

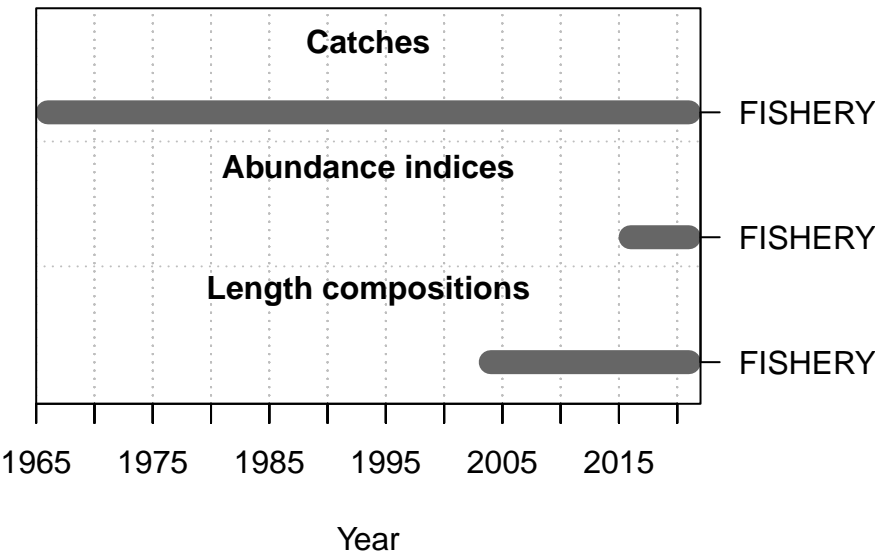
# American Samoa Model Checks

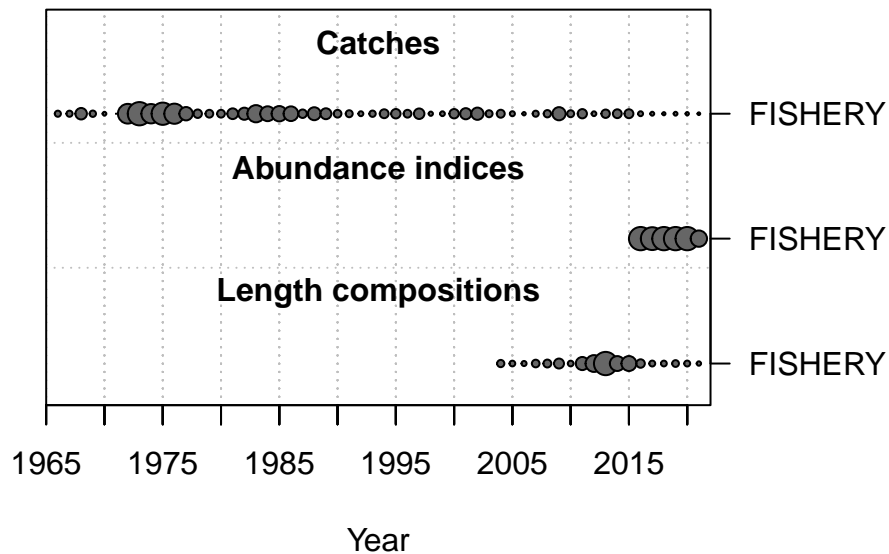
2022-10-19

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

## Model Output

### Input Data





## Convergence Check

```

Converged      MaxGrad
1      TRUE 5.57354e-05

```

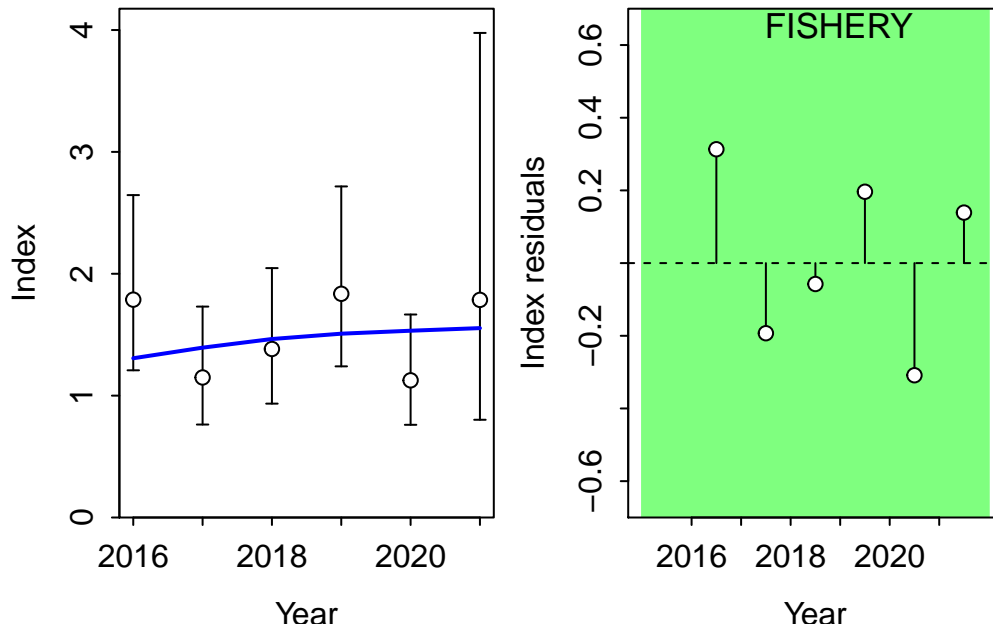
- [1] "1 NOTE: Max data length bin: 28 < max pop len bins: 31; so will accumulate larger pop
- [2] "2 warning: poor convergence in Fspr search 0.4 0.452066"
- [3] "3 warning: Fmult = 40 cannot get high enough to achieve low SPR target: 0.4; SPR achiev
- [4] "4 warning: poor convergence in Btarget search 4.30677 7.17708"
- [5] "5 warning: poor convergence in Fmsy, final dy/dy2= -0.0152624"
- [6] "6 Forecast F capped by max possible F from control file: 2.9"
- [7] "7 Forecast F capped by max possible F from control file: 2.9"
- [8] "N warnings: 7"

## Fit to Model

### CPUE

Fleet	RMSE.perc	Nobs
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FISHERY	22.1	6
Combined	22.1	6



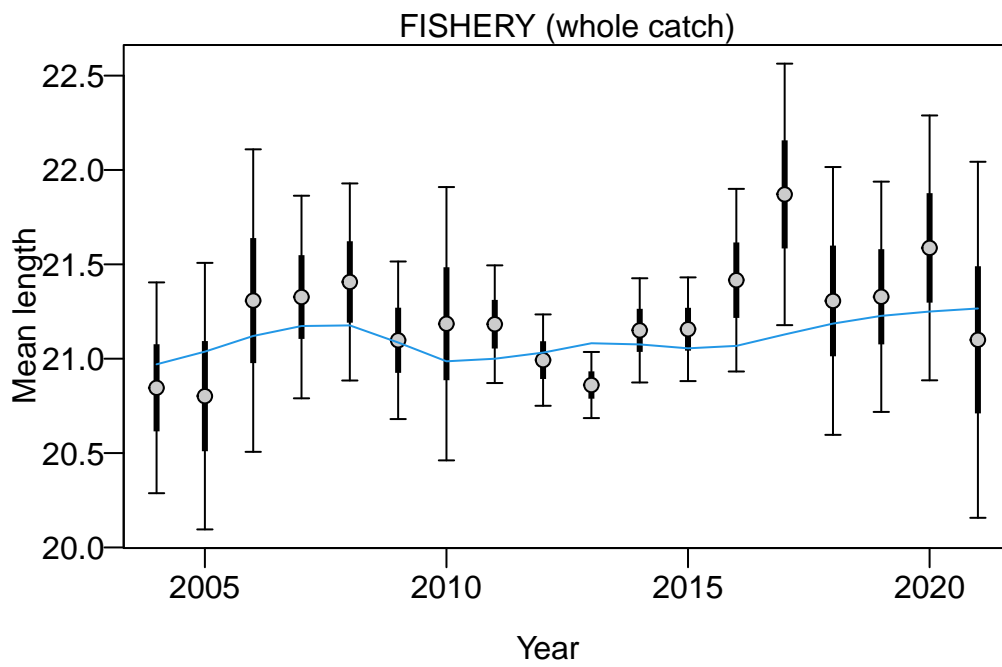
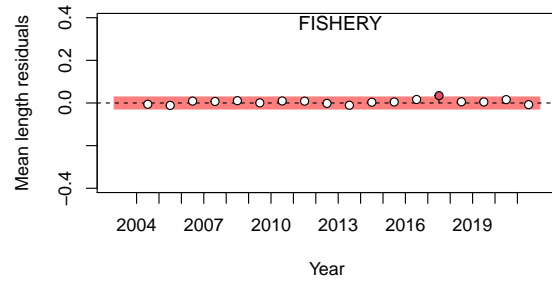
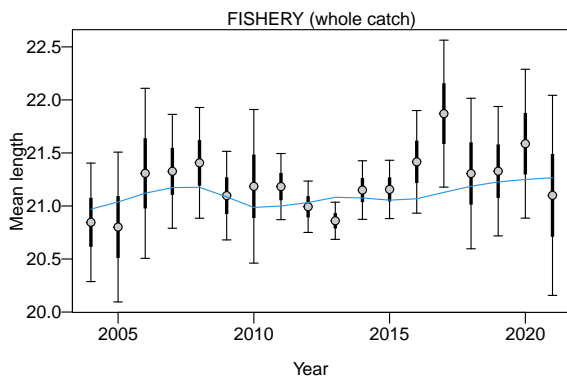
### Length Comp

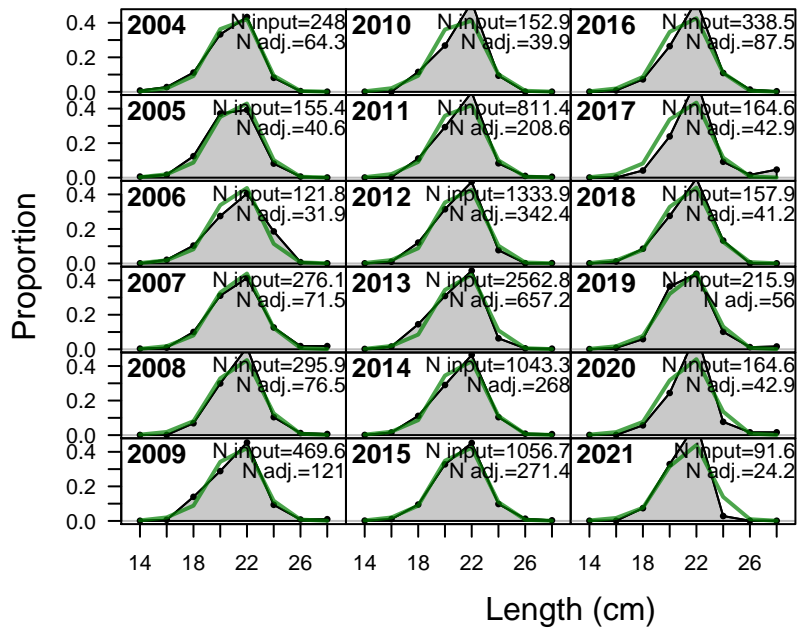
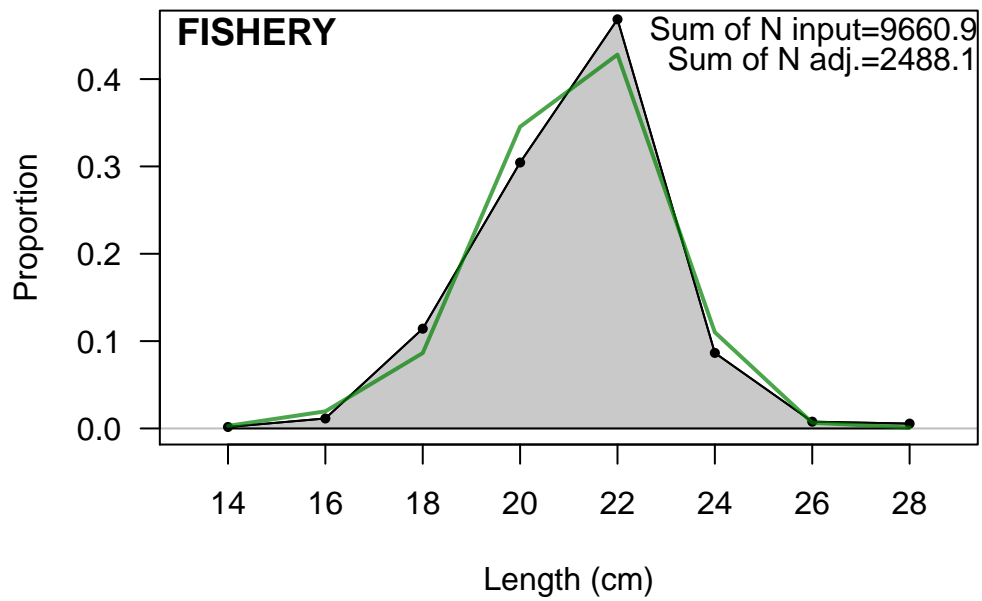
Fleet	RMSE.perc	Nobs
FISHERY	1.2	18
Combined	1.2	18

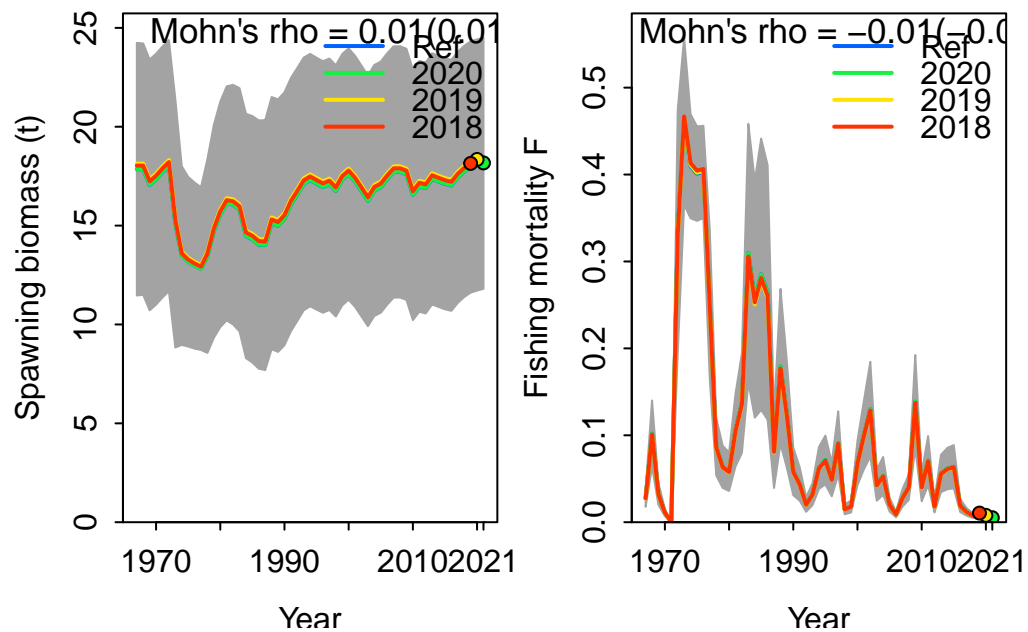
### Retrospective and Hindcasting

#### Retrospective

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







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

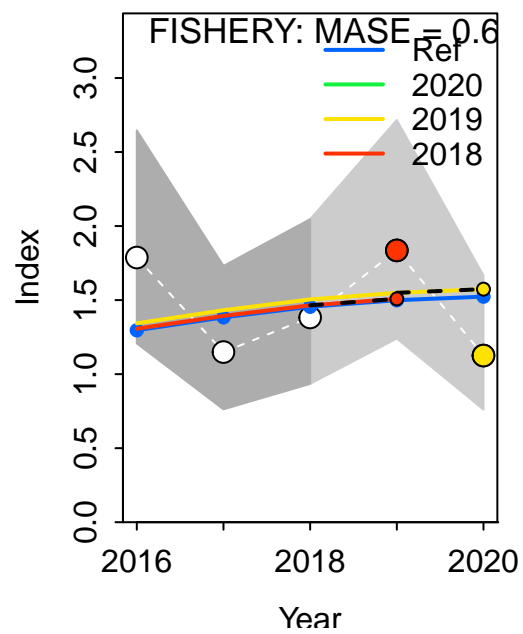
	type	peel	Rho	ForecastRho
1	F	2020	-0.0002445815	-0.0002272745
2	F	2019	-0.0154574401	-0.0151827685
3	F	2018	-0.0090489327	-0.0087113446
4	F Combined		-0.0082503181	-0.0080404625

## 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



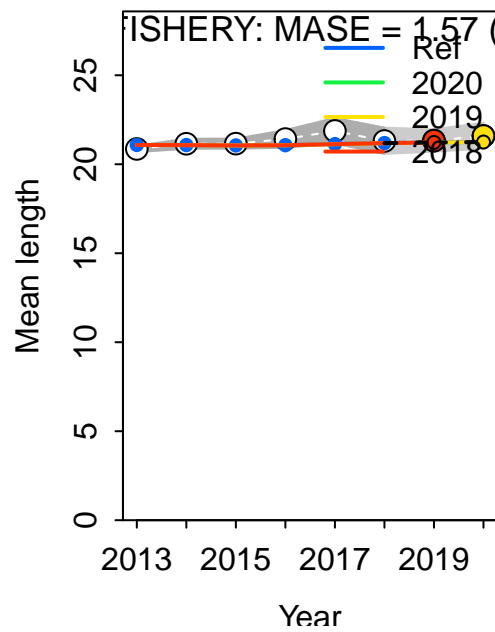
MASE stats by Index:

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MASE stats by Index:

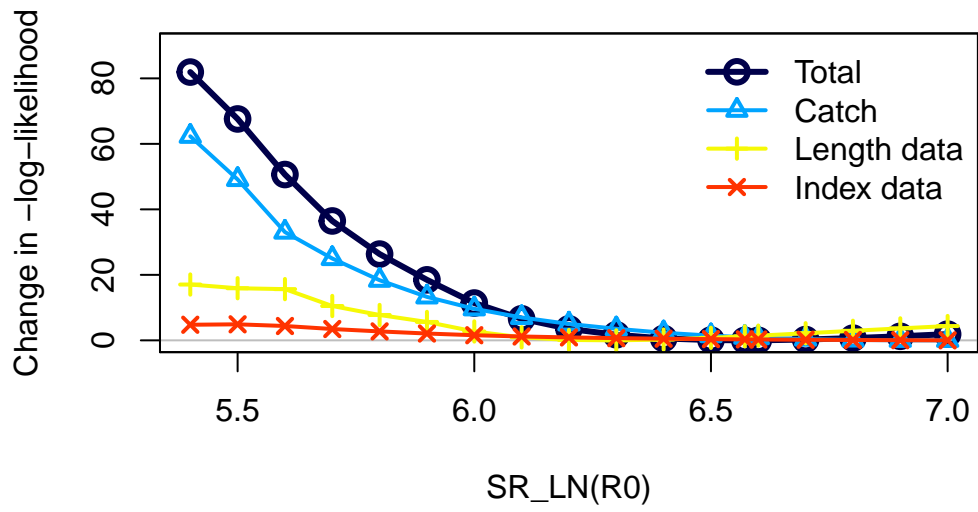


## Recruitment Deviations

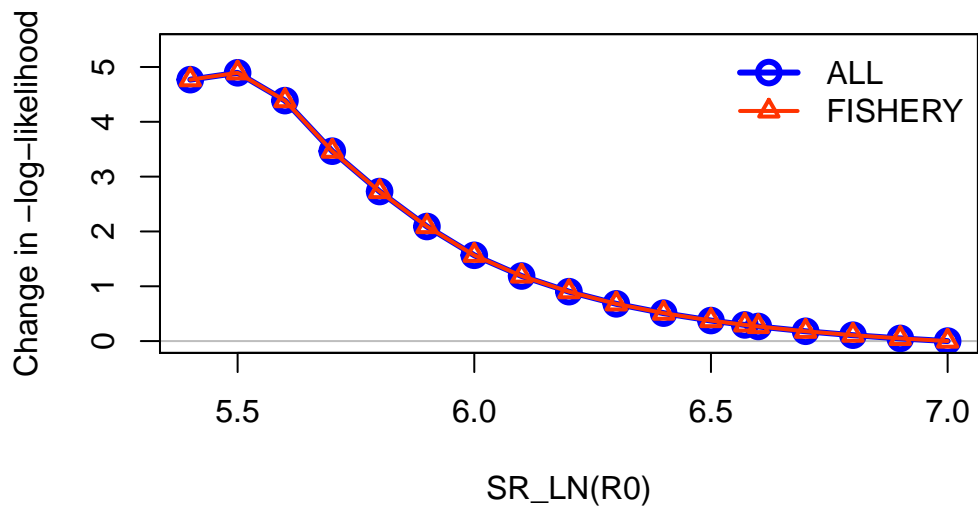
### Likelihood Profile

[1] "SR_LN"			
	frac_change	include	label
TOTAL	1.0000	TRUE	Total
Catch	0.7608	TRUE	Catch
Equil_catch	0.0031	FALSE	Equilibrium catch
Survey	0.0597	TRUE	Index data
Length_comp	0.2081	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	0.0006	FALSE	Priors
Parm_softbounds	0.0000	FALSE	Soft bounds
Parm_devs	0.0000	FALSE	Parameter deviations
Crash_Pen	0.0000	FALSE	Crash penalty



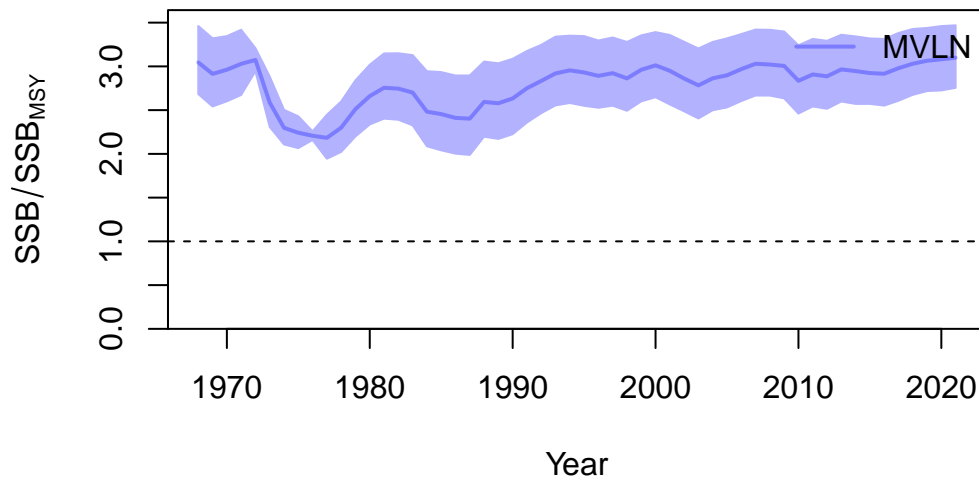
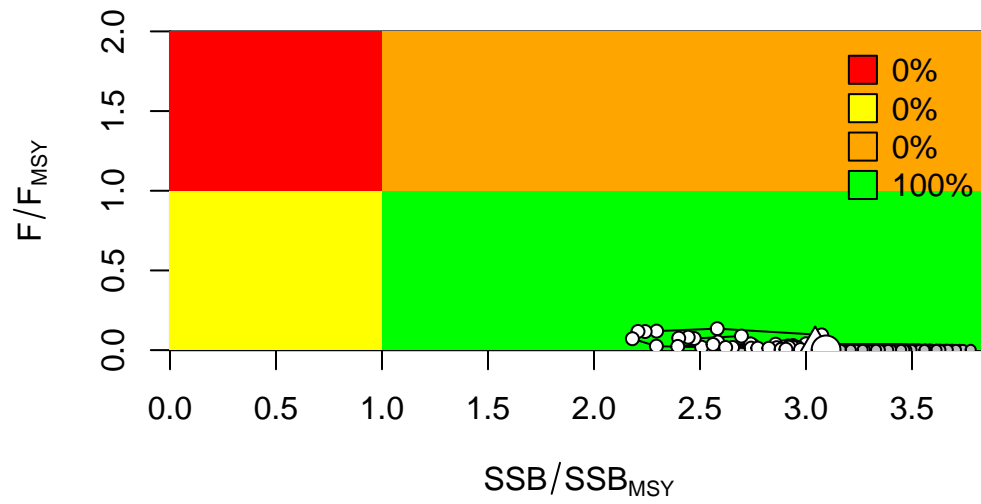


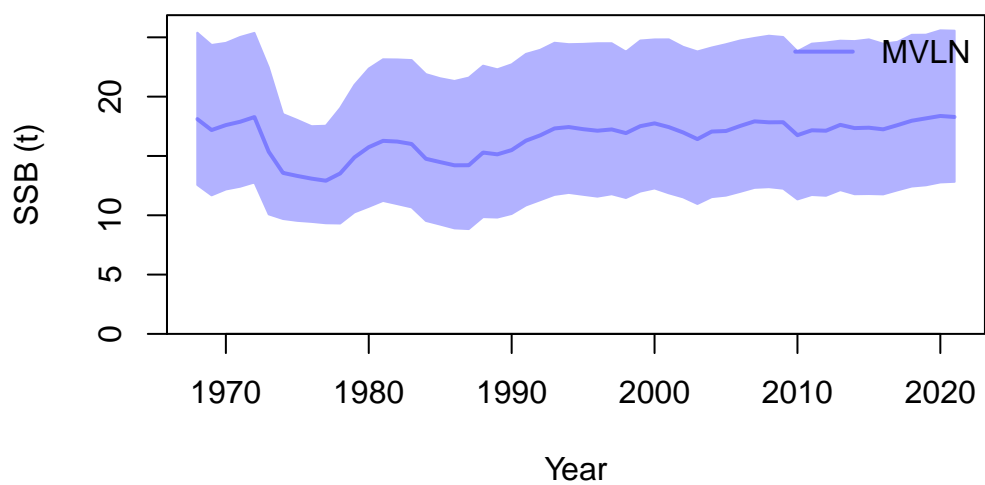
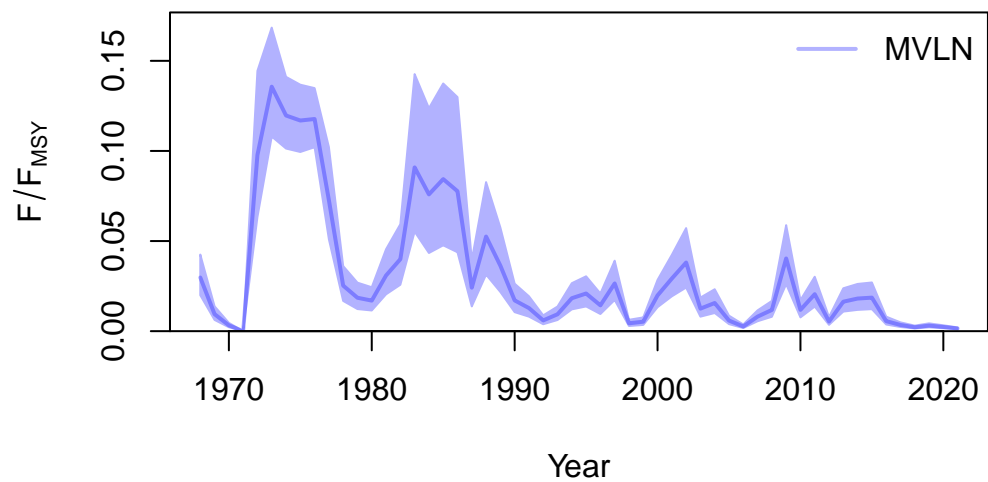
### Changes in survey likelihood by fleet

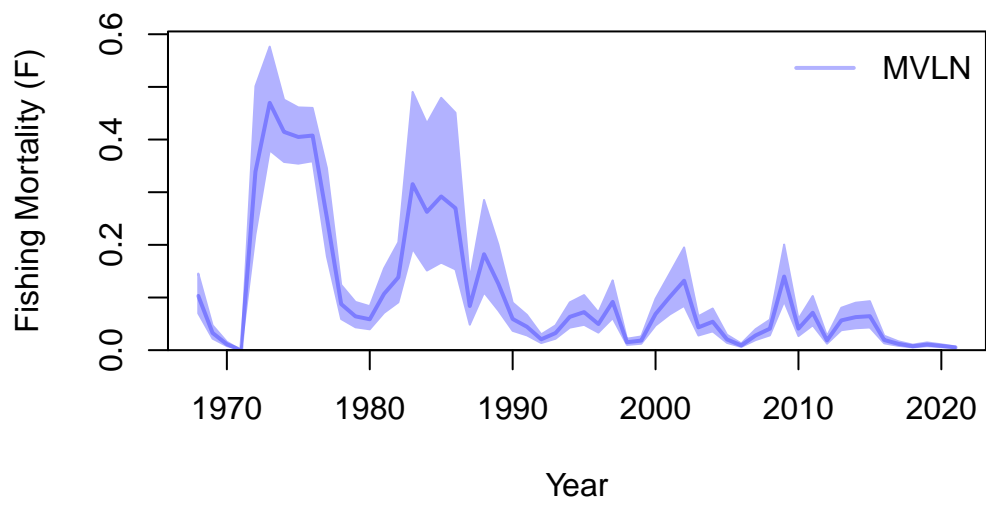


Management Quantities

starter.sso with Bratio: SSB/SSB<sub>MSY</sub> and F: \_abs\_F







null device  
1

**Jitter**

