

Fit of catch data

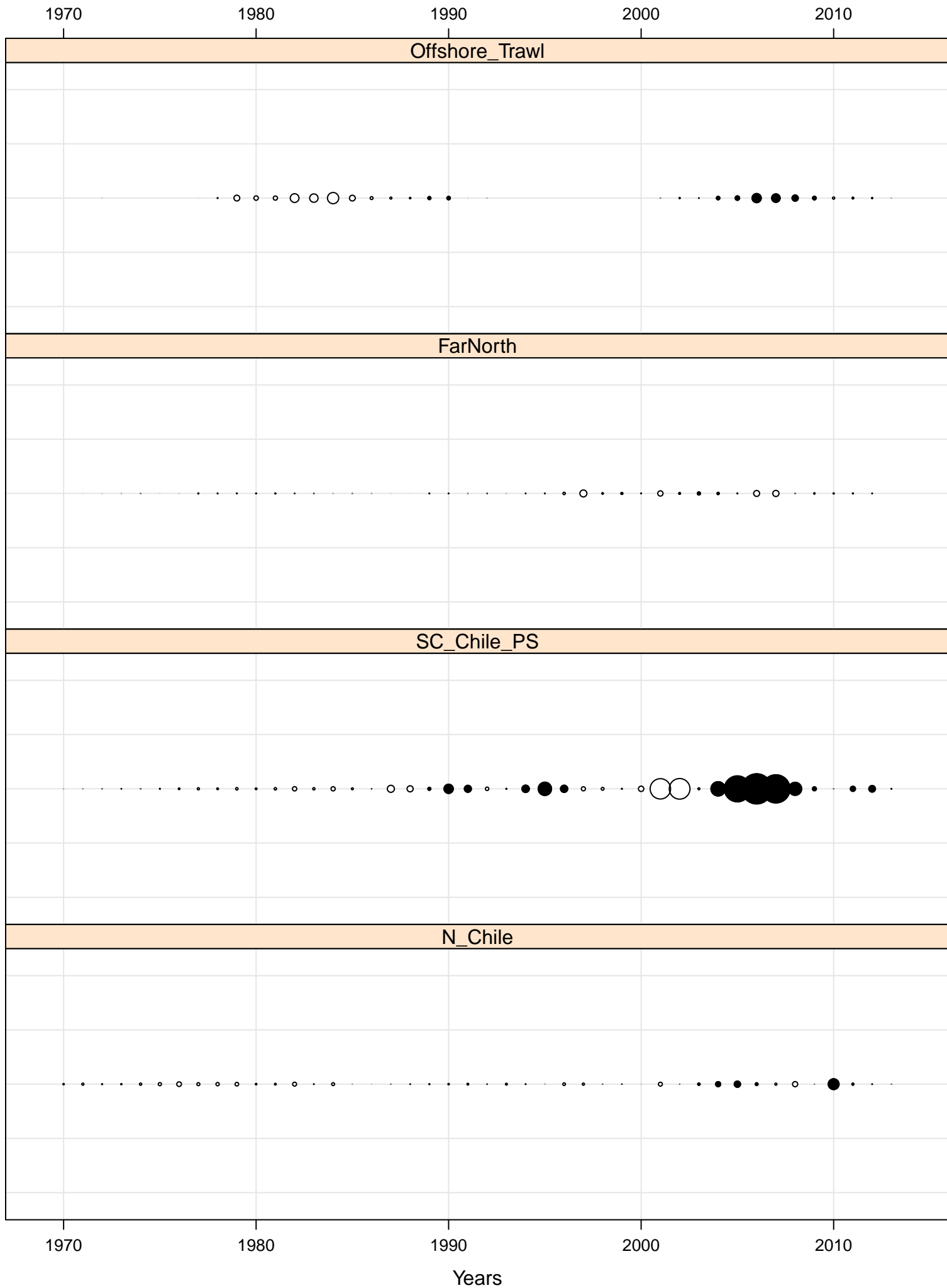
Total catch



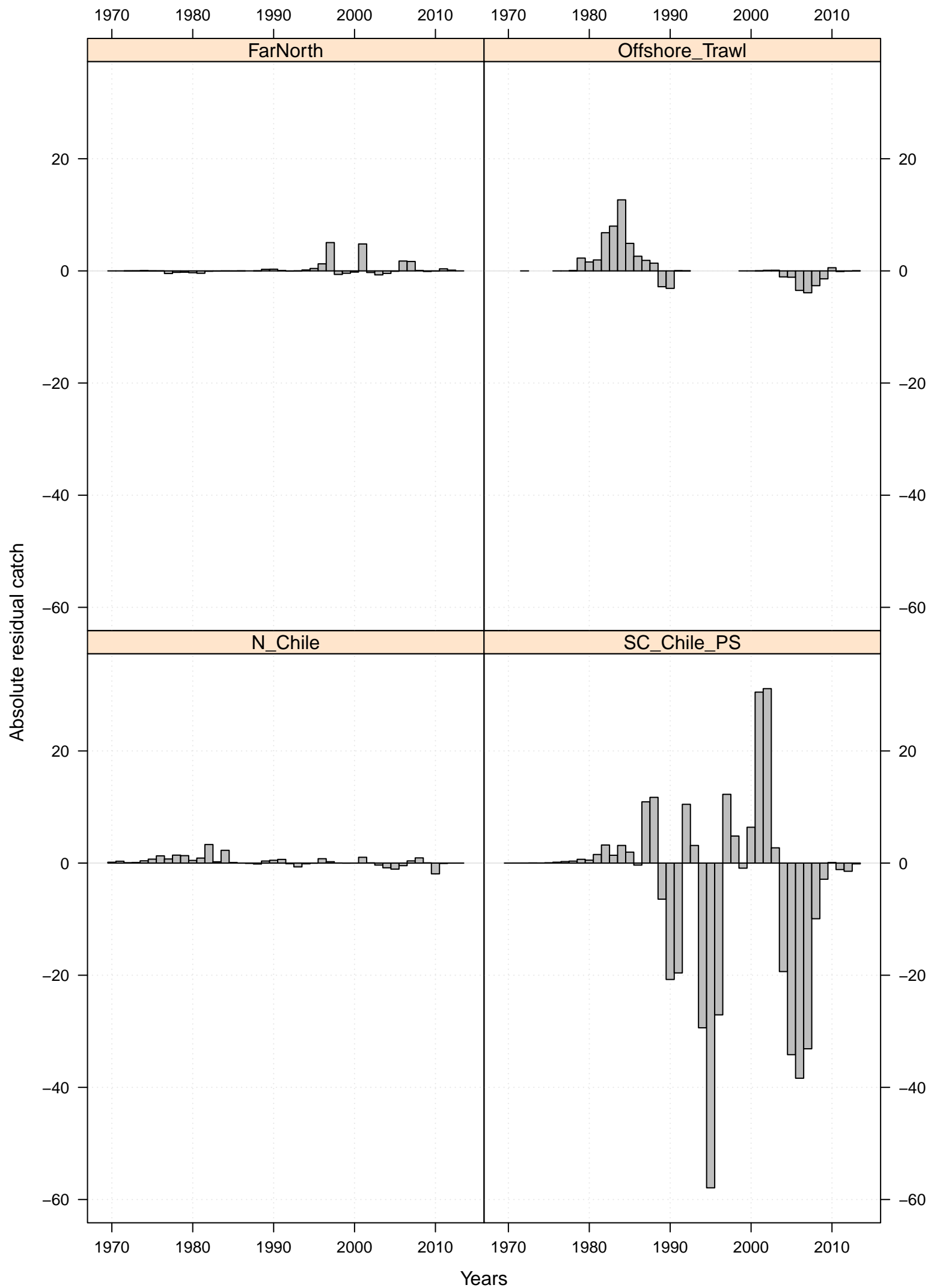
Total catch by fleet



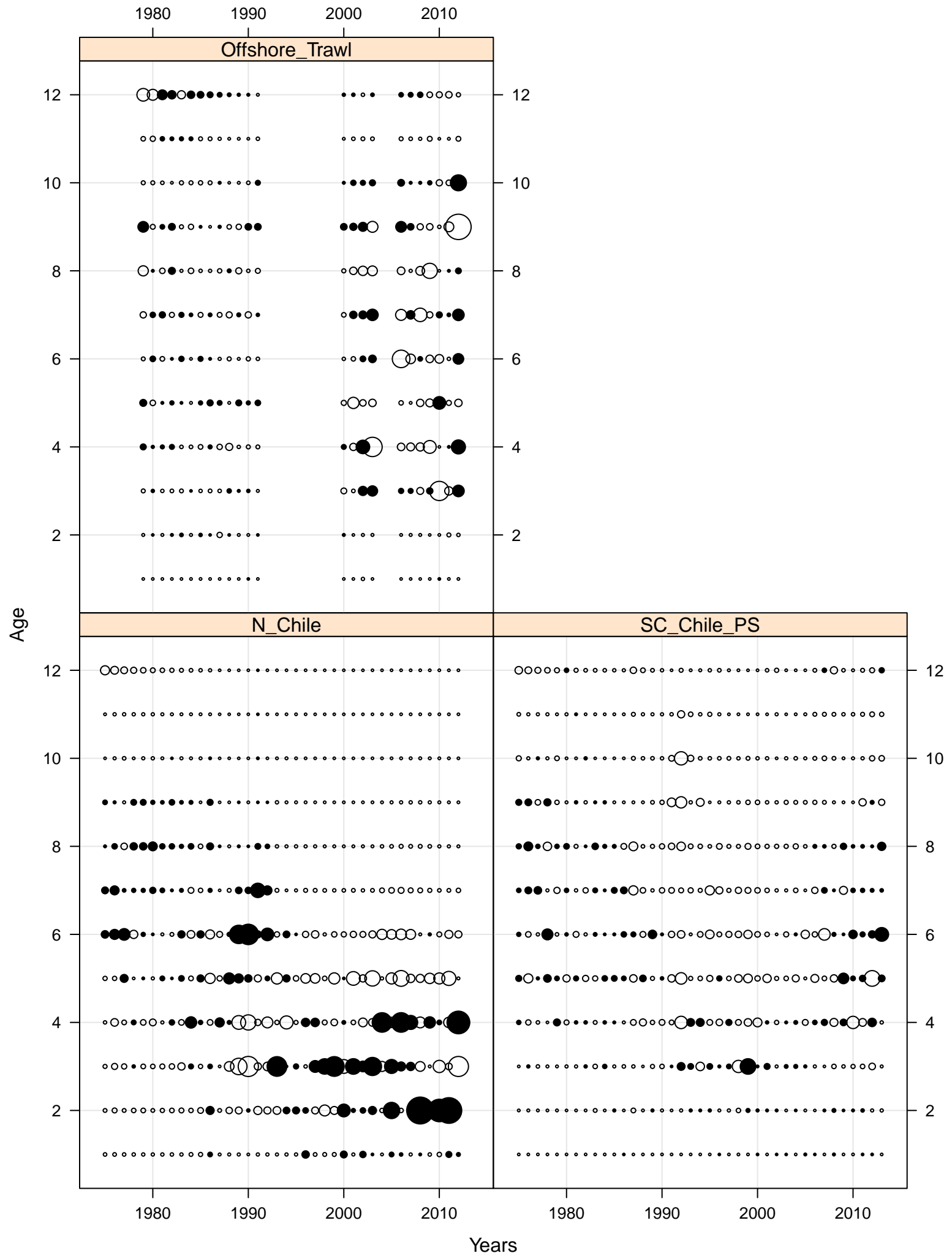
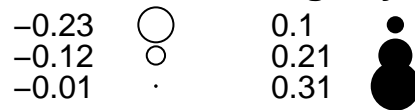
Catch residuals by fleet



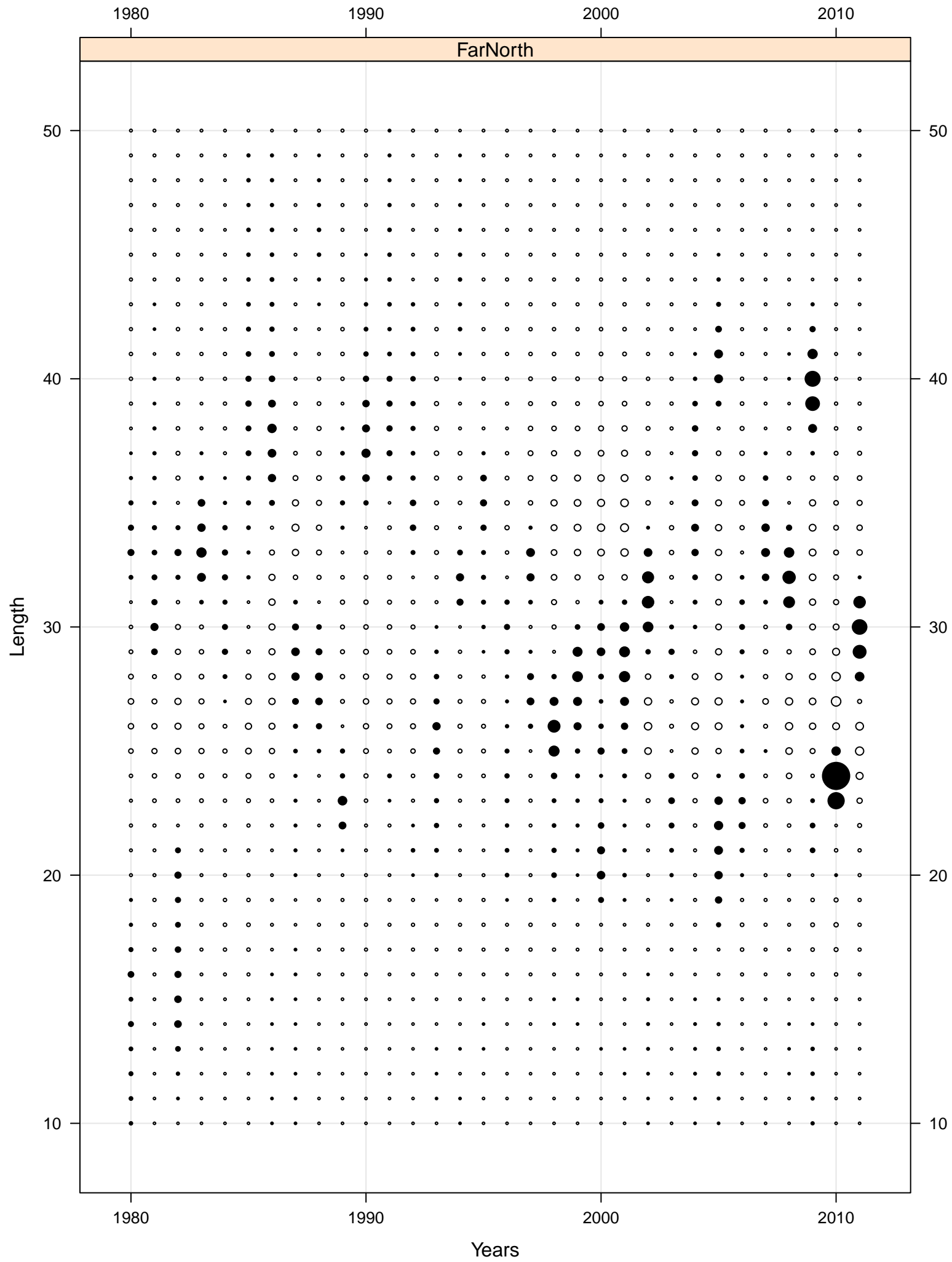
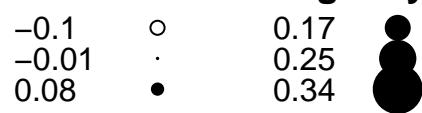
Absolute residual catch by fleet



Residuals catch-at-age by fleet



Residuals catch-at-length by fleet



Age fits N_Chile

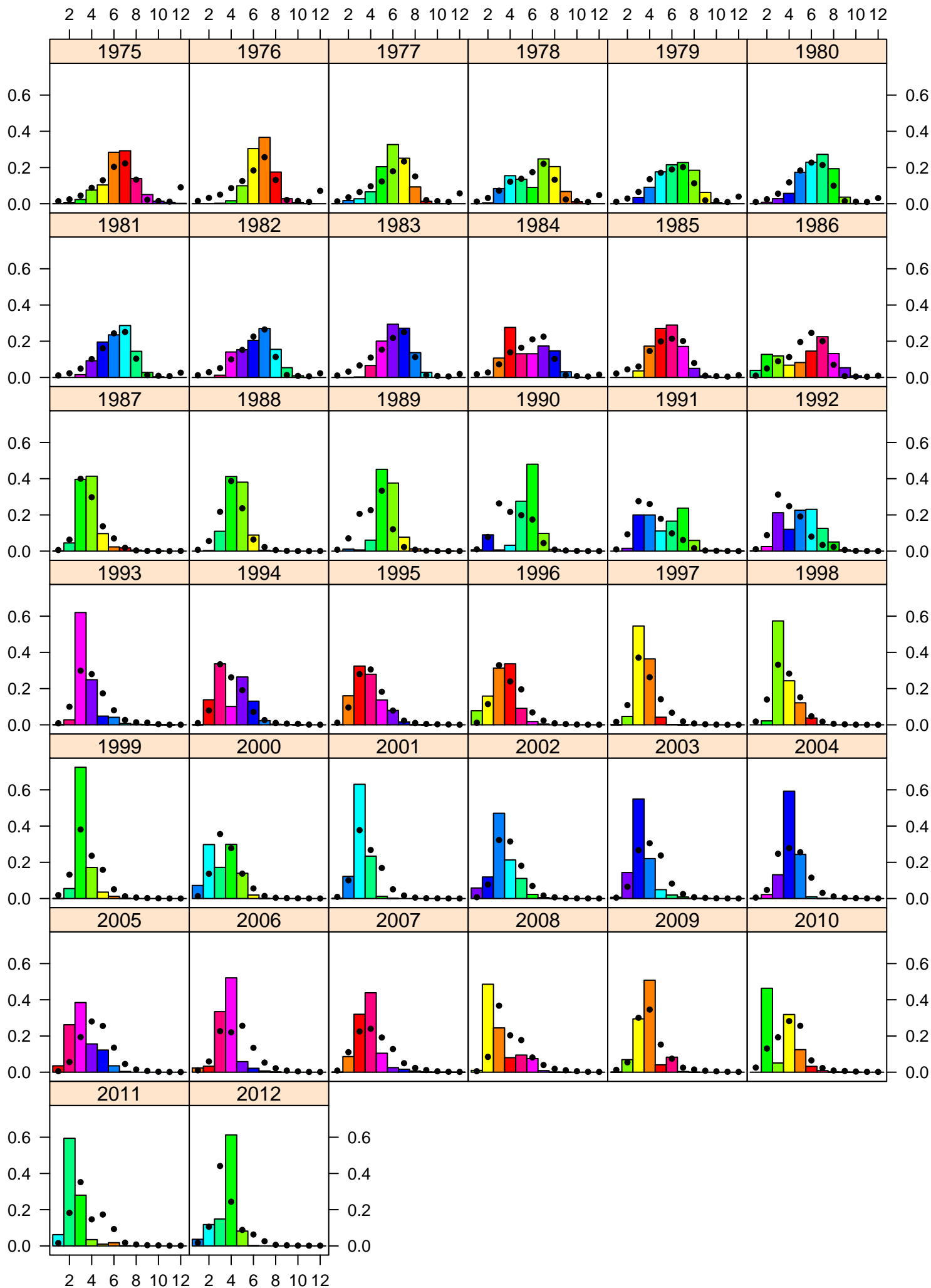
Observed



Predicted



Proportion at age



Age

Age fits SC_Chile_PS

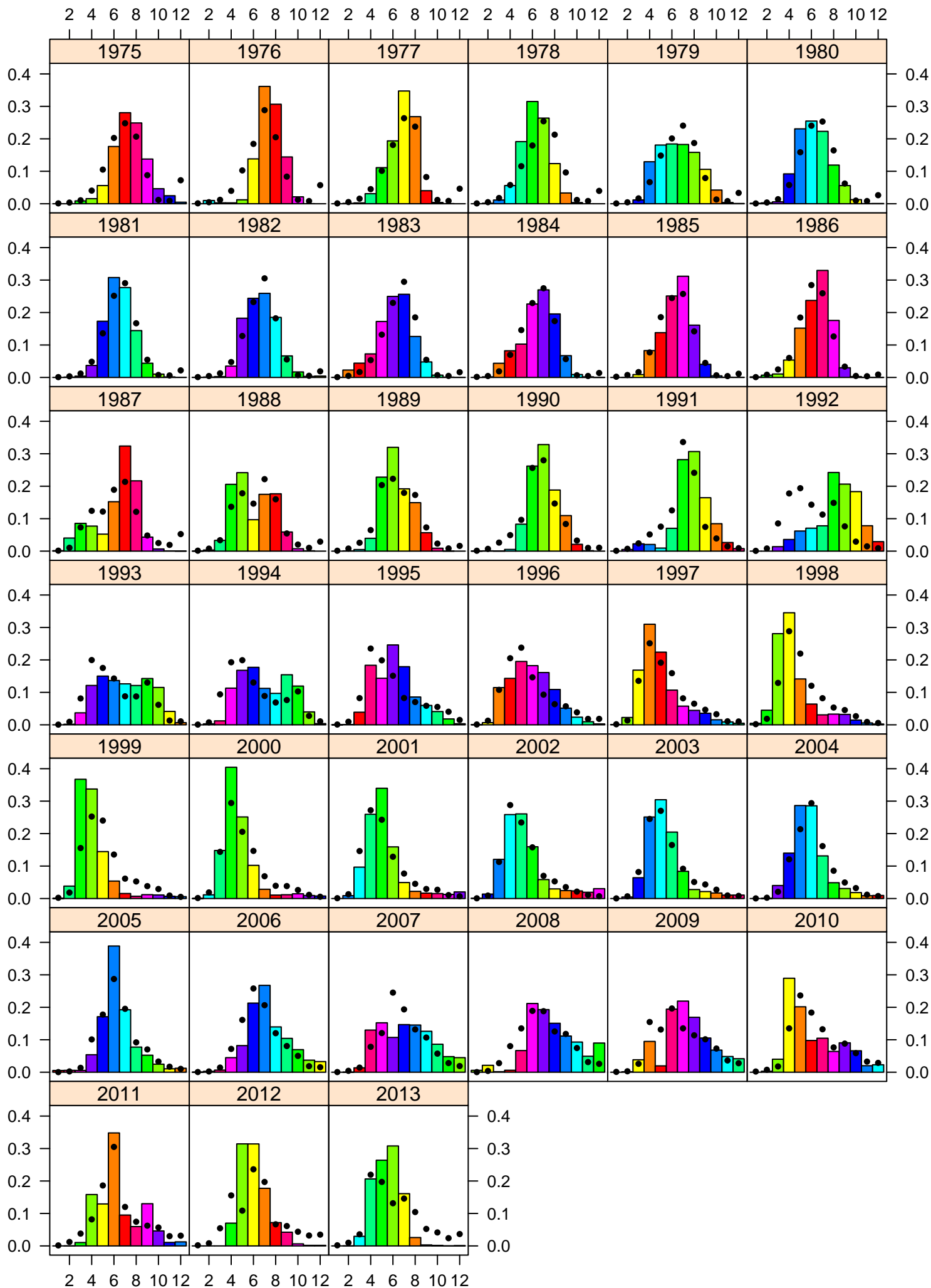
Observed



Predicted



Proportion at age



Age

Age fits Offshore_Trawl

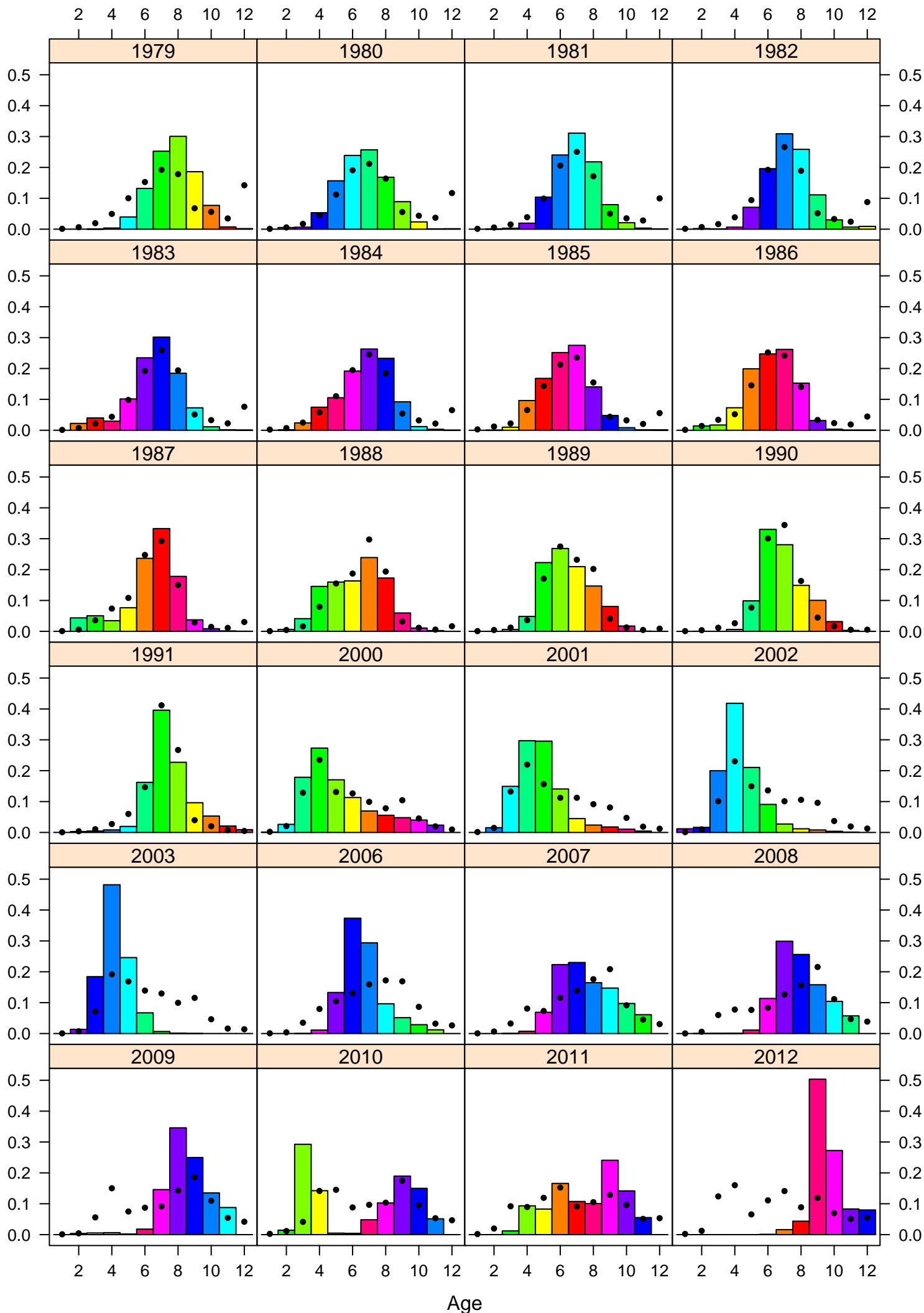
Observed



Predicted



Proportion at age



Length fits FarNorth

Observed



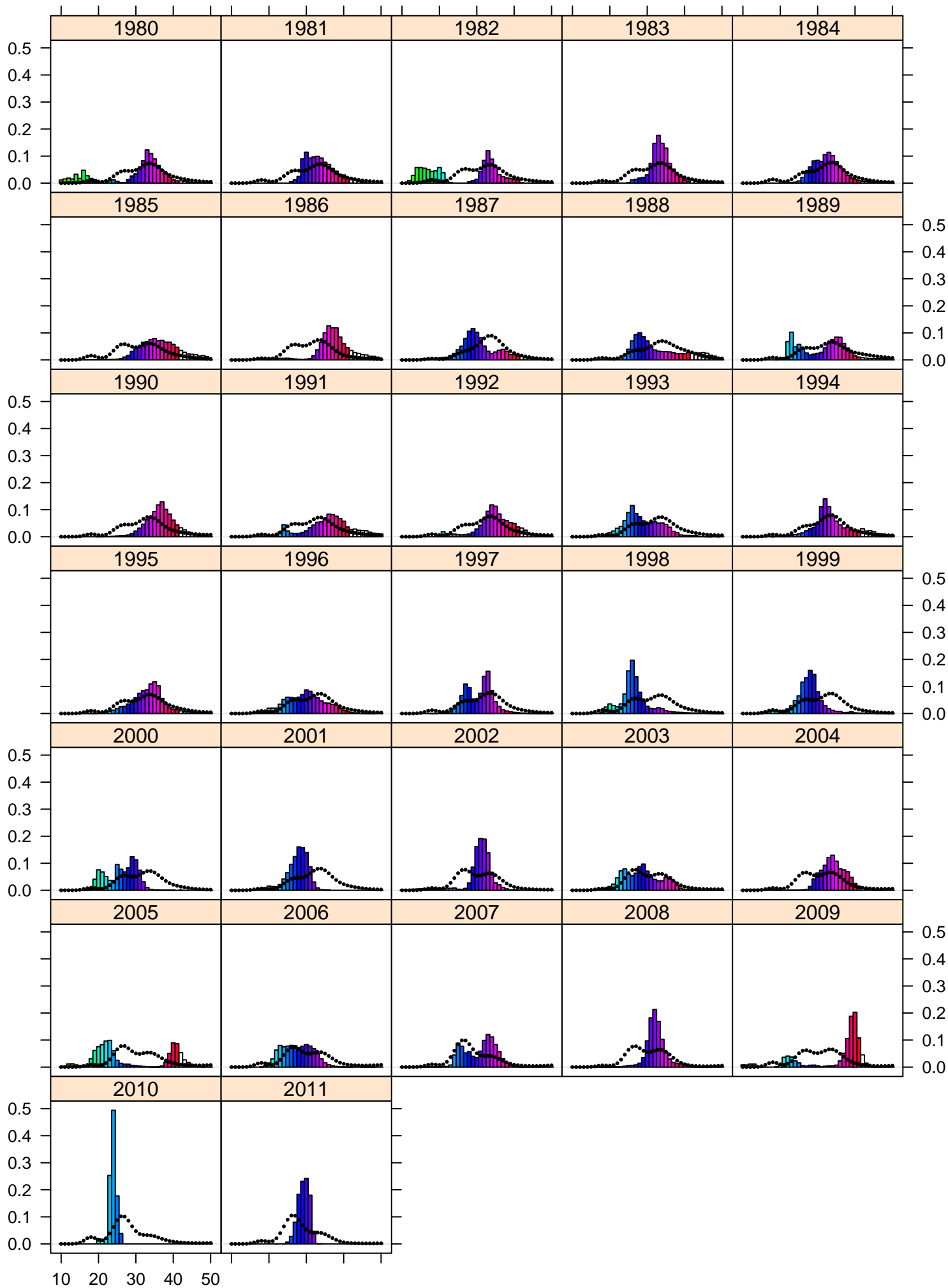
Predicted



10 20 30 40 50

10 20 30 40 50

Proportion at length



Length

Predicted and observed catches by fleet

Observed



Predicted



1970

1980

1990

2000

2010

Offshore_Trawl

SC_Chile_PS

4000

3000

2000

1000

0

FarNorth

N_Chile

4000

3000

2000

1000

0

1970

1980

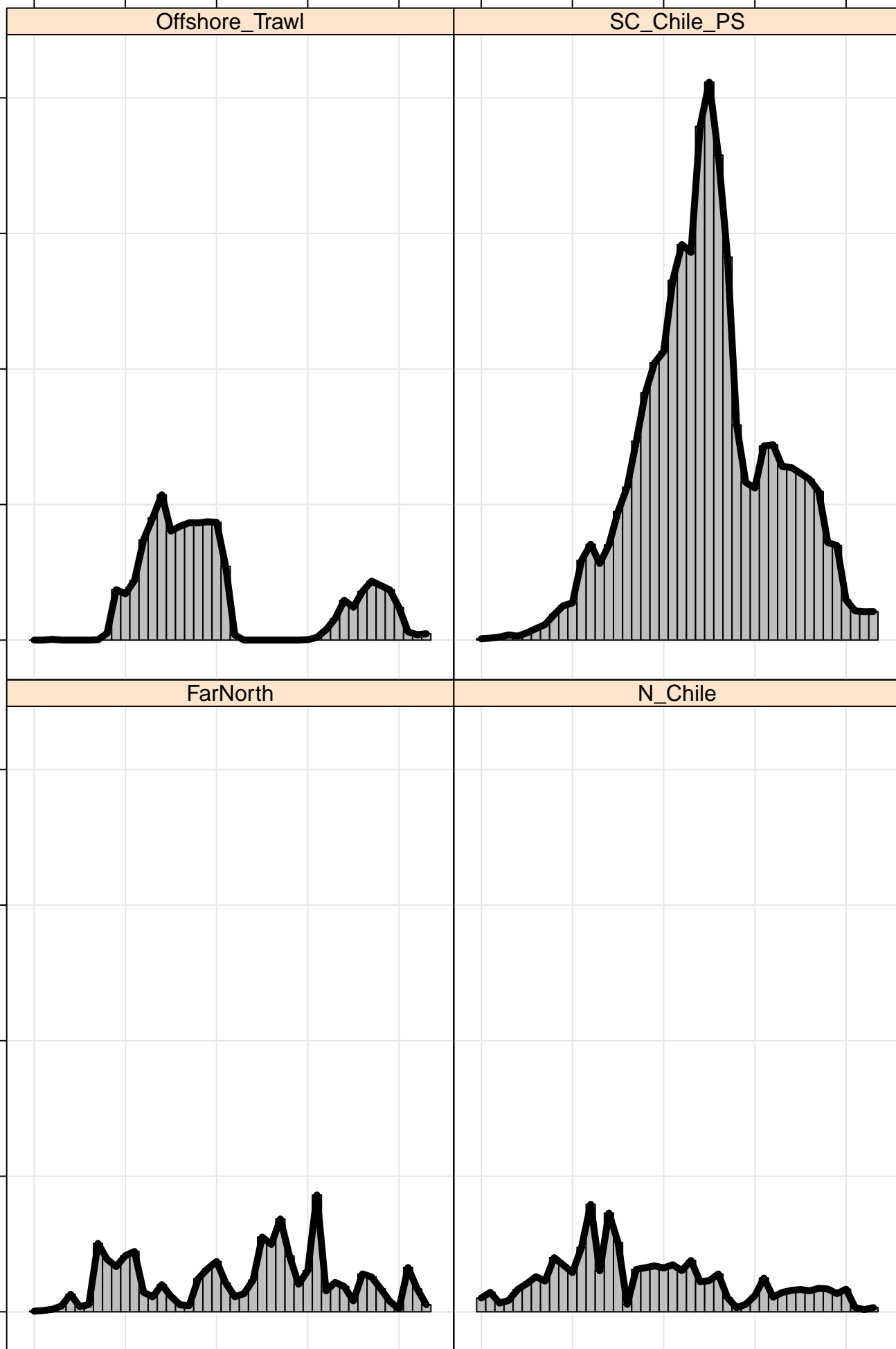
1990

2000

2010

Years

Thousand tonnes



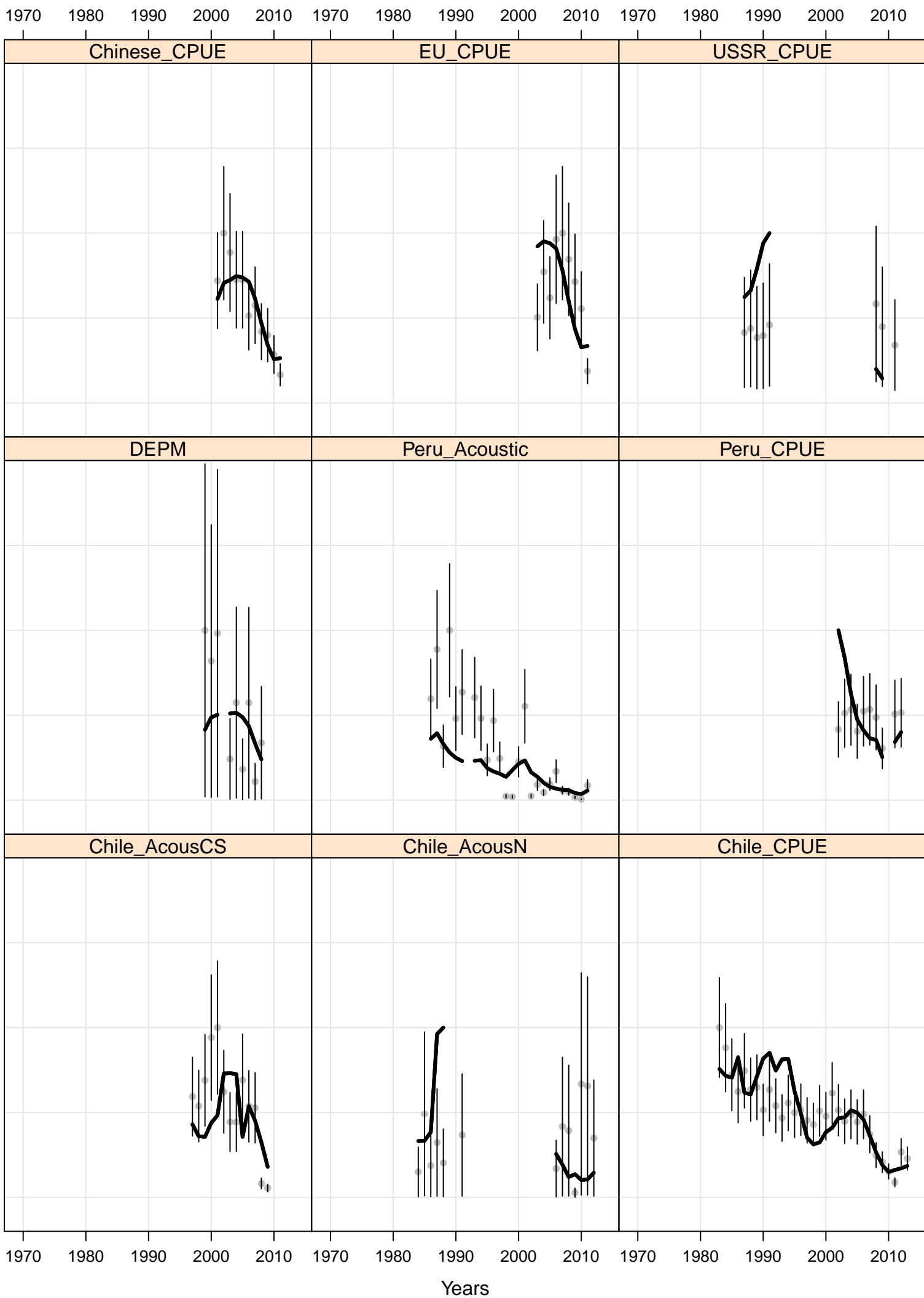
Fit of survey data

Predicted and observed indices

Observed



Predicted

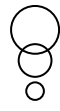


Standardized survey residuals

-11.03

-7.54

-4.05



-0.56

2.93

6.42



USSR_CPUE

EU_CPUE

Chinese_CPUE

Peru_CPUE

Peru_Acoustic

DEPM

Chile_CPUE

Chile_AcousN

Chile_AcousCS

Log residuals

1970

1980

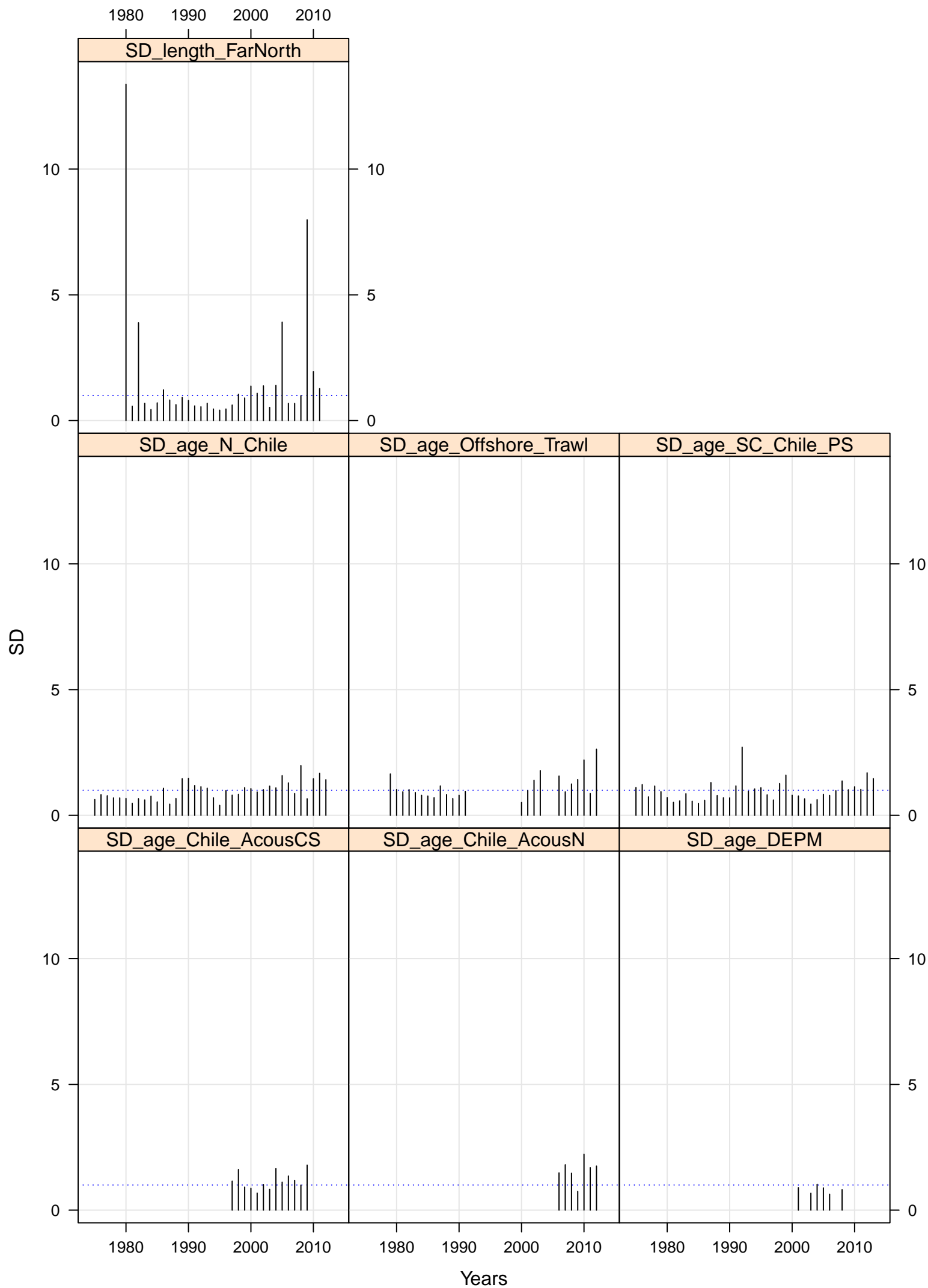
1990

2000

2010

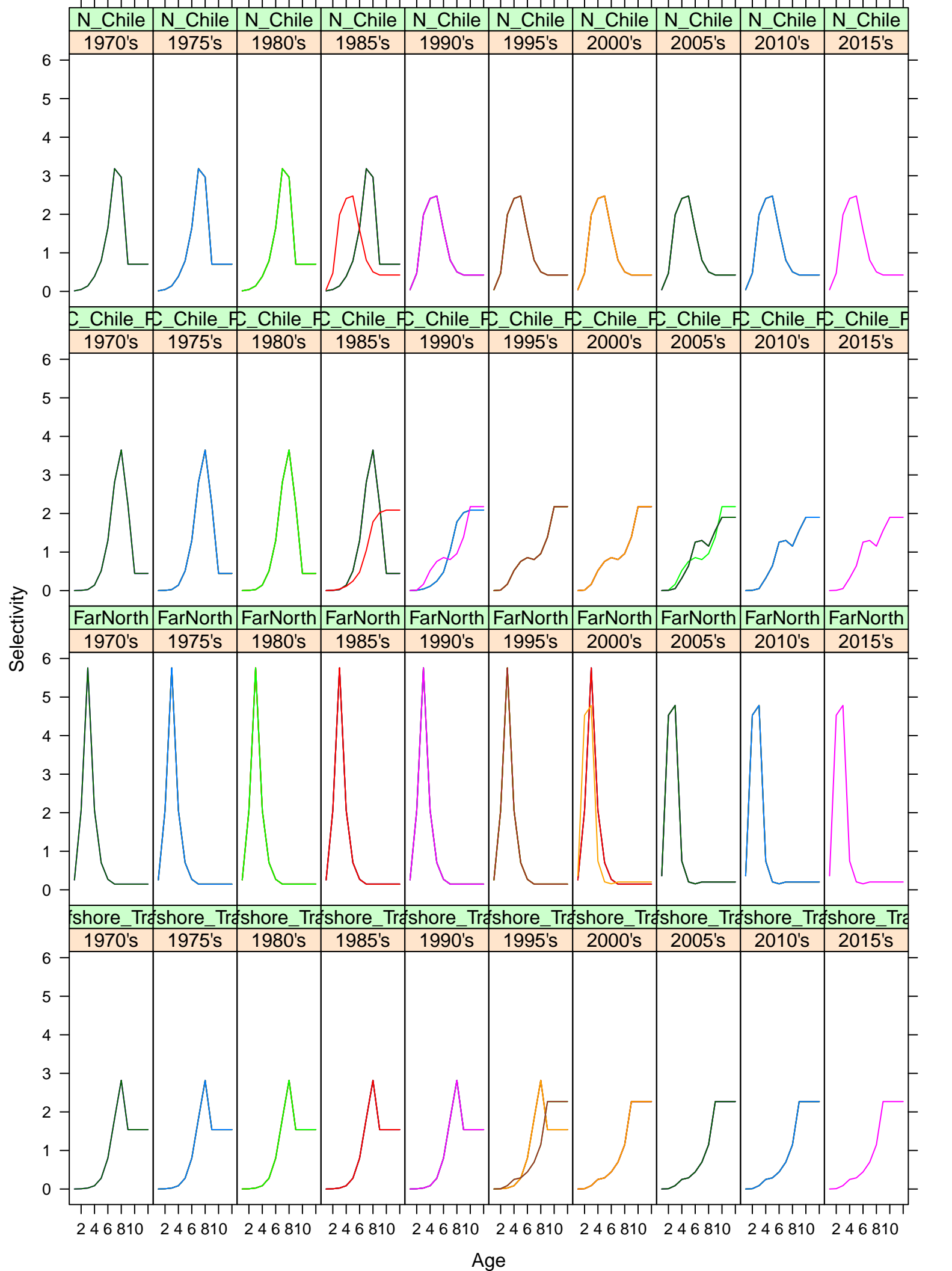
Years

SD per input series

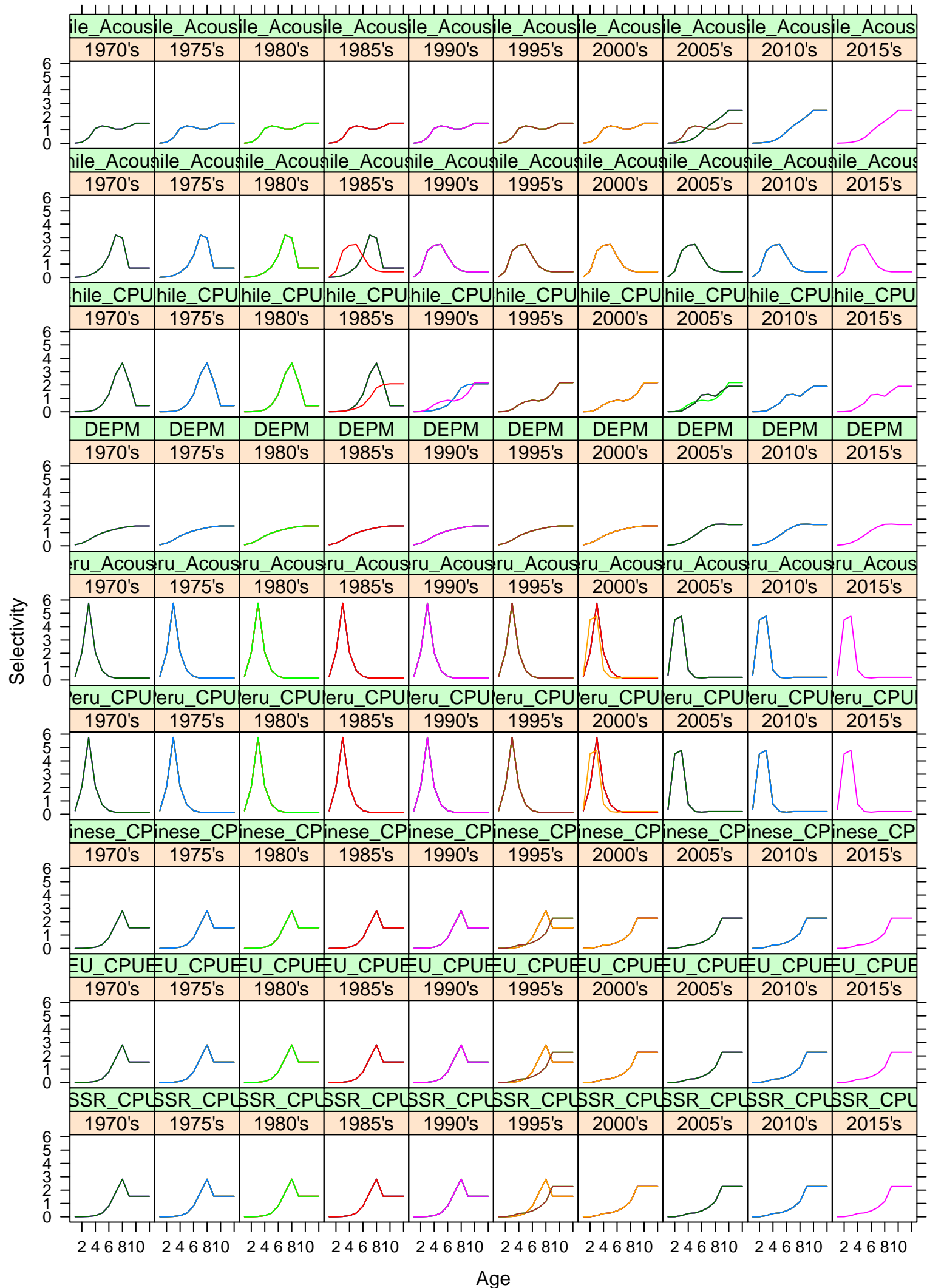


Fleet & Survey sel & F

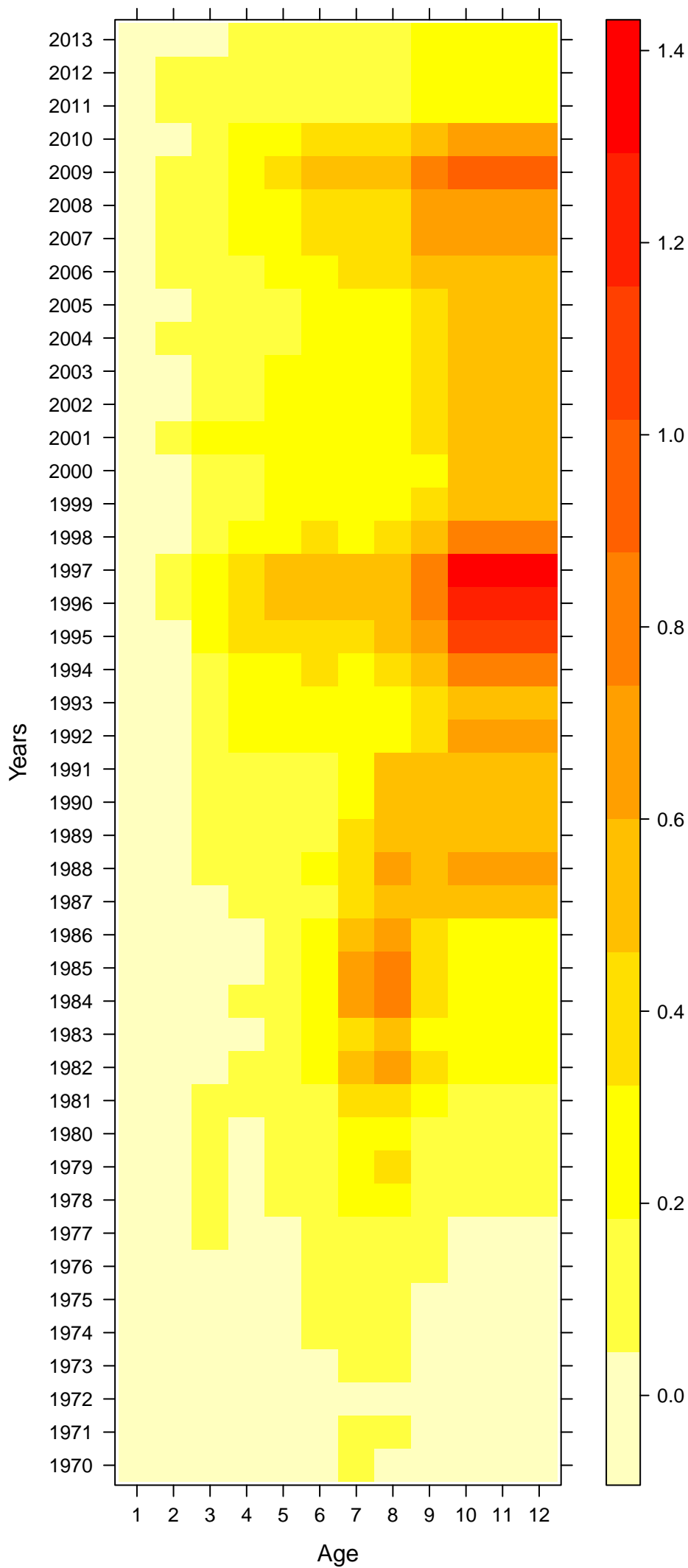
Selectivity of the Fishery by Pentad



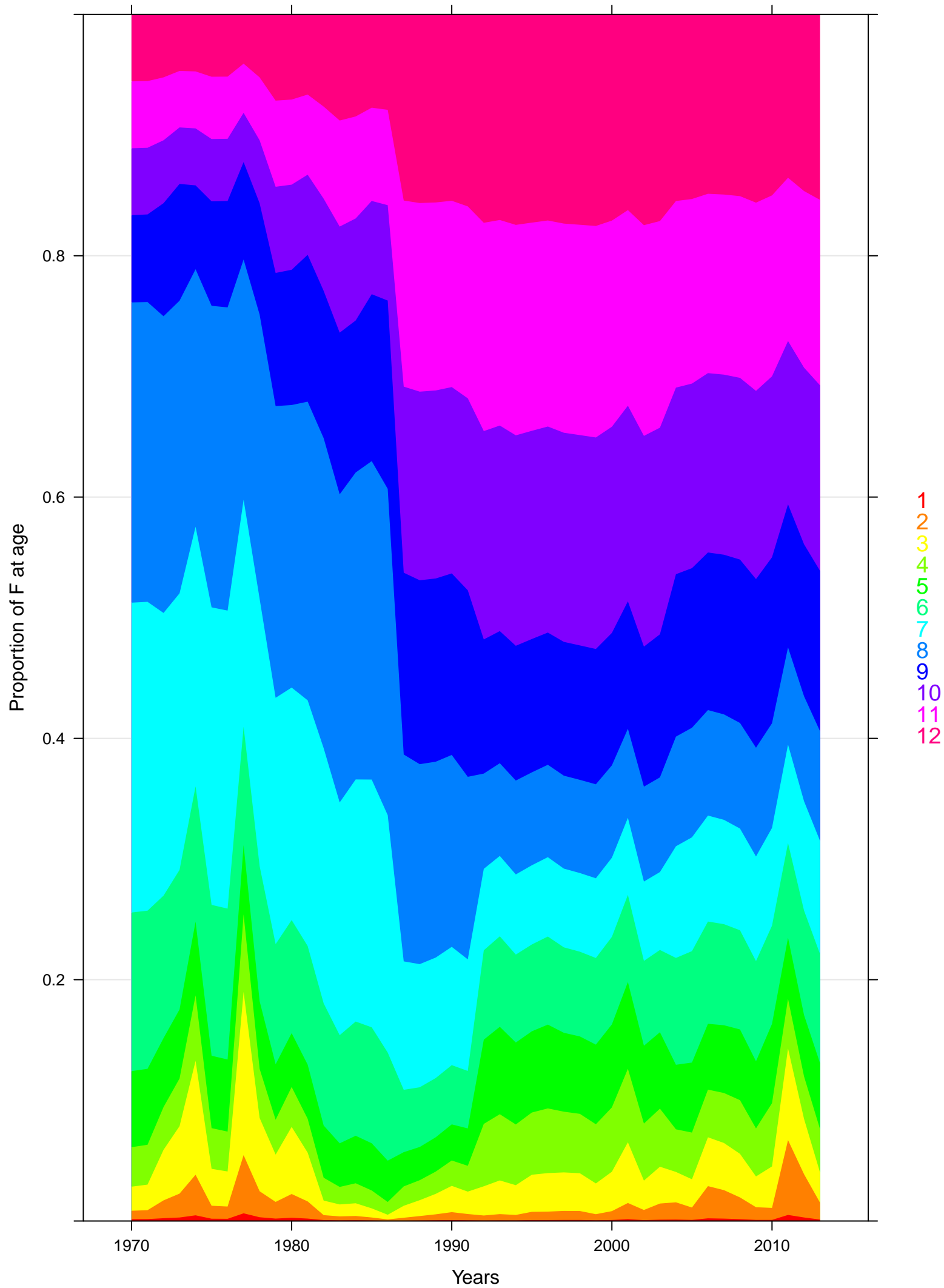
Selectivity of the survey by Pentad



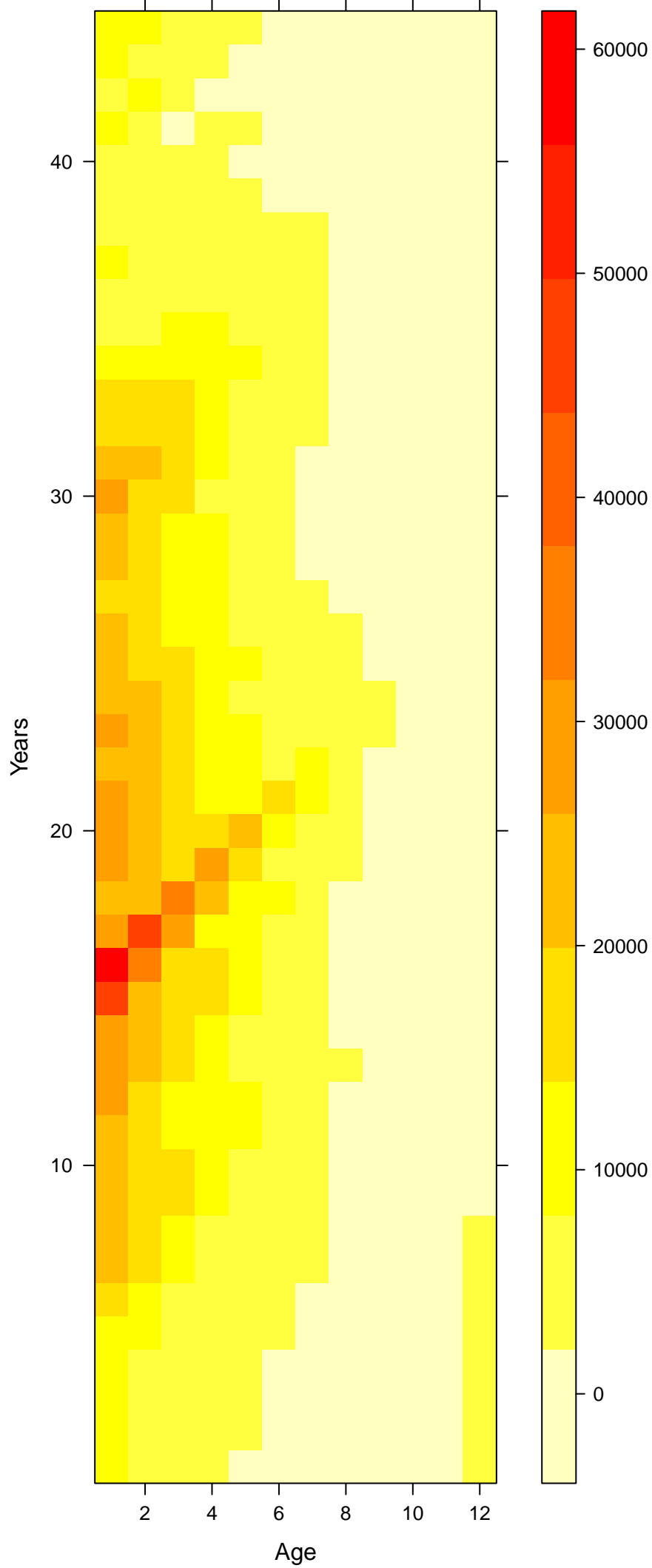
F at age



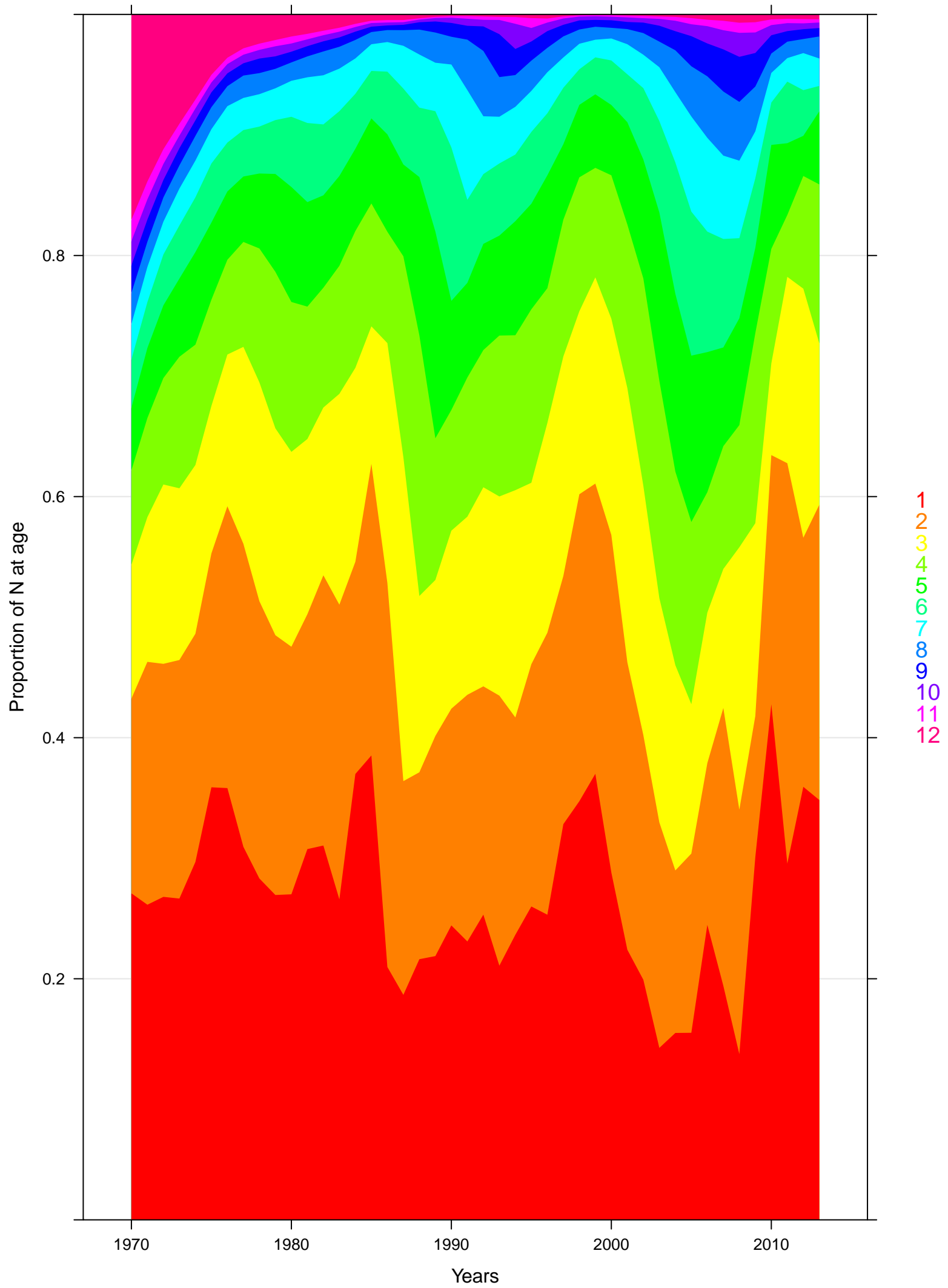
F proportion at age



N at age



Proportion at age



Fishery mean age

Observed



Modelled



Age

SC_Chile_PS

10

8

6

4

2

N_Chile

Offshore_Trawl

10

8

6

4

2

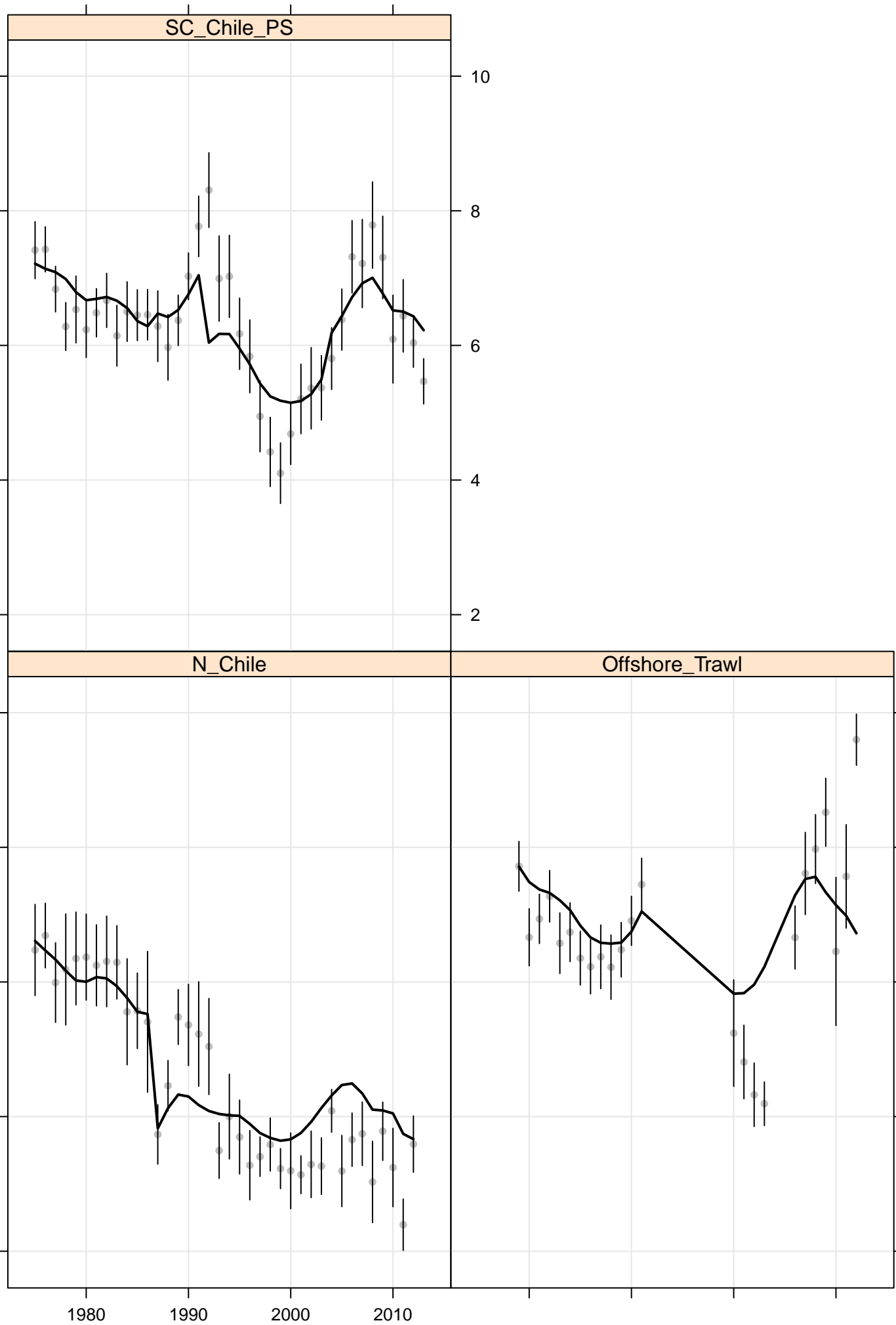
1980

1990

2000

2010

Years



Fishery mean length

Observed



Modelled



FarNorth

Length (cm)

Years

35

30

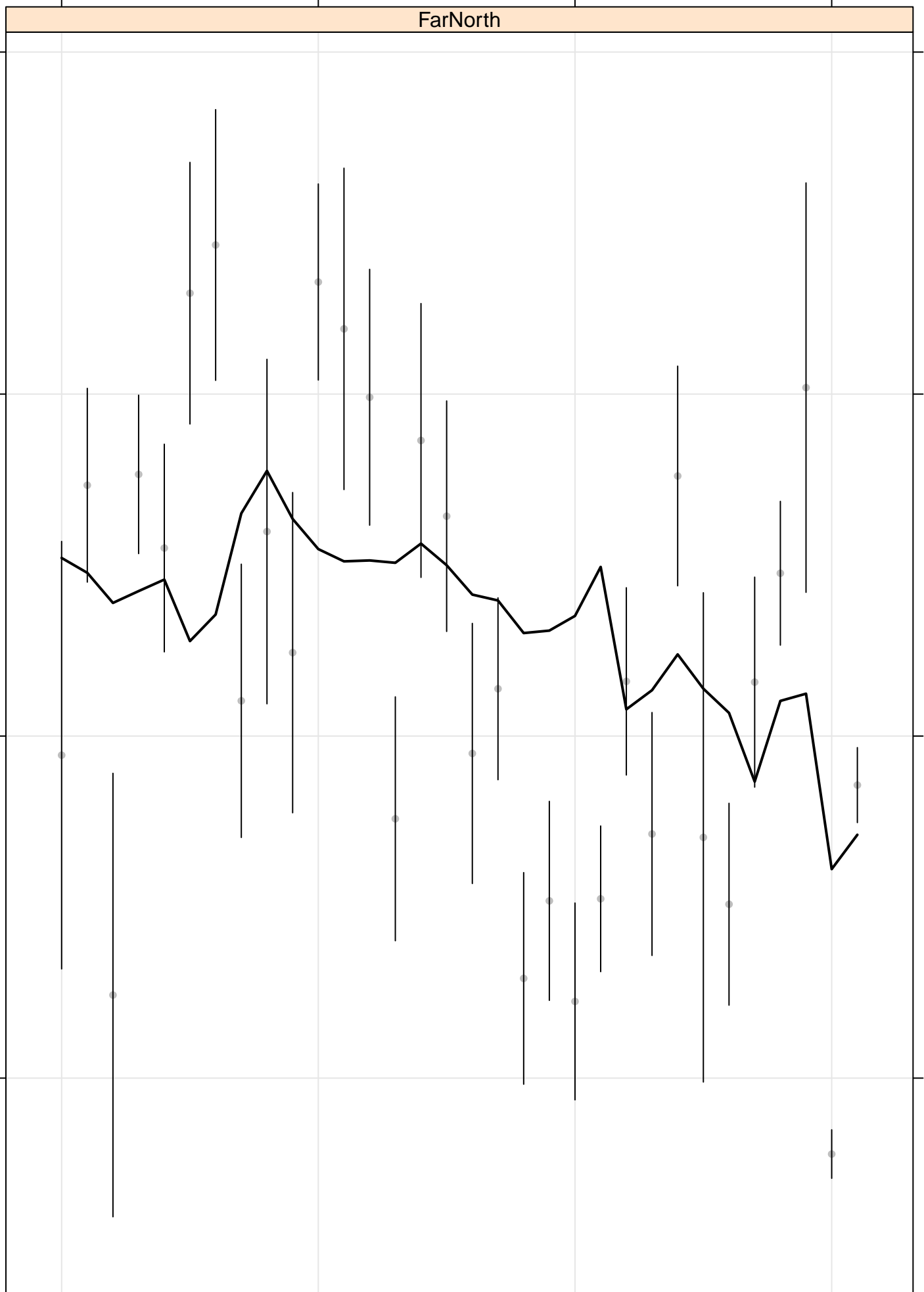
25

1980

1990

2000

2010



Survey mean age

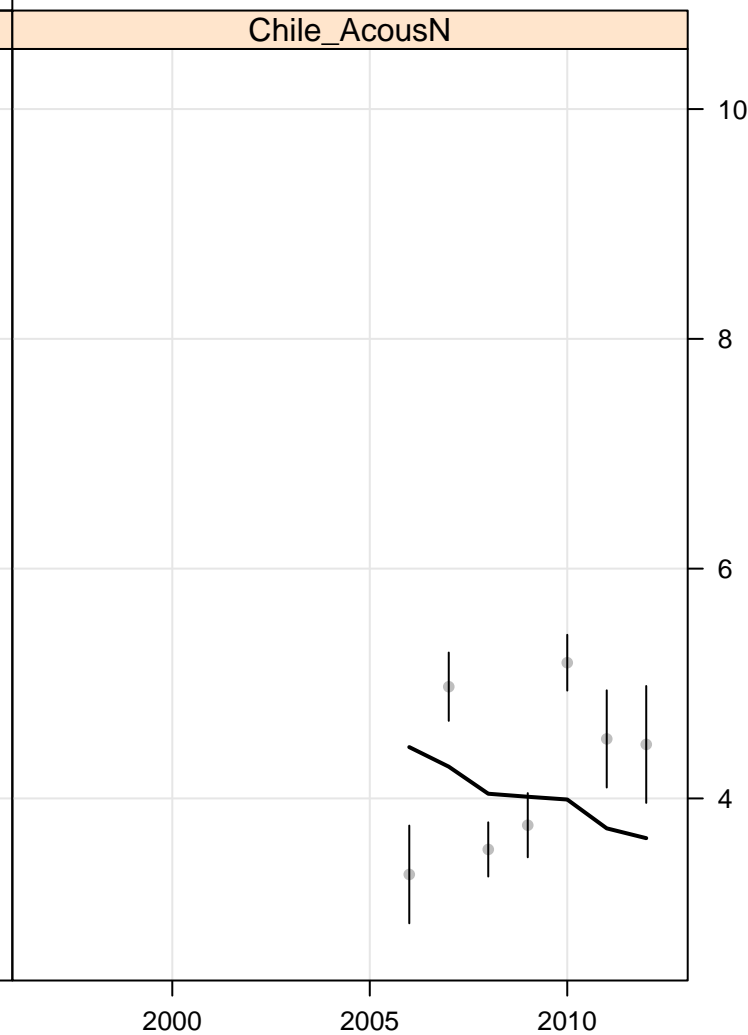
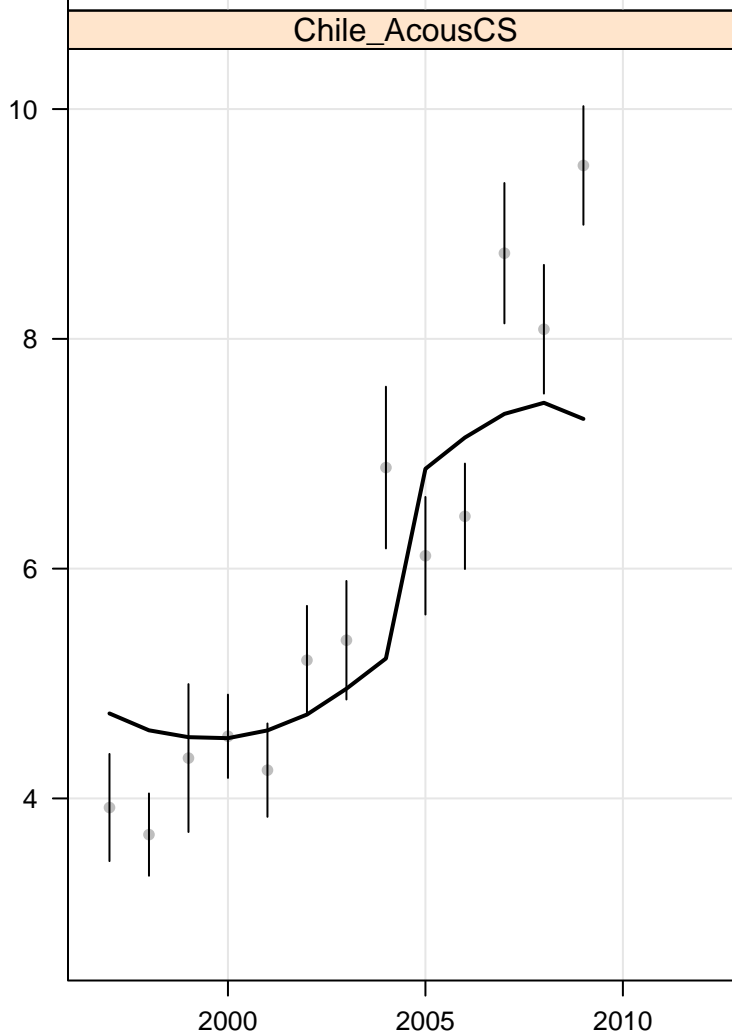
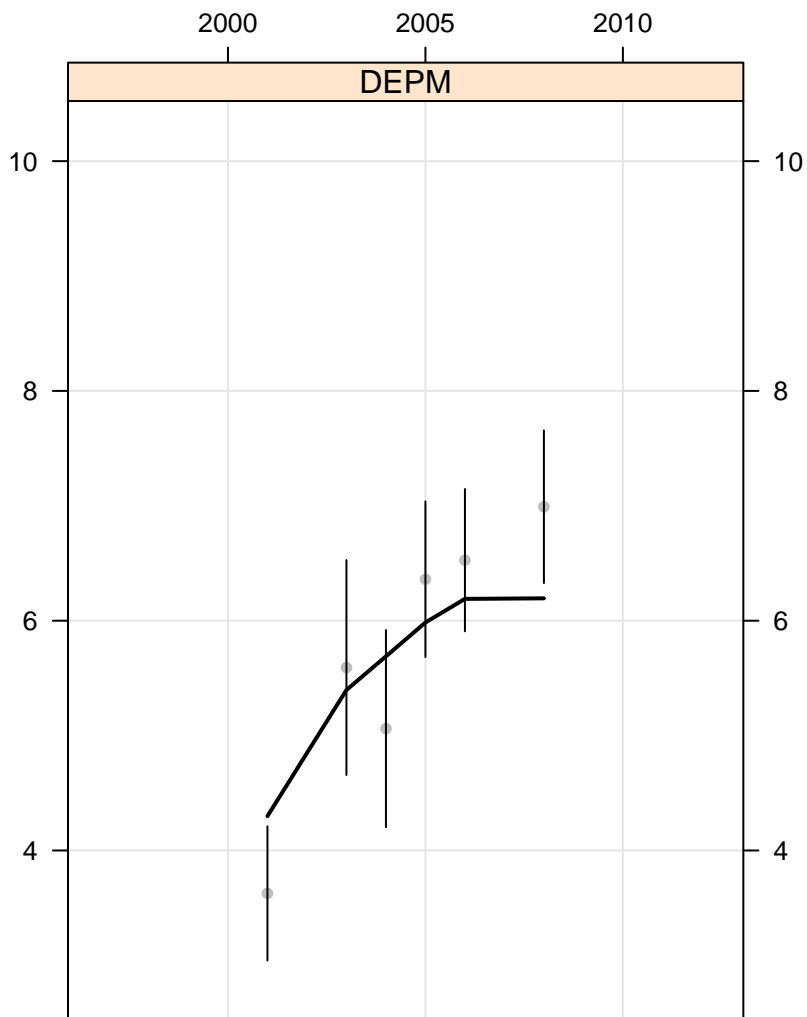
Observed



Modelled



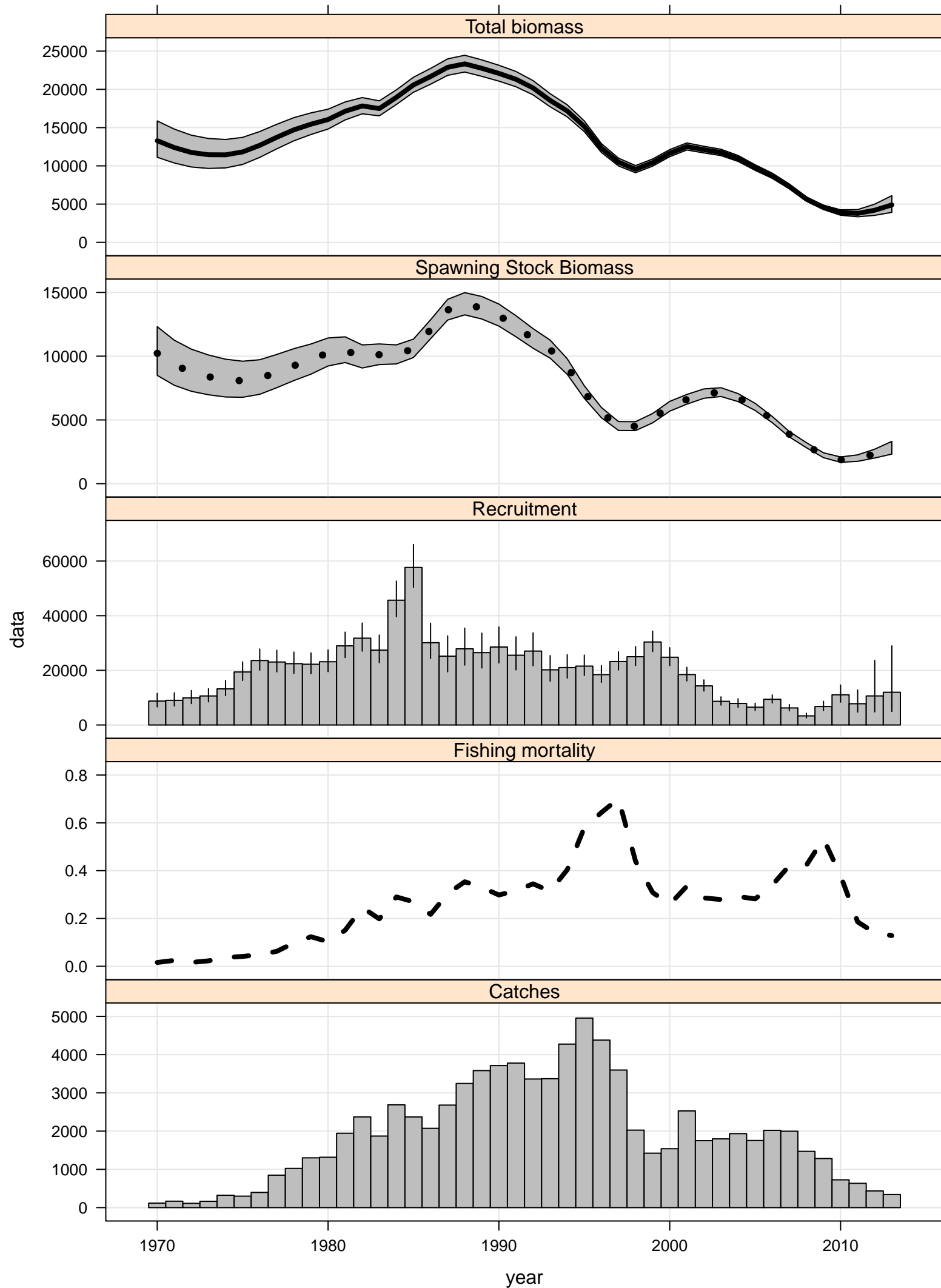
Age



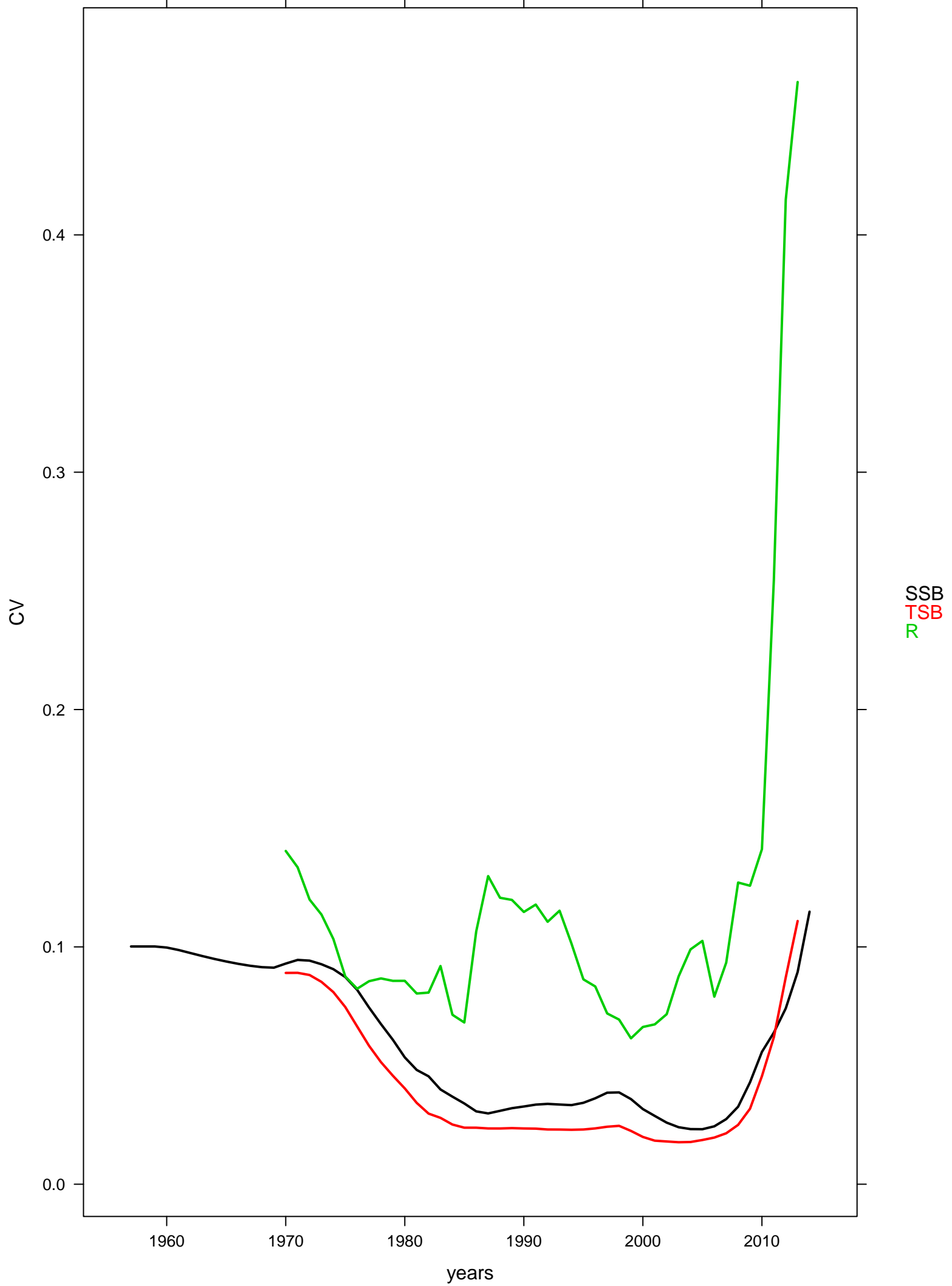
Years

Stock summary

Summary sheet



Uncertainty of key parameters



Mature – Immature fish

Mature

Immature —

Biomass in kt

20000
15000
10000
5000
0

1970

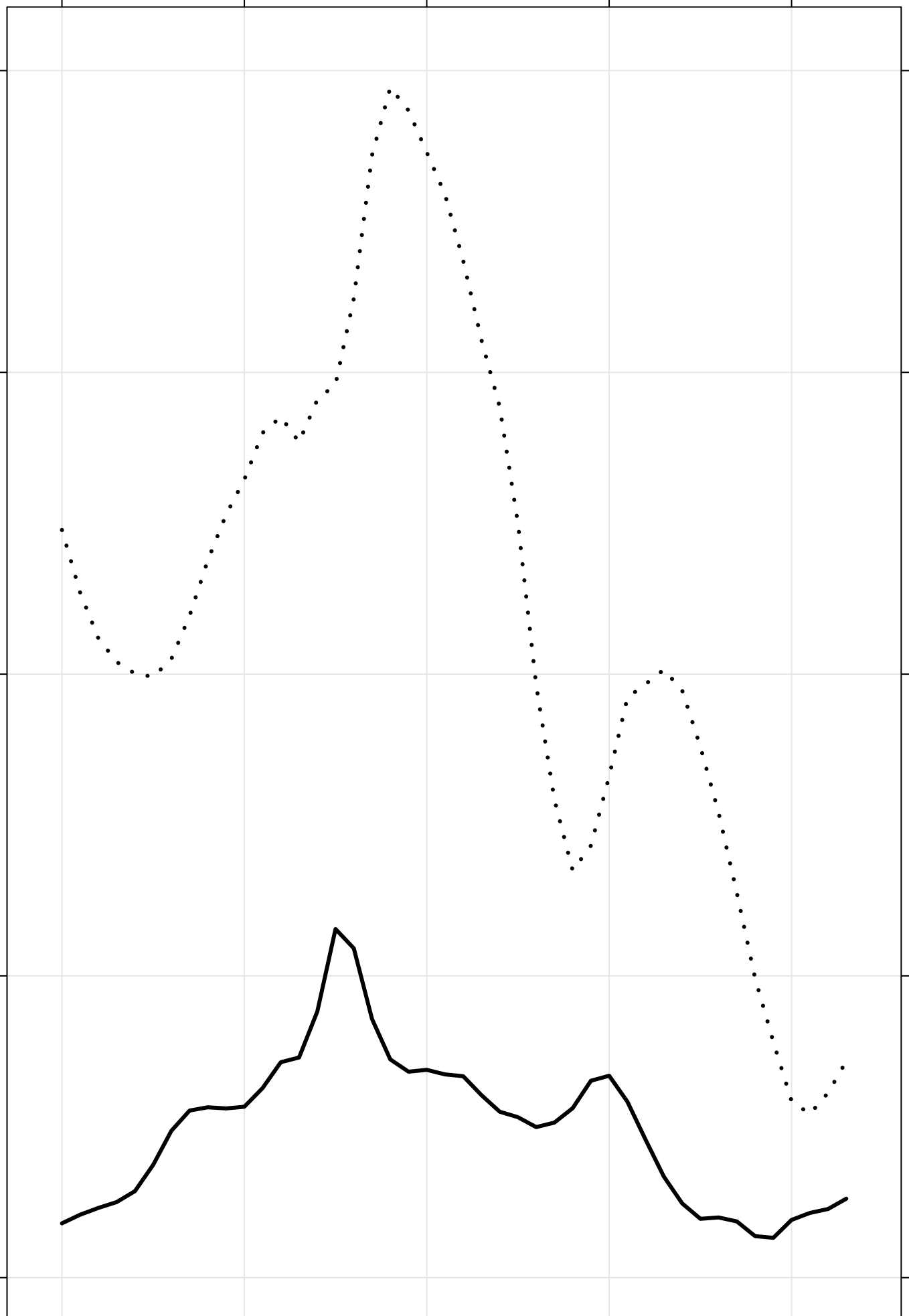
1980

1990

2000

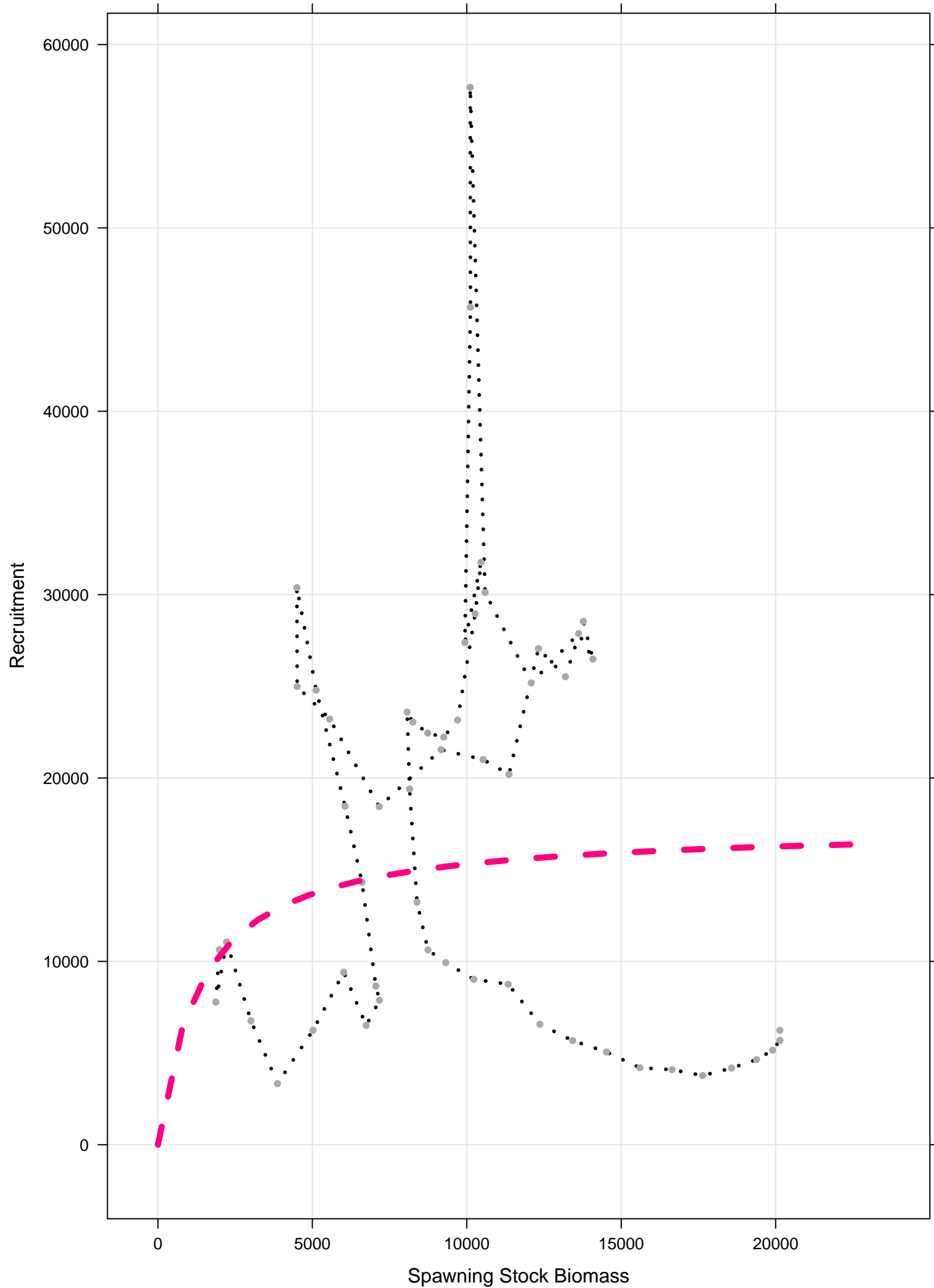
2010

Years



Stock Recruitment

Observed ● Modelled - - -



Fished vs. unfished biomass

Fished



Unfished



Total biomass

50000
40000
30000
20000
10000

1970

1980

1990

2000

2010

Years

