

American Samoa Model Checks

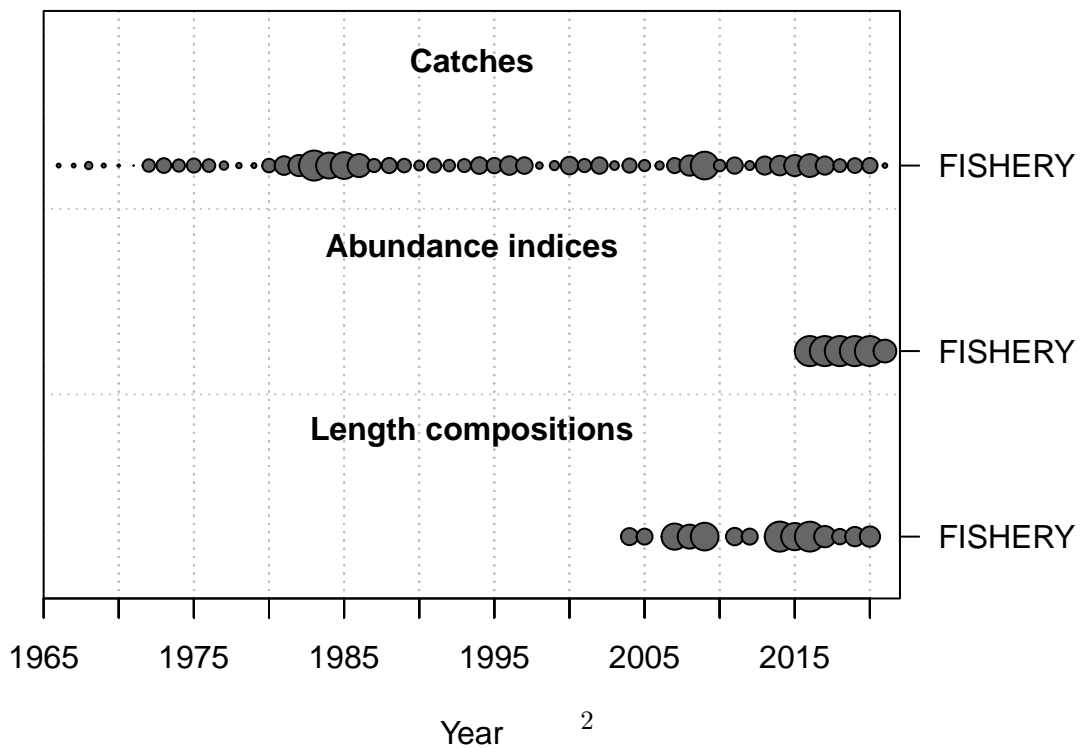
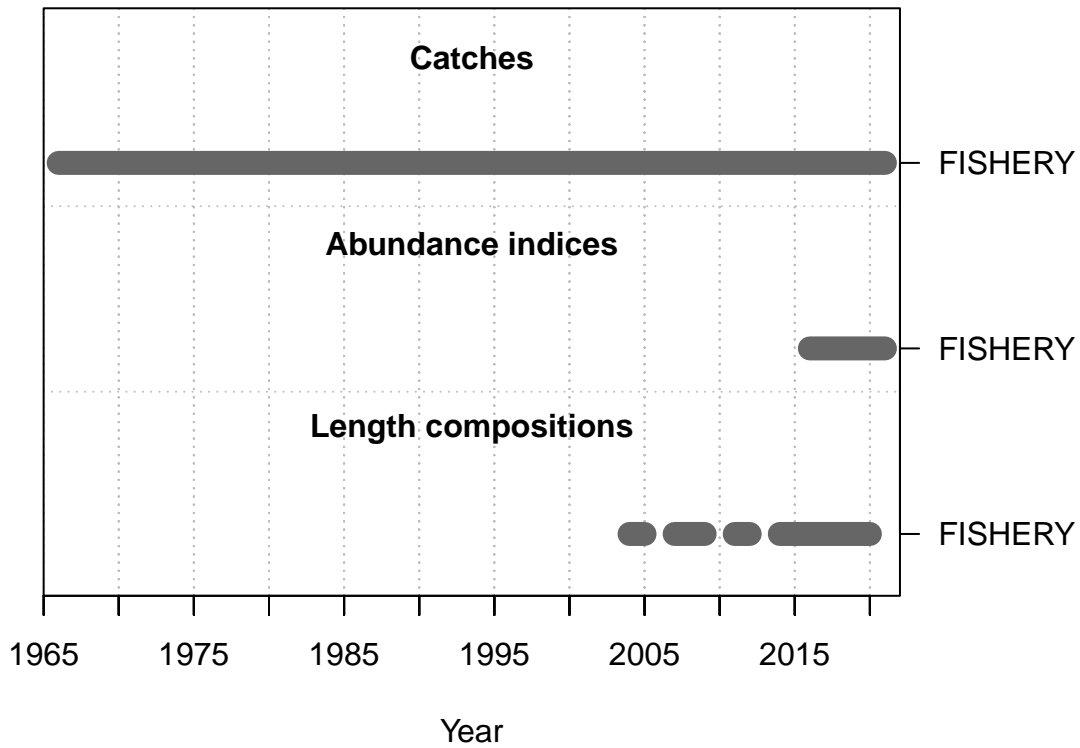
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2022-08-16

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

Model Output

Input Data



Convergence Check

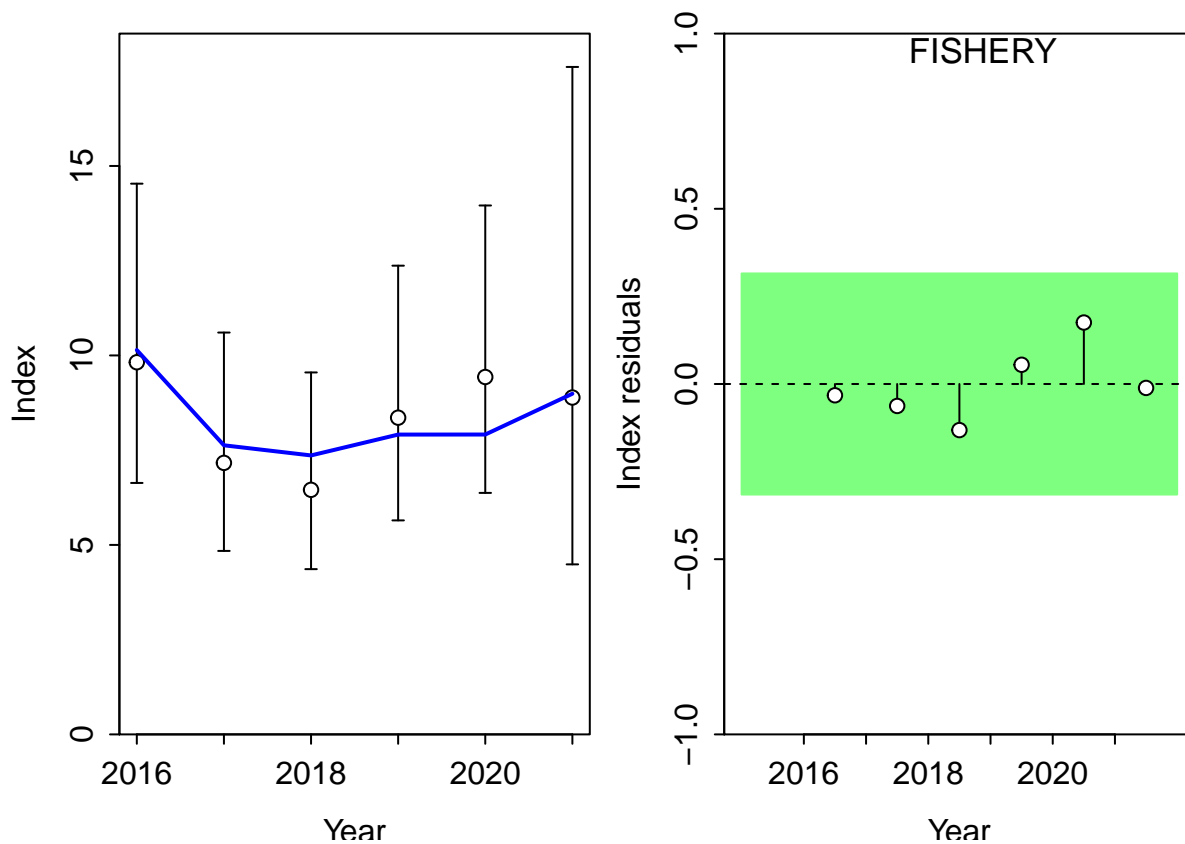
```
## Converged      MaxGrad
## 1      TRUE 2.21696e-05
```

```
## [1] "1 NOTE: Max data length bin: 85 < max pop len bins: 94; so will accumulate larger pop len bins"
## [2] "2 Minimum pop size bin:_1; is > L at Amin for sex: 1; Gpat: 1; L= 0"
## [3] "3 warning: poor convergence in Fmsy, final dy/dy2= -0.00790916"
## [4] " N parameters are on or within 1% of min-max bound: 1; check results, variance may be suspect"
## [5] "N warnings: 3"
```

Fit to Model

CPUE

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

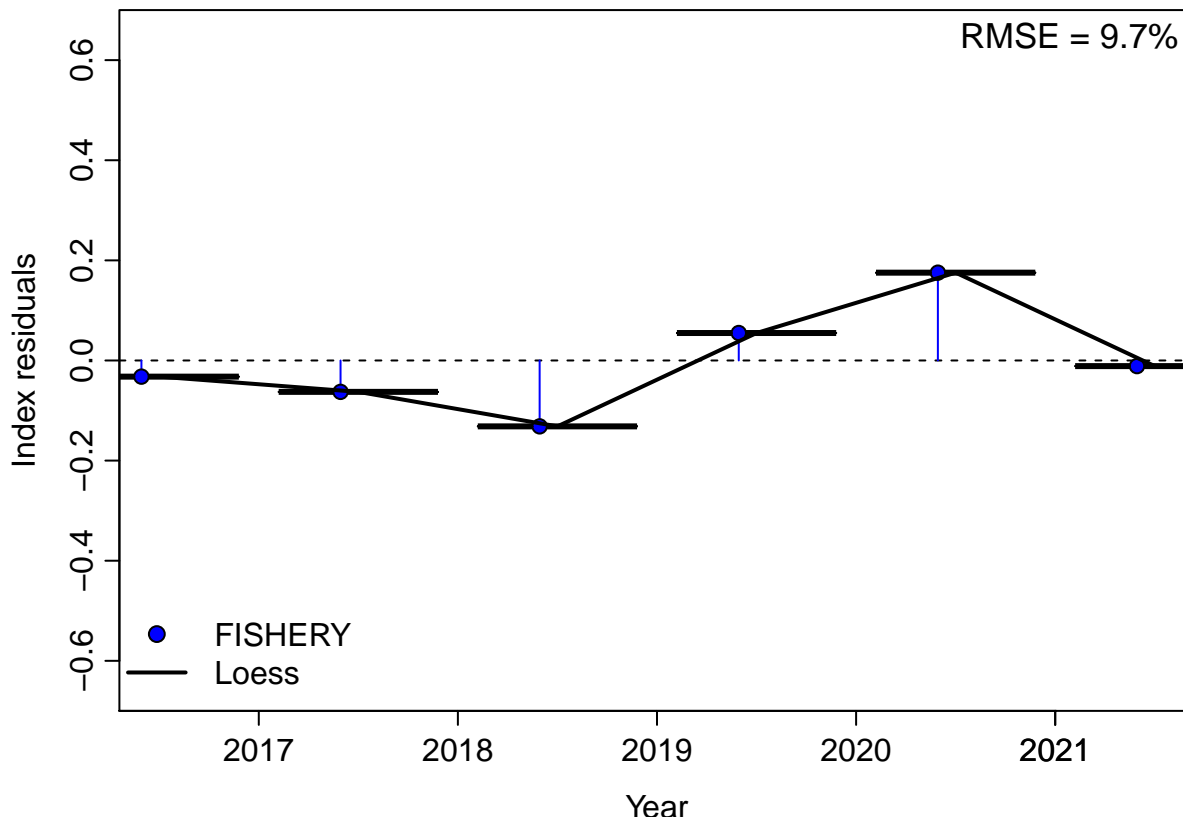


```
##
## Runs Test stats by Index:
## Plotting JABBA residual plot
```

```
## 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	0.108196	len	FISHERY

```
##
```

```
## Running Runs Test Diagnostics for Mean length
```

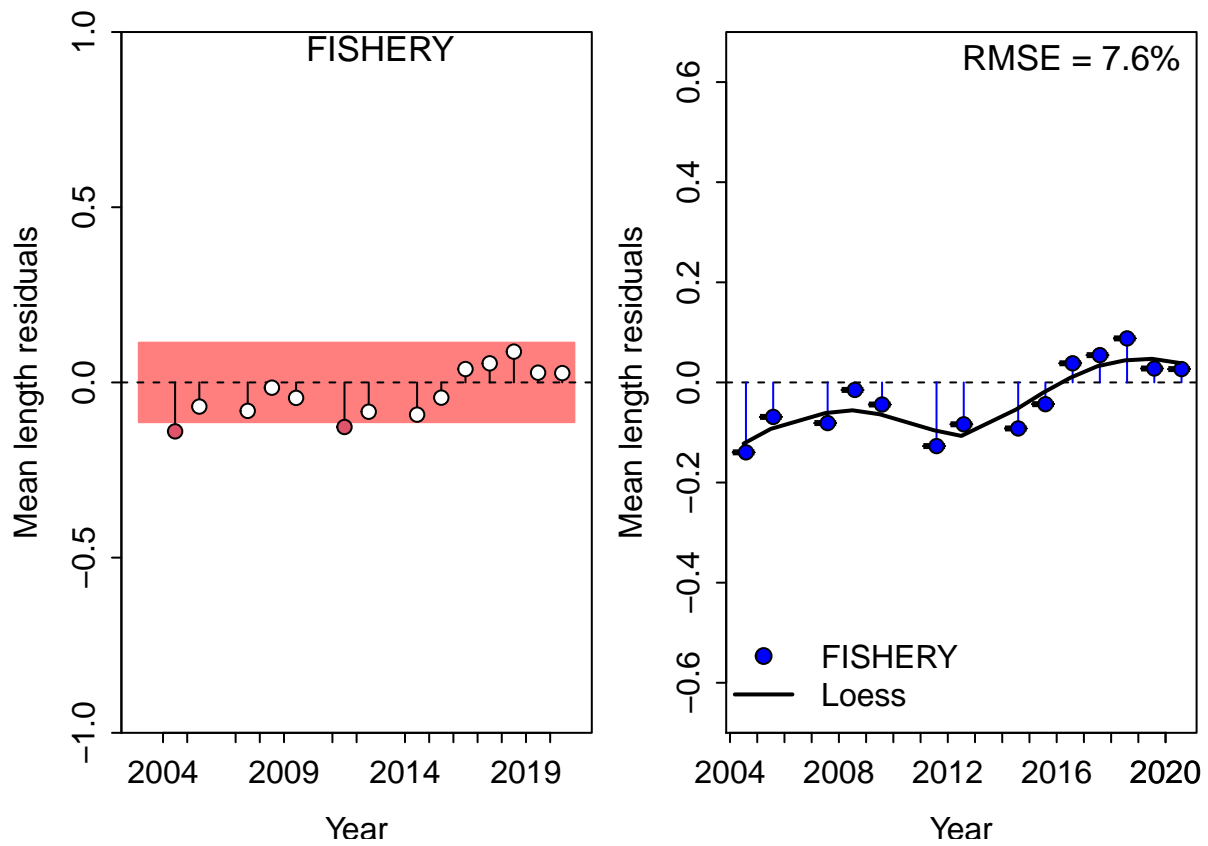
```
## Plotting Residual Runs Tests
```

```
##
```

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

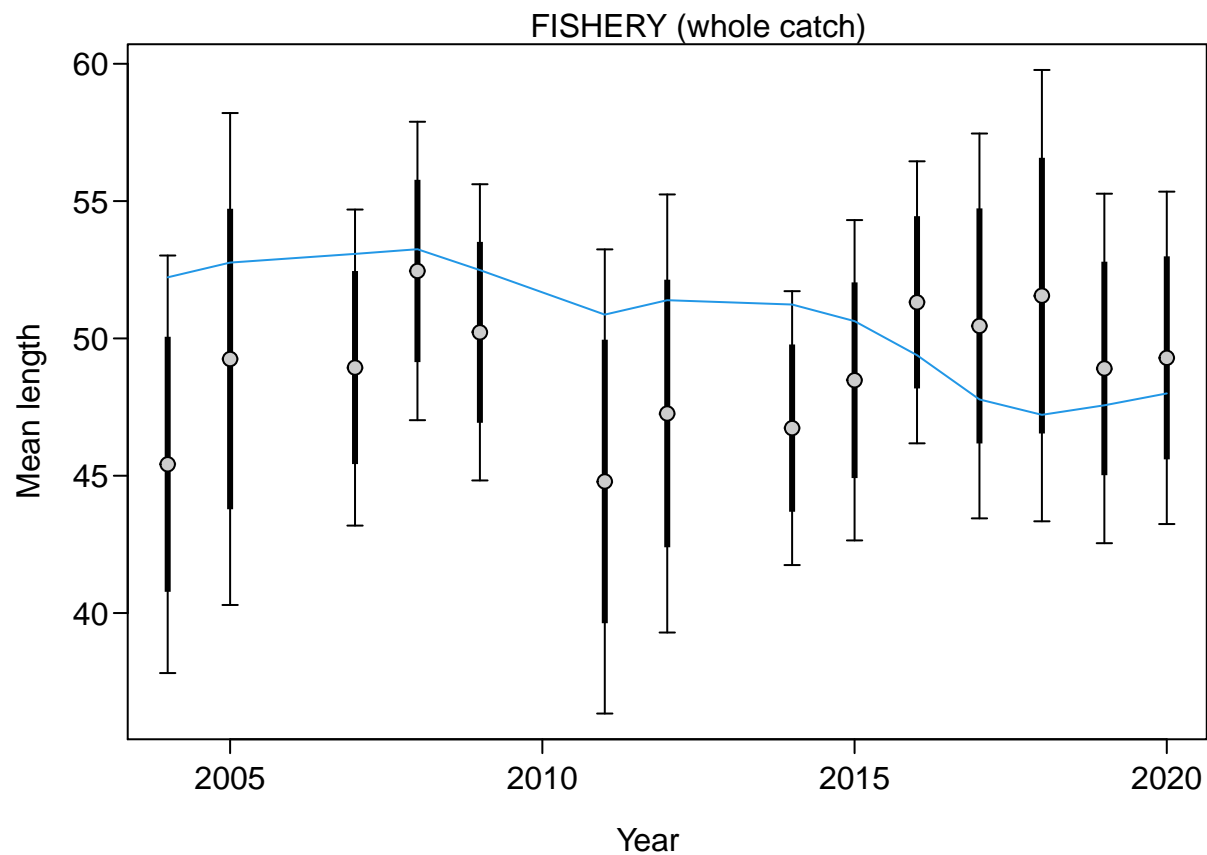
```
##      Index runs.p  test  sigma3.lo sigma3.hi type
## 1 FISHERY        0 Failed -0.1134308 0.1134308  len
```

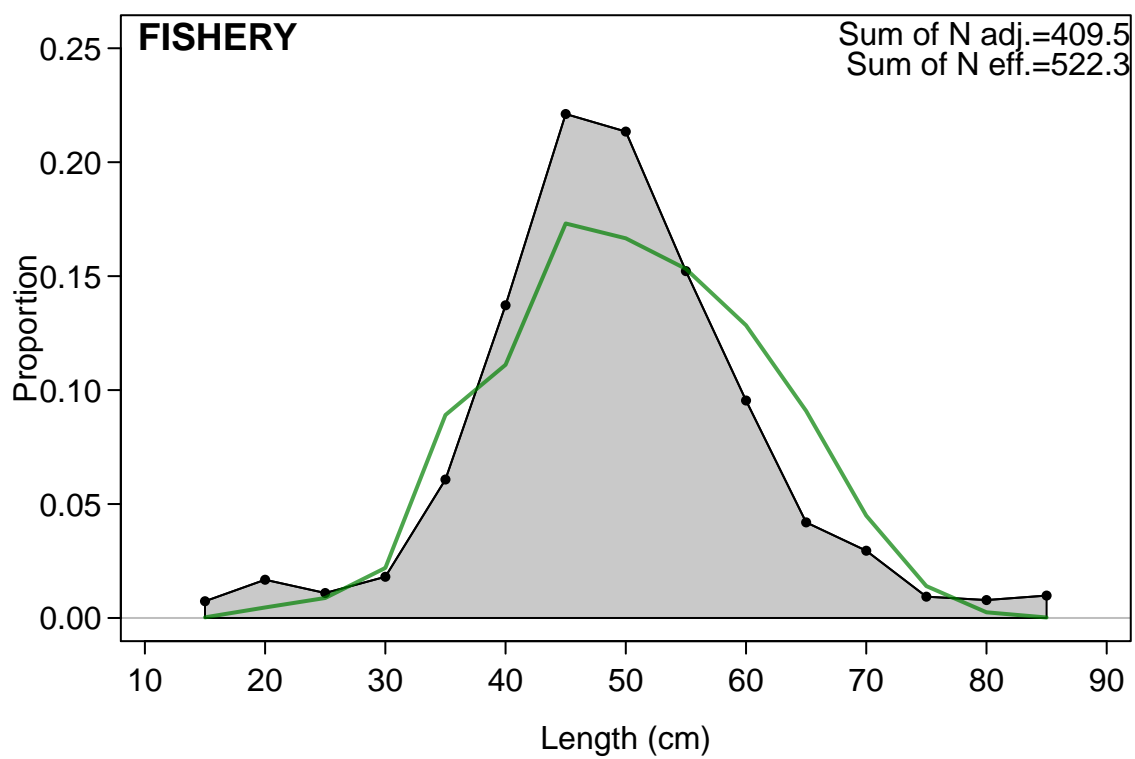
```
## Plotting JABBA residual plot
```

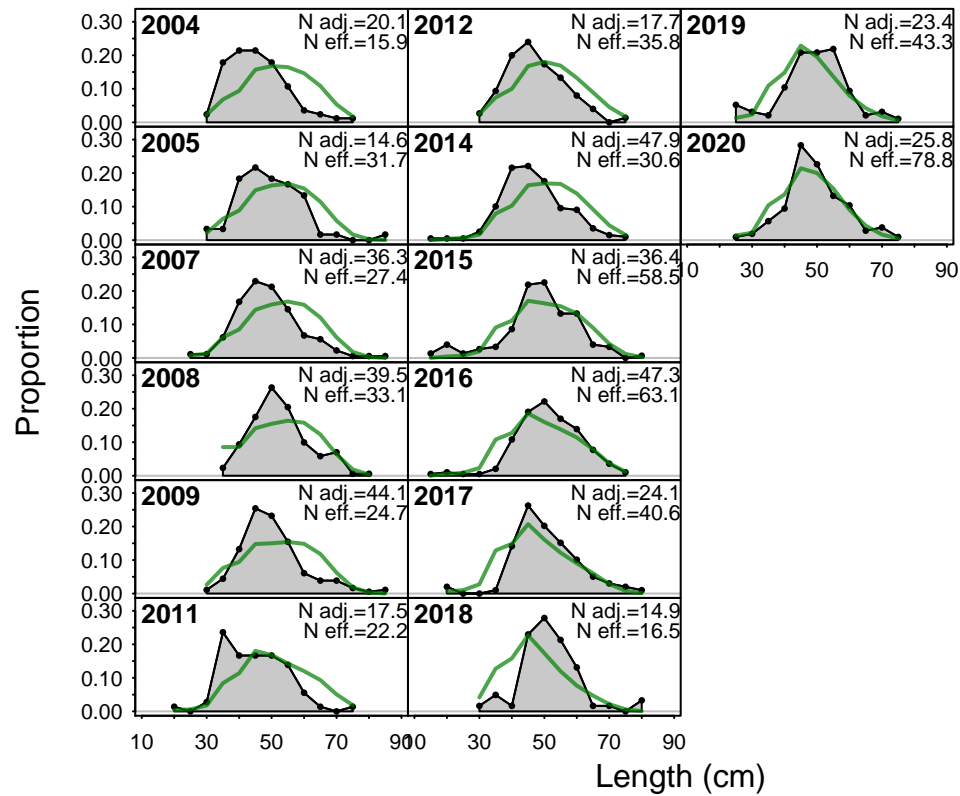


```
##
## RMSE stats by Index:

##   indices RMSE.perc nobs
## 1  FISHERY      7.6    14
## 2 Combined      7.6    14
```







Retrospective and Hindcasting

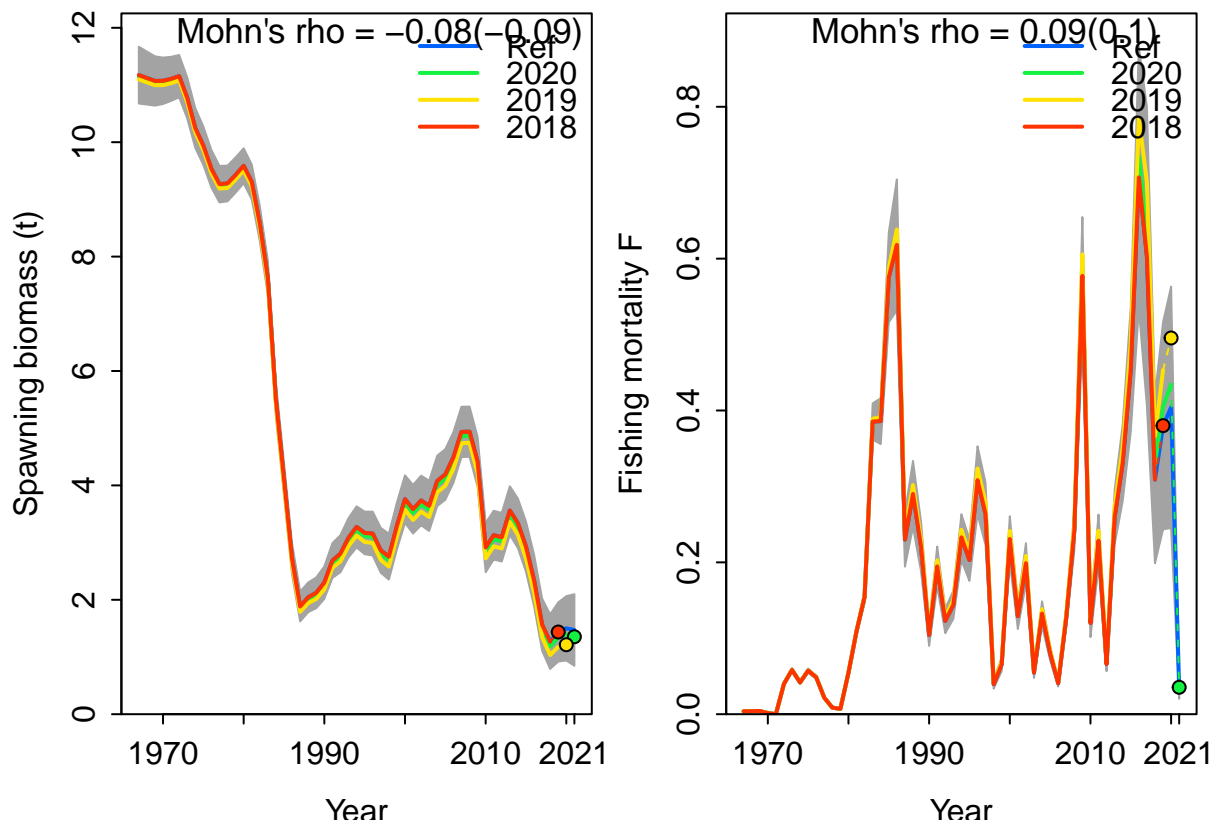
Retrospective

Plotting Retrospective pattern

##

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

Plotting Retrospective pattern

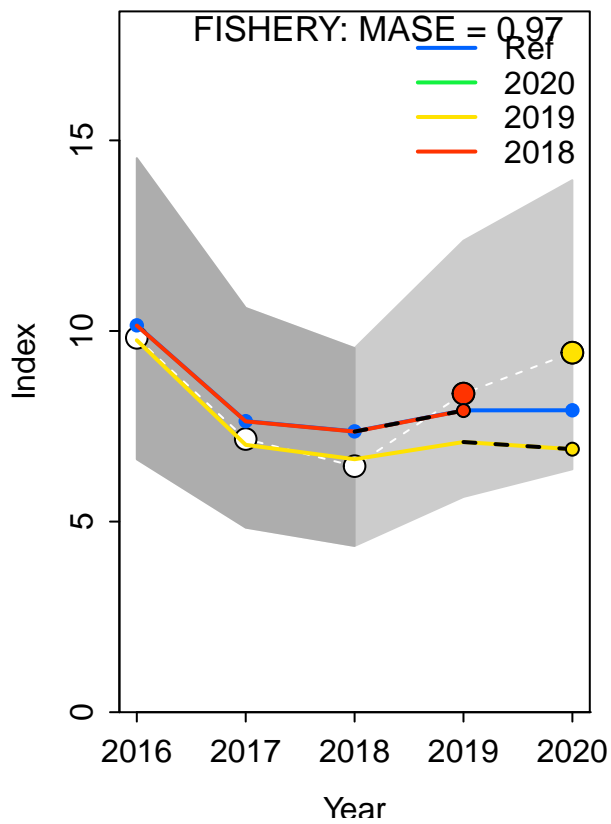


```
##
## Mohn's Rho stats, including one step ahead forecasts:
```

##	type	peel	Rho	ForecastRho
## 1	F	2020	0.0743276344	0.0742200637
## 2	F	2019	0.1931868138	0.2259643219
## 3	F	2018	0.0004272121	0.0004343465
## 4	F Combined		0.0893138868	0.1002062441

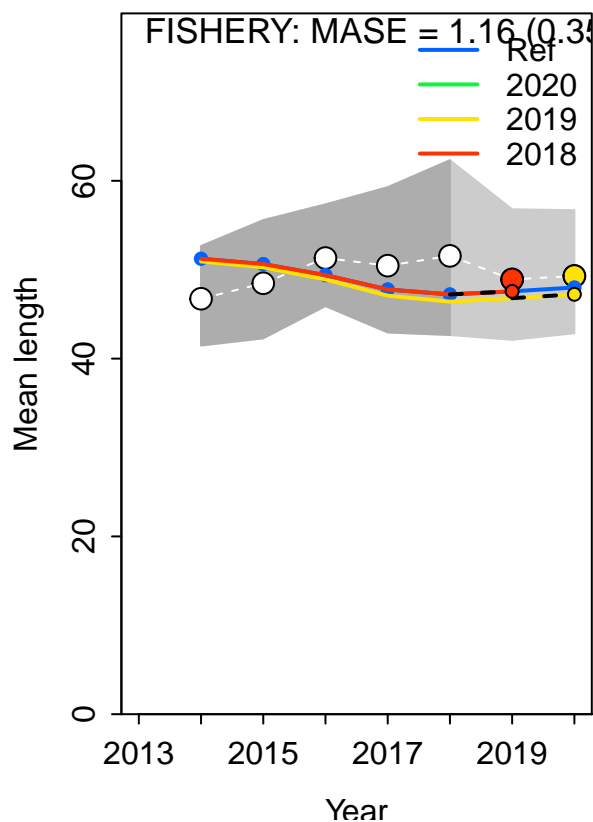
Hindcasting

```
## 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)
##
## 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:
```



Recruitment Deviations

Skipped SSplotrecdevs - no rec devs estimated

Likelihood Profile

[1] "SR_LN"

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

Parameter values (after subsetting based on input 'models'): 0.5, 0.7, 0.9, 1.1, 1.3, 0.615222

##

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	0.0586	TRUE	Catch
## Equil_catch	0.0006	FALSE	Equilibrium catch
## Survey	0.1559	TRUE	Index data
## Length_comp	0.7848	TRUE	Length data
## Recruitment	0.0000	FALSE	Recruitment

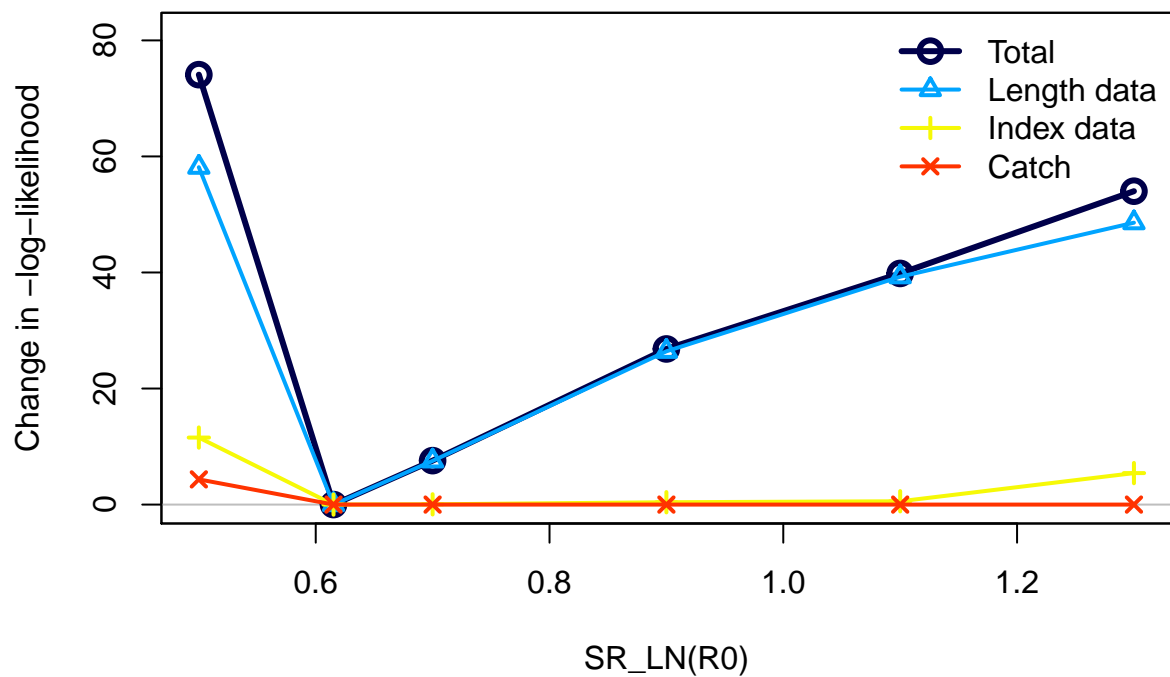
```

## InitEQ_Regime          0.0000  FALSE  Initital equilibrium recruitment
## Forecast_Recruitment  0.0000  FALSE          Forecast recruitment
## Parm_priors            0.0000  FALSE          Priors
## Parm_softbounds        0.0001  FALSE          Soft bounds
## Parm_devs              0.0000  FALSE          Parameter deviations
## Crash_Pen              0.0000  FALSE          Crash penalty

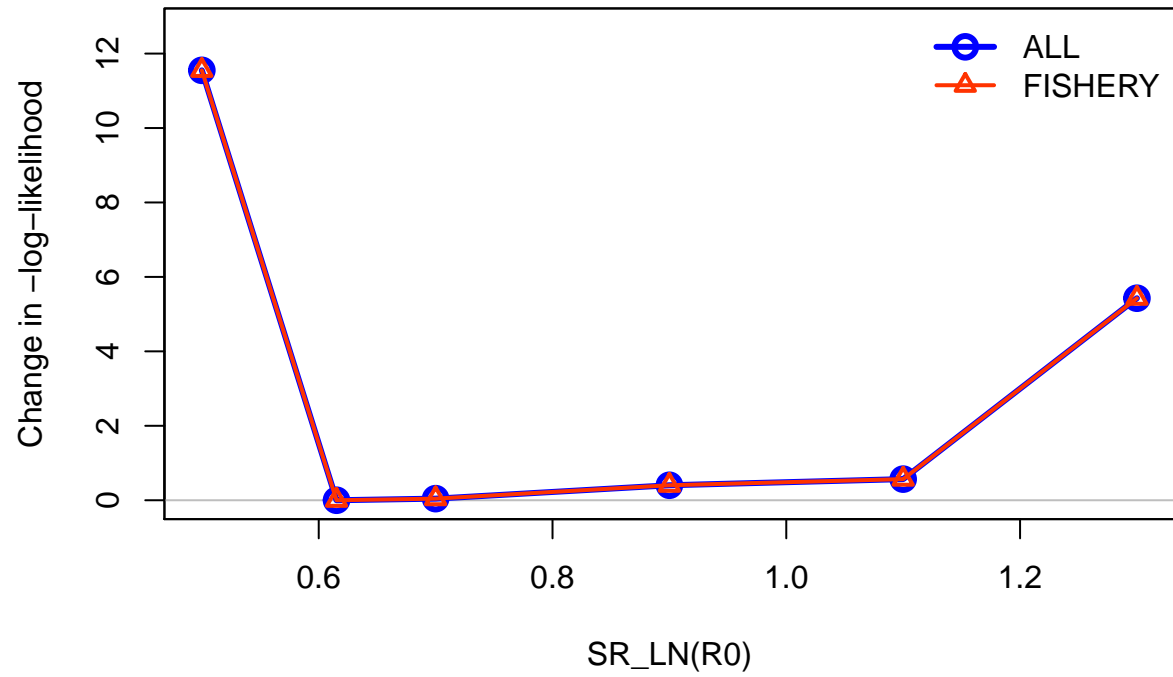
## Parameter matching profile.string = 'SR_LN': 'SR_LN(R0)
## Parameter values (after subsetting based on input 'models'): 0.5, 0.7, 0.9, 1.1, 1.3, 0.615222,

## 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

```

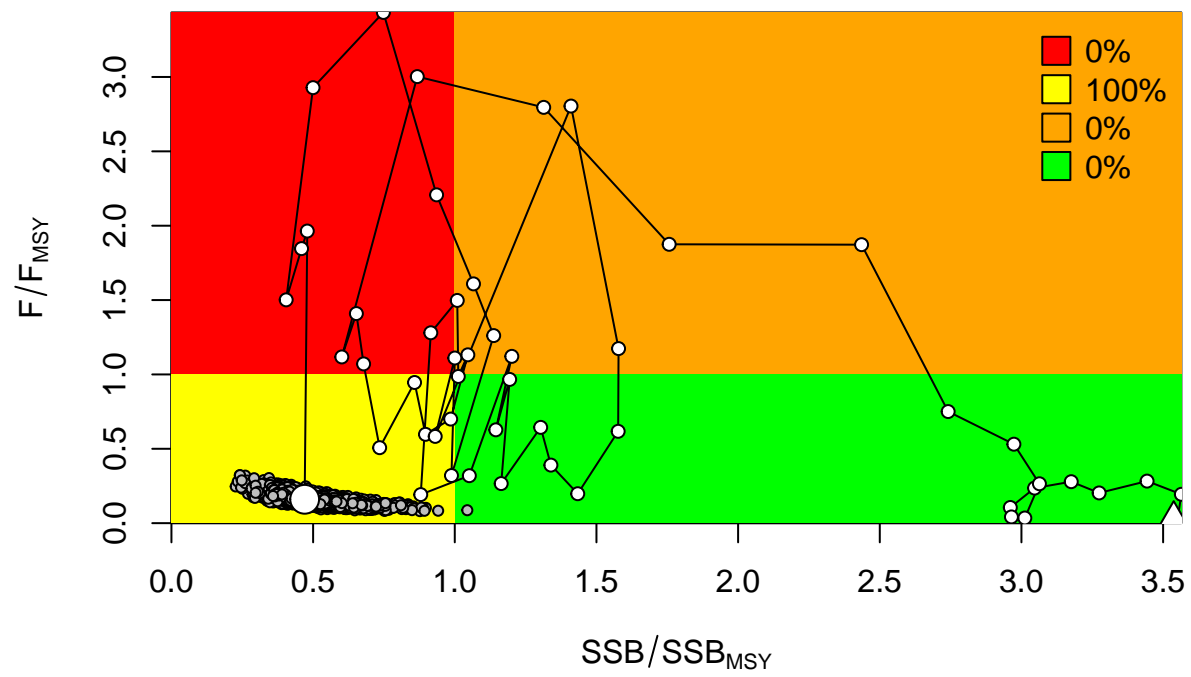


Changes in survey likelihood by fleet

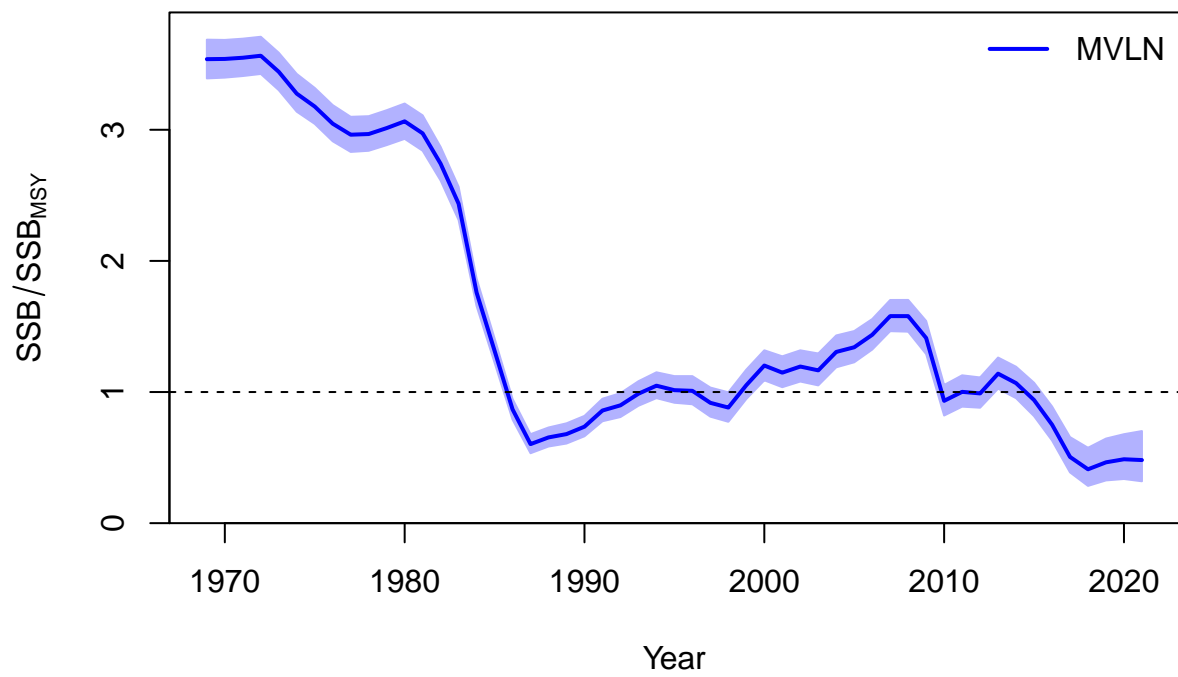


Management Quantities

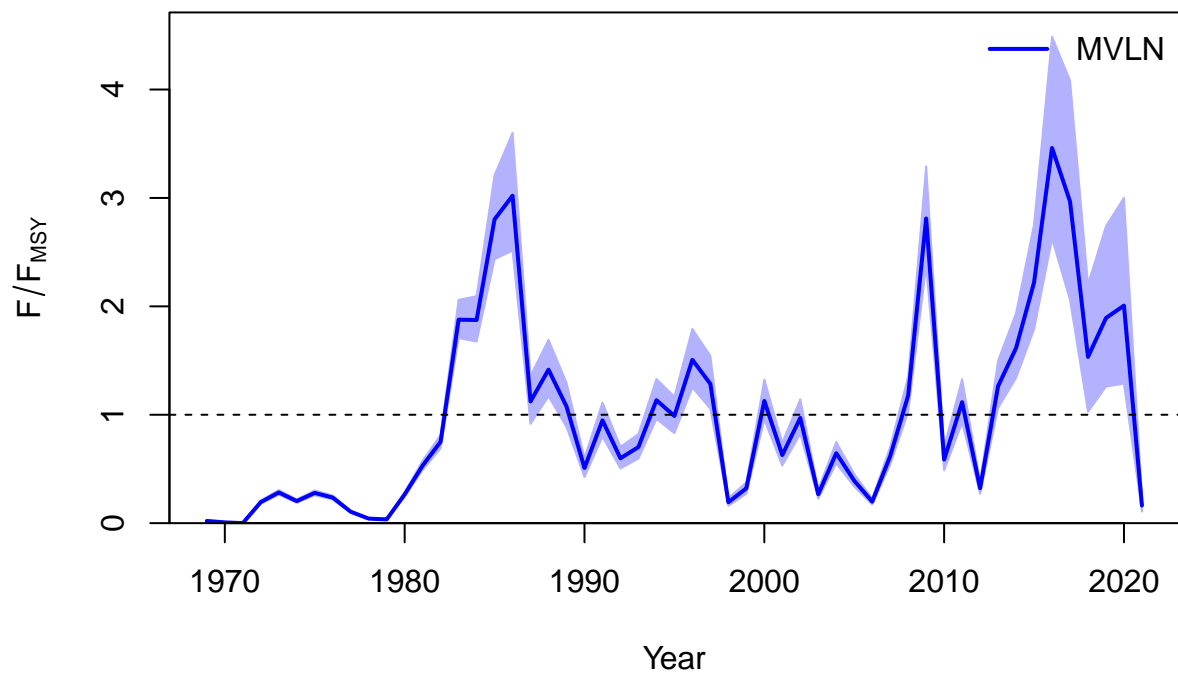
```
##  
## starter.sso with Bratio: SSB/SSBMSY and F: _abs_F  
##
```



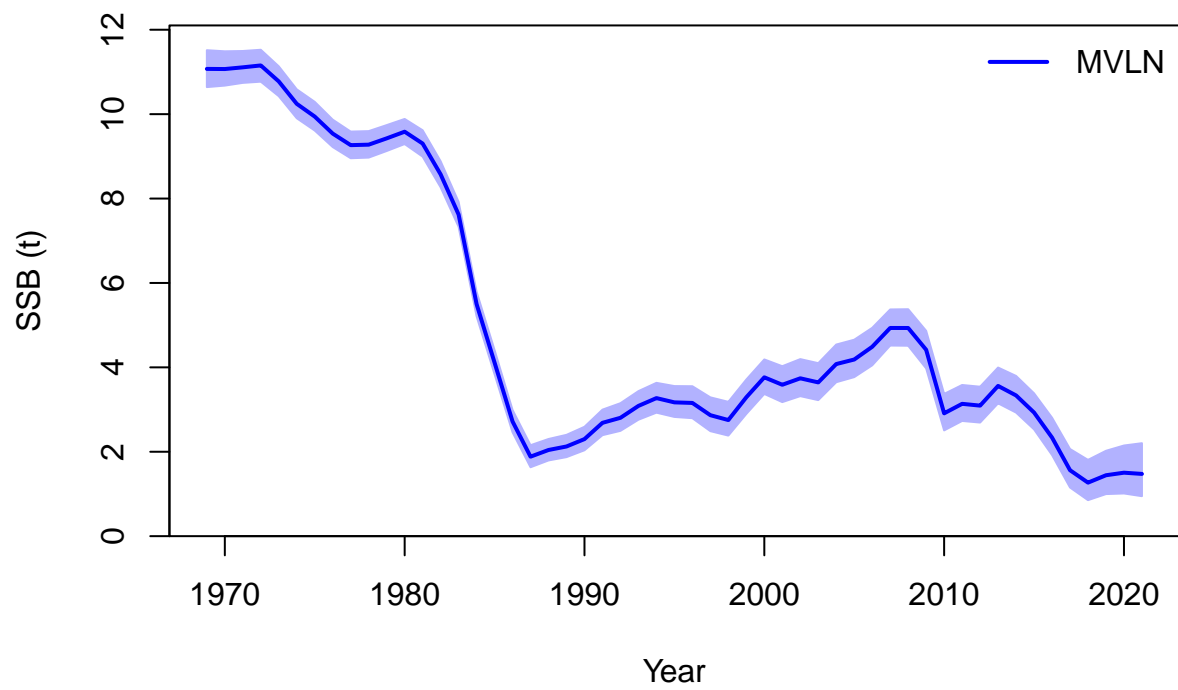
Plot Comparison of stock



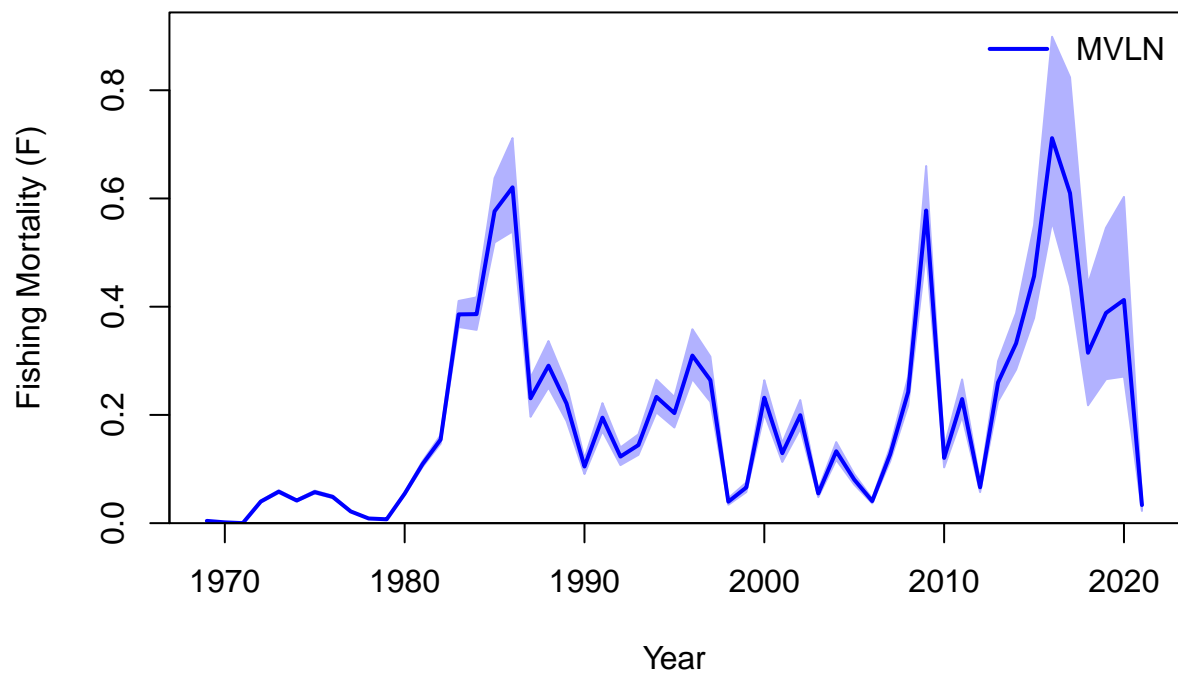
```
##  
## Plot Comparison of harvest
```



Plot Comparison of SSB



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



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

Jitter

