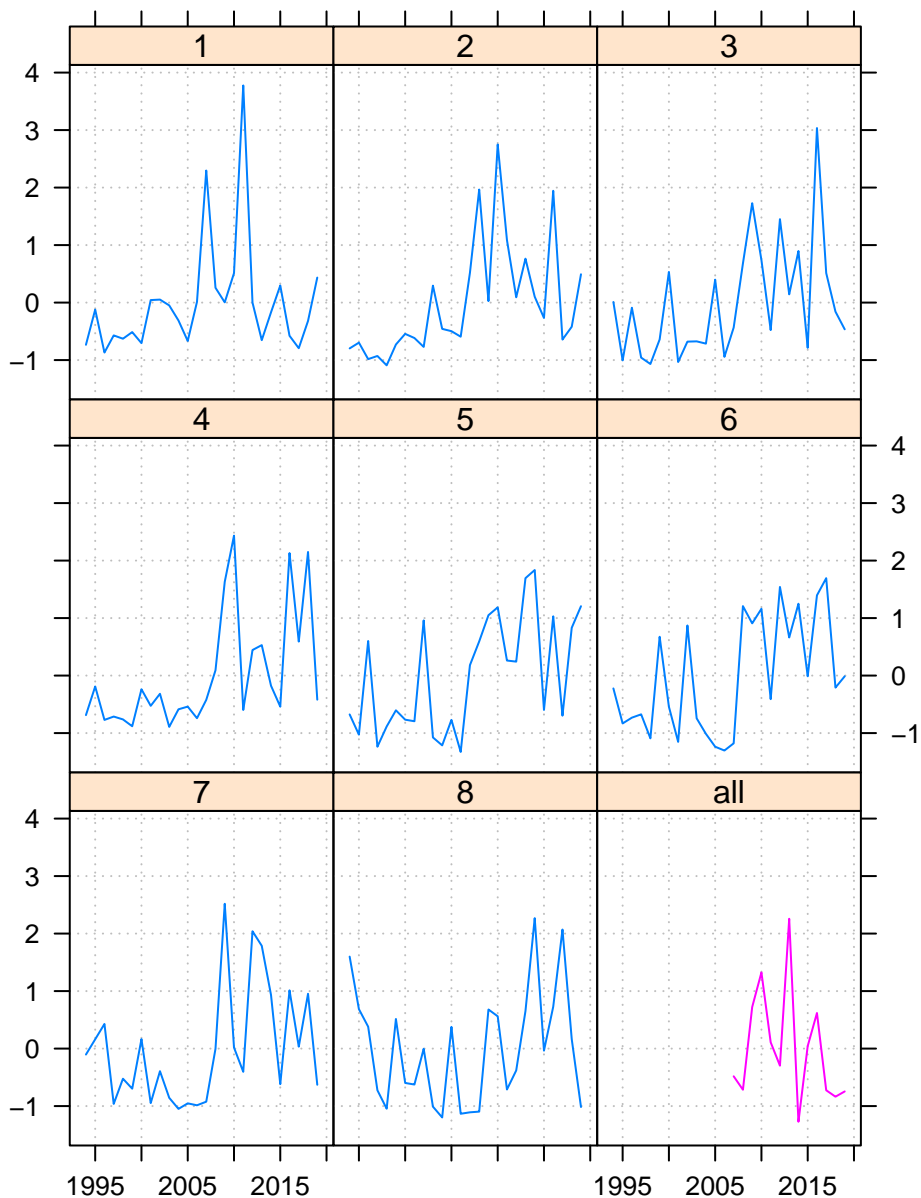
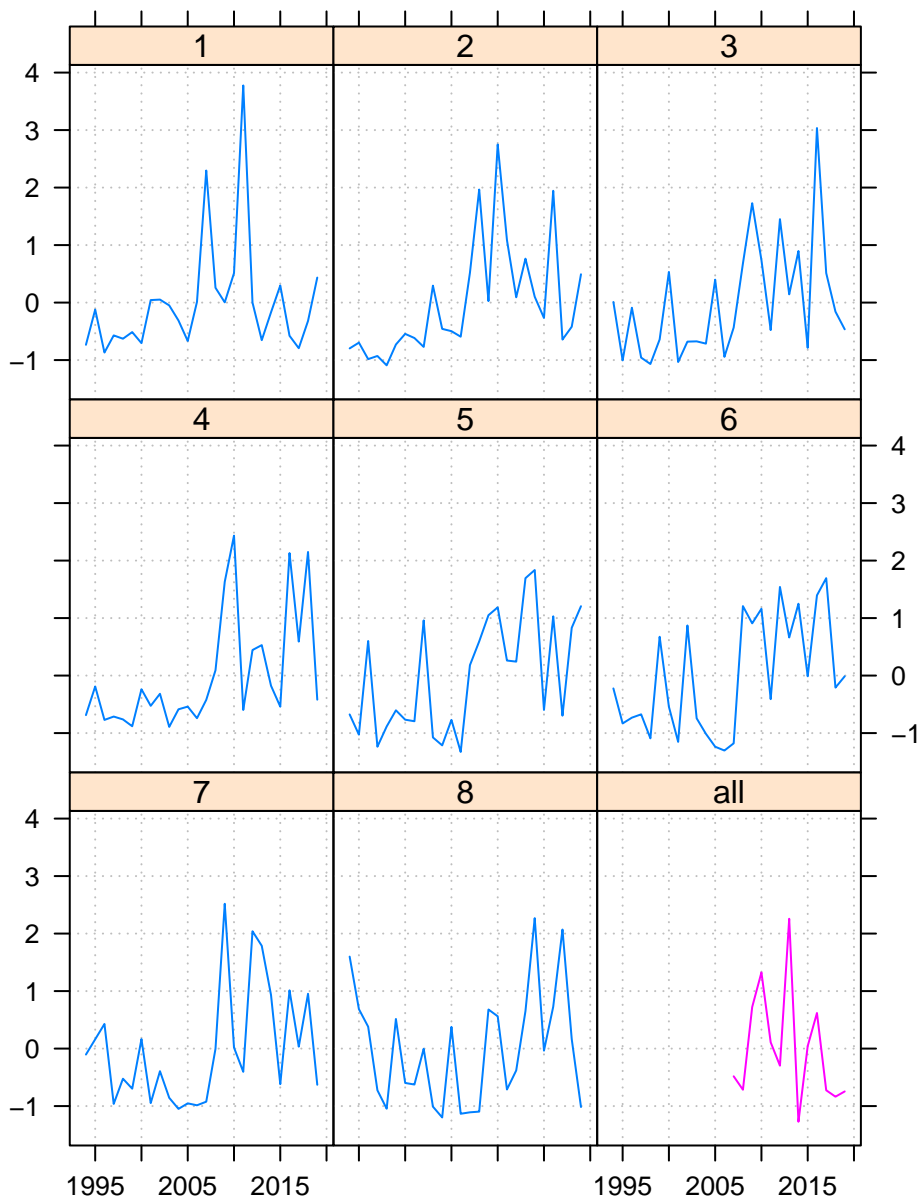


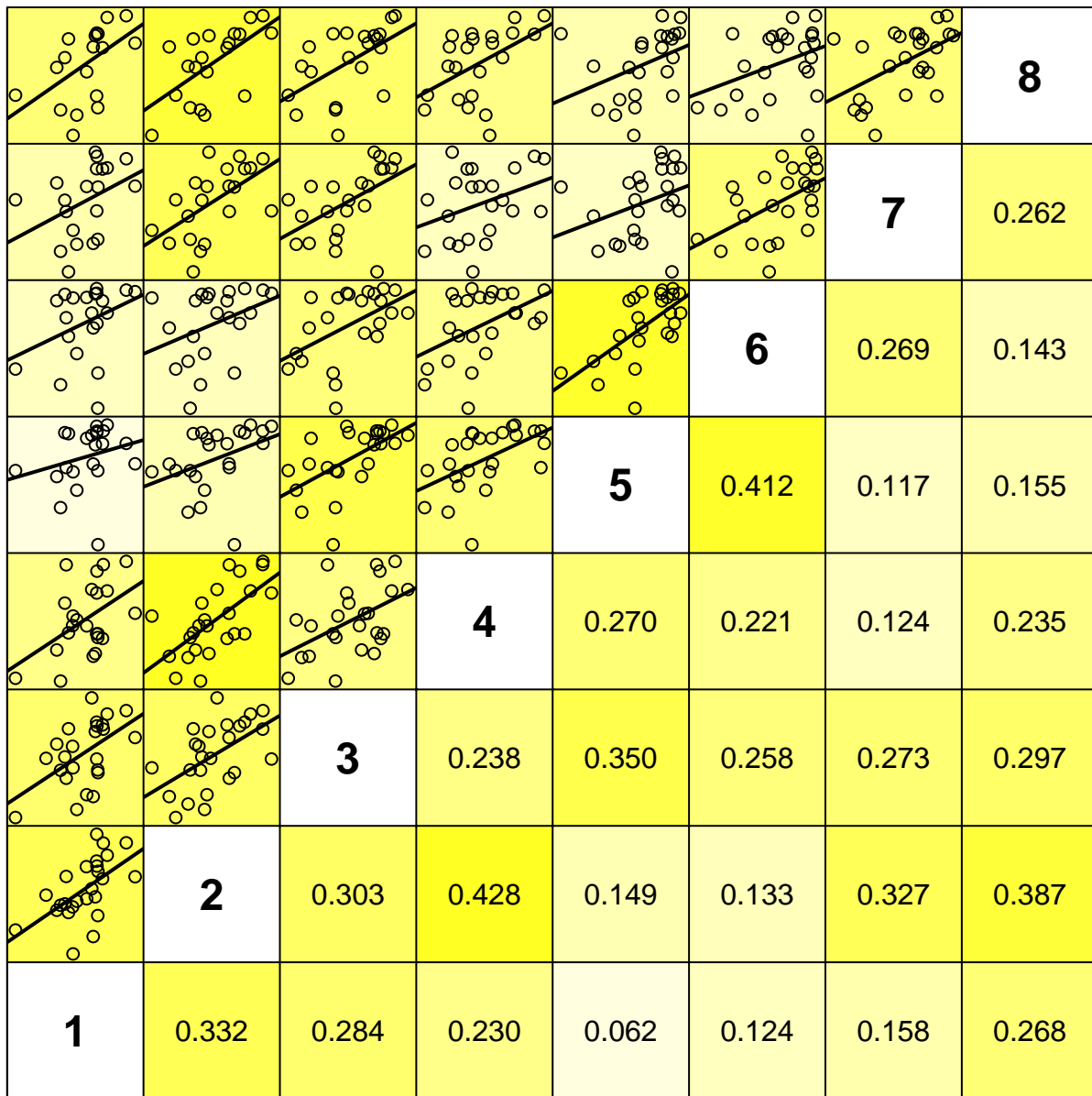
1995 2005 2015



1995 2005 2015



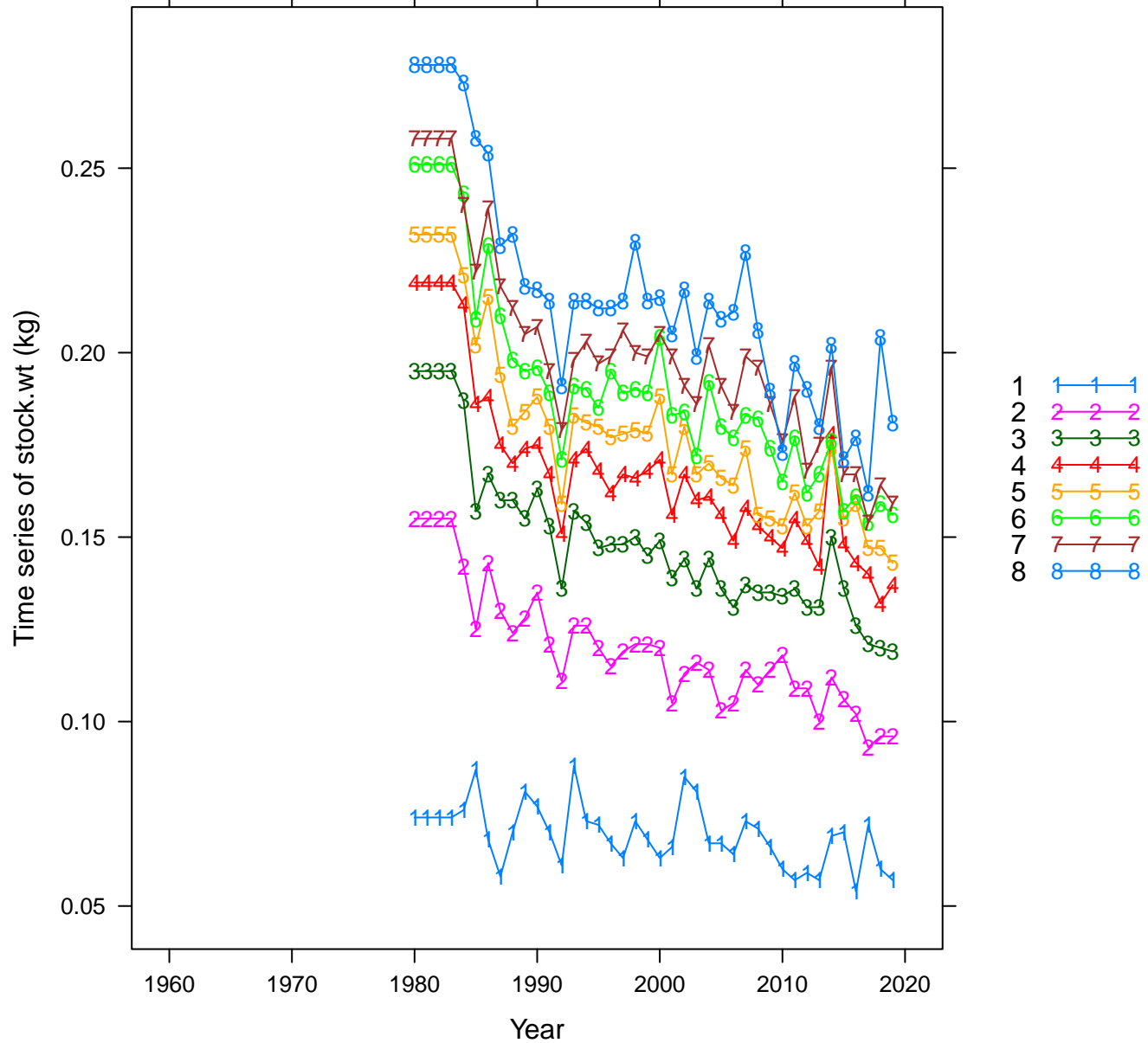
Log<sub>10</sub> (Index Value)



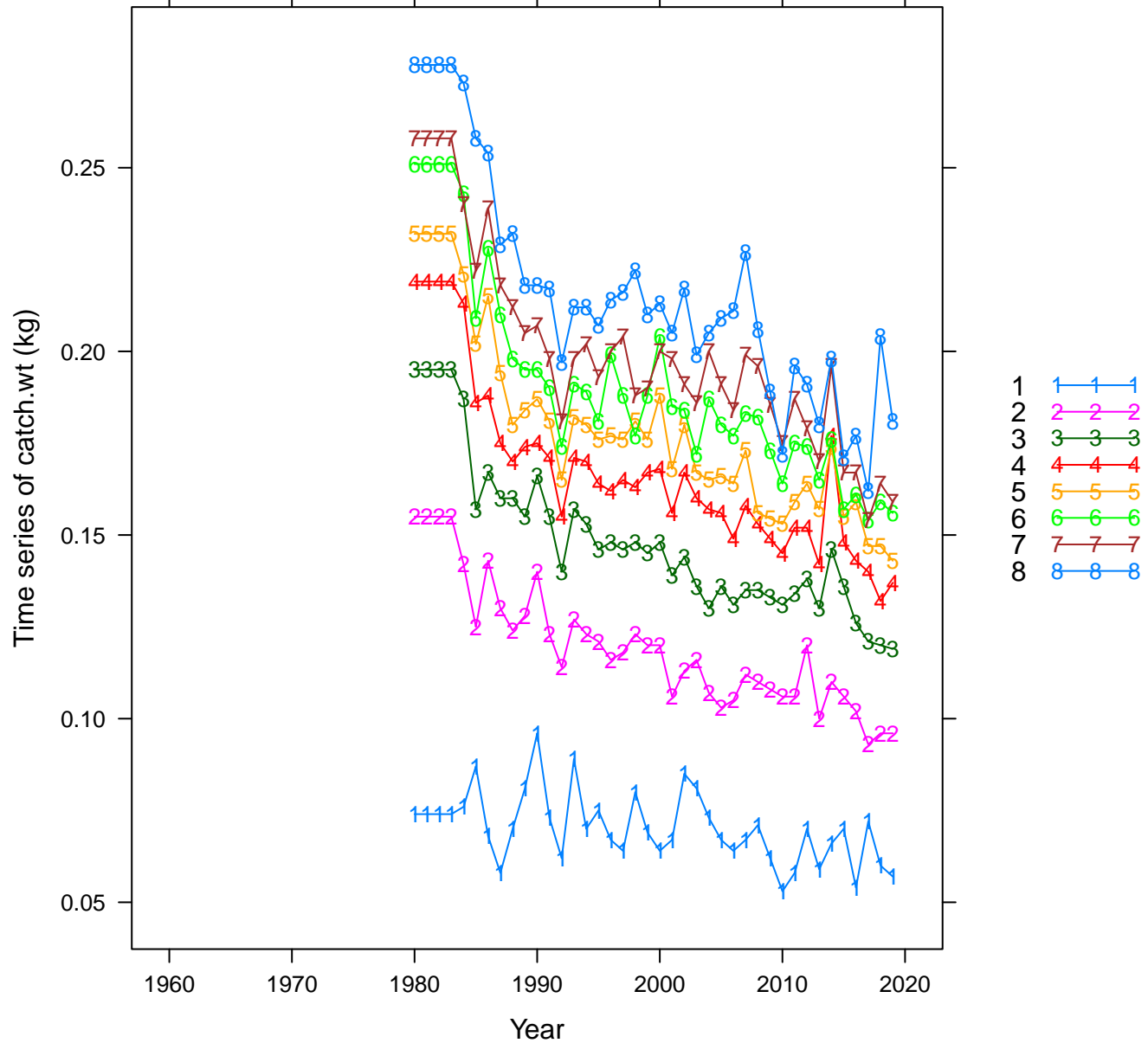
Log<sub>10</sub> (Index Value)

Lower right panels show the Coefficient of Determination ( $r^2$ )

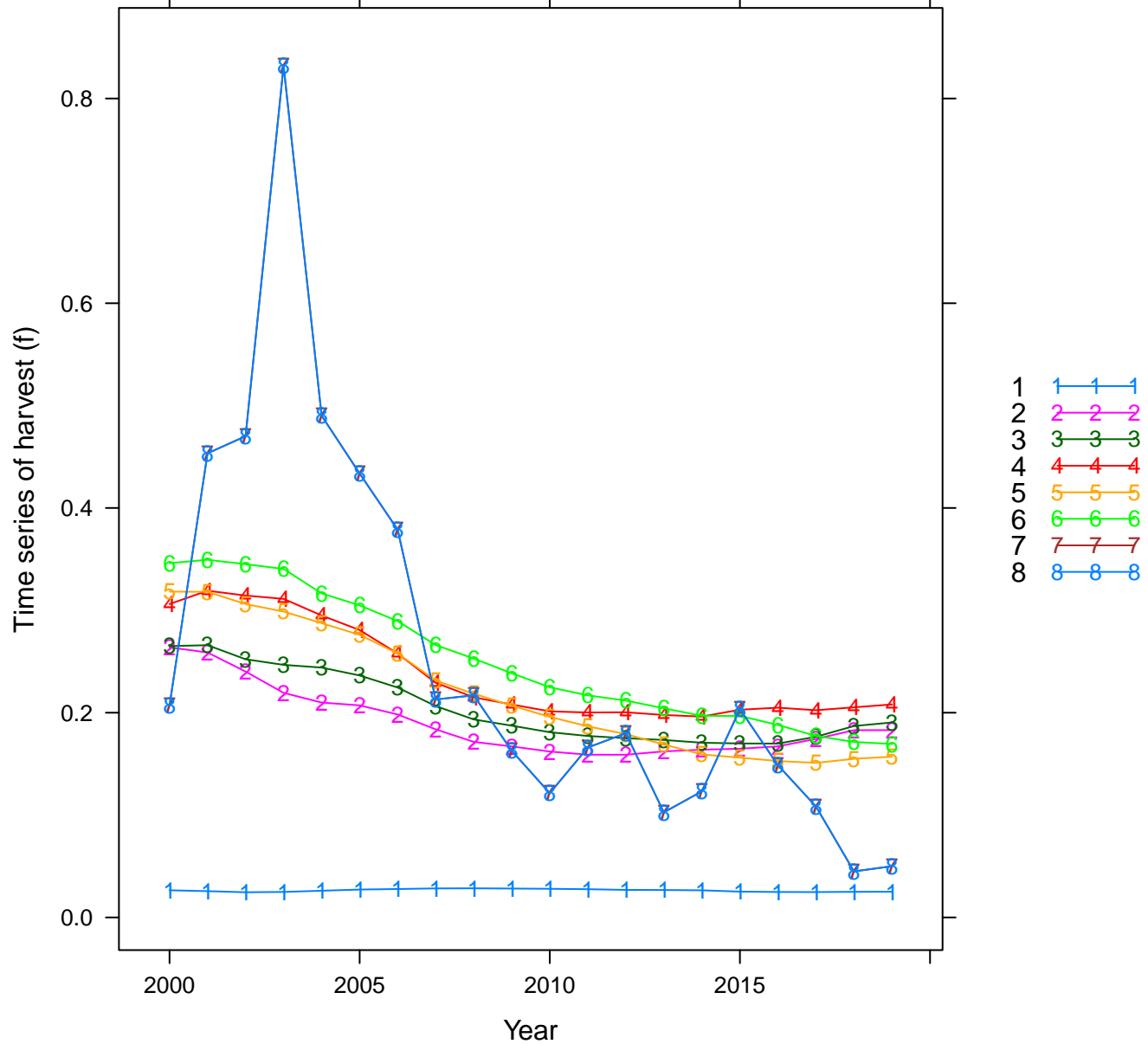
# Irish Sea herring timeseries of stock.wt



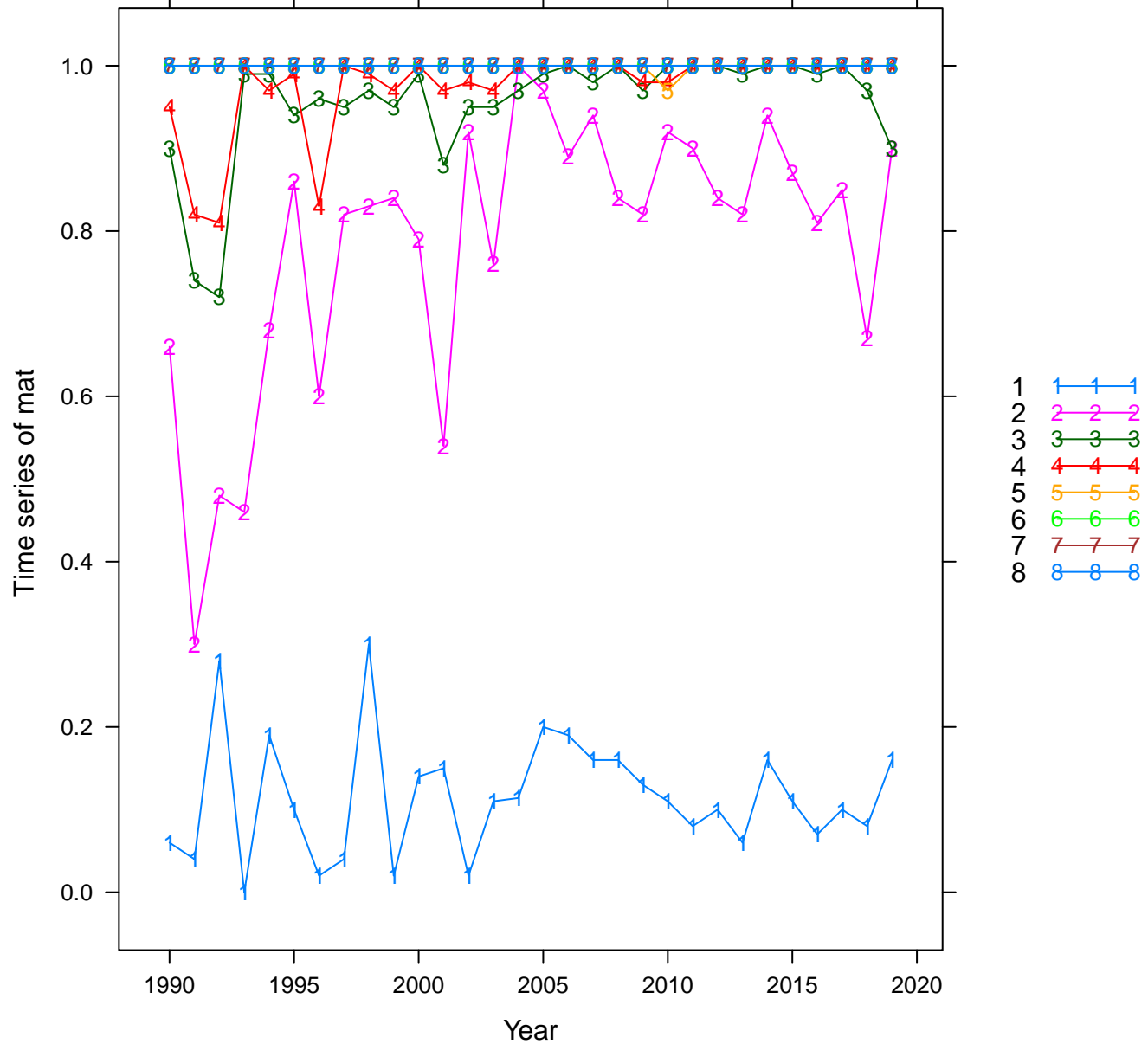
# Irish Sea herring timeseries of catch.wt



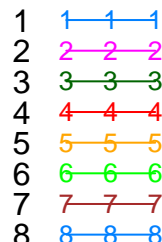
# Irish Sea herring timeseries of harvest



# Irish Sea herring timeseries of mat



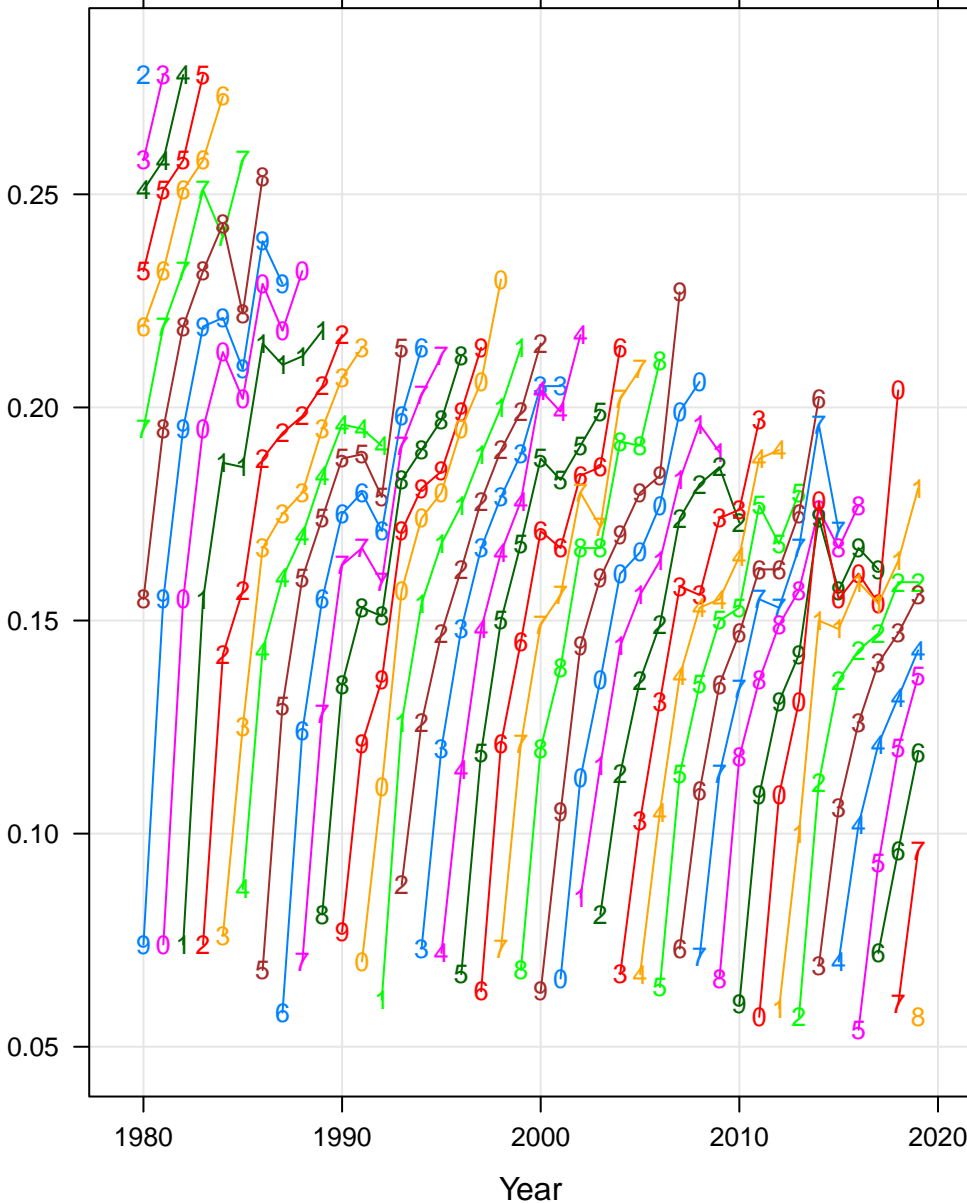
## AC(VIIaN) timeseries of index





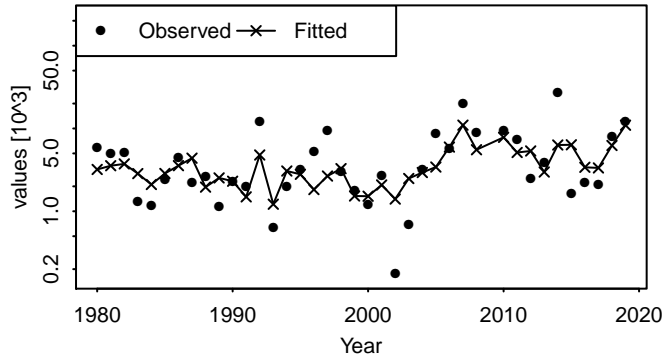
# Irish Sea herring Weight in the stock by cohort

Weight in the stock (kg)

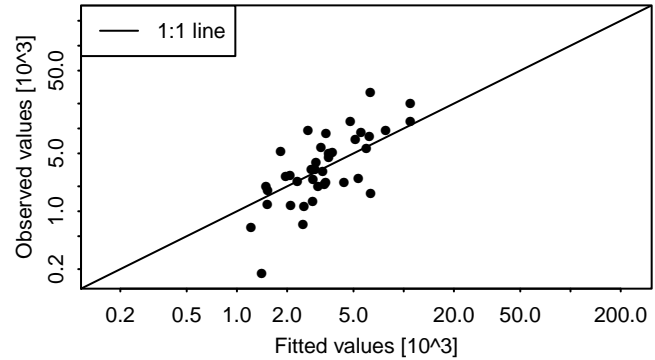


# ISH\_assessment 2020 Diagnostics – Fleet 1, age 1

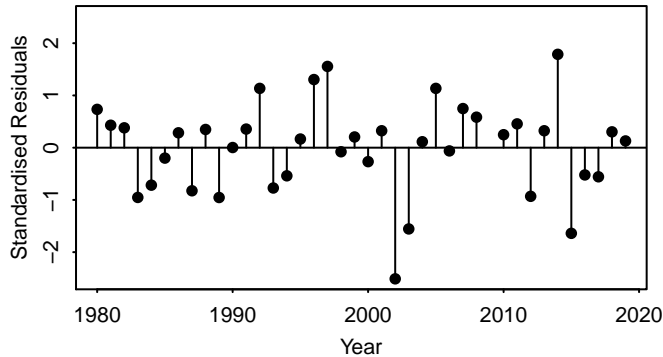
a) Observed and fitted values time series



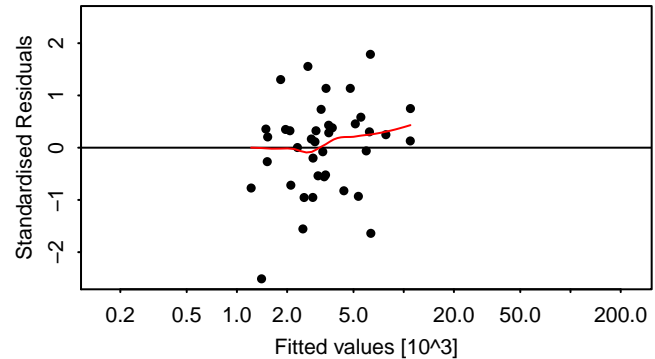
b) Observed vs fitted values



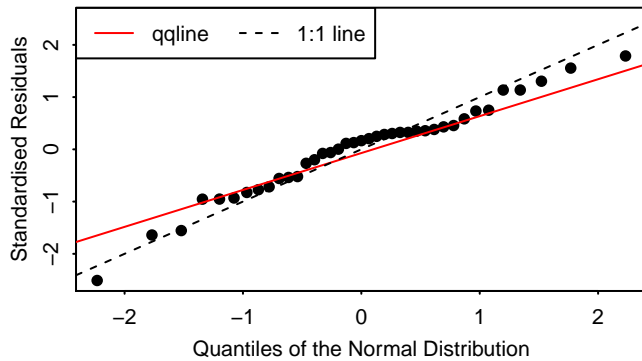
c) Standardised residuals over time



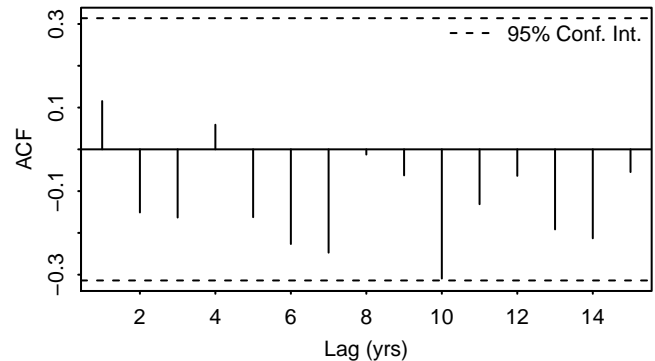
d) Tukey–Anscombe plot



e) Normal Q–Q plot

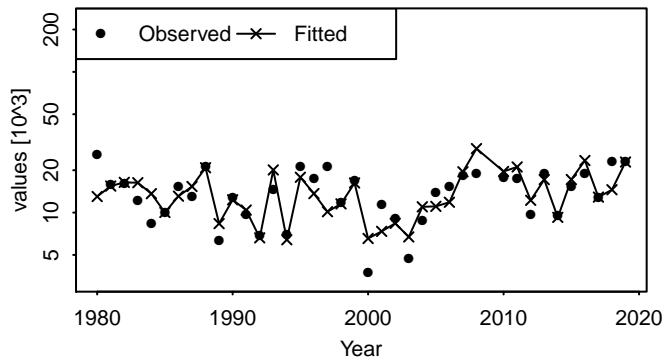


f) Autocorrelation of Residuals

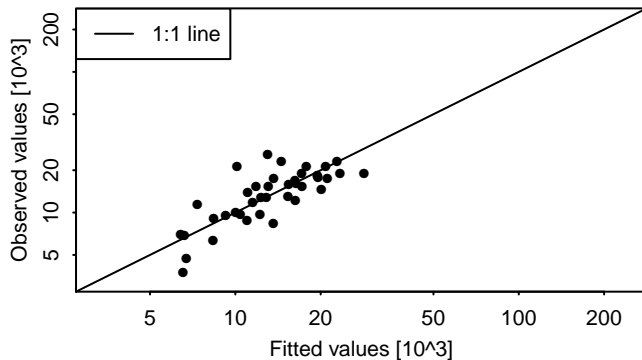


# ISH\_assessment 2020 Diagnostics – Fleet 1, age 2

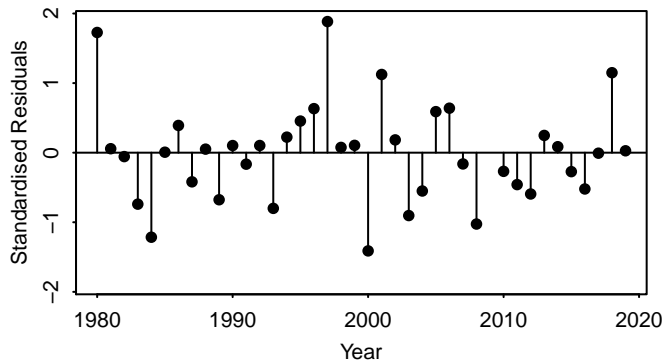
a) Observed and fitted values time series



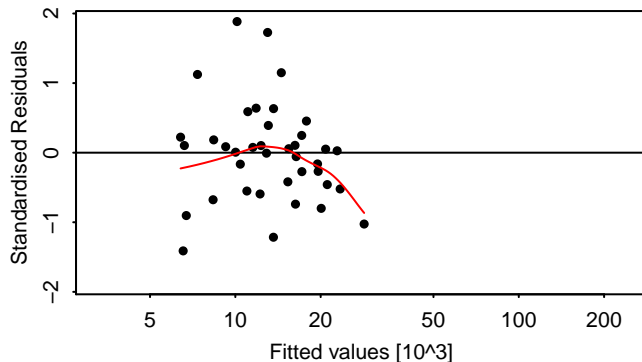
b) Observed vs fitted values



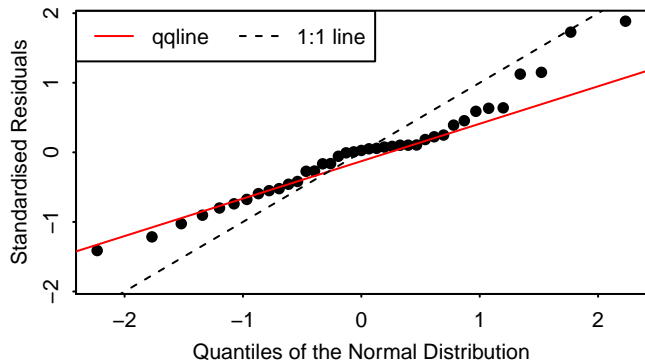
c) Standardised residuals over time



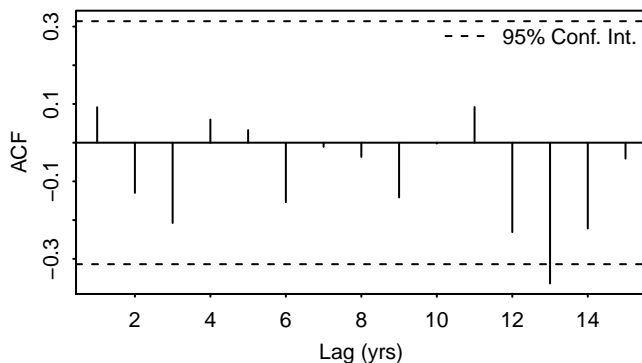
d) Tukey–Anscombe plot



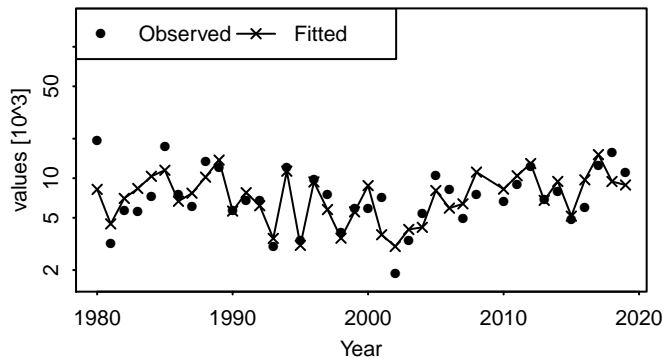
e) Normal Q–Q plot



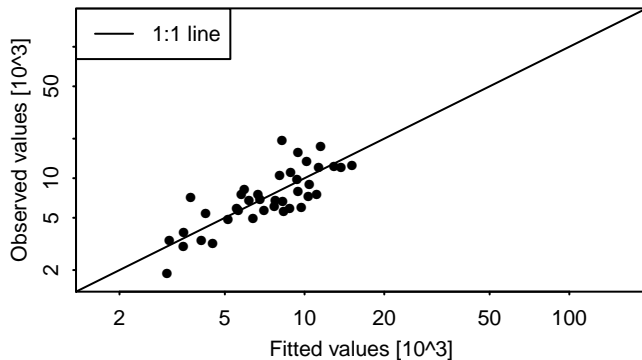
f) Autocorrelation of Residuals



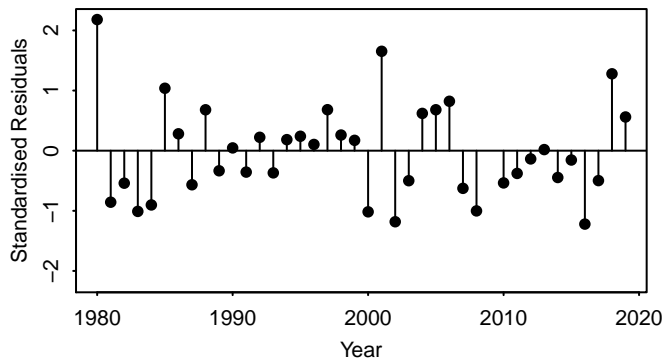
a) Observed and fitted values time series



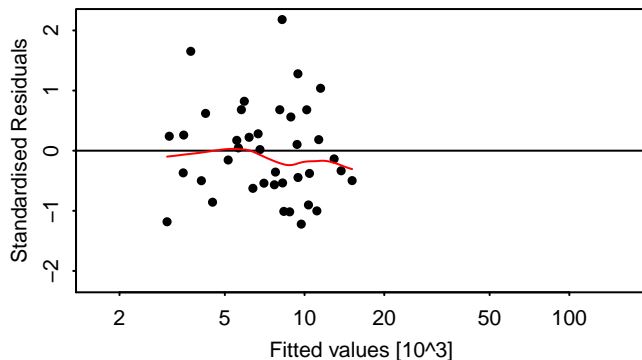
b) Observed vs fitted values



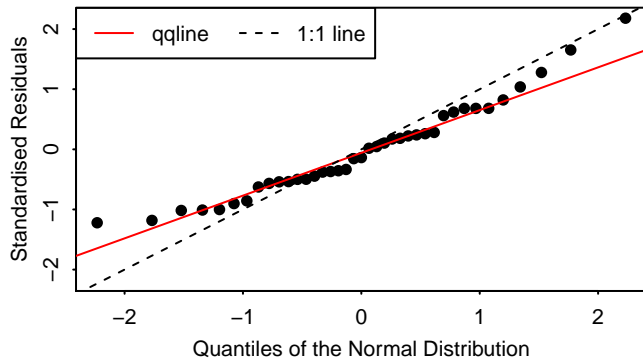
c) Standardised residuals over time



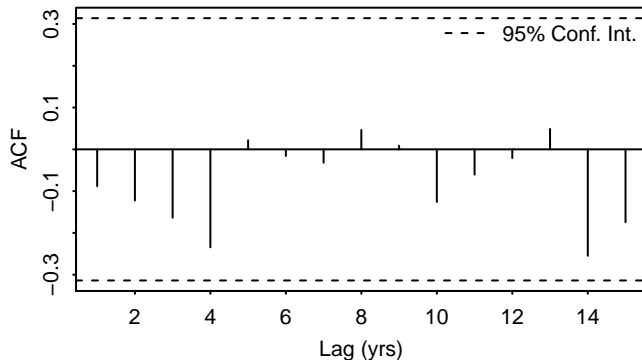
d) Tukey–Anscombe plot



e) Normal Q–Q plot

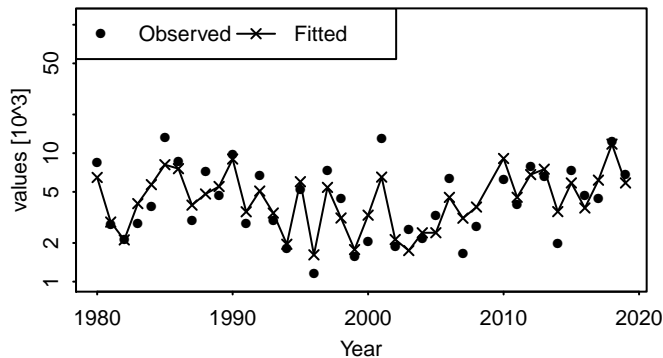


f) Autocorrelation of Residuals

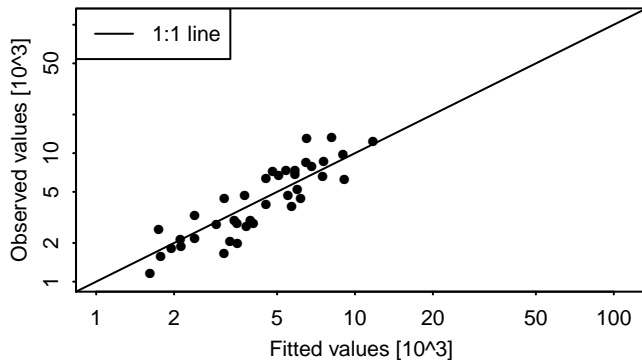


# ISH\_assessment 2020 Diagnostics – Fleet 1, age 4

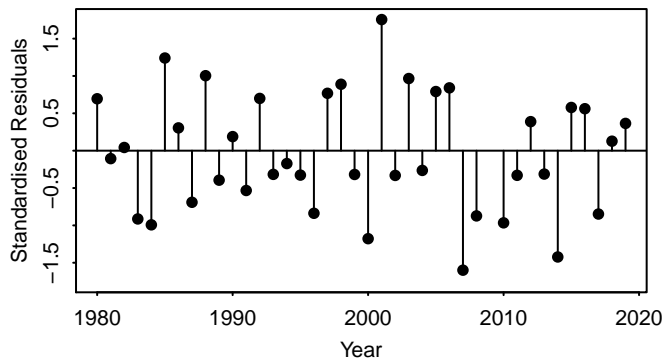
a) Observed and fitted values time series



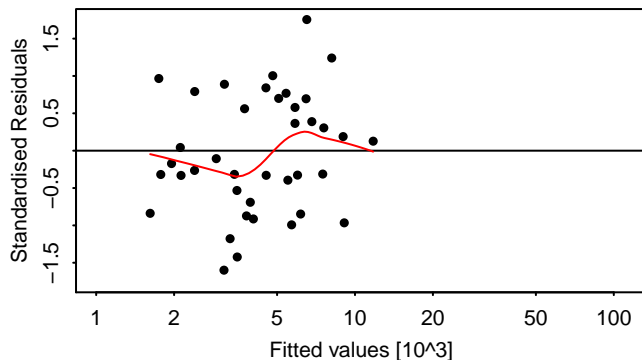
b) Observed vs fitted values



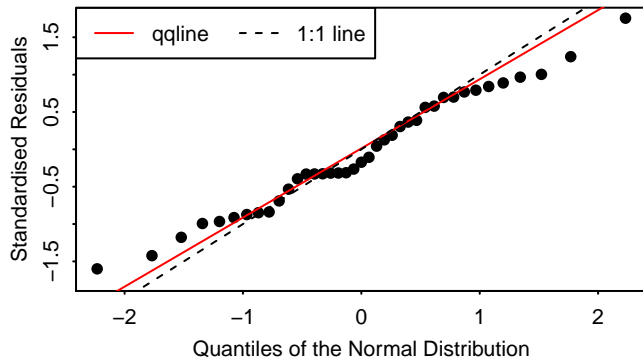
c) Standardised residuals over time



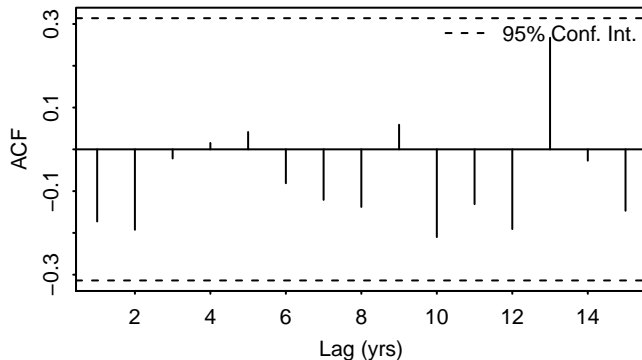
d) Tukey–Anscombe plot



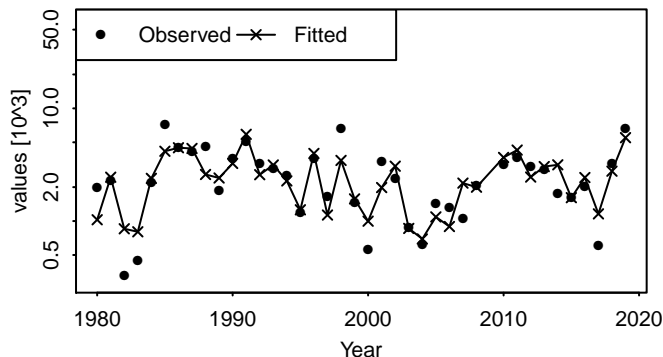
e) Normal Q–Q plot



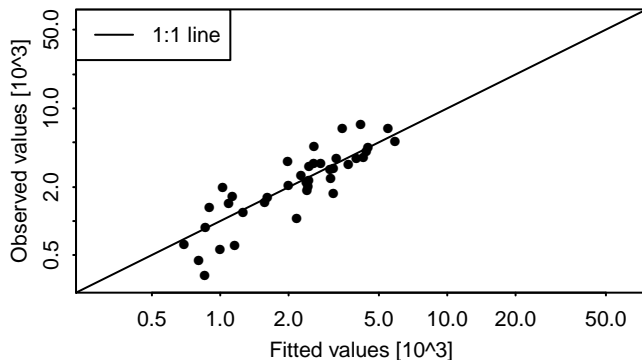
f) Autocorrelation of Residuals



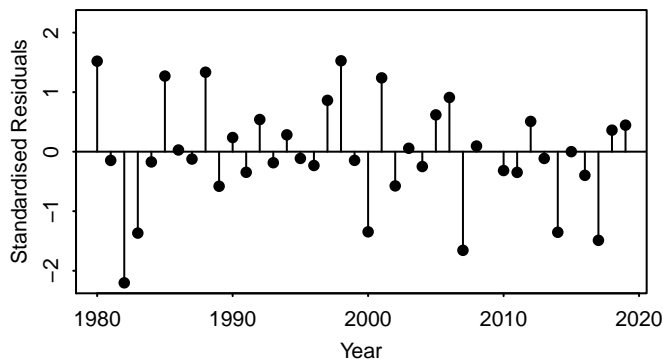
a) Observed and fitted values time series



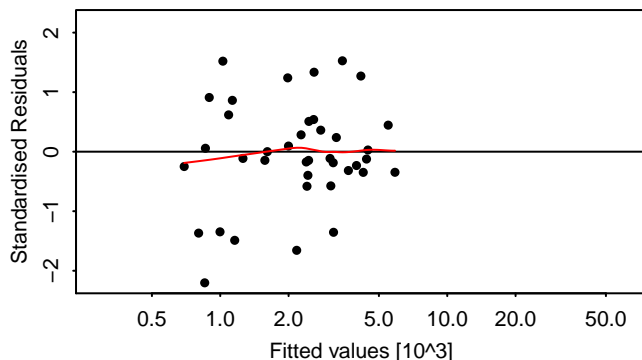
b) Observed vs fitted values



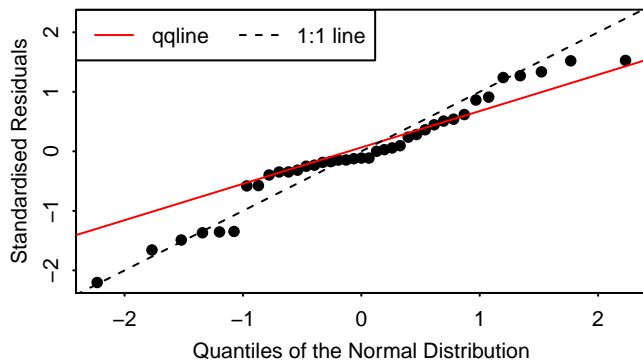
c) Standardised residuals over time



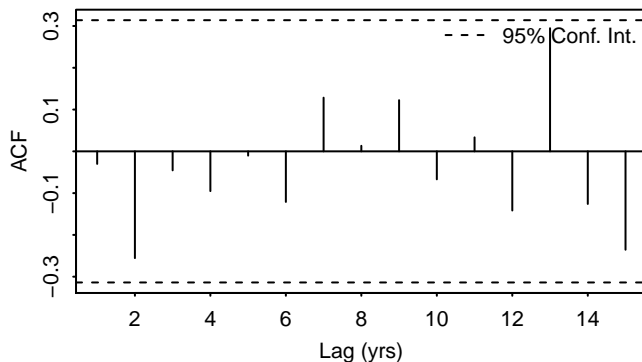
d) Tukey–Anscombe plot



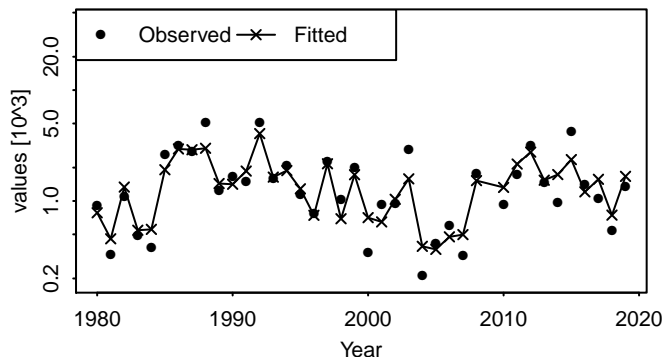
e) Normal Q–Q plot



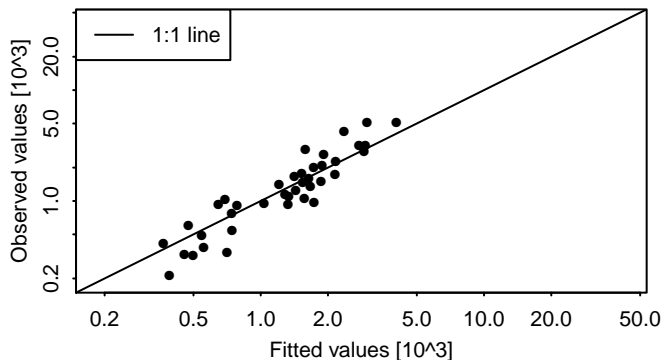
f) Autocorrelation of Residuals



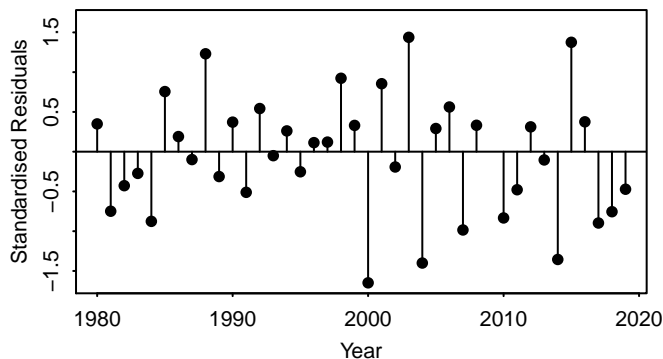
a) Observed and fitted values time series



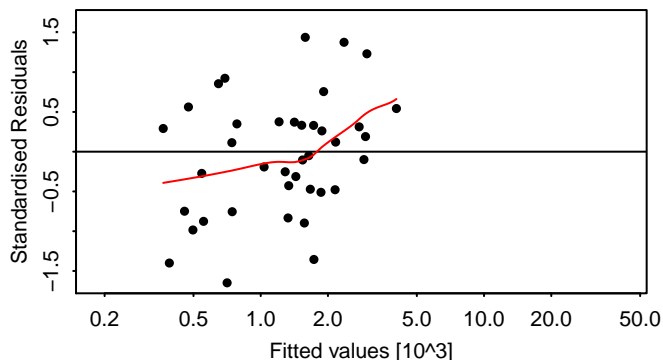
b) Observed vs fitted values



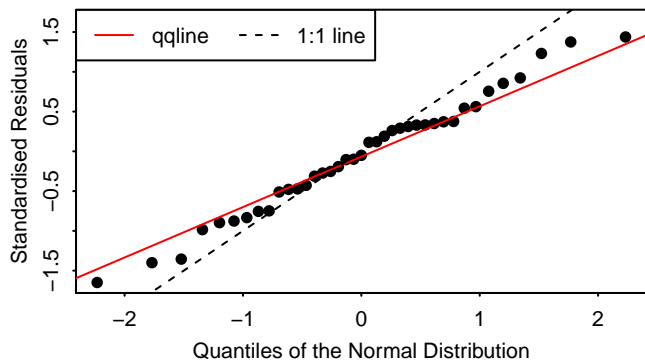
c) Standardised residuals over time



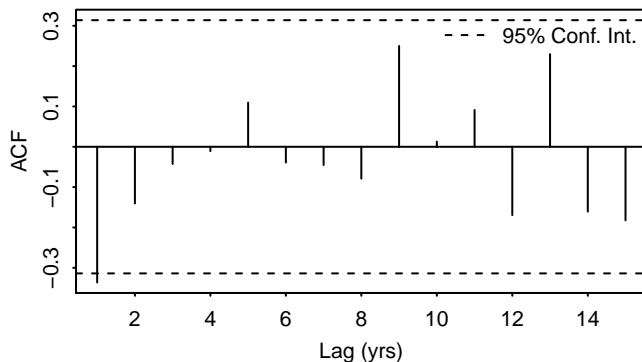
d) Tukey–Anscombe plot



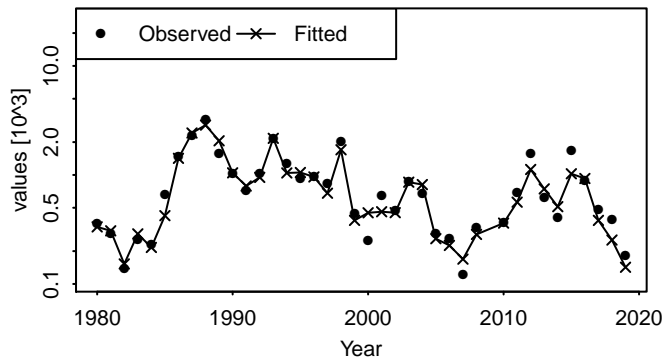
e) Normal Q–Q plot



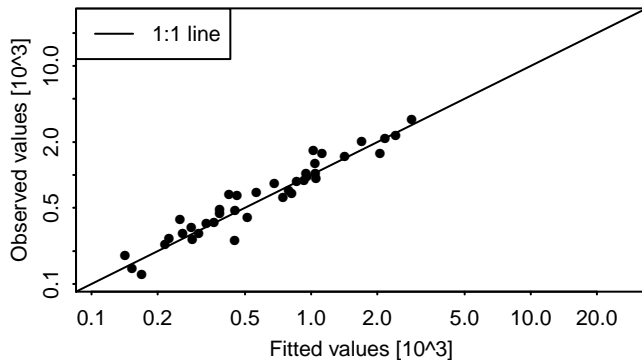
f) Autocorrelation of Residuals



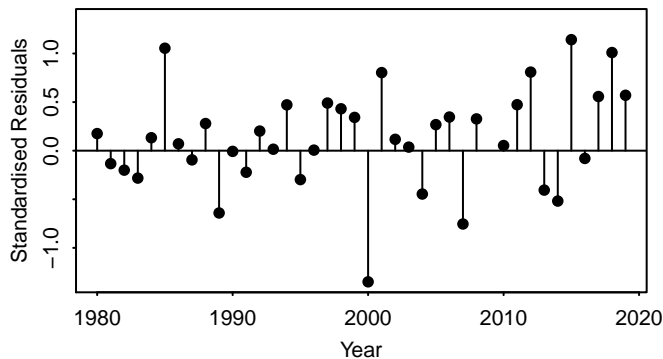
a) Observed and fitted values time series



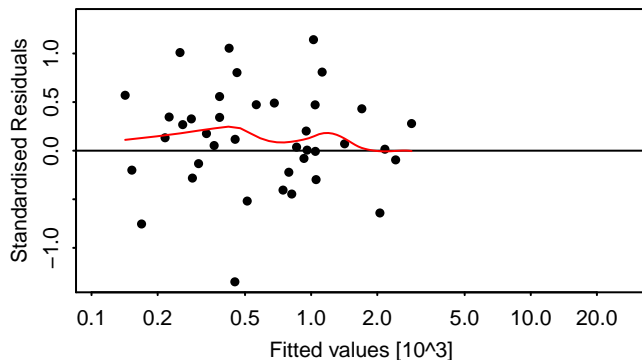
b) Observed vs fitted values



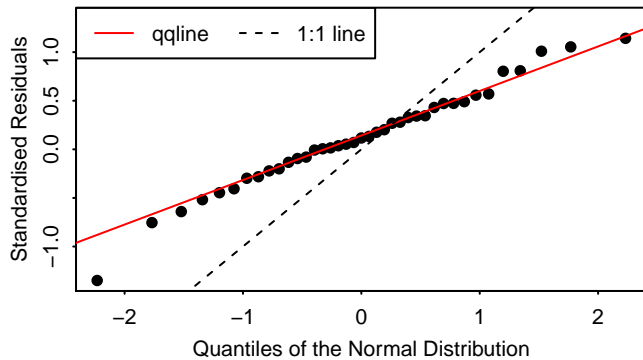
c) Standardised residuals over time



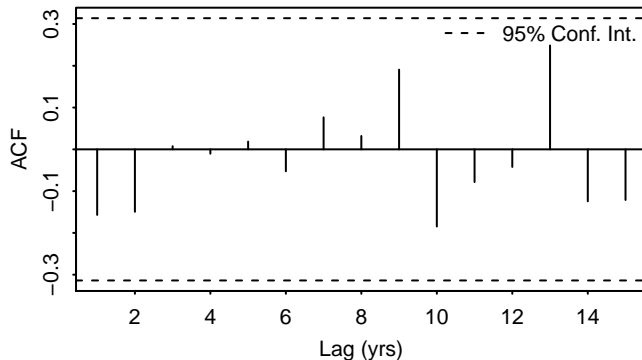
d) Tukey–Anscombe plot



e) Normal Q–Q plot



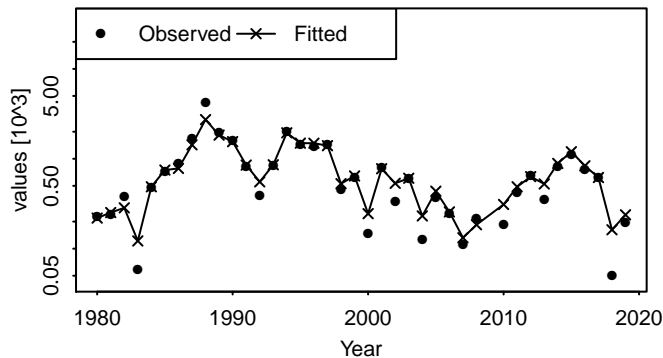
f) Autocorrelation of Residuals



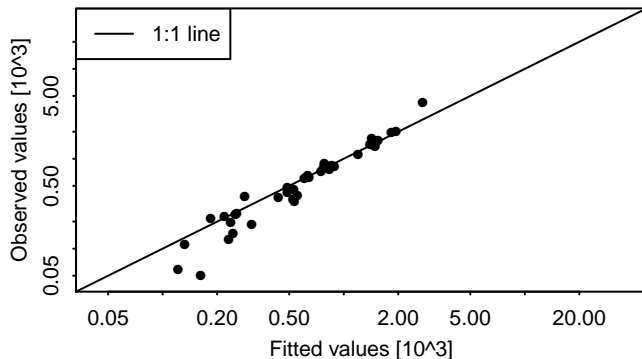


# ISH\_assessment 2020 Diagnostics – Fleet 1, age 8

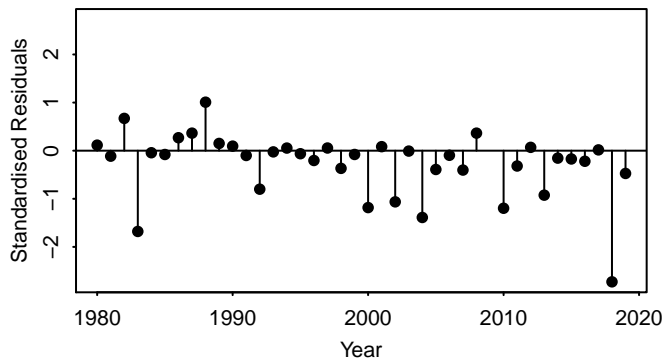
a) Observed and fitted values time series



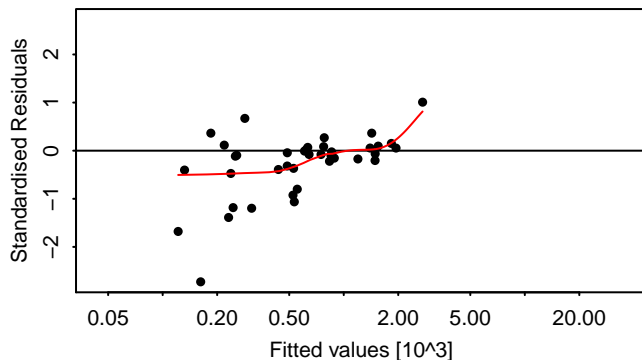
b) Observed vs fitted values



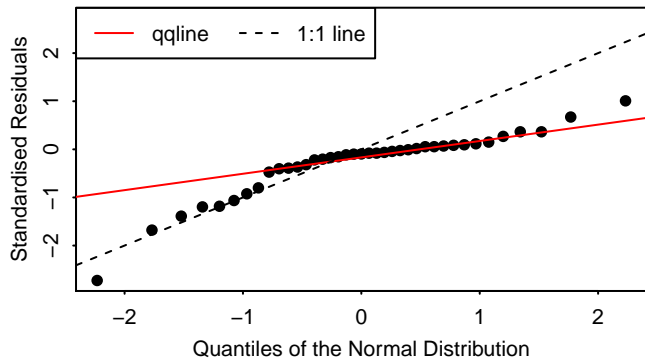
c) Standardised residuals over time



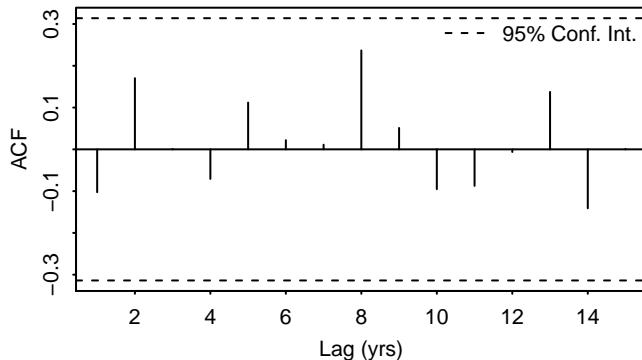
d) Tukey–Anscombe plot



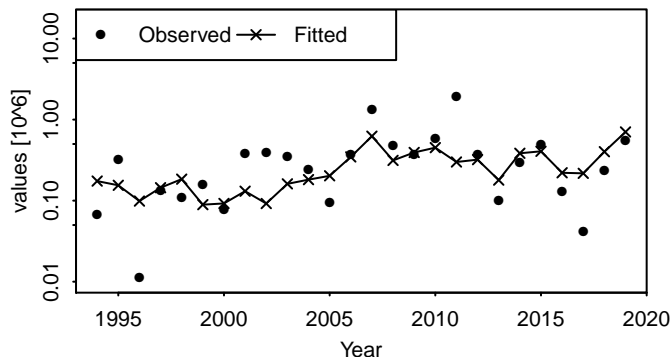
e) Normal Q–Q plot



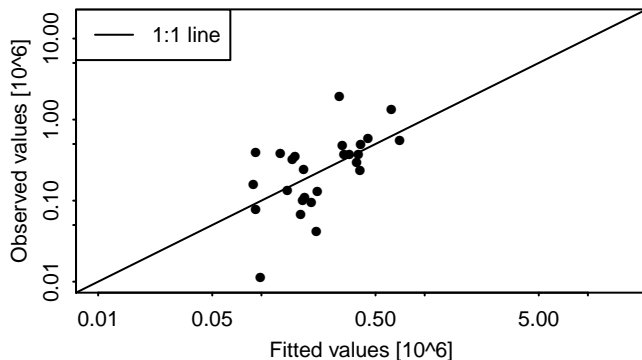
f) Autocorrelation of Residuals



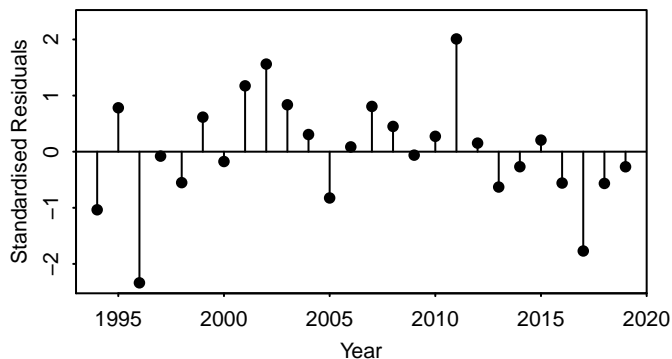
a) Observed and fitted values time series



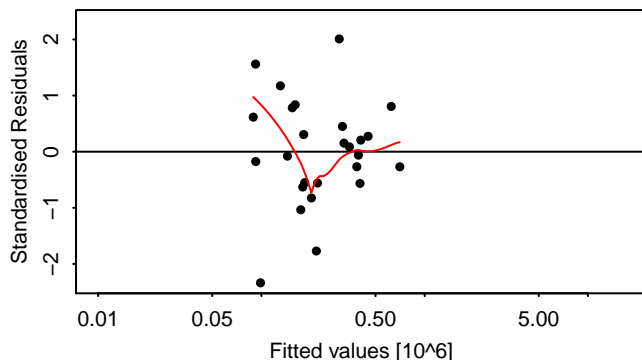
b) Observed vs fitted values



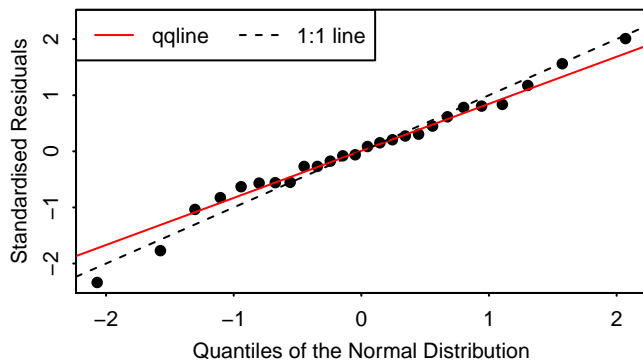
c) Standardised residuals over time



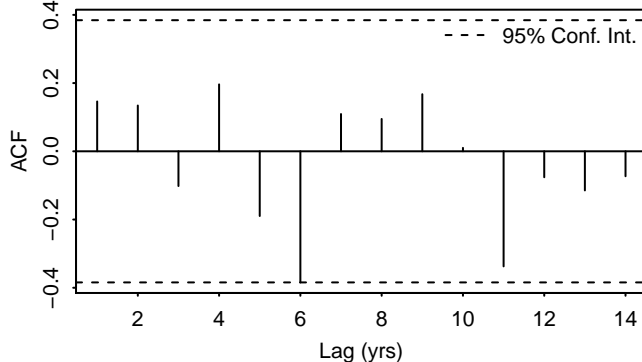
d) Tukey–Anscombe plot



e) Normal Q–Q plot

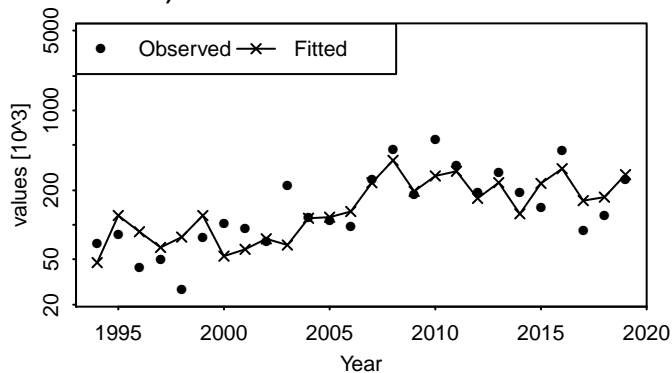


f) Autocorrelation of Residuals

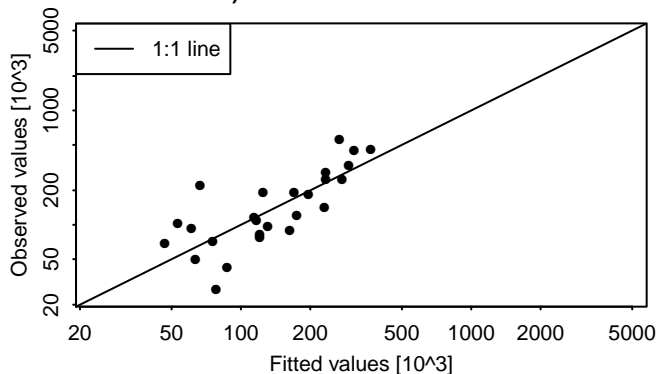


# ISH\_assessment 2020 Diagnostics – Fleet 2, age 2

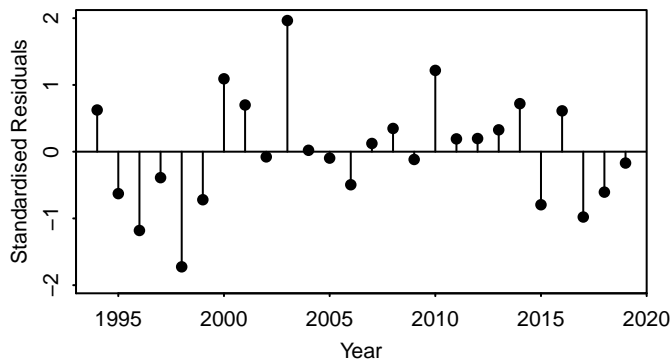
a) Observed and fitted values time series



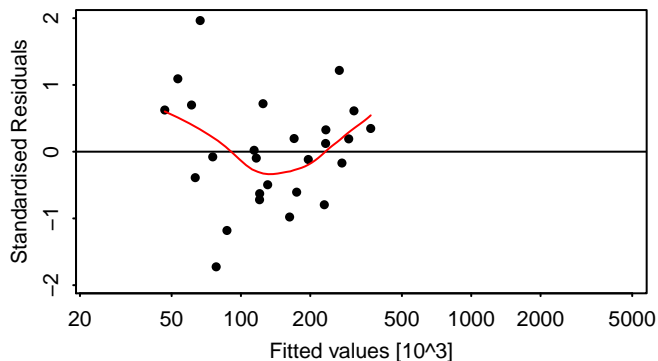
b) Observed vs fitted values



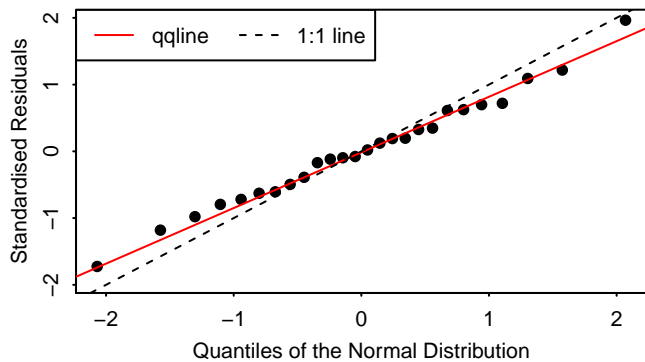
c) Standardised residuals over time



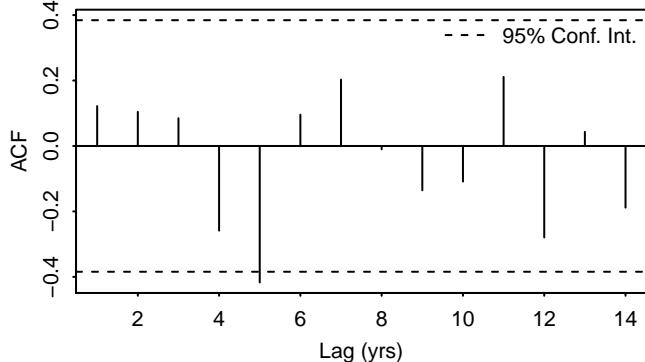
d) Tukey–Anscombe plot



e) Normal Q–Q plot

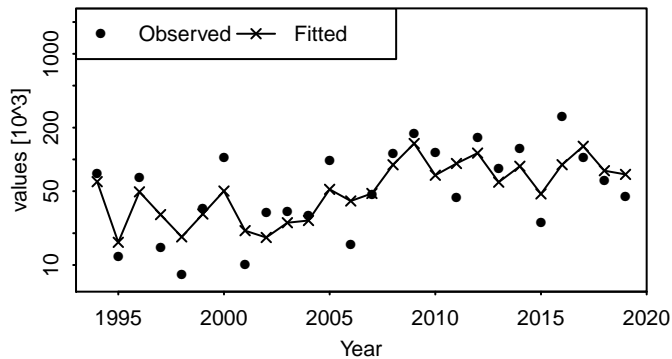


f) Autocorrelation of Residuals

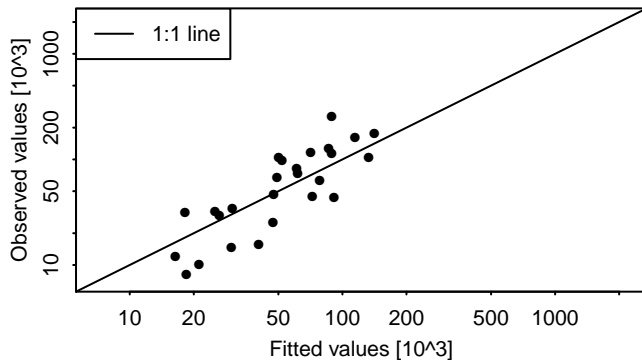


# ISH\_assessment 2020 Diagnostics – Fleet 2, age 3

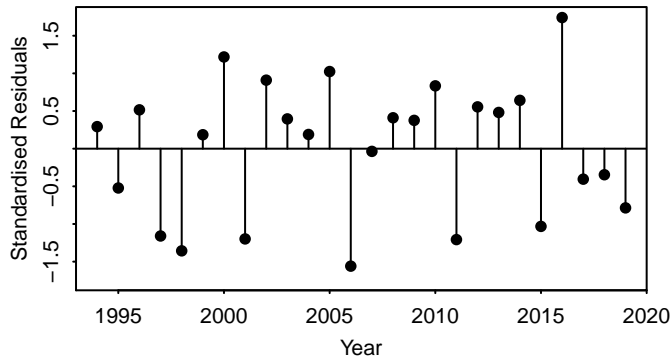
a) Observed and fitted values time series



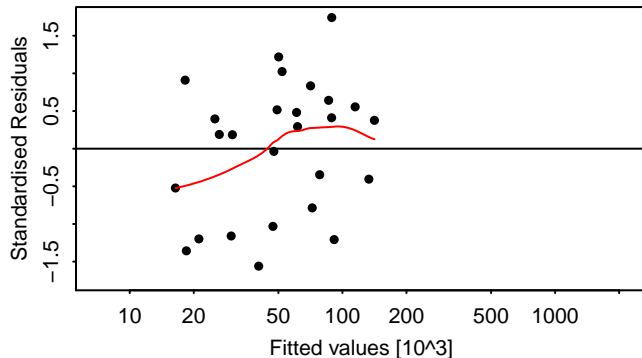
b) Observed vs fitted values



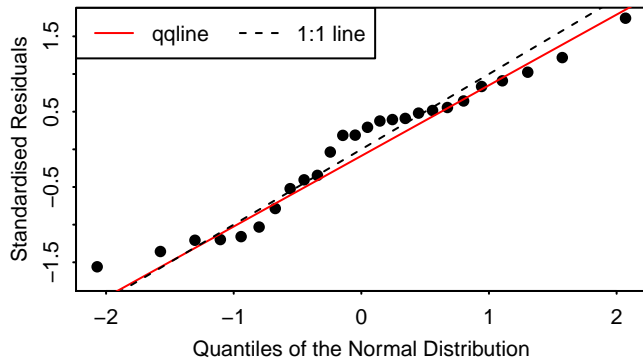
c) Standardised residuals over time



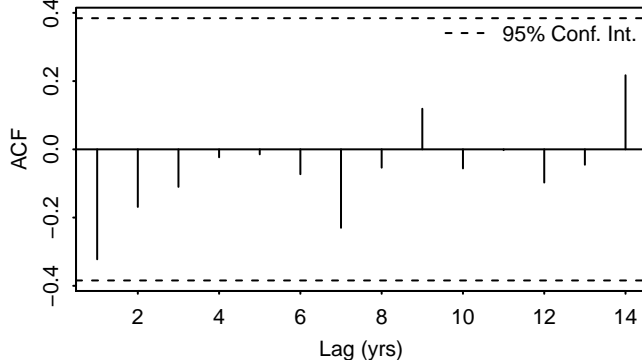
d) Tukey–Anscombe plot



e) Normal Q–Q plot

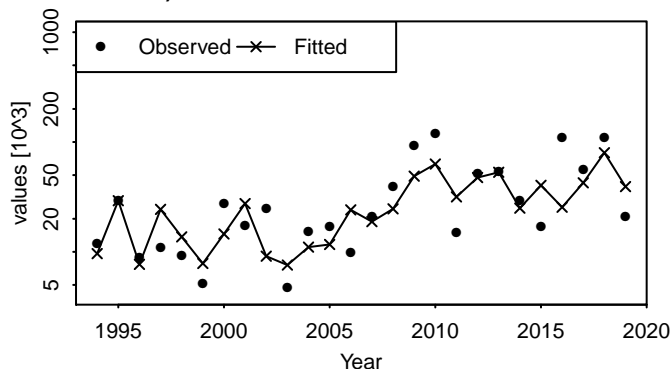


f) Autocorrelation of Residuals

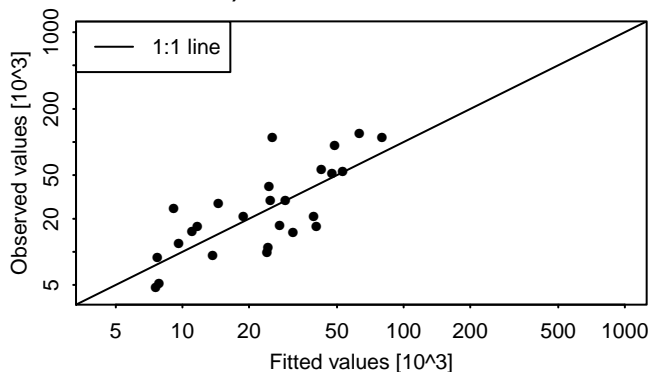


# ISH\_assessment 2020 Diagnostics – Fleet 2, age 4

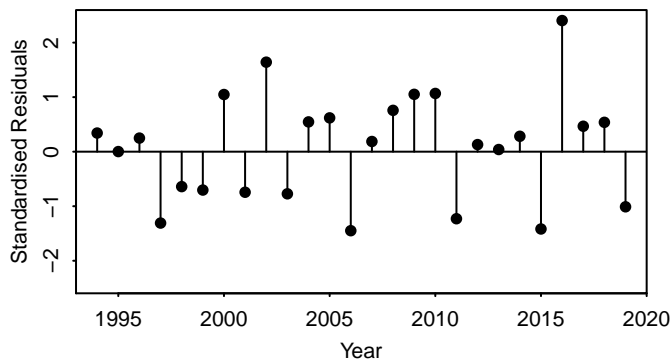
a) Observed and fitted values time series



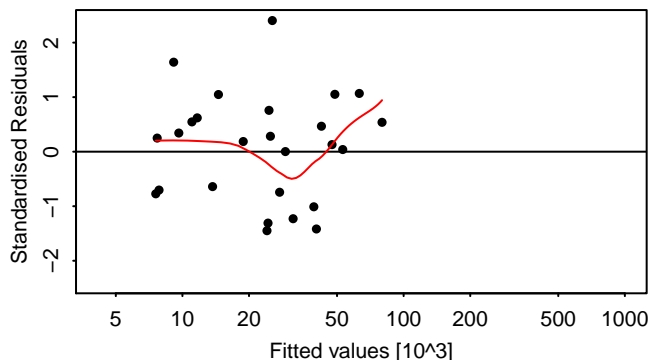
b) Observed vs fitted values



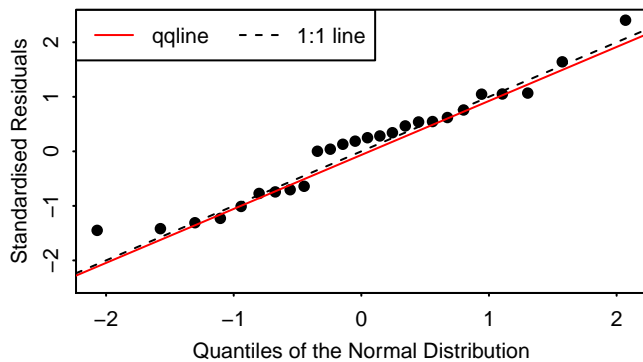
c) Standardised residuals over time



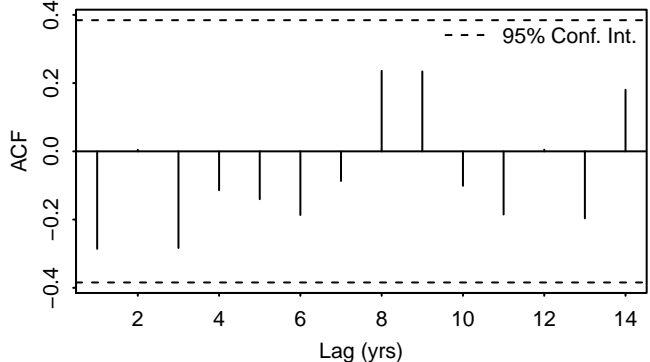
d) Tukey–Anscombe plot



e) Normal Q–Q plot

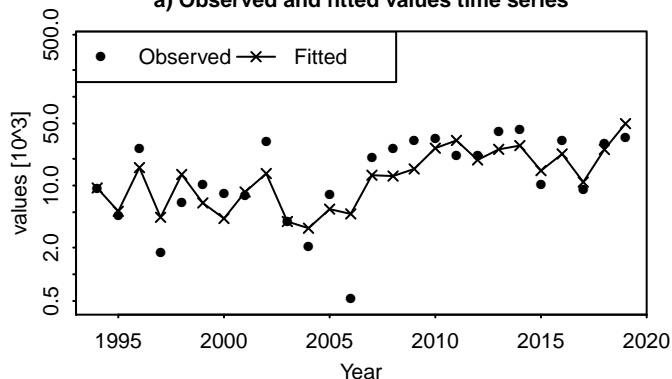


f) Autocorrelation of Residuals

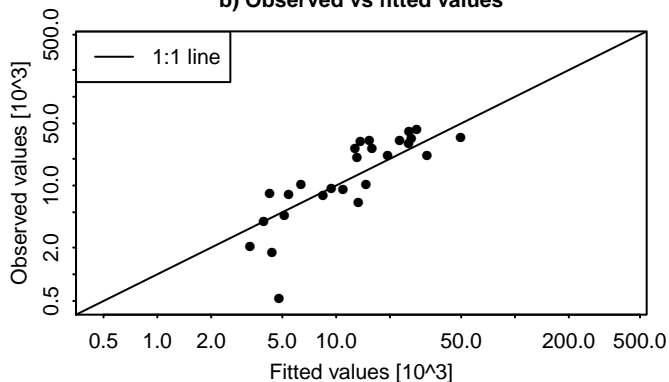


# ISH\_assessment 2020 Diagnostics – Fleet 2, age 5

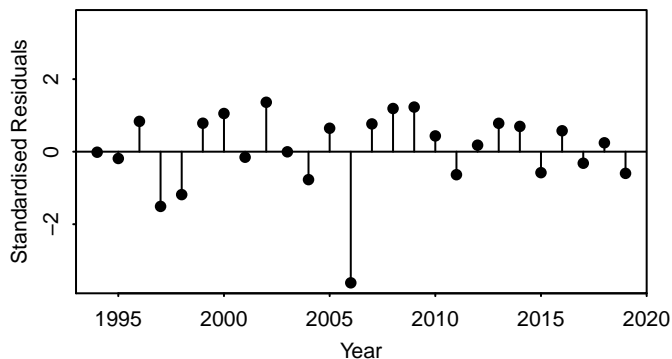
a) Observed and fitted values time series



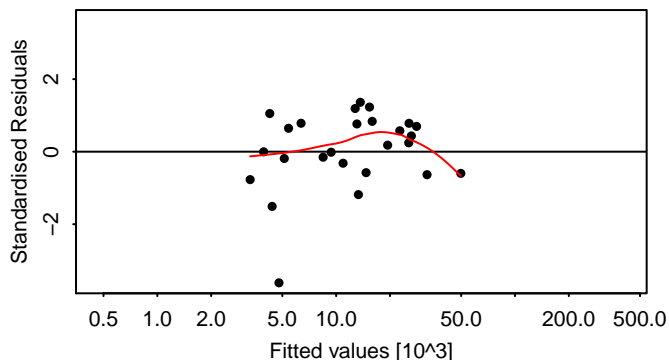
b) Observed vs fitted values



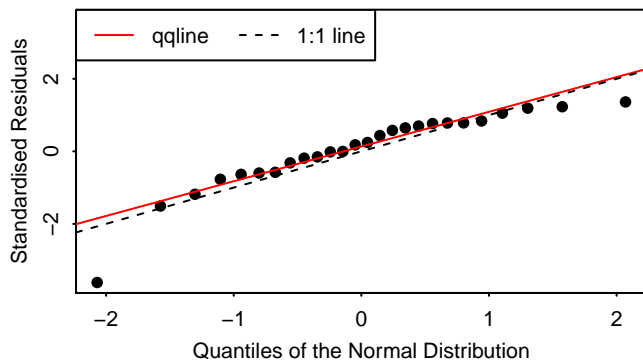
c) Standardised residuals over time



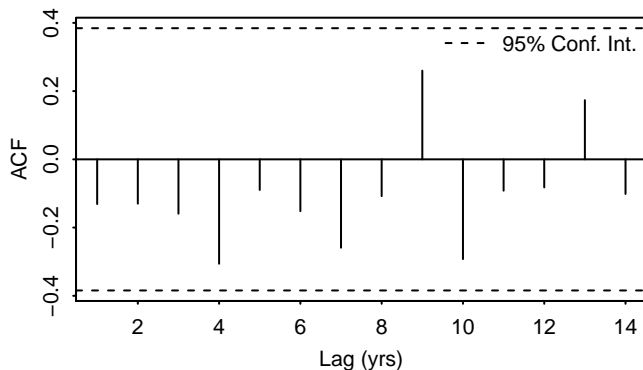
d) Tukey–Anscombe plot



e) Normal Q–Q plot

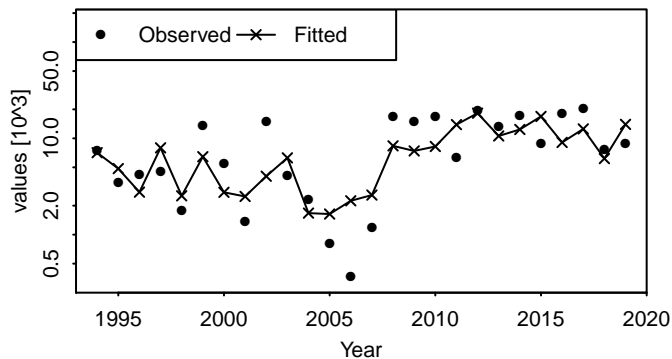


f) Autocorrelation of Residuals

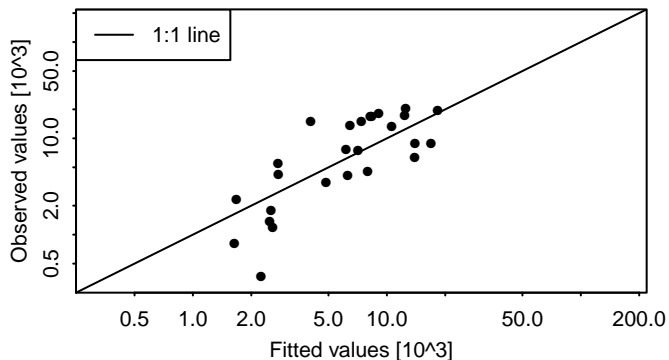


# ISH\_assessment 2020 Diagnostics – Fleet 2, age 6

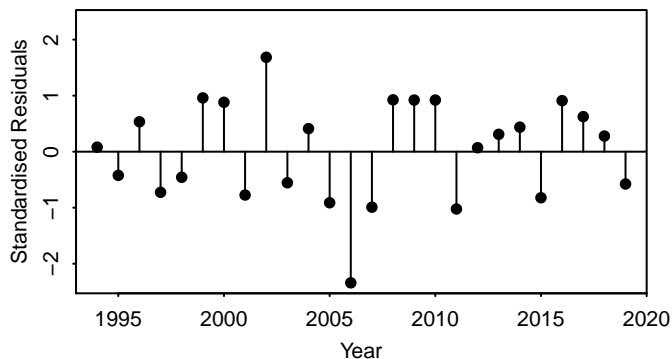
**a) Observed and fitted values time series**



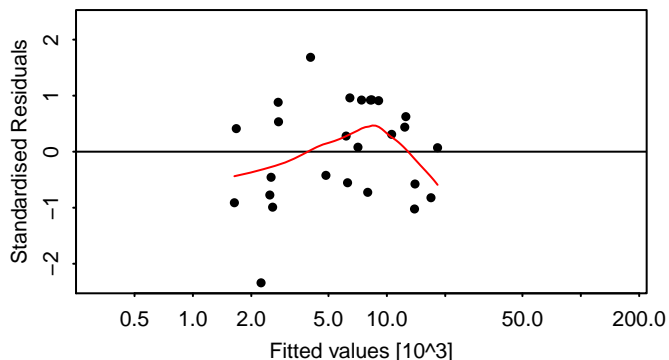
**b) Observed vs fitted values**



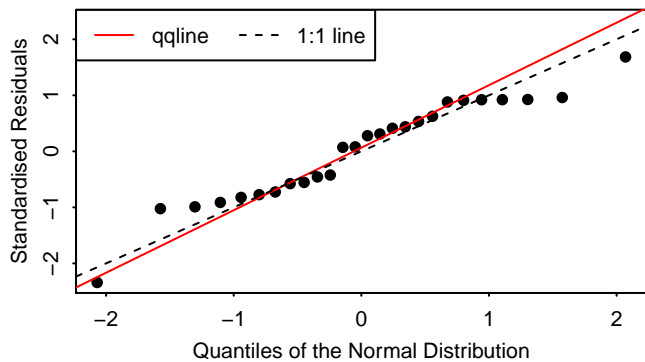
**c) Standardised residuals over time**



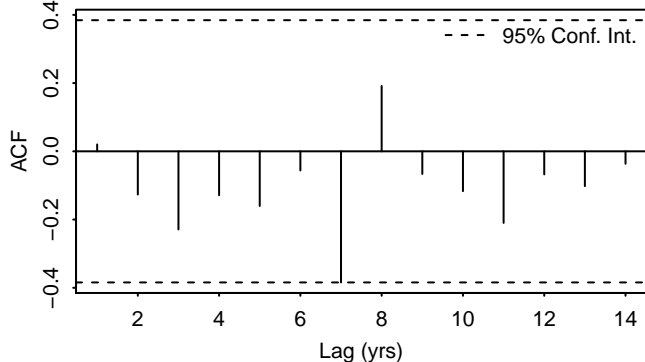
**d) Tukey–Anscombe plot**



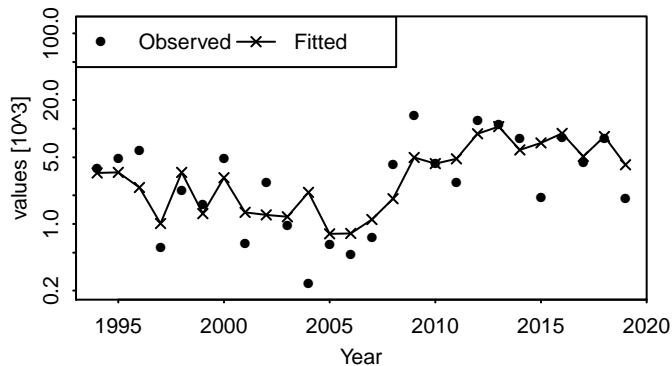
**e) Normal Q–Q plot**



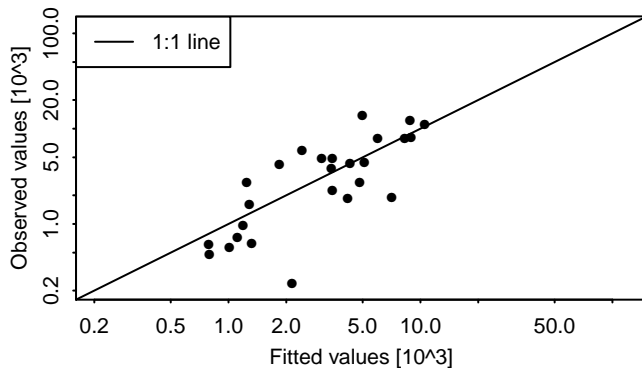
**f) Autocorrelation of Residuals**



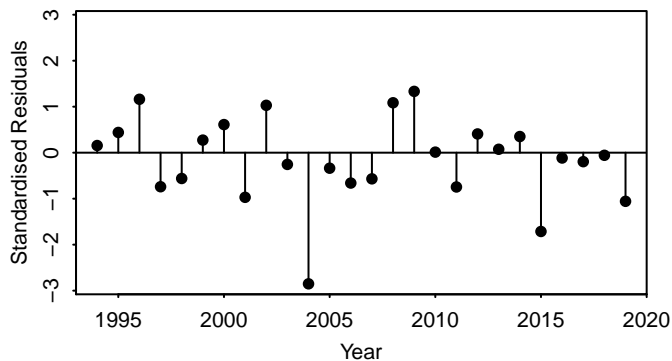
a) Observed and fitted values time series



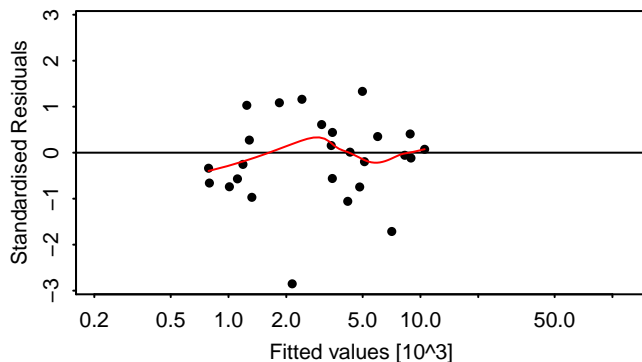
b) Observed vs fitted values



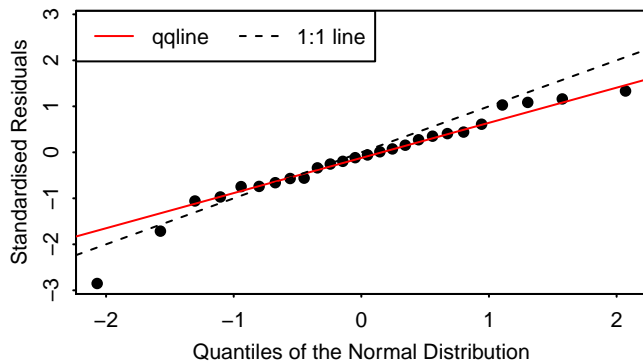
c) Standardised residuals over time



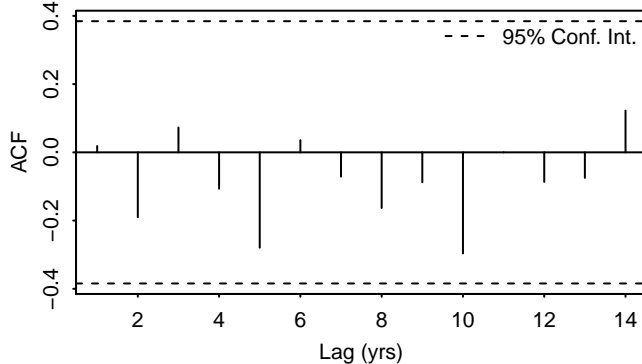
d) Tukey–Anscombe plot



e) Normal Q–Q plot

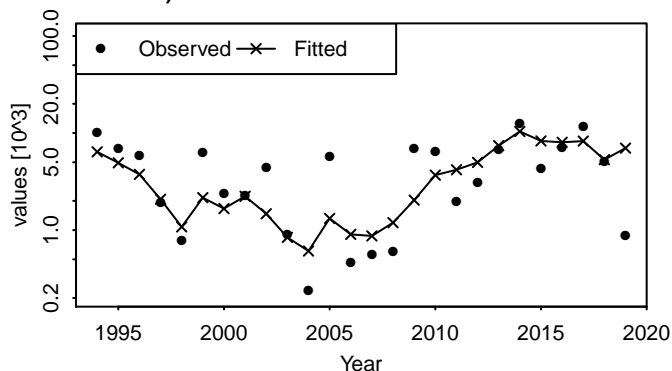


f) Autocorrelation of Residuals

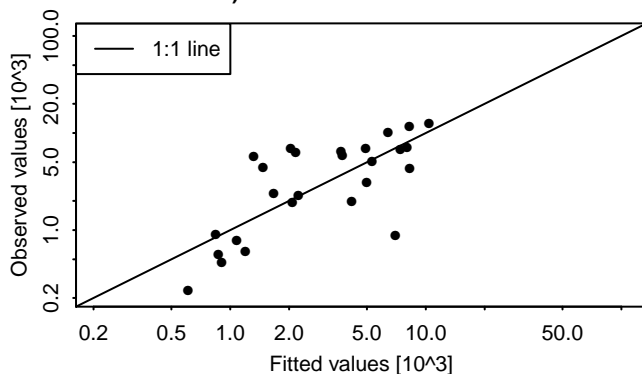




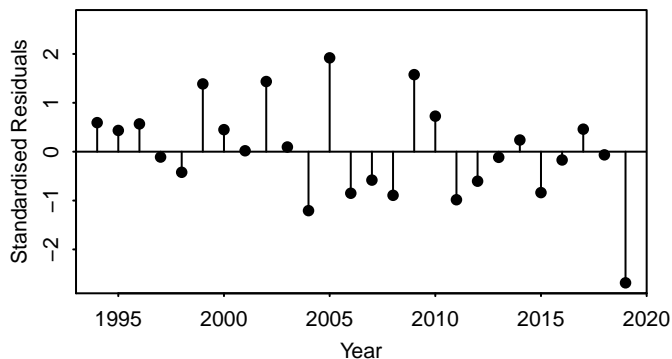
a) Observed and fitted values time series



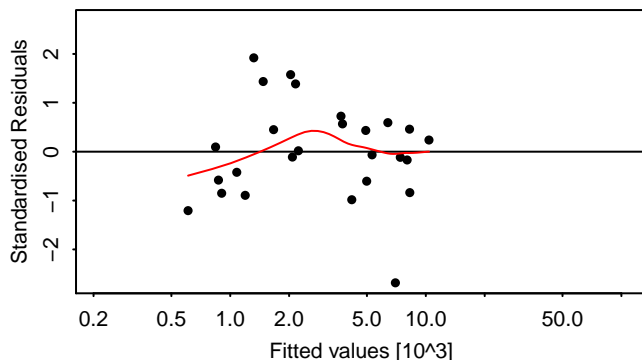
b) Observed vs fitted values



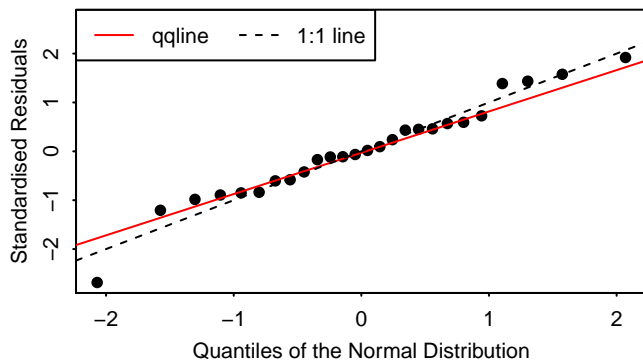
c) Standardised residuals over time



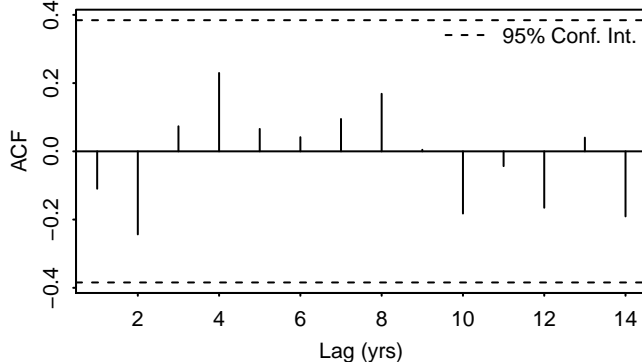
d) Tukey–Anscombe plot



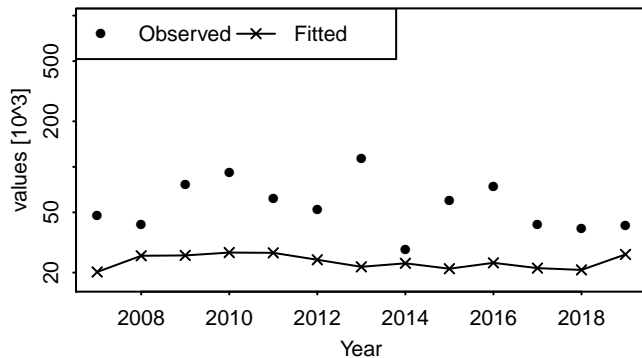
e) Normal Q–Q plot



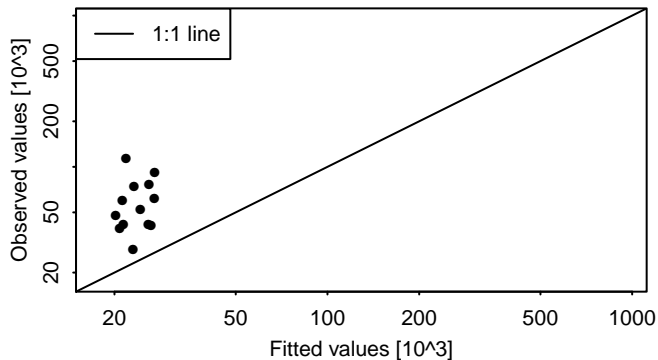
f) Autocorrelation of Residuals



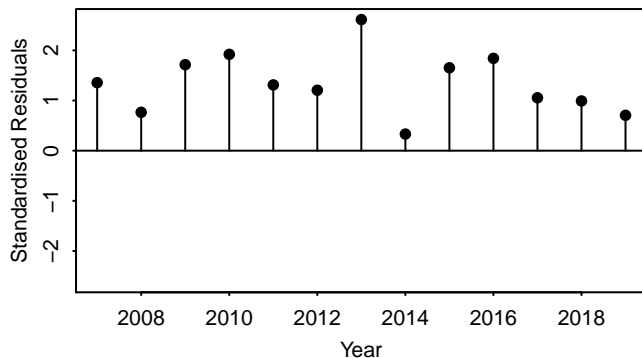
a) Observed and fitted values time series



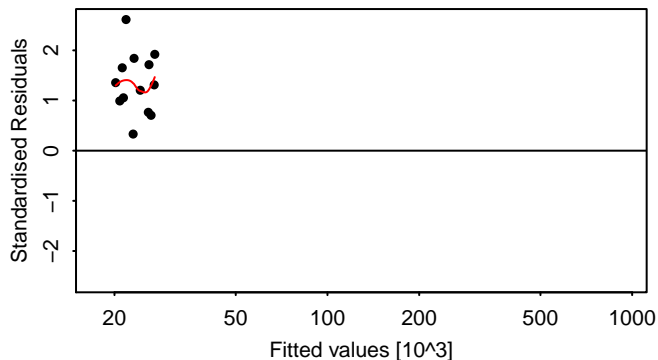
b) Observed vs fitted values



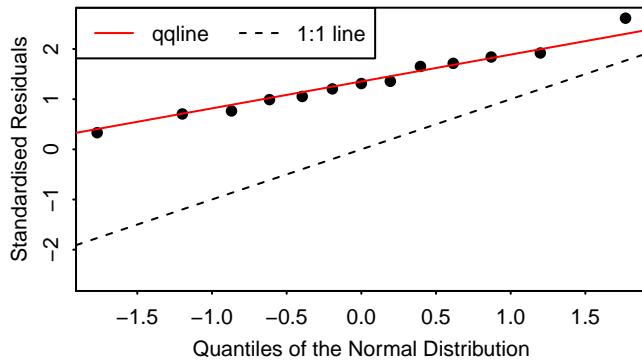
c) Standardised residuals over time



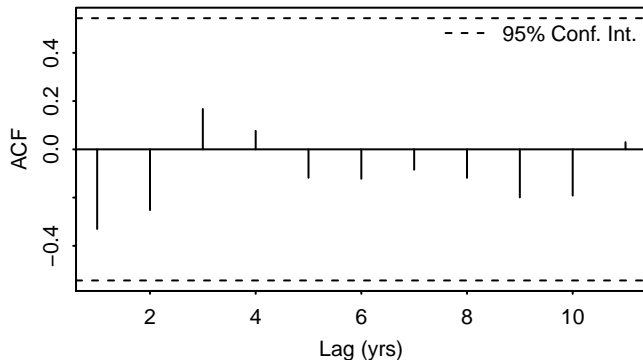
d) Tukey–Anscombe plot



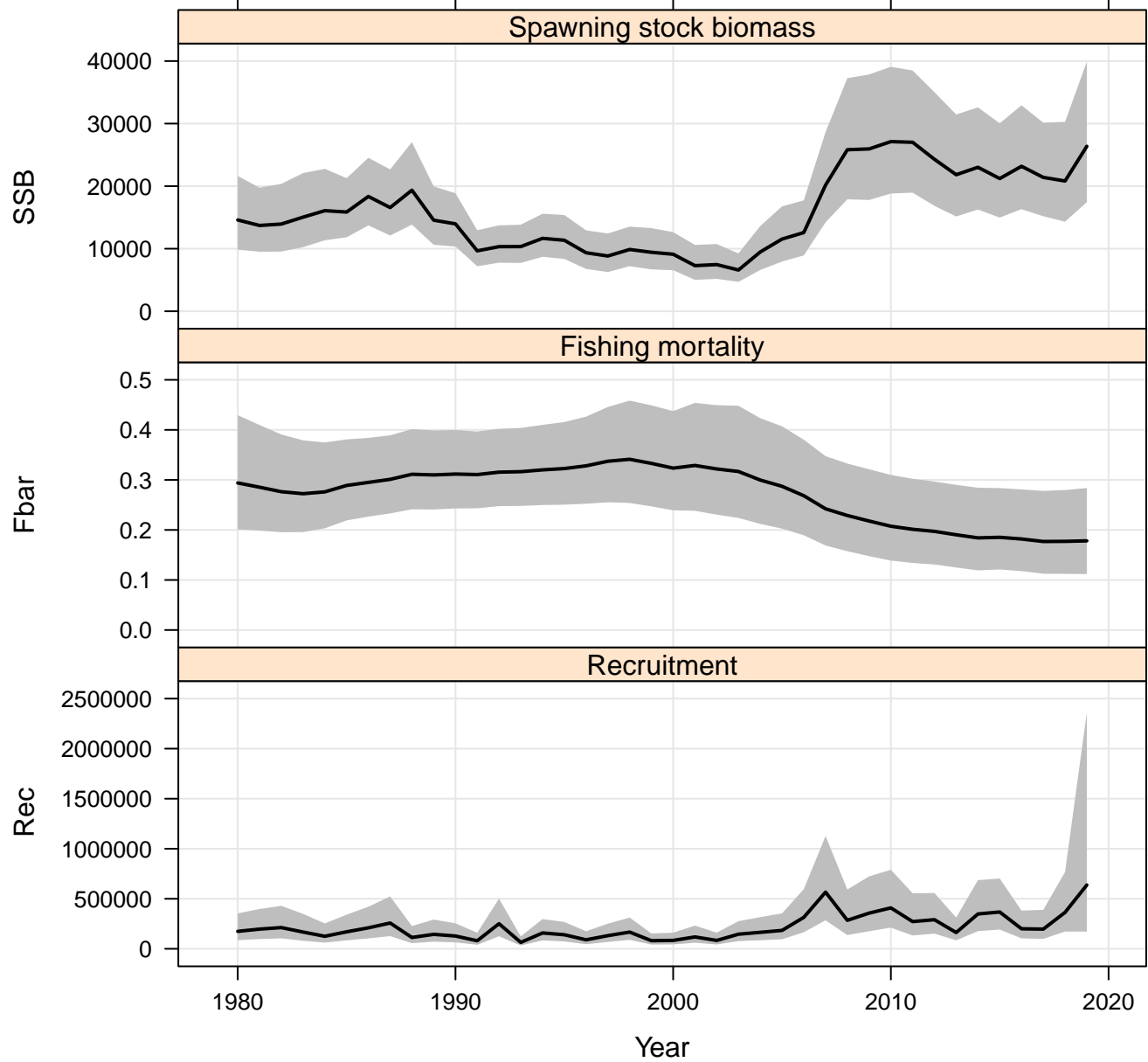
e) Normal Q–Q plot



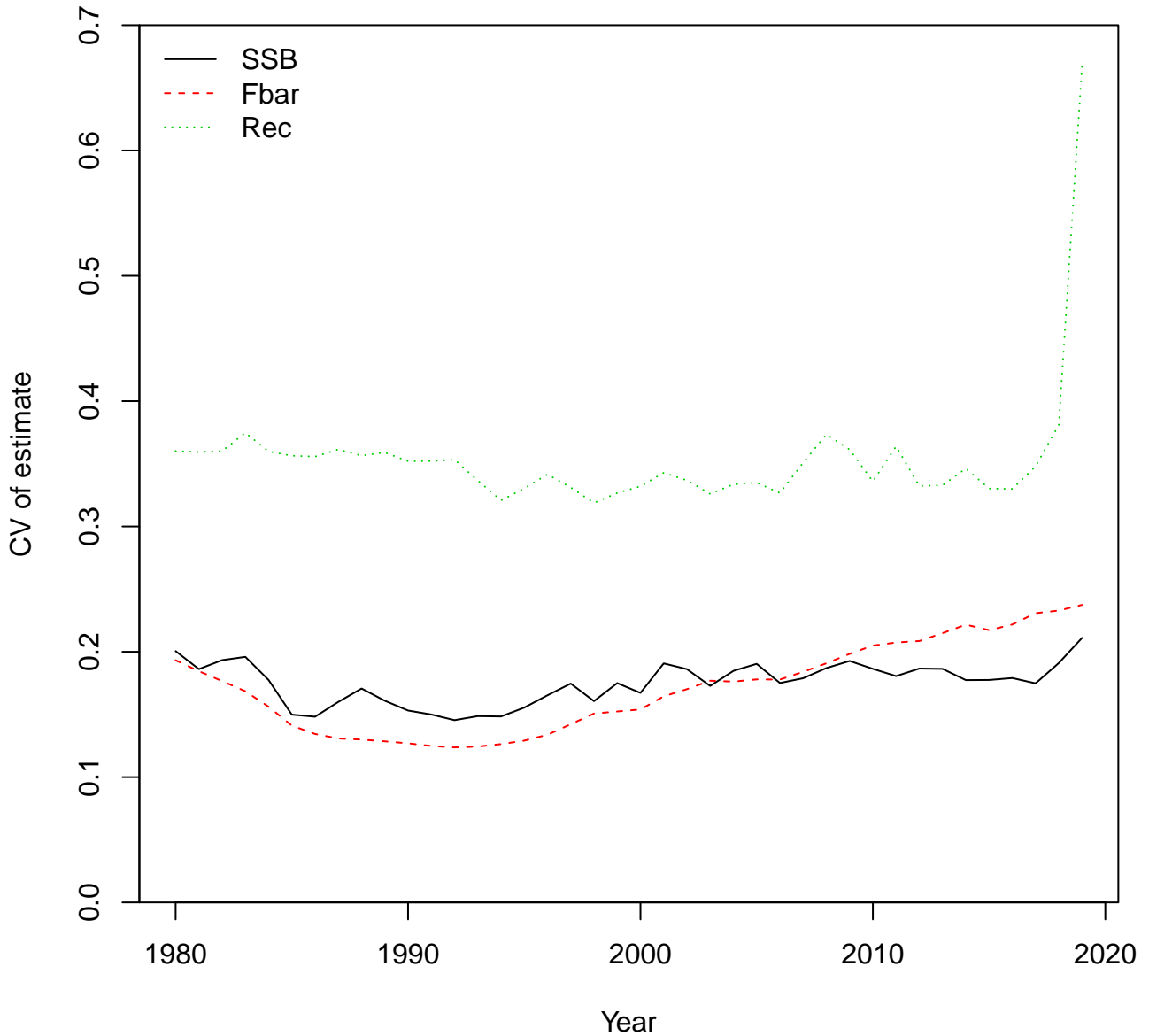
f) Autocorrelation of Residuals



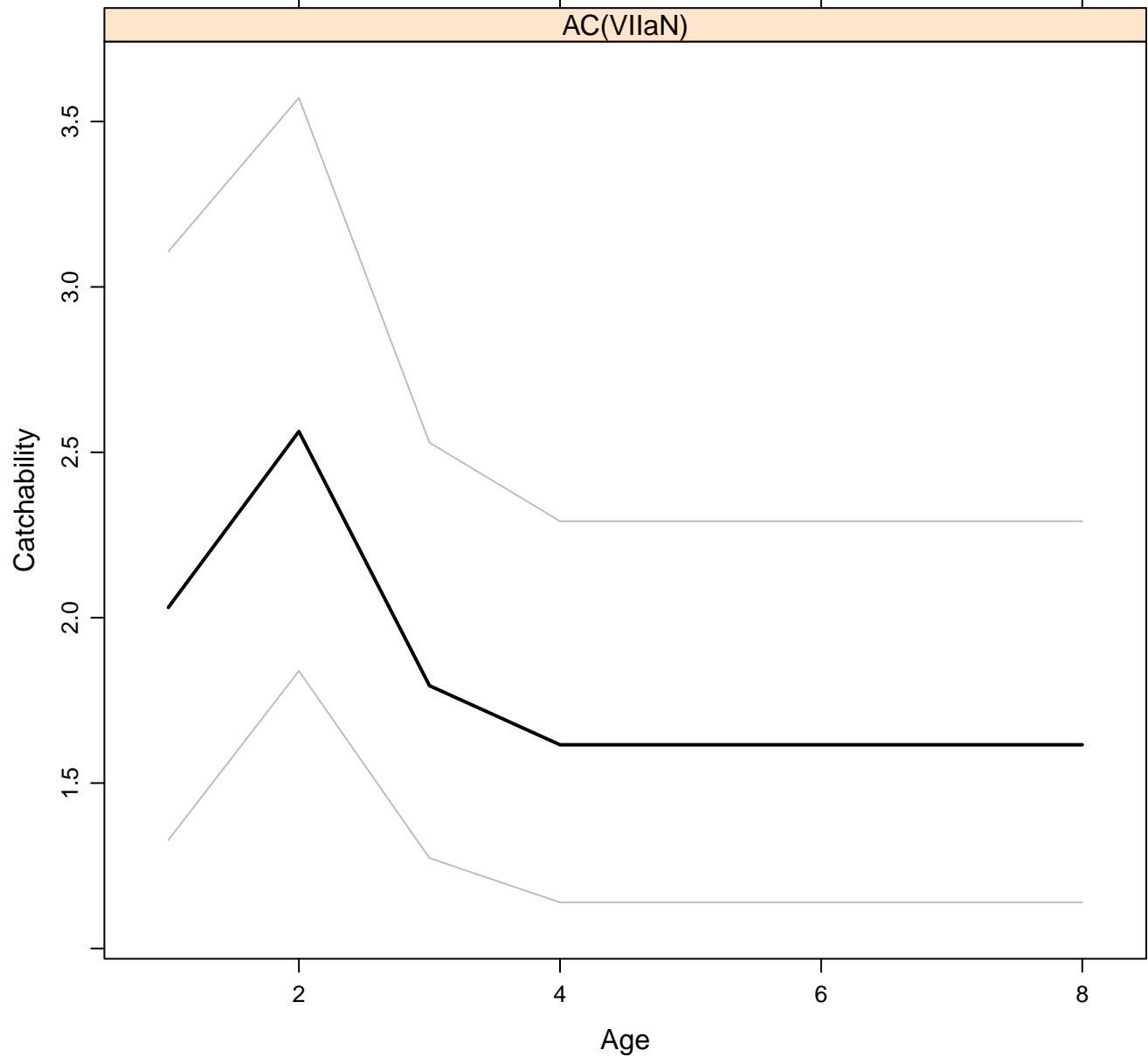
# ISH\_assessment 2020



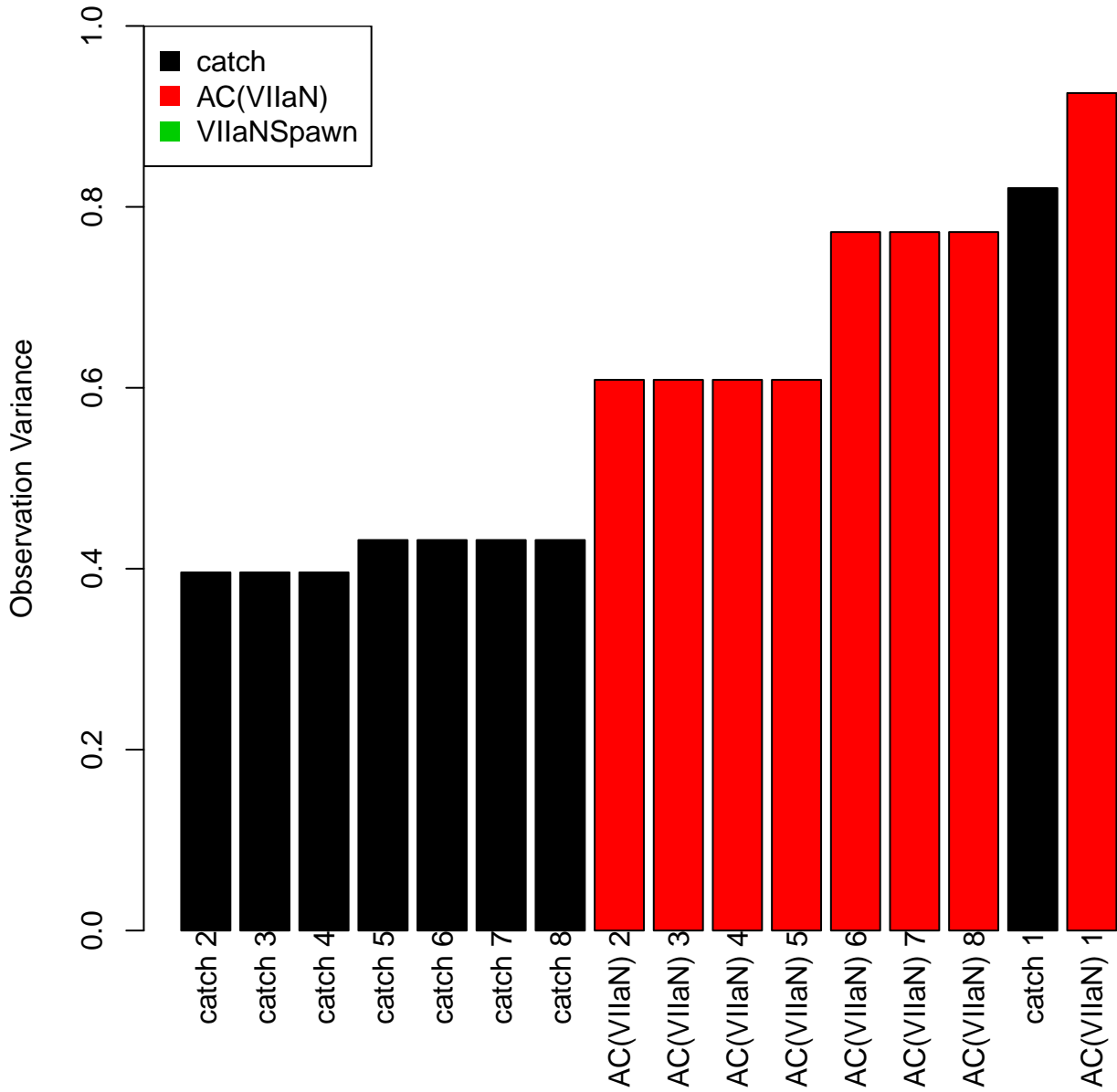
# Uncertainties of key parameters



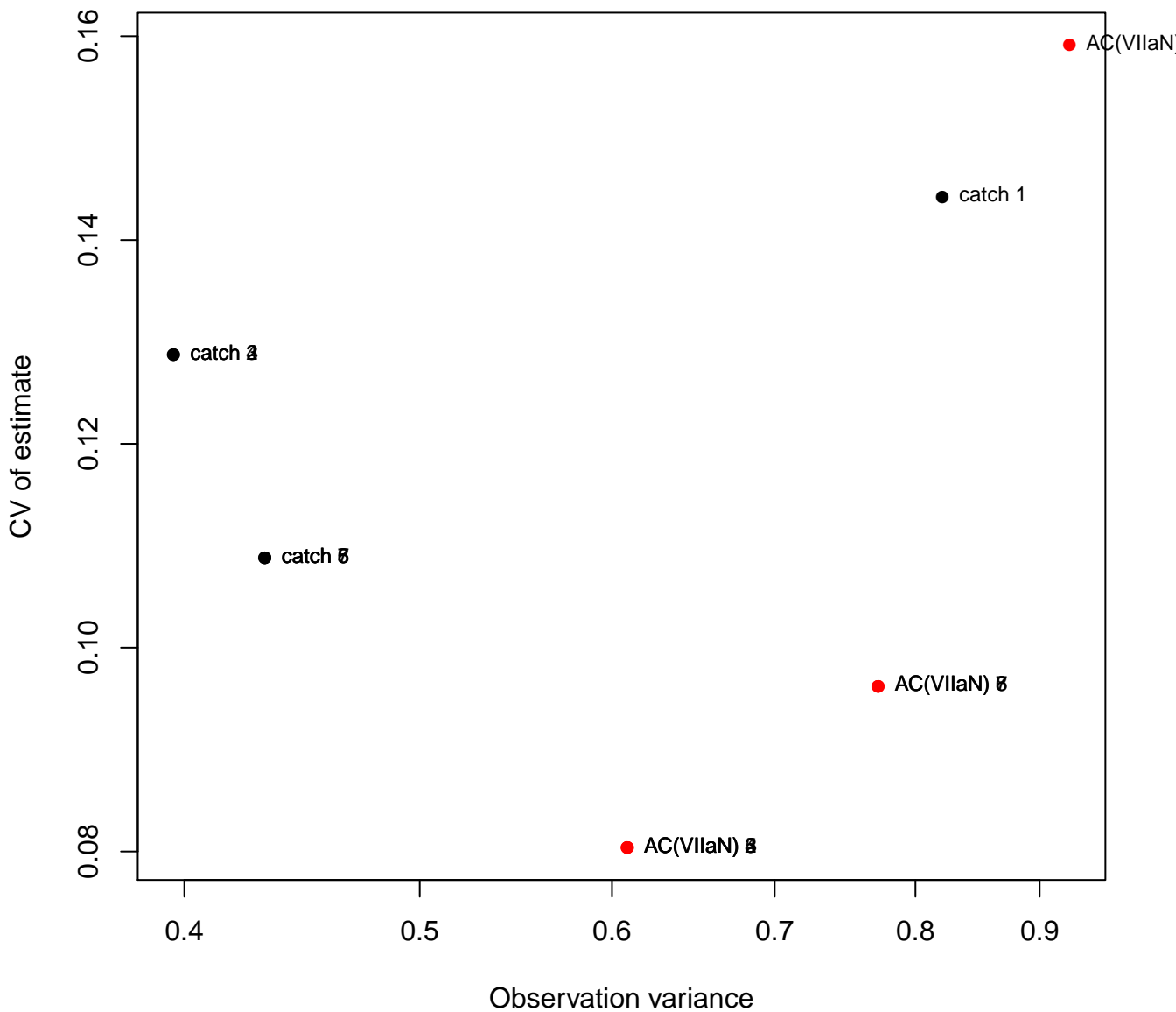
# Survey catchability parameters



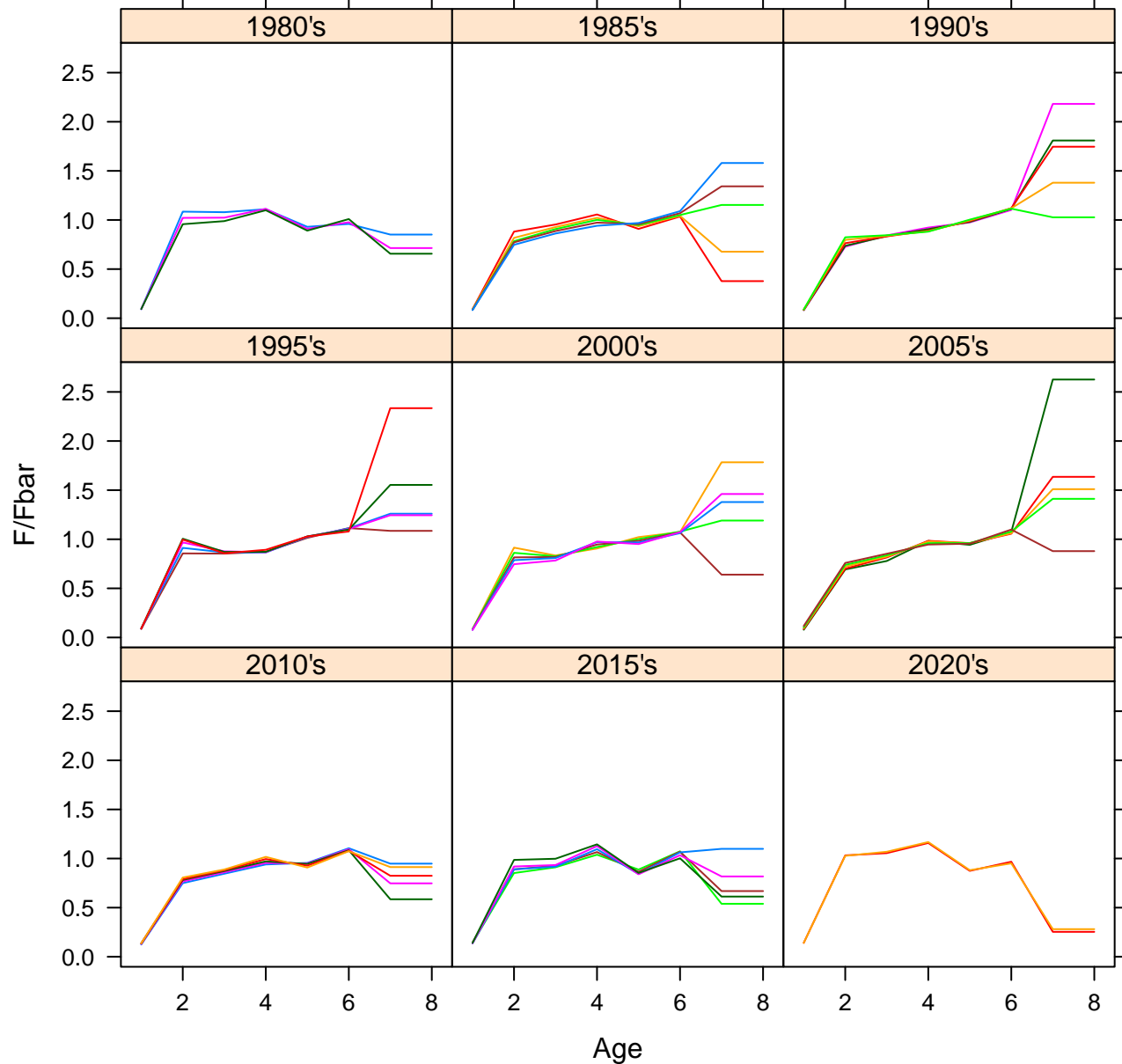
Observation variances by data source



## Observation variance vs uncertainty



# Selectivity of the Fishery by Pentad





# ISH\_assessment 2020

