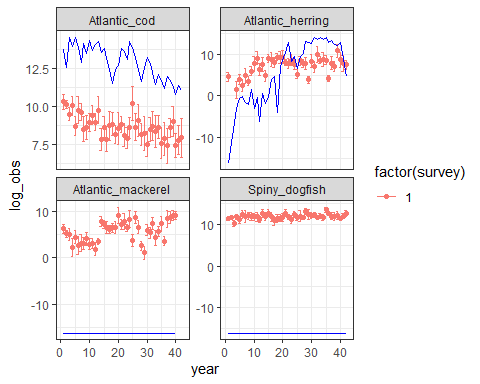
Hydra OM diagnostics

20 March, 2025

#### abundance indices

#### fits to survey indices of abundance

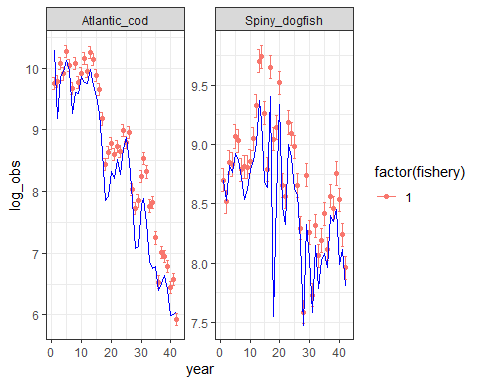
##### Survey # 1



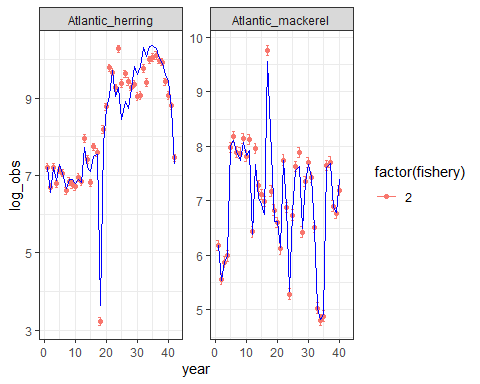
#### catch

#### fits to Catch time series

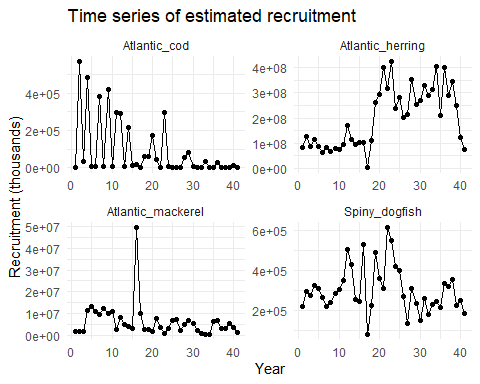
##### Fleet # 1



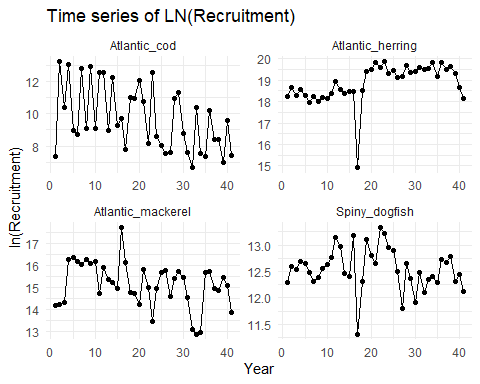
##### Fleet # 2



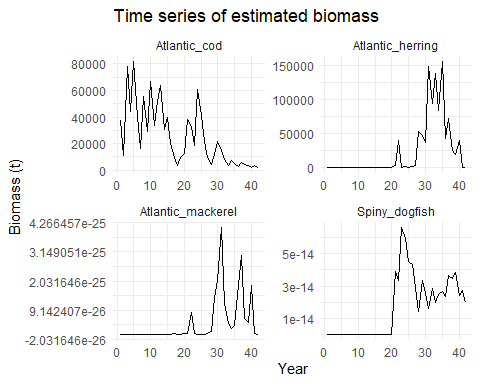
#### Estimated Recruitment time series

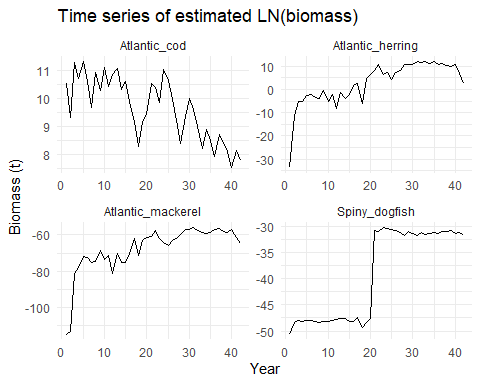


#### time series of log-recruitment

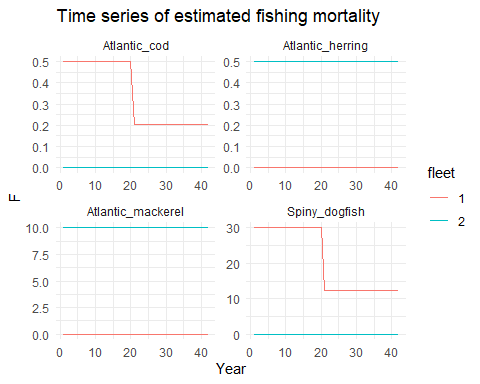


#### Biomass time series

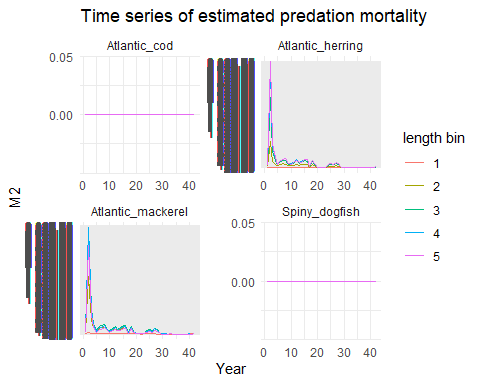




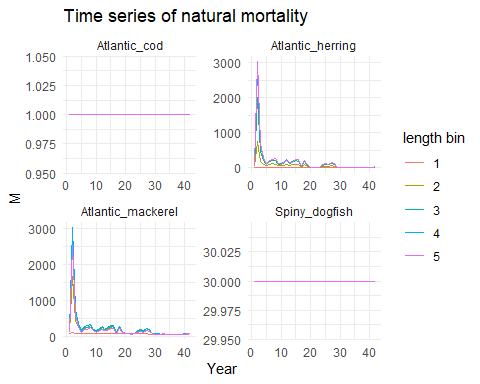
#### Fishing mortality time series



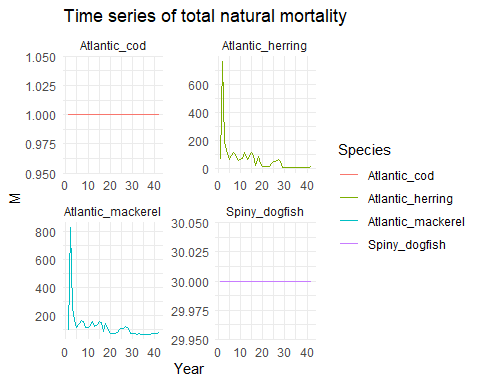
#### M2 Predation mortality



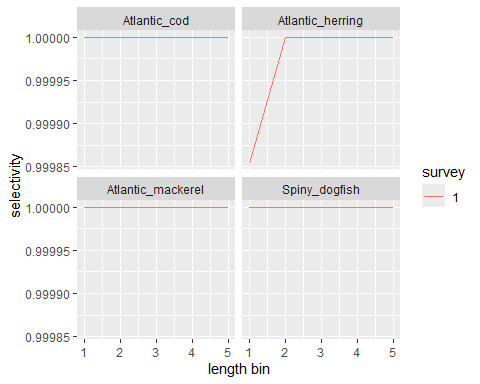
#### M total mortality



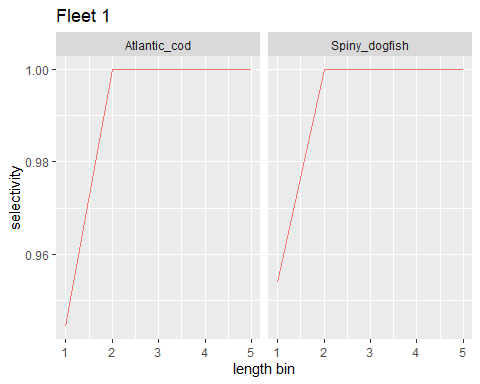
#### M total mortality

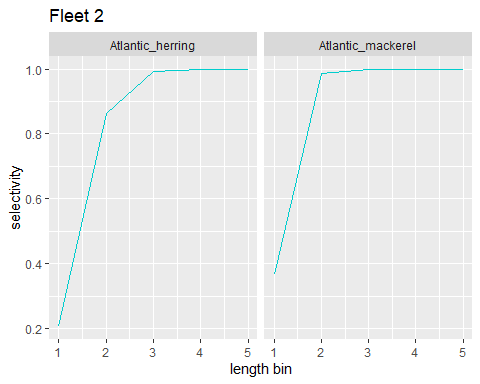


#### Survey selectivity



#### Fishery selectivity

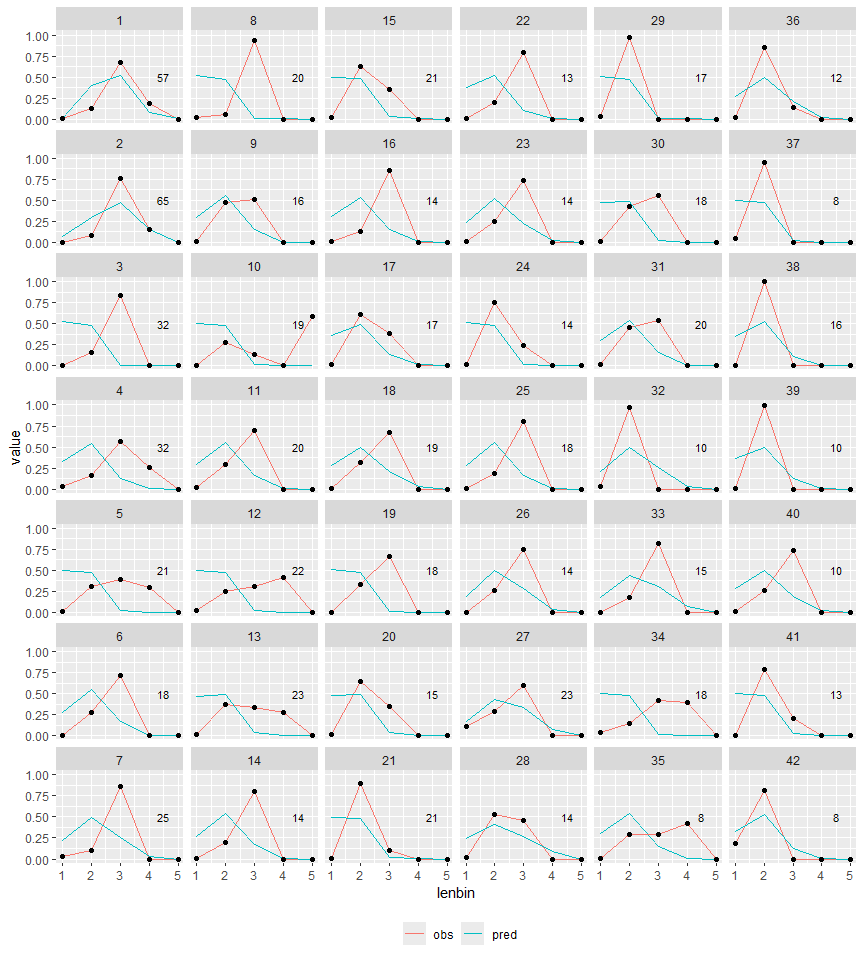




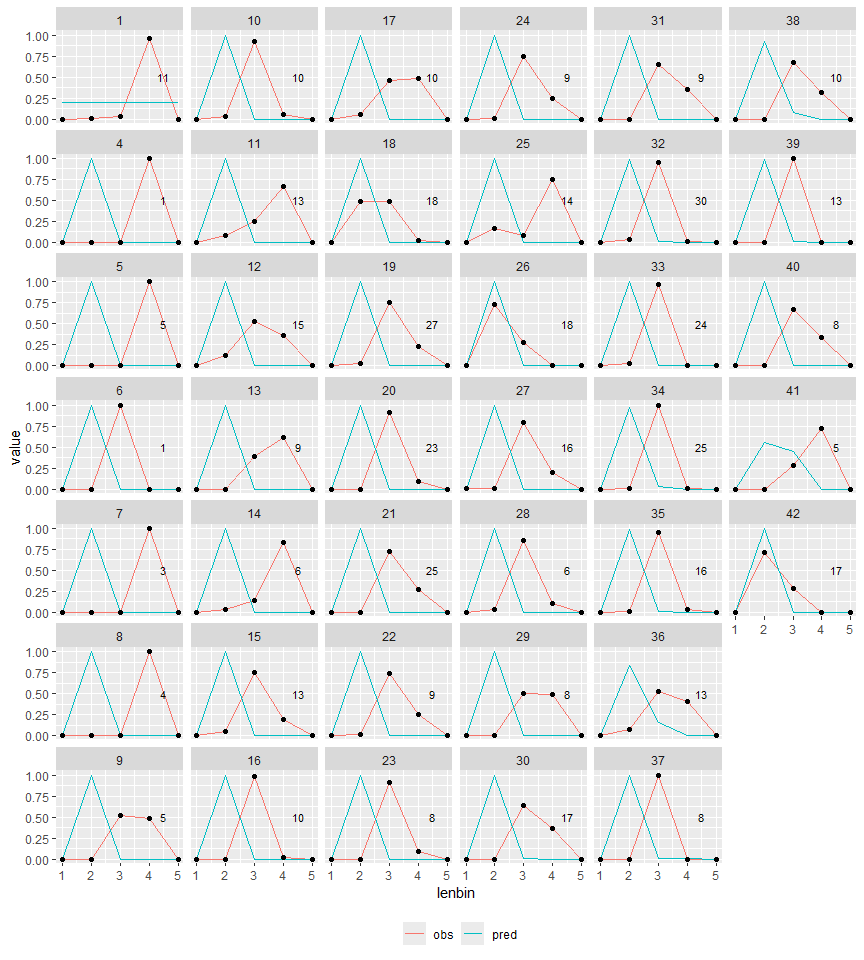
##### surveys

##### Size composition of survey 1 by species

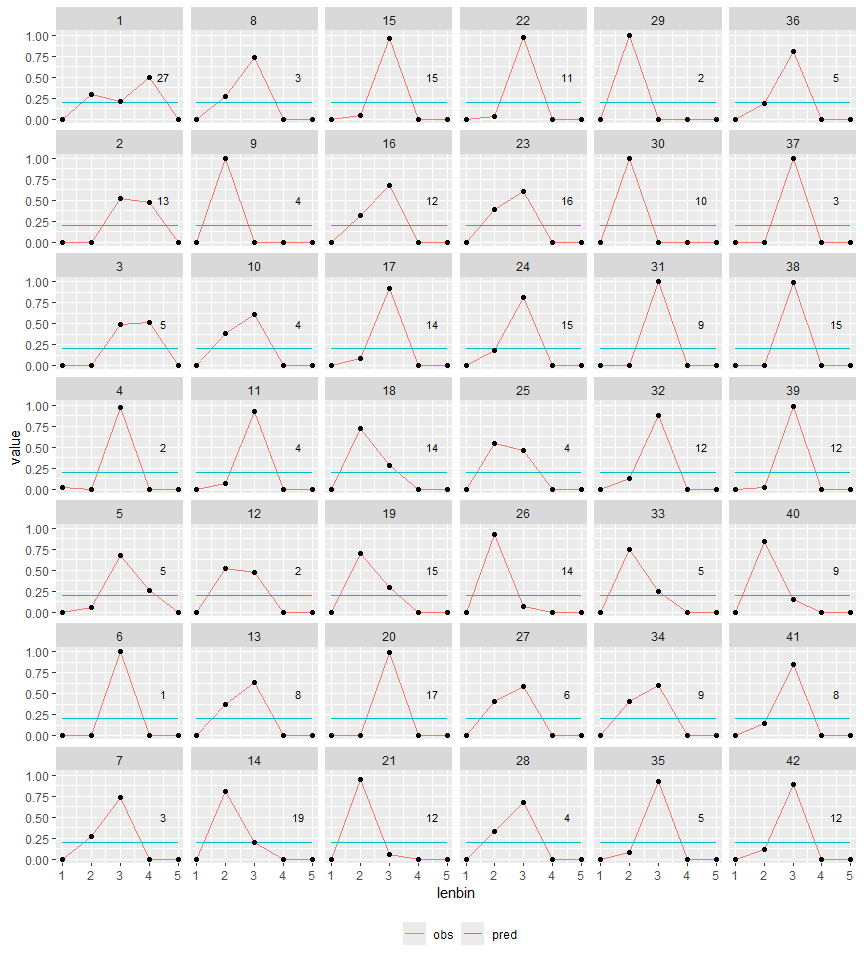
###### Atlantic\_cod



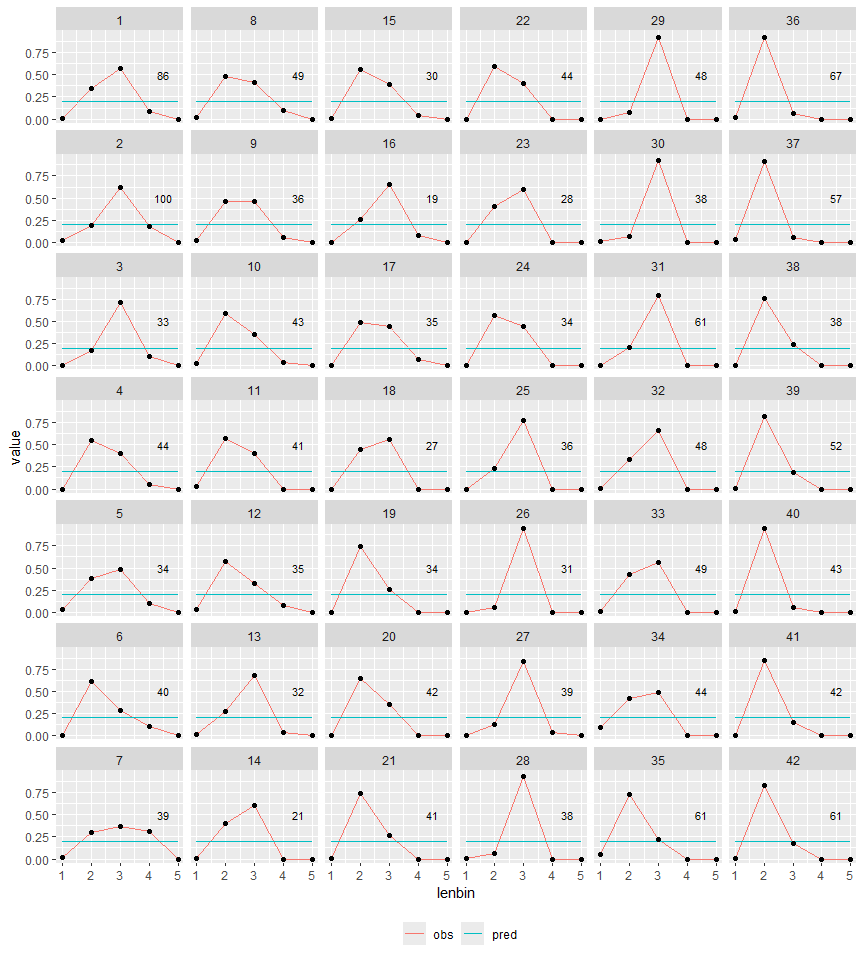
###### Atlantic\_herring



###### Atlantic\_mackerel

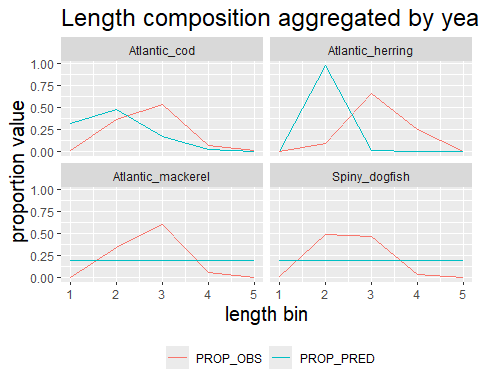


###### Spiny\_dogfish



##### Size composition aggregated over time

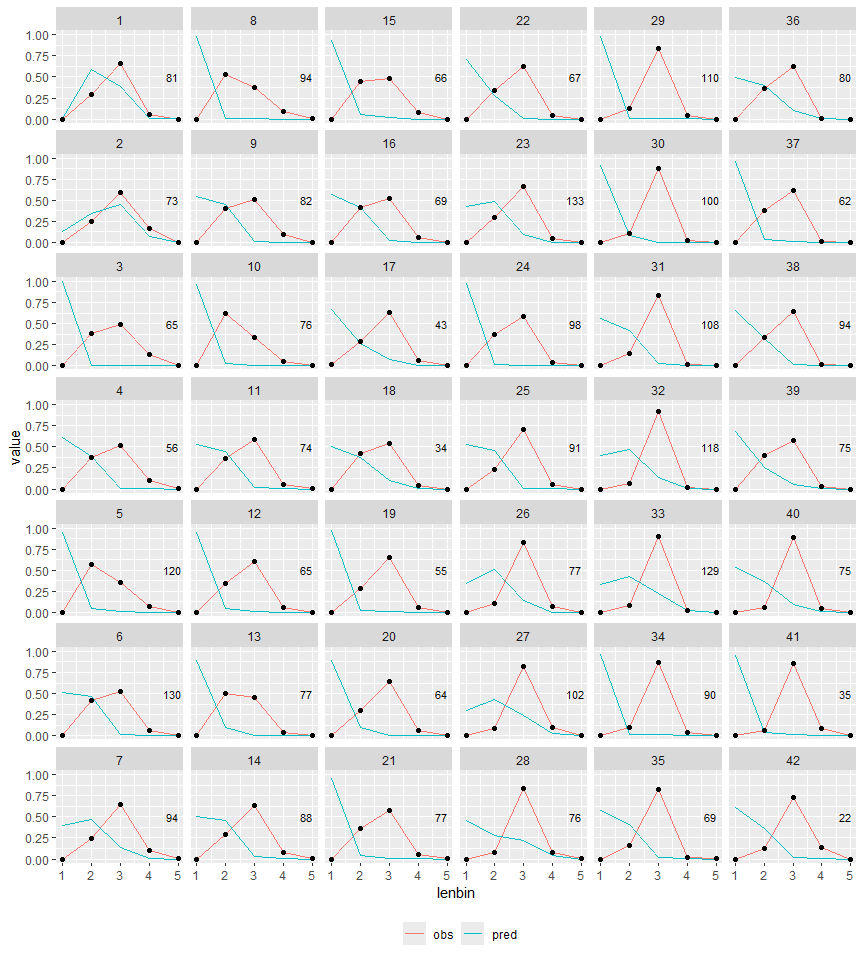
###### Surveys (1)



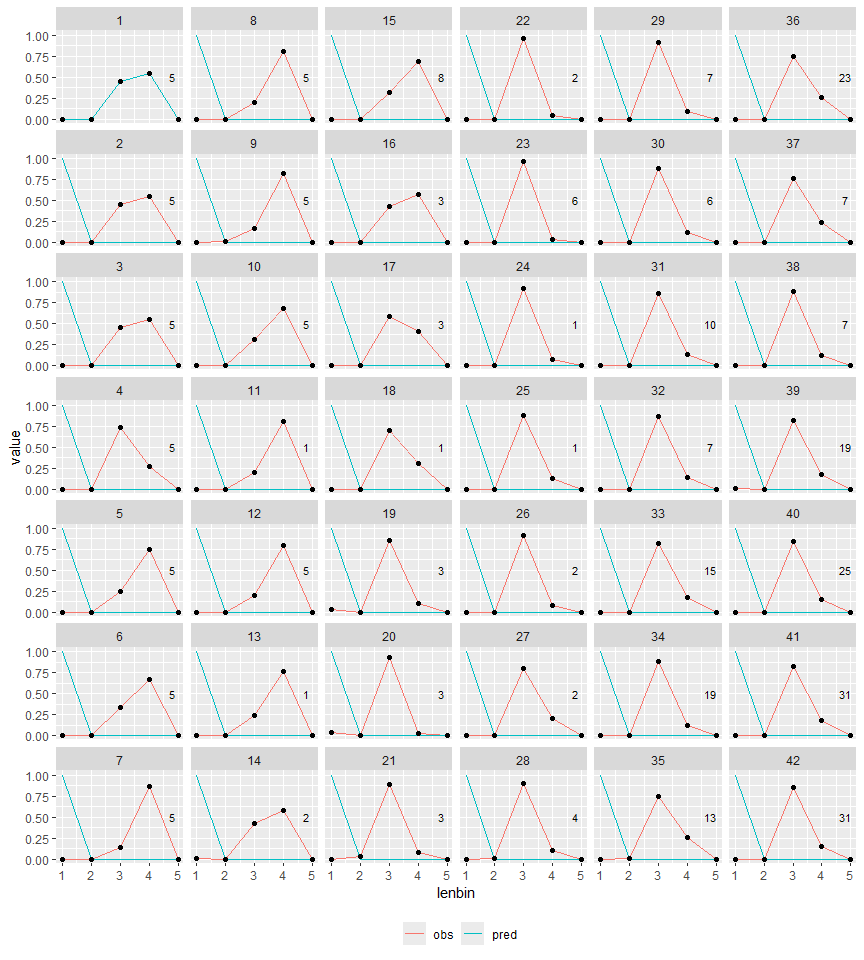
##### Size composition of catch by species

##### catch

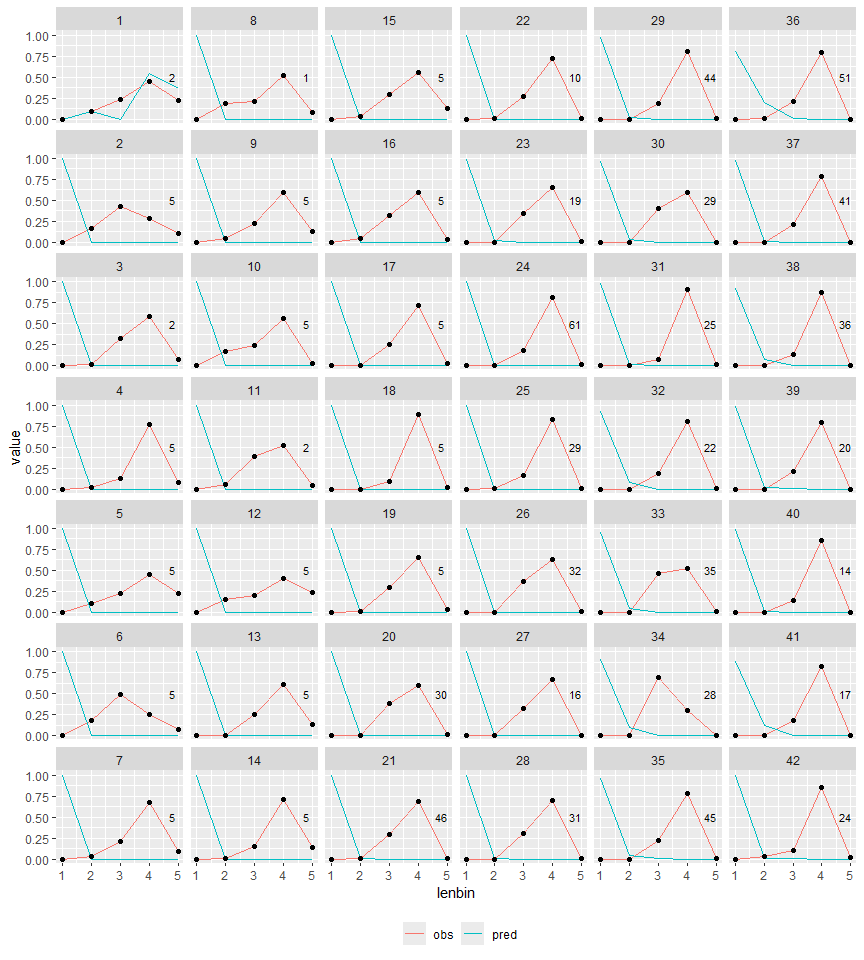
###### Atlantic\_cod



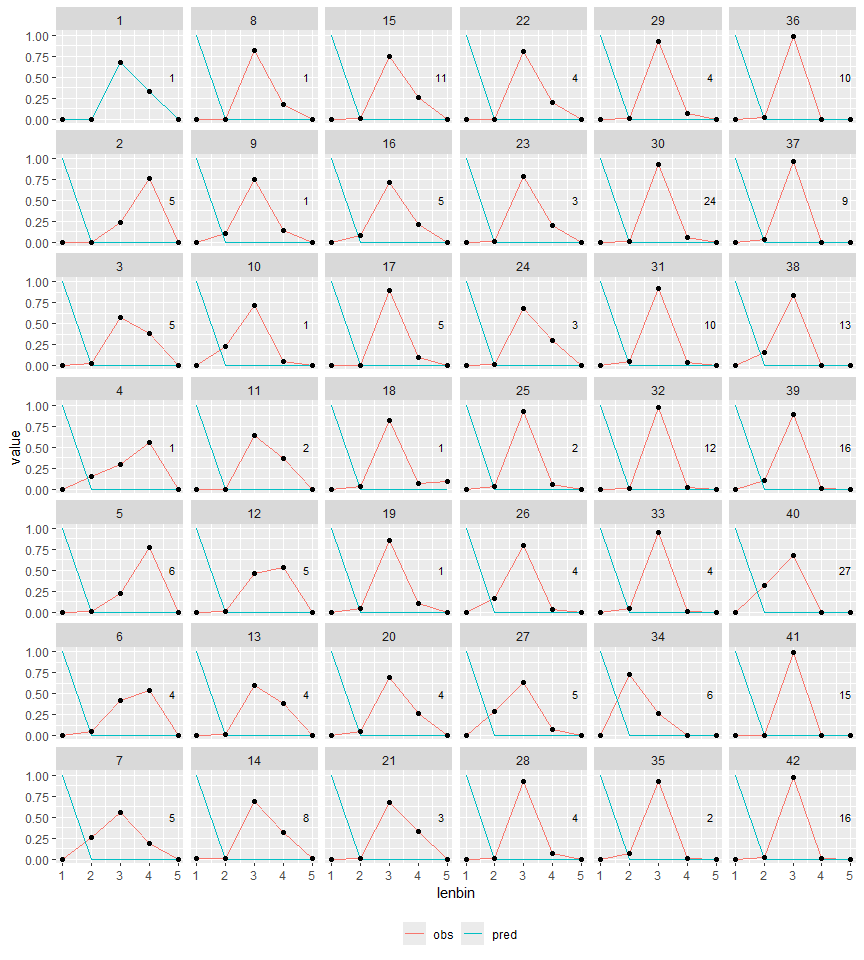
###### Spiny\_dogfish



###### Atlantic\_herring

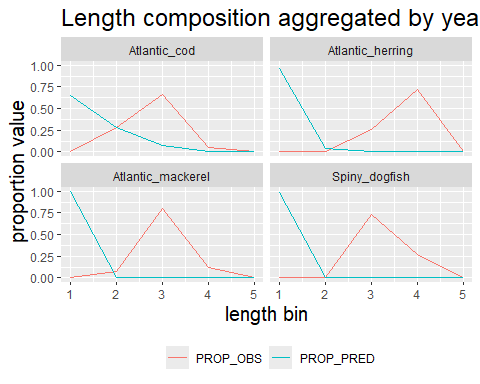


###### Atlantic\_mackerel

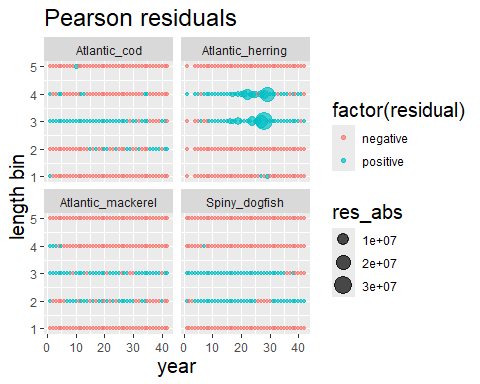


##### Size composition aggregated over time

###### Catches



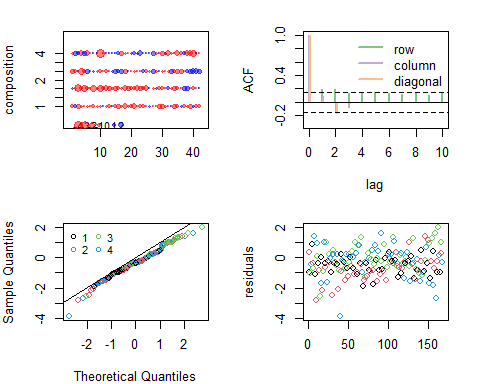
##### Survey size composition pearson residuals (survey 1)



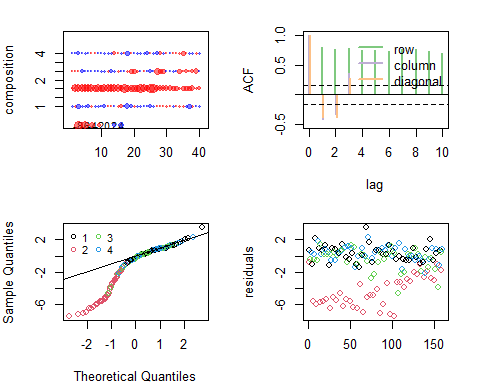
##### Survey OSA residuals

##### Survey 1 OSA residuals

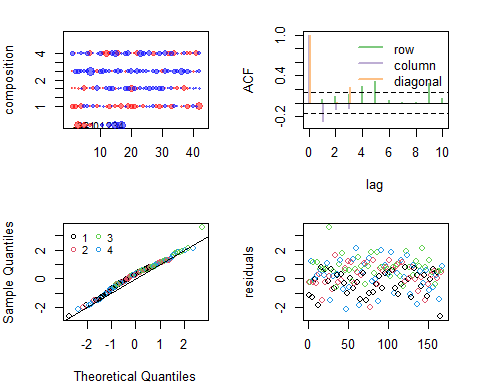
###### Atlantic\_cod



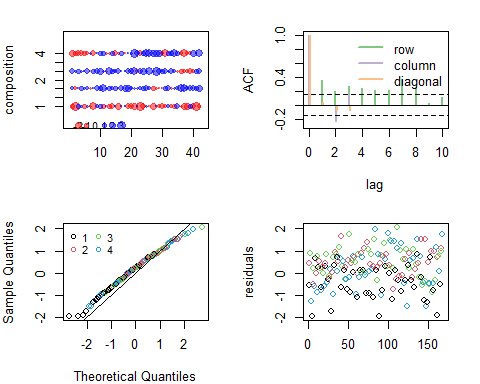
###### Atlantic\_herring



###### Atlantic\_mackerel

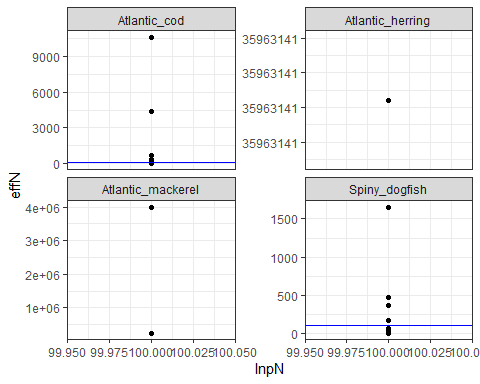


###### Spiny\_dogfish

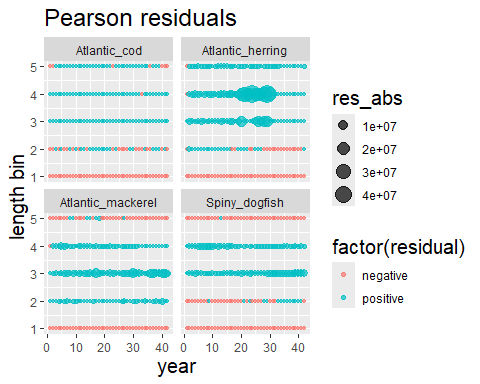
 ##### {-}

##### Diet composition effective sample size

###### Survey # 1



##### Catch size composition pearson residuals

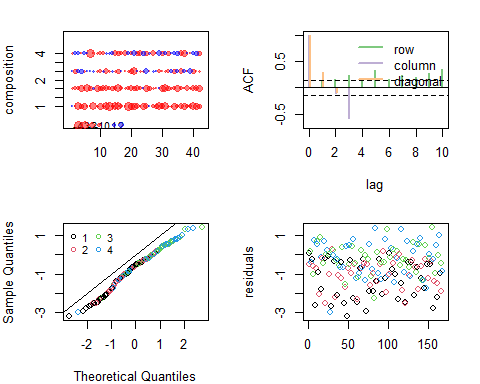


##### Fishery Size Comp OSA residuals

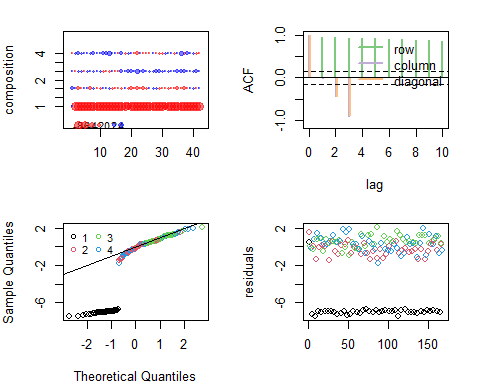
##### Fleet 1 Size composition OSA residuals

for (sp in especies) {  
 tmp <- plot\_osa[[sp]]  
 cat("######", sp, " \n")  
 plot(tmp)  
 cat(" \n\n")  
 }

###### Atlantic\_cod

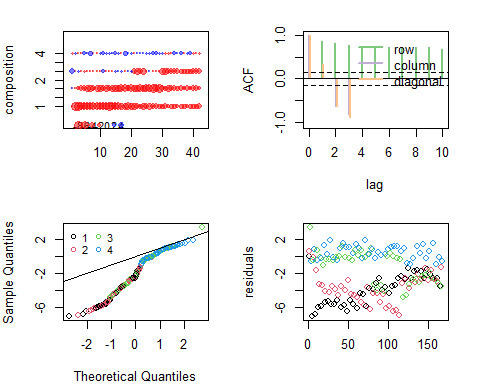


###### Spiny\_dogfish

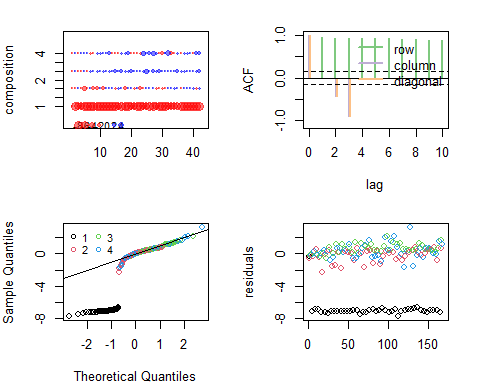


##### Fleet 2 Size composition OSA residuals

###### Atlantic\_herring

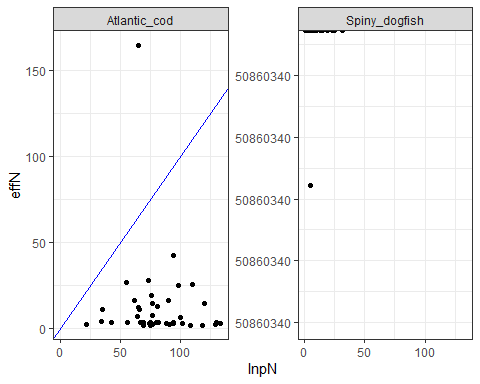


###### Atlantic\_mackerel

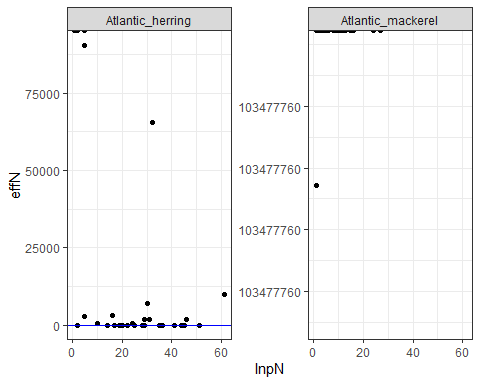


##### Fishery size comp Effective sample size

###### Fleet # 1



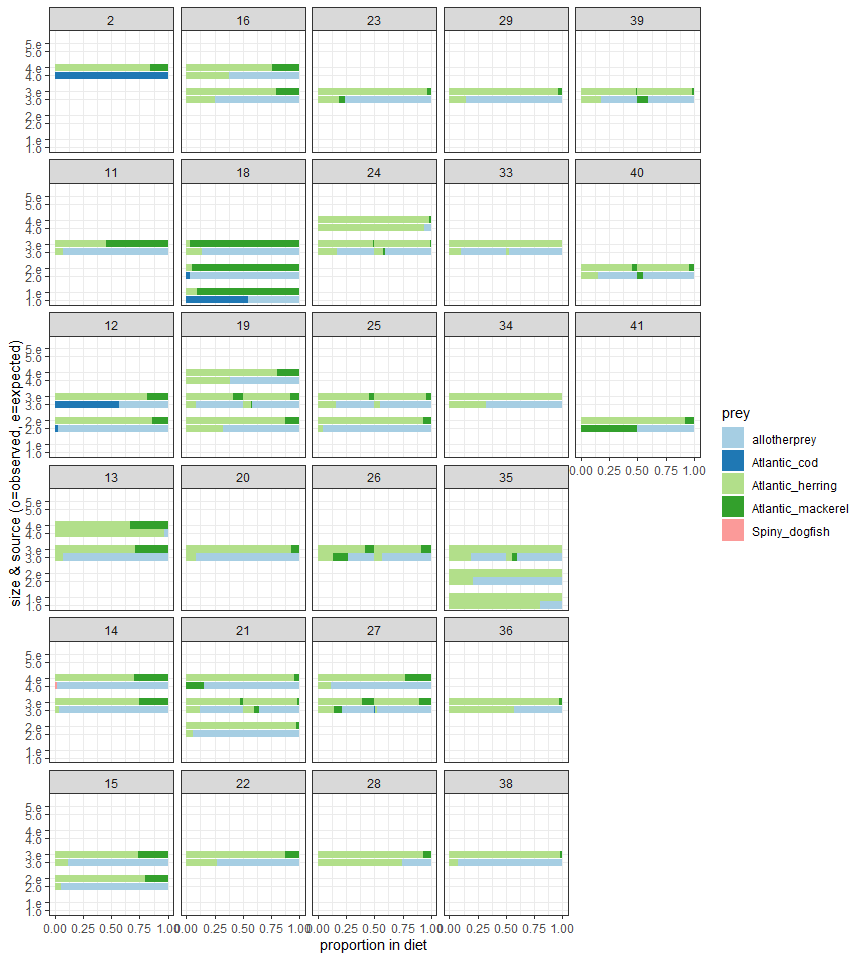
###### Fleet # 2

 ##### {-}

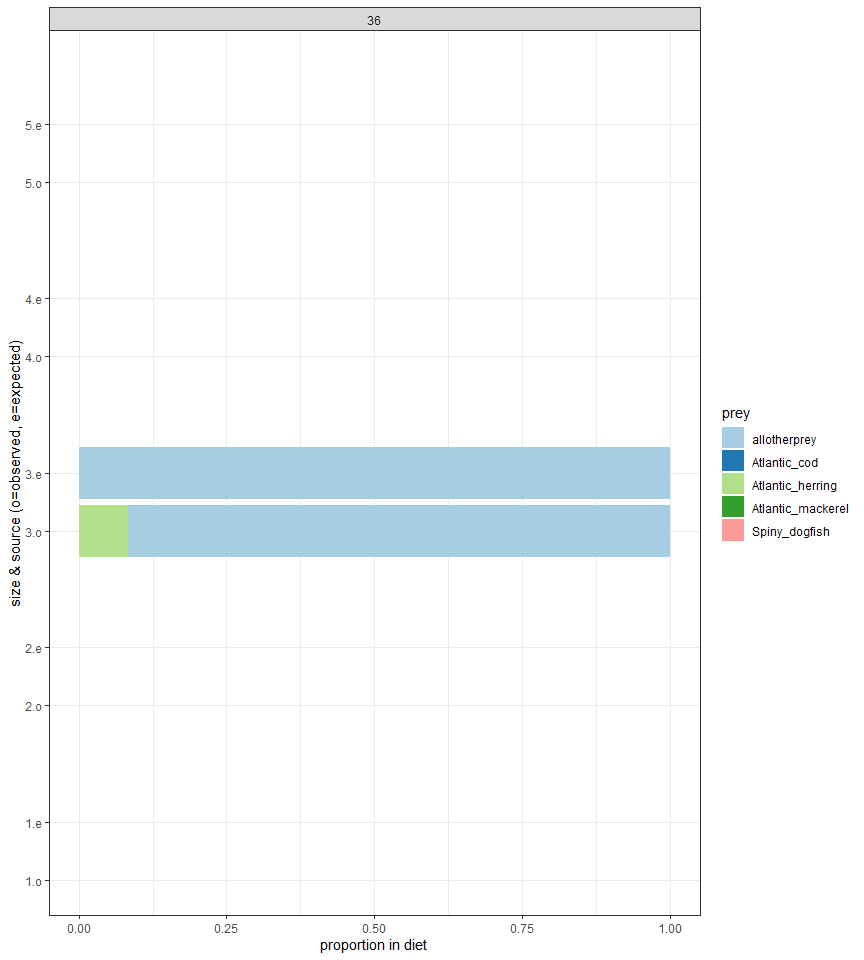
#### Diet composition data

##### Proportions by weight for stomach by predator size bin survey 1

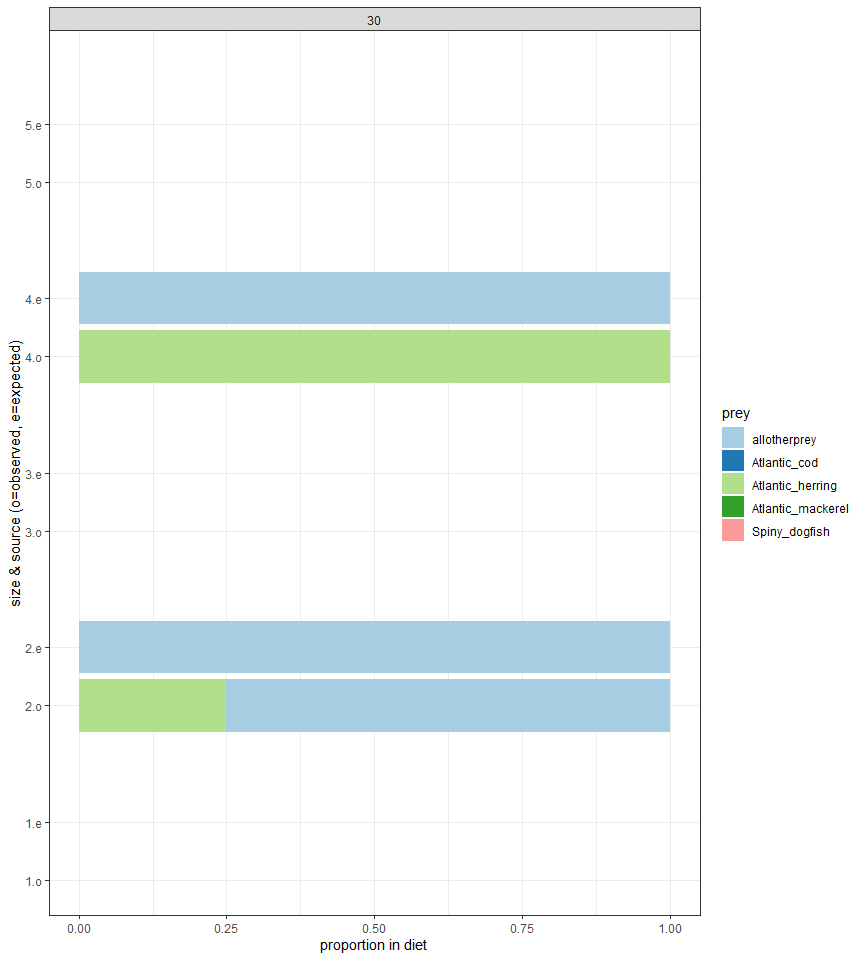
###### Atlantic\_cod



###### Atlantic\_herring



###### Atlantic\_mackerel



###### Spiny\_dogfish

