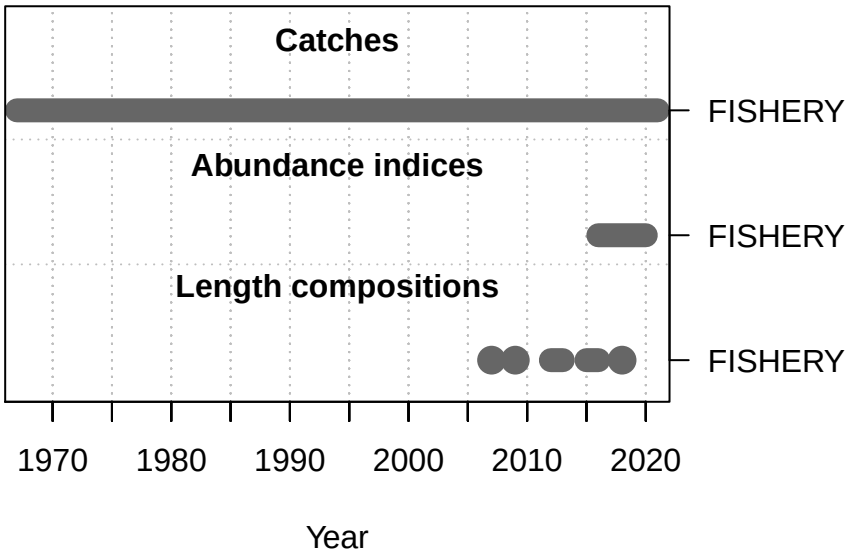
American Samoa Model Checks

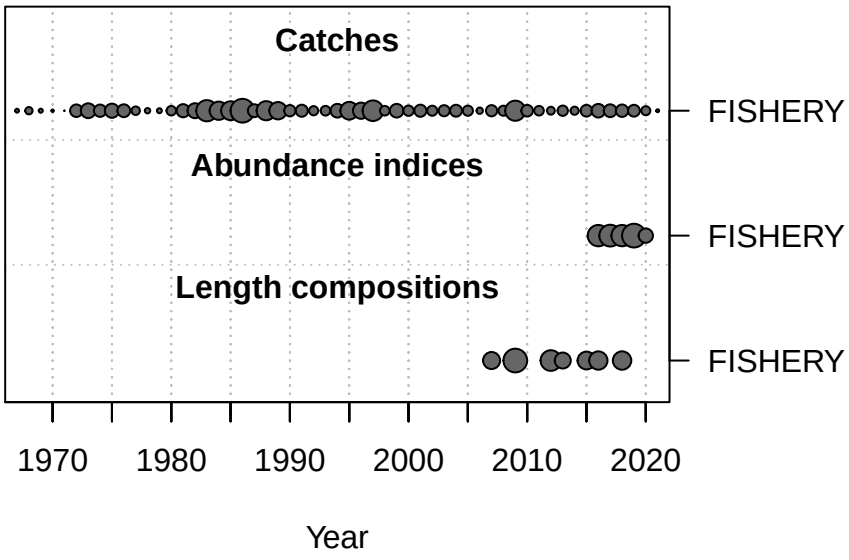
2022-10-16

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

Model Output

Input Data





Convergence Check

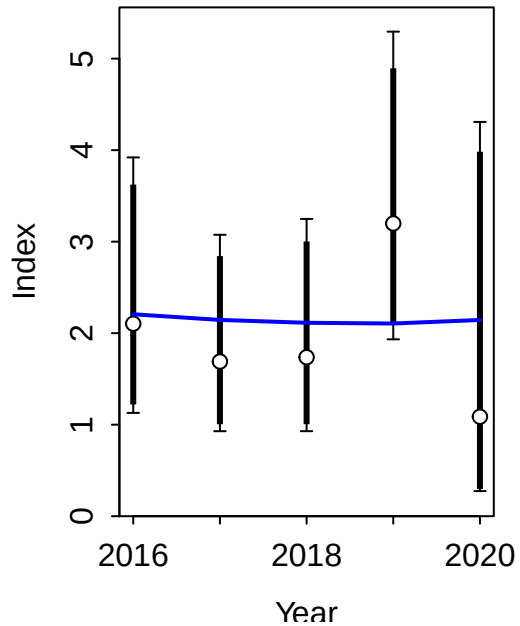
```
  Converged     MaxGrad
1      TRUE 9.11584e-05
```

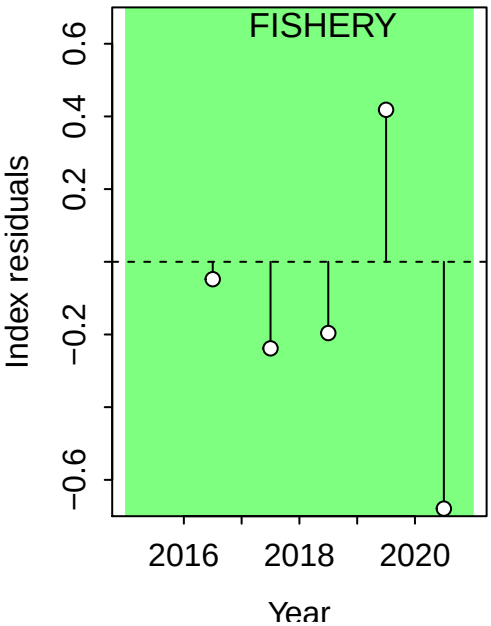
```
[1] "1 NOTE:  Max data length bin: 65  < max pop len bins: 72; so will accumulate larger pop
[2] "N warnings: 1"
```

Fit to Model

CPUE

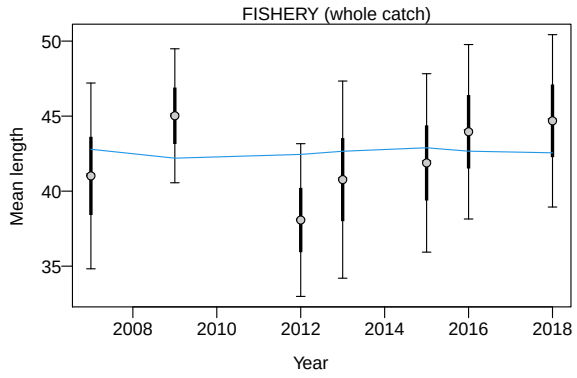
Fleet	RMSE.perc	Nobs
FISHERY	38.3	5
Combined	38.3	5

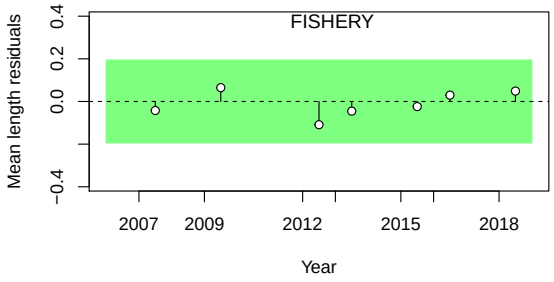


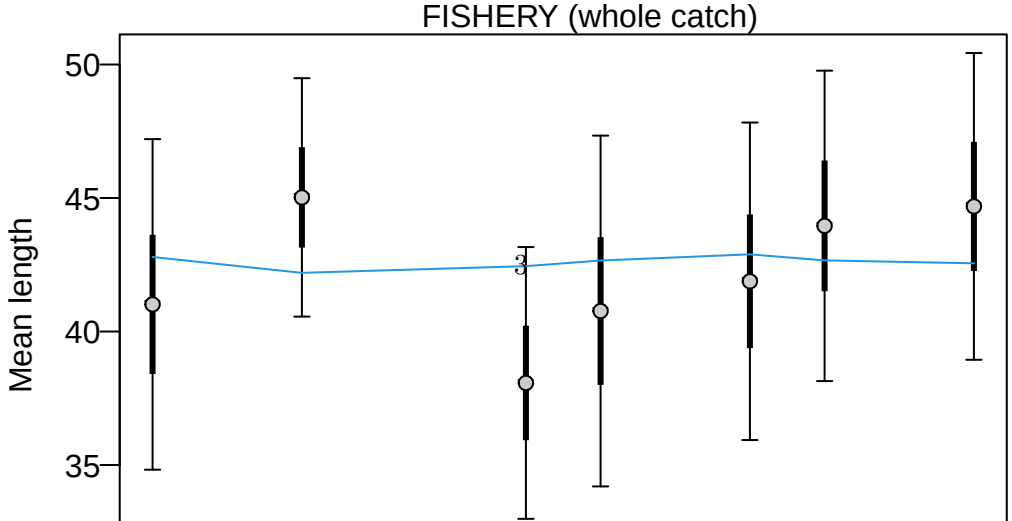


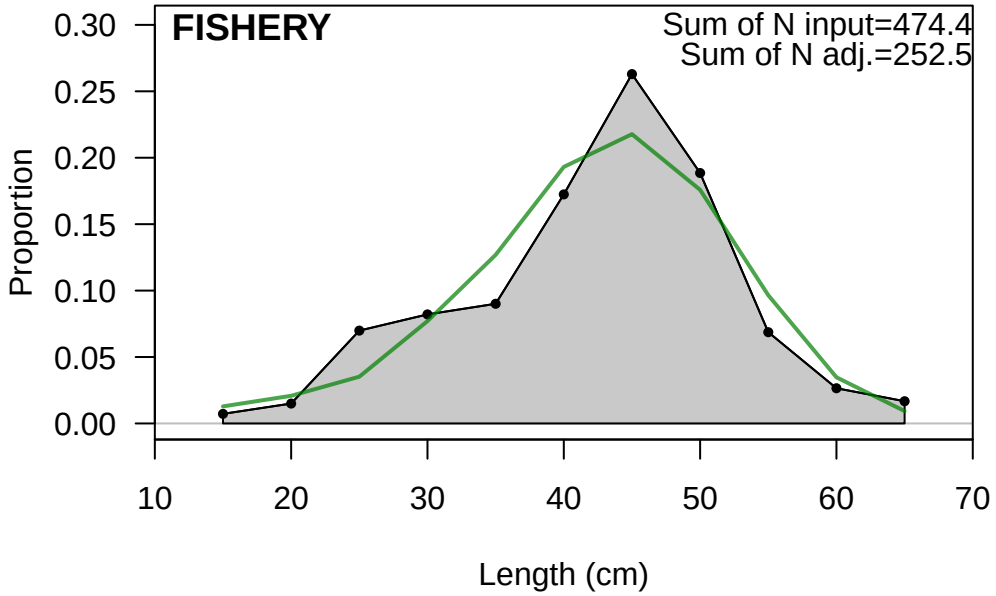
Length Comp

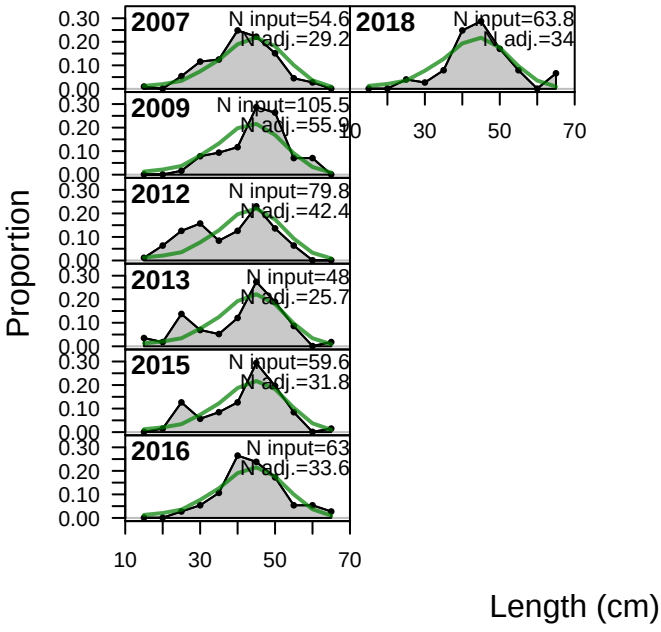
Fleet	RMSE.perc	Nobs
FISHERY	5.8	7
Combined	5.8	7





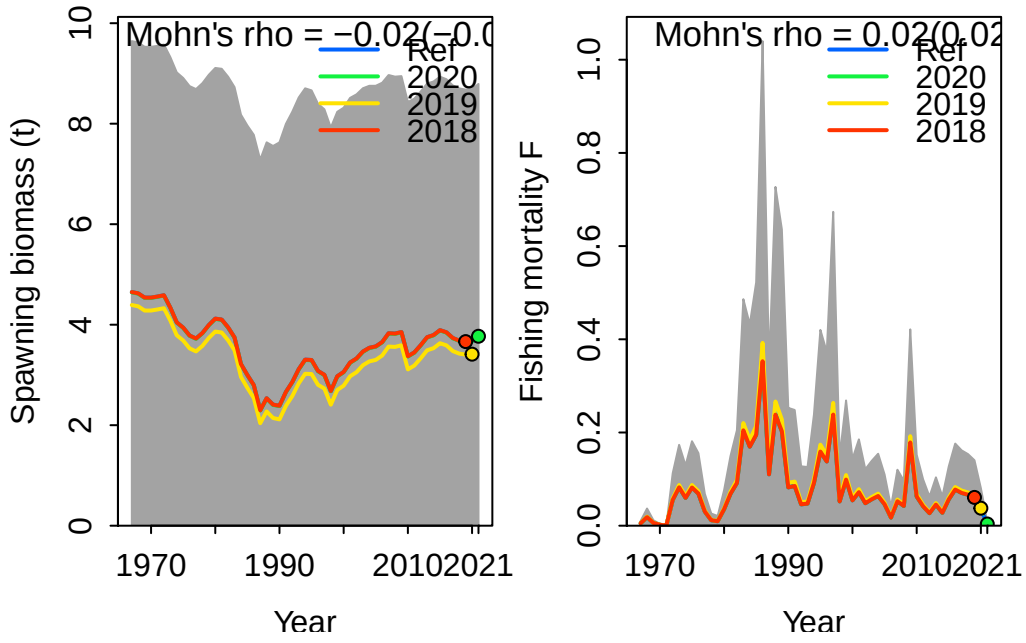



FISHERY
Sum of N input=474.4
Sum of N adj.=252.5
Proportion
0.30
0.25
0.20
0.15
0.10
0.05
0.00
10
20
30
40
50
60
70
Length (cm)


2007
N input=54.6
N adj.=29.2
2018
N input=63.8
N adj.=34
2009
N input=105.5
N adj.=55.9
2012
N input=79.8
N adj.=42.4
2013
N input=48
N adj.=25.7
2015
N input=59.6
N adj.=31.8
2016
N input=63
N adj.=33.6
Proportion
0.30
0.20
0.10
0.00
10
30
50
70
Length (cm)

Retrospective

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

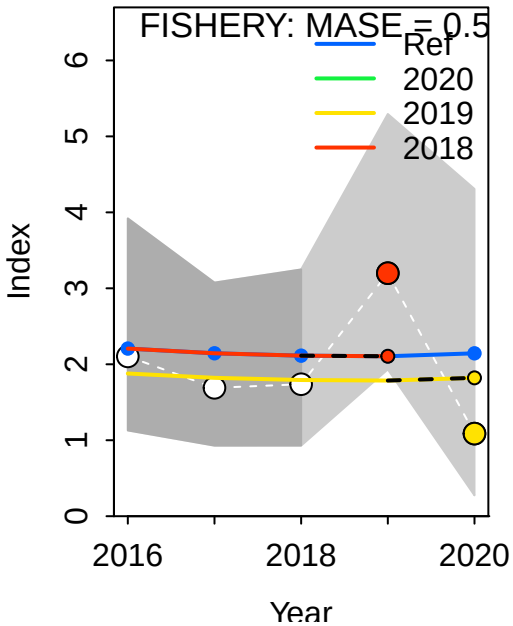



```
Mohn's Rho stats, including one step ahead forecasts:
```

	type	peel	Rho	ForecastRho
1	F	2020	0.001577646	0.00151359
2	F	2019	0.072479974	0.07134151
3	F	2018	0.000000000	0.00000000
4	F	Combined	0.024685874	0.02428503

Hindcasting

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

 Computing MASE with only 2 of 3  prediction residuals for Index FISHERY

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



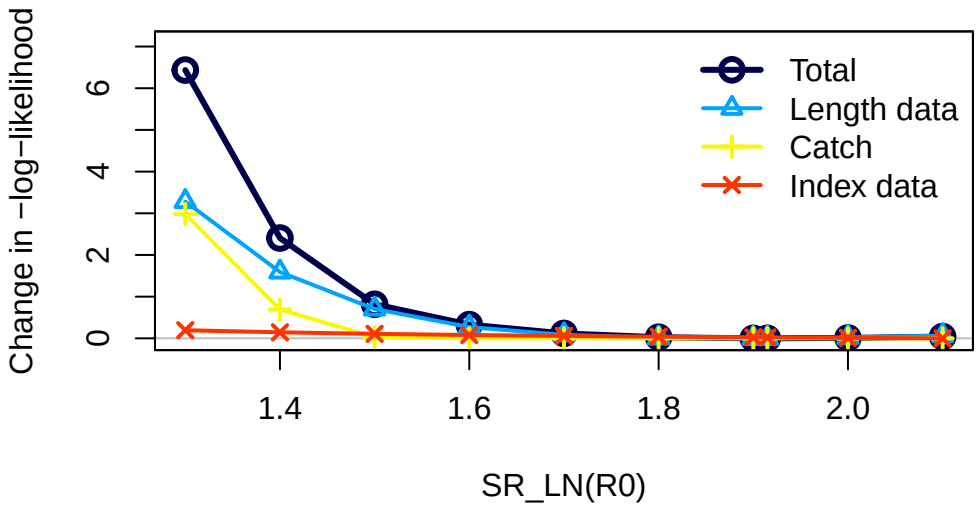

```
MASE stats by Index:
Plotting Hindcast Cross-Validation (one-step-ahead)

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

MASE stats by Index:
```

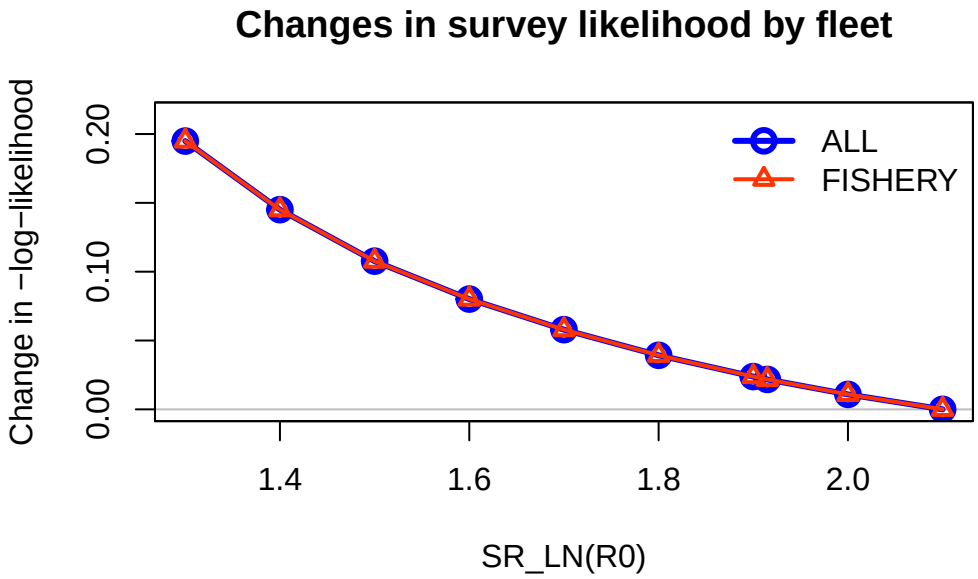
Recruitment Deviations

Likelihood Profile

```
[1] "SR_LN"
                    frac_change include                            label
TOTAL                    1.0000    TRUE                            Total
Catch                    0.4634    TRUE                            Catch
Equil_catch              0.0000   FALSE                Equilibrium catch
Survey                   0.0303    TRUE                       Index data
Length_comp              0.5099    TRUE                      Length data
Recruitment              0.0000   FALSE                      Recruitment
InitEQ_Regime            0.0000   FALSE Initital equilibrium recruitment
```

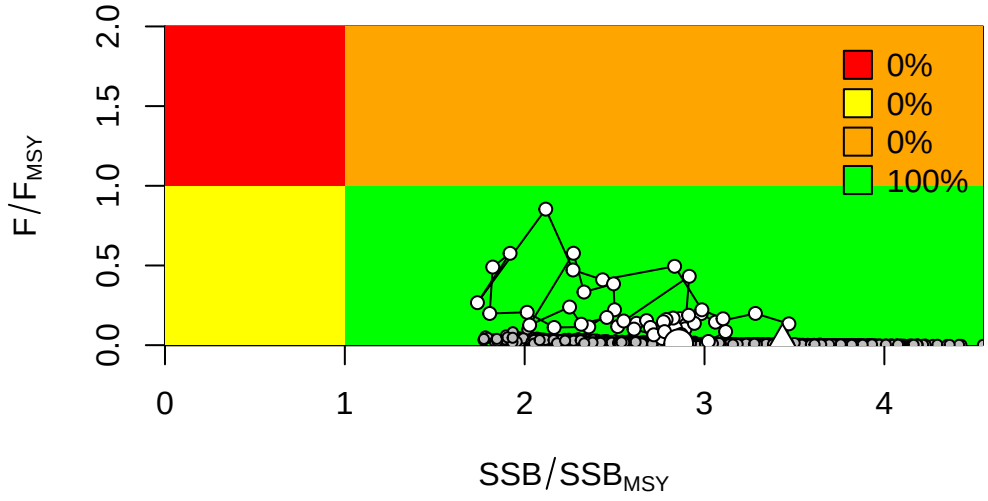
Forecast_Recruitment	0.0000	FALSE	Forecast recruitment
Parm_priors	0.0002	FALSE	Priors
Parm_softbounds	0.0000	FALSE	Soft bounds
Parm_devs	0.0000	FALSE	Parameter deviations
Crash_Pen	0.0000	FALSE	Crash penalty

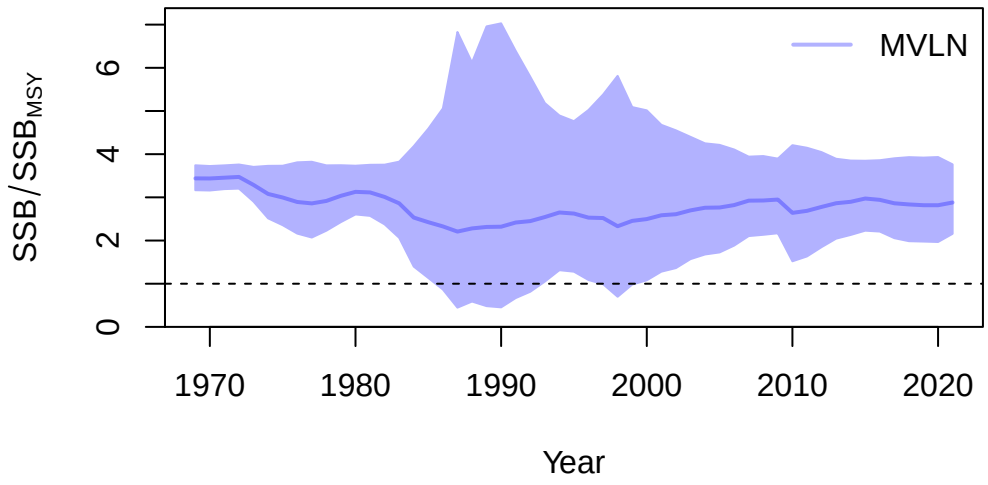


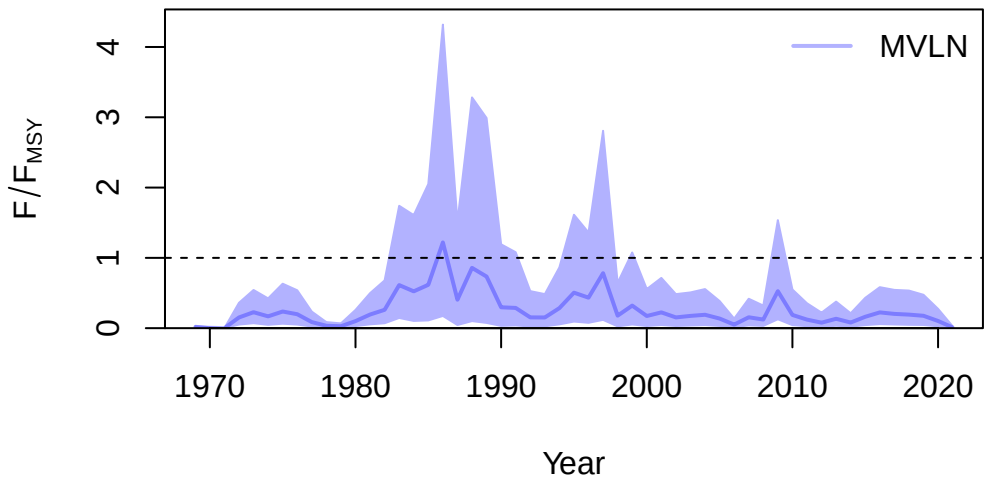


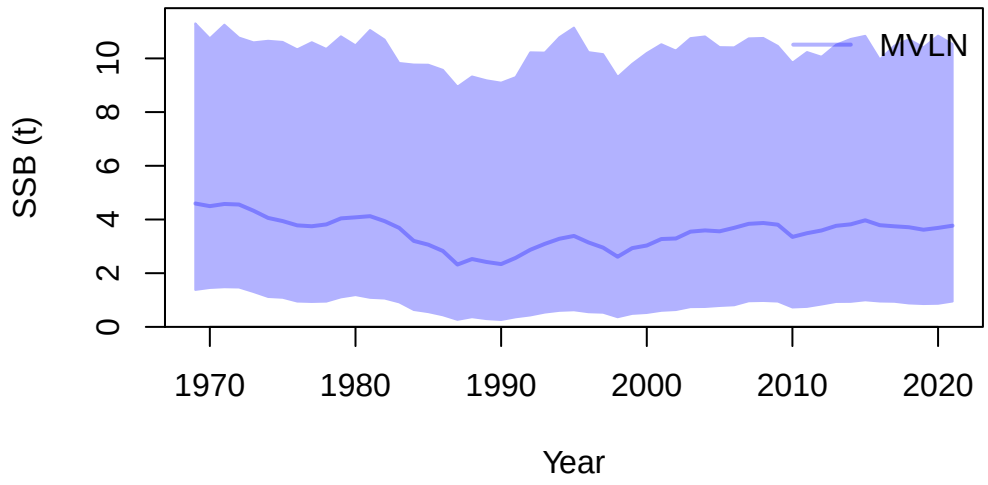
Management Quantities

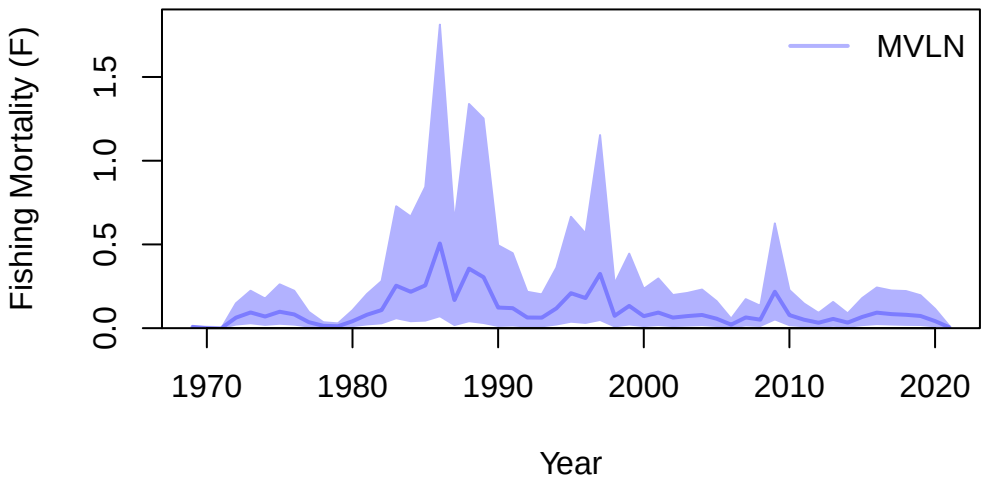
```
starter.sso with Bratio: SSB/SSBMSY and F: _abs_F
```


0%
0%
0%
100%
F/F_MSY
SSB/SSB_MSY
0.0
0.5
1.0
1.5
2.0
0
1
2
3
4


MVLN
SSB/SSB_MSY
Year
0
2
4
6
1970
1980
1990
2000
2010
2020

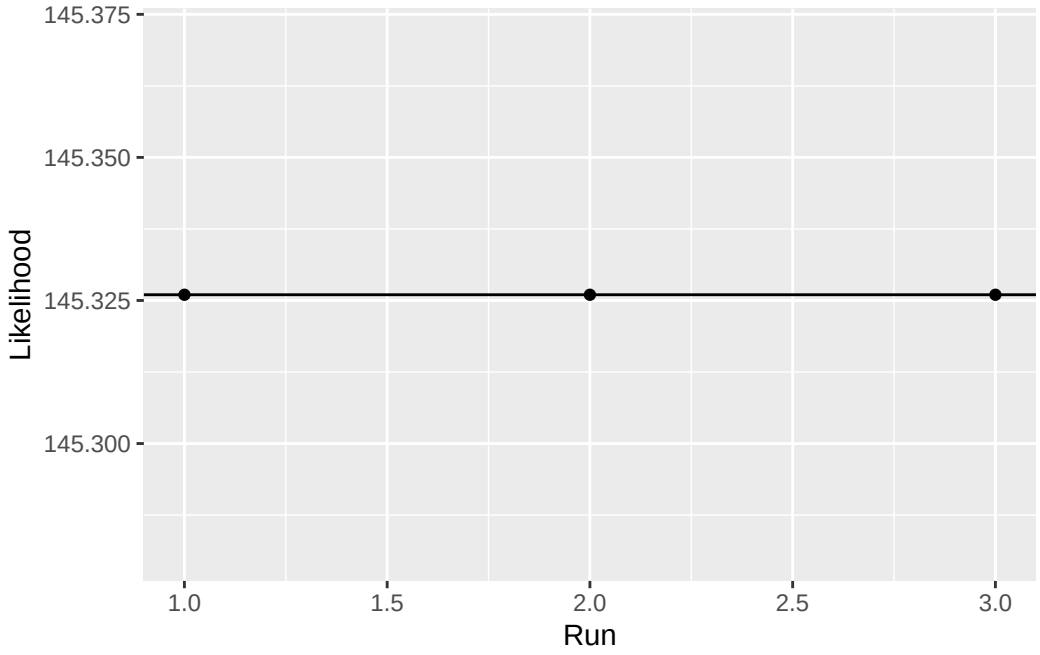

MVLN
F/F_MSY
0
1
2
3
4
1970
1980
1990
2000
2010
2020
Year

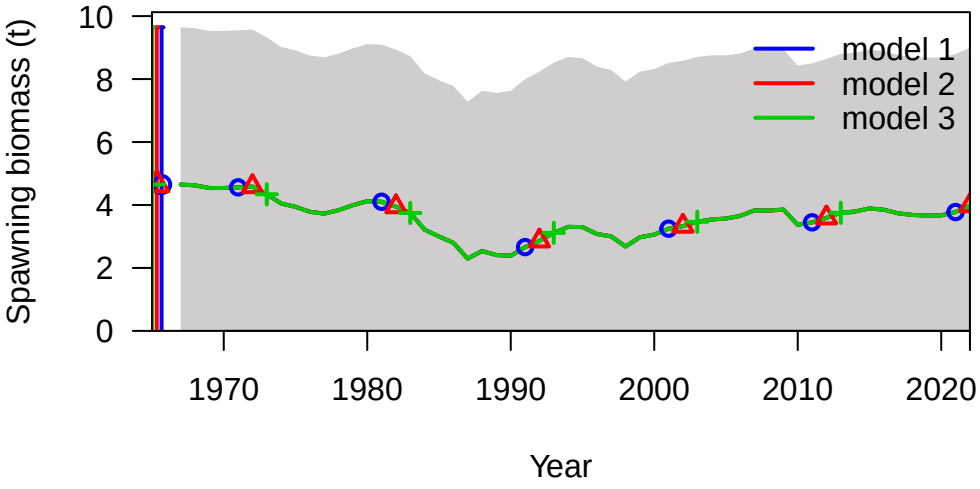

MVLN
SSB (t)
0
2
4
6
8
10
1970
1980
1990
2000
2010
2020
Year

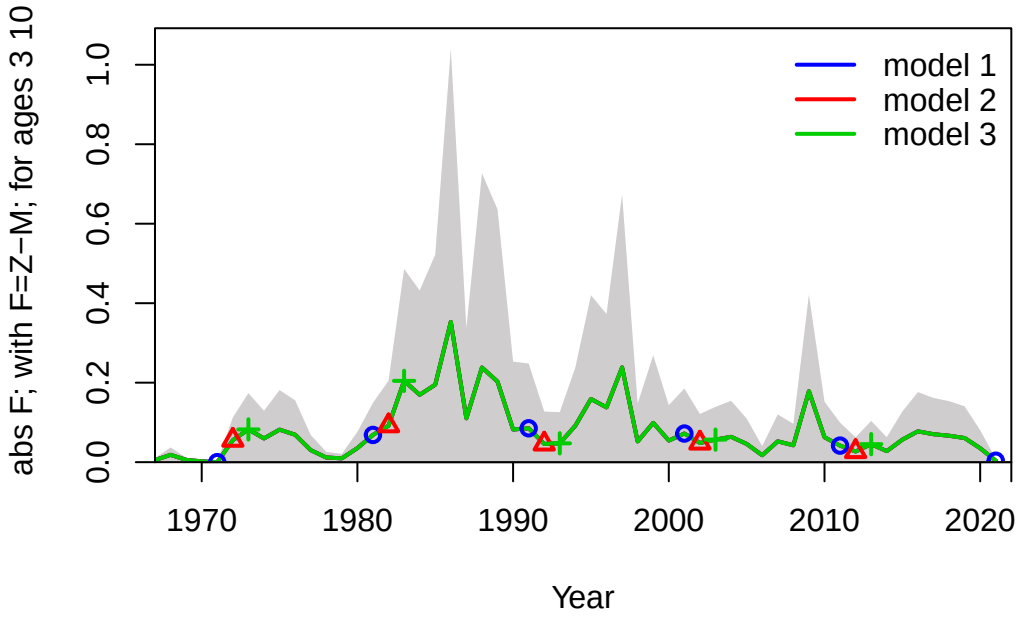


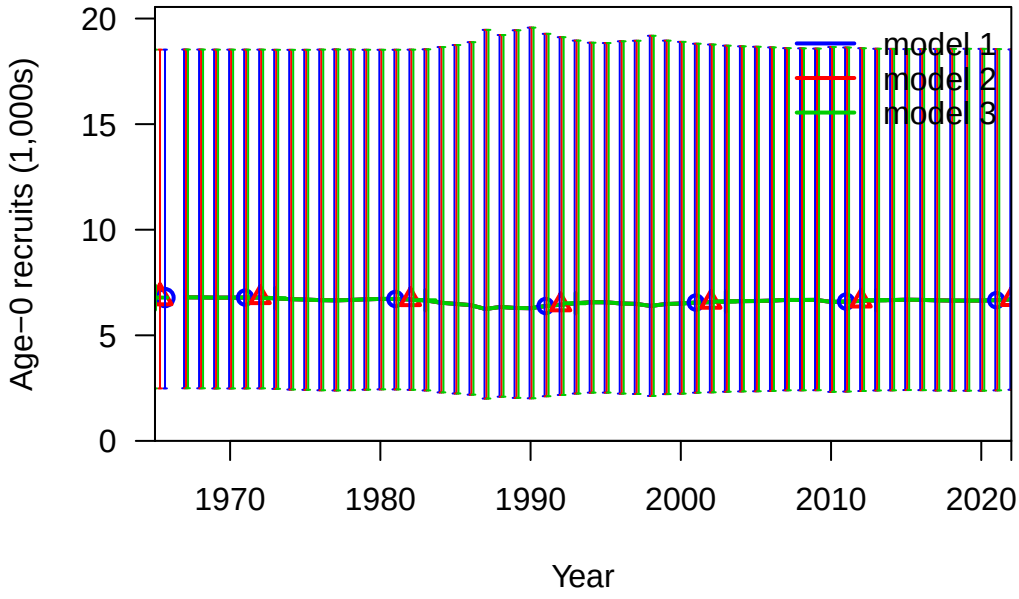

```
null device
          1
```

Jitter


145.375
145.350
145.325
145.300
Likelihood
1.0
1.5
2.0
2.5
3.0
Run


10
8
6
4
2
0
Spawning biomass (t)
model 1
model 2
model 3
1970
1980
1990
2000
2010
2020
Year


abs F; with F=Z−M; for ages 3 10
0.0
0.2
0.4
0.6
0.8
1.0
1970
1980
1990
2000
2010
2020
Year
model 1
model 2
model 3


Age−0 recruits (1,000s)
0
5
10
15
20
1970
1980
1990
2000
2010
2020
Year
model 1
model 2
model 3