

American Samoa Model Checks

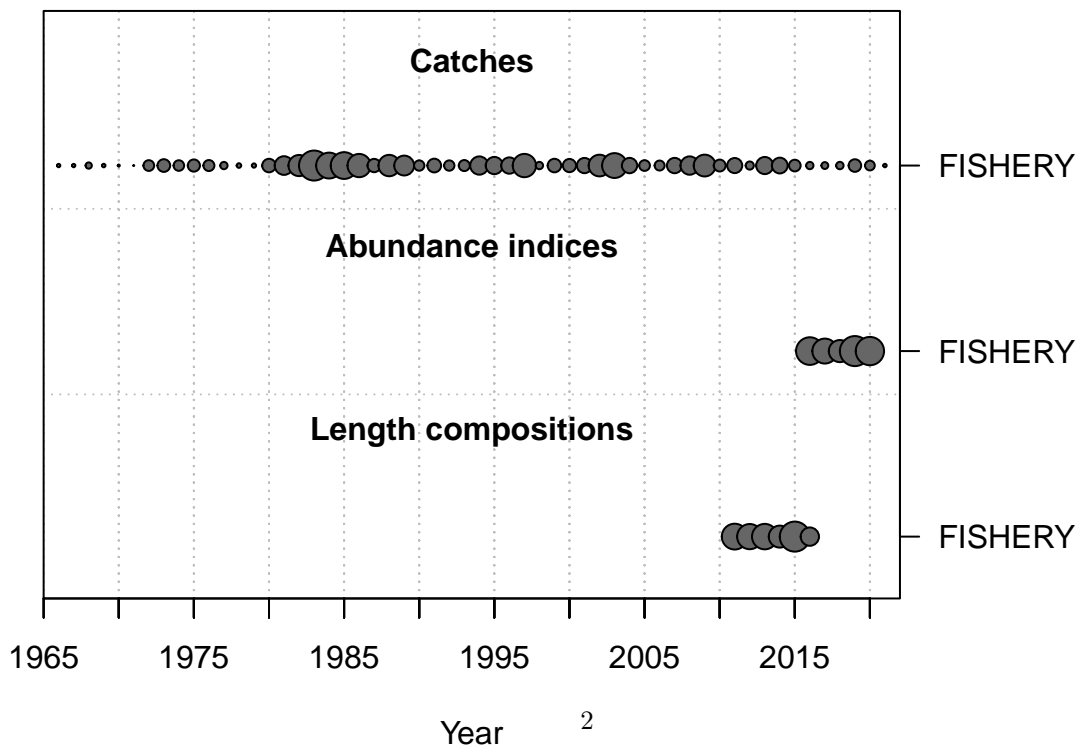
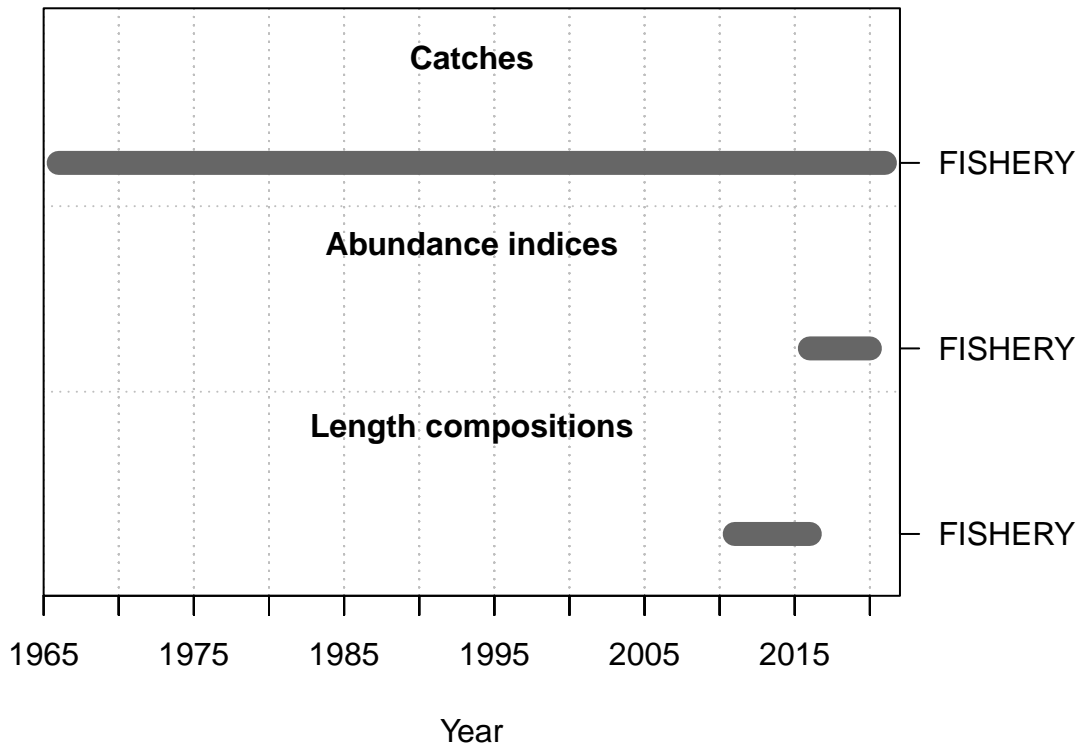
Meg Oshima

2022-08-12

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

Model Output

Input Data



Convergence Check

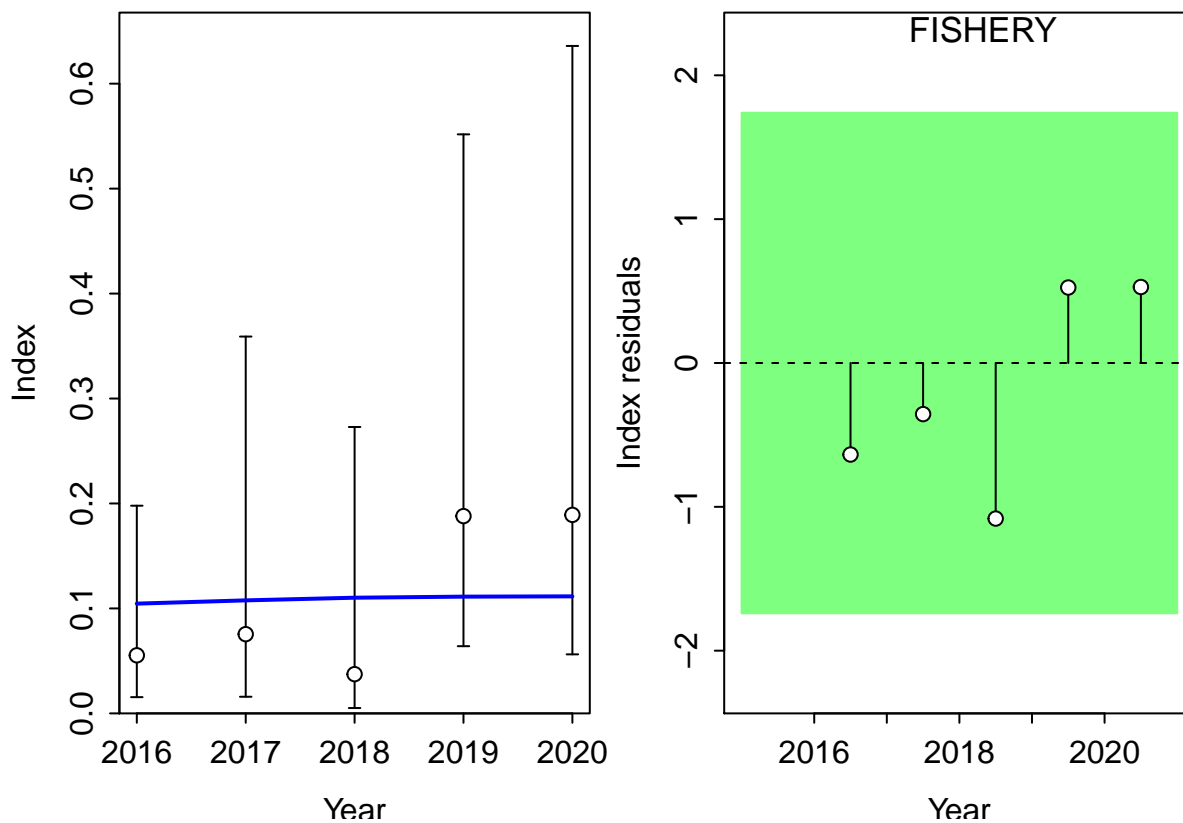
```
## Converged MaxGrad
## 1 TRUE 9.9523e-05
```

```
## [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 warning: poor convergence in Fmsy, final dy/dy2= -0.00580964"
## [4] " N parameters are on or within 1% of min-max bound: 2; check results, variance may be suspect"
## [5] "N warnings: 3"
```

Fit to Model

CPUE

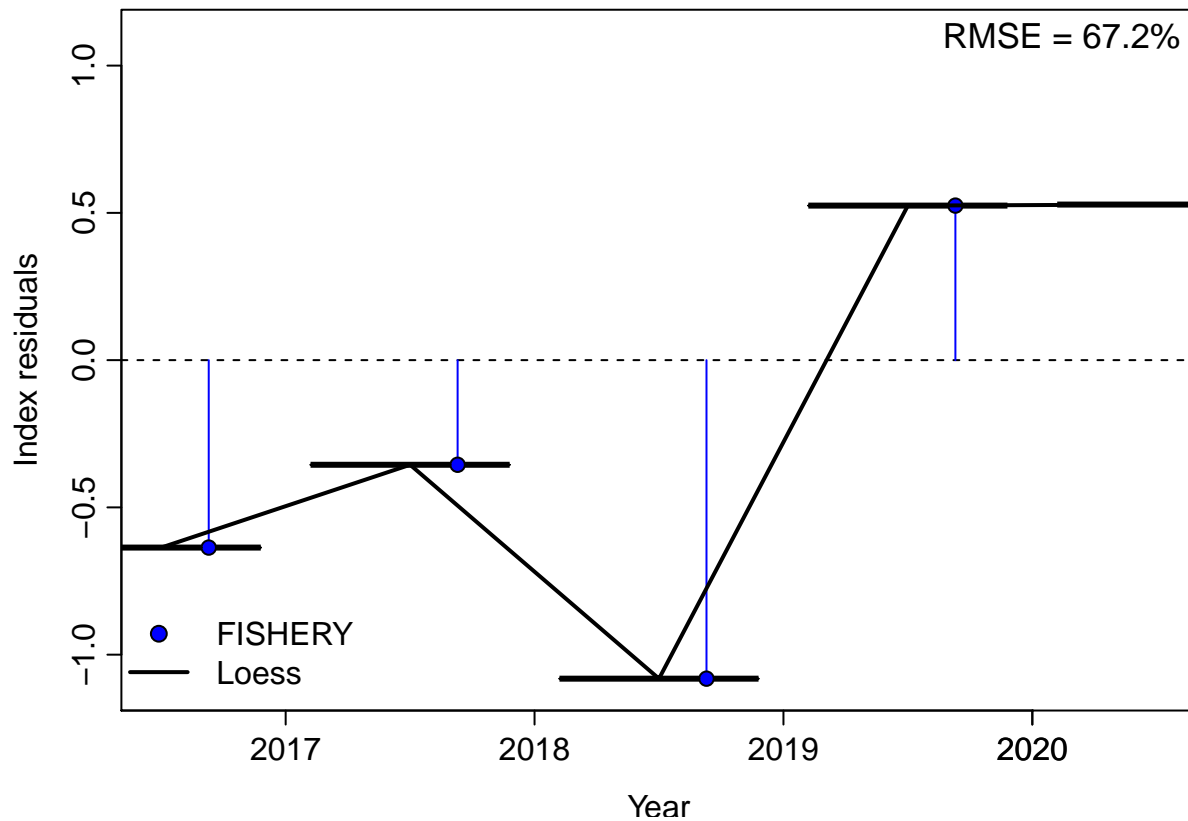
```
##
## Running Runs Test Diagnostics for Index
## Plotting Residual Runs Tests
```



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

```
## Warning in simpleLoess(y, x, w, span, degree = degree, parametric = parametric, : 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 radius
## 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	0.097394	len	FISHERY

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

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

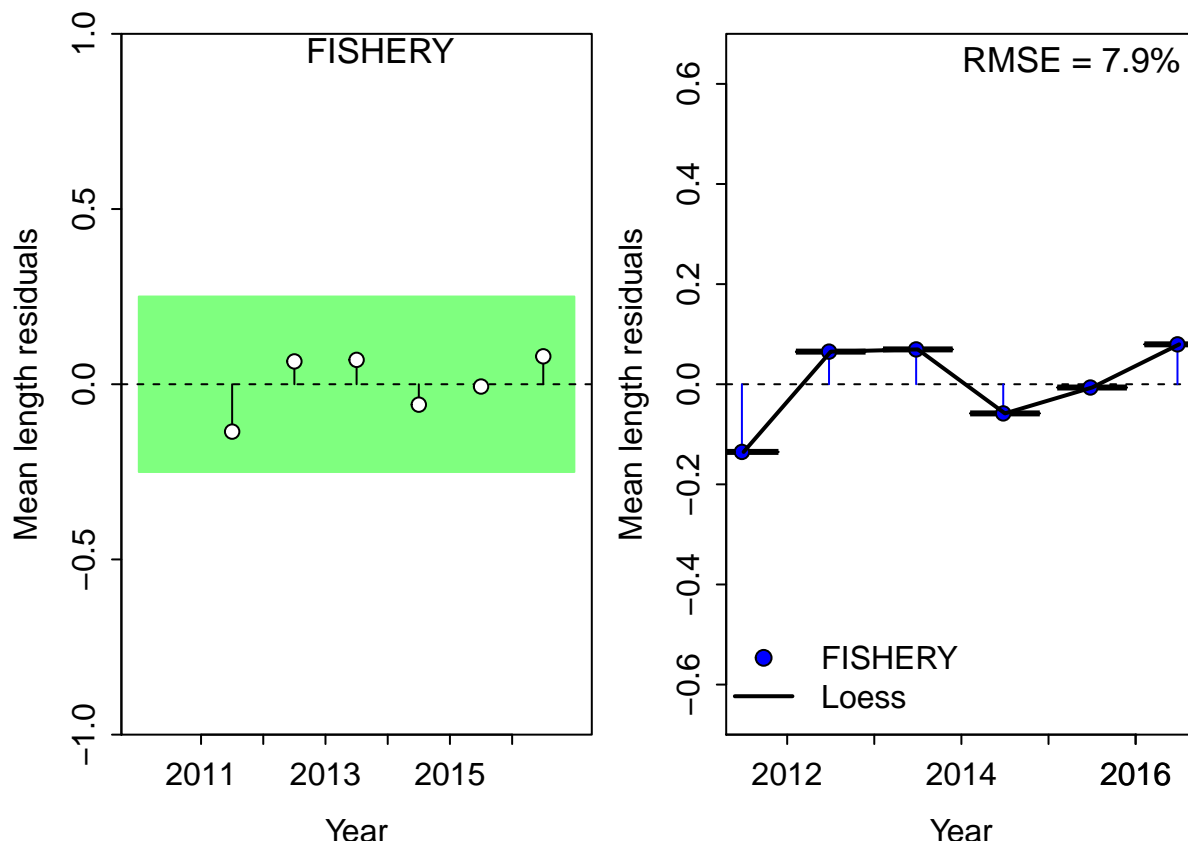
```
##      Index runs.p  test  sigma3.lo sigma3.hi type
## 1 FISHERY      0.5 Passed -0.2503518 0.2503518 len
```

```
## 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
```

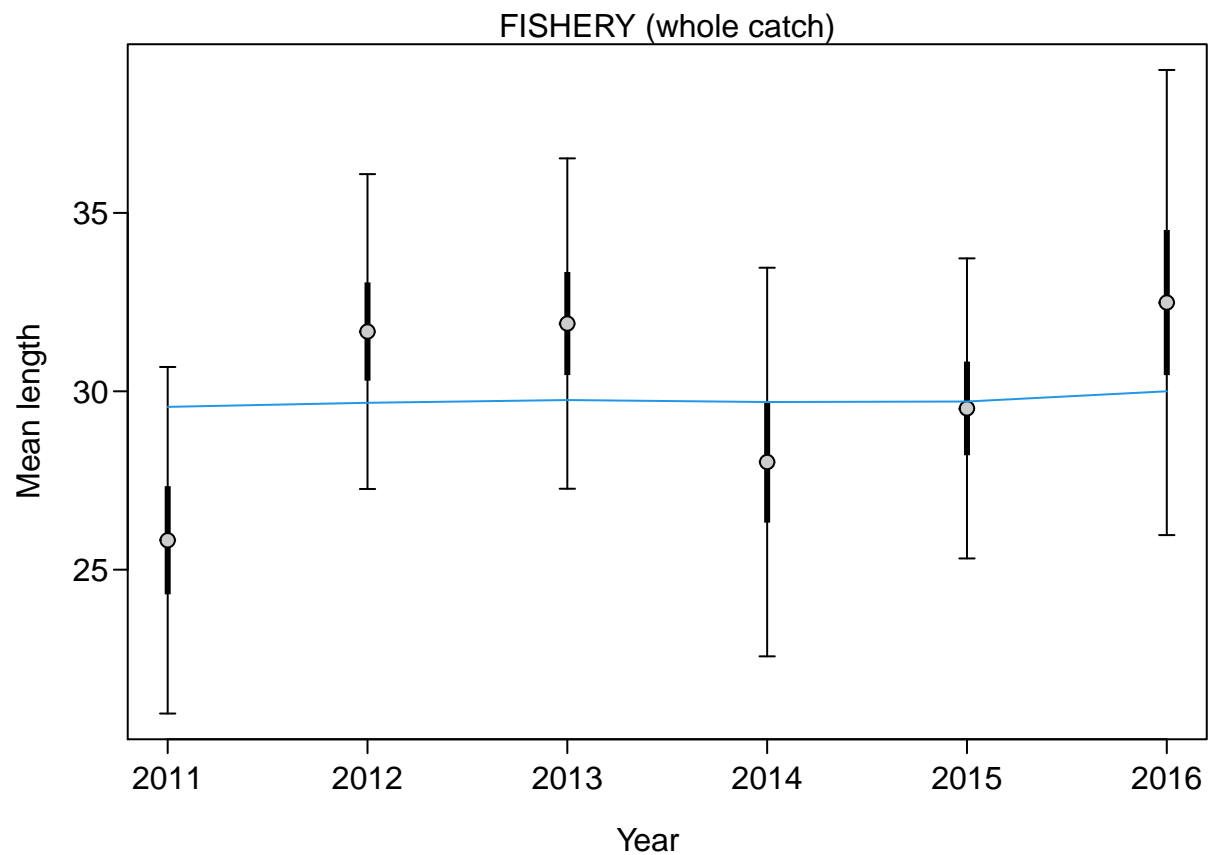
```
## Warning in sqrt(sum.squares/one.delta): NaNs produced
```

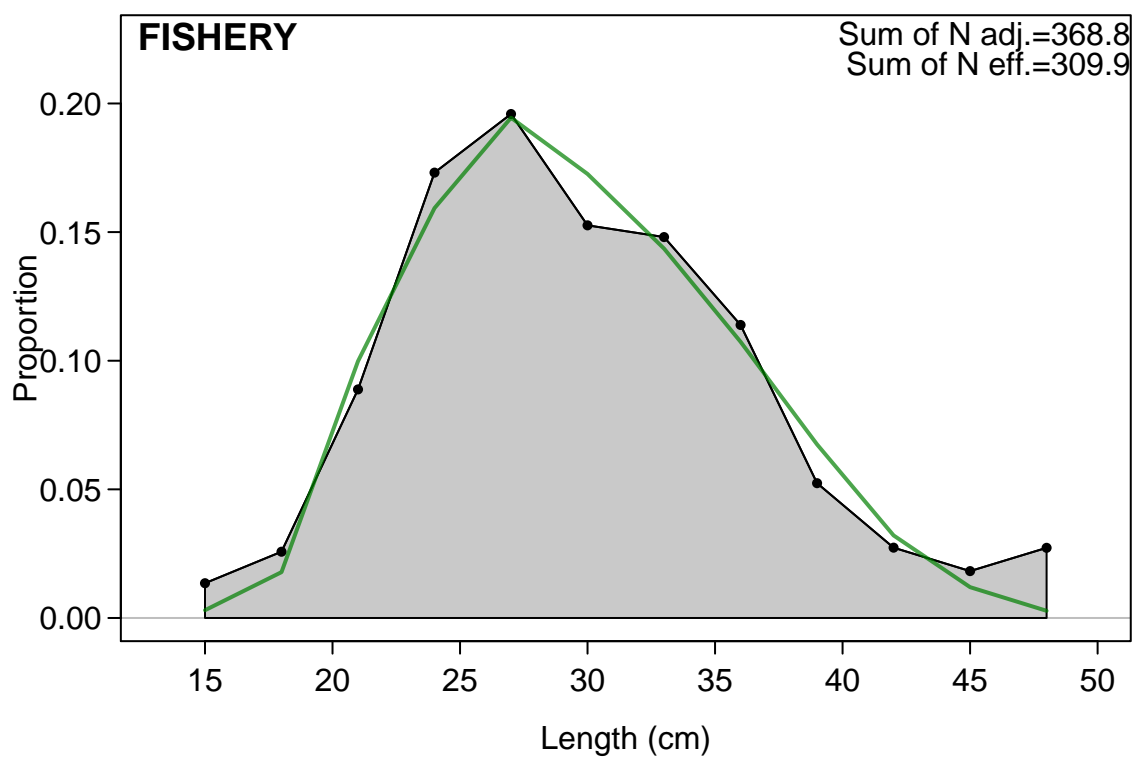


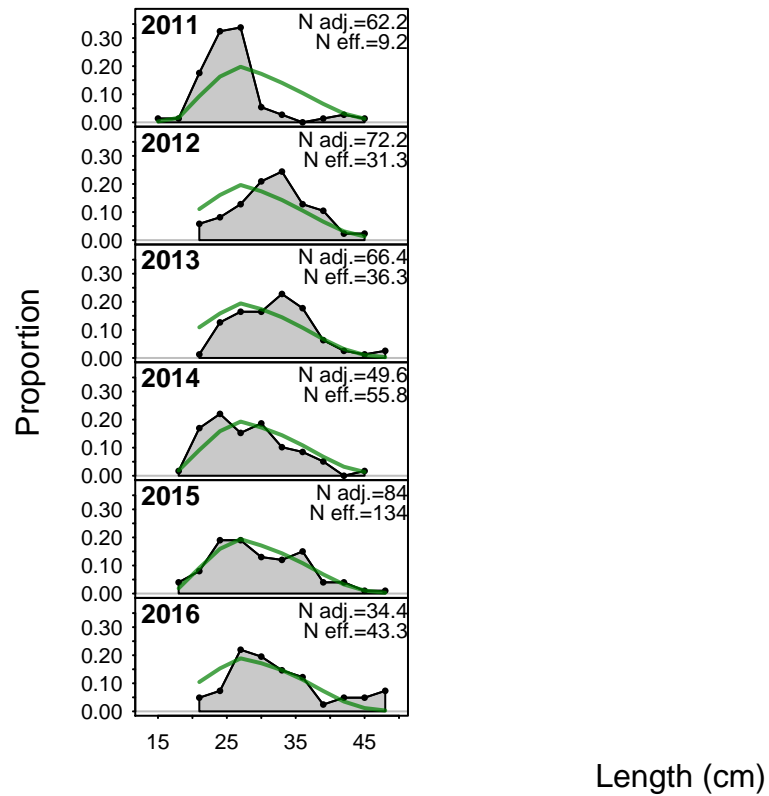
```
##
```

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

```
##      indices RMSE.perc nobs
## 1 FISHERY      7.9      6
## 2 Combined      7.9      6
```







Retrospective and Hindcasting

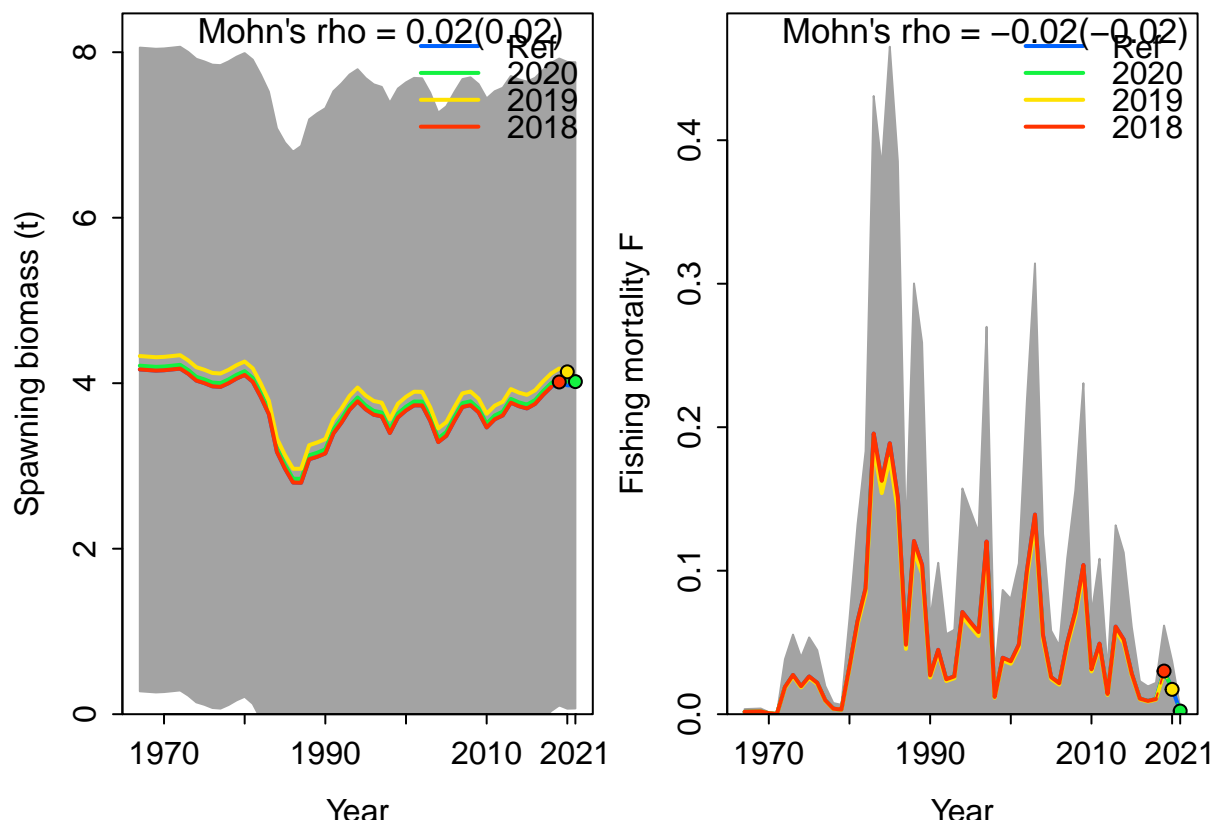
Retrospective

Plotting Retrospective pattern

##

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

Plotting Retrospective pattern

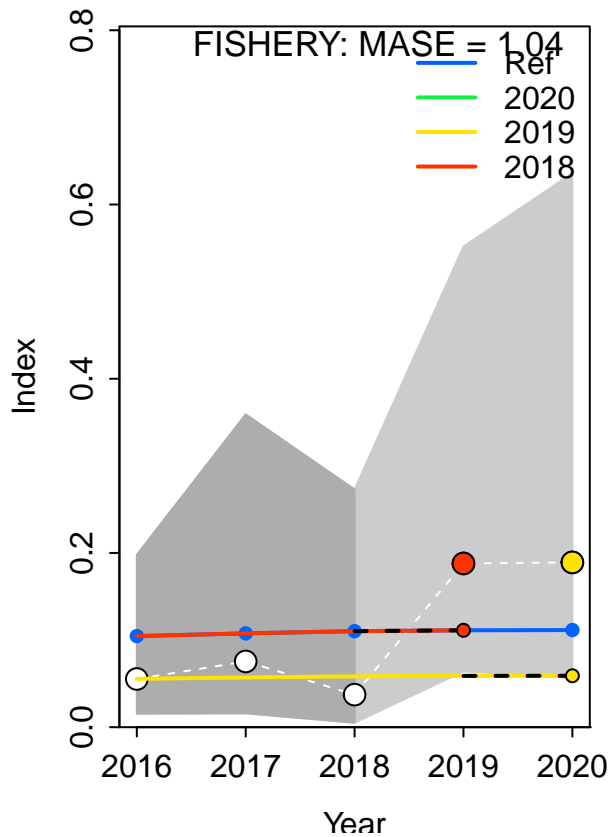


```
##
## Mohn's Rho stats, including one step ahead forecasts:
```

##	type	peel	Rho	ForecastRho
## 1	F	2020	-0.01206419	-0.01189049
## 2	F	2019	-0.04198244	-0.04184283
## 3	F	2018	0.00000000	0.00000000
## 4	F Combined		-0.01801554	-0.01791111

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

```
## 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'): 1.5, 1.7, 1.9, 2.1, 2.3, 2.5, 2.02469

##
## Likelihood components showing max change as fraction of total change.
## To change which components are included, change input 'minfraction'.
```

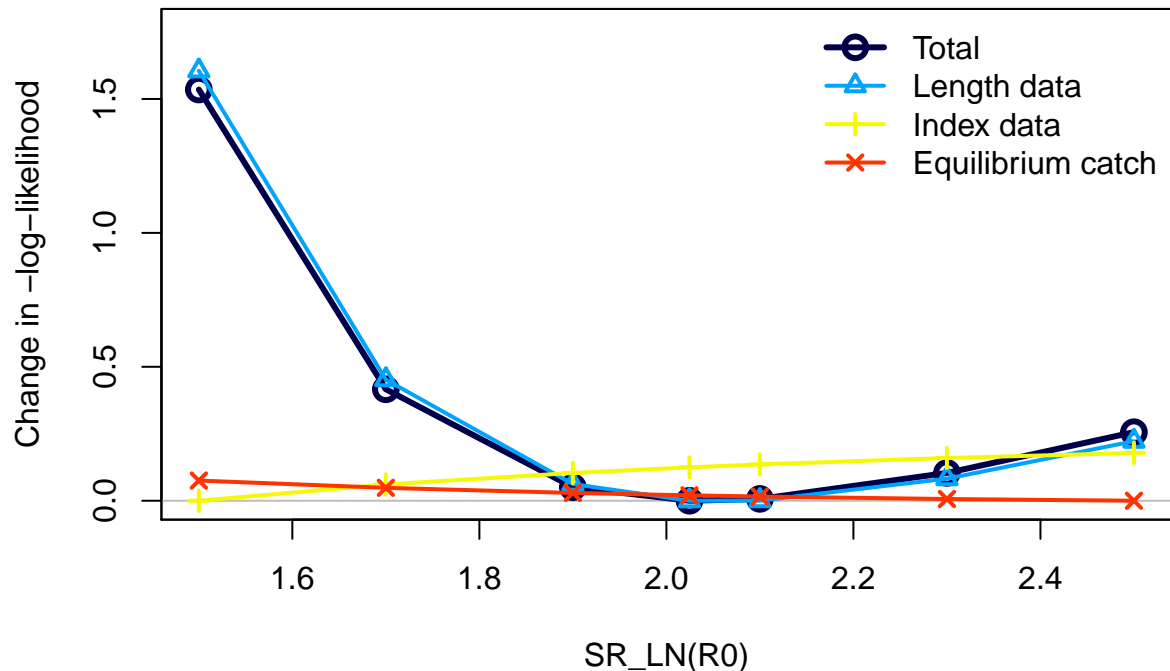
```

##          frac_change include          label
## TOTAL          1.0000    TRUE          Total
## Catch           0.0000   FALSE          Catch
## Equil_catch     0.0490    TRUE    Equilibrium catch
## Survey          0.1161    TRUE          Index data
## Length_comp     1.0455    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 0.0002   FALSE    Soft bounds
## Parm_devs       0.0000   FALSE    Parameter deviations
## Crash_Pen       0.0000   FALSE    Crash penalty

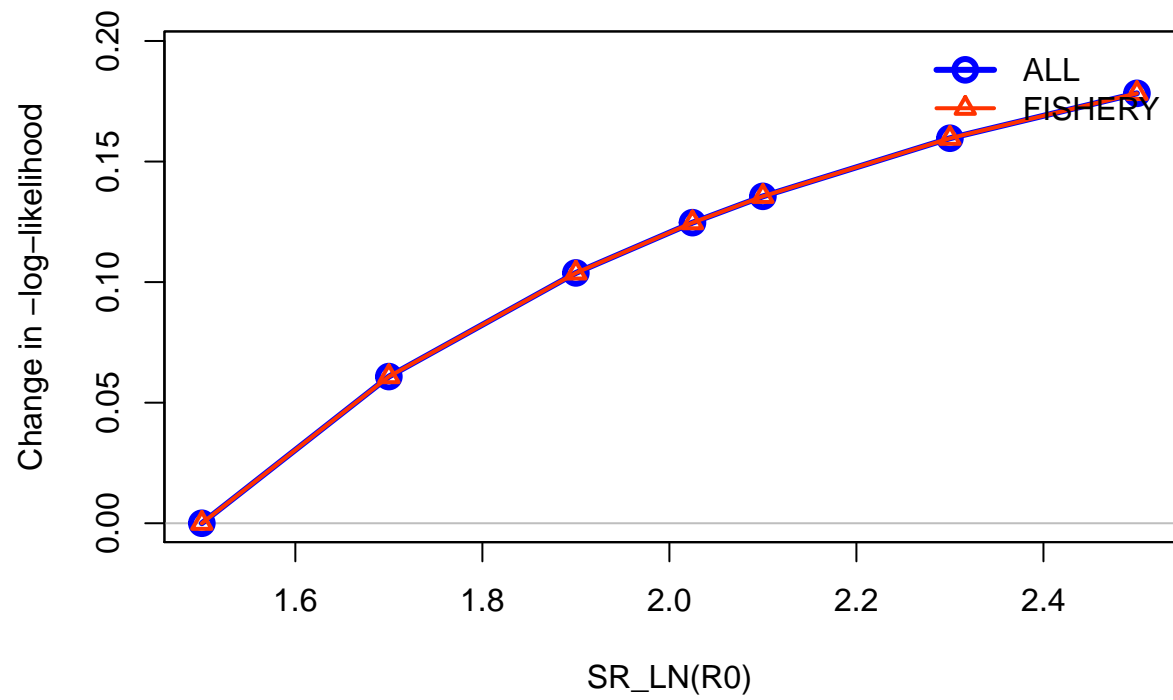
## Parameter matching profile.string = 'SR_LN': 'SR_LN(R0)'
## Parameter values (after subsetting based on input 'models'): 1.5, 1.7, 1.9, 2.1, 2.3, 2.5, 2.02469,

## 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

```

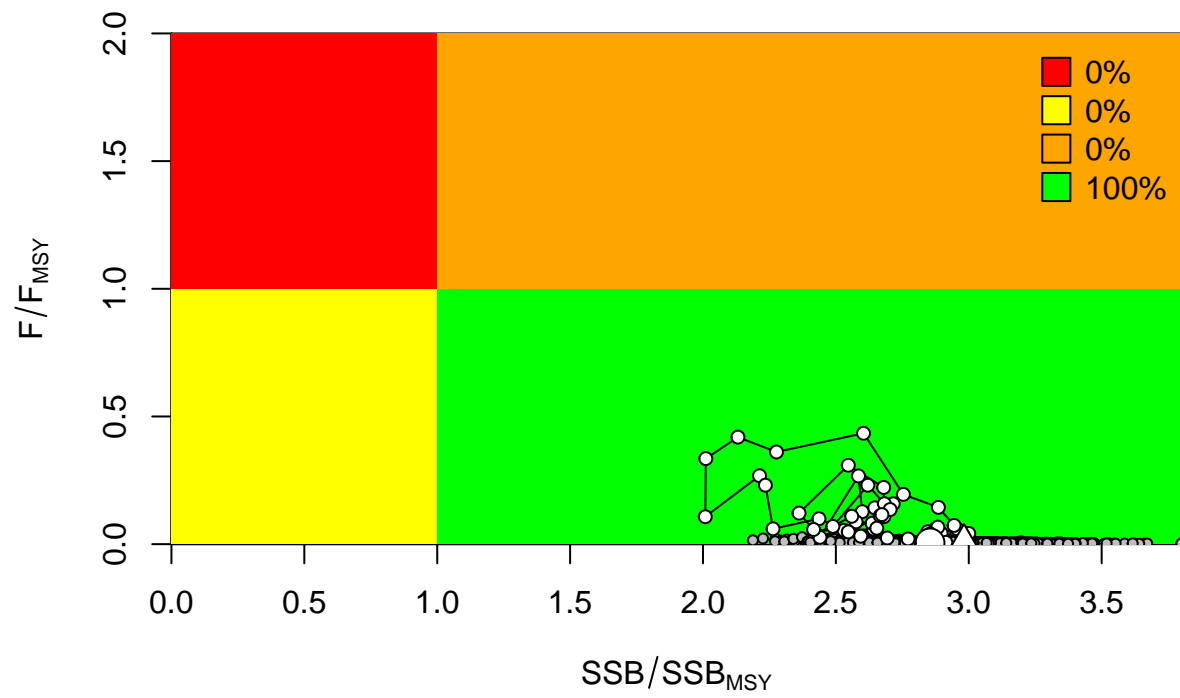


Changes in survey likelihood by fleet

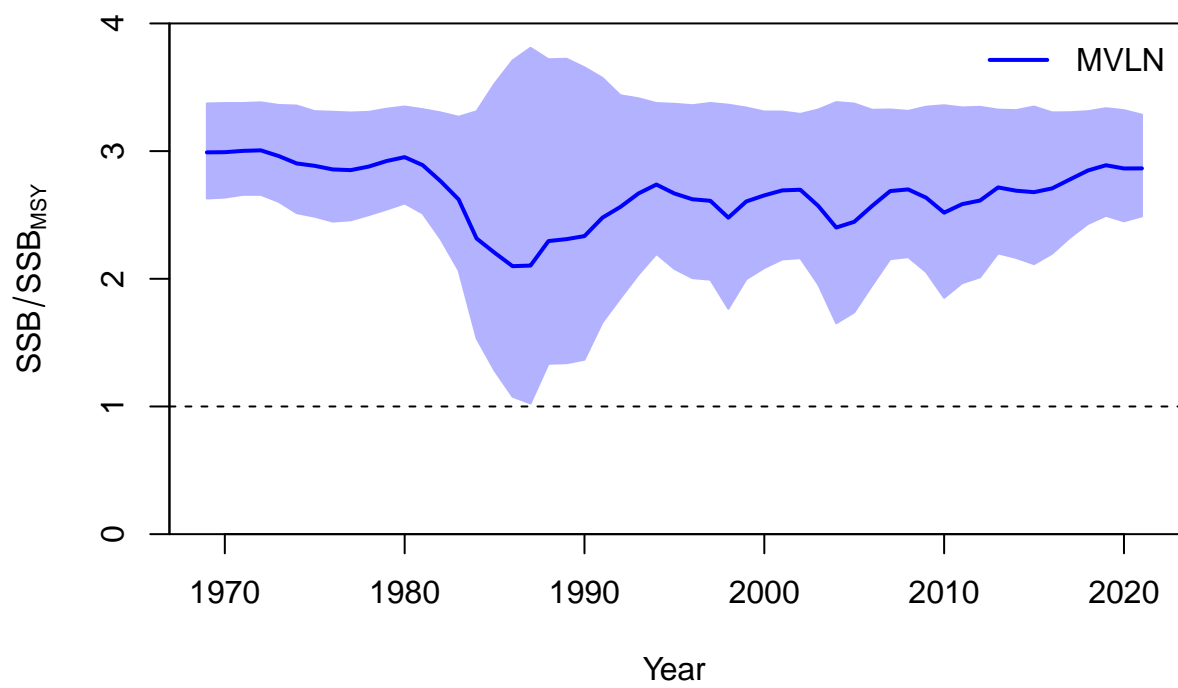


Management Quantities

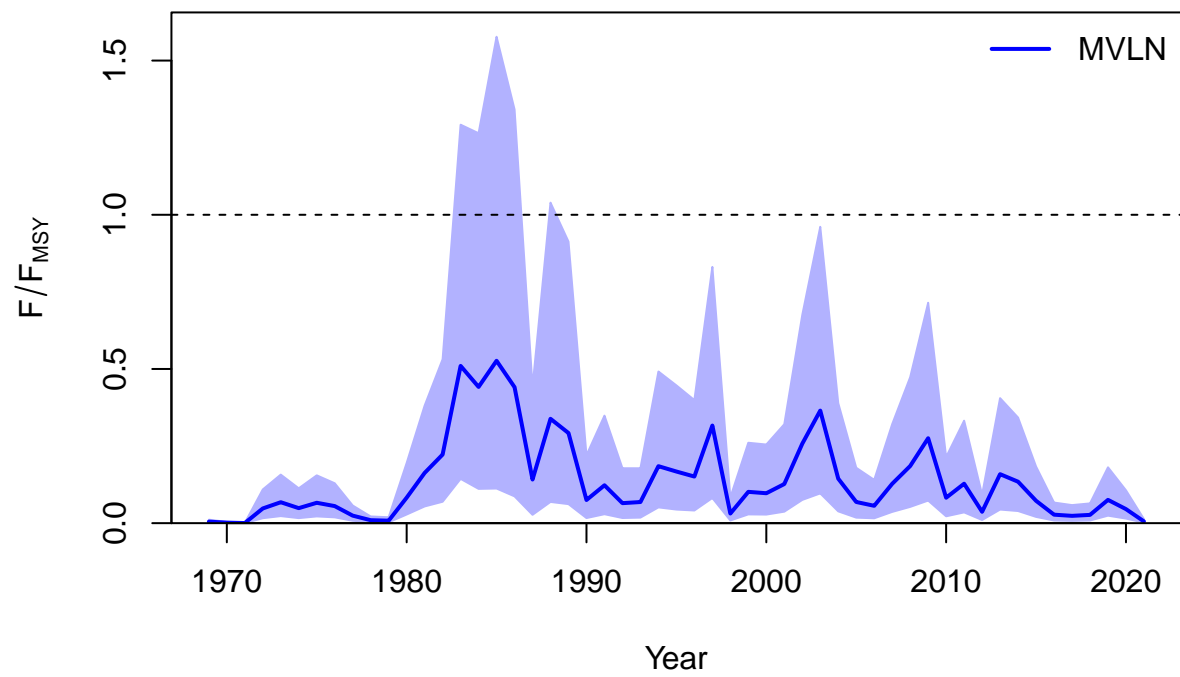
```
##  
## starter.sso with Bratio: SSB/SSBMSY and F: _abs_F  
##
```



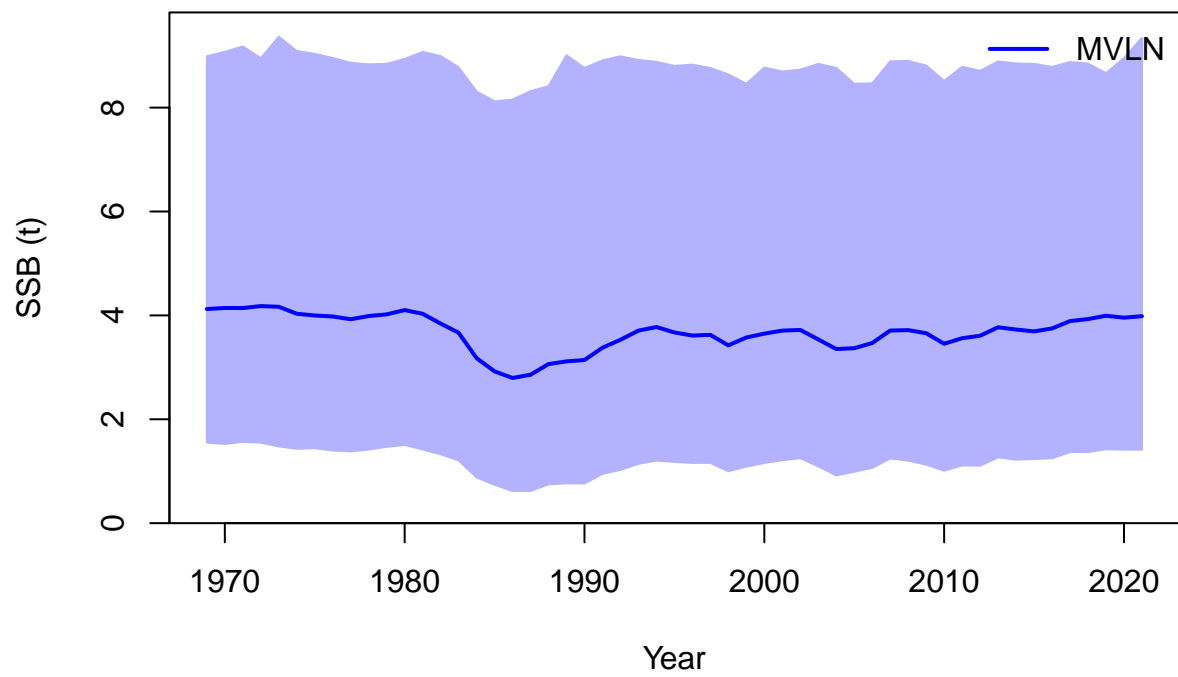
Plot Comparison of stock



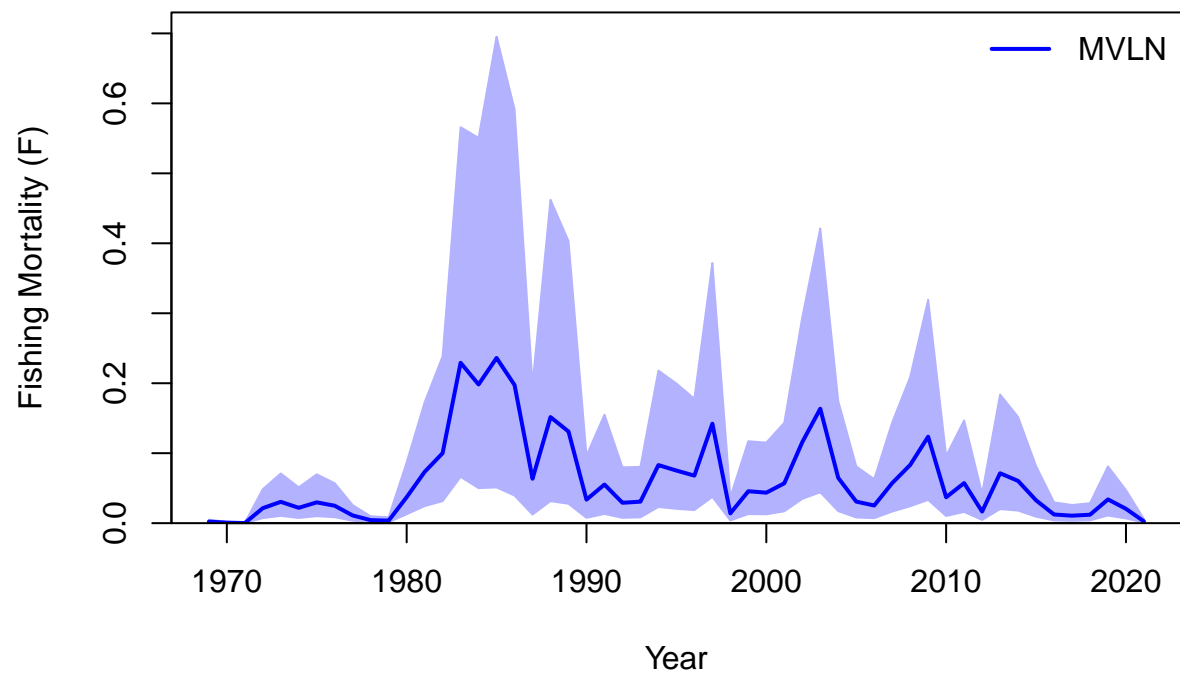
Plot Comparison of harvest



Plot Comparison of SSB



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

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

Jitter

