

American Samoa Model Checks

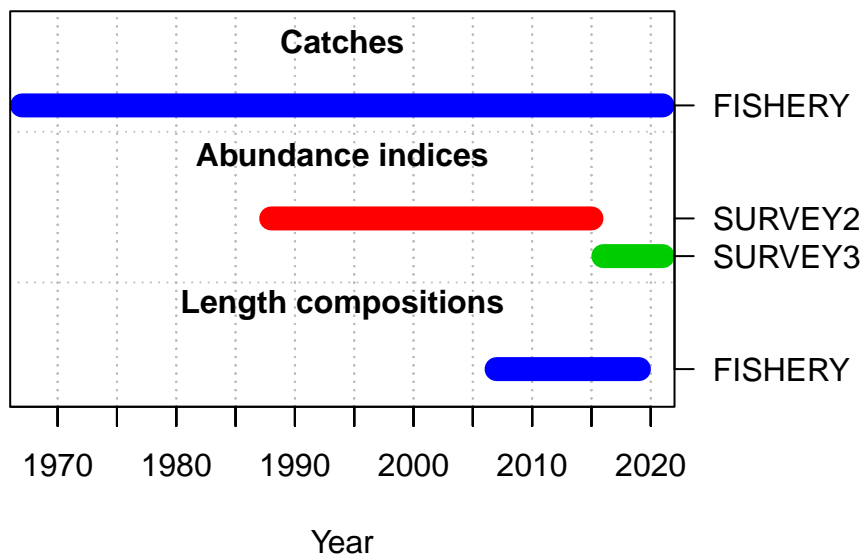
Marc Nadon and Meg Oshima

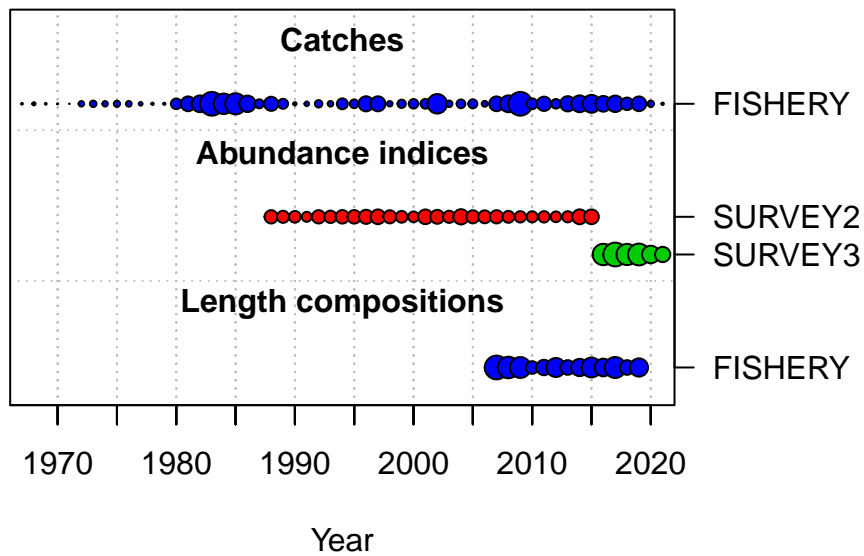
2023-02-14

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 9.67635e-05

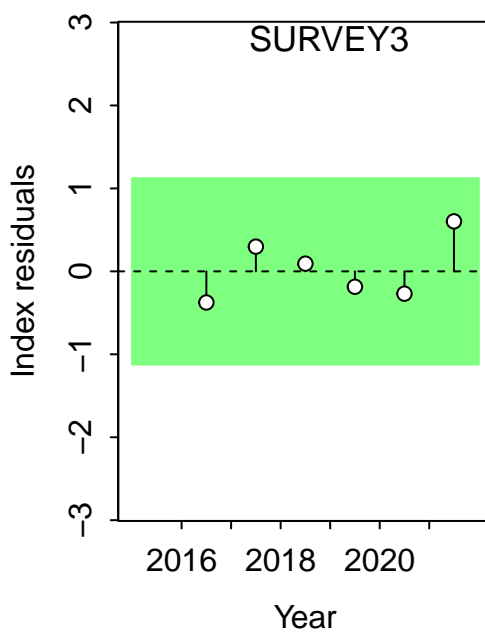
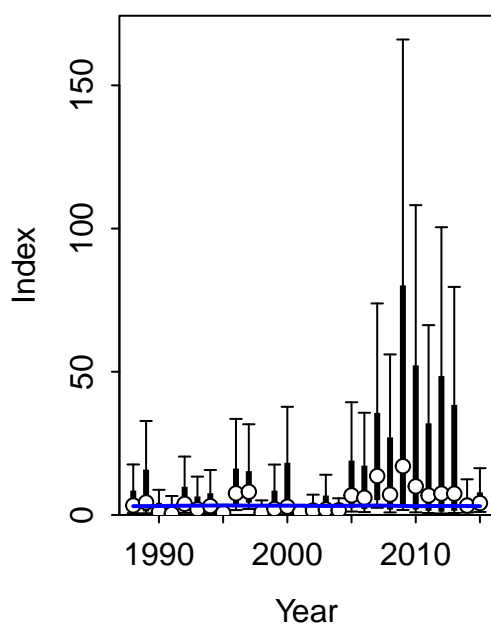
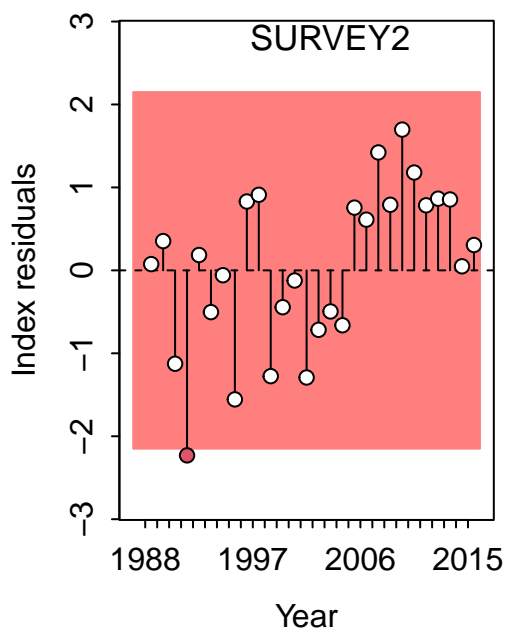
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- [1] "1 NOTE: Max data length bin: 90 < max pop len bins: 100; so will accumulate larger pop"
- [2] "2 Early recdev biasadj is >2 times ratio of rmse to sigmaR"
- [3] " N parameters are on or within 1% of min-max bound: 1; check results, variance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

Fit to Model

CPUE

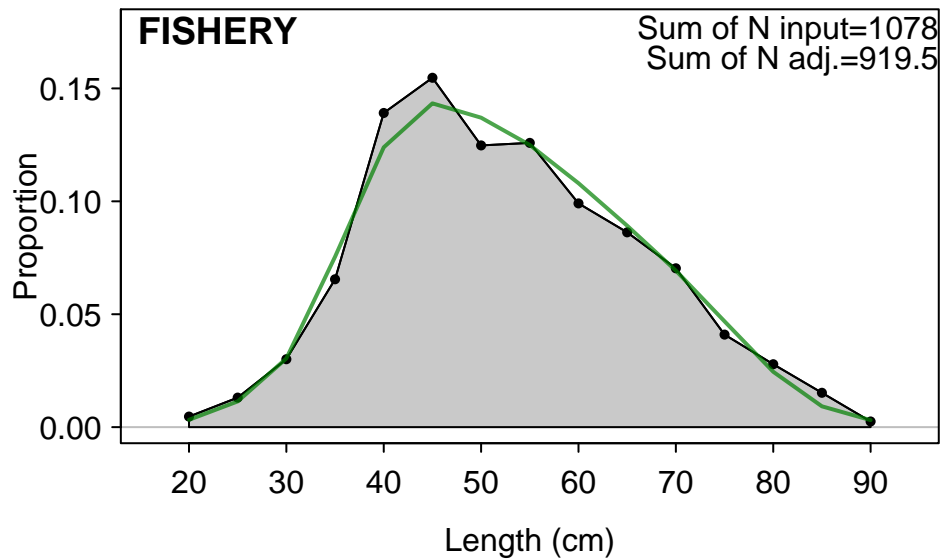
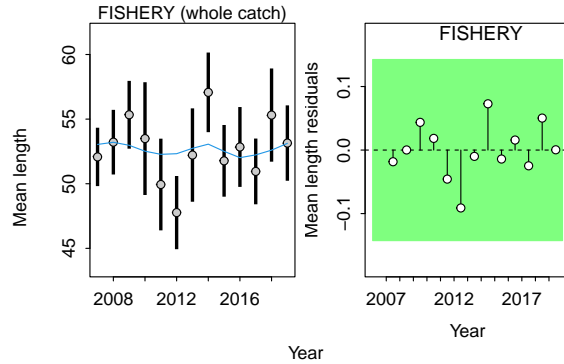
Fleet	RMSE.perc	Nobs
SURVEY2	95.2	28
SURVEY3	34.4	6
Combined	87.6	34



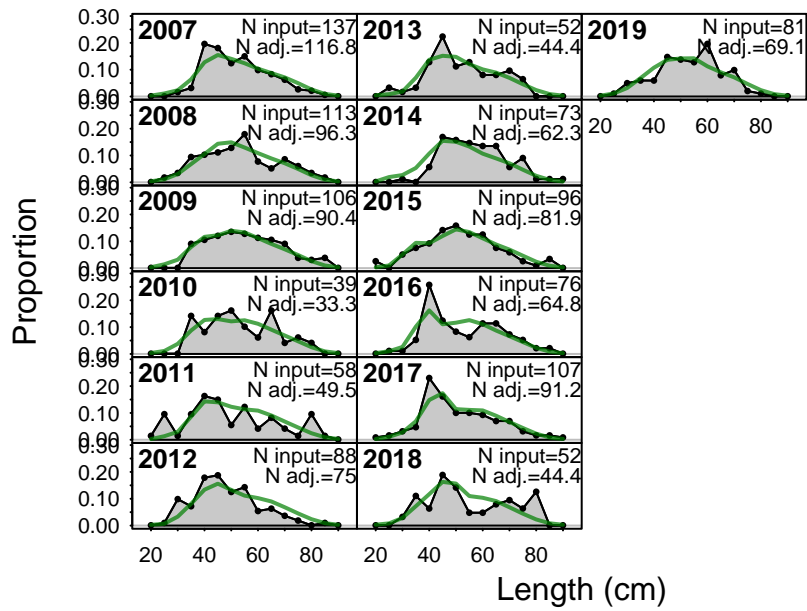
Length Comp

Fleet	RMSE.perc	Nobs
FISHERY	4.1	13
Combined	4.1	13

w lo hi Index runs.p test sigma3.lo sigma3.hi type
 0.4450253 0.2587373 1.5172330 1 FISHERY 0.623 Passed -0.1425631 0.1425631 len

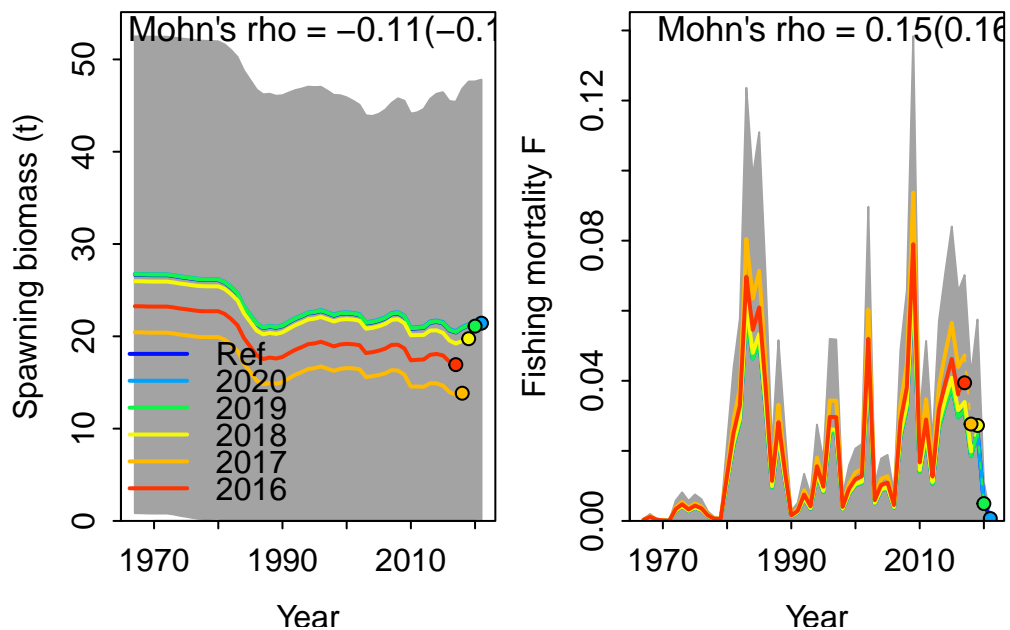


Retrospective and Hindcasting



Retrospective

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



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	type	peel	Rho	ForecastRho
1	F	2020	-0.005115978	-0.0044606421
2	F	2019	-0.001323799	-0.0008203346
3	F	2018	0.067218806	0.0580802199
4	F	2017	0.488083117	0.4863434087
5	F	2016	0.214301814	0.2431163886
6	F Combined		0.152632792	0.1564518081

Hindcasting

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

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

MASE stats by Index:

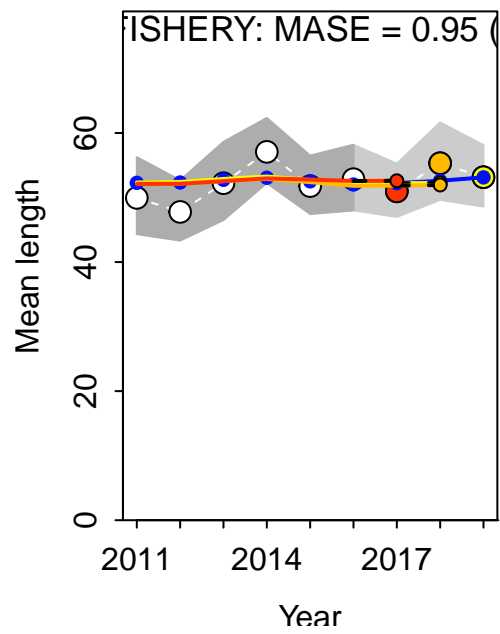
Plotting Hindcast Cross-Validation (one-step-ahead)

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

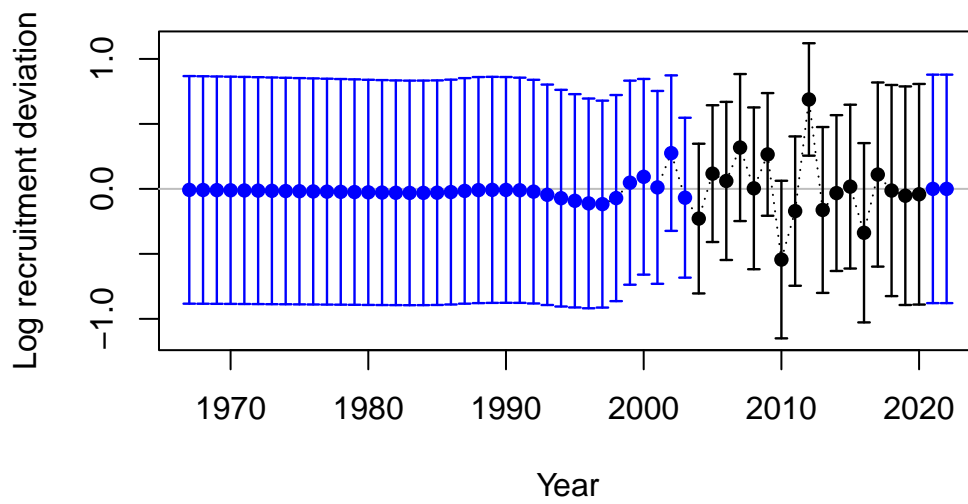
Warning: Unequal spacing of naive predictions residuals may influence the interpretation of

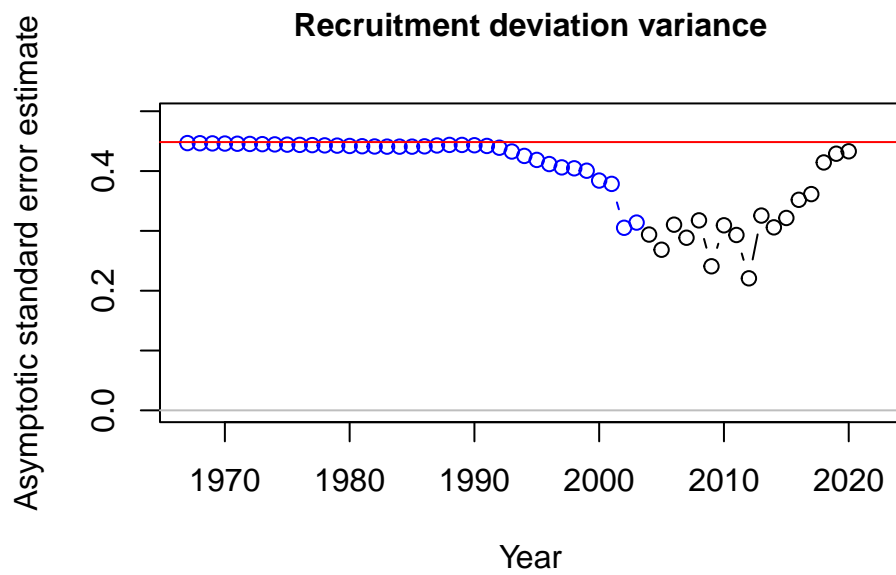
MASE stats by Index:

	Index	Season	MASE	MAE.PR	MAE.base	MASE.adj	n.eval
1	FISHERY	1	0.9545624	0.05044494	0.05284614	0.5044494	3



Recruitment Deviations

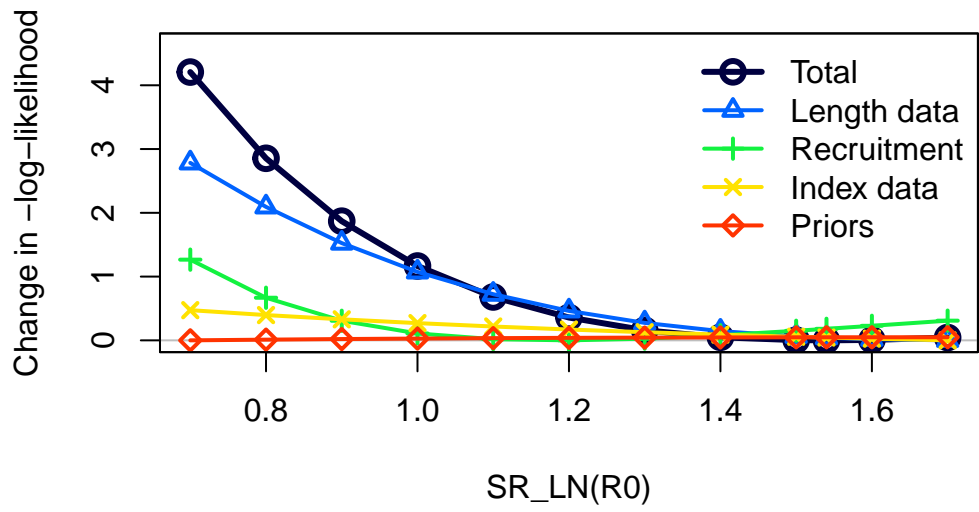




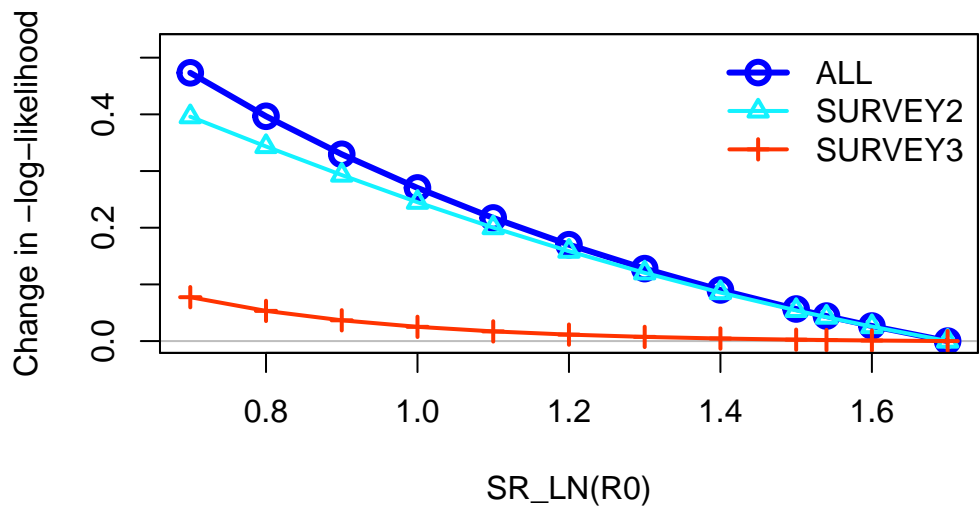
Likelihood Profile

[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	0.1125	TRUE	Index data
Length_comp	0.6615	TRUE	Length data
Recruitment	0.3008	TRUE	Recruitment
InitEQ_Regime	0.0000	FALSE	Initital equilibrium recruitment
Forecast_Recruitment	0.0000	FALSE	Forecast recruitment
Parm_priors	0.0117	TRUE	Priors
Parm_softbounds	0.0000	FALSE	Soft bounds
Parm_devs	0.0000	FALSE	Parameter deviations
Crash_Pen	0.0000	FALSE	Crash penalty

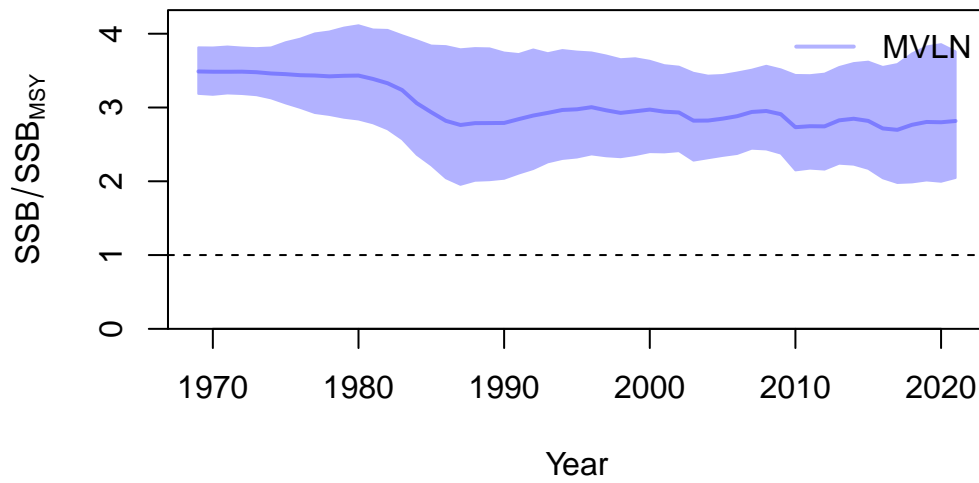
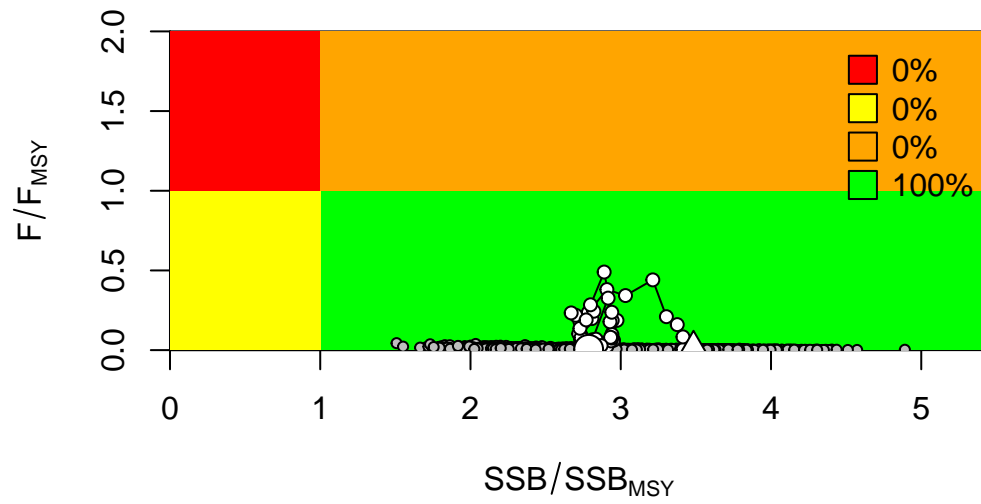


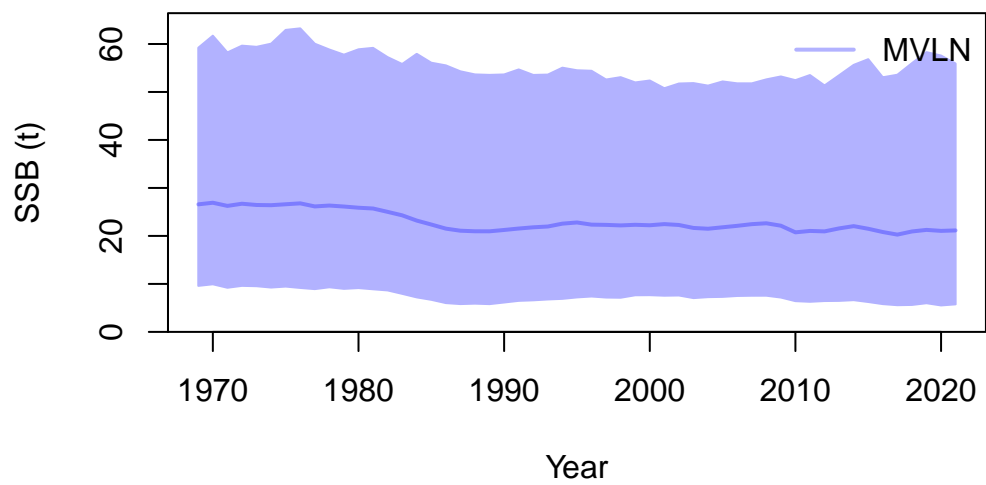
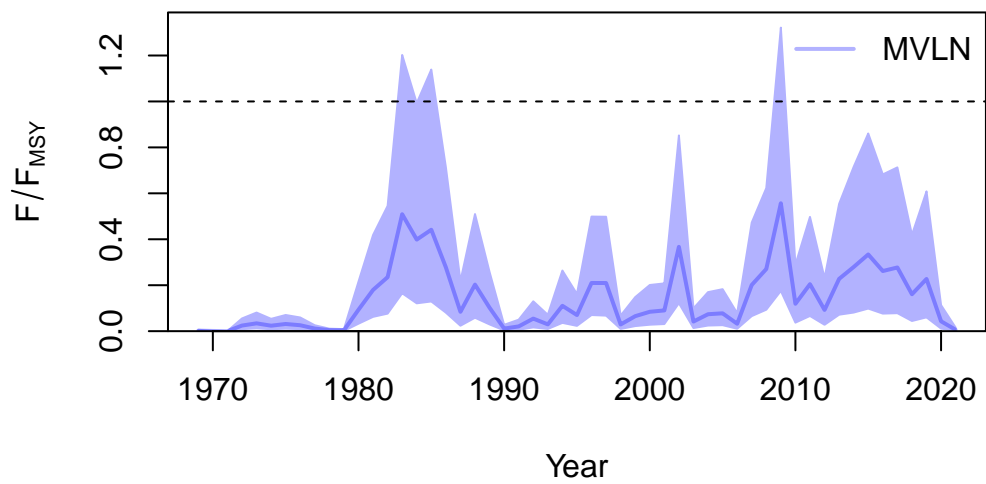
Changes in survey likelihood by fleet

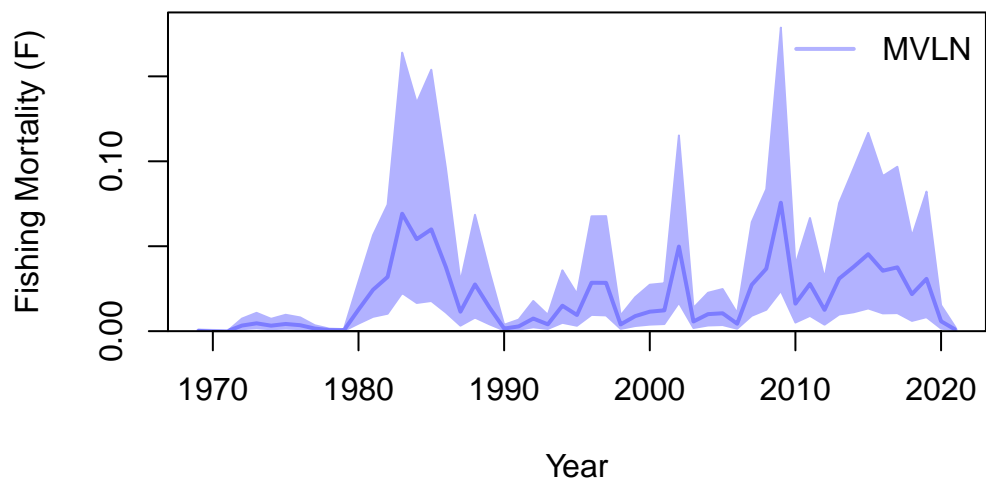


Management Quantities

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

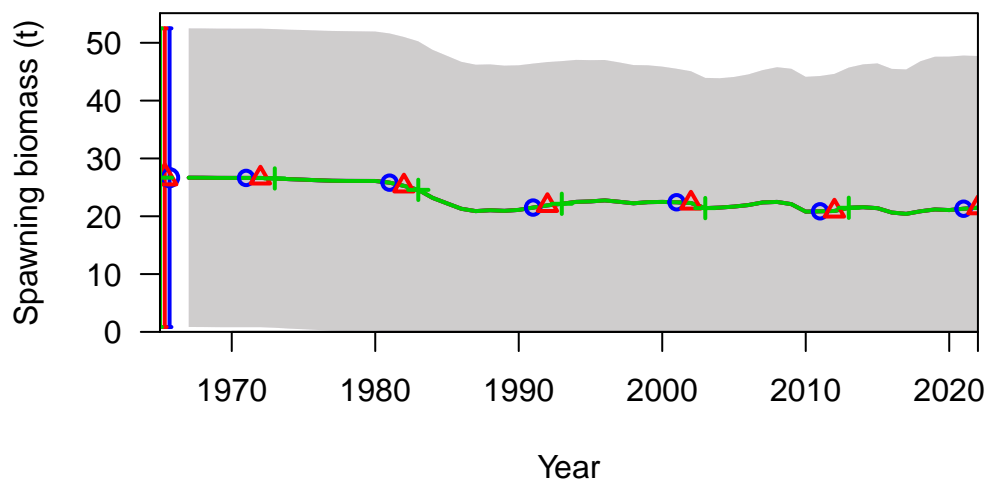
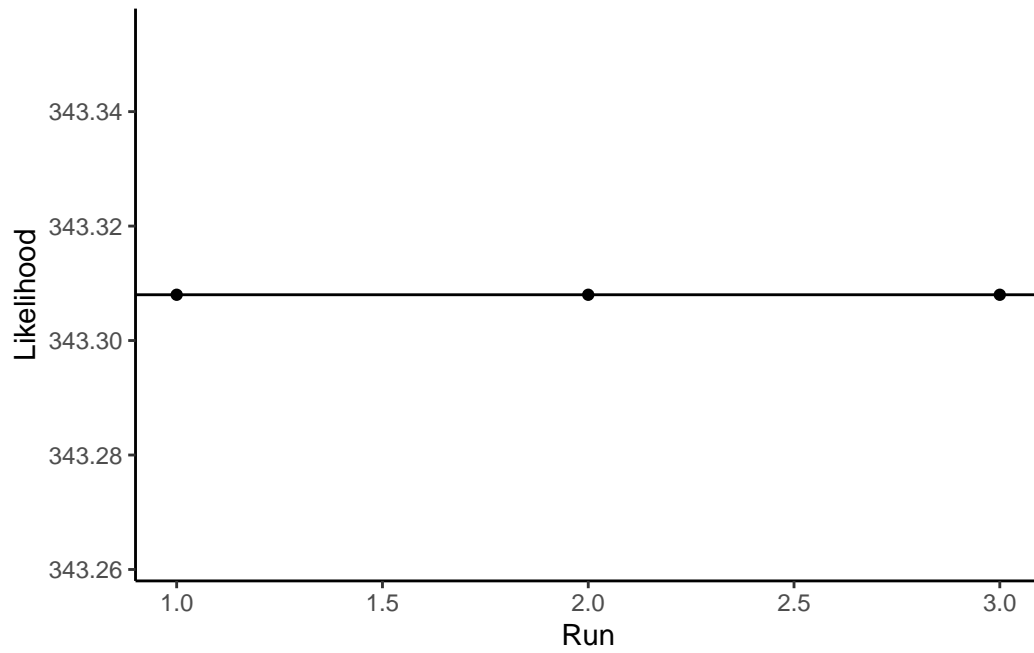


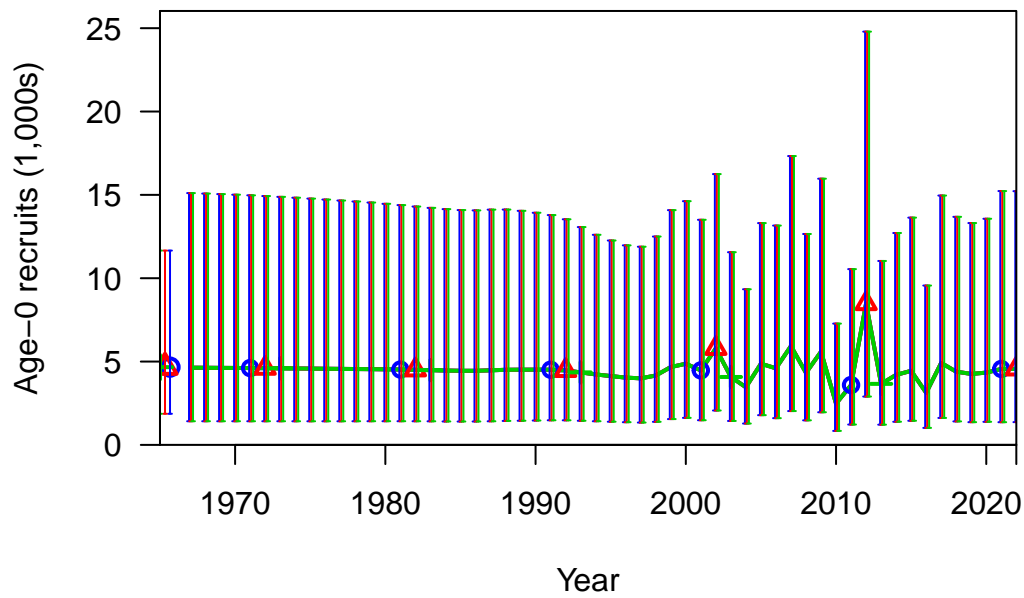
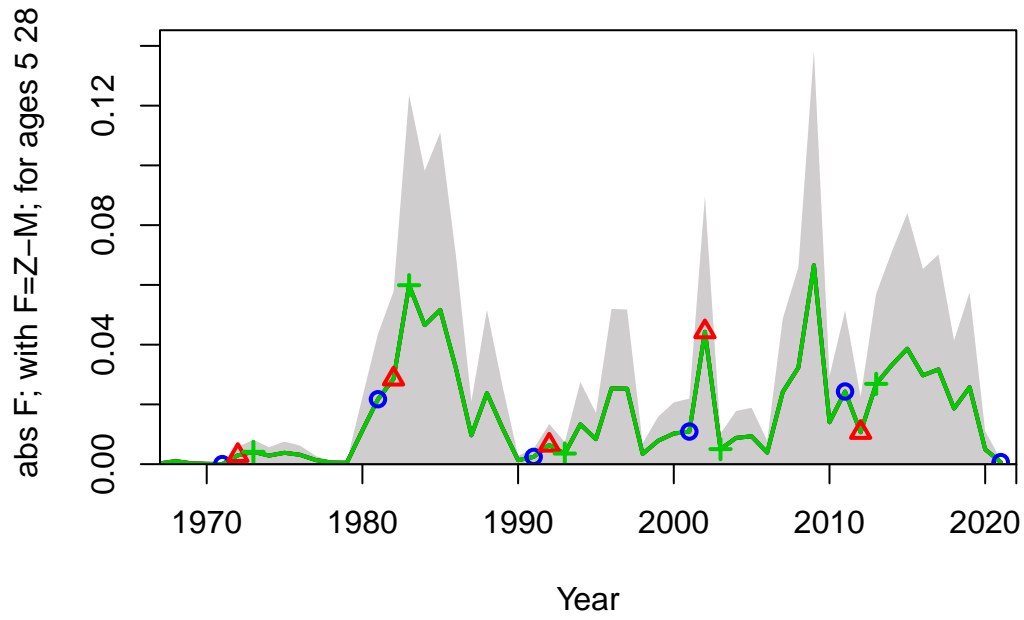




null device
1

Jitter





Selectivity and Maturity

