

American Samoa Model Checks

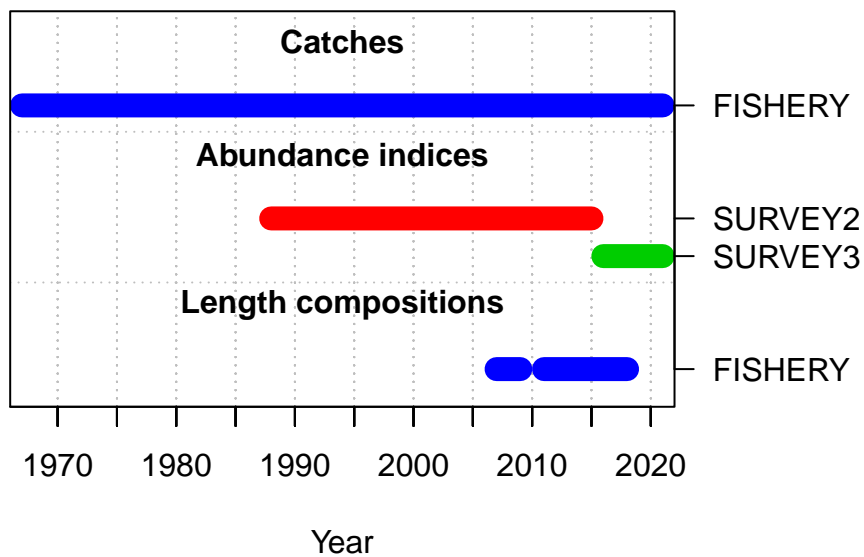
Marc Nadon and Meg Oshima

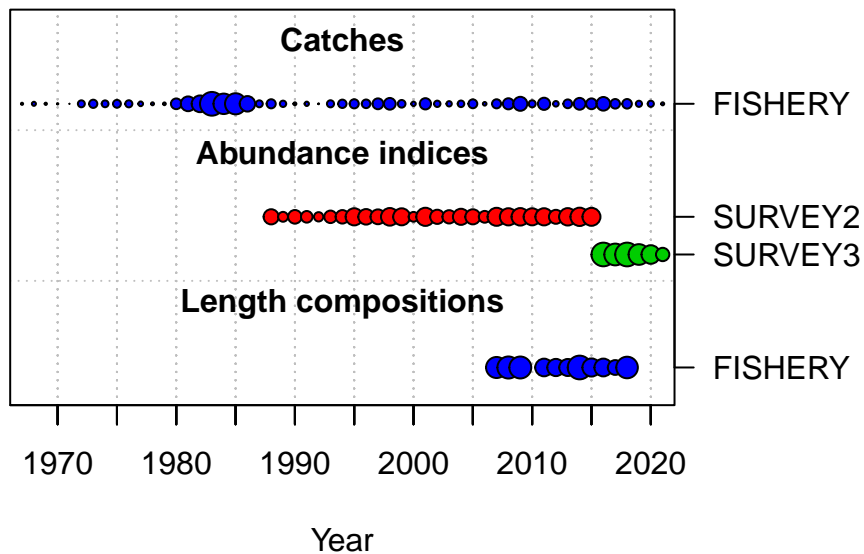
2023-02-14

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

Model Output

Input Data





Convergence Check

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Converged      MaxGrad
1      TRUE 8.25122e-05

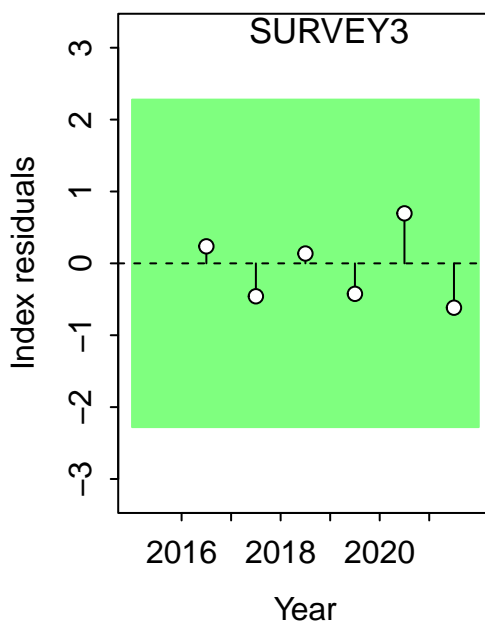
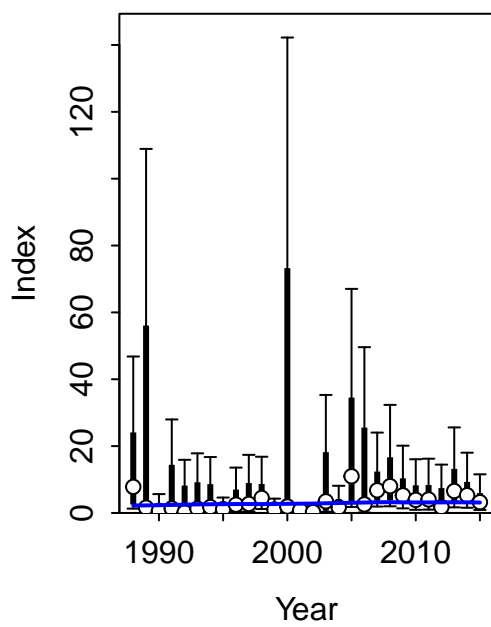
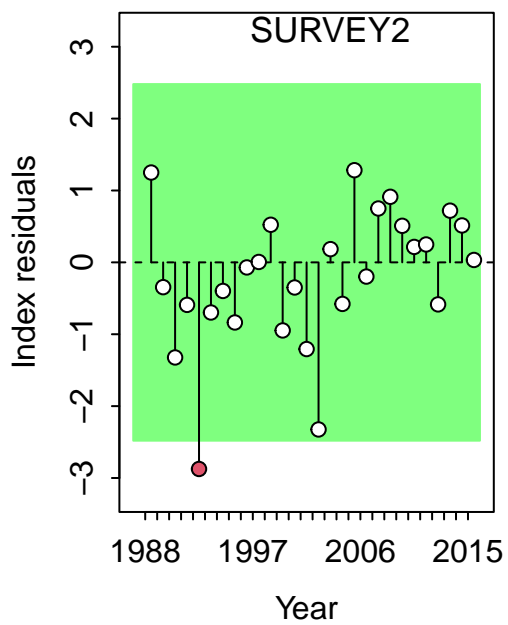
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- [1] "1 NOTE: Max data length bin: 90 < max pop len bins: 100; so will accumulate larger pop"
- [2] "2 Main recdev biasadj is >2 times ratio of rmse to sigmaR"
- [3] " N parameters are on or within 1% of min-max bound: 1; check results, variance may be s"
- [4] "N warnings: 2"

Fit to Model

CPUE

Fleet	RMSE.perc	Nobs
SURVEY2	97.3	28
SURVEY3	47.1	6
Combined	90.4	34



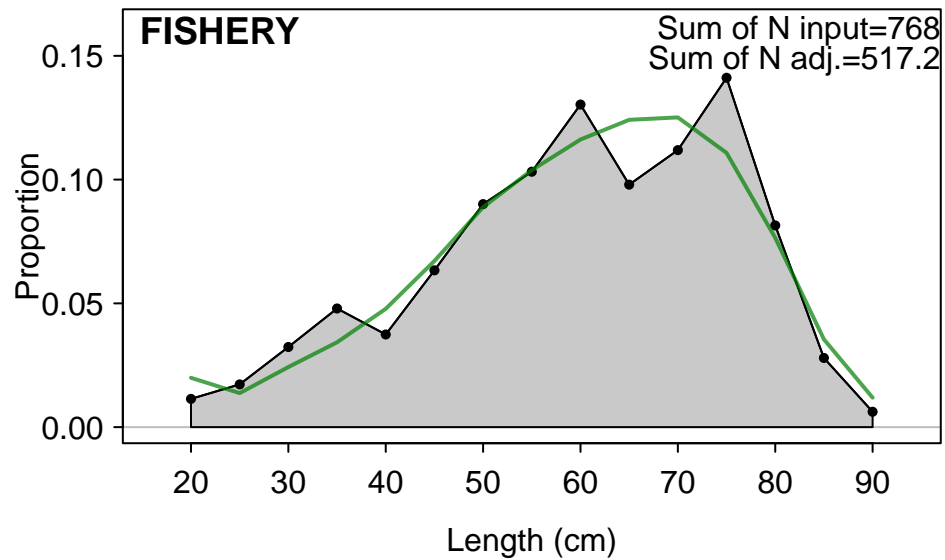
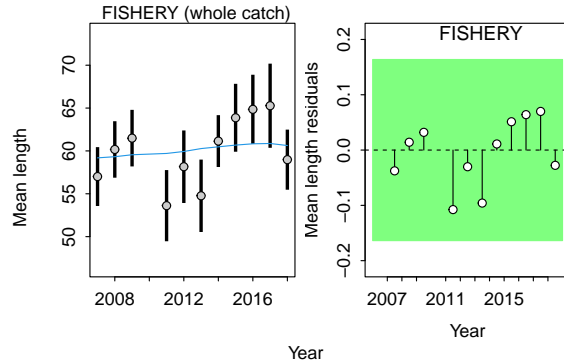
Length Comp

Fleet	RMSE.perc	Nobs
FISHERY	5.8	11
Combined	5.8	11

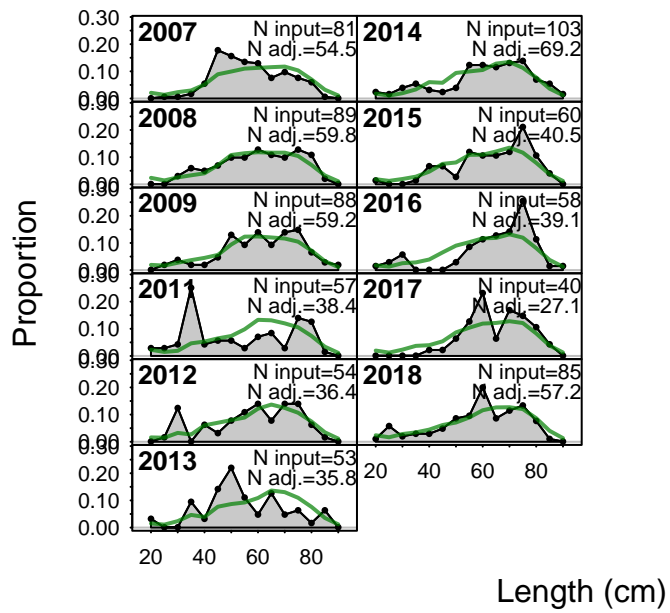
```

w      lo      hi      Index runs.p  test  sigma3.lo sigma3.hi type
0.3316614 0.2287669 0.9374015      1 FISHERY  0.175 Passed -0.1637538 0.1637538 len

```

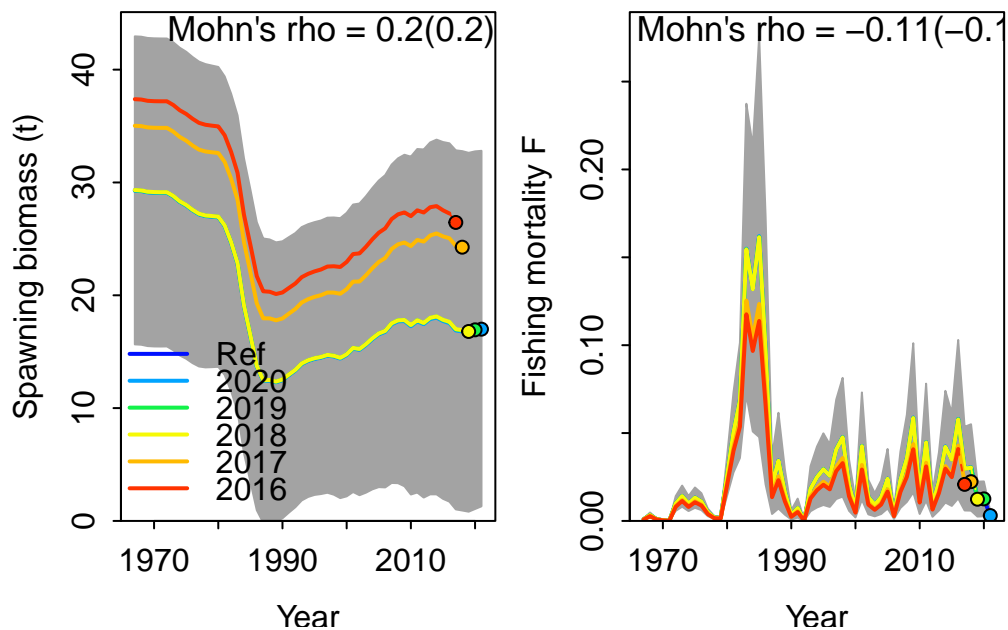


Retrospective and Hindcasting



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	0.0023488009	0.0022762108
2	F	2019	-0.0008141681	-0.0007245454
3	F	2018	-0.0041075589	-0.0041756346
4	F	2017	-0.2642520670	-0.2659299349
5	F	2016	-0.2932467156	-0.3006559902
6	F Combined		-0.1120143417	-0.1138419788

Hindcasting

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

No observations in evaluation years to compute prediction residuals for Index SURVEY2

MASE stats by Index:

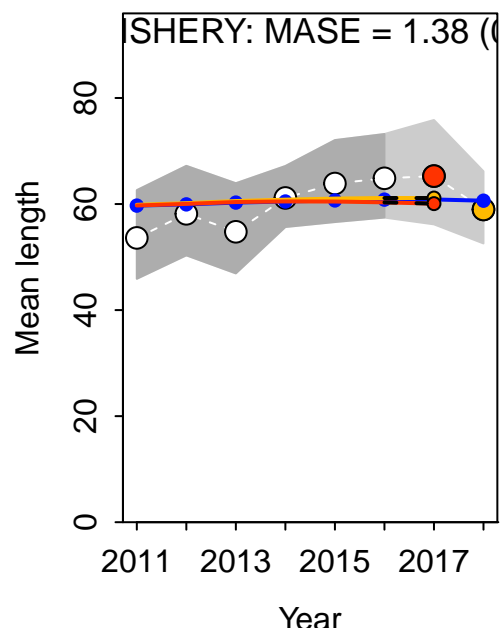
Plotting Hindcast Cross-Validation (one-step-ahead)

Computing MASE with only 2 of 5 prediction residuals for Index FISHERY

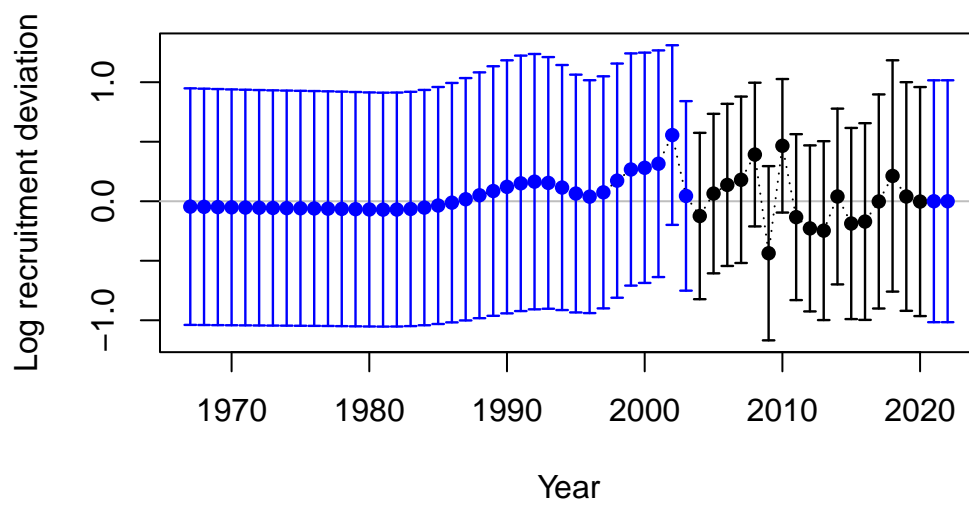
Warning: Unequal spacing of naive predictions residuals may influence the interpretation of

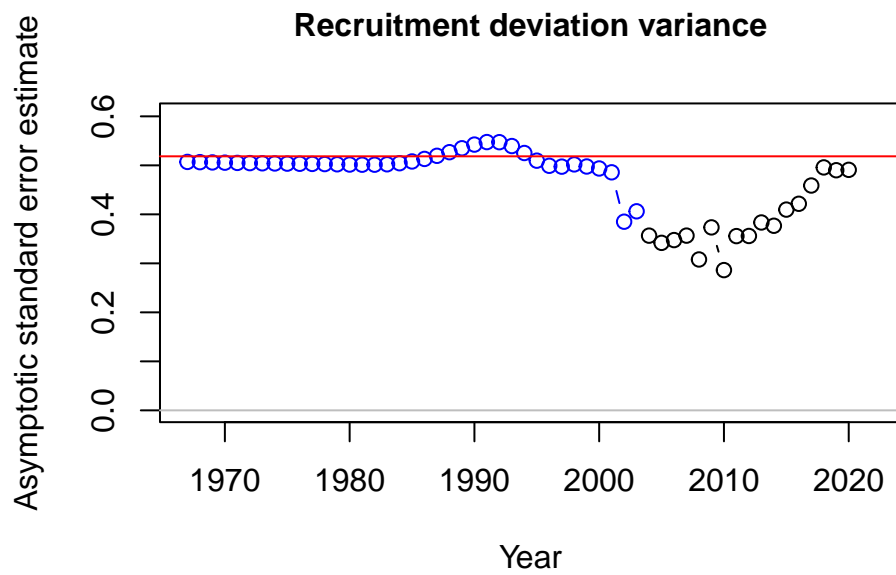
MASE stats by Index:

	Index	Season	MASE	MAE.PR	MAE.base	MASE.adj	n.eval
1	FISHERY	1	1.37723	0.07424709	0.05391045	0.7424709	2



Recruitment Deviations

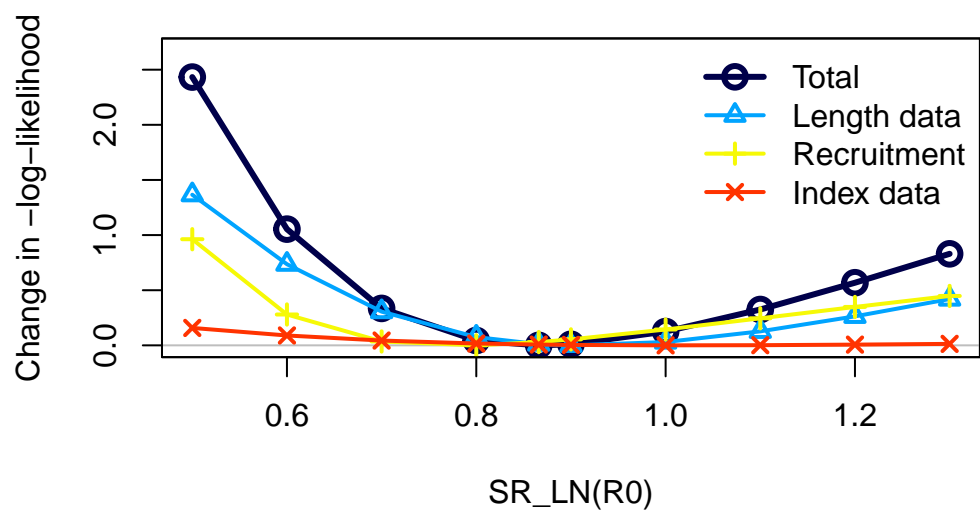




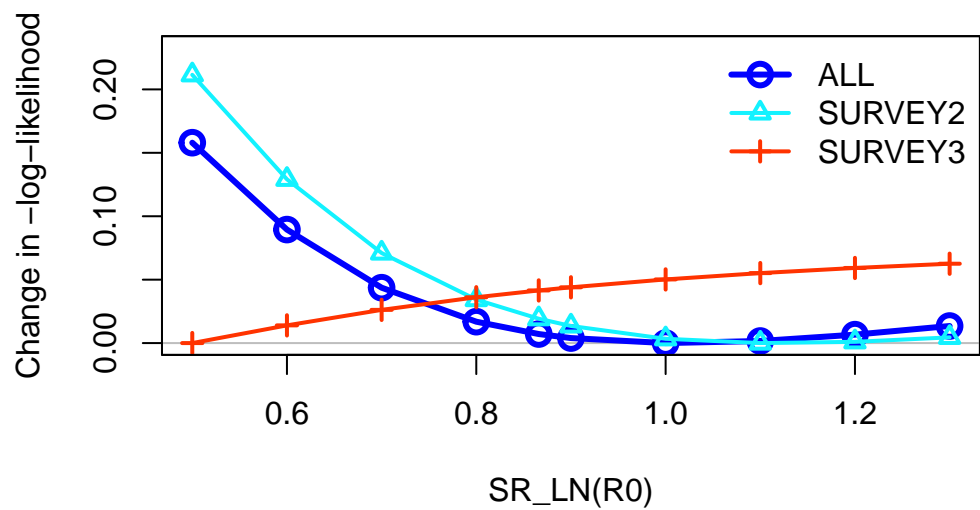
Likelihood Profile

[1] "SR_LN"

	frac_change	include	label
TOTAL	1.0000	TRUE	Total
Catch	0.0000	FALSE	Catch
Equil_catch	0.0000	FALSE	Equilibrium catch
Survey	0.0649	TRUE	Index data
Length_comp	0.5614	TRUE	Length data
Recruitment	0.3956	TRUE	Recruitment
InitEQ_Regime	0.0000	FALSE	Initital equilibrium recruitment
Forecast_Recruitment	0.0000	FALSE	Forecast recruitment
Parm_priors	0.0022	FALSE	Priors
Parm_softbounds	0.0001	FALSE	Soft bounds
Parm_devs	0.0000	FALSE	Parameter deviations
Crash_Pen	0.0000	FALSE	Crash penalty

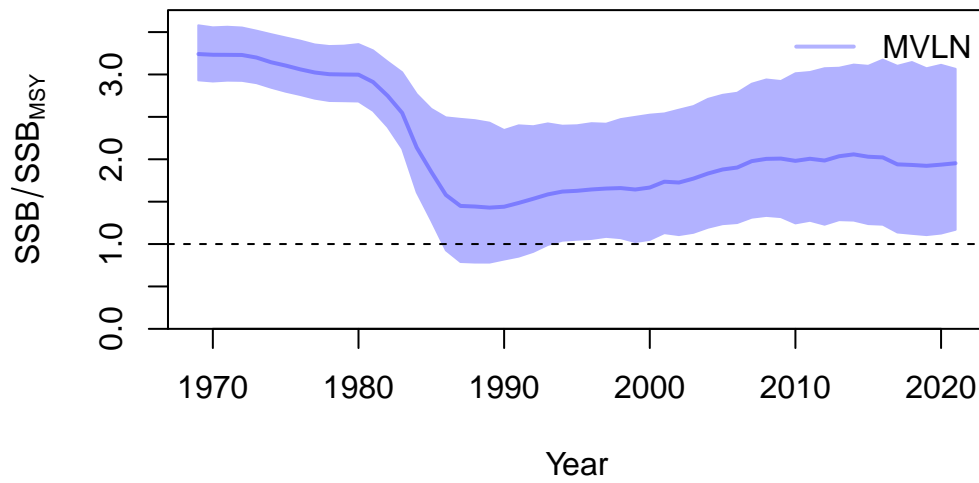
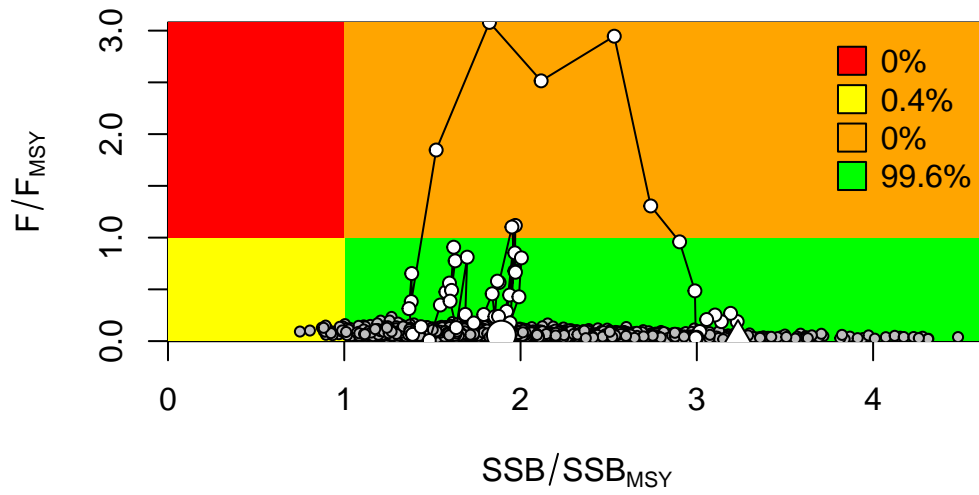


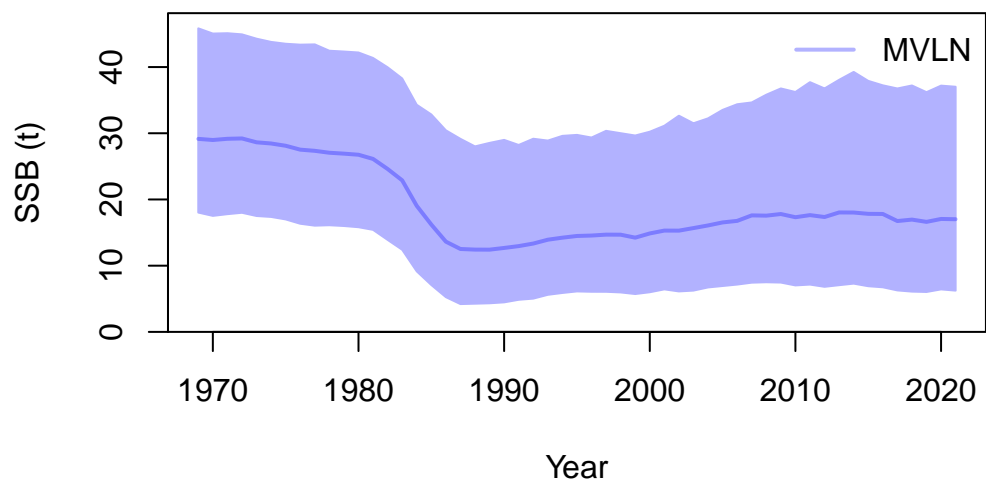
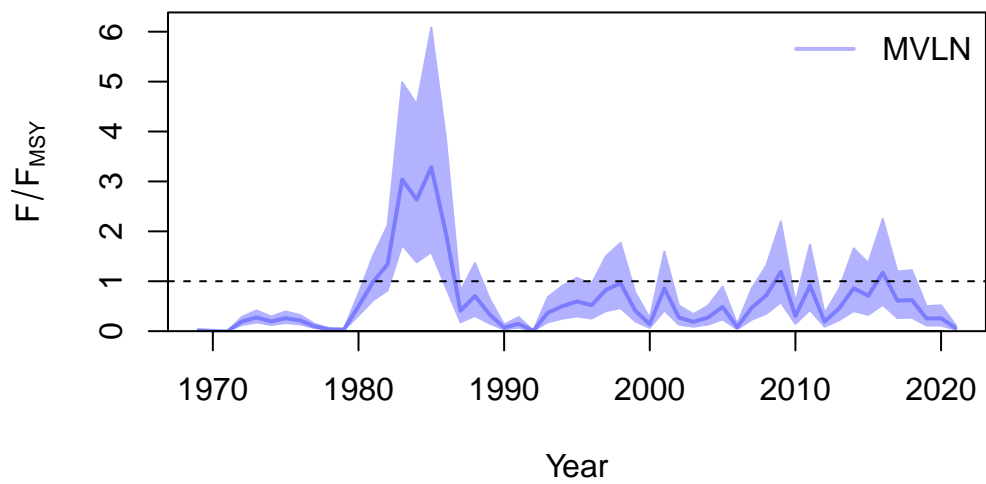
Changes in survey likelihood by fleet

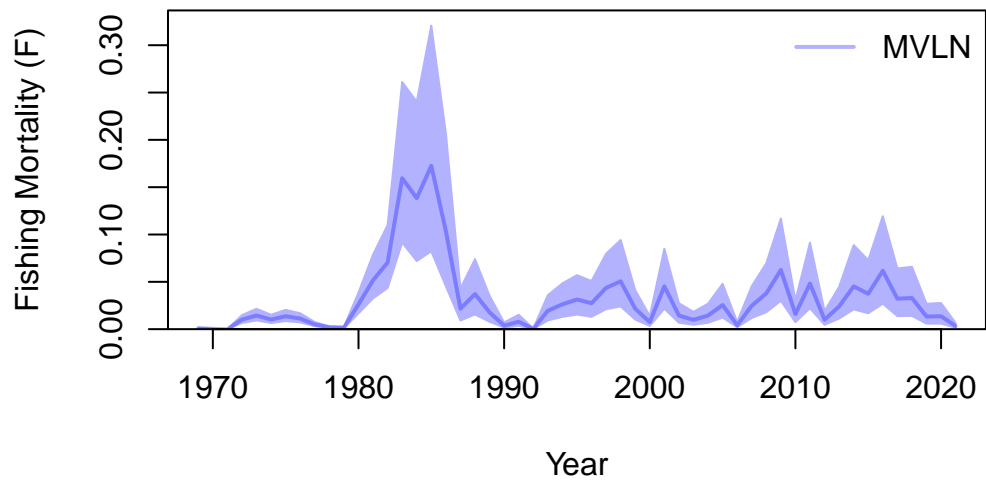


Management Quantities

starter.sso with Bratio: SSB/SSB_{MSY} and F: _abs_F

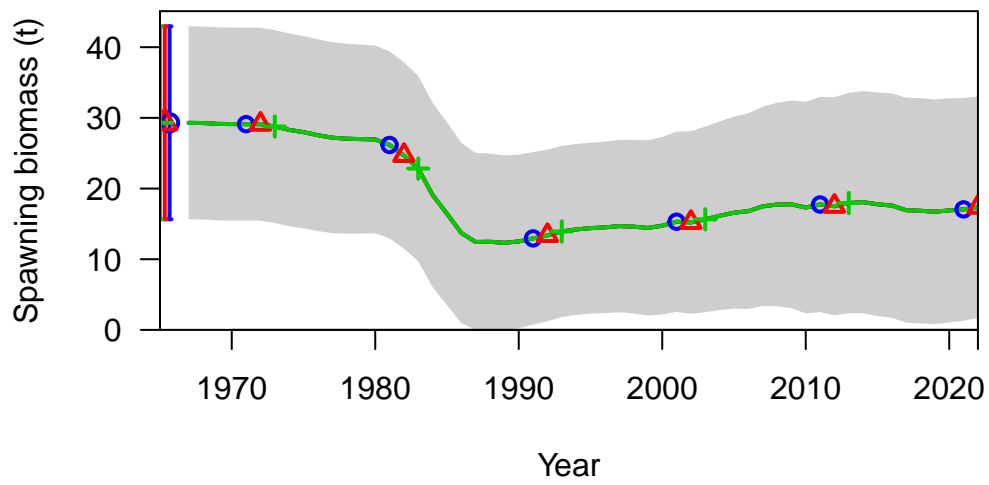
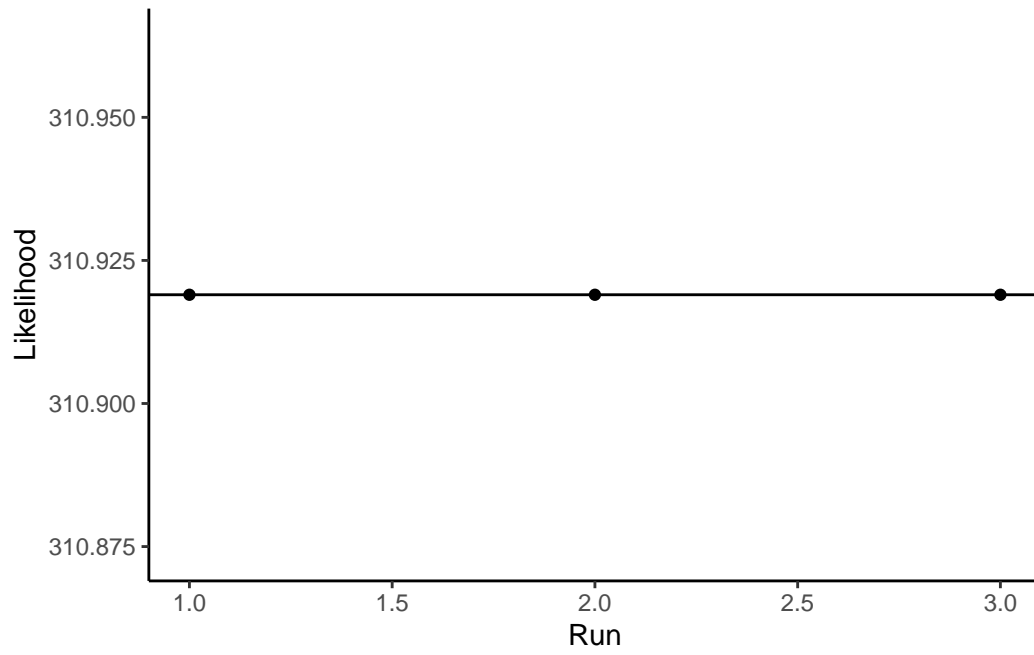


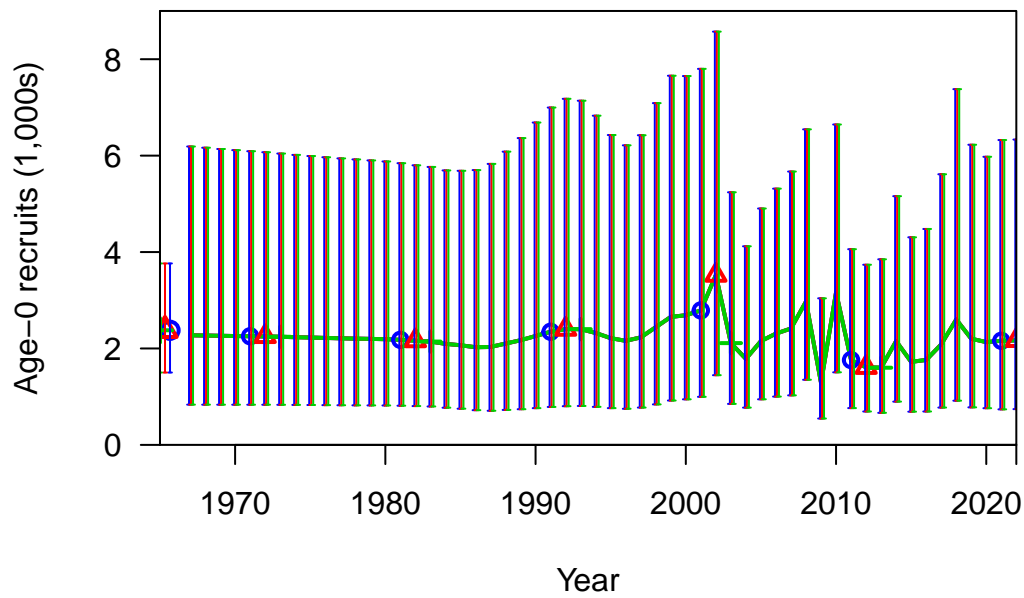
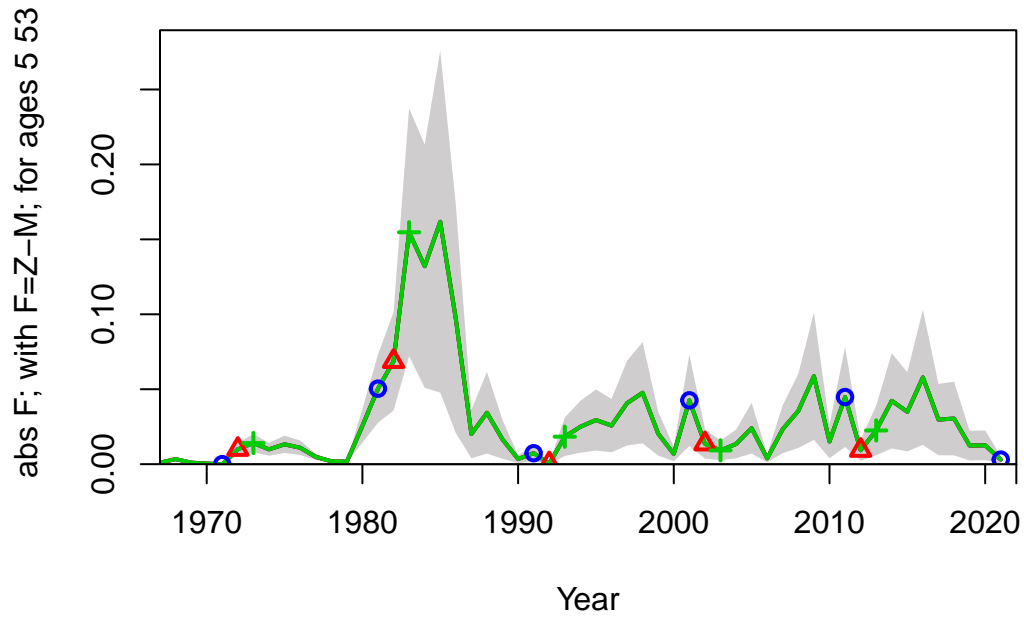




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Jitter





Selectivity and Maturity

