

# American Samoa Model Checks

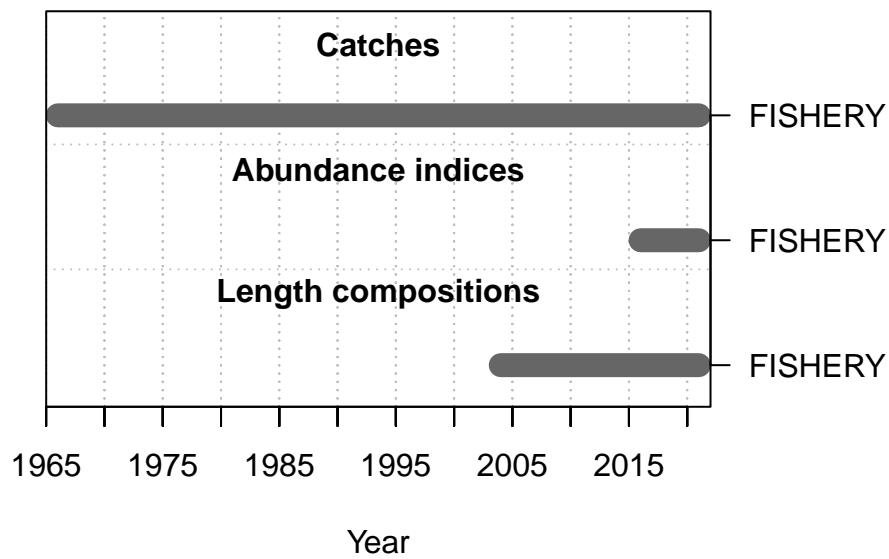
Marc Nadon and Meg Oshima

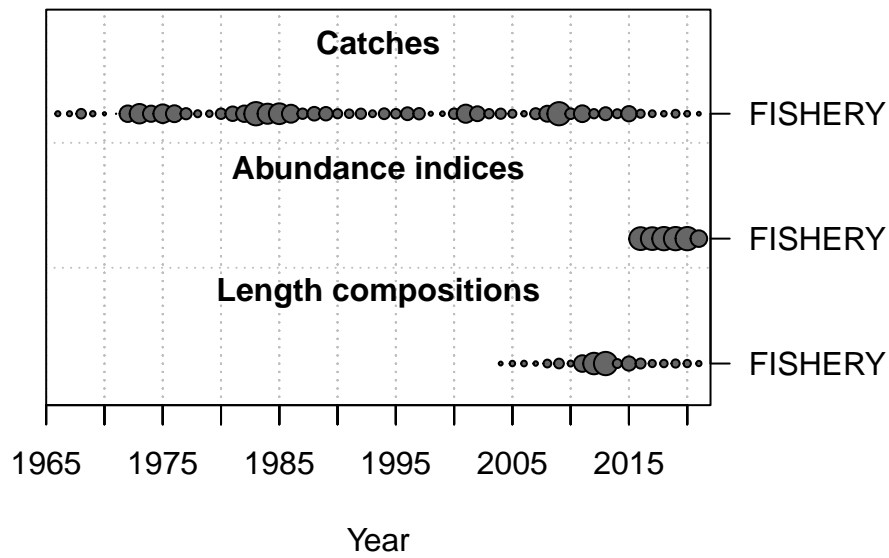
2022-12-27

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

## Model Output

### Input Data





### Convergence Check

```

Converged      MaxGrad
1      TRUE 7.47605e-08

```

```

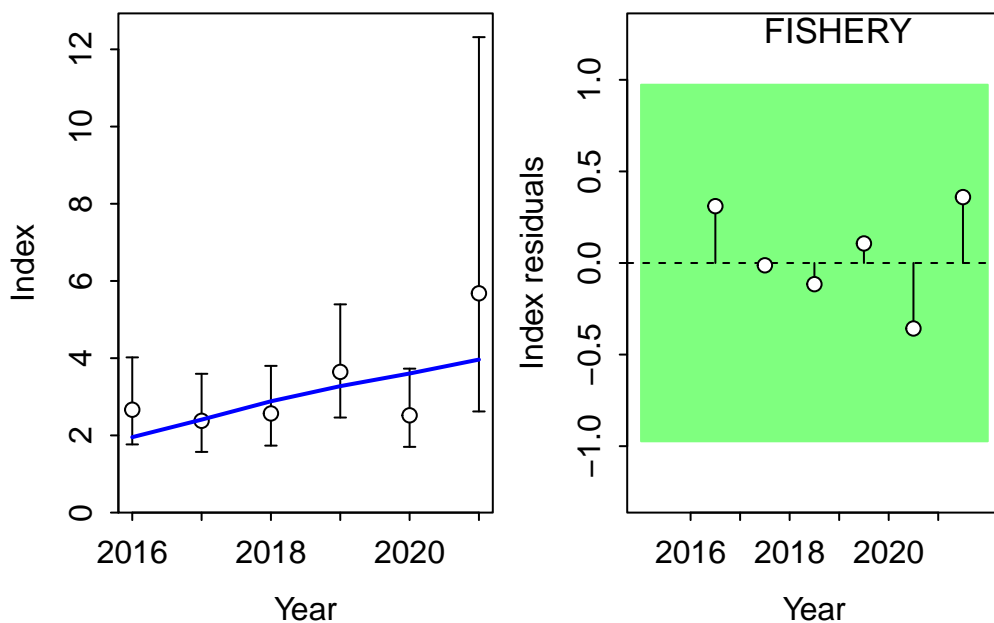
[1] "1 NOTE: Max data length bin: 38.5 < max pop len bins: 43; so will accumulate larger p
[2] "N warnings: 1"

```

### Fit to Model

#### CPUE

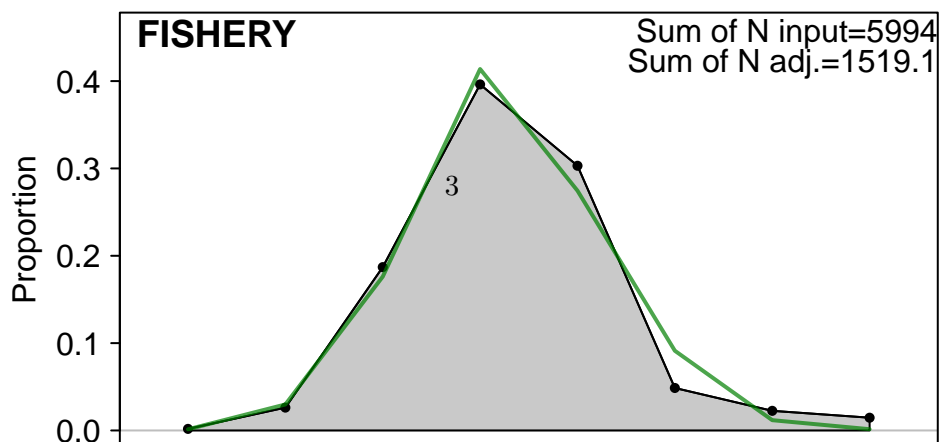
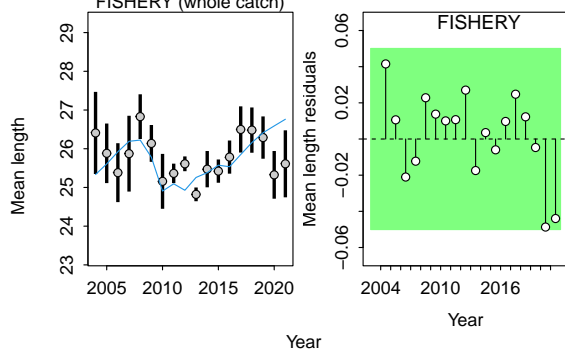
Fleet	RMSE.perc	Nobs
FISHERY	25.1	6
Combined	25.1	6

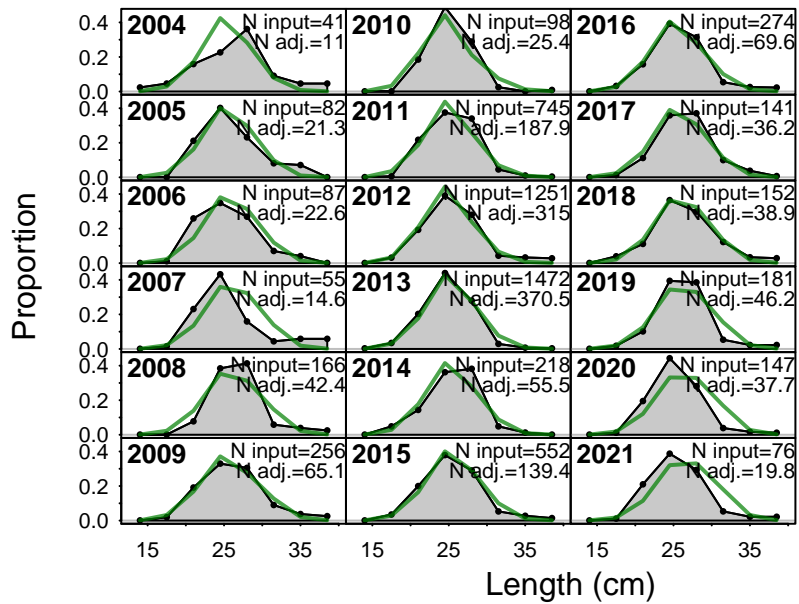


### Length Comp

Fleet	RMSE.perc	Nobs
FISHERY	2.3	18
Combined	2.3	18

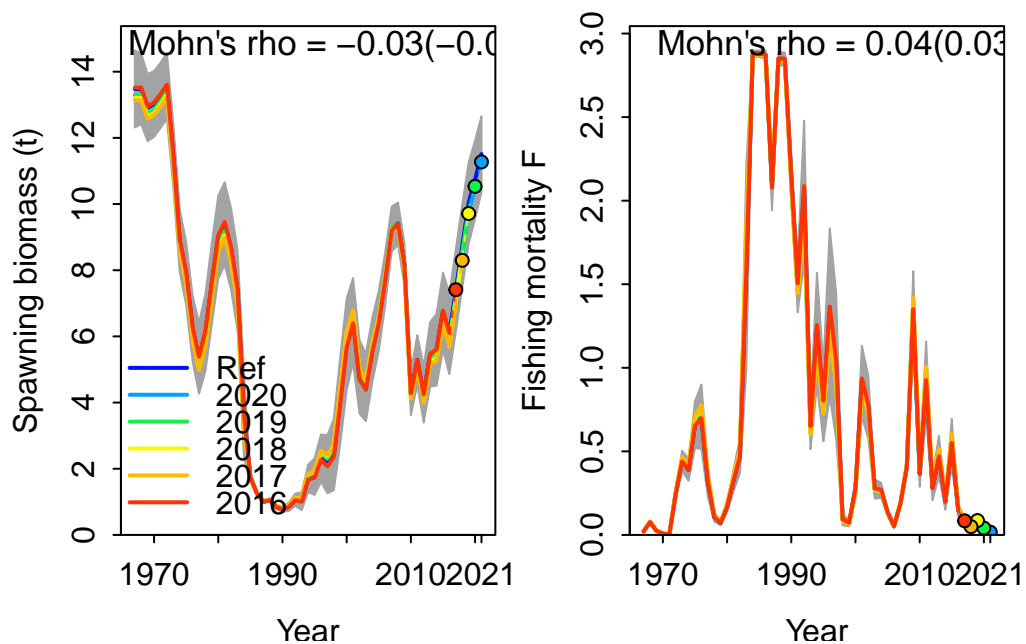
w lo hi Index runs.p test sigma3.lo sigma3.hi type  
 0.13607244 0.07521187 0.48529126 1 FISHERY 0.213 Passed -0.05008385 0.05008385 len





## Retrospective

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



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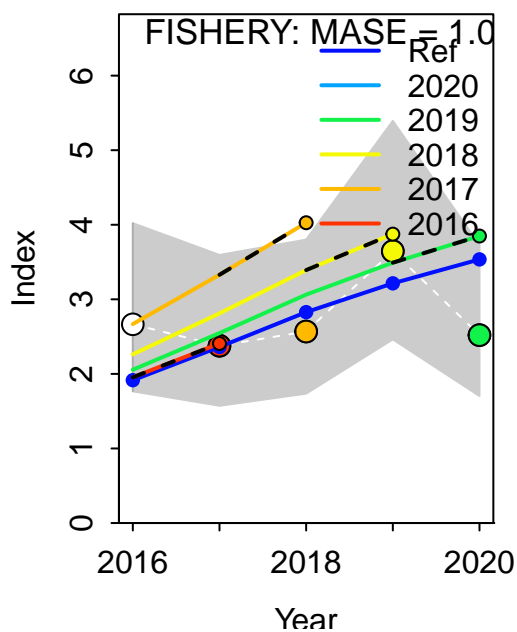
	type	peel	Rho	ForecastRho
1	F	2020	0.033628040	0.030663596
2	F	2019	0.029526277	0.027397021
3	F	2018	0.051757080	0.046609164
4	F	2017	0.078721165	0.068161234
5	F	2016	-0.006095466	-0.005771685
6	F Combined		0.037507419	0.033411866

## 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 of



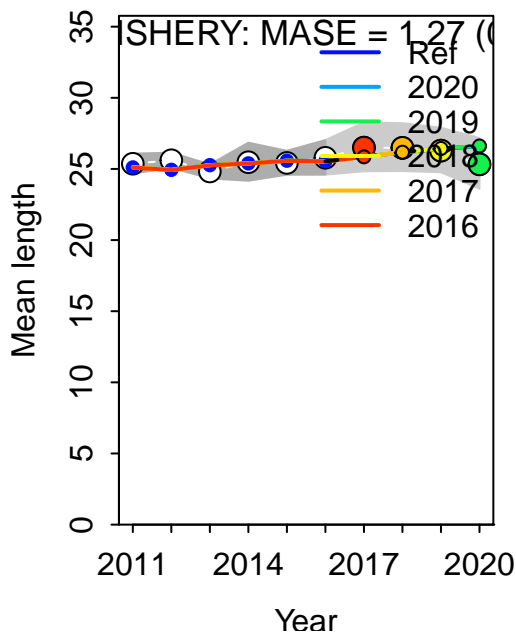
MASE stats by Index:

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MASE stats by Index:

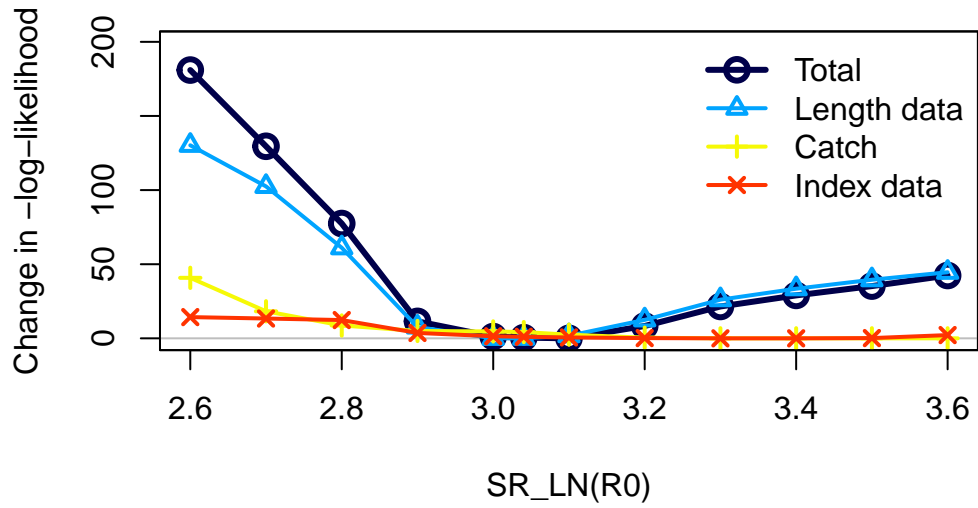


Recruitment Deviations

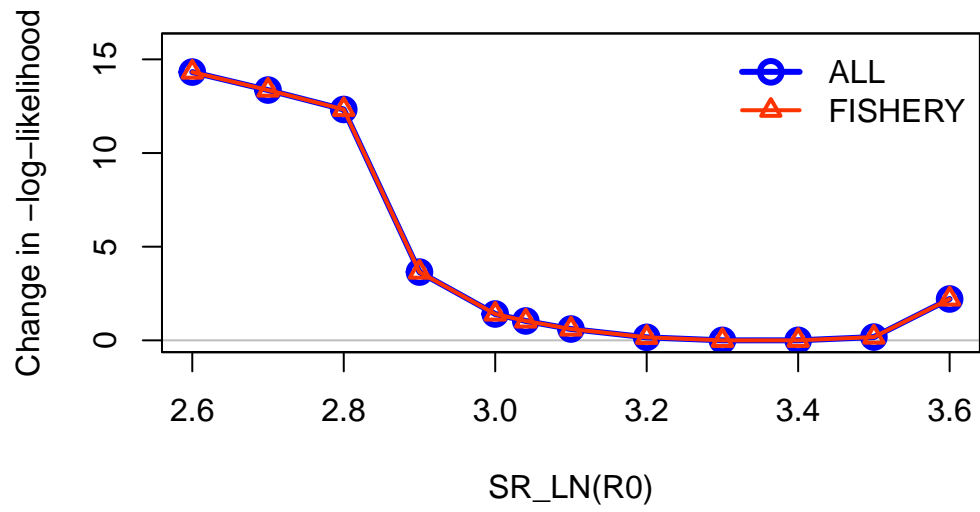
Likelihood Profile

[1] "SR_LN"			
	frac_change	include	label
TOTAL	1.0000	TRUE	Total
Catch	0.2255	TRUE	Catch
Equil_catch	0.0000	FALSE	Equilibrium catch
Survey	0.0791	TRUE	Index data
Length_comp	0.7196	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	0.0026	FALSE	Priors
Parm_softbounds	0.0001	FALSE	Soft bounds
Parm_devs	0.0000	FALSE	Parameter deviations
Crash_Pen	0.0000	FALSE	Crash penalty



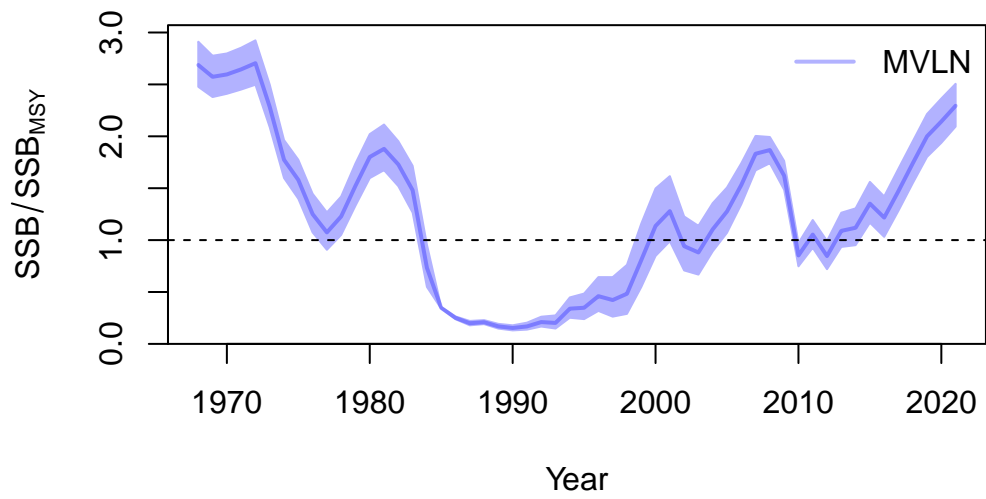
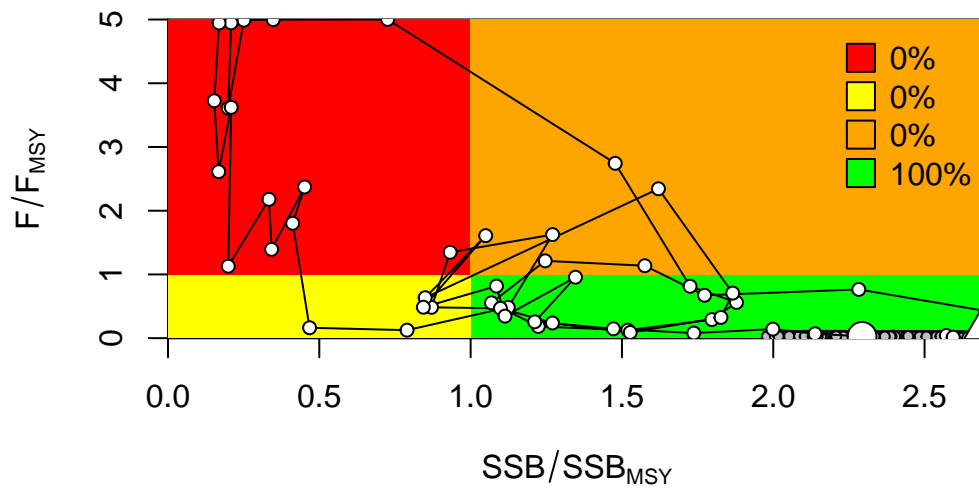
### Changes in survey likelihood by fleet

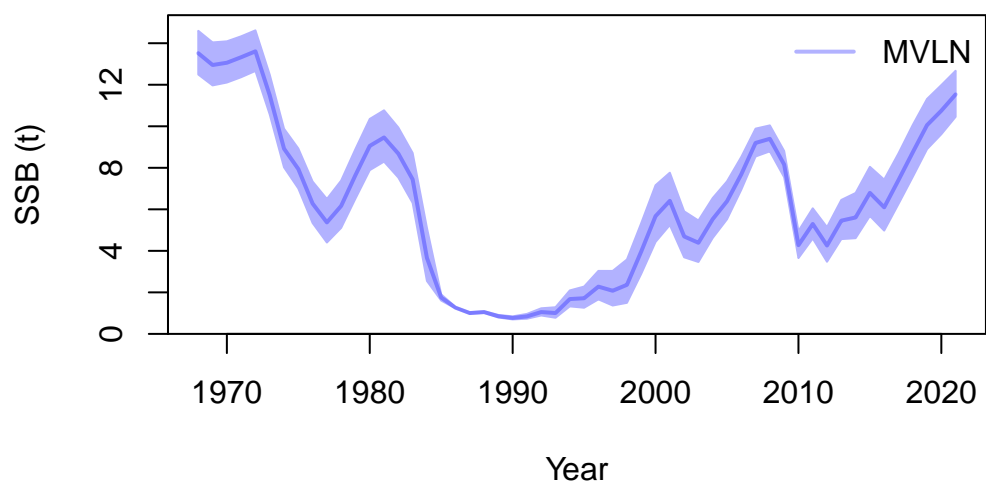
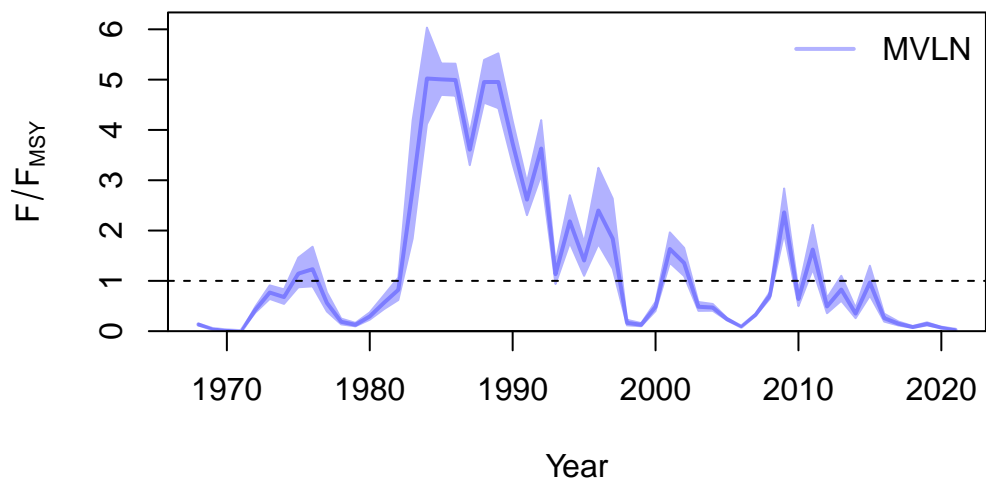


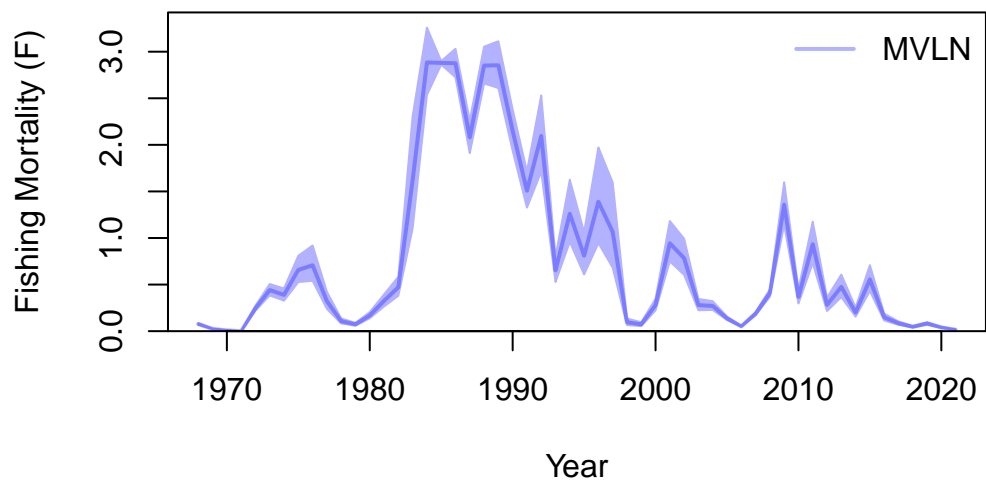
### Management Quantities

starter.sso with Bratio:  $SSB/SSB_{MSY}$  and F:  $_{abs\_F}$



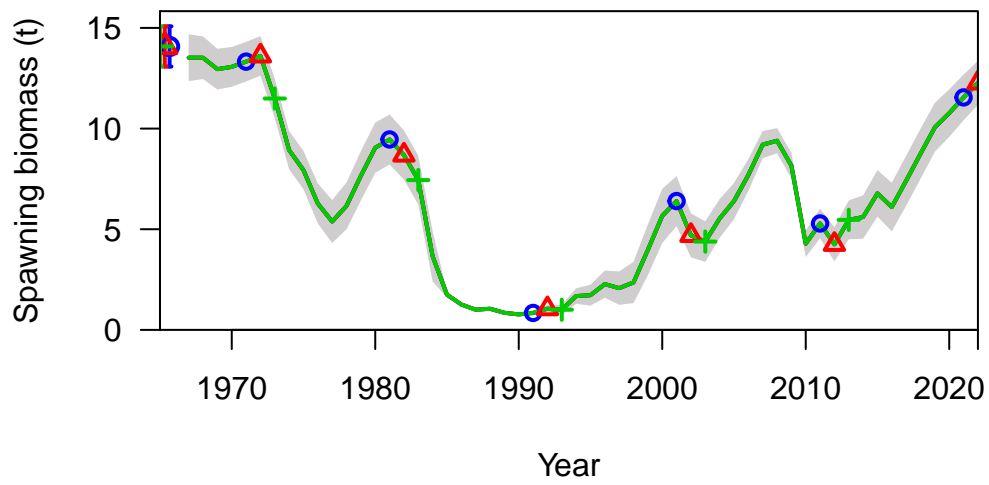
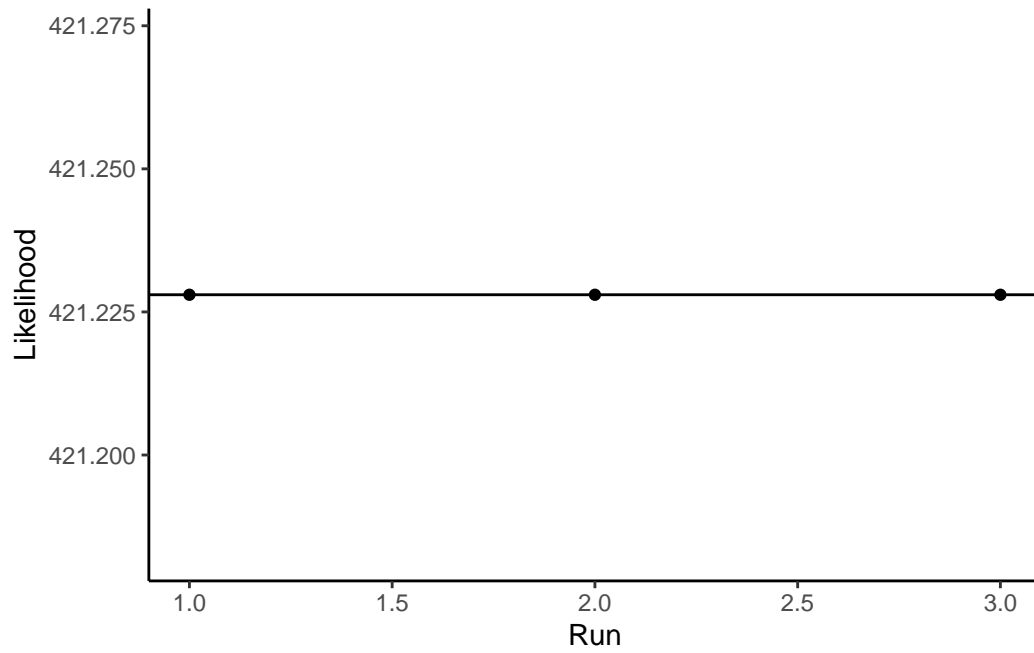


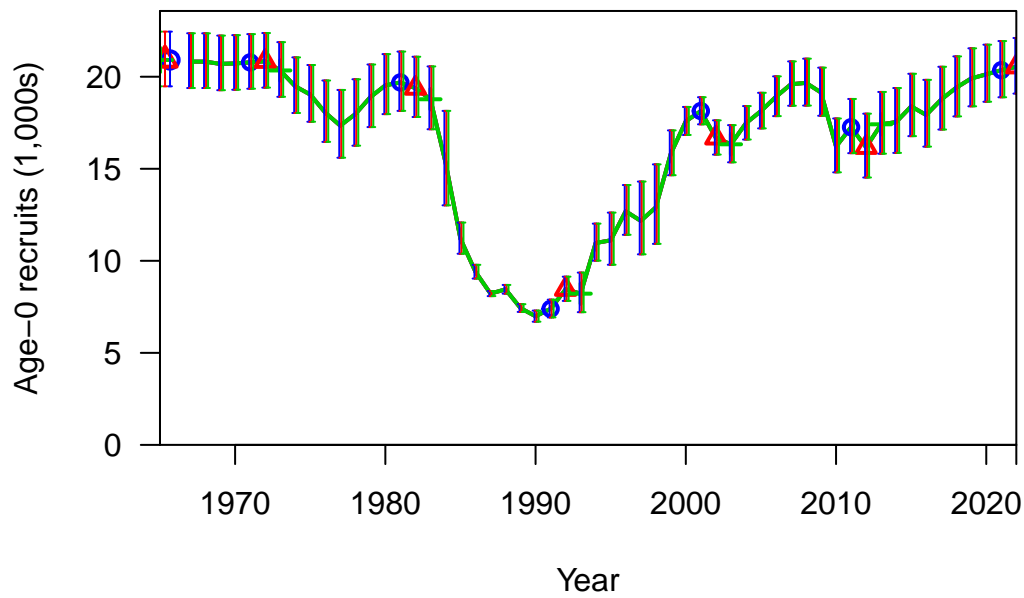
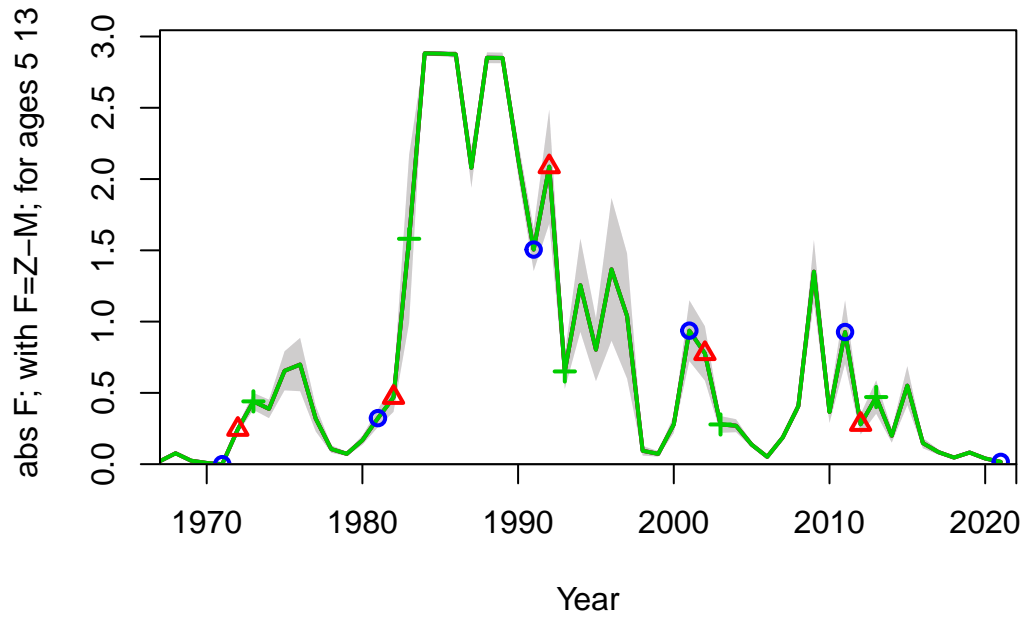




null device  
1

**Jitter**





**Selectivity and Maturity**

