

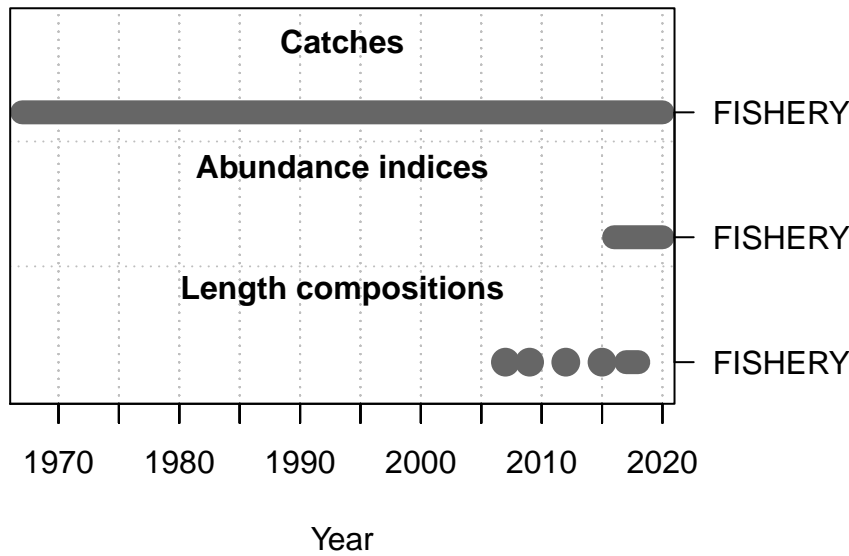
American Samoa Model Checks

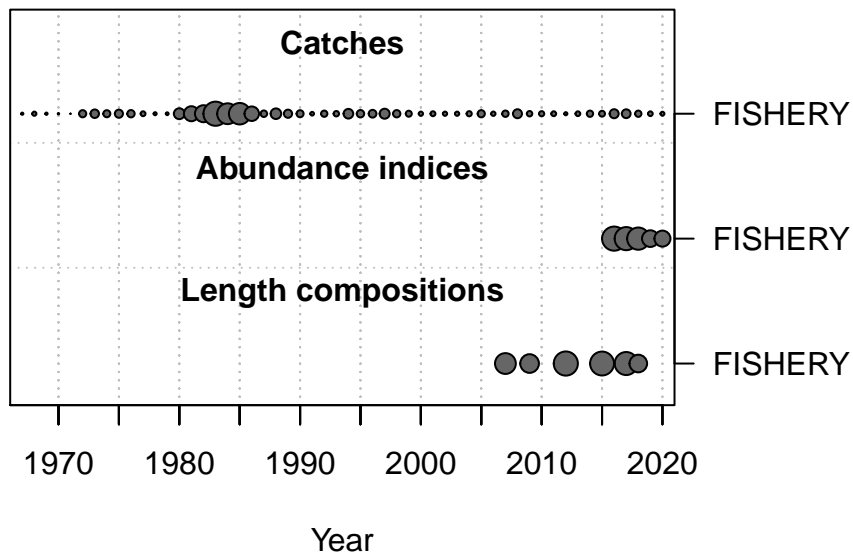
2022-09-02

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

Model Output

Input Data





Convergence Check

```

Converged      MaxGrad
1      TRUE 0.000204377

```

```

[1] "1 catch is 0.0 in endyr; this can cause problem in the benchmark and forecast calculation"
[2] "2 NOTE: Max data length bin: 40 < max pop len bins: 44; so will accumulate larger pop"
[3] "3 warning: poor convergence in Fmsy, final dy/dy2= -0.00139821"
[4] "4 Final gradient: 0.000204377 is larger than final_conv: 0.0001"
[5] "N warnings: 4"

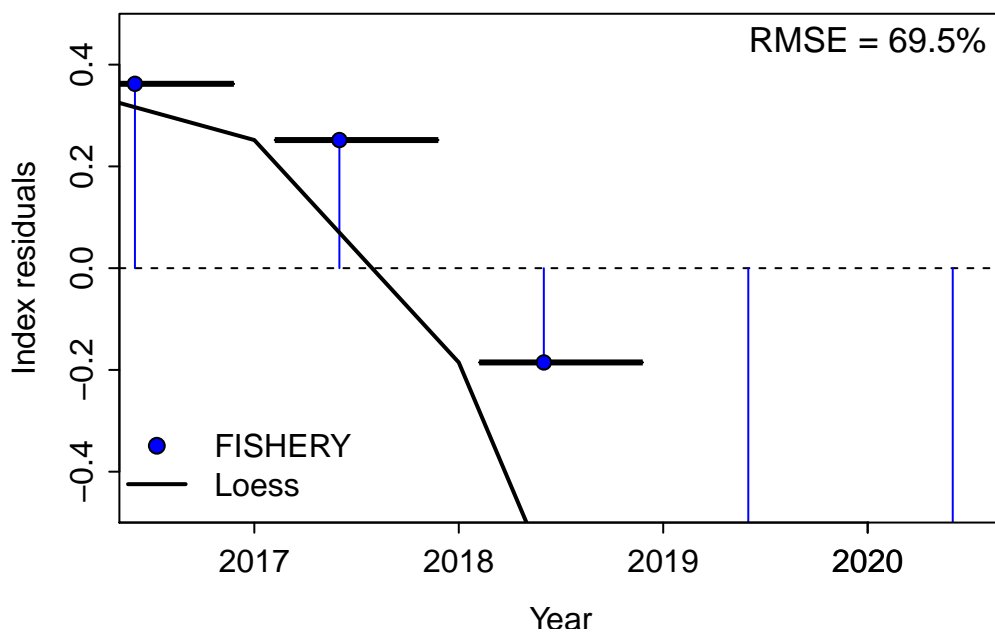
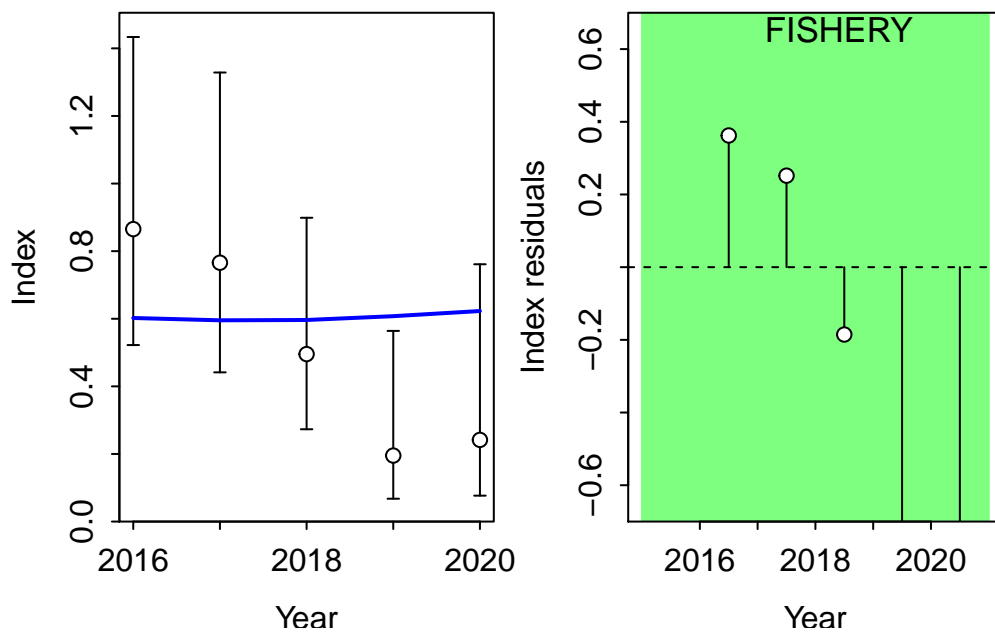
```

Fit to Model

CPUE

Residual Runs Test (/w plot) stats by Index:

RMSE stats by Index:



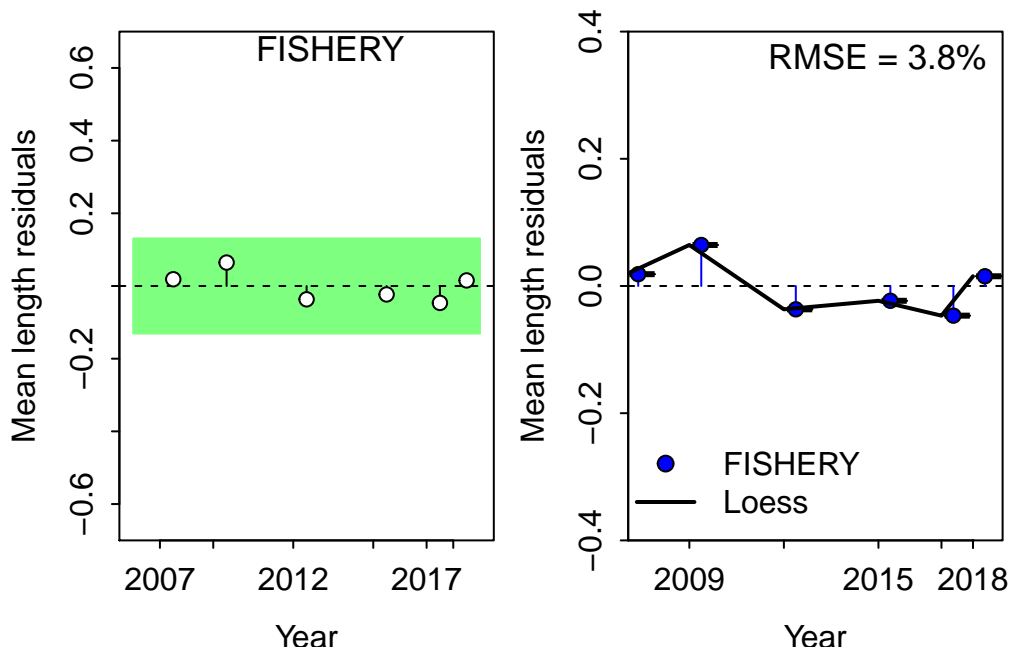
Length Comp

Residual Runs Test (/w plot) stats by Mean length:

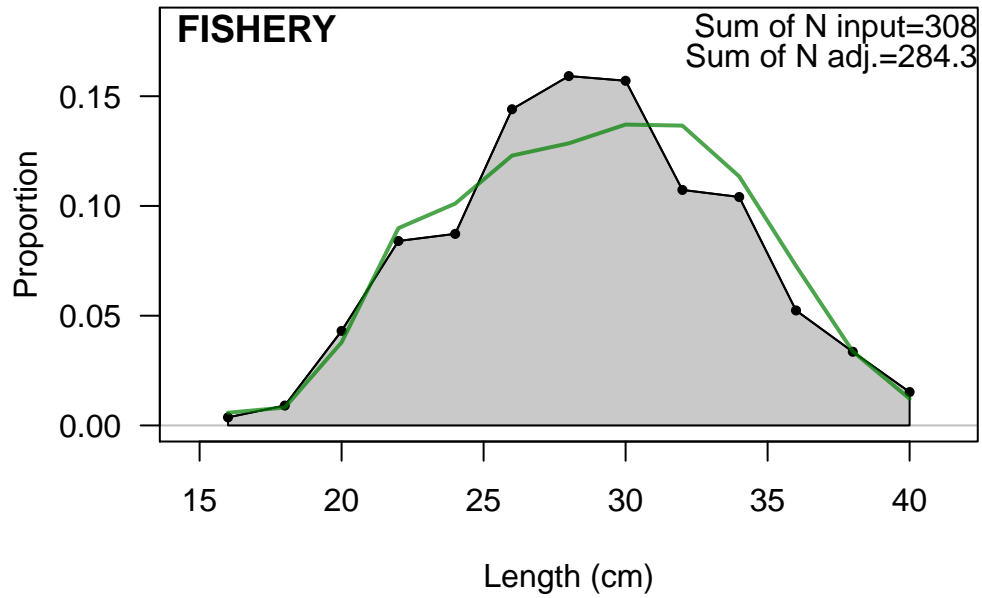
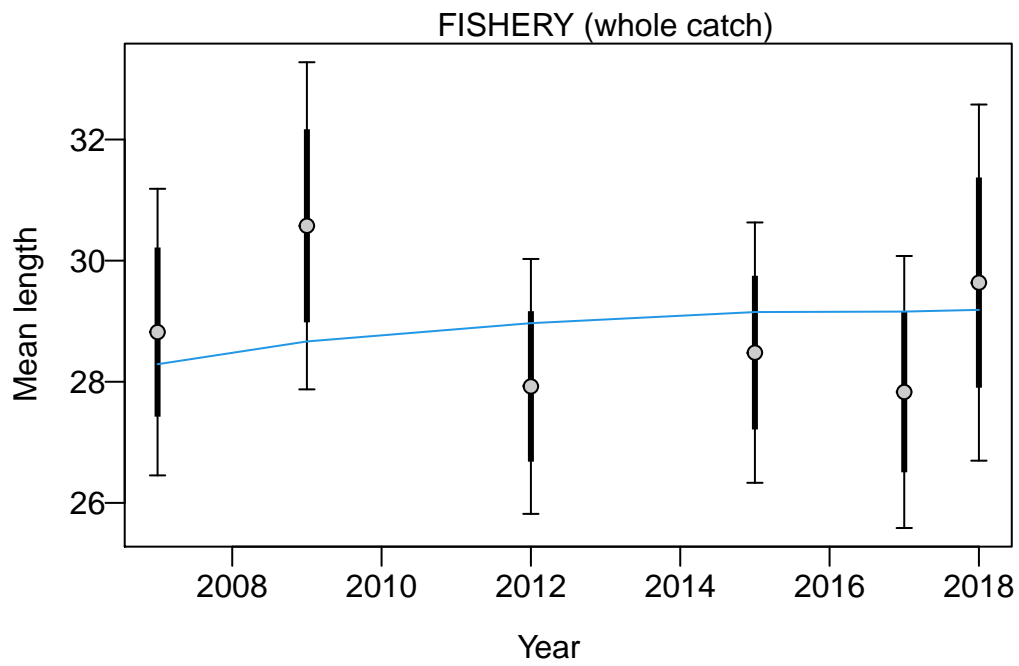
```
Index runs.p  test  sigma3.lo sigma3.hi type
1 FISHERY    0.181 Passed -0.1307709 0.1307709  len
```

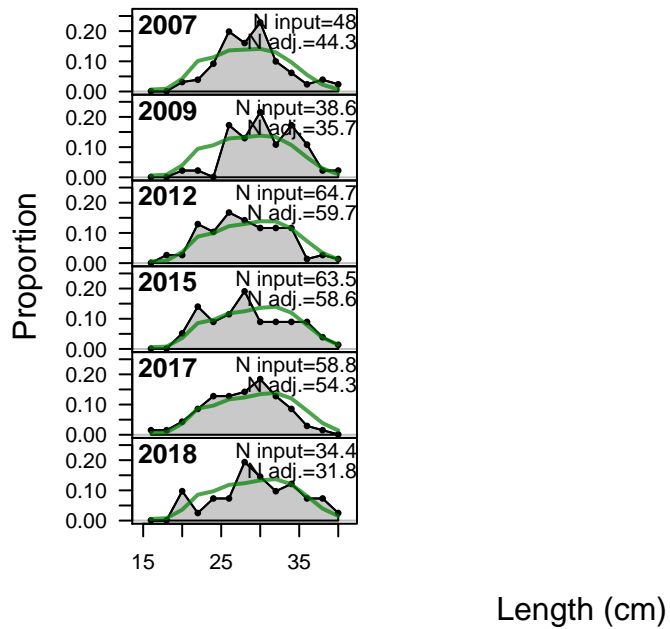
RMSE stats by Index:

```
# A tibble: 2 x 3
  Fleet    RMSE.perc  Nobs
  <chr>      <dbl> <int>
1 FISHERY      3.8     6
2 Combined      3.8     6
```



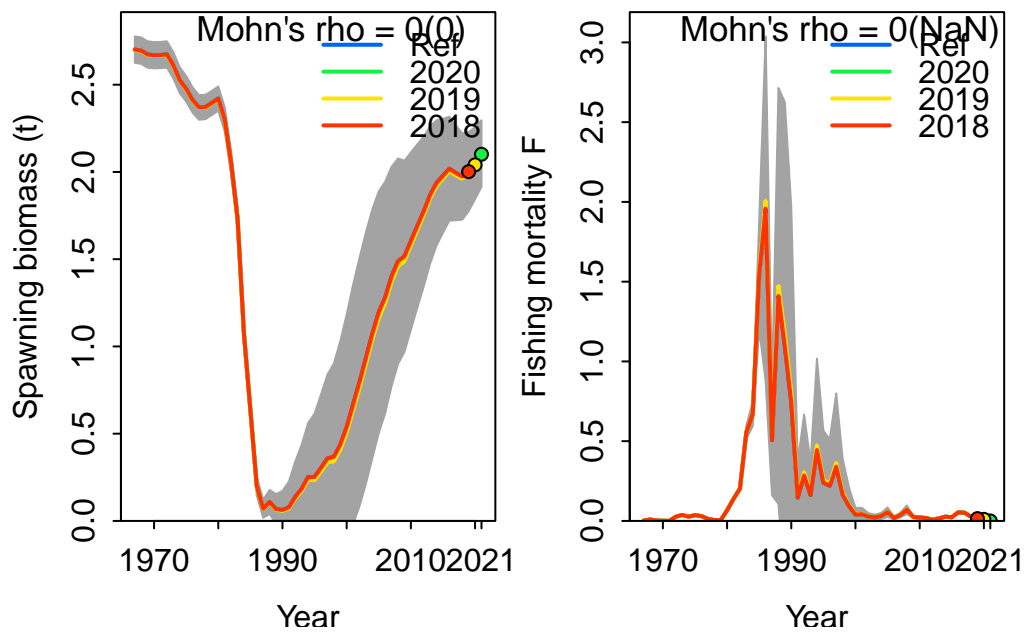
Retrospective and Hindcasting





Retrospective

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



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

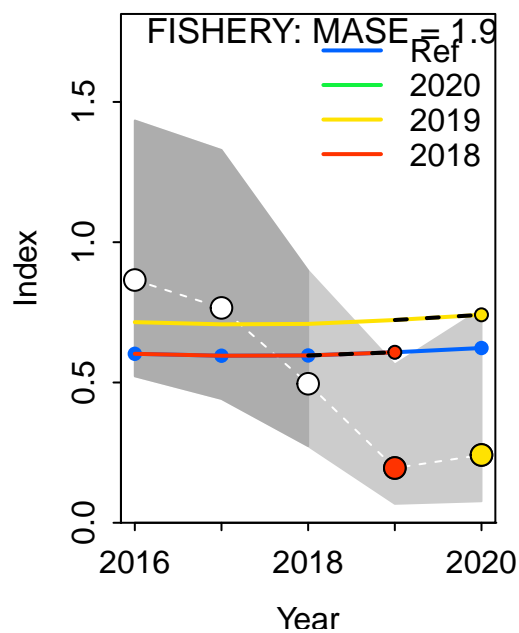
	type	peel	Rho	ForecastRho
1	F	2020	0.002496112	NaN
2	F	2019	0.005722820	0.005160613
3	F	2018	0.000000000	0.000000000
4	F Combined		0.002739644	NaN

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 of



MASE stats by Index:

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

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

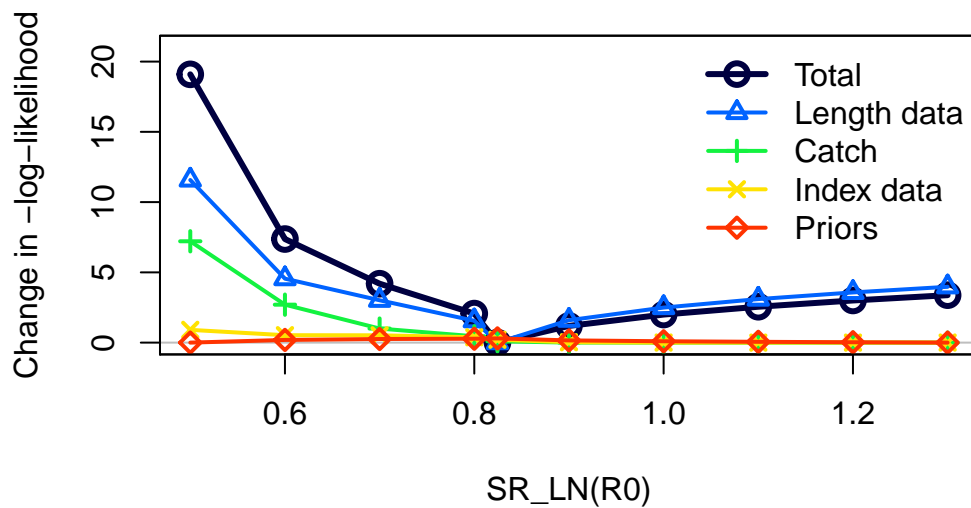
MASE stats by Index:

Recruitment Deviations

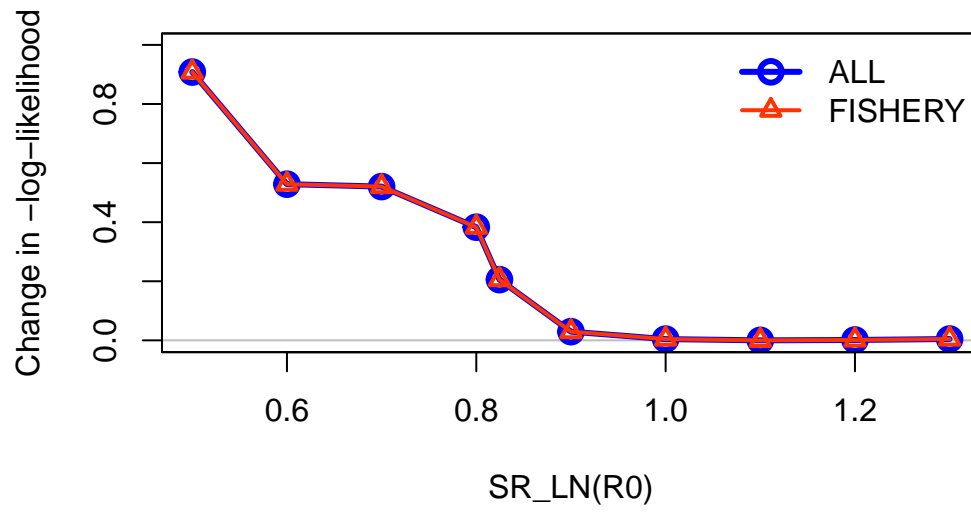
Likelihood Profile

[1] "SR_LN"

	frac_change	include	label
TOTAL	1.0000	TRUE	Total
Catch	0.3777	TRUE	Catch
Equil_catch	0.0000	FALSE	Equilibrium catch
Survey	0.0476	TRUE	Index data
Length_comp	0.6061	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	0.0158	TRUE	Priors
Parm_softbounds	0.0000	FALSE	Soft bounds
Parm_devs	0.0000	FALSE	Parameter deviations
Crash_Pen	0.0000	FALSE	Crash penalty

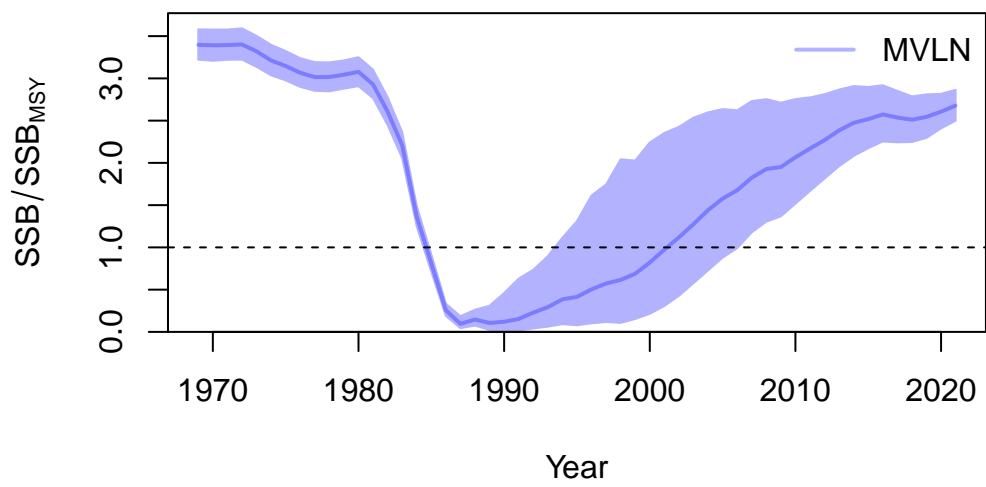
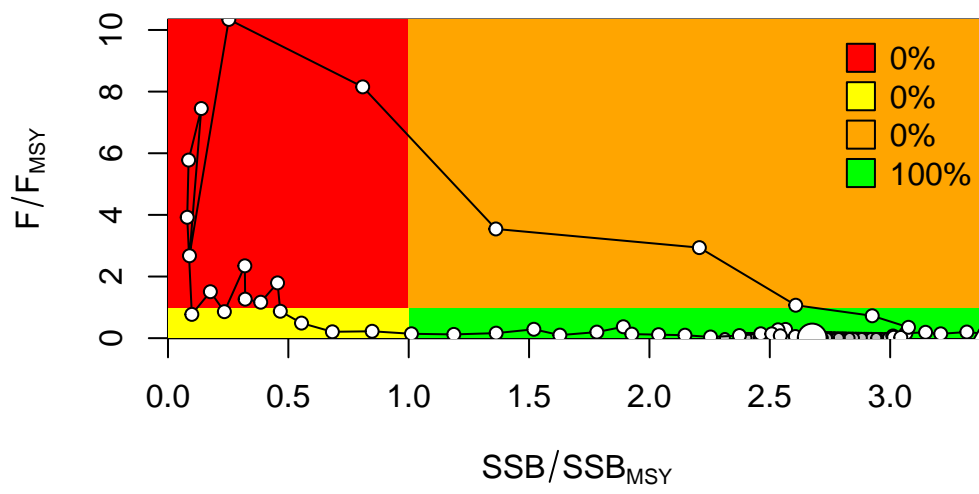


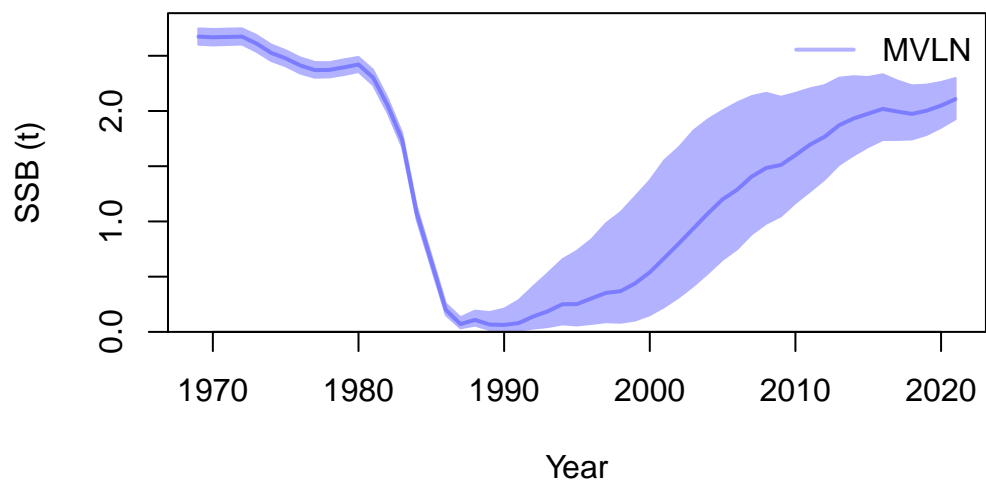
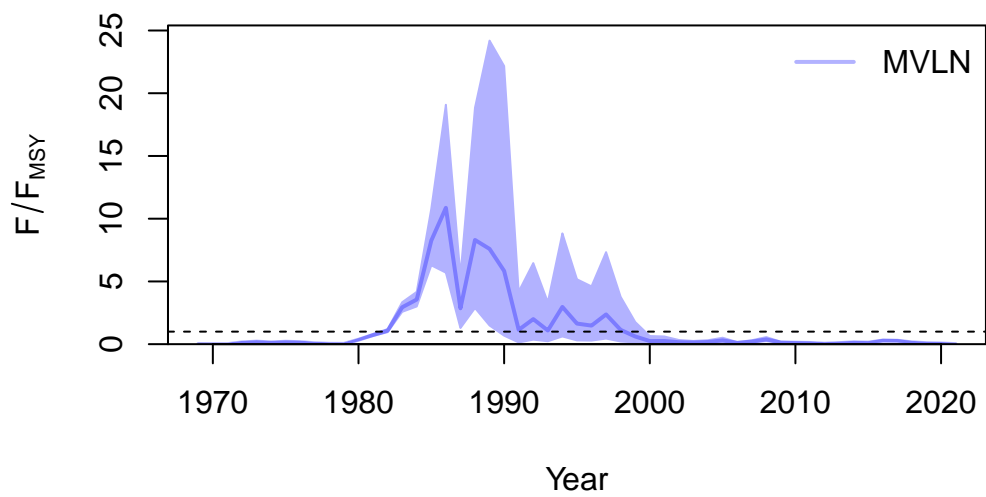
Changes in survey likelihood by fleet

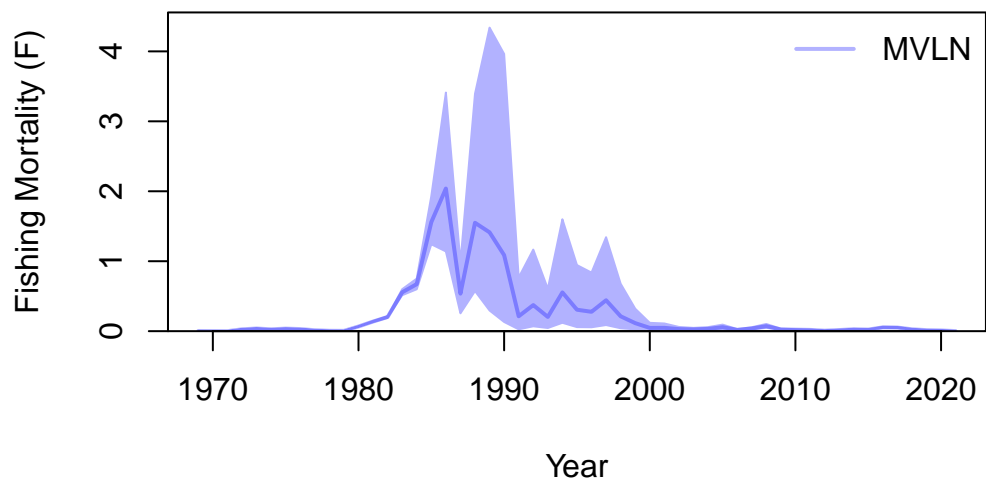


Management Quantities

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







null device
1

Jitter

