

Plots created using the 'r4ss' package in R  
Stock Synthesis version: 3.30.19.0  
StartTime: Tue Jul 05 12:11:04 2022  
Data\_File: data.ss  
Control\_File: control.ss

Length (cm, beginning of the year)

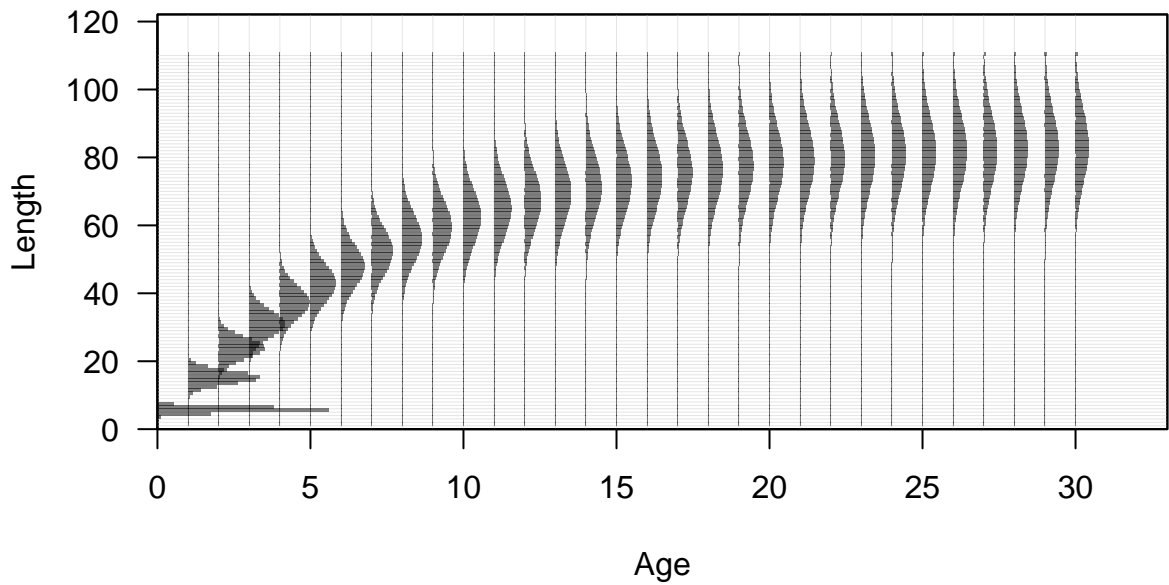


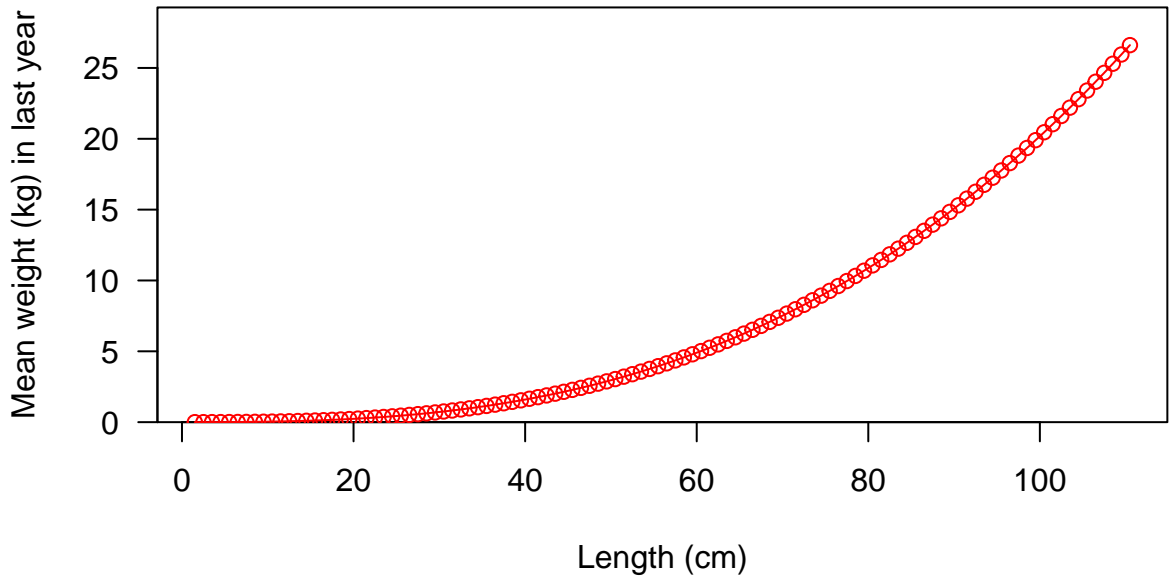
Age (yr)







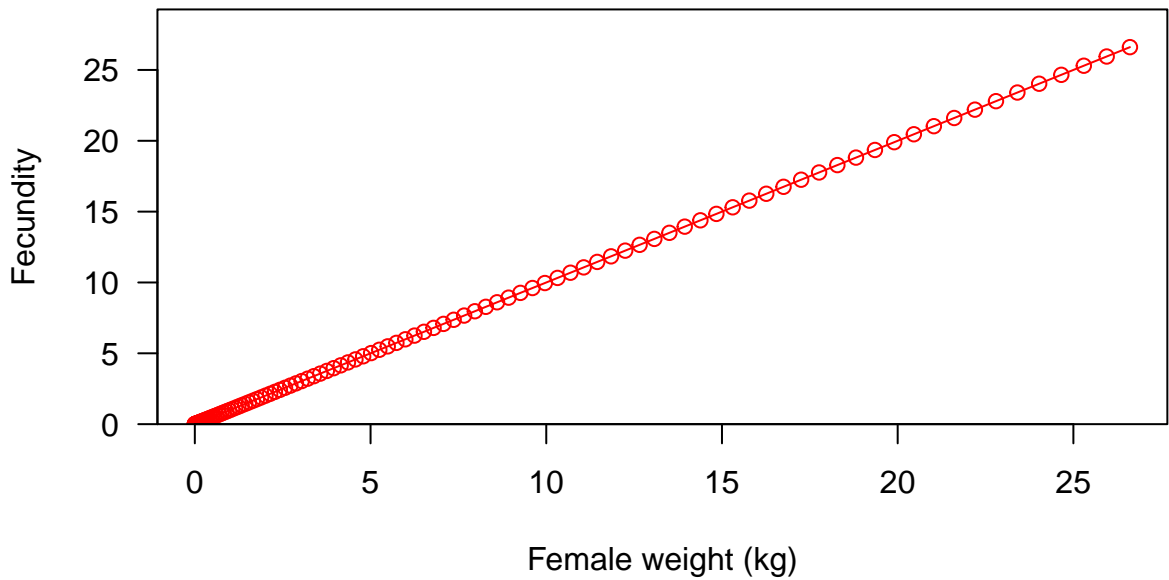




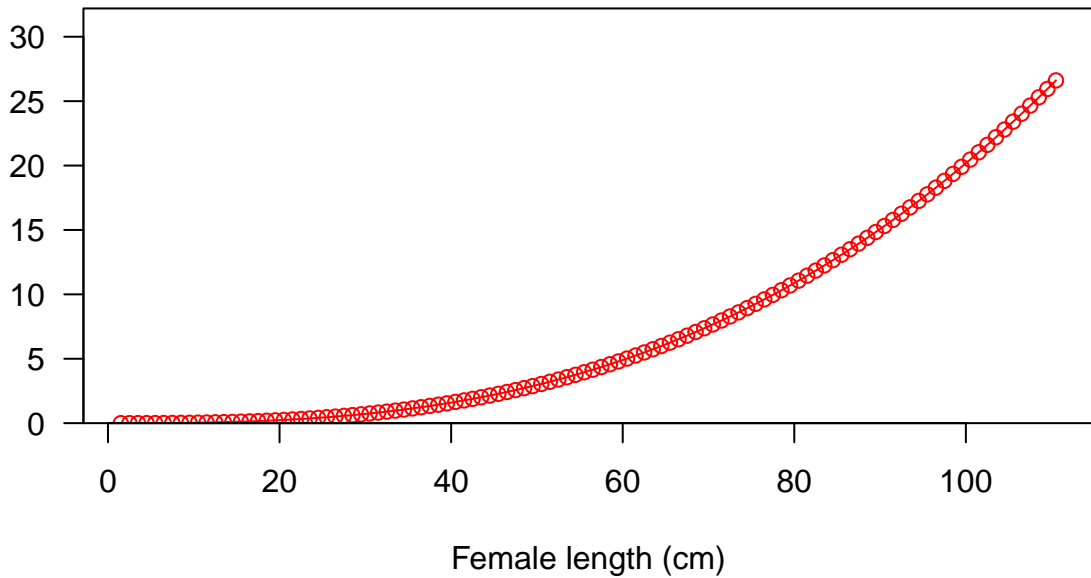








Fecundity



Spawning output

25  
20  
15  
10  
5  
0

0

20

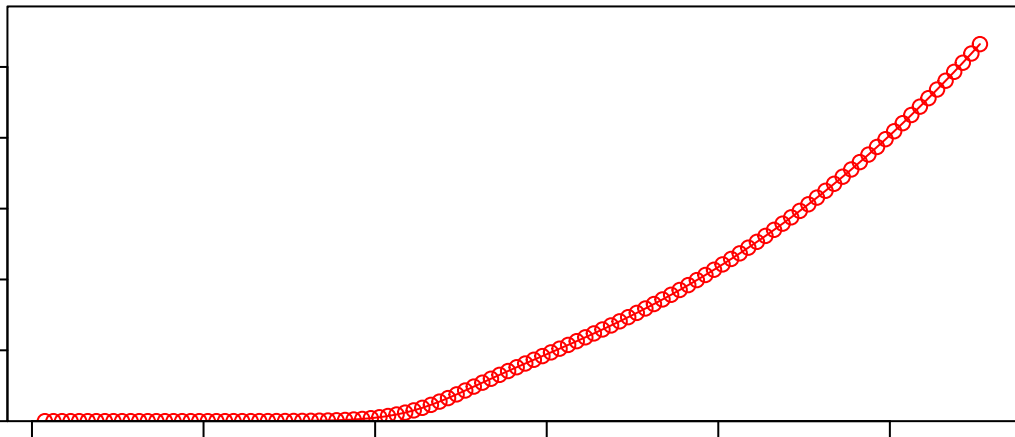
40

60

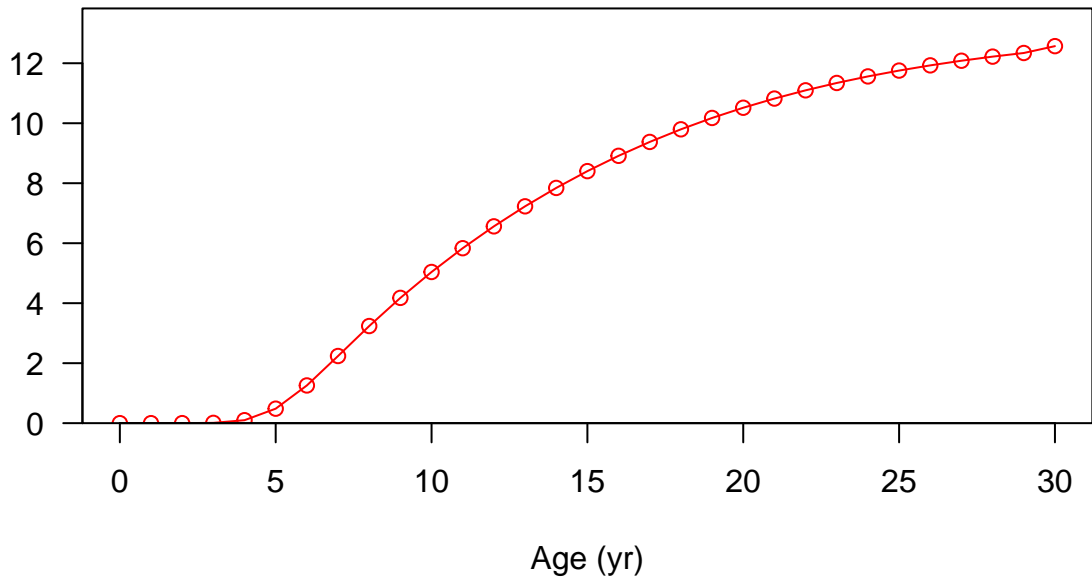
80

100

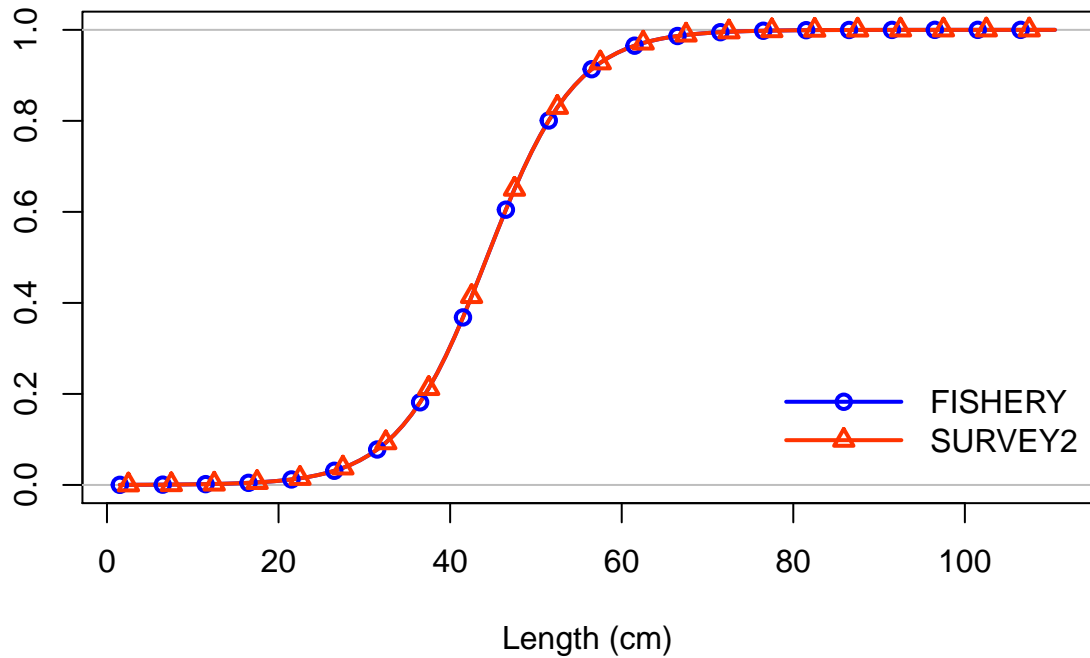
Length (cm)



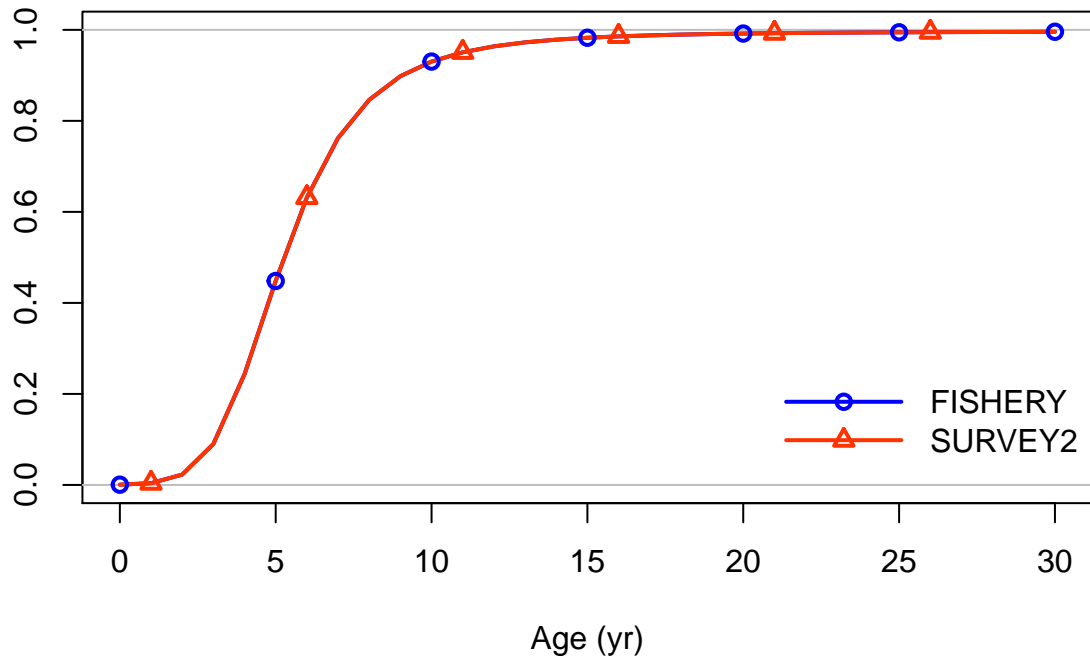
Spawning output



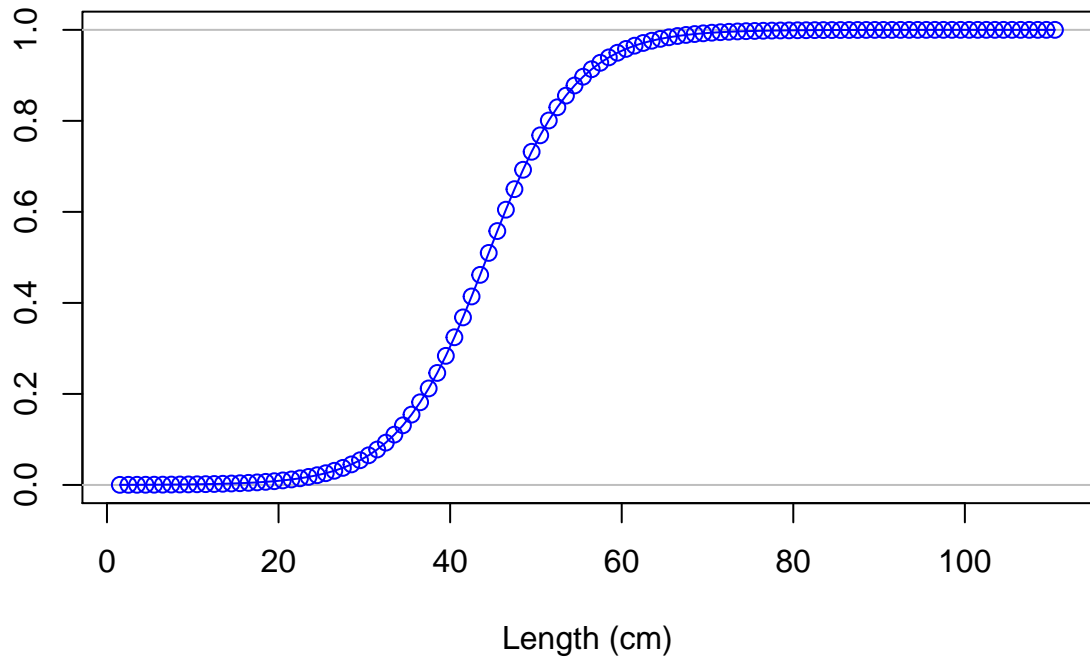
Selectivity



Selectivity

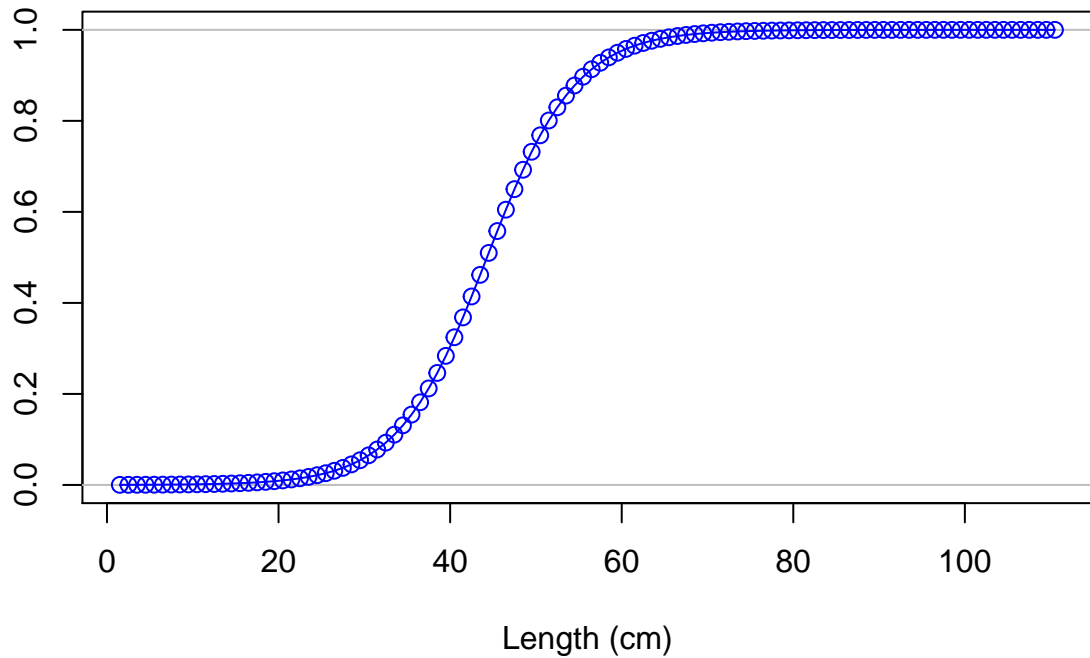


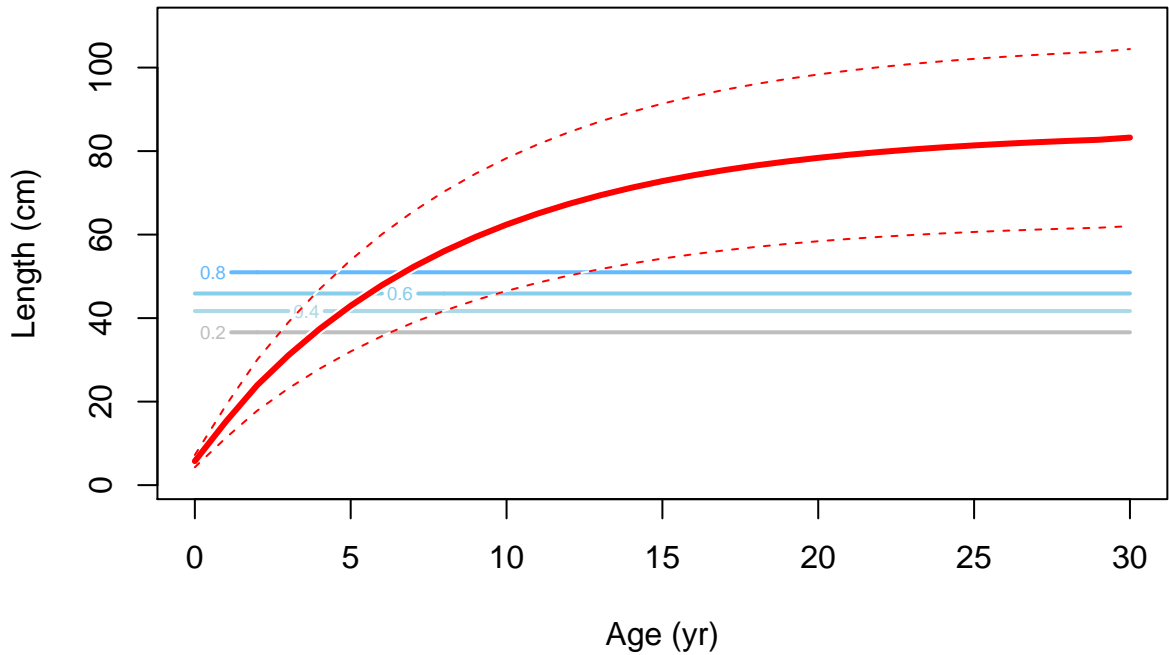
Selectivity

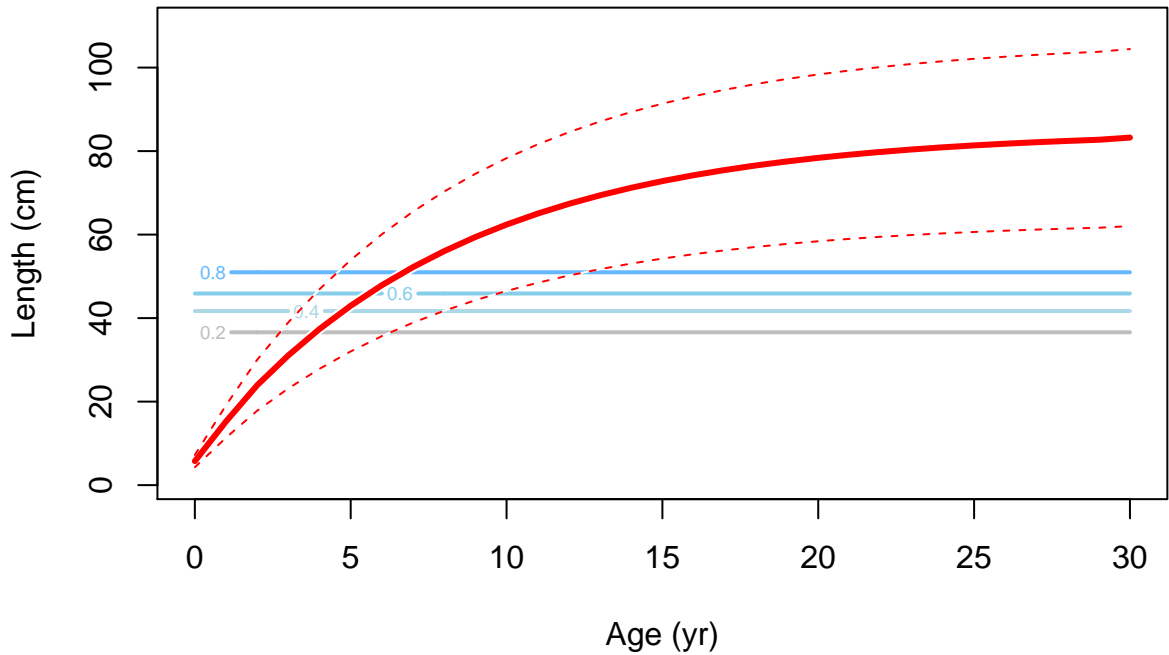




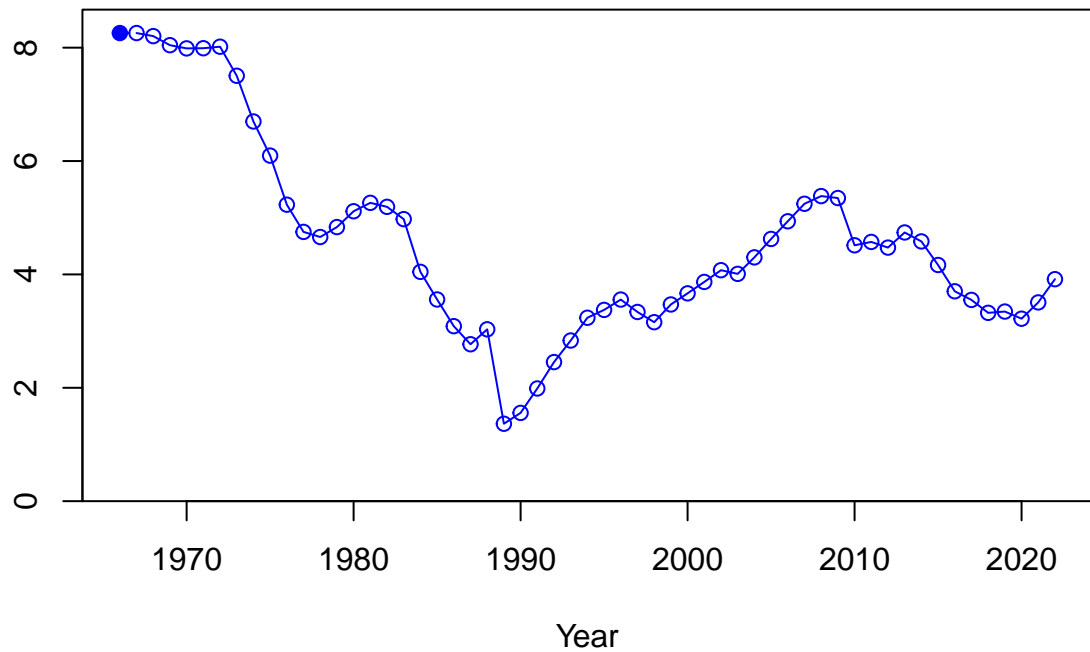
Selectivity



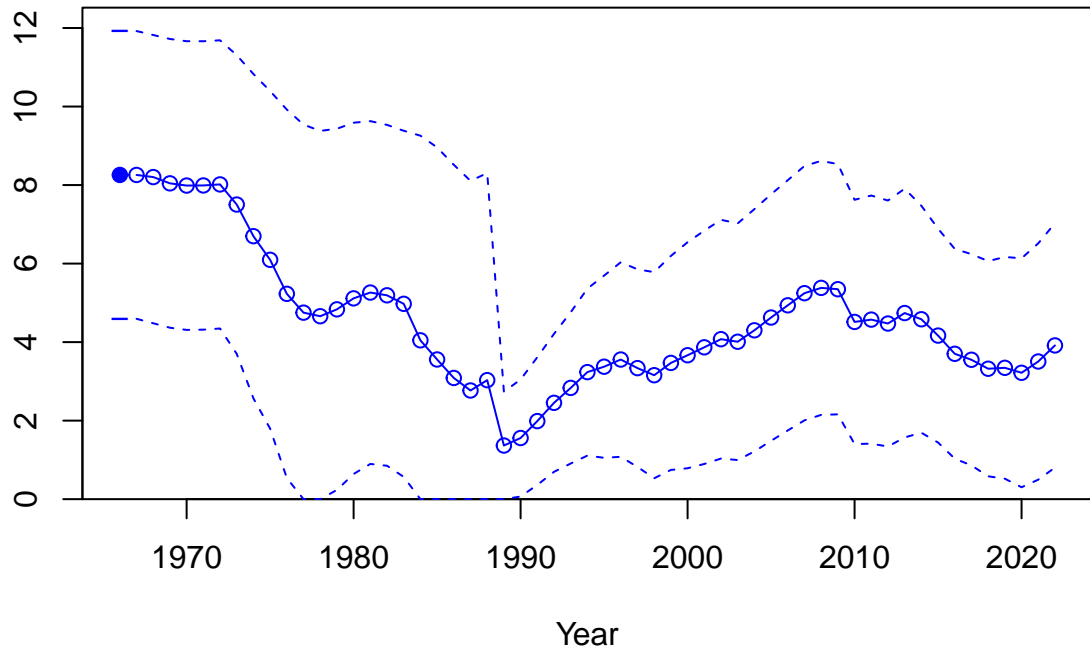




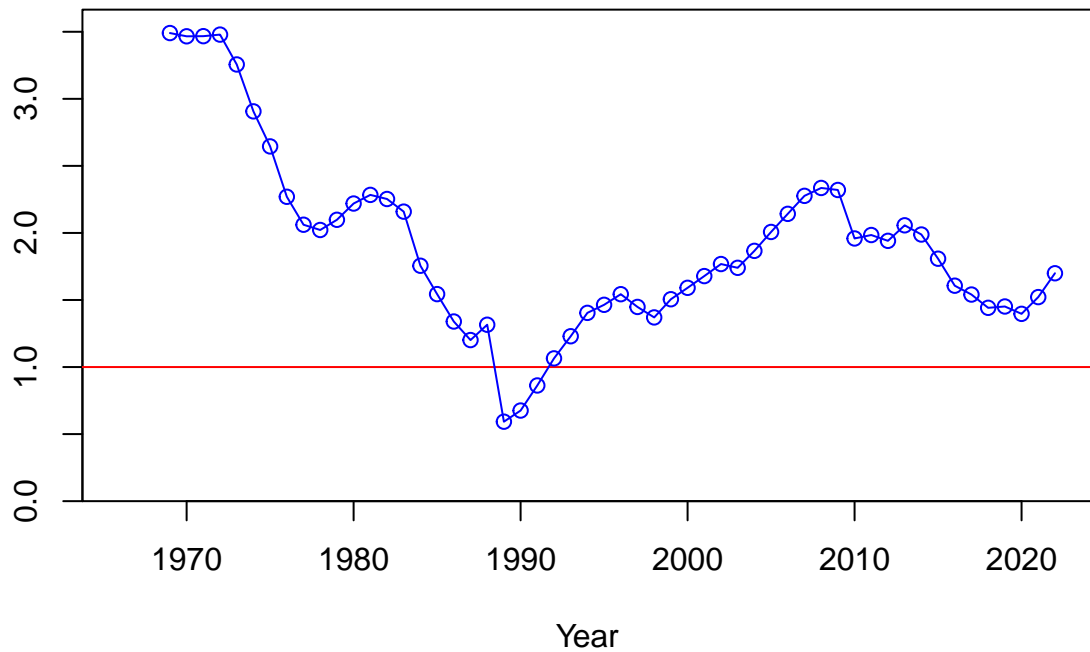
Spawning biomass (mt)



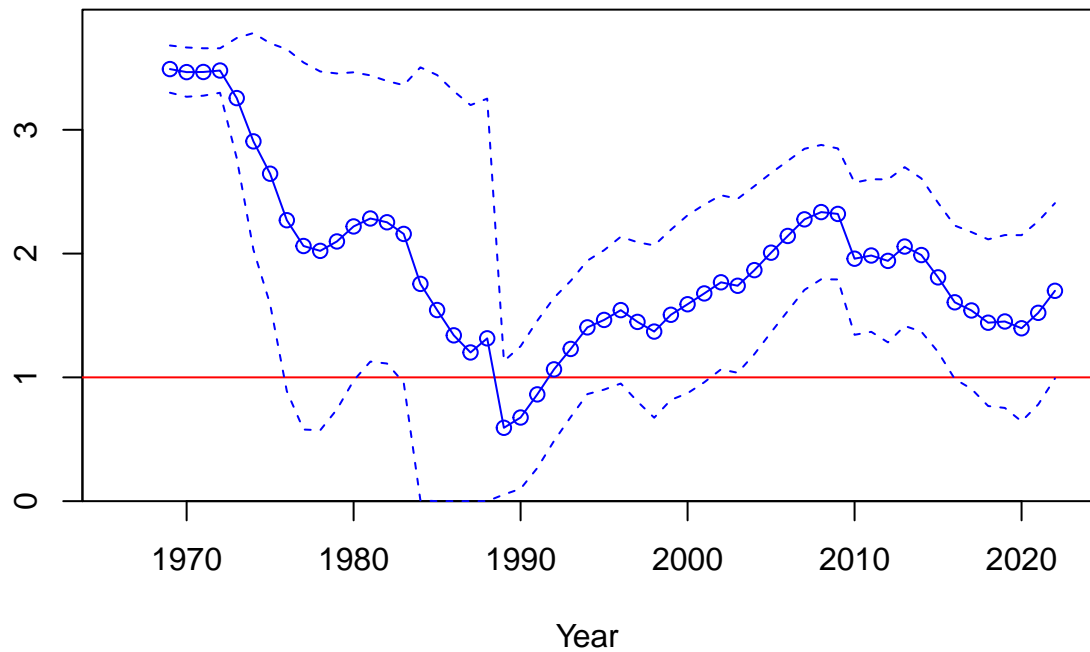
Spawning biomass (mt)

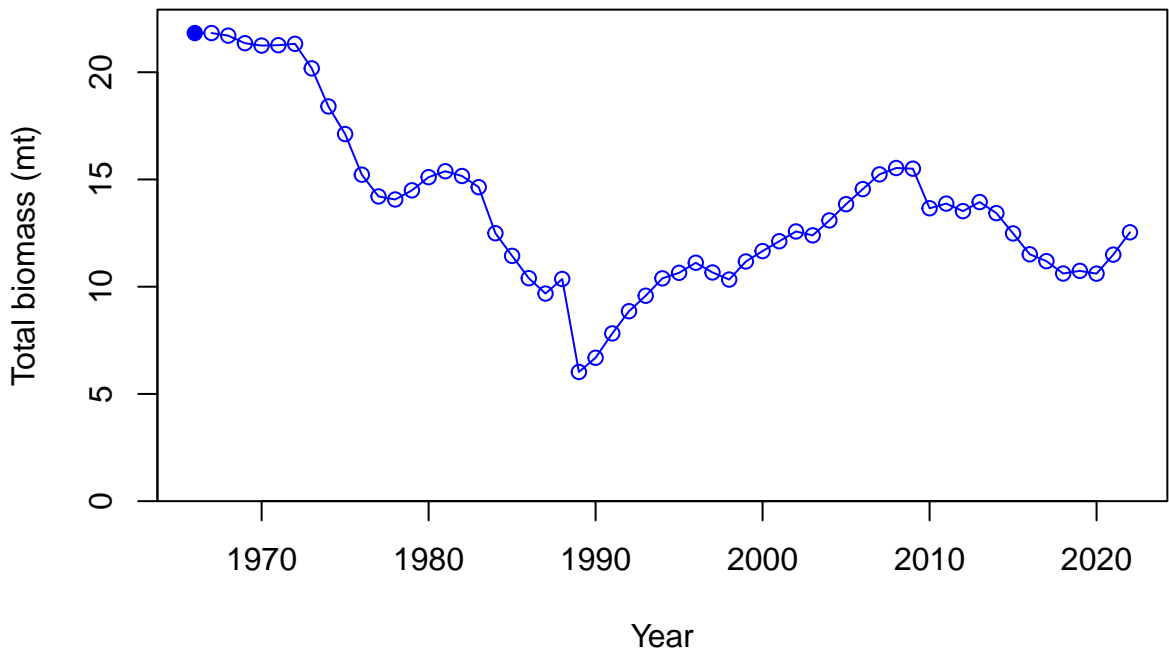


Relative spawning biomass:  $B/B_{MSY}$

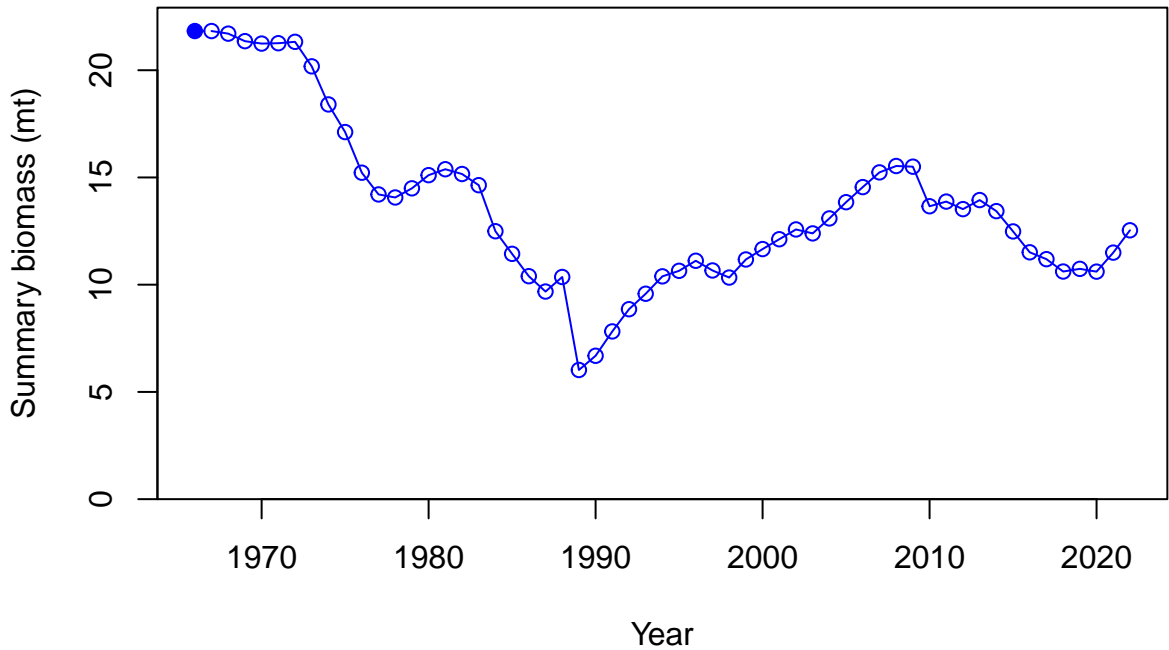


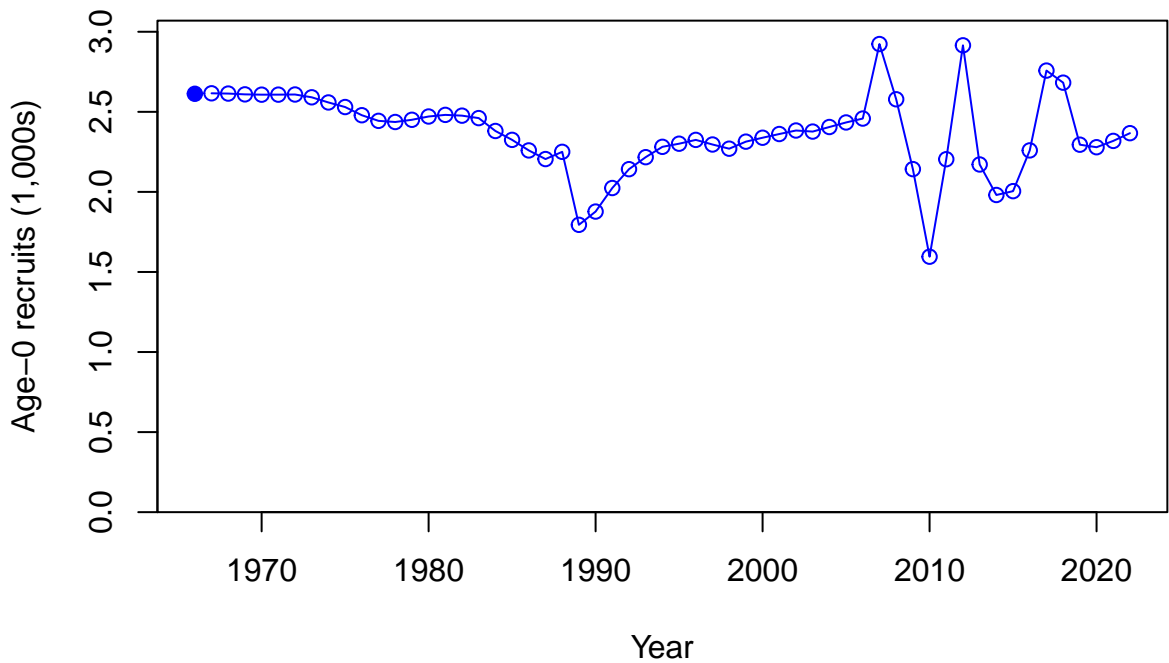
Relative spawning biomass: B/B<sub>MSY</sub>



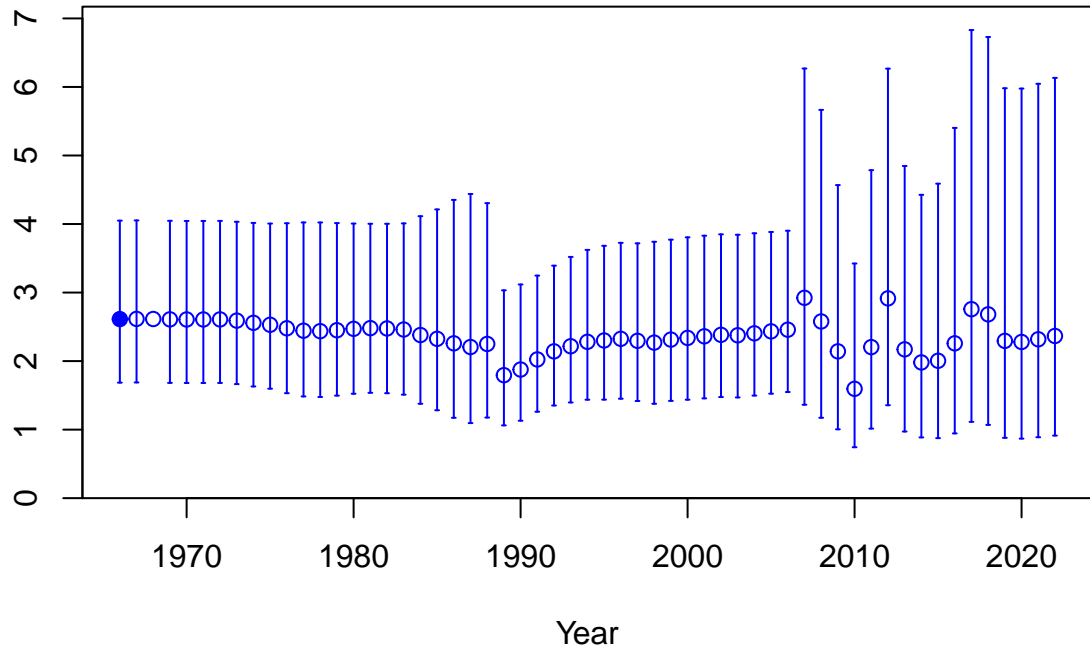




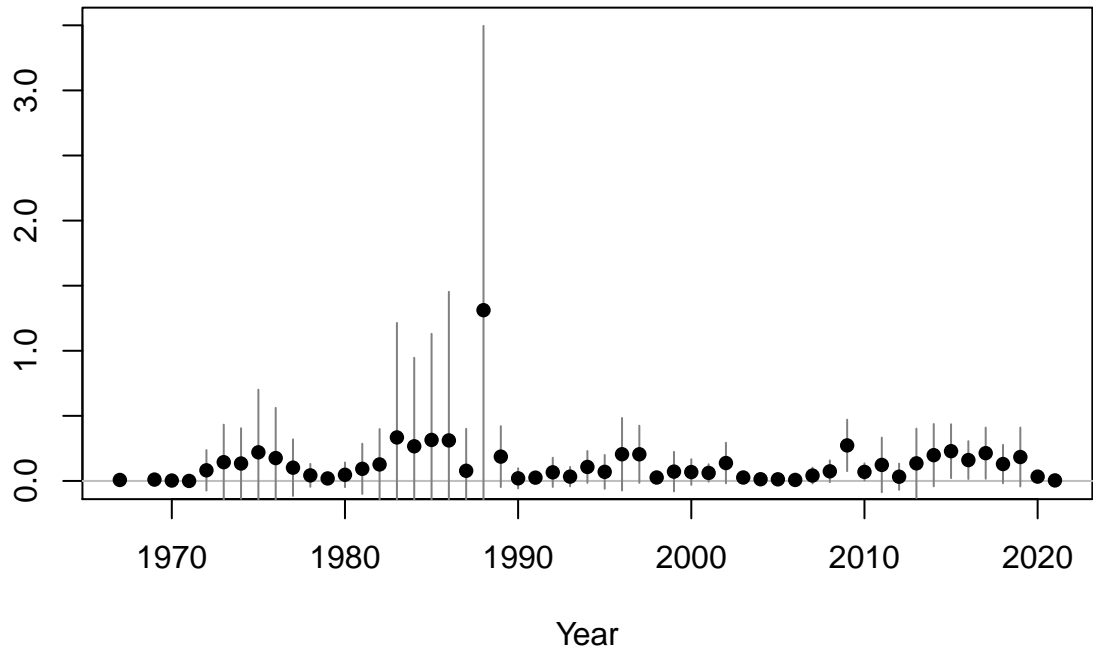


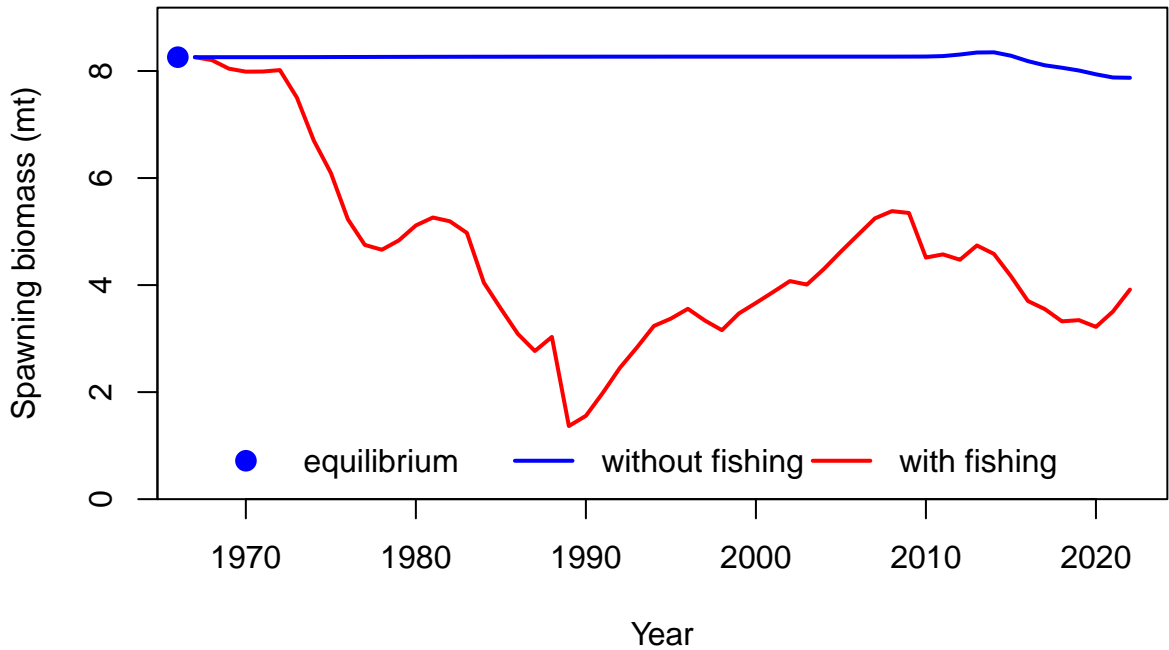


Age-0 recruits (1,000s)

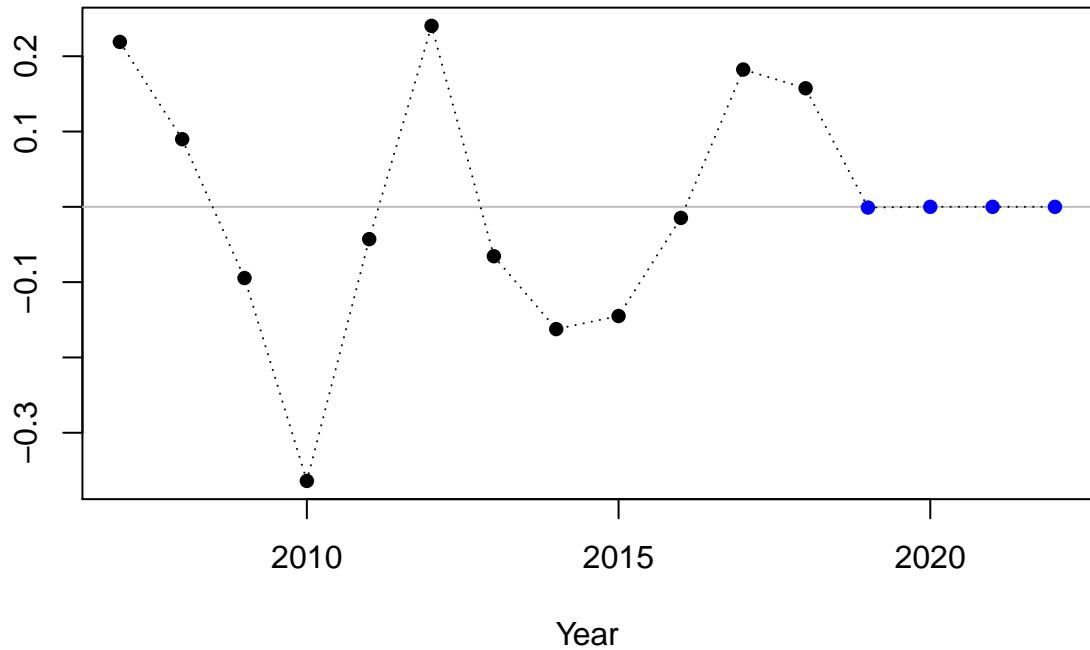


Summary Fishing Mortality

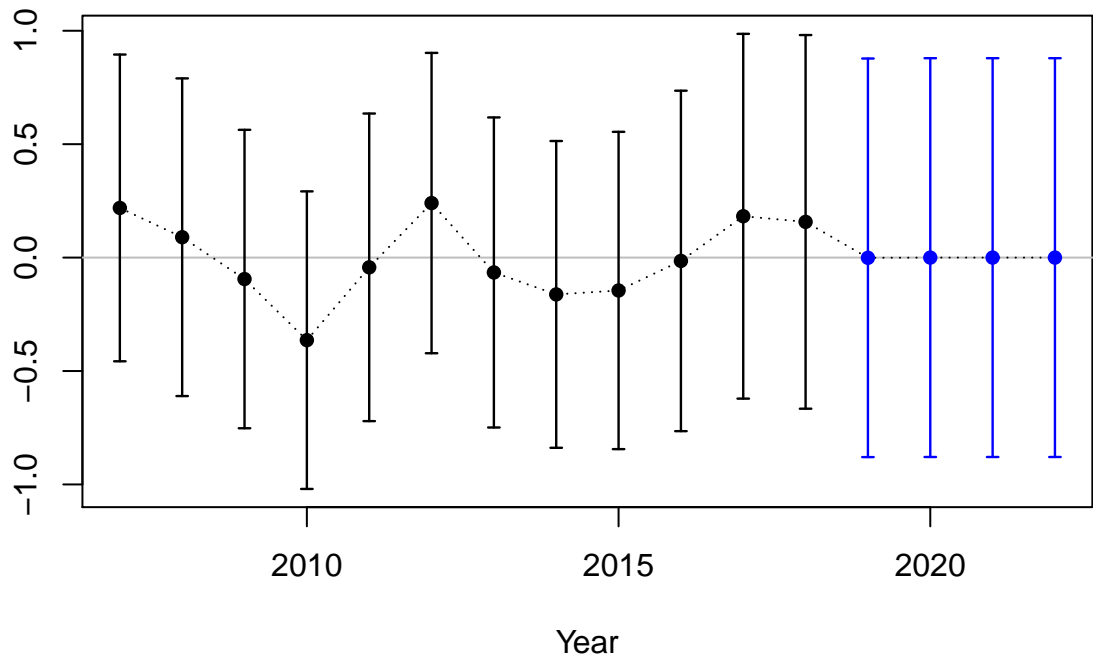




Log recruitment deviation

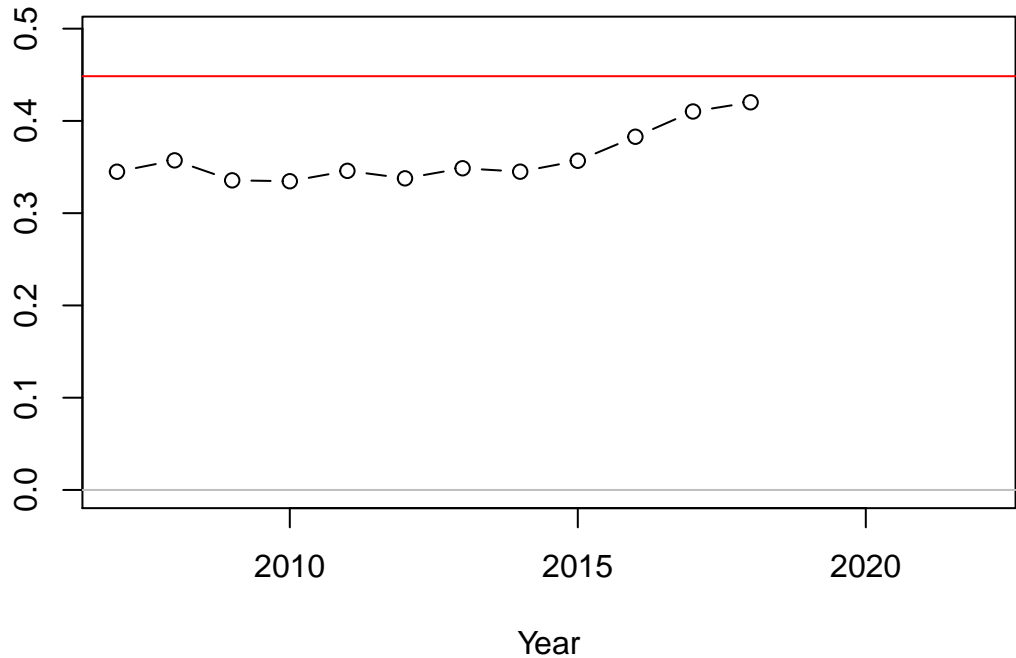


Log recruitment deviation

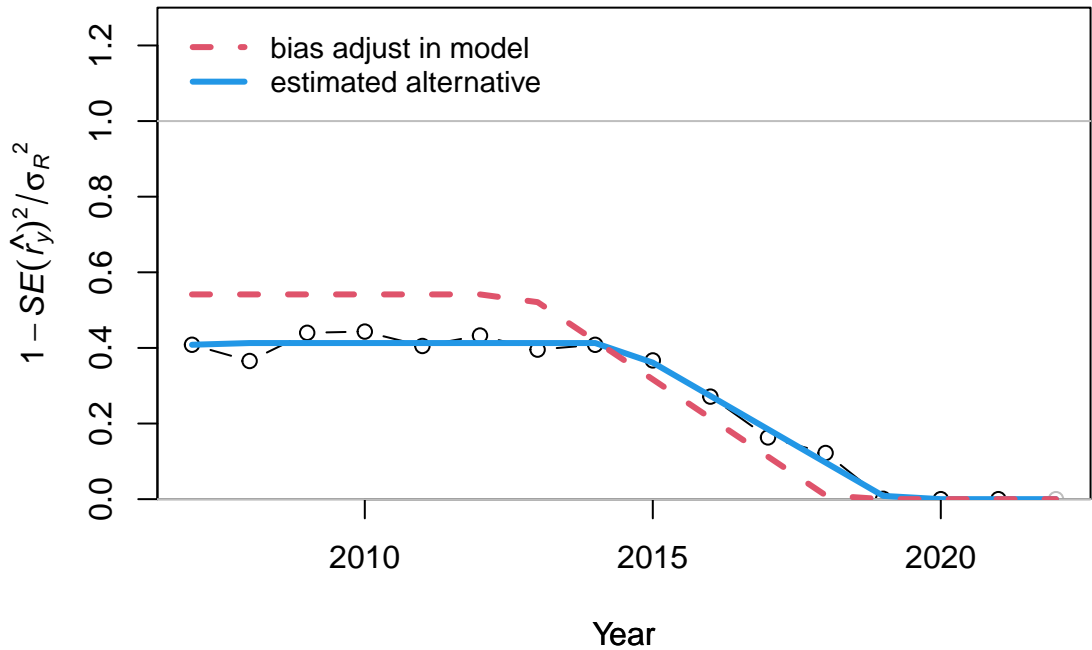


## Recruitment deviation variance

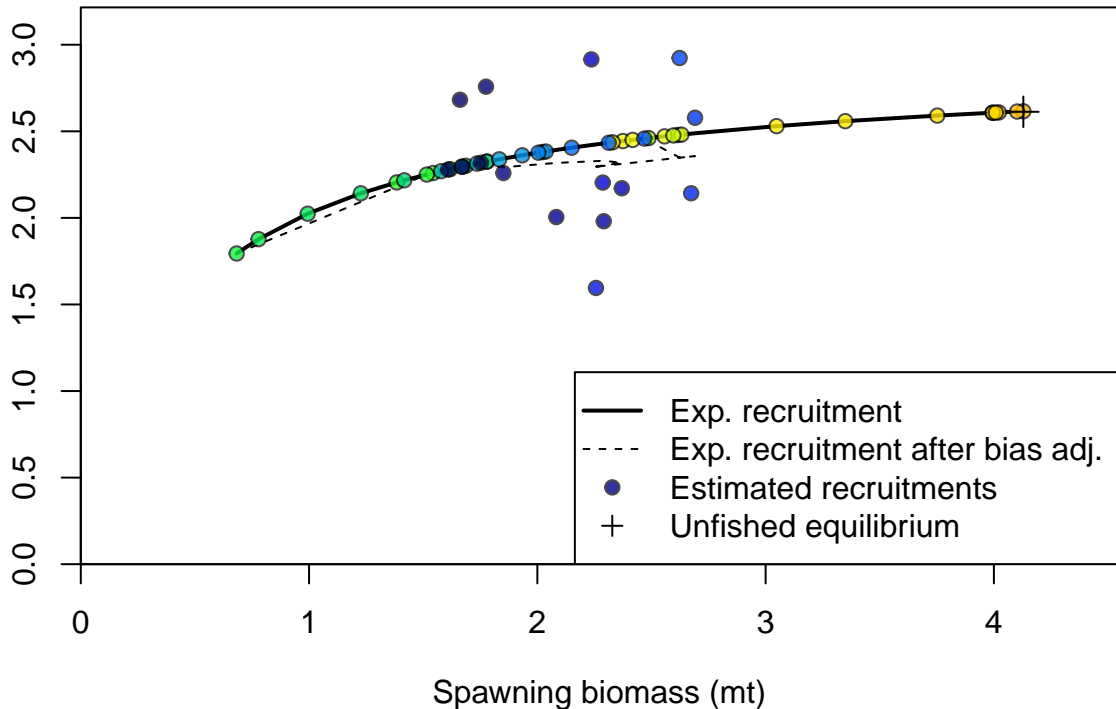
Asymptotic standard error estimate



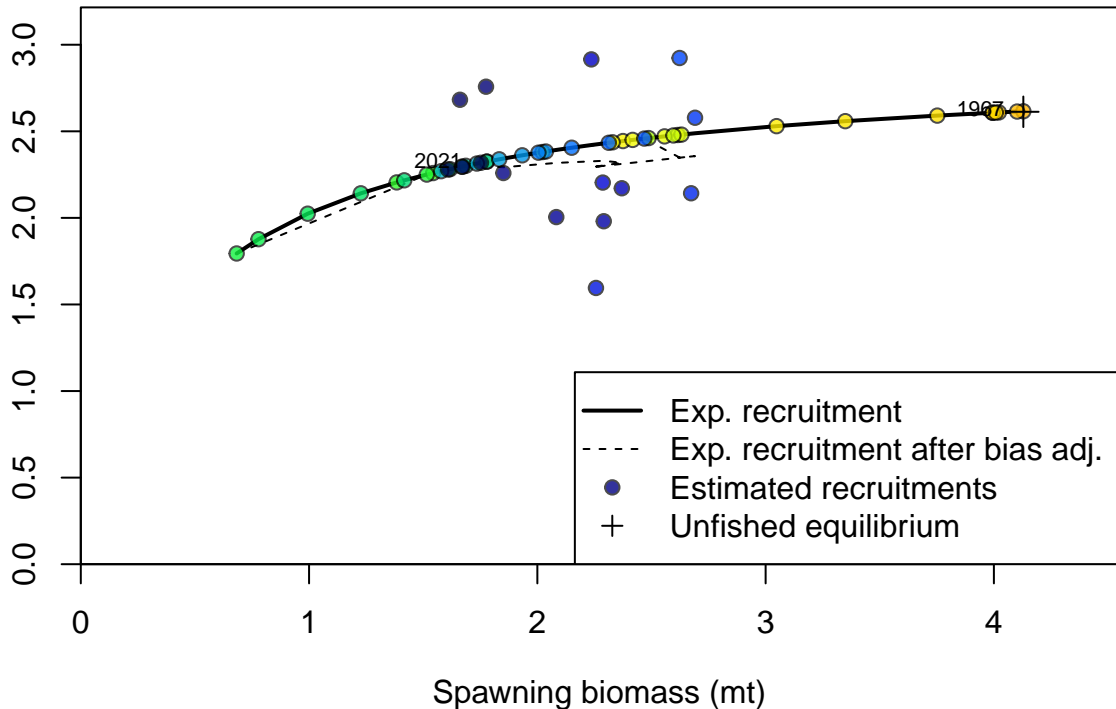




Recruitment (1,000s)



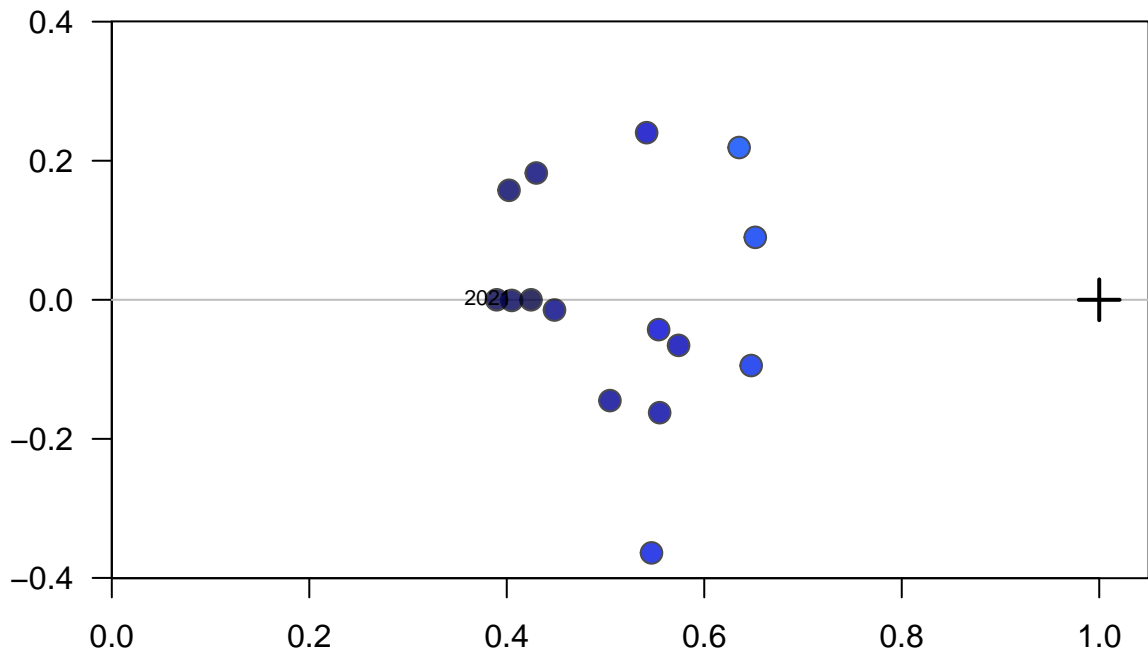
Recruitment (1,000s)

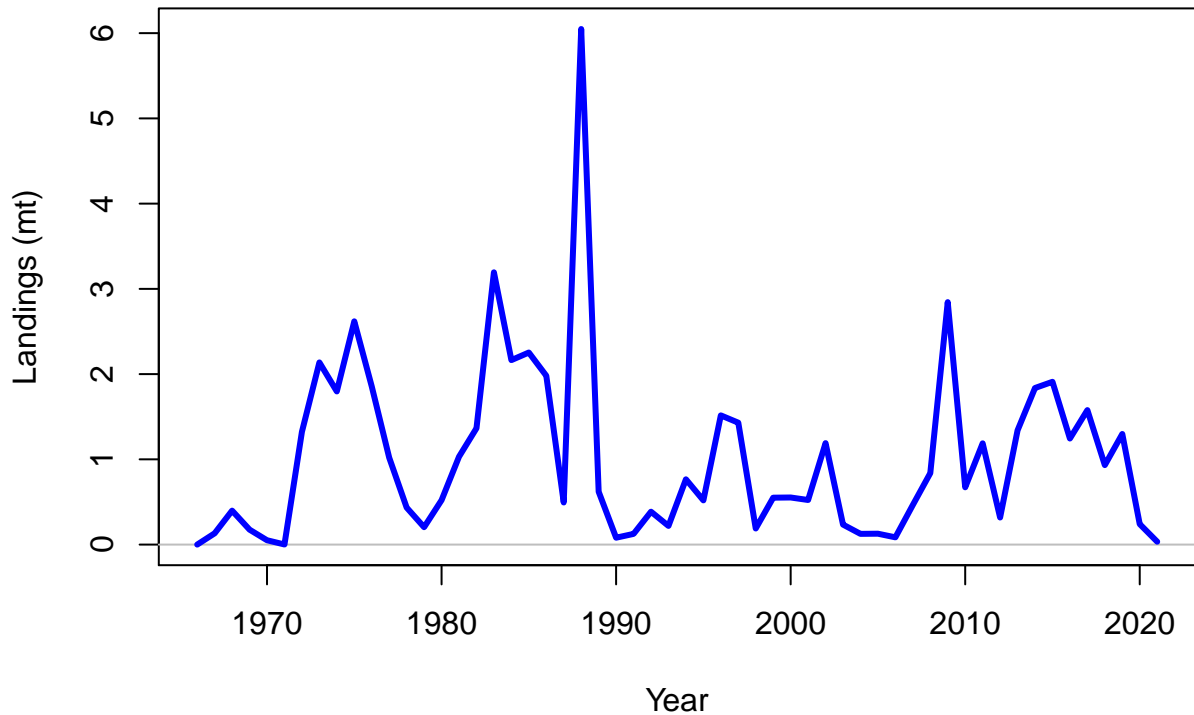


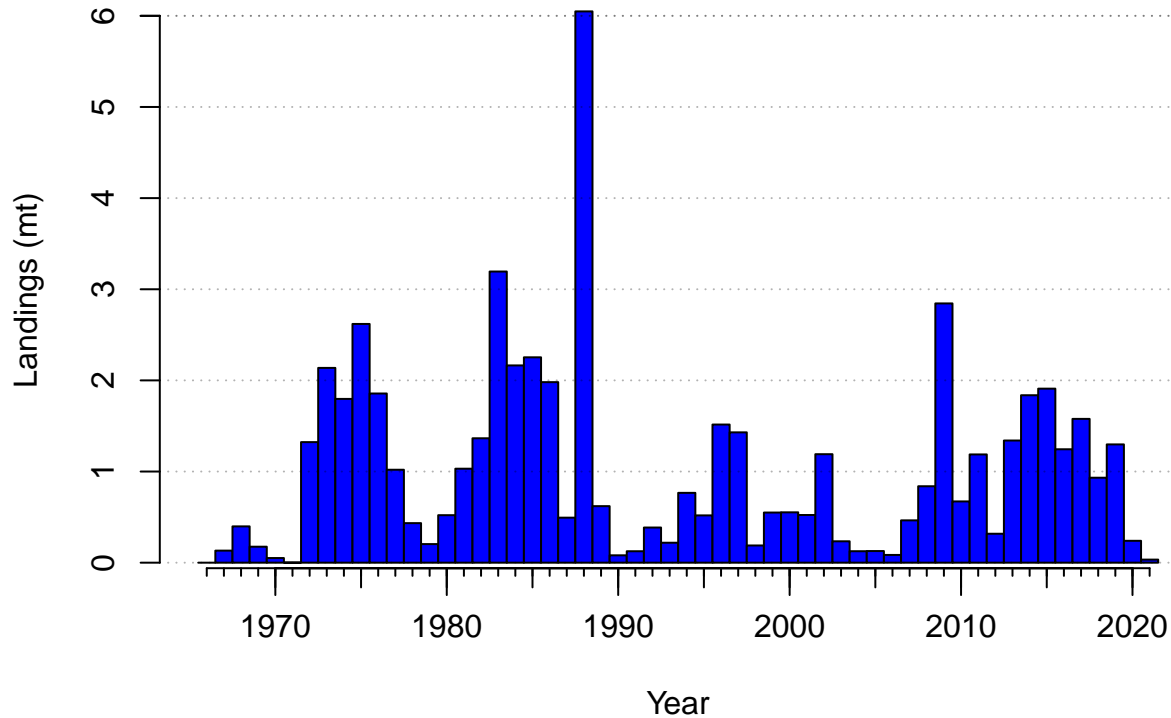
Log recruitment deviation

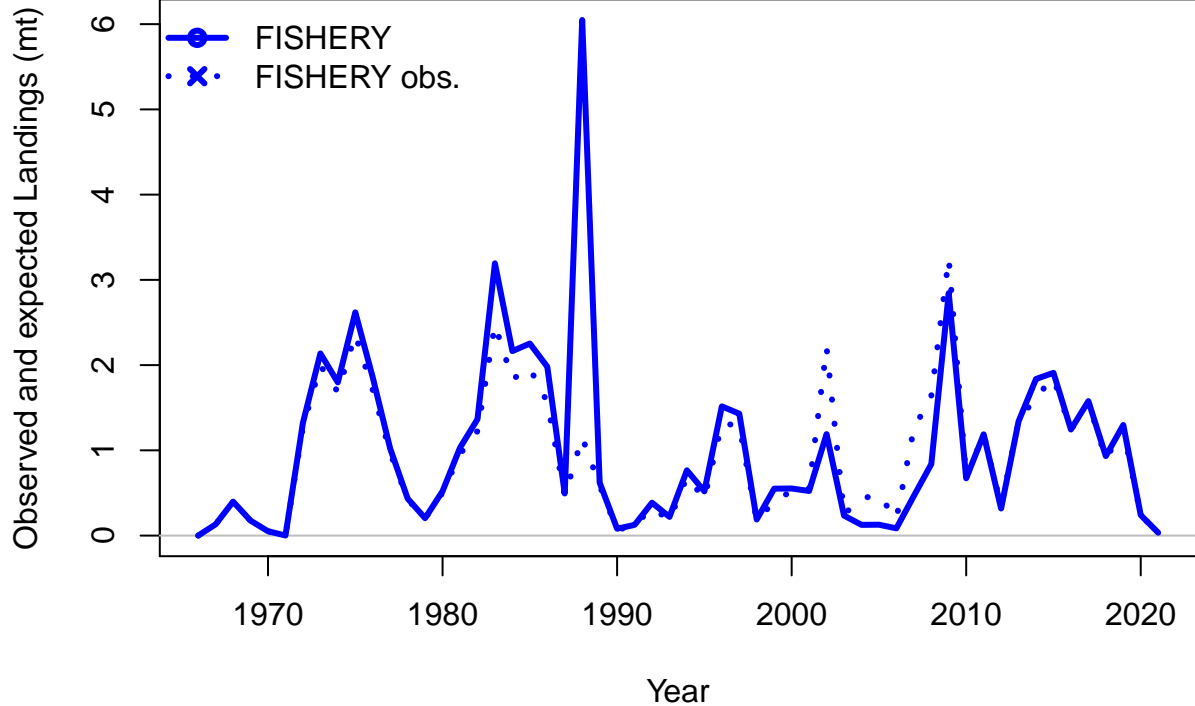
2020

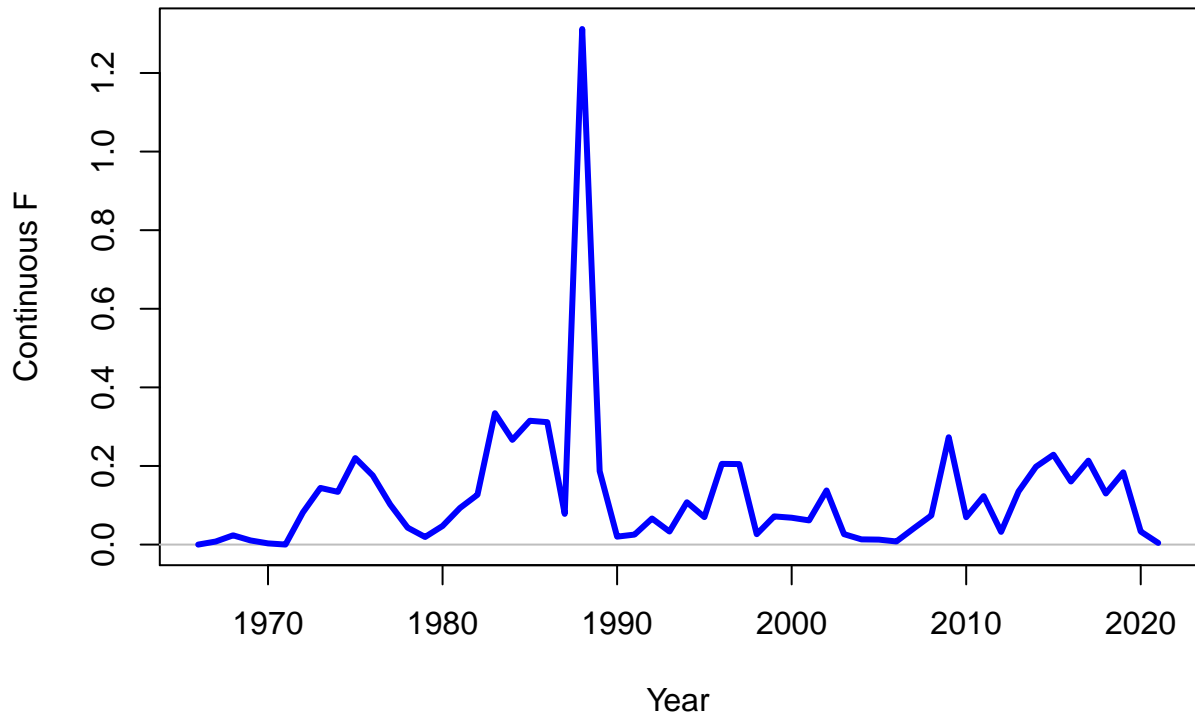
Spawning output (relative to  $B_0$ )





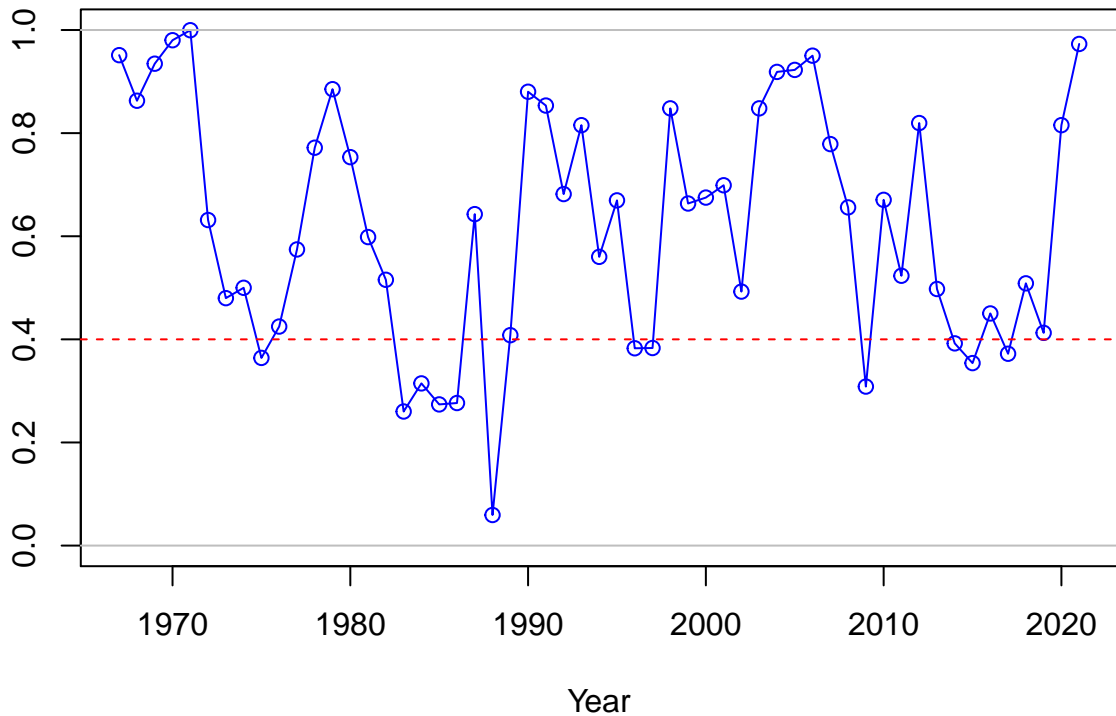


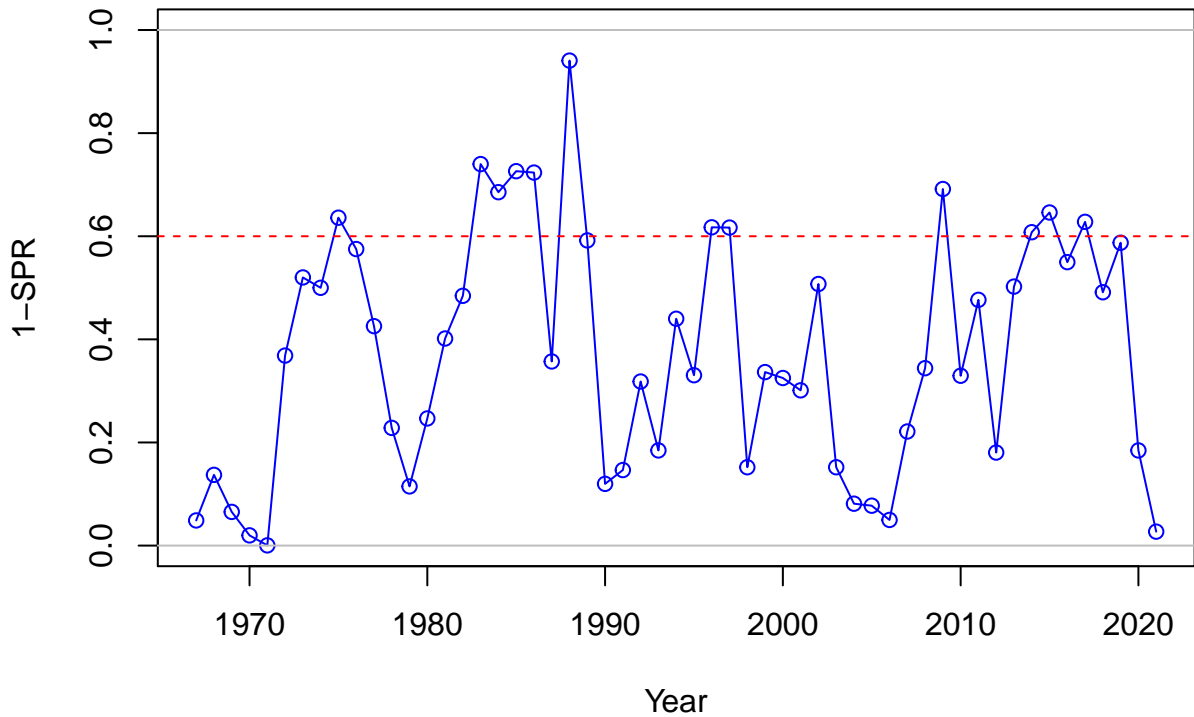




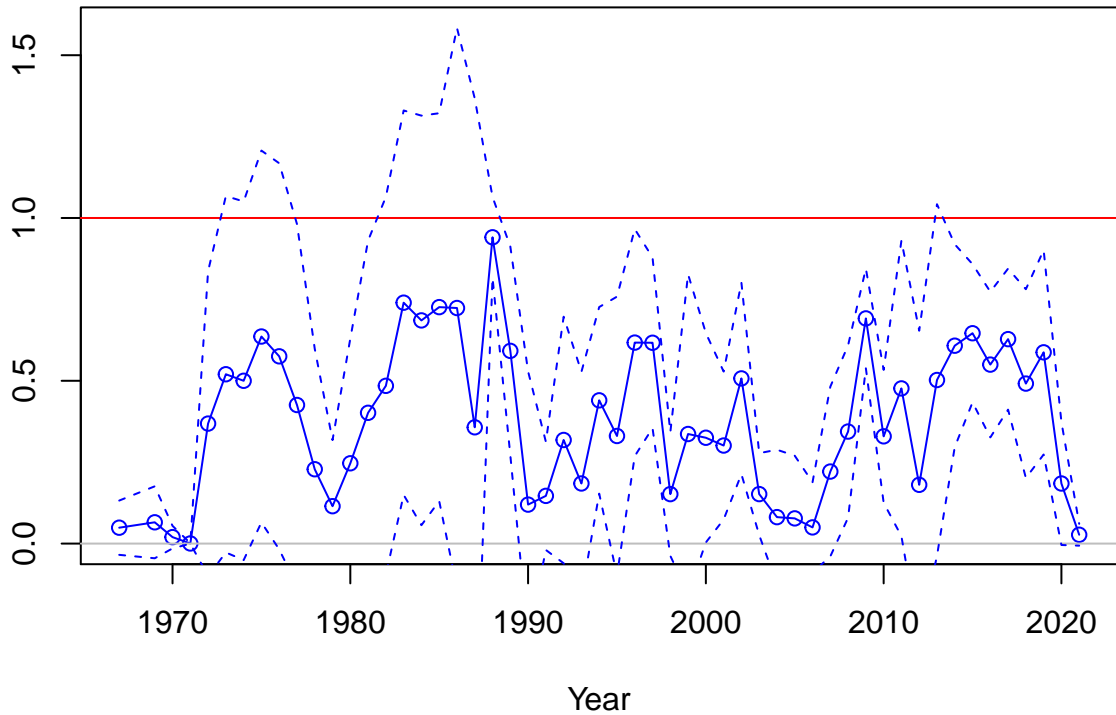


SPR

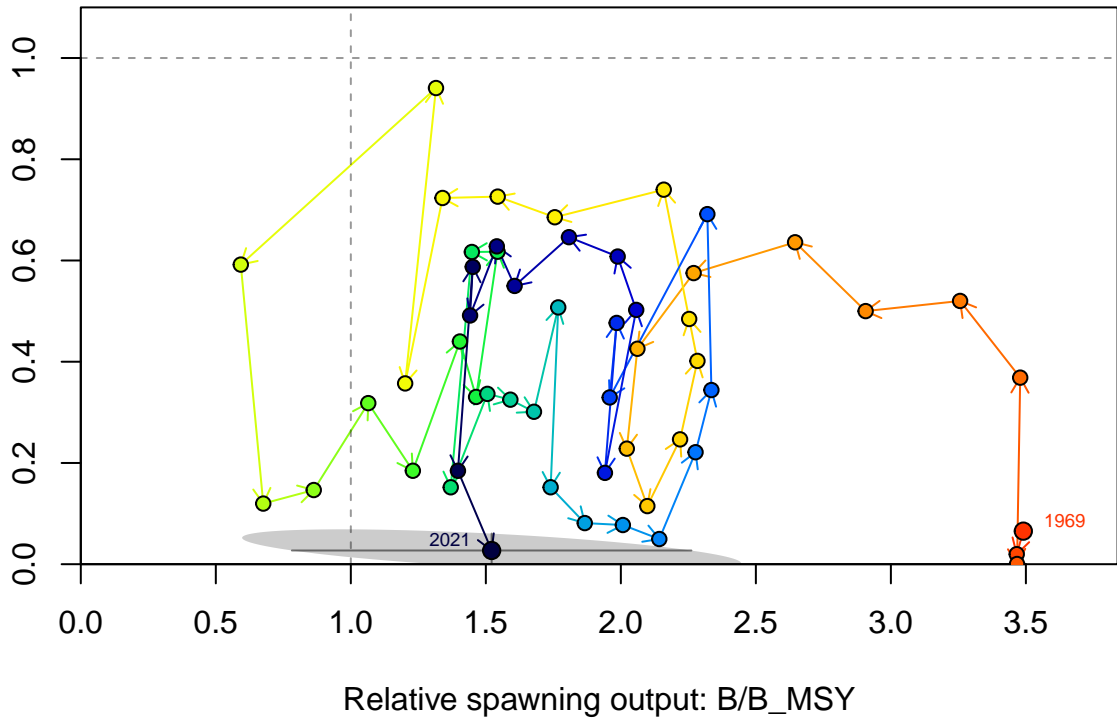




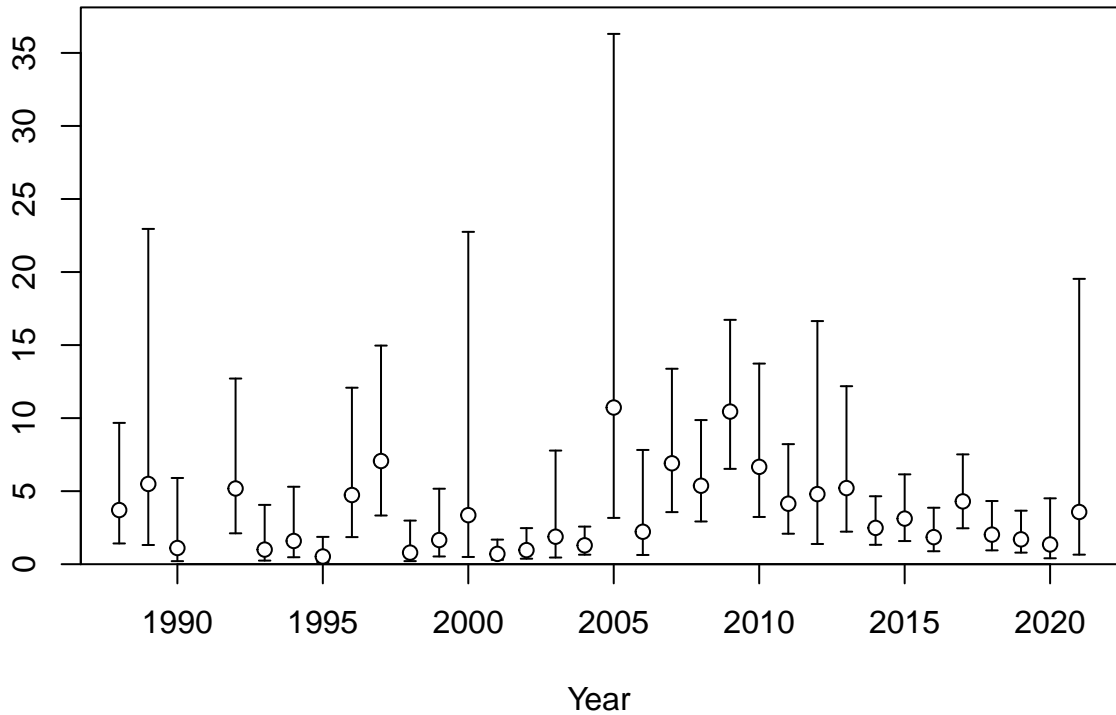
Fishing intensity: 1-SPR



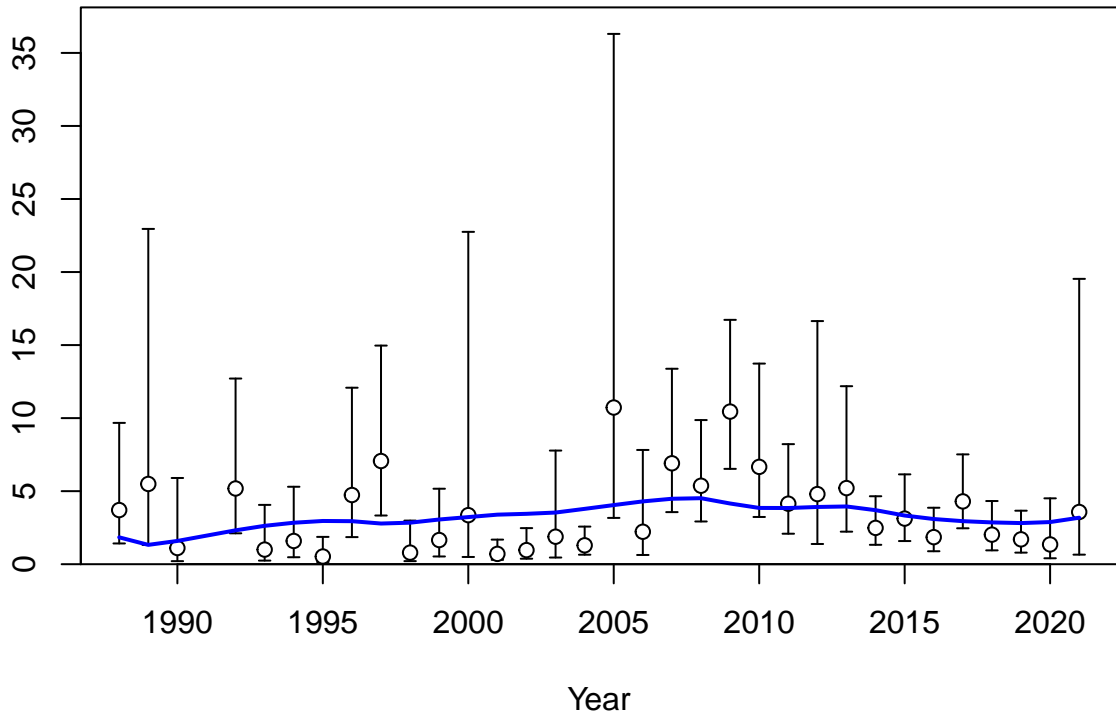
Fishing intensity: 1-SPR

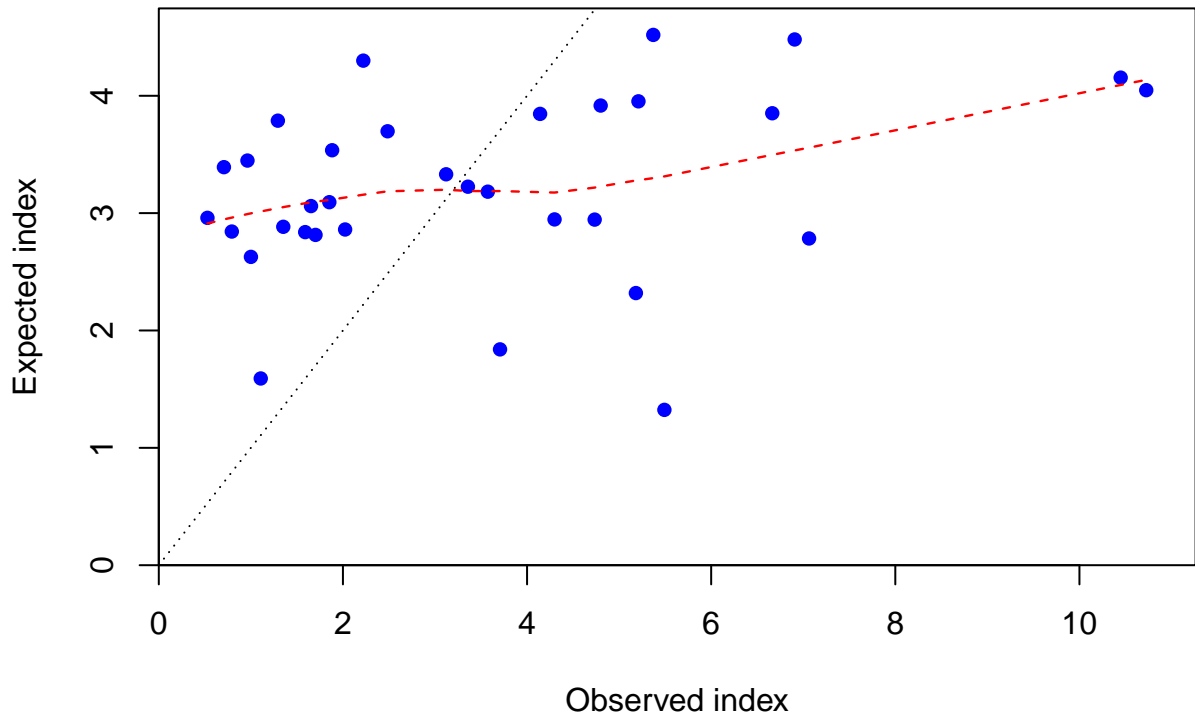


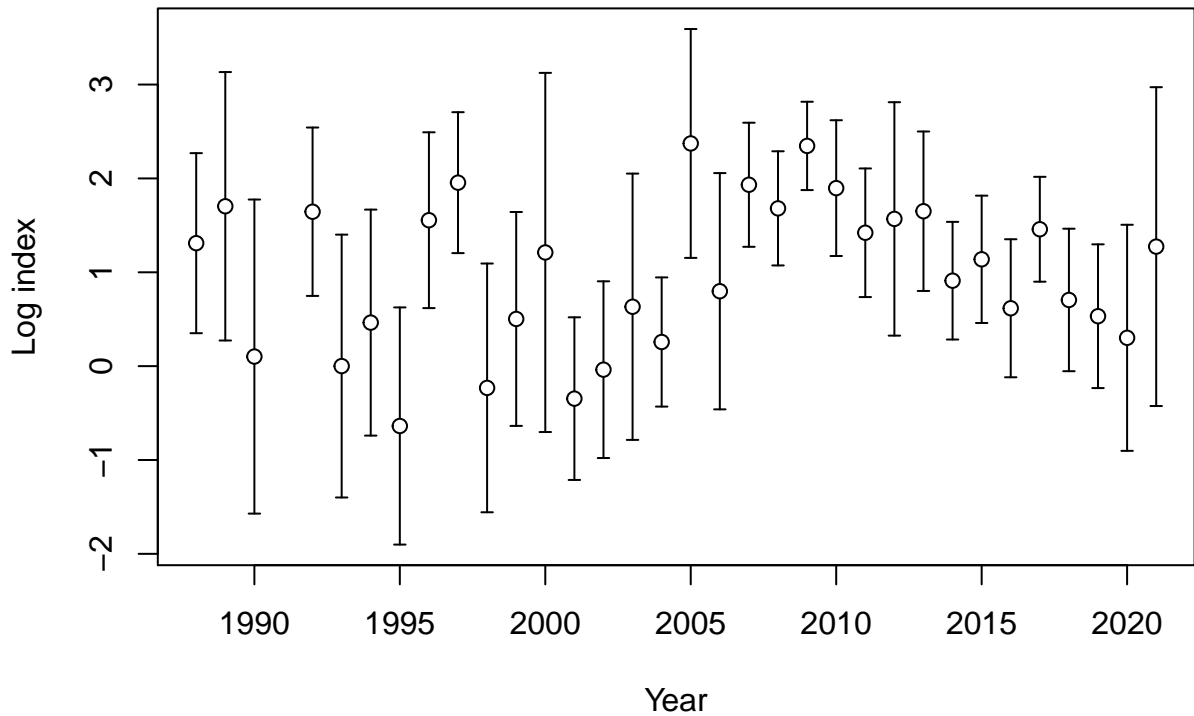
Index



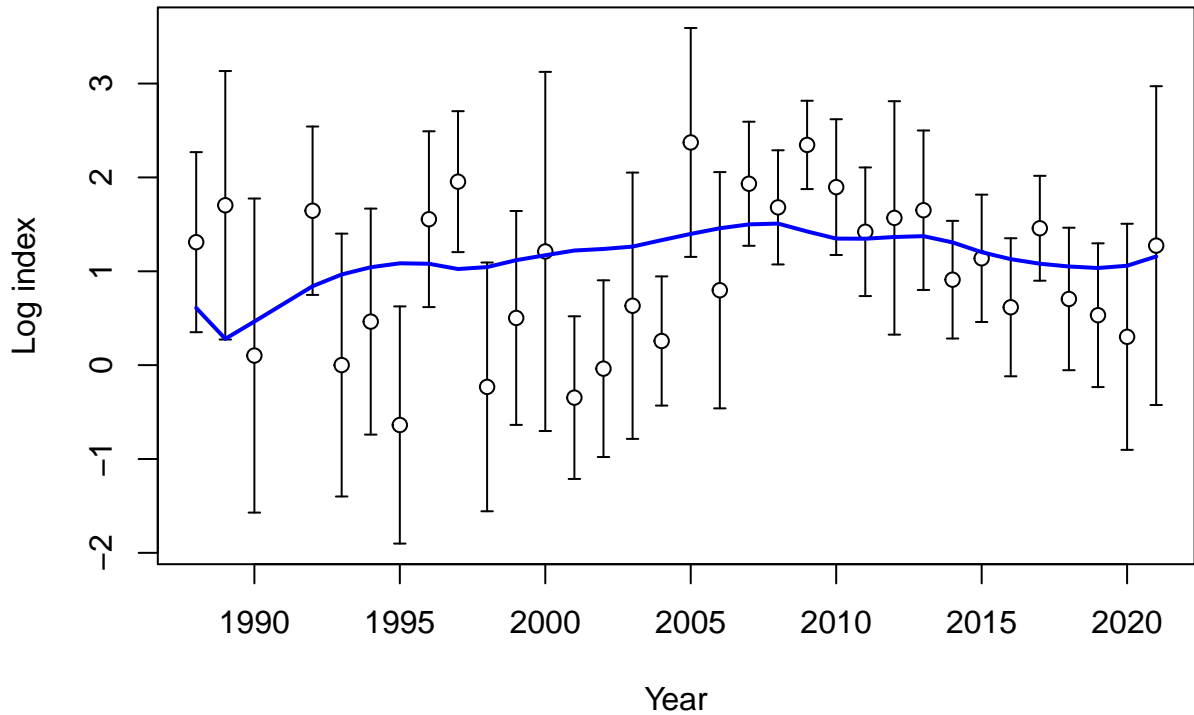
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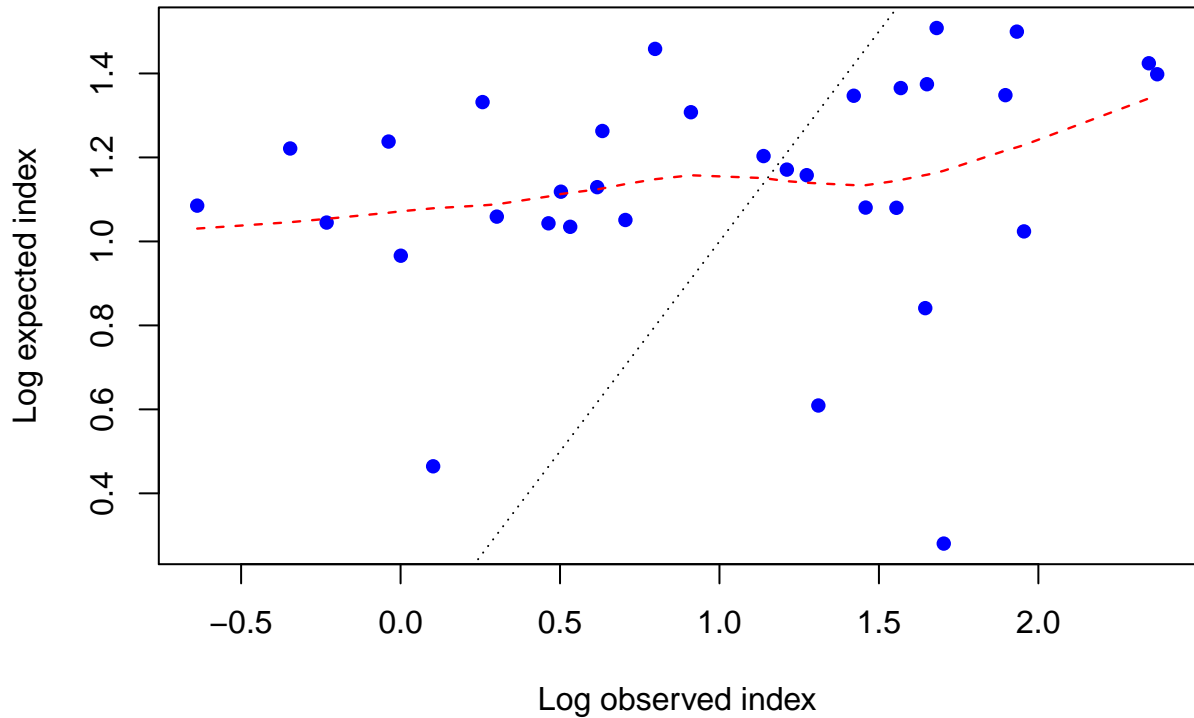




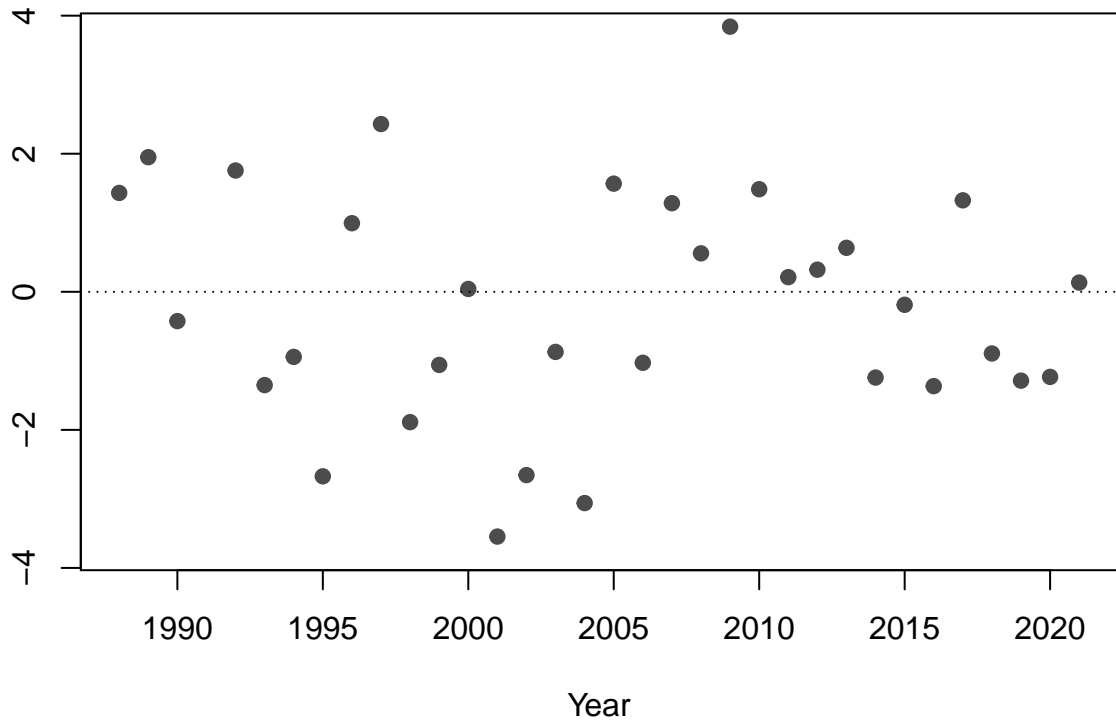


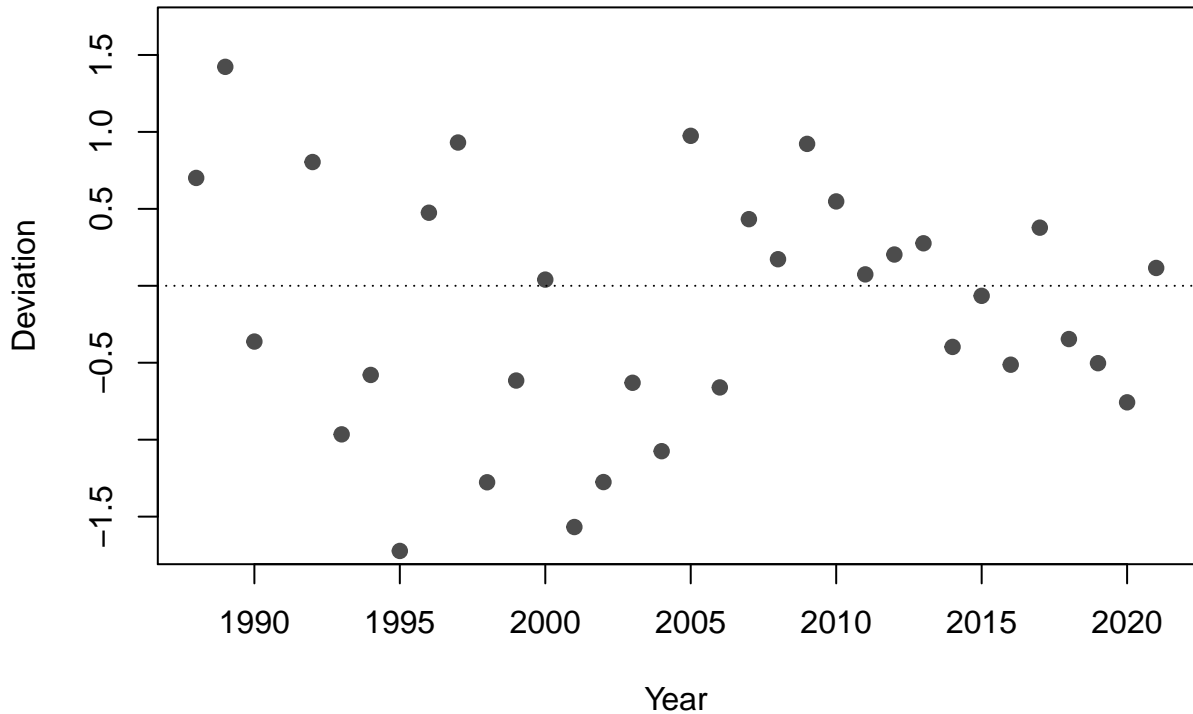


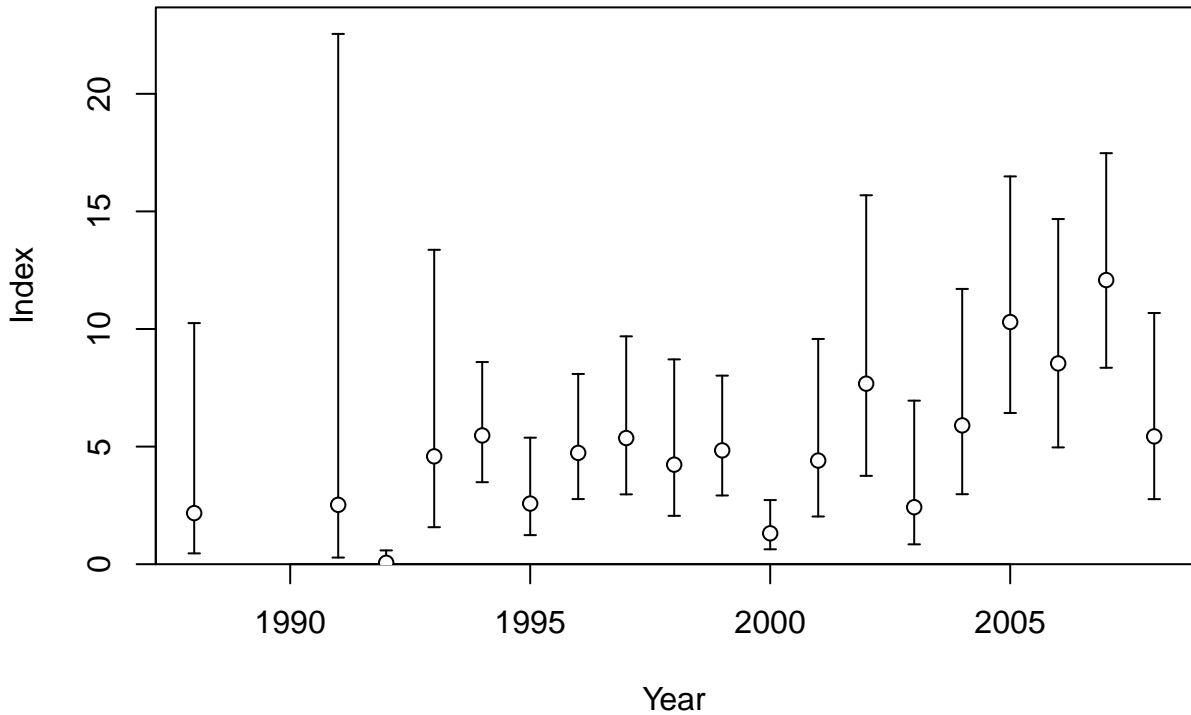


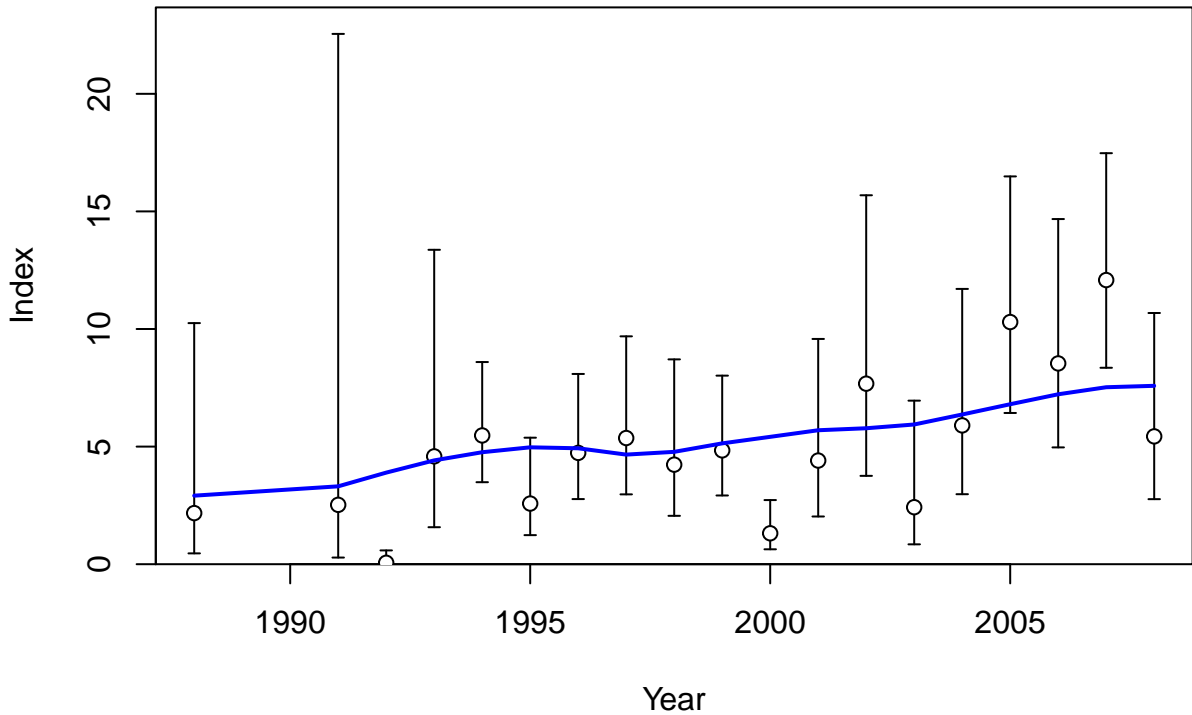


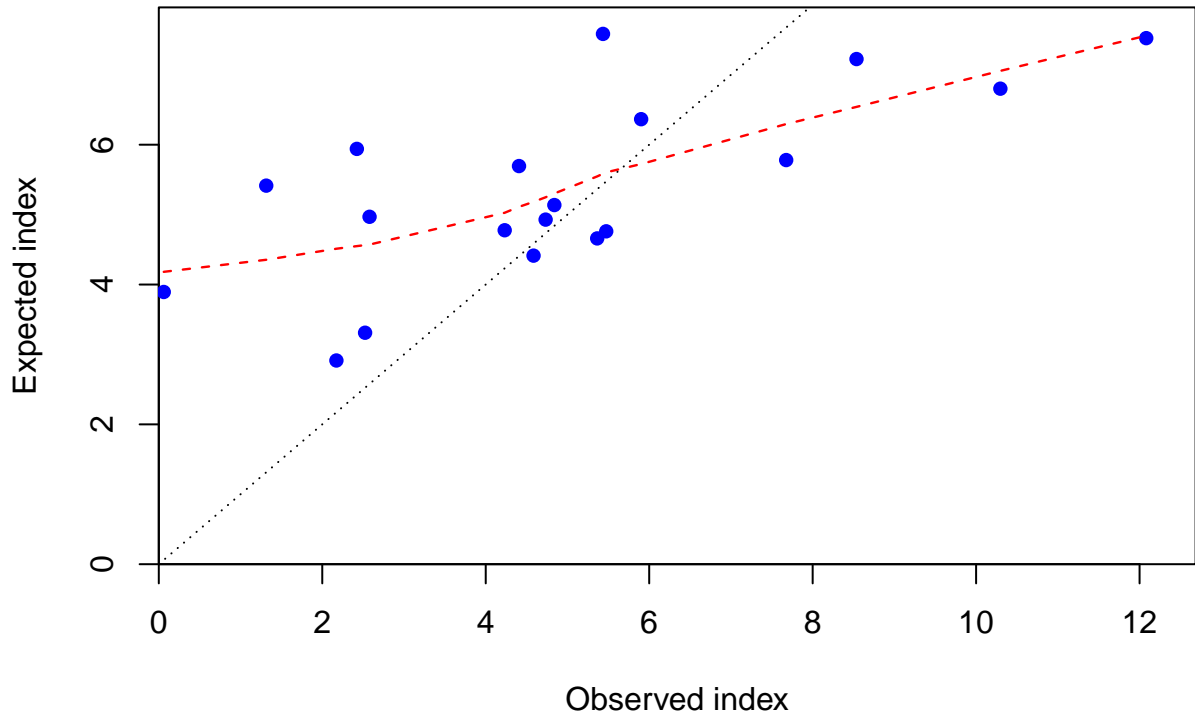
Residual

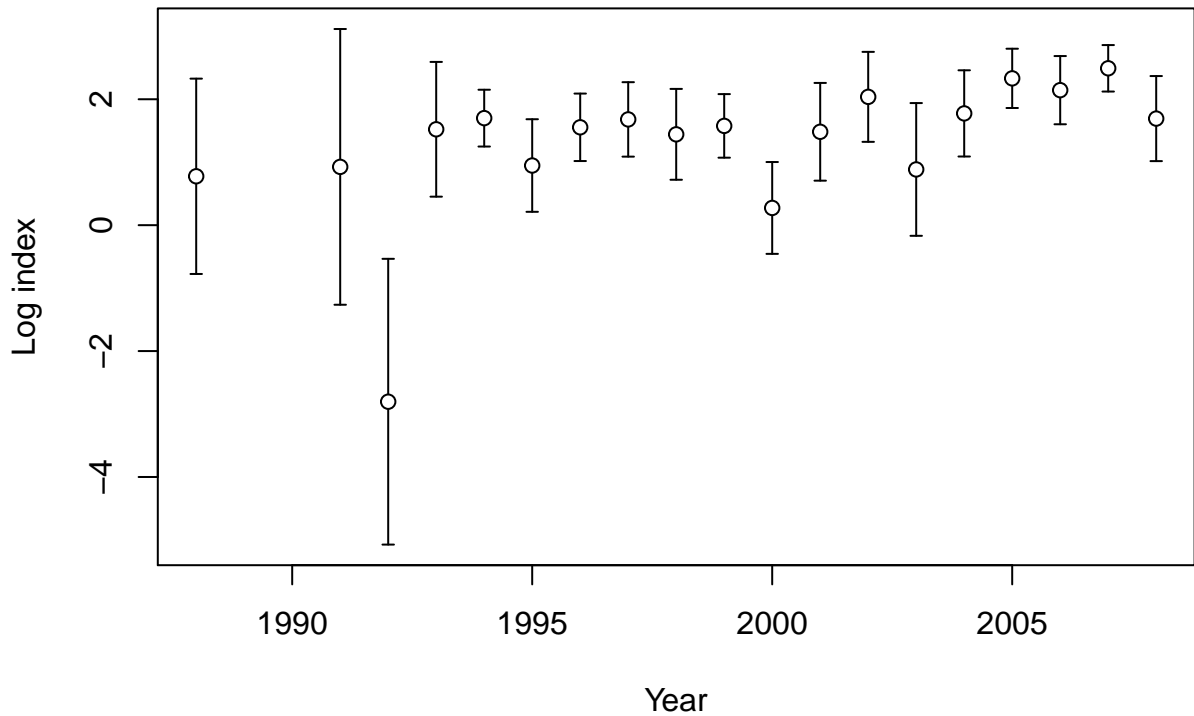




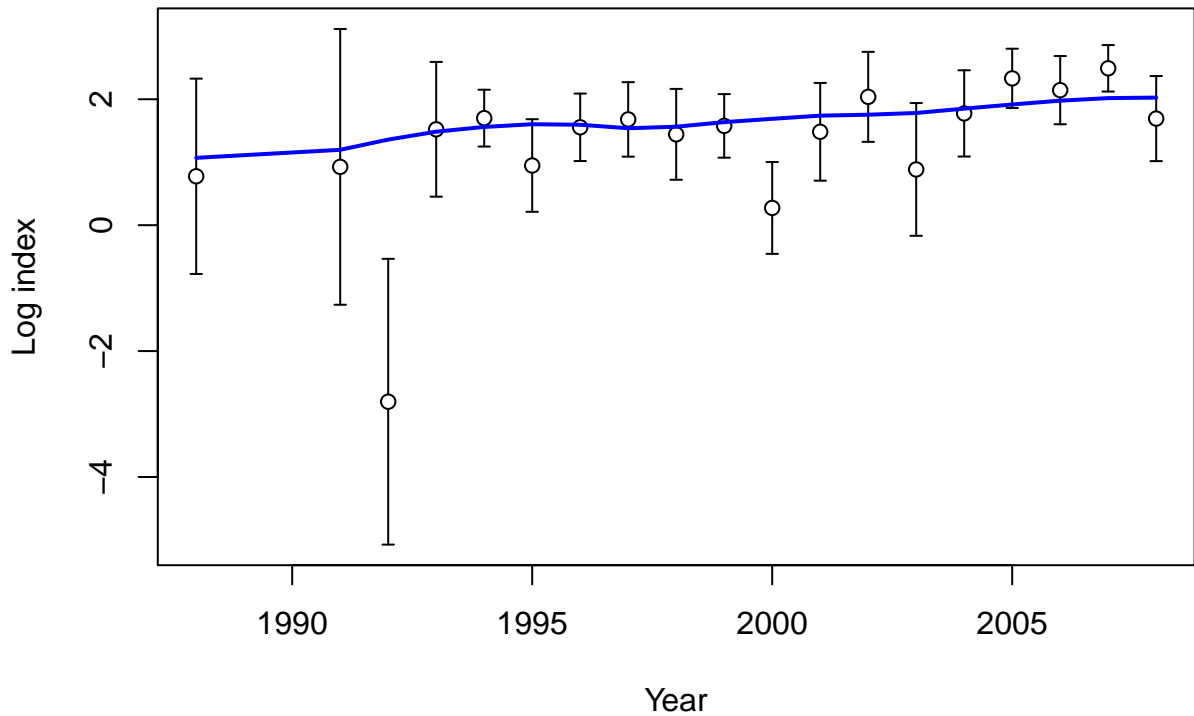


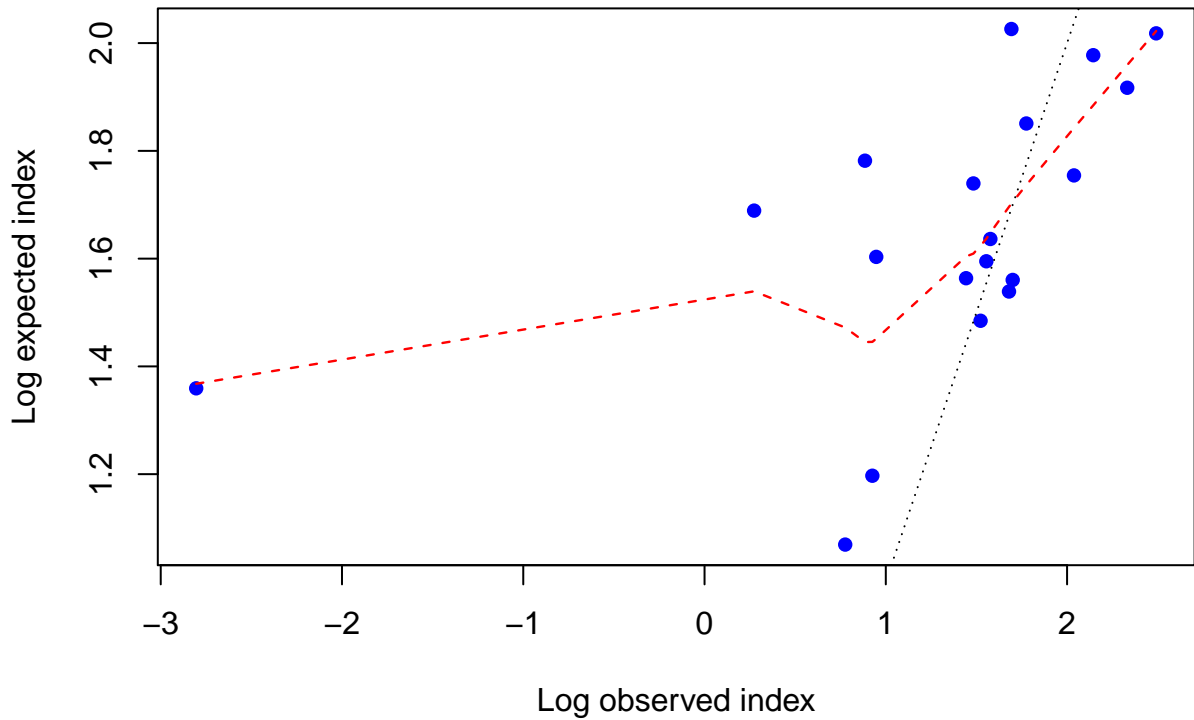


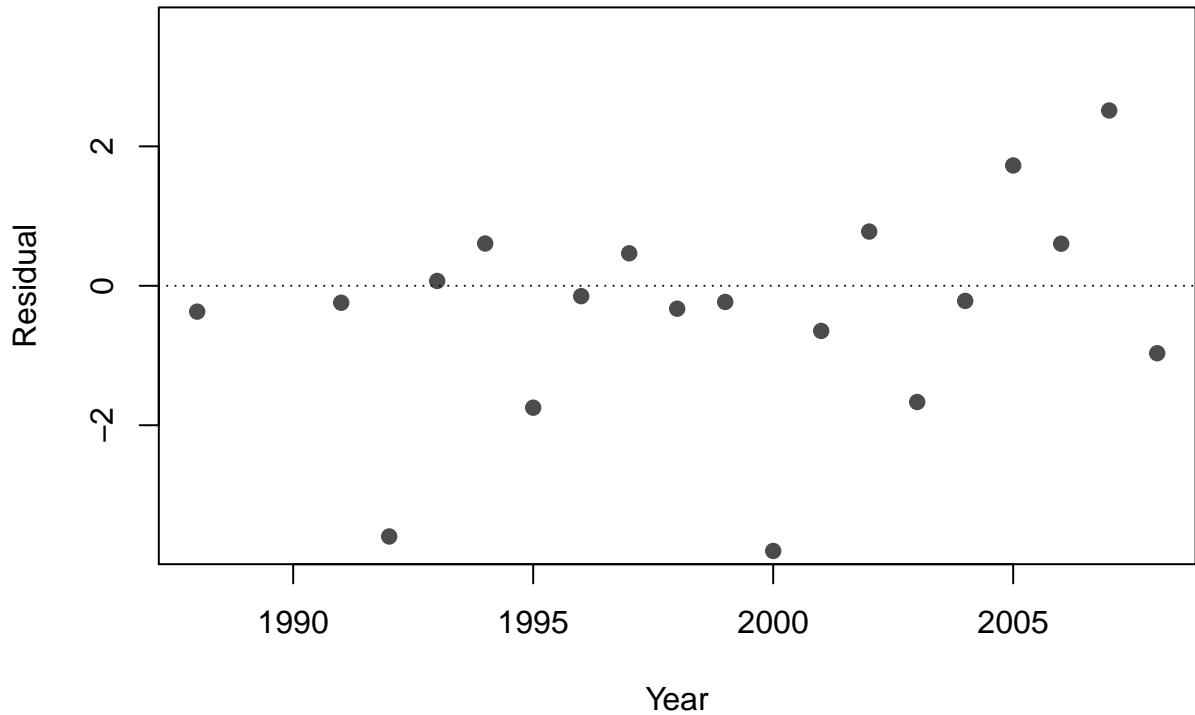


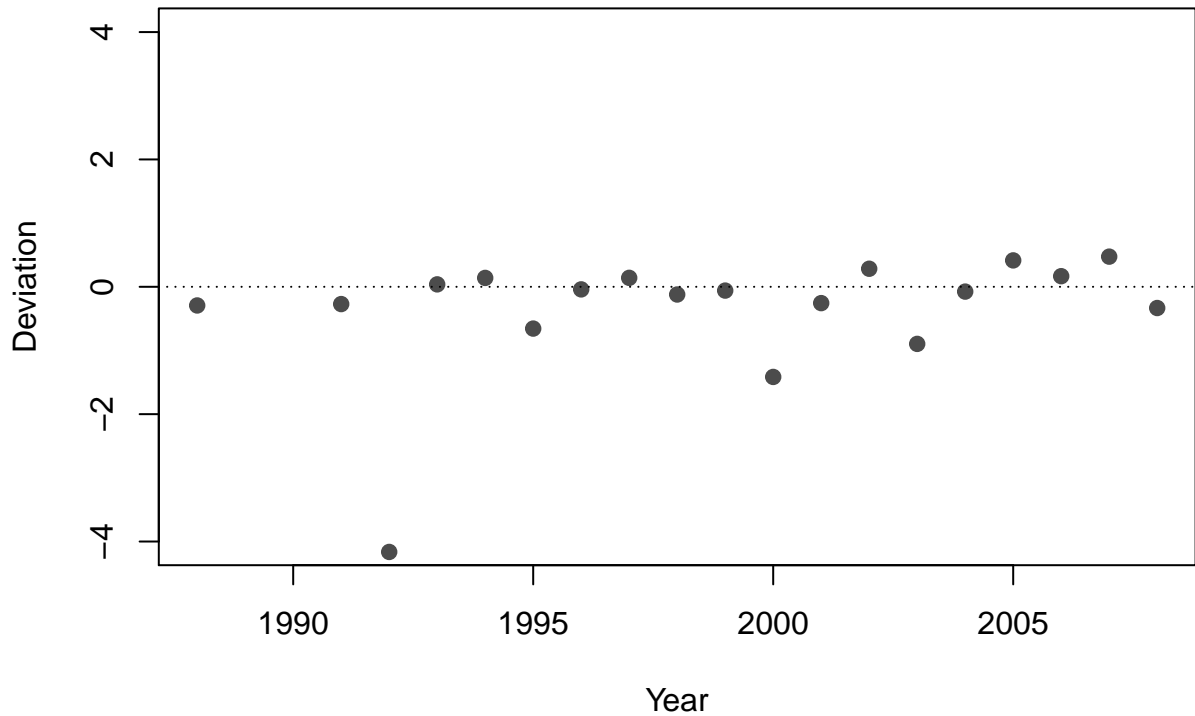




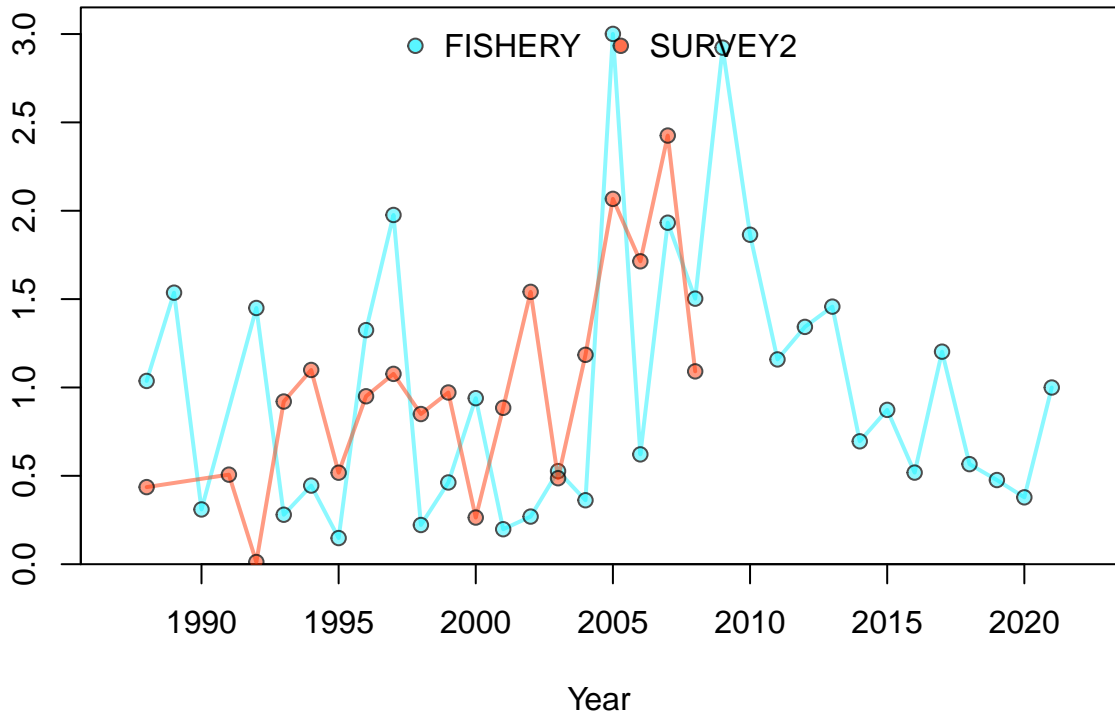


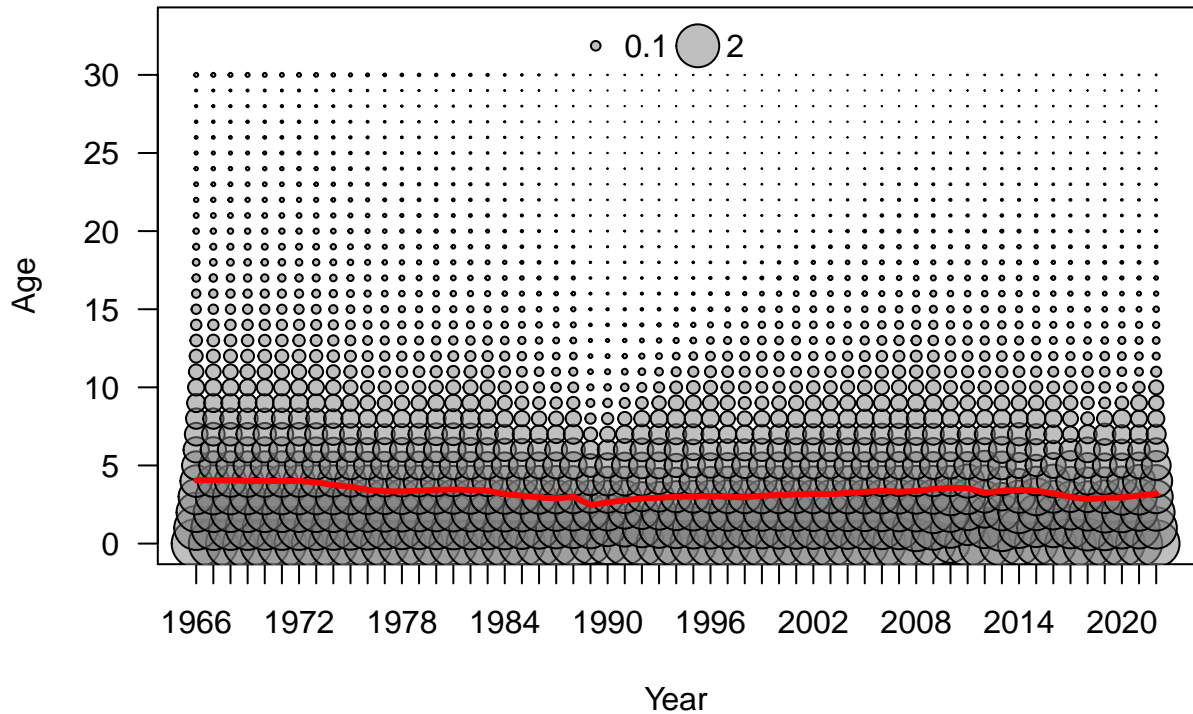


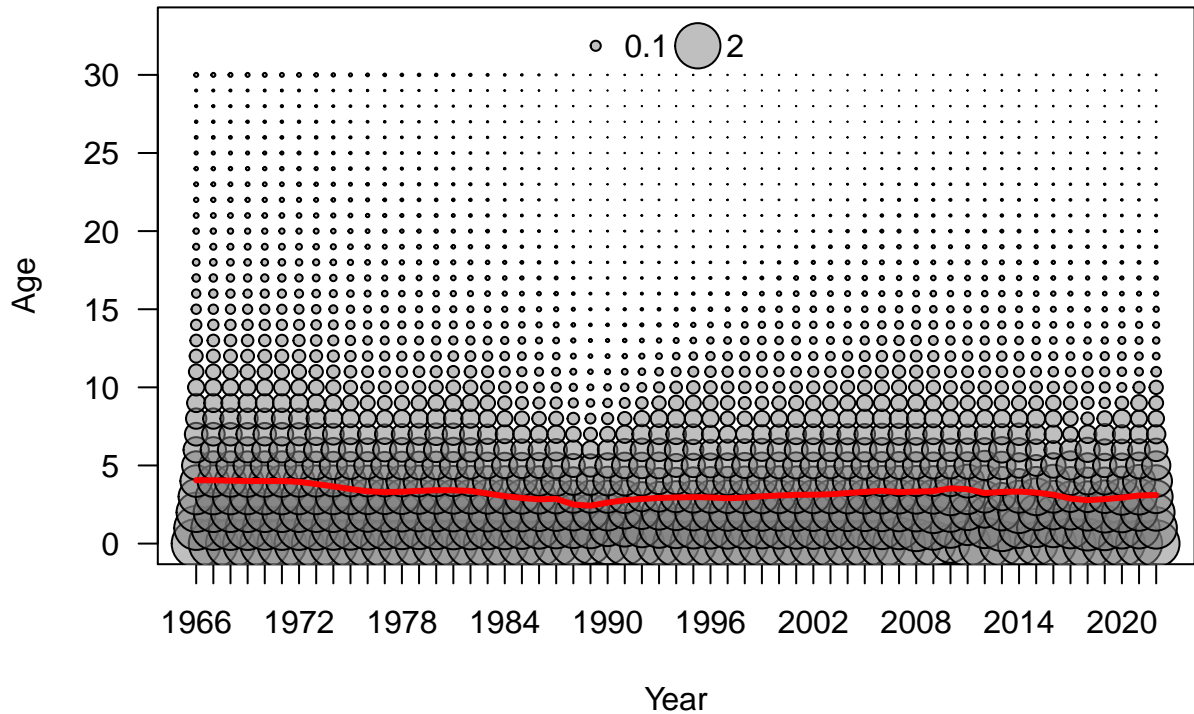




Standardized index







Length

120

100

80

60

40

20

0

○ 0.1 ● 2

1967

1973

1979

1985

1991

1997

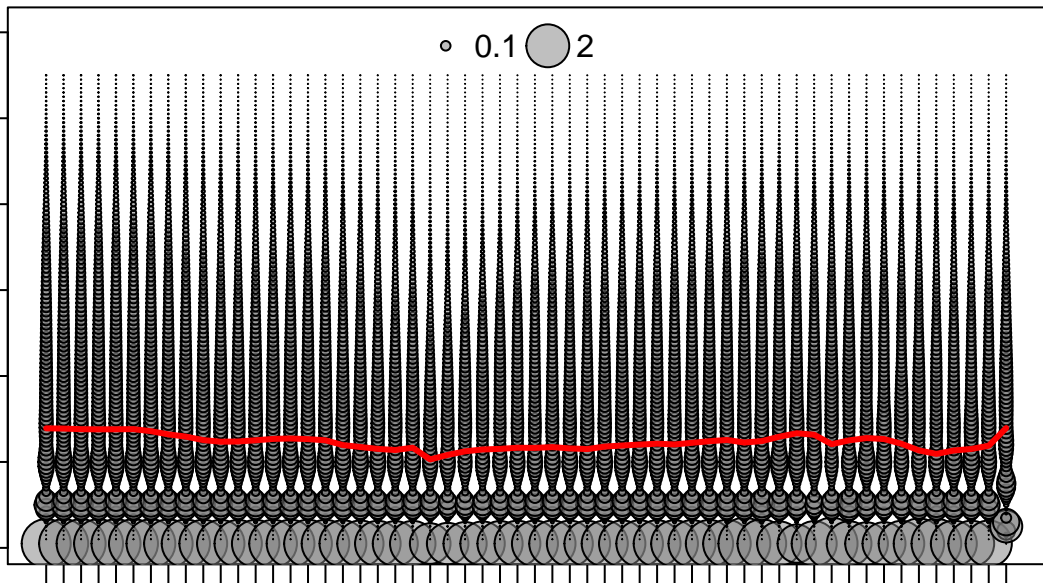
2003

2009

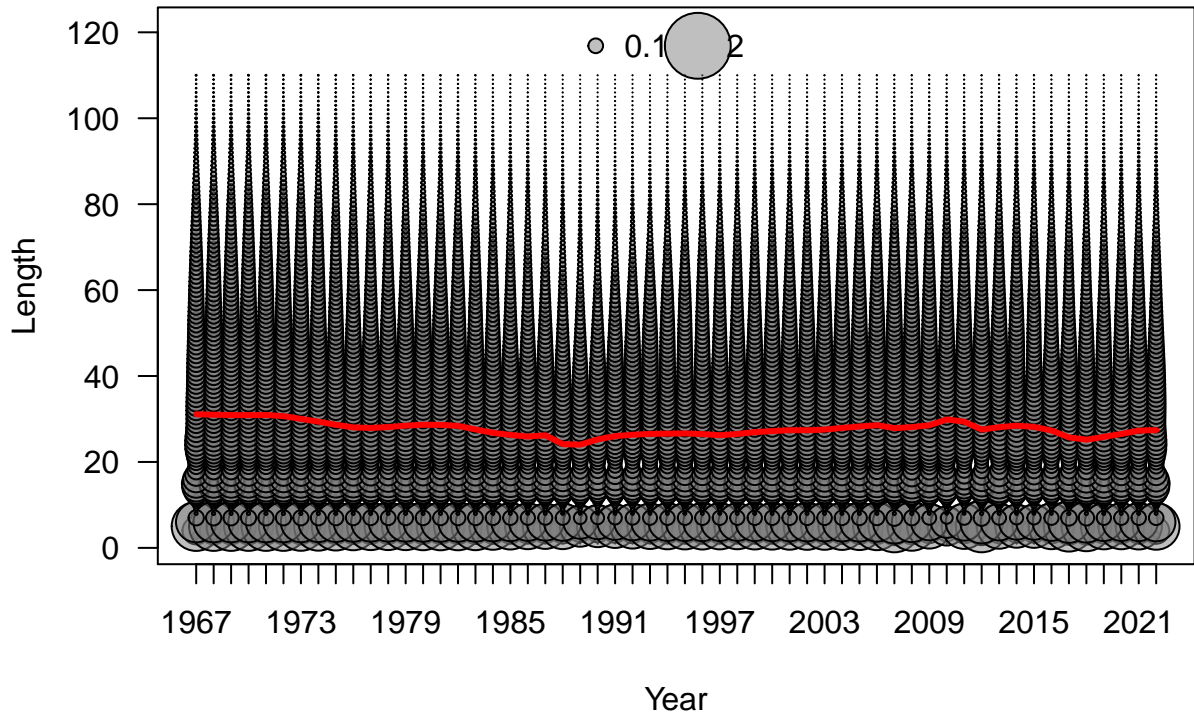
2015

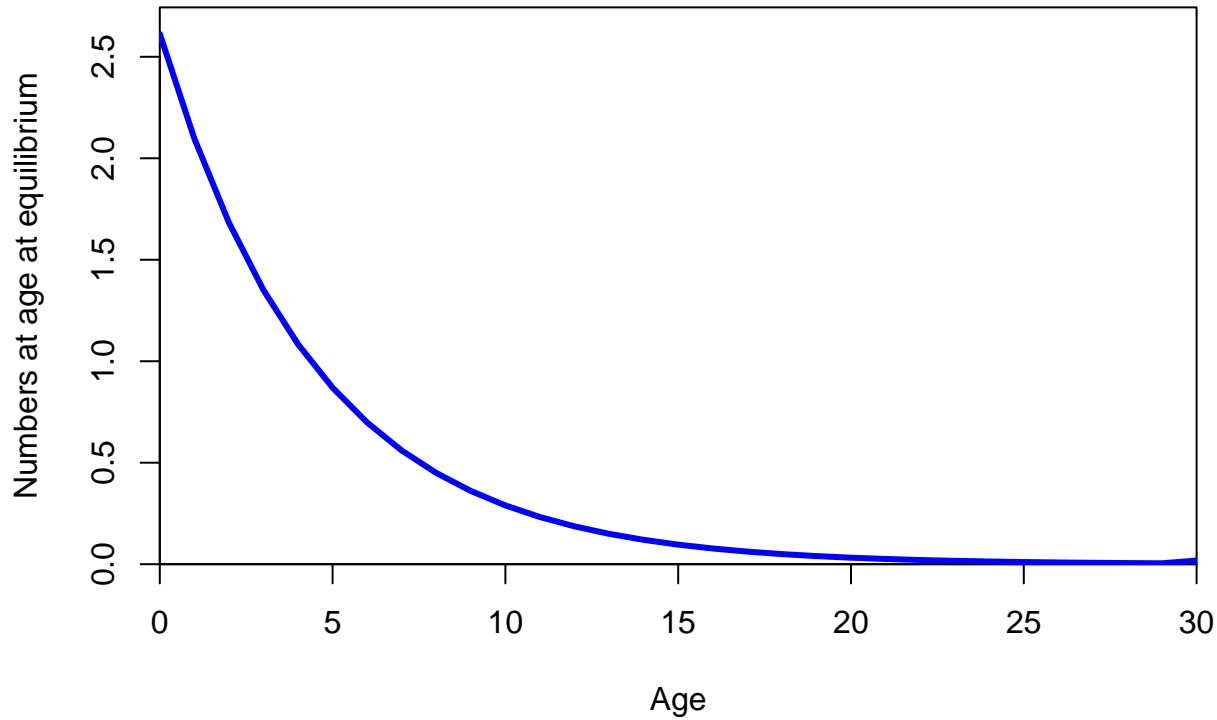
2021

Year



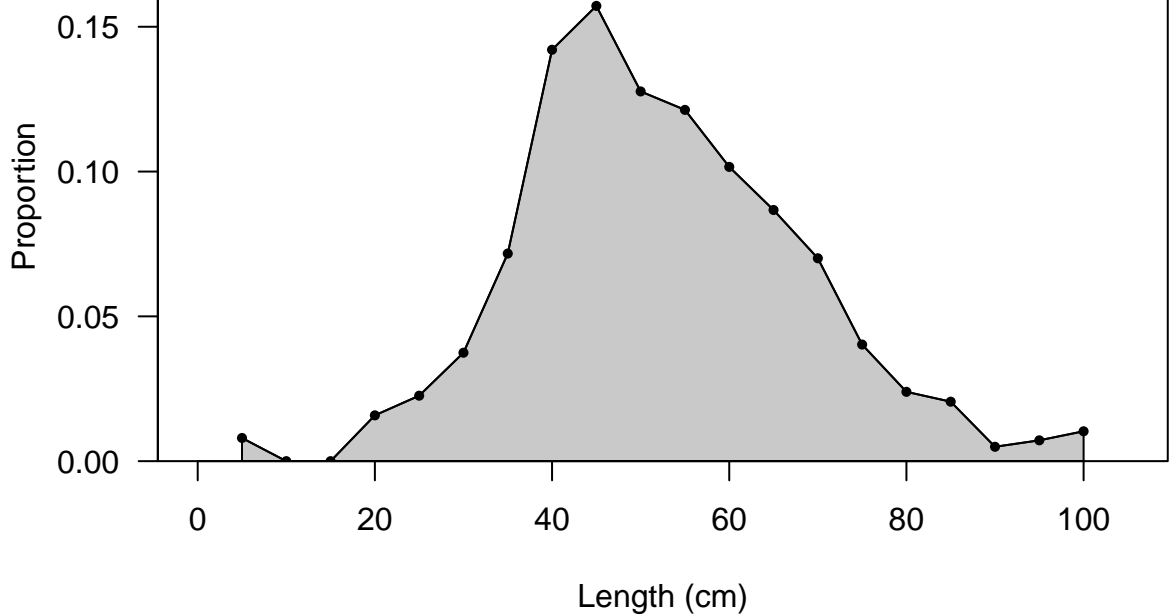


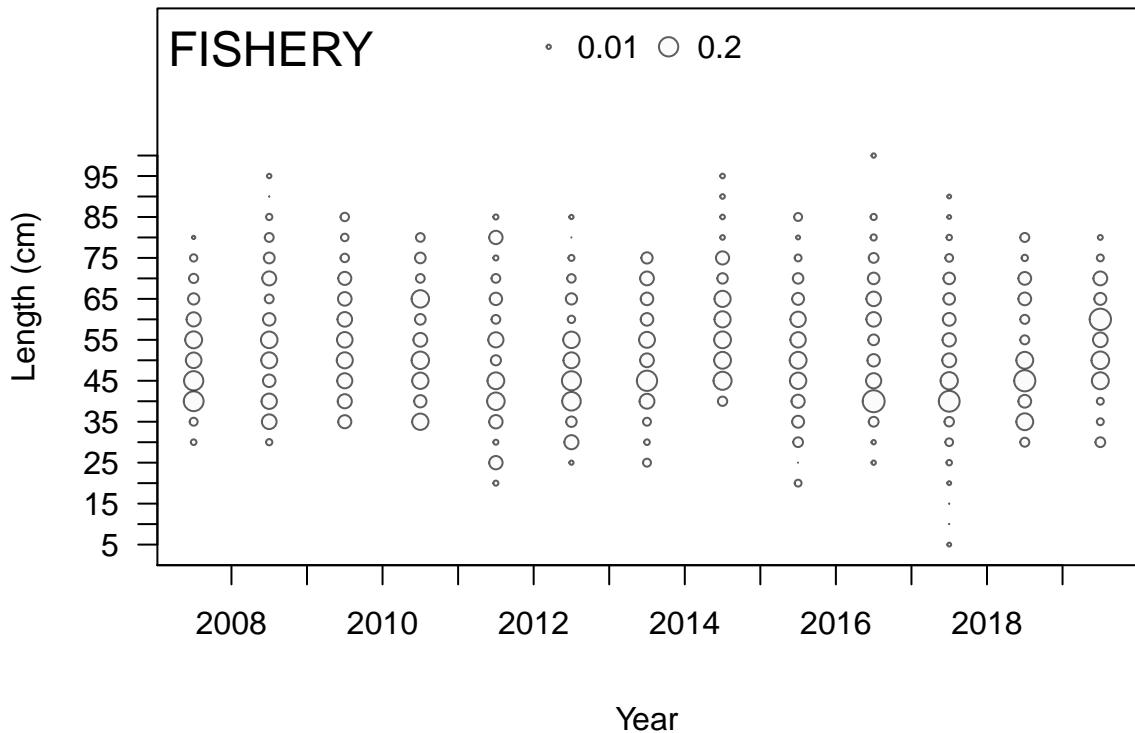




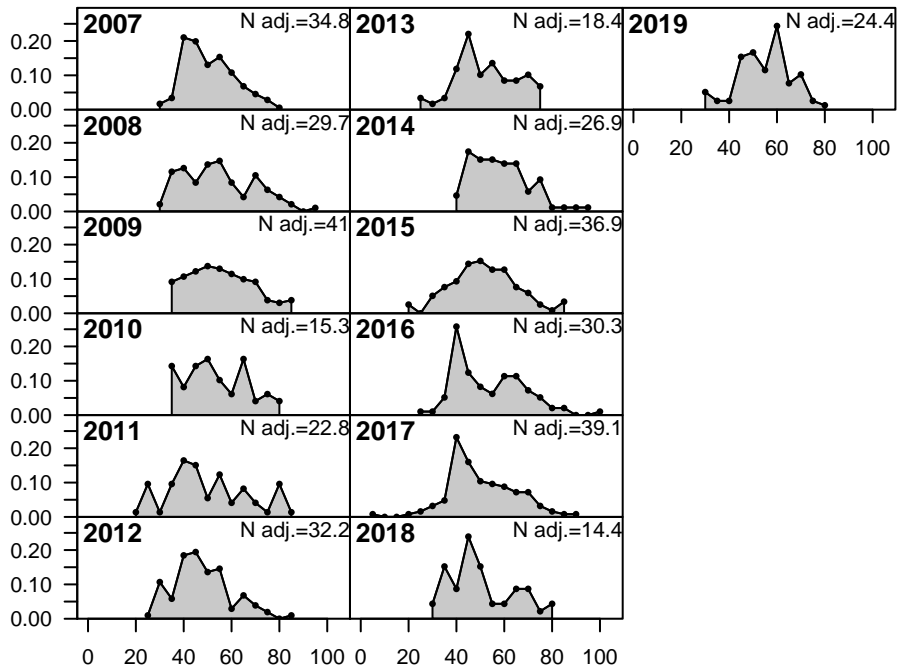
# FISHERY

Sum of N adj.=366.2

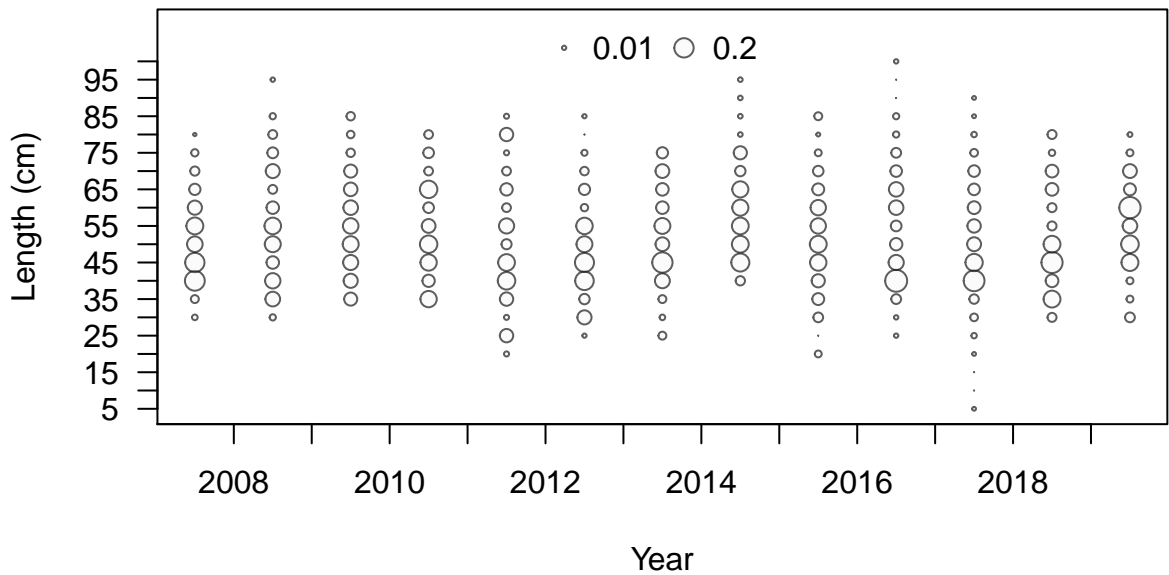




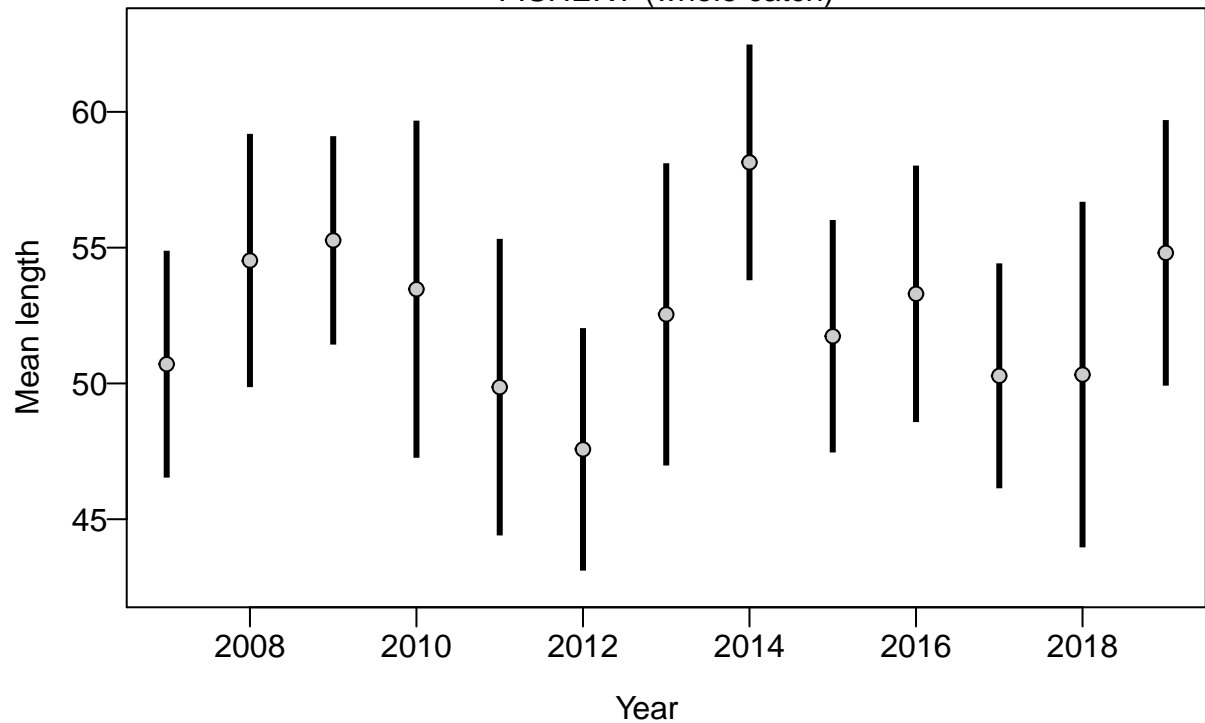
Proportion



Length (cm)

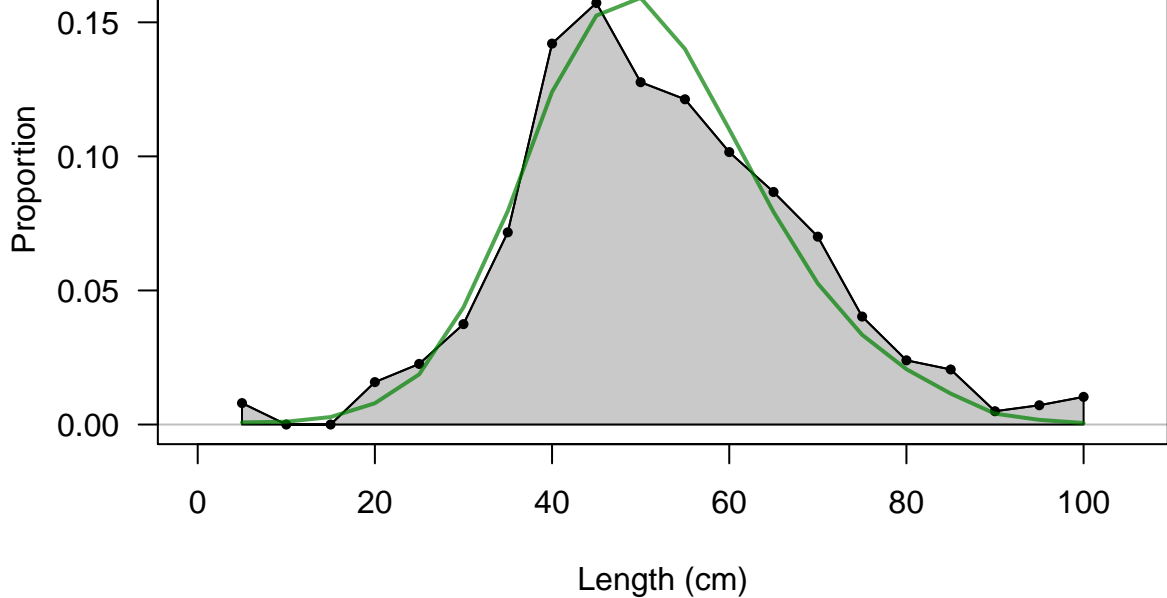


FISHERY (whole catch)

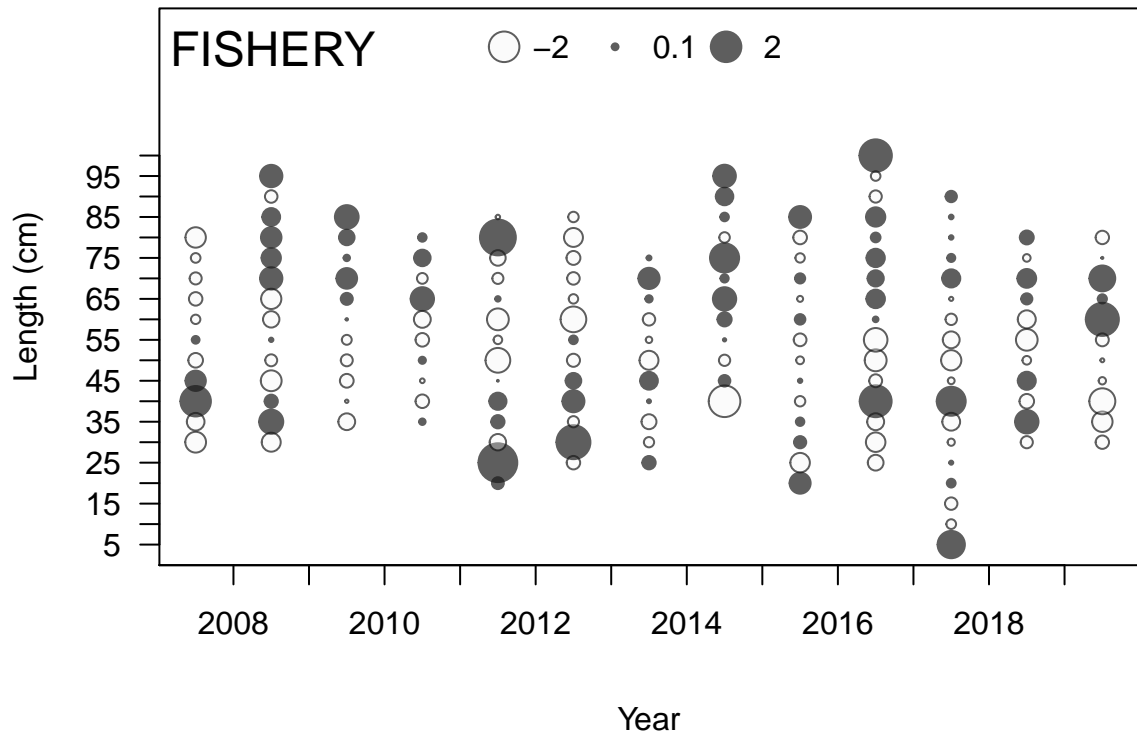


# FISHERY

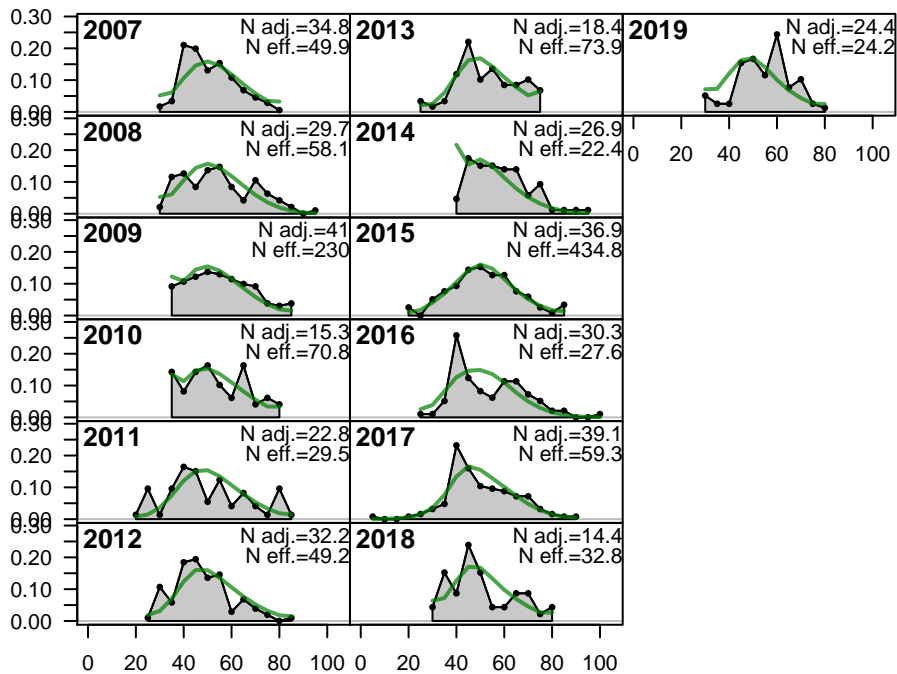
Sum of N adj.=366.2  
Sum of N eff.=1162.4



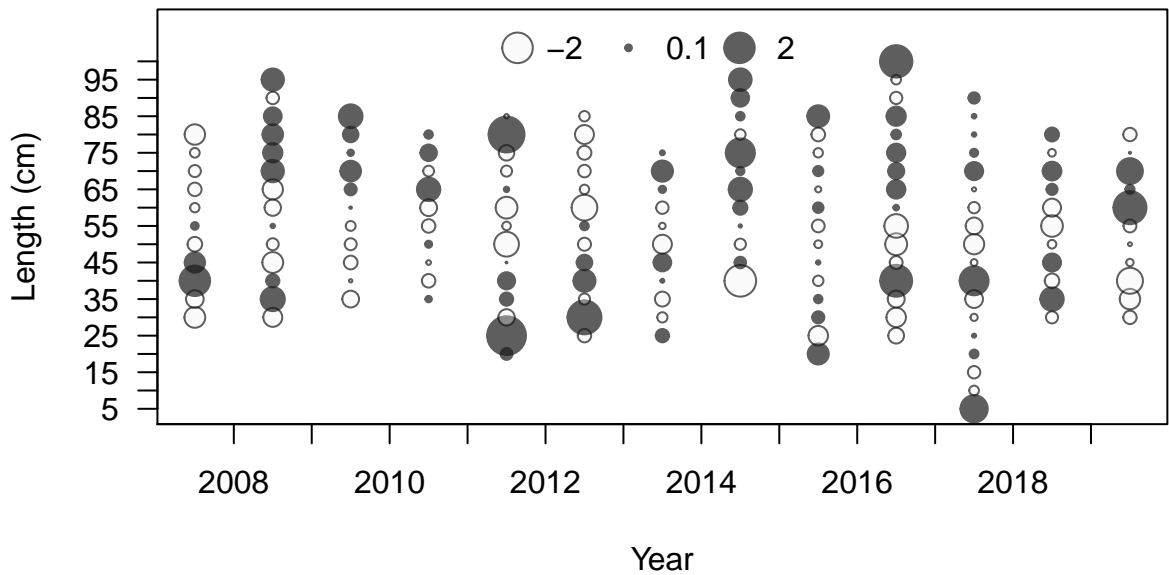




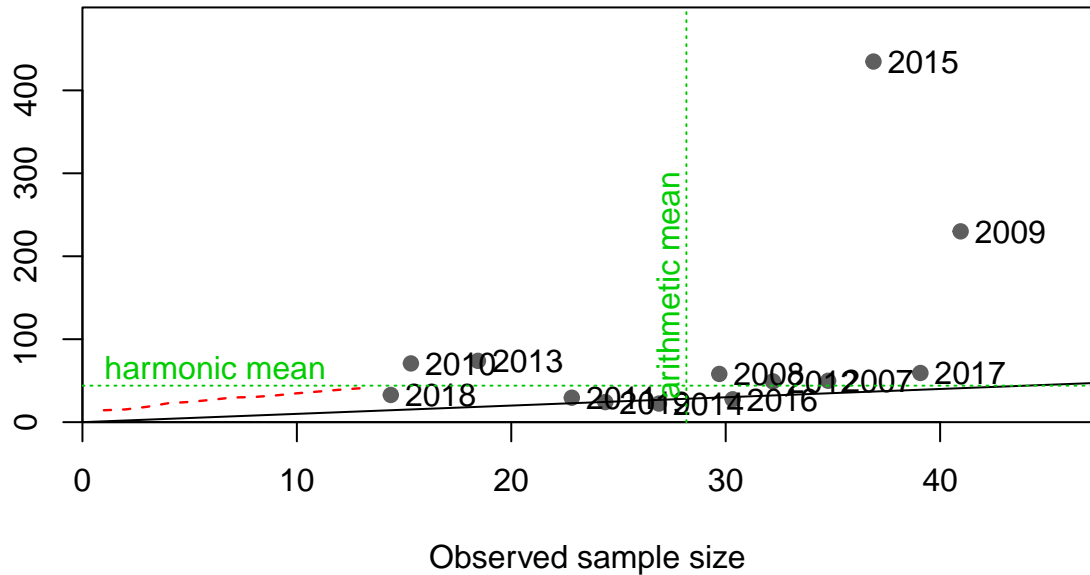
Proportion



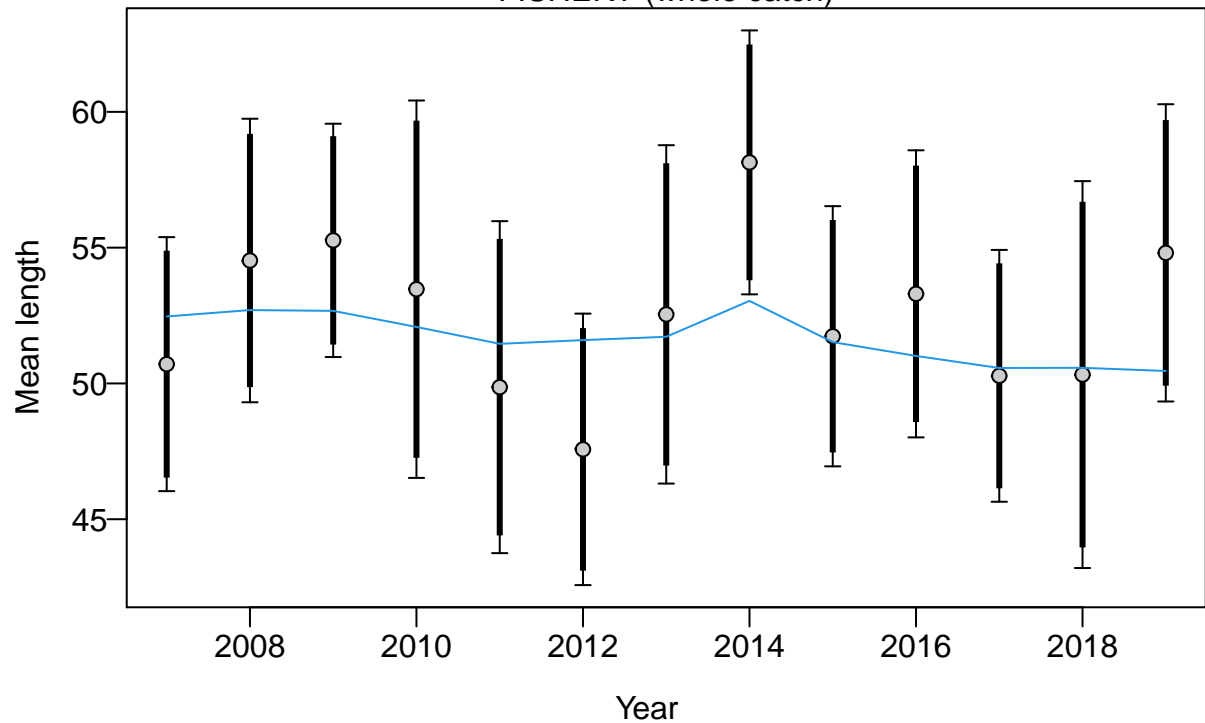
Length (cm)

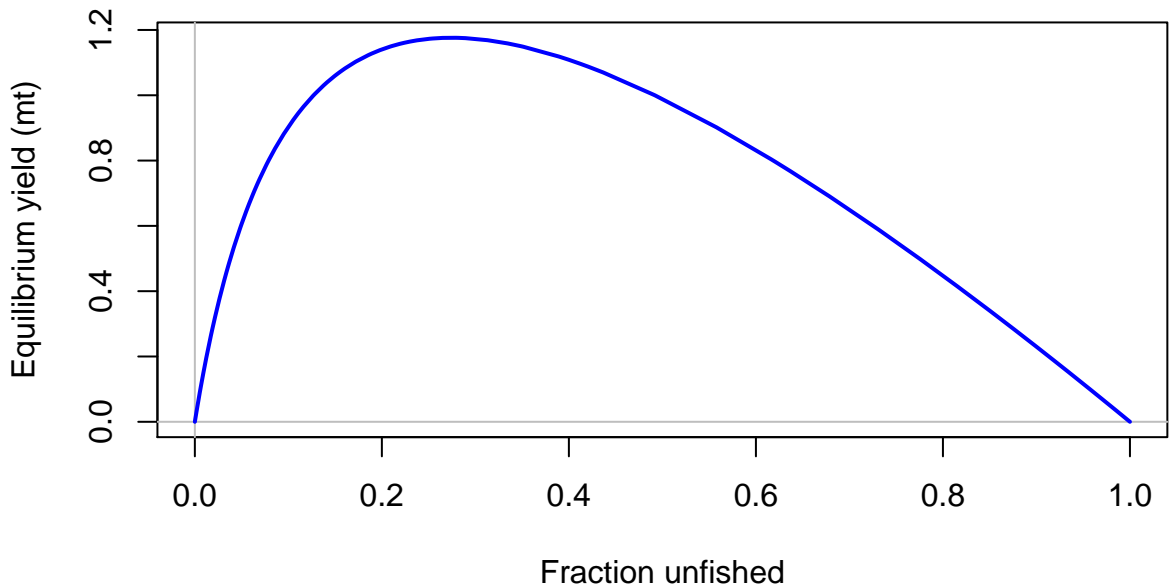


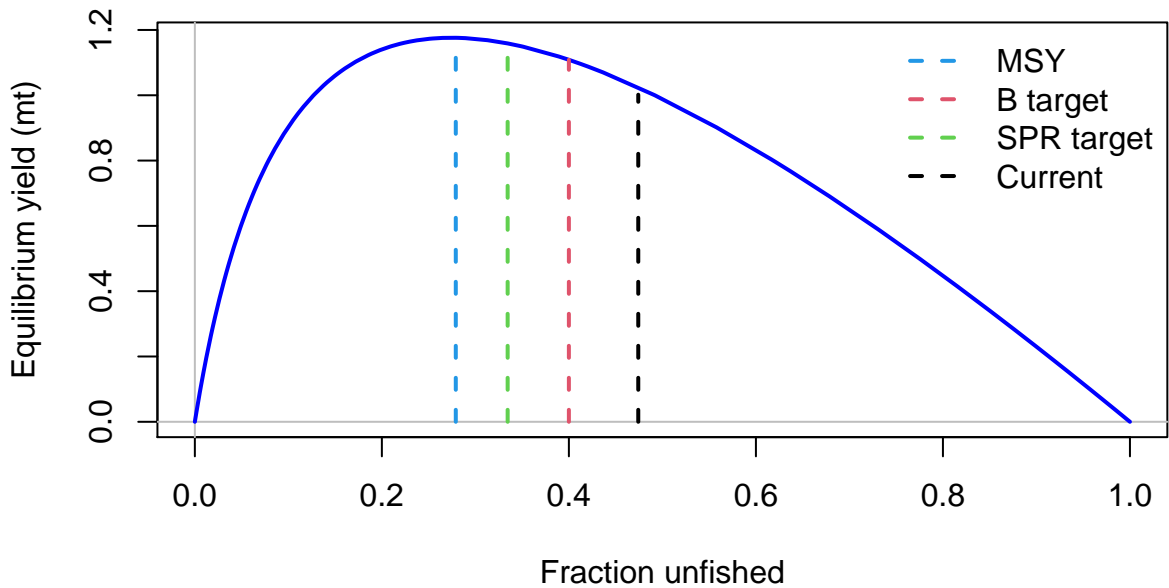
Effective sample size

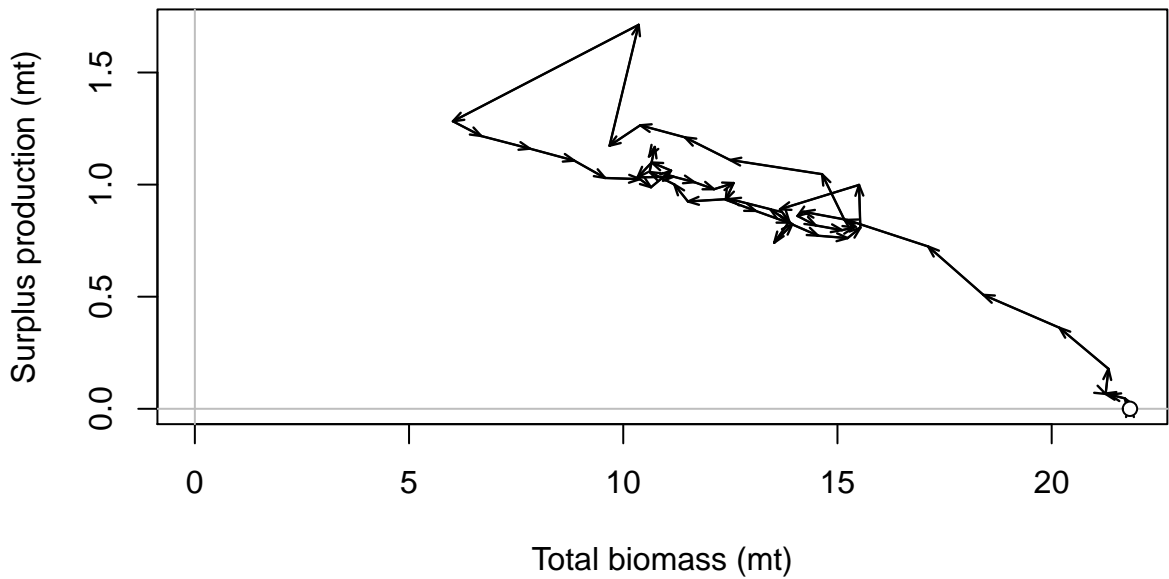


FISHERY (whole catch)

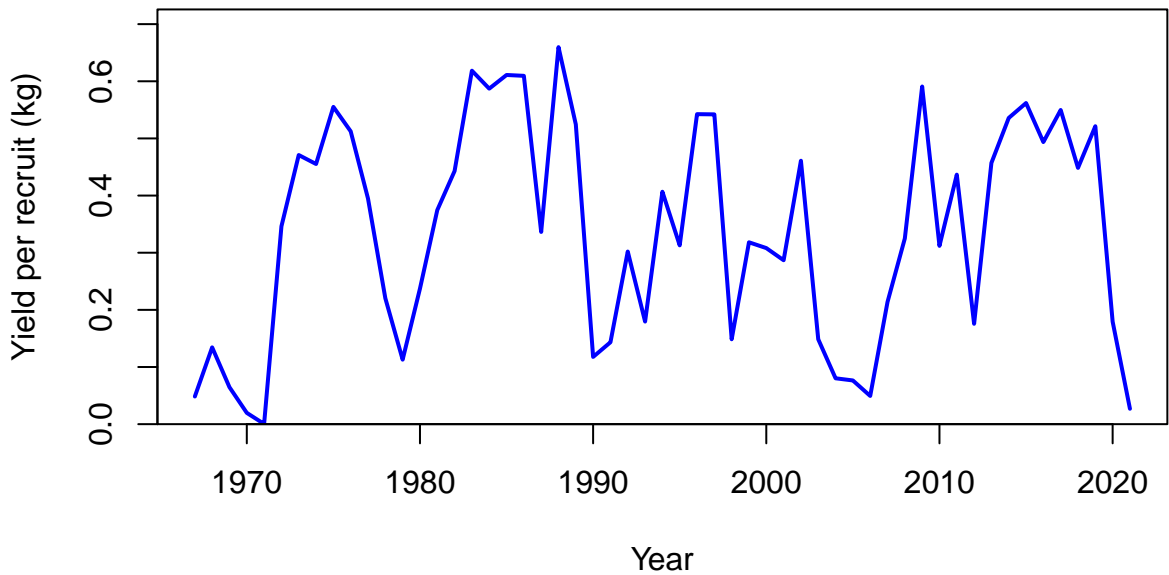


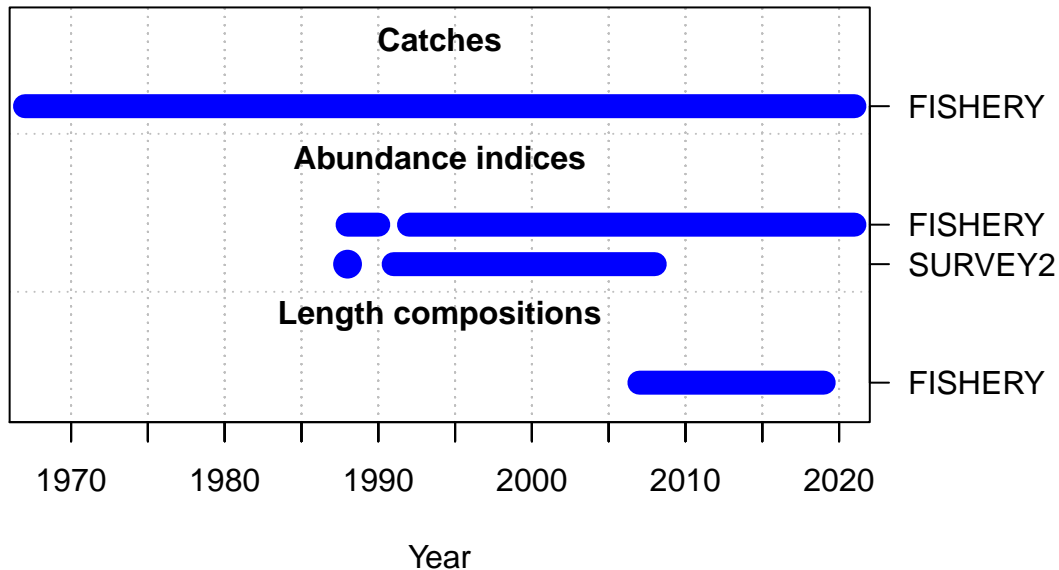


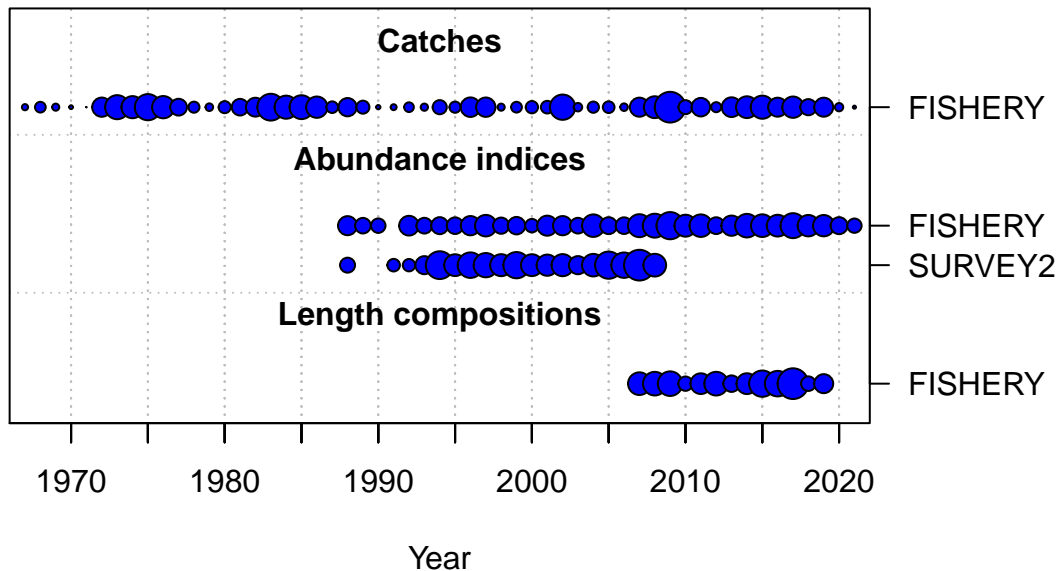




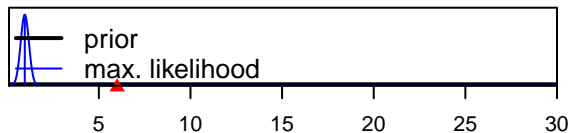




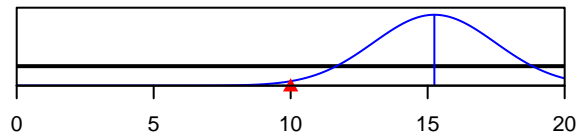




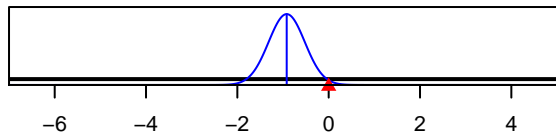
SR\_LN(R0)



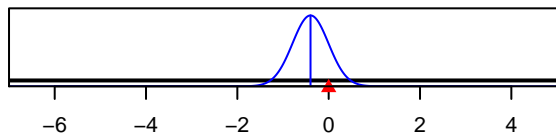
Size\_95%width\_FISHERY(1)



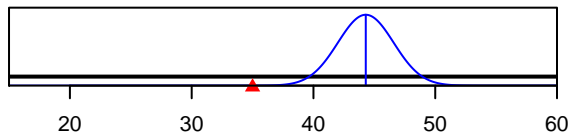
LnQ\_base\_FISHERY(1)



LnQ\_base\_SURVEY2(2)



Size\_inflection\_FISHERY(1)



Parameter value