

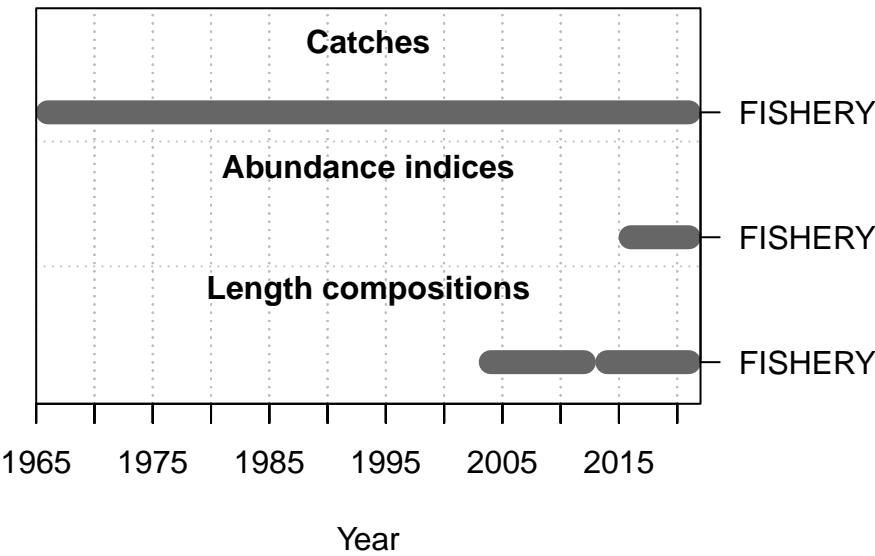
# American Samoa Model Checks

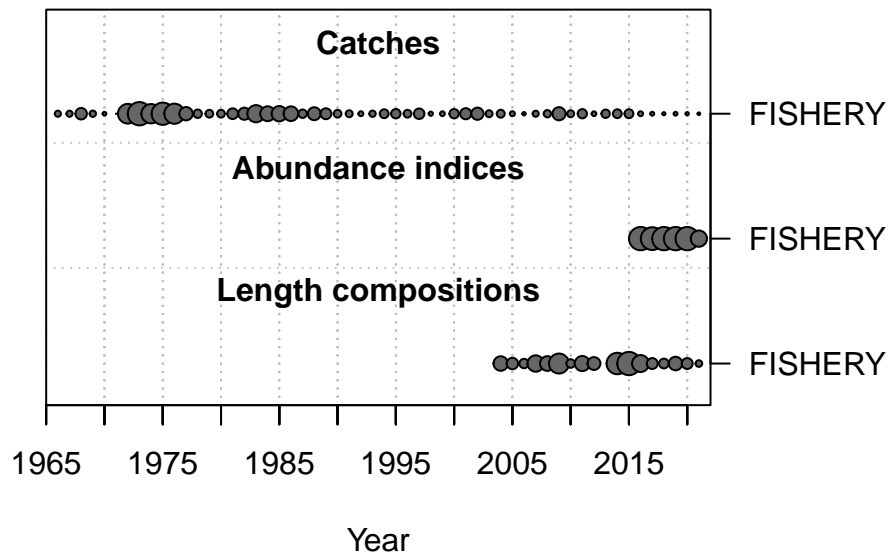
2022-08-22

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

## Model Output

### Input Data





### Convergence Check

```

Converged      MaxGrad
1      TRUE 5.89582e-06

```

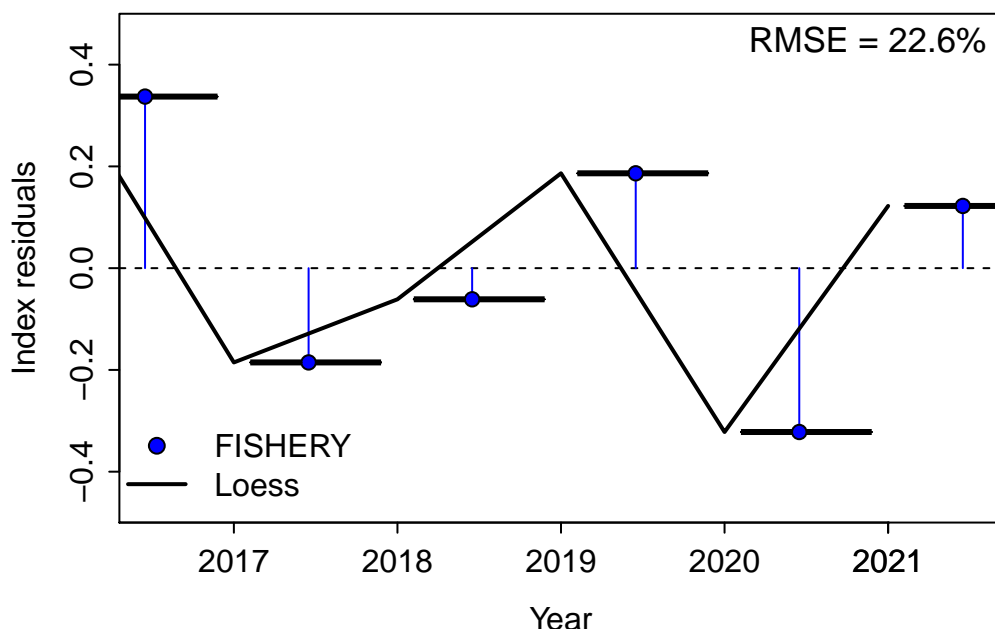
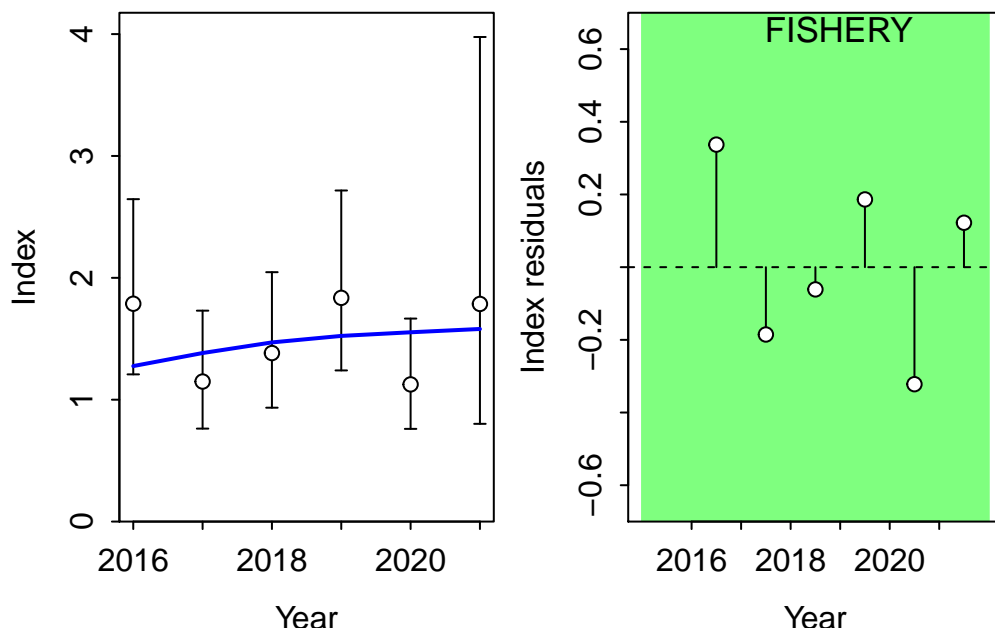
- [1] "1 NOTE: Max data length bin: 28 < max pop len bins: 31; so will accumulate larger pop
- [2] "2 warning: poor convergence in Fspr search 0.4 0.421746"
- [3] "3 warning: Fmult = 40 cannot get high enough to achieve low SPR target: 0.4; SPR achiev
- [4] "4 warning: poor convergence in Btarget search 4.07205 4.73934"
- [5] "5 warning: poor convergence in Fmsy, final dy/dy2= -0.0118261"
- [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

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

RMSE stats by Index:



## Length Comp

#Factor	Fleet	New_Var_adj	Type	Name
4	1	0.351796	len	FISHERY

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

```

Index runs.p  test  sigma3.lo  sigma3.hi  type
1 FISHERY    0.962 Passed -0.02942583 0.02942583  len

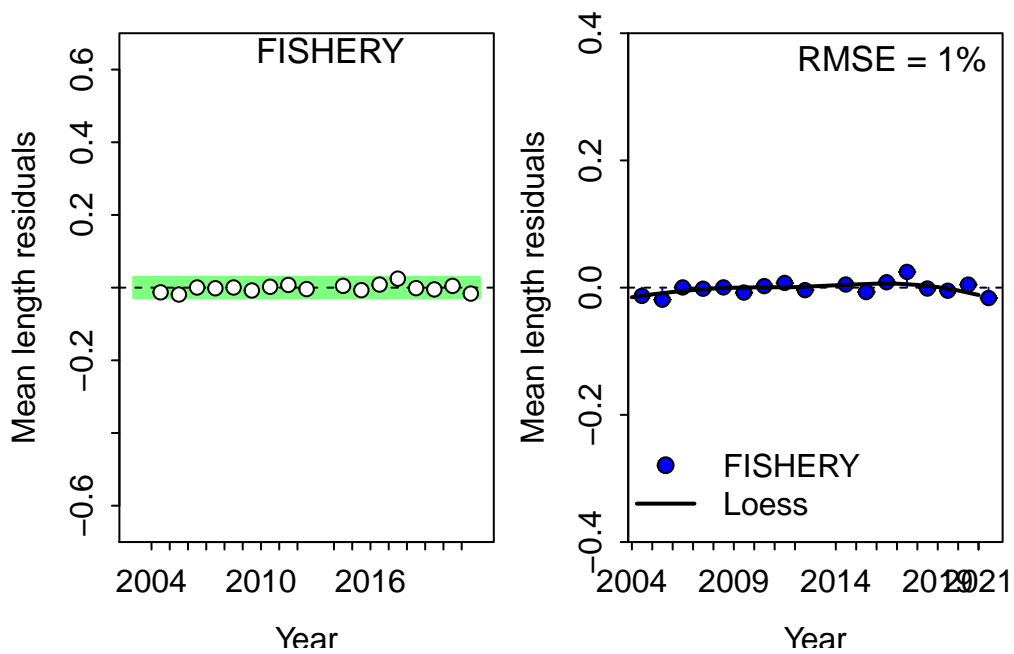
```

RMSE stats by Index:

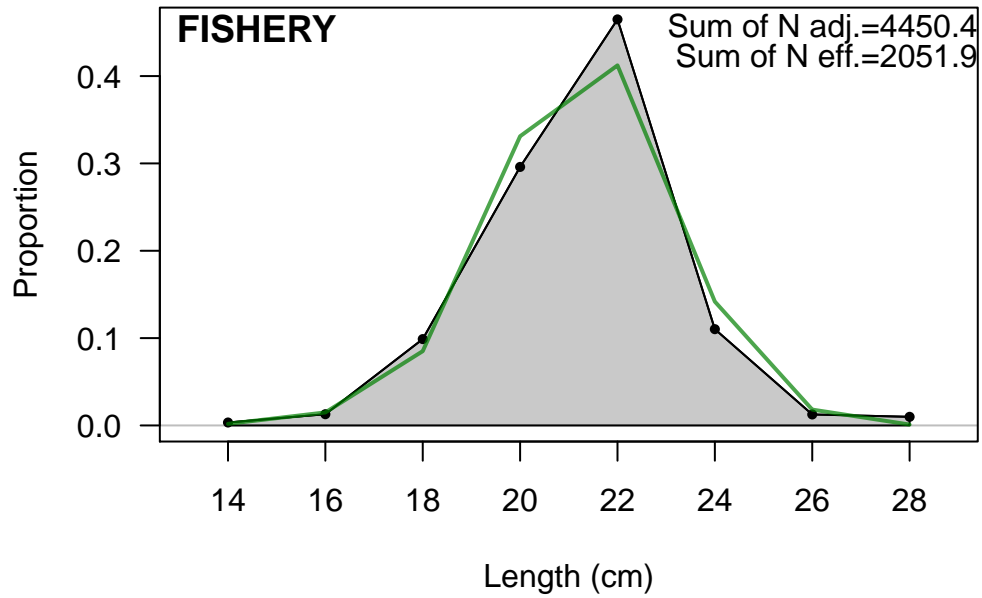
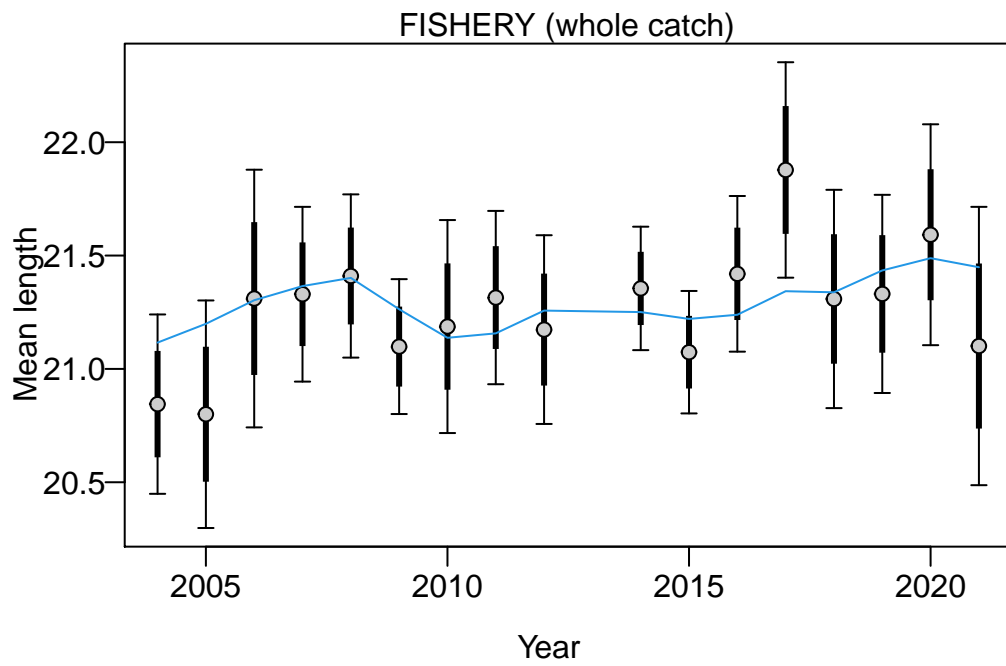
```

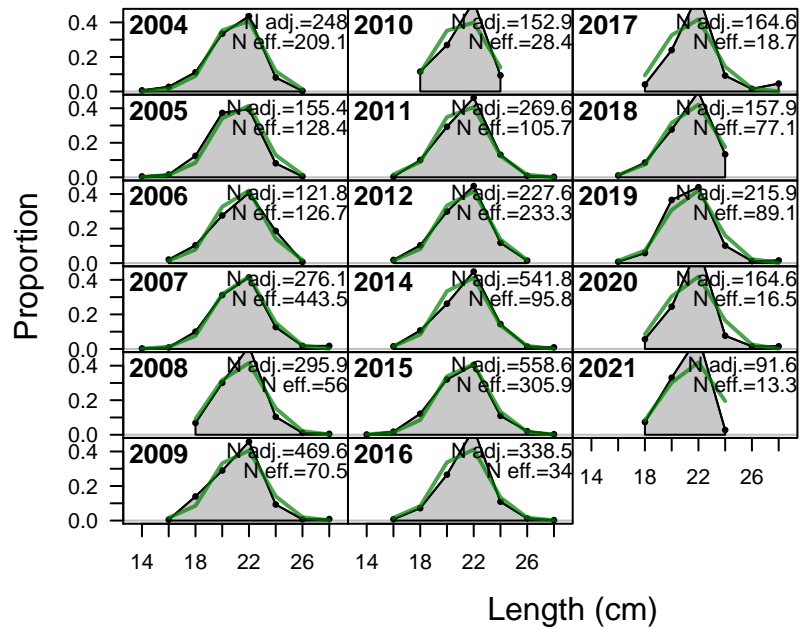
# A tibble: 2 x 3
  Fleet    RMSE.perc  Nobs
  <chr>      <dbl> <int>
1 FISHERY      1    17
2 Combined      1    17

```



## Retrospective and Hindcasting





## Retrospective

Error in xy.coords(x, y, setLab = FALSE): 'x' and 'y' lengths differ

Spawning biomass (t)

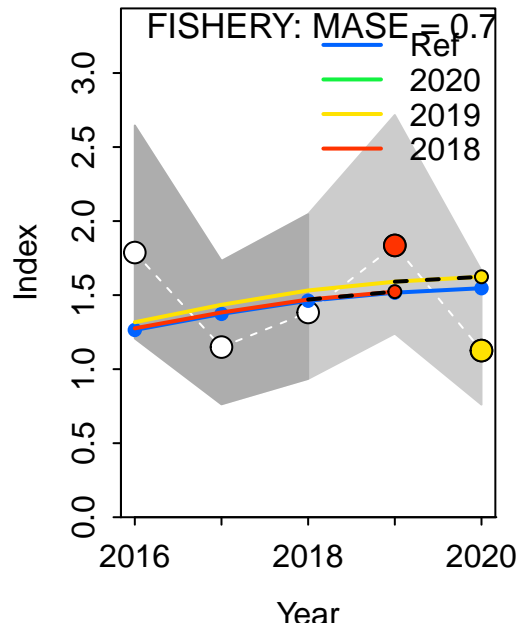
Year

## 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



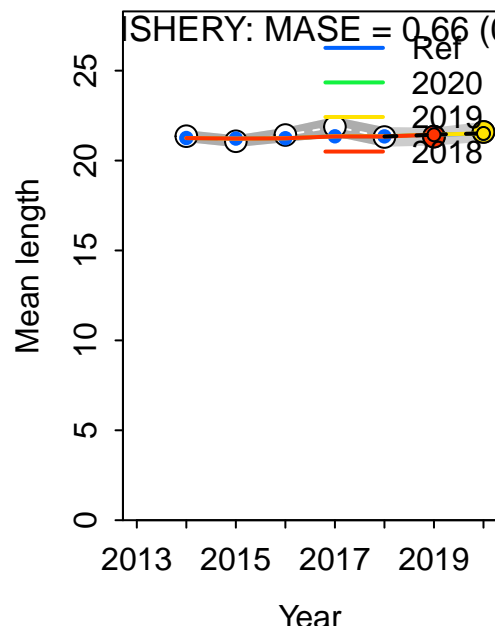
MASE stats by Index:

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:

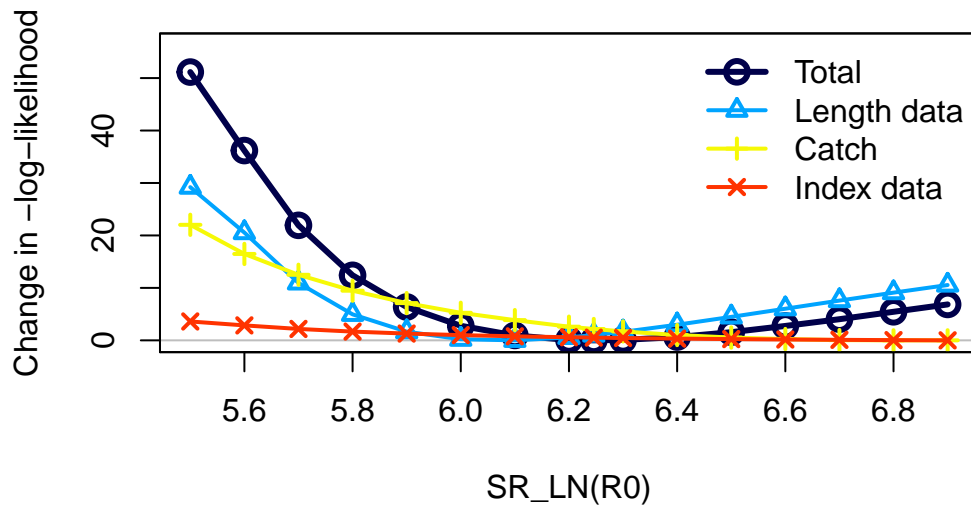


## Recruitment Deviations

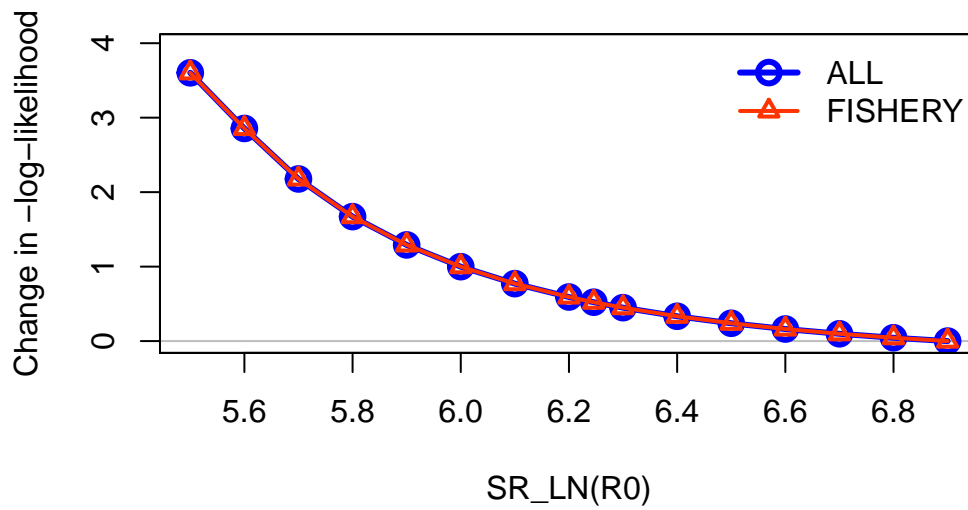
### Likelihood Profile

[1] "SR_LN"			
	frac_change	include	label
TOTAL	1.0000	TRUE	Total
Catch	0.4307	TRUE	Catch
Equil_catch	0.0000	FALSE	Equilibrium catch
Survey	0.0704	TRUE	Index data
Length_comp	0.5711	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	0.0000	FALSE	Soft bounds
Parm_devs	0.0000	FALSE	Parameter deviations
Crash_Pen	0.0000	FALSE	Crash penalty



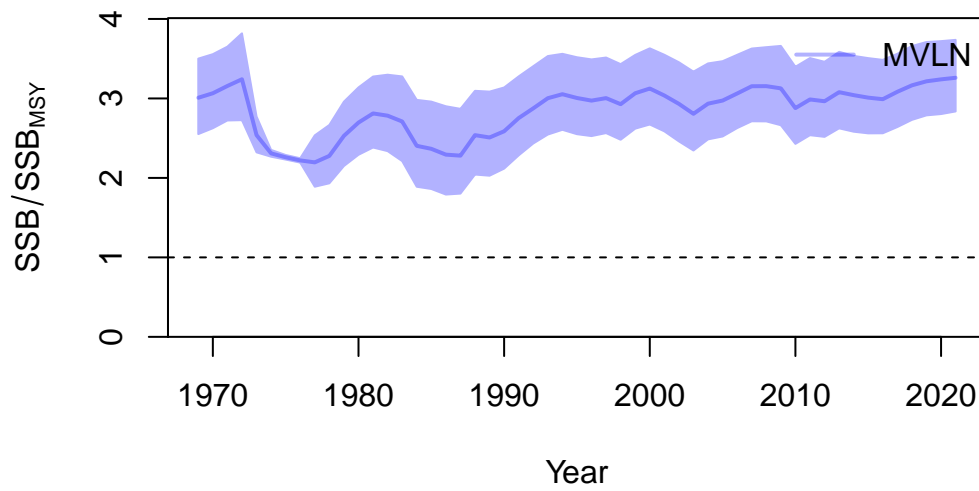
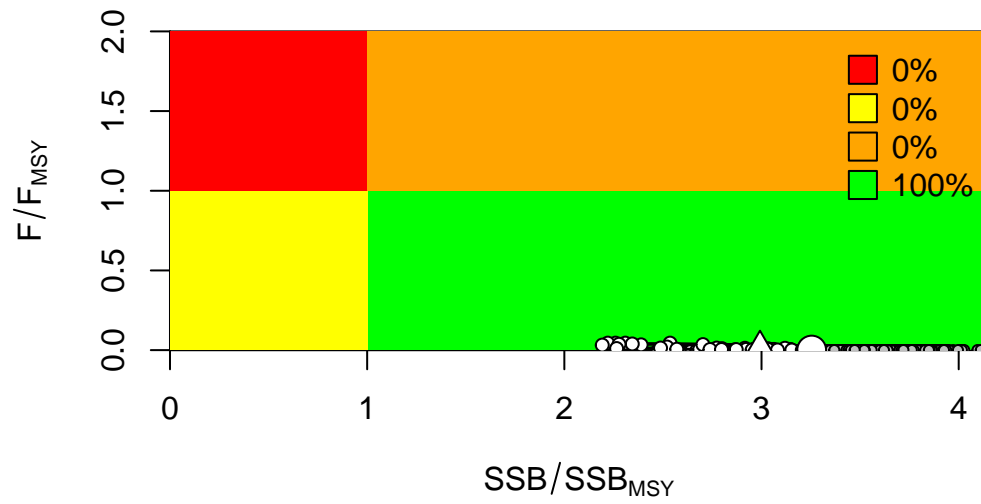


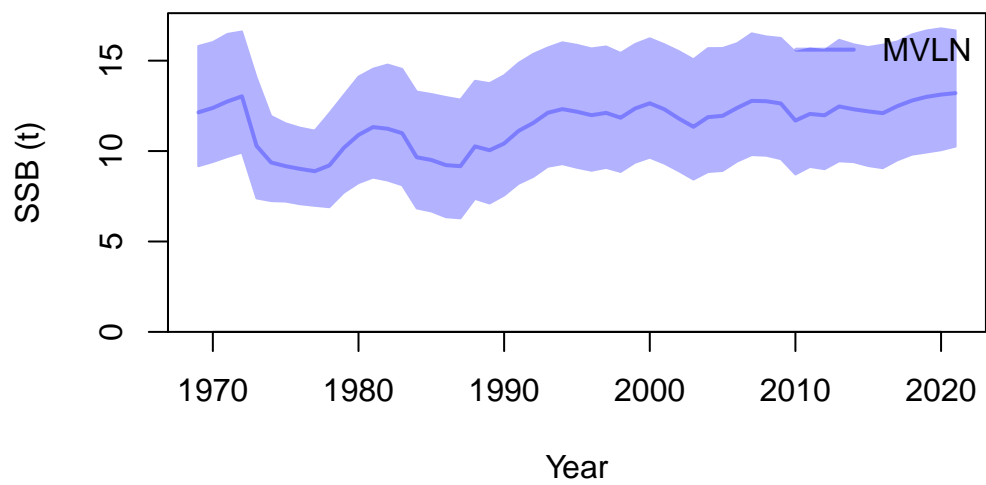
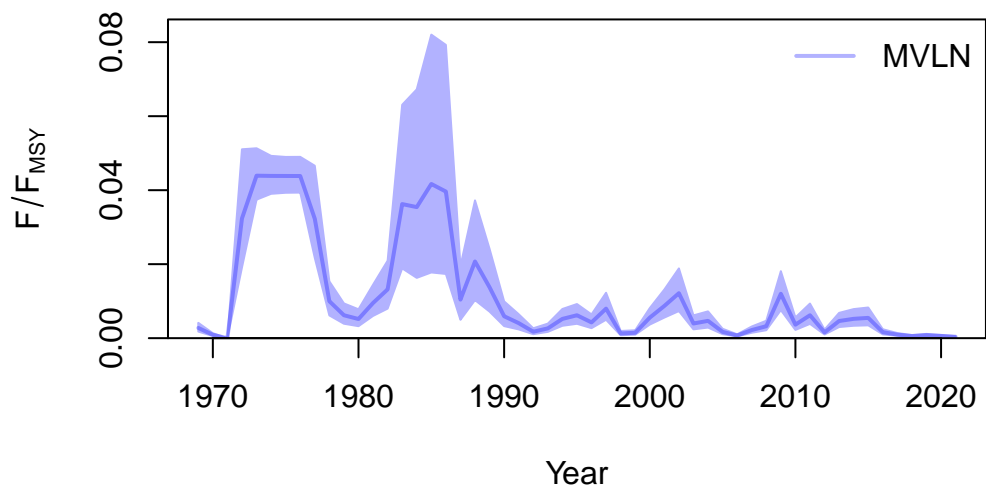
### Changes in survey likelihood by fleet

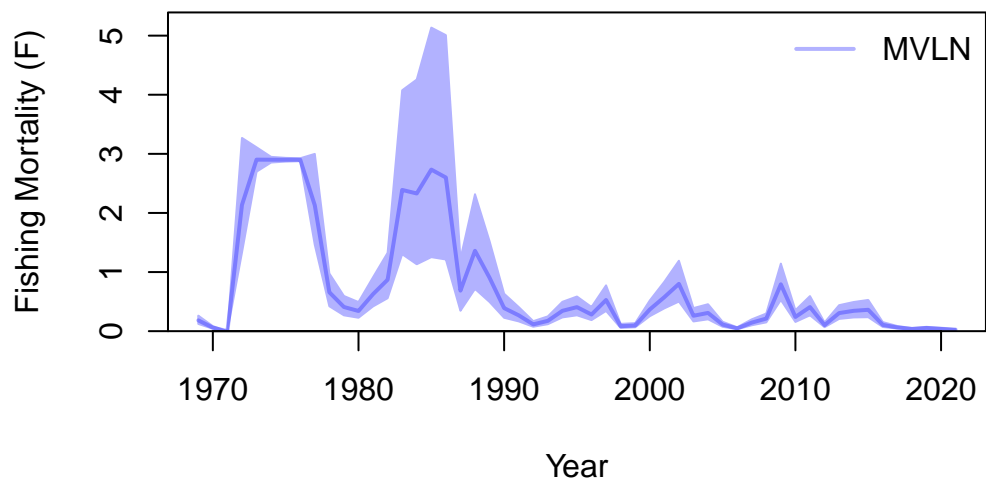


Management Quantities

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







null device  
1

**Jitter**

