American Samoa Model Checks

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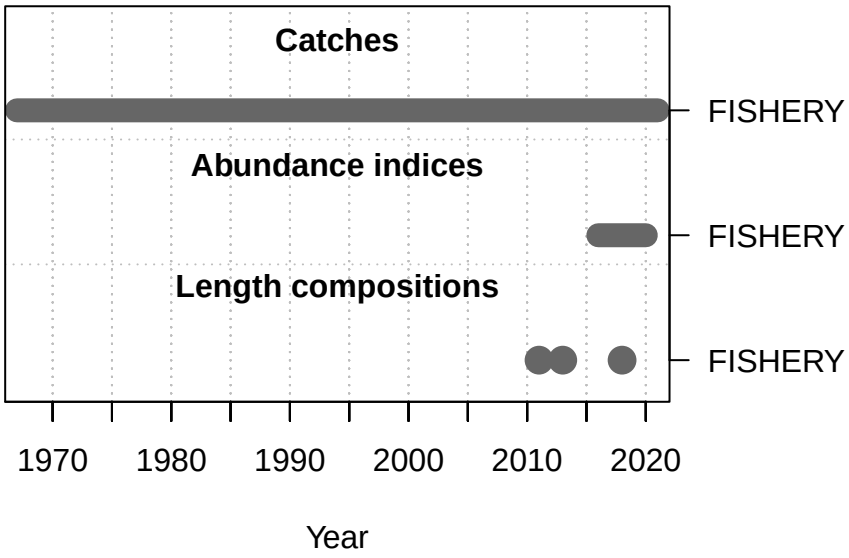
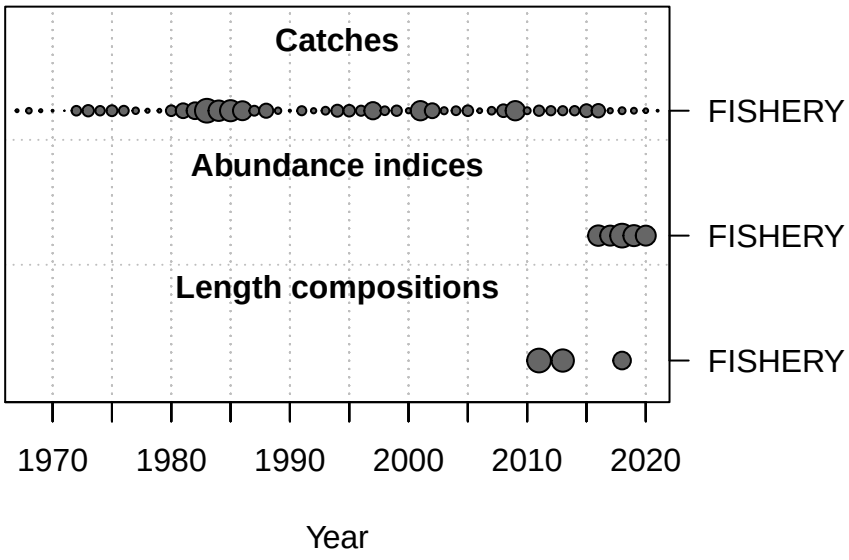
2023-01-05

This is a summary report for the PRFL base model run.

Model Output

Input Data





Convergence Check

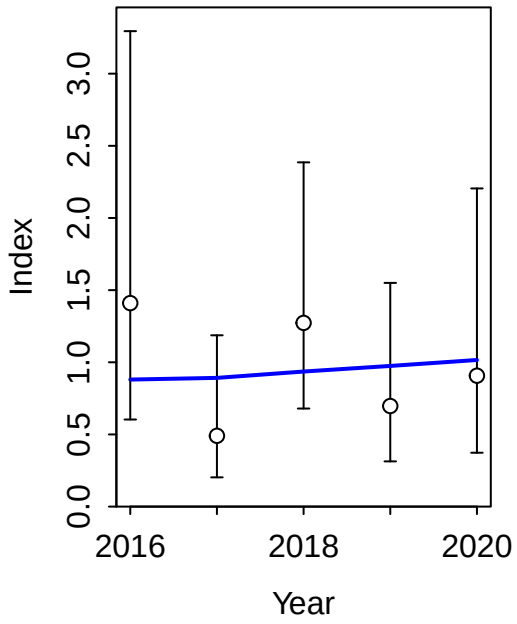
```
  Converged    MaxGrad
1      TRUE 3.9594e-05
```

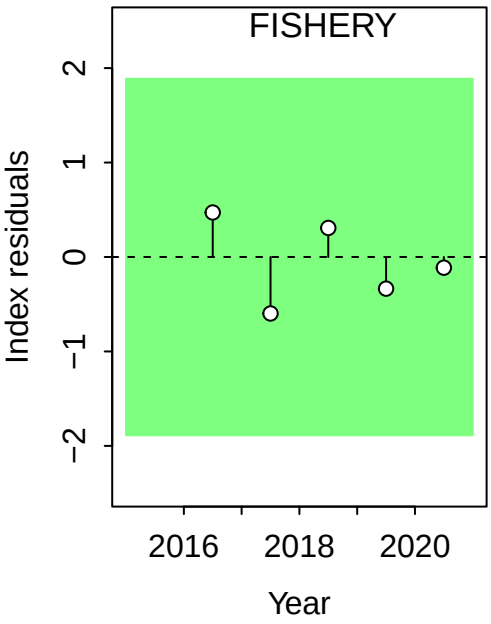
```
[1] "1 NOTE:  Max data length bin: 48  < max pop len bins: 53; so will accumulate larger pop
[2] "N warnings: 1"
```

Fit to Model

CPUE

Fleet	RMSE.perc	Nobs
FISHERY	40	5
Combined	40	5

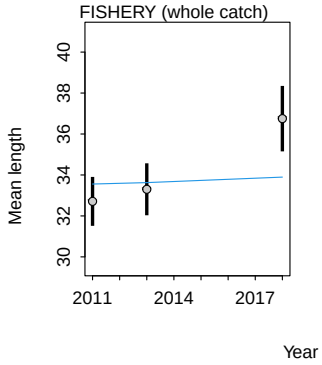


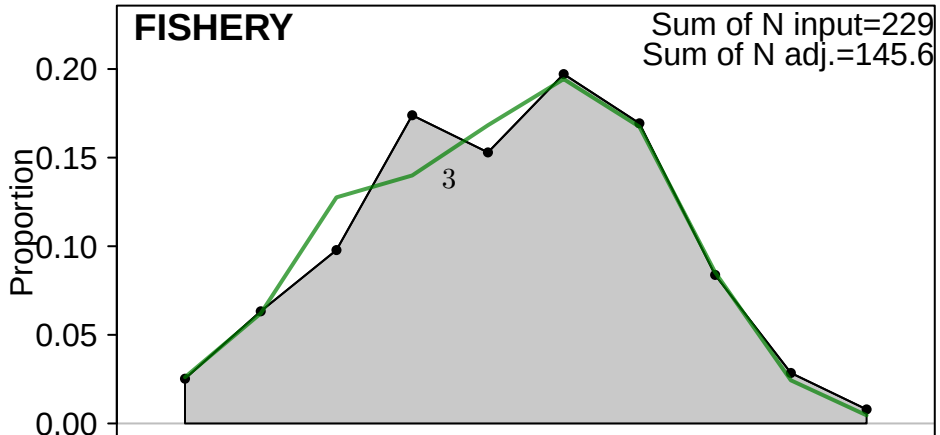


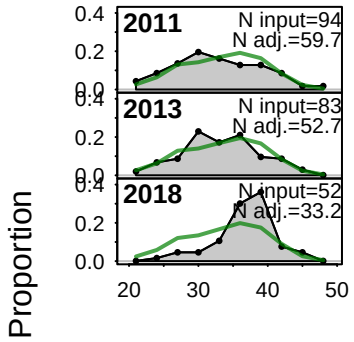
Length Comp

Fleet	RMSE.perc	Nobs
FISHERY	4.9	3
Combined	4.9	3

```
          w         lo         hi              Index runs.p     test sigma3.lo sigma3.hi type
0.1414846 0.1204928        Inf          1 FISHERY     NA Excluded        NA         NA  len
```

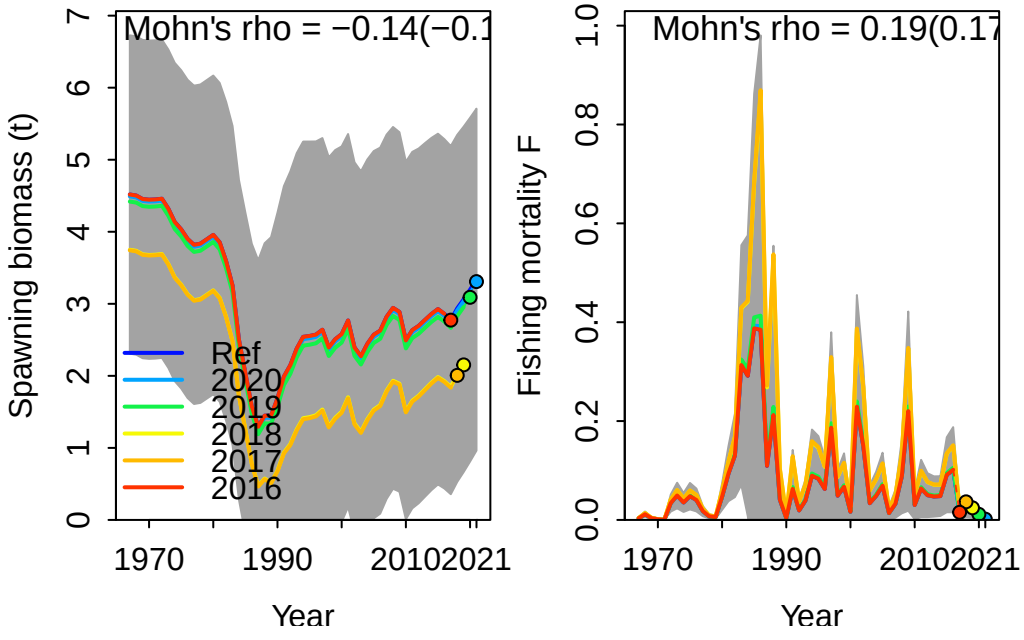






Retrospective

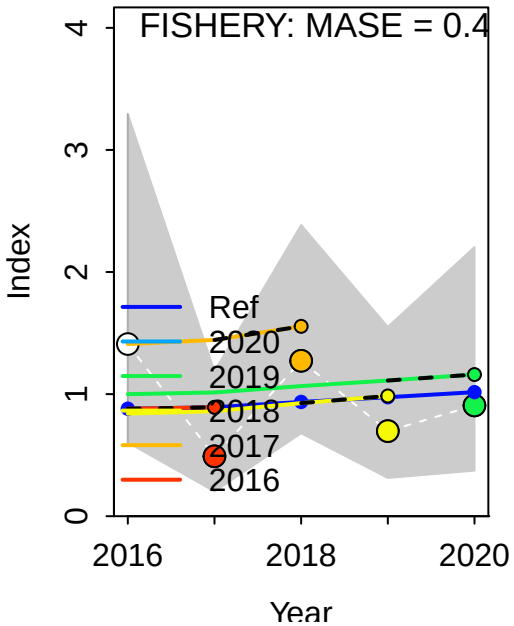
`Mohn's Rho stats, including one step ahead forecasts:`



```
Mohn's Rho stats, including one step ahead forecasts:

  type     peel         Rho ForecastRho
1    F     2020 0.008451699 0.008052919
2    F     2019 0.034902621 0.033254221
3    F     2018 0.427245612 0.397730189
4    F     2017 0.472497670 0.434220827
5    F     2016 0.000000000 0.000000000
6    F Combined 0.188619520 0.174651631
```

Hindcasting

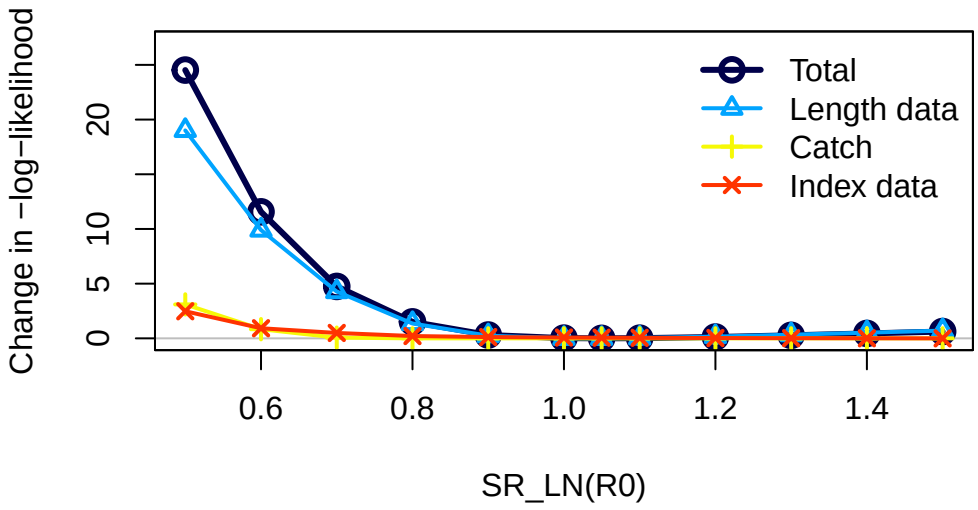
```
Plotting Hindcast Cross-Validation (one-step-ahead)

 Computing MASE with only 4 of 5  prediction residuals for Index FISHERY

 Warning:  Unequal spacing of naive predictions residuals may influence the interpretation o


MASE stats by Index:
Plotting Hindcast Cross-Validation (one-step-ahead)

No observations in evaluation years to compute prediction residuals for Index FISHERY

MASE stats by Index:

    Index Season MASE MAE.PR MAE.base MASE.adj n.eval
1 FISHERY      1   NA     NA       NA       NA      0
```

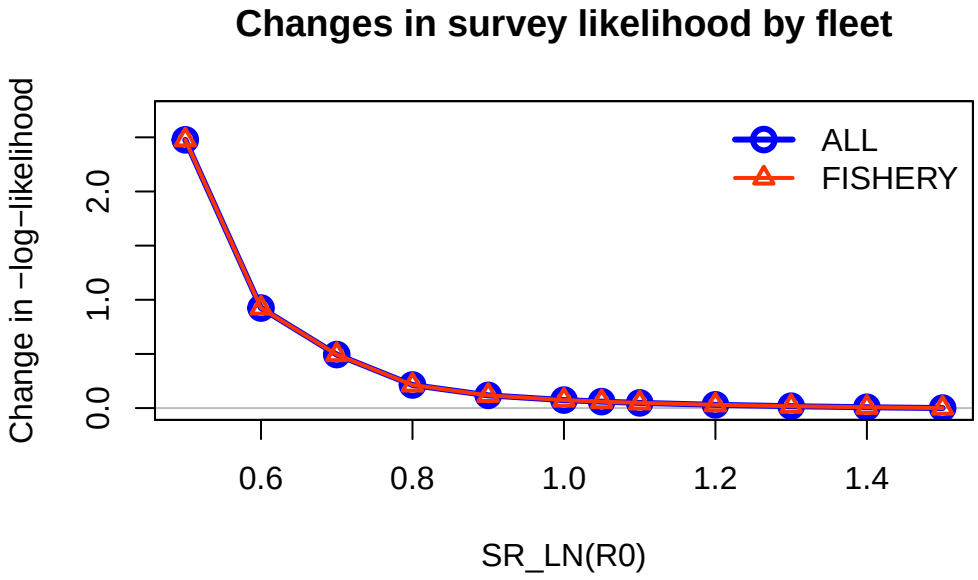


Recruitment Deviations

Likelihood Profile

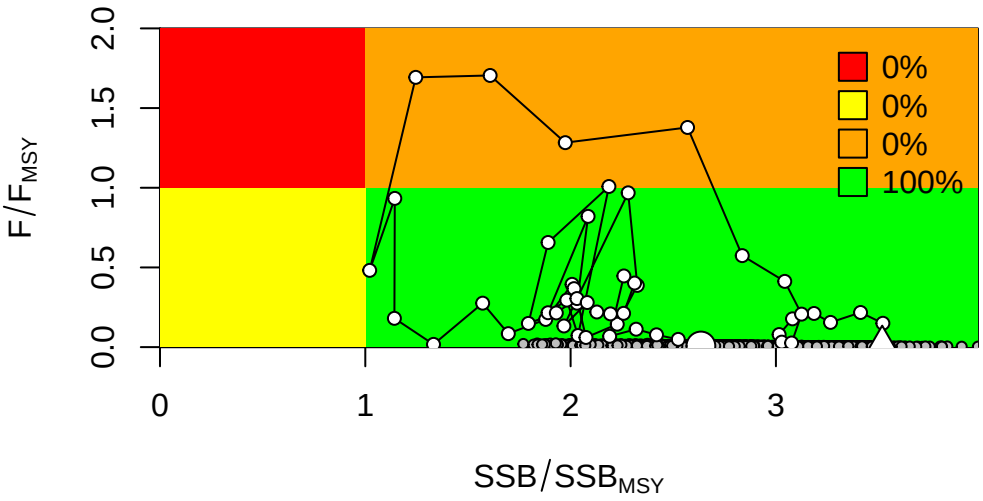
```
[1] "SR_LN"
                     frac_change include                            label
TOTAL                     1.0000    TRUE                            Total
Catch                     0.1265    TRUE                            Catch
Equil_catch               0.0000   FALSE                Equilibrium catch
Survey                    0.1010    TRUE                       Index data
Length_comp               0.7750    TRUE                      Length data
Recruitment               0.0000   FALSE                      Recruitment
InitEQ_Regime             0.0000   FALSE Initital equilibrium recruitment
Forecast_Recruitment      0.0000   FALSE             Forecast recruitment
Parm_priors               0.0020   FALSE                           Priors
Parm_softbounds           0.0004   FALSE                      Soft bounds
Parm_devs                 0.0000   FALSE             Parameter deviations
Crash_Pen                 0.0000   FALSE                    Crash penalty
```

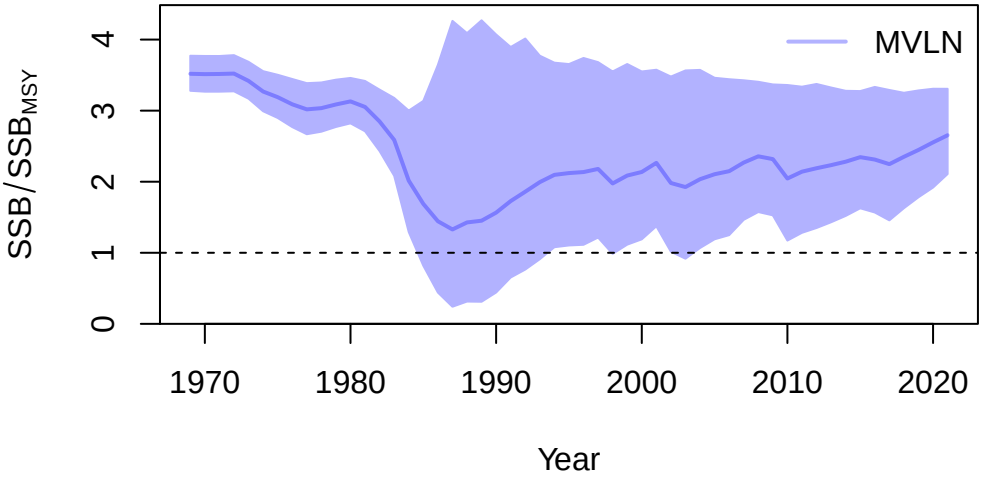


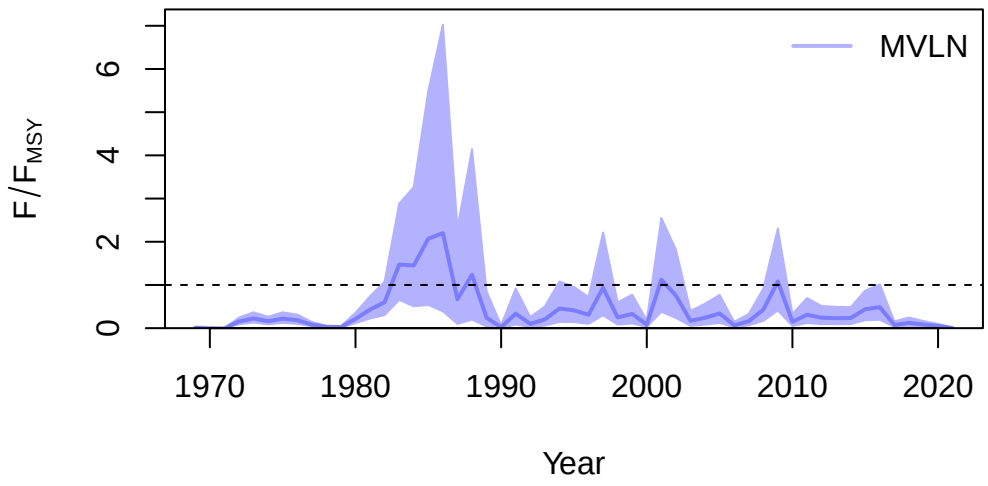


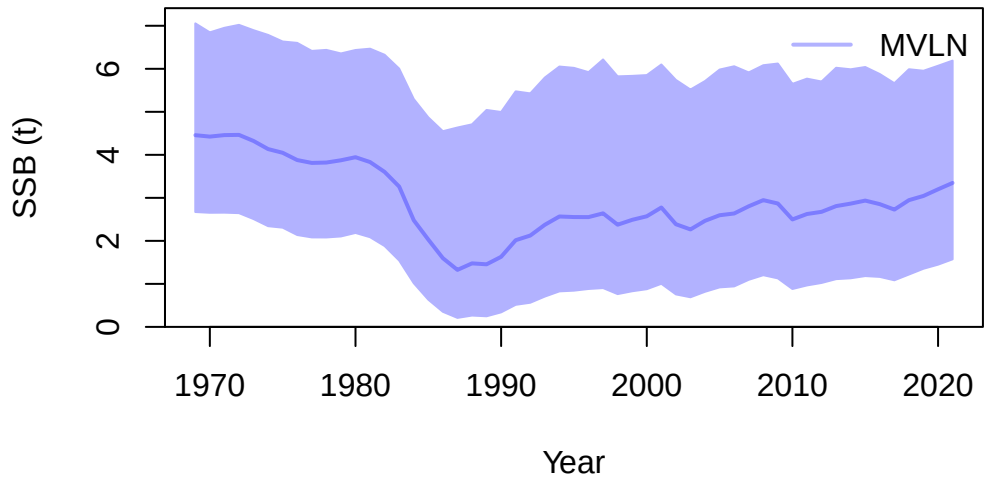
Management Quantities

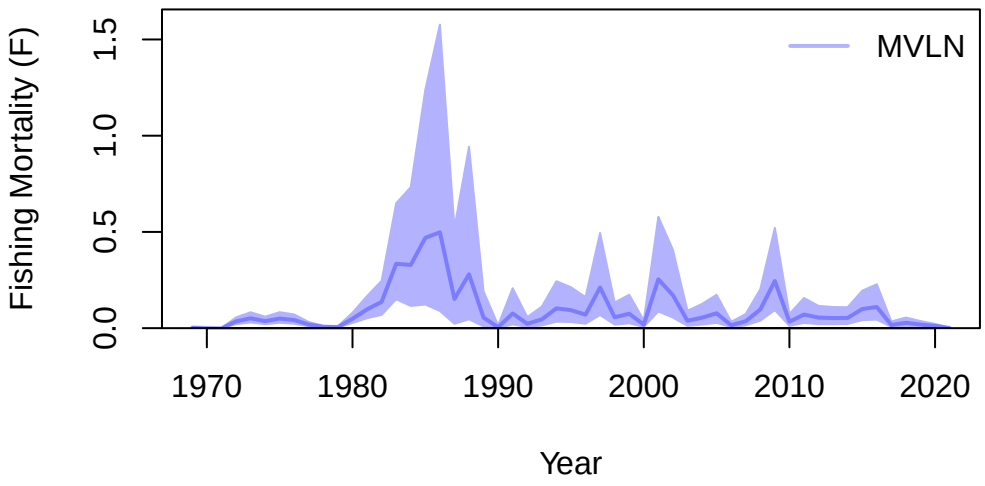
starter.sso with Bratio: SSB/SSBMSY and F: _abs_F





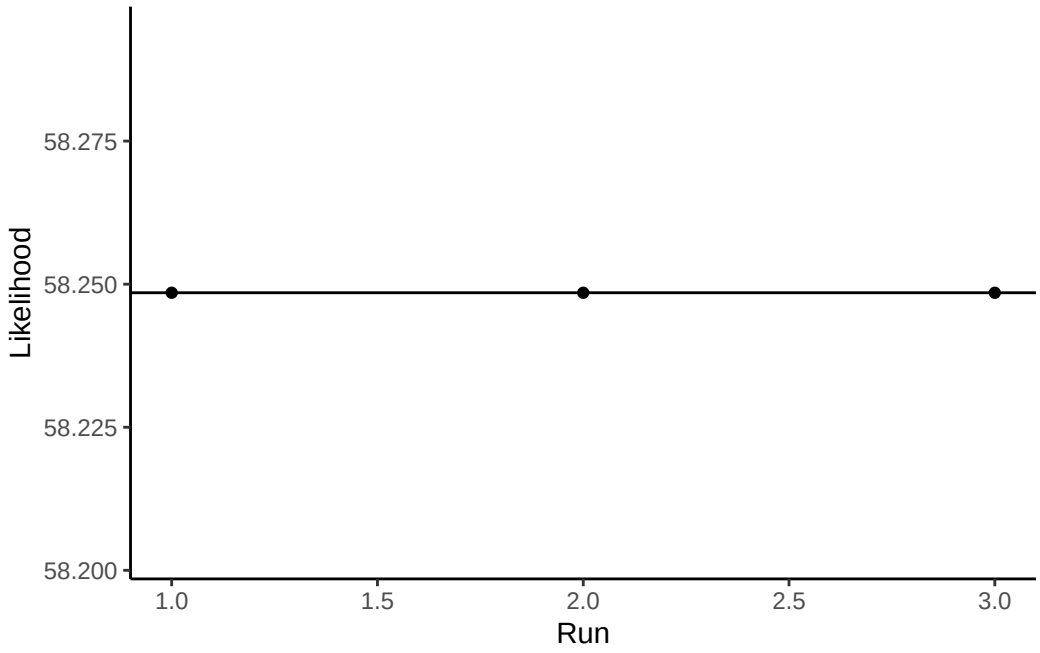

MVLN
F/F_MSY
0
2
4
6
1970
1980
1990
2000
2010
2020
Year

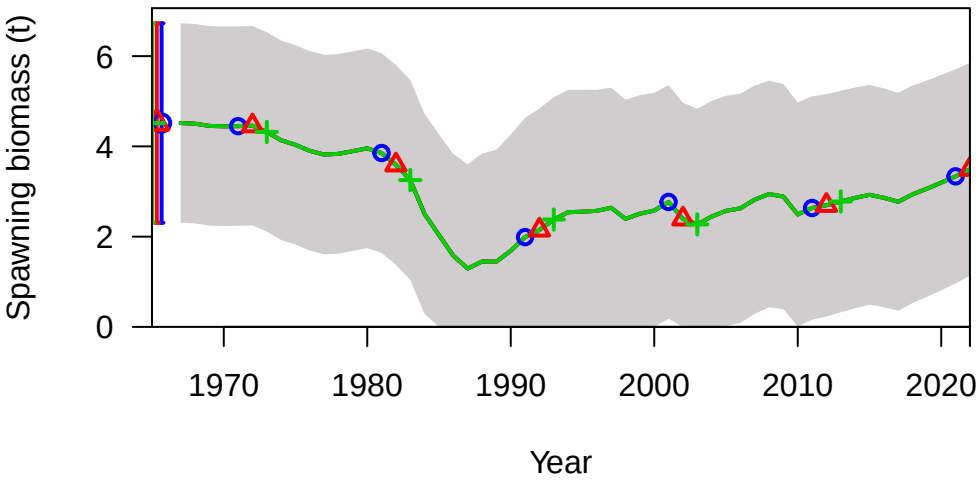

MVLN
SSB (t)
0
2
4
6
1970
1980
1990
2000
2010
2020
Year

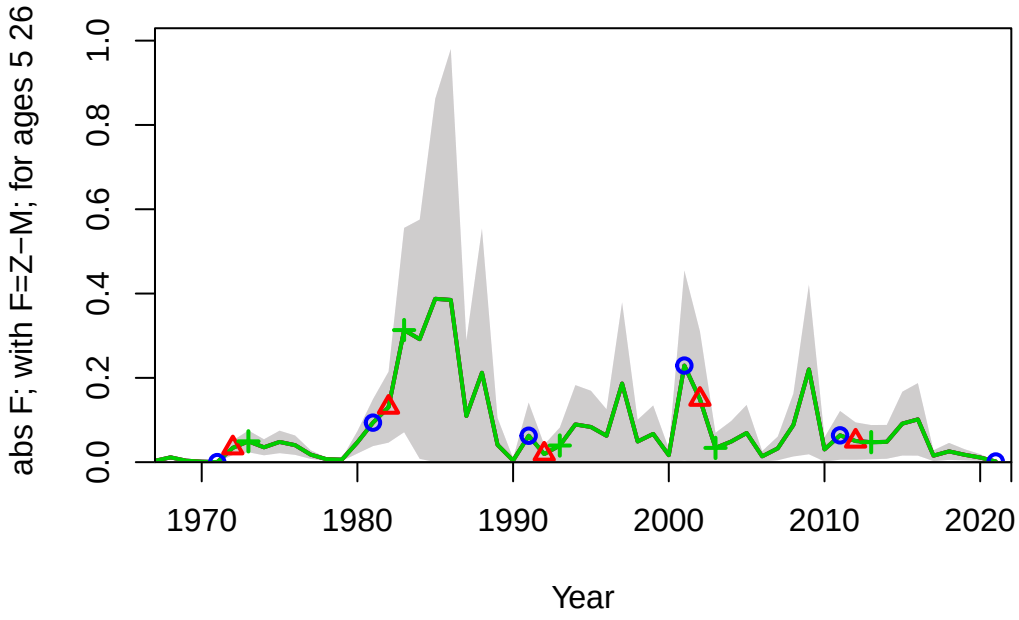


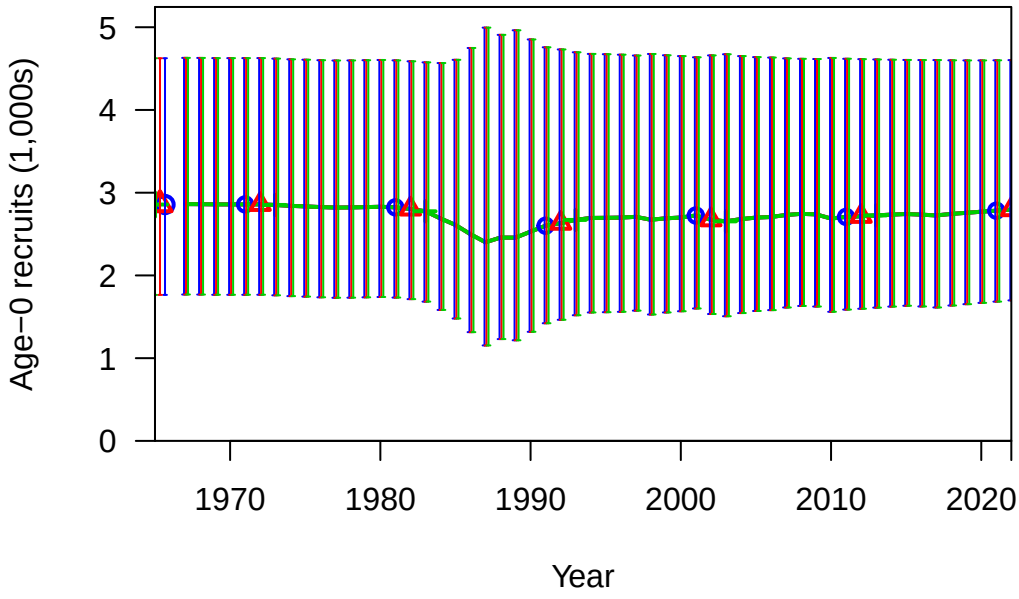

```
null device
          1
```

Jitter

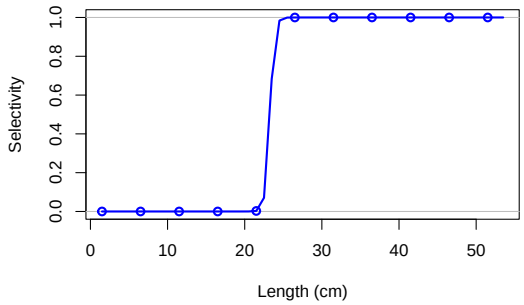

Likelihood
58.275
58.250
58.225
58.200
1.0
1.5
2.0
2.5
3.0
Run

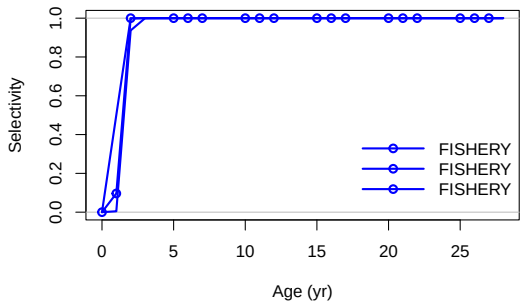

Spawning biomass (t)
6
4
2
0
1970
1980
1990
2000
2010
2020
Year

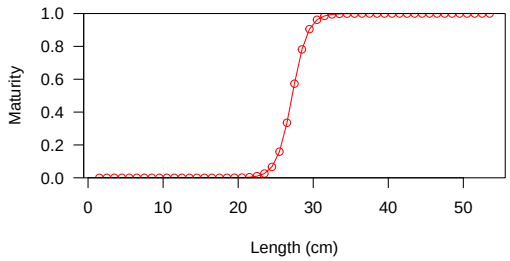


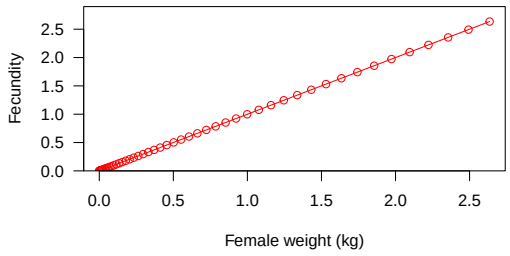


Selectivity and Maturity


Selectivity
0.0
0.2
0.4
0.6
0.8
1.0
0
10
20
30
40
50
Length (cm)


Selectivity
0.0
0.2
0.4
0.6
0.8
1.0
0
5
10
15
20
25
Age (yr)
FISHERY
FISHERY
FISHERY


Maturity
0.0
0.2
0.4
0.6
0.8
1.0
0
10
20
30
40
50
Length (cm)


Fecundity
0.0
0.5
1.0
1.5
2.0
2.5
0.0
0.5
1.0
1.5
2.0
2.5
Female weight (kg)