

American Samoa Model Checks

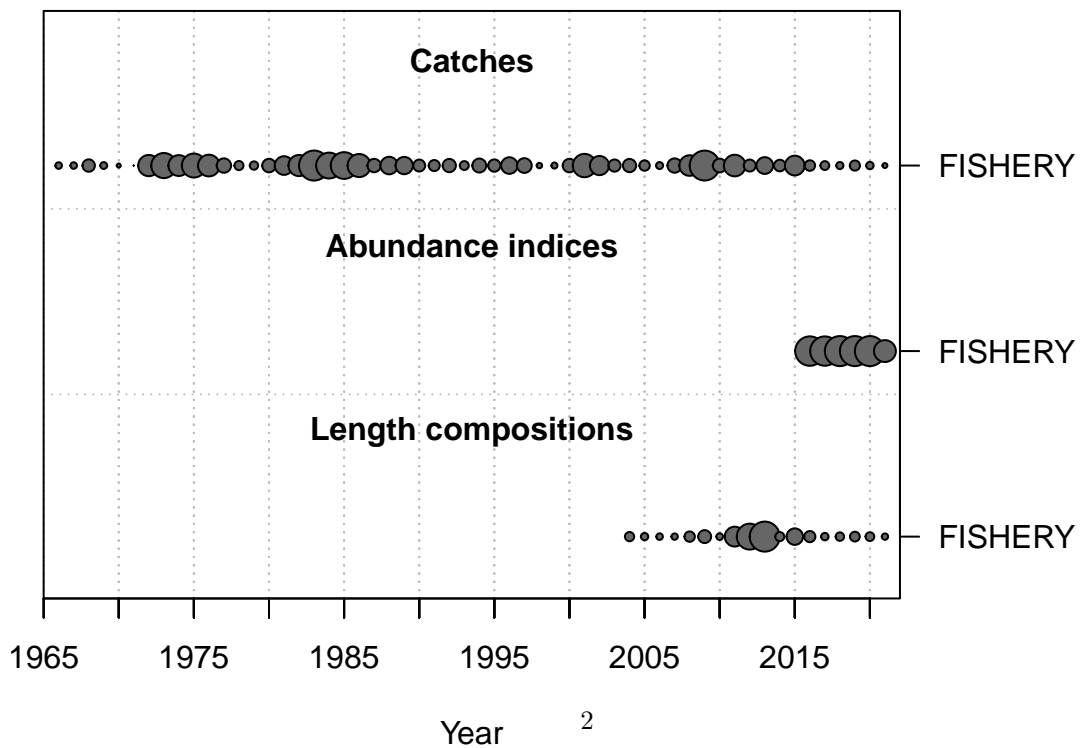
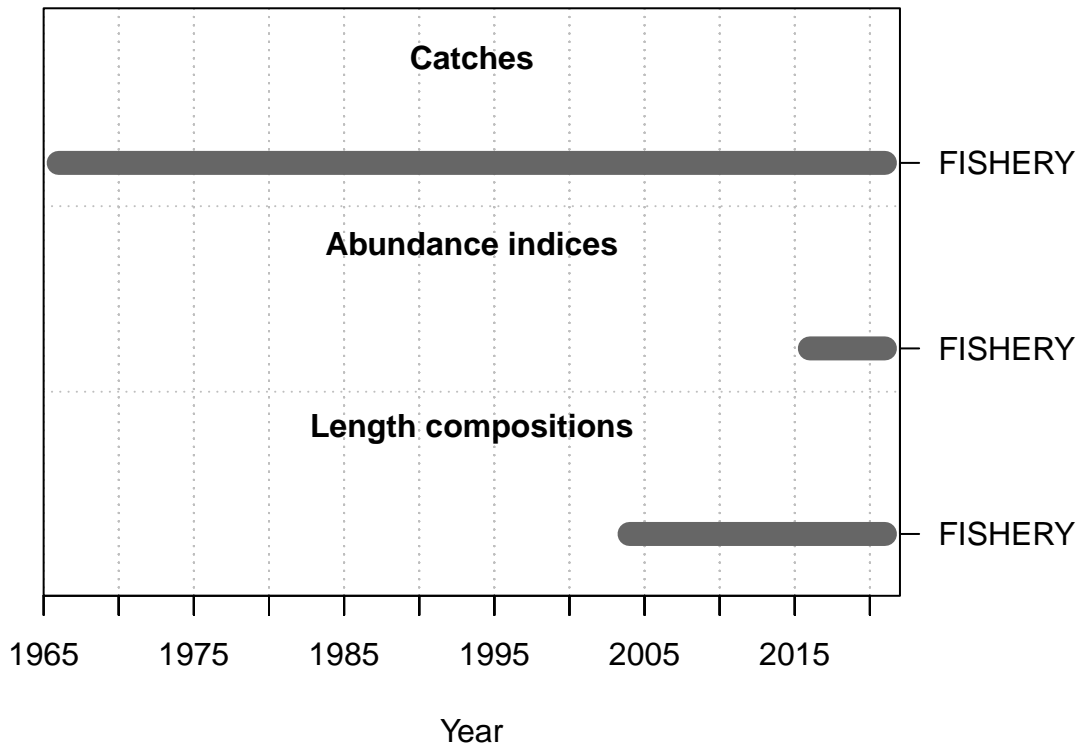
Meg Oshima

2022-08-11

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

Model Output

Input Data



Convergence Check

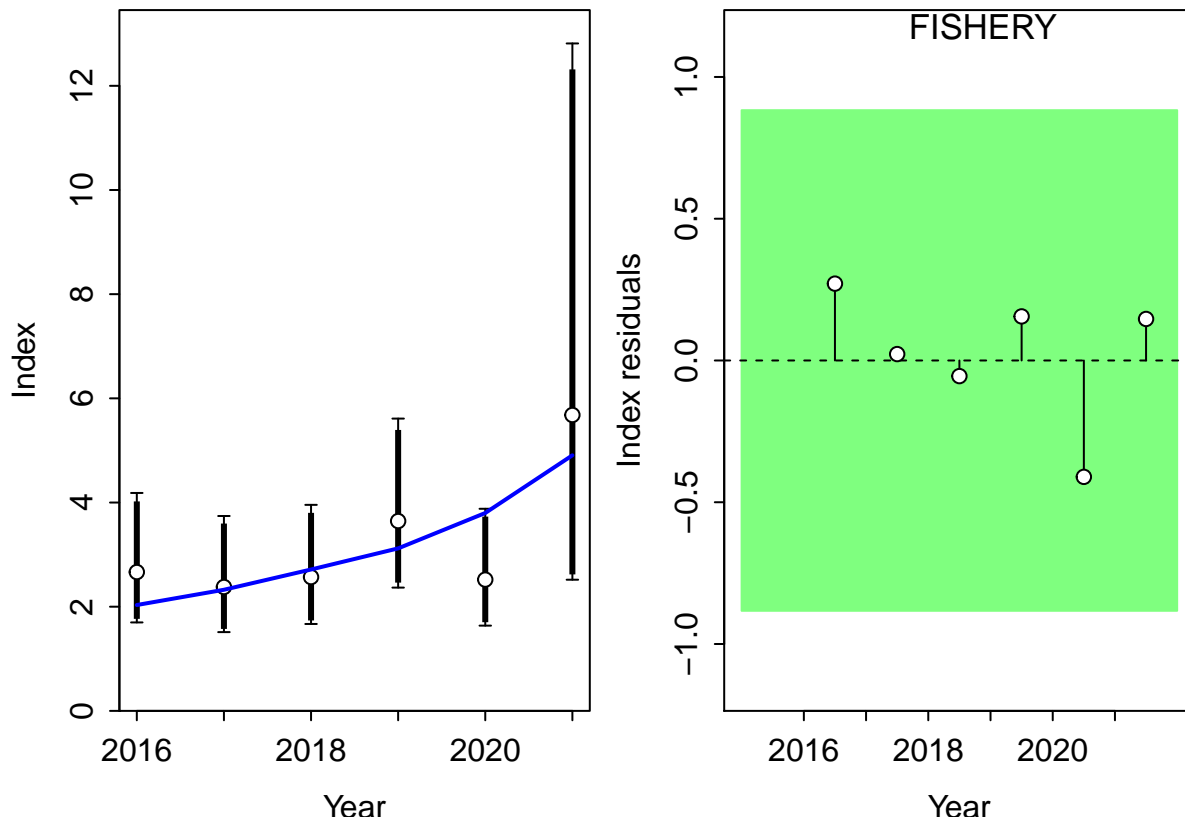
```
## Converged MaxGrad
## 1 TRUE 8.5767e-05
```

```
## [1] "1 NOTE: Max data length bin: 38.5 < max pop len bins: 43; so will accumulate larger pop len b
## [2] "2 parameter init value is greater than parameter max 0.8 > 0.6 for parm: 14 ; search for <now cl
## [3] "3 Main recdev biasadj is >2 times ratio of rmse to sigmaR"
## [4] "N warnings: 3"
```

Fit to Model

CPUE

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

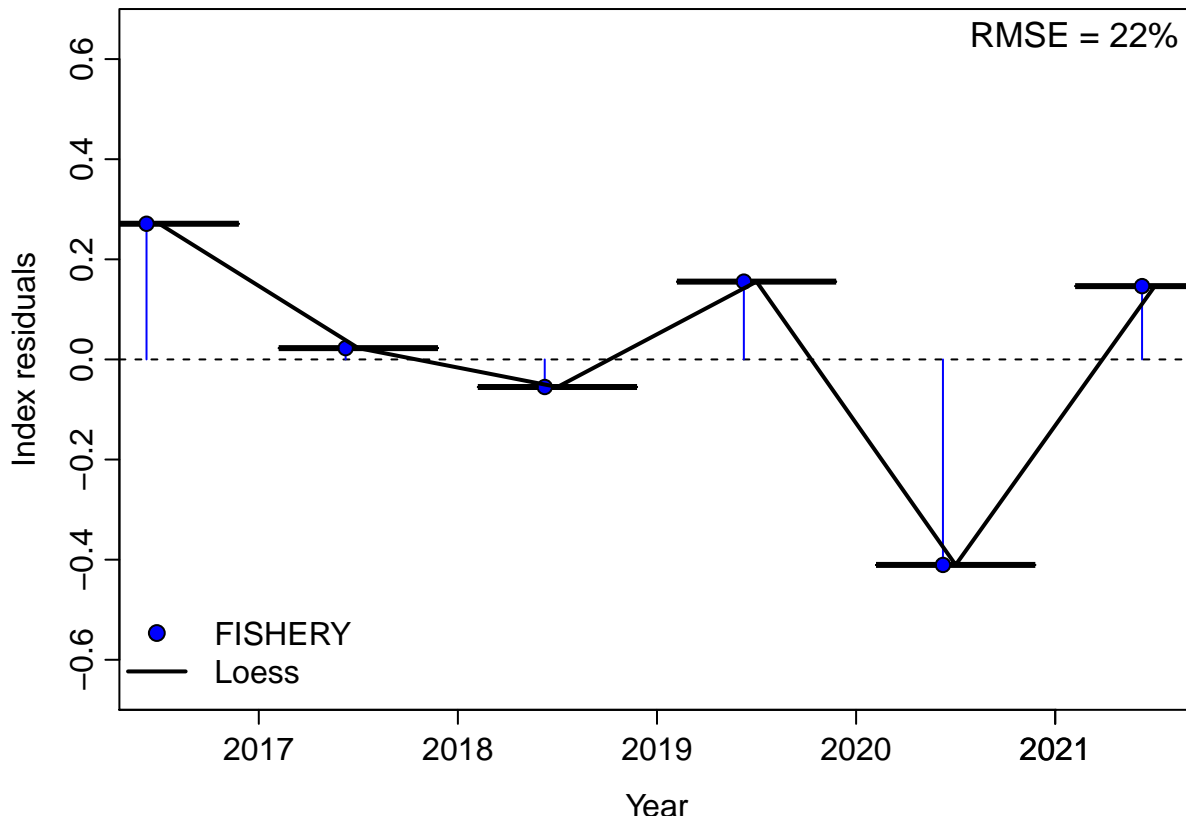


```
##
## Runs Test stats by Index:
## Plotting JABBA residual plot
```

```
## 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

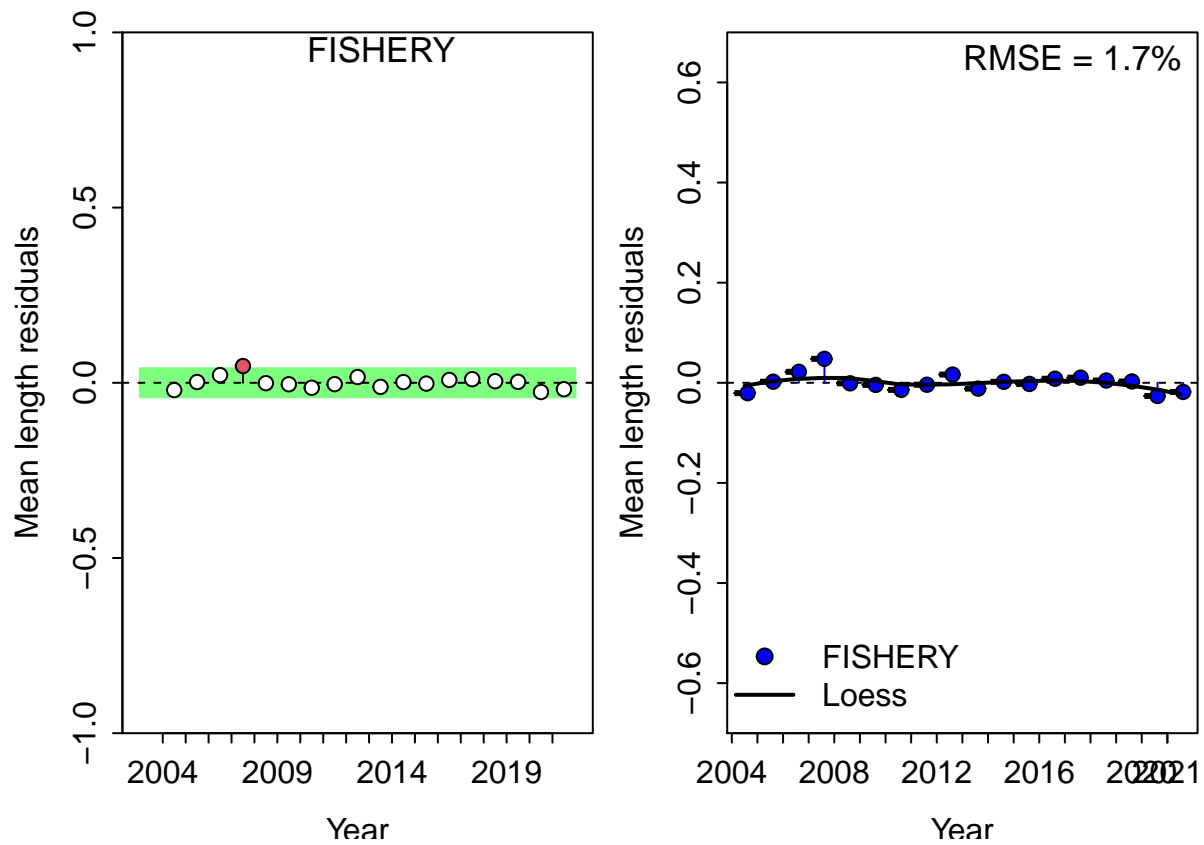
#Factor	Fleet	New_Var_adj	Type	Name
4	1	0.323951	len	FISHERY

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

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

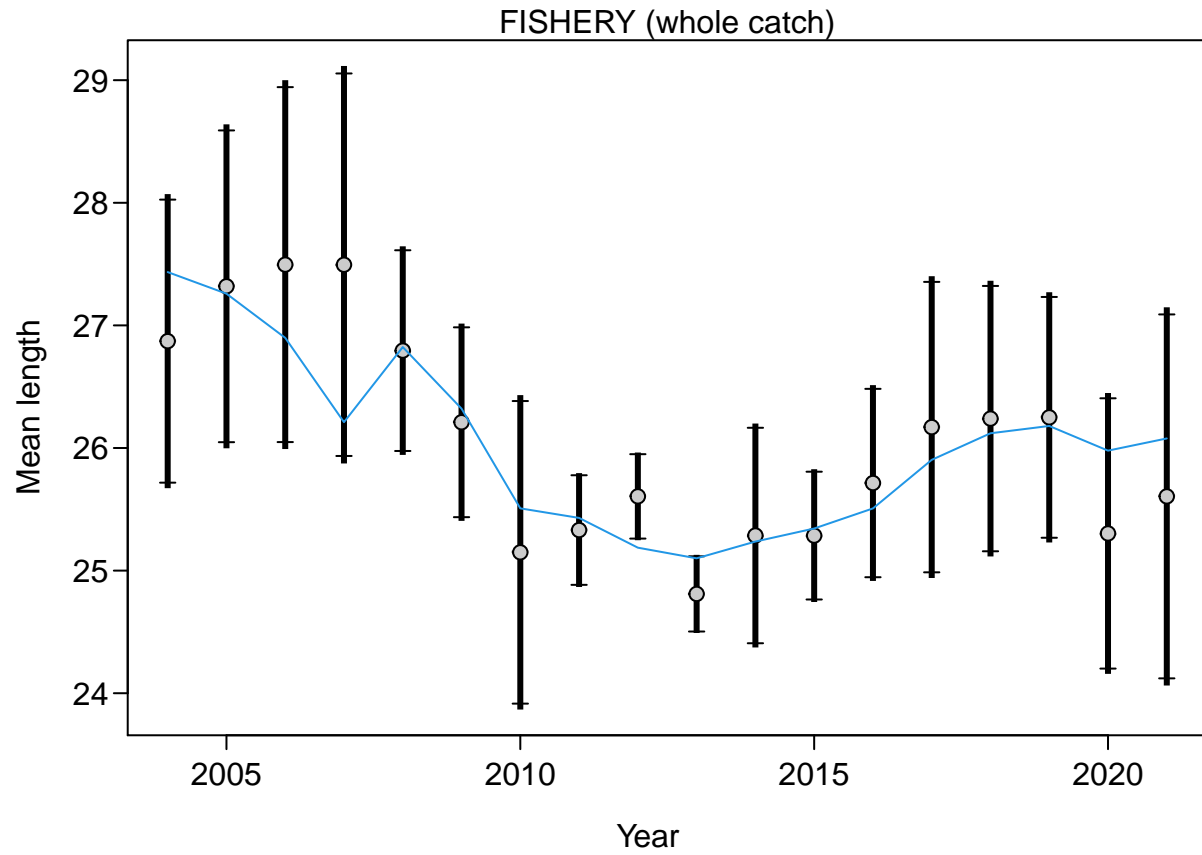
```
## Index runs.p test sigma3.lo sigma3.hi type
## 1 FISHERY 0.314 Passed -0.04134751 0.04134751 len
```

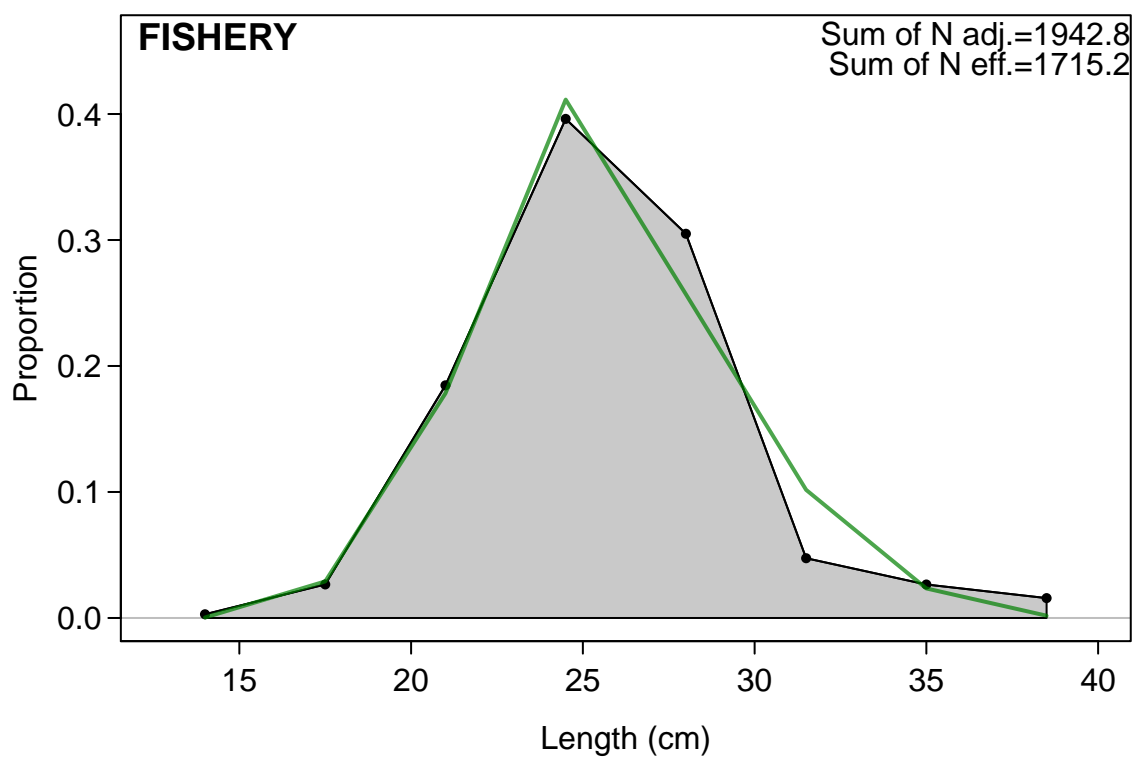
```
## Plotting JABBA residual plot
```

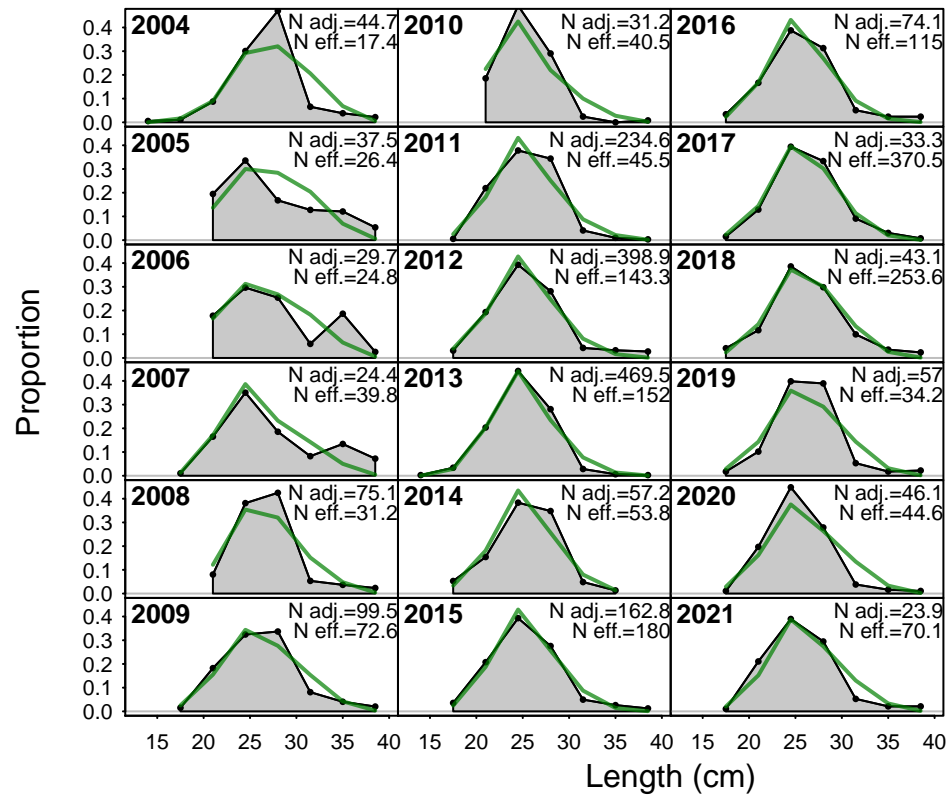


```
##
## RMSE stats by Index:

##   indices RMSE.perc nobs
## 1 FISHERY      1.7    18
## 2 Combined      1.7    18
```







Retrospective and Hindcasting

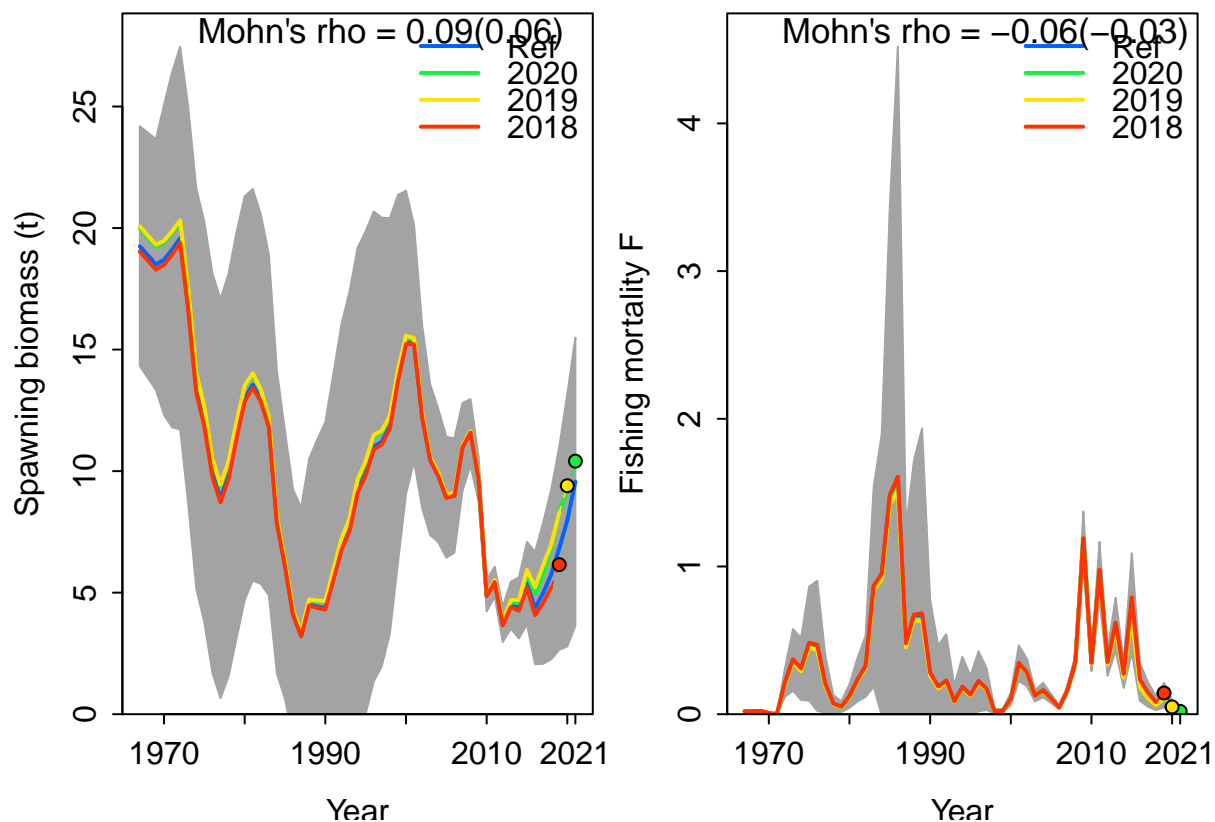
Retrospective

Plotting Retrospective pattern

##

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

Plotting Retrospective pattern

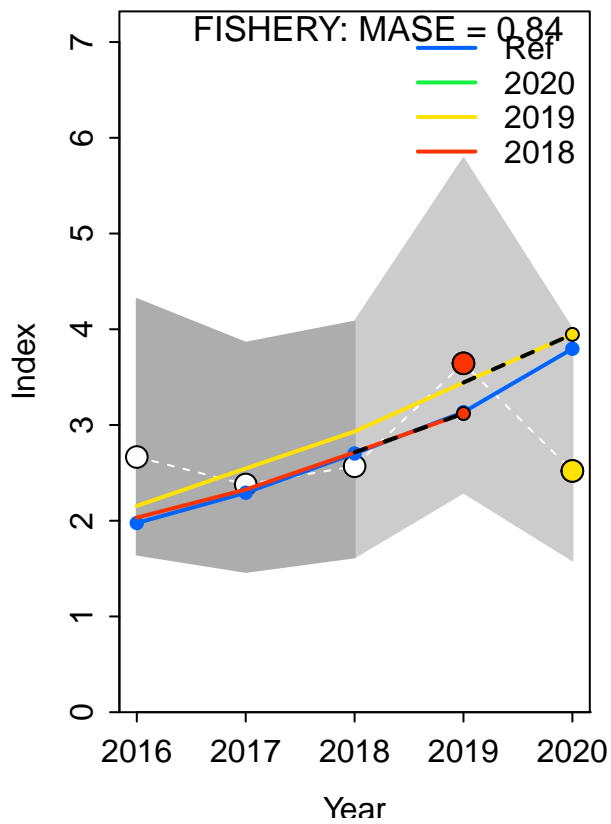


```
##
## Mohn's Rho stats, including one step ahead forecasts:
```

##	type	peel	Rho	ForecastRho
## 1	F	2020	-0.11124124	-0.07356286
## 2	F	2019	-0.18213931	-0.13566638
## 3	F	2018	0.10355656	0.11370412
## 4	F Combined		-0.06327466	-0.03184171

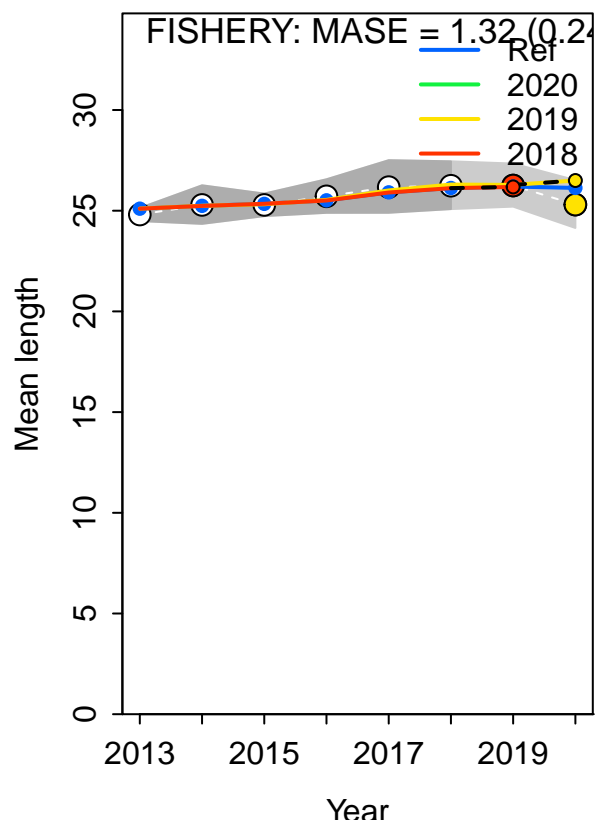
Hindcasting

```
## 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
```

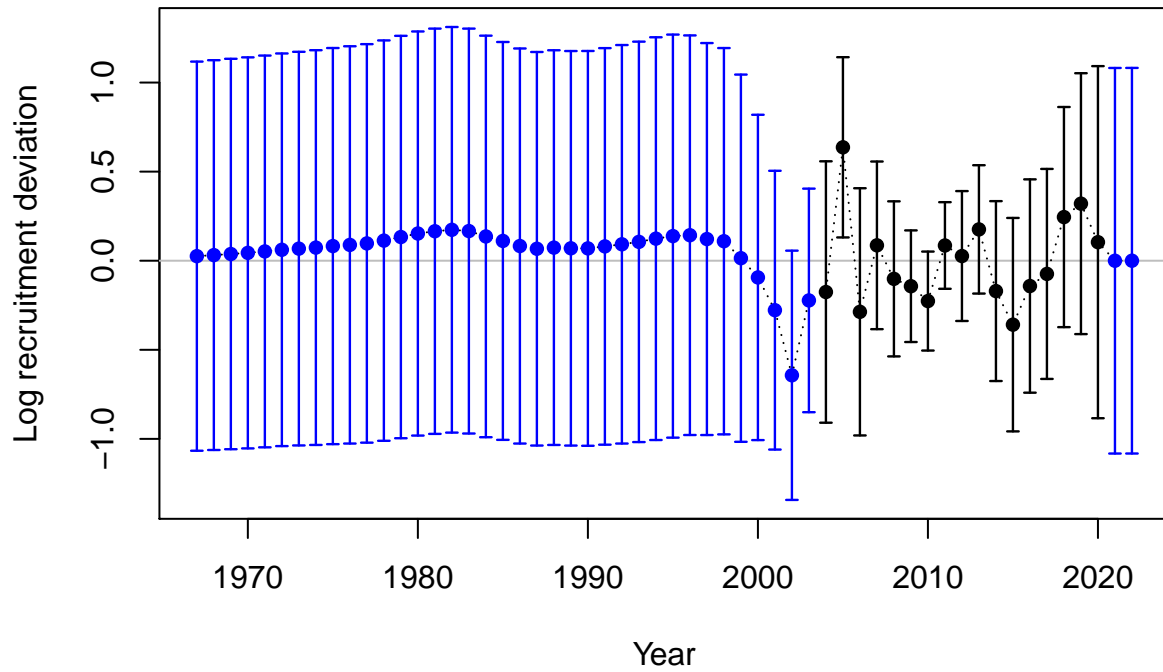


```
##
## MASE stats by Index:
## Plotting Hindcast Cross-Validation (one-step-ahead)
##
## Computing MASE with only 2 of 3 prediction residuals for Index FISHERY
##
## Warning: Unequal spacing of naive predictions residuals may influence the interpretation of MASE

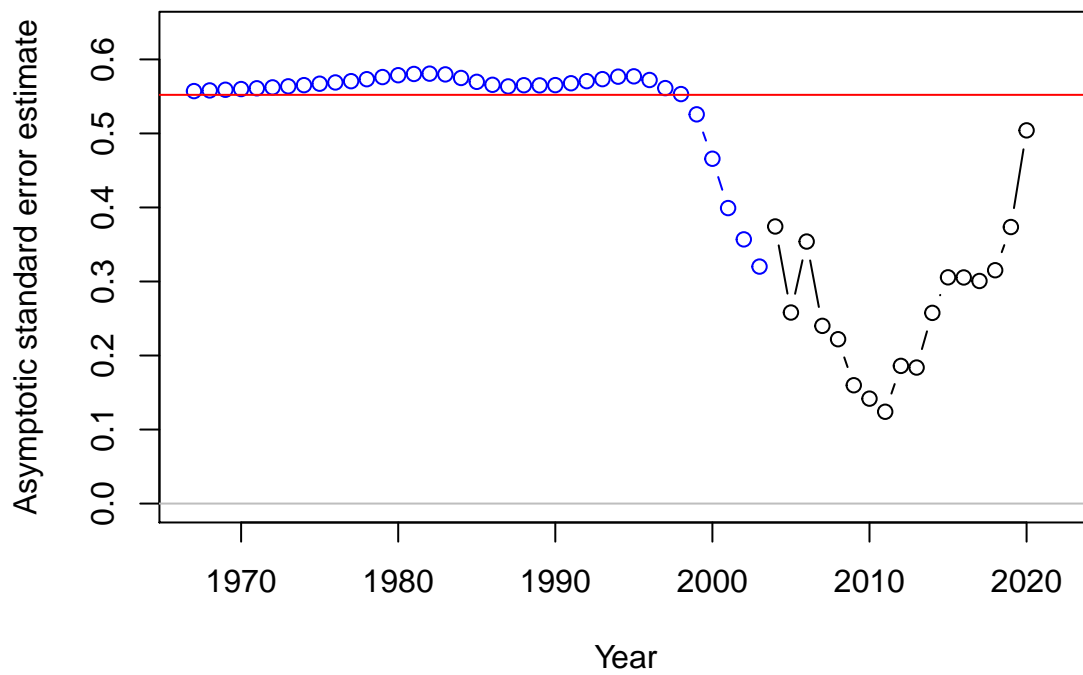
##
## MASE stats by Index:
```



Recruitment Deviations



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'): 3, 3.2, 3.4, 3.6, 3.8, 4, 4.2, 4.4, 4.6
```

```
##
```

```
## 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	0.0168	TRUE	Catch
## Equil_catch	0.0000	FALSE	Equilibrium catch
## Survey	0.1874	TRUE	Index data
## Length_comp	0.0757	TRUE	Length data
## Recruitment	0.8091	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	0.0000	FALSE	Soft bounds
## Parm_devs	0.0000	FALSE	Parameter deviations
## Crash_Pen	0.0000	FALSE	Crash penalty

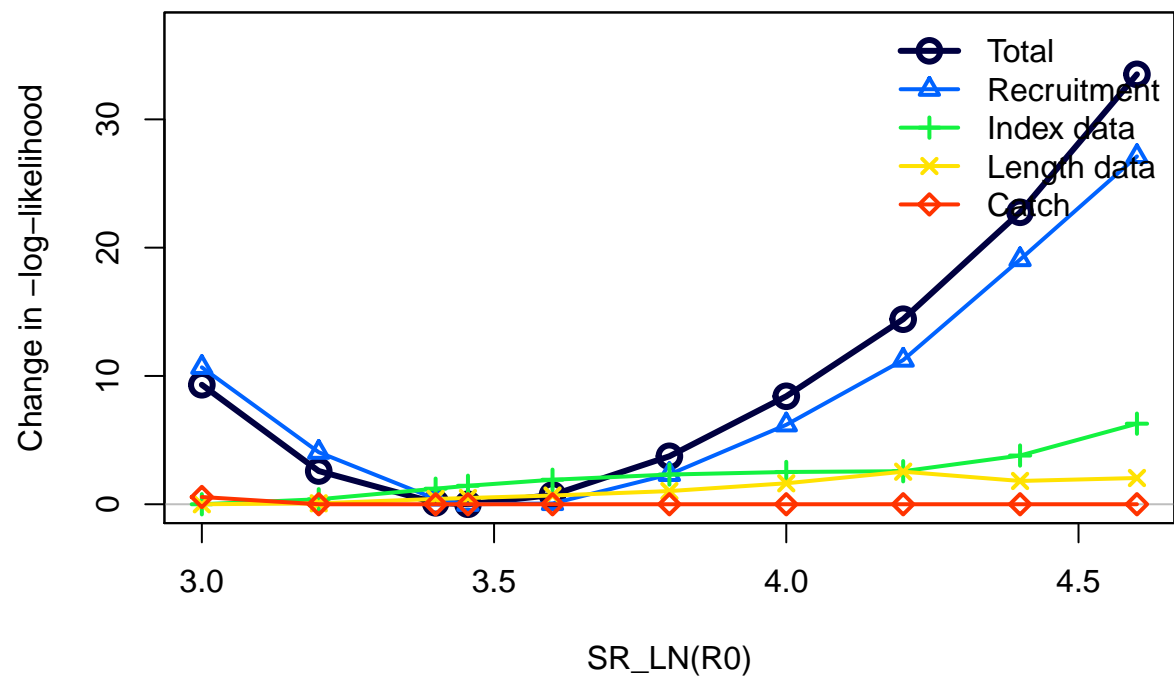
```
## Parameter matching profile.string = 'SR_LN': 'SR_LN(R0)
```

```
## Parameter values (after subsetting based on input 'models'): 3, 3.2, 3.4, 3.6, 3.8, 4, 4.2, 4.4, 4.6
```

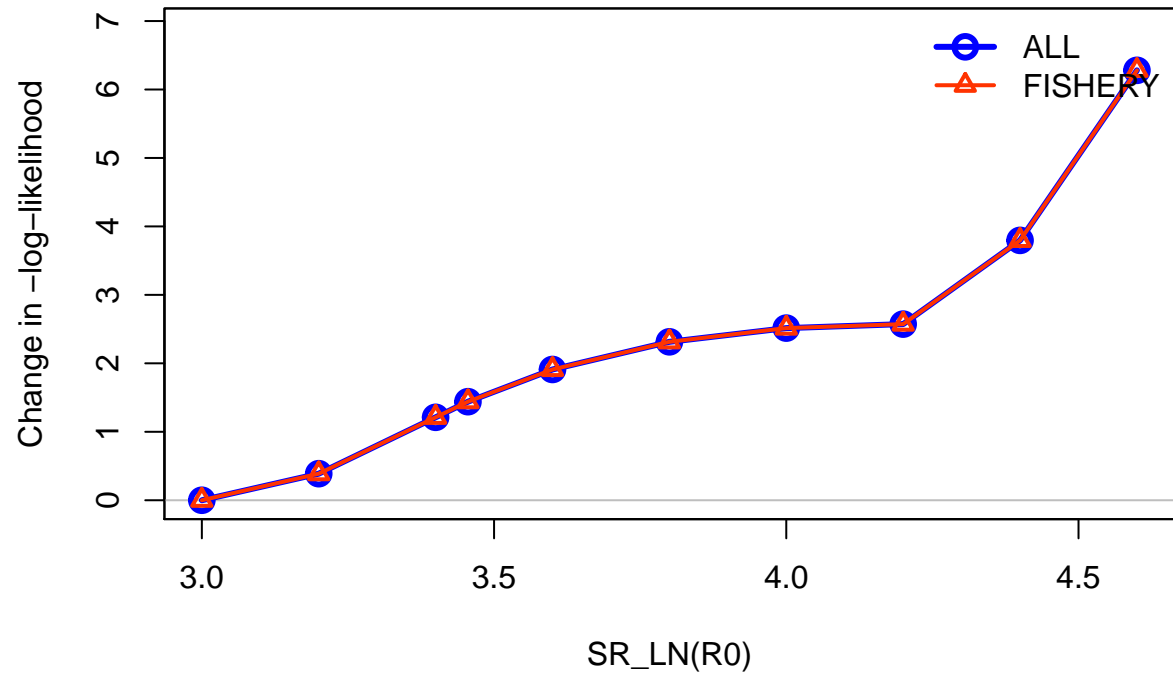
```
## Fleet-specific likelihoods showing max change as fraction of total change.
```

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

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

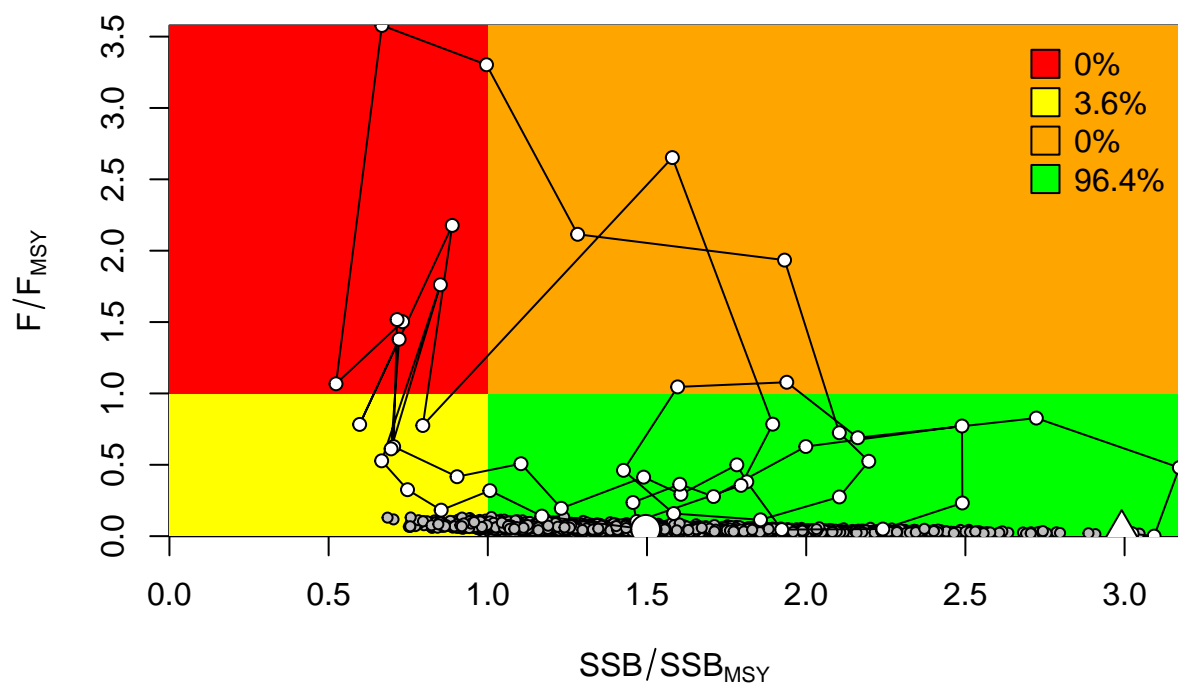


Changes in survey likelihood by fleet

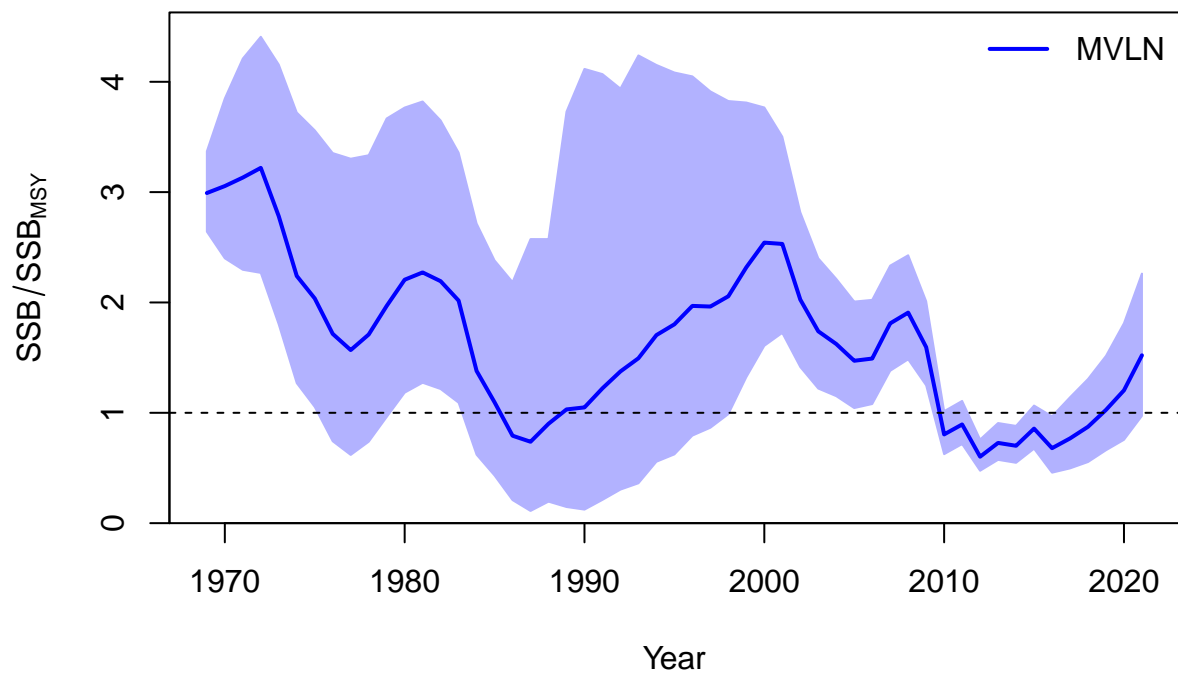


Management Quantities

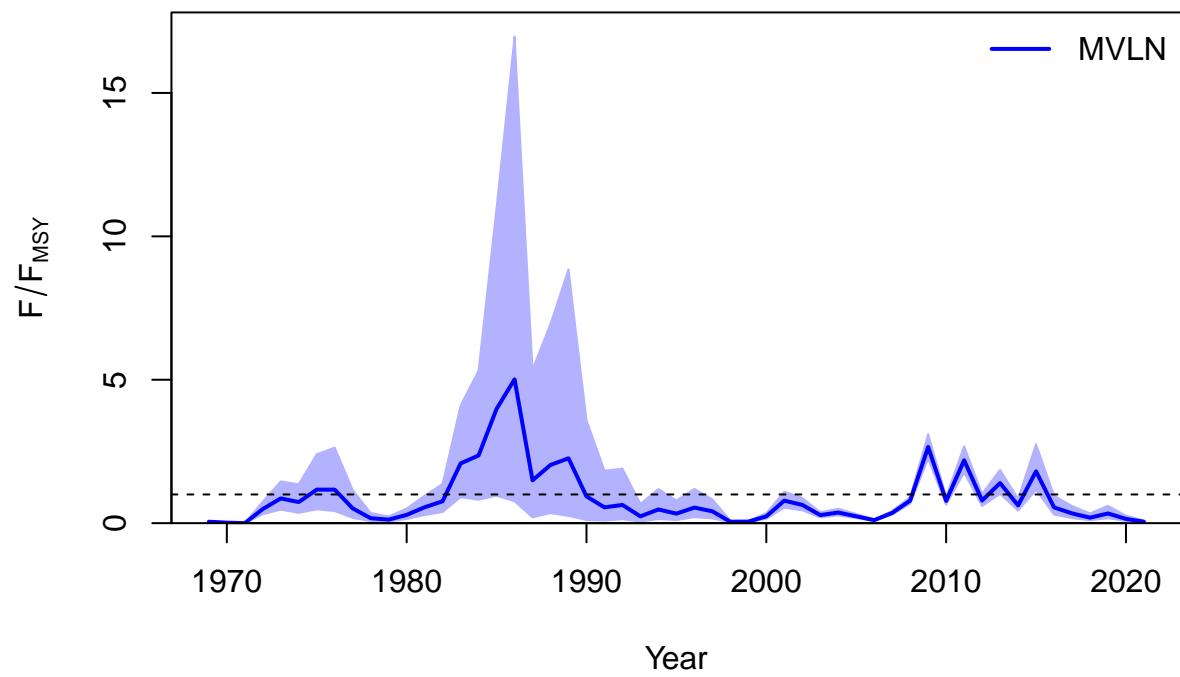
```
##  
## starter.sso with Bratio: SSB/SSBMSY and F: _abs_F  
##
```



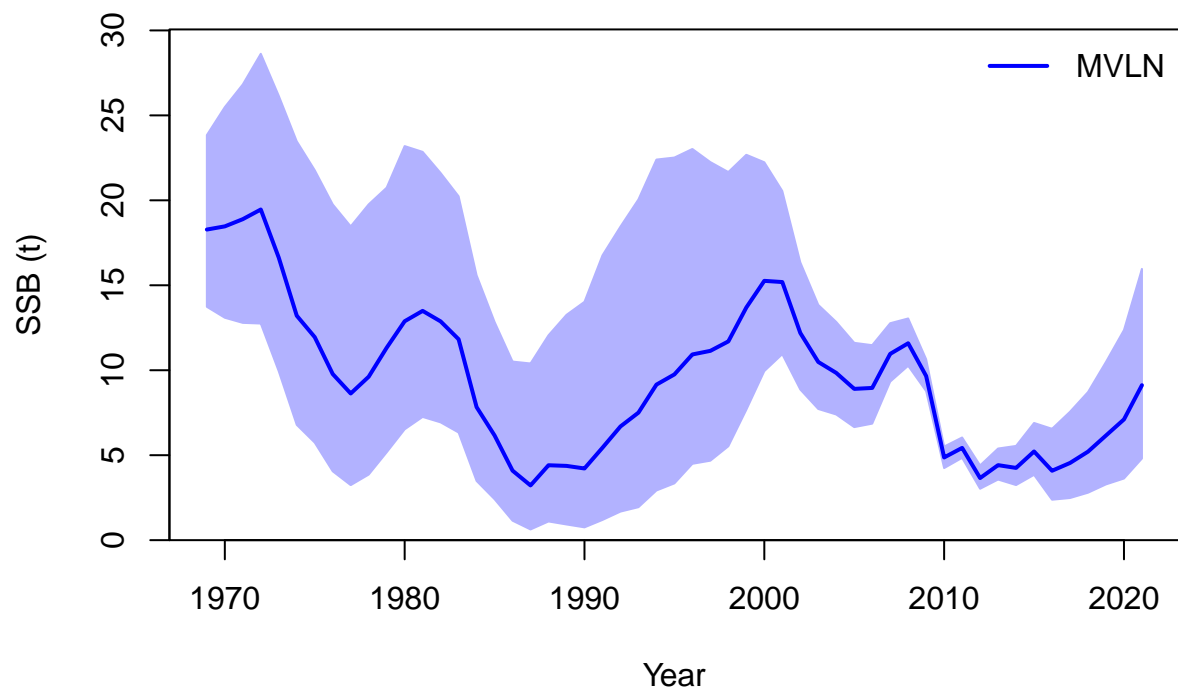
 ## Plot Comparison of stock



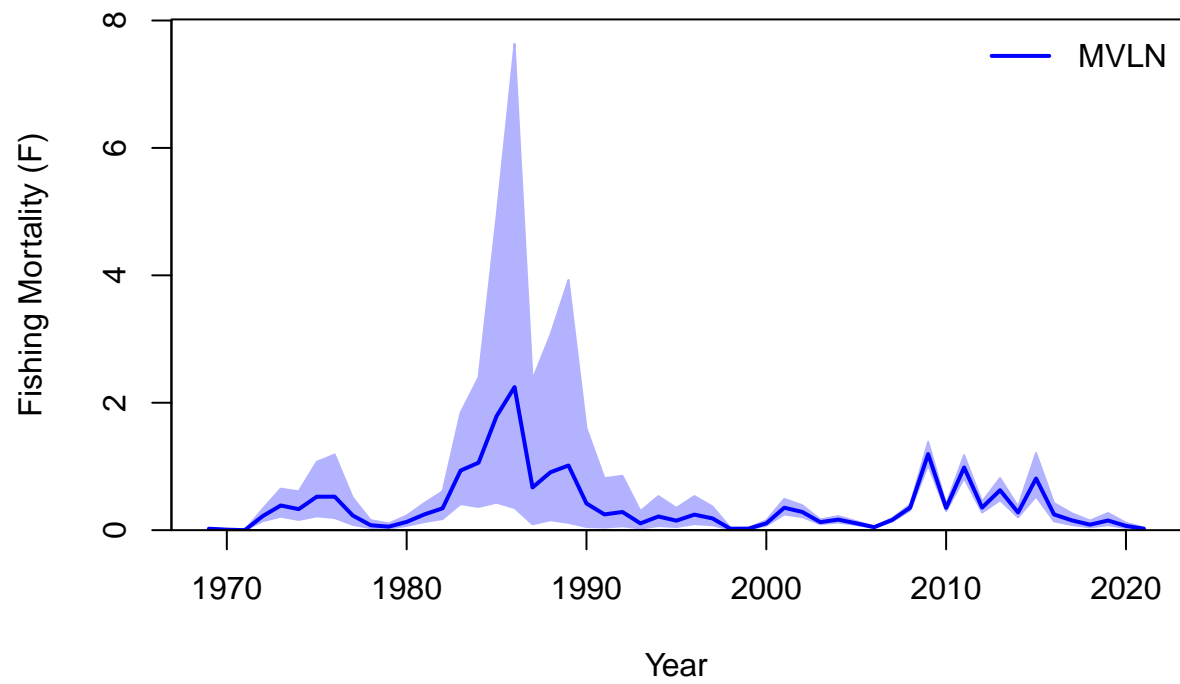
Plot Comparison of harvest



Plot Comparison of SSB



Plot Comparison of F



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

Jitter

