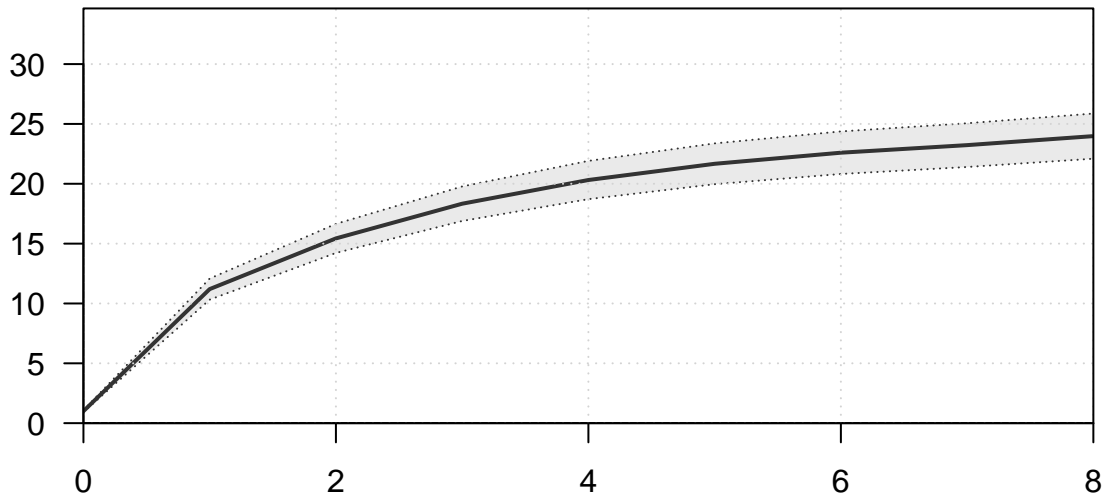


Plots created using the 'r4ss' package in R
Stock Synthesis version: 3.30.19.0
StartTime: Tue Feb 14 17:11:57 2023
Data_File: data.ss
Control_File: control.ss

Length (cm, beginning of the year)



Age (yr)











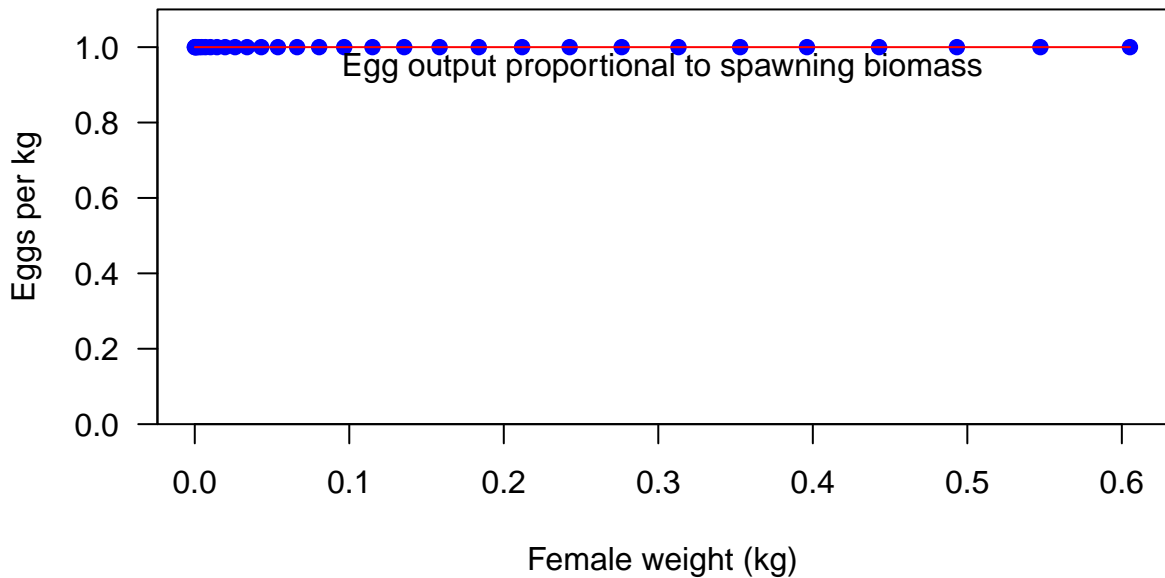






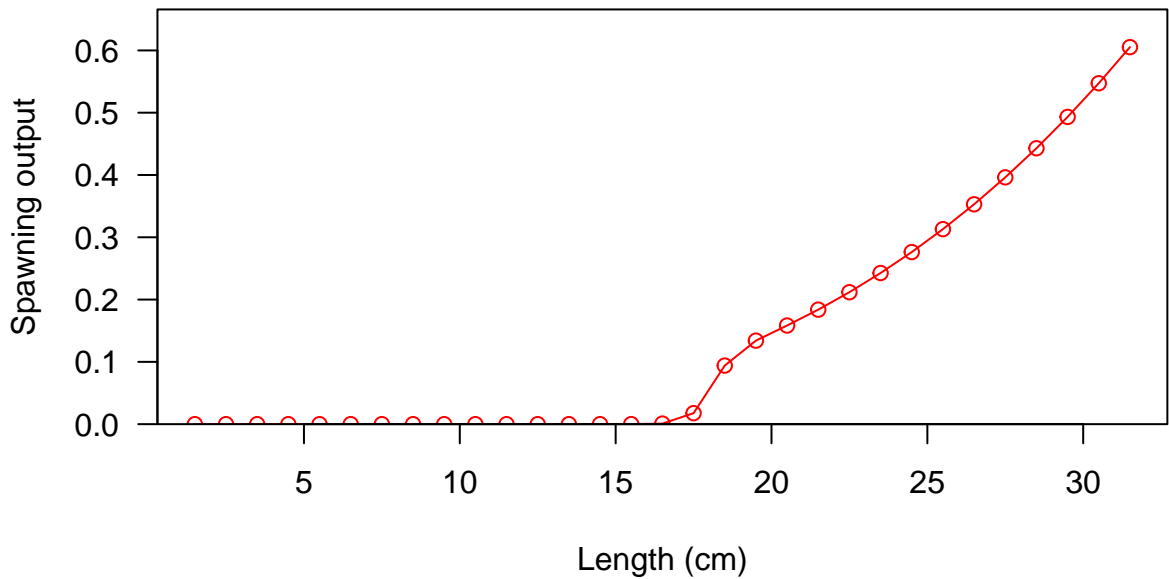






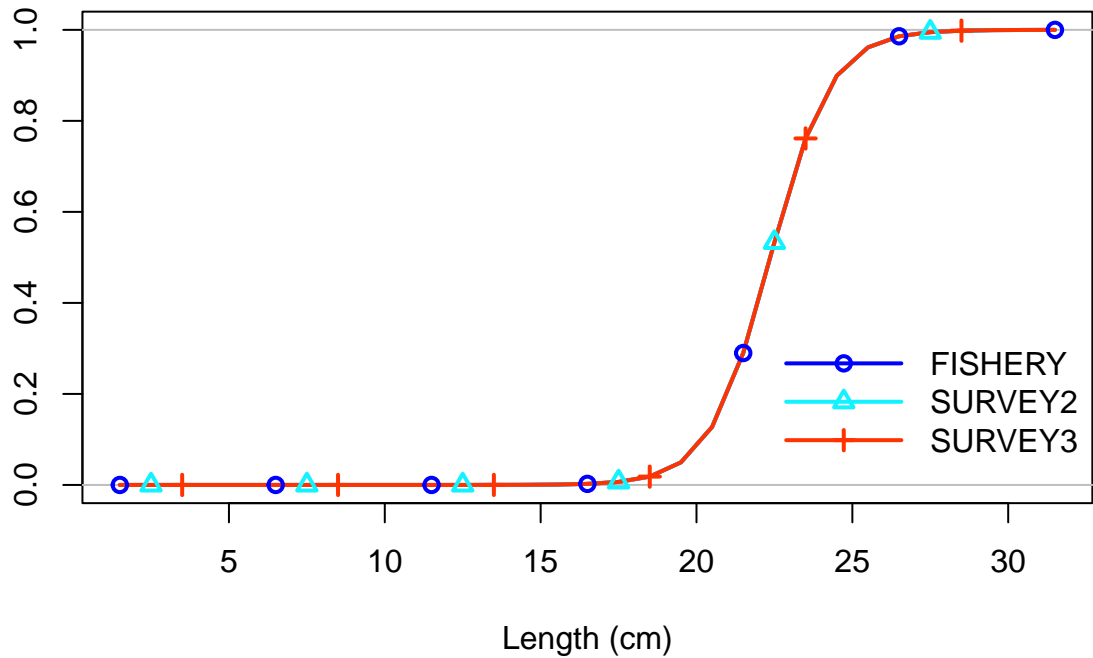




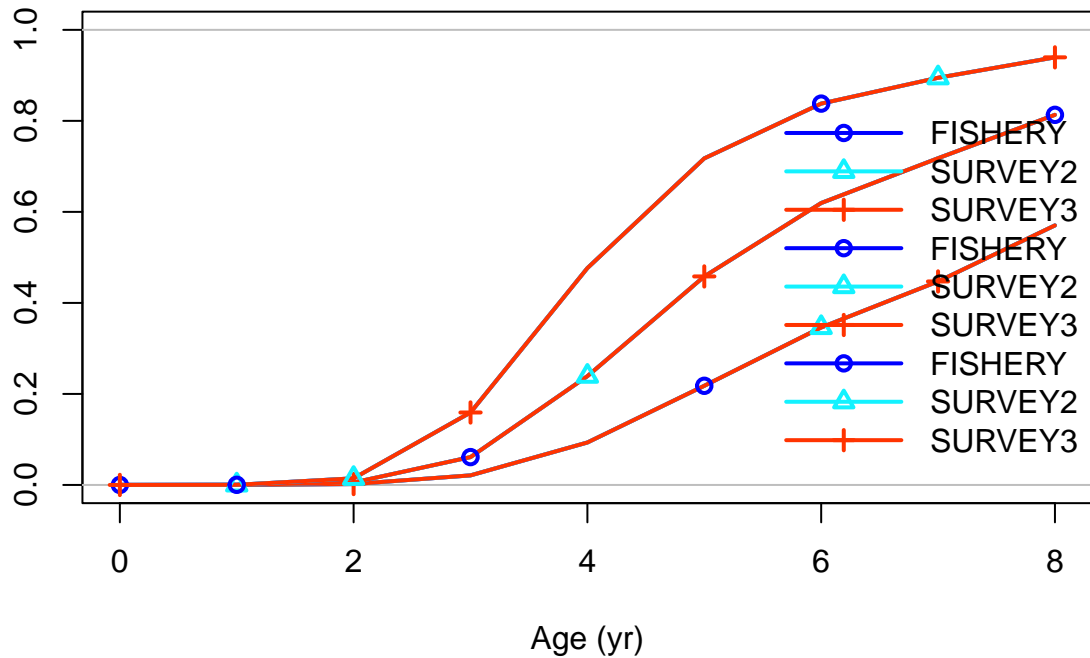




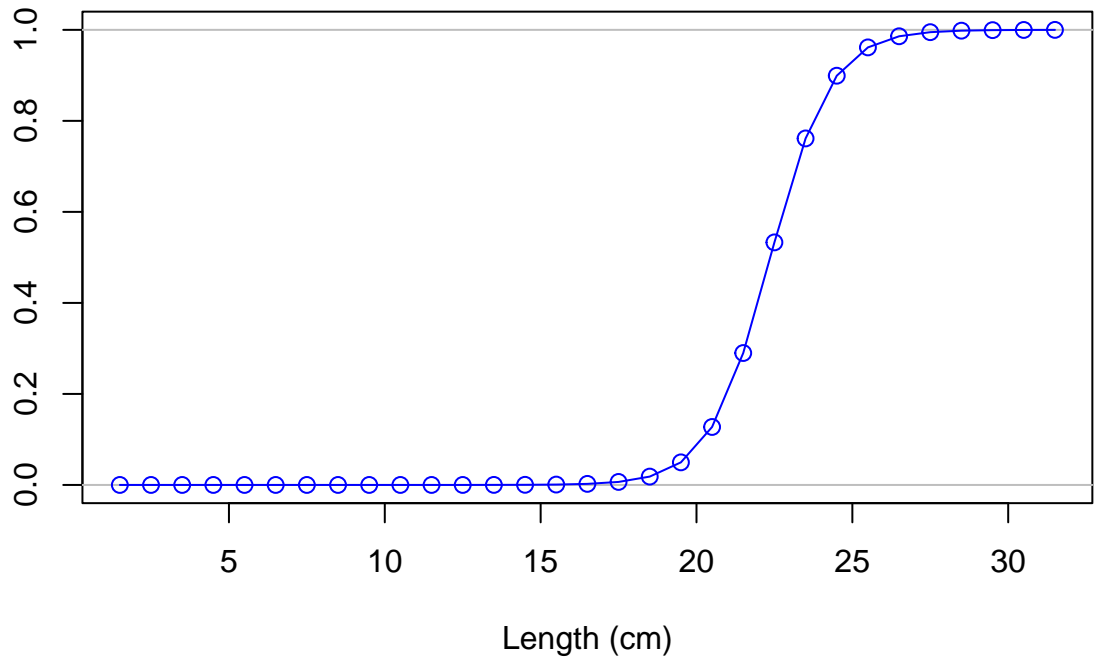
Selectivity



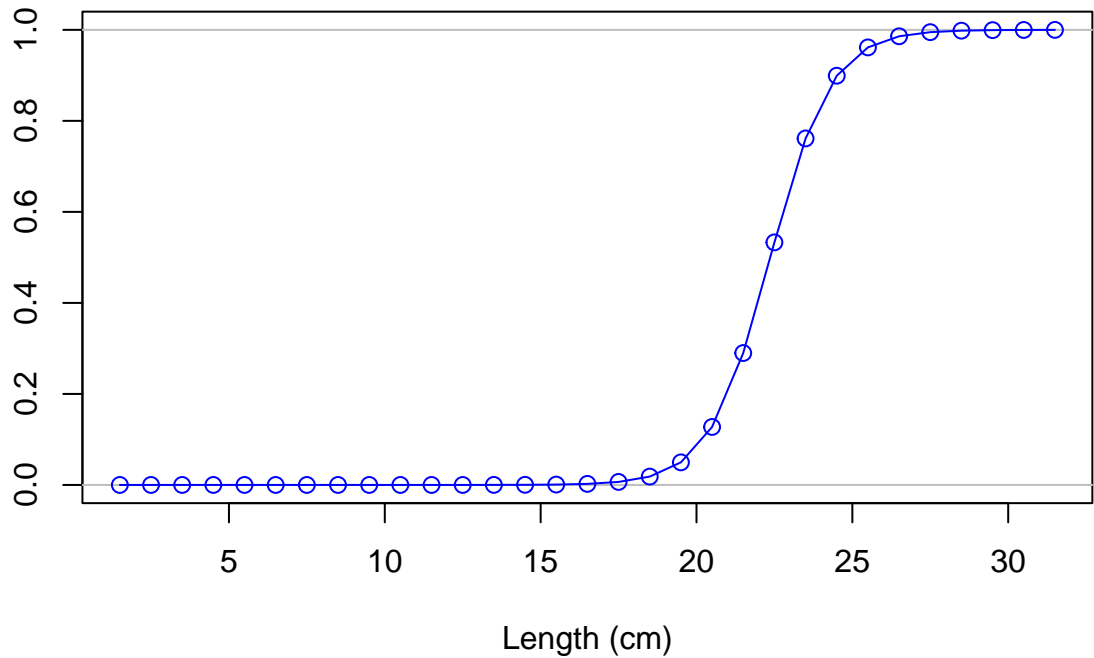
Selectivity



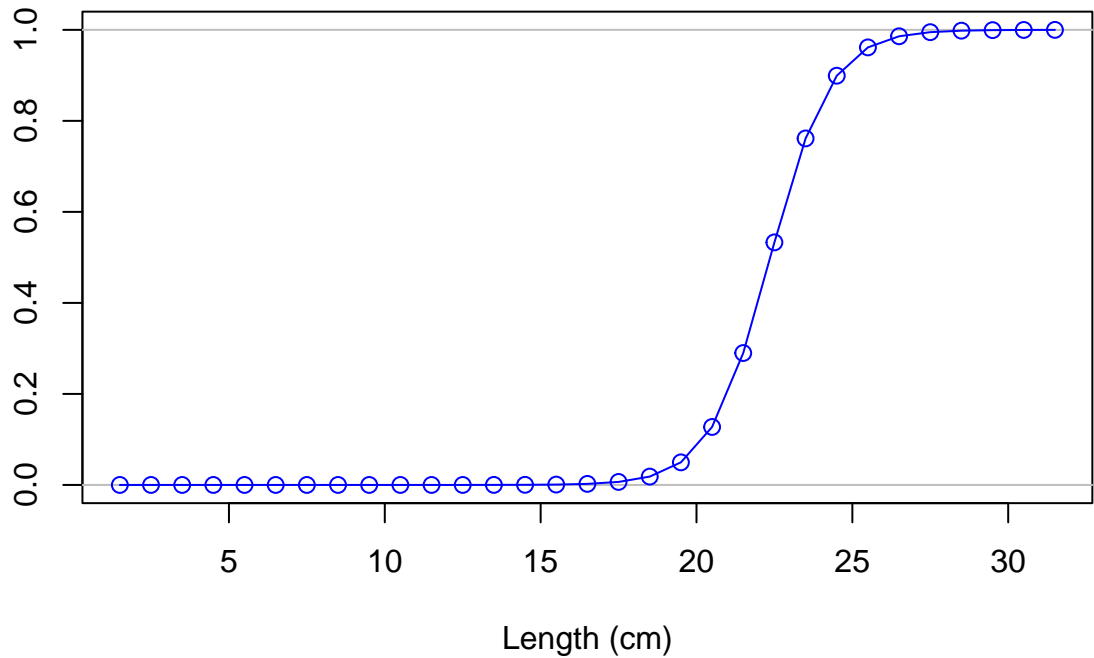
Selectivity

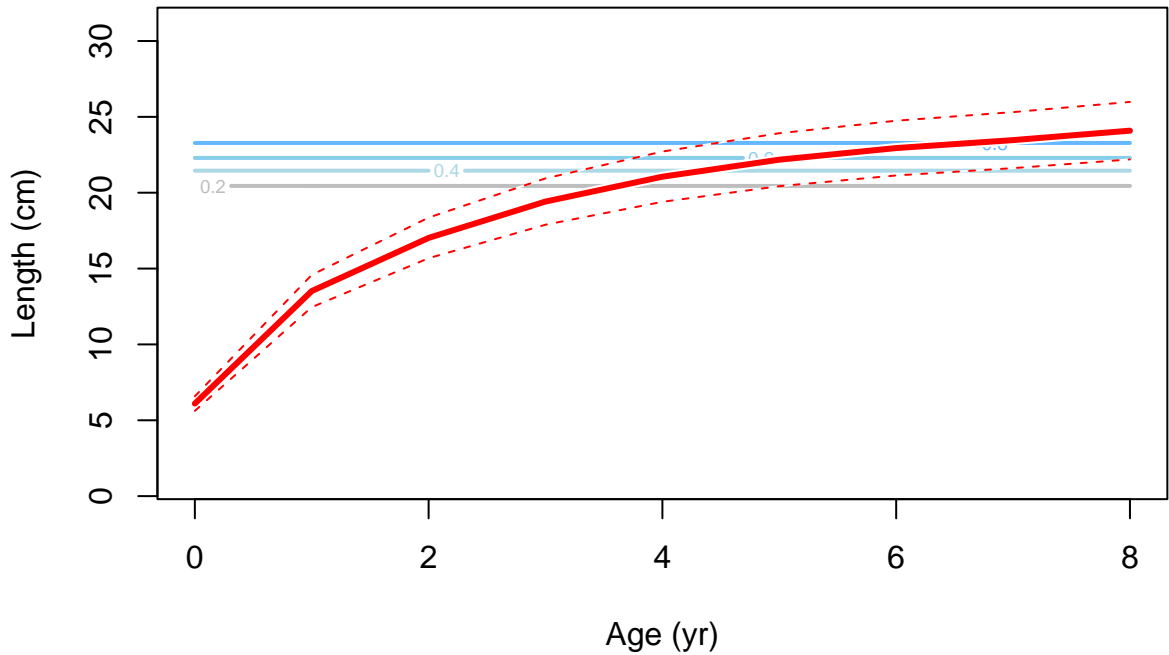


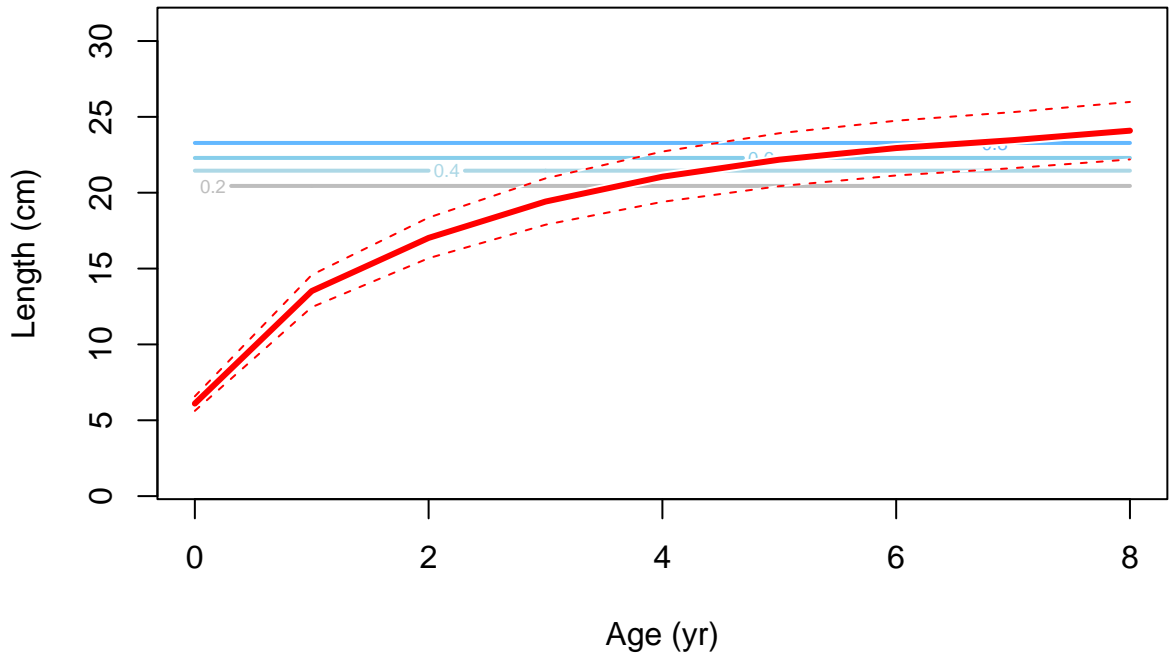
Selectivity

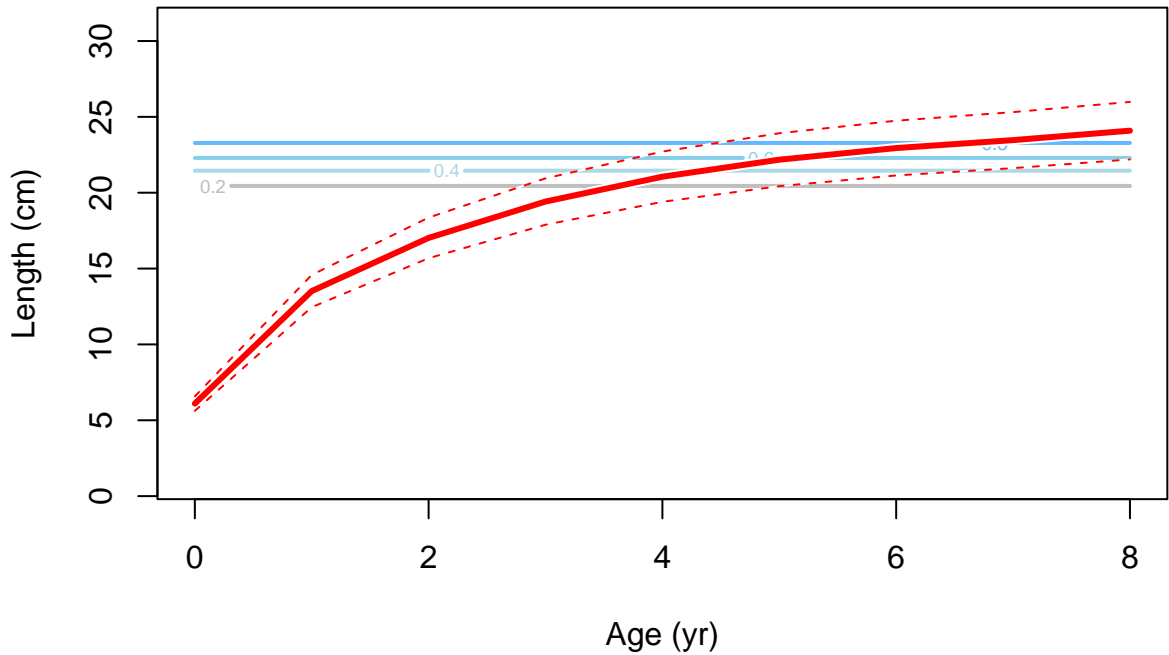


Selectivity

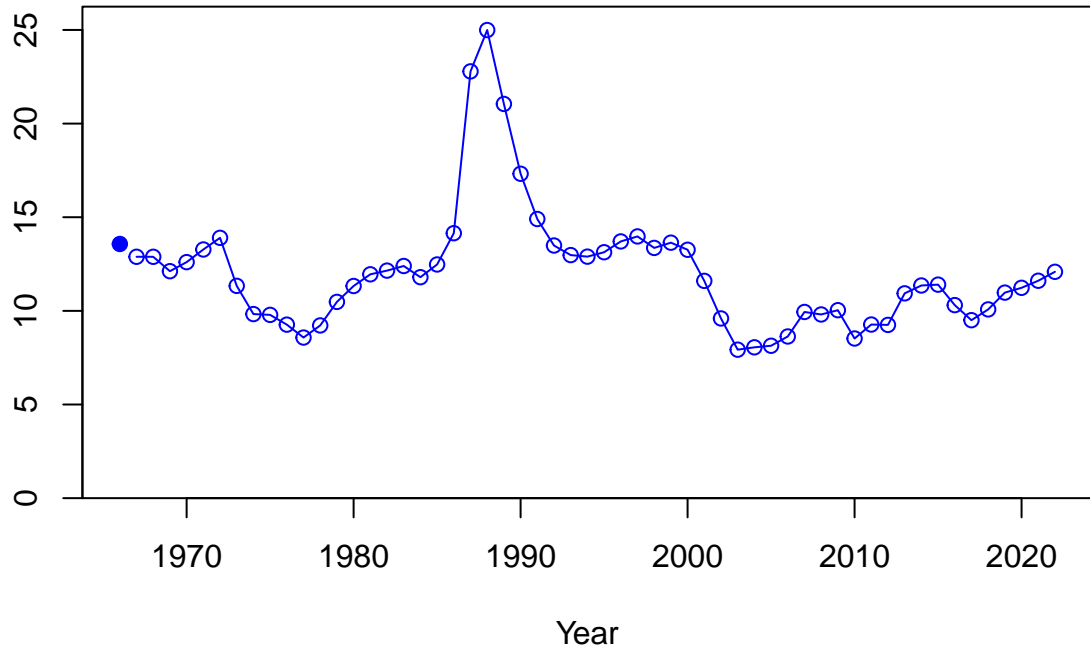




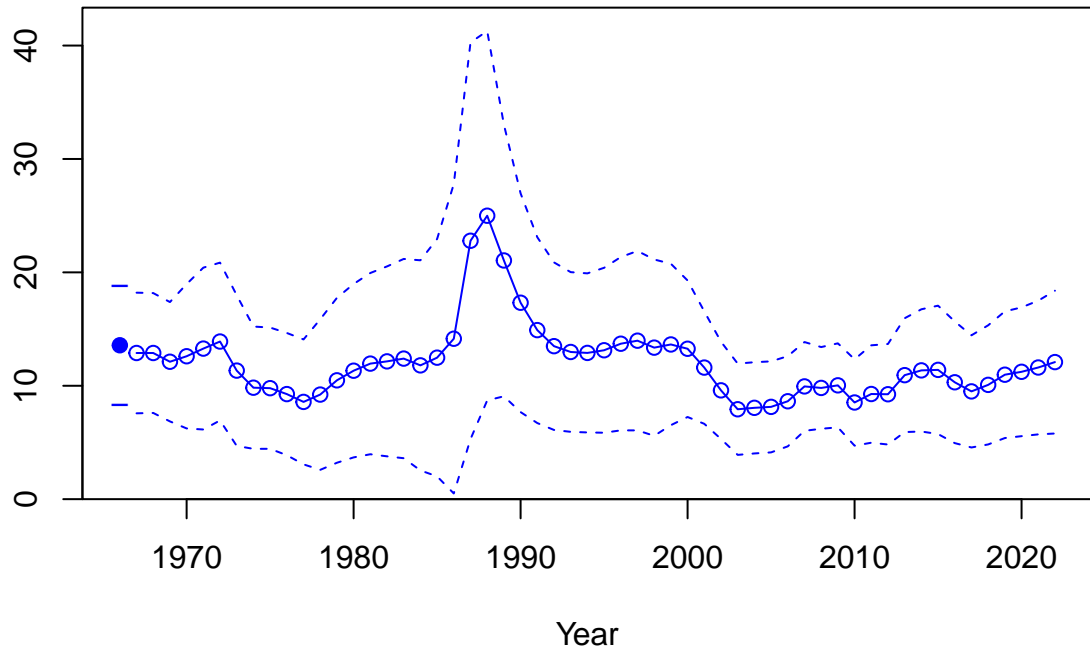




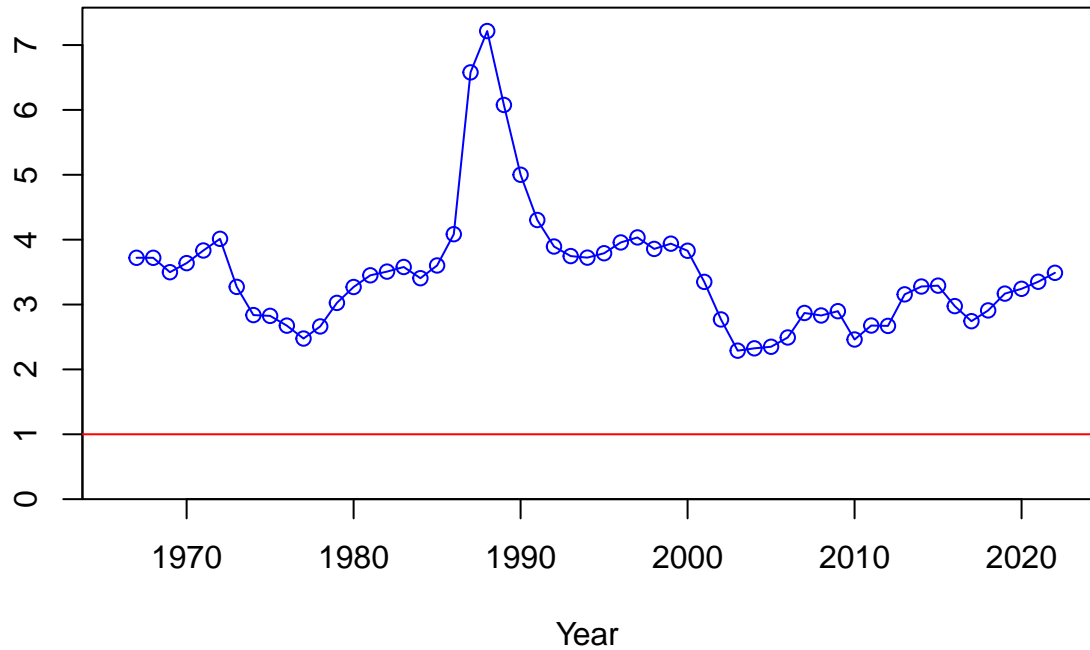
Spawning biomass (mt)



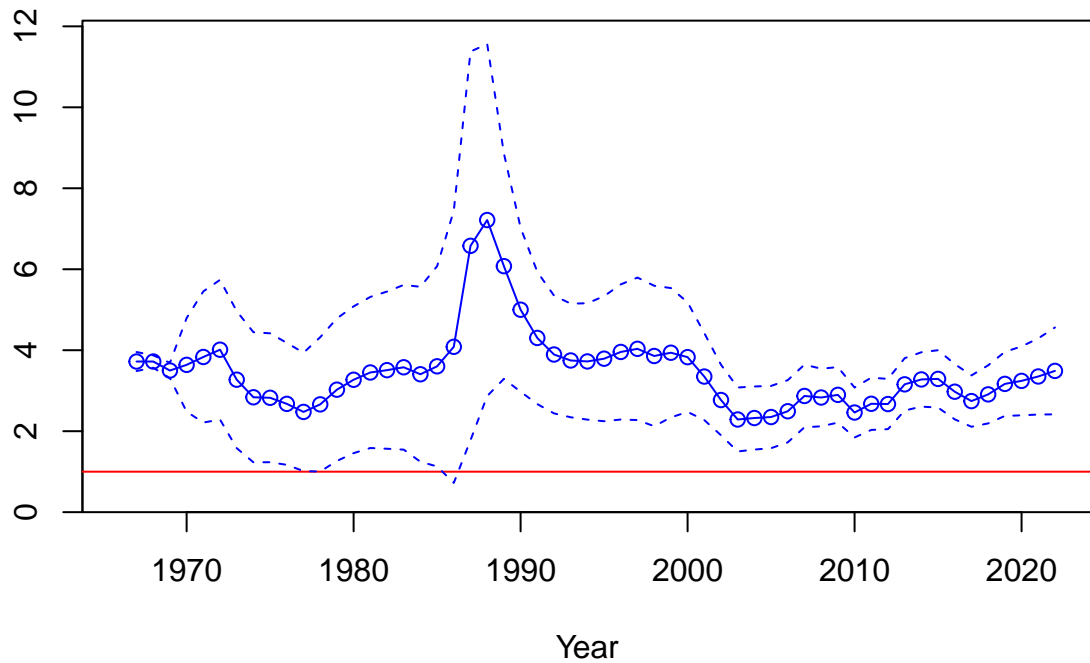
Spawning biomass (mt)

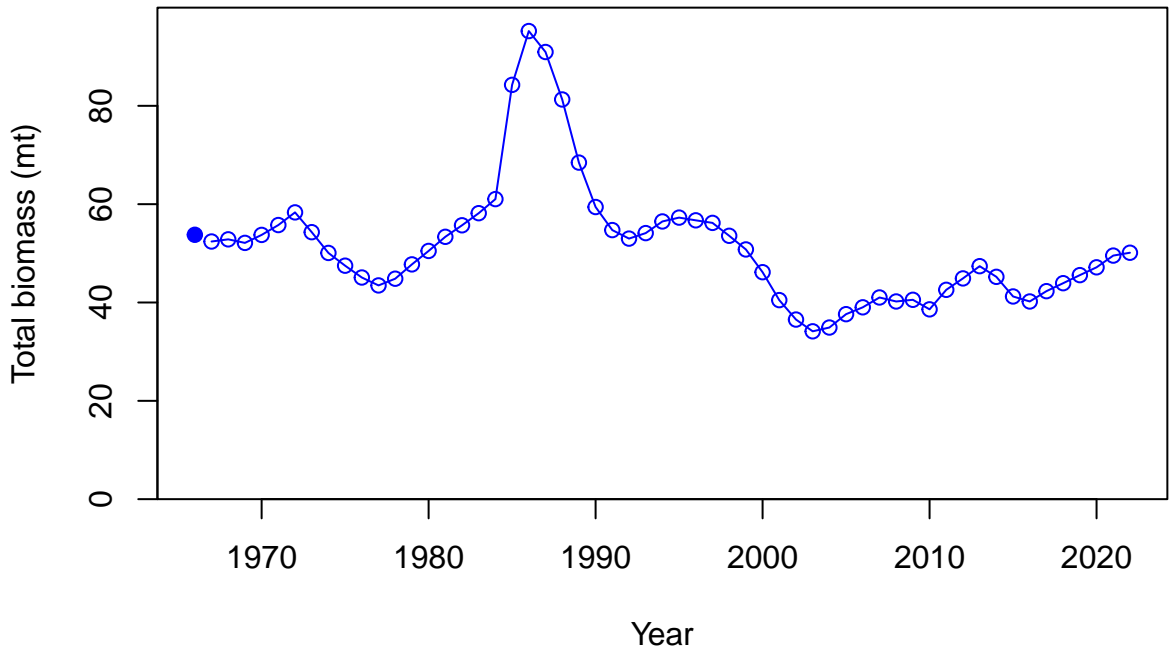


Relative spawning biomass: B/B_{MSY}

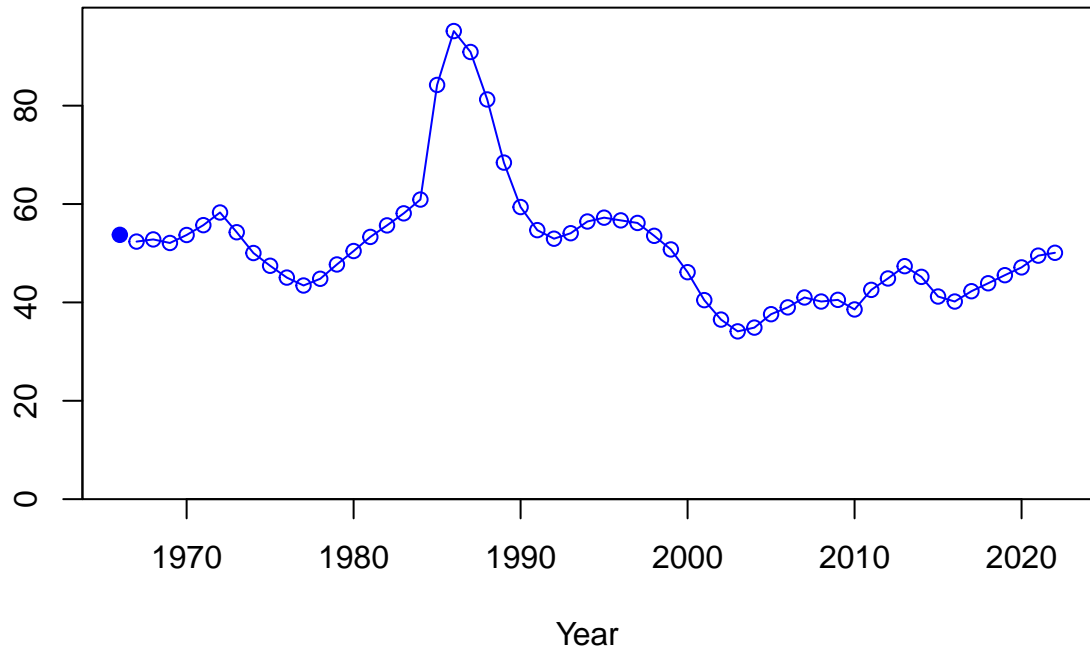


Relative spawning biomass: B/B_{MSY}

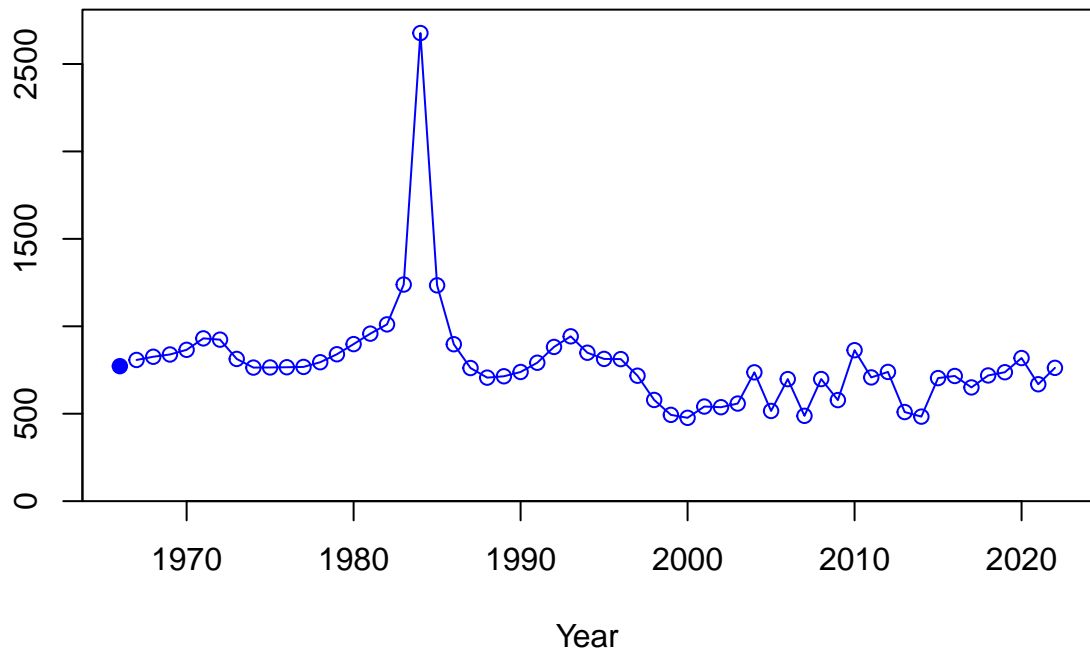


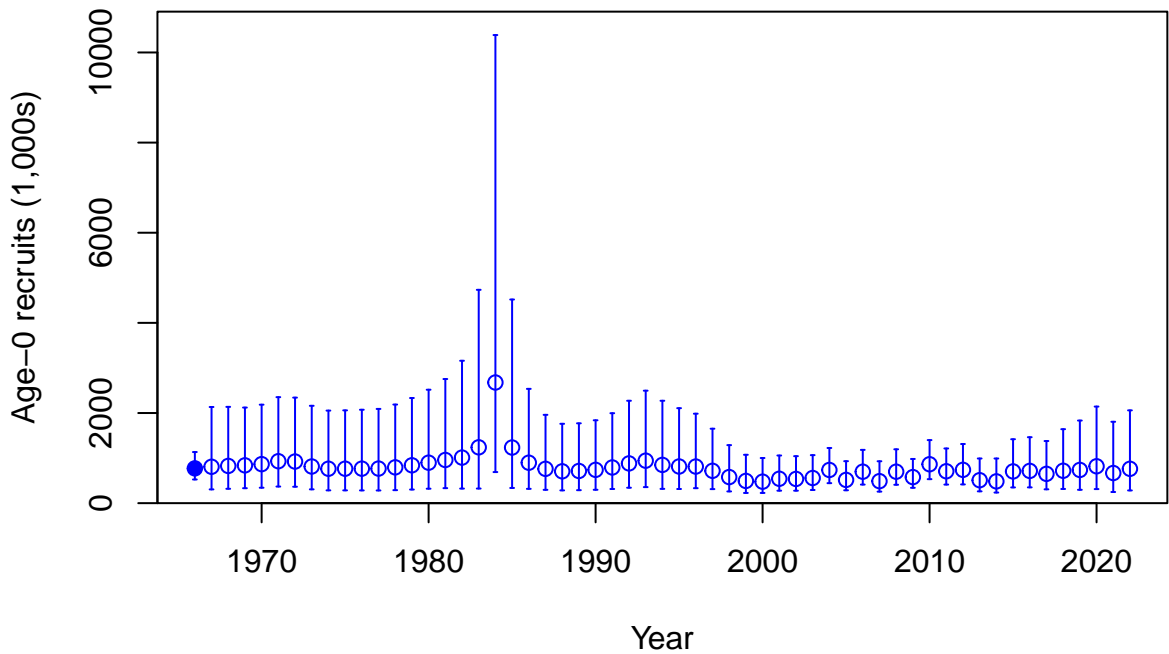


Summary biomass (mt)

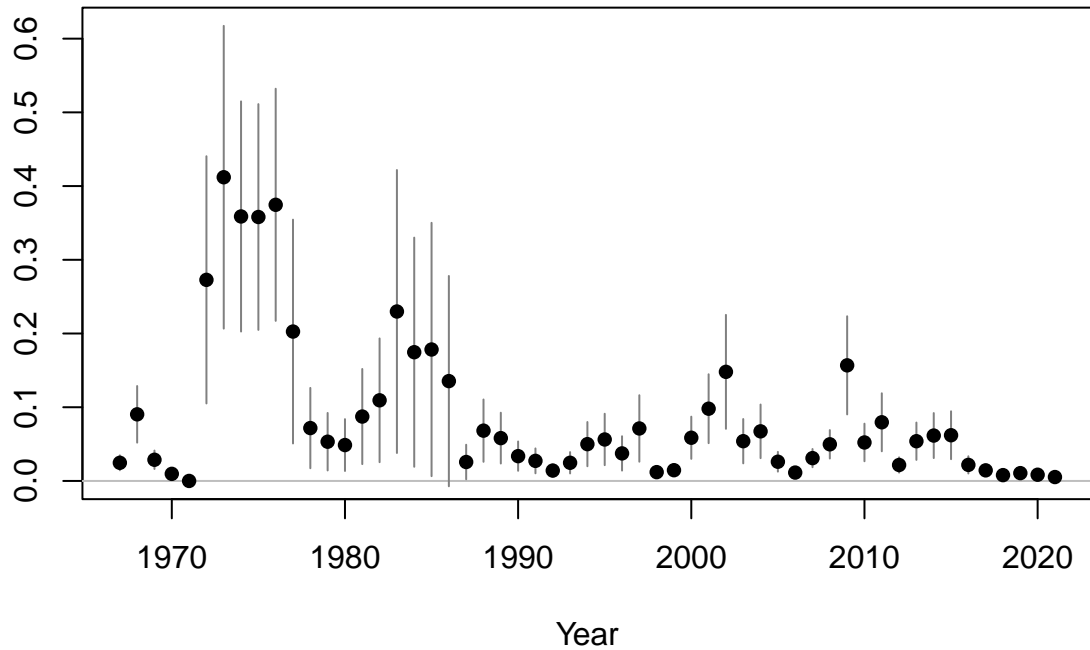


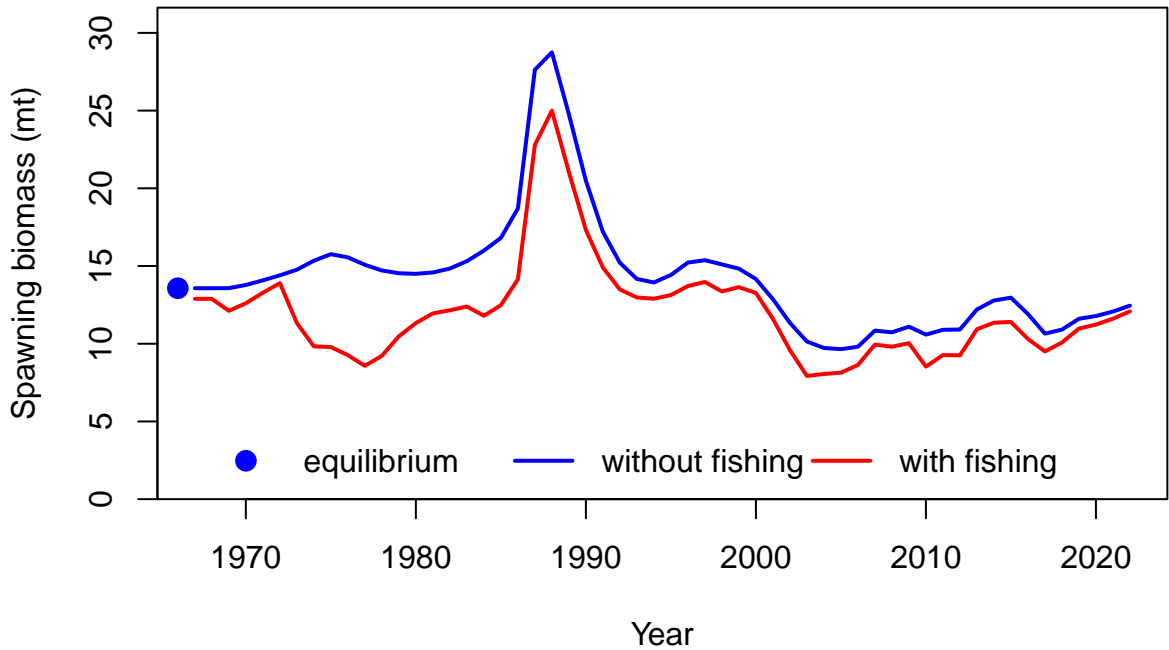
Age-0 recruits (1,000s)





Summary Fishing Mortality





Log recruitment deviation

1.0
0.5
0.0

1970

1980

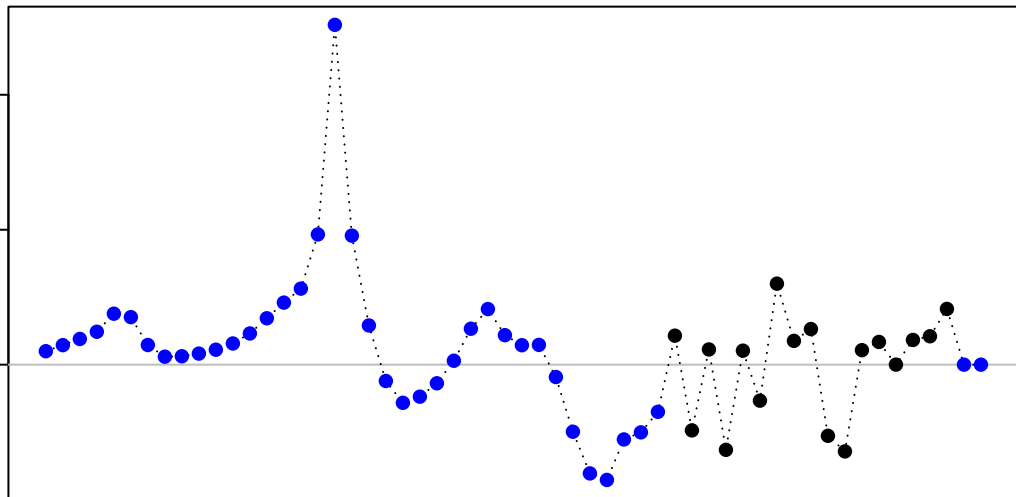
1990

2000

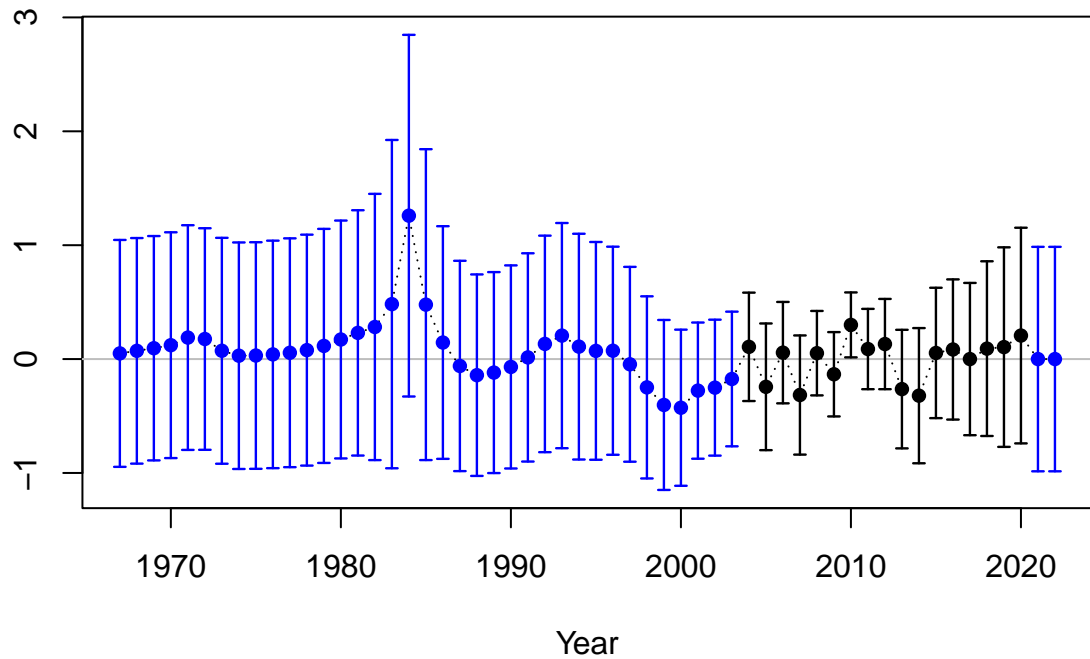
2010

2020

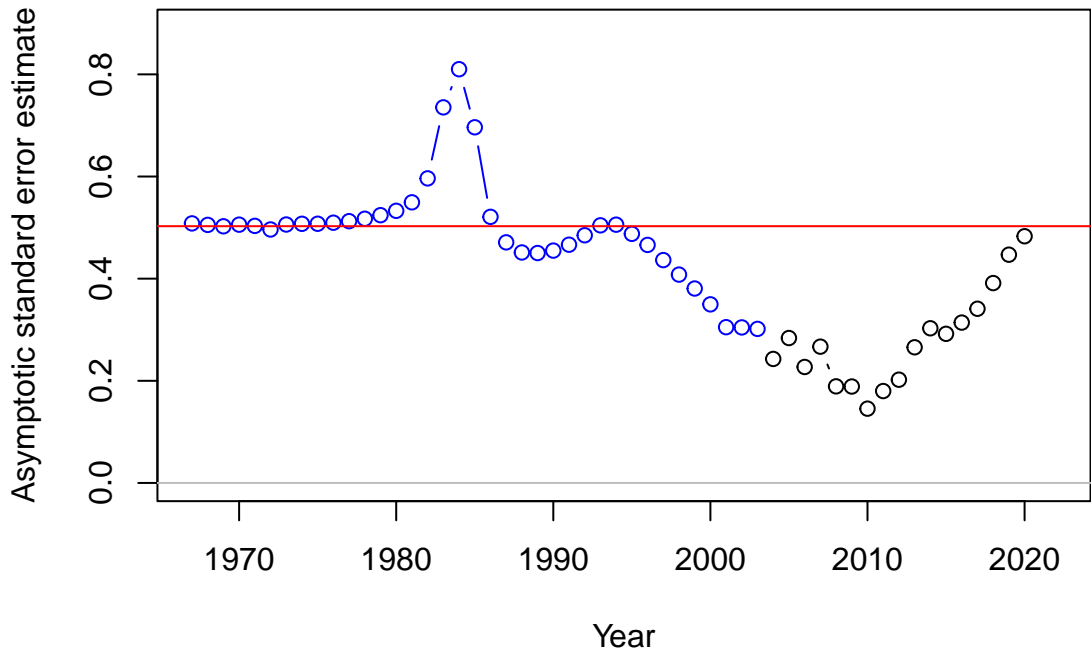
Year

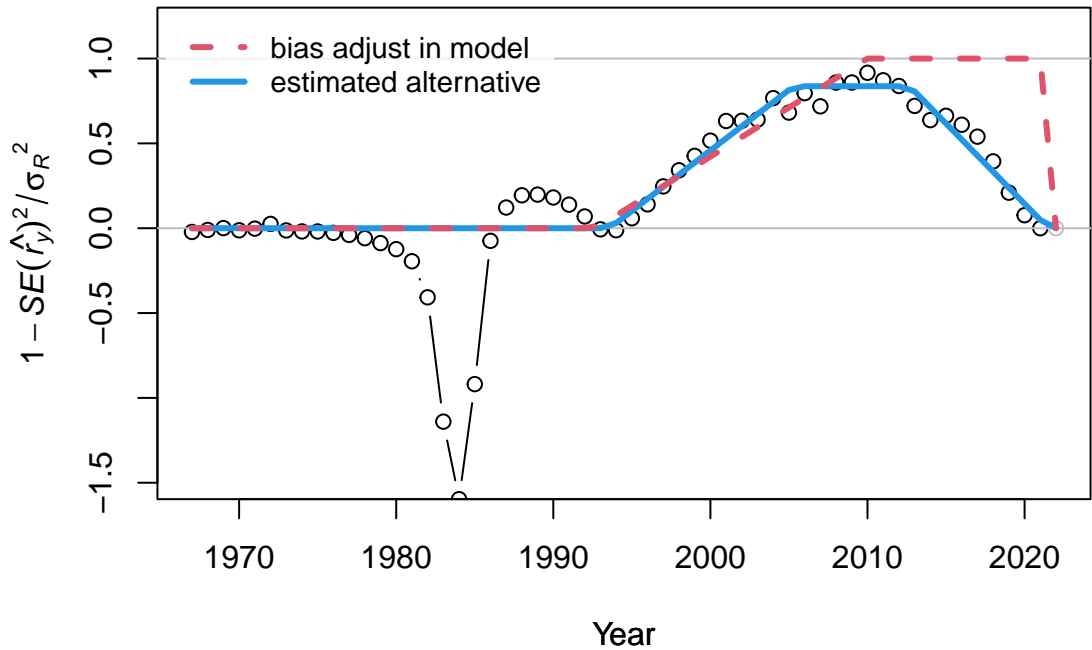


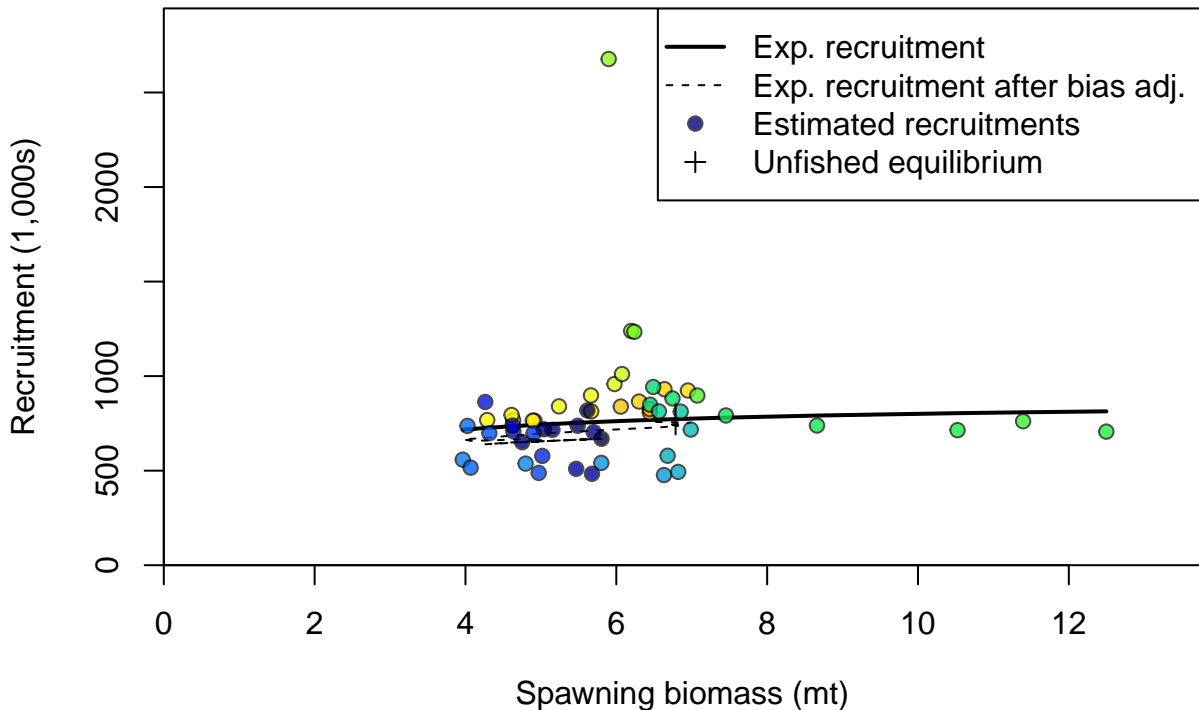
Log recruitment deviation

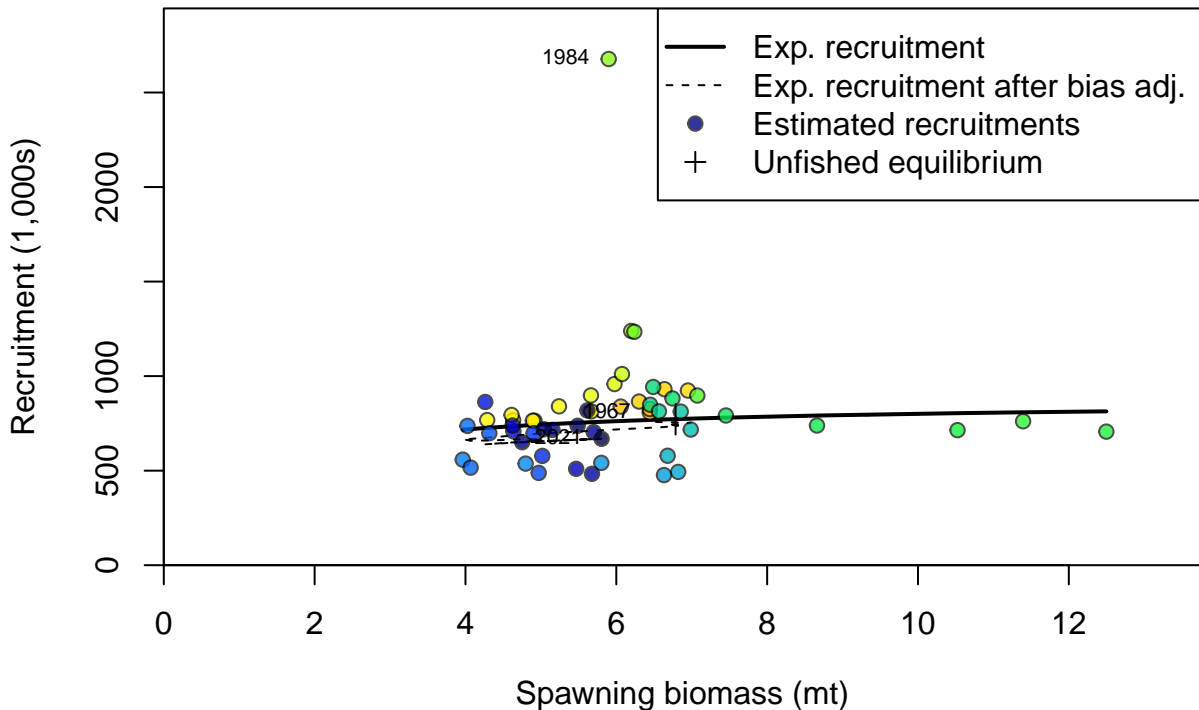


Recruitment deviation variance









Log recruitment deviation

1984

2021

1967

2011

2017

2019

2020

2022

2023

2024

2025

2026

2027

2028

2029

2030

2031

2032

2033

2034

2035

2036

2037

2038

2039

2040

2041

2042

2043

2044

2045

2046

2047

2048

2049

2050

2051

2052

2053

2054

2055

2056

2057

2058

2059

2060

2061

2062

2063

2064

2065

2066

2067

2068

2069

2070

2071

2072

2073

2074

2075

2076

2077

2078

2079

2080

2081

2082

2083

2084

2085

2086

2087

2088

2089

2090

2091

2092

2093

2094

2095

2096

2097

2098

2099

2100

2101

2102

2103

2104

2105

2106

2107

2108

2109

2110

2111

2112

2113

2114

2115

2116

2117

2118

2119

2120

2121

2122

2123

2124

2125

2126

2127

2128

2129

2130

2131

2132

2133

2134

2135

2136

2137

2138

2139

2140

2141

2142

2143

2144

2145

2146

2147

2148

2149

2150

2151

2152

2153

2154

2155

2156

2157

2158

2159

2160

2161

2162

2163

2164

2165

2166

2167

2168

2169

2170

2171

2172

2173

2174

2175

2176

2177

2178

2179

2180

2181

2182

2183

2184

2185

2186

2187

2188

2189

2190

2191

2192

2193

2194

2195

2196

2197

2198

2199

2200

2201

2202

2203

2204

2205

2206

2207

2208

2209

2210

2211

2212

2213

2214

2215

2216

2217

2218

2219

2220

2221

2222

2223

2224

2225

2226

2227

2228

2229

2230

2231

2232

2233

2234

2235

2236

2237

2238

2239

2240

2241

2242

2243

2244

2245

2246

2247

2248

2249

2250

2251

2252

2253

2254

2255

2256

2257

2258

2259

2260

2261

2262

2263

2264

2265

2266

2267

2268

2269

2270

2271

2272

2273

2274

2275

2276

2277

2278

2279

2280

2281

2282

2283

2284

2285

2286

2287

2288

2289

2290

2291

2292

2293

2294

2295

2296

2297

2298

2299

2300

2301

2302

2303

2304

2305

2306

2307

2308

2309

2310

2311

2312

2313

2314

2315

2316

2317

2318

2319

2320

2321

2322

2323

2324

2325

2326

2327

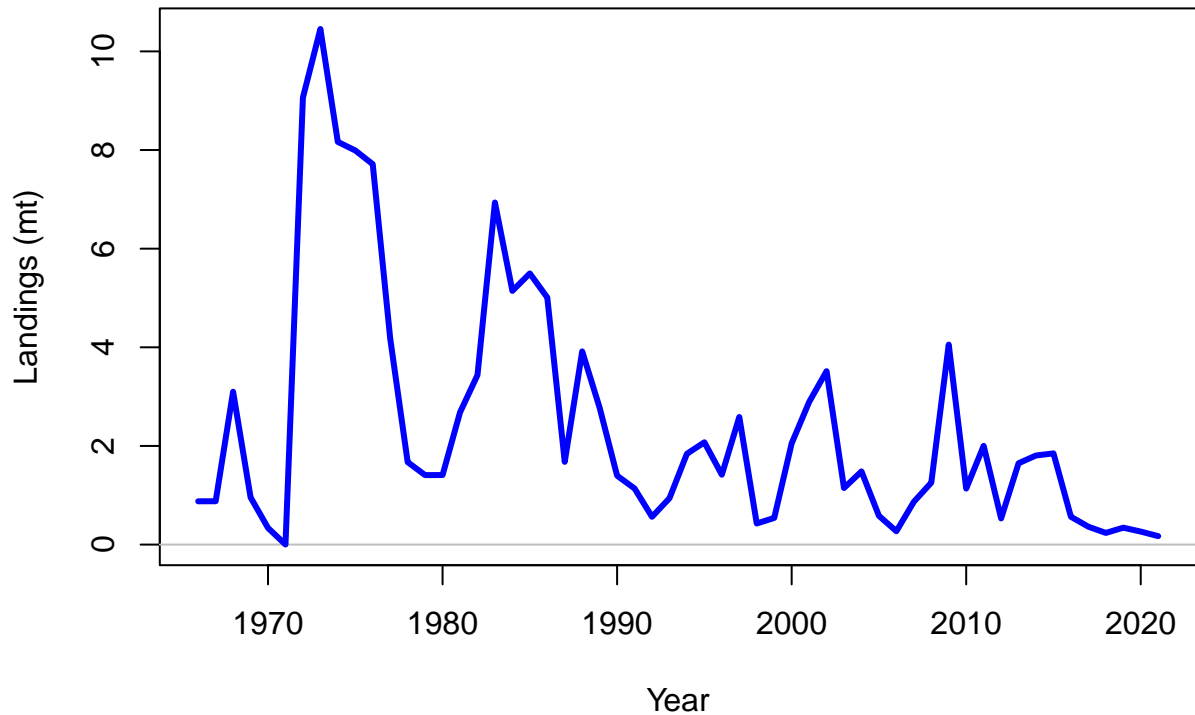
2328

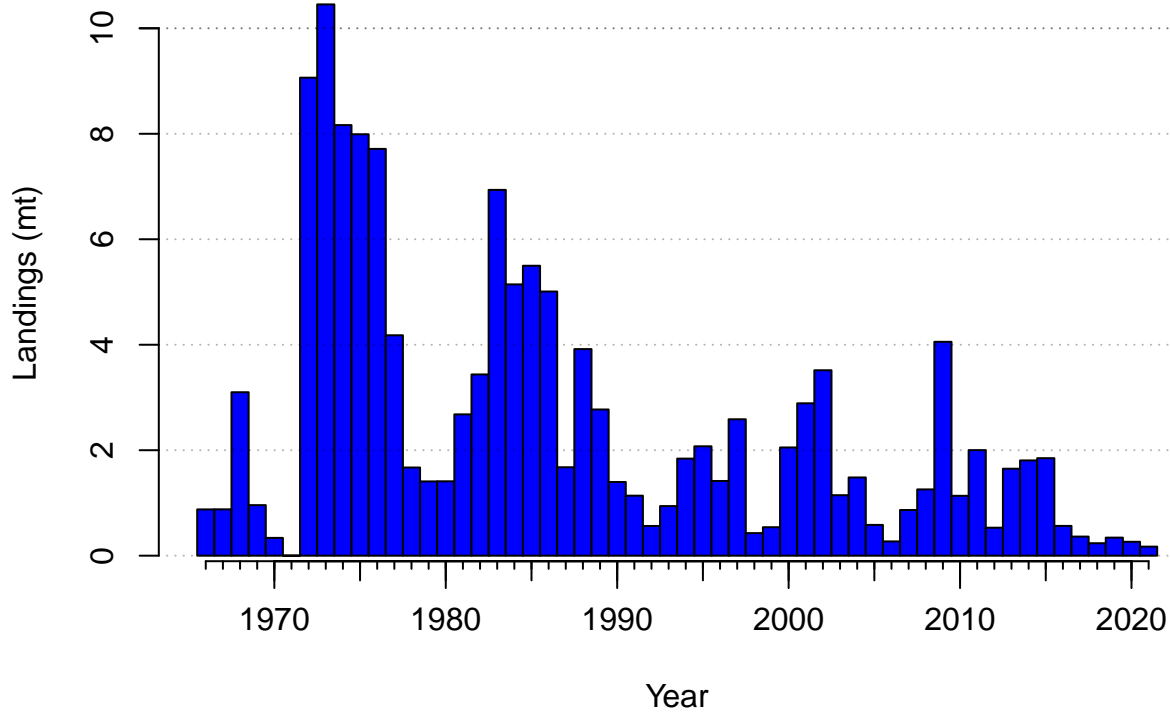
2329

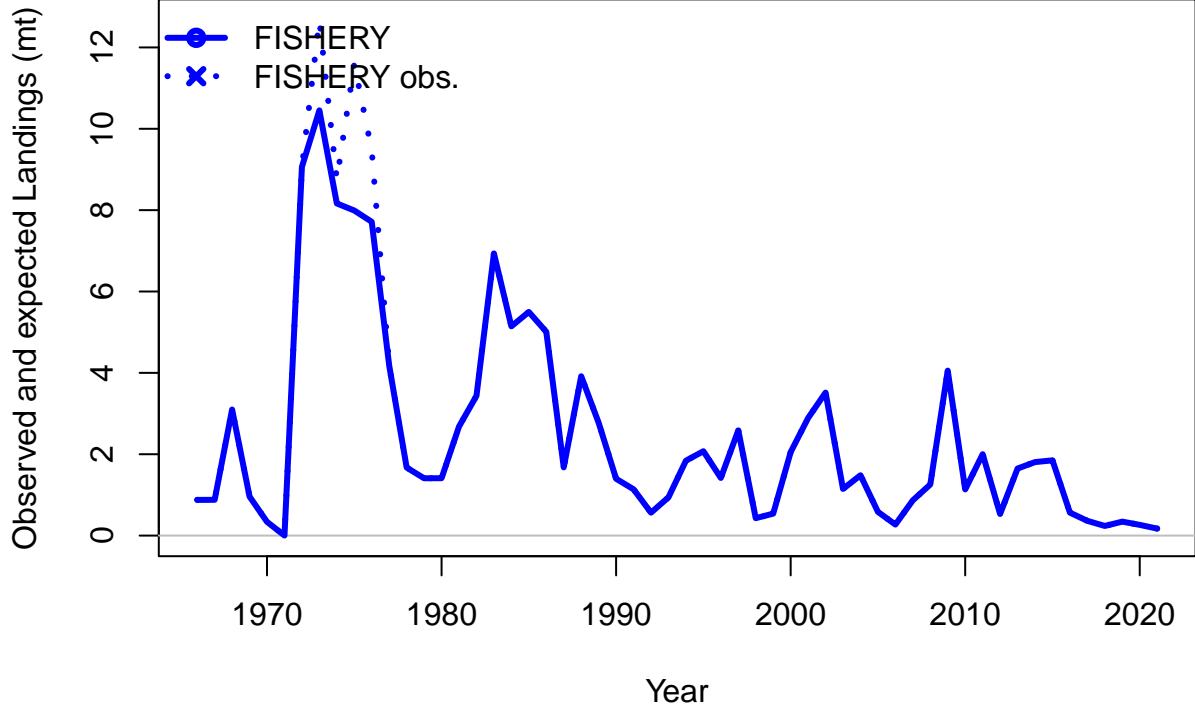
2330

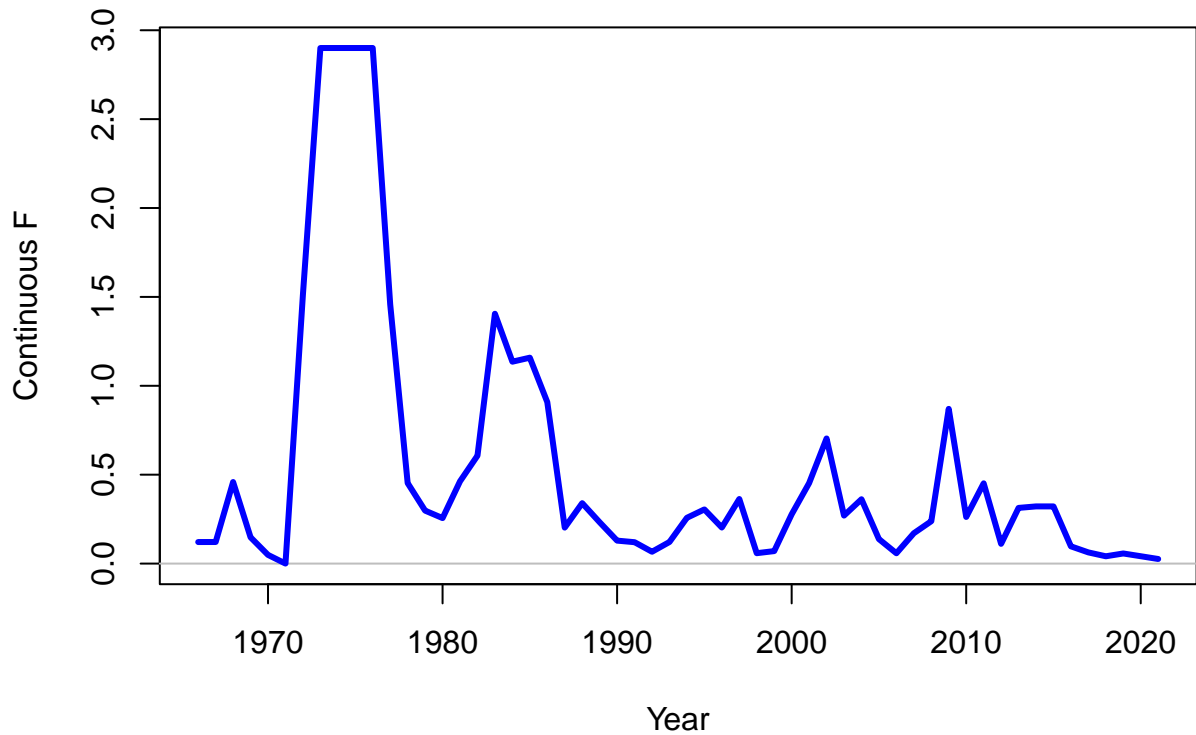
2331

2332</

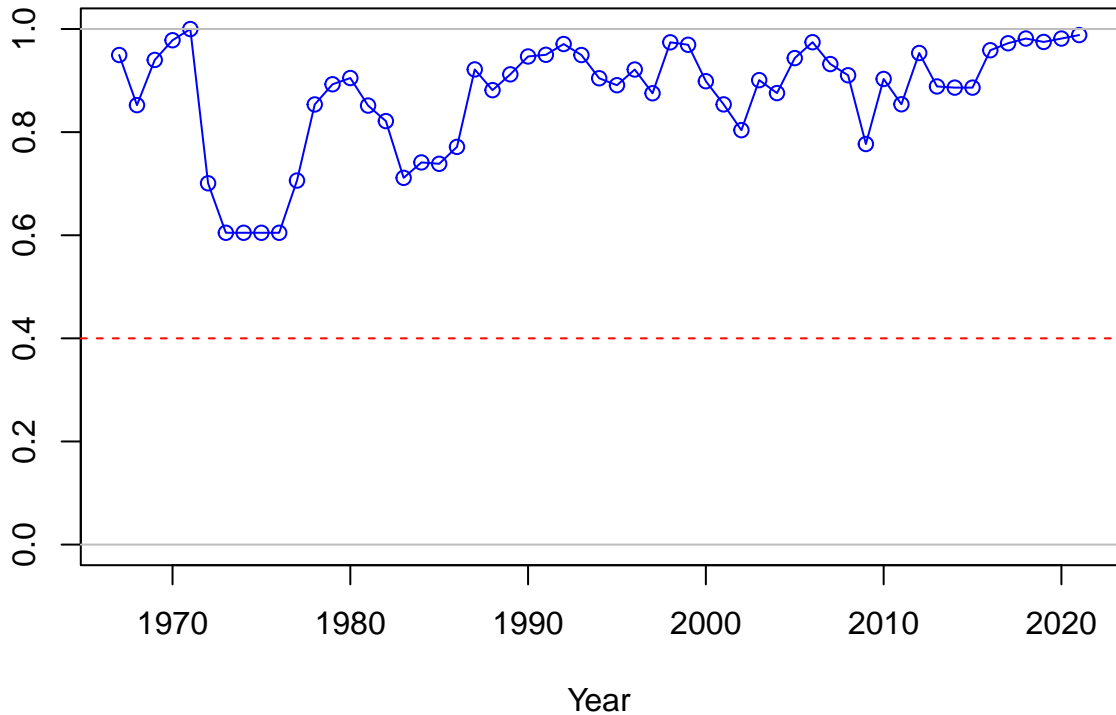




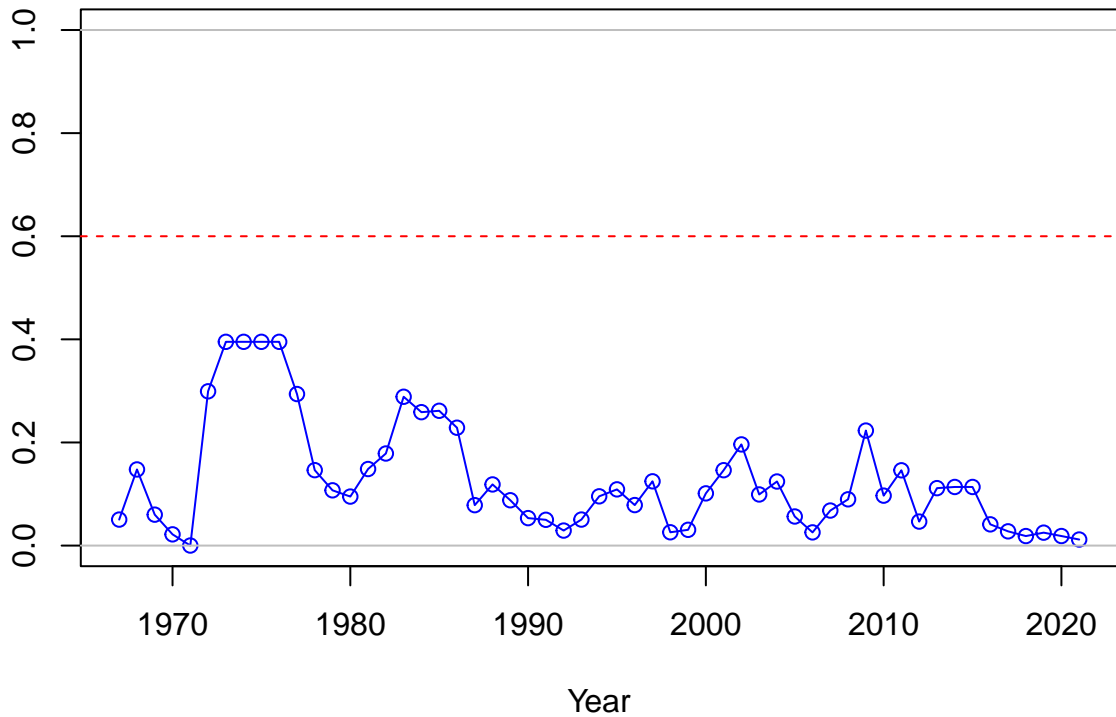




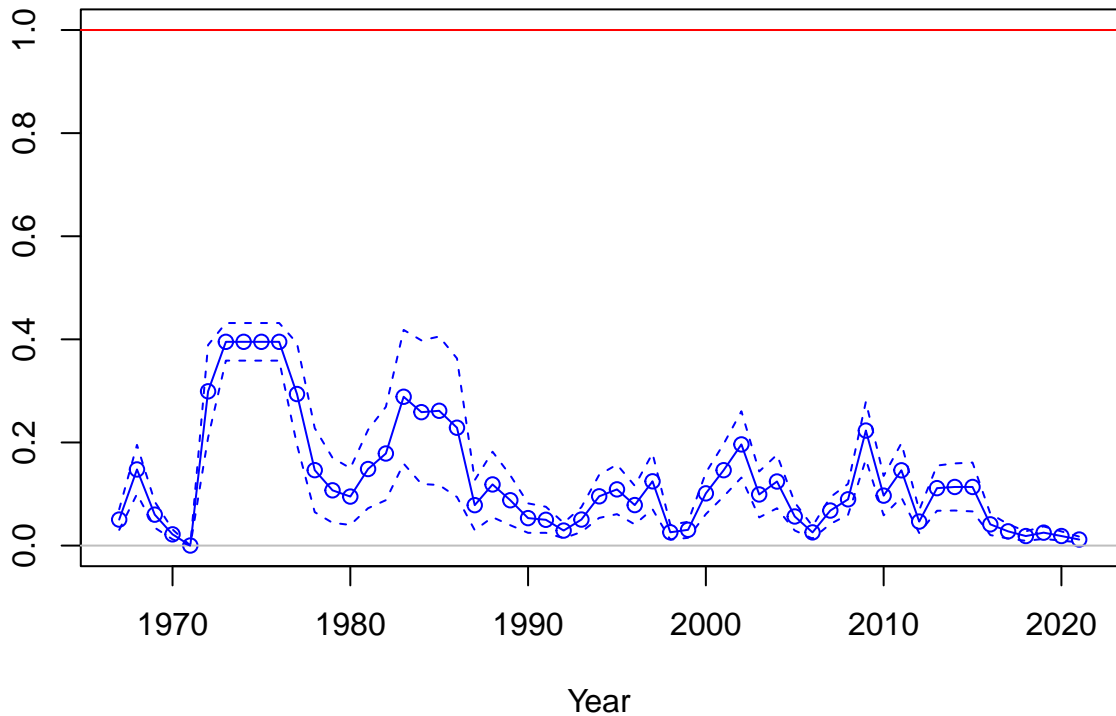
SPR



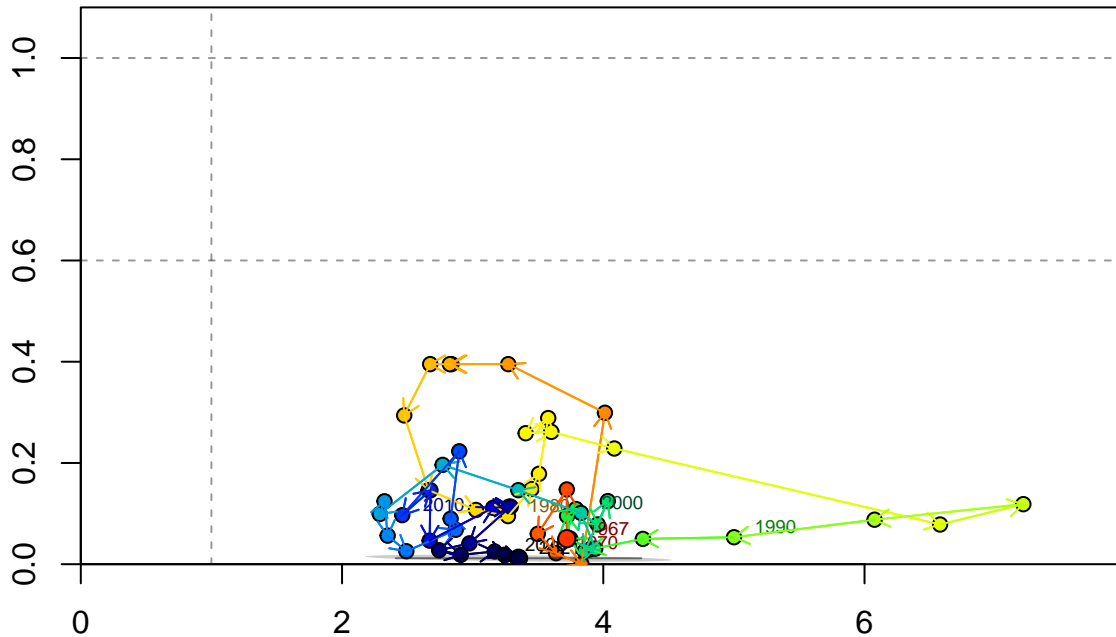
1-SPR



Fishing intensity: 1-SPR



Fishing intensity: 1-SPR



Relative spawning output: B/B_MS

Index

80
60
40
20
0

1990

1995

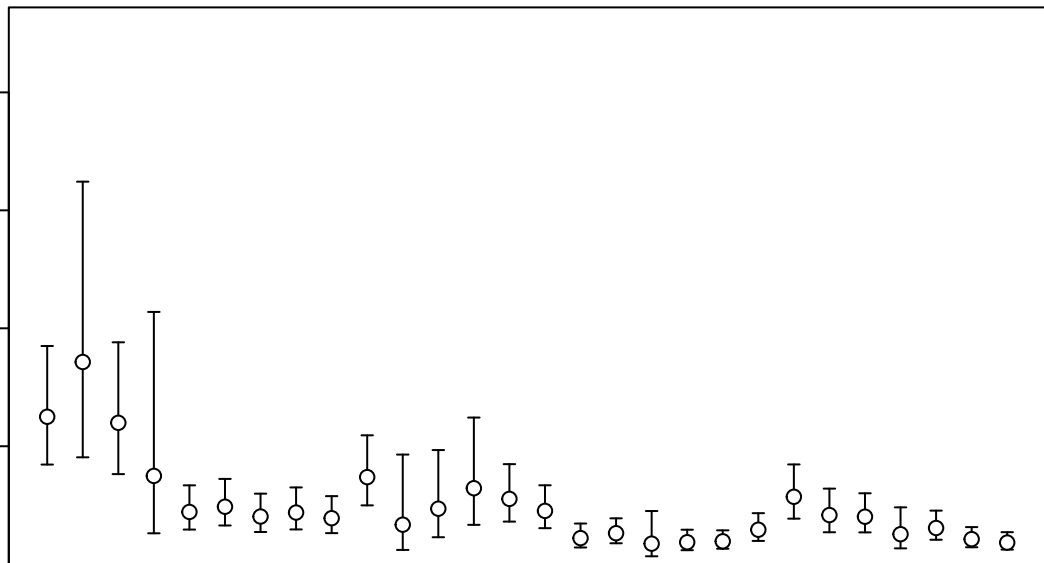
2000

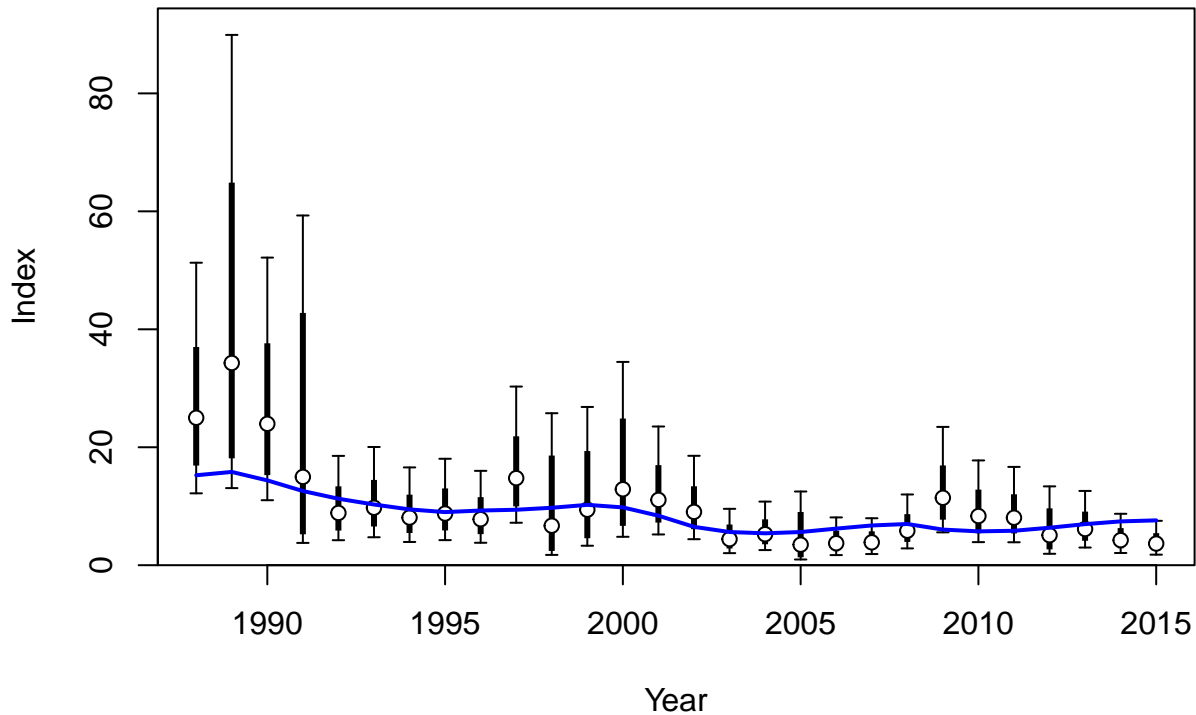
2005

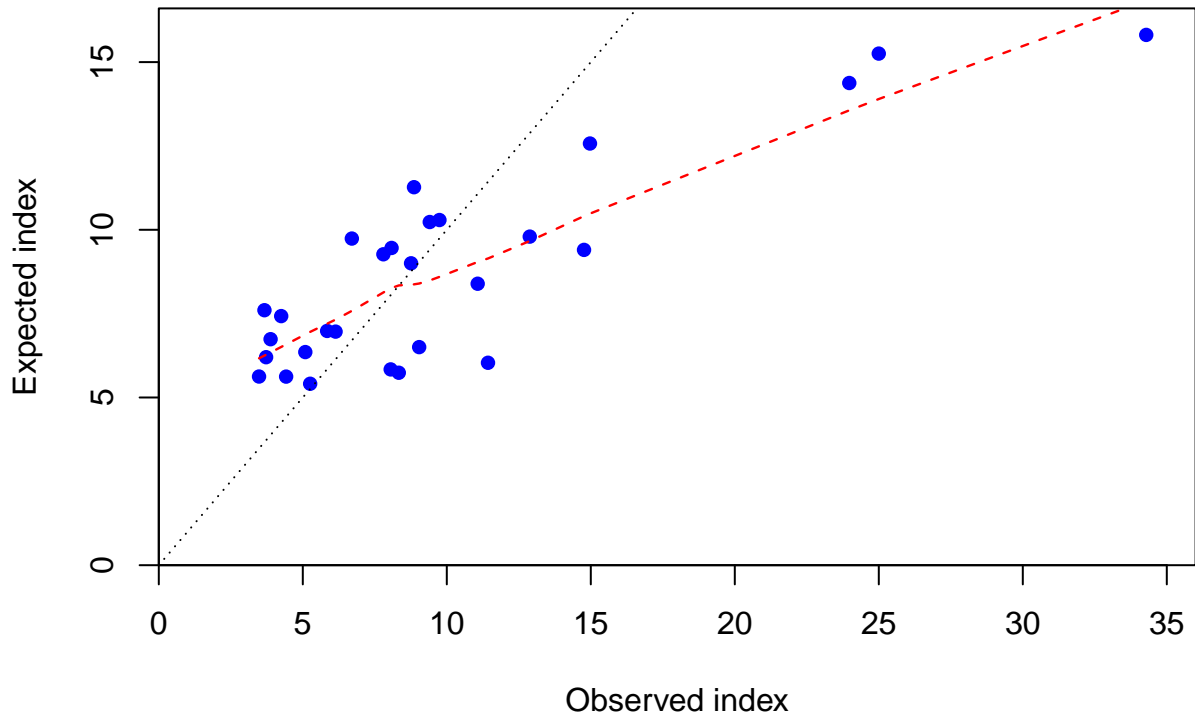
2010

2015

Year







Log index

4
3
2
1
0

1990

1995

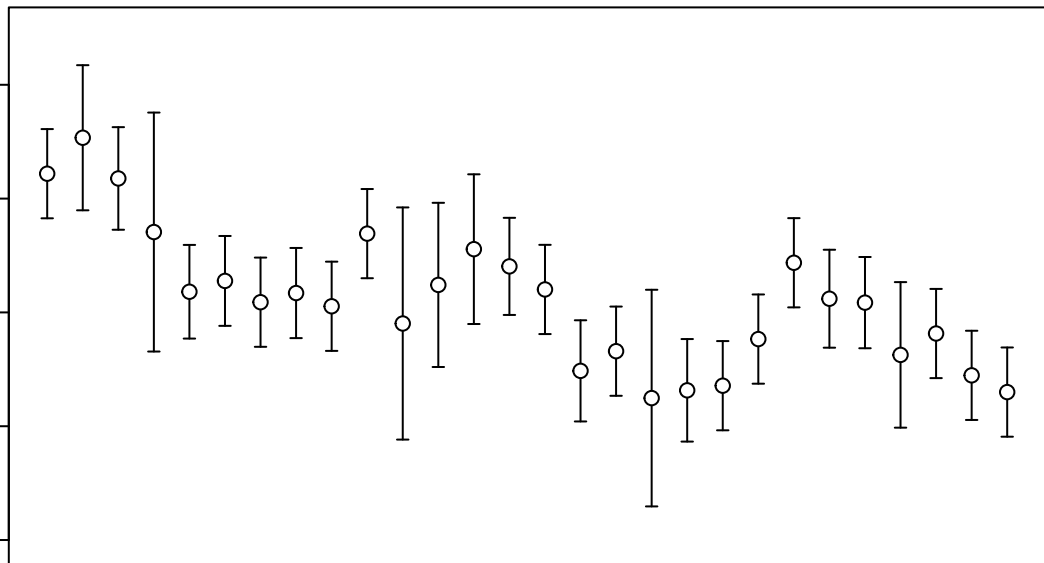
2000

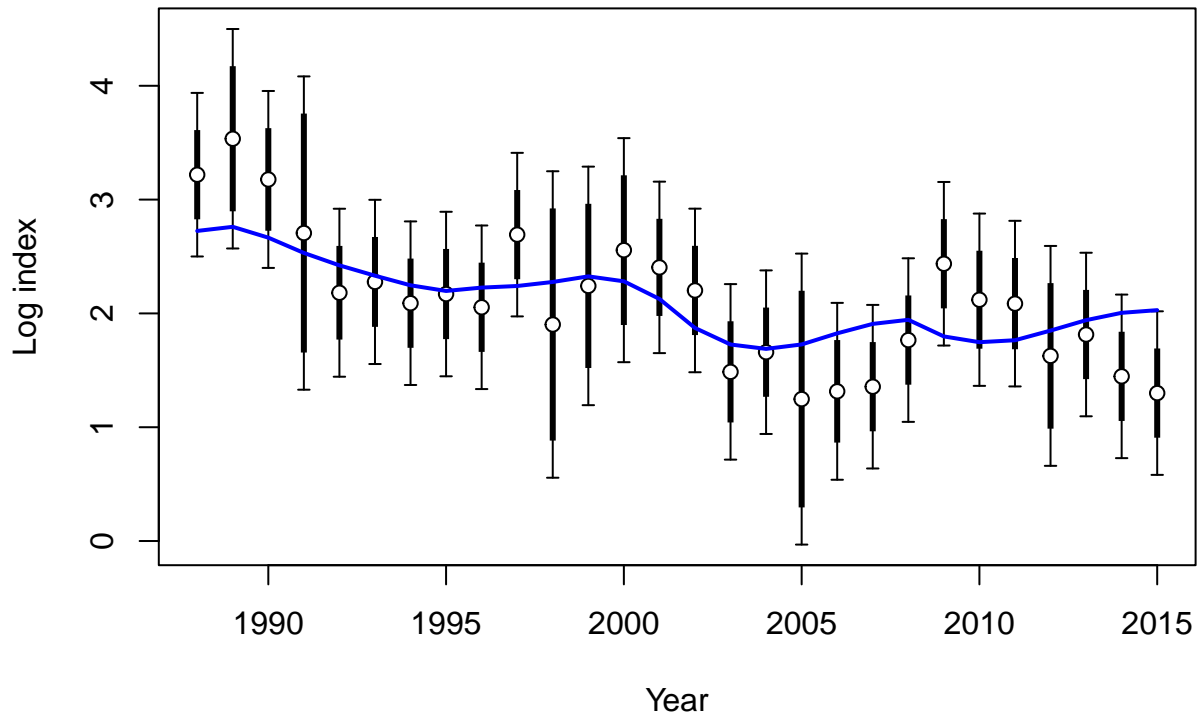
2005

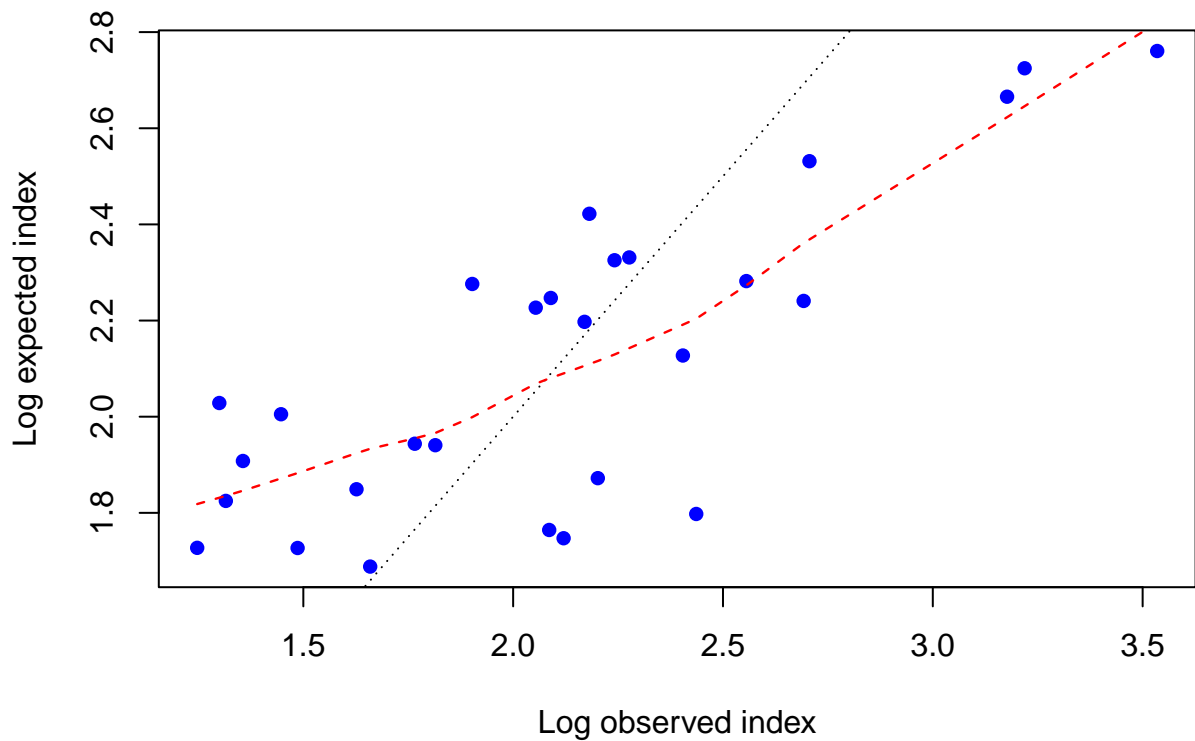
2010

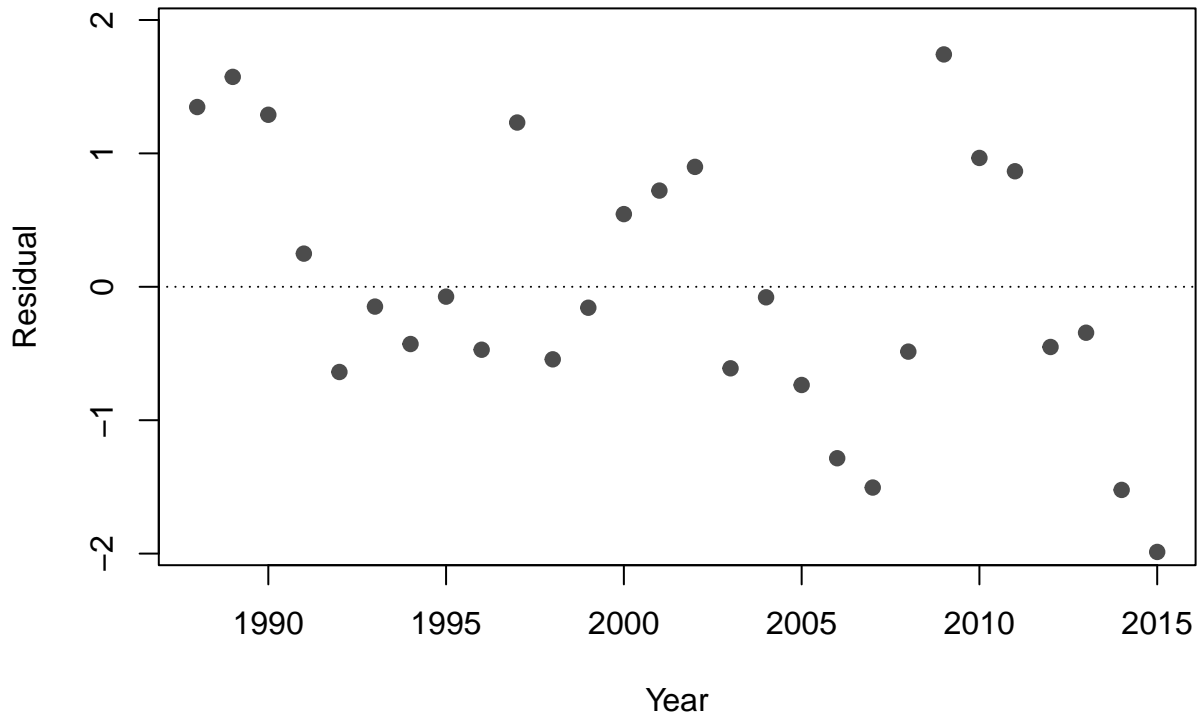
2015

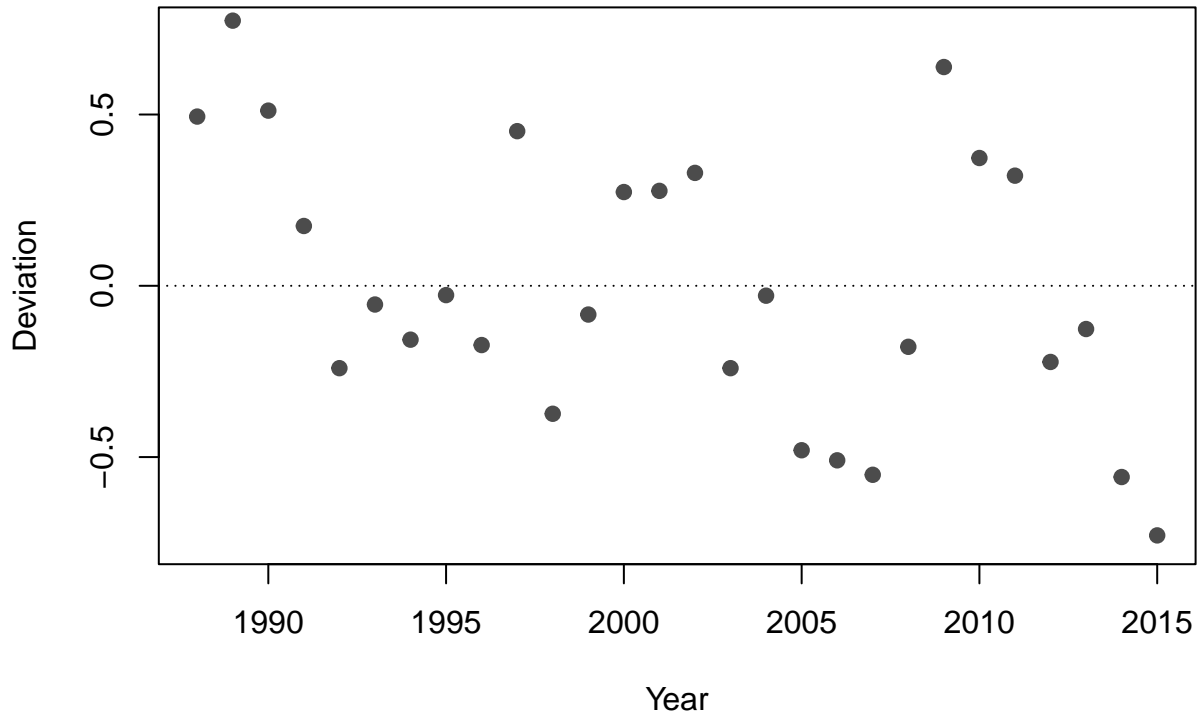
Year











Index

4
3
2
1
0

2016

2017

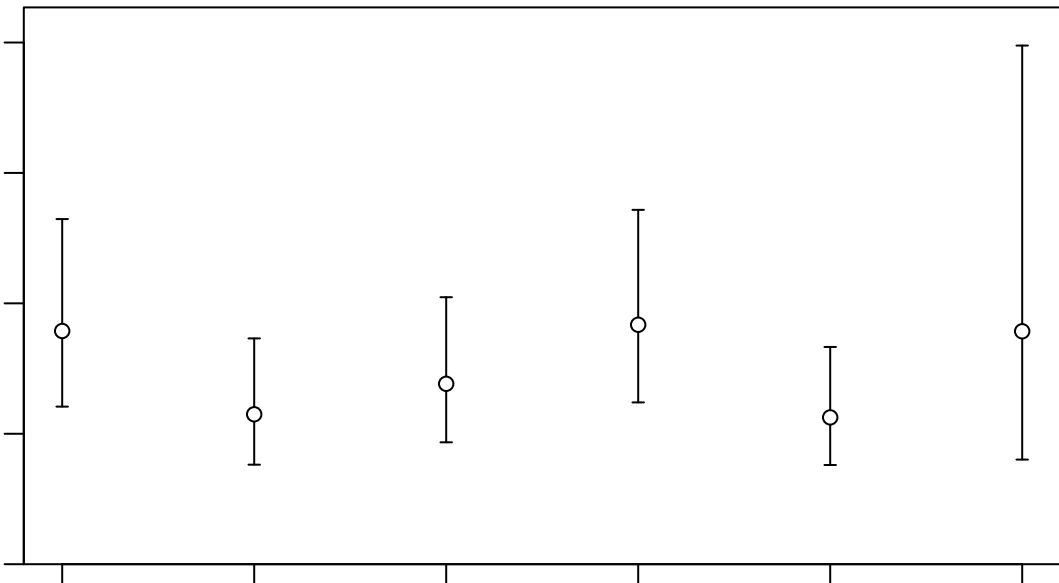
2018

2019

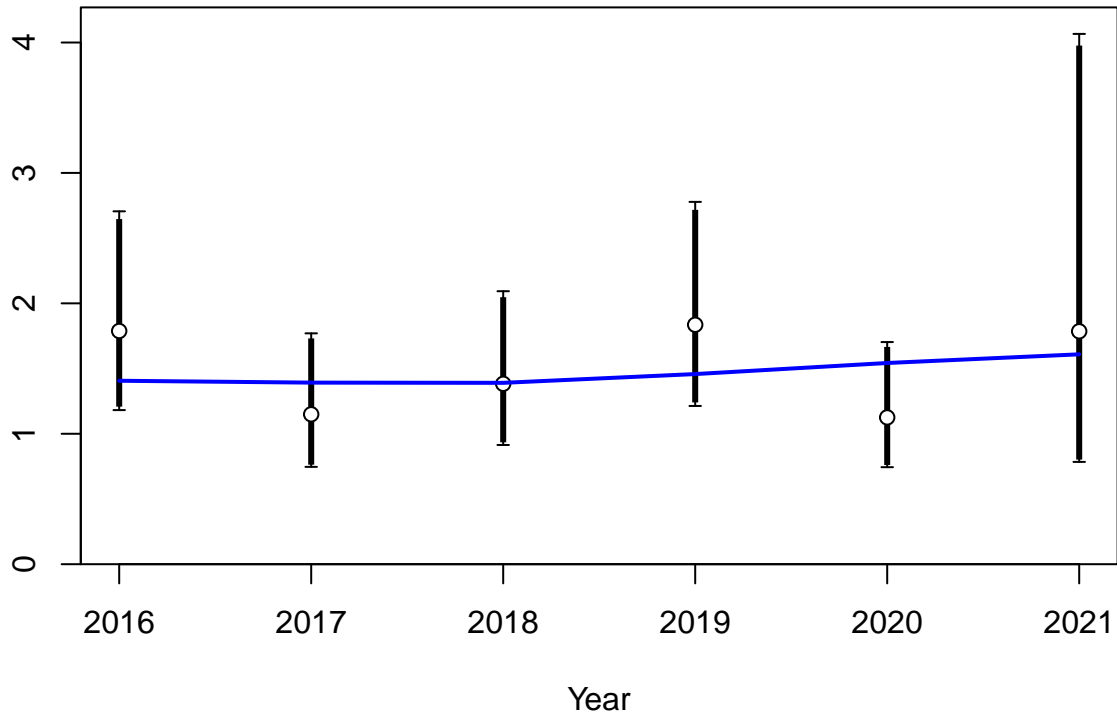
2020

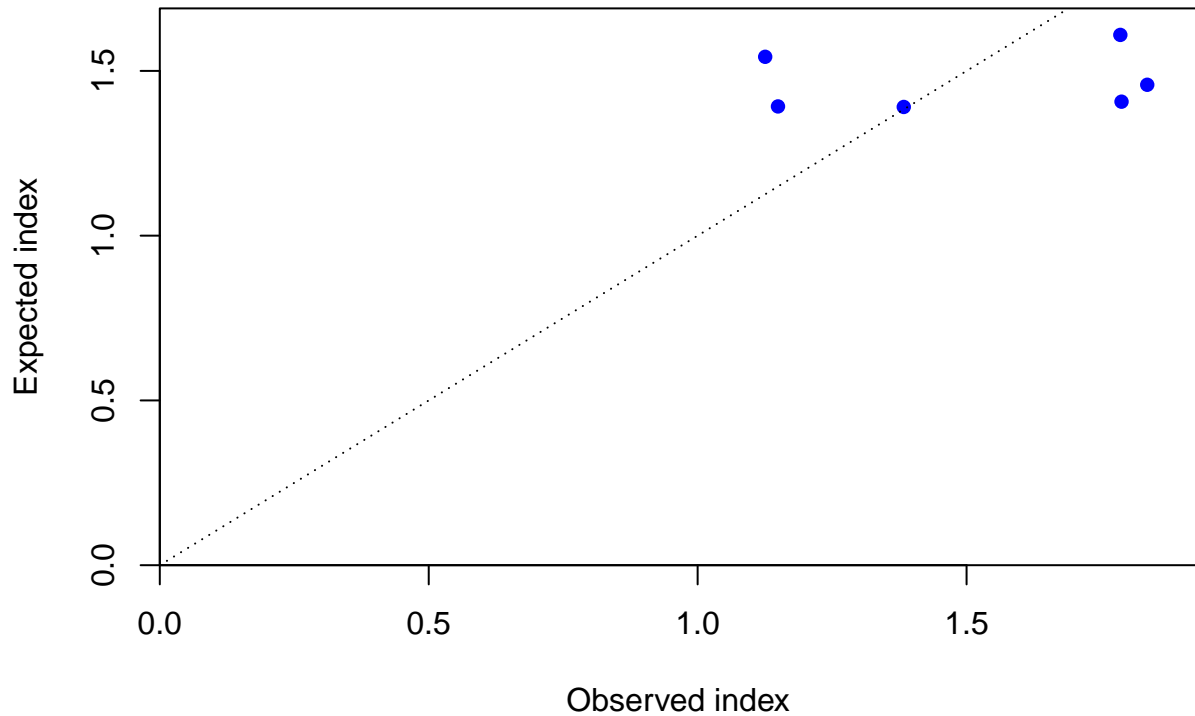
2021

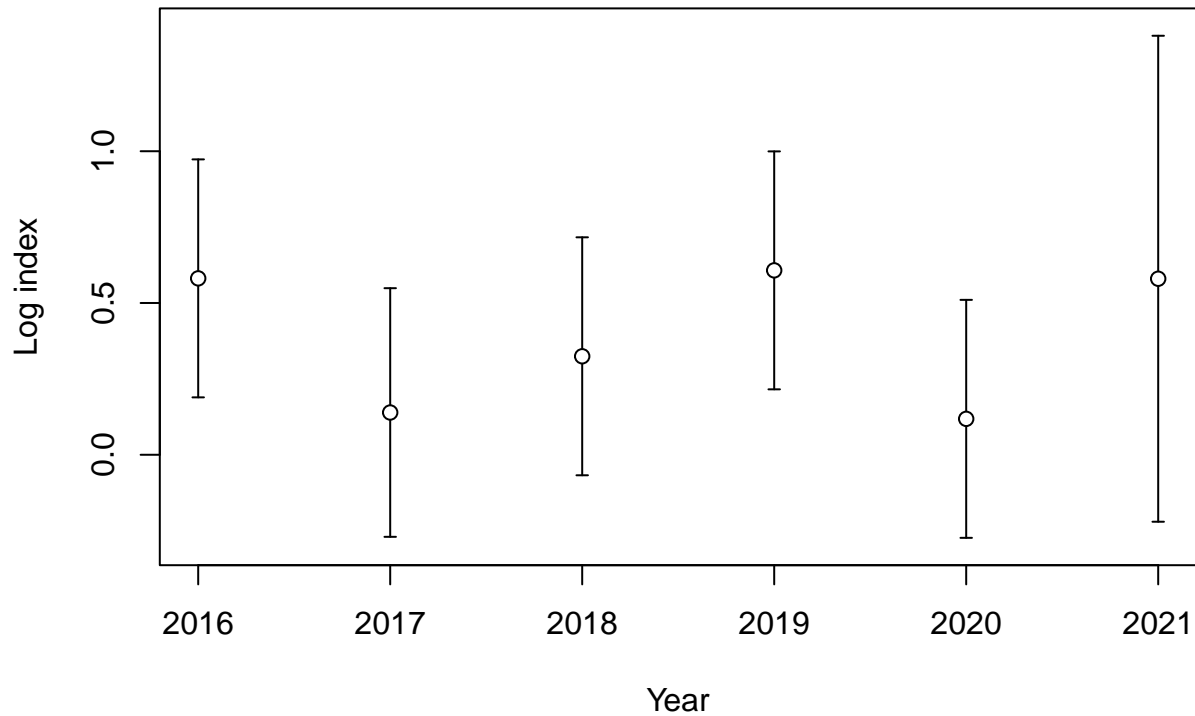
Year

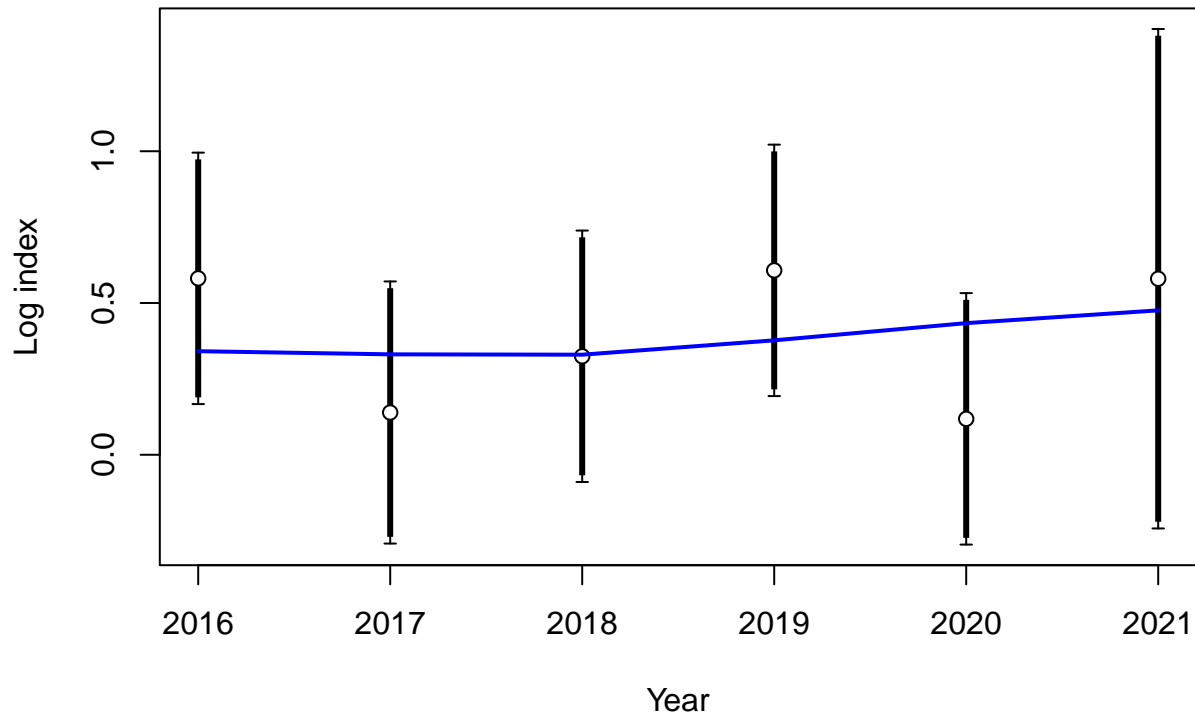


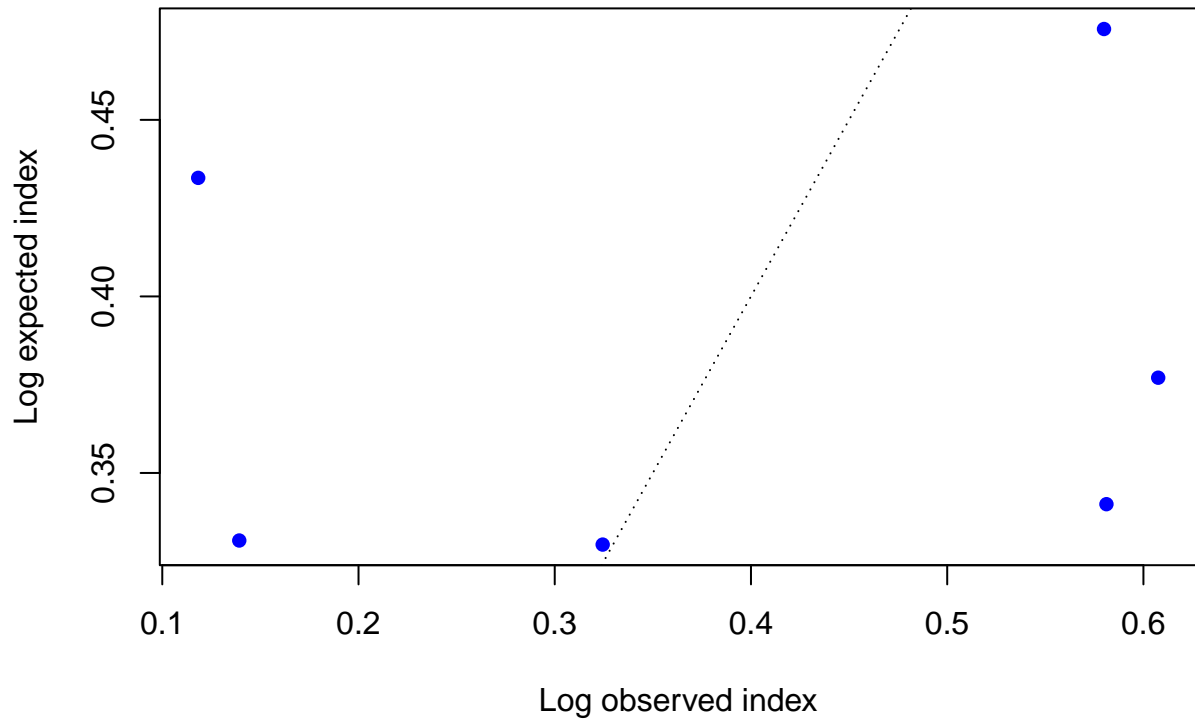
Index

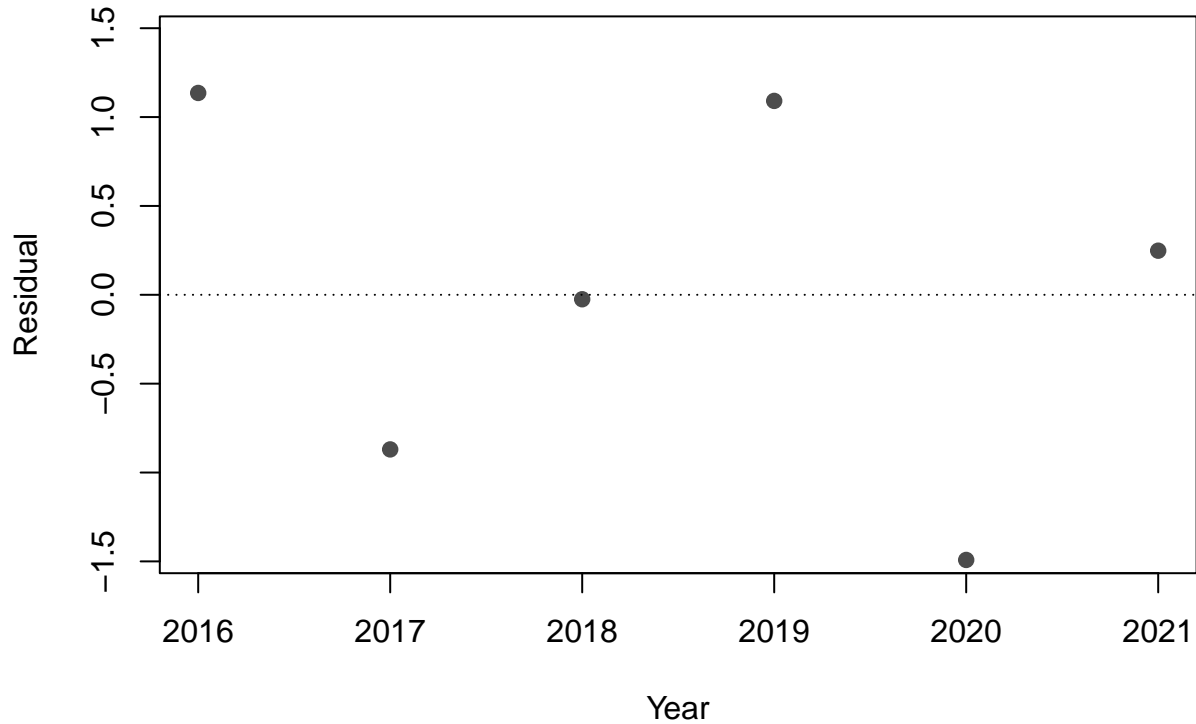


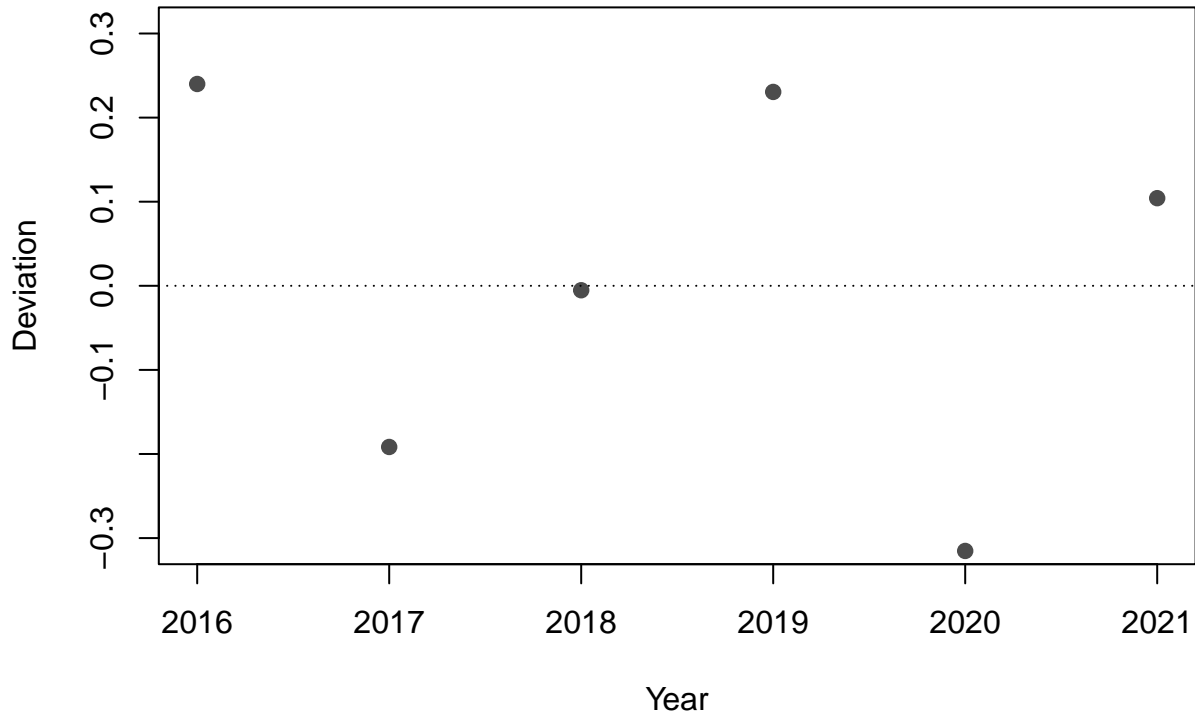


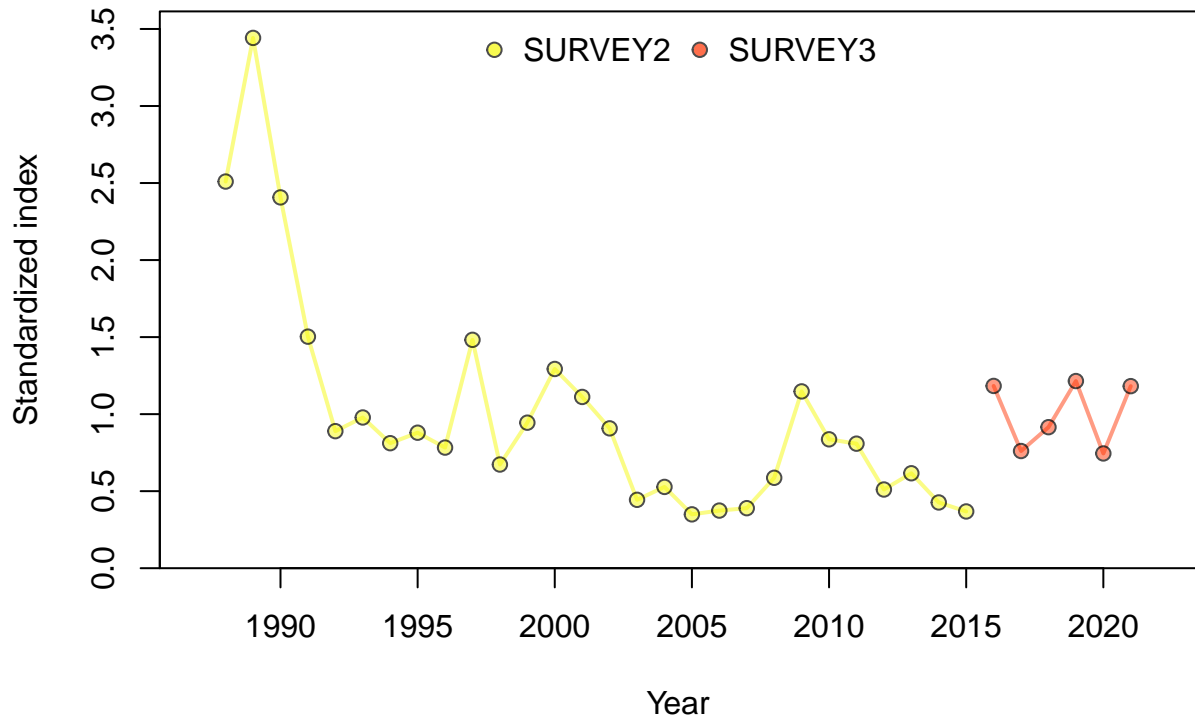


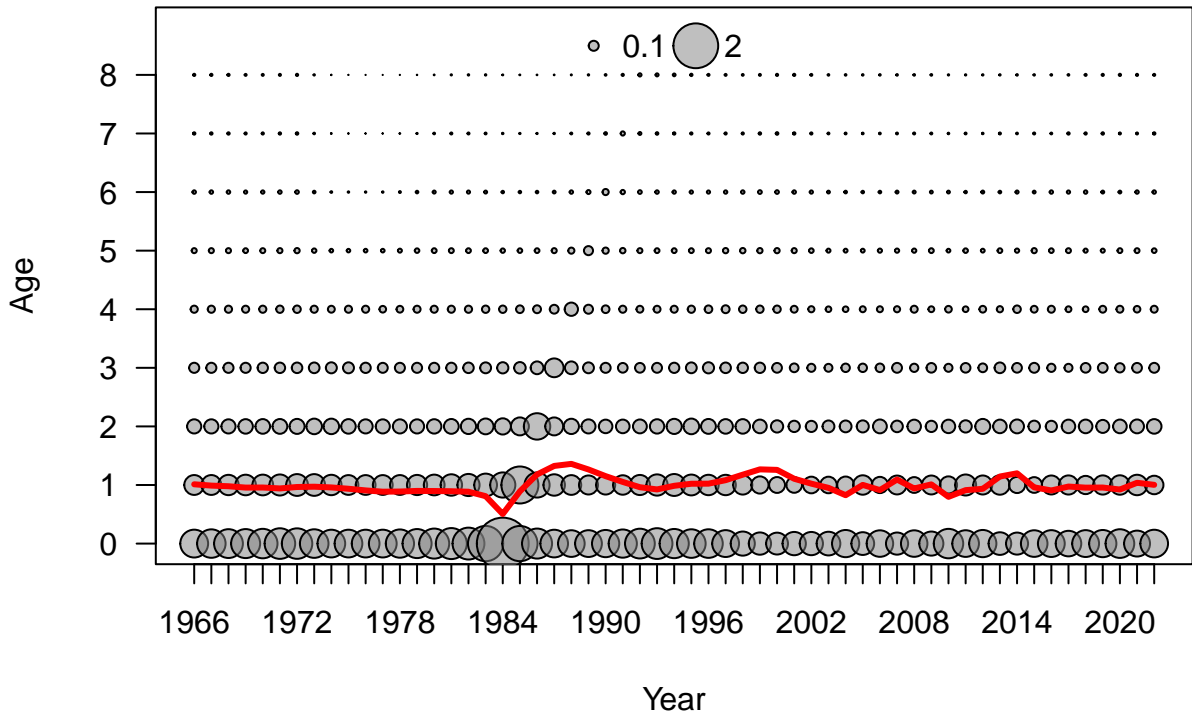


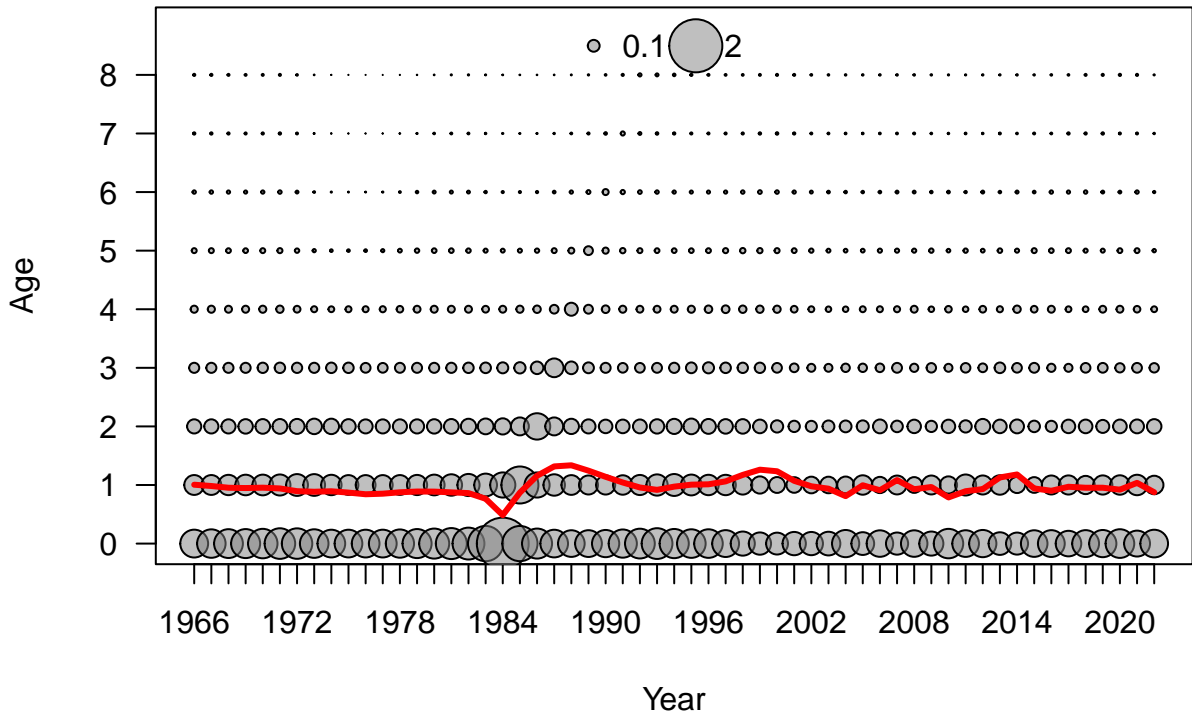


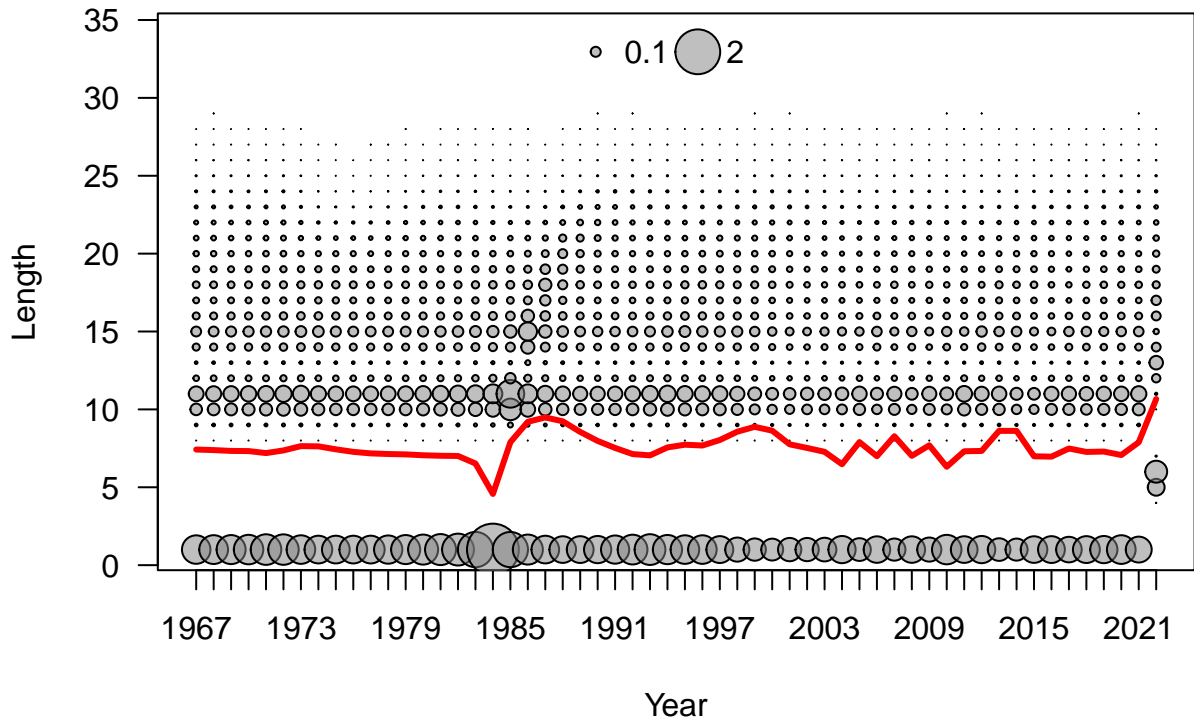


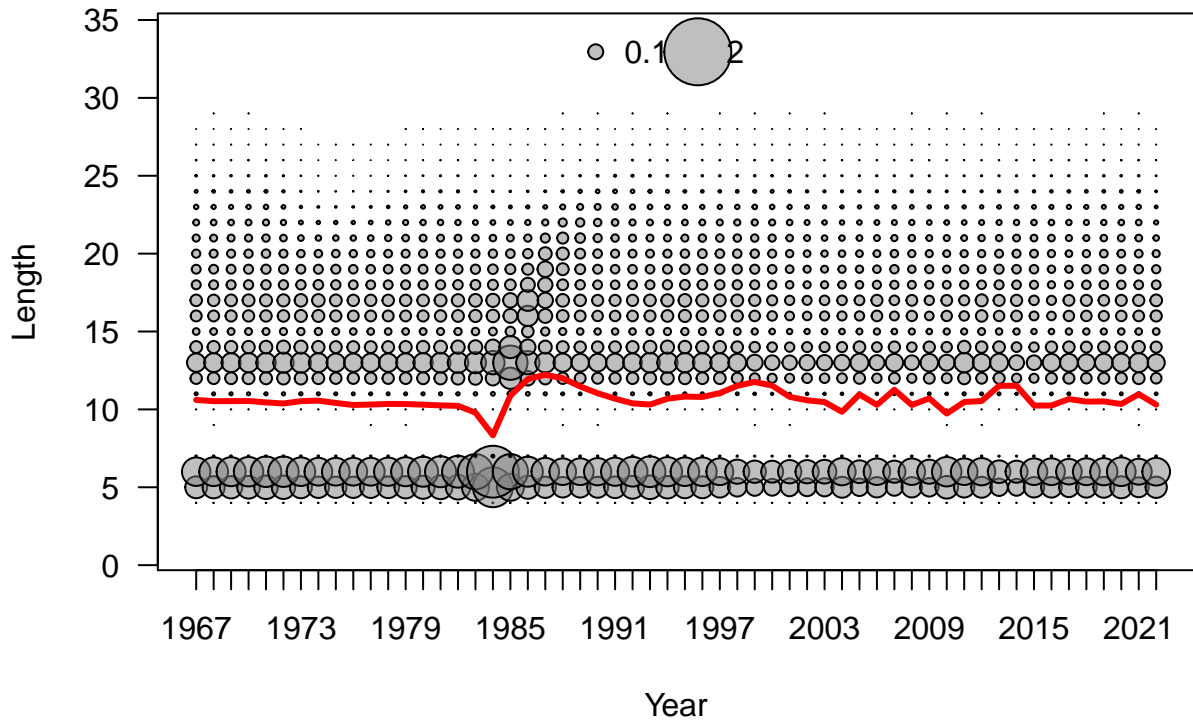


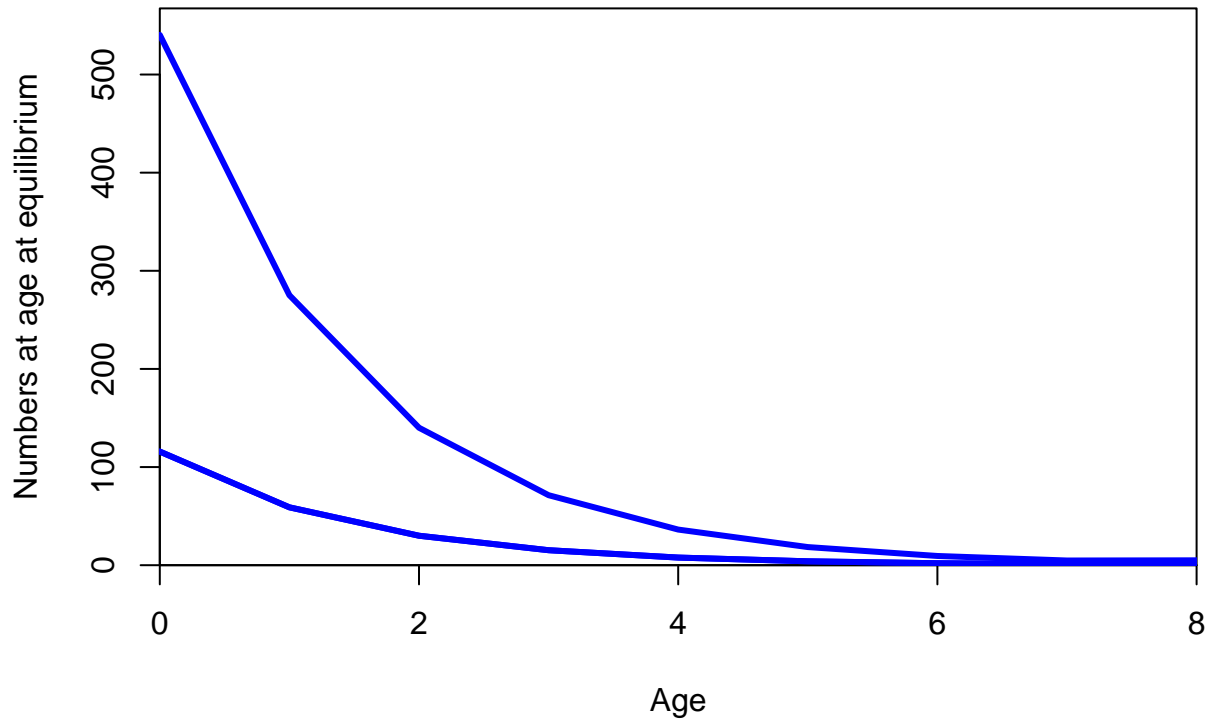


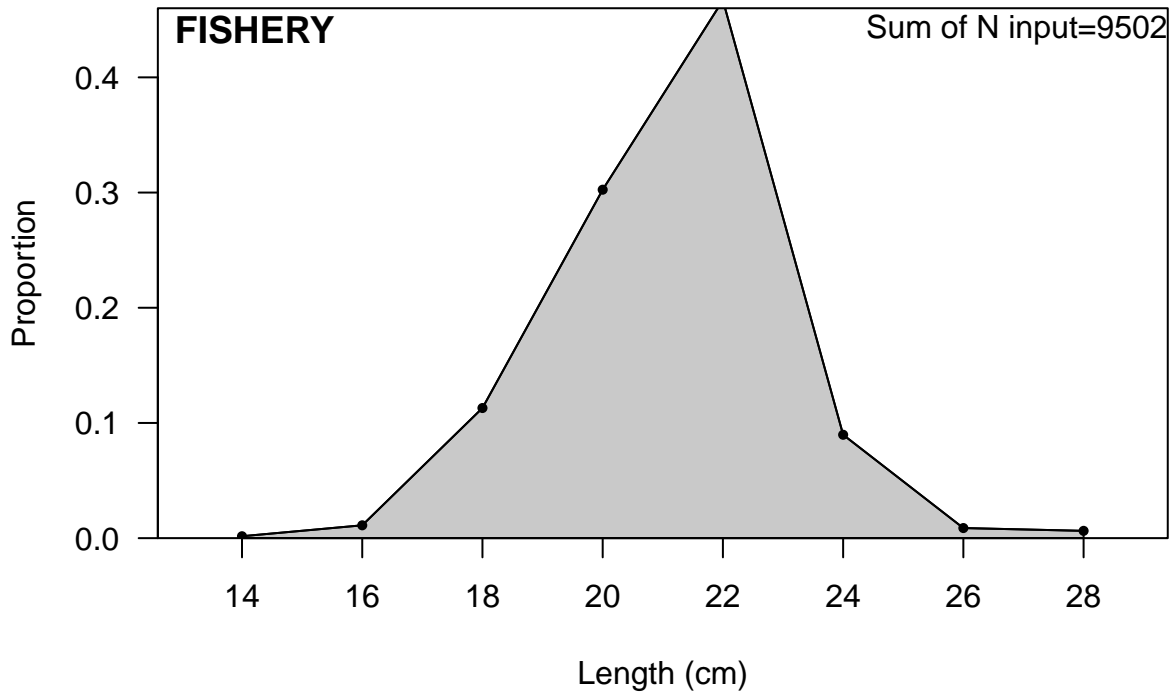


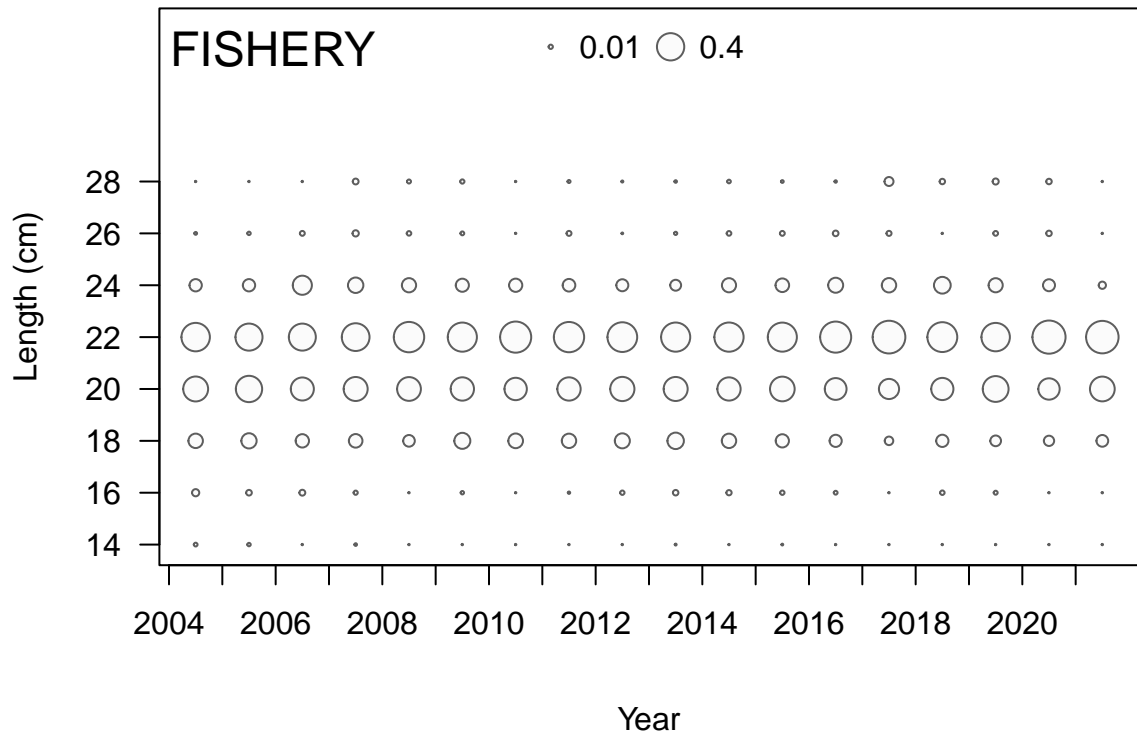




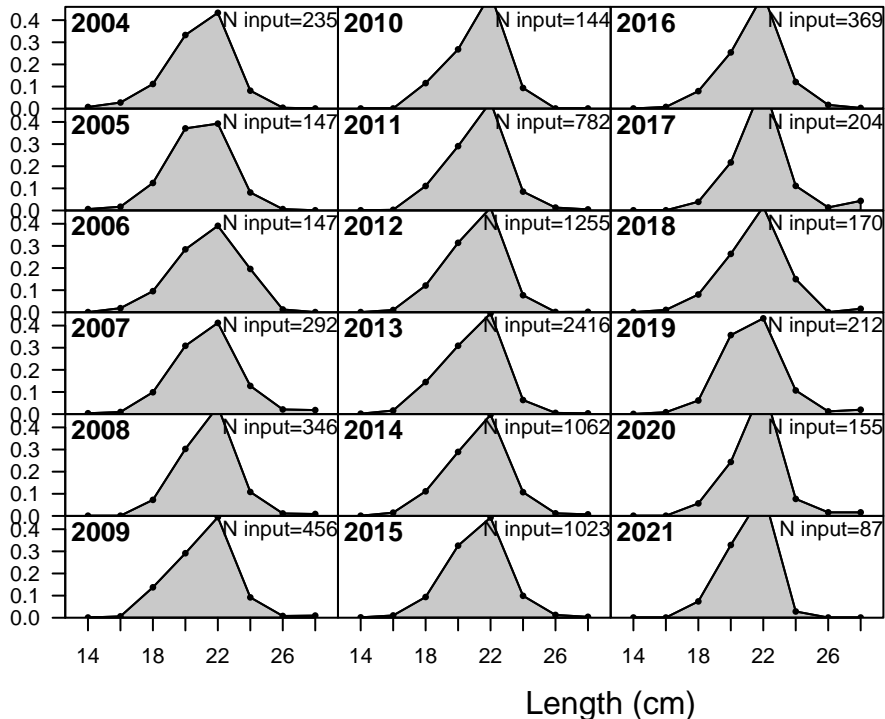


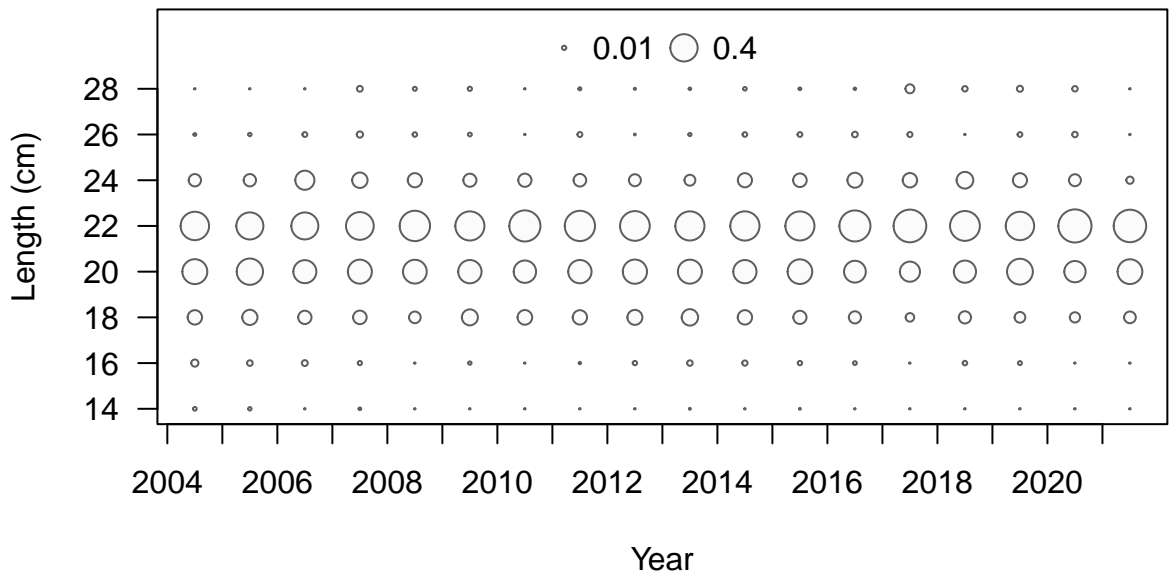




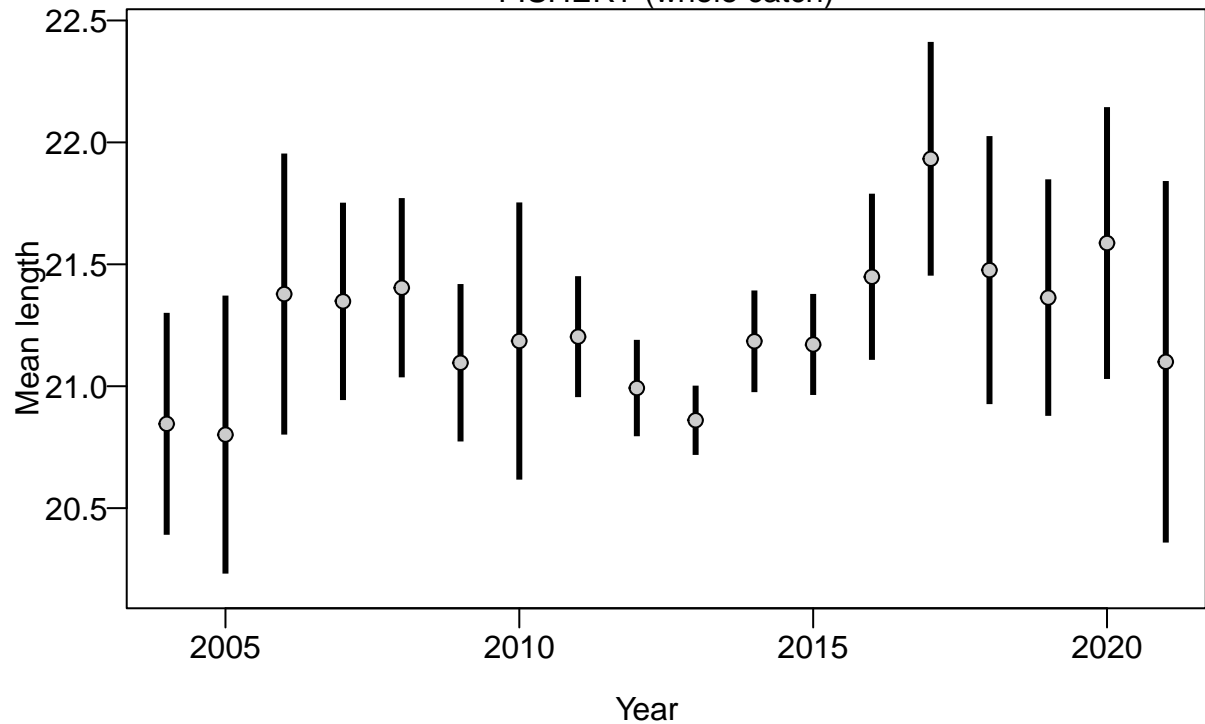


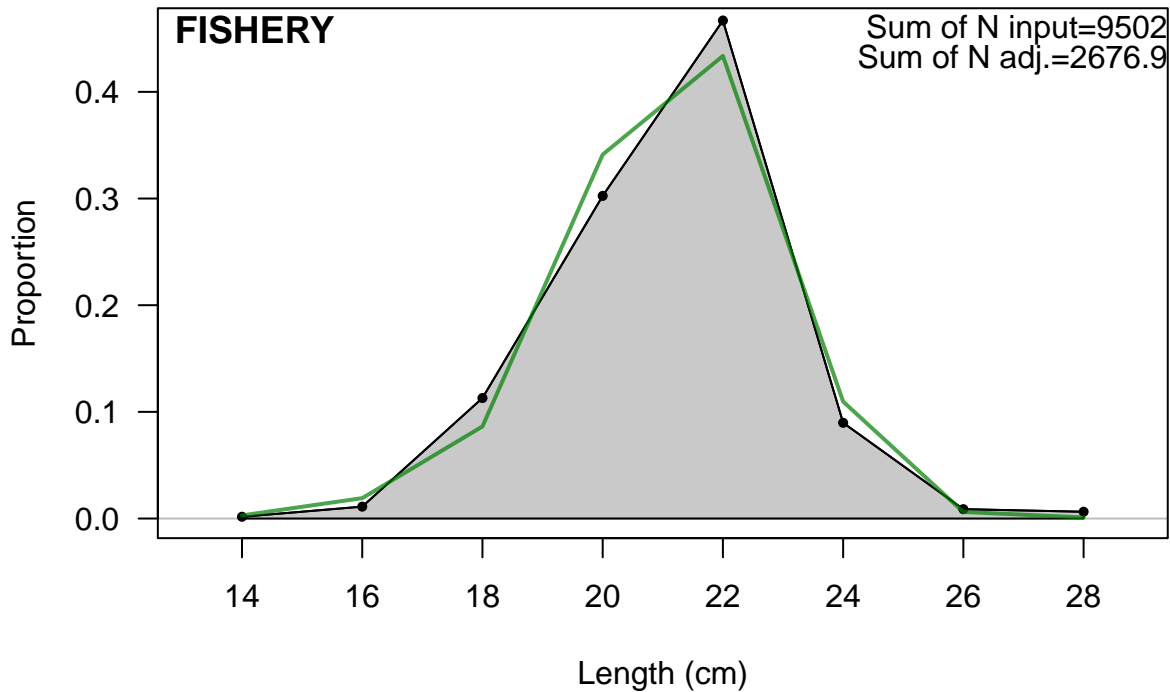
Proportion

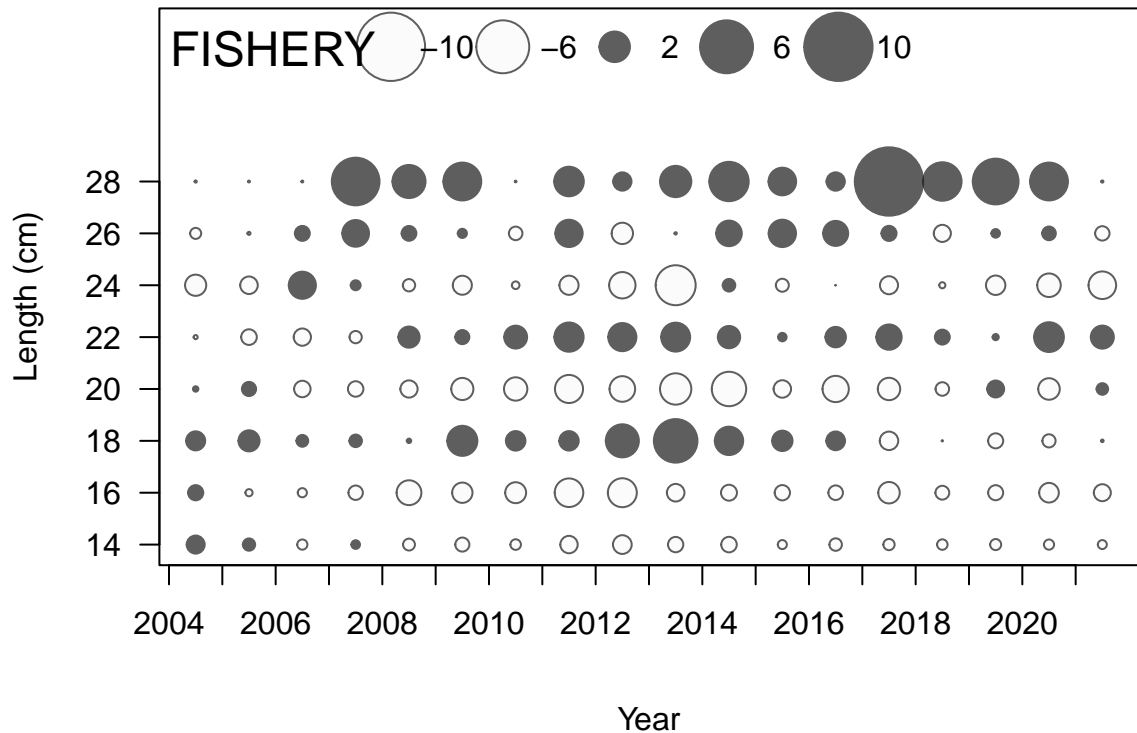




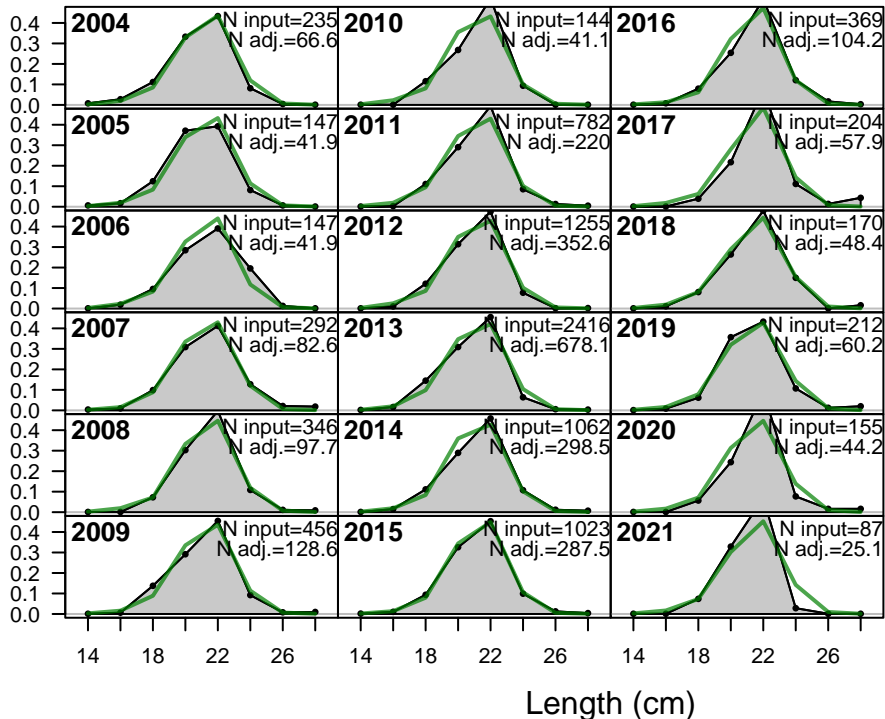
FISHERY (whole catch)

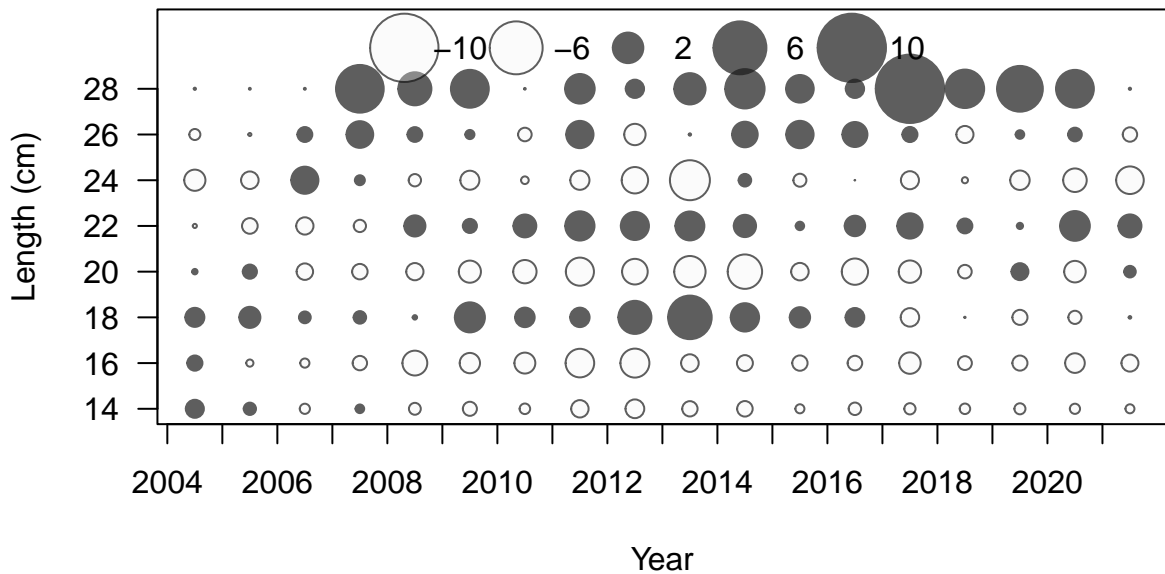




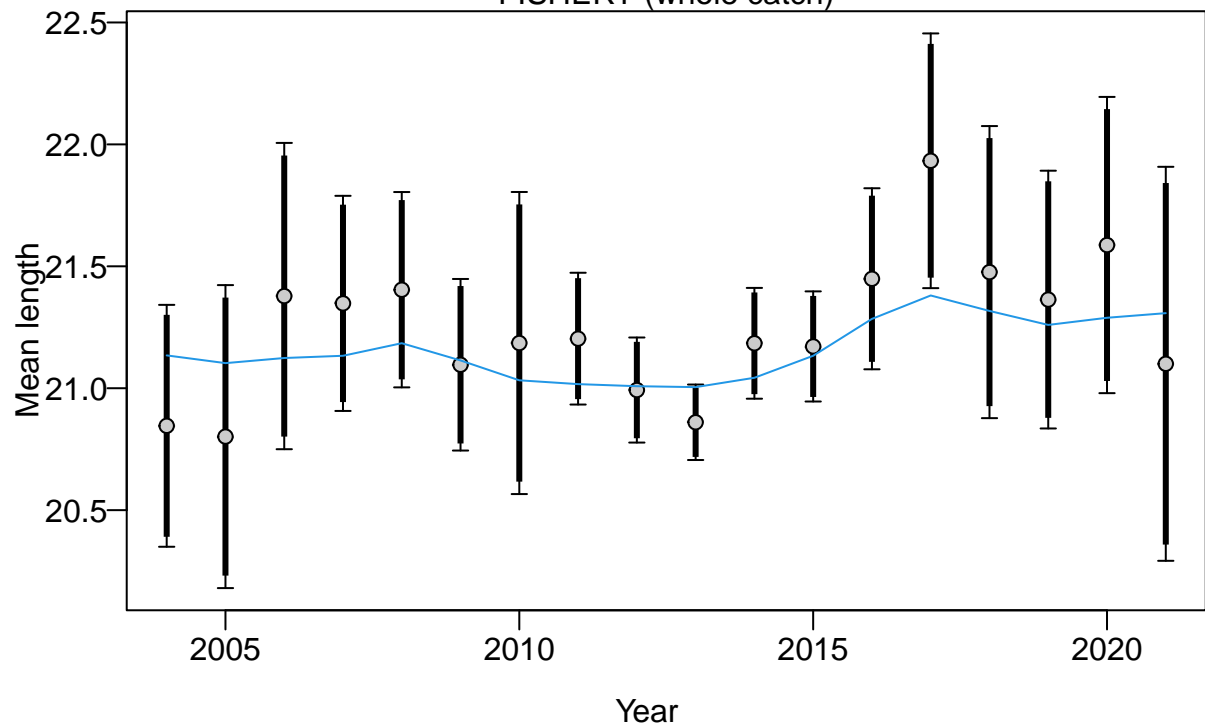


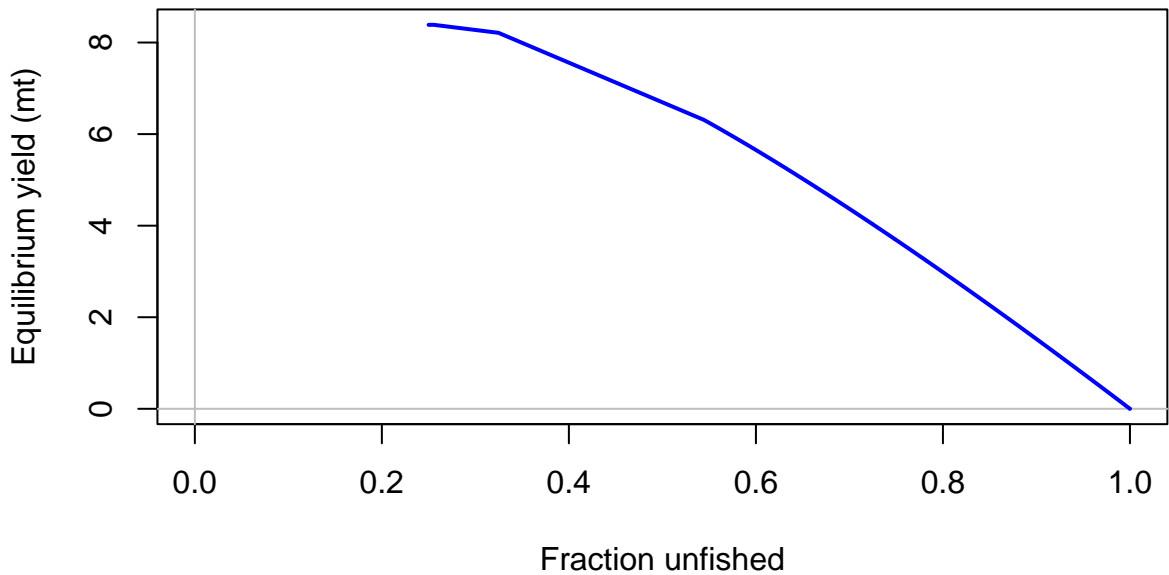
Proportion

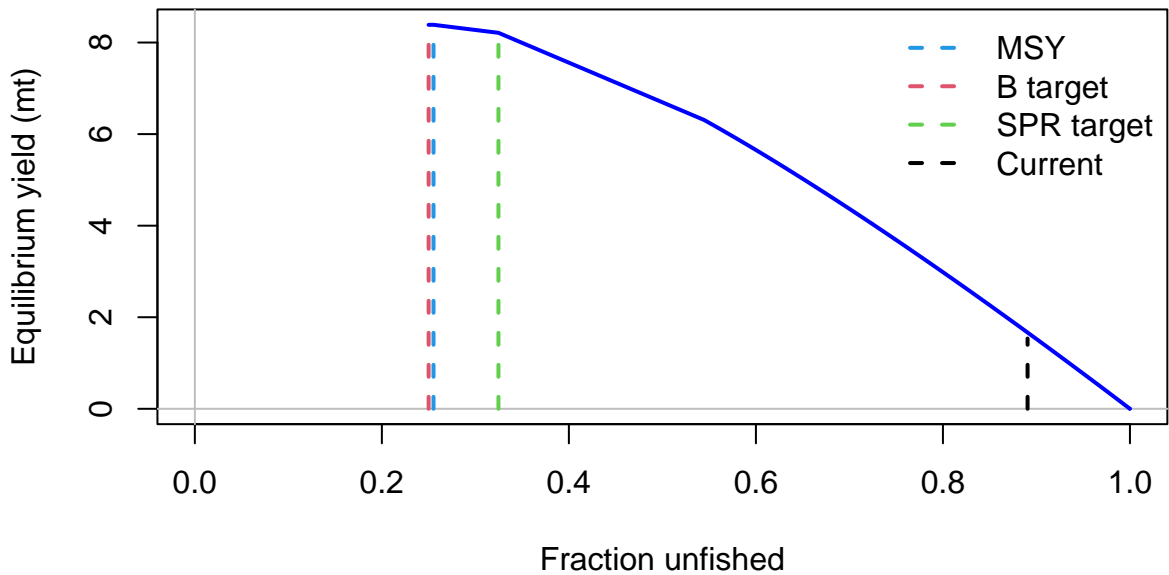


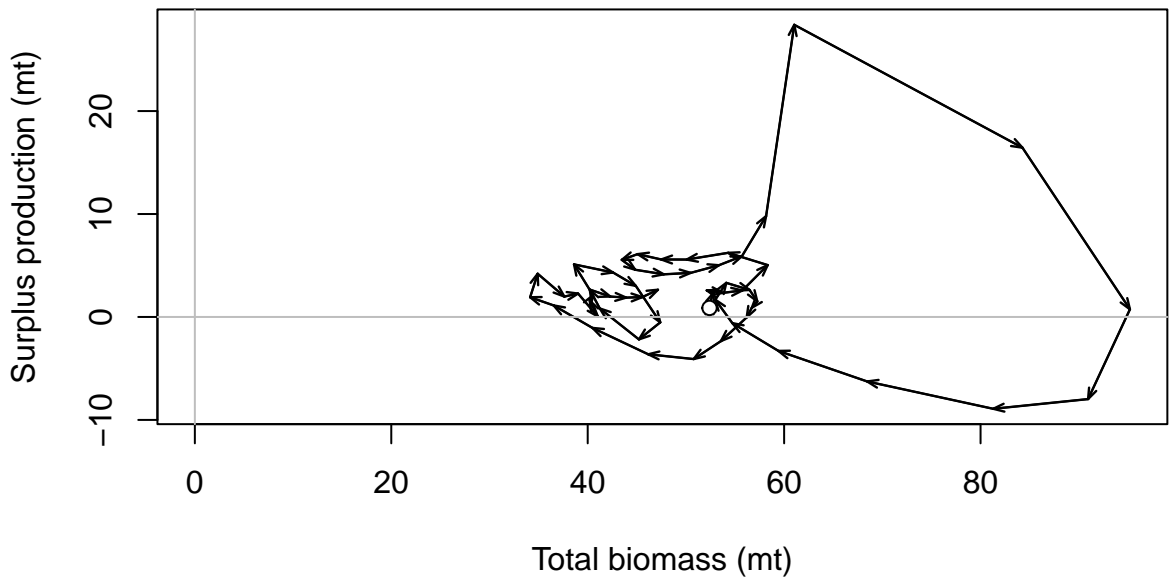


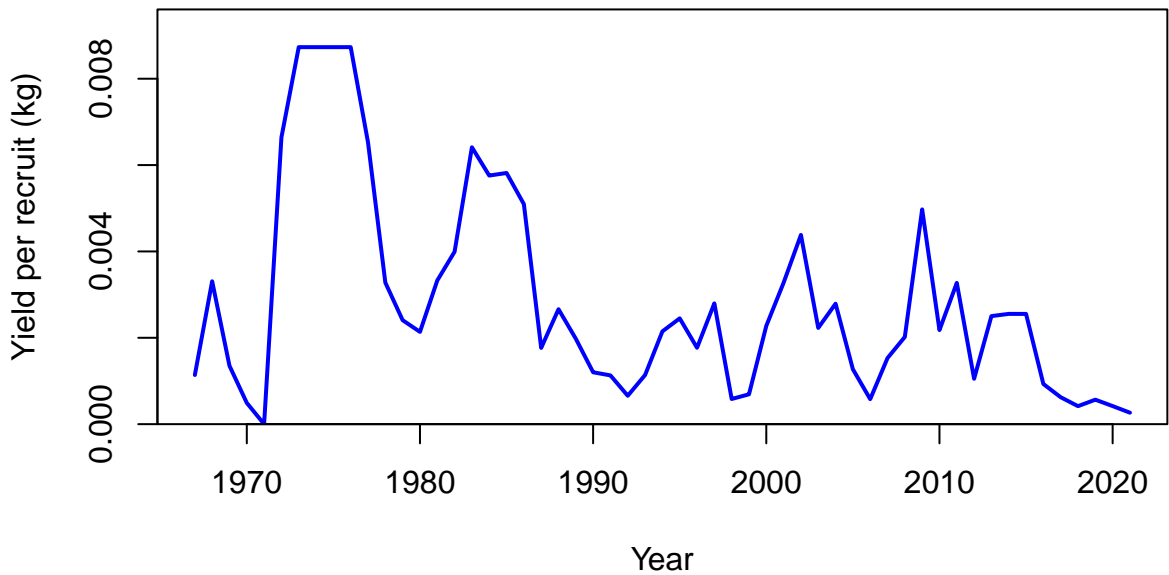
FISHERY (whole catch)

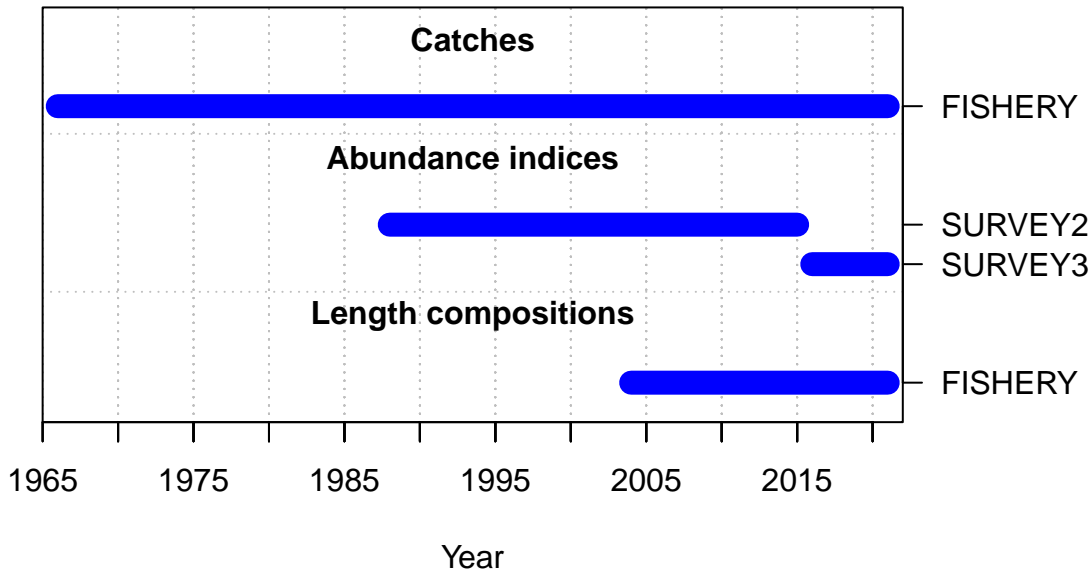


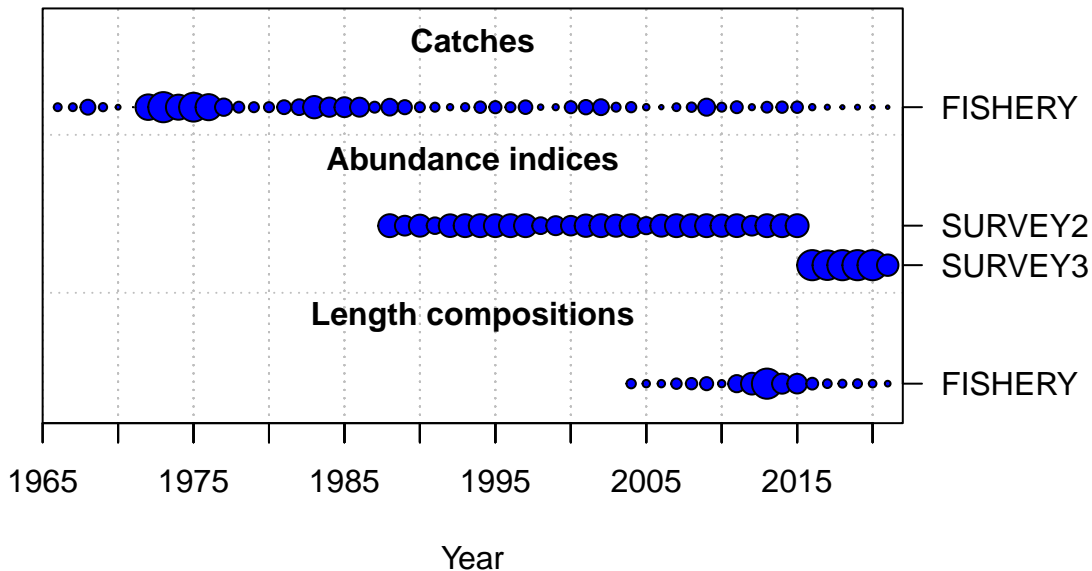




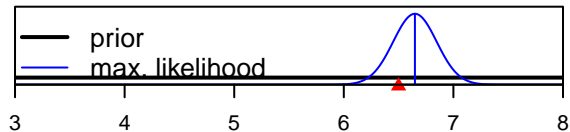




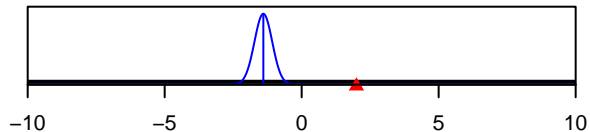




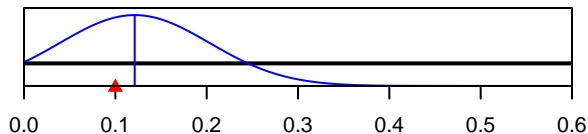
SR_LN(R0)



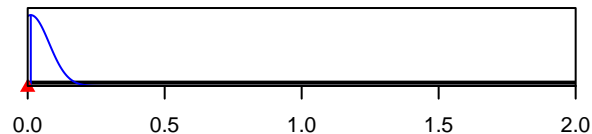
LnQ_base_SURVEY3(3)



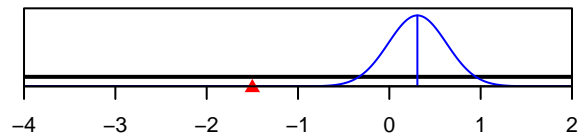
InitF_seas_1_flt_1FISHERY



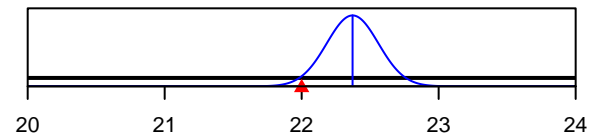
Q_extraSD_SURVEY3(3)



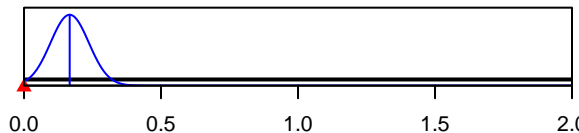
LnQ_base_SURVEY2(2)



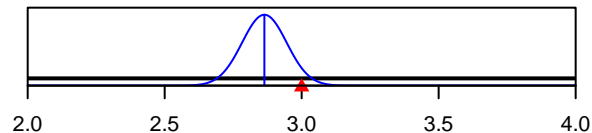
Size_inflection_FISHERY(1)



Q_extraSD_SURVEY2(2)

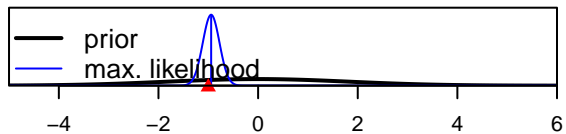


Size_95%width_FISHERY(1)



Parameter value

$\ln(\text{DM_theta})_1$



Density

Parameter value