

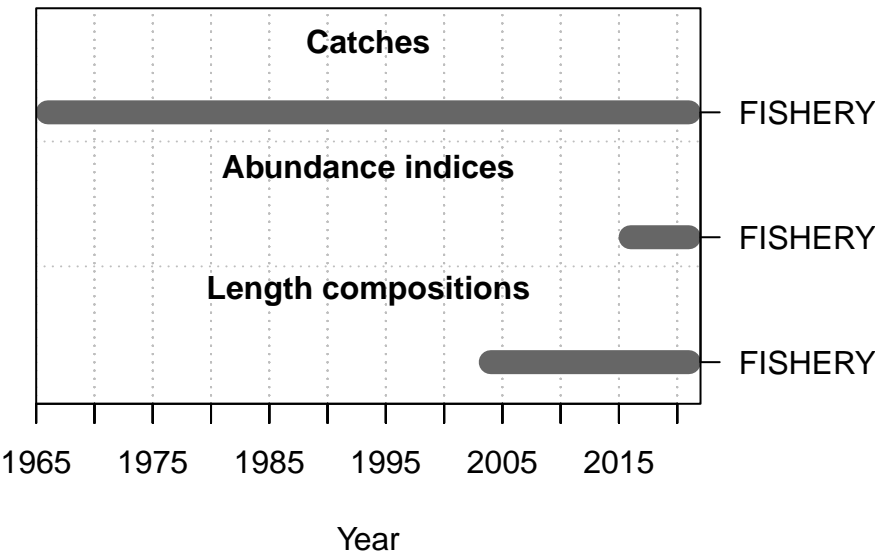
American Samoa Model Checks

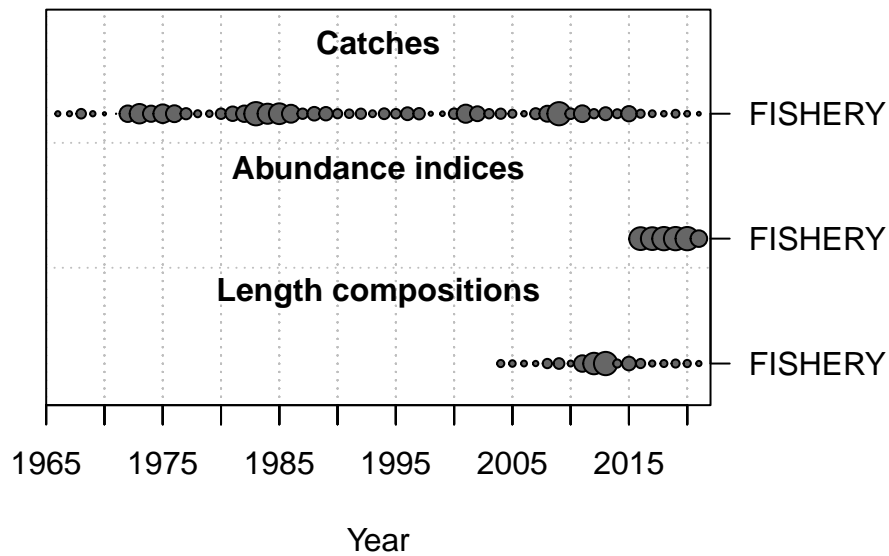
2022-08-30

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

Model Output

Input Data





Convergence Check

```

Converged      MaxGrad
1      TRUE 1.80646e-05

```

```

[1] "1 NOTE:  Max data length bin: 38.5  < max pop len bins: 43; so will accumulate larger p
[2] "N warnings: 1"

```

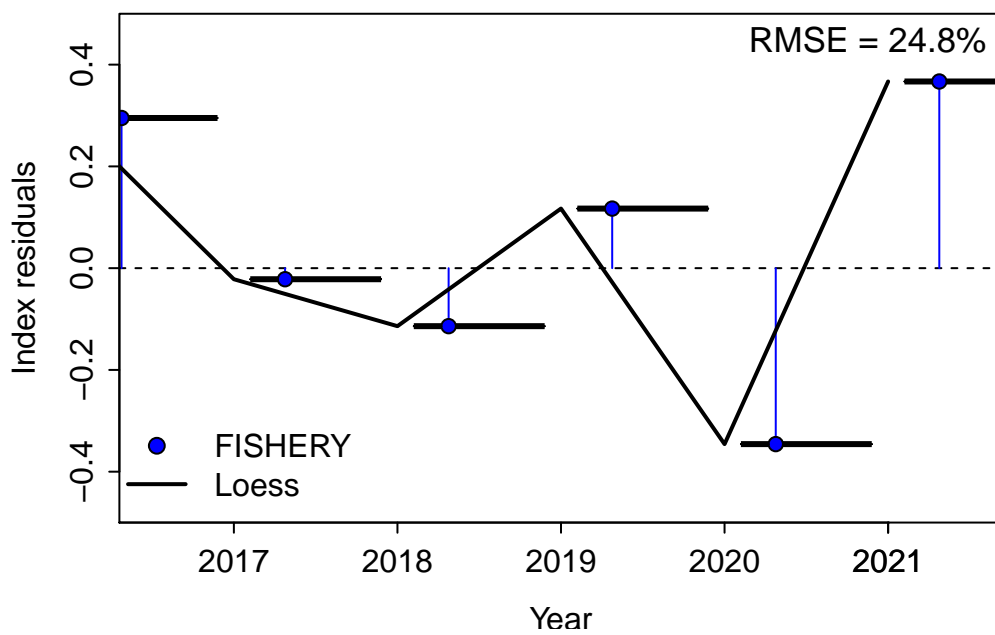
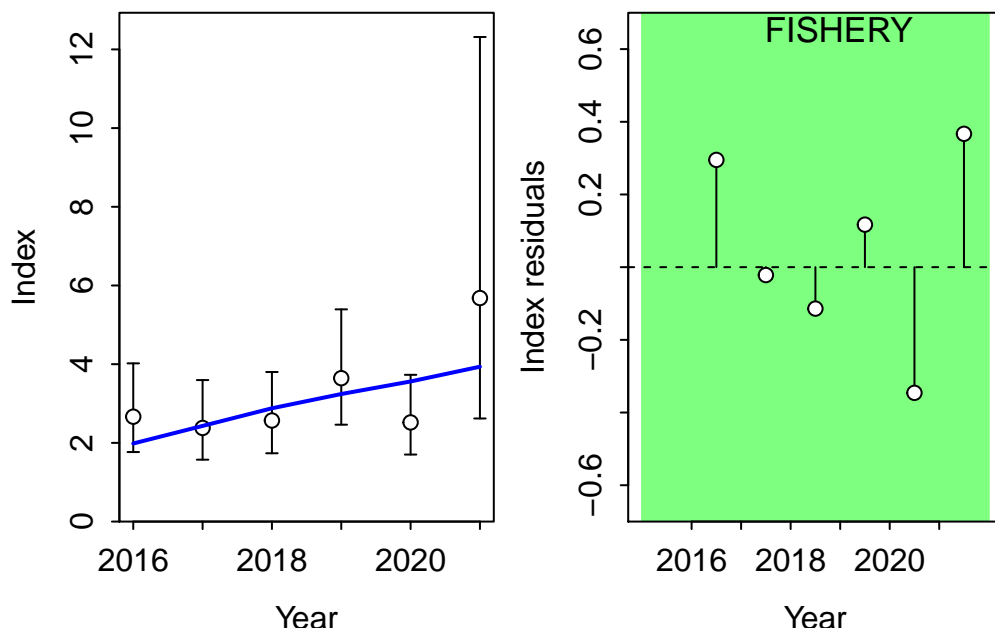
Fit to Model

CPUE

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

RMSE stats by Index:

Length Comp



| #Factor | Fleet | New_Var_adj | Type | Name |
|---------|-------|-------------|------|---------|
| 4 | 1 | 0.088892 | len | FISHERY |

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

```

      Index runs.p  test  sigma3.lo  sigma3.hi type
1 FISHERY  0.003 Failed -0.02189642 0.02189642  len

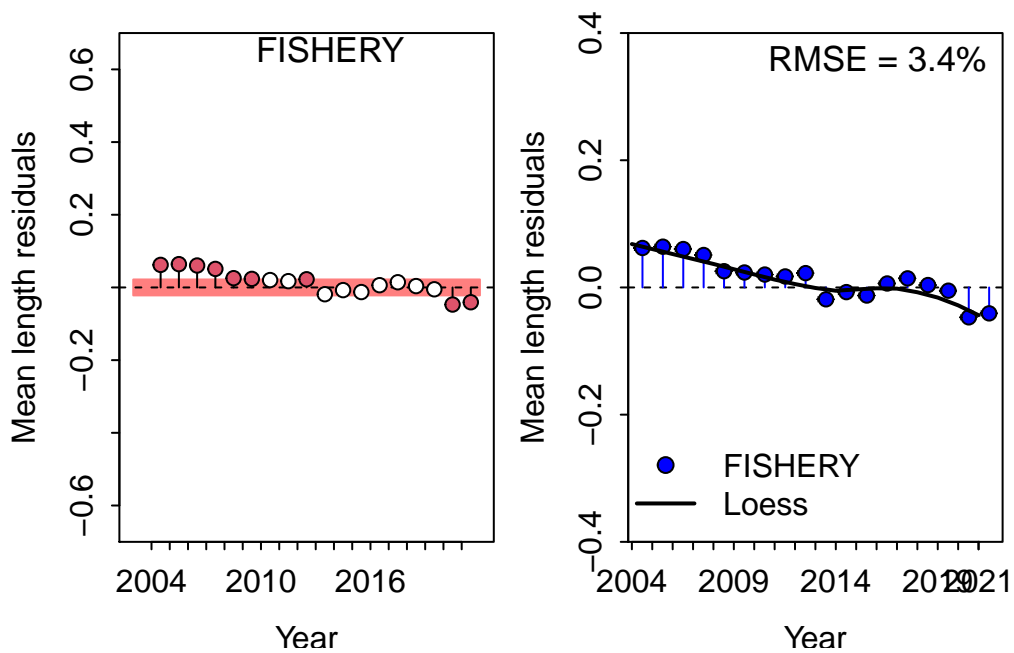
```

RMSE stats by Index:

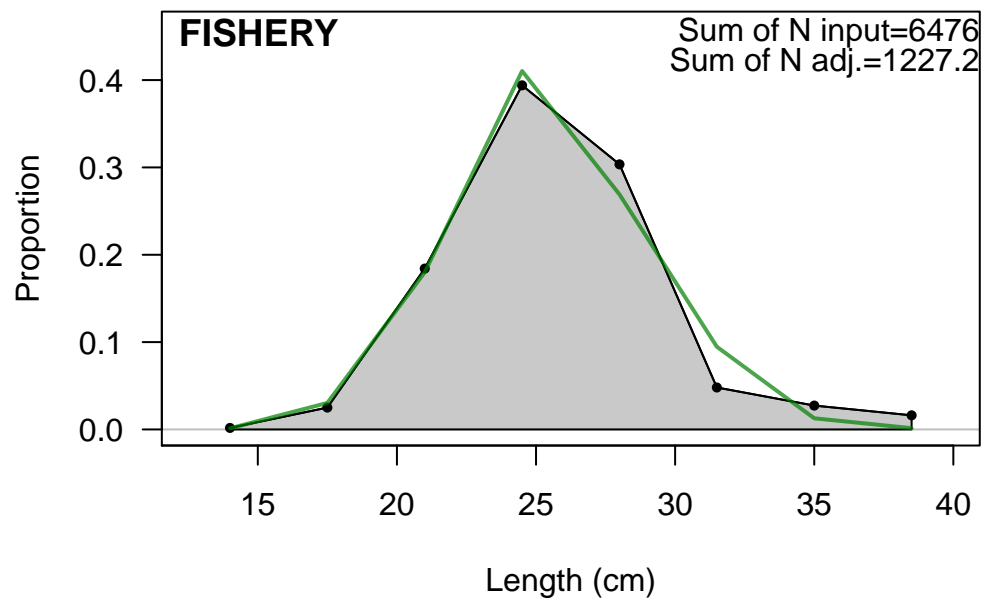
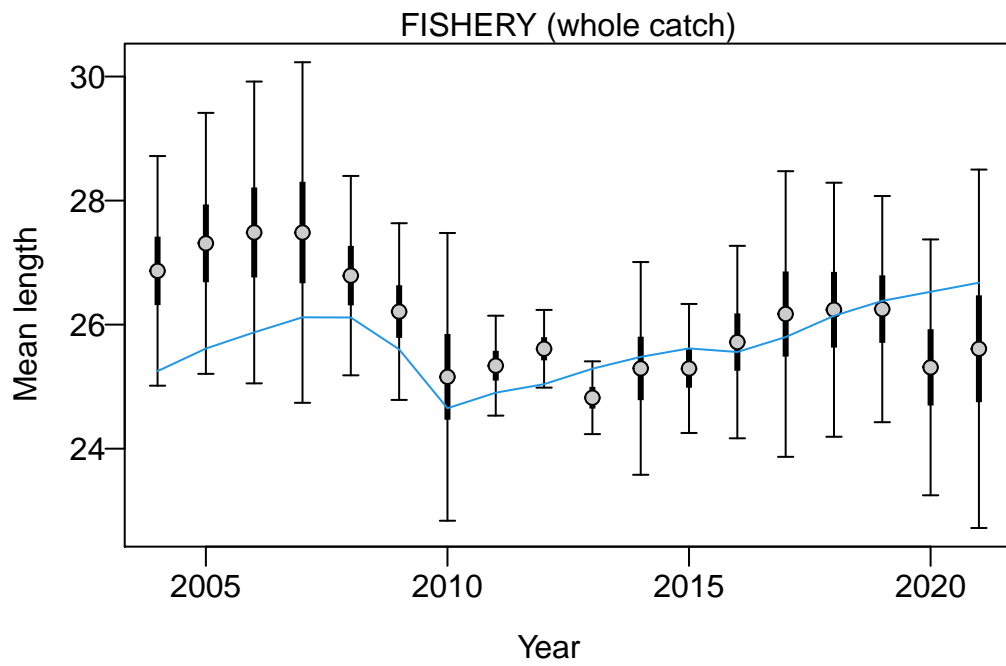
```

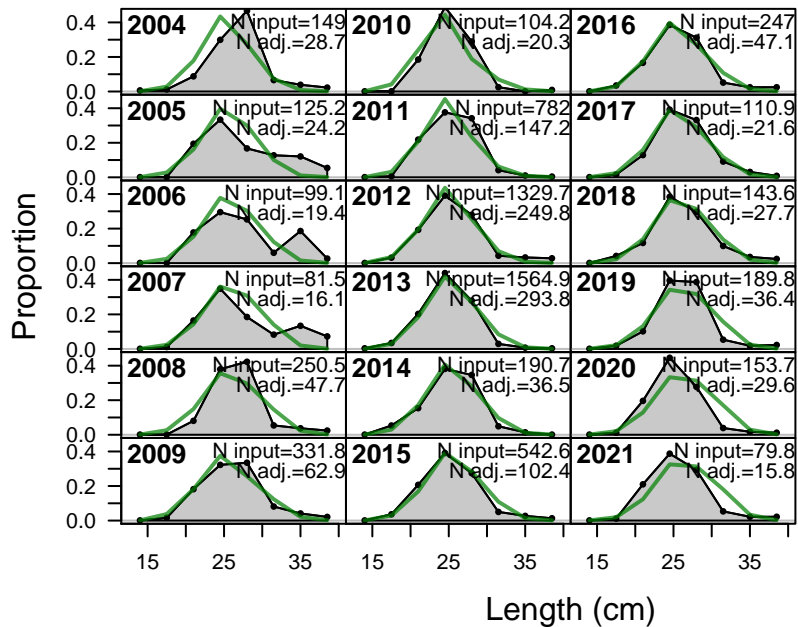
# A tibble: 2 x 3
  Fleet    RMSE.perc Nobs
  <chr>      <dbl> <int>
1 FISHERY      3.4     18
2 Combined      3.4     18

```



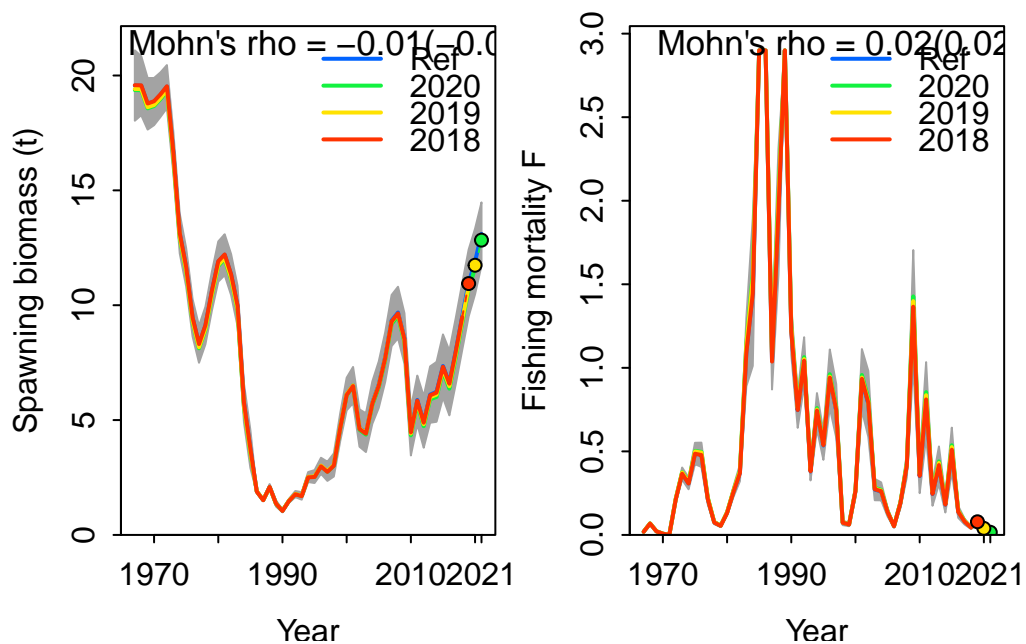
Retrospective and Hindcasting





Retrospective

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



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

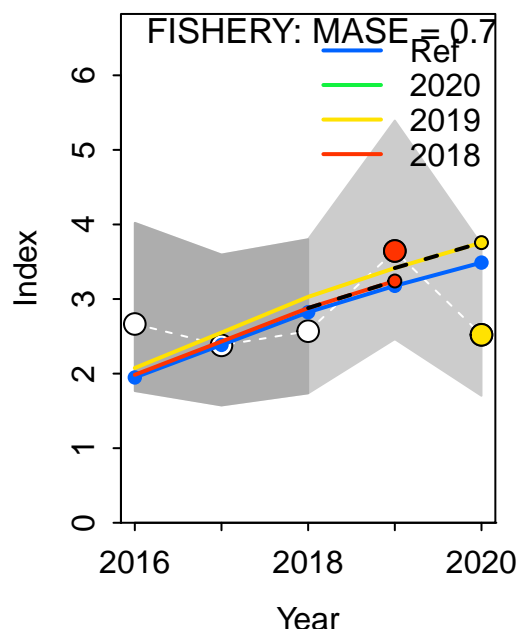
| | type | peel | Rho | ForecastRho |
|---|------------|------|--------------|--------------|
| 1 | F | 2020 | 0.0341821190 | 0.0309781789 |
| 2 | F | 2019 | 0.0240928182 | 0.0225287691 |
| 3 | F | 2018 | 0.0009708098 | 0.0005070433 |
| 4 | F Combined | | 0.0197485823 | 0.0180046638 |

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



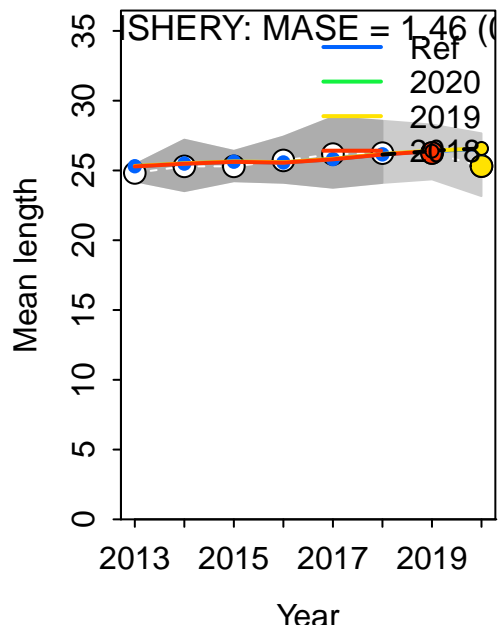
MASE stats by Index:

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

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:

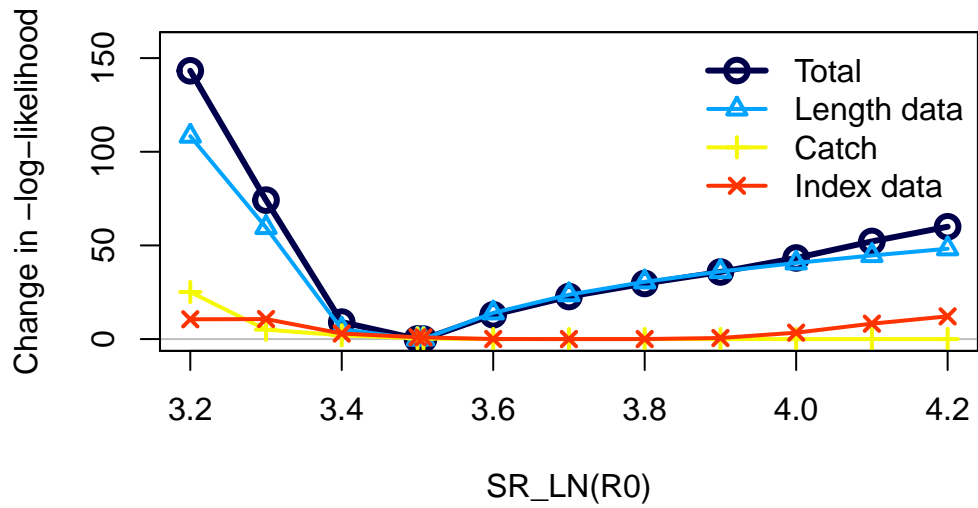


Recruitment Deviations

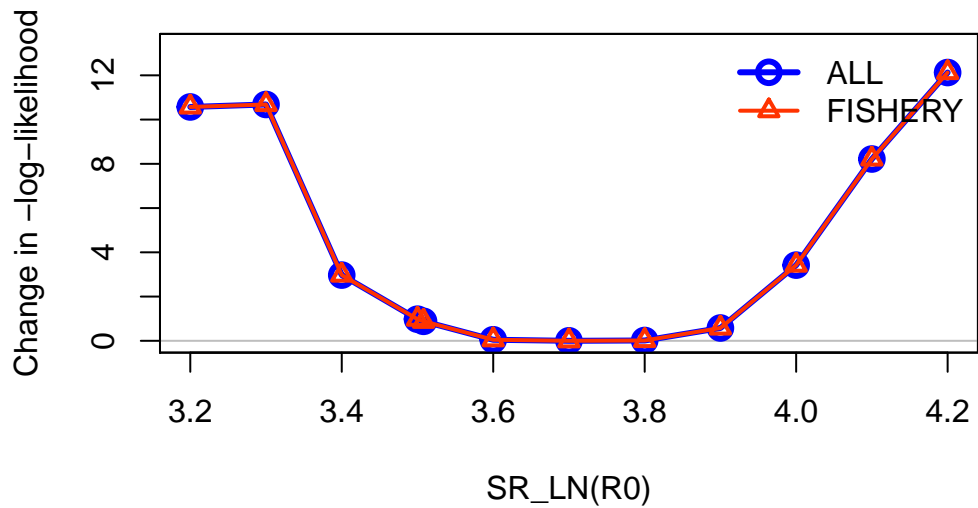
Likelihood Profile

| | | | |
|----------------------|-------------|---------|----------------------------------|
| [1] "SR_LN" | | | |
| | frac_change | include | label |
| TOTAL | 1.0000 | TRUE | Total |
| Catch | 0.1755 | TRUE | Catch |
| Equil_catch | 0.0006 | FALSE | Equilibrium catch |
| Survey | 0.0847 | TRUE | Index data |
| Length_comp | 0.7564 | 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 | 0.0062 | FALSE | Priors |

| | | | |
|-----------------|--------|-------|----------------------|
| Parm_softbounds | 0.0001 | FALSE | Soft bounds |
| Parm_devs | 0.0000 | FALSE | Parameter deviations |
| Crash_Pen | 0.0000 | FALSE | Crash penalty |

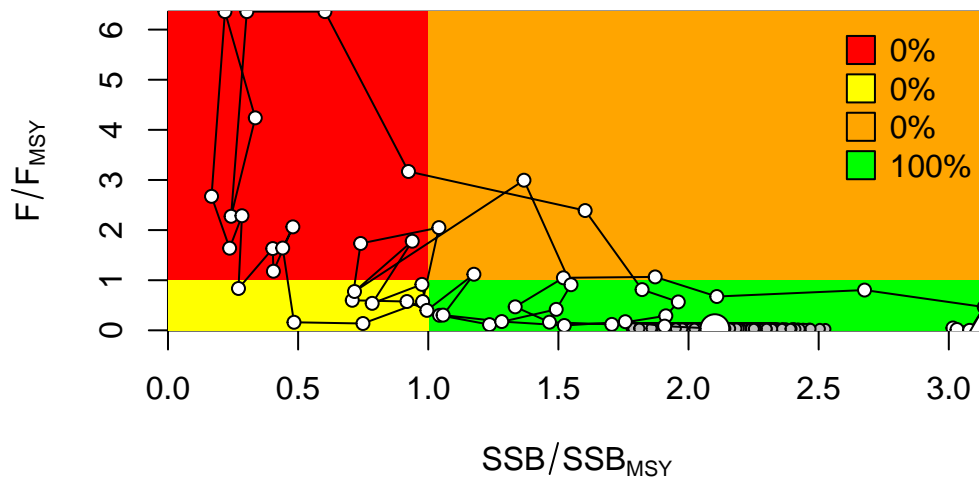


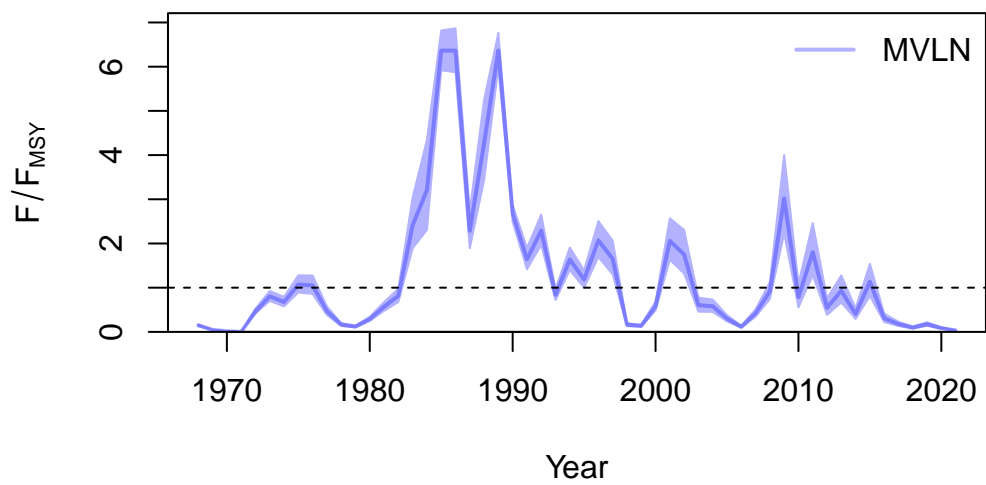
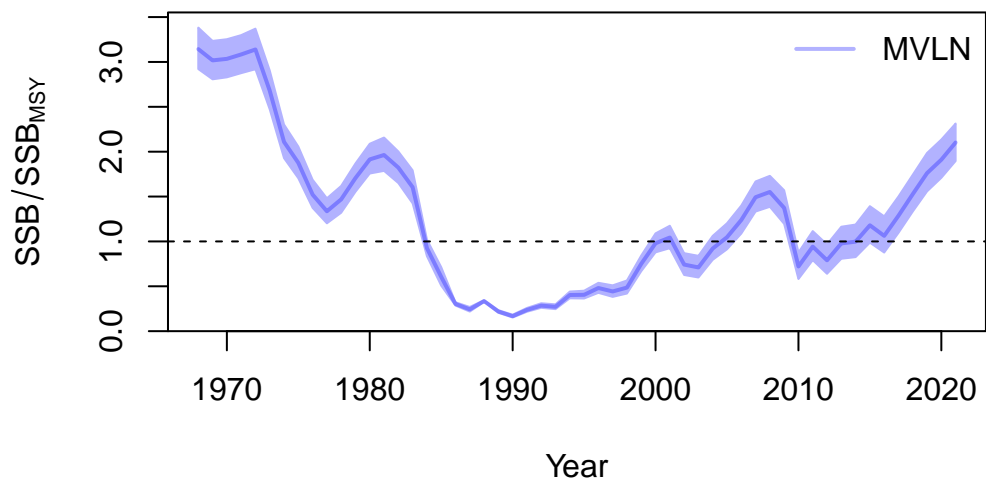
Changes in survey likelihood by fleet

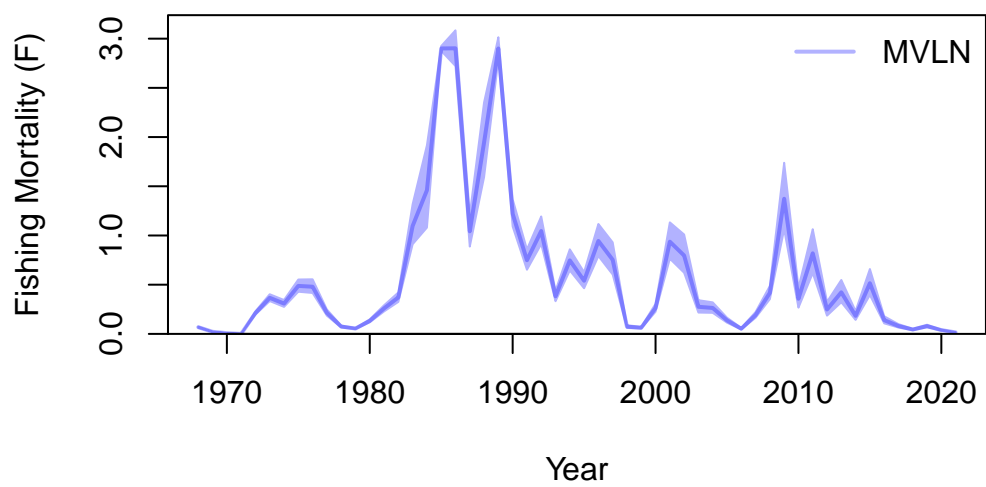
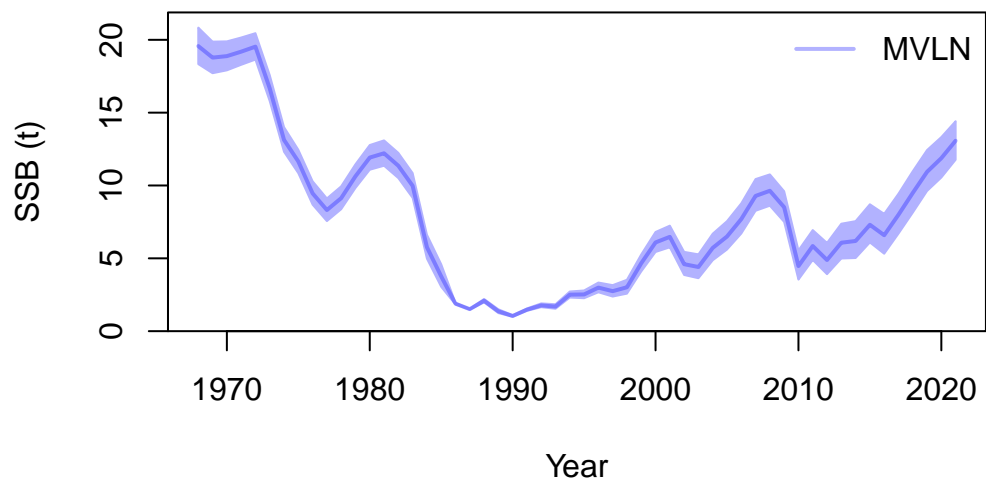


Management Quantities

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







null device
1

Jitter

