

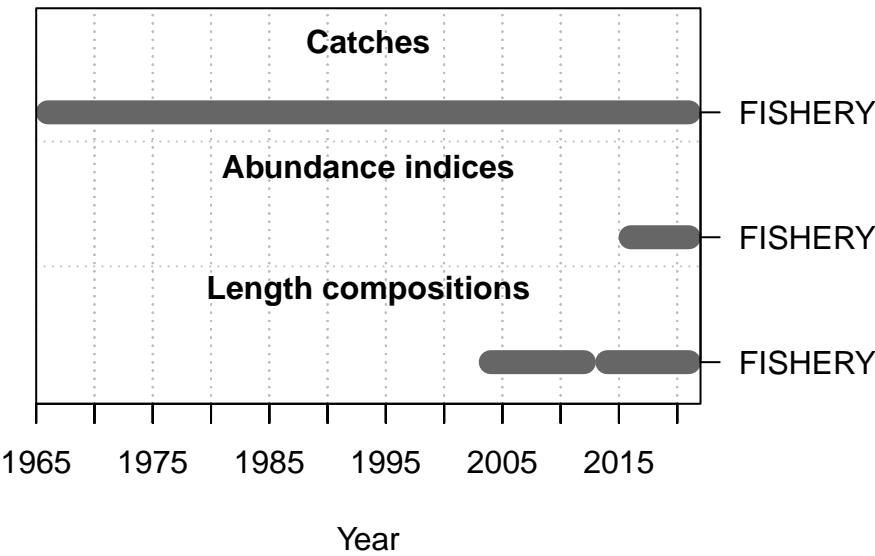
American Samoa Model Checks

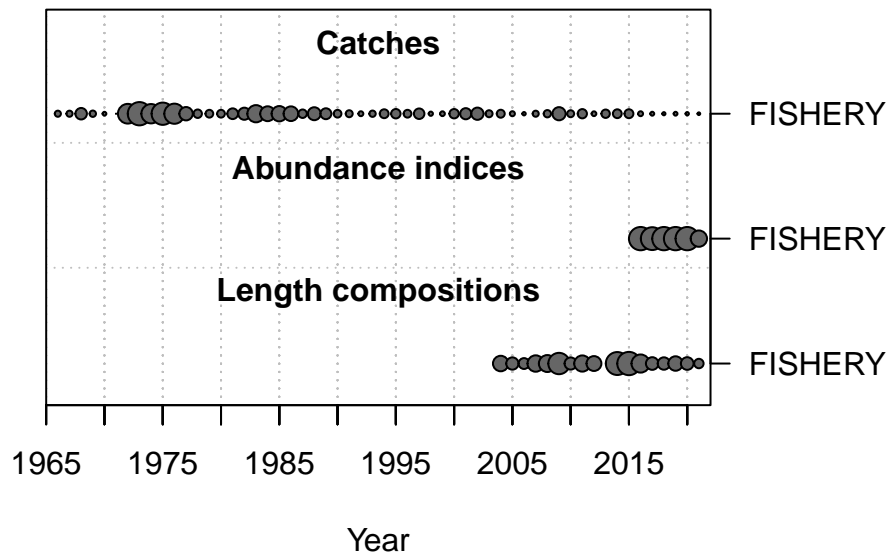
2022-08-28

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

Model Output

Input Data





Convergence Check

```

Converged      MaxGrad
1      TRUE 1.41328e-05

```

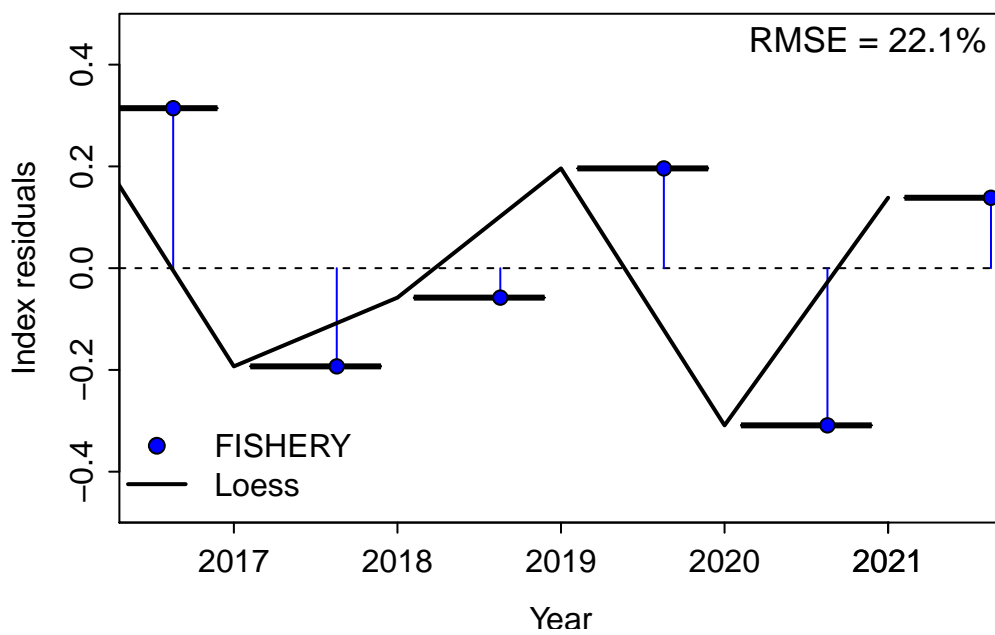
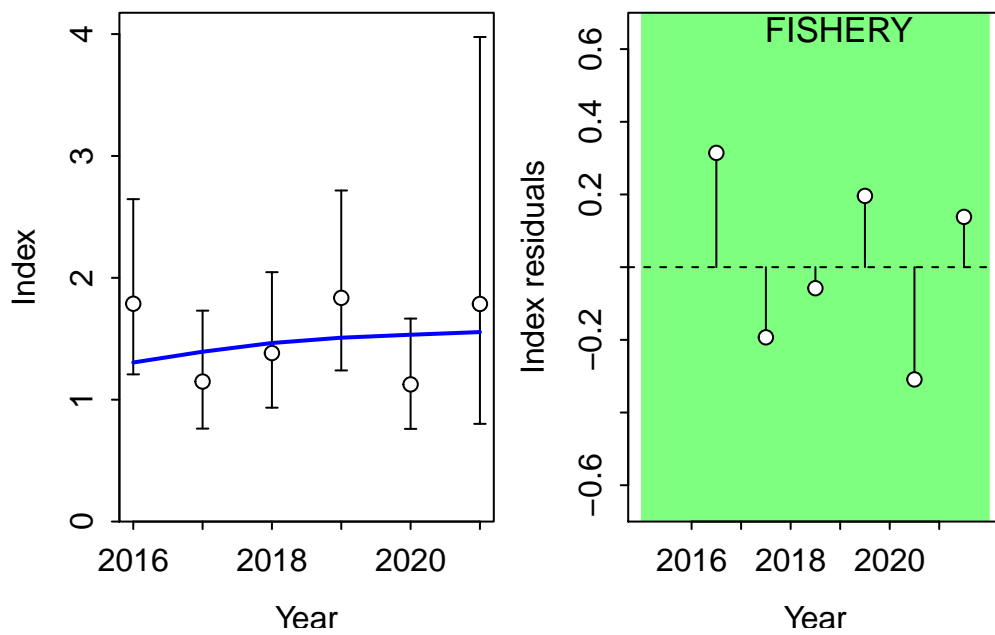
- [1] "1 NOTE: Max data length bin: 28 < max pop len bins: 31; so will accumulate larger pop
- [2] "2 warning: poor convergence in Fspr search 0.4 0.411374"
- [3] "3 warning: Fmult = 40 cannot get high enough to achieve low SPR target: 0.4; SPR achiev
- [4] "4 warning: poor convergence in Btarget search 4.78278 5.38043"
- [5] "5 warning: poor convergence in Fmsy, final dy/dy2= -0.00474565"
- [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	0.363889	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 -0.03071958 0.03071958  len

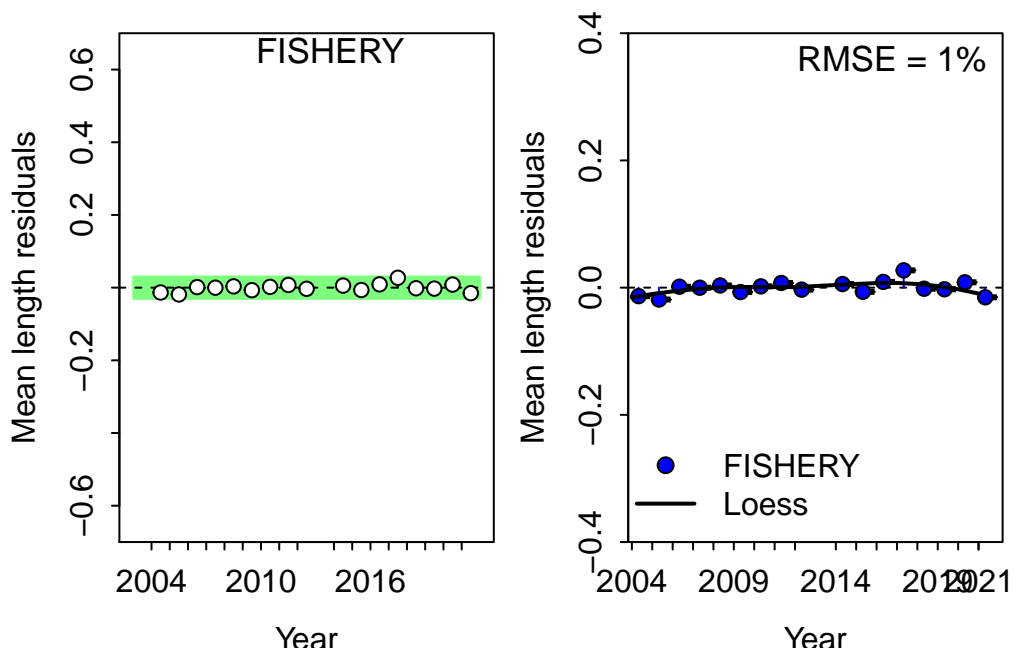
```

RMSE stats by Index:

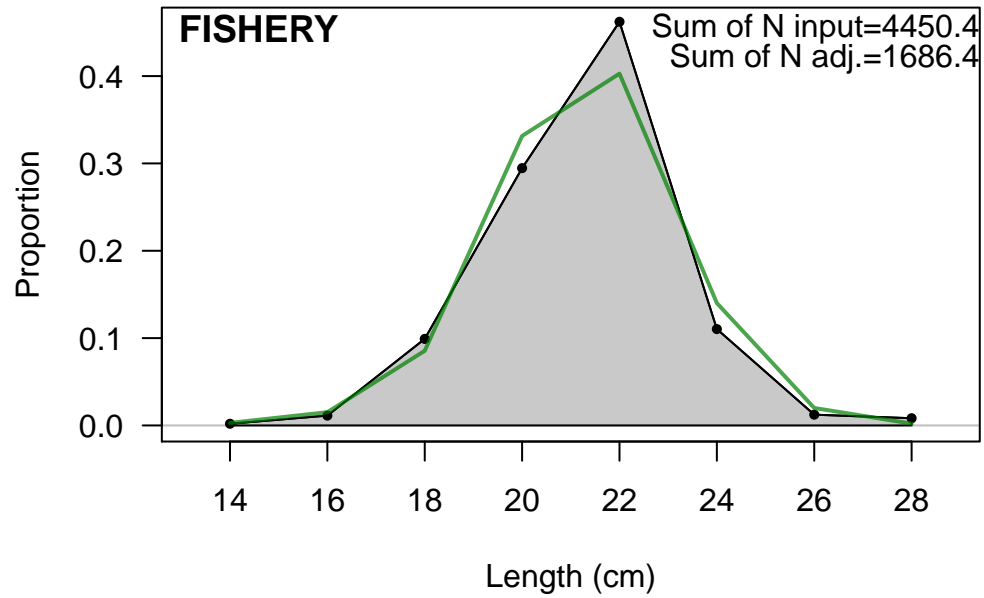
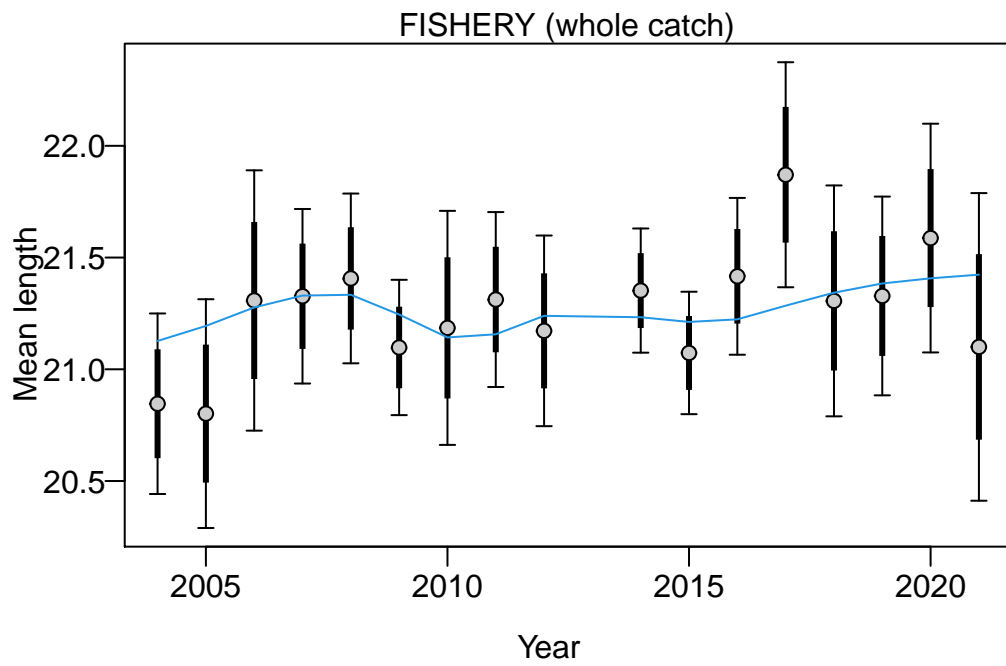
```

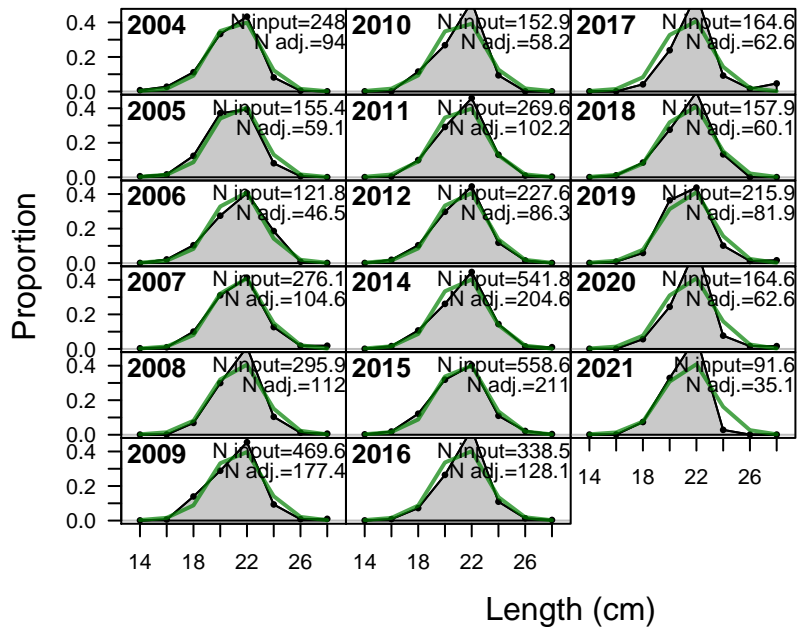
# A tibble: 2 x 3
  Fleet    RMSE.perc  Nobs
  <chr>      <dbl> <int>
1 FISHERY      1    17
2 Combined      1    17

```



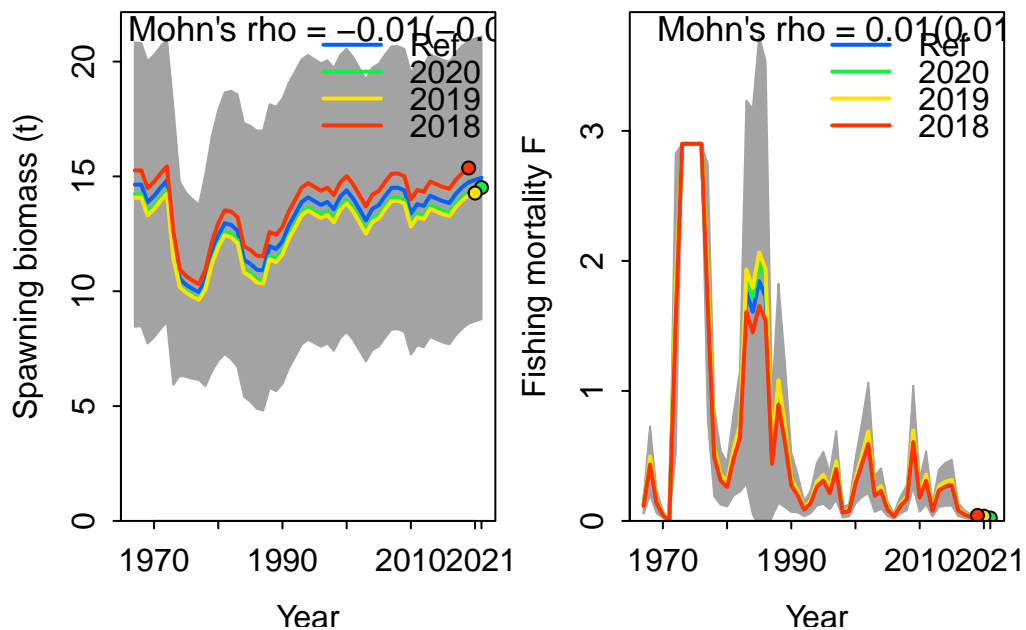
Retrospective and Hindcasting





Retrospective

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



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

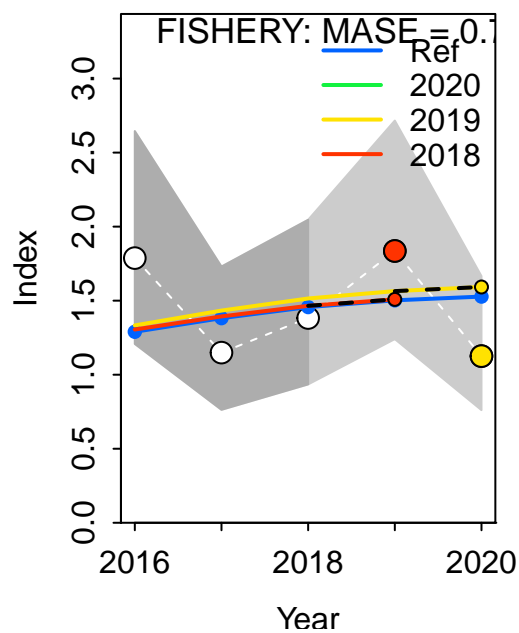
	type	peel	Rho	ForecastRho
1	F	2020	0.03659296	0.03608521
2	F	2019	0.06376985	0.06283589
3	F	2018	-0.05749849	-0.05606051
4	F Combined		0.01428810	0.01428686

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



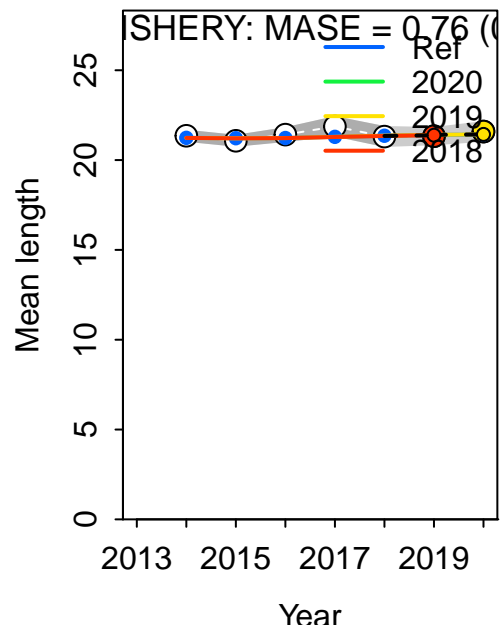
MASE stats by Index:

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:

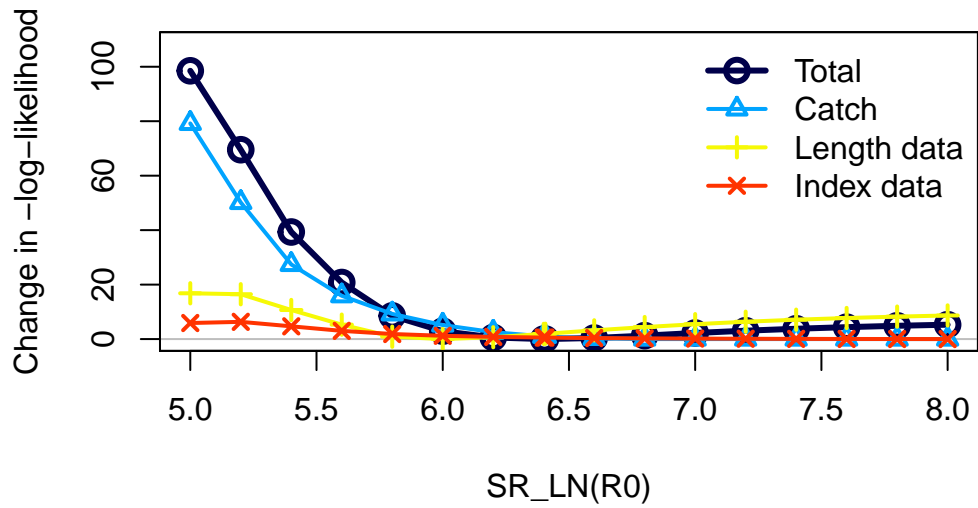


Recruitment Deviations

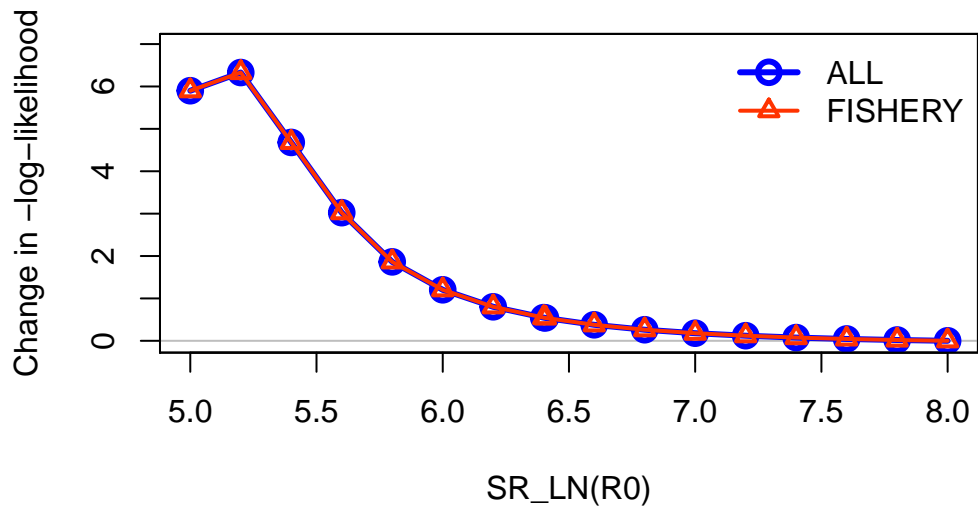
Likelihood Profile

[1] "SR_LN"				
	frac_change	include		label
TOTAL	1.0000	TRUE		Total
Catch	0.8039	TRUE		Catch
Equil_catch	0.0004	FALSE		Equilibrium catch
Survey	0.0642	TRUE		Index data
Length_comp	0.1707	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	0.0007	FALSE		Priors

Parm_softbounds	0.0000	FALSE	Soft bounds
Parm_devs	0.0000	FALSE	Parameter deviations
Crash_Pen	0.0000	FALSE	Crash penalty

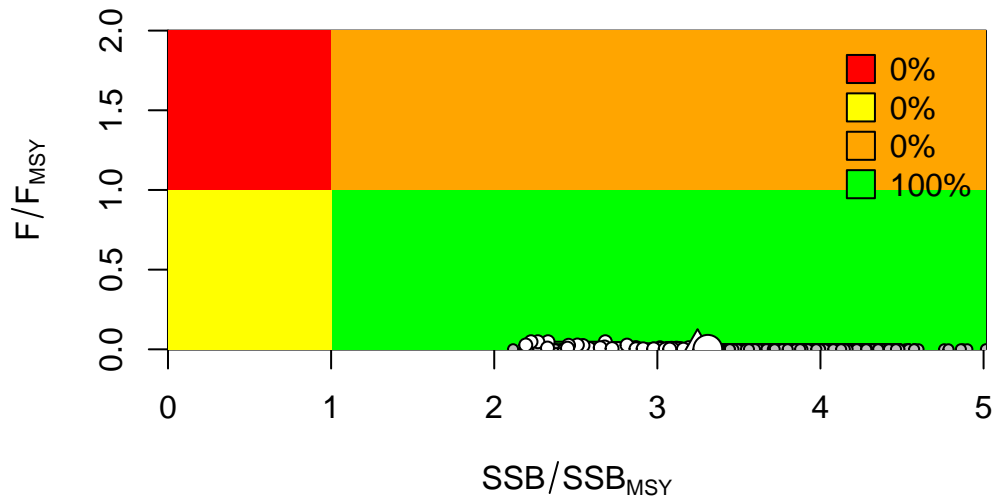


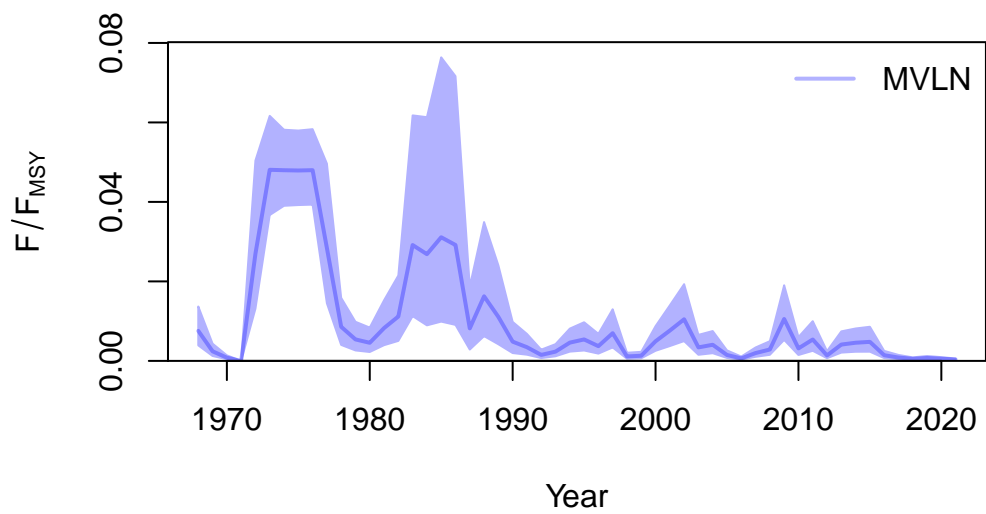
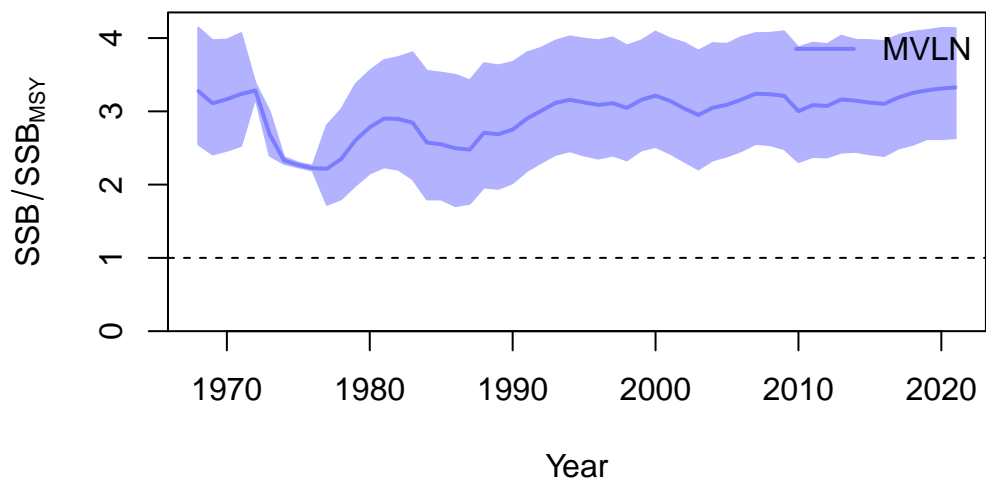
Changes in survey likelihood by fleet

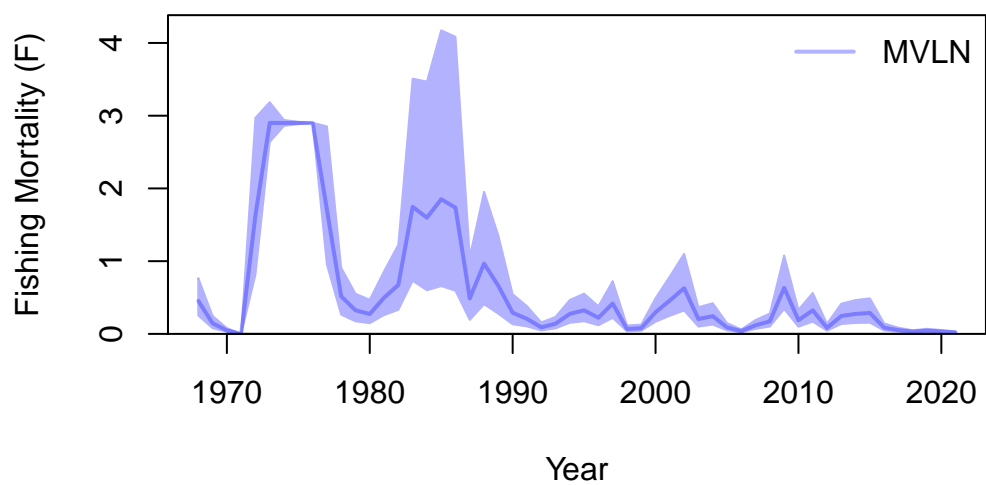
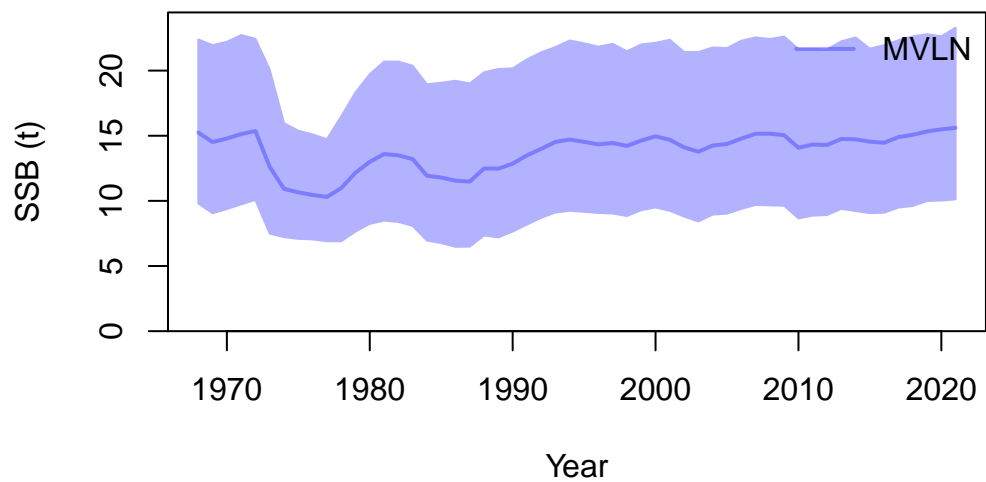


Management Quantities

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







null device
1

Jitter

