

American Samoa Model Checks

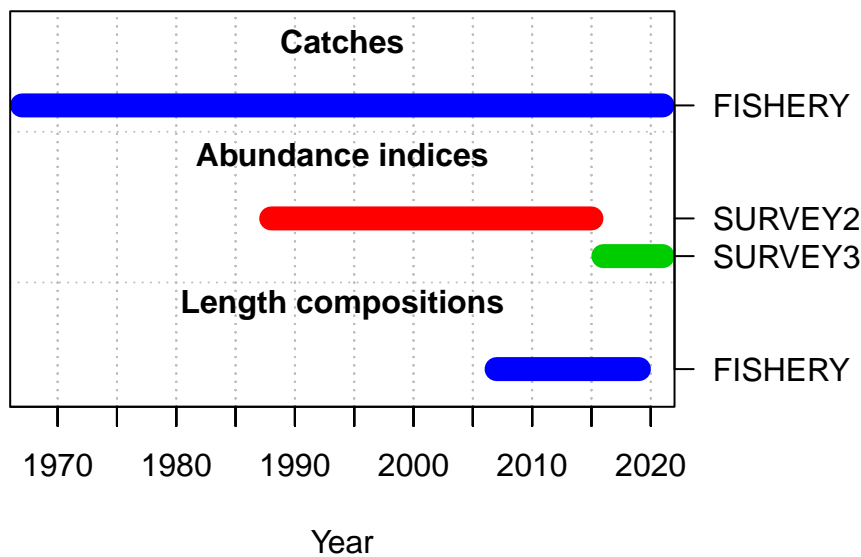
Marc Nadon and Meg Oshima

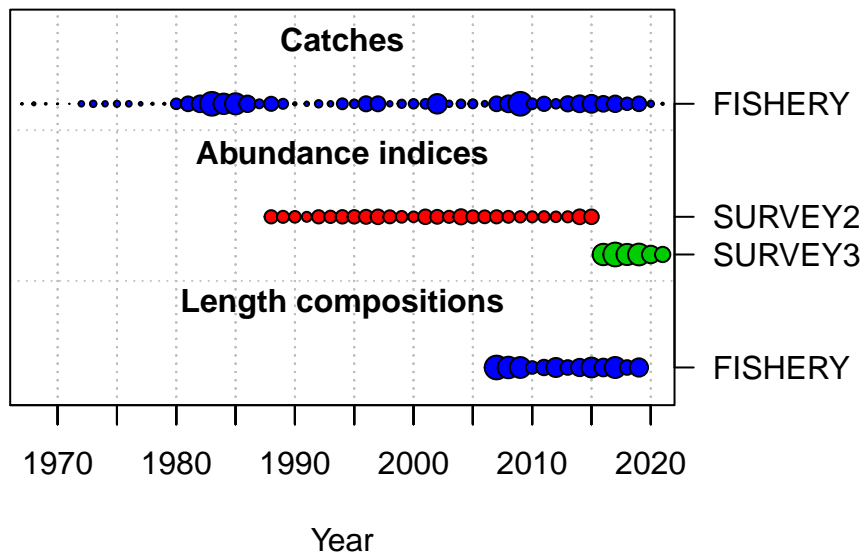
2023-02-14

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

Model Output

Input Data





Convergence Check

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Converged      MaxGrad
1      TRUE 9.76716e-05

```

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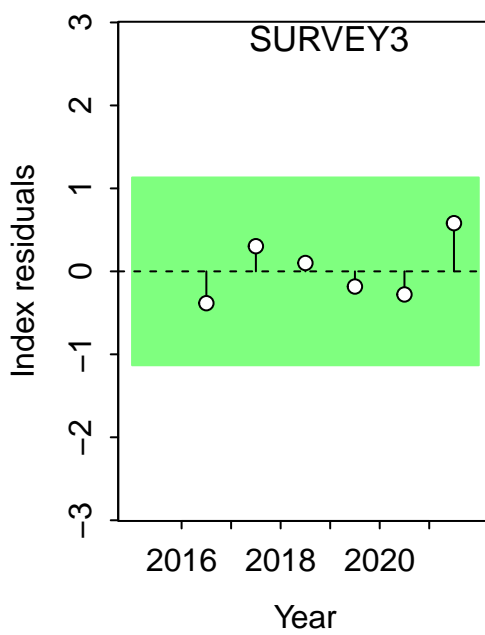
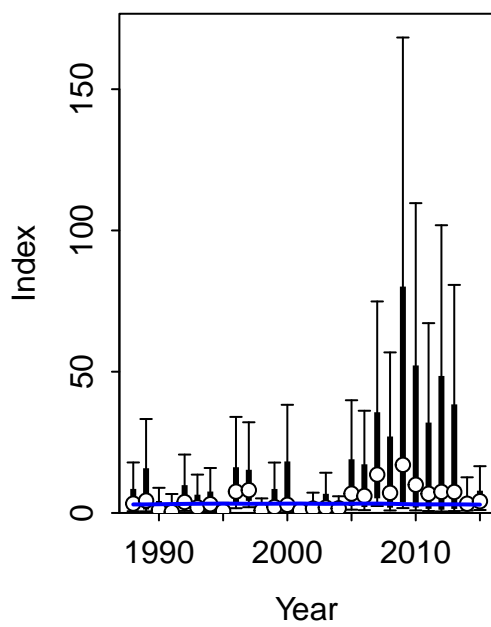
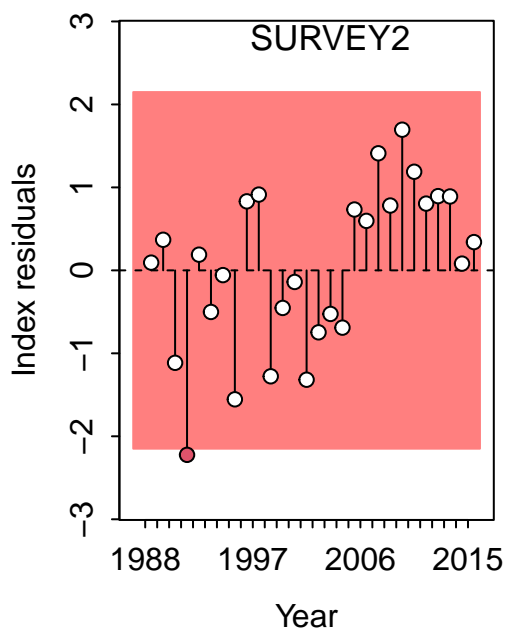
[1] "1 NOTE:  Max data length bin: 90  < max pop len bins: 100; so will accumulate larger pop
[2] " N parameters are on or within 1% of min-max bound: 1; check results, variance may be s
[3] "N warnings: 1"

```

Fit to Model

CPUE

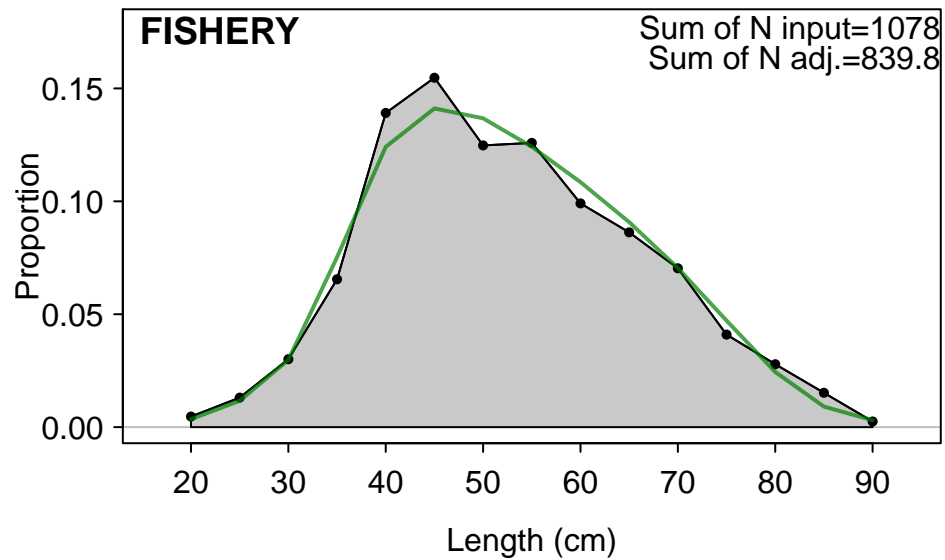
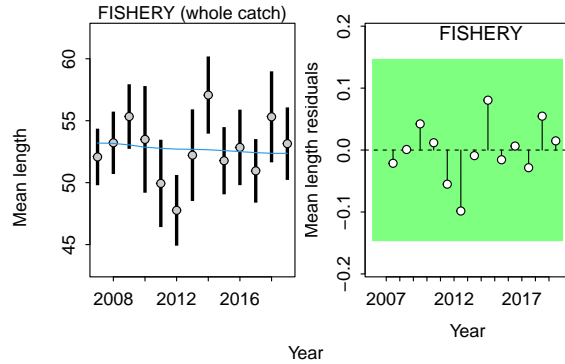
Fleet	RMSE.perc	Nobs
SURVEY2	95.6	28
SURVEY3	34.1	6
Combined	88.0	34



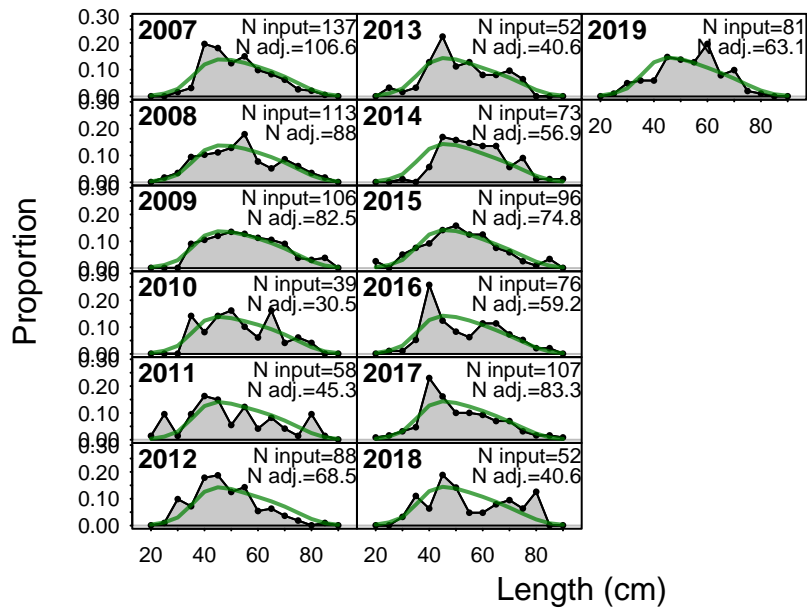
Length Comp

Fleet	RMSE.perc	Nobs
FISHERY	4.5	13
Combined	4.5	13

w lo hi Index runs.p test sigma3.lo sigma3.hi type
 0.3823584 0.2166965 1.3992983 1 FISHERY 0.623 Passed -0.1462079 0.1462079 len

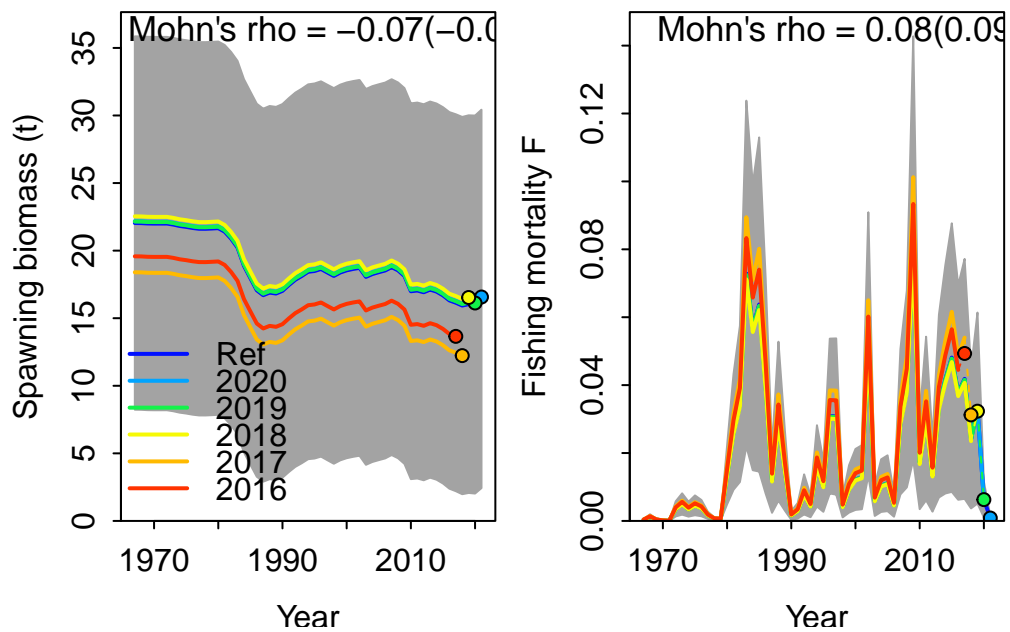


Retrospective and Hindcasting



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	-0.008257219	-0.008052619
2	F	2019	-0.006908624	-0.006839616
3	F	2018	-0.027999851	-0.027947294
4	F	2017	0.290154821	0.291492098
5	F	2016	0.176468877	0.178804449
6	F Combined		0.084691601	0.085491404

Hindcasting

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

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

MASE stats by Index:

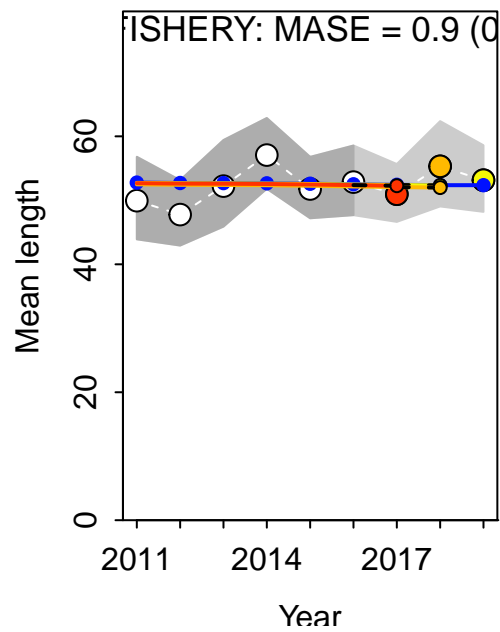
Plotting Hindcast Cross-Validation (one-step-ahead)

Computing MASE with only 3 of 5 prediction residuals for Index FISHERY

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

MASE stats by Index:

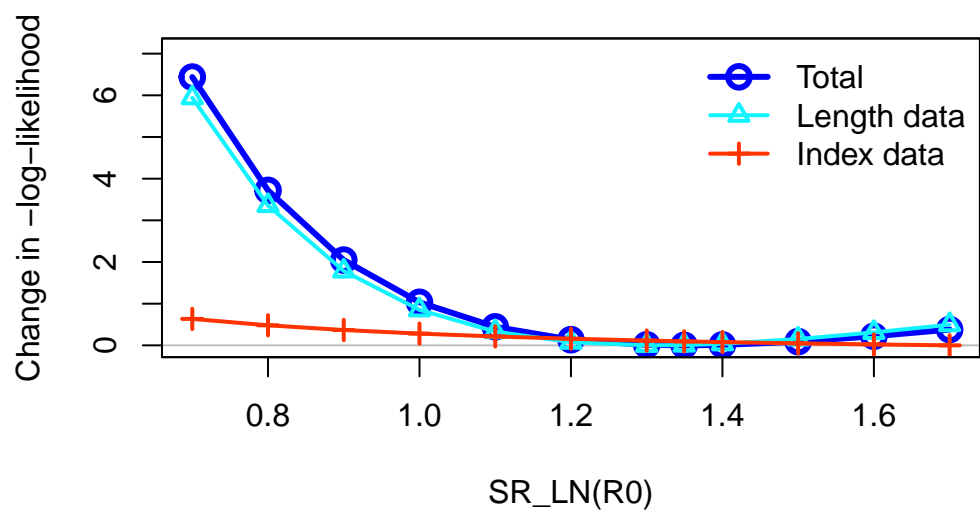
	Index	Season	MASE	MAE.PR	MAE.base	MASE.adj	n.eval
1	FISHERY	1	0.9025369	0.04769559	0.05284614	0.4769559	3



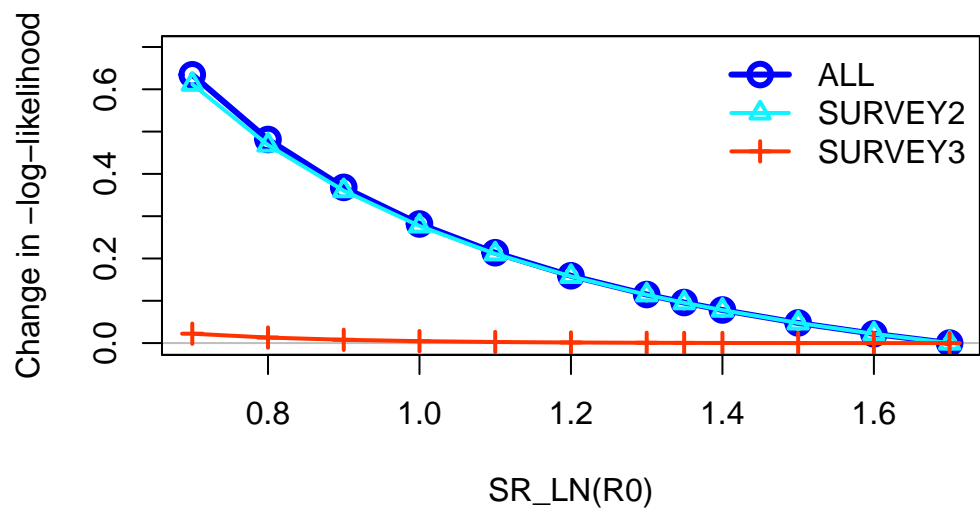
Recruitment Deviations

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	0.0985	TRUE	Index data
Length_comp	0.9228	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	0.0061	FALSE	Priors
Parm_softbounds	0.0000	FALSE	Soft bounds
Parm_devs	0.0000	FALSE	Parameter deviations
Crash_Pen	0.0000	FALSE	Crash penalty

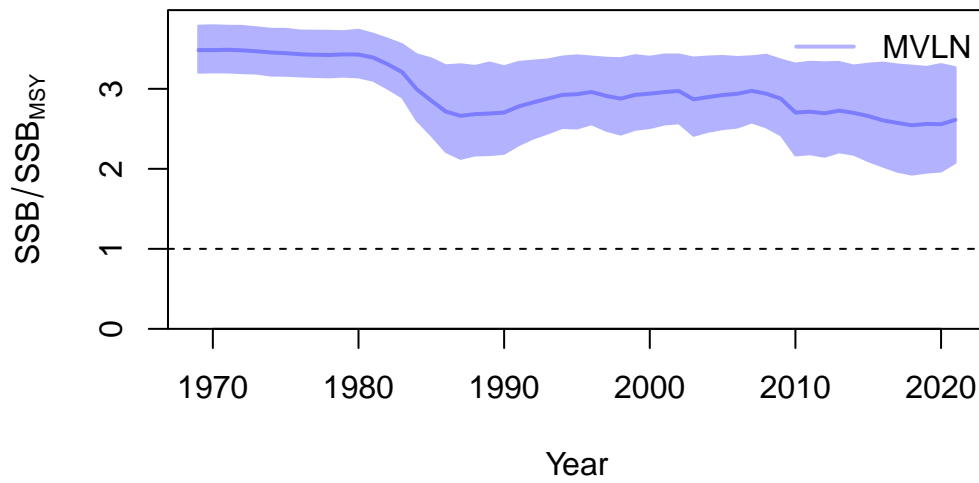
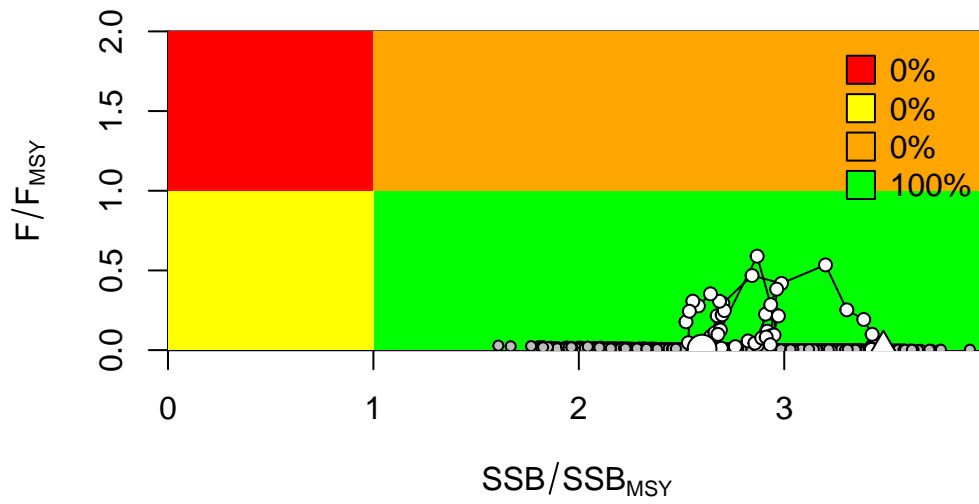


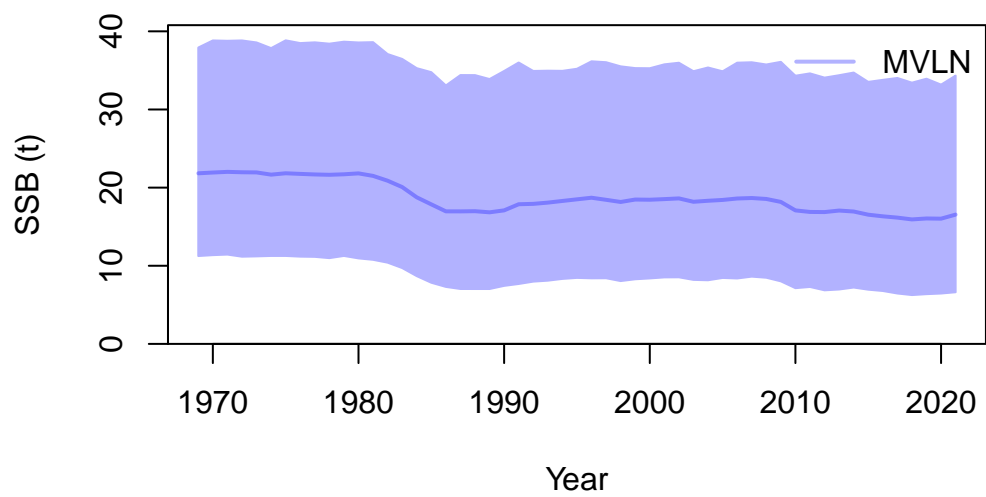
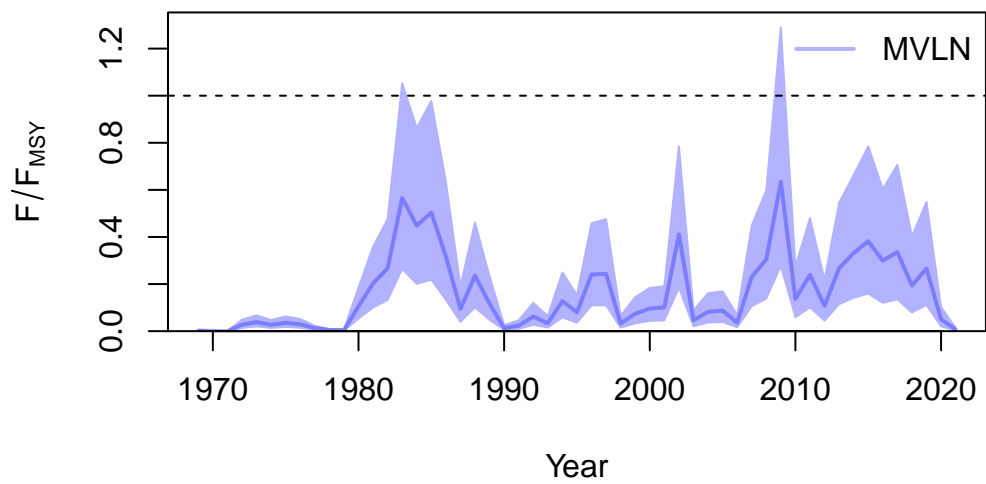
Changes in survey likelihood by fleet

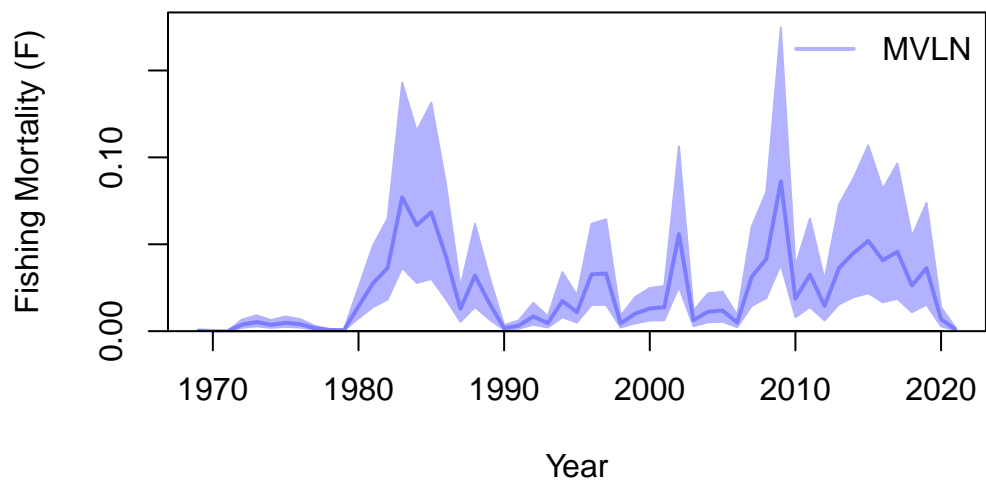


Management Quantities

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

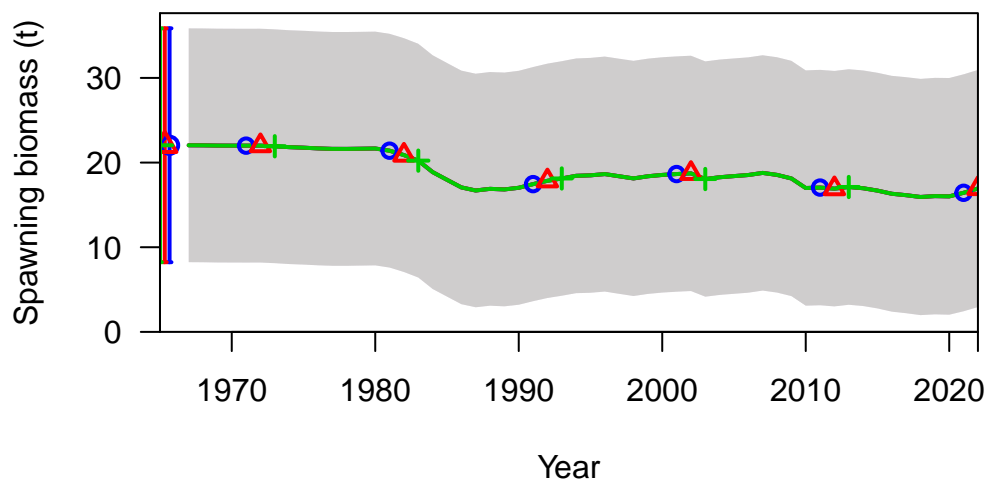
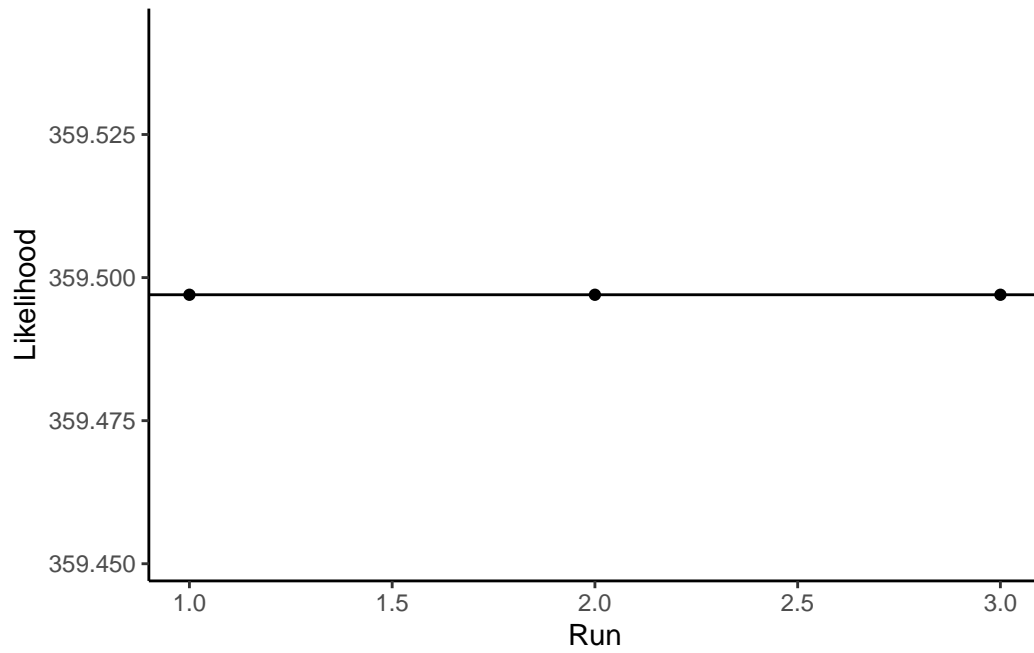


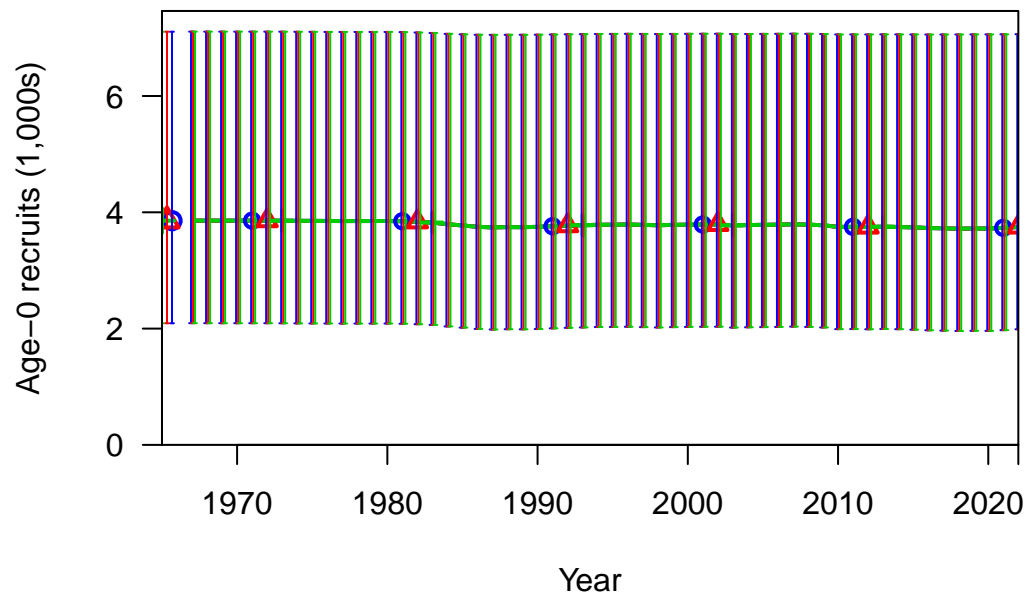
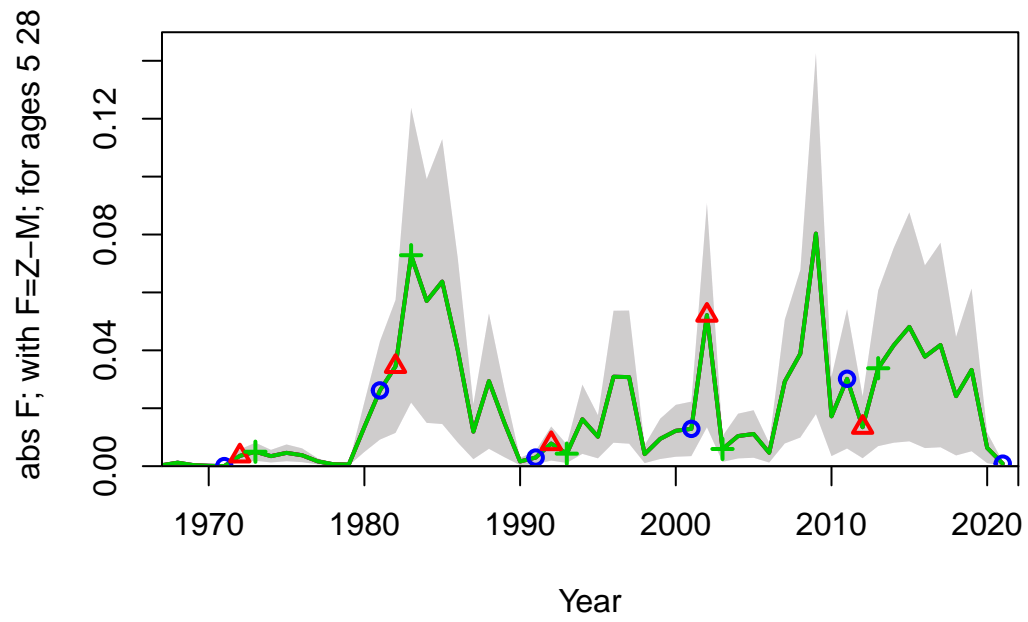




null device
1

Jitter





Selectivity and Maturity

