

American Samoa Model Checks

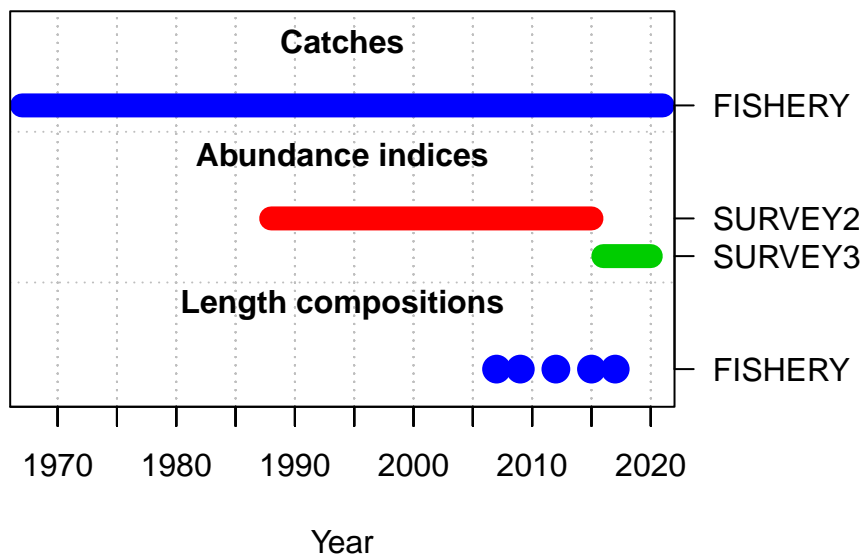
Marc Nadon and Meg Oshima

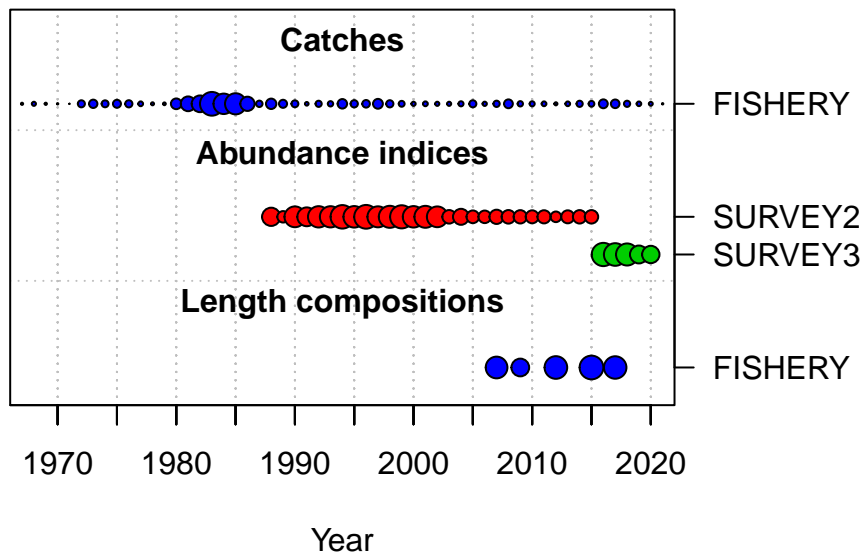
2023-02-14

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

Model Output

Input Data





Convergence Check

```

Converged      MaxGrad
1      TRUE 4.90867e-05

```

```

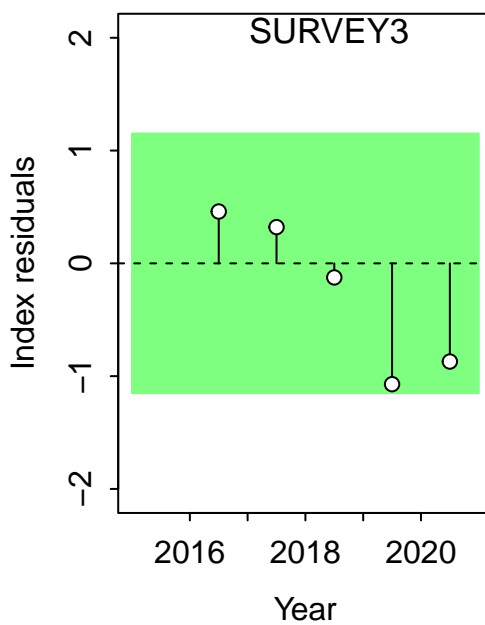
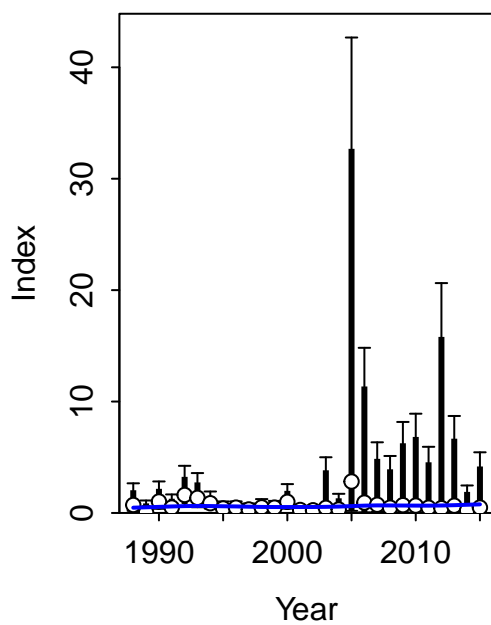
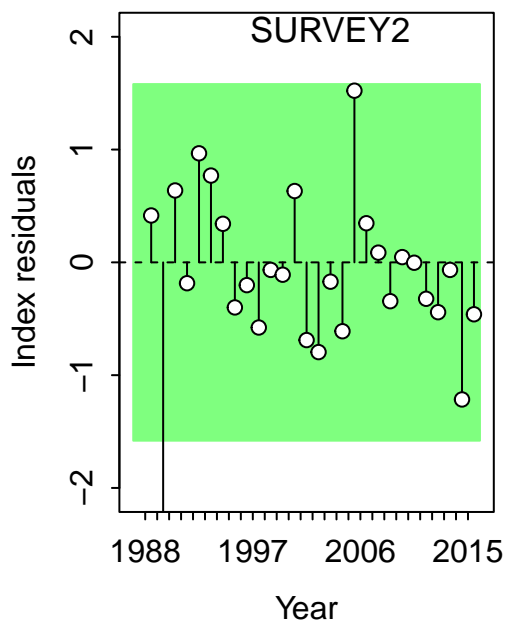
[1] "1 NOTE: Max data length bin: 40 < max pop len bins: 44; so will accumulate larger pop
[2] " N parameters are on or within 1% of min-max bound: 1; check results, variance may be s
[3] "N warnings: 1"

```

Fit to Model

CPUE

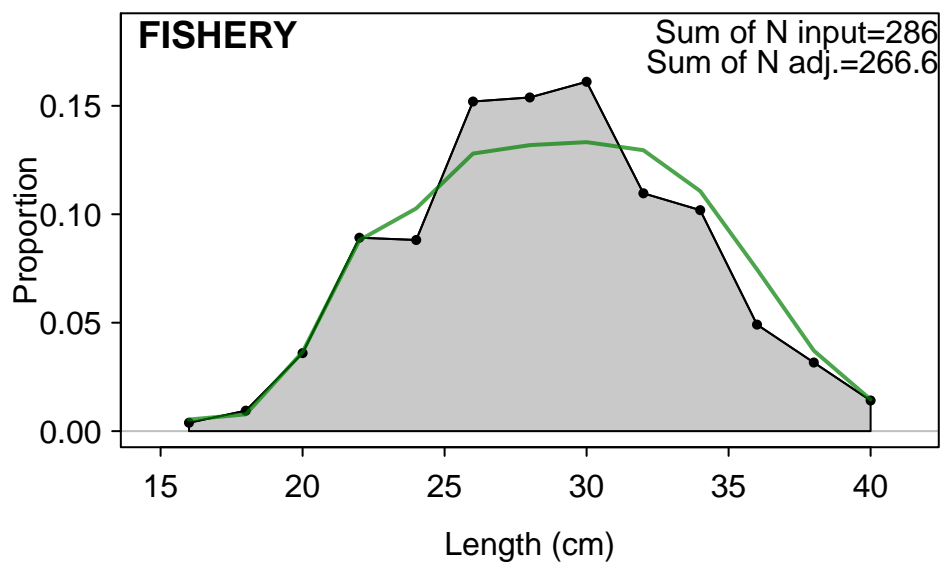
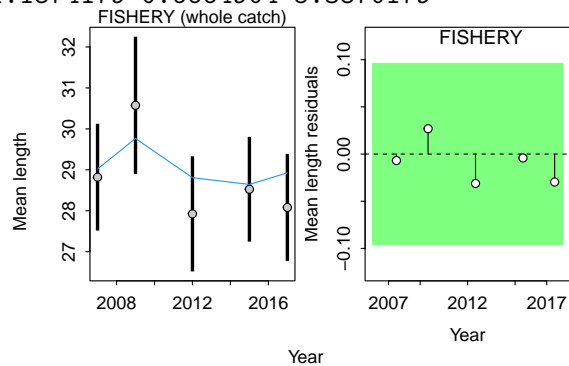
| Fleet | RMSE.perc | Nobs |
|----------|-----------|------|
| SURVEY2 | 74.8 | 28 |
| SURVEY3 | 66.9 | 5 |
| Combined | 73.6 | 33 |



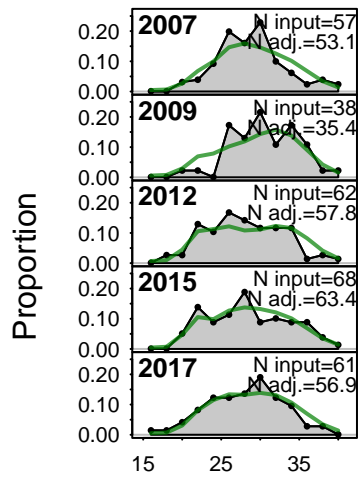
Length Comp

| Fleet | RMSE.perc | Nobs |
|----------|-----------|------|
| FISHERY | 2.3 | 5 |
| Combined | 2.3 | 5 |

w lo hi Index runs.p test sigma3.lo sigma3.hi type
 1.1574179 0.6664904 5.3870179 1 FISHERY 0.793 Passed -0.09595952 0.09595952 len



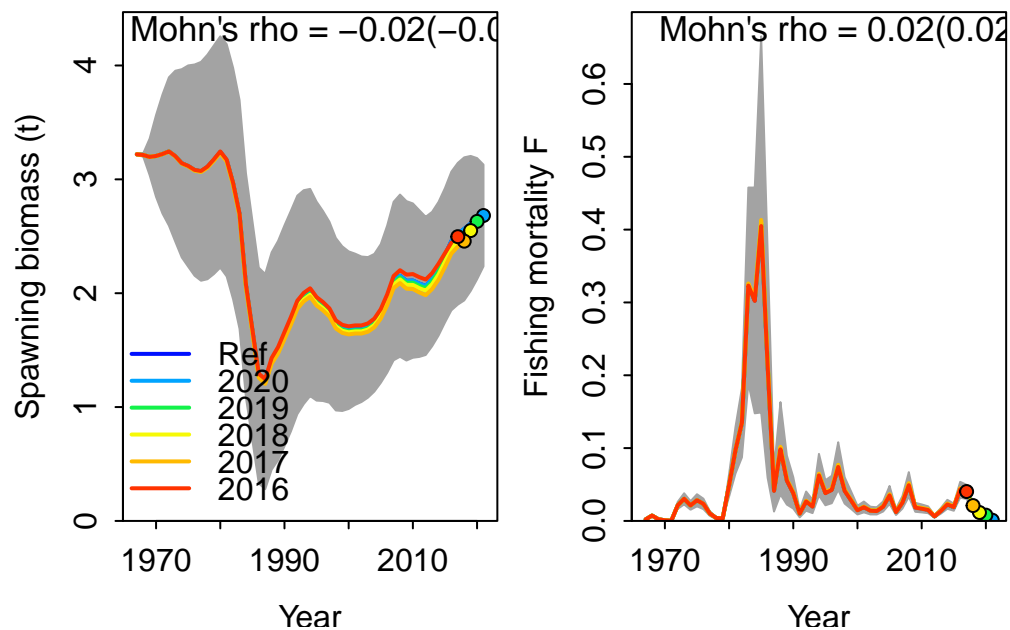
Retrospective and Hindcasting



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 | 0.000000000 | 0.000000000 |
| 2 | F | 2019 | 0.009408306 | 0.006543896 |
| 3 | F | 2018 | 0.024906974 | 0.018675796 |
| 4 | F | 2017 | 0.045390937 | 0.037338341 |
| 5 | F | 2016 | 0.011374558 | 0.013845655 |
| 6 | F Combined | | 0.018216155 | 0.015280738 |

Hindcasting

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

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

MASE stats by Index:

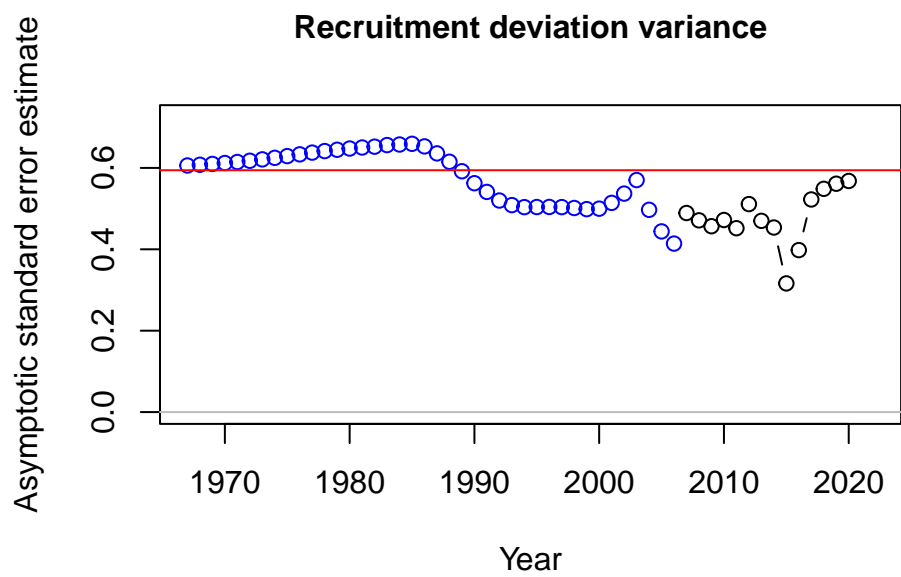
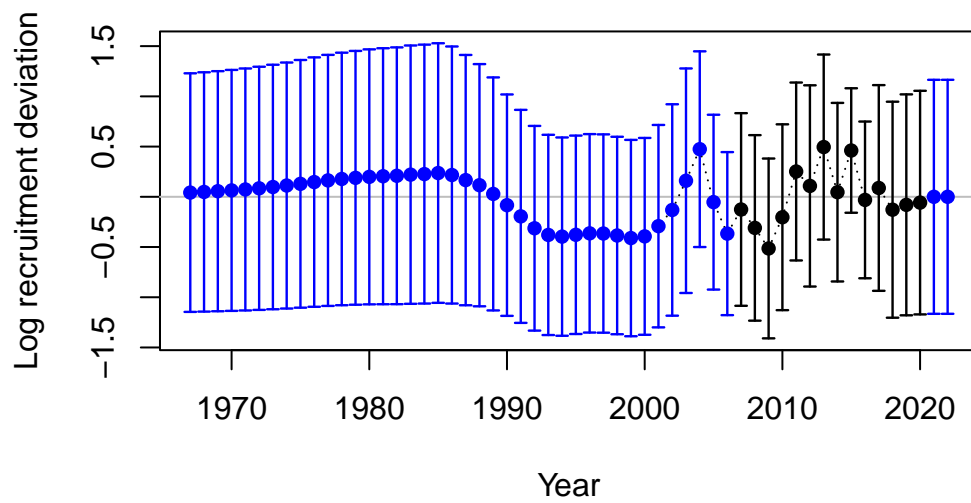
Plotting Hindcast Cross-Validation (one-step-ahead)

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

MASE stats by Index:

| | Index | Season | MASE | MAE.PR | MAE.base | MASE.adj | n.eval |
|---|---------|--------|------|--------|----------|----------|--------|
| 1 | FISHERY | 1 | NA | NA | NA | NA | 0 |

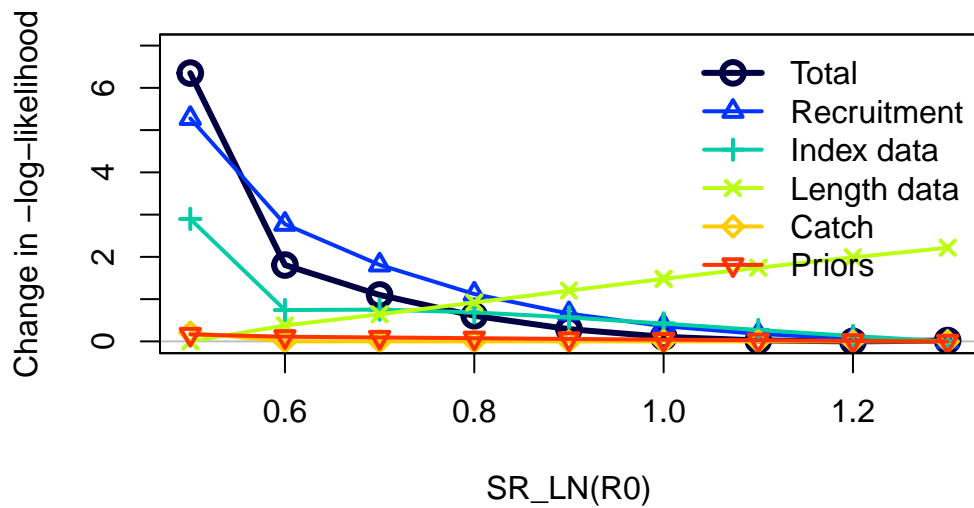
Recruitment Deviations



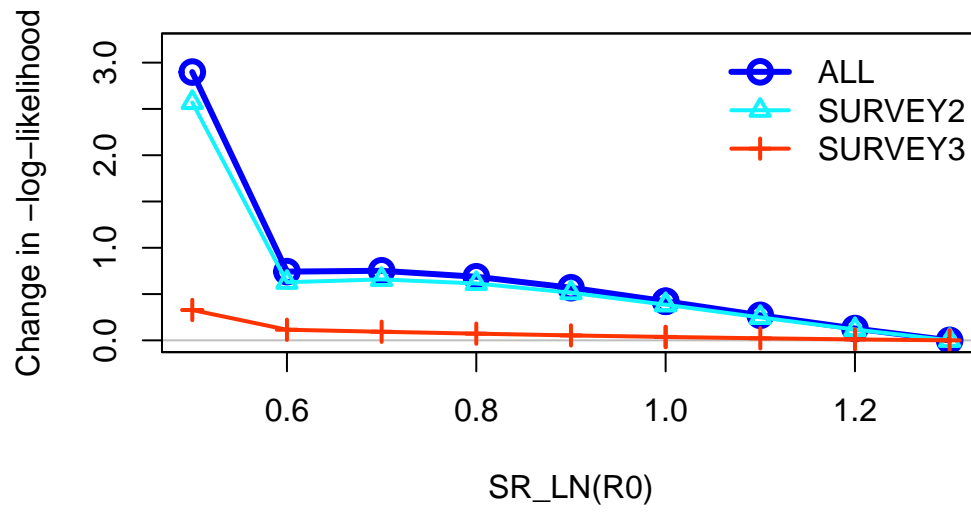
Likelihood Profile

[1] "SR_LN"

| | frac_change | include | label |
|----------------------|-------------|---------|----------------------------------|
| TOTAL | 1.0000 | TRUE | Total |
| Catch | 0.0325 | TRUE | Catch |
| Equil_catch | 0.0000 | FALSE | Equilibrium catch |
| Survey | 0.4565 | TRUE | Index data |
| Length_comp | 0.3491 | TRUE | Length data |
| Recruitment | 0.8312 | TRUE | Recruitment |
| InitEQ_Regime | 0.0000 | FALSE | Initital equilibrium recruitment |
| Forecast_Recruitment | 0.0000 | FALSE | Forecast recruitment |
| Parm_priors | 0.0258 | TRUE | Priors |
| Parm_softbounds | 0.0000 | FALSE | Soft bounds |
| Parm_devs | 0.0000 | FALSE | Parameter deviations |
| Crash_Pen | 0.0000 | FALSE | Crash penalty |

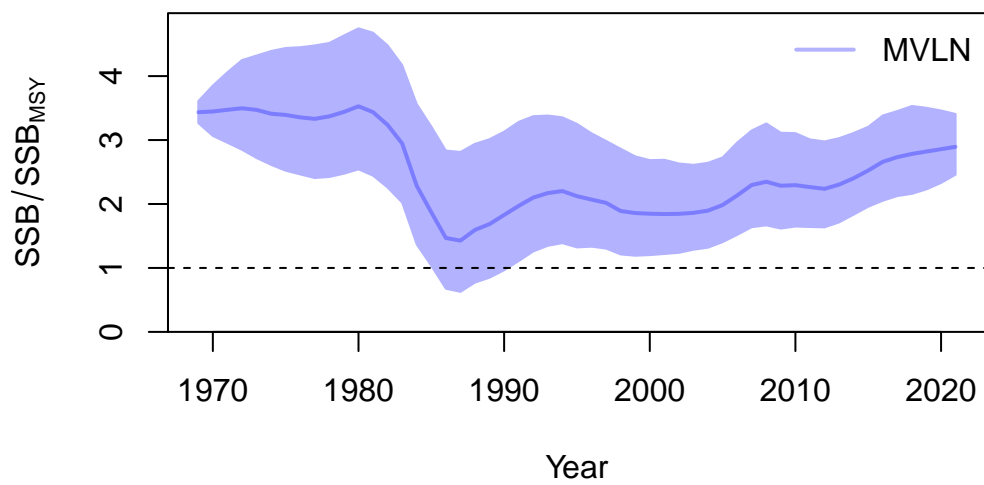
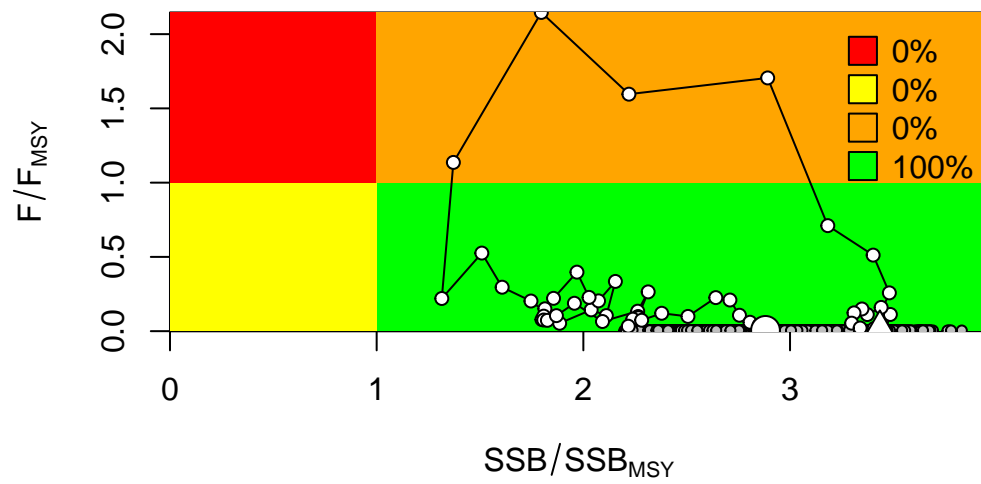


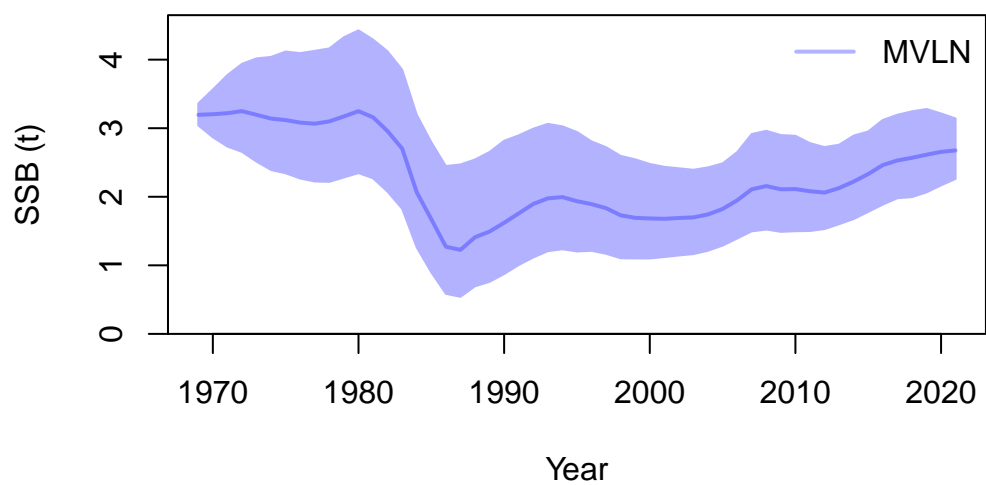
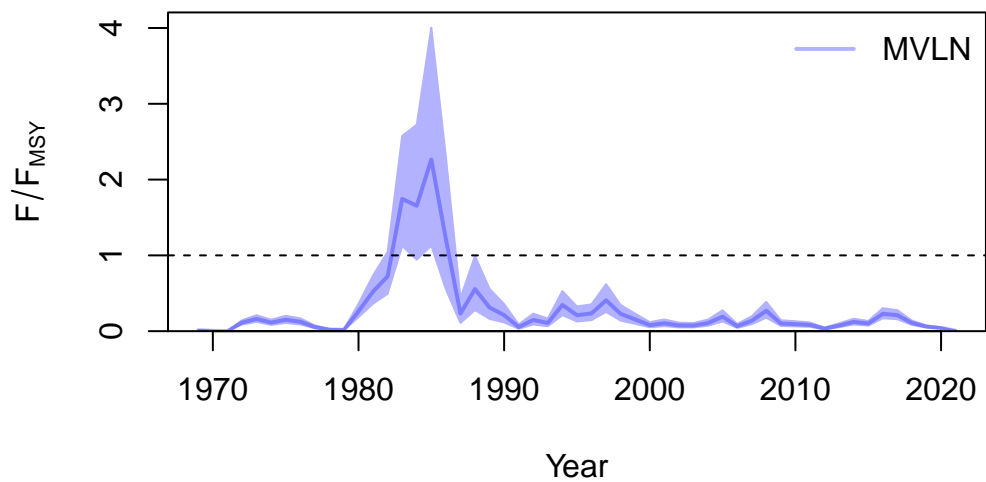
Changes in survey likelihood by fleet

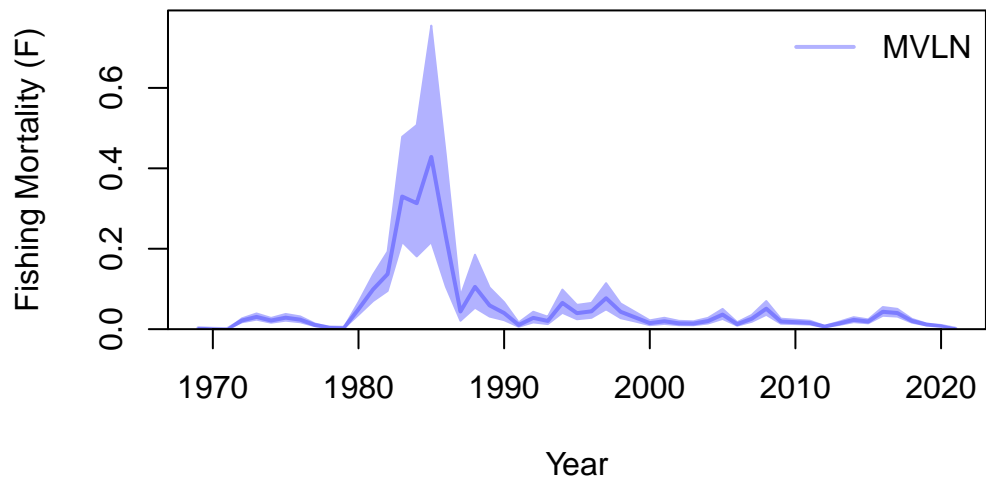


Management Quantities

starter.sso with Bratio: SSB/SSBMSY and F: _abs_F







```
null device
1
```

Jitter

```
[1] "No jitter runs were found."
```

Selectivity and Maturity

