

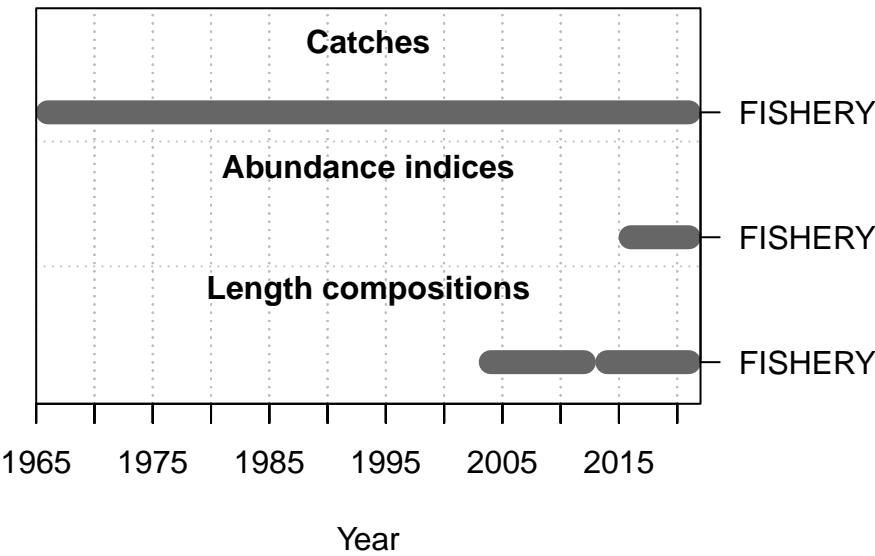
American Samoa Model Checks

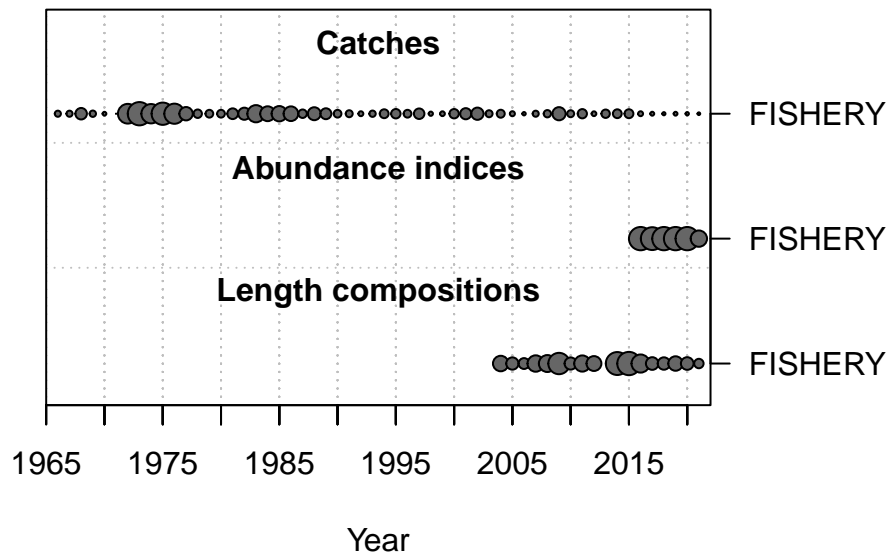
2022-08-26

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

Model Output

Input Data





Convergence Check

```

Converged      MaxGrad
1      TRUE 2.46603e-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 0.414785"
[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 4.52752 5.15121"
[5] "5 warning: poor convergence in Fmsy, final dy/dy2= -0.00663601"
[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"

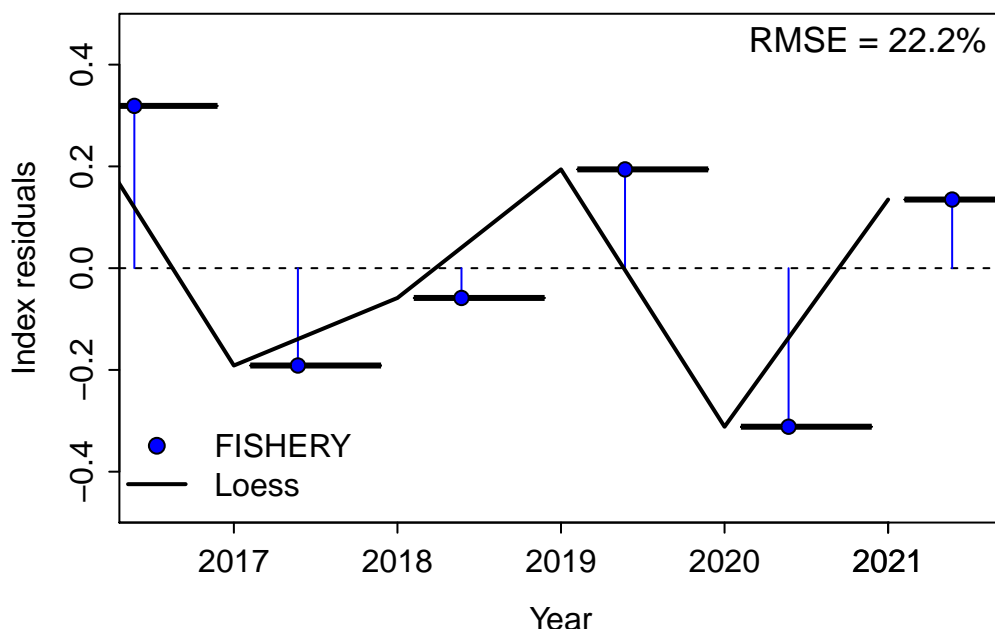
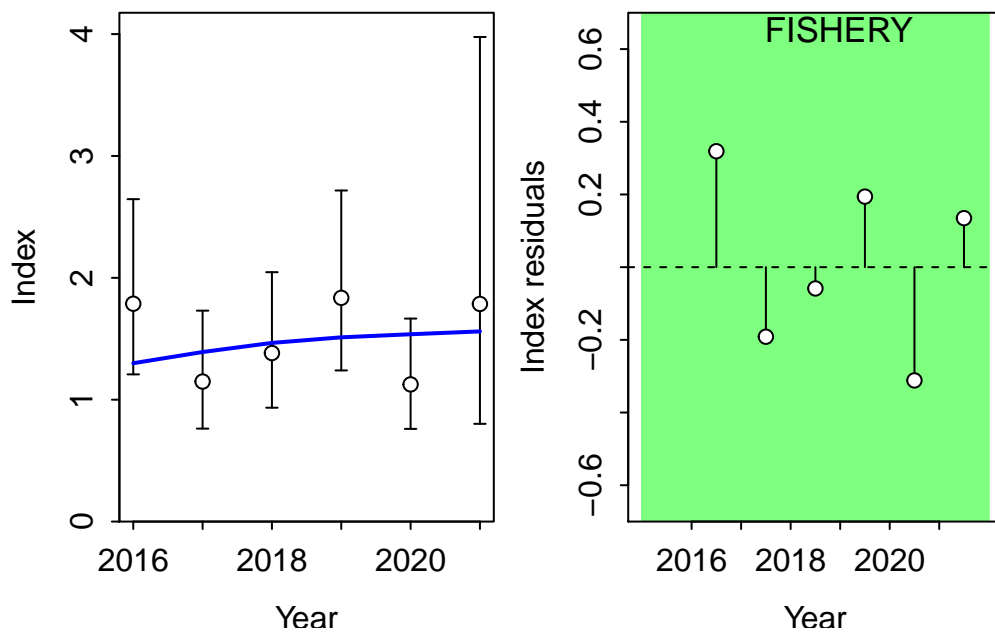
```

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	0.398476	len	FISHERY

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

```

Index runs.p  test  sigma3.lo sigma3.hi type
1 FISHERY    0.779 Passed -0.0305606 0.0305606 len

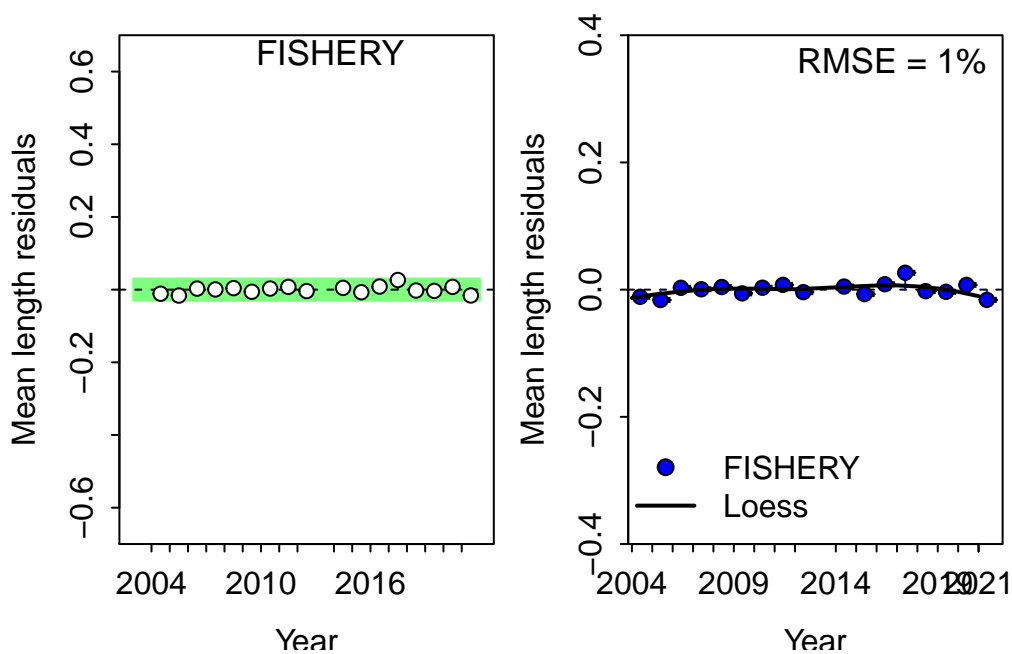
```

RMSE stats by Index:

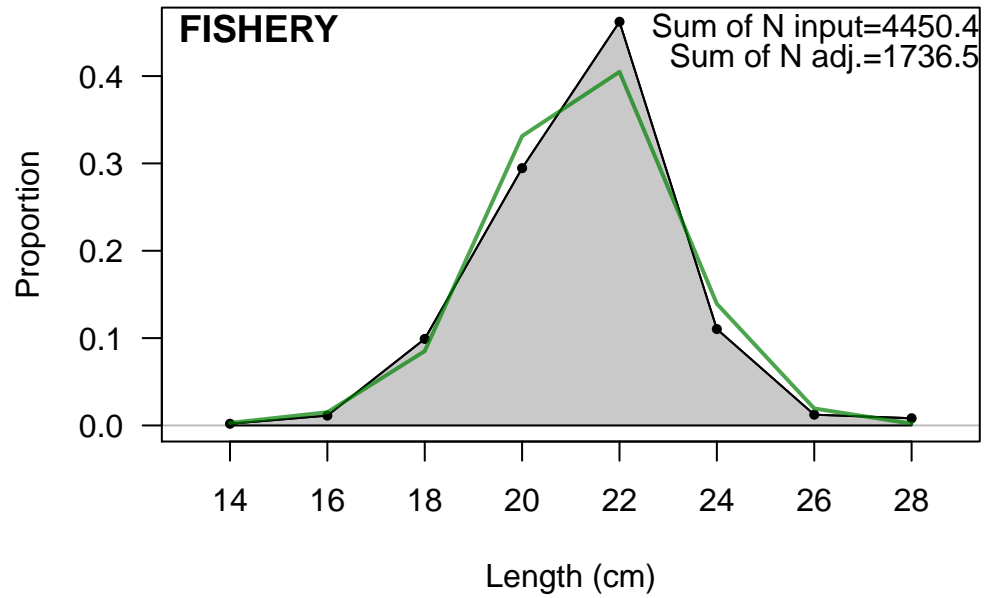
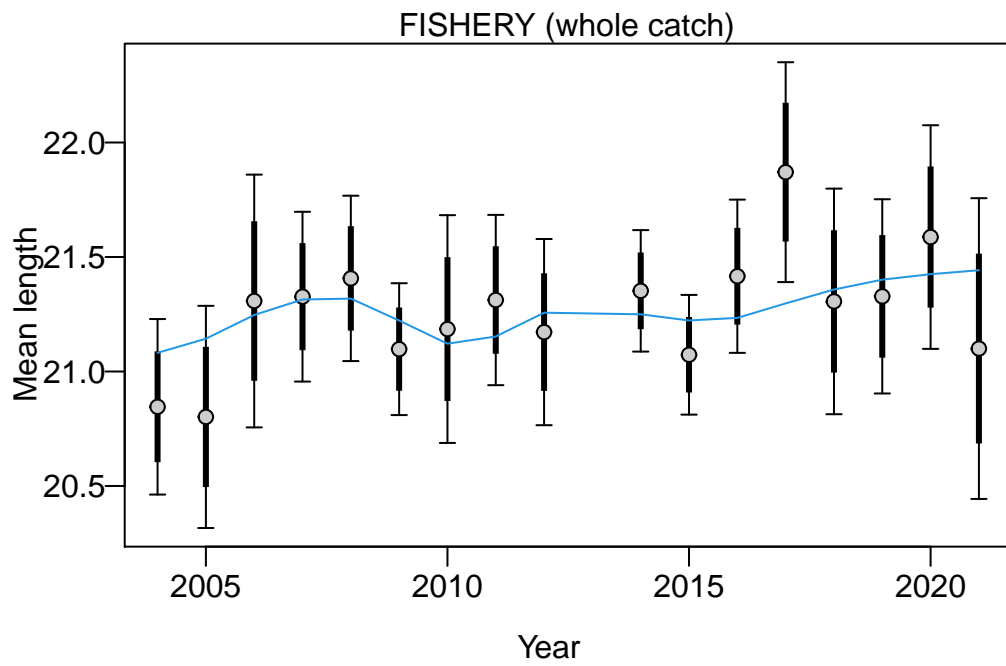
```

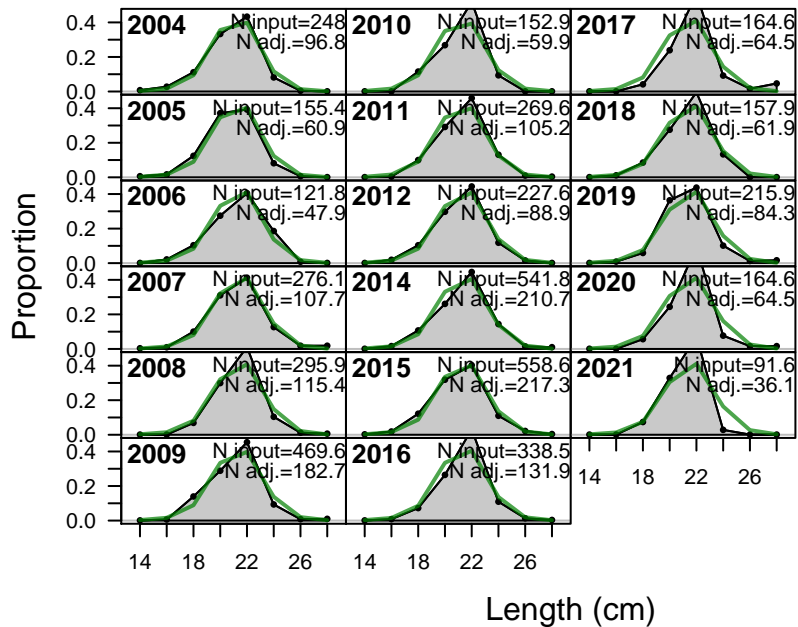
# A tibble: 2 x 3
  Fleet    RMSE.perc  Nobs
  <chr>      <dbl> <int>
1 FISHERY      1    17
2 Combined      1    17

```



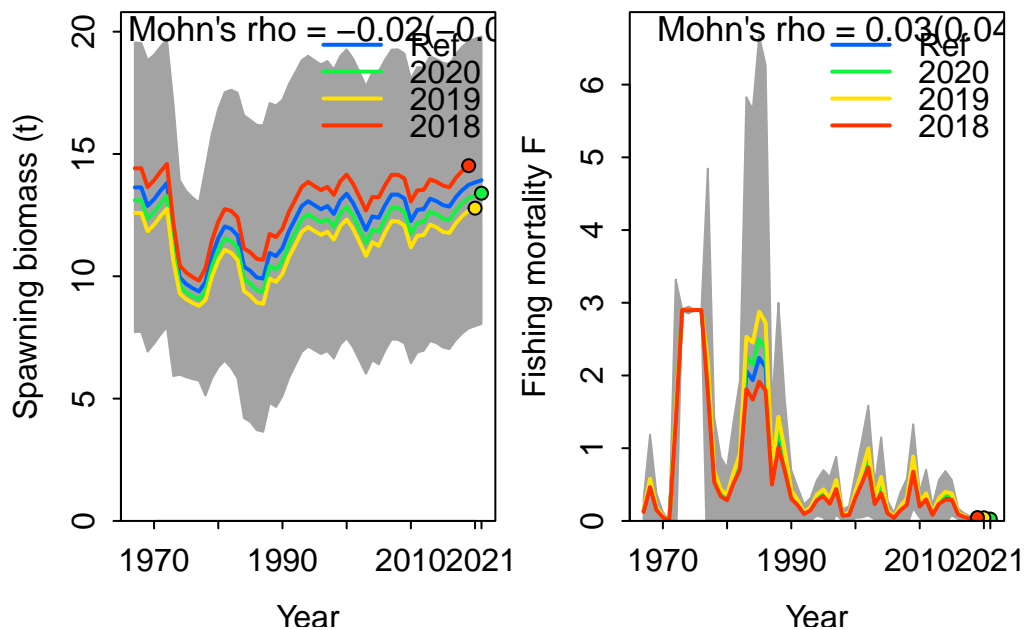
Retrospective and Hindcasting





Retrospective

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



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

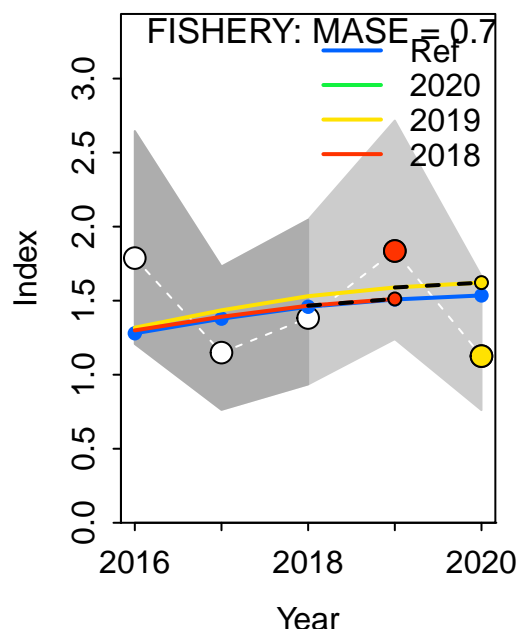
	type	peel	Rho	ForecastRho
1	F	2020	0.05178605	0.05395267
2	F	2019	0.12704383	0.12814814
3	F	2018	-0.07822582	-0.07364650
4	F Combined		0.03353469	0.03615144

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



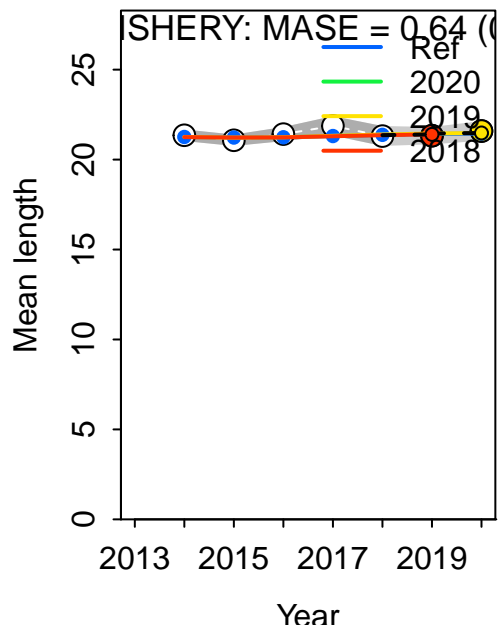
MASE stats by Index:

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:



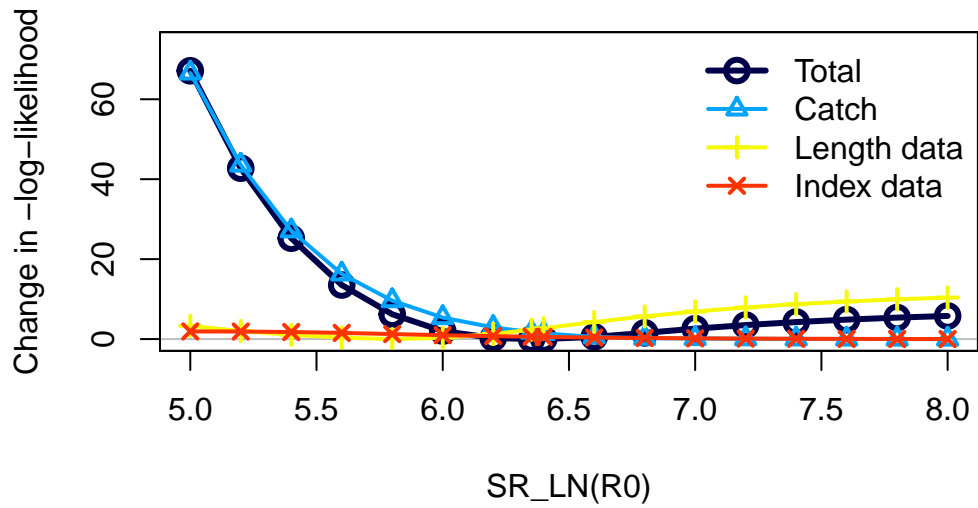
Recruitment Deviations

Likelihood Profile

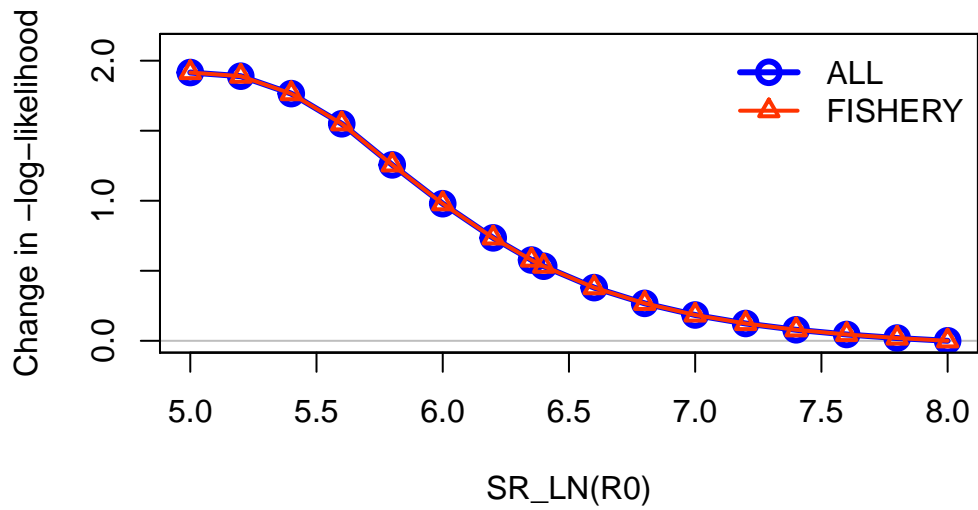
[1] "SR_LN"

	frac_change	include	label
TOTAL	1.0000	TRUE	Total
Catch	0.9918	TRUE	Catch
Equil_catch	0.0003	FALSE	Equilibrium catch
Survey	0.0285	TRUE	Index data
Length_comp	0.1548	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	0.0012	FALSE	Priors

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

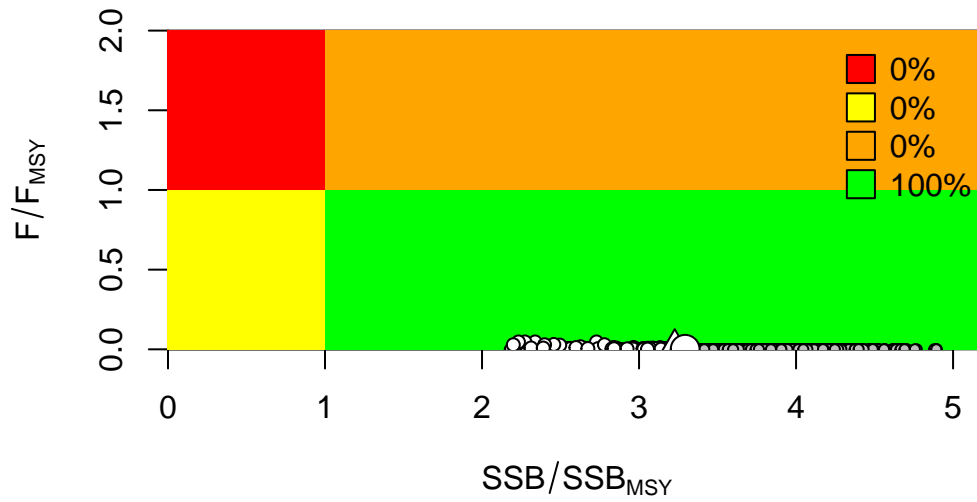


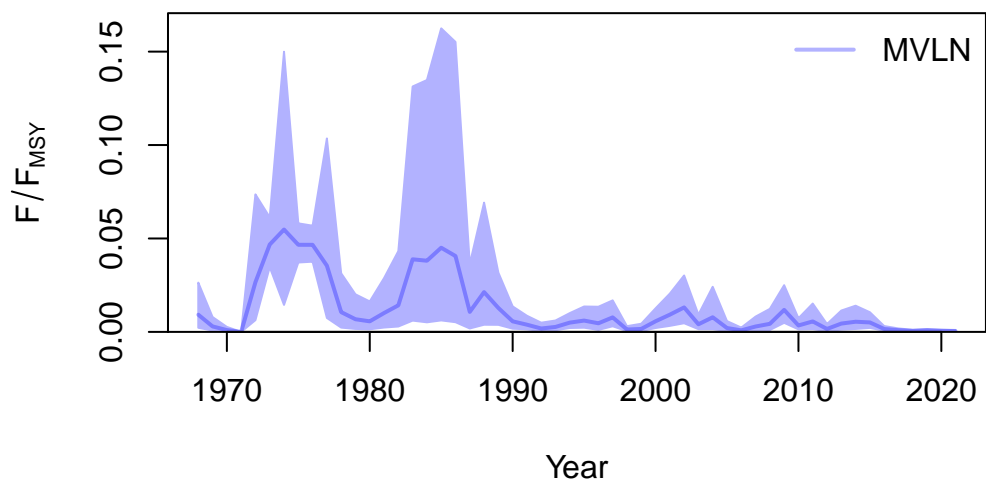
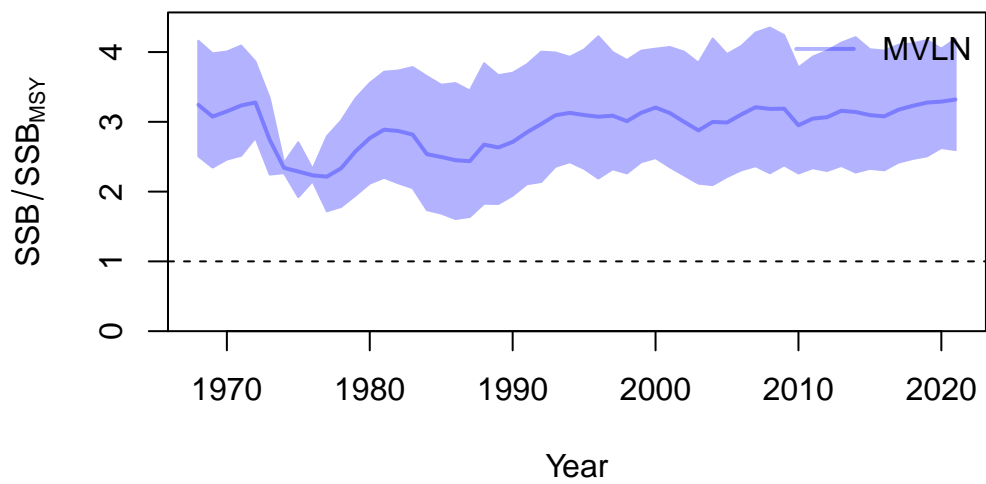
Changes in survey likelihood by fleet

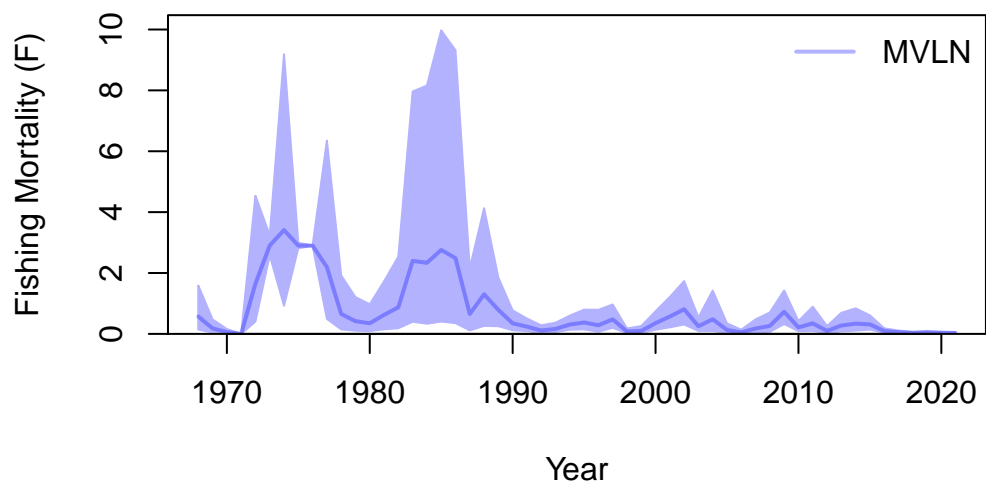
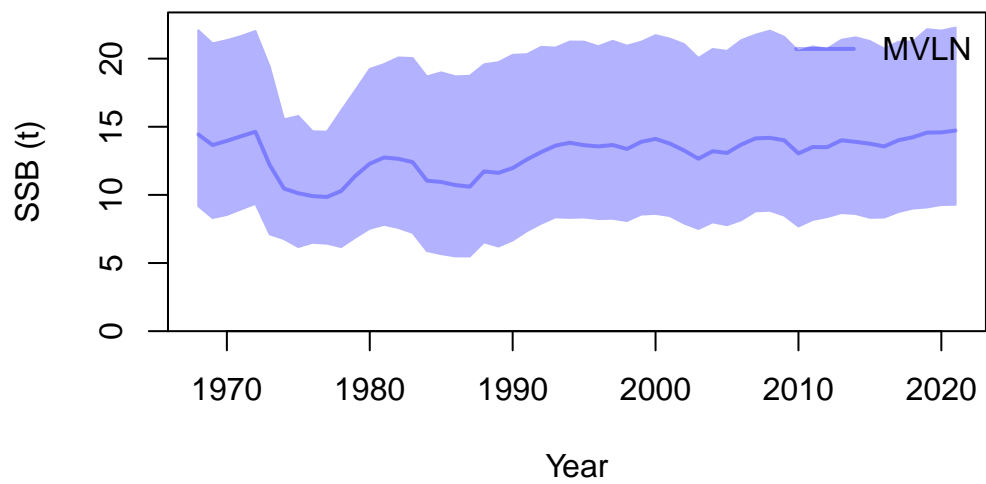


Management Quantities

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







null device
1

Jitter

