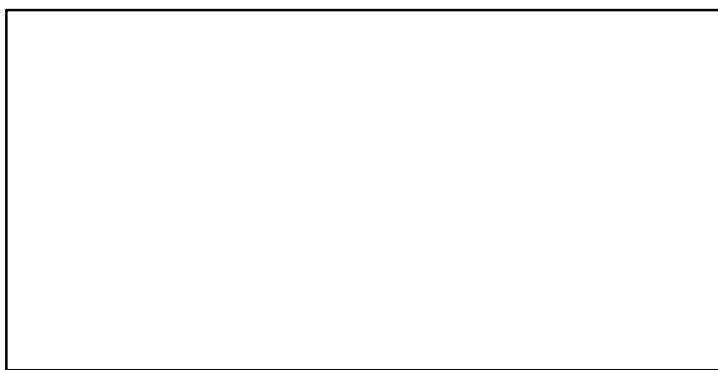


SSB-index (1999–2015–ICESIMP2018)

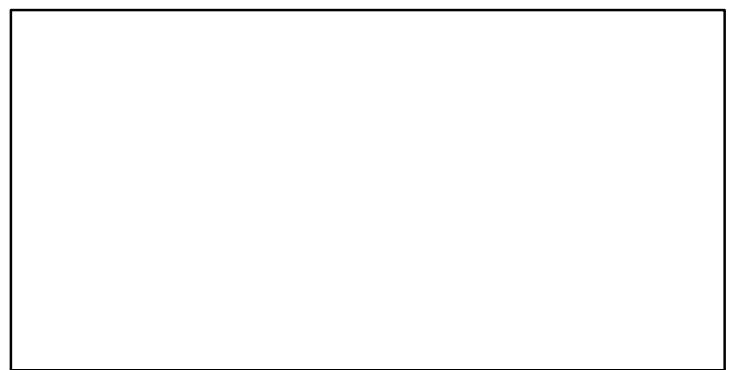


SSB<sub>mgt</sub>\* , SSB<sub>lim</sub>\*

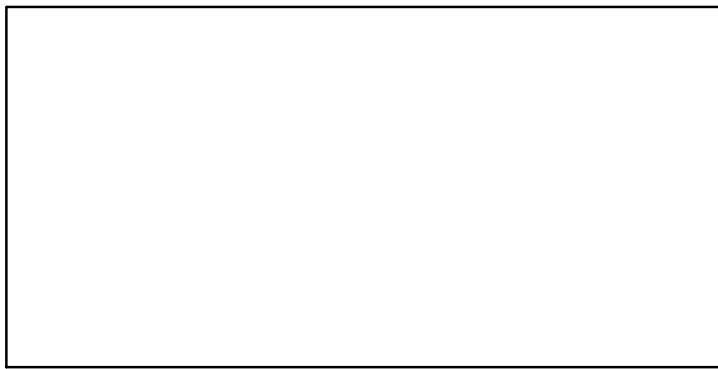
**TN \***



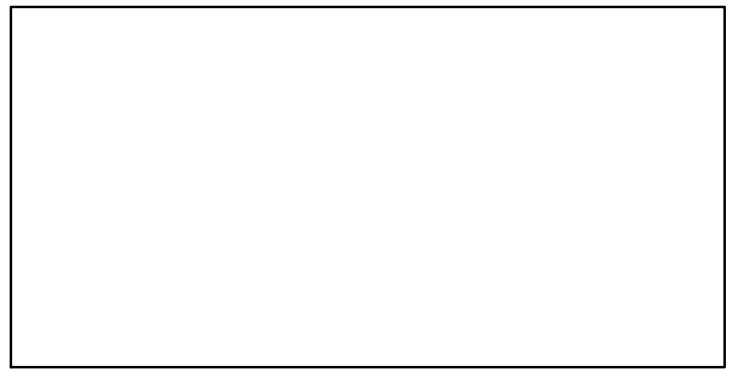
**F\***



**ER\***



**Recruits\***

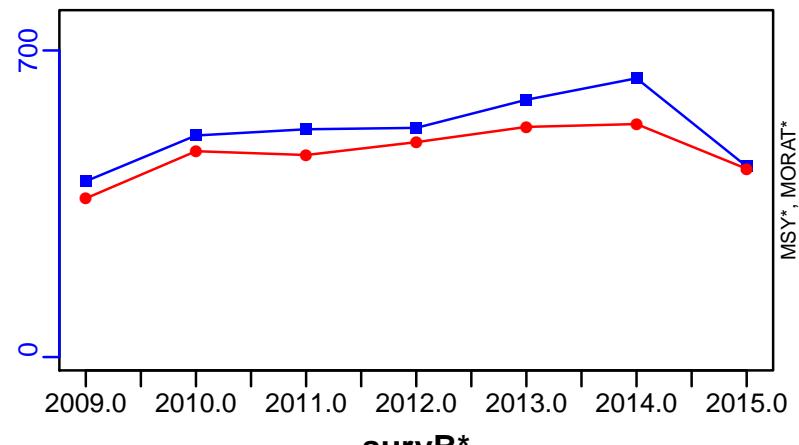


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

Thornback skate Bay of Biscay [TBSKAVIII]

TC-MT, TL-MT, RecC\* (1999–2015–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



survB\*

MSY\*, MORAT\*

CPUE\*

EFFORT\*

CdivMSY\*



## Tope shark Northeast Atlantic [TPSHARNEATL]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Galeorhinus galeus                                   |
| <b>Current Assess ID</b>    | WGEF-TPSHARNEATL-2005-2018-ICESIMP2021               |
| <b>Area</b>                 | Northeast Atlantic                                   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2014, 2016, 2018                                     |

| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | -     | -         | -          |     |     |
| <b>TL</b>         | TL-MT | 2018      | 452        |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

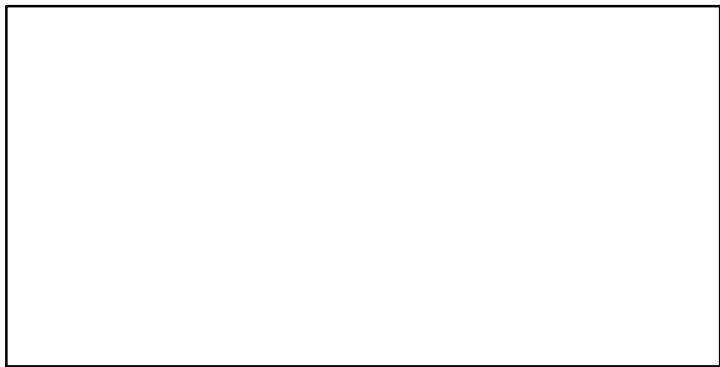
**Spawner Recruit\***

**Production\***

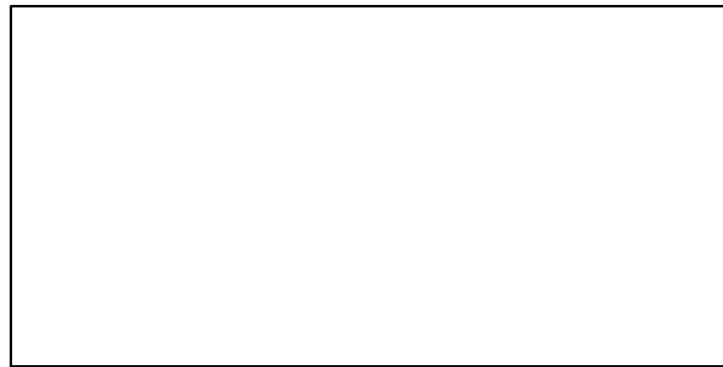
◆ Start Year ♦ End Year \* No Data

Tope shark Northeast Atlantic [TPSHARNEATL]

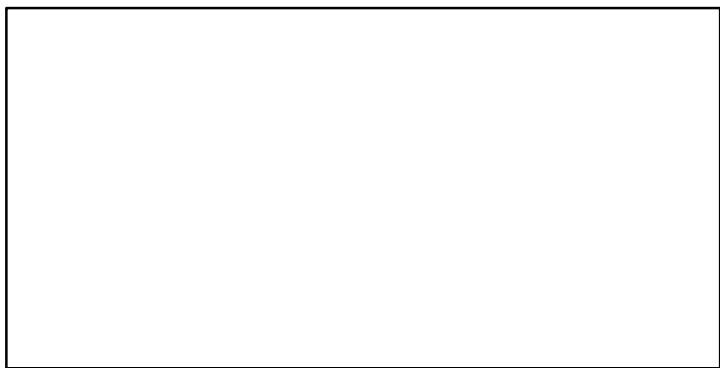
**TB\***



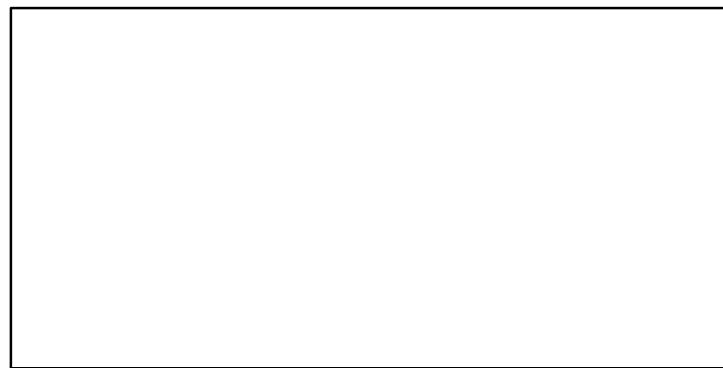
**SSB\***



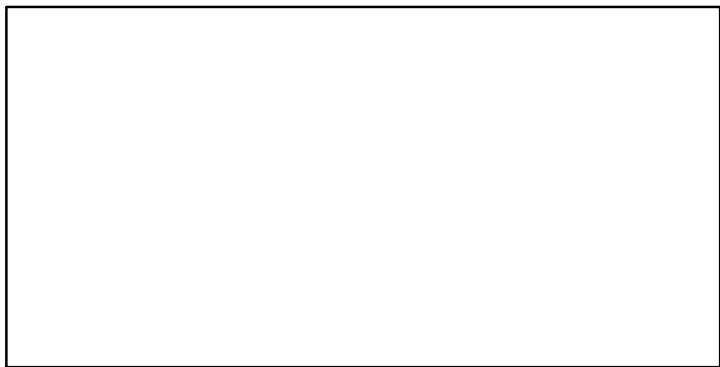
**TN \***



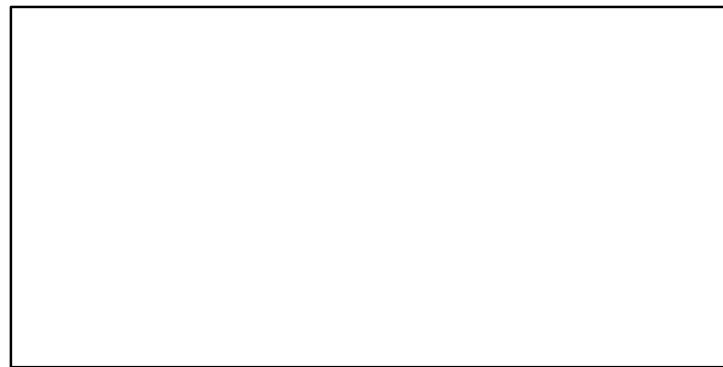
**F\***



**ER\***



**Recruits\***

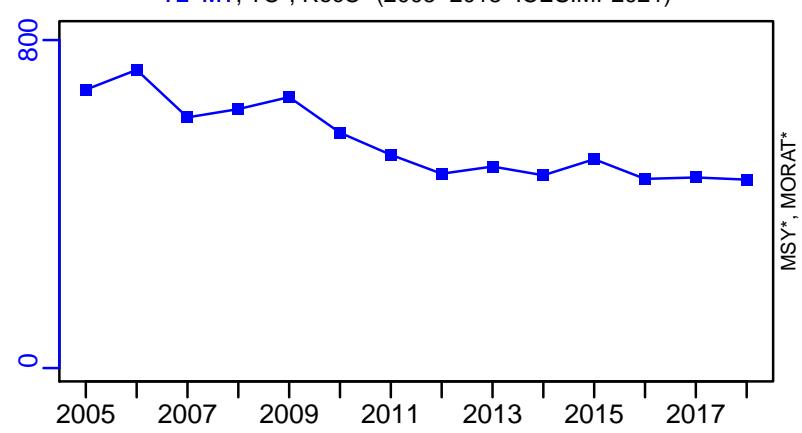


- |       |                    |       |            |   |         |
|-------|--------------------|-------|------------|---|---------|
| ■     | Listed time series | - - - | Target BRP | — | Rec-Est |
| - - - | MSY-based BRP      | - - - | Lim BRP    | * | No Data |

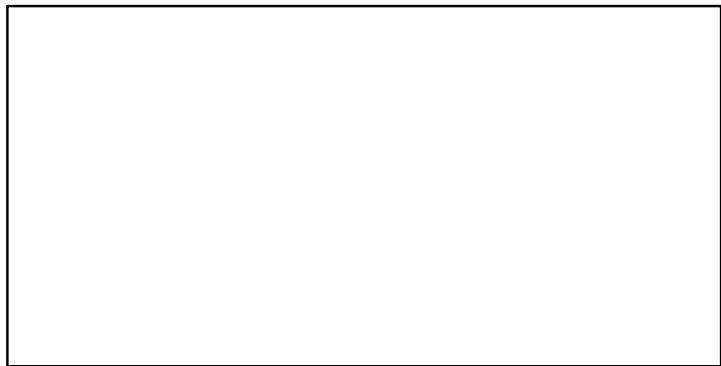
Tope shark Northeast Atlantic [TPSHARNEATL]

TL-MT, TC\*, RecC\* (2005–2018–ICESIMP2021)

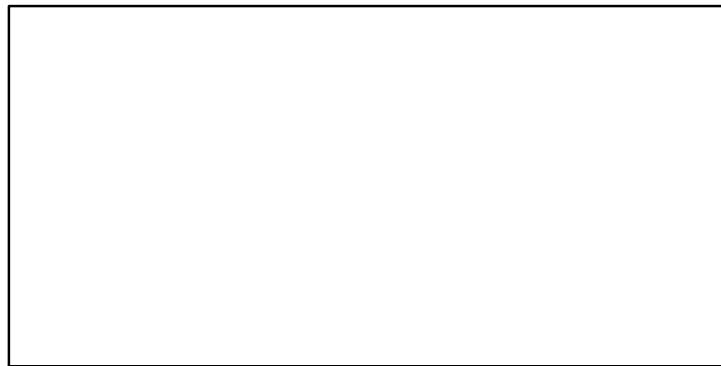
TAC\*, Cpair\*, Cadv\*



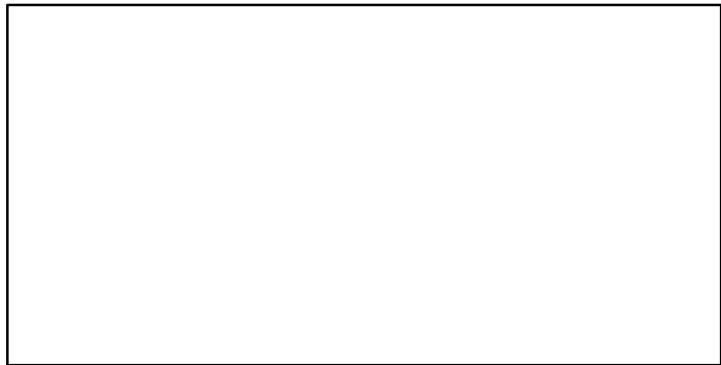
survB\*



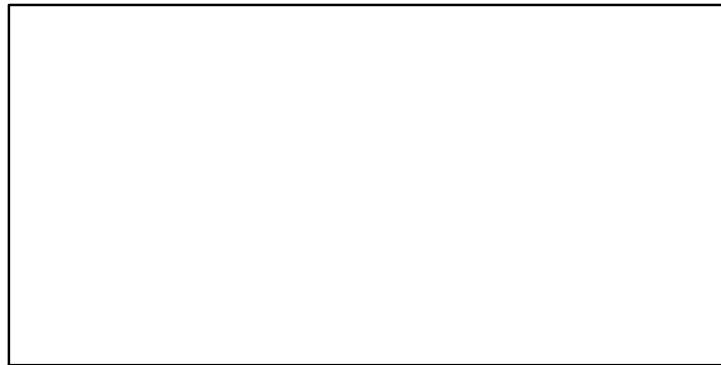
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

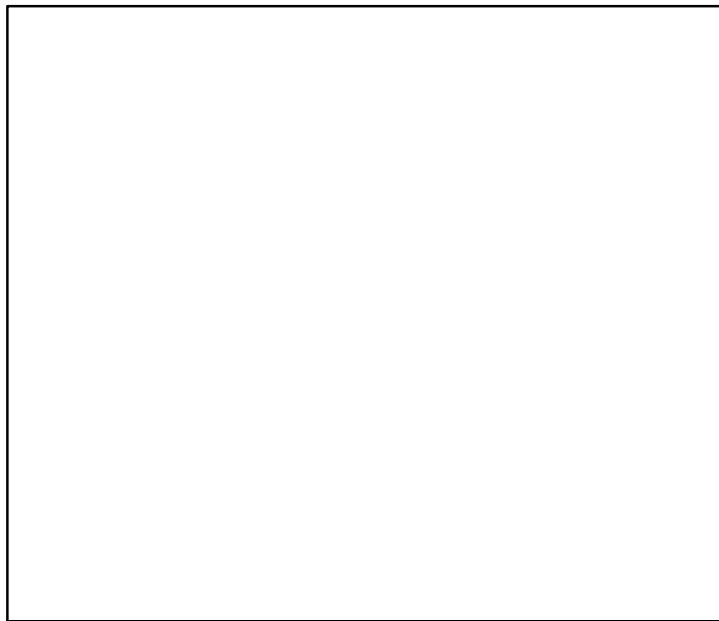
## Turbot Baltic Areas 22-32 [TUR2232]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Scophthalmus maximus                                 |
| <b>Current Assess ID</b>    | WGBFAS-TUR2232-1970-2017-ICESIMP2018                 |
| <b>Area</b>                 | Baltic Areas 22-32                                   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Baltic Fisheries Assessment Working Group            |
| <b>Asmts in RAM</b>         | 2016, 2016, 2017                                     |

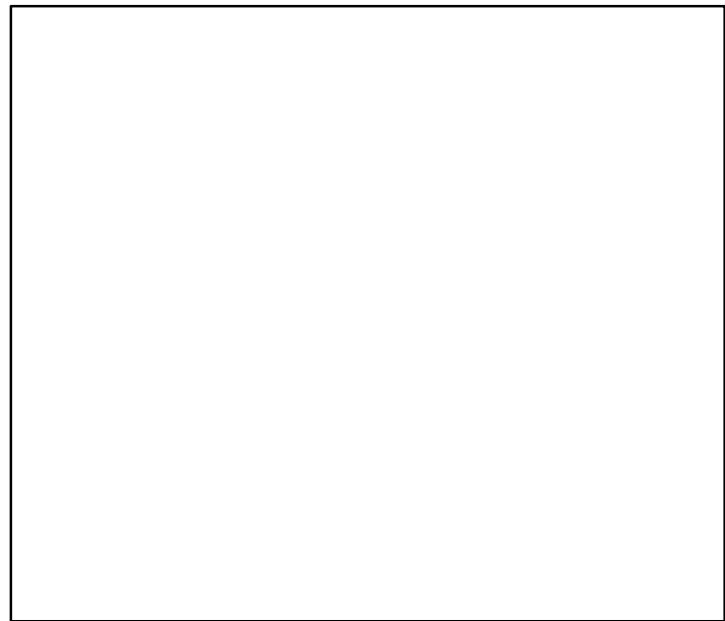
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | TC-MT | 2017      | 322        |     |     |
| <b>TL</b>          | TL-MT | 2017      | 264        |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

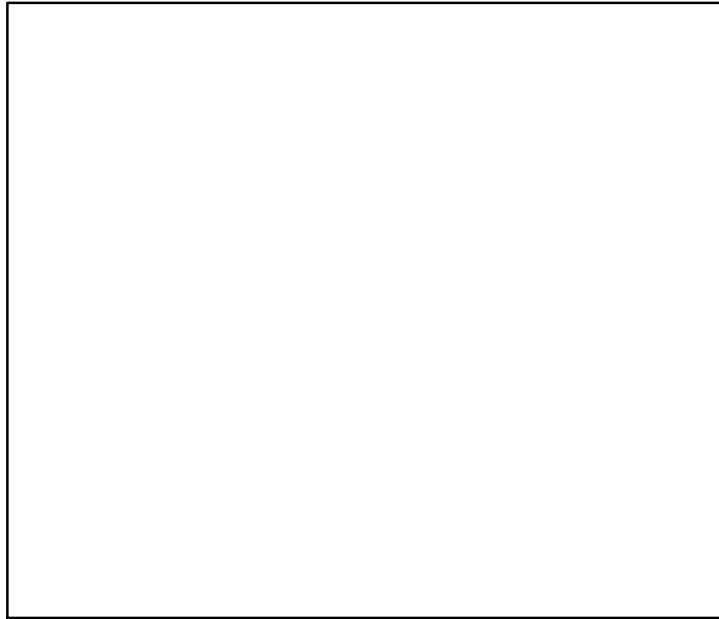
**Kobe MSY\***



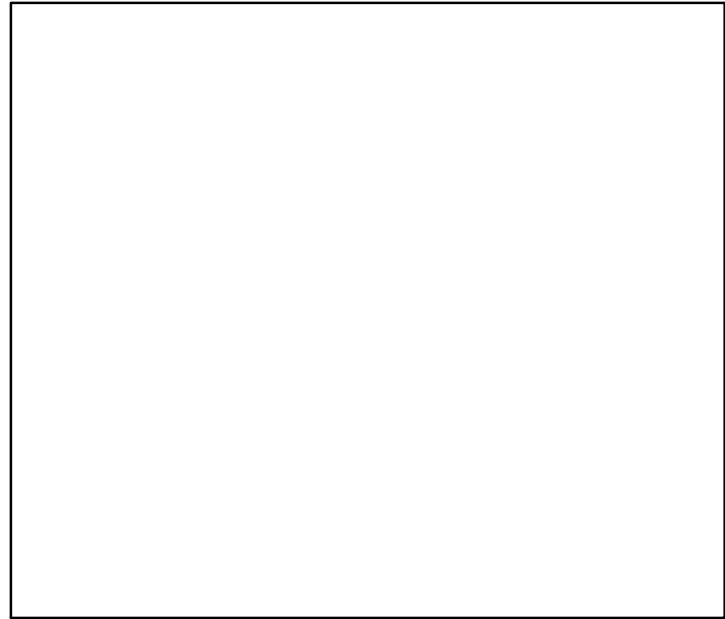
**Kobe MGT\***



**Spawner Recruit\***

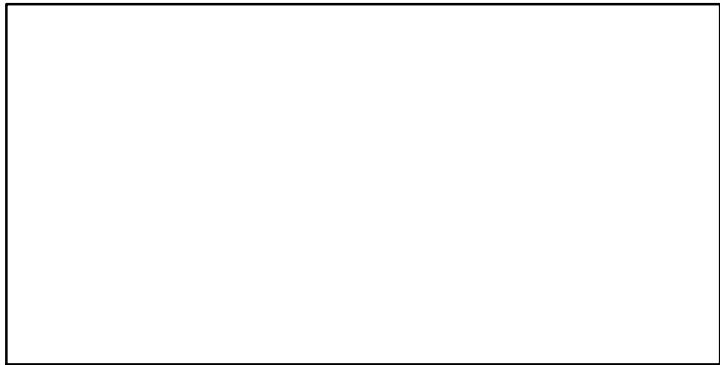


**Production\***

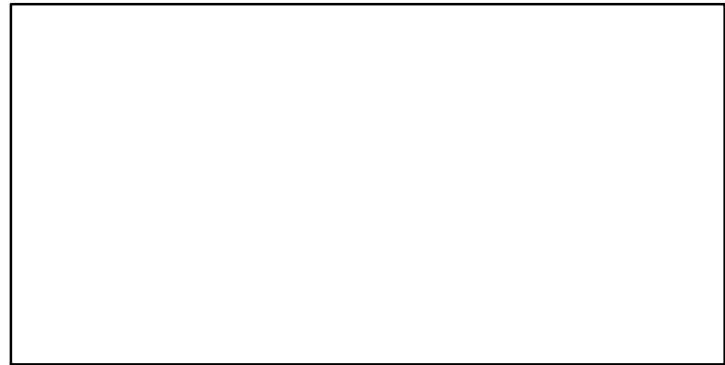


◆ Start Year ♦ End Year \* No Data

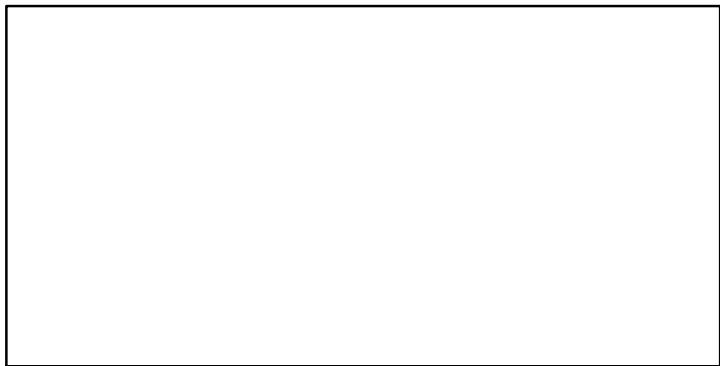
**TB\***



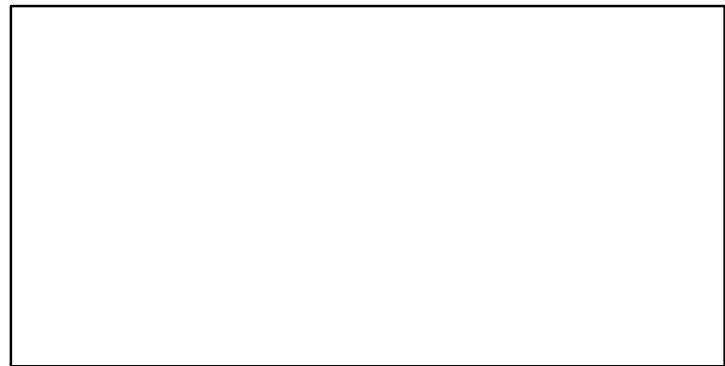
**SSB\***



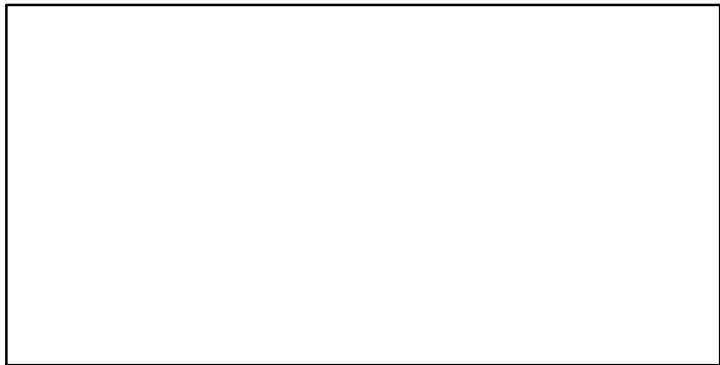
**TN \***



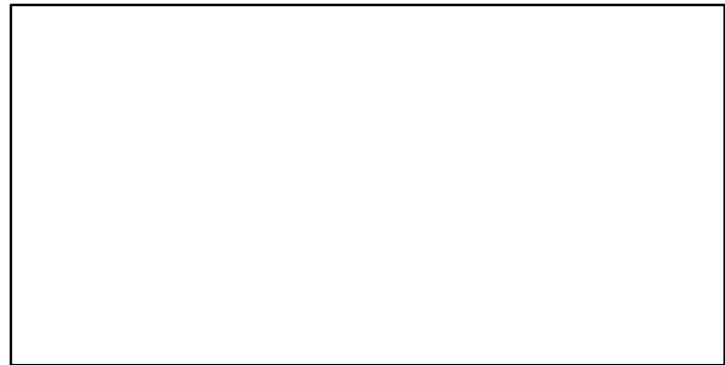
**F\***



**ER\***



**Recruits\***

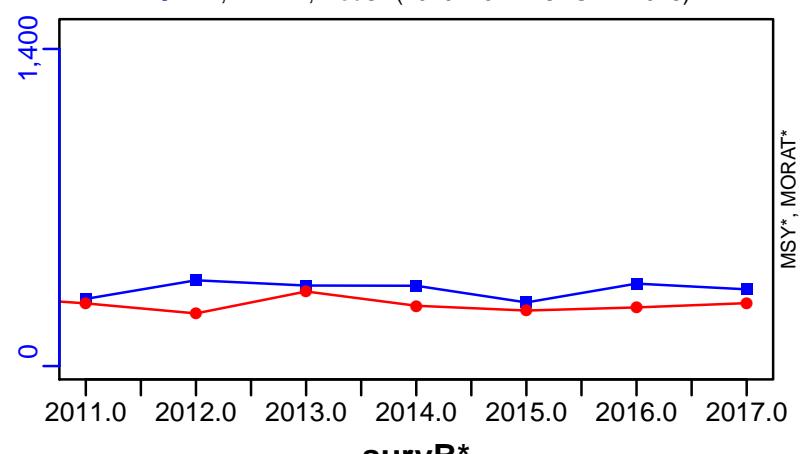


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Turbot Baltic Areas 22–32 [TUR2232]

TC-MT, TL-MT, RecC\* (1970–2017–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



survB\*

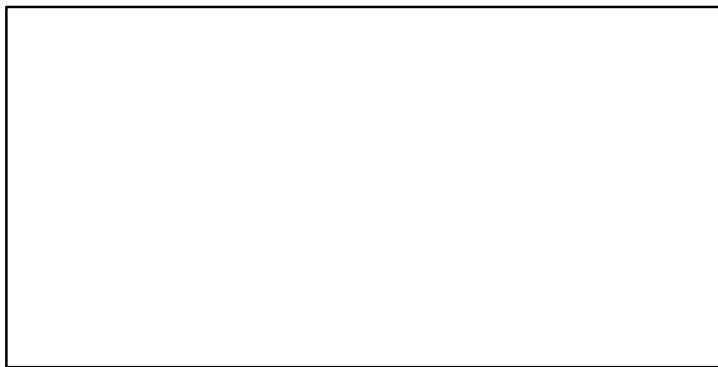
MSY\*, MORAT\*



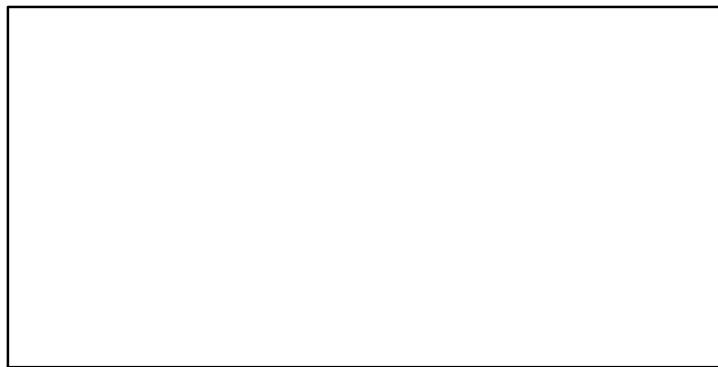
CPUE\*



EFFORT\*



CdivMSY\*



## Turbot Kattegat and Skagerrak [TURIIIa]

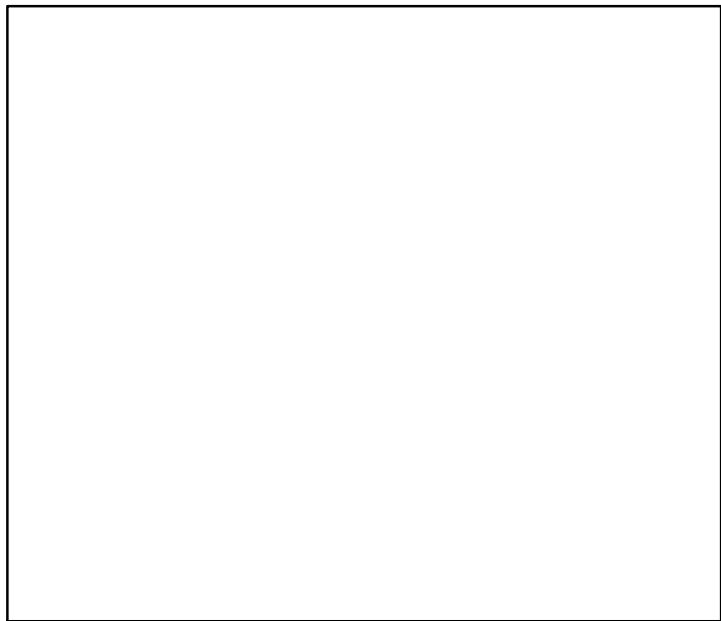
| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Scophthalmus maximus  |
| <b>Current Assess ID</b>    | WGNSSK-TURIIIa-1950-2019-ICESIMP2021  |
| <b>Area</b>                 | Kattegat and Skagerrak  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2019, 2016, 2015  |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

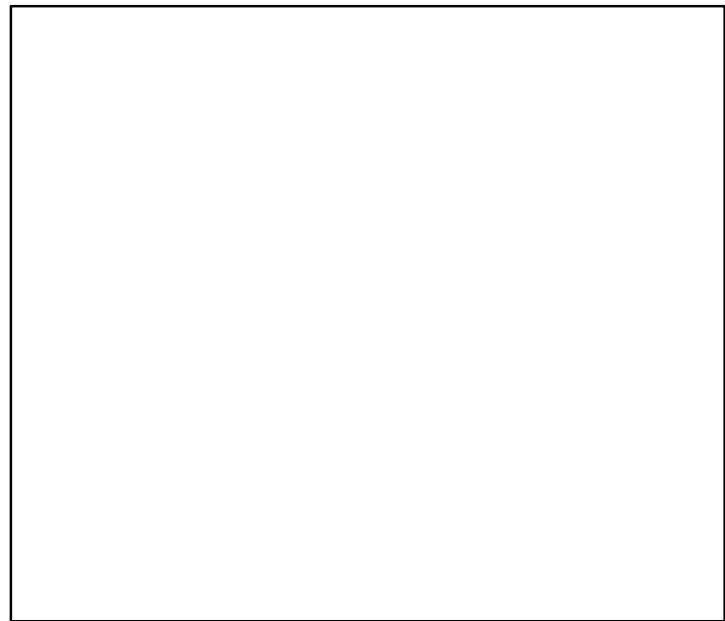
| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2015      | 0.652      | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | TC-MT     | 2019      | 174        |      |     |
| <b>TL</b>          | TL-MT     | 2019      | 153        |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

**Turbot Kattegat and Skagerrak [TURIlla]**

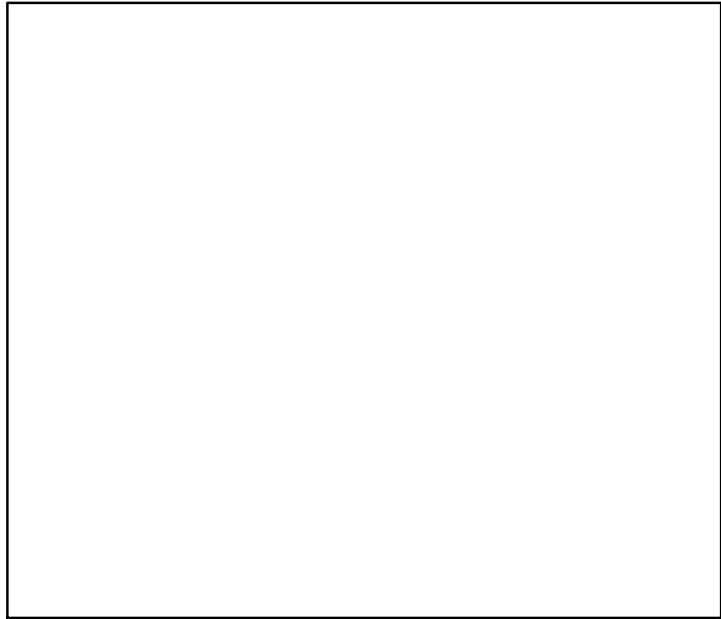
**Kobe MSY\***



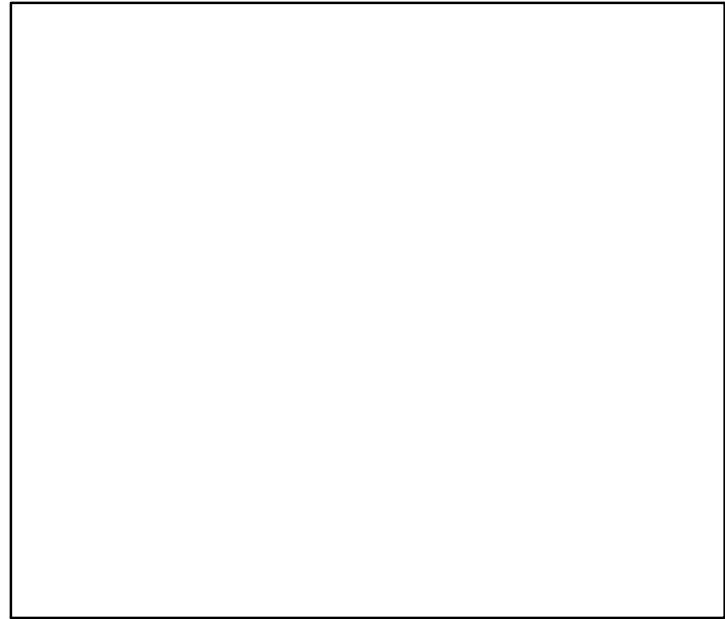
**Kobe MGT\***



**Spawner Recruit\***



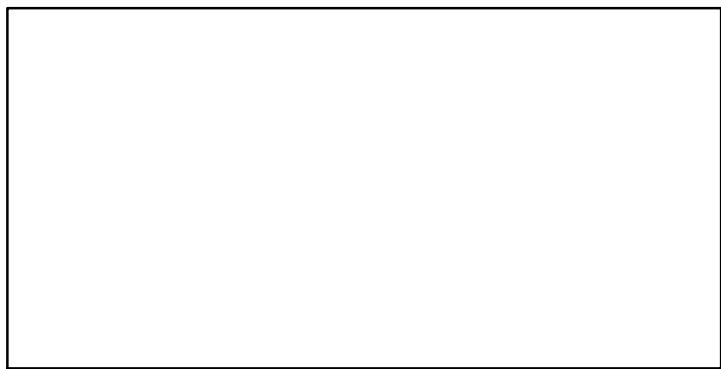
**Production\***



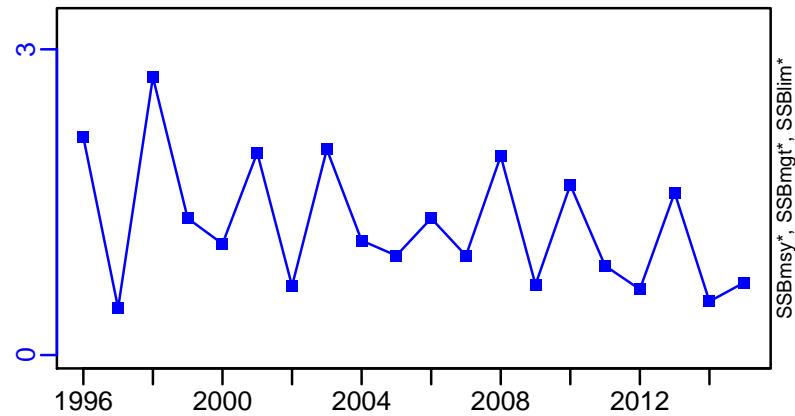
◆ Start Year ♦ End Year \* No Data

**Turbot Kattegat and Skagerrak [TURIIla]**

**TB\***

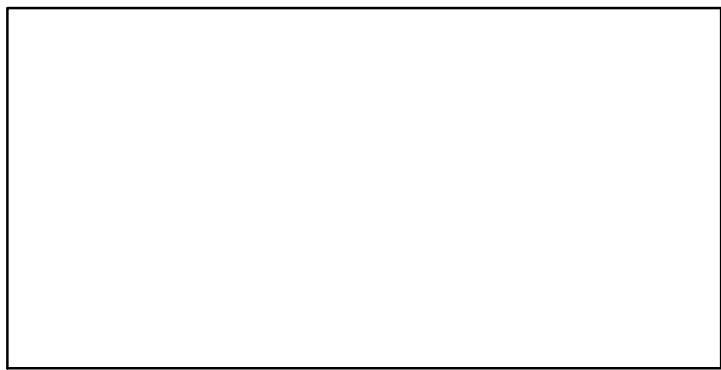


**SSB-index (1964–2015–ICESIMP2018)**

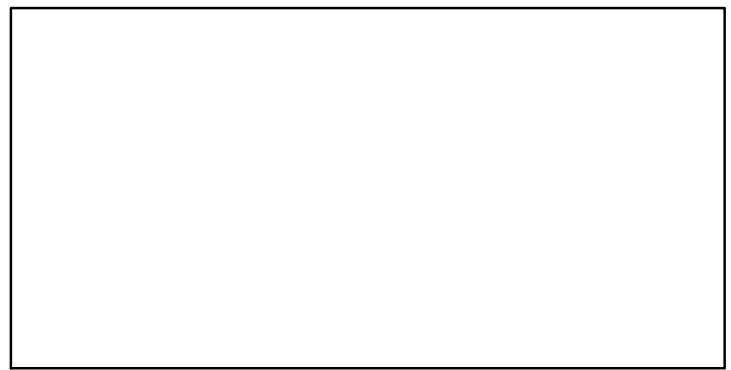


SSBm<sup>\*</sup>, SSBmg<sup>\*</sup>, SSBlim<sup>\*</sup>

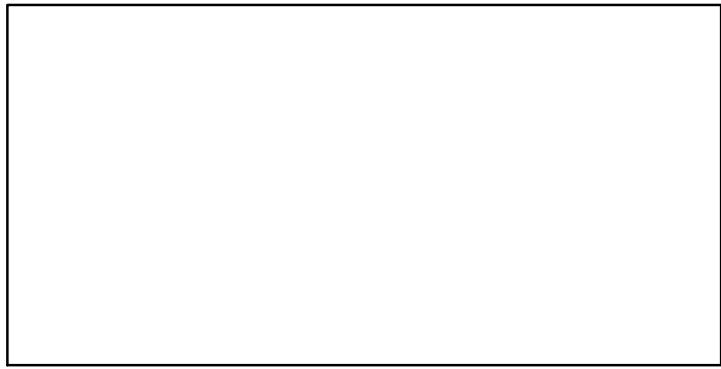
**TN \***



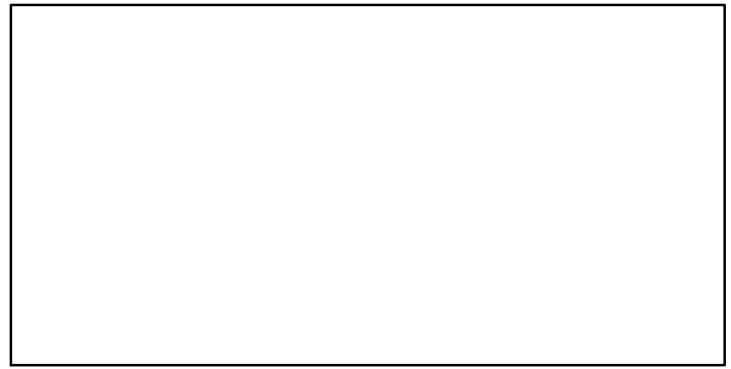
**F\***



**ER\***



**Recruits\***

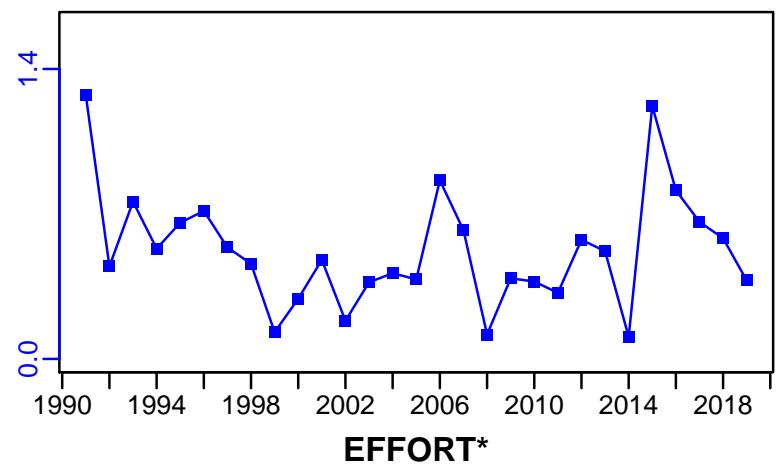
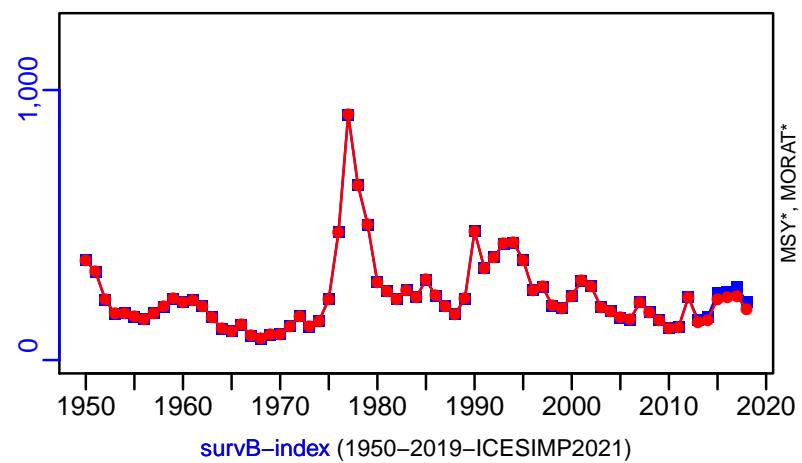


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | ··· Lim BRP  | * No Data |

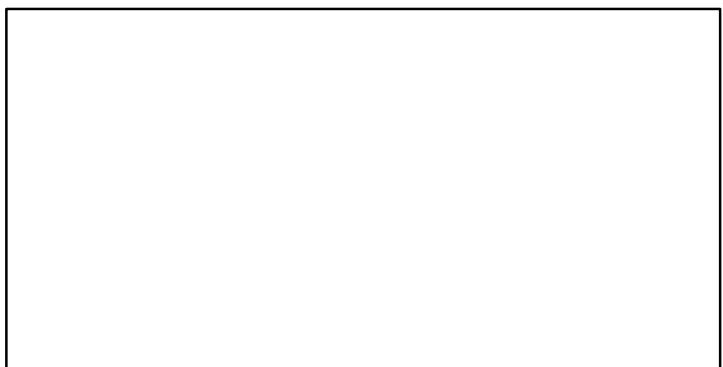
**Turbot Kattegat and Skagerrak [TURIIla]**

TC-MT, TL-MT, RecC\* (1950–2019–ICESIMP2021)

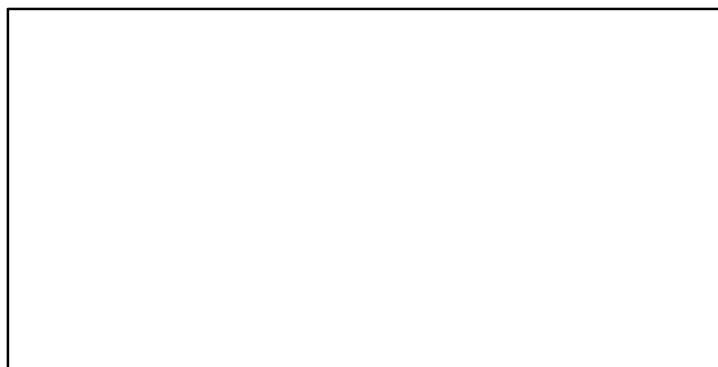
**TAC\*, Cpair\*, Cadv\***



**CPUE\***



**CdivMSY\***



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Turbot North Sea [TURIV]

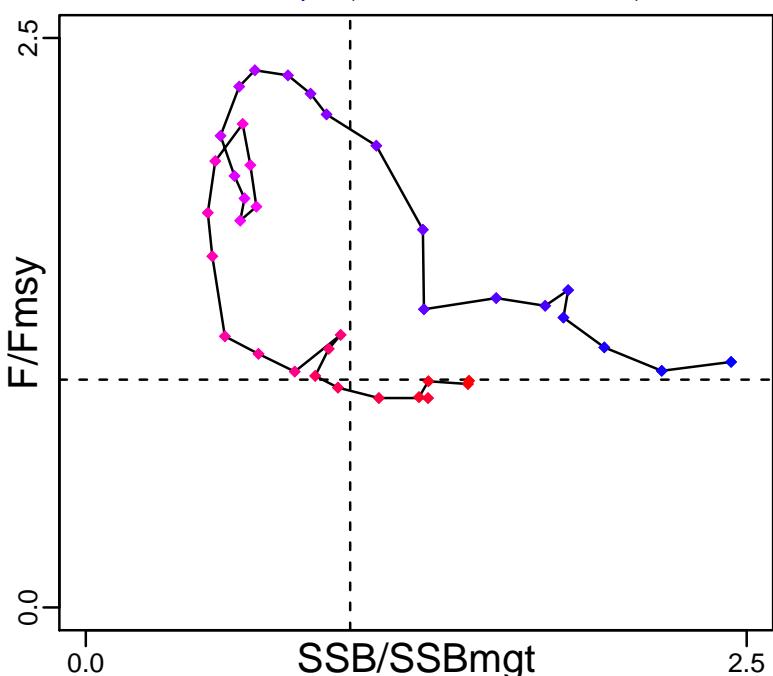
| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Scophthalmus maximus  |
| <b>Current Assess ID</b>    | WGNSSK-TURIV-1980-2019-ICESIMP2021  |
| <b>Area</b>                 | North Sea   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2013, 2014, 2015, 2016, 2019  |

| <b>Reference Points</b> |           |           |       |  |
|-------------------------|-----------|-----------|-------|--|
| Type                    | ID        | Asmt Year | Value |  |
| <b>TBmsy</b>            | -         | -         | -     |  |
| <b>SSBmsy</b>           | -         | -         | -     |  |
| <b>Fmsy</b>             | Fmsy-1/yr | 2019      | 0.36  |  |
| <b>ERmsy</b>            | -         | -         | -     |  |
| <b>TBmgt</b>            | -         | -         | -     |  |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019      | 6353  |  |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019      | 0.36  |  |
| <b>ERmgt</b>            | -         | -         | -     |  |
| <b>TB0</b>              | -         | -         | -     |  |
| <b>SSB0</b>             | -         | -         | -     |  |
| <b>MSY</b>              | -         | -         | -     |  |
| <b>M</b>                | -         | -         | -     |  |
| <b>TBlim</b>            | -         | -         | -     |  |
| <b>SSBlim</b>           | -         | -         | -     |  |
| <b>Flim</b>             | -         | -         | -     |  |
| <b>ERlim</b>            | -         | -         | -     |  |

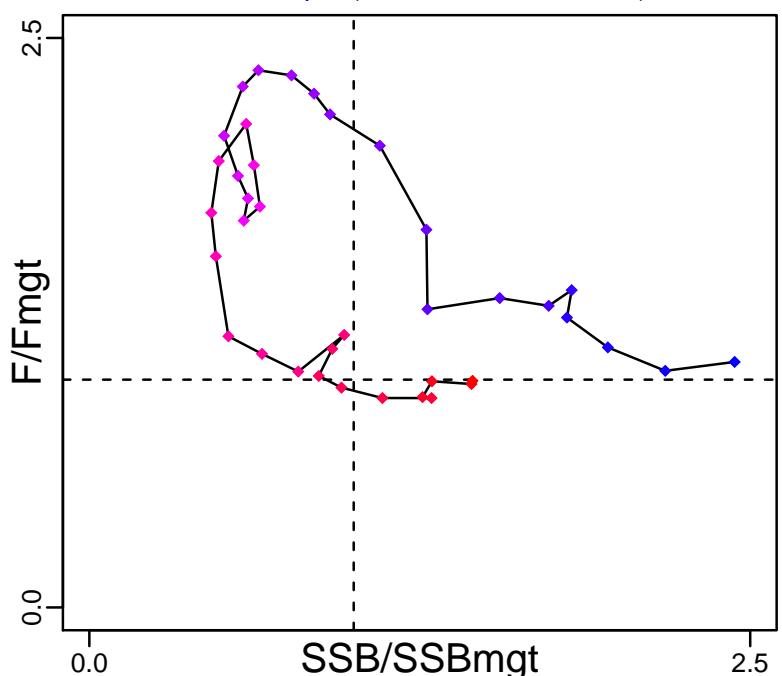
| <b>Time Series</b> |                  |           |            |     |        |  |
|--------------------|------------------|-----------|------------|-----|--------|--|
| Type               | ID               | Asmt Year | Curr Value | Sex | Age    |  |
| <b>TB</b>          | TB-MT            | 2019      | 13,630     | -   | -      |  |
| <b>SSB</b>         | SSB-MT           | 2019      | 8523       | -   | -      |  |
| <b>TN</b>          | -                | -         | -          | -   | -      |  |
| <b>R</b>           | R-E00            | 2019      | 4,492,019  | -   | 1      |  |
| <b>F</b>           | F-1/yr           | 2019      | 0.358      | -   | 2 to 6 |  |
| <b>ER</b>          | ER-calc-ratio    | 2019      | 0.266      | -   | -      |  |
| <b>TC</b>          | TC-MT            | 2019      | 3626       |     |        |  |
| <b>TL</b>          | TL-MT            | 2019      | 3140       |     |        |  |
| <b>TB/TBmsy</b>    | -                | -         | -          |     |        |  |
| <b>SSB/SSBmsy</b>  | -                | -         | -          |     |        |  |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2019      | 0.995      |     |        |  |
| <b>ER/ERmsy</b>    | -                | -         | -          |     |        |  |
| <b>TB/TBmgt</b>    | -                | -         | -          |     |        |  |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019      | 1.342      |     |        |  |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019      | 0.995      |     |        |  |
| <b>ER/ERmgt</b>    | -                | -         | -          |     |        |  |

Turbot North Sea [TURIV]

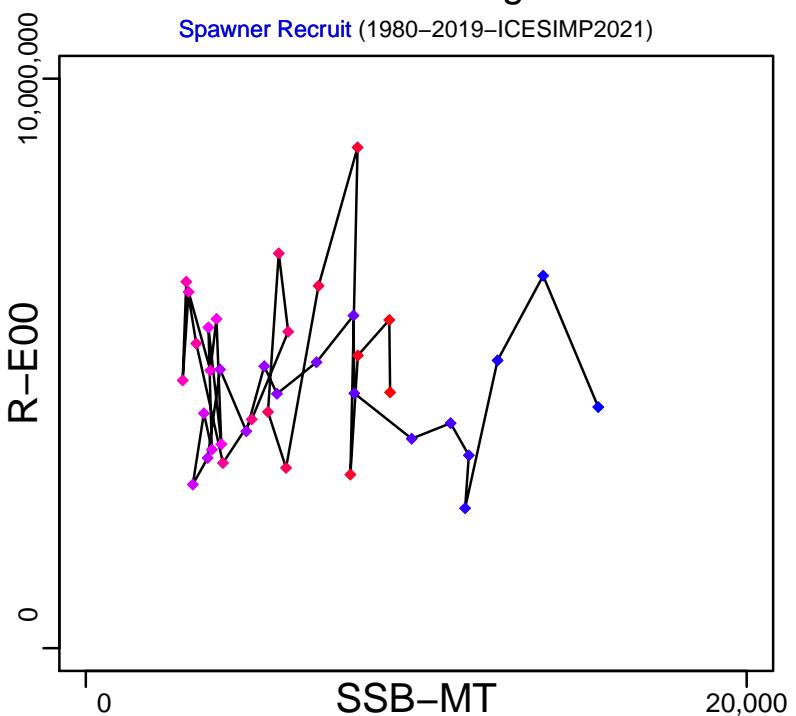
Kobe MSYpref (1980–2019–ICESIMP2021)



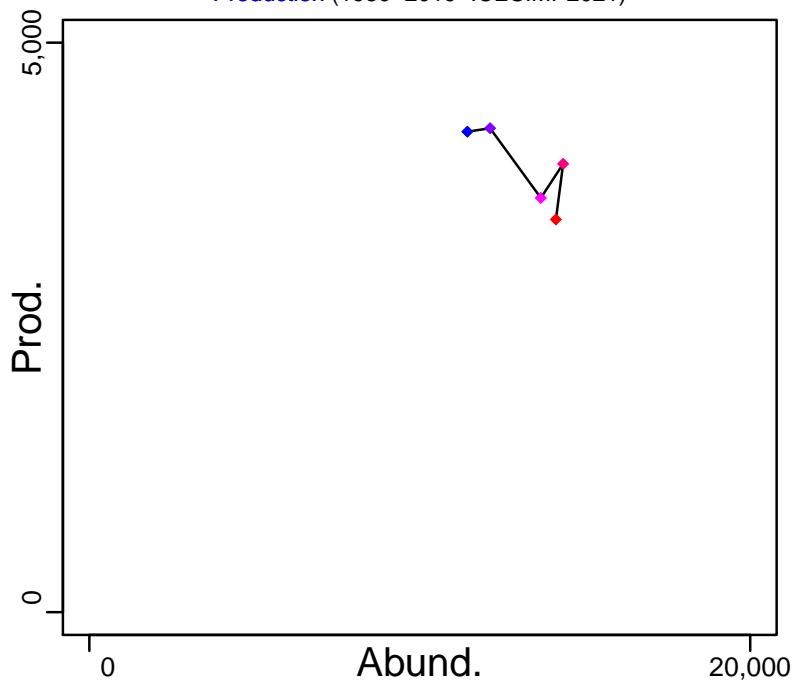
Kobe MGTpref (1980–2019–ICESIMP2021)



Spawner Recruit (1980–2019–ICESIMP2021)



Production (1980–2019–ICESIMP2021)

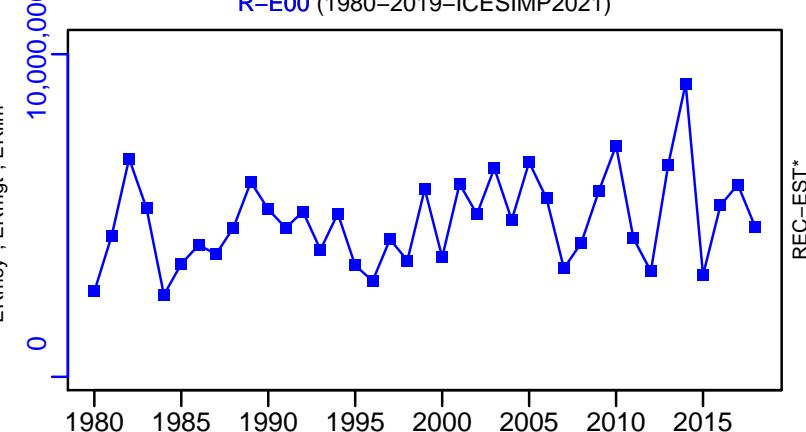
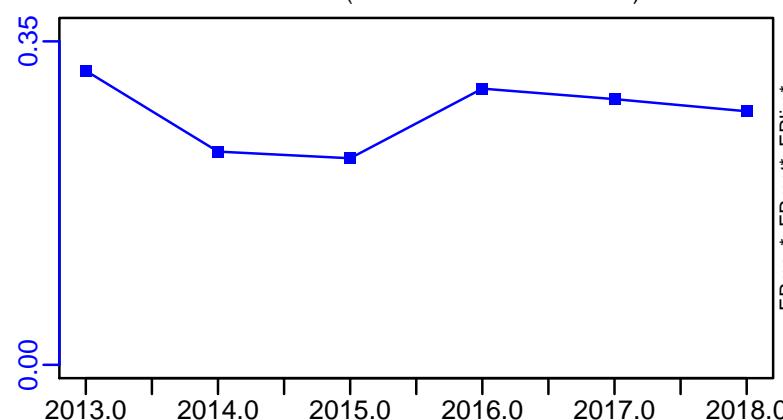
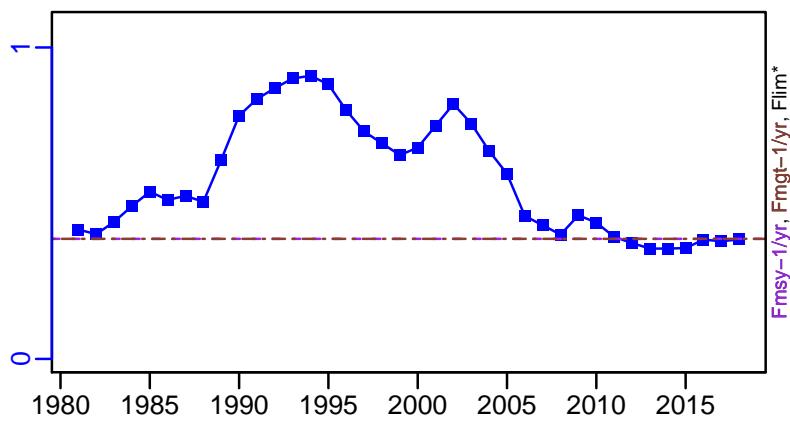
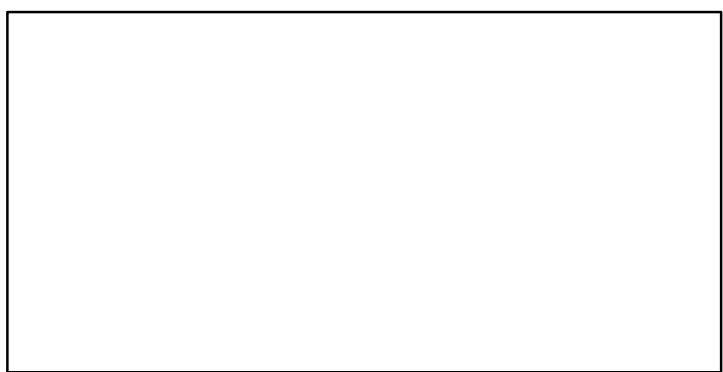
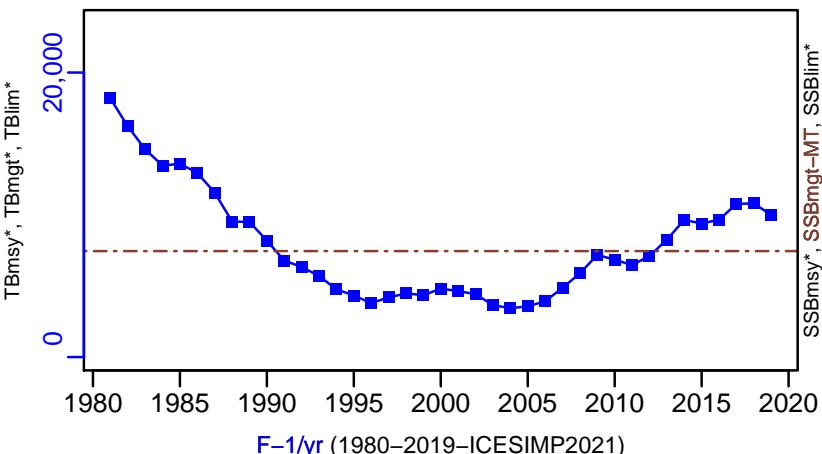
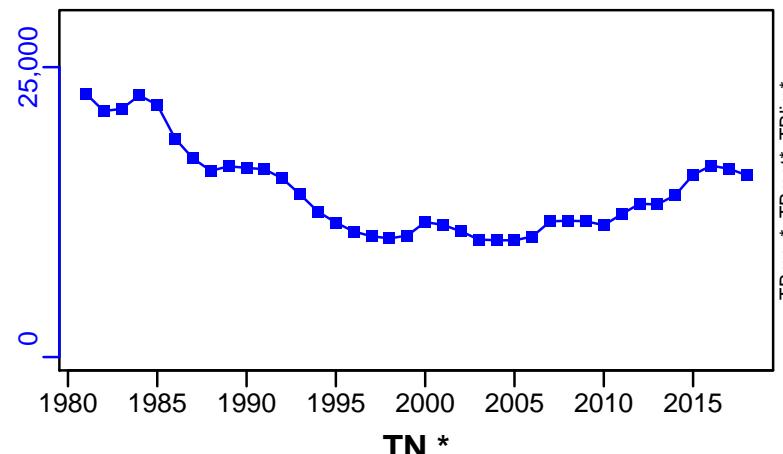


◆ Start Year ◆ End Year \* No Data

### Turbot North Sea [TURIV]

TB-MT (1980–2019–ICESIMP2021)

SSB-MT (1980–2019–ICESIMP2021)

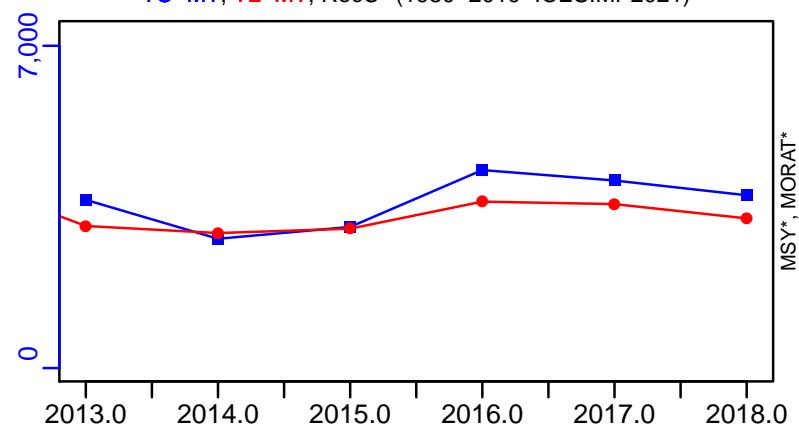


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - MSY-based BRP    | --- Lim BRP  | * No Data |

Turbot North Sea [TURIV]

TC-MT, TL-MT, RecC\* (1980–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



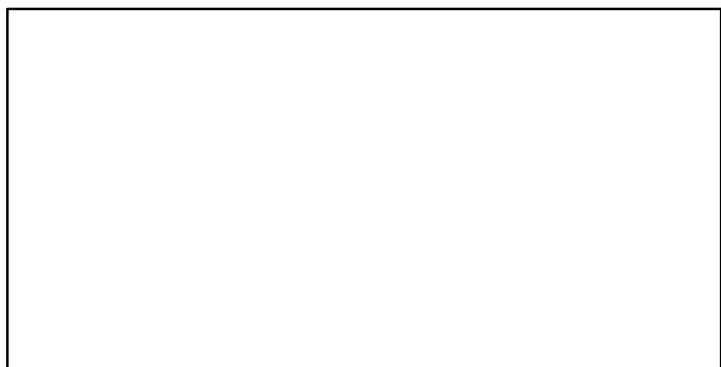
survB\*



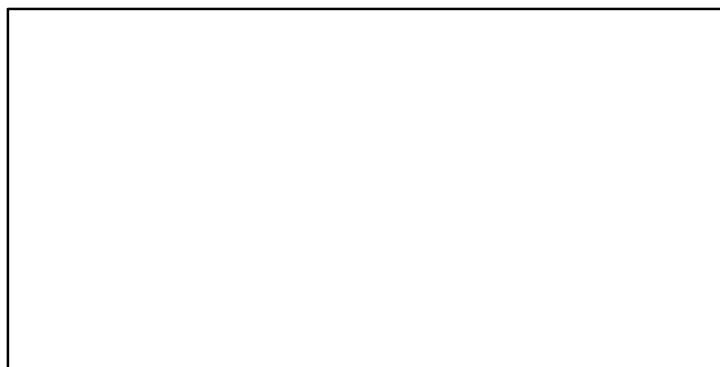
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

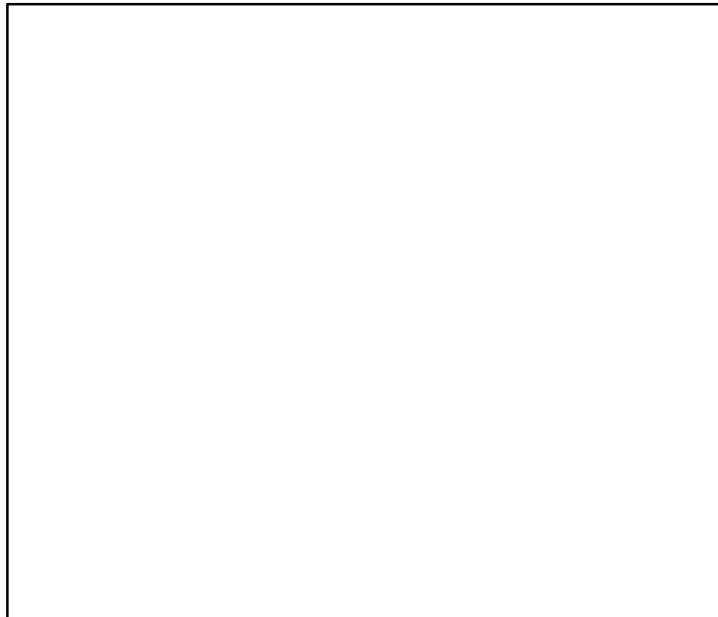
## Undulate ray ICES 7de [URAYVIIde]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Raja undulata  |
| <b>Current Assess ID</b>    | WGEF-URAYVIIde-2008-2017-ICESIMP2018                 |
| <b>Area</b>                 | ICES 7de   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2015, 2017   |

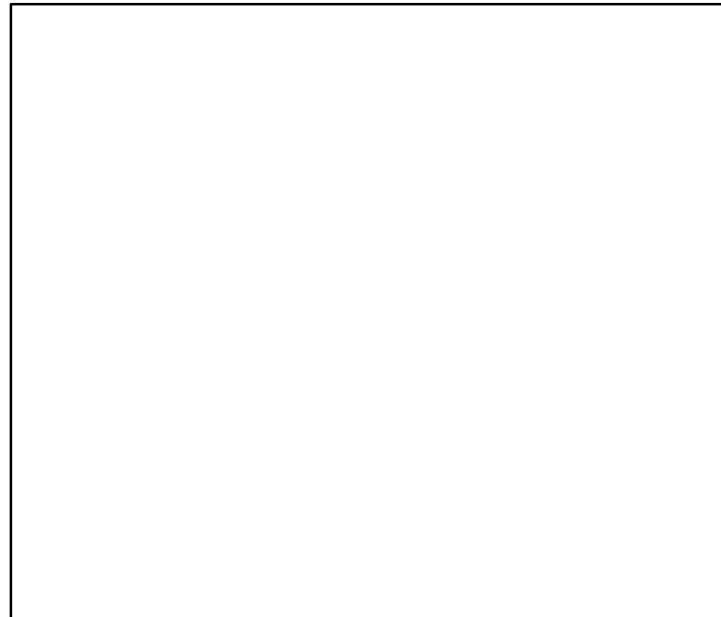
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2015      | 912        | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | TC-MT     | 2017      | 1380       |      |     |
| <b>TL</b>          | TL-MT     | 2017      | 139        |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

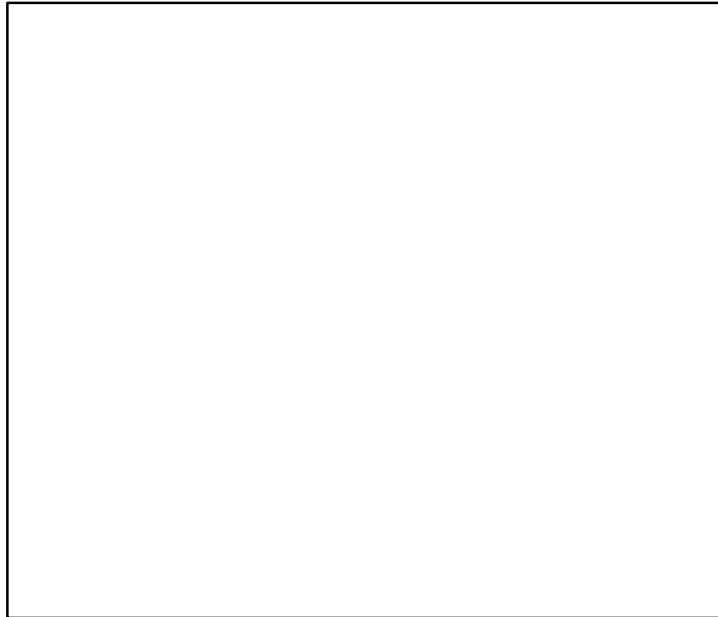
**Kobe MSY\***



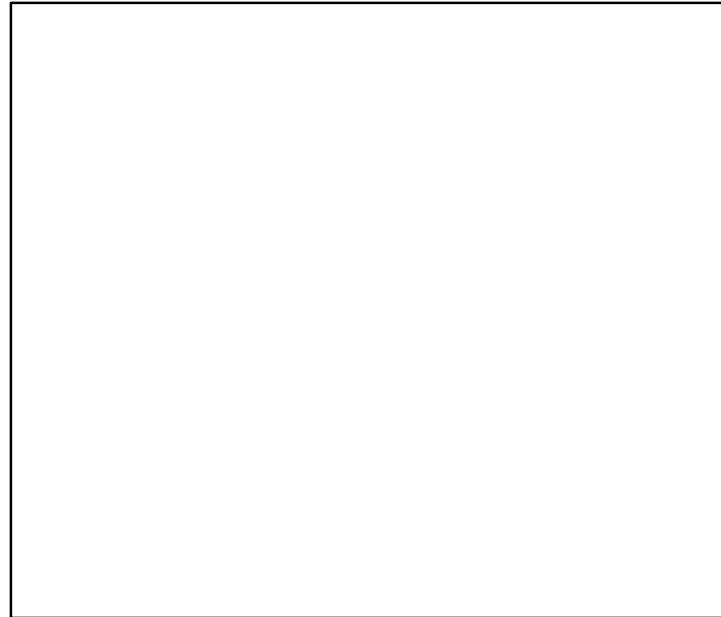
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



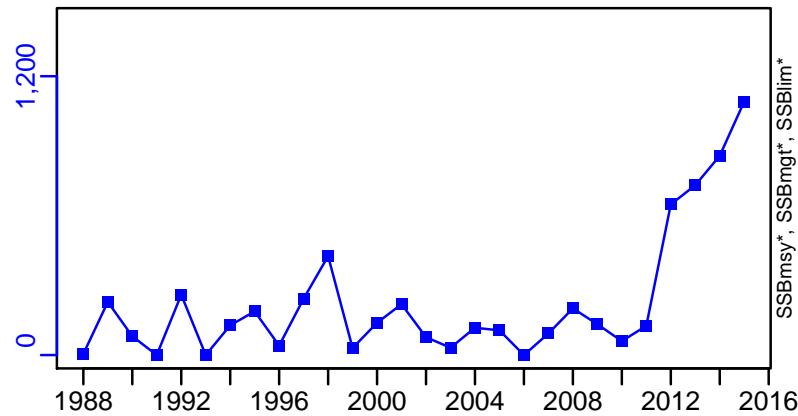
◆ Start Year ♦ End Year \* No Data

Undulate ray ICES 7de [URAYVIIde]

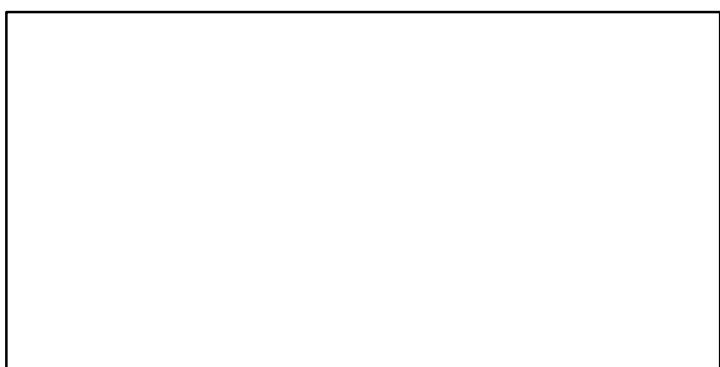
**TB\***



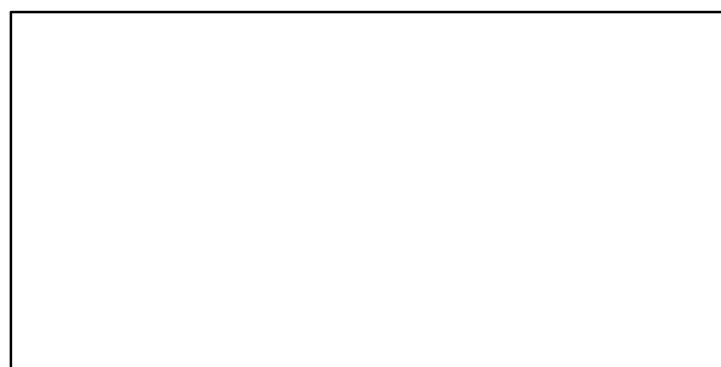
SSB-index (1988–2015–ICESIMP2018)



**TN \***



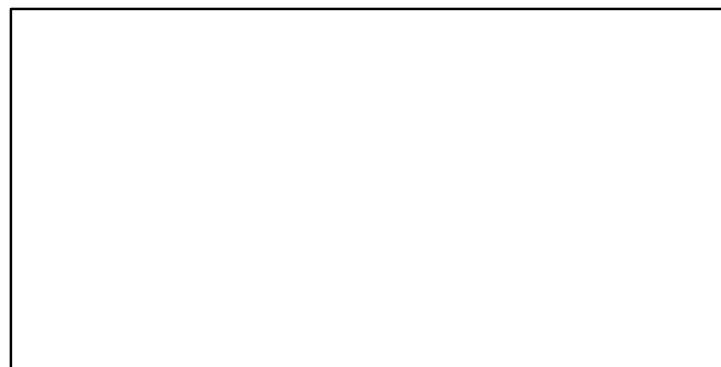
**F\***



**ER\***



**Recruits\***

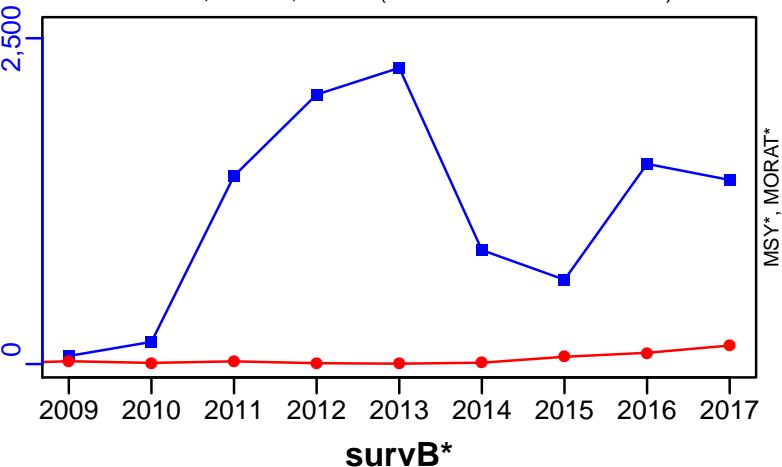


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | ··· Lim BRP  | * No Data |

Undulate ray ICES 7de [URAYVIIde]

TC-MT, TL-MT, RecC\* (2008–2017–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



survB\*

MSY\*, MORAT\*

CPUE\*

EFFORT\*

CdivMSY\*

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

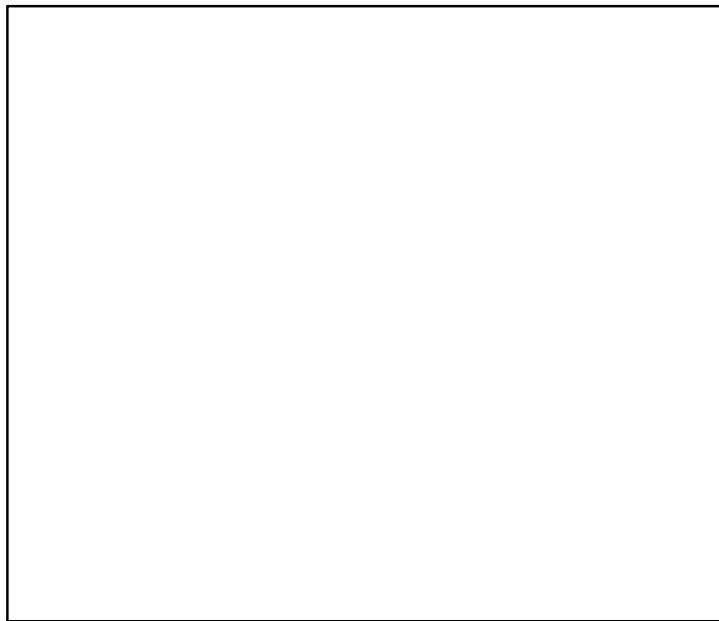
## Undulate ray ICES 8ab [URAYVIIlab]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Raja undulata  |
| <b>Current Assess ID</b>    | WGEF-URAYVIIlab-2009-2017-ICESIMP2018                |
| <b>Area</b>                 | ICES 8ab   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Elasmobranch Fishes                 |
| <b>Asmts in RAM</b>         | 2017   |

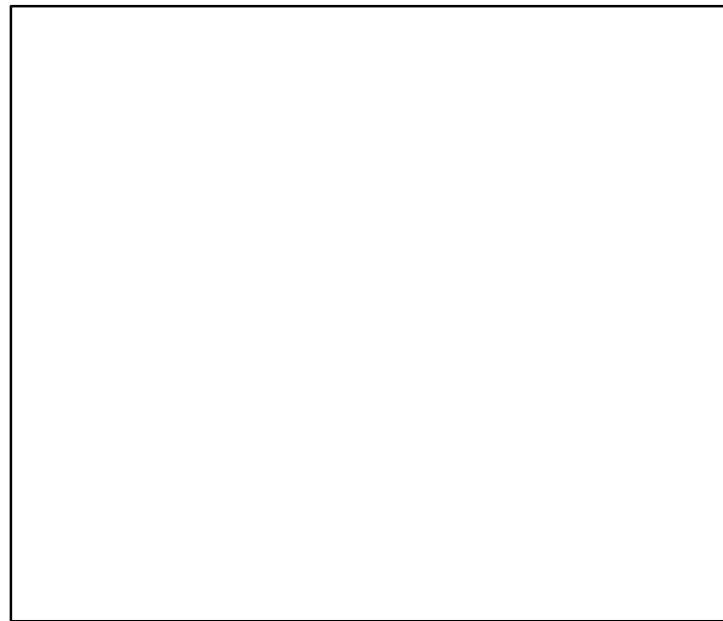
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | TC-MT | 2017      | 336        |     |     |
| <b>TL</b>          | TL-MT | 2017      | 22         |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

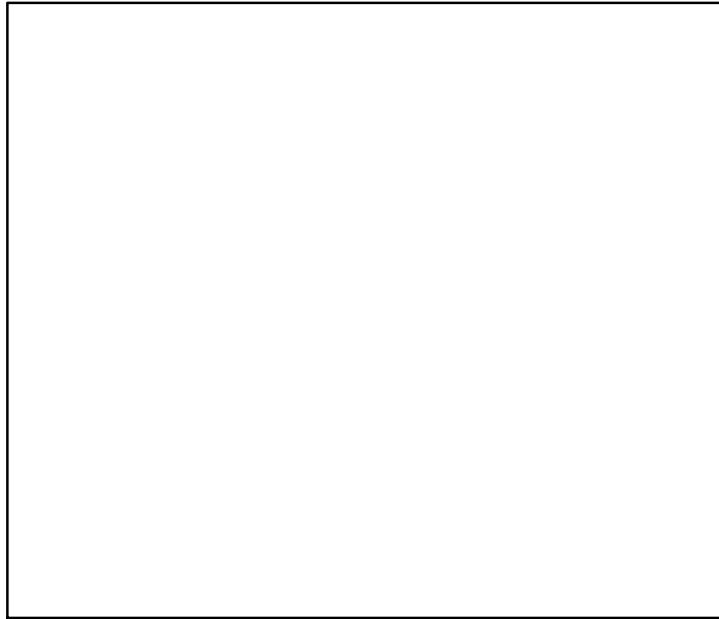
**Kobe MSY\***



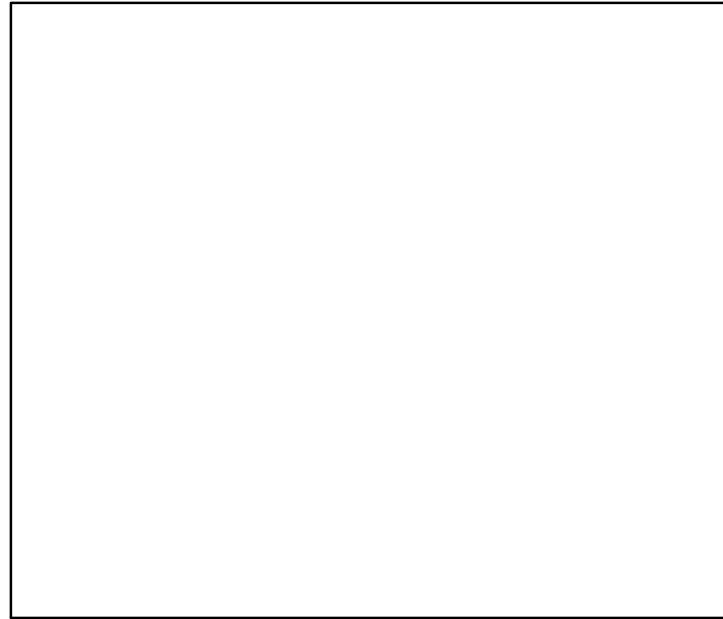
**Kobe MGT\***



**Spawner Recruit\***



**Production\***



◆ Start Year ♦ End Year \* No Data

**Undulate ray ICES 8ab [URAYVIIlab]**

**TB\***



**SSB\***



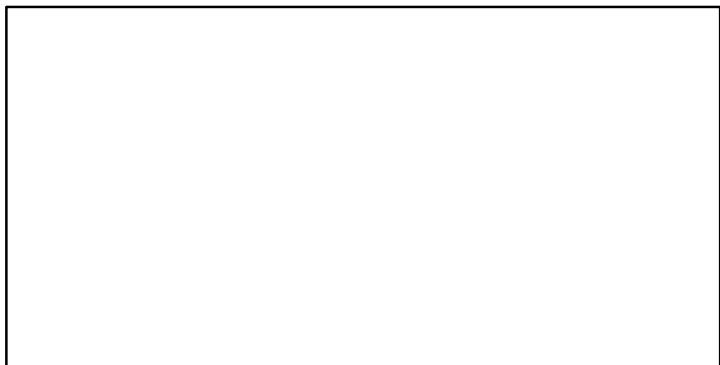
**TN \***



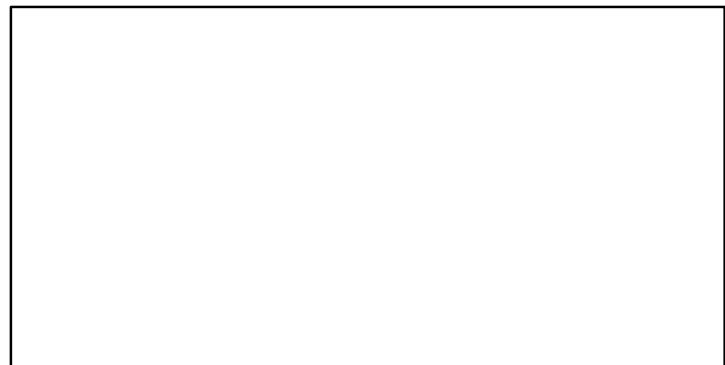
**F\***



**ER\***



**Recruits\***

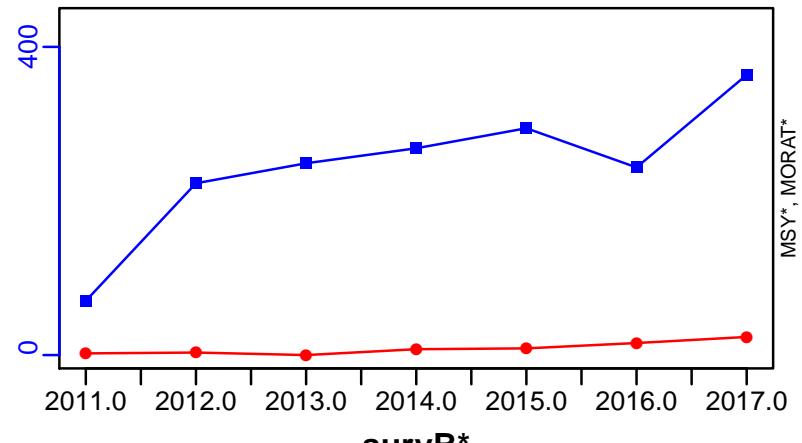


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Undulate ray ICES 8ab [URAYVIIlab]

TC-MT, TL-MT, RecC\* (2009–2017–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



survB\*

MSY\*, MORAT\*

CPUE\*

EFFORT\*

CdivMSY\*



## White anglerfish ICES 8c-9a [WANGLVIIIC-IXa]

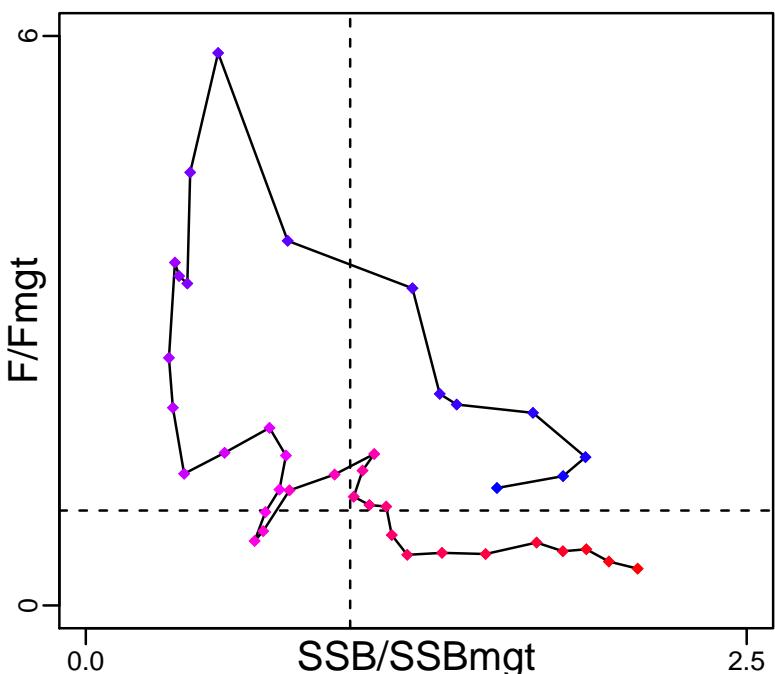
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Lophius piscatorius  |
| <b>Current Assess ID</b>    | WGBIE-WANGLVIIIC-IXa-1980-2019-ICESIMP2021                           |
| <b>Area</b>                 | ICES 8c-9a   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                 |
| <b>Assessor</b>             | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion |
| <b>Asmts in RAM</b>         | 2014, 2015, 2016, 2017, 2018, 2019, 2013                             |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2018             | 0.24         |
| <b>ERrmsy</b>           | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019             | 6283         |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019             | 0.24         |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | SSBlim-MT | 2018             | 1993         |
| <b>Flim</b>             | Flim-1/yr | 2018             | 0.56         |
| <b>ERlim</b>            | -         | -                | -            |

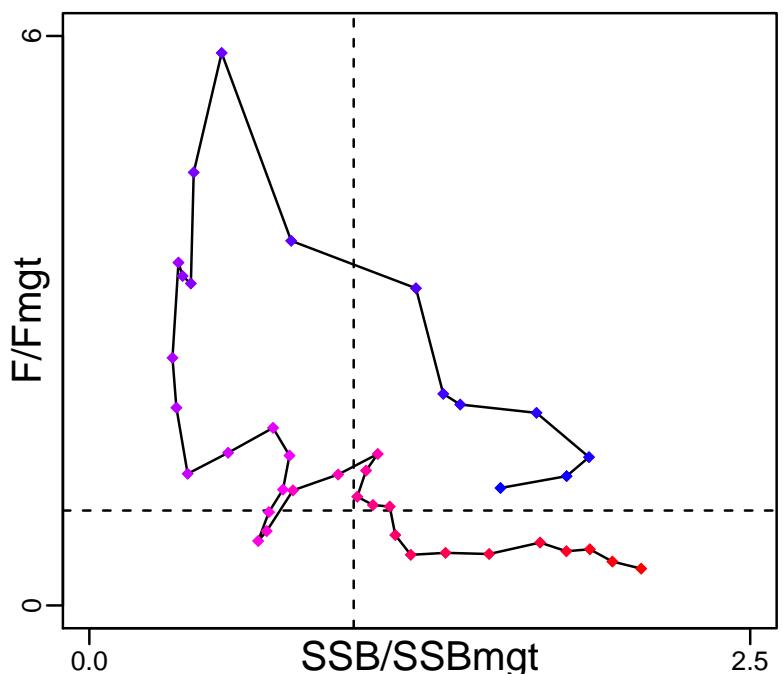
| <b>Time Series</b> |                  |                  |                   |            |            |
|--------------------|------------------|------------------|-------------------|------------|------------|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |
| <b>TB</b>          | TB-MT            | 2019             | 14,645            | -          | -          |
| <b>SSB</b>         | SSB-MT           | 2019             | 13,477            | -          | -          |
| <b>TN</b>          | -                | -                | -                 | -          | -          |
| <b>R</b>           | R-E00            | 2019             | 712,159           | -          | 0          |
| <b>F</b>           | F-1/yr           | 2019             | 0.093             | -          | -          |
| <b>ER</b>          | ER-calc-ratio    | 2019             | 0.078             | -          | -          |
| <b>TC</b>          | -                | -                | -                 |            |            |
| <b>TL</b>          | TL-MT            | 2019             | 1153              |            |            |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2018             | 0.525             |            |            |
| <b>ER/ERrmsy</b>   | -                | -                | -                 |            |            |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019             | 2.145             |            |            |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019             | 0.388             |            |            |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |

White anglerfish ICES 8c–9a [WANGLVIIIC–IXa]

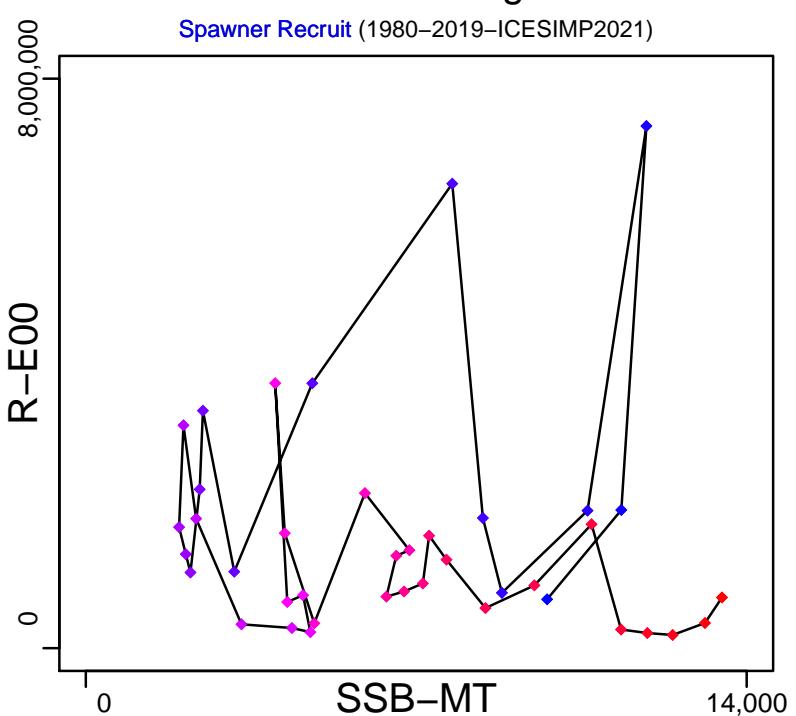
Kobe MSYpref (1980–2019–ICESIMP2021)



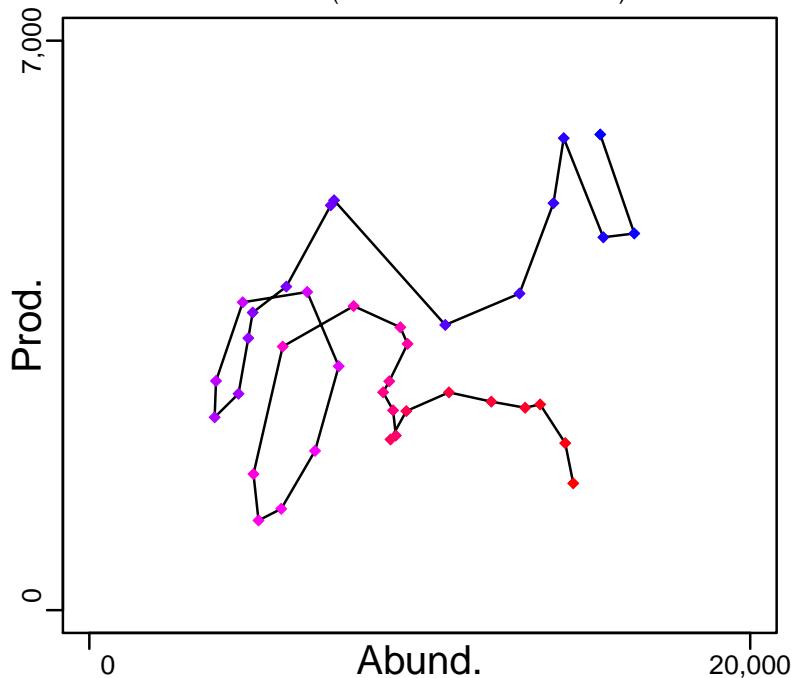
Kobe MGTpref (1980–2019–ICESIMP2021)



Spawner Recruit (1980–2019–ICESIMP2021)



Production (1980–2019–ICESIMP2021)

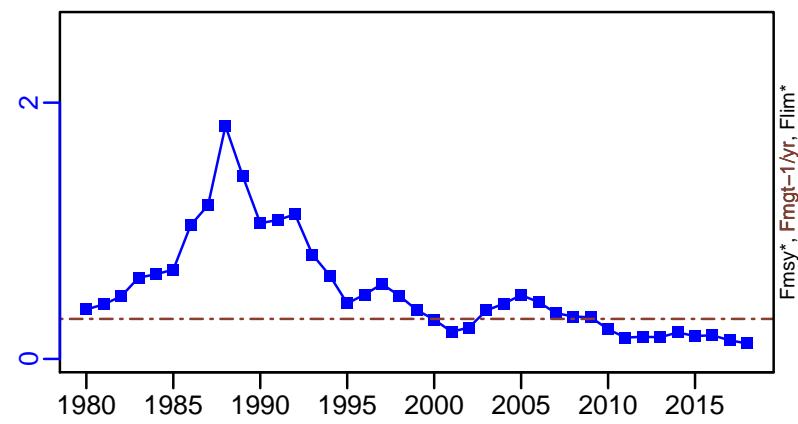
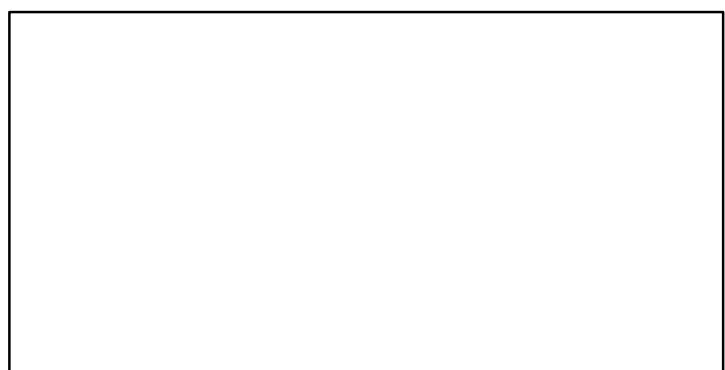
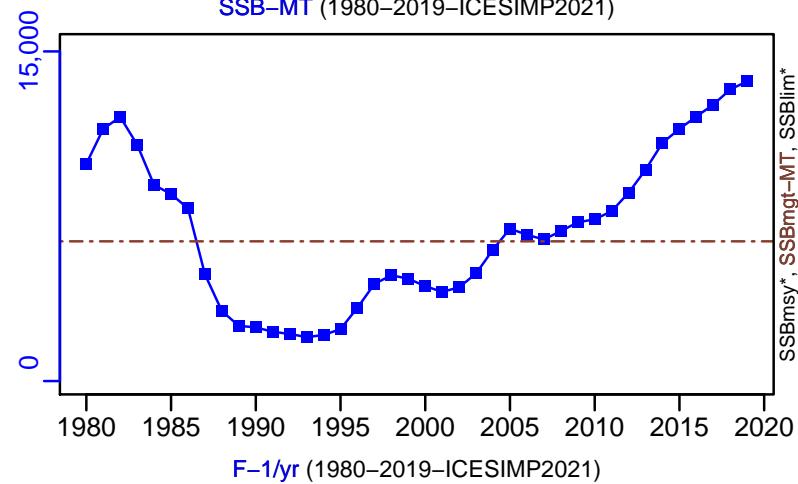
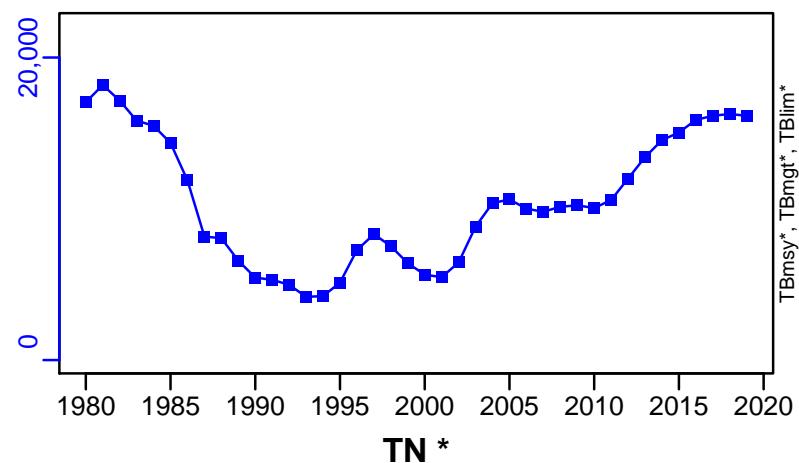


◆ Start Year   ◆ End Year   \* No Data

White anglerfish ICES 8c–9a [WANGLVIIIC–IXa]

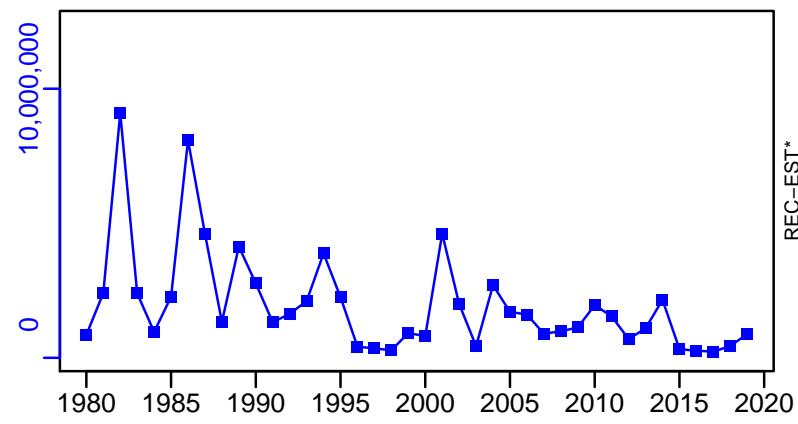
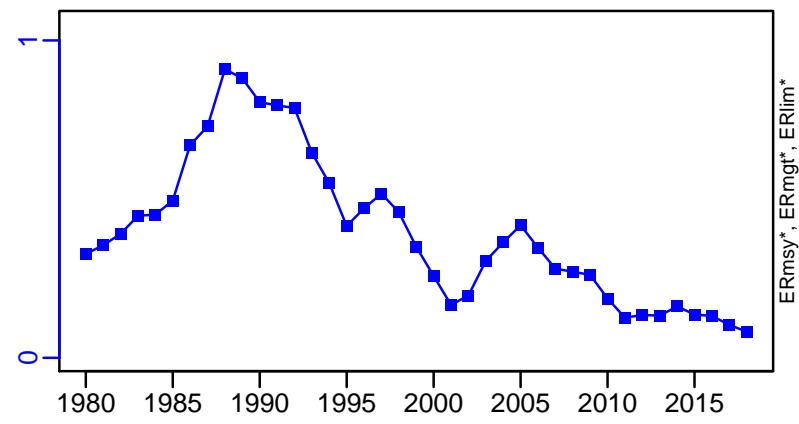
TB-MT (1980–2019–ICESIMP2021)

SSB-MT (1980–2019–ICESIMP2021)



ER-calc-ratio (1980–2019–ICESIMP2021)

R-E00 (1980–2019–ICESIMP2021)

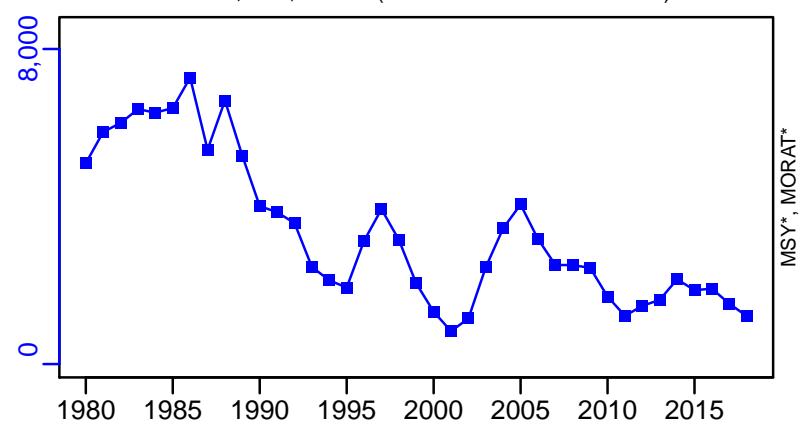


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | ··· Lim BRP  | * No Data |

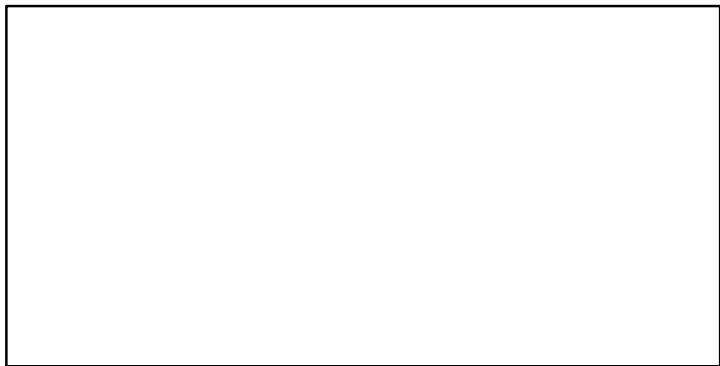
White anglerfish ICES 8c–9a [WANGLVIIIC–IXa]

TL–MT, TC\*, RecC\* (1980–2019–ICESIMP2021)

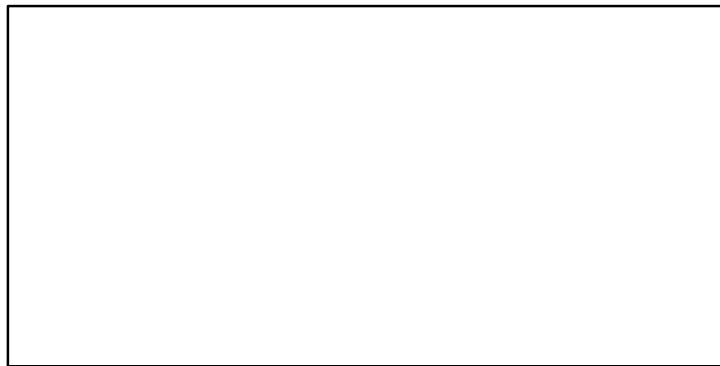
TAC\*, Cpair\*, Cadv\*



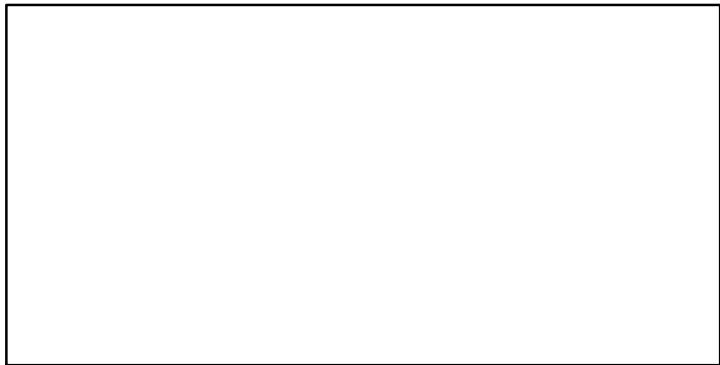
survB\*



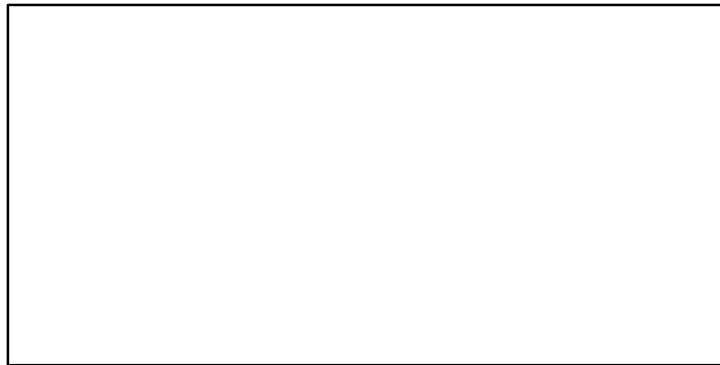
CPUE\*



EFFORT\*



CdivMSY\*



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - MSY                  | * No Data |

## White anglerfish ICES 7-8abd [WANGLVII-VIIIabd]

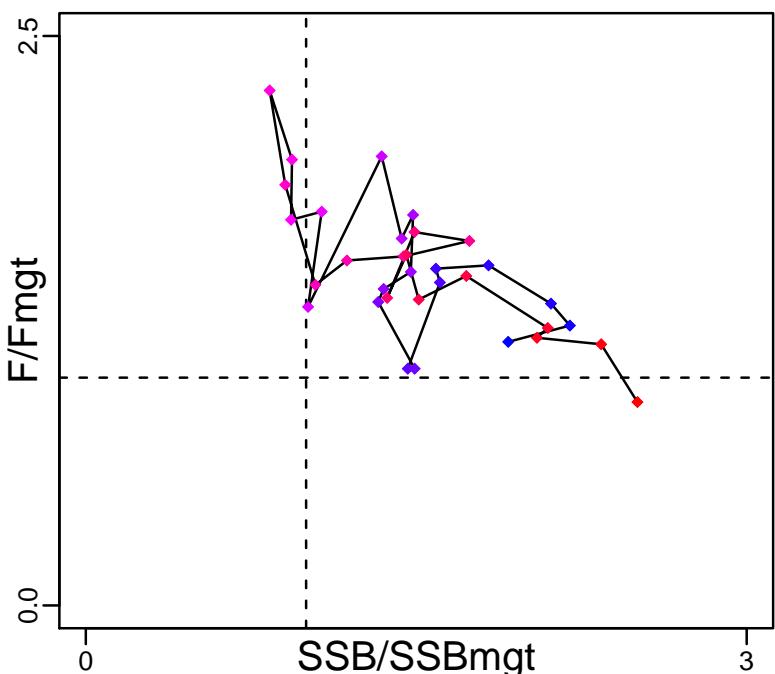
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Lophius piscatorius  |
| <b>Current Assess ID</b>    | WGBIE-WANGLVII-VIIIabd-1986-2019-ICESIMP2021                         |
| <b>Area</b>                 | ICES 7-8abd  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                 |
| <b>Assessor</b>             | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion |
| <b>Asmts in RAM</b>         | 2016, 2018, 2019   |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2018             | 0.28         |
| <b>ERrmsy</b>           | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019             | 22,278       |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019             | 0.28         |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | SSBlim-MT | 2018             | 16,032       |
| <b>Flim</b>             | Flim-1/yr | 2018             | 0.53         |
| <b>ERlim</b>            | -         | -                | -            |

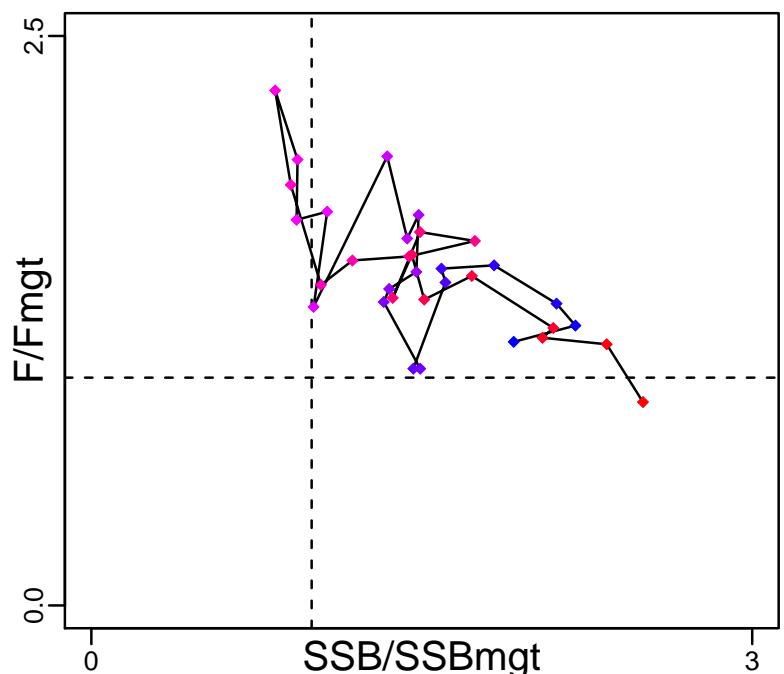
| <b>Time Series</b> |                  |                  |                   |            |            |  |
|--------------------|------------------|------------------|-------------------|------------|------------|--|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |  |
| <b>TB</b>          | TB-MT            | 2019             | 115,872           | -          | -          |  |
| <b>SSB</b>         | SSB-MT           | 2019             | 72,848            | -          | -          |  |
| <b>TN</b>          | -                | -                | -                 | -          | -          |  |
| <b>R</b>           | R-E00            | 2019             | 32,059,000        | -          | 0          |  |
| <b>F</b>           | F-1/yr           | 2019             | 0.25              | -          | 3 to 6     |  |
| <b>ER</b>          | ER-calc-ratio    | 2019             | 0.205             | -          | -          |  |
| <b>TC</b>          | TC-MT            | 2019             | 23,768            |            |            |  |
| <b>TL</b>          | TL-MT            | 2019             | 22,371            |            |            |  |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |  |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2018             | 1.004             |            |            |  |
| <b>ER/ERrmsy</b>   | -                | -                | -                 |            |            |  |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019             | 3.27              |            |            |  |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019             | 0.893             |            |            |  |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |  |

White anglerfish ICES 7–8abd [WANGLVII–VIIIabd]

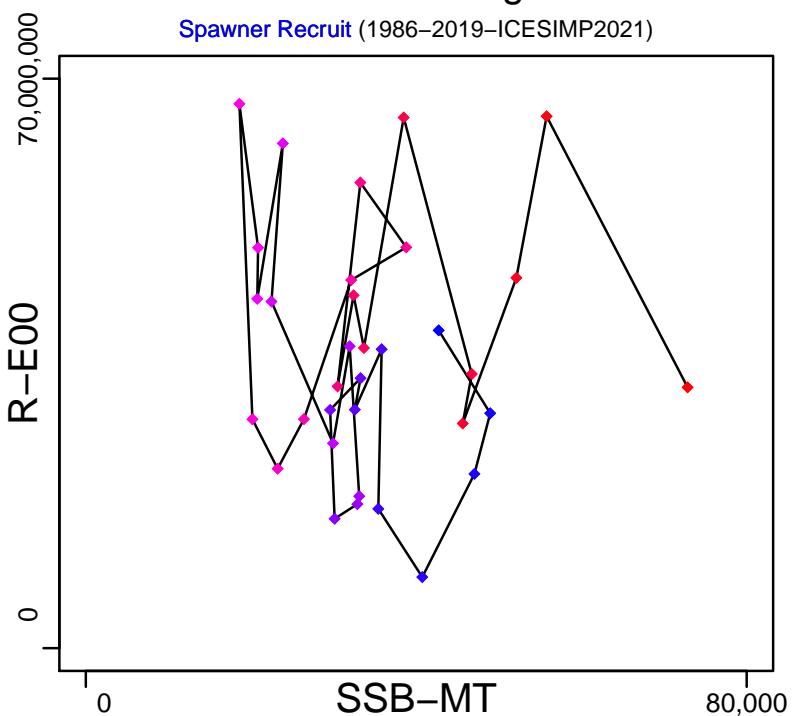
Kobe MSYpref (1986–2019–ICESIMP2021)



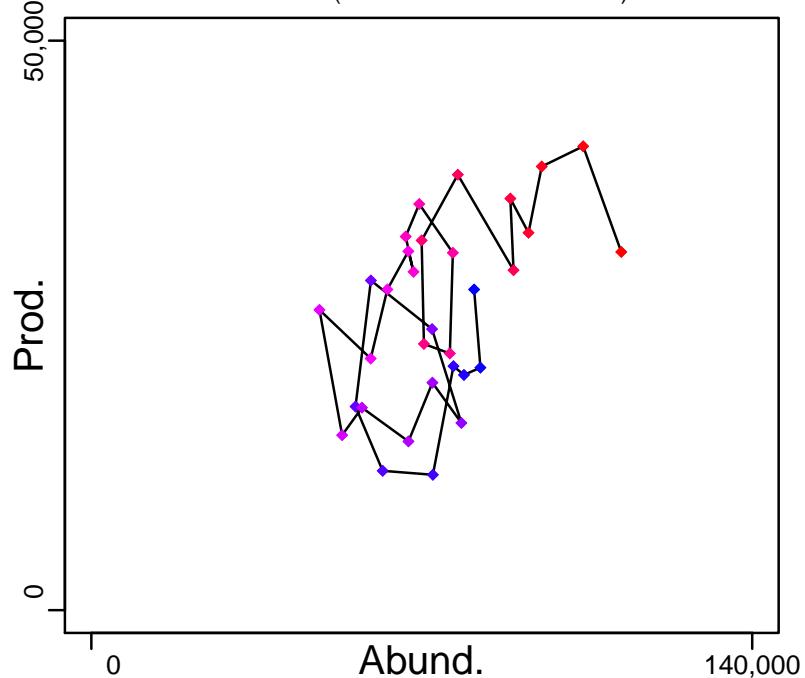
Kobe MGTpref (1986–2019–ICESIMP2021)



Spawner Recruit (1986–2019–ICESIMP2021)



Production (1986–2019–ICESIMP2021)

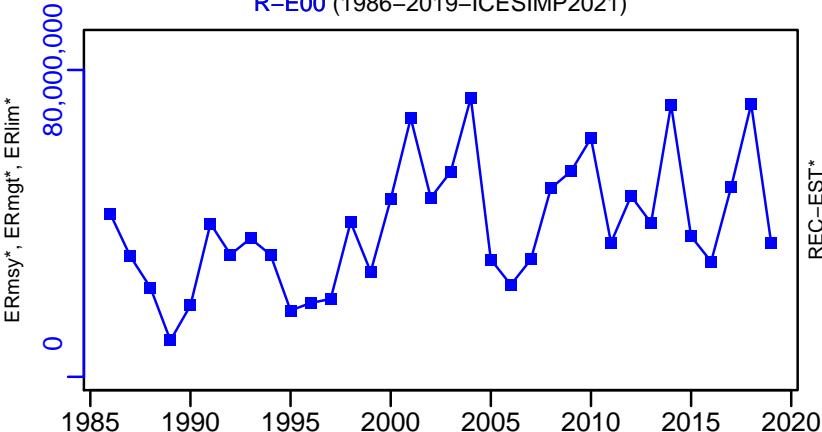
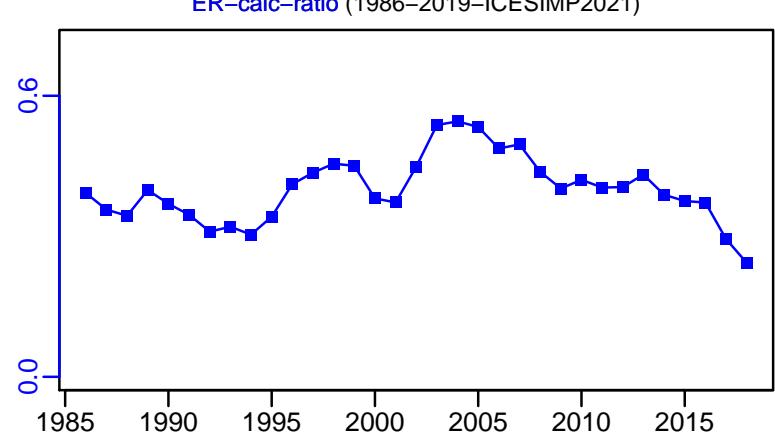
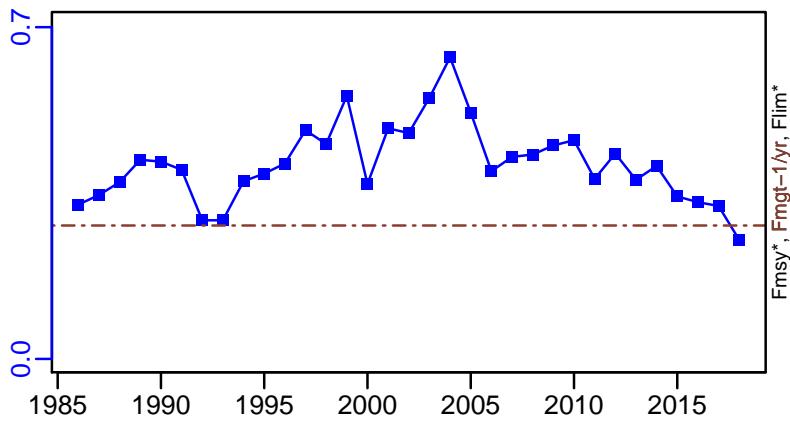
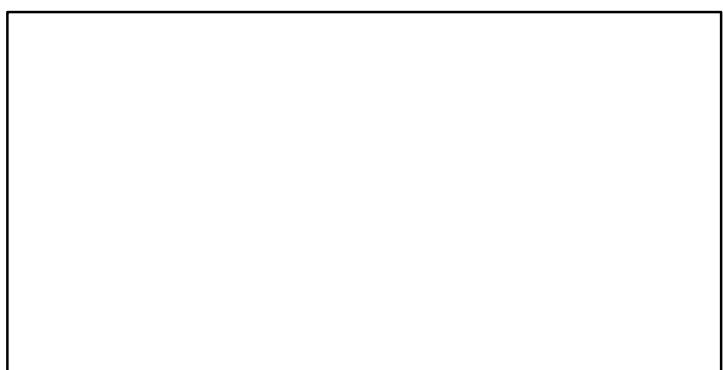
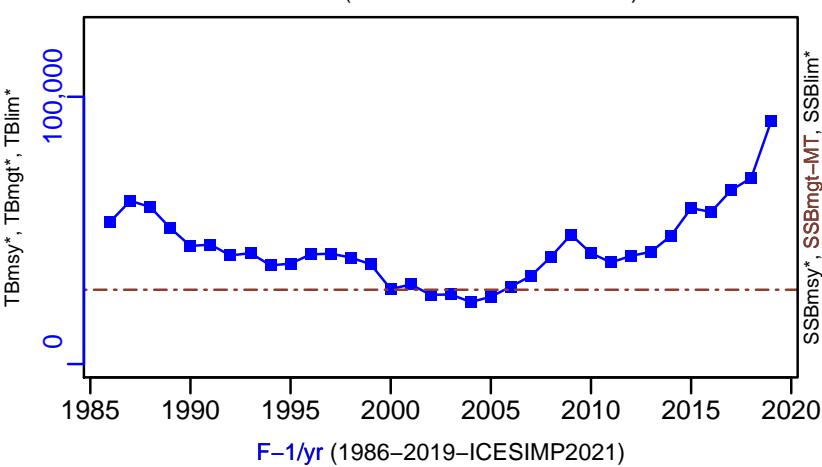
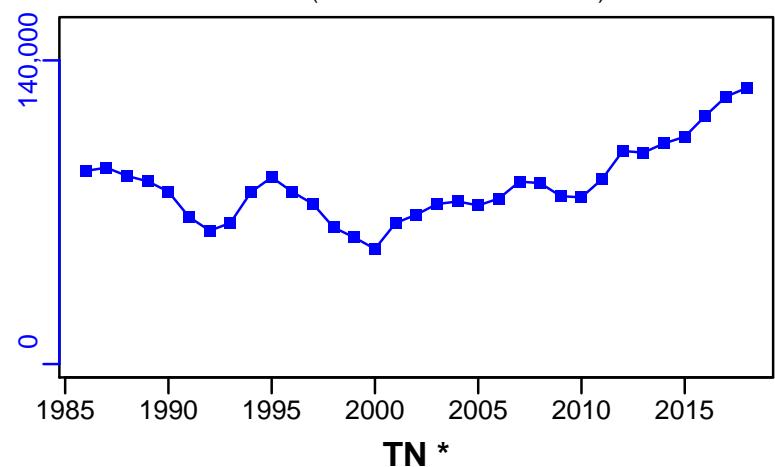


|              |            |   |         |
|--------------|------------|---|---------|
| ◆ Start Year | ◆ End Year | * | No Data |
|--------------|------------|---|---------|

### White anglerfish ICES 7–8abd [WANGLVII–VIIIabd]

**TB-MT** (1986–2019–ICESIMP2021)

**SSB-MT** (1986–2019–ICESIMP2021)

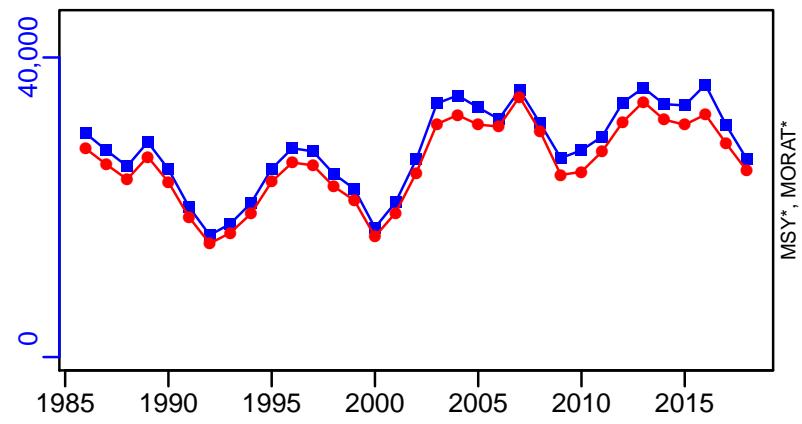


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

White anglerfish ICES 7–8abd [WANGLVII–VIIIabd]

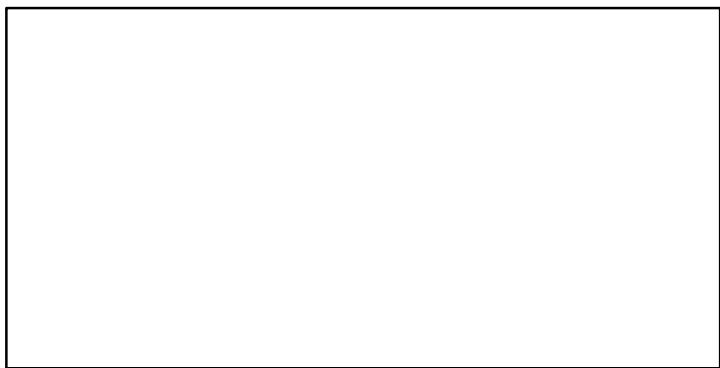
TC–MT, TL–MT, RecC\* (1986–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*

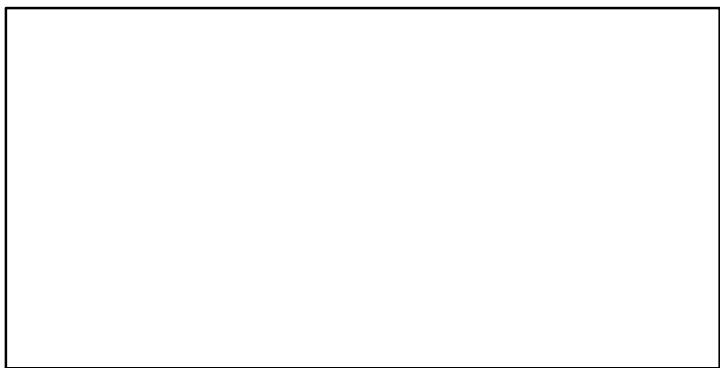


MSY\*, MORAT\*

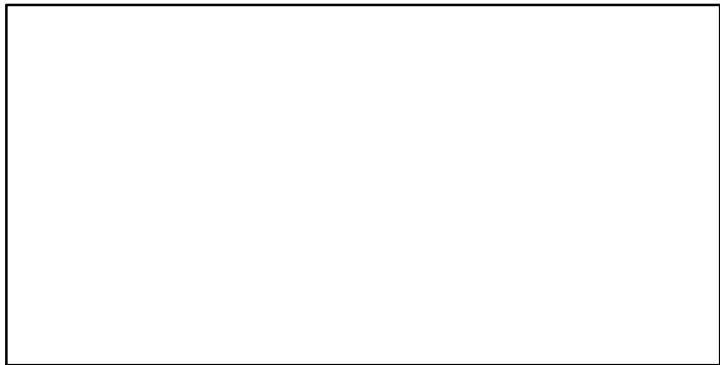
survB\*



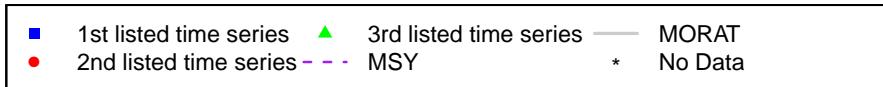
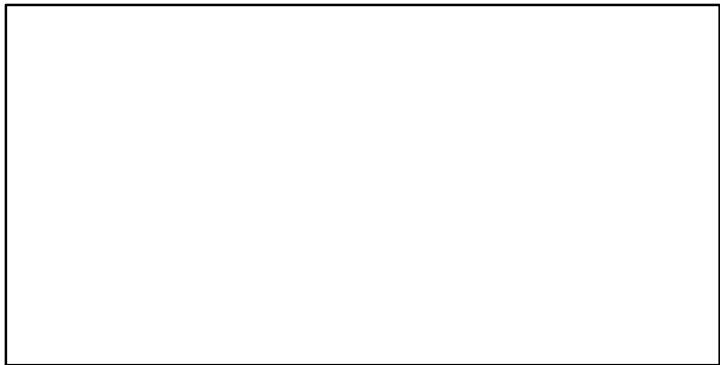
CPUE\*



EFFORT\*



CdivMSY\*



## Whiting Kattegat and Skagerrak [WHITIIIa]

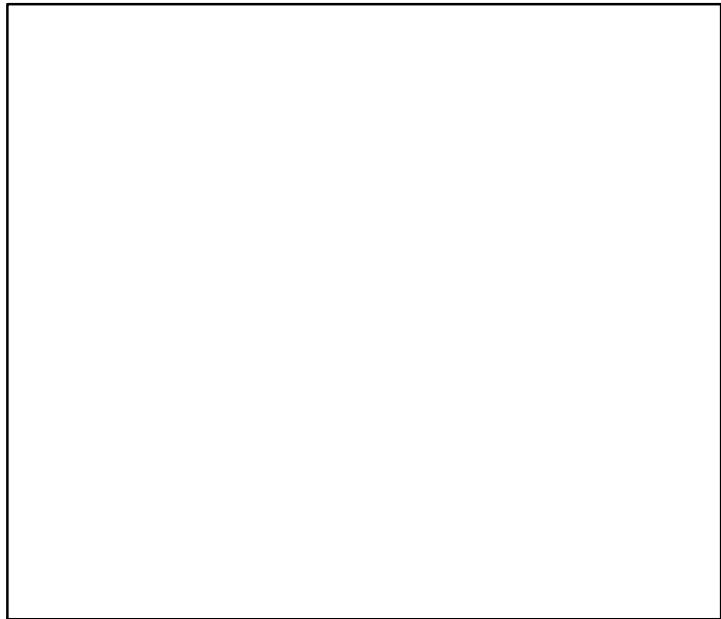
| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Merlangius merlangus  |
| <b>Current Assess ID</b>    | WGNSSK-WHITIIIa-1975-2018-ICESIMP2021   |
| <b>Area</b>                 | Kattegat and Skagerrak  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2014, 2016, 2018  |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

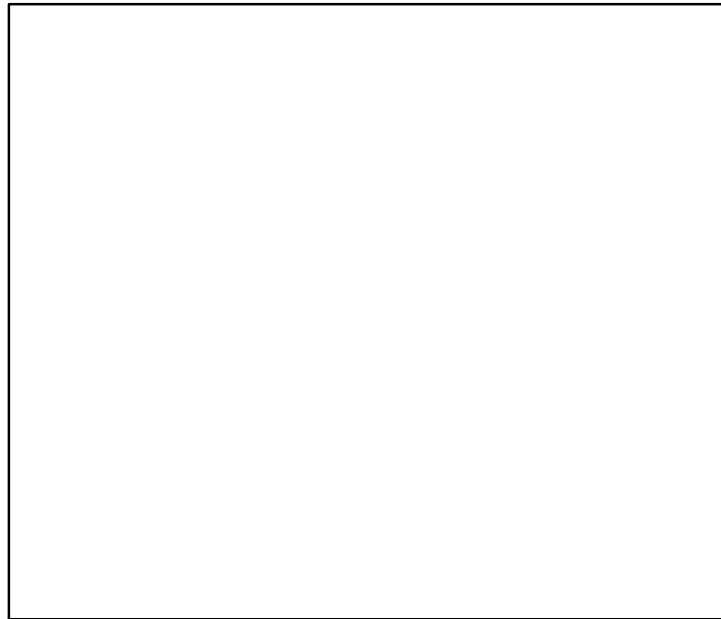
| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | TC-MT | 2018      | 1743       |     |     |
| <b>TL</b>          | TL-MT | 2018      | 372        |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

**Whiting Kattegat and Skagerrak [WHITIIa]**

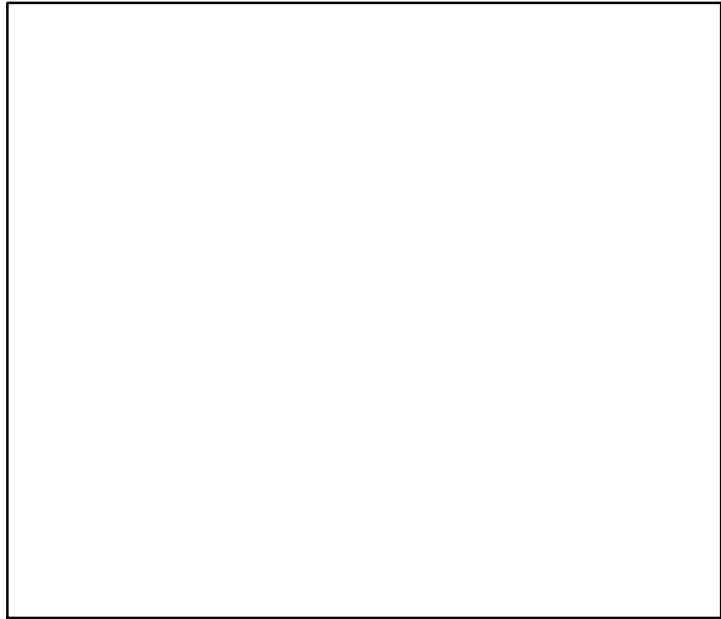
**Kobe MSY\***



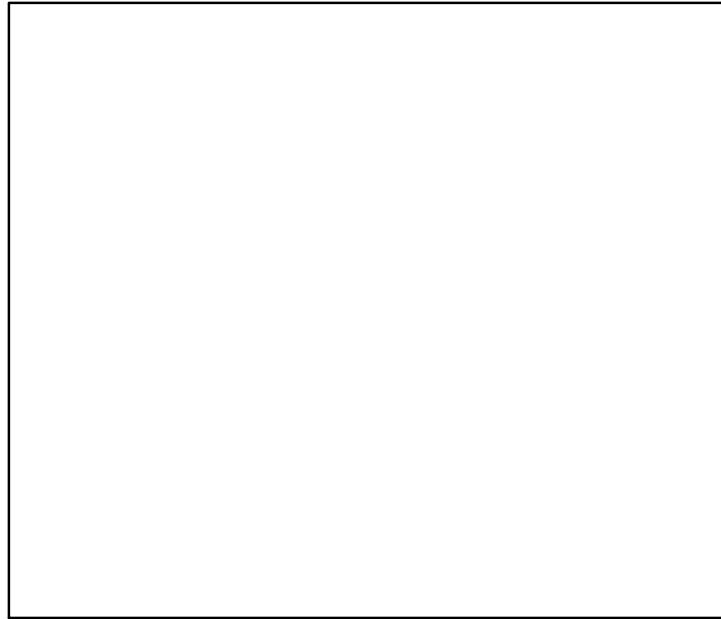
**Kobe MGT\***



**Spawner Recruit\***



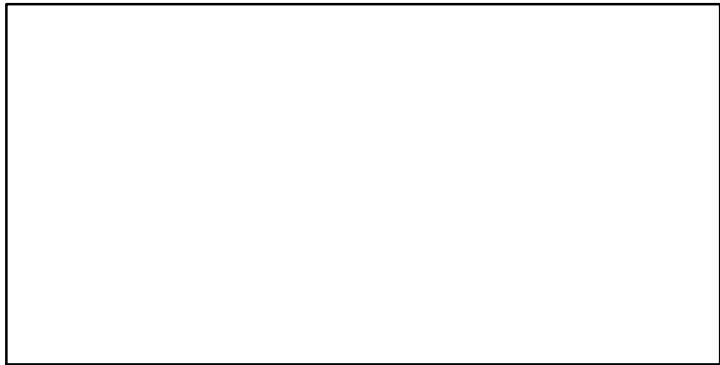
**Production\***



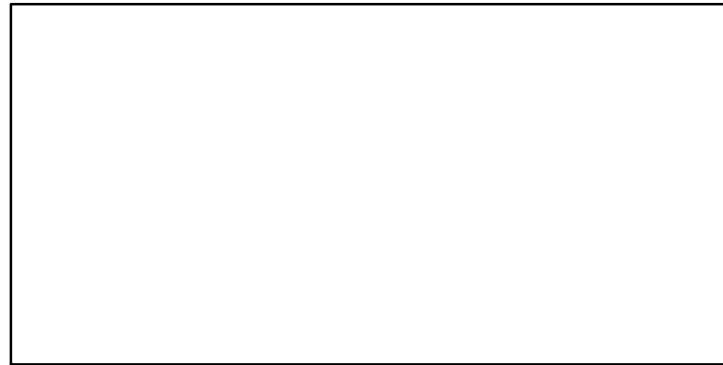
◆ Start Year ♦ End Year \* No Data

**Whiting Kattegat and Skagerrak [WHITIIa]**

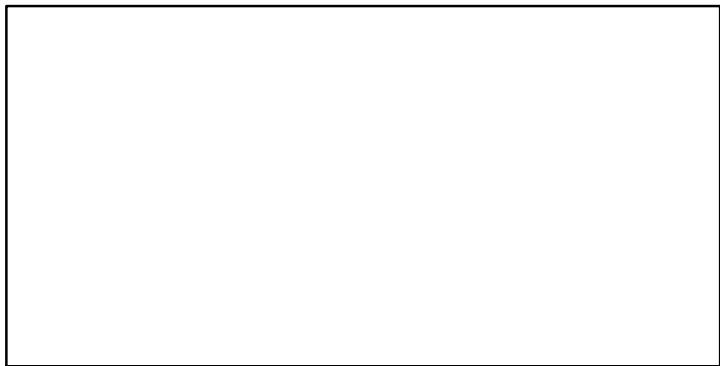
**TB\***



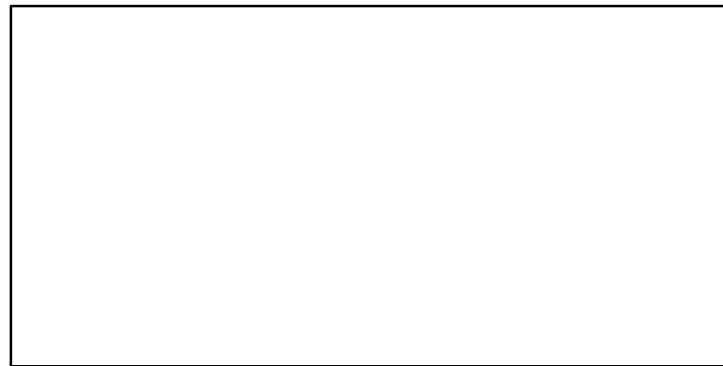
**SSB\***



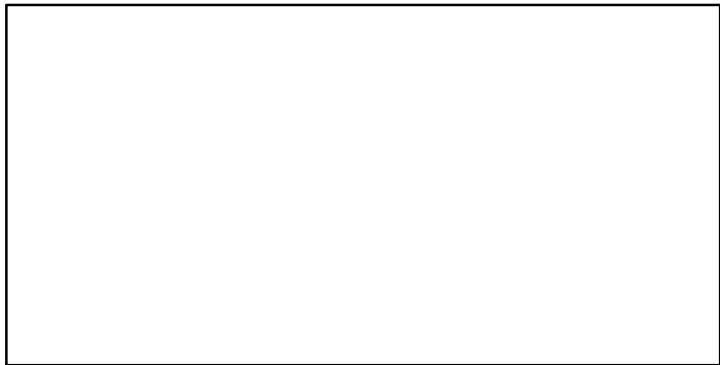
**TN \***



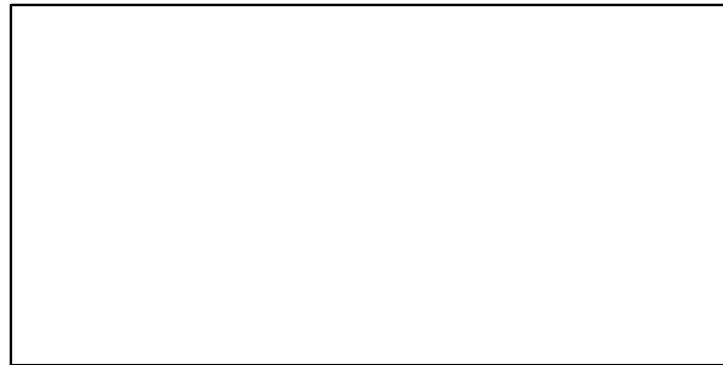
**F\***



**ER\***



**Recruits\***

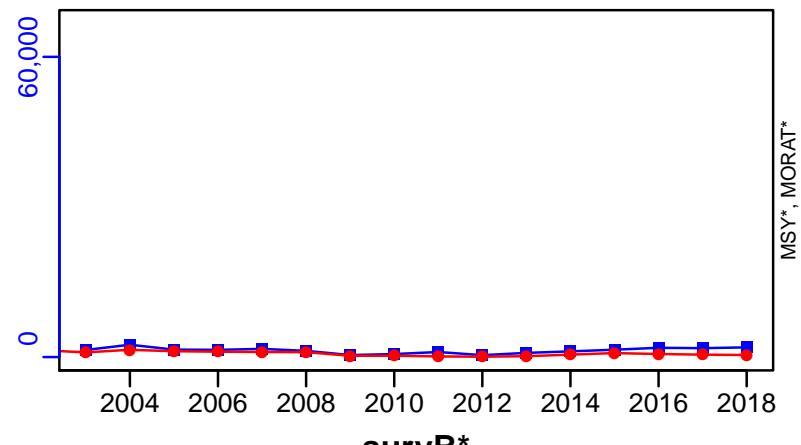


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

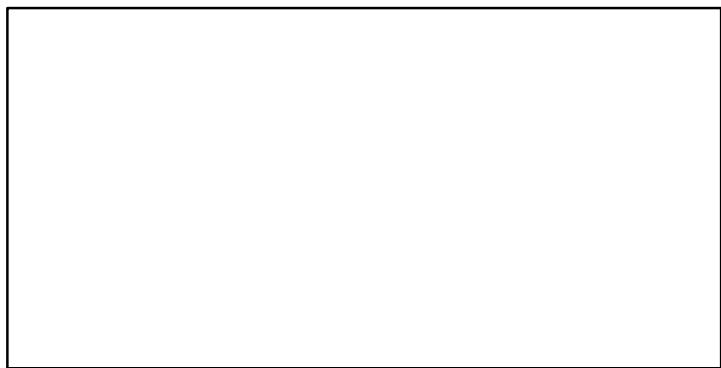
Whiting Kattegat and Skagerrak [WHITIIia]

TC-MT, TL-MT, RecC\* (1975–2018–ICESIMP2021)

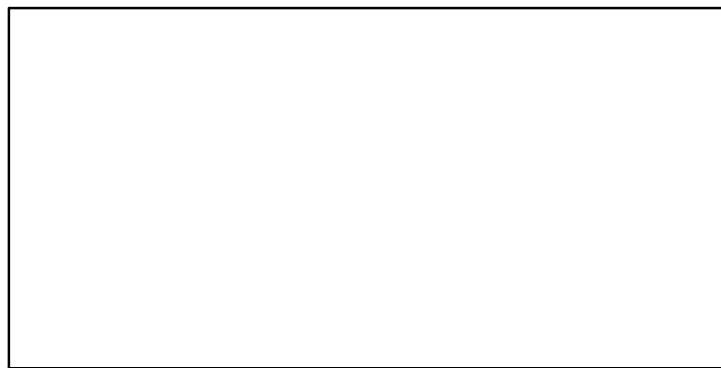
TAC\*, Cpair\*, Cadv\*



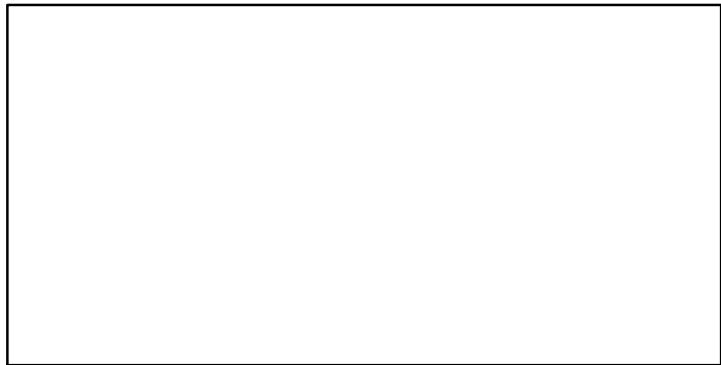
survB\*



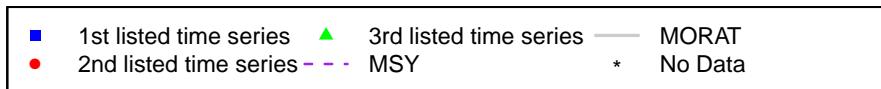
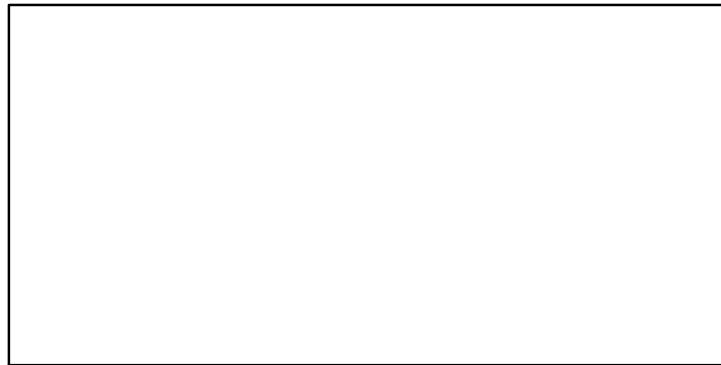
CPUE\*



EFFORT\*



CdivMSY\*



## Whiting ICES 4-7d [WHITNS-VIId]

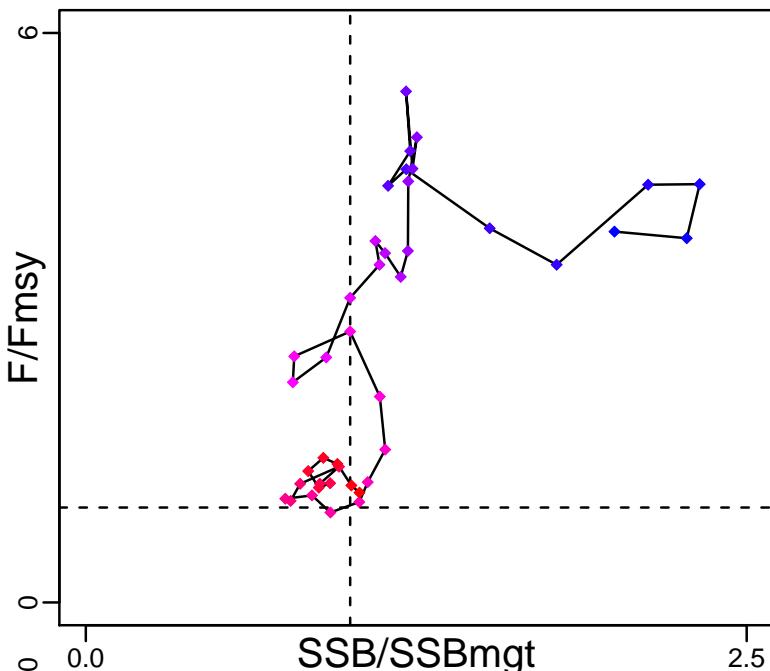
| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Merlangius merlangus  |
| <b>Current Assess ID</b>    | WGNSSK-WHITNS-VIId-1978-2019-ICESIMP2021  |
| <b>Area</b>                 | ICES 4-7d   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2018, 2019, 2012, 2013, 2014, 2015, 2016, 2017                                    |

| <b>Reference Points</b> |           |           |         |
|-------------------------|-----------|-----------|---------|
| Type                    | ID        | Asmt Year | Value   |
| <b>TBmsy</b>            | -         | -         | -       |
| <b>SSBmsy</b>           | -         | -         | -       |
| <b>Fmsy</b>             | Fmsy-1/yr | 2019      | 0.172   |
| <b>ERmsy</b>            | -         | -         | -       |
| <b>TBmgt</b>            | -         | -         | -       |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019      | 166,708 |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019      | 0.172   |
| <b>ERmgt</b>            | -         | -         | -       |
| <b>TB0</b>              | -         | -         | -       |
| <b>SSB0</b>             | -         | -         | -       |
| <b>MSY</b>              | -         | -         | -       |
| <b>M</b>                | -         | -         | -       |
| <b>TBlim</b>            | -         | -         | -       |
| <b>SSBlim</b>           | SSBlim-MT | 2018      | 119,970 |
| <b>Flim</b>             | Flim-1/yr | 2018      | 0.458   |
| <b>ERlim</b>            | -         | -         | -       |

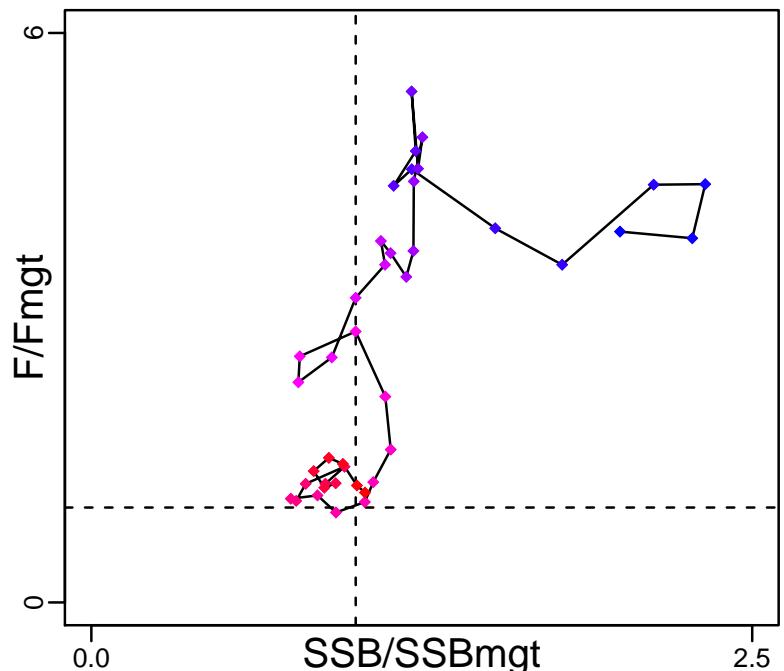
| <b>Time Series</b> |                  |           |                |     |        |
|--------------------|------------------|-----------|----------------|-----|--------|
| Type               | ID               | Asmt Year | Curr Value     | Sex | Age    |
| <b>TB</b>          | TB-MT            | 2019      | 293,190        | -   | -      |
| <b>SSB</b>         | SSB-MT           | 2019      | 163,406        | -   | -      |
| <b>TN</b>          | -                | -         | -              | -   | -      |
| <b>R</b>           | R-E00            | 2019      | 11,883,334,000 | -   | 0      |
| <b>F</b>           | F-1/yr           | 2019      | 0.199          | -   | 2 to 6 |
| <b>ER</b>          | ER-calc-ratio    | 2019      | 0.096          | -   | -      |
| <b>TC</b>          | TC-MT            | 2019      | 28,083         |     |        |
| <b>TL</b>          | TL-MT            | 2019      | 16,444         |     |        |
| <b>TB/TBmsy</b>    | -                | -         | -              |     |        |
| <b>SSB/SSBmsy</b>  | -                | -         | -              |     |        |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2019      | 1.157          |     |        |
| <b>ER/ERmsy</b>    | -                | -         | -              |     |        |
| <b>TB/TBmgt</b>    | -                | -         | -              |     |        |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019      | 0.98           |     |        |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019      | 1.157          |     |        |
| <b>ER/ERmgt</b>    | -                | -         | -              |     |        |

Whiting ICES 4-7d [WHITNS-VIId]

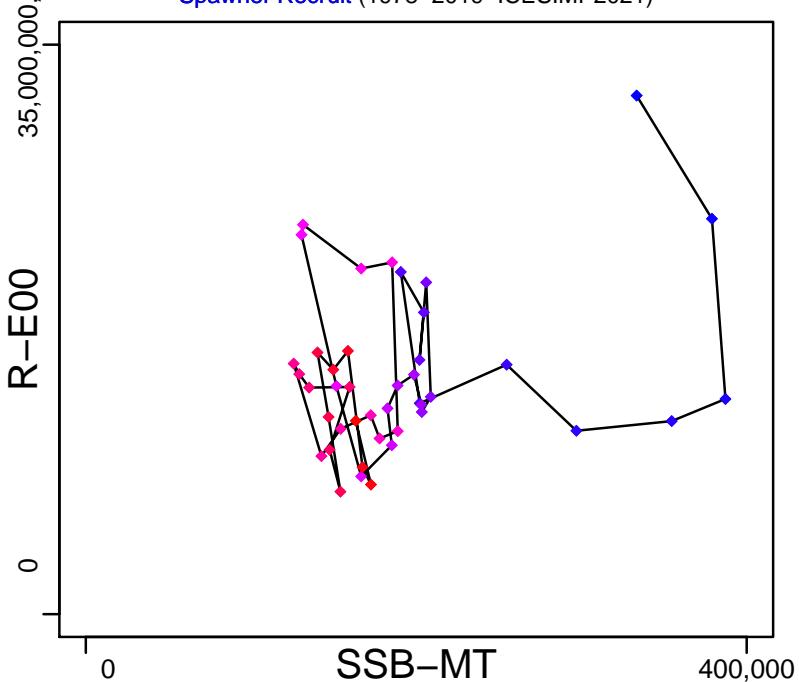
Kobe MSYpref (1978–2019–ICESIMP2021)



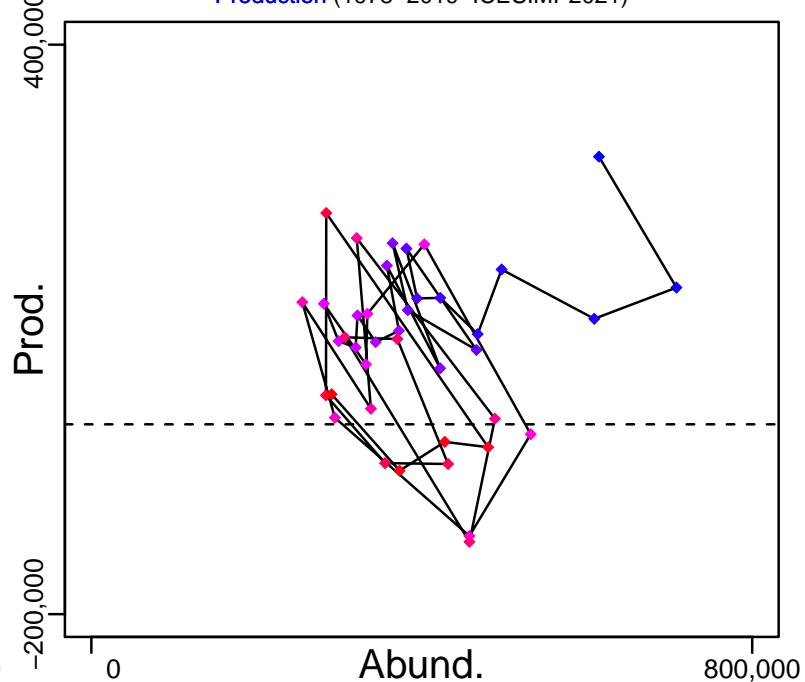
Kobe MGTpref (1978–2019–ICESIMP2021)



Spawner Recruit (1978–2019–ICESIMP2021)



Production (1978–2019–ICESIMP2021)

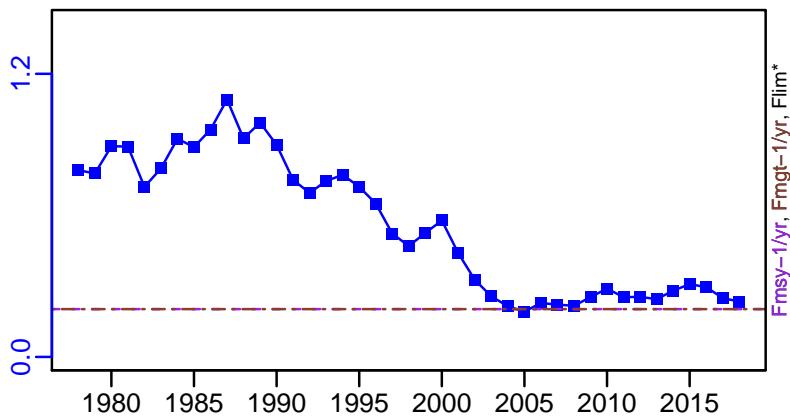
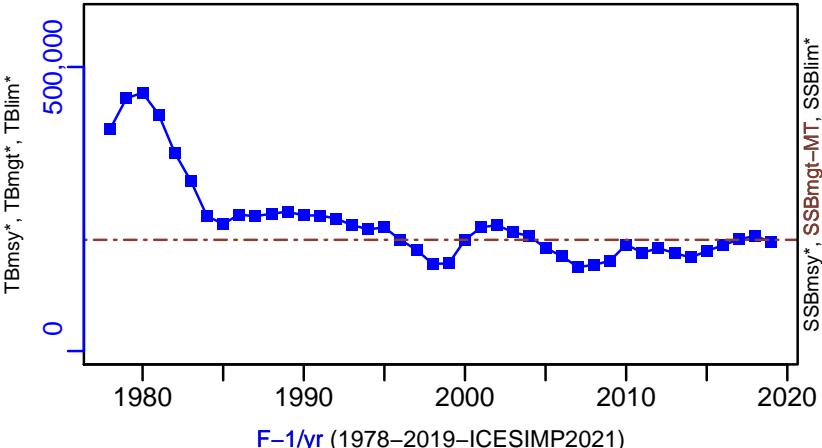
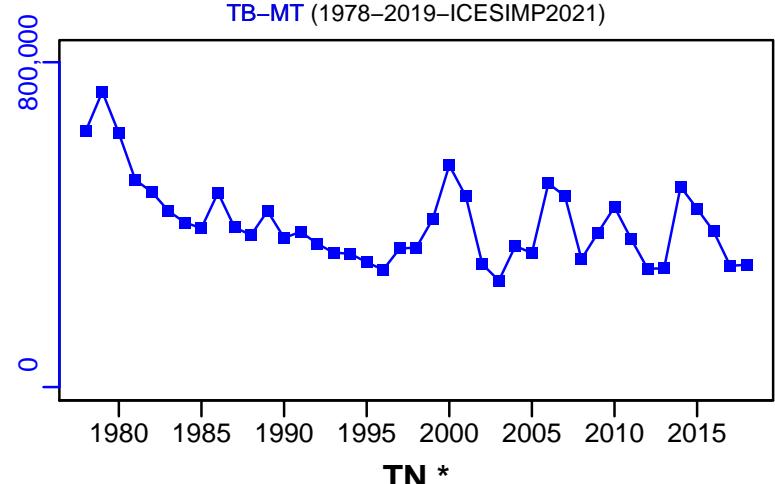


◆ Start Year   ◆ End Year   \* No Data

### Whiting ICES 4-7d [WHITNS-VIId]

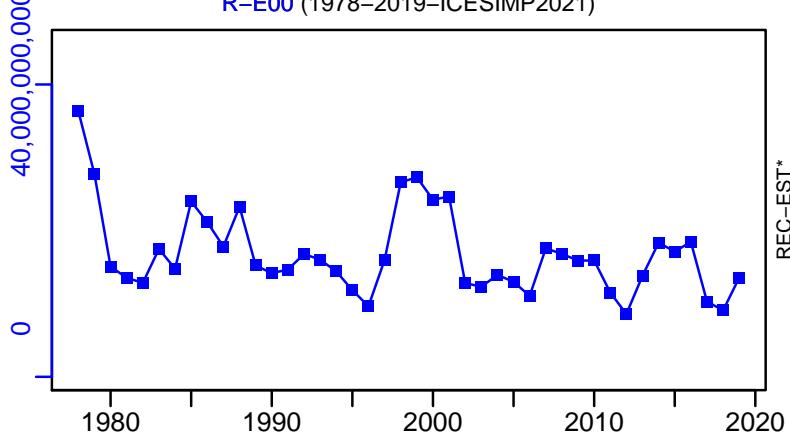
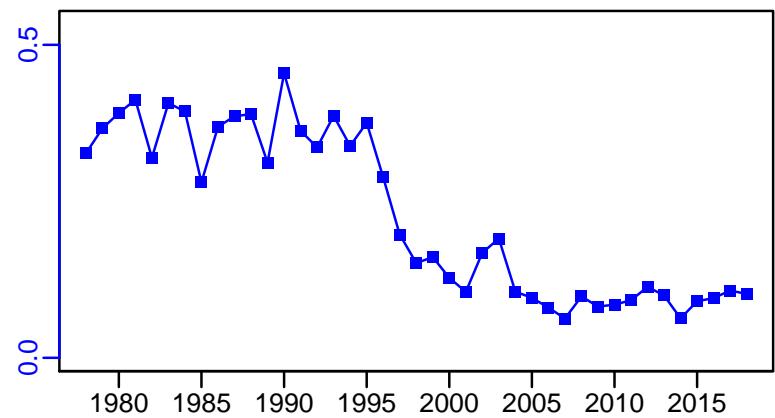
TB-MT (1978–2019–ICESIMP2021)

SSB-MT (1978–2019–ICESIMP2021)



ER-calc-ratio (1978–2019–ICESIMP2021)

R-E00 (1978–2019–ICESIMP2021)

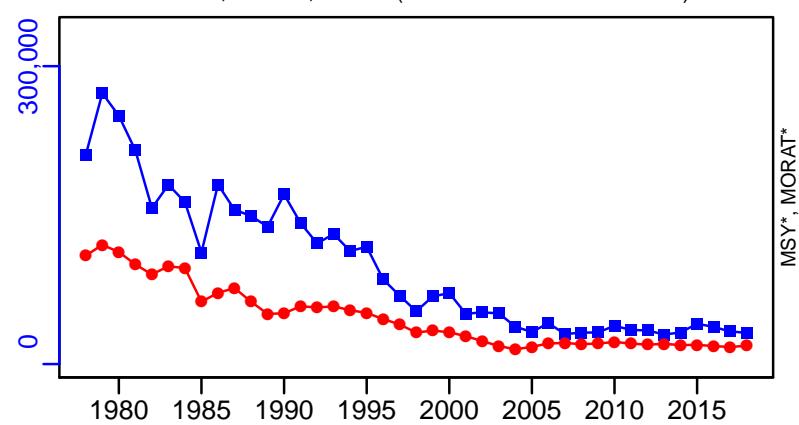


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - - MSY-based BRP  | --- Lim BRP  | * No Data |

Whiting ICES 4–7d [WHITNS–VIIId]

TC–MT, TL–MT, RecC\* (1978–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



survB\*

CPUE\*

EFFORT\*

CdivMSY\*

- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Whiting West of Scotland [WHITVla]

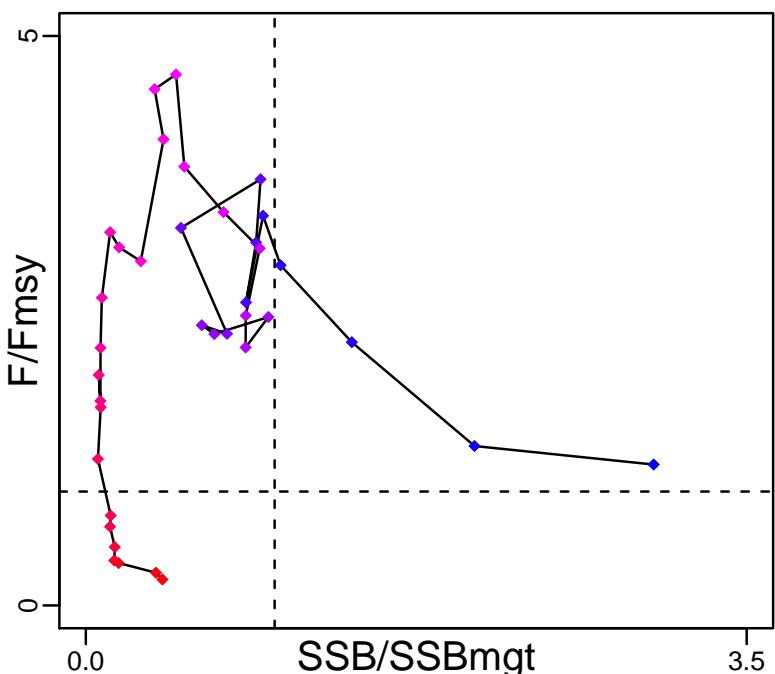
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Merlangius merlangus                                 |
| <b>Current Assess ID</b>    | WGCSE-WHITVla-1980-2018-ICESIMP2021                  |
| <b>Area</b>                 | West of Scotland                                     |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2013, 2014, 2015, 2016, 2017, 2018, 2012             |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2018             | 0.18         |
| <b>ERmsy</b>            | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2018             | 44,600       |
| <b>Fmgt</b>             | Fmgt-1/yr | 2018             | 0.18         |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | -         | -                | -            |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | SSBlim-MT | 2017             | 31,880       |
| <b>Flim</b>             | Flim-1/yr | 2017             | 0.27         |
| <b>ERlim</b>            | -         | -                | -            |

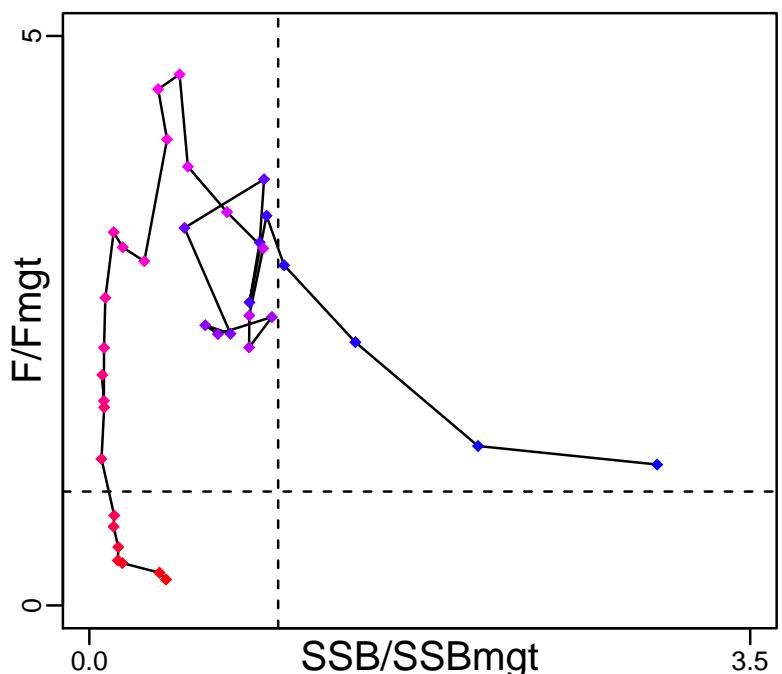
| <b>Time Series</b> |                  |                  |                   |            |            |  |
|--------------------|------------------|------------------|-------------------|------------|------------|--|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |  |
| <b>TB</b>          | TB-MT            | 2018             | 31,460            | -          | -          |  |
| <b>SSB</b>         | SSB-MT           | 2018             | 23,143            | -          | -          |  |
| <b>TN</b>          | -                | -                | -                 | -          | -          |  |
| <b>R</b>           | R-E00            | 2018             | 117,219,140       | -          | 1          |  |
| <b>F</b>           | F-1/yr           | 2018             | 0.041             | -          | 2 to 4     |  |
| <b>ER</b>          | ER-calc-ratio    | 2018             | 0.054             | -          | -          |  |
| <b>TC</b>          | TC-MT            | 2018             | 1383              |            |            |  |
| <b>TL</b>          | TL-MT            | 2018             | 176               |            |            |  |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |  |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2018             | 0.228             |            |            |  |
| <b>ER/ERmsy</b>    | -                | -                | -                 |            |            |  |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |  |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2018             | 0.519             |            |            |  |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2018             | 0.228             |            |            |  |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |  |

**Whiting West of Scotland [WHITVla]**

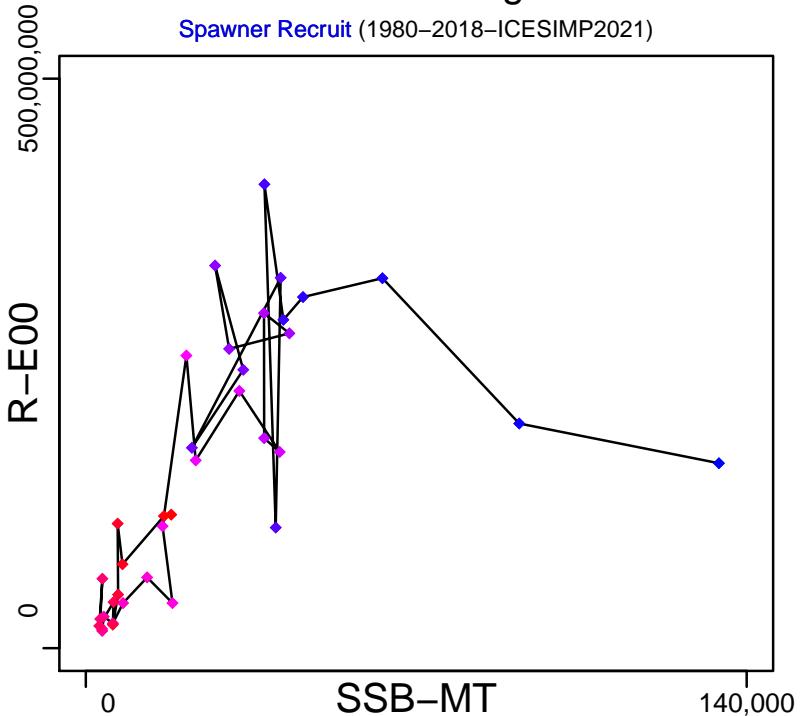
Kobe MSYpref (1980–2018–ICESIMP2021)



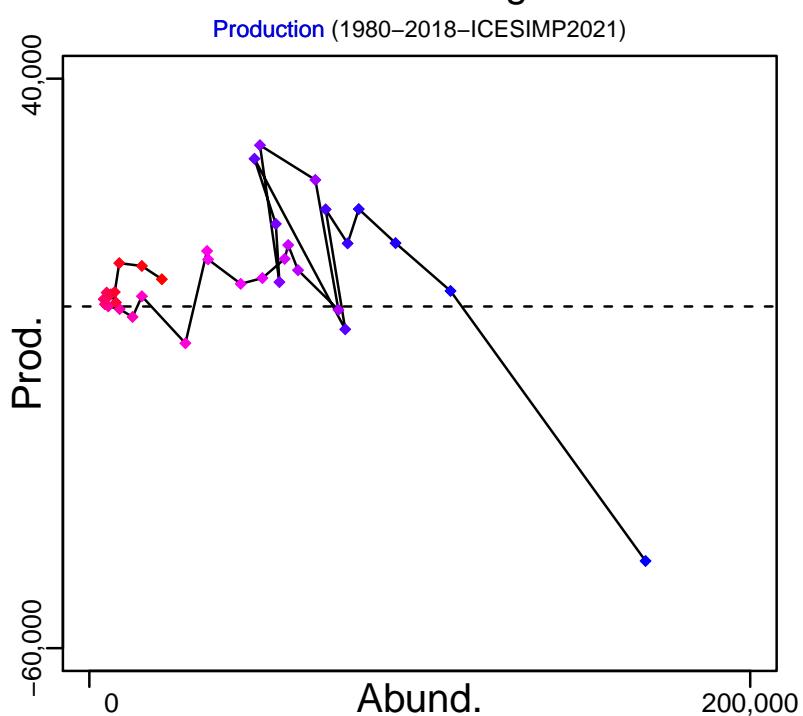
Kobe MGTpref (1980–2018–ICESIMP2021)



Spawner Recruit (1980–2018–ICESIMP2021)



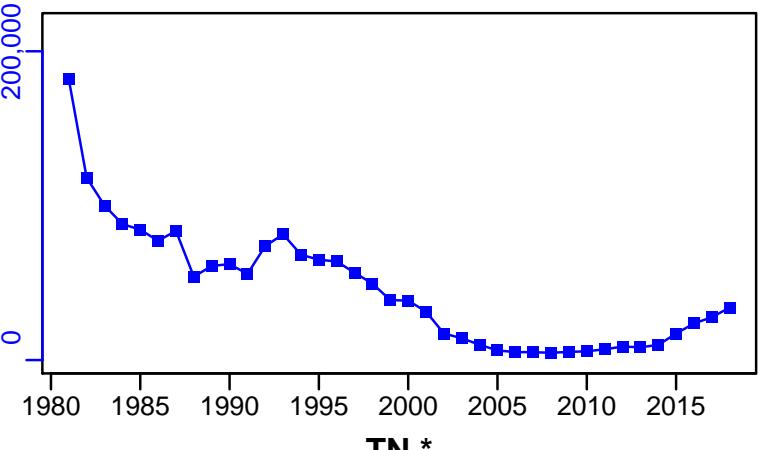
Production (1980–2018–ICESIMP2021)



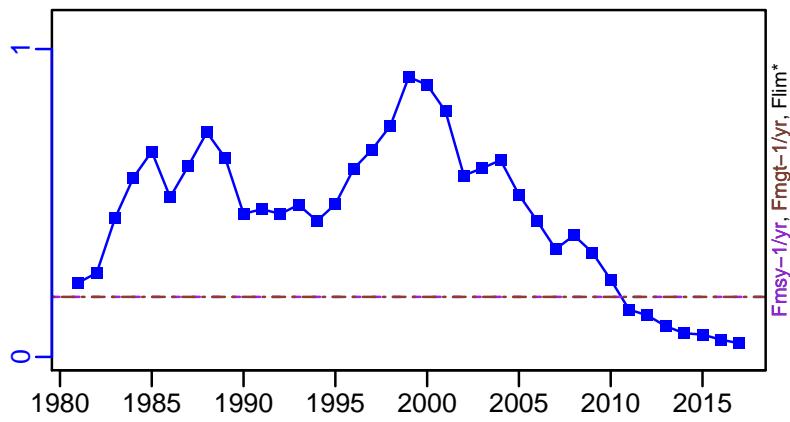
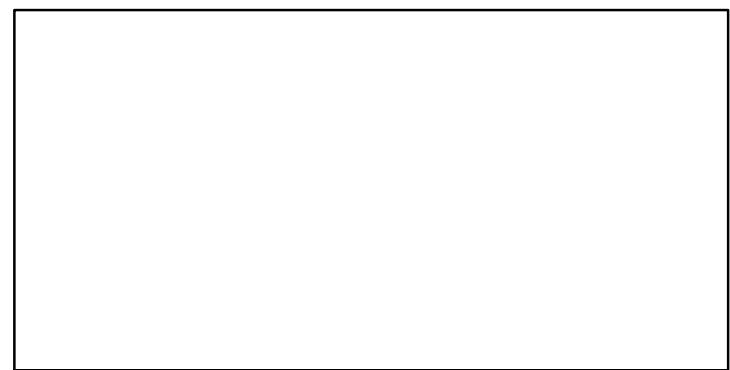
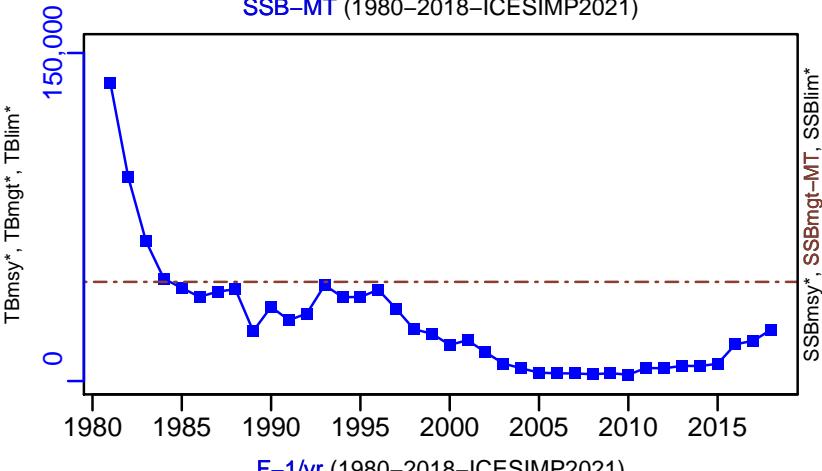
◆ Start Year   ◆ End Year   \* No Data

### Whiting West of Scotland [WHITVla]

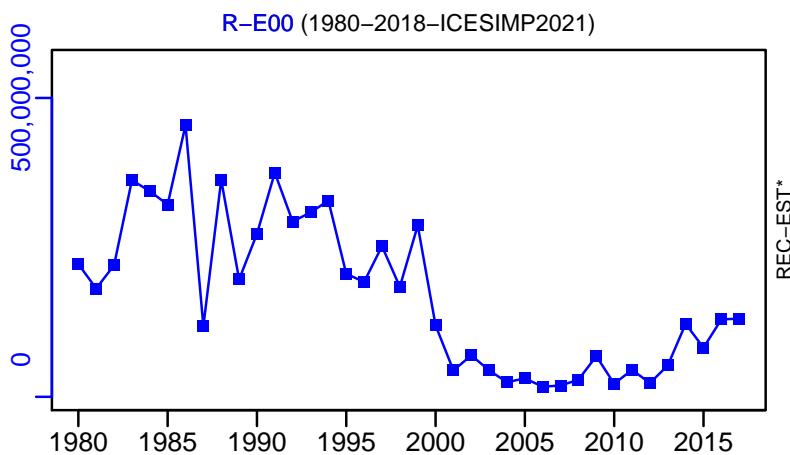
TB-MT (1980–2018–ICESIMP2021)



SSB-MT (1980–2018–ICESIMP2021)



ER-calc-ratio (1980–2018–ICESIMP2021)

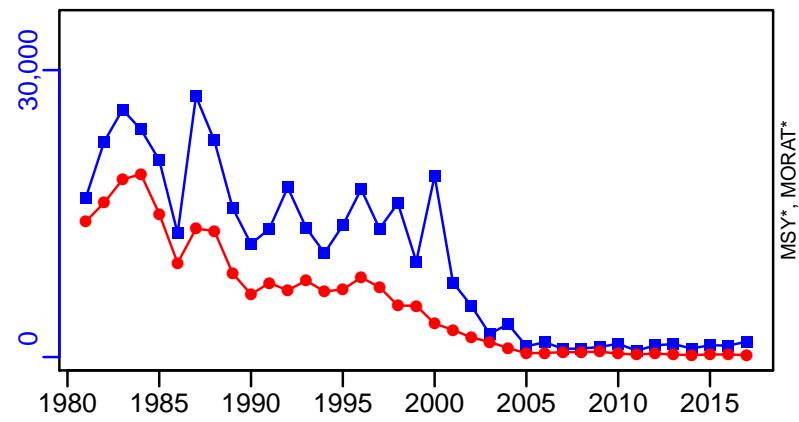


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| - - - MSY-based BRP  | --- Lim BRP  | * No Data |

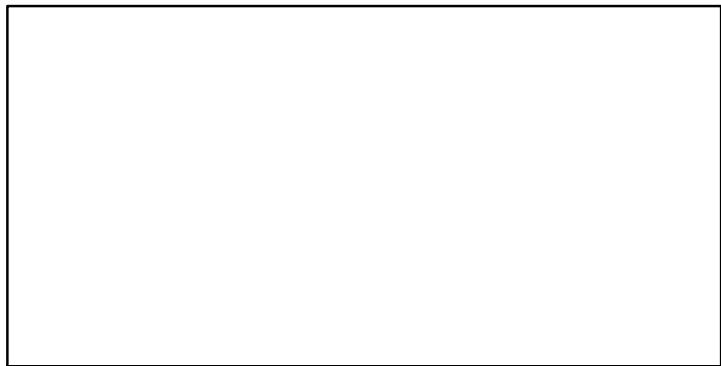
**Whiting West of Scotland [WHITVla]**

TC-MT, TL-MT, RecC\* (1980–2018–ICESIMP2021)

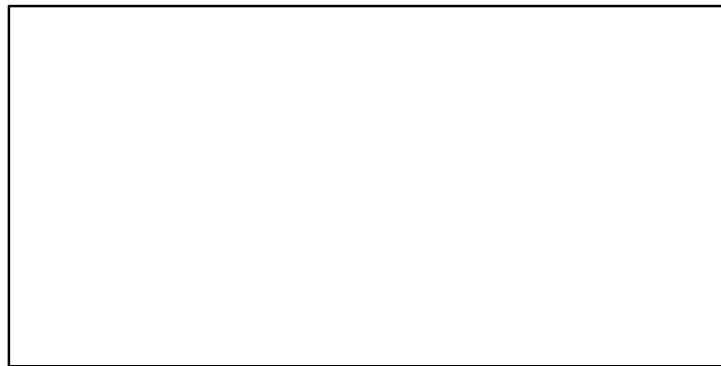
TAC\*, Cpair\*, Cadv\*



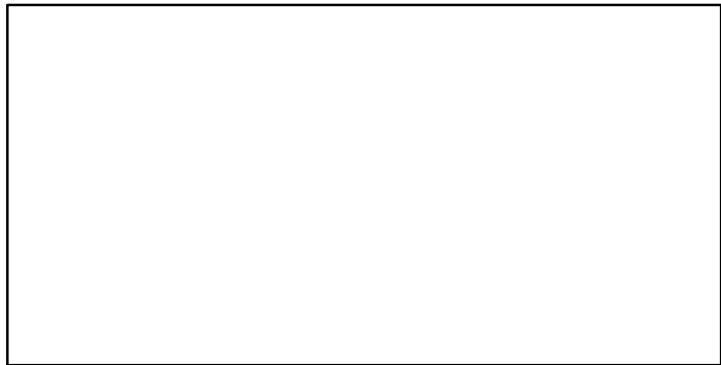
**survB\***



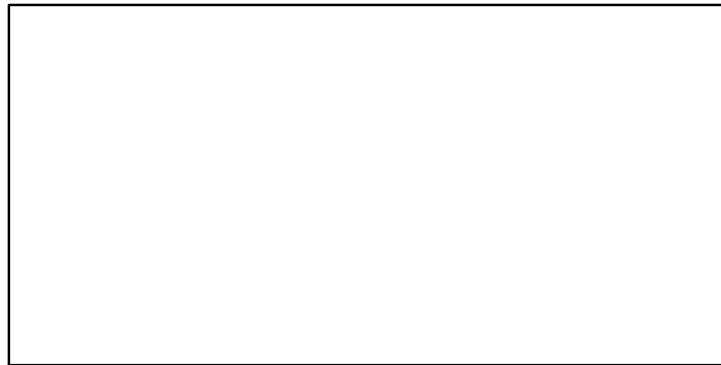
**CPUE\***



**EFFORT\***



**CdivMSY\***



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Whiting Rockall Bank [WHITVIb]

| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Merlangius merlangus                                 |
| <b>Current Assess ID</b>    | WGCSE-WHITVIb-1961-2017-ICESIMP2021                  |
| <b>Area</b>                 | Rockall Bank   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2014, 2017   |

| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |       |           |            |     |     |
|--------------------|-------|-----------|------------|-----|-----|
| Type               | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>          | -     | -         | -          | -   | -   |
| <b>SSB</b>         | -     | -         | -          | -   | -   |
| <b>TN</b>          | -     | -         | -          | -   | -   |
| <b>R</b>           | -     | -         | -          | -   | -   |
| <b>F</b>           | -     | -         | -          | -   | -   |
| <b>ER</b>          | -     | -         | -          | -   | -   |
| <b>TC</b>          | -     | -         | -          |     |     |
| <b>TL</b>          | TL-MT | 2017      | 40         |     |     |
| <b>TB/TBmsy</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b>  | -     | -         | -          |     |     |
| <b>F/Fmsy</b>      | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>    | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>    | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b>  | -     | -         | -          |     |     |
| <b>F/Fmgt</b>      | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>    | -     | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

**Spawner Recruit\***

**Production\***

◆ Start Year ♦ End Year \* No Data

**Whiting Rockall Bank [WHITVlb]**

**TB\***



**SSB\***



**TN \***



**F\***



**ER\***



**Recruits\***

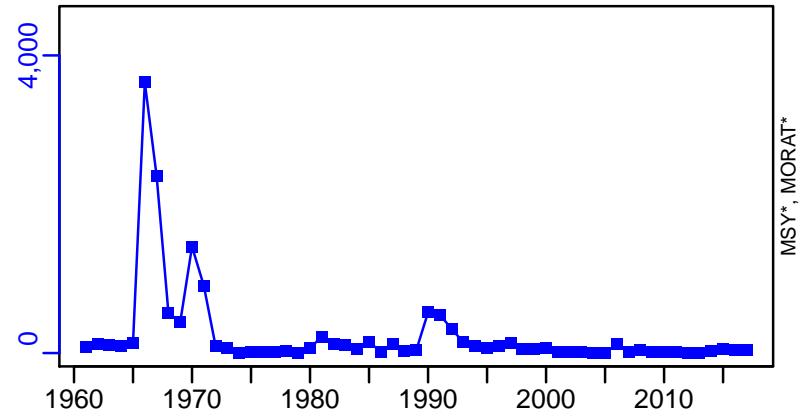


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

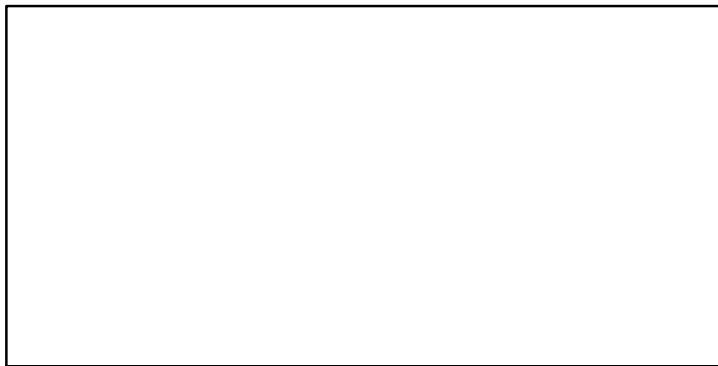
Whiting Rockall Bank [WHITVlb]

TL-MT, TC\*, RecC\* (1961–2017–ICESIMP2021)

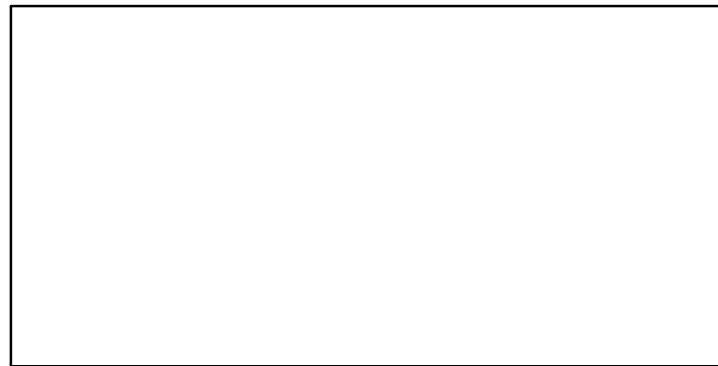
TAC\*, Cpair\*, Cadv\*



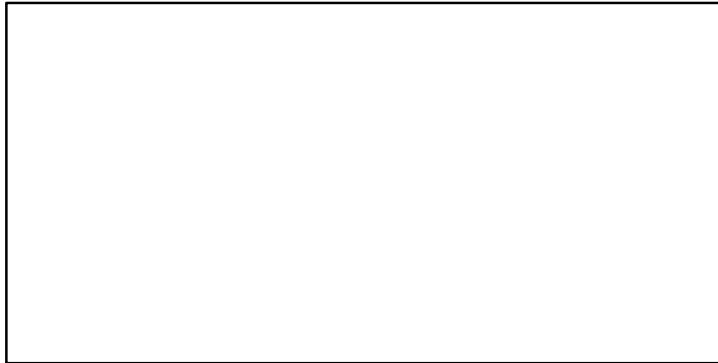
**survB\***



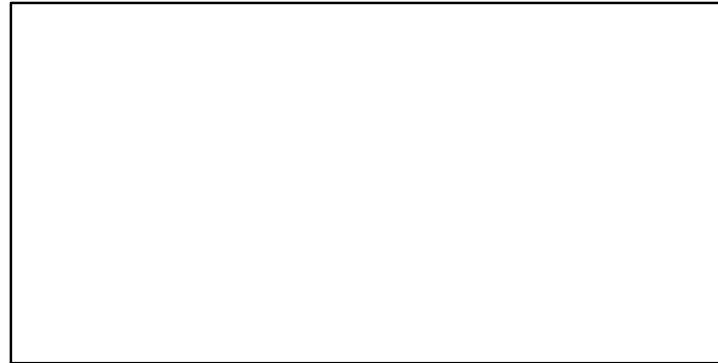
**CPUE\***



**EFFORT\***



**CdivMSY\***



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Whiting Irish Sea [WHITVIIa]

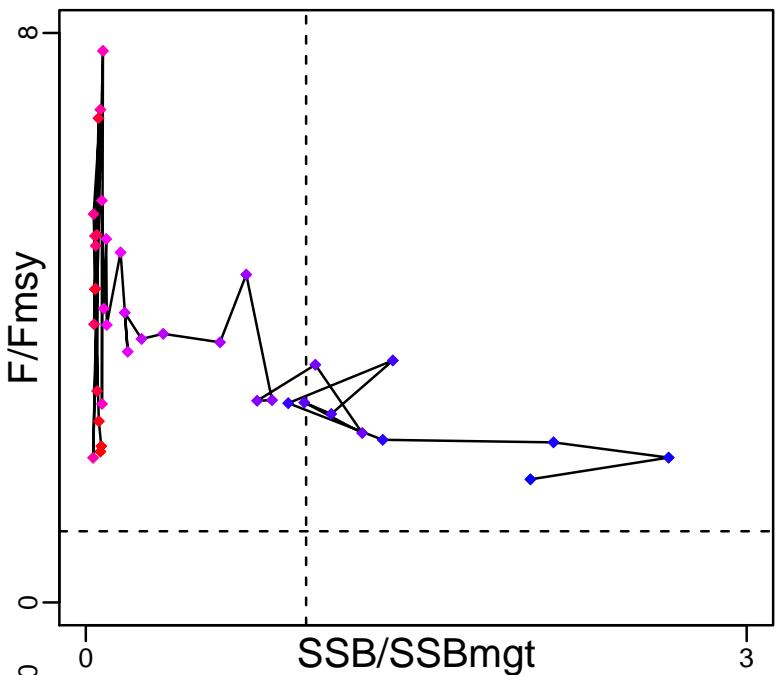
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Merlangius merlangus                                 |
| <b>Current Assess ID</b>    | WGCSE-WHITVIIa-1980-2019-ICESIMP2021                 |
| <b>Area</b>                 | Irish Sea  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2016, 2017, 2019                                     |

| <b>Reference Points</b> |           |           |        |
|-------------------------|-----------|-----------|--------|
| Type                    | ID        | Asmt Year | Value  |
| <b>TBmsy</b>            | -         | -         | -      |
| <b>SSBmsy</b>           | -         | -         | -      |
| <b>Fmsy</b>             | Fmsy-1/yr | 2019      | 0.219  |
| <b>ERmsy</b>            | -         | -         | -      |
| <b>TBmgt</b>            | -         | -         | -      |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019      | 16,300 |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019      | 0.219  |
| <b>ERmgt</b>            | -         | -         | -      |
| <b>TB0</b>              | -         | -         | -      |
| <b>SSB0</b>             | -         | -         | -      |
| <b>MSY</b>              | -         | -         | -      |
| <b>M</b>                | -         | -         | -      |
| <b>TBlim</b>            | -         | -         | -      |
| <b>SSBlim</b>           | SSBlim-MT | 2017      | 10,000 |
| <b>Flim</b>             | Flim-1/yr | 2017      | 0.371  |
| <b>ERlim</b>            | -         | -         | -      |

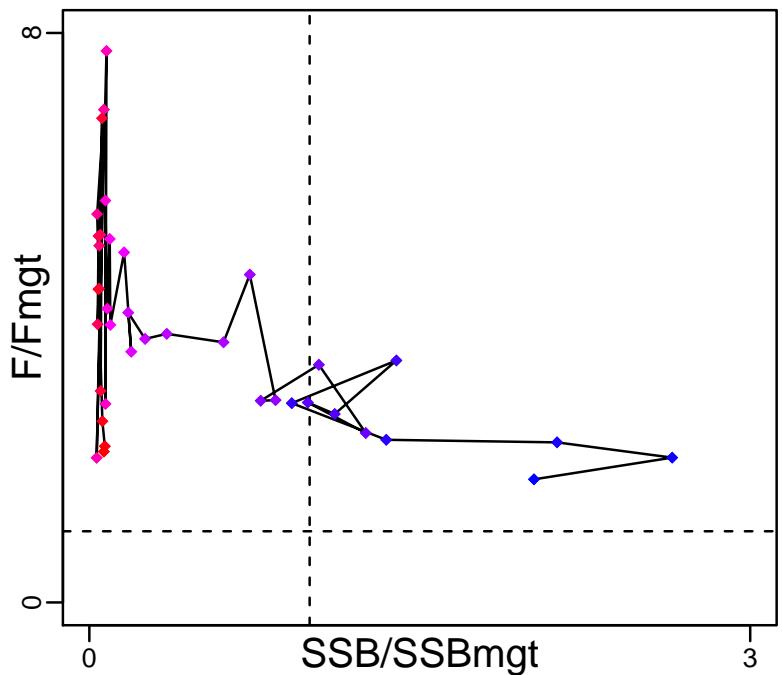
| <b>Time Series</b> |                  |           |             |     |        |  |
|--------------------|------------------|-----------|-------------|-----|--------|--|
| Type               | ID               | Asmt Year | Curr Value  | Sex | Age    |  |
| <b>TB</b>          | TB-MT            | 2019      | 2175        | -   | -      |  |
| <b>SSB</b>         | SSB-MT           | 2019      | 1376        | -   | -      |  |
| <b>TN</b>          | -                | -         | -           | -   | -      |  |
| <b>R</b>           | R-E00            | 2019      | 118,853,000 | -   | 0      |  |
| <b>F</b>           | F-1/yr           | 2019      | 0.464       | -   | 1 to 3 |  |
| <b>ER</b>          | ER-calc-ratio    | 2019      | 0.413       | -   | -      |  |
| <b>TC</b>          | TC-MT            | 2019      | 899         |     |        |  |
| <b>TL</b>          | TL-MT            | 2019      | 46          |     |        |  |
| <b>TB/TBmsy</b>    | -                | -         | -           |     |        |  |
| <b>SSB/SSBmsy</b>  | -                | -         | -           |     |        |  |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2019      | 2.119       |     |        |  |
| <b>ER/ERmsy</b>    | -                | -         | -           |     |        |  |
| <b>TB/TBmgt</b>    | -                | -         | -           |     |        |  |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019      | 0.084       |     |        |  |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019      | 2.119       |     |        |  |
| <b>ER/ERmgt</b>    | -                | -         | -           |     |        |  |

**Whiting Irish Sea [WHITVIIa]**

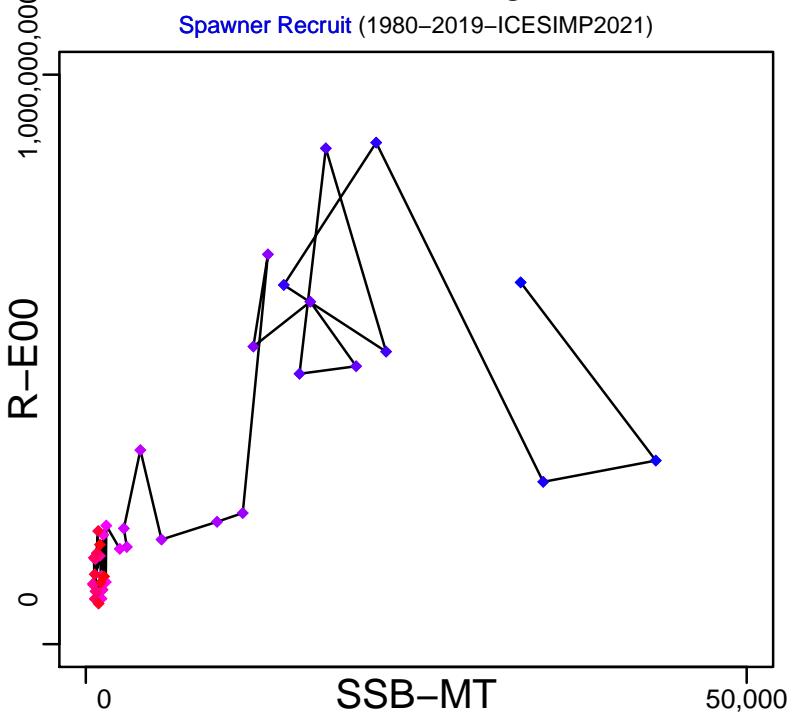
Kobe MSYpref (1980–2019–ICESIMP2021)



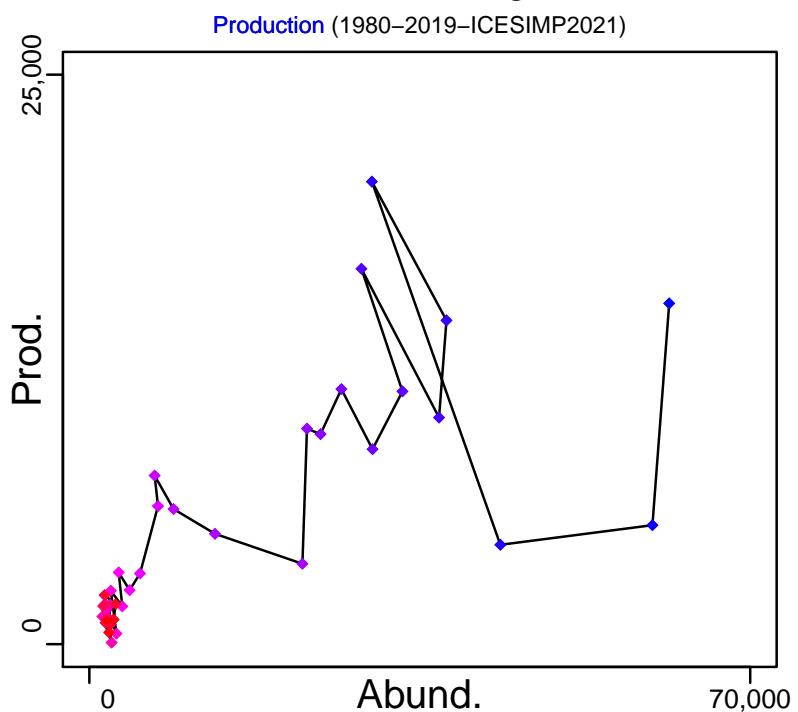
Kobe MGTpref (1980–2019–ICESIMP2021)



Spawner Recruit (1980–2019–ICESIMP2021)



Production (1980–2019–ICESIMP2021)

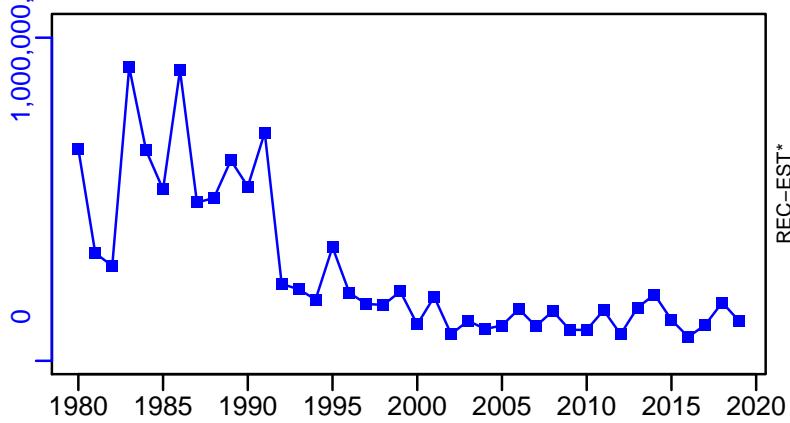
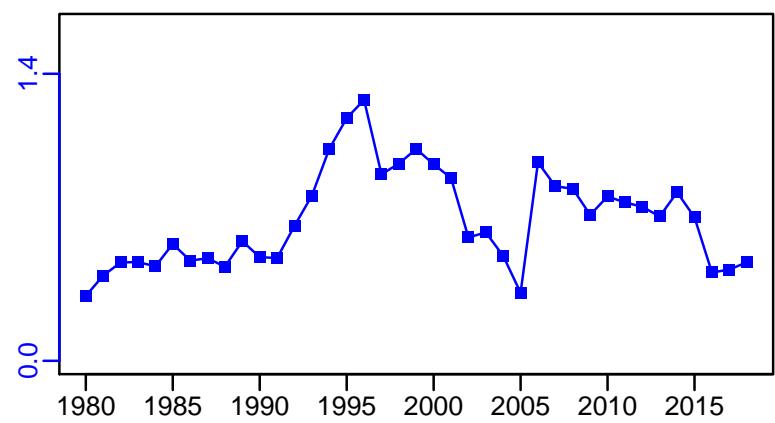
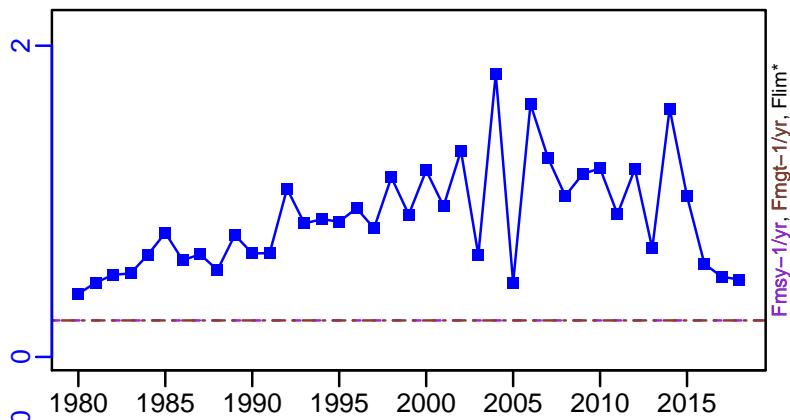
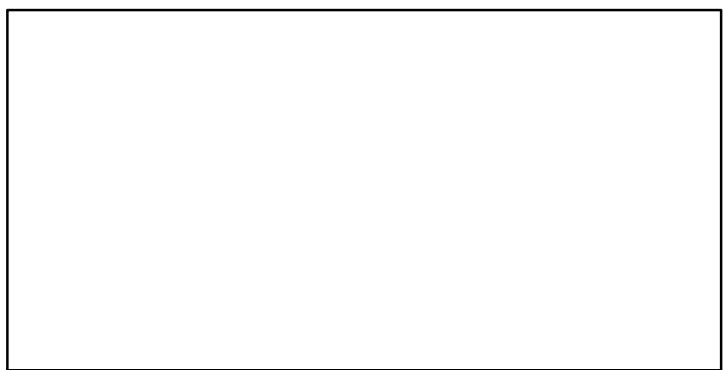
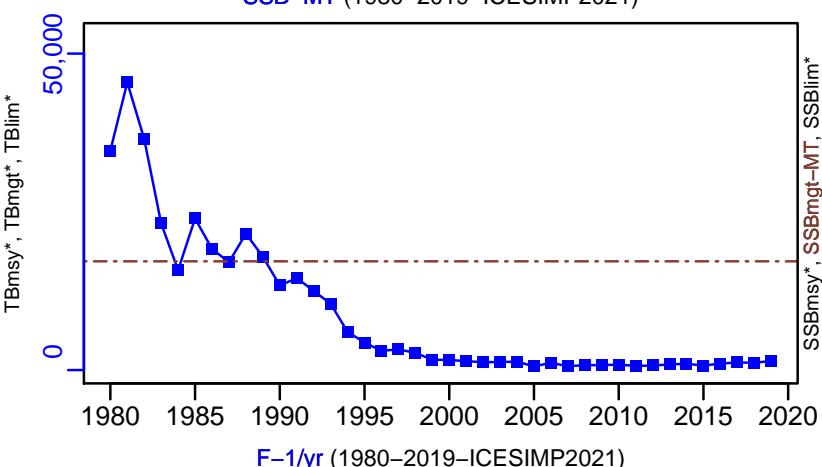
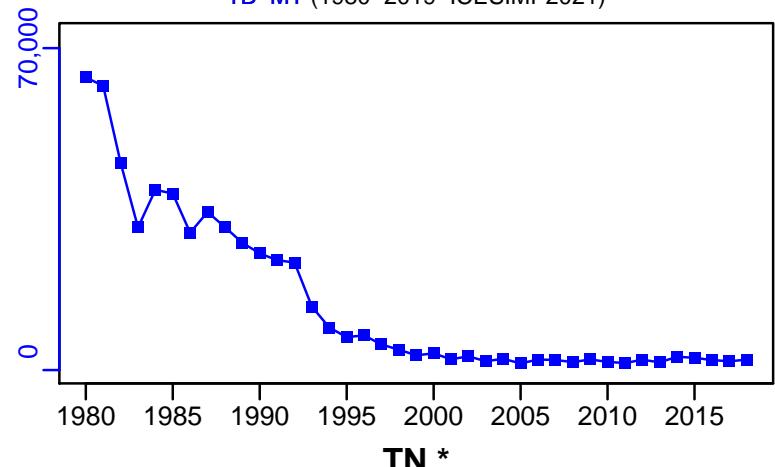


|              |            |   |         |
|--------------|------------|---|---------|
| ◆ Start Year | ◆ End Year | * | No Data |
|--------------|------------|---|---------|

### Whiting Irish Sea [WHITVIIa]

TB-MT (1980–2019–ICESIMP2021)

SSB-MT (1980–2019–ICESIMP2021)

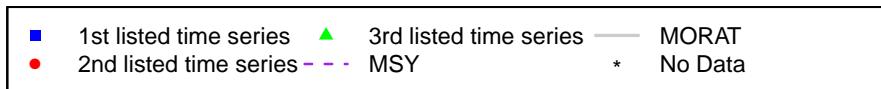
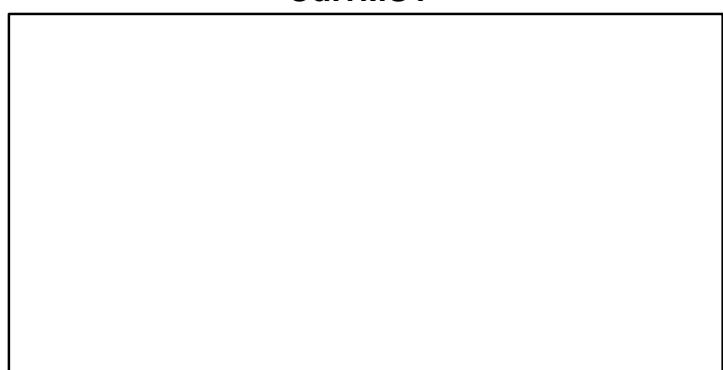
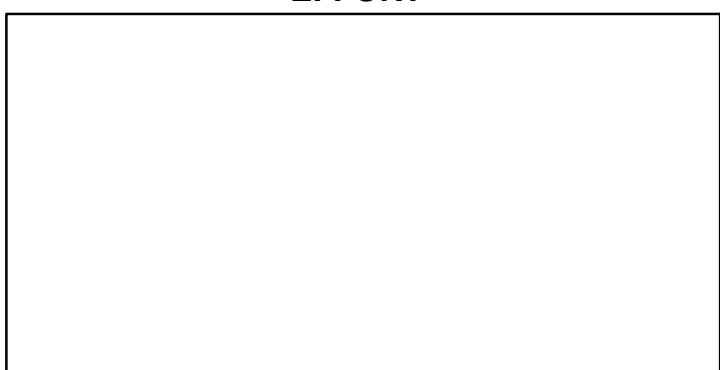
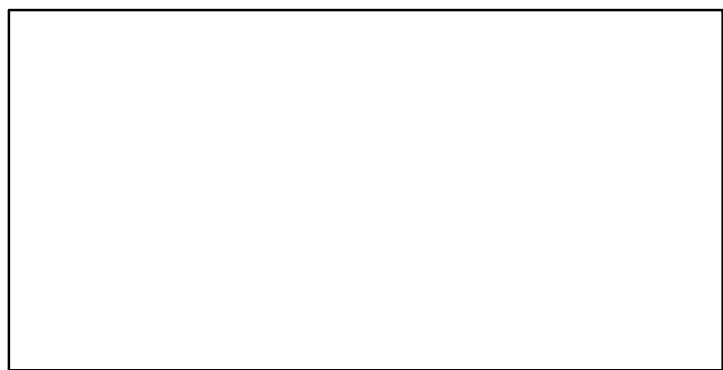
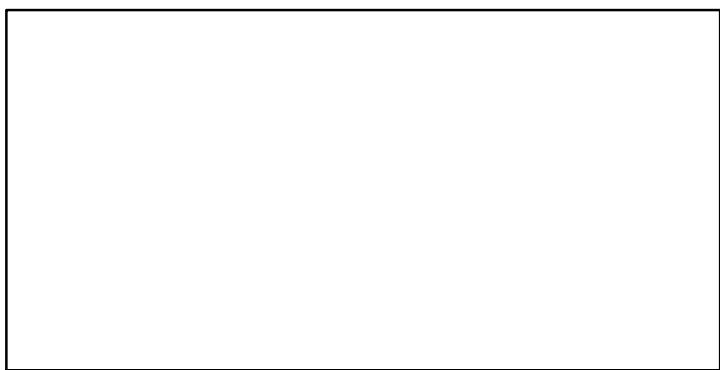
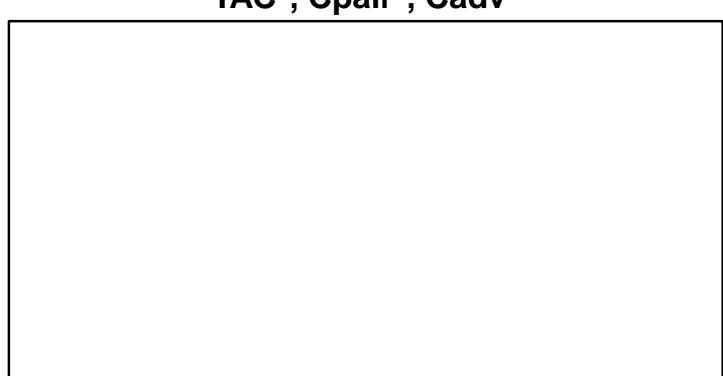
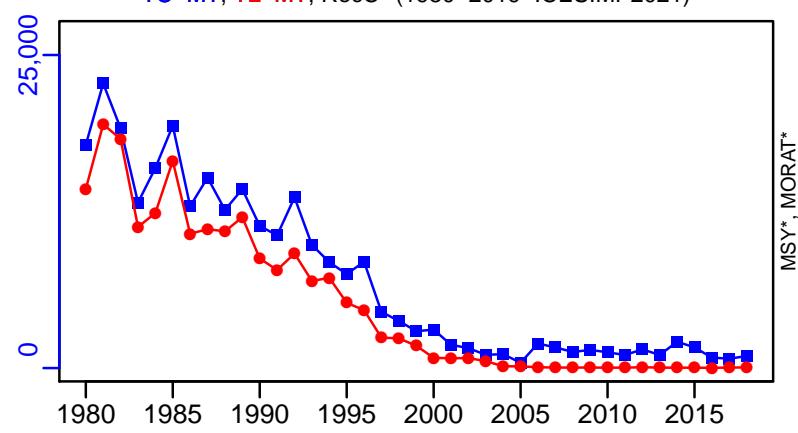


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | --- Lim BRP  | * No Data |

**Whiting Irish Sea [WHITVIIa]**

TC-MT, TL-MT, RecC\* (1980–2019–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



## Whiting Celtic Sea [WHITVIIbce-k]

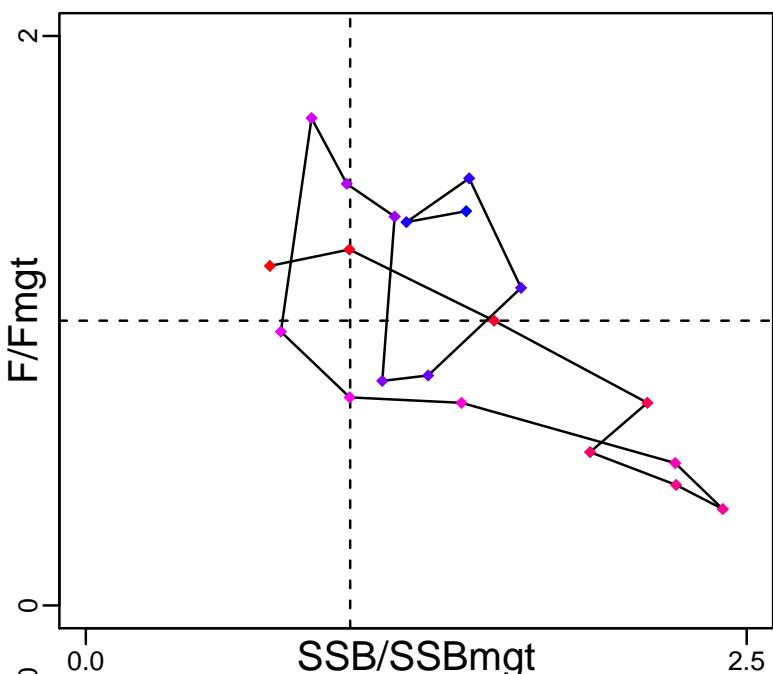
| <b>Metadata</b>             |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Merlangius merlangus                                 |
| <b>Current Assess ID</b>    | WGCSE-WHITVIIbce-k-1999-2019-ICESIMP2021             |
| <b>Area</b>                 | Celtic Sea   |
| <b>Management Authority</b> | International Council for the Exploration of the Sea |
| <b>Assessor</b>             | Working Group on Celtic Seas Ecosystems              |
| <b>Asmts in RAM</b>         | 2013, 2014, 2015, 2016, 2017, 2019, 2012             |

| <b>Reference Points</b> |           |                  |              |
|-------------------------|-----------|------------------|--------------|
| <b>Type</b>             | <b>ID</b> | <b>Asmt Year</b> | <b>Value</b> |
| <b>TBmsy</b>            | -         | -                | -            |
| <b>SSBmsy</b>           | -         | -                | -            |
| <b>Fmsy</b>             | Fmsy-1/yr | 2017             | 0.52         |
| <b>ERrmsy</b>           | -         | -                | -            |
| <b>TBmgt</b>            | -         | -                | -            |
| <b>SSBmgt</b>           | SSBmgt-MT | 2019             | 35,000       |
| <b>Fmgt</b>             | Fmgt-1/yr | 2019             | 0.52         |
| <b>ERmgt</b>            | -         | -                | -            |
| <b>TB0</b>              | -         | -                | -            |
| <b>SSB0</b>             | -         | -                | -            |
| <b>MSY</b>              | MSY-MT    | 2012             | 21,000       |
| <b>M</b>                | -         | -                | -            |
| <b>TBlim</b>            | -         | -                | -            |
| <b>SSBlim</b>           | SSBlim-MT | 2017             | 25,000       |
| <b>Flim</b>             | Flim-1/yr | 2017             | 1.12         |
| <b>ERlim</b>            | -         | -                | -            |

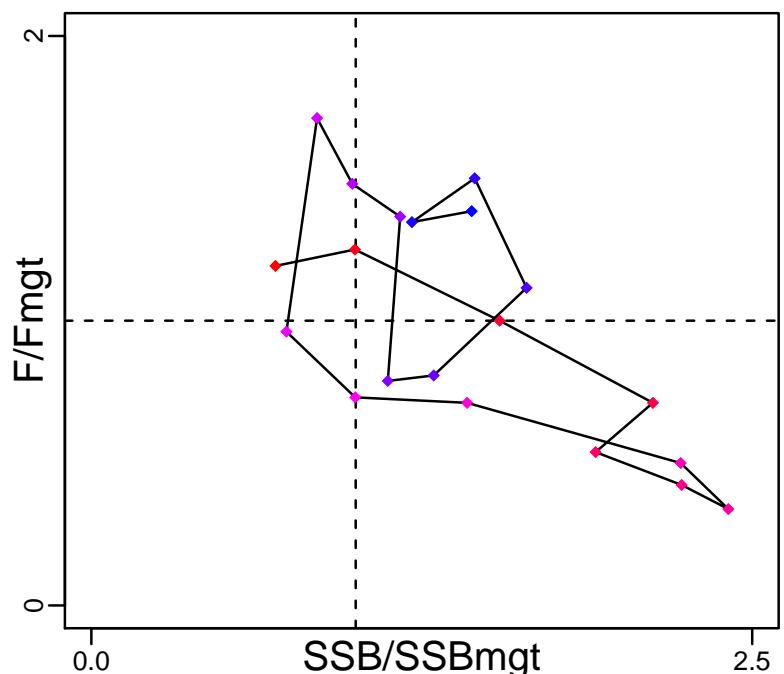
| <b>Time Series</b> |                  |                  |                   |            |            |
|--------------------|------------------|------------------|-------------------|------------|------------|
| <b>Type</b>        | <b>ID</b>        | <b>Asmt Year</b> | <b>Curr Value</b> | <b>Sex</b> | <b>Age</b> |
| <b>TB</b>          | TB-MT            | 2016             | 95,300            | Both       | -          |
| <b>SSB</b>         | SSB-MT           | 2019             | 17,423            | -          | -          |
| <b>TN</b>          | -                | -                | -                 | -          | -          |
| <b>R</b>           | R-E00            | 2019             | 844,529,000       | -          | 0          |
| <b>F</b>           | F-1/yr           | 2019             | 0.62              | -          | 2 to 5     |
| <b>ER</b>          | ER-calc-ratio    | 2016             | 0.203             | -          | -          |
| <b>TC</b>          | TC-MT            | 2017             | 22,500            |            |            |
| <b>TL</b>          | TL-MT            | 2019             | 8773              |            |            |
| <b>TB/TBmsy</b>    | -                | -                | -                 |            |            |
| <b>SSB/SSBmsy</b>  | -                | -                | -                 |            |            |
| <b>F/Fmsy</b>      | F-1/yr/Fmsy-1/yr | 2017             | 0.827             |            |            |
| <b>ER/ERrmsy</b>   | -                | -                | -                 |            |            |
| <b>TB/TBmgt</b>    | -                | -                | -                 |            |            |
| <b>SSB/SSBmgt</b>  | SSB-MT/SSBmgt-MT | 2019             | 0.498             |            |            |
| <b>F/Fmgt</b>      | F-1/yr/Fmgt-1/yr | 2019             | 1.192             |            |            |
| <b>ER/ERmgt</b>    | -                | -                | -                 |            |            |

Whiting Celtic Sea [WHITVIIbce–k]

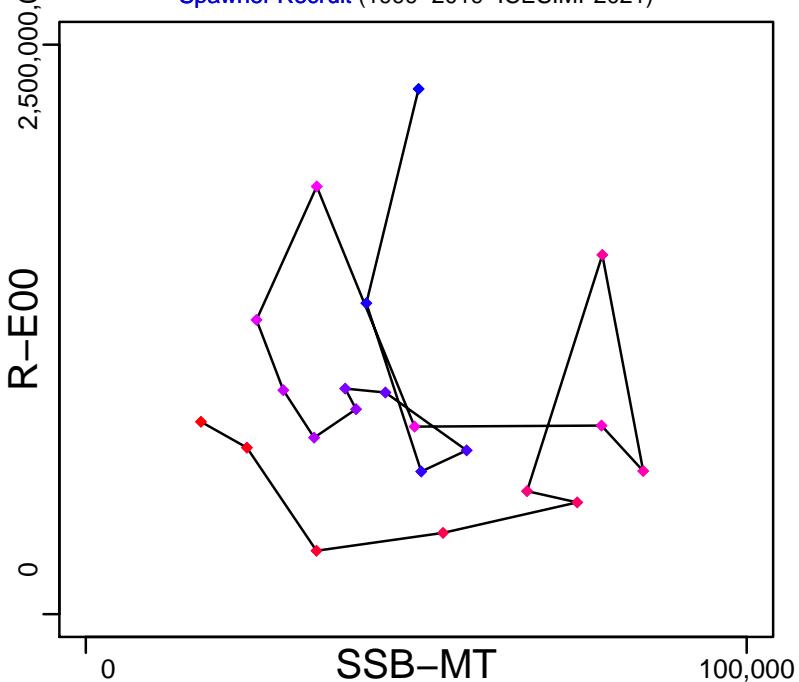
Kobe MSYpref (1999–2019–ICESIMP2021)



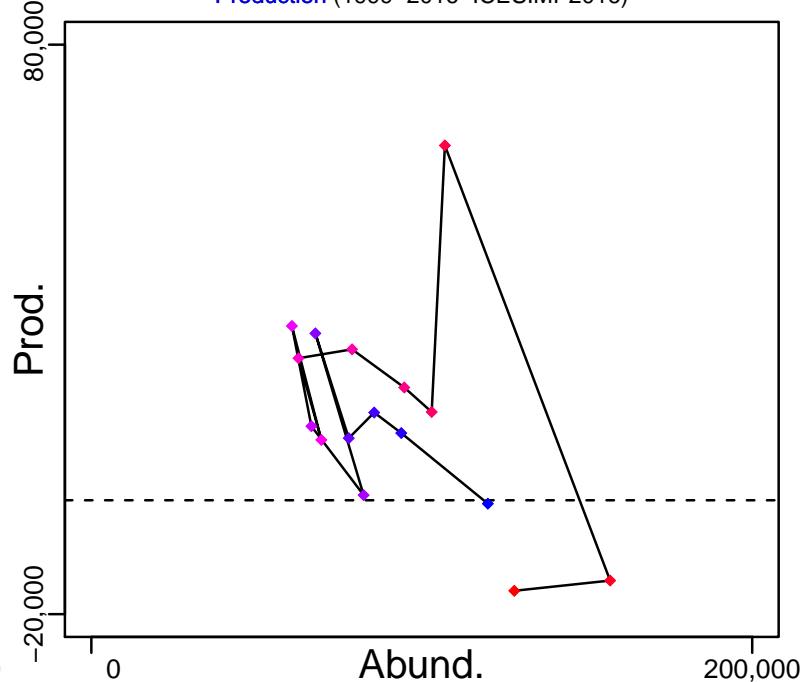
Kobe MGTpref (1999–2019–ICESIMP2021)



Spawner Recruit (1999–2019–ICESIMP2021)



Production (1999–2016–ICESIMP2016)

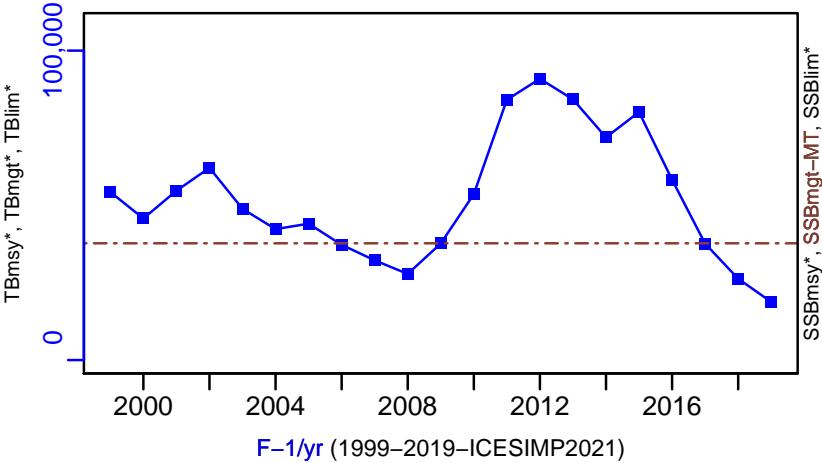
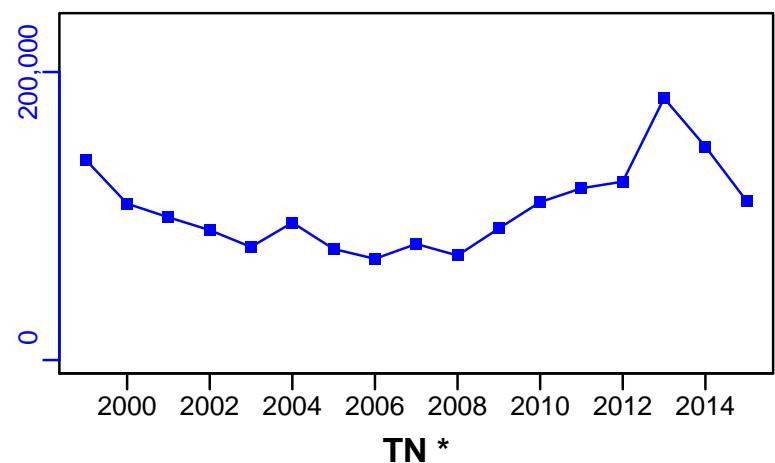


◆ Start Year   ◆ End Year   \* No Data

Whiting Celtic Sea [WHITVIIbce–k]

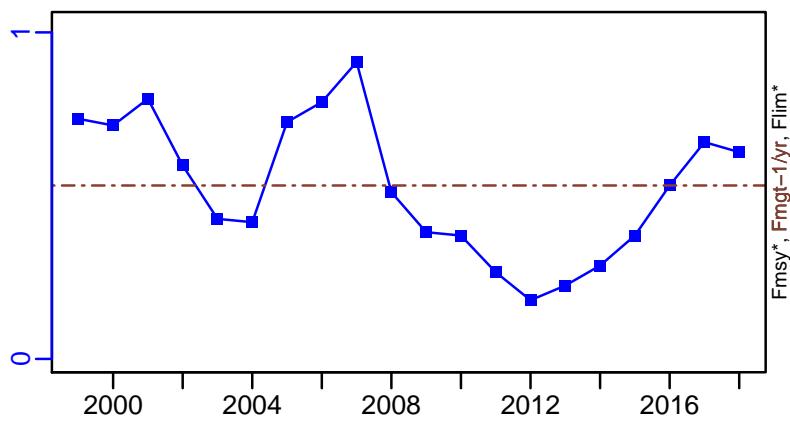
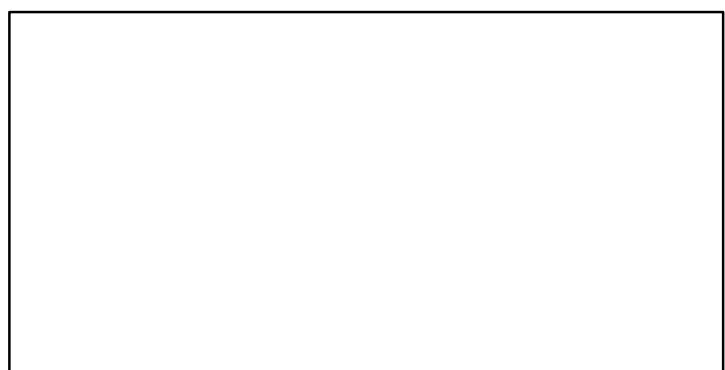
TB-MT (1999–2016–ICESIMP2016)

SSB-MT (1999–2019–ICESIMP2021)



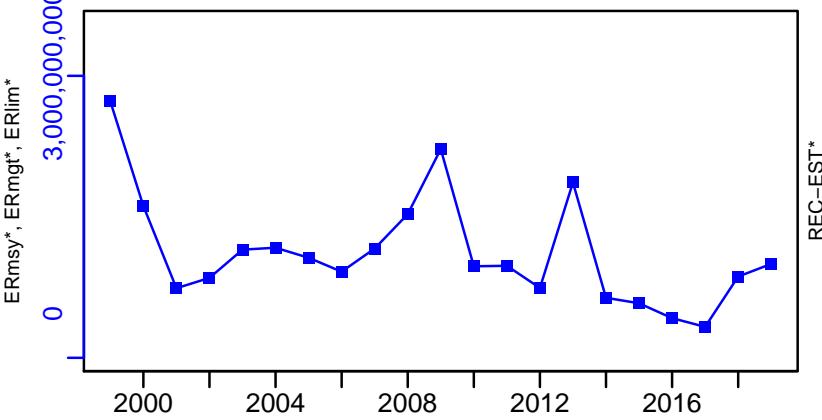
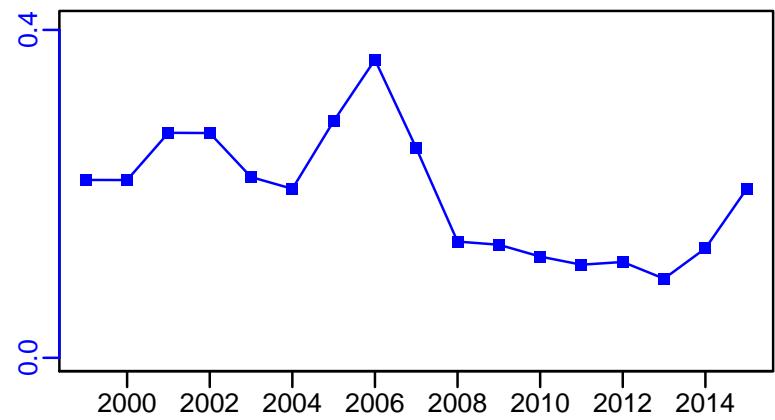
TN \*

F-1/yr (1999–2019–ICESIMP2021)



ER-calc-ratio (1999–2016–ICESIMP2016)

R-E00 (1999–2019–ICESIMP2021)

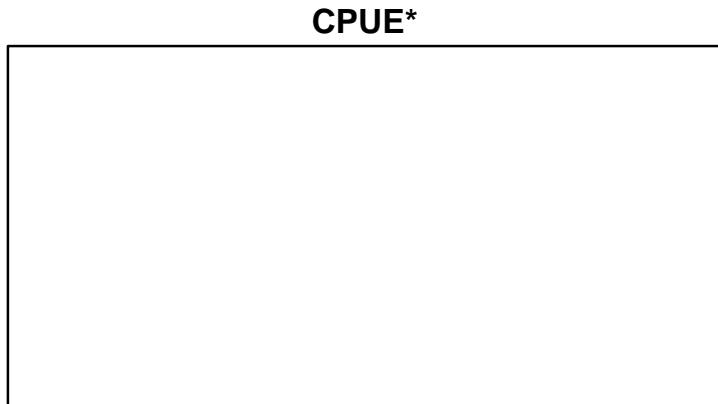
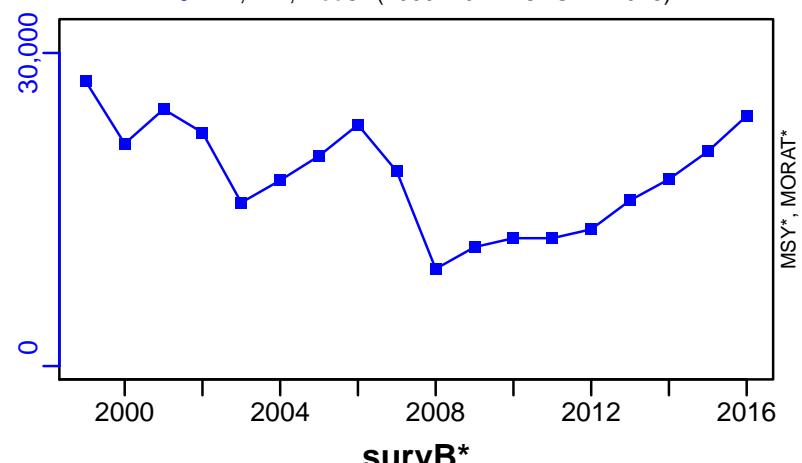


|                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | — Lim BRP    | * No Data |

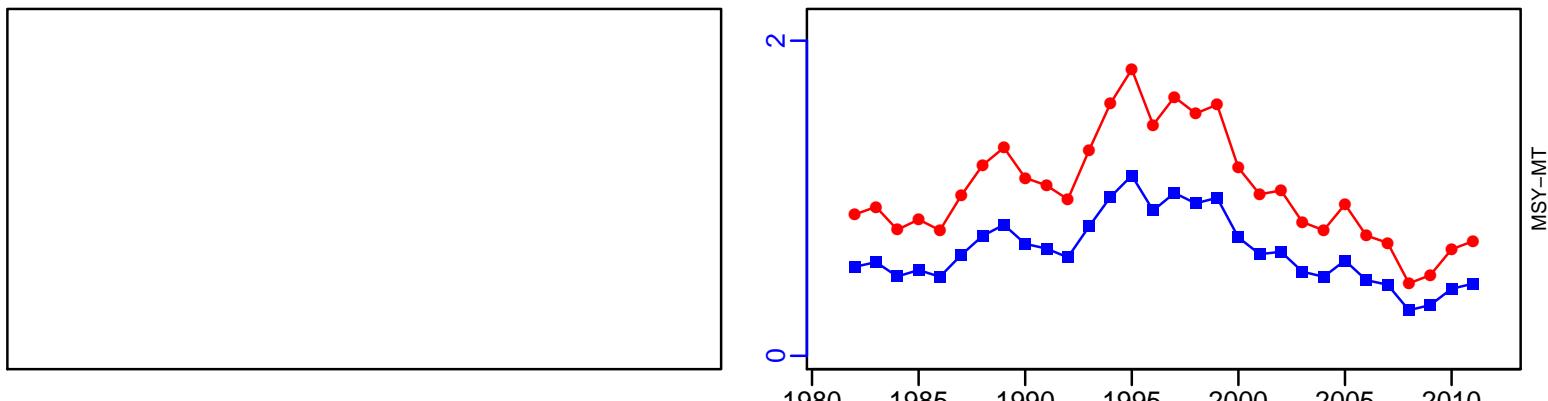
**Whiting Celtic Sea [WHITVIIbce–k]**

TC–MT, TL\*, RecC\* (1999–2017–ICESIMP2018)

TAC\*, Cpair\*, Cadv\*



TL–MT/MSY–MT, CdivMEANC–ratio, (1981–2012–CHING)



|                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |

## Whiting ICES 8-9a [WHITVIII-IXa]

| Metadata                    |  |
|-----------------------------|--|
| <b>Scientific Name</b>      | Merlangius merlangus   |
| <b>Current Assess ID</b>    | WGBIE-WHITVIII-IXa-1994-2018-ICESIMP2021                             |
| <b>Area</b>                 | ICES 8-9a  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                 |
| <b>Assessor</b>             | Working Group for the Bay of Biscay and the Iberian Waters Ecoregion |
| <b>Asmts in RAM</b>         | 2015, 2016, 2016, 2018   |

| Reference Points |    |           |       |
|------------------|----|-----------|-------|
| Type             | ID | Asmt Year | Value |
| <b>TBmsy</b>     | -  | -         | -     |
| <b>SSBmsy</b>    | -  | -         | -     |
| <b>Fmsy</b>      | -  | -         | -     |
| <b>ERmsy</b>     | -  | -         | -     |
| <b>TBmgt</b>     | -  | -         | -     |
| <b>SSBmgt</b>    | -  | -         | -     |
| <b>Fmgt</b>      | -  | -         | -     |
| <b>ERmgt</b>     | -  | -         | -     |
| <b>TB0</b>       | -  | -         | -     |
| <b>SSB0</b>      | -  | -         | -     |
| <b>MSY</b>       | -  | -         | -     |
| <b>M</b>         | -  | -         | -     |
| <b>TBlim</b>     | -  | -         | -     |
| <b>SSBlim</b>    | -  | -         | -     |
| <b>Flim</b>      | -  | -         | -     |
| <b>ERlim</b>     | -  | -         | -     |

| Time Series       |       |           |            |     |     |
|-------------------|-------|-----------|------------|-----|-----|
| Type              | ID    | Asmt Year | Curr Value | Sex | Age |
| <b>TB</b>         | -     | -         | -          | -   | -   |
| <b>SSB</b>        | -     | -         | -          | -   | -   |
| <b>TN</b>         | -     | -         | -          | -   | -   |
| <b>R</b>          | -     | -         | -          | -   | -   |
| <b>F</b>          | -     | -         | -          | -   | -   |
| <b>ER</b>         | -     | -         | -          | -   | -   |
| <b>TC</b>         | TC-MT | 2018      | 2194       |     |     |
| <b>TL</b>         | TL-MT | 2018      | 1539       |     |     |
| <b>TB/TBmsy</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmsy</b> | -     | -         | -          |     |     |
| <b>F/Fmsy</b>     | -     | -         | -          |     |     |
| <b>ER/ERmsy</b>   | -     | -         | -          |     |     |
| <b>TB/TBmgt</b>   | -     | -         | -          |     |     |
| <b>SSB/SSBmgt</b> | -     | -         | -          |     |     |
| <b>F/Fmgt</b>     | -     | -         | -          |     |     |
| <b>ER/ERmgt</b>   | -     | -         | -          |     |     |

**Kobe MSY\***

**Kobe MGT\***

**Spawner Recruit\***

**Production\***

♦ Start Year ♦ End Year \* No Data

**TB\***



**SSB\***



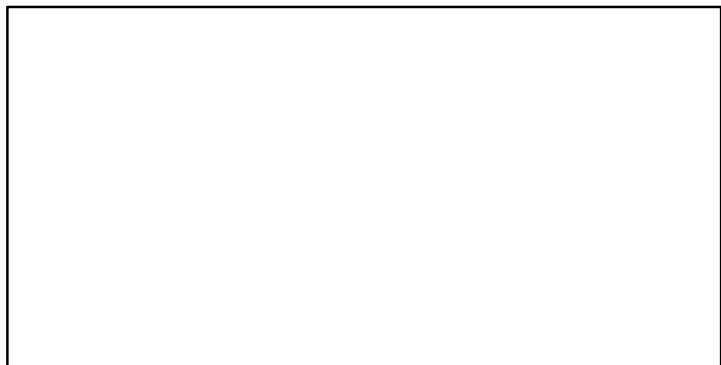
**TN \***



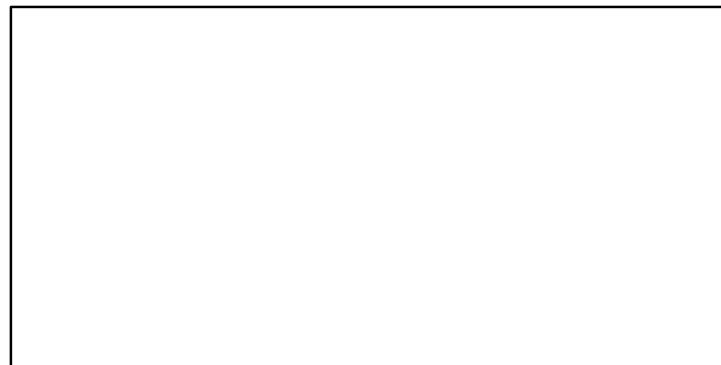
**F\***



**ER\***



**Recruits\***

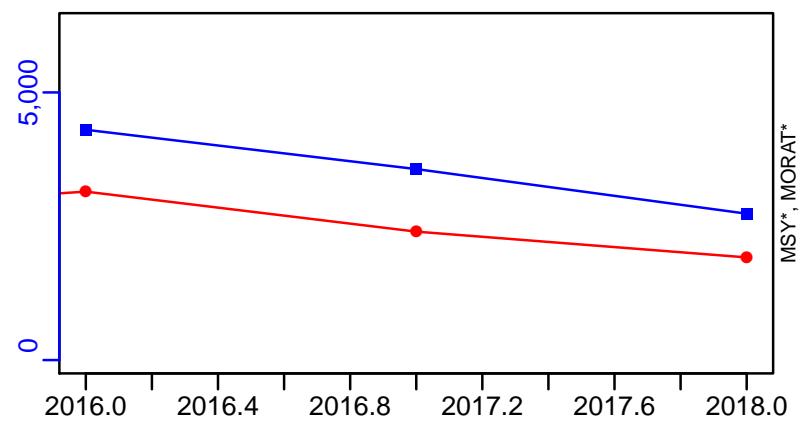


- |                      |                  |           |
|----------------------|------------------|-----------|
| ■ Listed time series | - - - Target BRP | — Rec-Est |
| - - - MSY-based BRP  | - - - Lim BRP    | * No Data |

Whiting ICES 8–9a [WHITVIII–IXa]

TC–MT, TL–MT, RecC\* (1994–2018–ICESIMP2021)

TAC\*, Cpair\*, Cadv\*



**survB\***

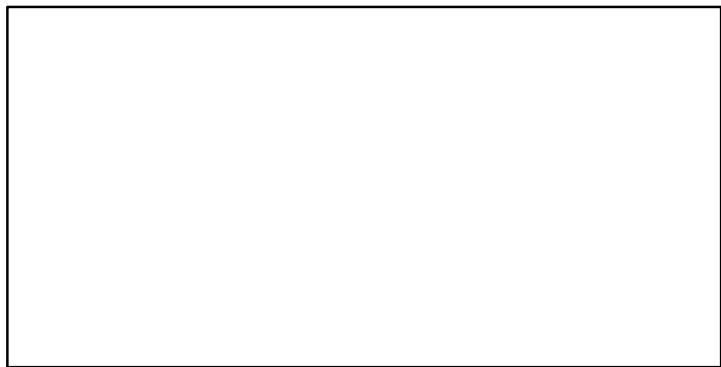
MSY\*, MORAT\*



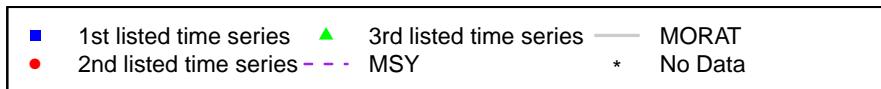
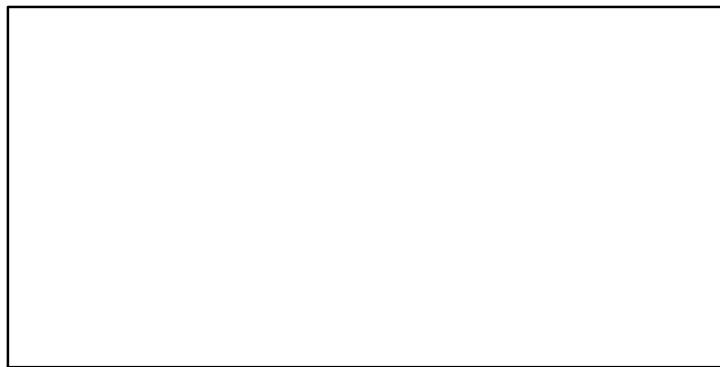
**CPUE\***



**EFFORT\***



**CdivMSY\***



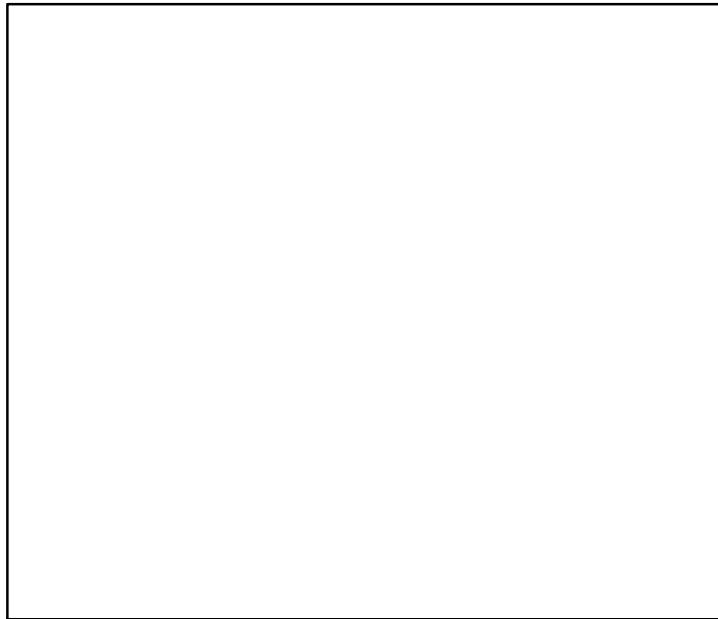
## Witch flounder ICES 3a-4-7d [WITFLOUNIIIa-IV-VIId]

| <b>Metadata</b>             |   |
|-----------------------------|---|
| <b>Scientific Name</b>      | Glyptocephalus cynoglossus  |
| <b>Current Assess ID</b>    | WGNSSK-WITFLOUNIIIa-IV-VIId-1975-2016-ICESIMP2018                                 |
| <b>Area</b>                 | ICES 3a-4-7d  |
| <b>Management Authority</b> | International Council for the Exploration of the Sea                              |
| <b>Assessor</b>             | Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak |
| <b>Asmts in RAM</b>         | 2015, 2016  |

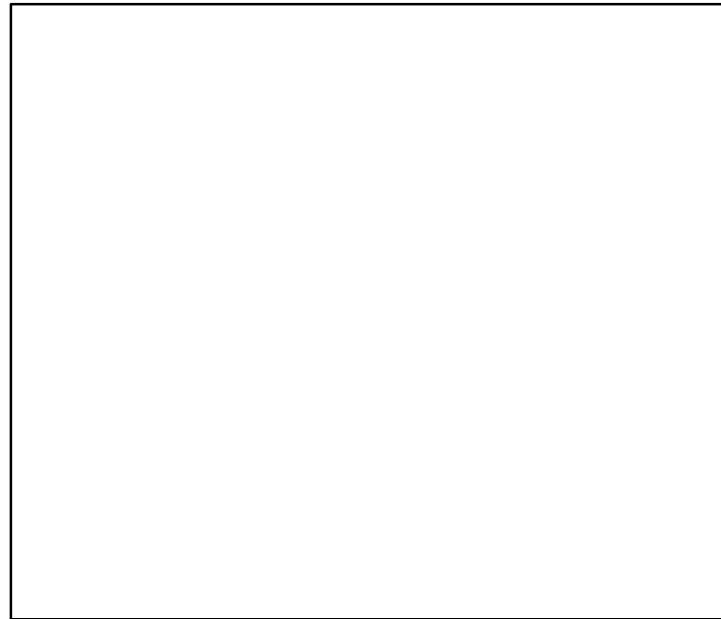
| <b>Reference Points</b> |    |           |       |
|-------------------------|----|-----------|-------|
| Type                    | ID | Asmt Year | Value |
| <b>TBmsy</b>            | -  | -         | -     |
| <b>SSBmsy</b>           | -  | -         | -     |
| <b>Fmsy</b>             | -  | -         | -     |
| <b>ERmsy</b>            | -  | -         | -     |
| <b>TBmgt</b>            | -  | -         | -     |
| <b>SSBmgt</b>           | -  | -         | -     |
| <b>Fmgt</b>             | -  | -         | -     |
| <b>ERmgt</b>            | -  | -         | -     |
| <b>TB0</b>              | -  | -         | -     |
| <b>SSB0</b>             | -  | -         | -     |
| <b>MSY</b>              | -  | -         | -     |
| <b>M</b>                | -  | -         | -     |
| <b>TBlim</b>            | -  | -         | -     |
| <b>SSBlim</b>           | -  | -         | -     |
| <b>Flim</b>             | -  | -         | -     |
| <b>ERlim</b>            | -  | -         | -     |

| <b>Time Series</b> |           |           |            |      |     |
|--------------------|-----------|-----------|------------|------|-----|
| Type               | ID        | Asmt Year | Curr Value | Sex  | Age |
| <b>TB</b>          | -         | -         | -          | -    | -   |
| <b>SSB</b>         | SSB-index | 2015      | 0.189      | Both | -   |
| <b>TN</b>          | -         | -         | -          | -    | -   |
| <b>R</b>           | -         | -         | -          | -    | -   |
| <b>F</b>           | -         | -         | -          | -    | -   |
| <b>ER</b>          | -         | -         | -          | -    | -   |
| <b>TC</b>          | -         | -         | -          |      |     |
| <b>TL</b>          | TL-MT     | 2016      | 2740       |      |     |
| <b>TB/TBmsy</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmsy</b>  | -         | -         | -          |      |     |
| <b>F/Fmsy</b>      | -         | -         | -          |      |     |
| <b>ER/ERmsy</b>    | -         | -         | -          |      |     |
| <b>TB/TBmgt</b>    | -         | -         | -          |      |     |
| <b>SSB/SSBmgt</b>  | -         | -         | -          |      |     |
| <b>F/Fmgt</b>      | -         | -         | -          |      |     |
| <b>ER/ERmgt</b>    | -         | -         | -          |      |     |

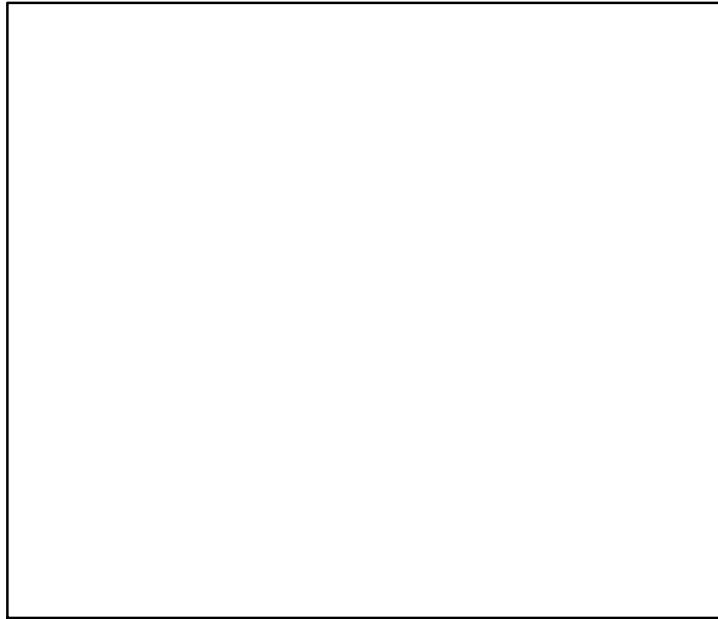
Kobe MSY\*



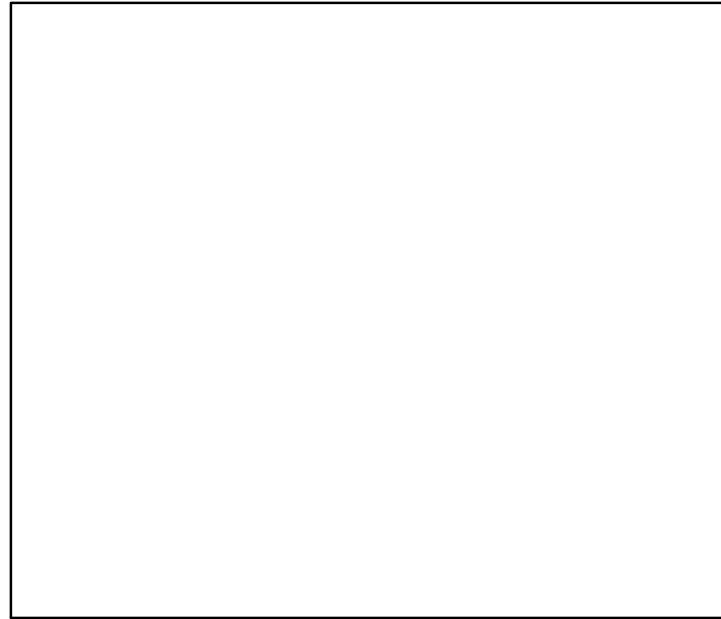
Kobe MGT\*



Spawner Recruit\*



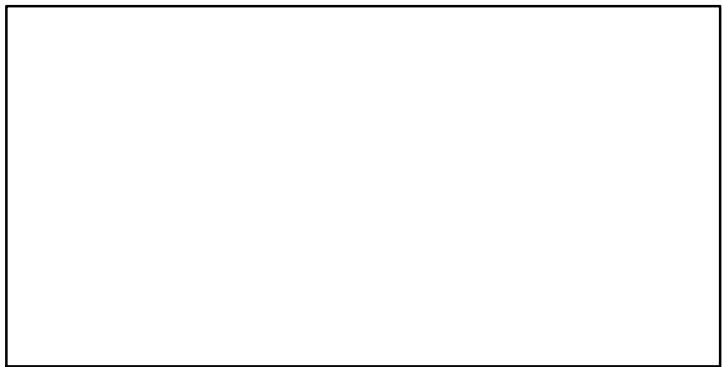
Production\*



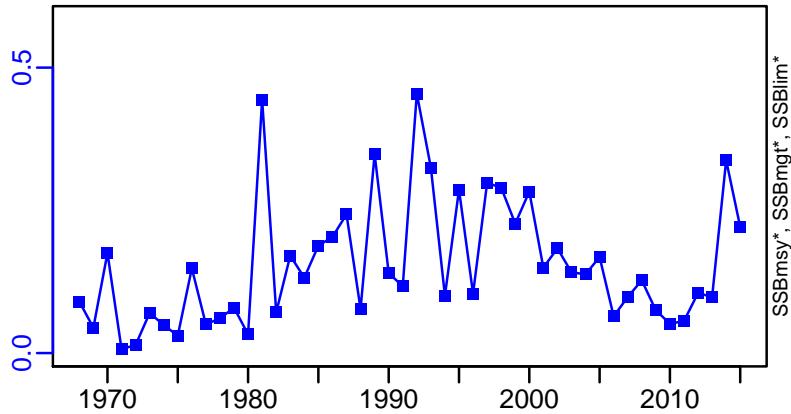
◆ Start Year ♦ End Year \* No Data

Witch flounder ICES 3a–4–7d [WITFLOUNIIla–IV–VIIId]

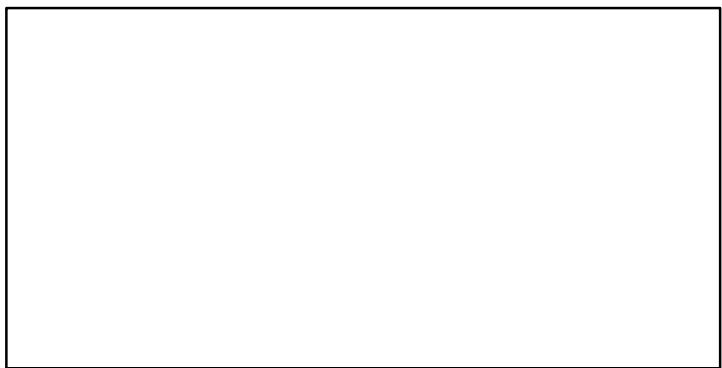
**TB\***



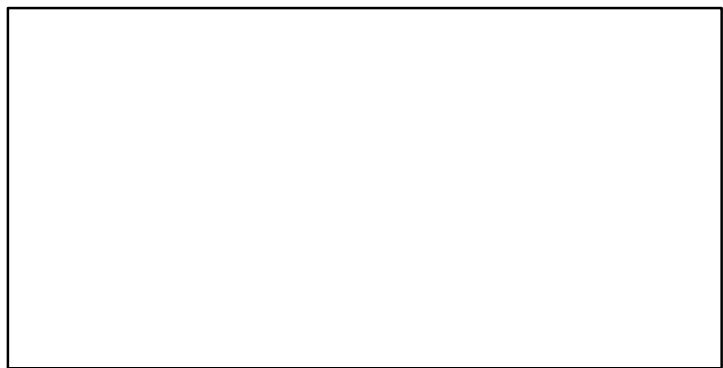
SSB-index (1968–2015–ICESIMP2018)



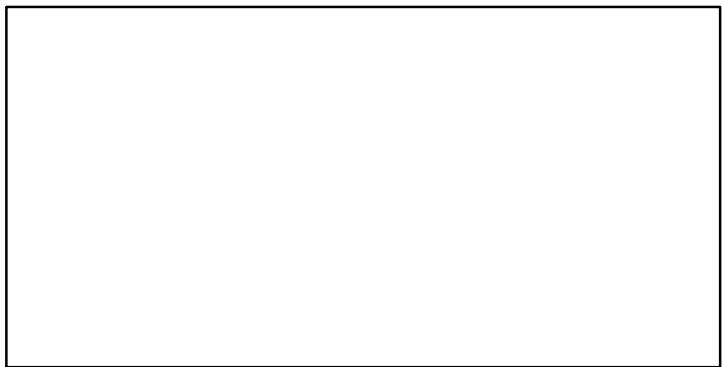
**TN \***



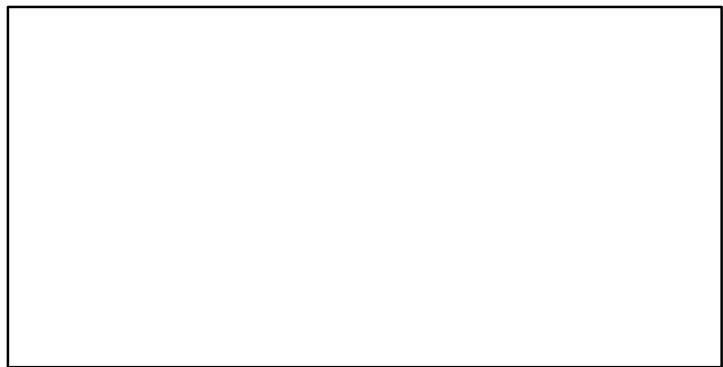
**F\***



**ER\***



**Recruits\***

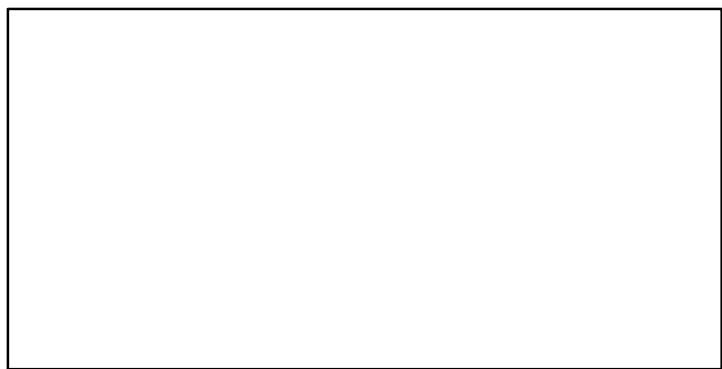
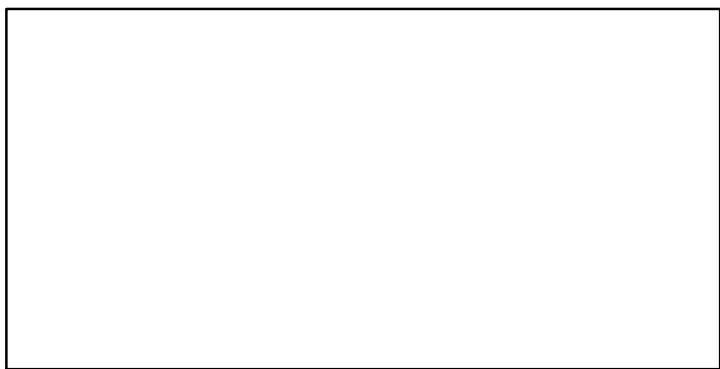
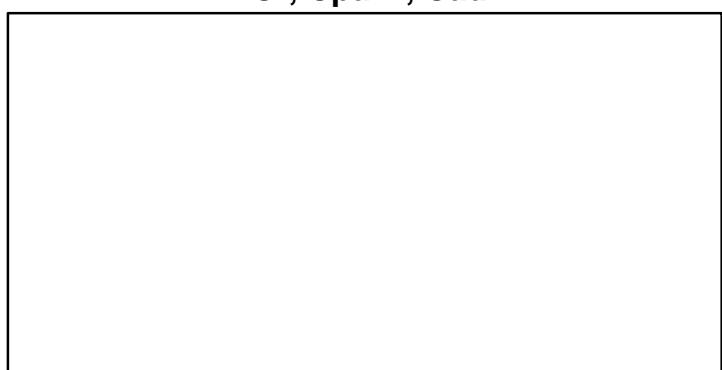
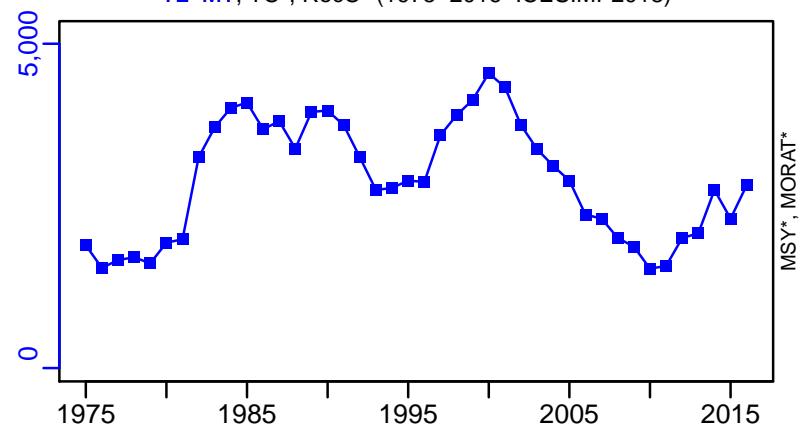


- |                      |              |           |
|----------------------|--------------|-----------|
| ■ Listed time series | — Target BRP | — Rec-Est |
| — MSY-based BRP      | ··· Lim BRP  | * No Data |

**Witch flounder ICES 3a–4–7d [WITFLOUNIIla–IV–VIIId]**

TL–MT, TC\*, RecC\* (1975–2016–ICESIMP2018)

**TAC\*, Cpair\*, Cadv\***



- |                          |                          |           |
|--------------------------|--------------------------|-----------|
| ■ 1st listed time series | ▲ 3rd listed time series | — MORAT   |
| ● 2nd listed time series | - - - MSY                | * No Data |