

# American Samoa Model Checks

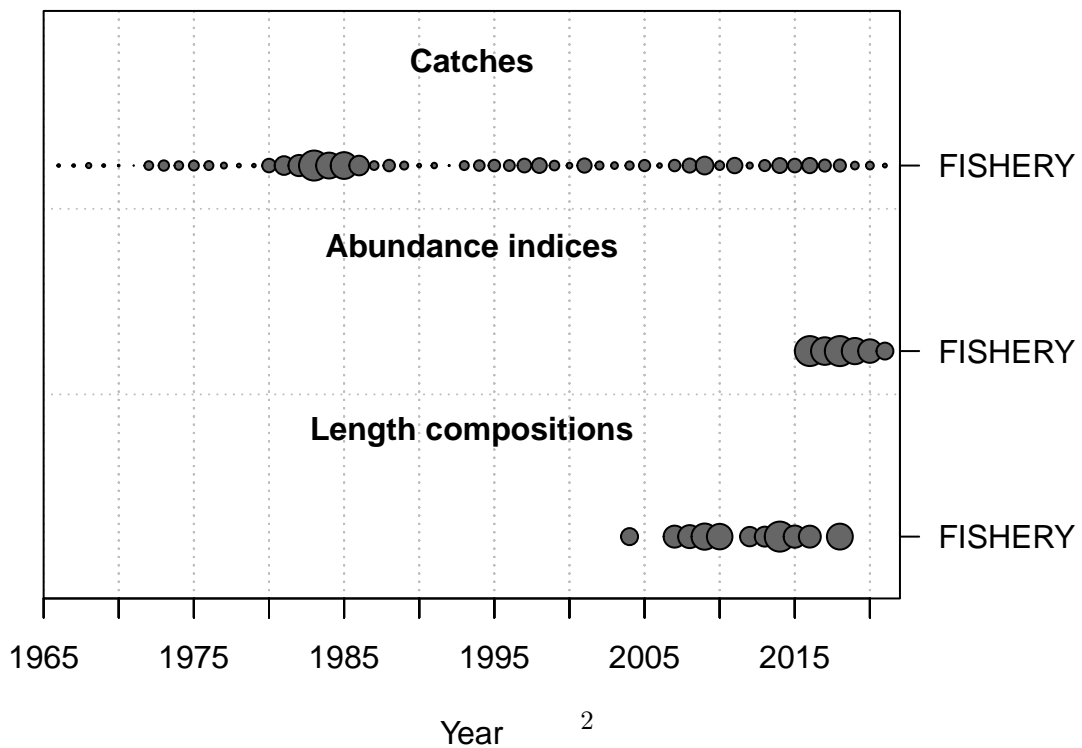
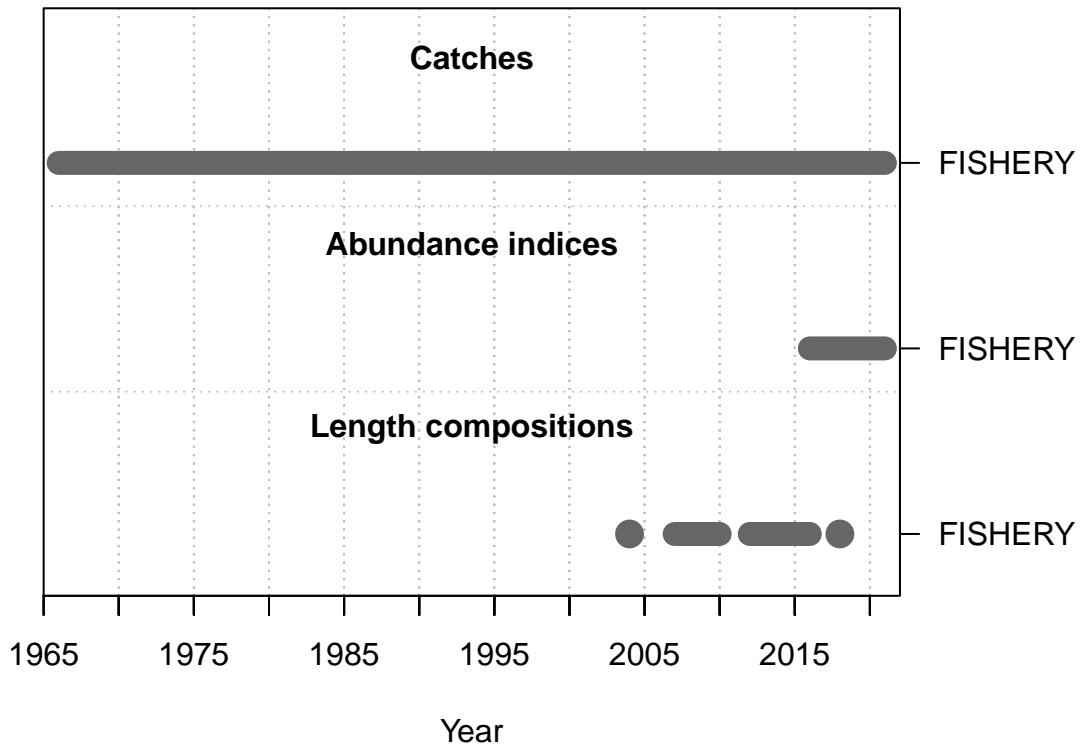
Meg Oshima

2022-08-10

**This is a summary report for the ETCO base model run.**

## Model Output

### Input Data



## Convergence Check

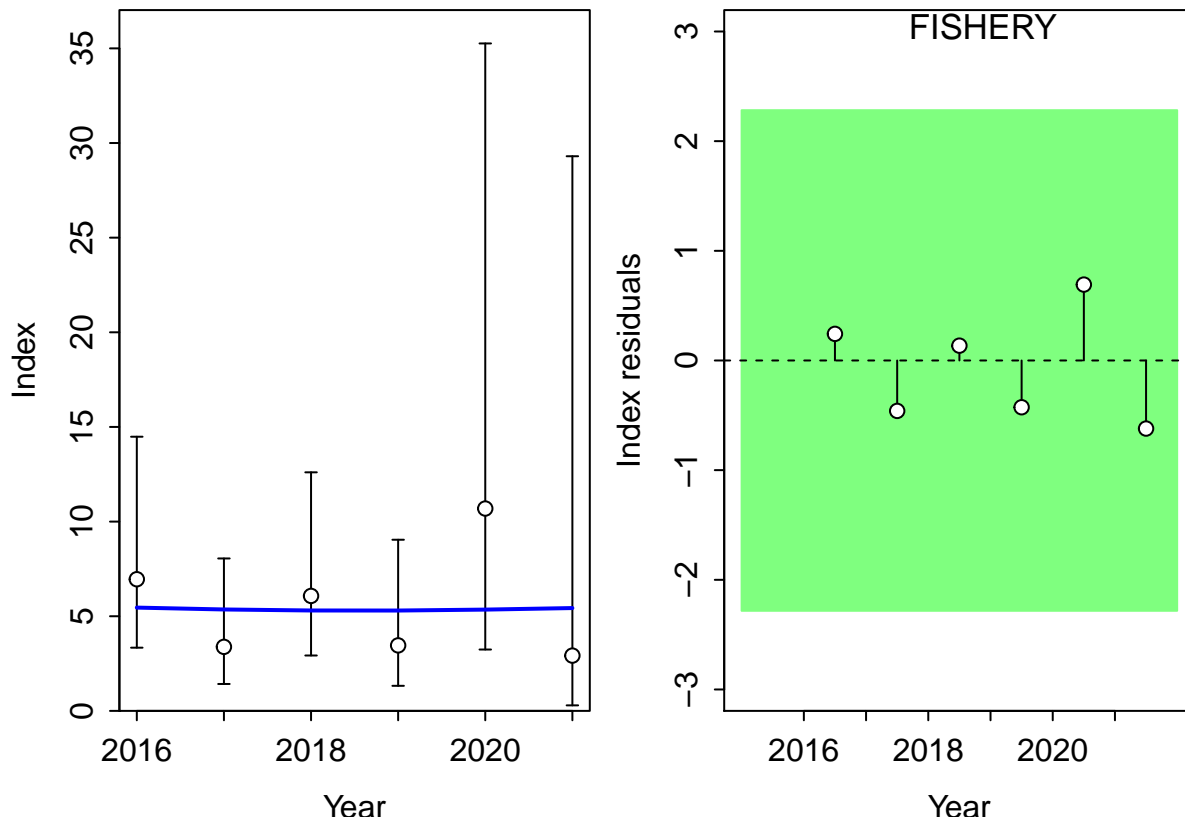
```
## Converged MaxGrad
## 1 TRUE 9.5612e-05
```

```
## [1] "1 NOTE: Max data length bin: 90 < max pop len bins: 100; so will accumulate larger pop len bins"
## [2] "2 Main recdev biasadj is >2 times ratio of rmse to sigmaR"
## [3] " N parameters are on or within 1% of min-max bound: 2; check results, variance may be suspect"
## [4] "N warnings: 2"
```

## Fit to Model

### CPUE

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

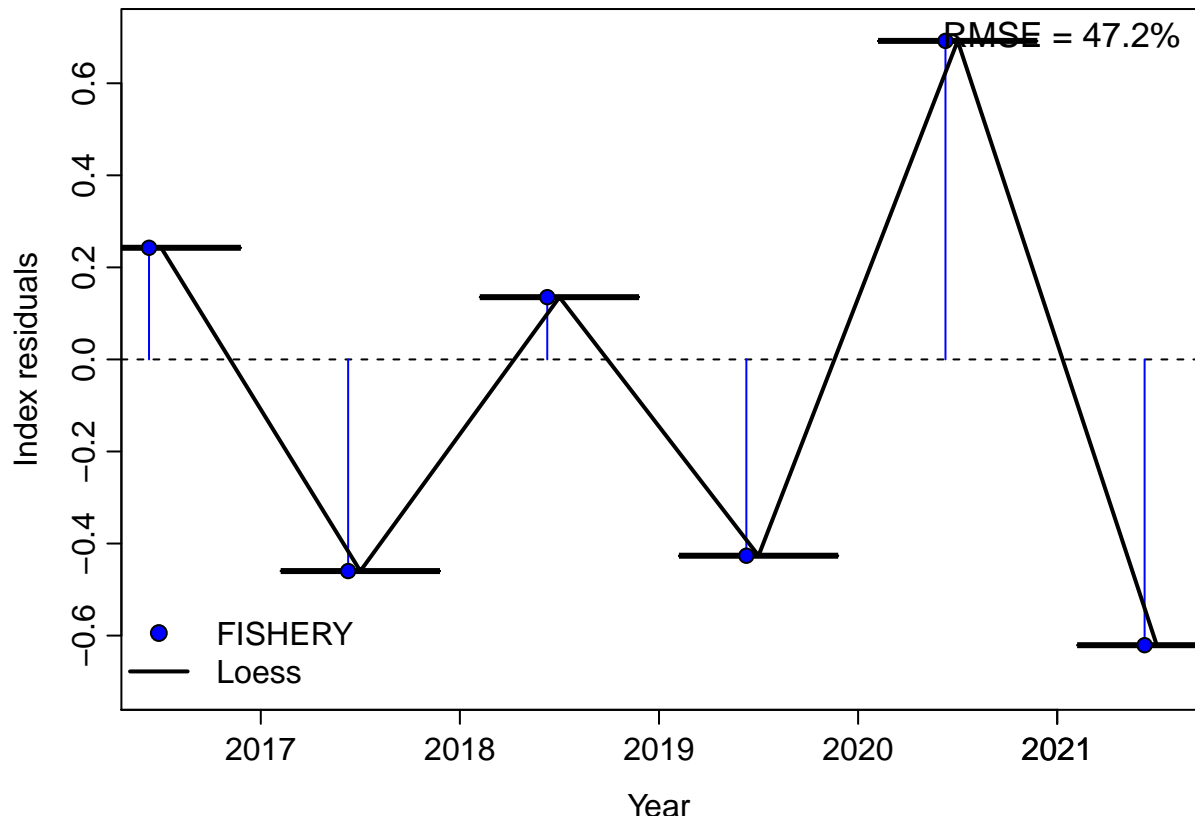


```
##
## Runs Test stats by Index:
## Plotting JABBA residual plot
```

```
## Warning in simpleLoess(y, x, w, span, degree = degree, parametric = parametric, : 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:
```

### Length Comp

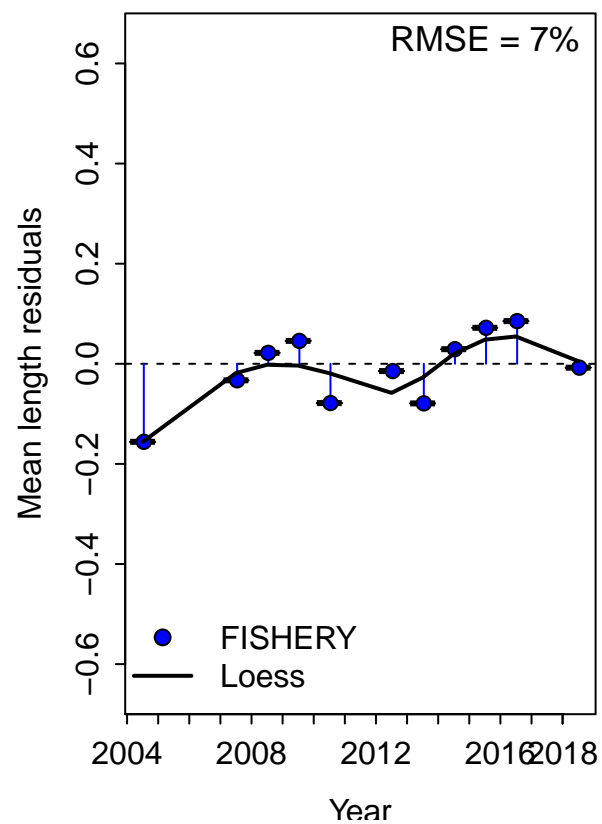
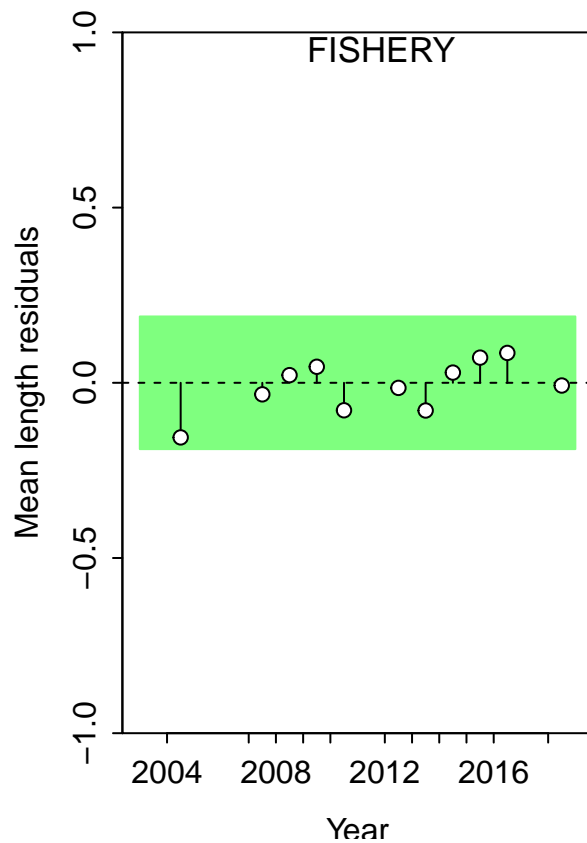
#Factor	Fleet	New_Var_adj	Type	Name
4	1	0.271023	len	FISHERY

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

##
## Runs Test stats by Mean length:

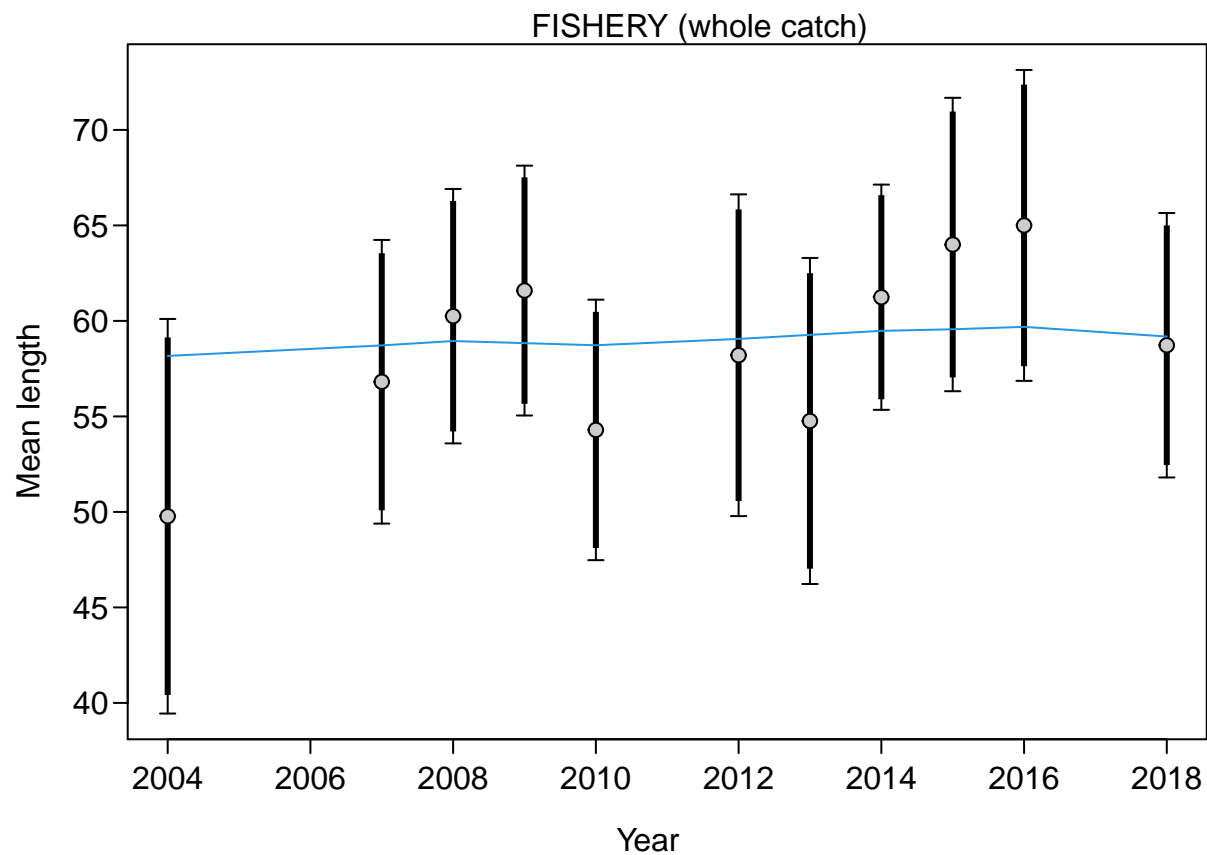
##      Index runs.p  test  sigma3.lo sigma3.hi type
## 1 FISHERY  0.175 Passed -0.1892542 0.1892542  len

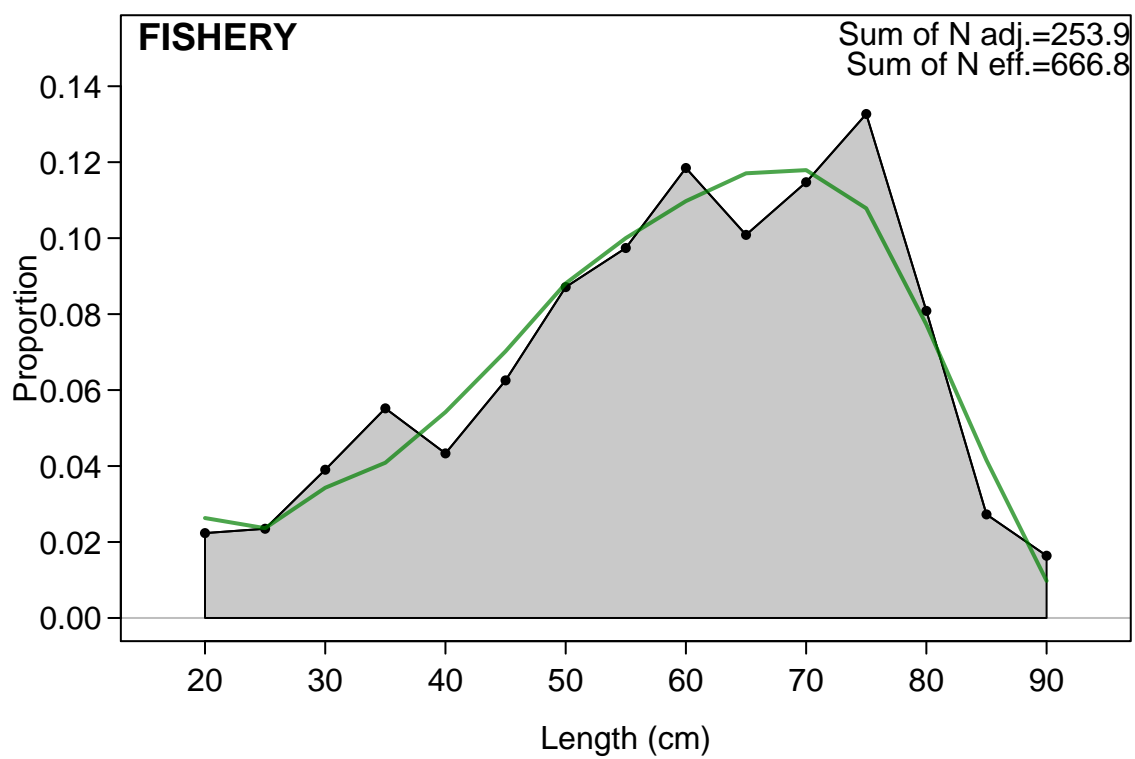
## Plotting JABBA residual plot
```

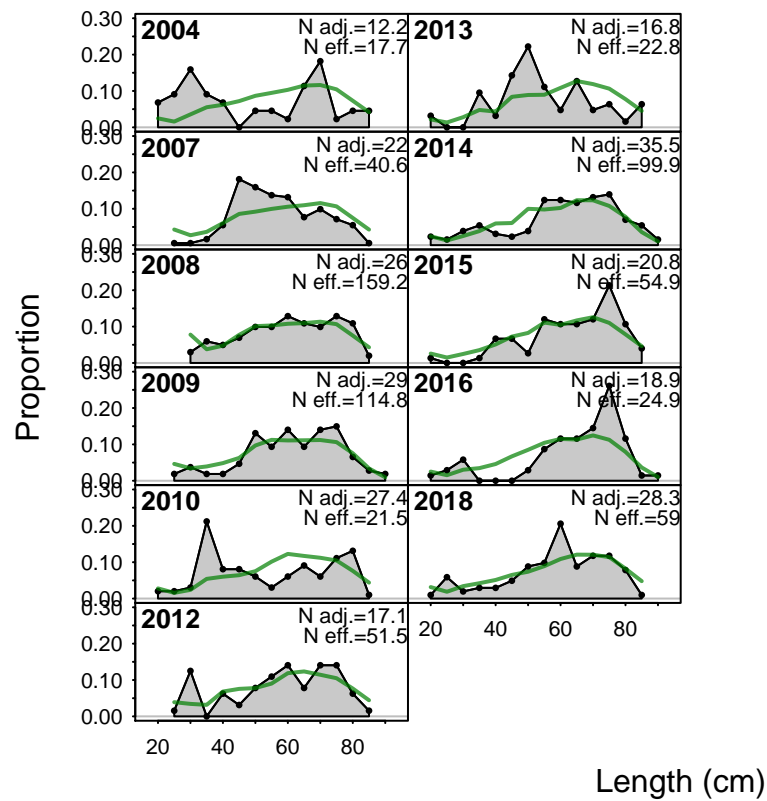


```
##
## RMSE stats by Index:

##   indices RMSE.perc nobs
## 1  FISHERY      7    11
## 2 Combined      7    11
```







## Retrospective and Hindcasting

### Retrospective

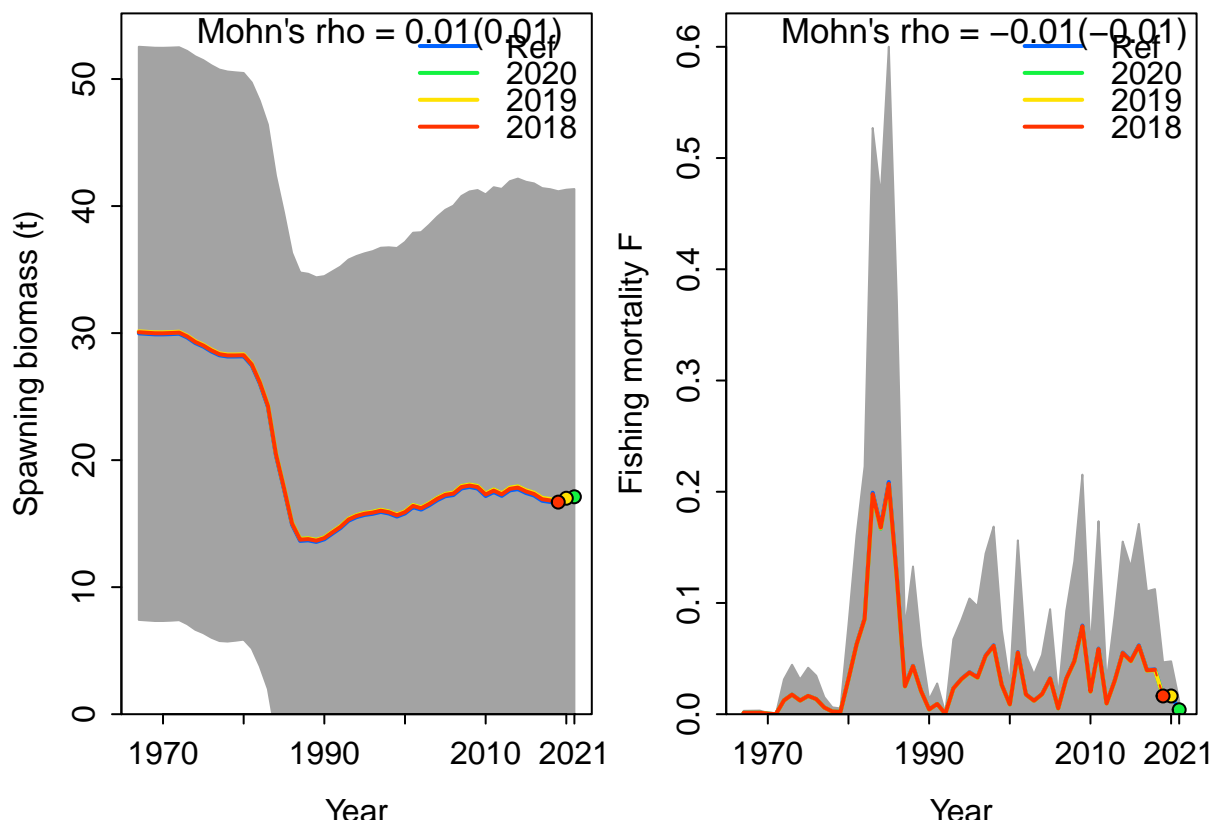
## Plotting Retrospective pattern

##

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

## Plotting Retrospective pattern



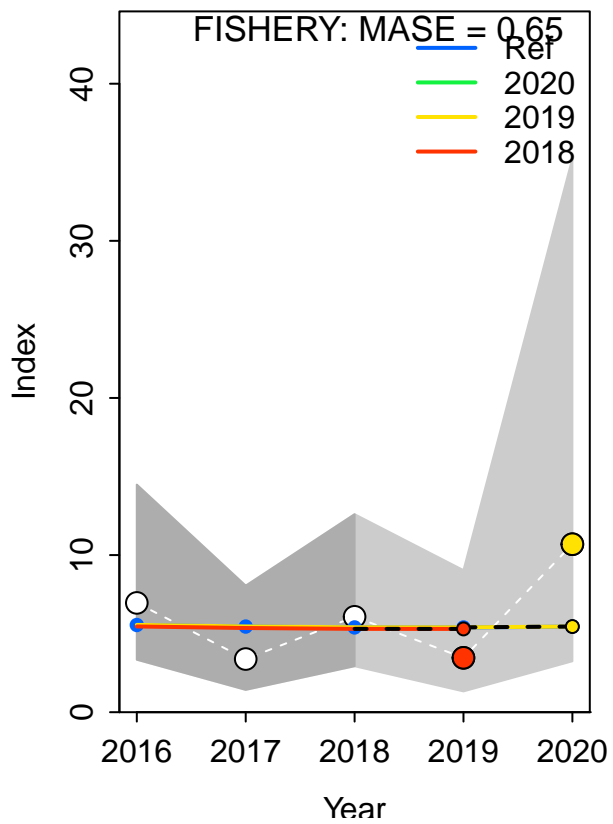


```
##
## Mohn's Rho stats, including one step ahead forecasts:
```

##	type	peel	Rho	ForecastRho
## 1	F	2020	-0.011611651	-0.013122968
## 2	F	2019	-0.013557947	-0.012642057
## 3	F	2018	-0.007974454	-0.007896187
## 4	F Combined		-0.011048017	-0.011220404

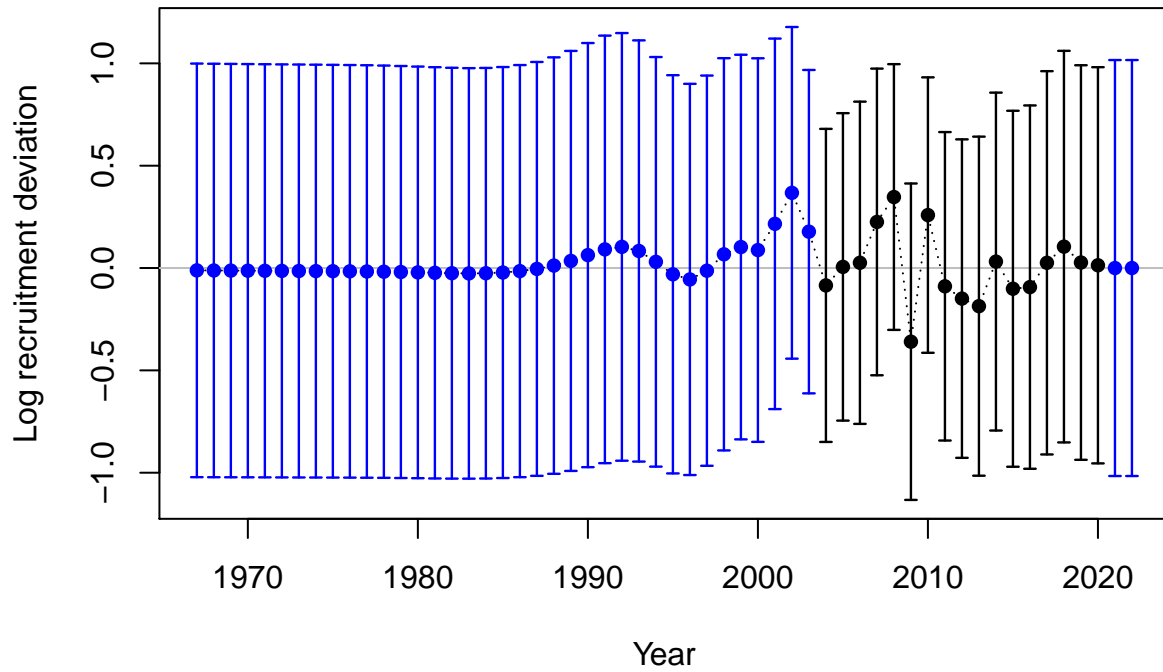
## Hindcasting

```
## 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
```

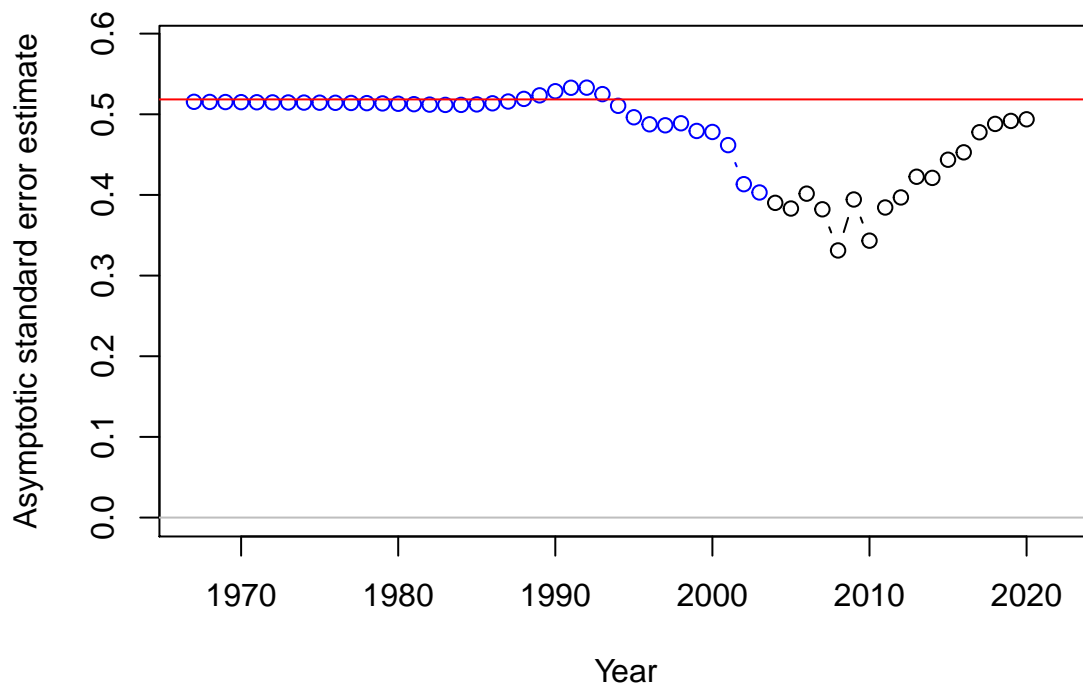


```
##
## MASE stats by Index:
## Plotting Hindcast Cross-Validation (one-step-ahead)
##
## No observations in evaluation years to compute prediction residuals for Index FISHERY
##
## MASE stats by Index:
```

## 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'): 0.1, 0.3, 0.5, 0.7, 0.9, 1.1, 1.3, 1.5,
```

```
##
```

```
## 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	0.4278	TRUE	Catch
## Equil_catch	0.0004	FALSE	Equilibrium catch
## Survey	0.0106	TRUE	Index data
## Length_comp	0.2581	TRUE	Length data
## Recruitment	0.3206	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	0.0003	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)
```

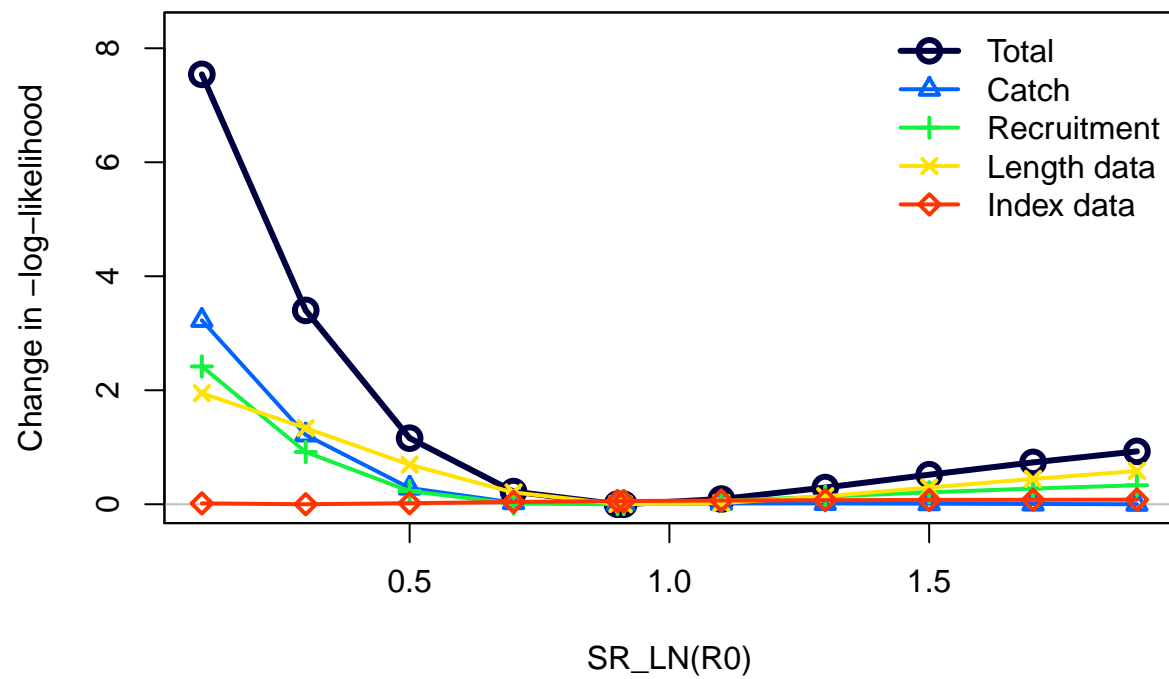
```
## Parameter values (after subsetting based on input 'models'): 0.1, 0.3, 0.5, 0.7, 0.9, 1.1, 1.3, 1.5,
```

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

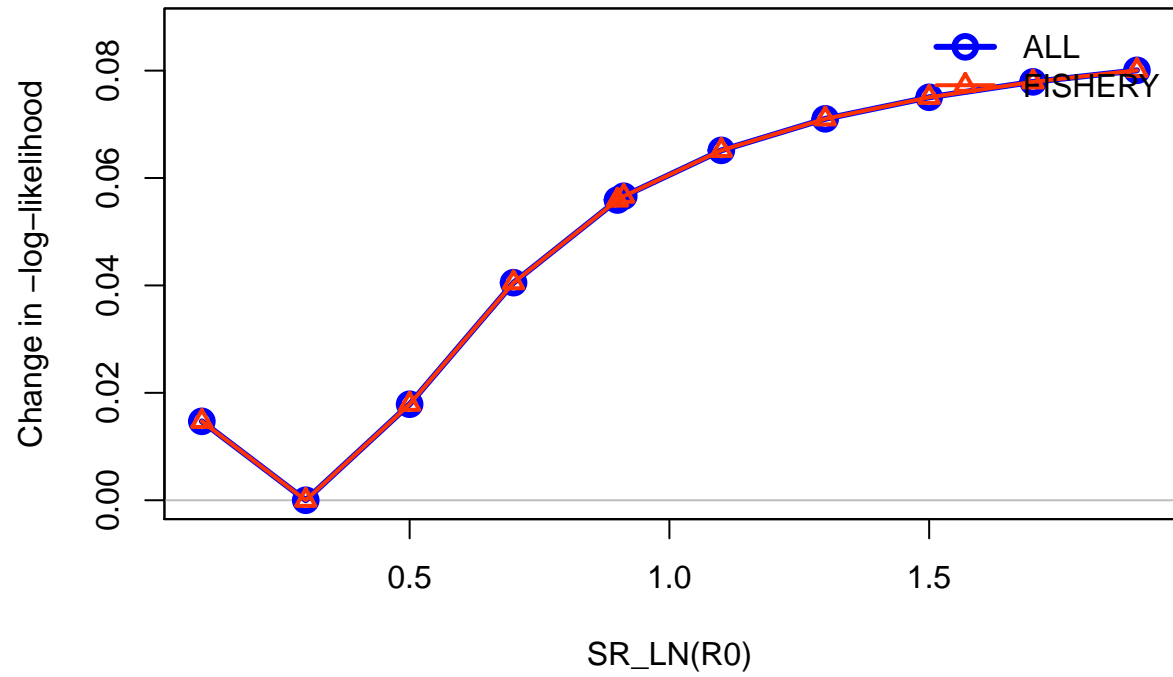
```
## To change which components are included, change input 'minfraction'.
```

```
##          frac_change include
```

```
## prof.table....c.1.3..      1    TRUE
```

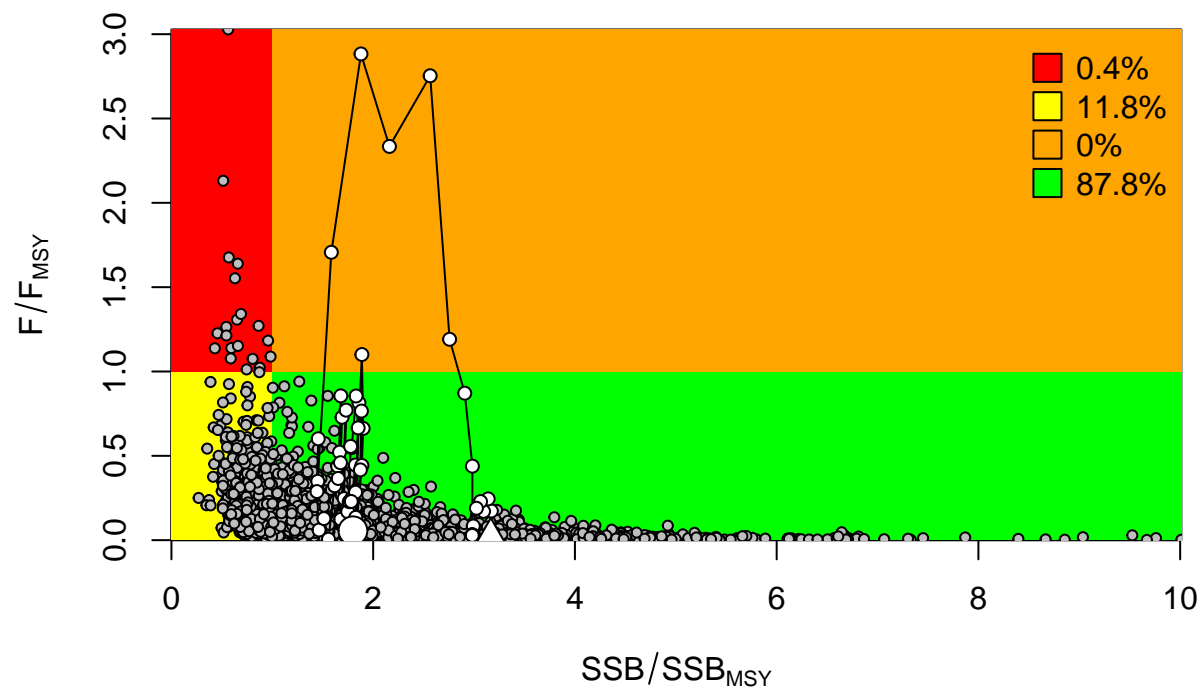


### Changes in survey likelihood by fleet

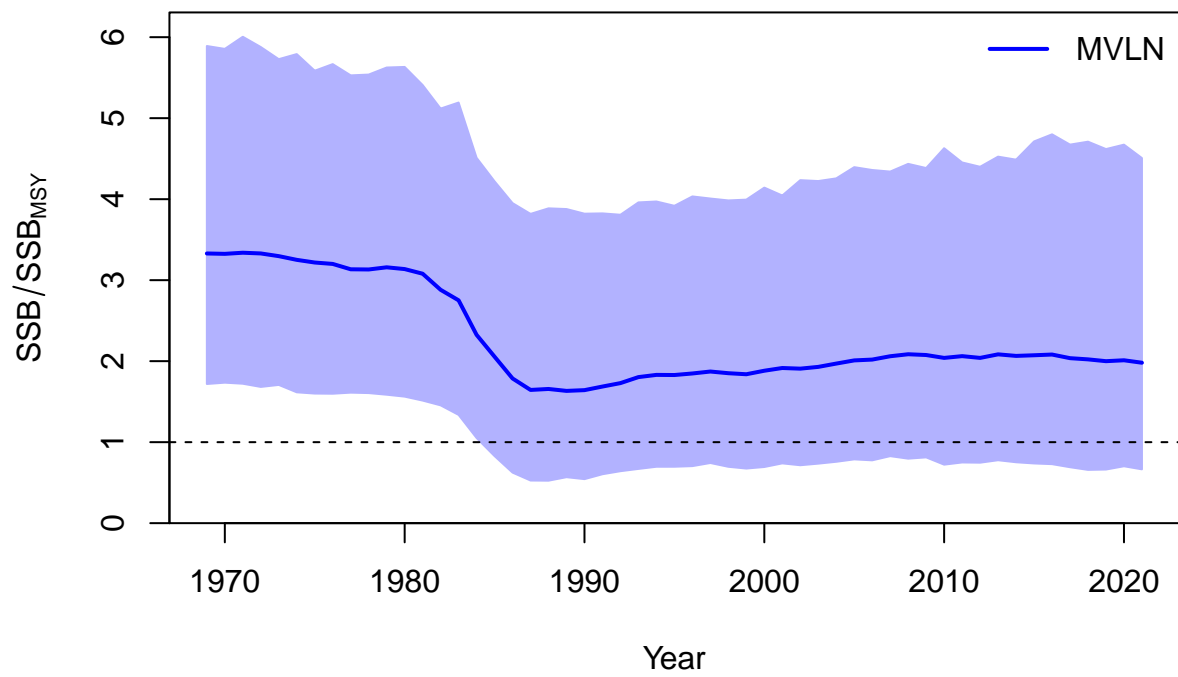


### Management Quantities

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

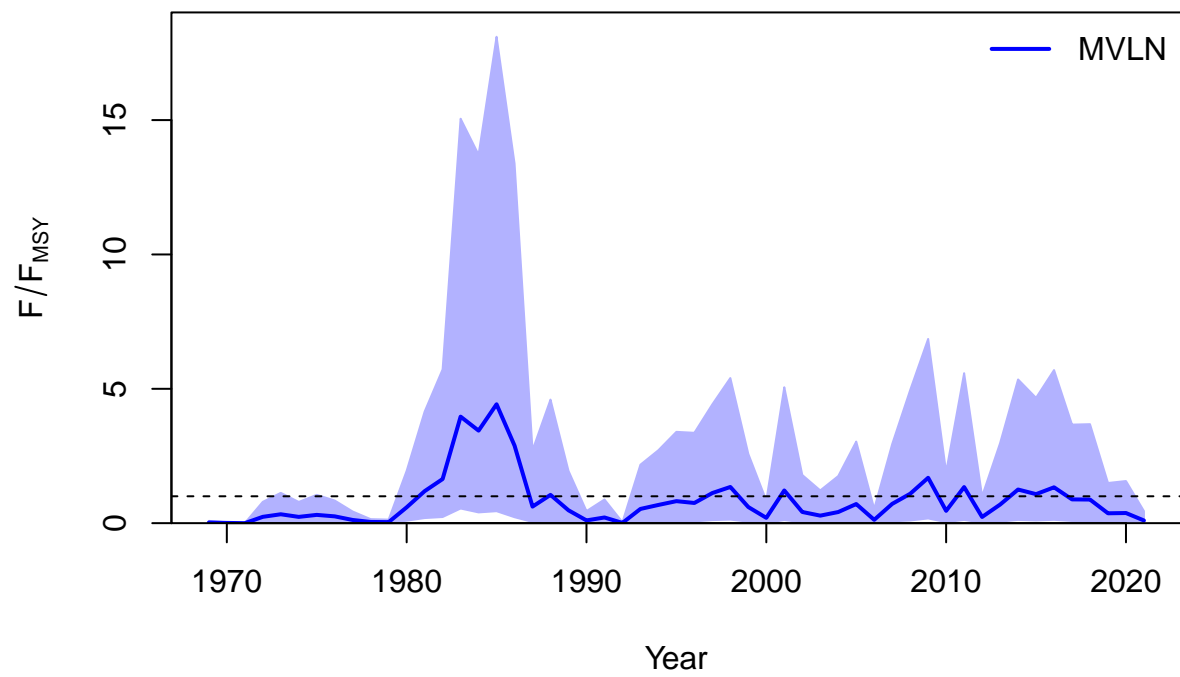


```
##
## Plot Comparison of stock
```

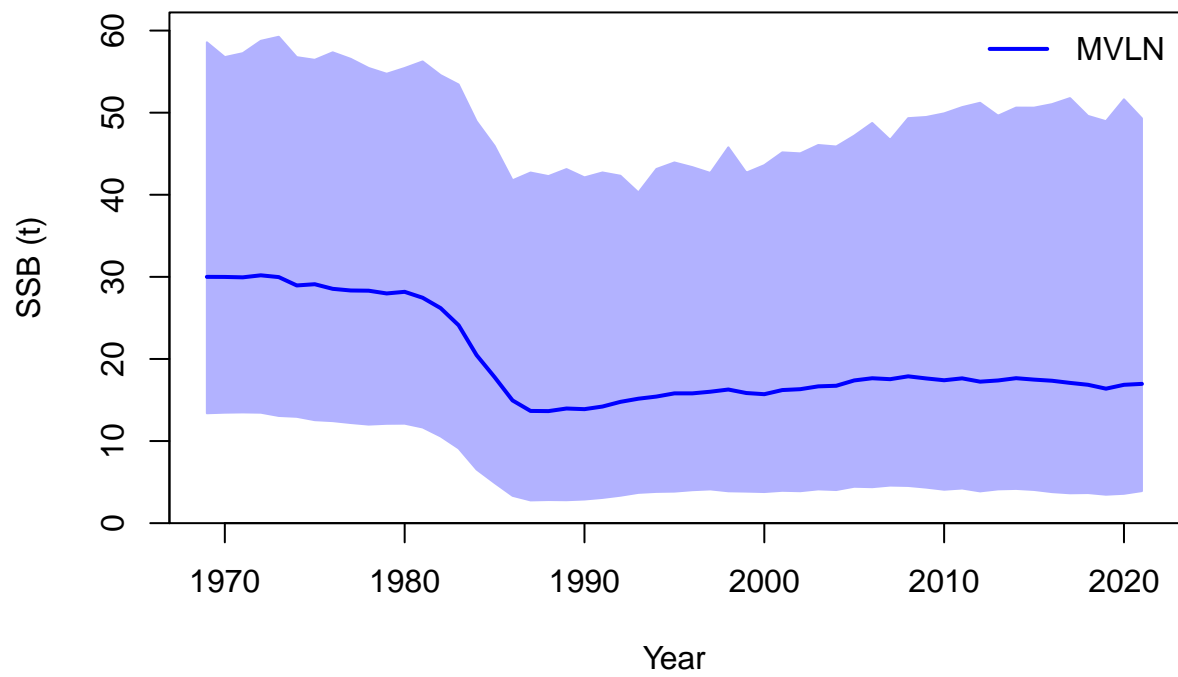


```
##  
## Plot Comparison of harvest
```

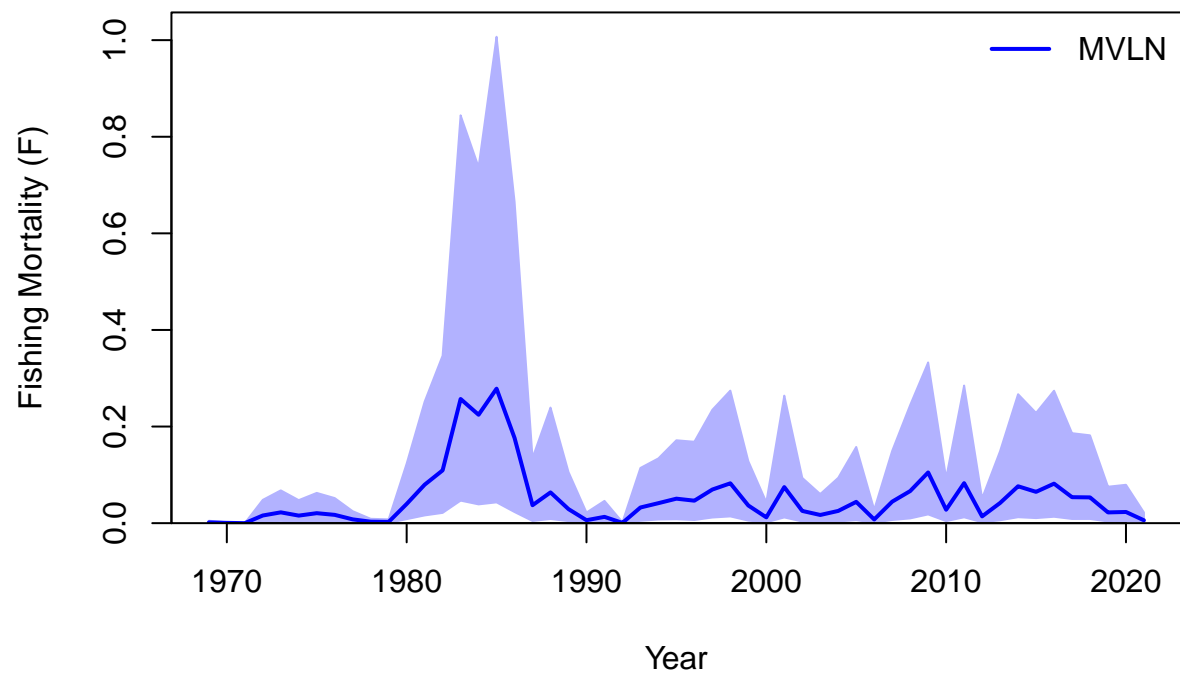




##  
## Plot Comparison of SSB



##  
## Plot Comparison of F



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

## Jitter

