

American Samoa Model Checks

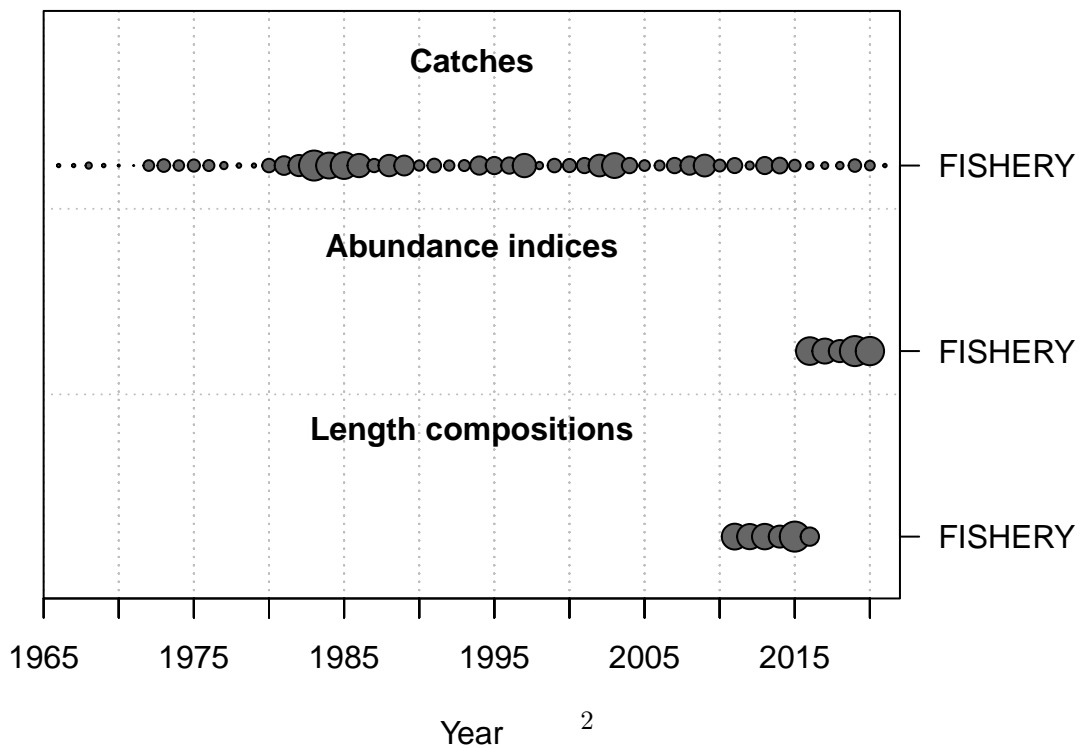
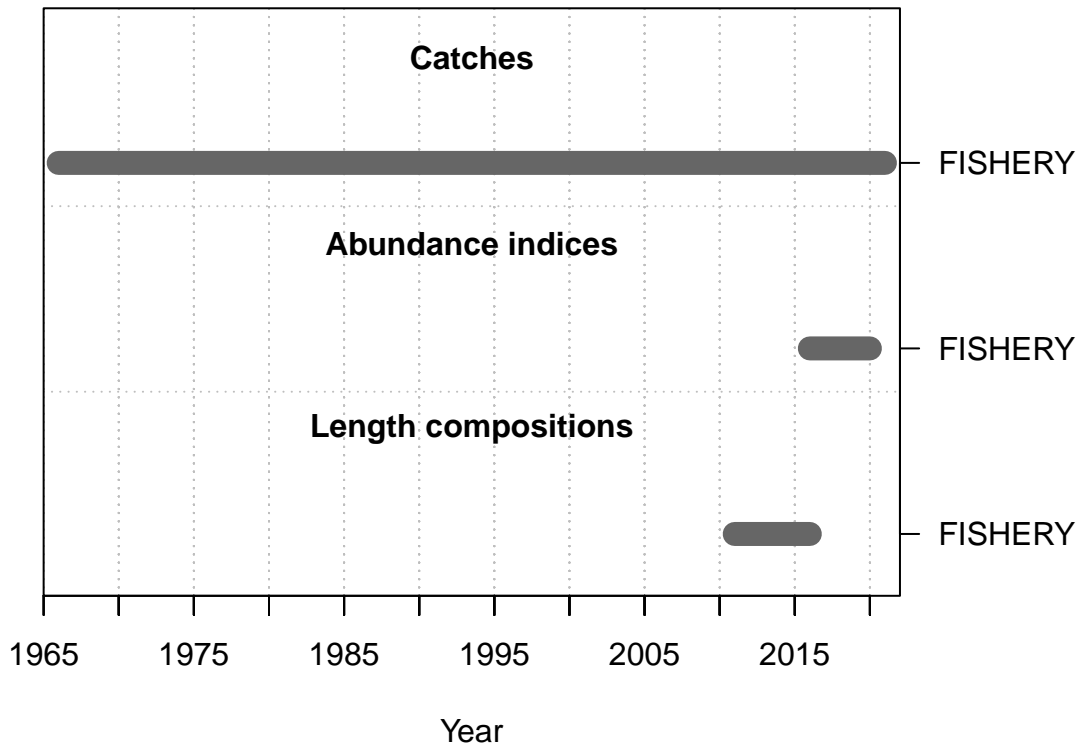
Meg Oshima

2022-08-11

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

Model Output

Input Data



Convergence Check

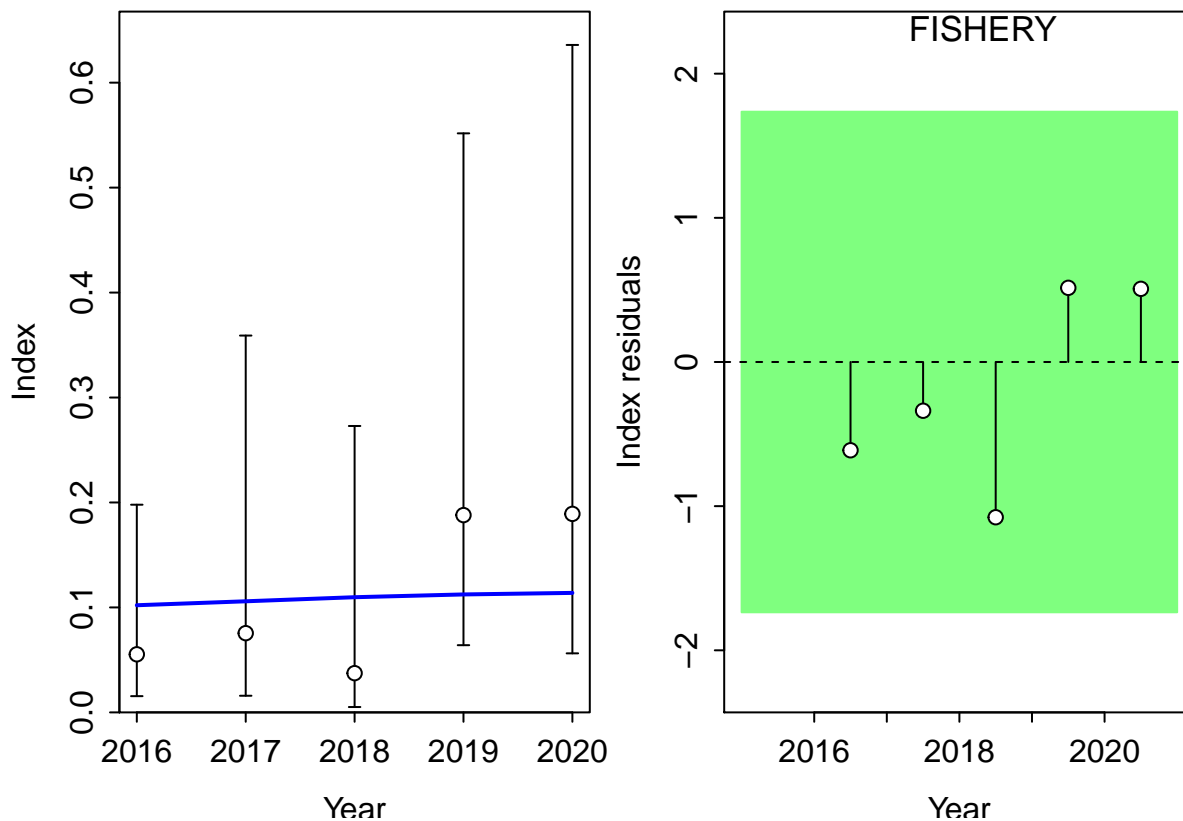
```
## Converged      MaxGrad
## 1      TRUE 1.55153e-05
```

```
## [1] "1 NOTE: Max data length bin: 51 < max pop len bins: 57; so will accumulate larger pop len bins"
## [2] "2 parameter init value is greater than parameter max 1 > 0.99999 for parm: 25 ; search for <now"
## [3] "3 Main recdev biasadj is >2 times ratio of rmse to sigmaR"
## [4] "4 Early recdev biasadj is >2 times ratio of rmse to sigmaR"
## [5] "5 warning: poor convergence in Fmsy, final dy/dy2= -0.00486632"
## [6] " N parameters are on or within 1% of min-max bound: 2; check results, variance may be suspect"
## [7] "N warnings: 5"
```

Fit to Model

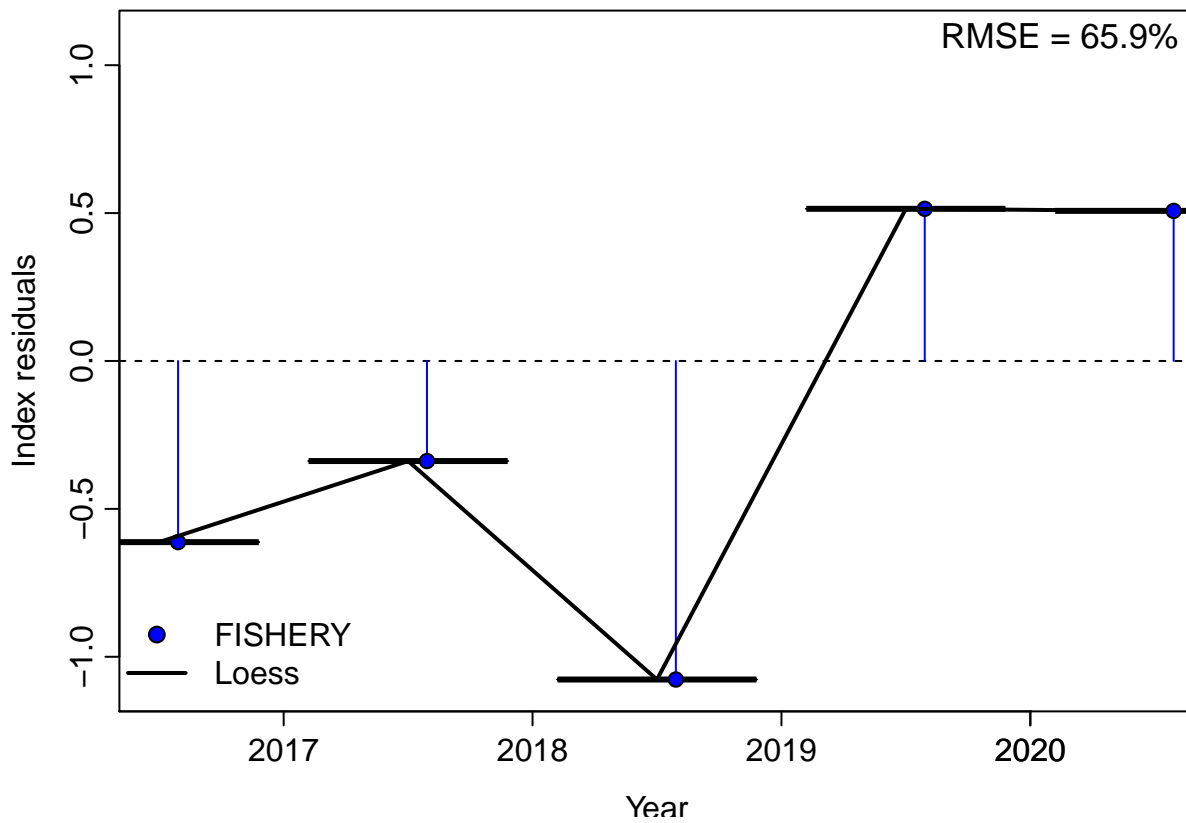
CPUE

```
##
## Running Runs Test Diagnostics for Index
## Plotting Residual Runs Tests
```



```
##
## Runs Test stats by Index:
## Plotting JABBA residual plot
```

```
## Warning in simpleLoess(y, x, w, span, degree = degree, parametric = parametric, : span too small. fe
## Warning in simpleLoess(y, x, w, span, degree = degree, parametric = parametric, : pseudoinverse used
## Warning in simpleLoess(y, x, w, span, degree = degree, parametric = parametric, : neighborhood radiu
## Warning in simpleLoess(y, x, w, span, degree = degree, parametric = parametric, : reciprocal conditi
## Warning in simpleLoess(y, x, w, span, degree = degree, parametric = parametric, : There are other ne
```



```
##
## RMSE stats by Index:
```

Length Comp

#Factor	Fleet	New_Var_adj	Type	Name
4	1	0.101978	len	FISHERY

```
##
## Running Runs Test Diagnostics for Mean length
## Plotting Residual Runs Tests
```

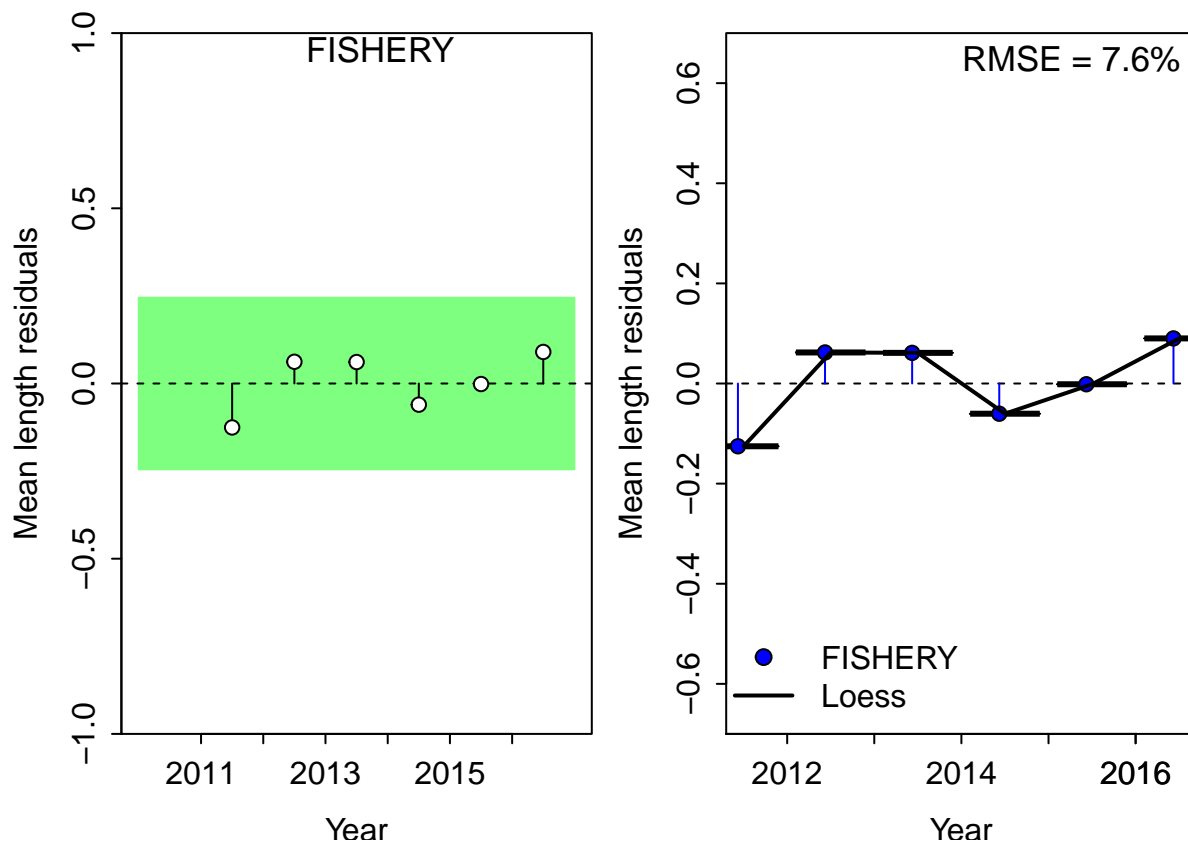
```
##
## Runs Test stats by Mean length:

##      Index runs.p  test  sigma3.lo sigma3.hi type
## 1 FISHERY      0.5 Passed -0.2448045 0.2448045  len

## Plotting JABBA residual plot

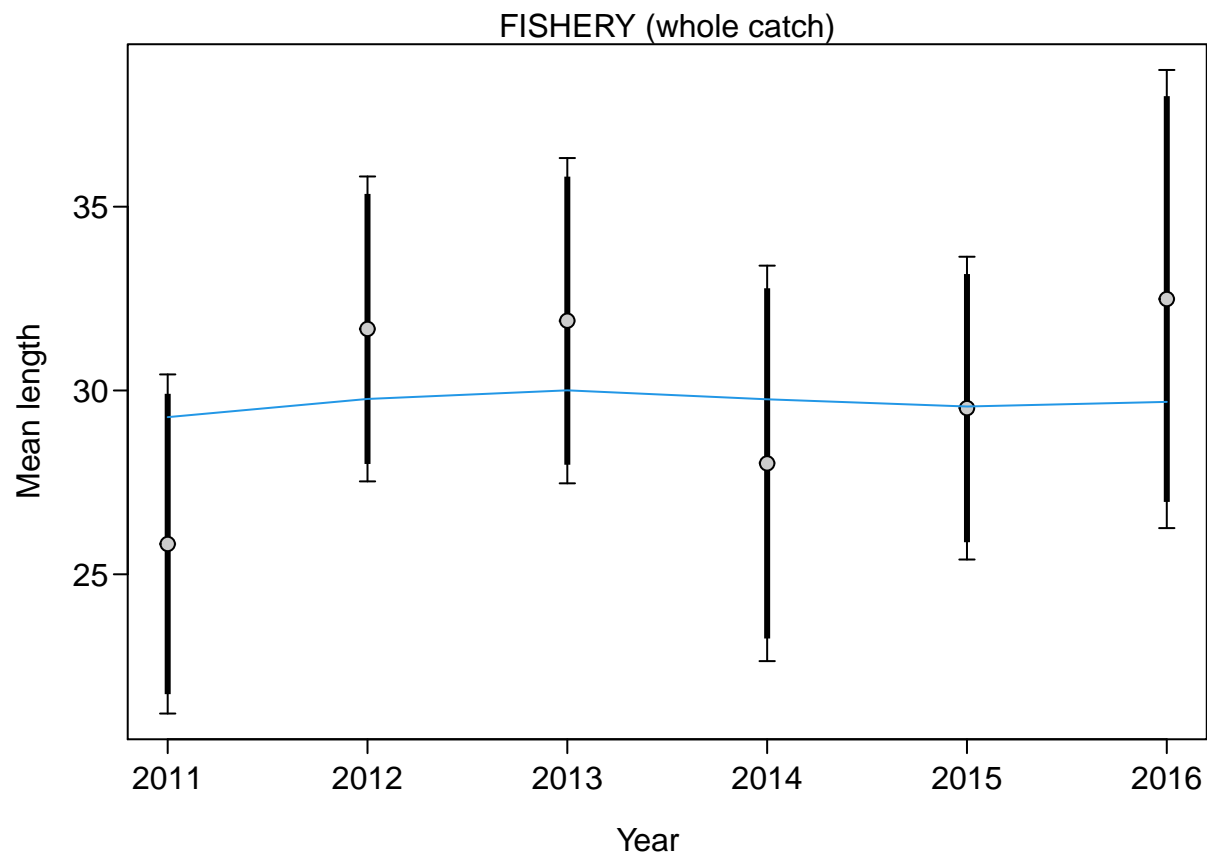
## Warning in simpleLoess(y, x, w, span, degree = degree, parametric = parametric, : Chernobyl! trL>n 6
## Warning in simpleLoess(y, x, w, span, degree = degree, parametric = parametric, : Chernobyl! trL>n 6

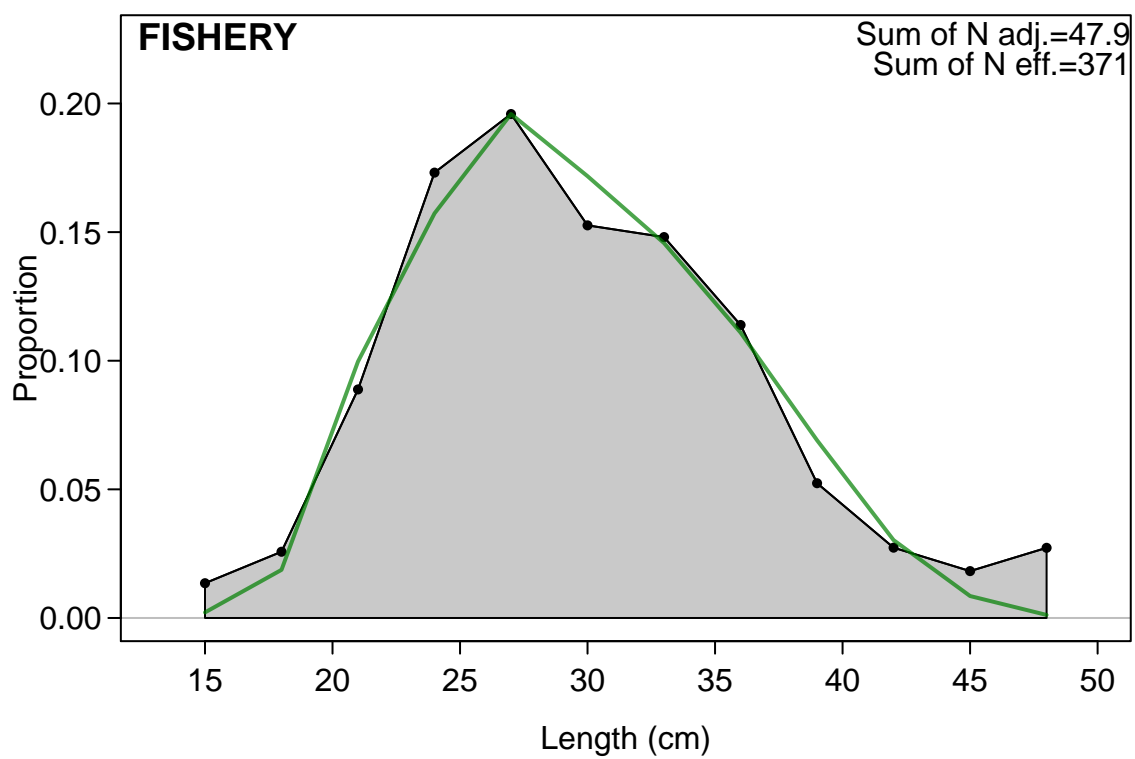
## Warning in sqrt(sum.squares/one.delta): NaNs produced
```

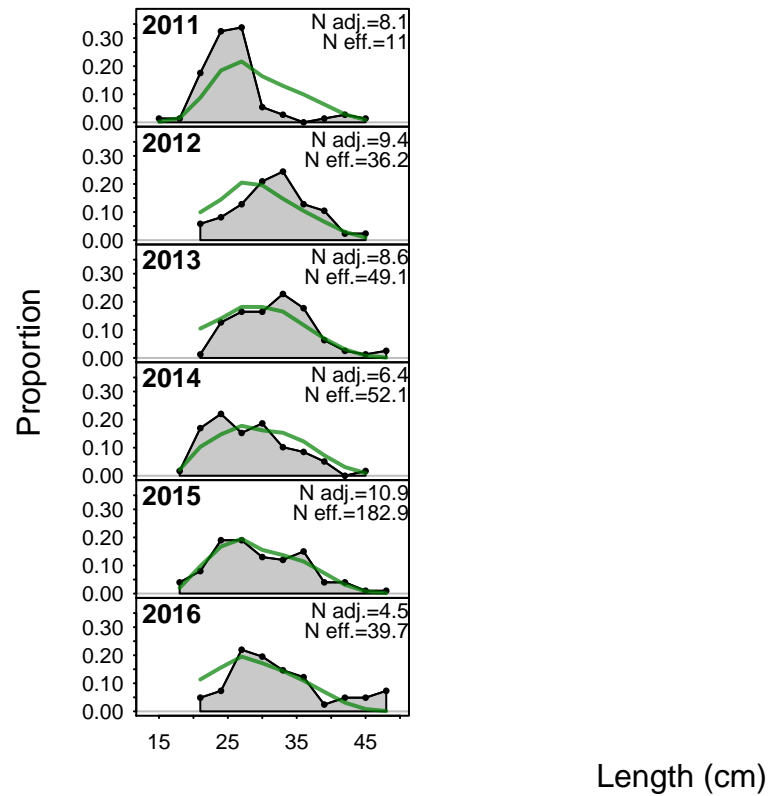


```
##
## RMSE stats by Index:

##      indices RMSE.perc nobs
## 1 FISHERY      7.6      6
## 2 Combined      7.6      6
```







Retrospective and Hindcasting

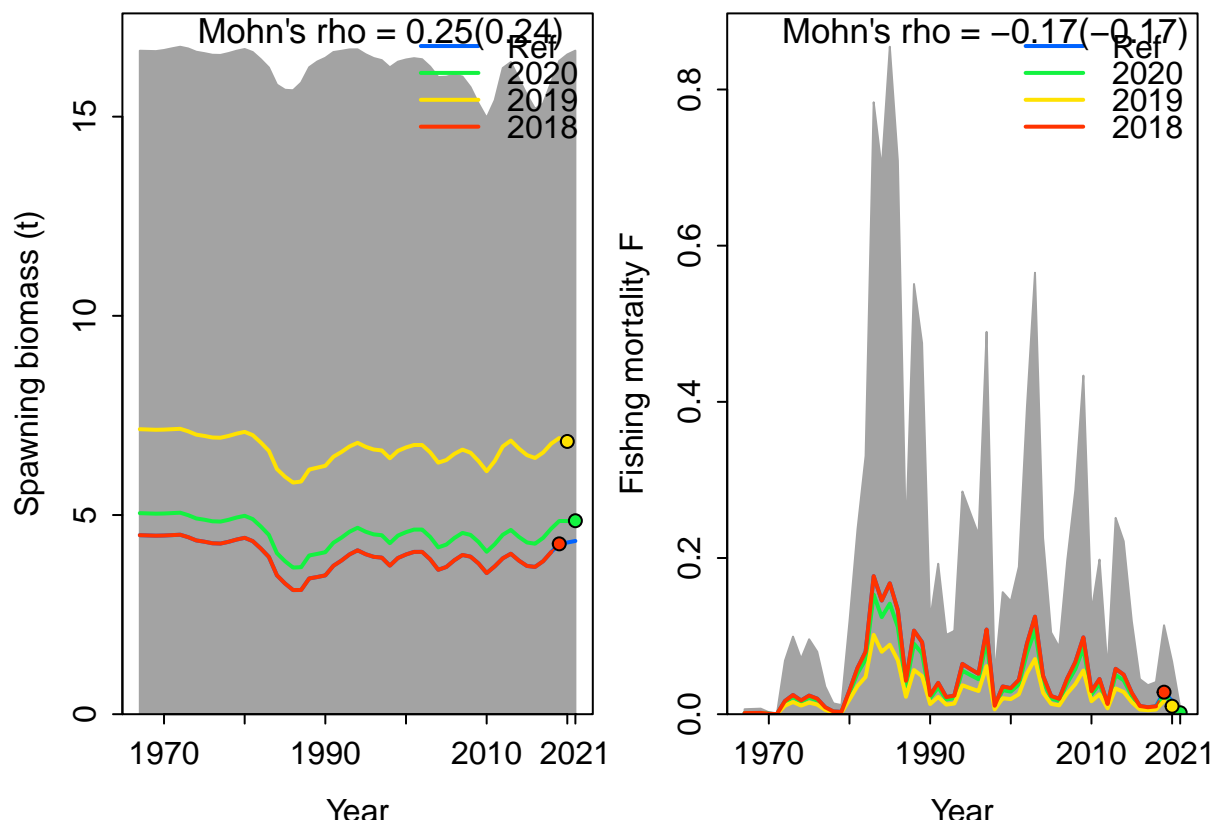
Retrospective

Plotting Retrospective pattern

##

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

Plotting Retrospective pattern

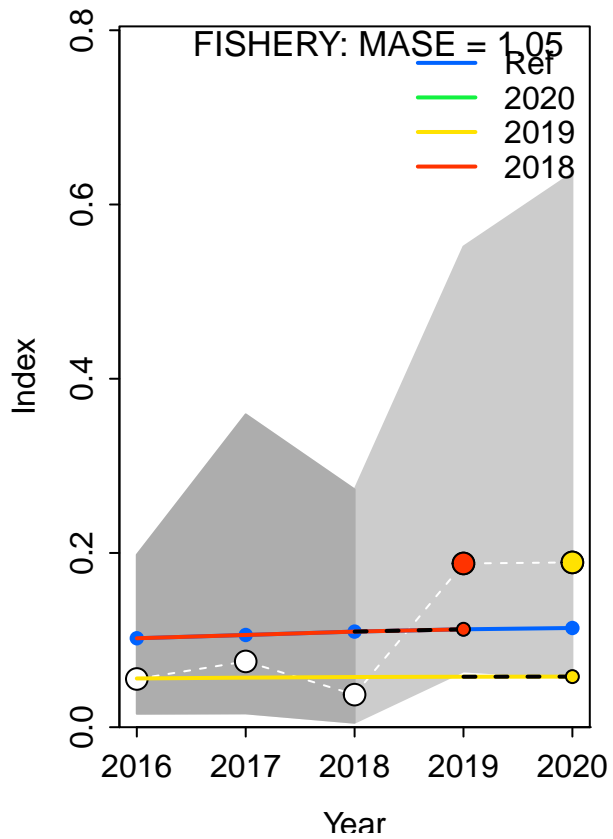


```
##
## Mohn's Rho stats, including one step ahead forecasts:
```

##	type	peel	Rho	ForecastRho
## 1	F	2020	-0.1184523	-0.1149692
## 2	F	2019	-0.3978716	-0.3914446
## 3	F	2018	0.0000000	0.0000000
## 4	F Combined		-0.1721080	-0.1688046

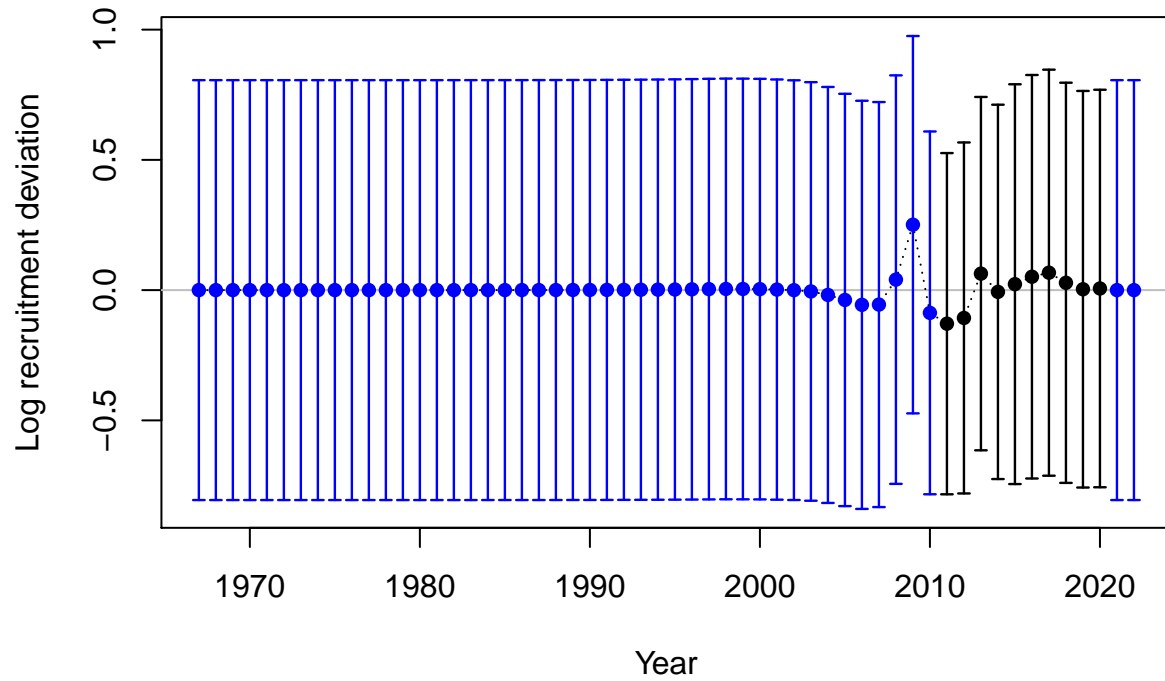
Hindcasting

```
## 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
```

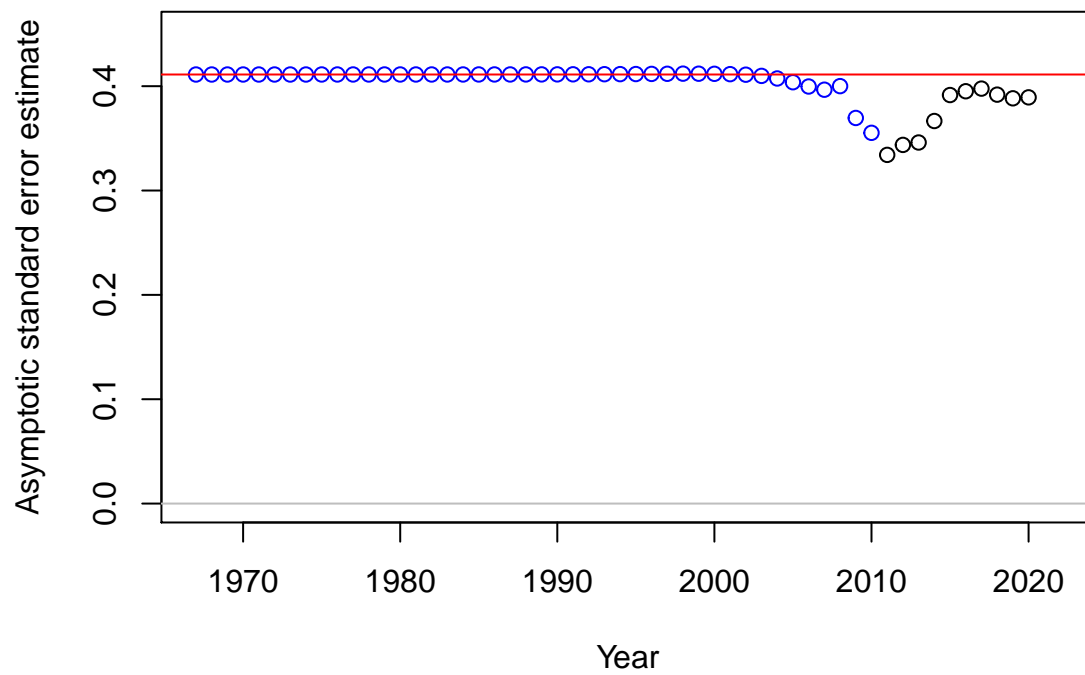


```
##
## MASE stats by Index:
## Plotting Hindcast Cross-Validation (one-step-ahead)
##
## No observations in evaluation years to compute prediction residuals for Index FISHERY
##
## MASE stats by Index:
```

Recruitment Deviations



Recruitment deviation variance



Likelihood Profile

```
## [1] "SR_LN"
```

```
## Parameter matching profile.string=SR_LN: SR_LN(R0)
```

```
## Parameter values (after subsetting based on input 'models'): 2.6, 2.8, 3, 3.2, 3.4, 3.6, 3.8, 4, 2.1
```

```
##
```

```
## Likelihood components showing max change as fraction of total change.
```

```
## To change which components are included, change input 'minfraction'.
```

##	frac_change	include	label
## TOTAL	1.0000	TRUE	Total
## Catch	0.0000	FALSE	Catch
## Equil_catch	0.6292	TRUE	Equilibrium catch
## Survey	1.3898	TRUE	Index data
## Length_comp	0.4263	TRUE	Length data
## Recruitment	0.3431	TRUE	Recruitment
## InitEQ_Regime	0.0000	FALSE	Initital equilibrium recruitment
## Forecast_Recruitment	0.0000	FALSE	Forecast recruitment
## Parm_priors	0.0000	FALSE	Priors
## Parm_softbounds	0.0015	FALSE	Soft bounds
## Parm_devs	0.0000	FALSE	Parameter deviations
## Crash_Pen	0.0000	FALSE	Crash penalty

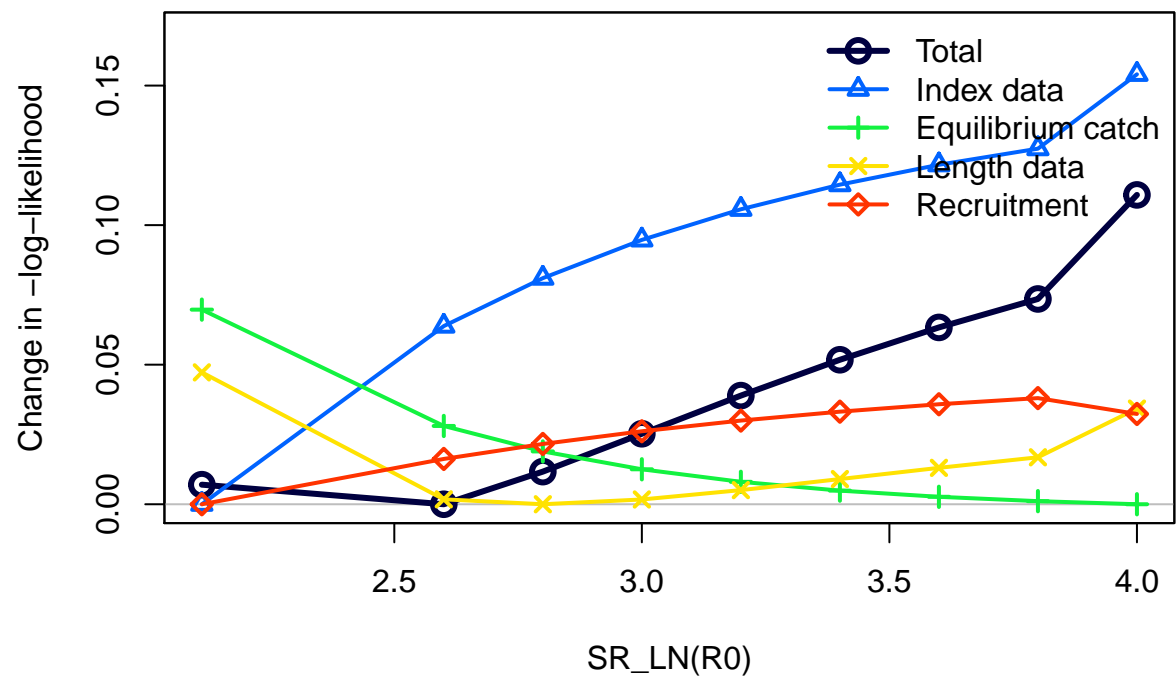
```
## Parameter matching profile.string = 'SR_LN': 'SR_LN(R0)
```

```
## Parameter values (after subsetting based on input 'models'): 2.6, 2.8, 3, 3.2, 3.4, 3.6, 3.8, 4, 2.1
```

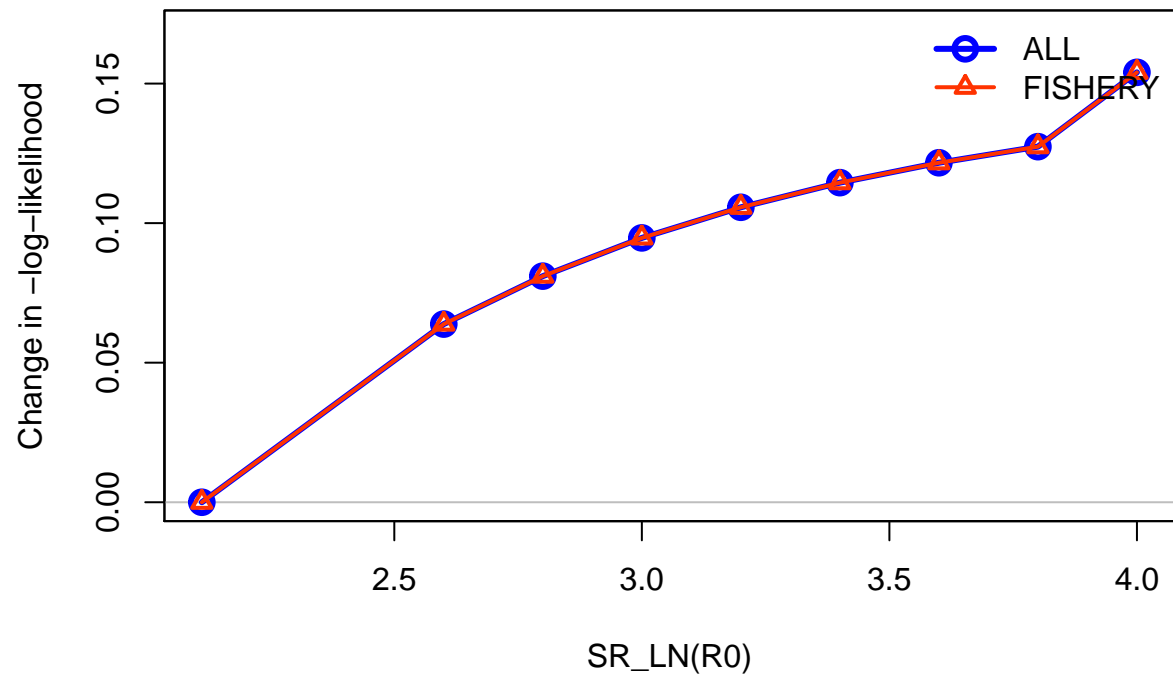
```
## Fleet-specific likelihoods showing max change as fraction of total change.
```

```
## To change which components are included, change input 'minfraction'.
```

##	frac_change	include
## prof.table....c.1.3..	1	TRUE

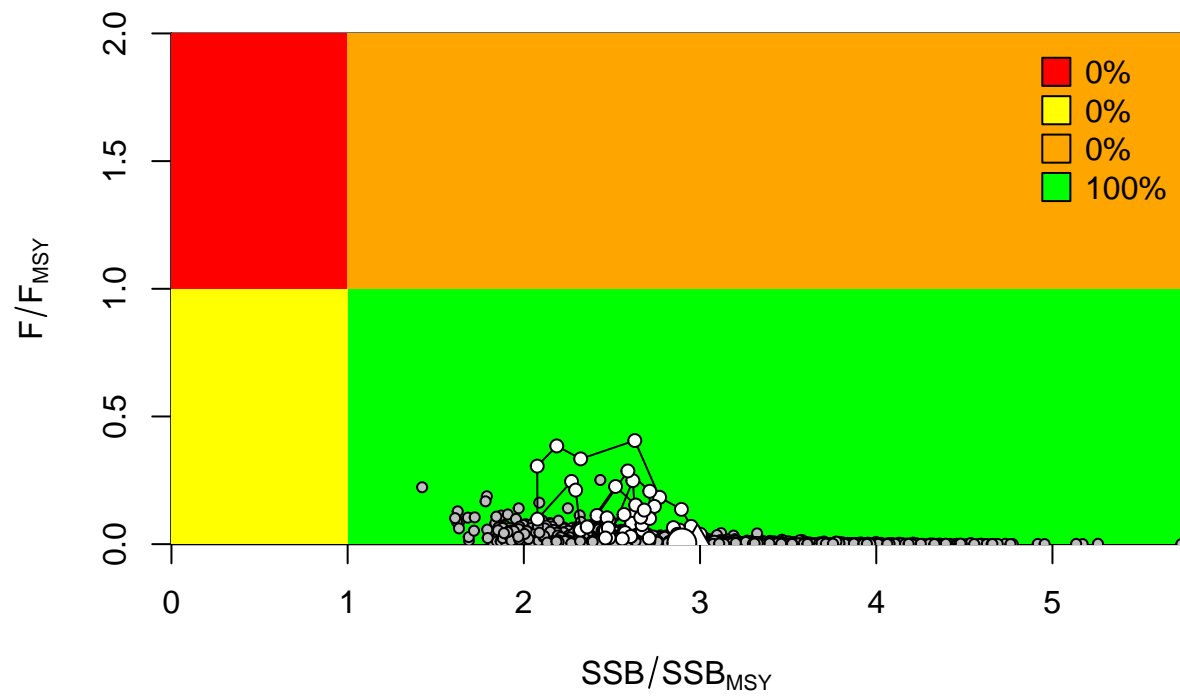


Changes in survey likelihood by fleet

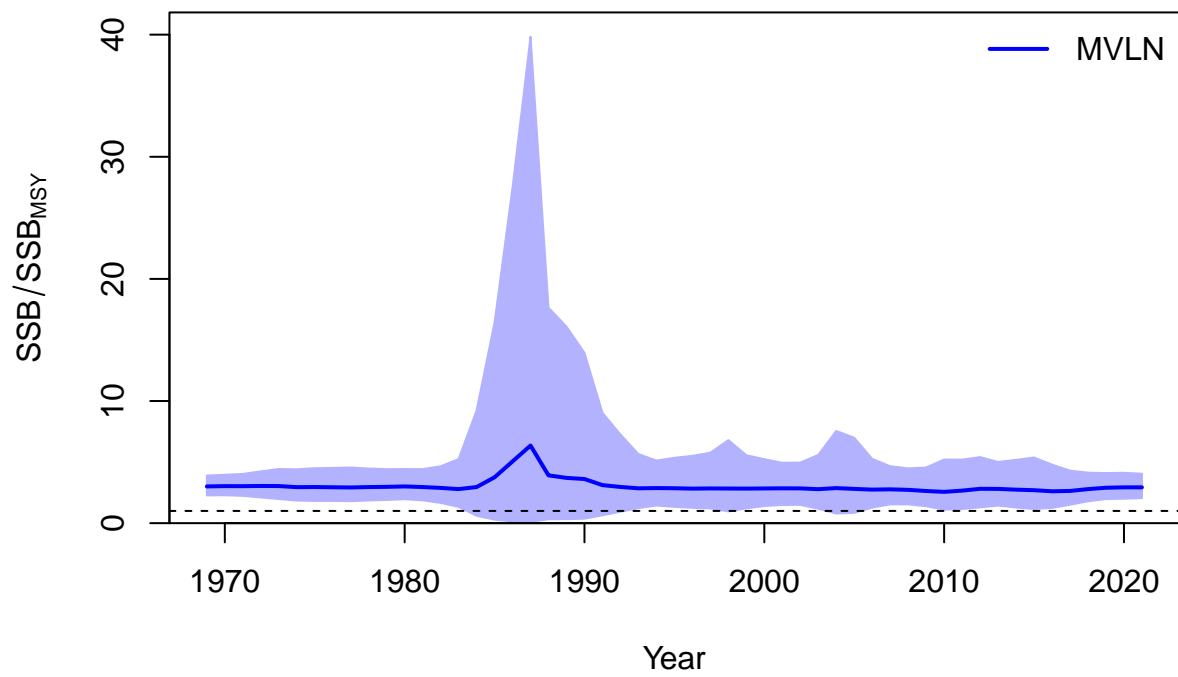


Management Quantities

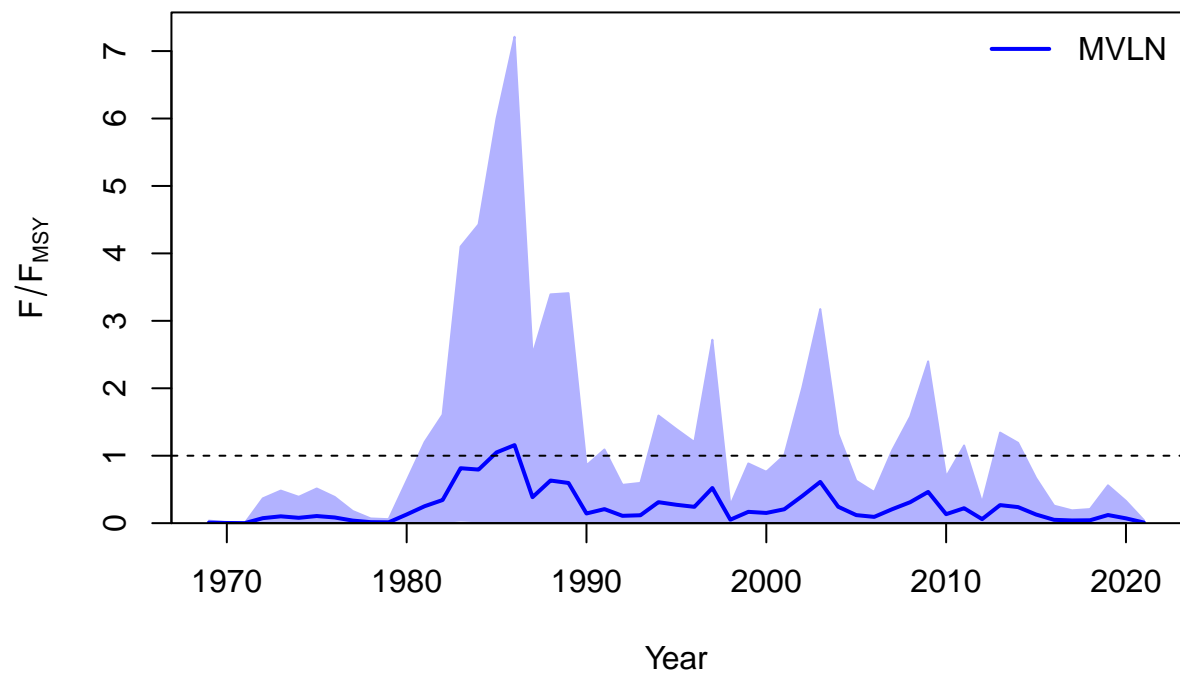
```
##  
## starter.sso with Bratio: SSB/SSBMSY and F: _abs_F  
##
```



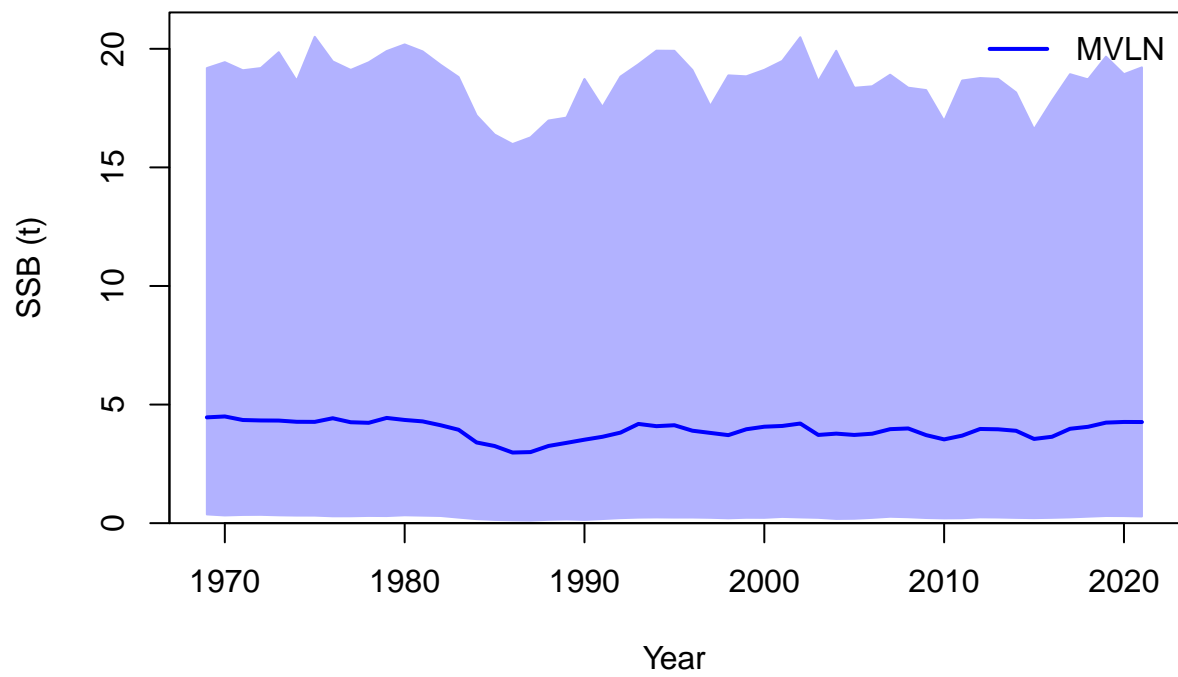
Plot Comparison of stock



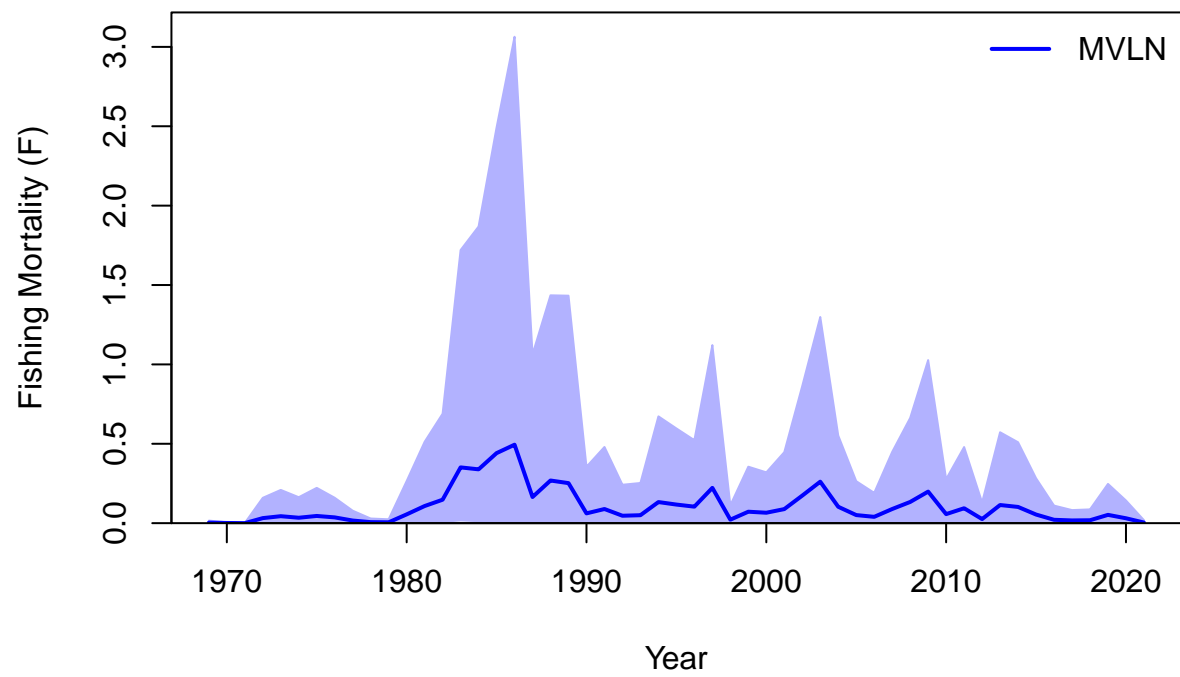
```
##  
## Plot Comparison of harvest
```

Plot Comparison of SSB



```
##  
## Plot Comparison of F
```



```
## RStudioGD  
## 2
```

Jitter

