

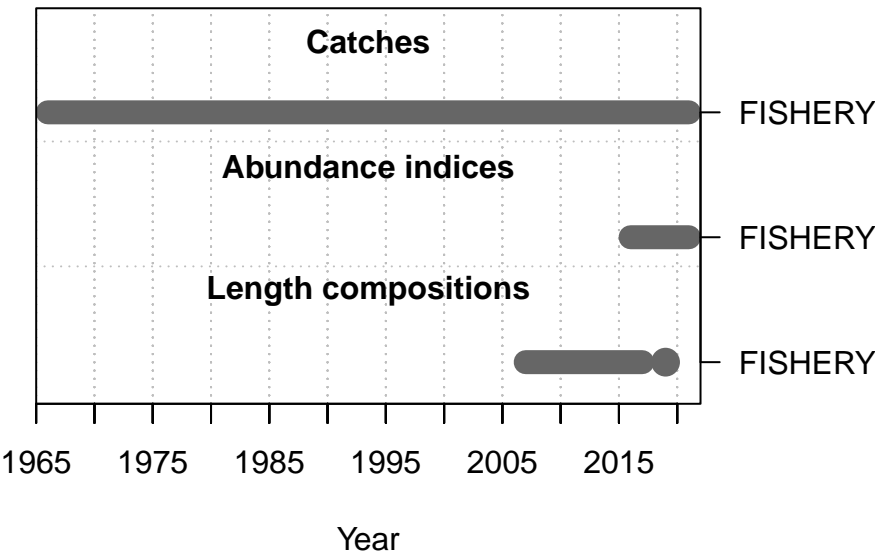
# American Samoa Model Checks

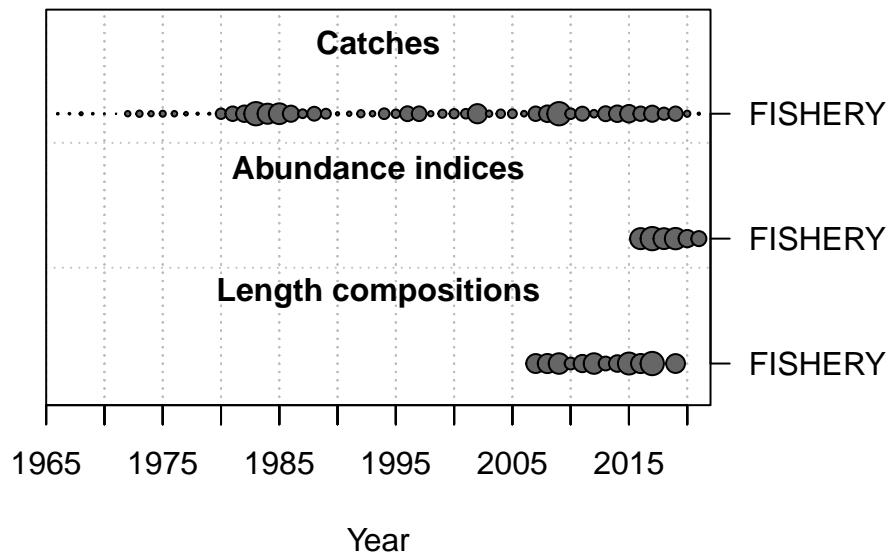
2022-08-24

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

## Model Output

### Input Data





### Convergence Check

```

Converged      MaxGrad
1      TRUE 1.87116e-05

```

```

[1] "1 NOTE: Max data length bin: 90 < max pop len bins: 100; 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"

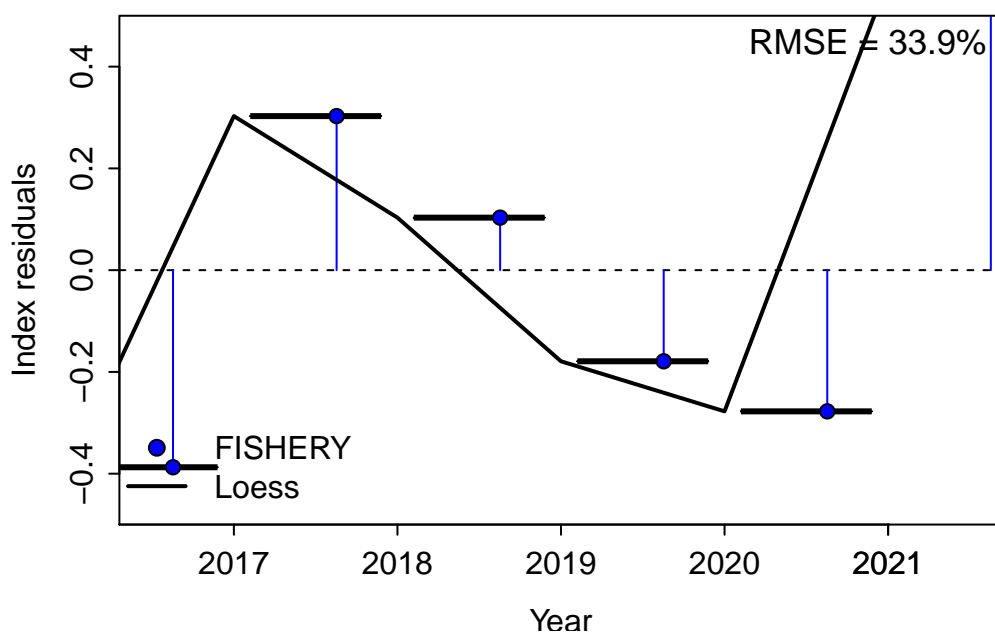
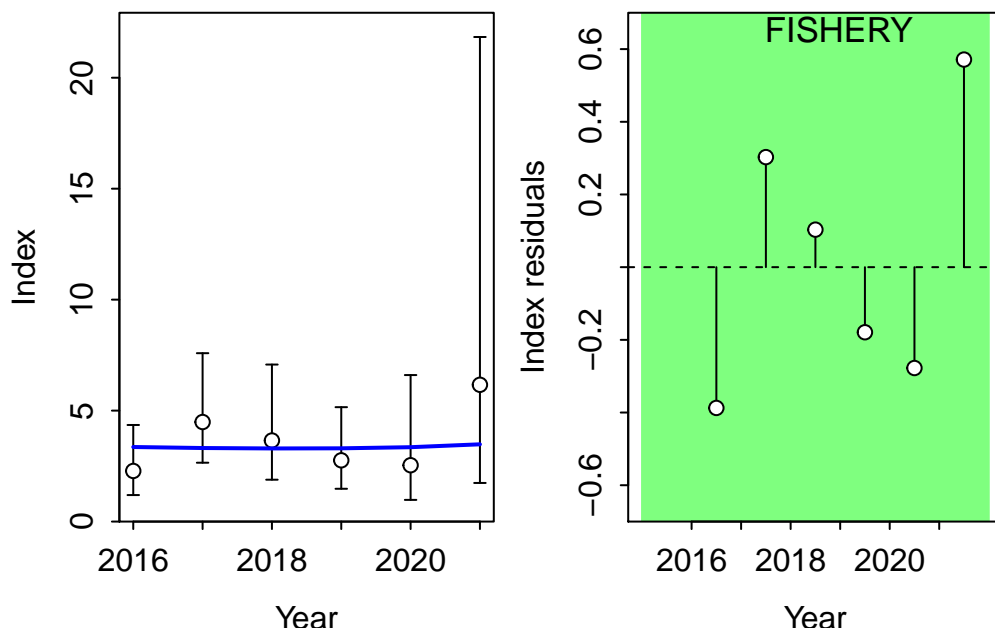
```

### Fit to Model

#### CPUE

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

RMSE stats by Index:



## Length Comp

#Factor	Fleet	New_Var_adj	Type	Name
4	1	0.351588	len	FISHERY

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

```

Index runs.p  test  sigma3.lo sigma3.hi type
1 FISHERY    0.767 Passed -0.1407918 0.1407918 len

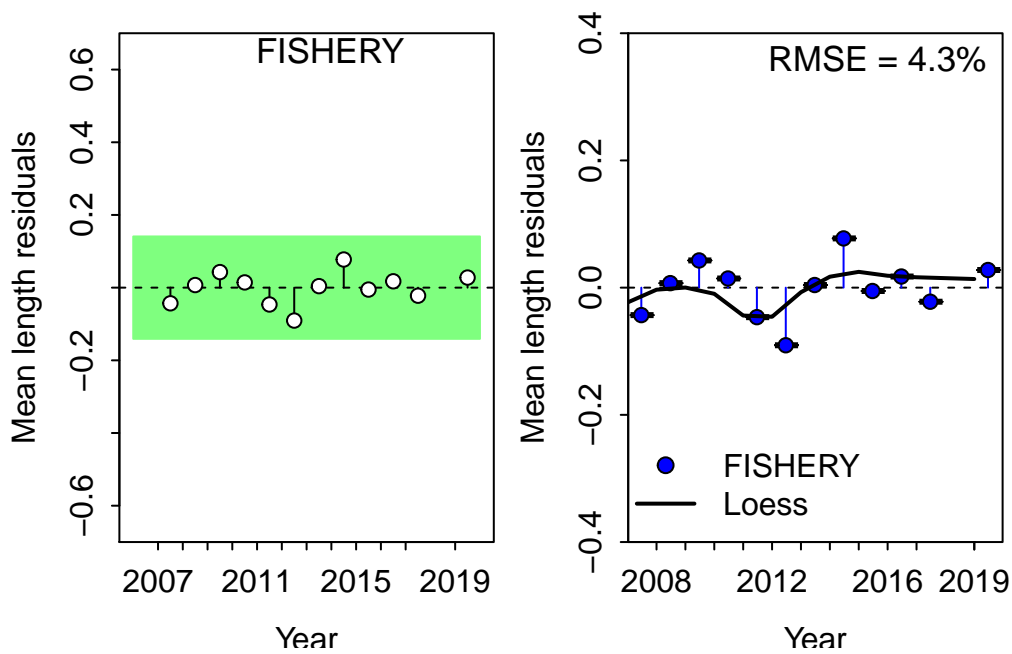
```

RMSE stats by Index:

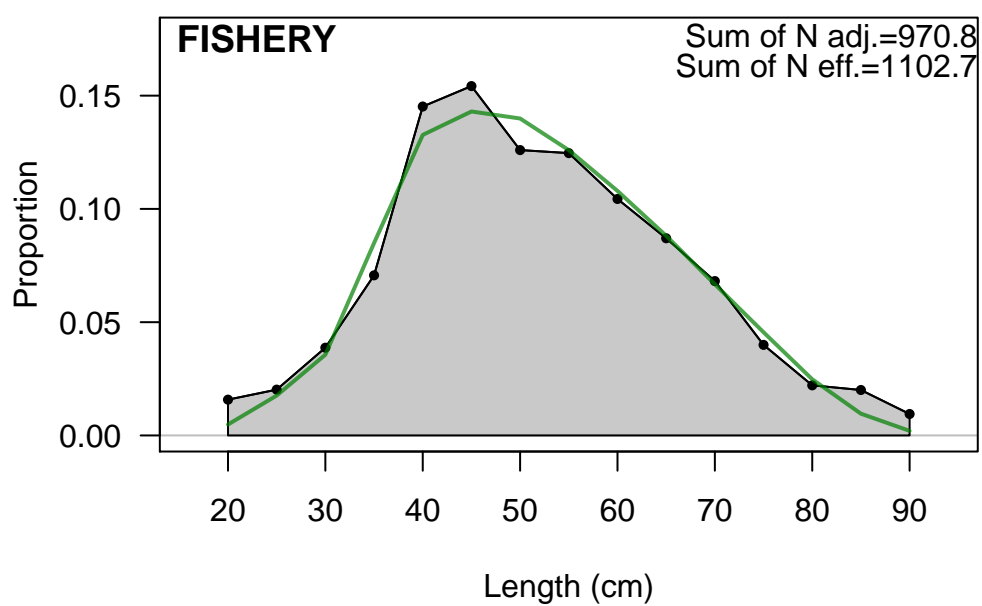
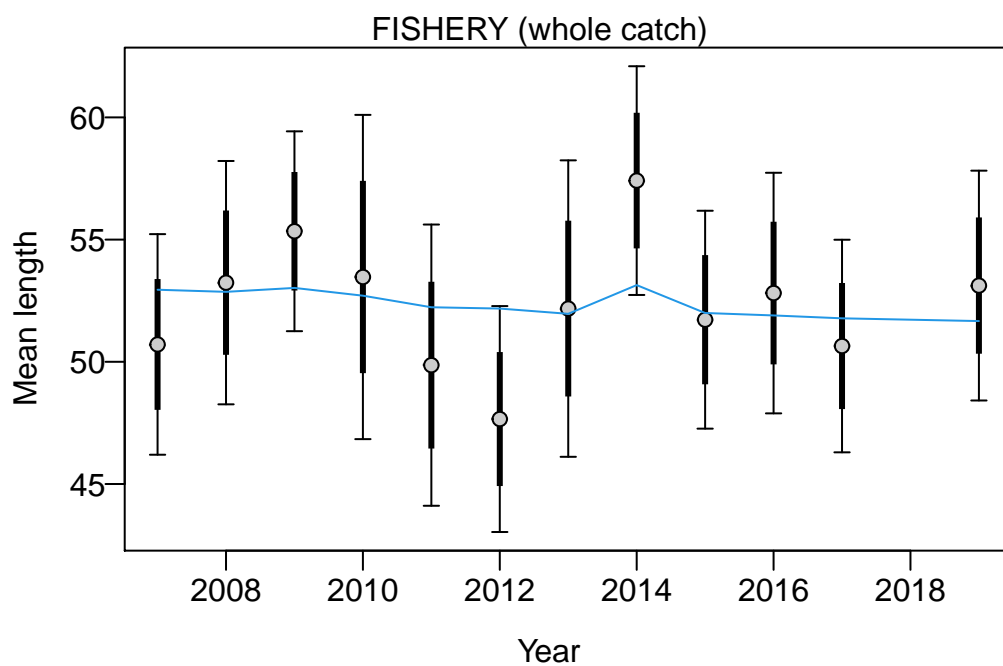
```

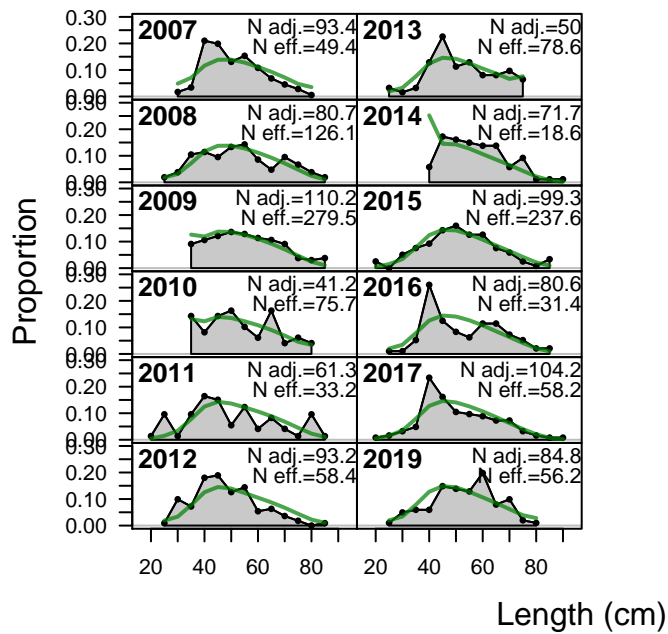
# A tibble: 2 x 3
  Fleet    RMSE.perc Nobs
  <chr>      <dbl> <int>
1 FISHERY     4.3     12
2 Combined     4.3     12

```



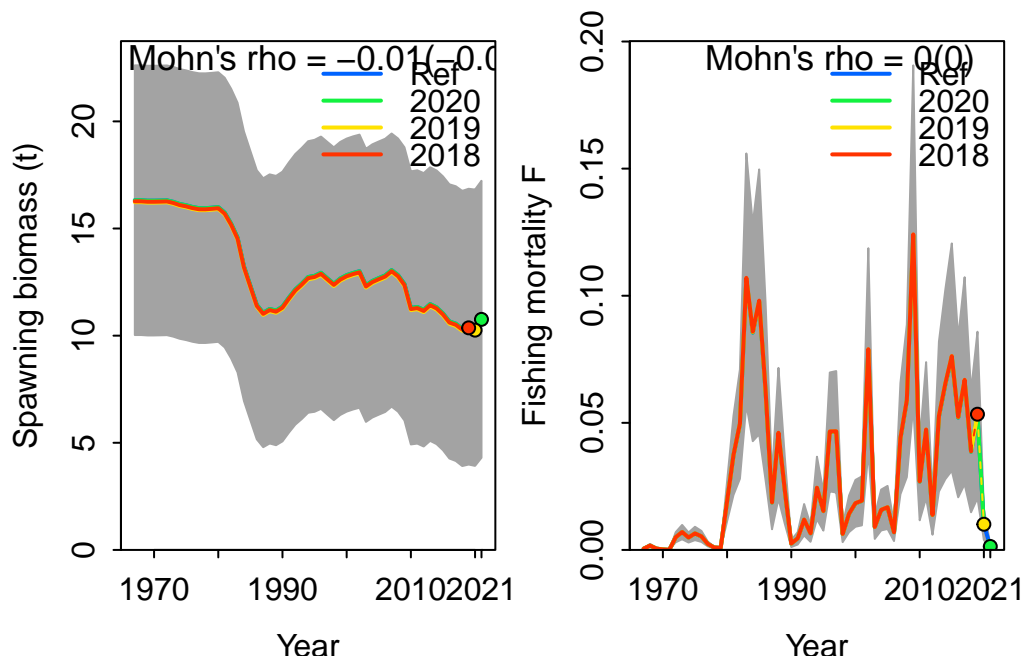
## Retrospective and Hindcasting





## Retrospective

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



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

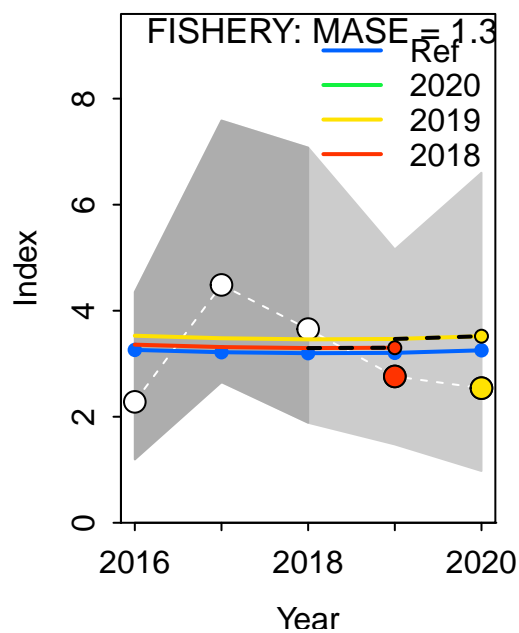
	type	peel	Rho	ForecastRho
1	F	2020	0.0005071952	0.0004927847
2	F	2019	0.0051348776	0.0050719521
3	F	2018	0.0052827393	0.0052855158
4	F Combined		0.0036416040	0.0036167509

## 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

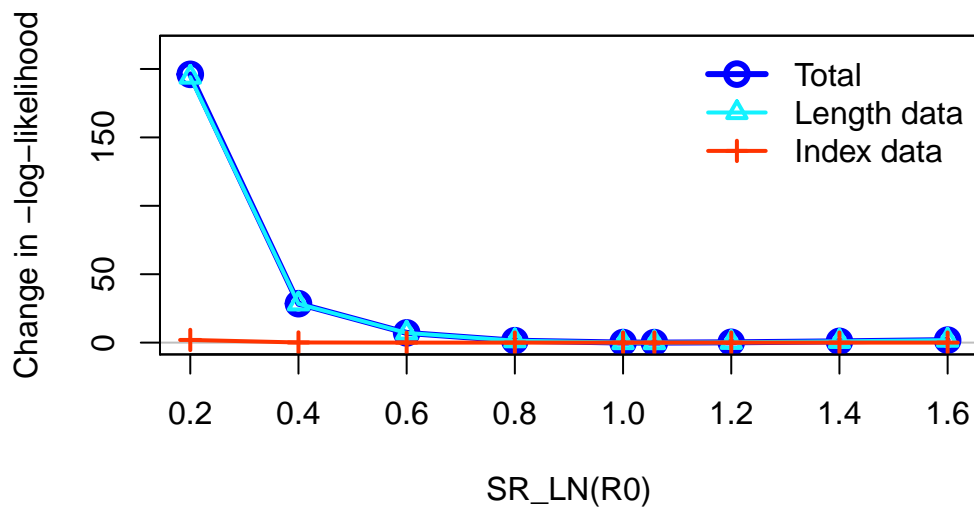
MASE stats by Index:

## Recruitment Deviations

## Likelihood Profile

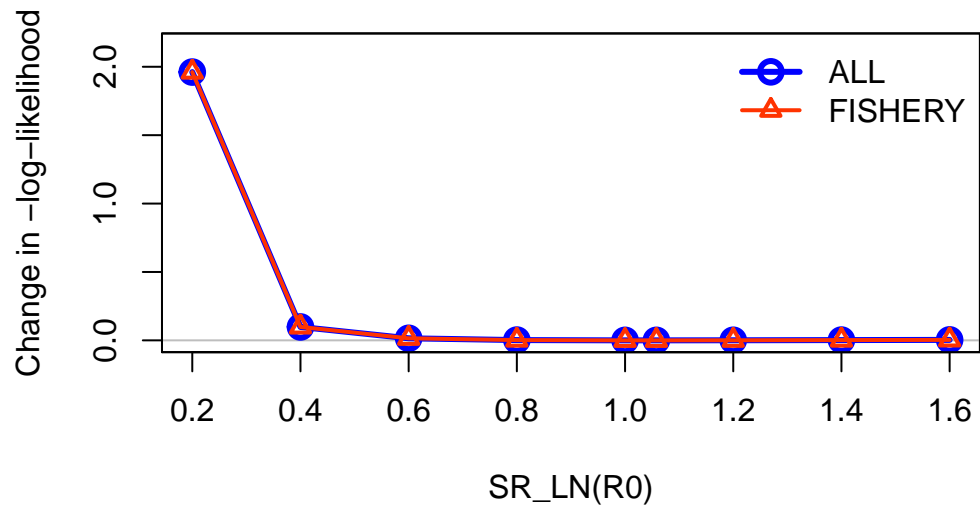
[1] "SR\_LN"

	frac_change	include	label
TOTAL	1.0000	TRUE	Total
Catch	0.0000	FALSE	Catch
Equil_catch	0.0002	FALSE	Equilibrium catch
Survey	0.0100	TRUE	Index data
Length_comp	0.9897	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	0.0001	FALSE	Soft bounds
Parm_devs	0.0000	FALSE	Parameter deviations
Crash_Pen	0.0000	FALSE	Crash penalty



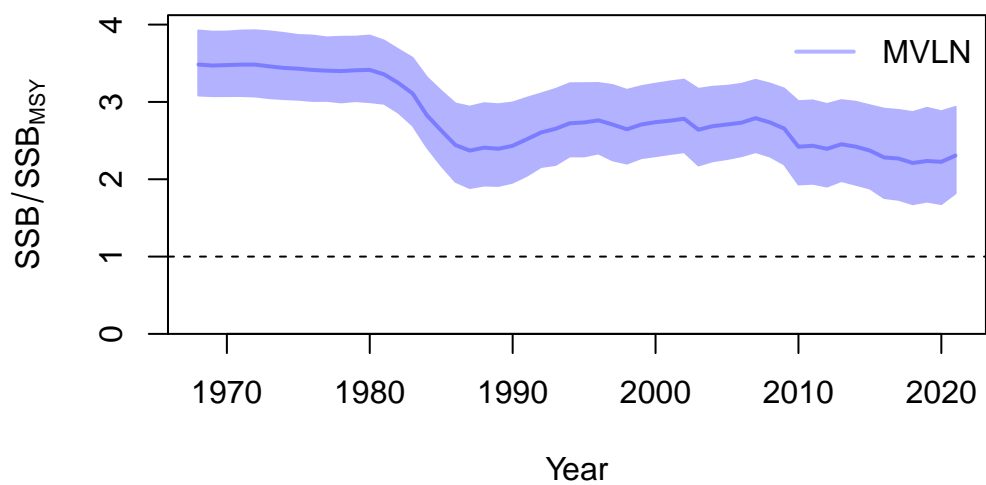
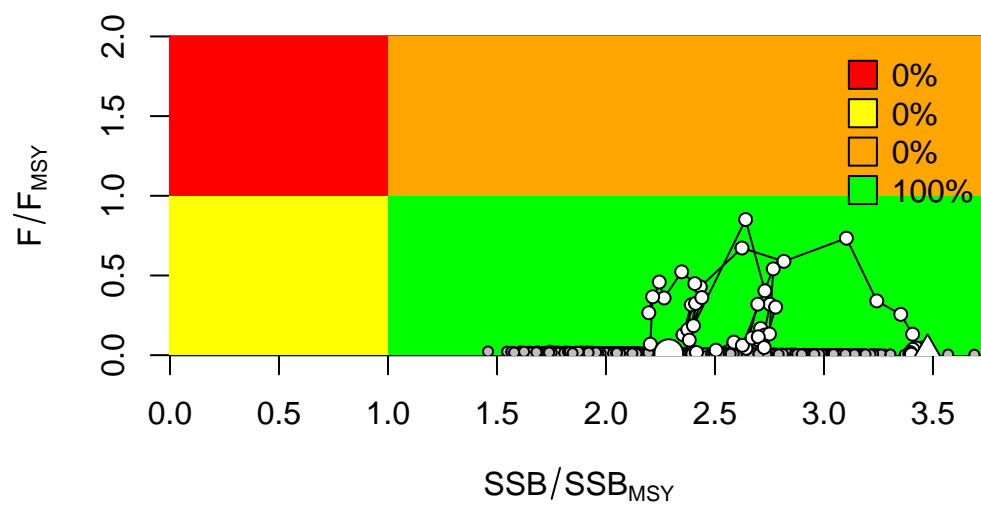


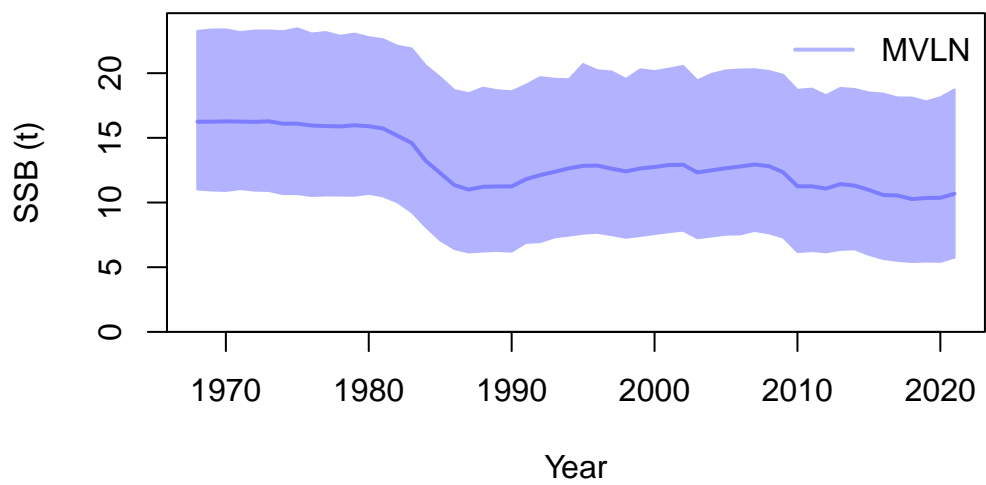
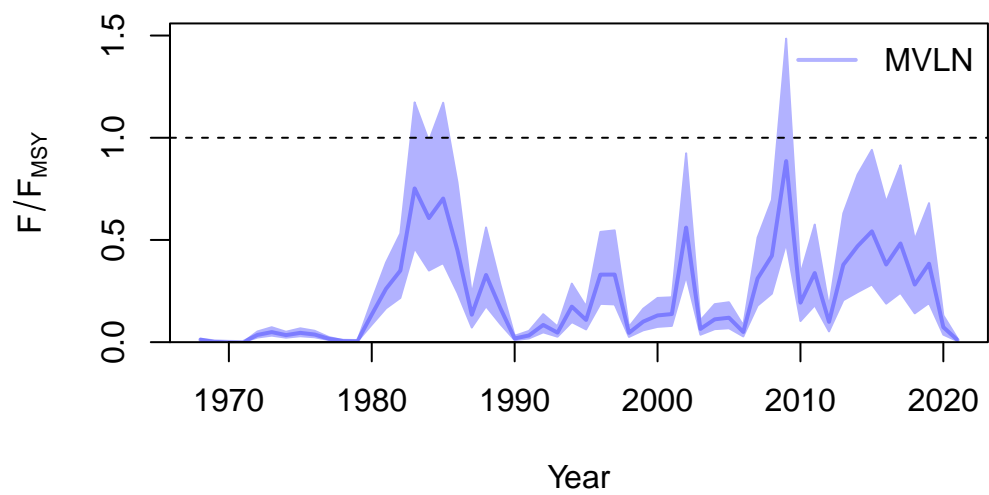
### Changes in survey likelihood by fleet

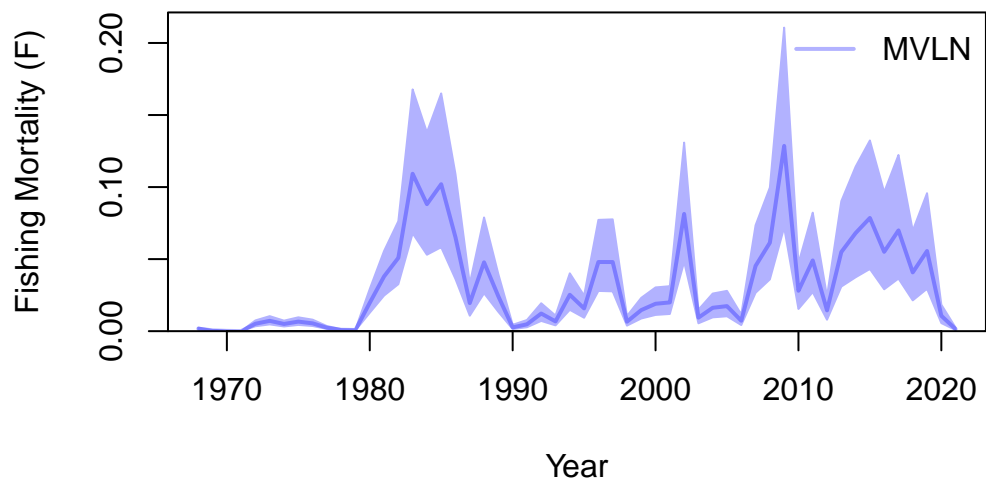


### Management Quantities

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







null device  
1

**Jitter**

