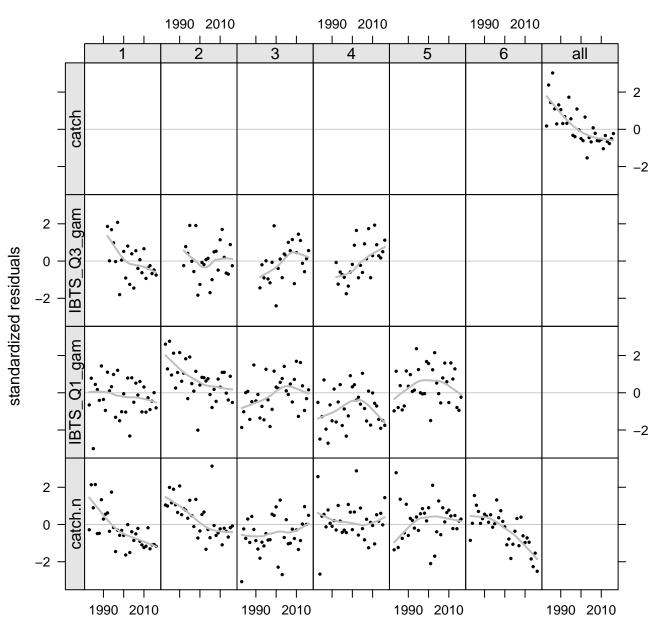
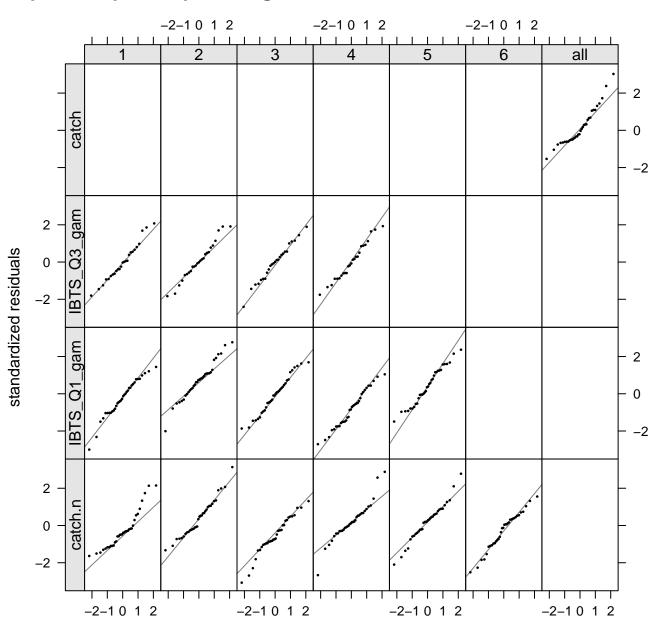
## log residuals of catch and abundance indices by age



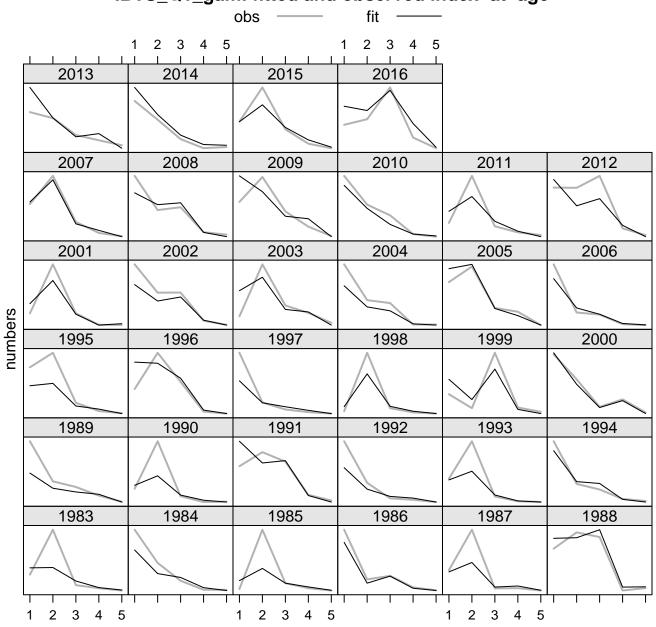
### quantile-quantile plot of log residuals of catch and abundance indices



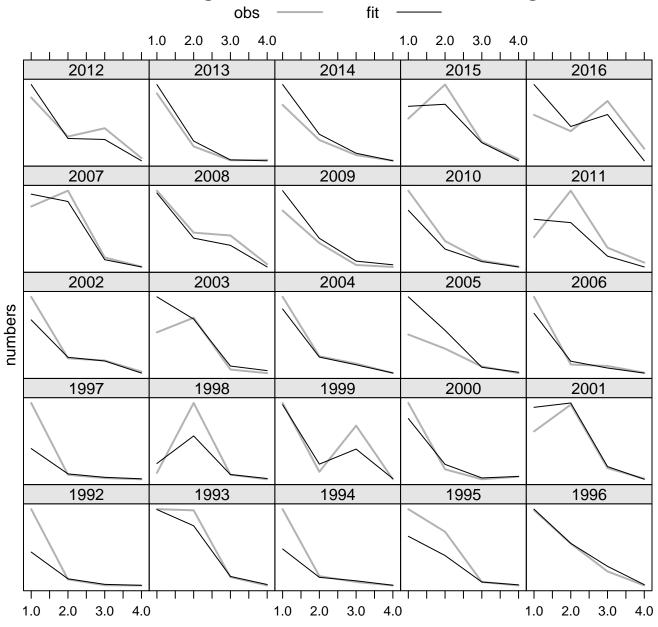
#### fitted and observed catch-at-age obs fit 1 2 3 4 5 6 1 2 3 4 5 6 numbers 2 3 4 5 6 5 6 4 5 6

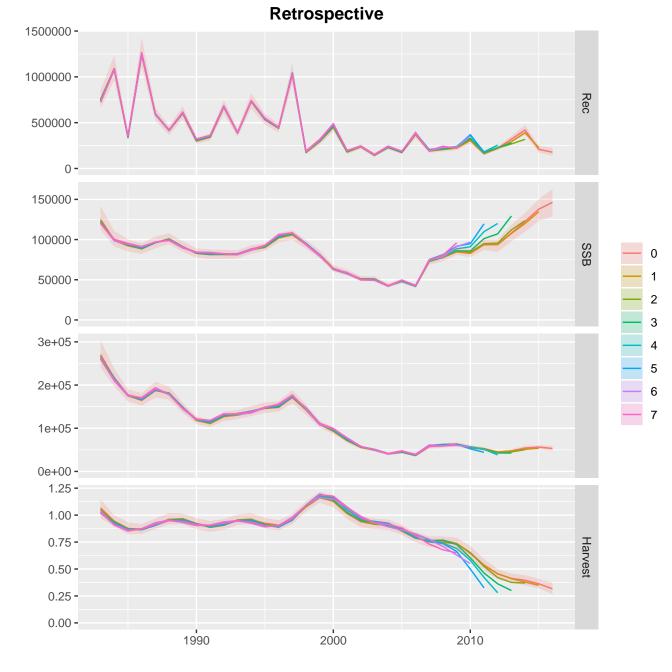
age

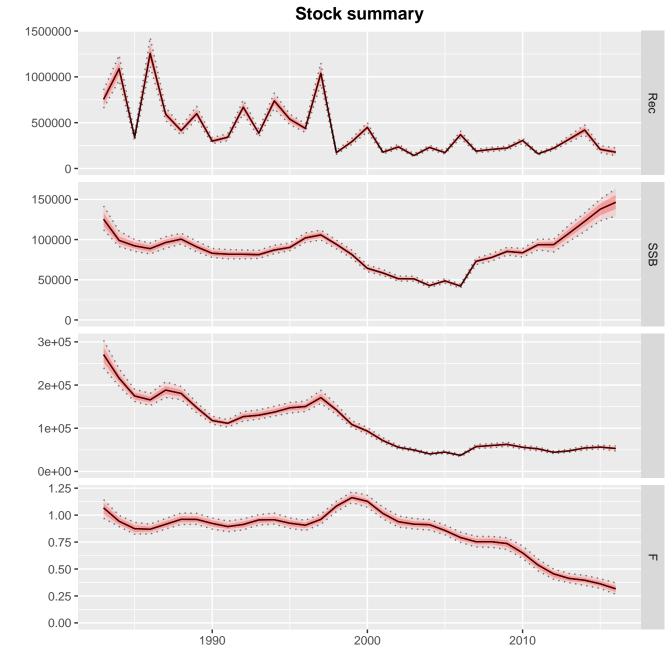
#### IBTS\_Q1\_gam: fitted and observed index-at-age



### IBTS\_Q3\_gam: fitted and observed index-at-age







# **Abundance indices predictions**

