

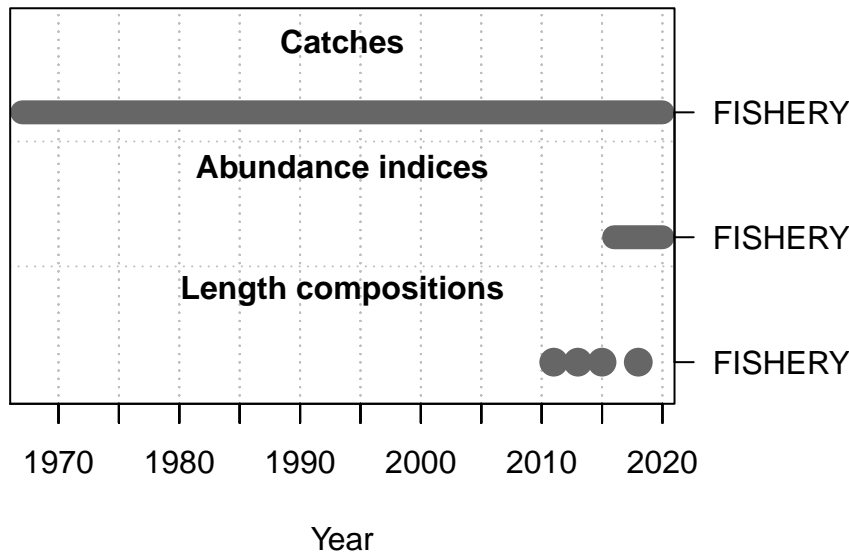
American Samoa Model Checks

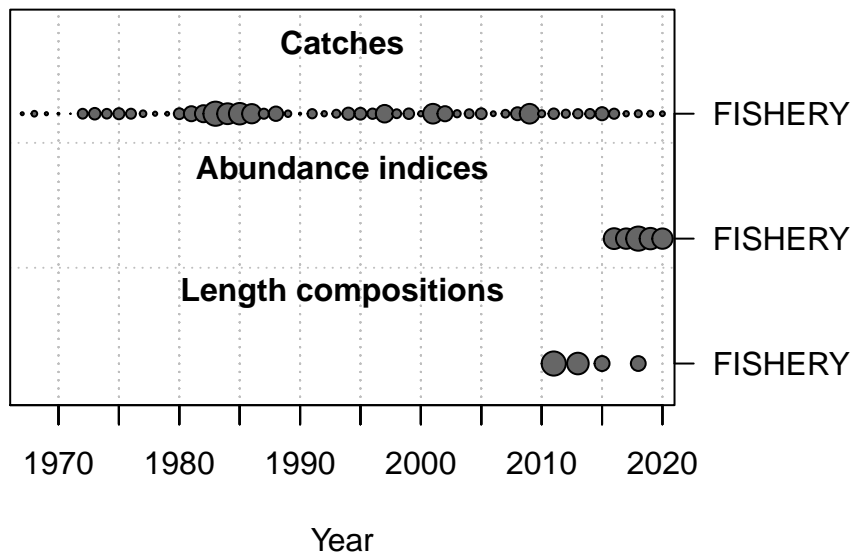
2022-08-24

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

Model Output

Input Data





Convergence Check

```

Converged      MaxGrad
1      TRUE 2.38053e-06

```

```

[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: 48 < max pop len bins: 53; so will accumulate larger pop"
[3] "3 warning: poor convergence in Fmsy, final dy/dy2= -0.00191804"
[4] "N warnings: 3"

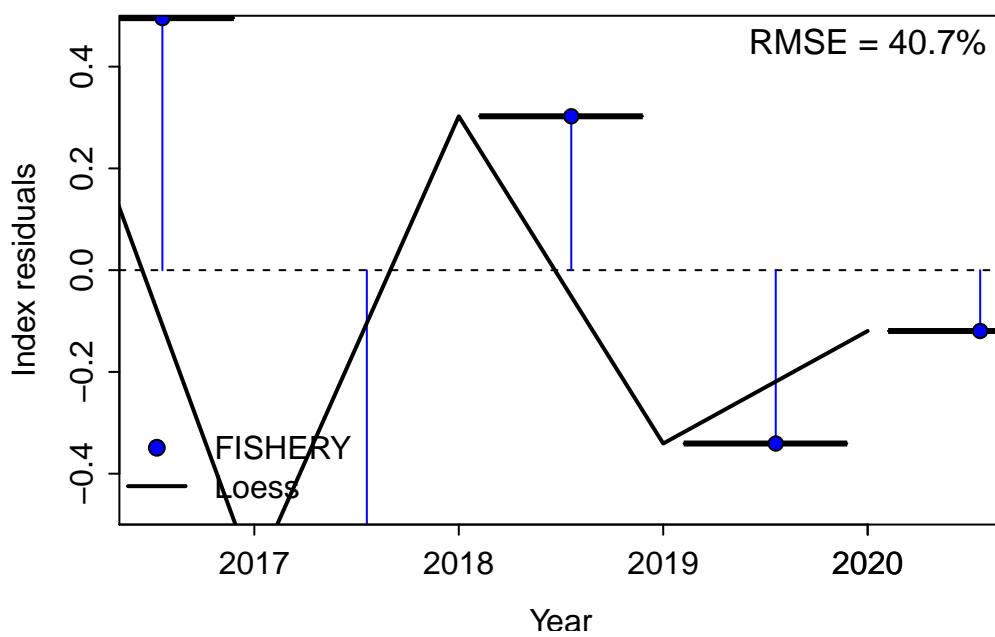
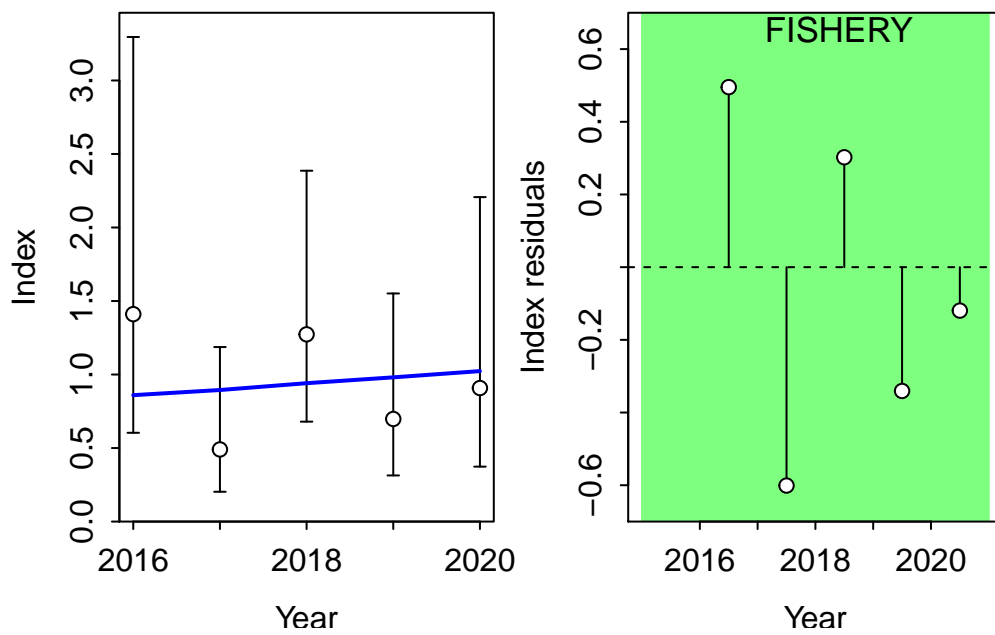
```

Fit to Model

CPUE

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

RMSE stats by Index:



Length Comp

| #Factor | Fleet | New_Var_adj | Type | Name |
|---------|-------|-------------|------|---------|
| 4 | 1 | 0.308639 | len | FISHERY |

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

```

Index runs.p  test  sigma3.lo  sigma3.hi  type
1 FISHERY    0.11 Passed -0.07735141 0.07735141  len

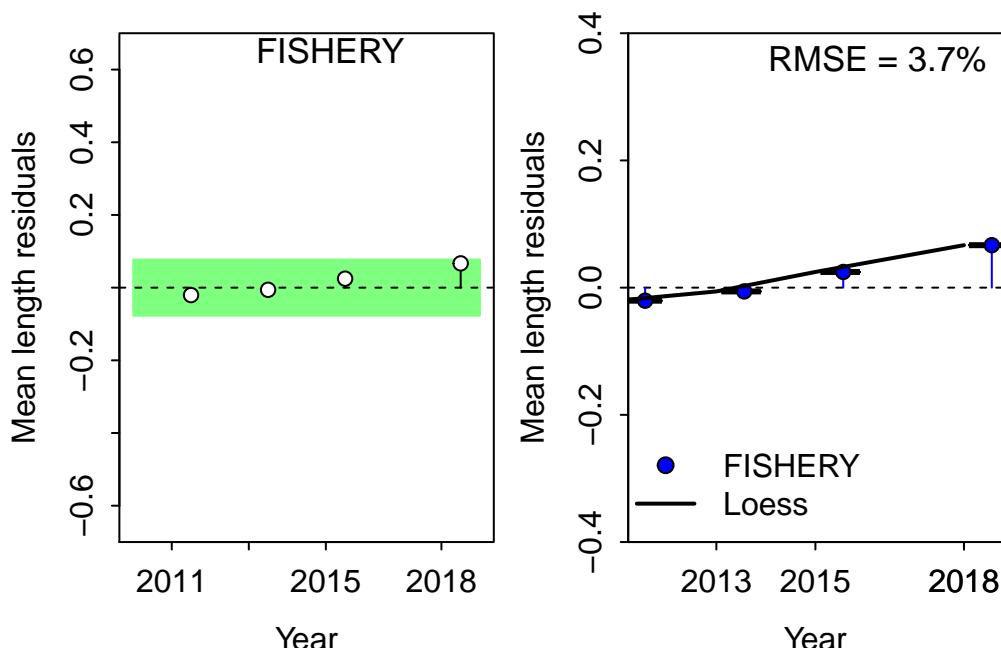
```

RMSE stats by Index:

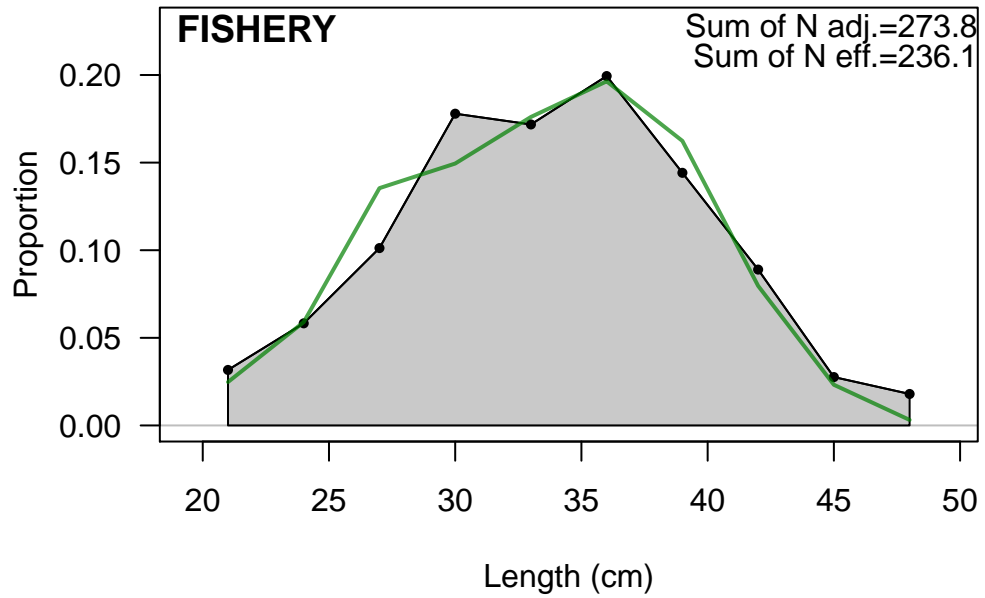
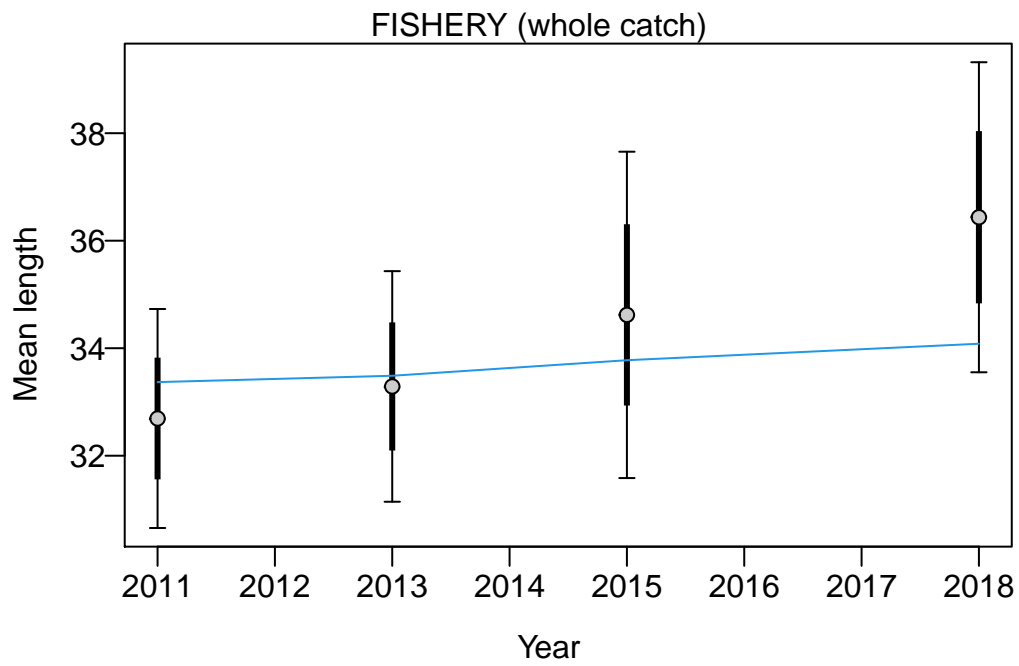
```

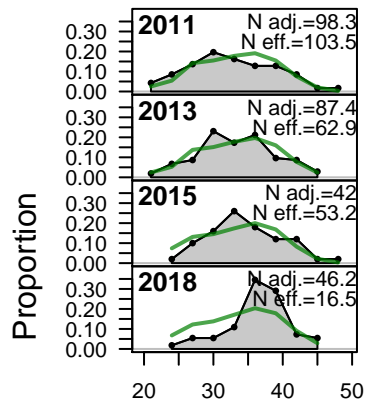
# A tibble: 2 x 3
  Fleet    RMSE.perc  Nobs
  <chr>      <dbl> <int>
1 FISHERY      3.7      4
2 Combined      3.7      4

```



Retrospective and Hindcasting

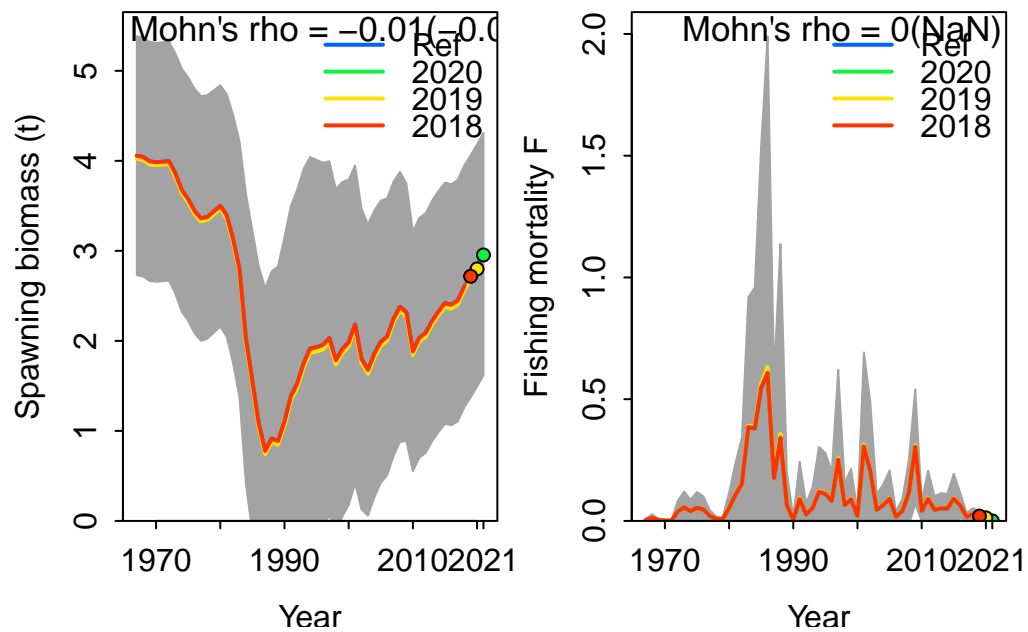




Length (cm)

Retrospective

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



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

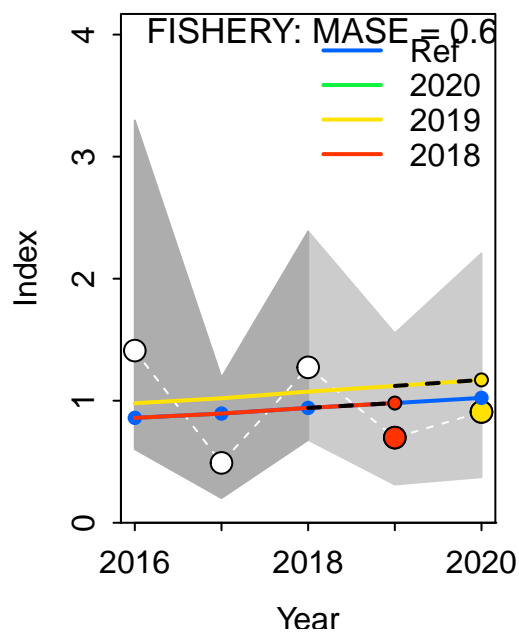
| | type | peel | Rho | ForecastRho |
|---|------------|------|-------------|-------------|
| 1 | F | 2020 | 0.002749924 | NaN |
| 2 | F | 2019 | 0.009091459 | 0.01286486 |
| 3 | F | 2018 | 0.000000000 | 0.000000000 |
| 4 | F Combined | | 0.003947128 | NaN |

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

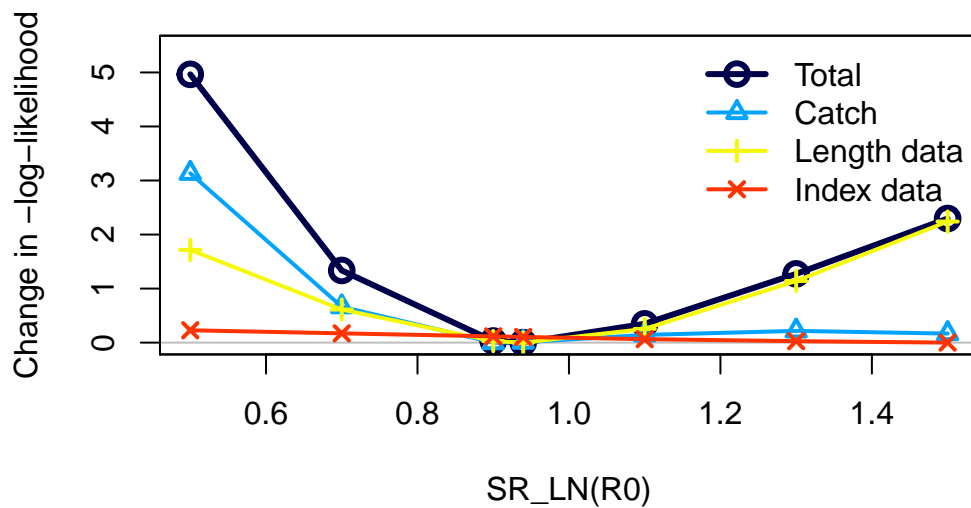
MASE stats by Index:

Recruitment Deviations

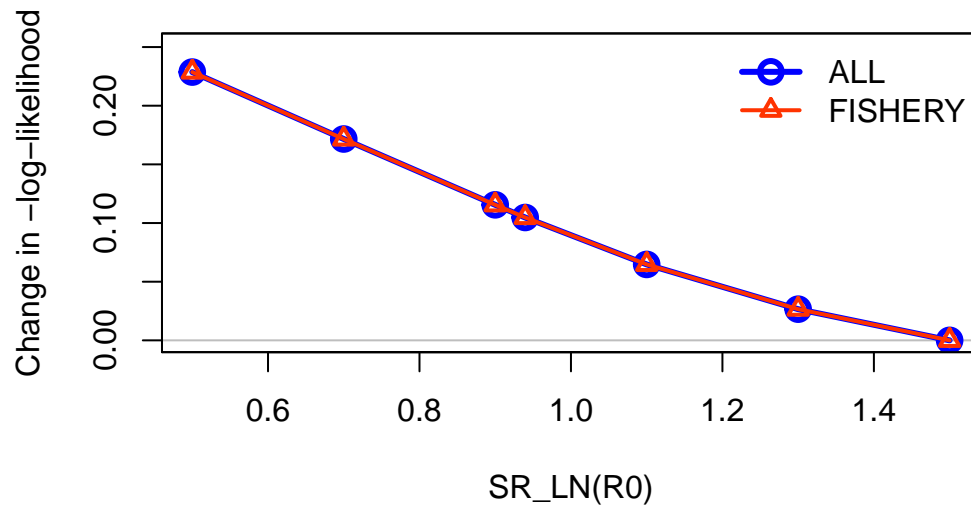
Likelihood Profile

[1] "SR_LN"

| | frac_change | include | label |
|----------------------|-------------|---------|----------------------------------|
| TOTAL | 1.0000 | TRUE | Total |
| Catch | 0.6311 | TRUE | Catch |
| Equil_catch | 0.0000 | FALSE | Equilibrium catch |
| Survey | 0.0461 | TRUE | Index data |
| Length_comp | 0.4513 | 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 | 0.0000 | FALSE | Priors |
| Parm_softbounds | 0.0004 | FALSE | Soft bounds |
| Parm_devs | 0.0000 | FALSE | Parameter deviations |
| Crash_Pen | 0.0000 | FALSE | Crash penalty |

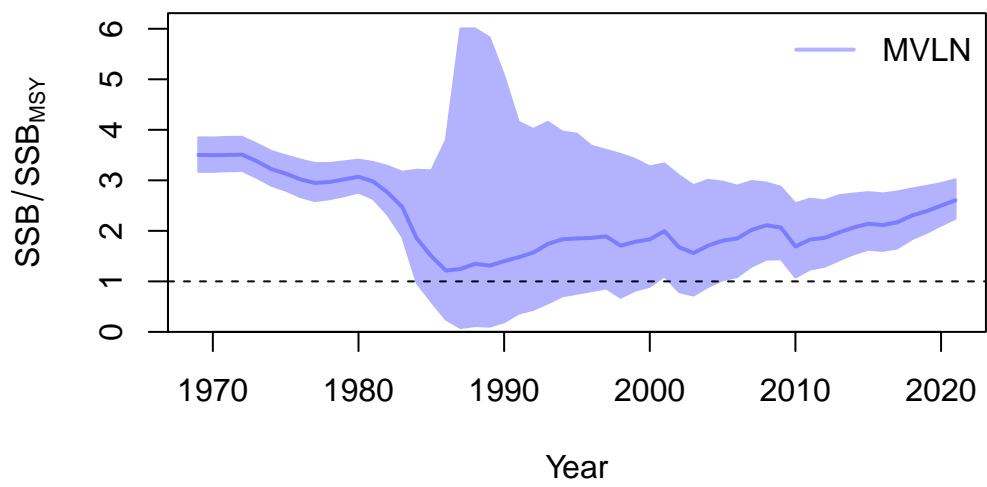
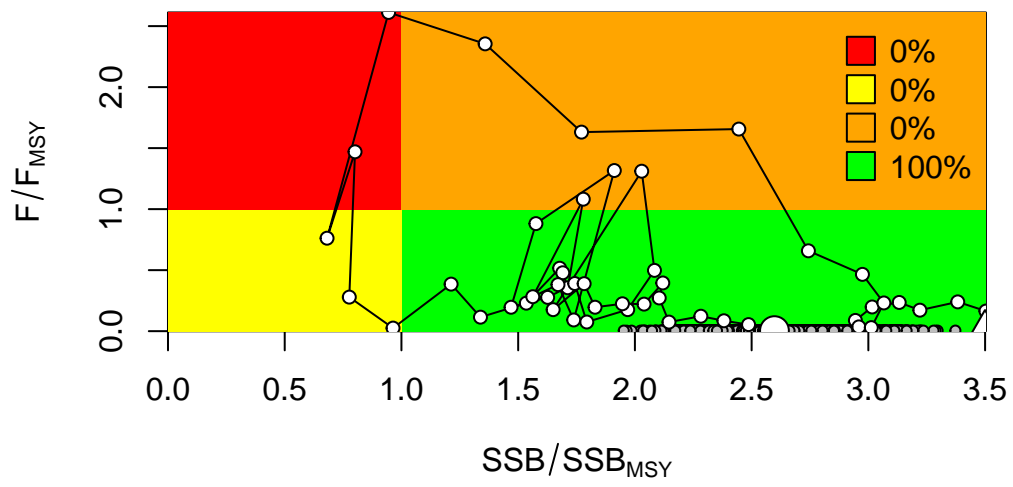


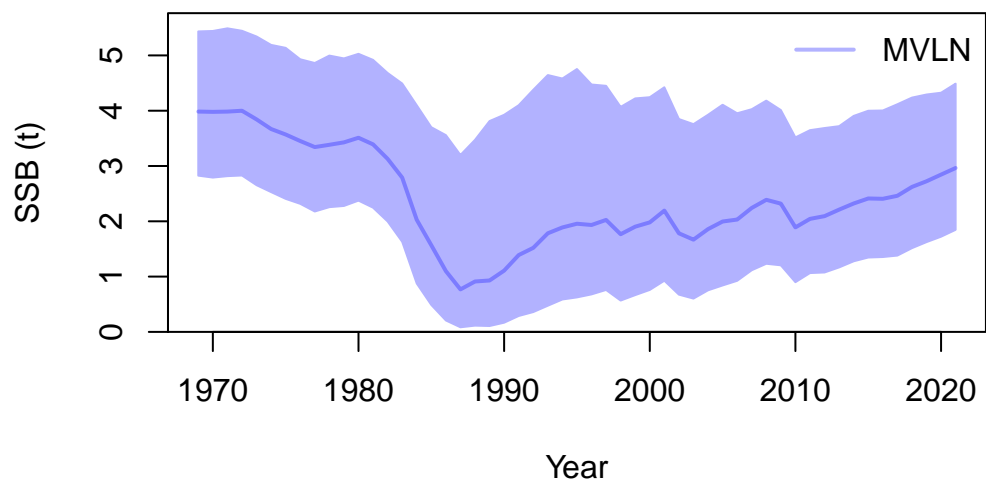
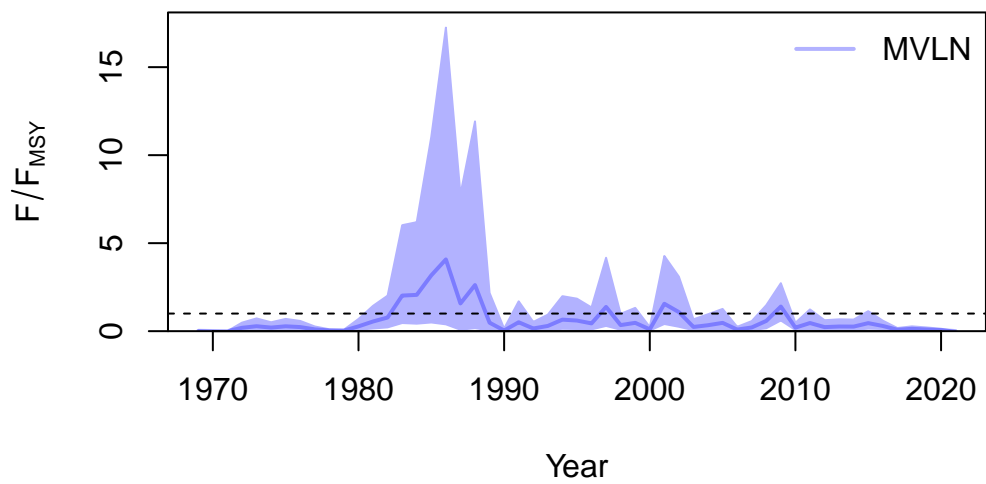
Changes in survey likelihood by fleet

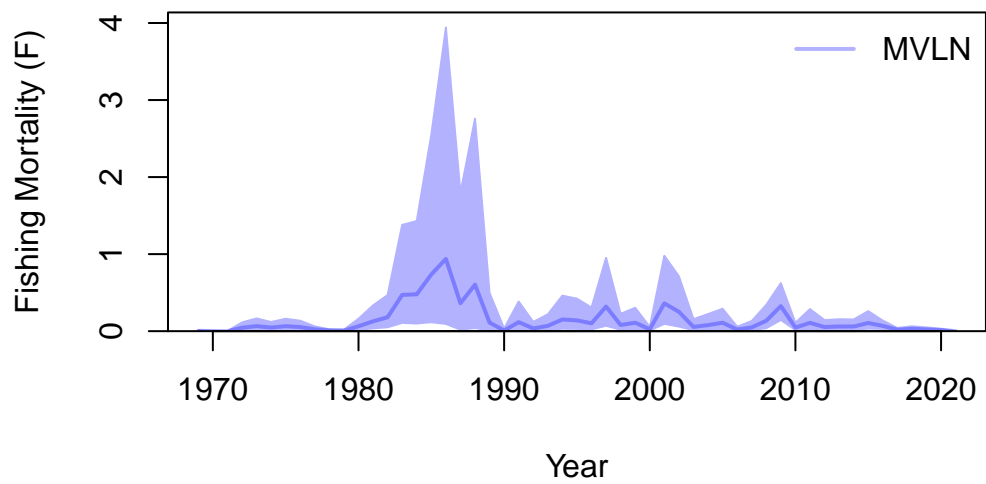


Management Quantities

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







null device
1

Jitter

