

Fit of catch data

Total catch



Total catch by fleet



Catch residuals by fleet

-0.03



0.02



-0.02



0.03



0



0.05



1970

1980

1990

2000

2010

Offshore_Trawl

FarNorth

SC_Chile_PS

N_Chile

Residuals

1970

1980

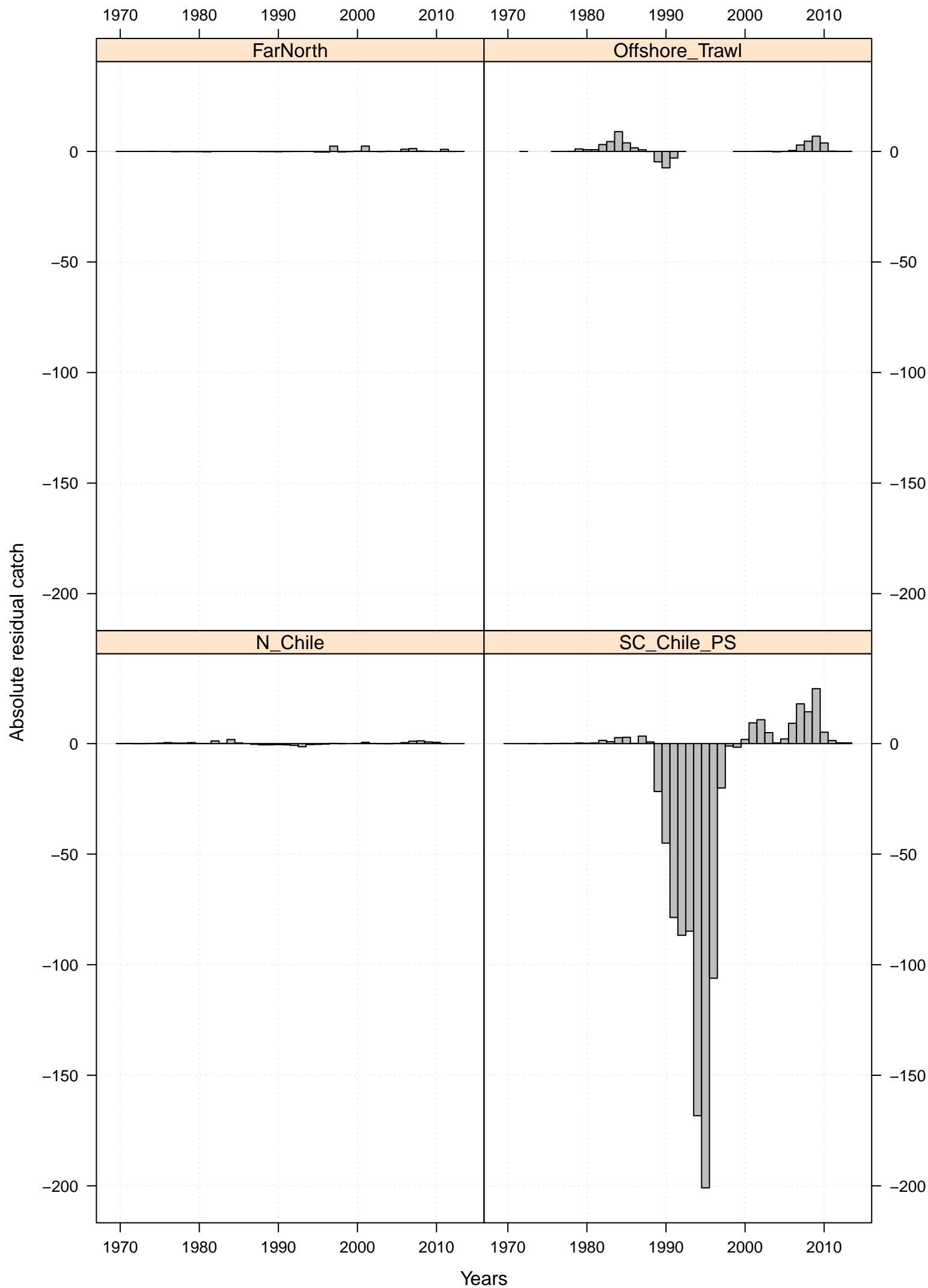
1990

2000

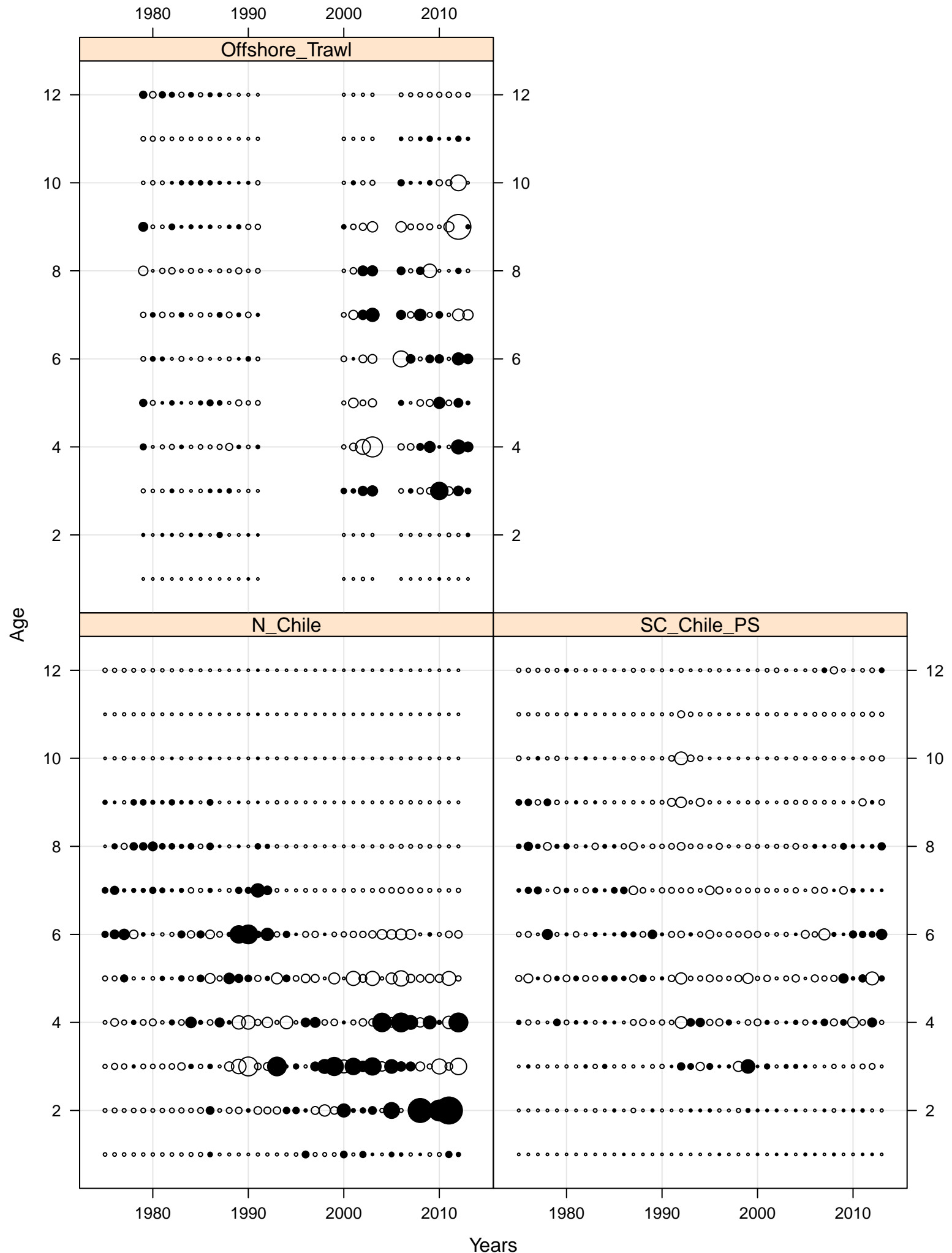
2010

Years

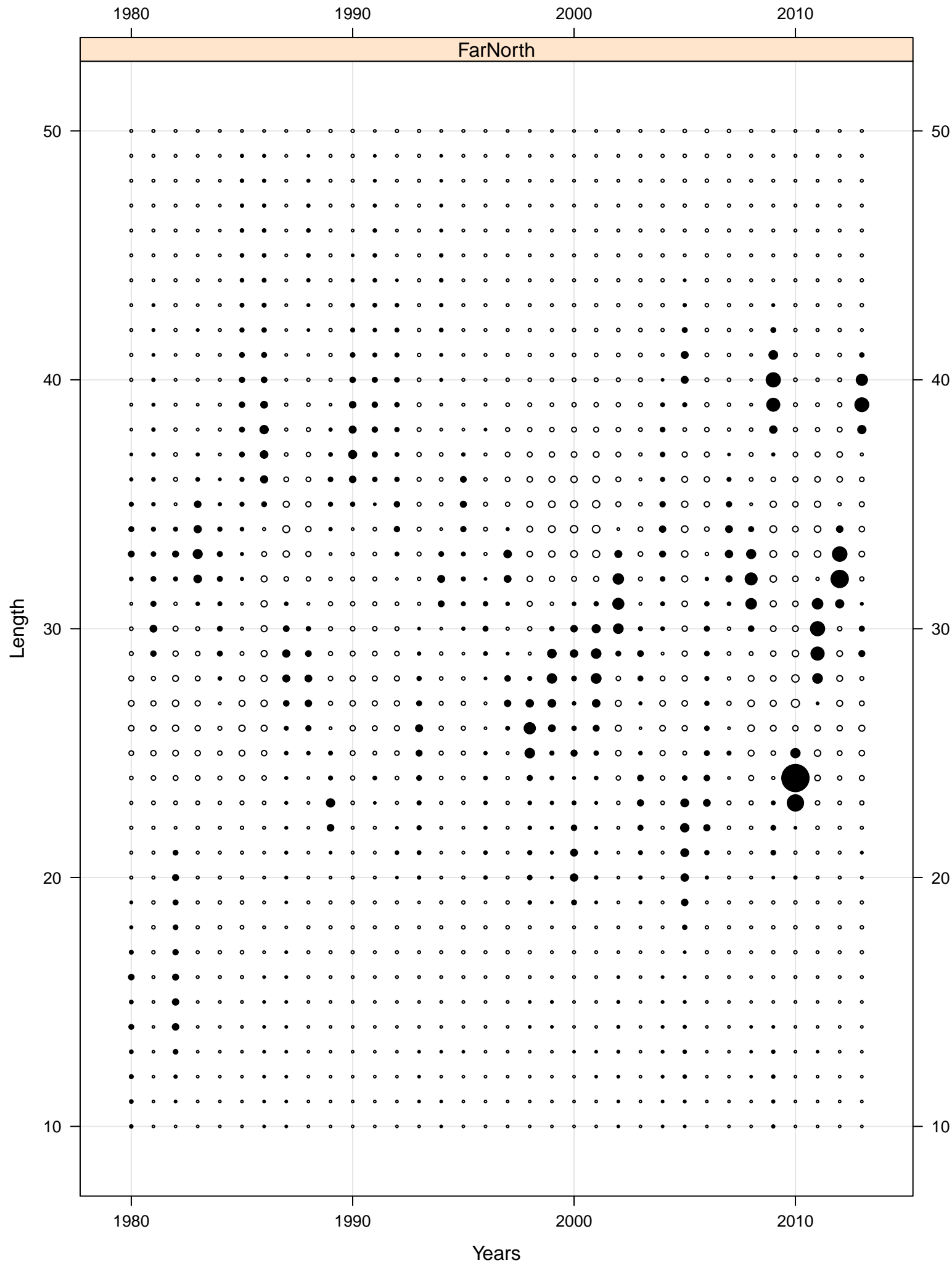
Absolute residual catch by fleet



Residuals catch-at-age by fleet



Residuals catch-at-length by fleet



Age fits N_Chile

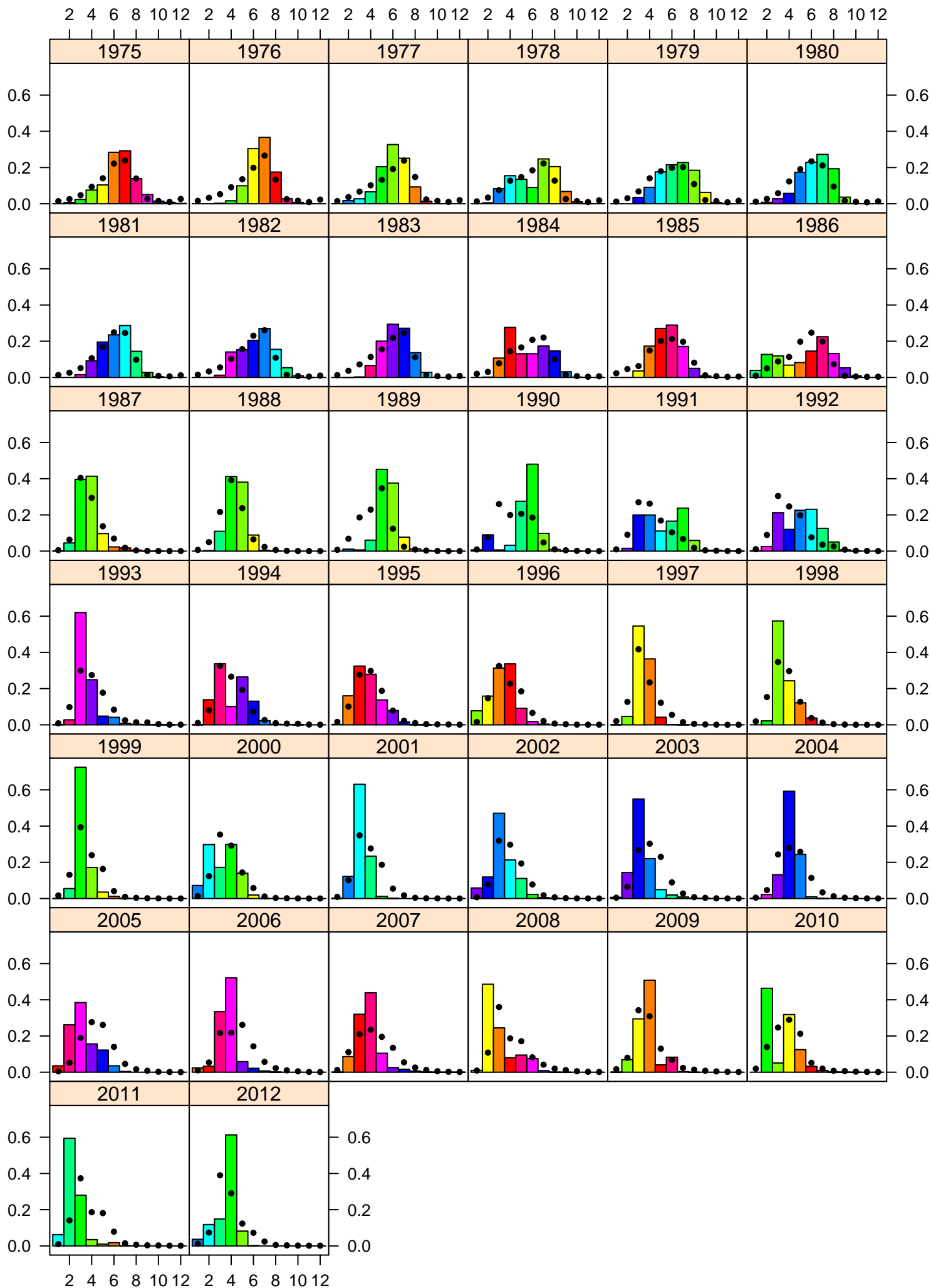
Observed



Predicted



Proportion at age



Age

Age fits SC_Chile_PS

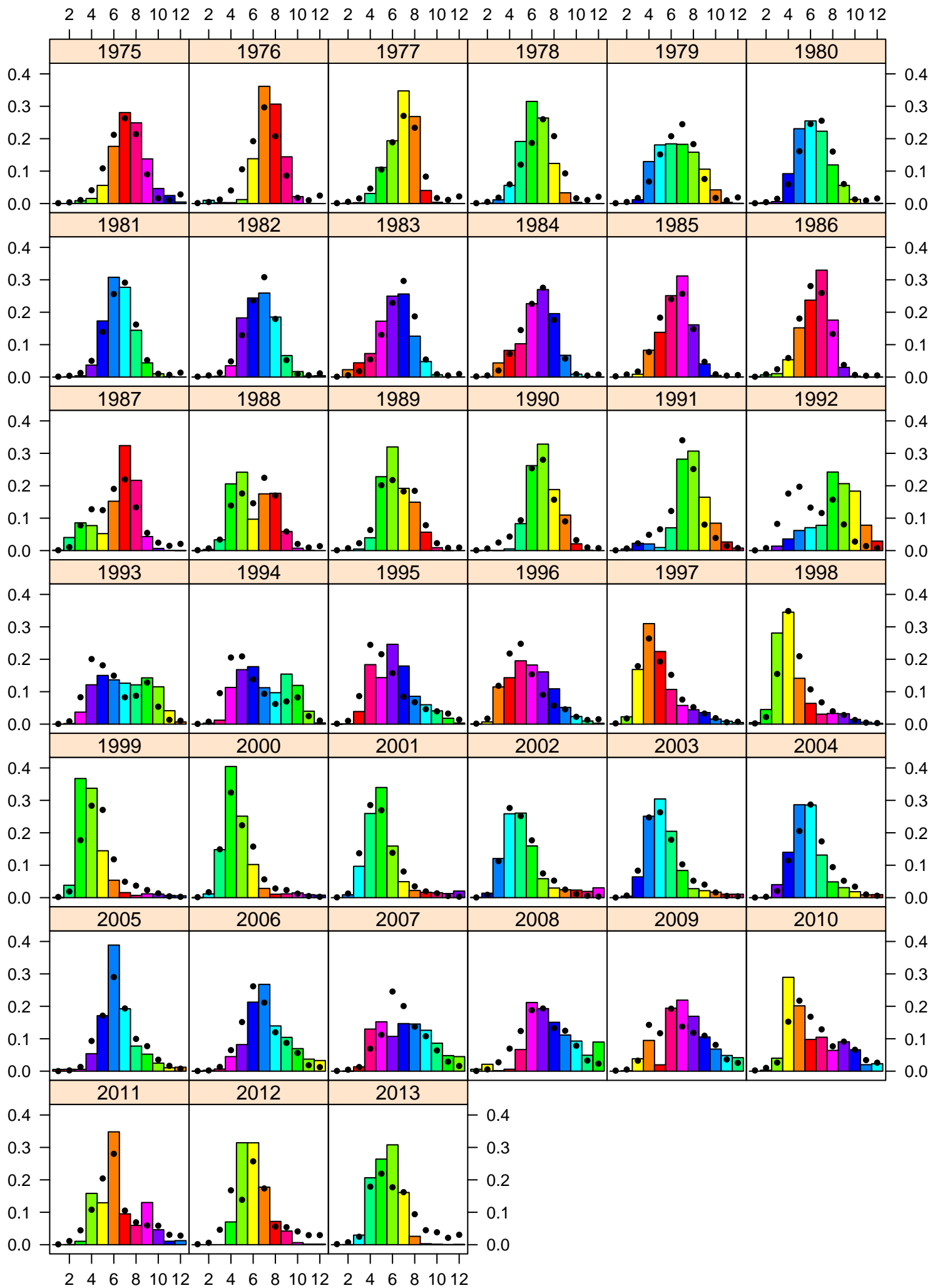
Observed



Predicted



Proportion at age



Age

Age fits Offshore_Trawl

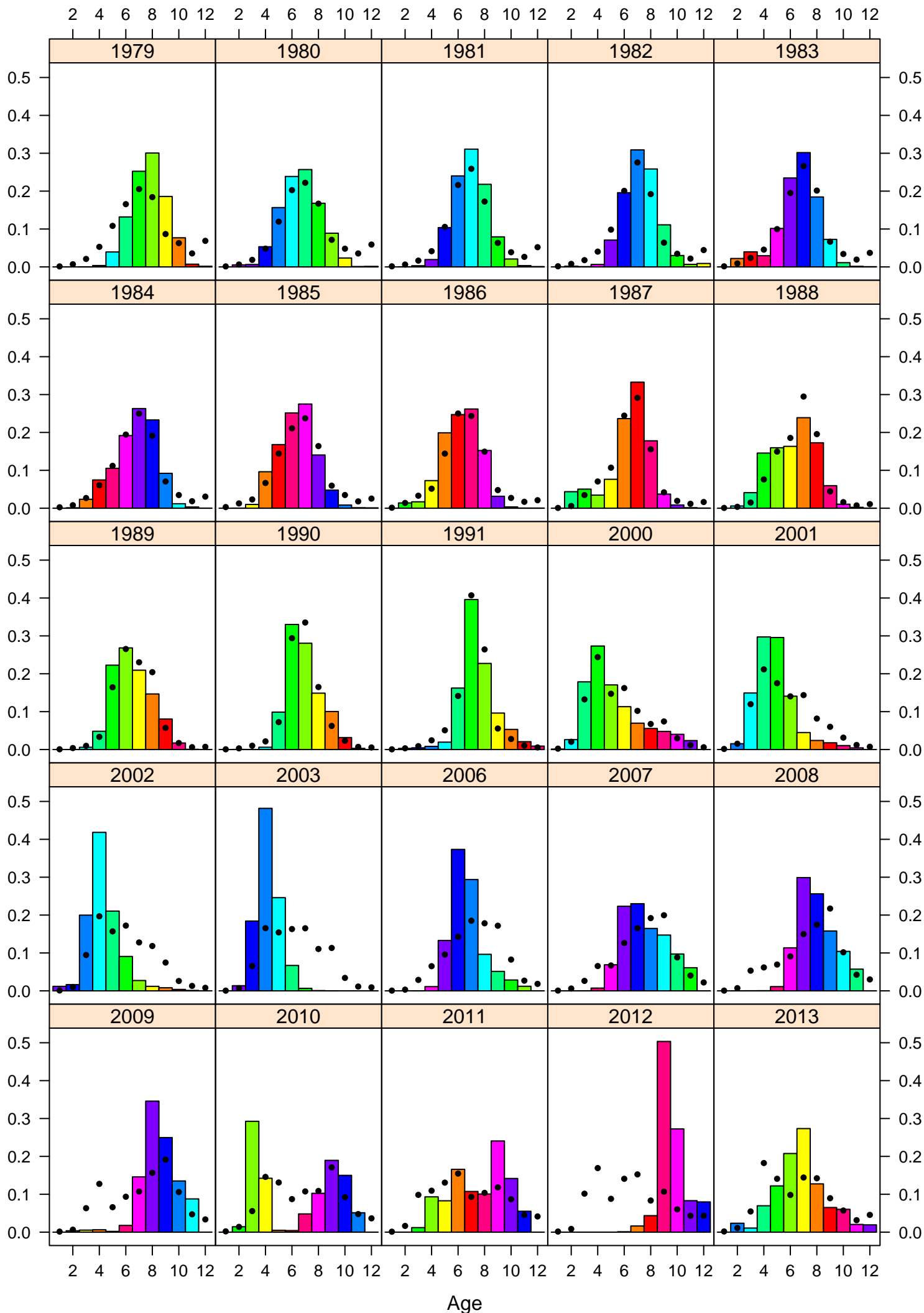
Observed



Predicted



Proportion at age



Length fits FarNorth

Observed



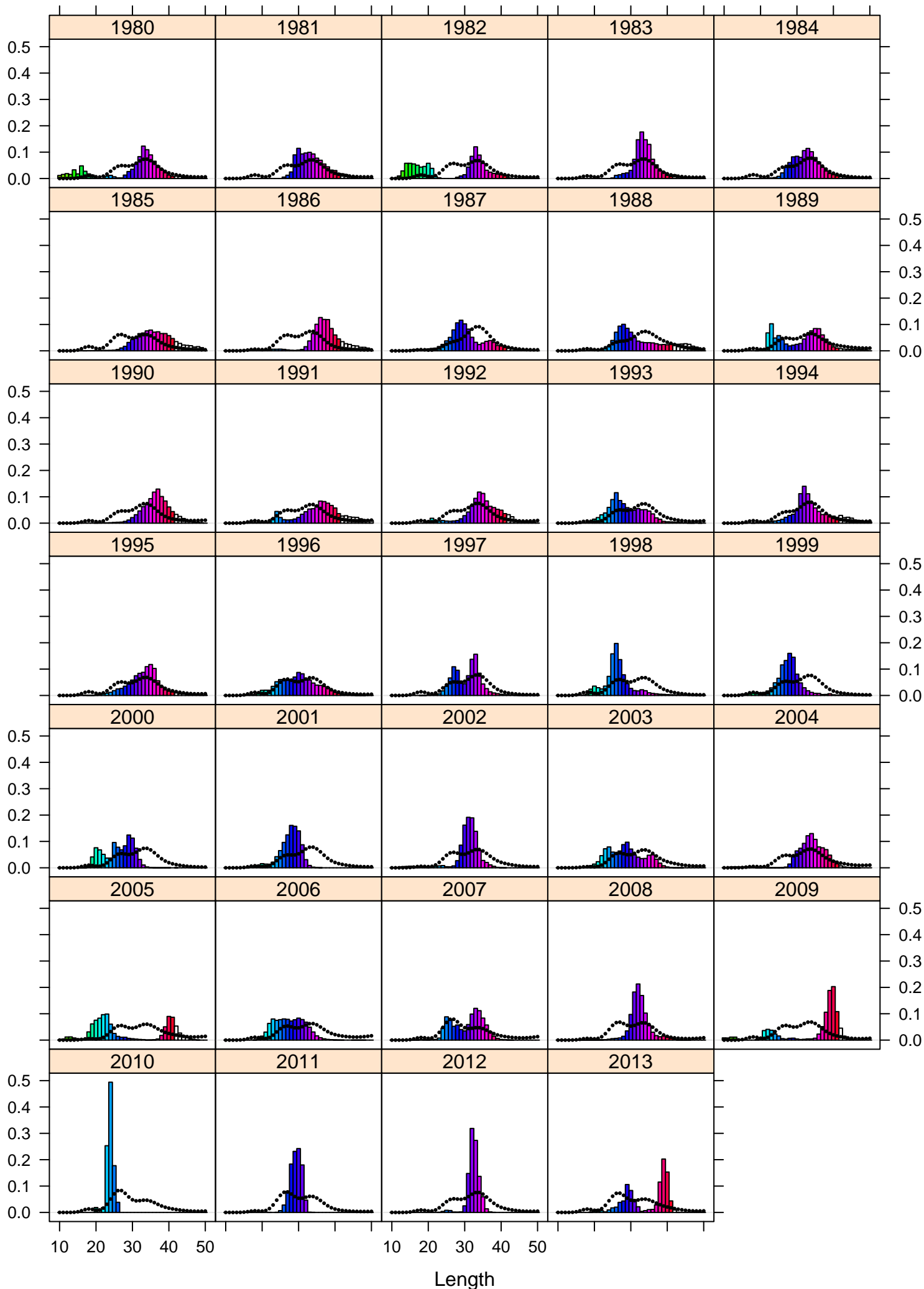
Predicted



10 20 30 40 50

10 20 30 40 50

Proportion at length



Predicted and observed catches by fleet

Observed



Predicted



1970

1980

1990

2000

2010

Offshore_Trawl

SC_Chile_PS

FarNorth

N_Chile

Thousand tonnes

4000

3000

2000

1000

0

4000

3000

2000

1000

0

1970

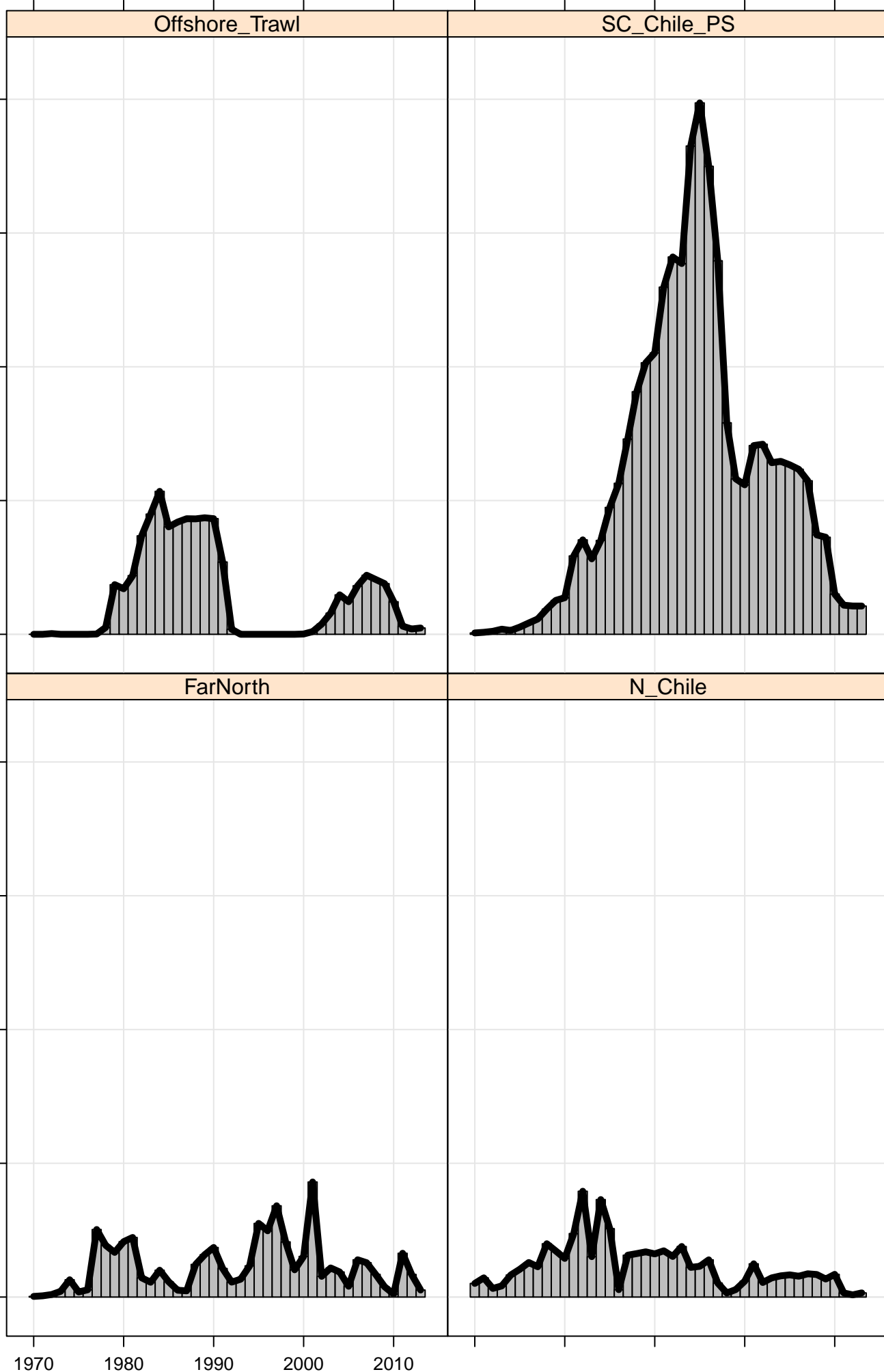
1980

1990

2000

2010

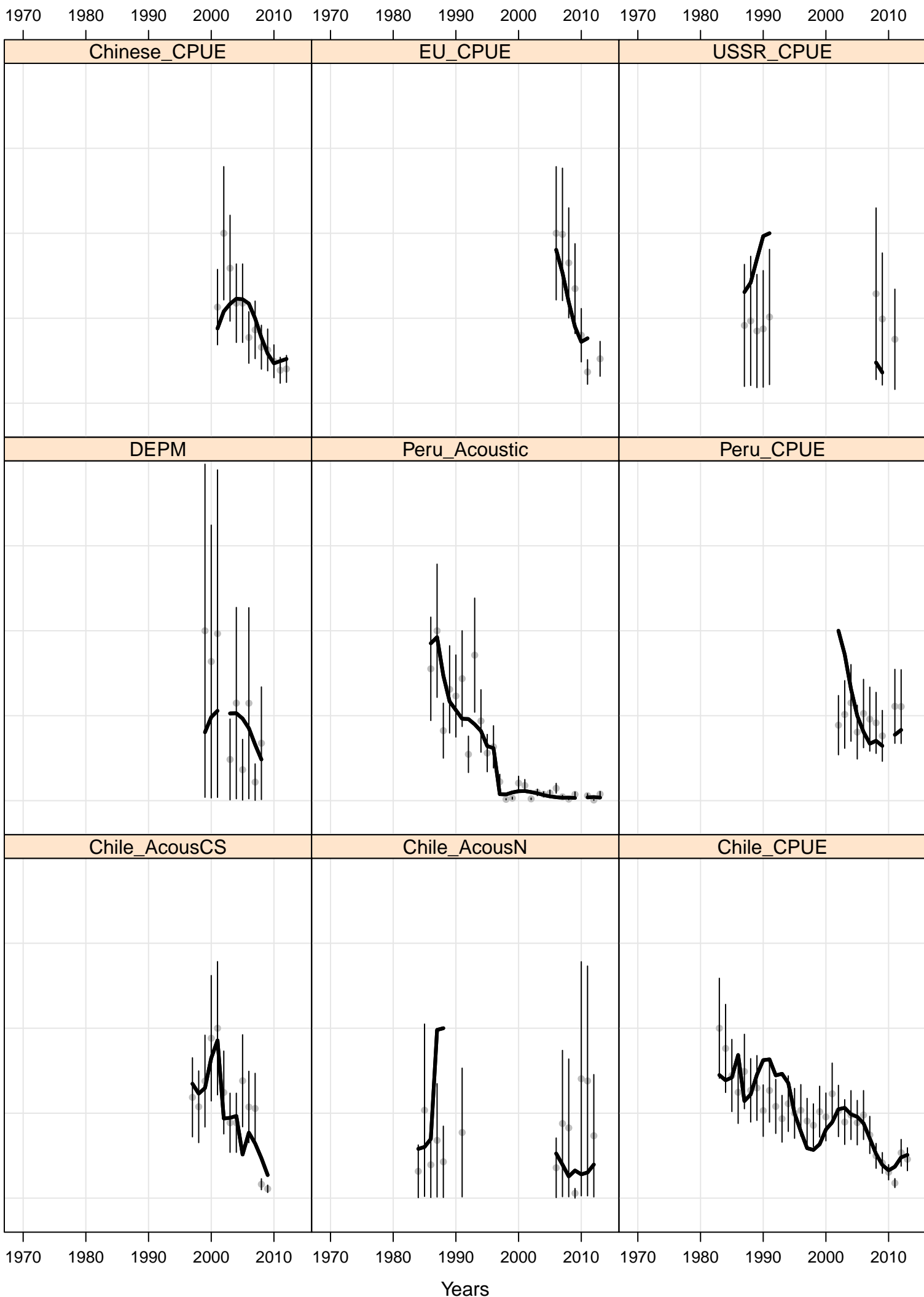
Years



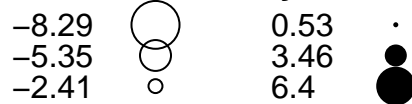
Fit of survey data

Predicted and observed indices

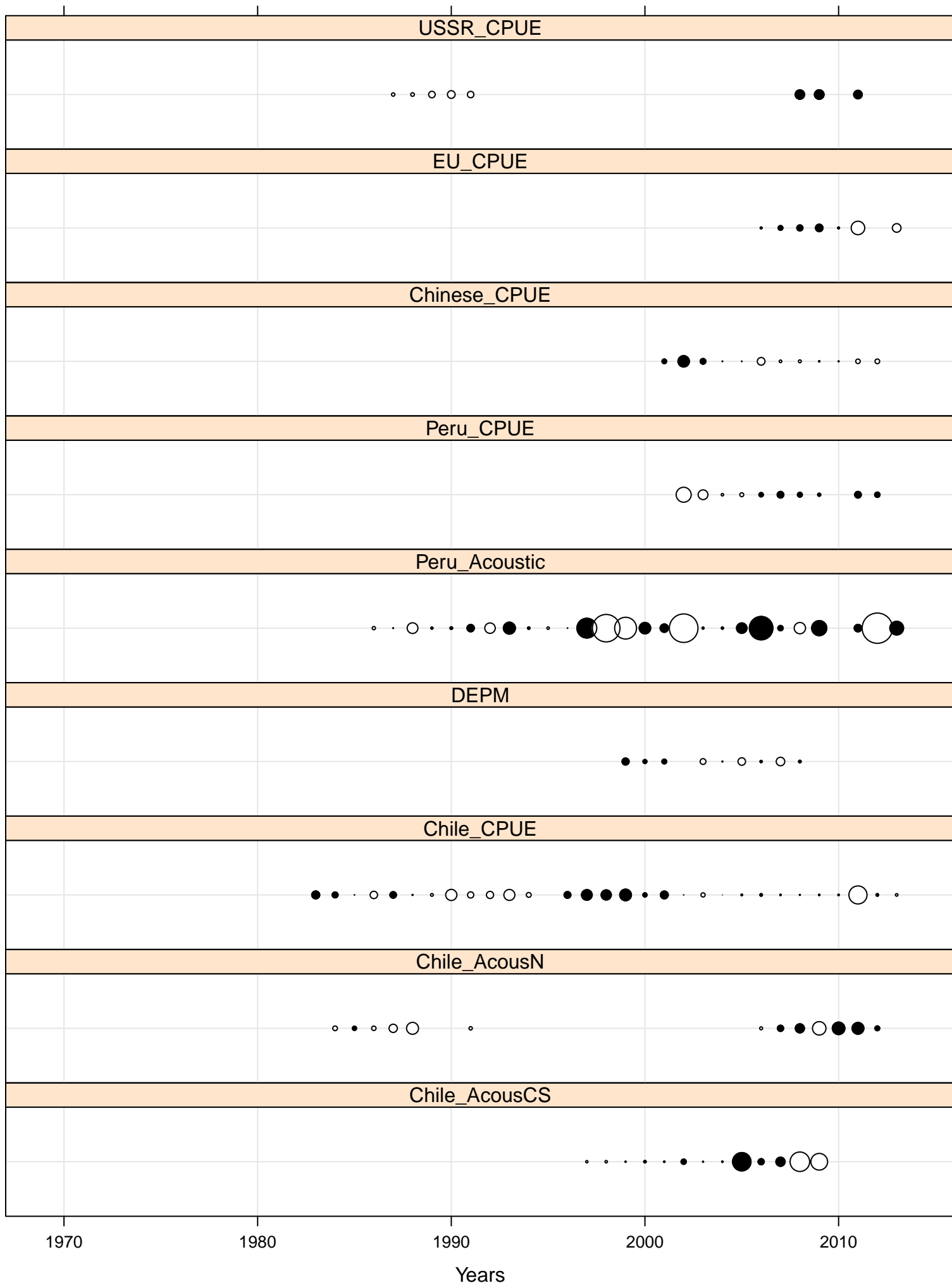
Observed ● Predicted —



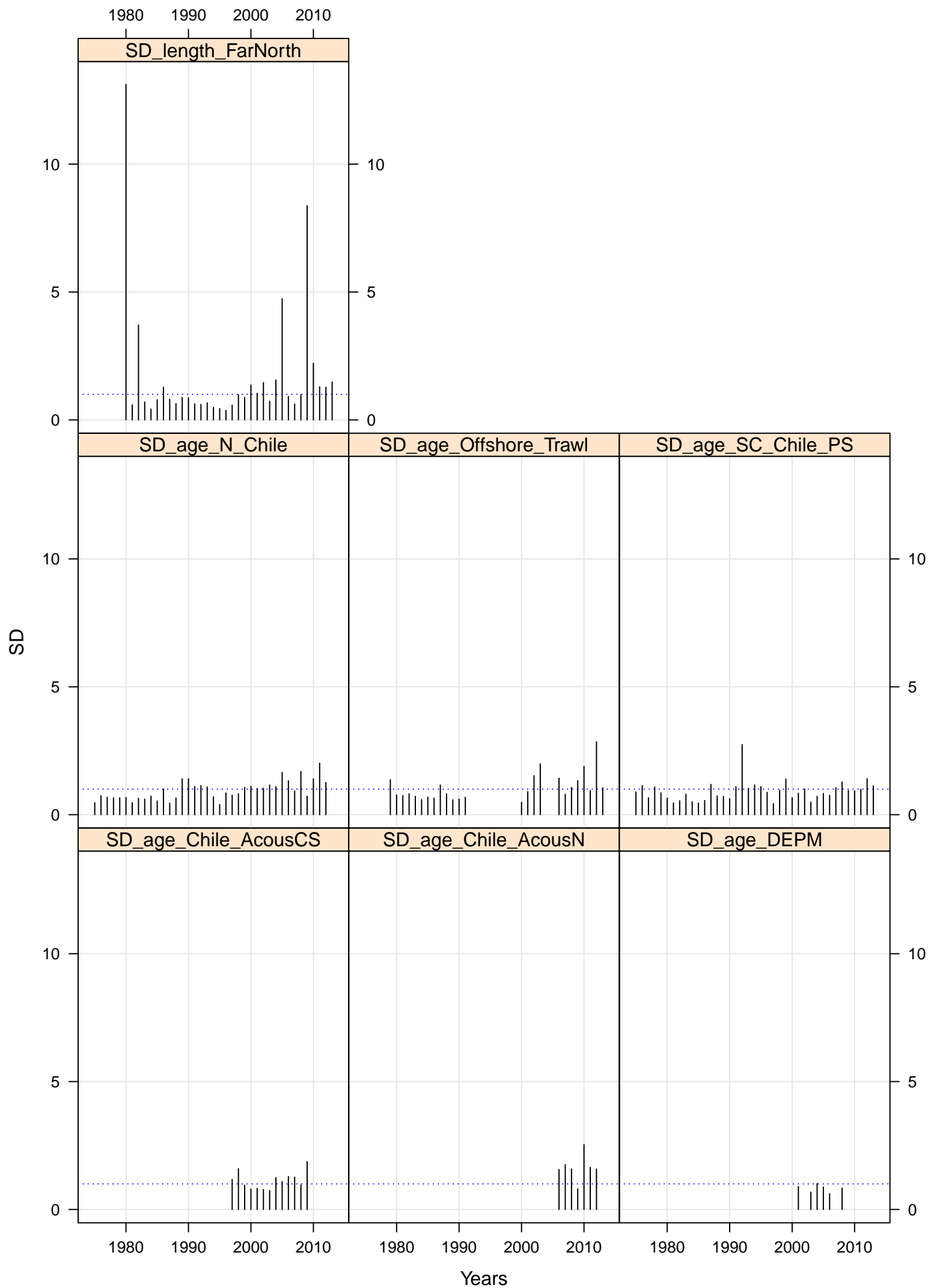
Standardized survey residuals



Log residuals

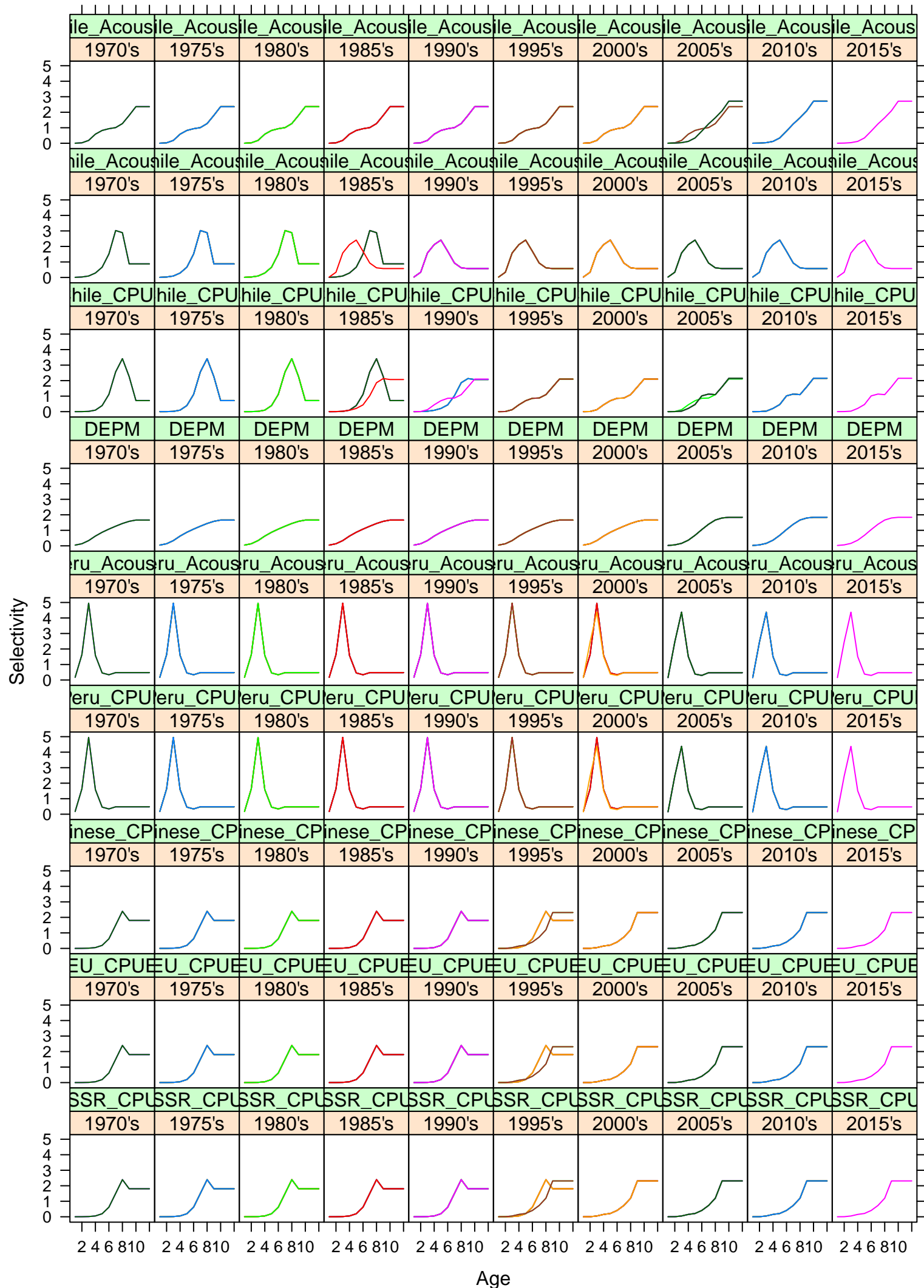


SD per input series

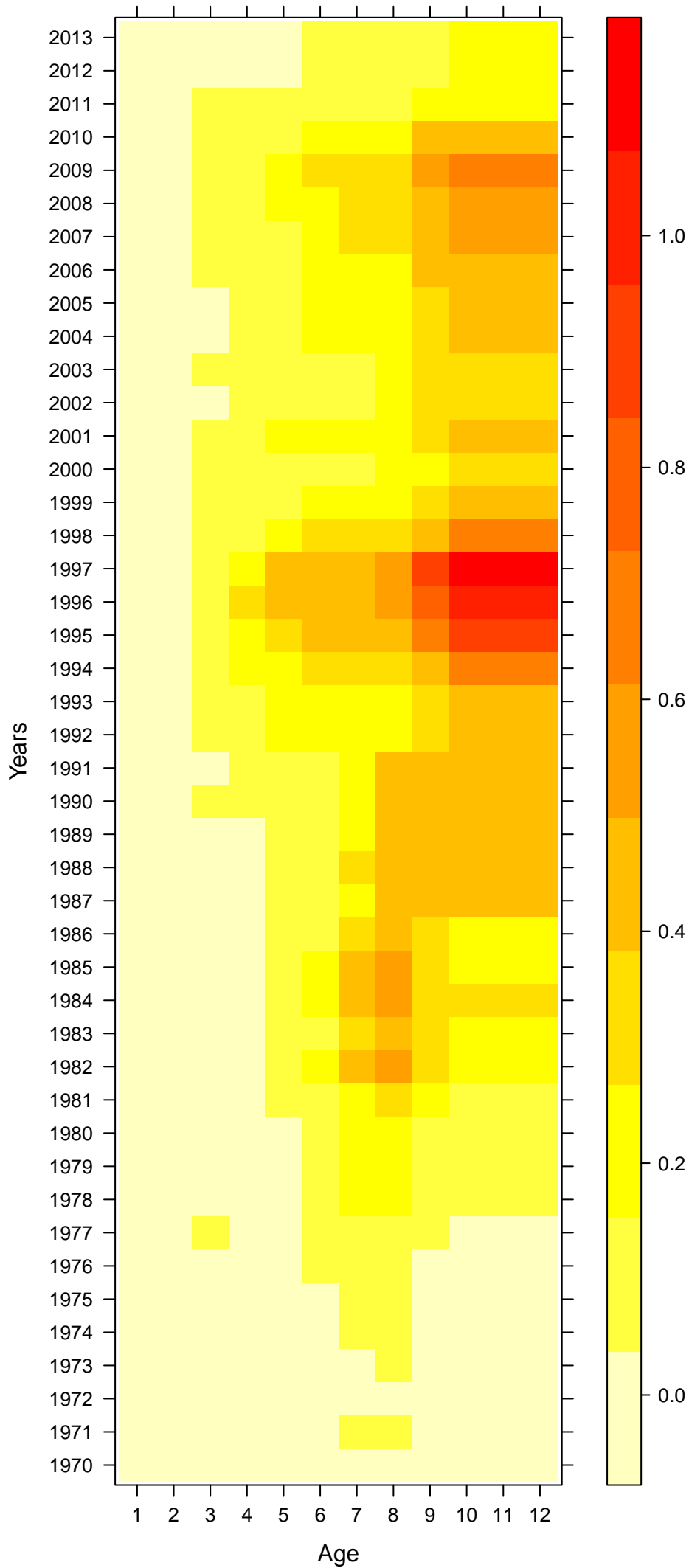


Fleet & Survey sel & F

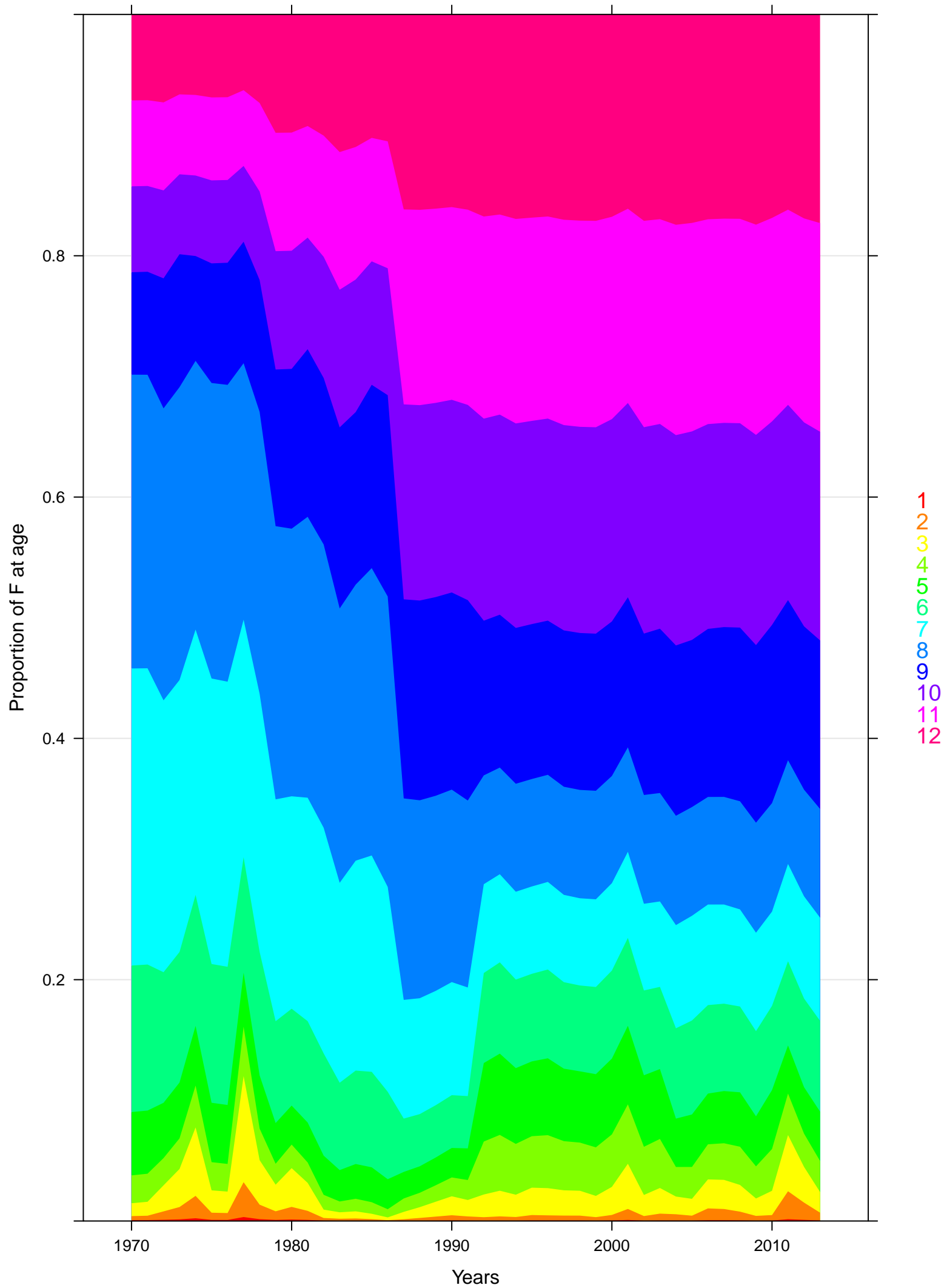
Selectivity of the survey by Pentad



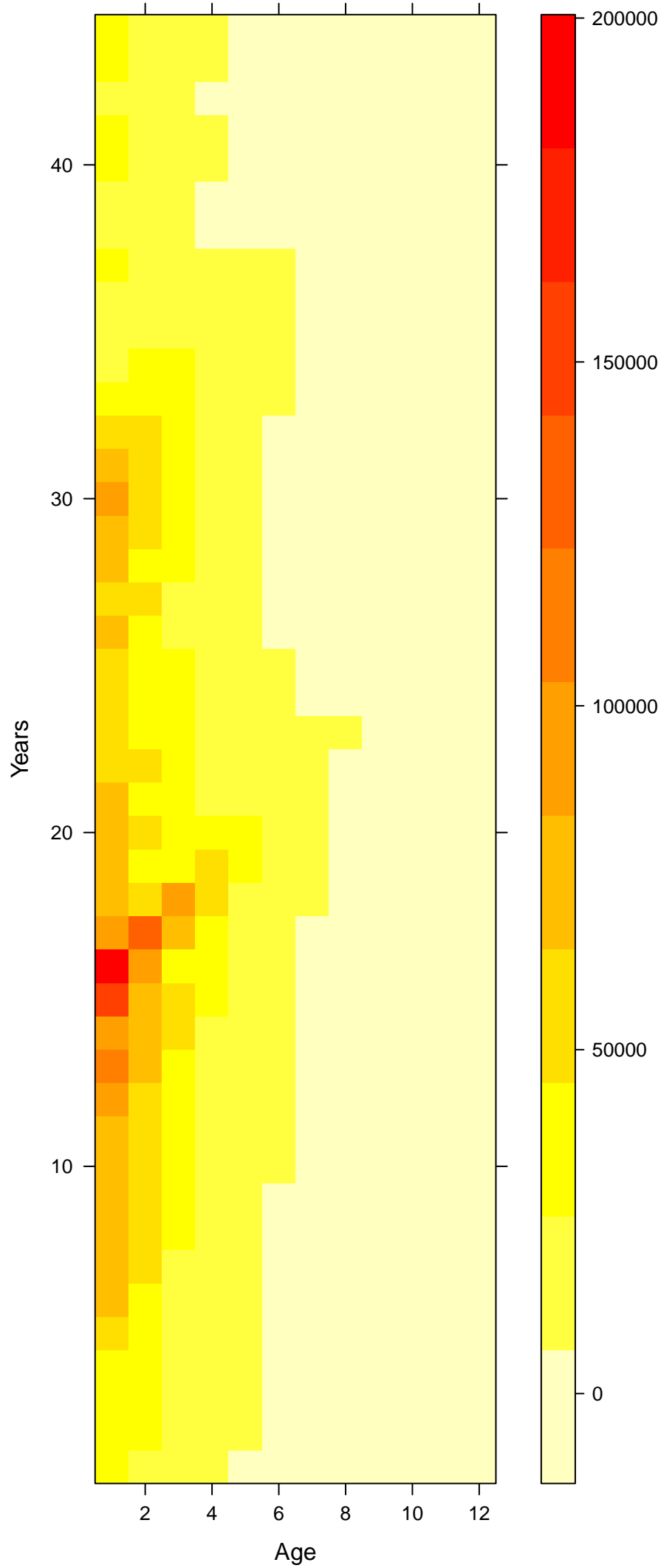
F at age



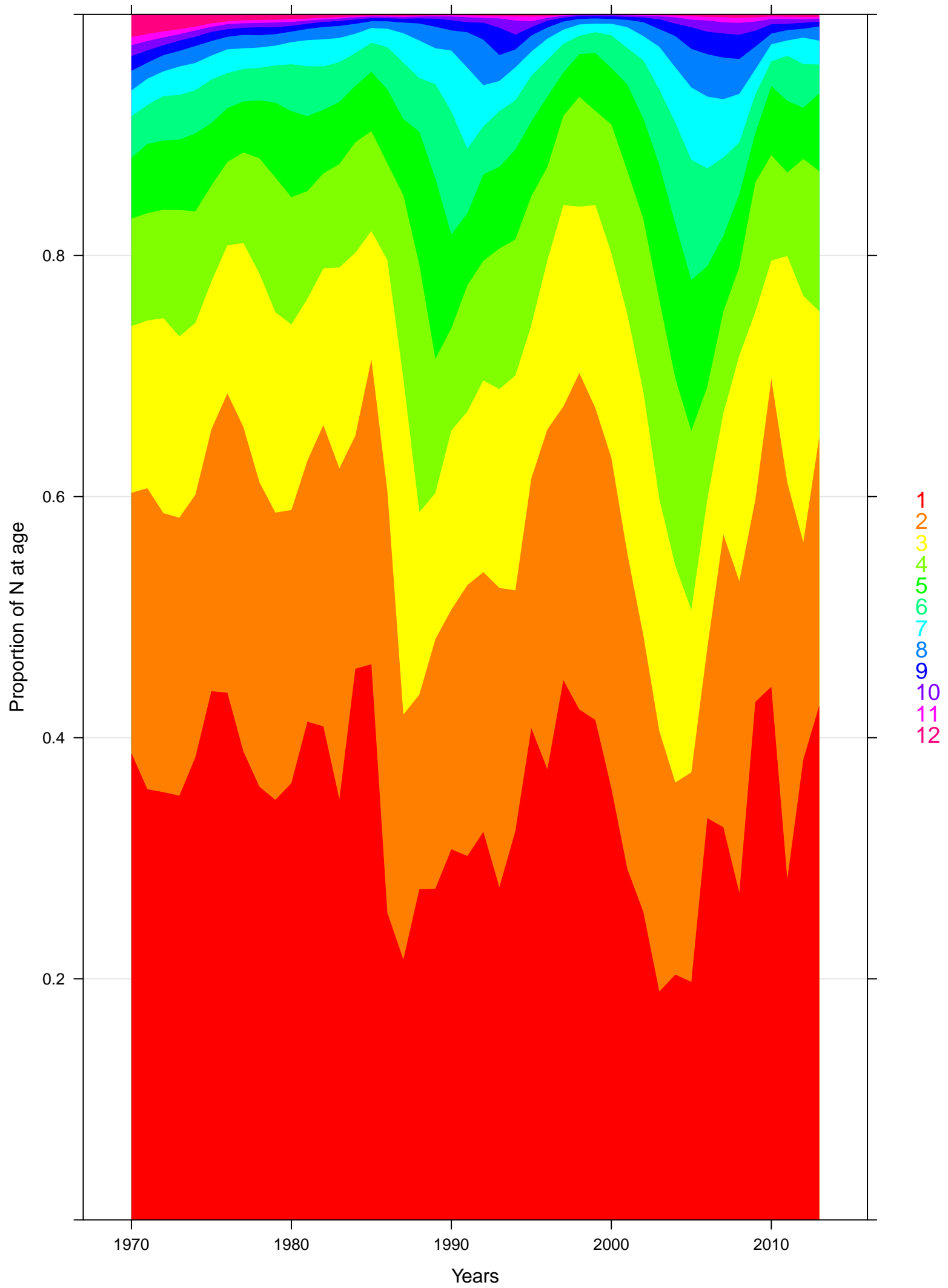
F proportion at age



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

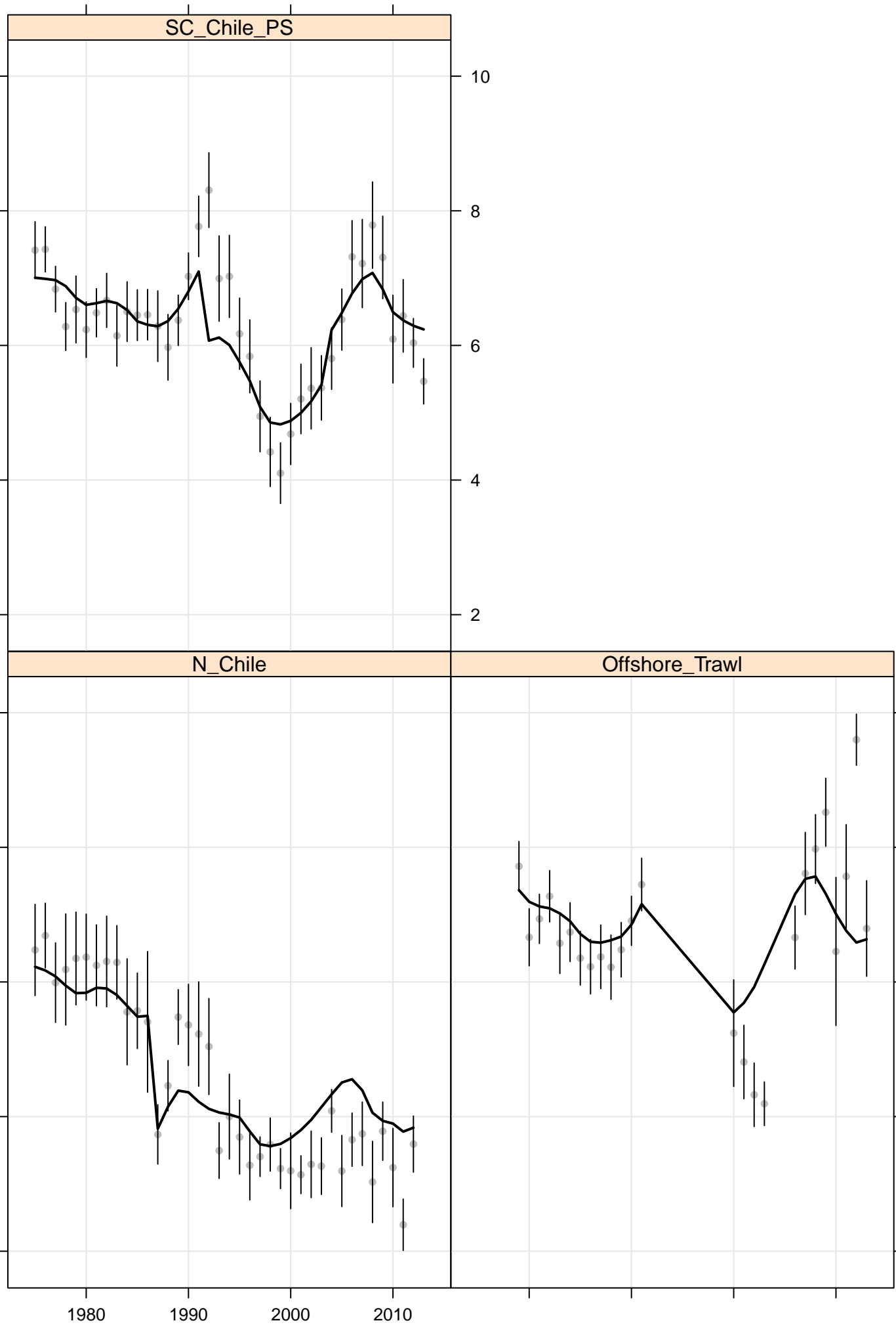
1980

1990

2000

2010

Years



Fishery mean length

Observed



Modelled



FarNorth

Length (cm)

35

30

25

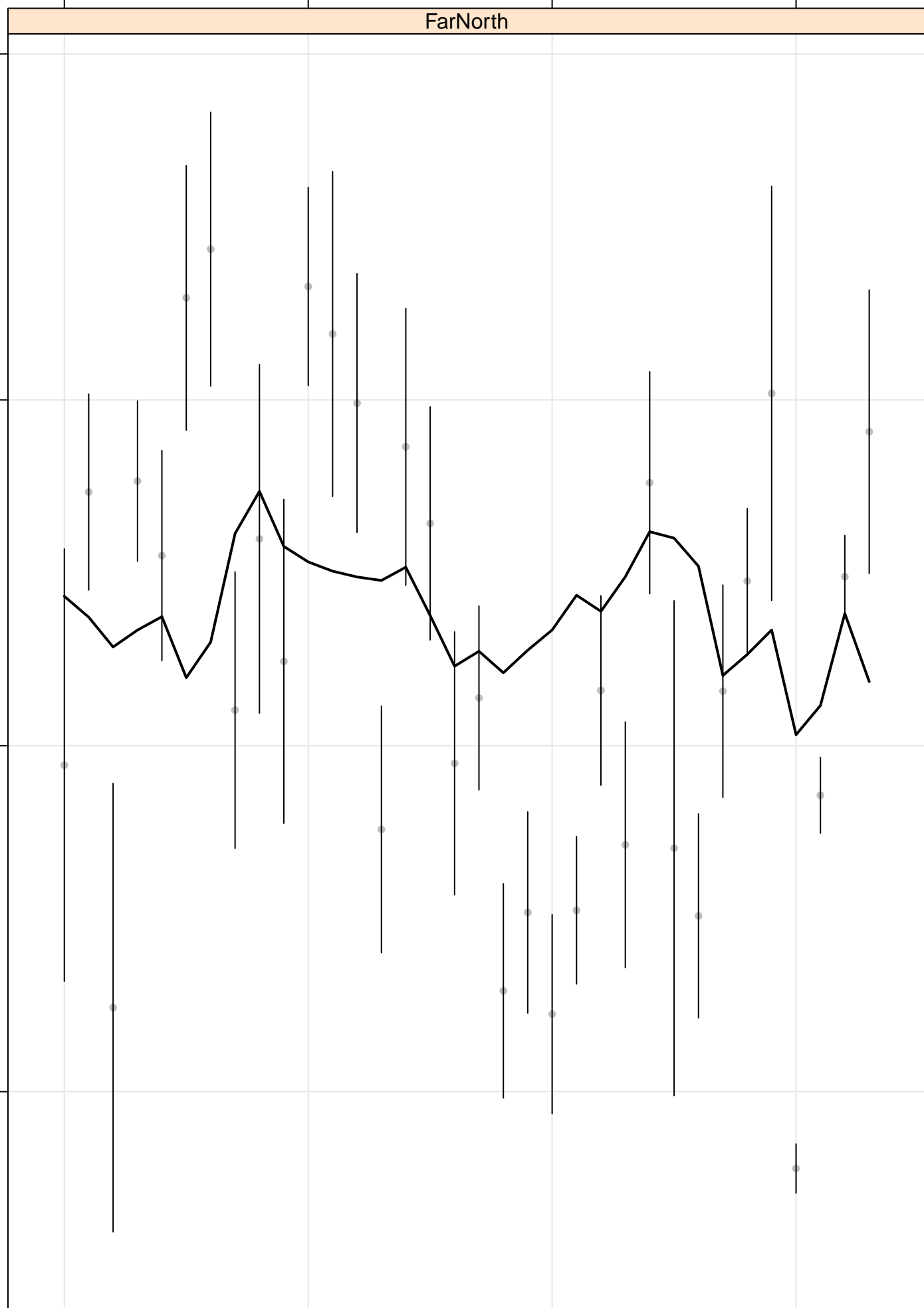
1980

1990

2000

2010

Years



Survey mean age

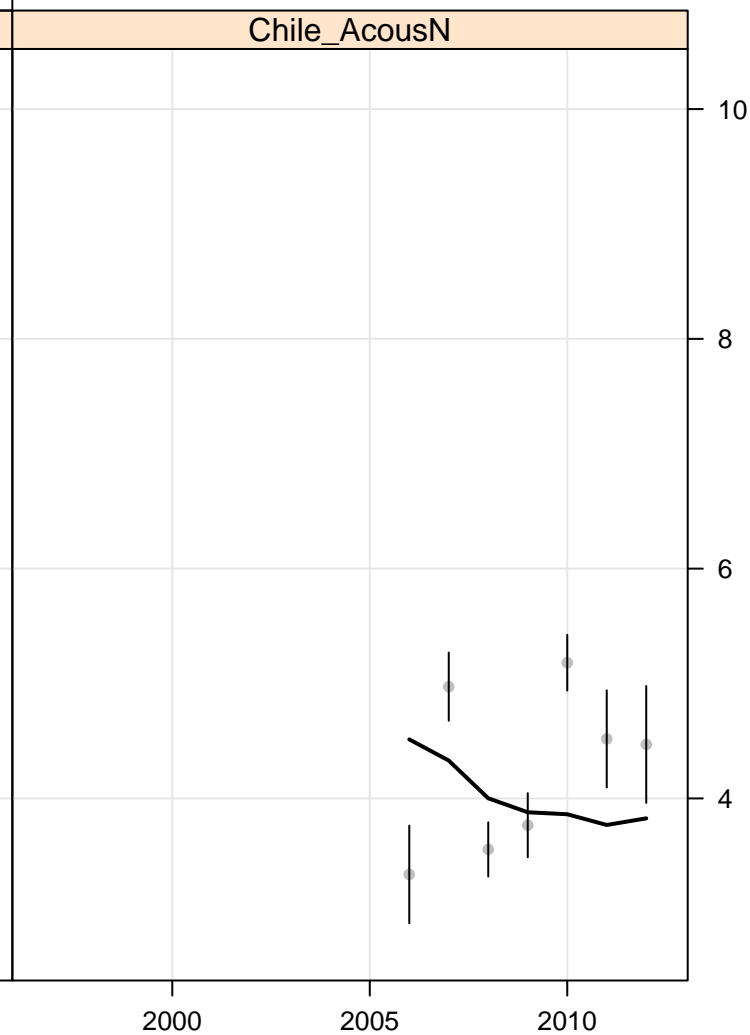
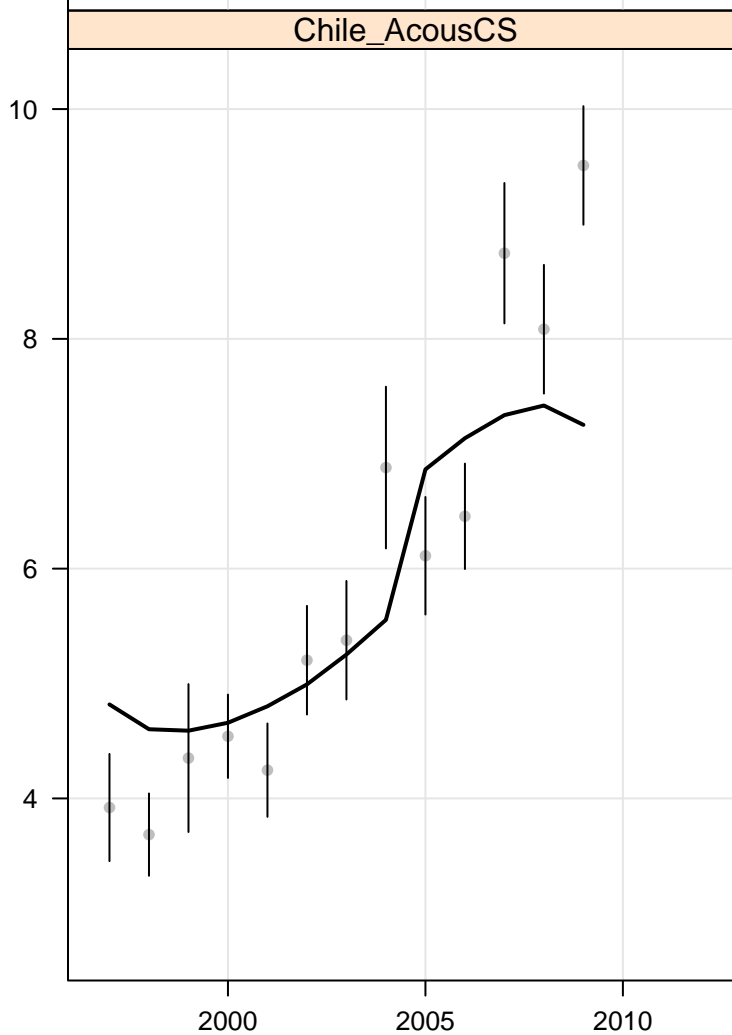
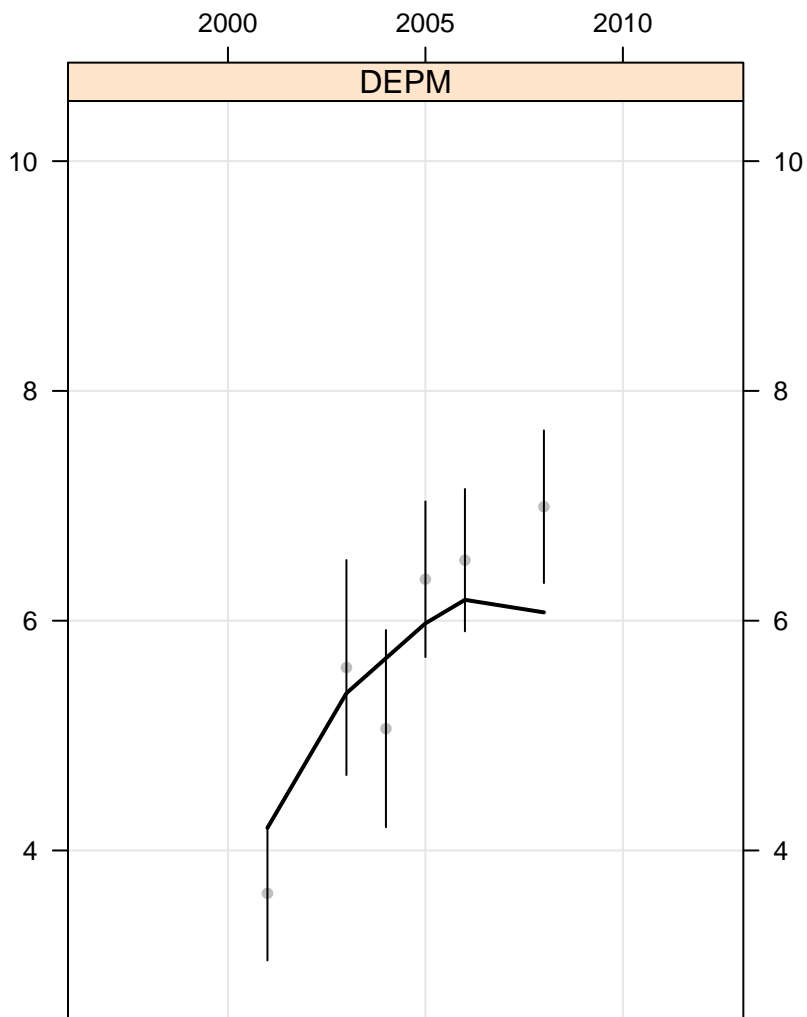
Observed



Modelled



Age



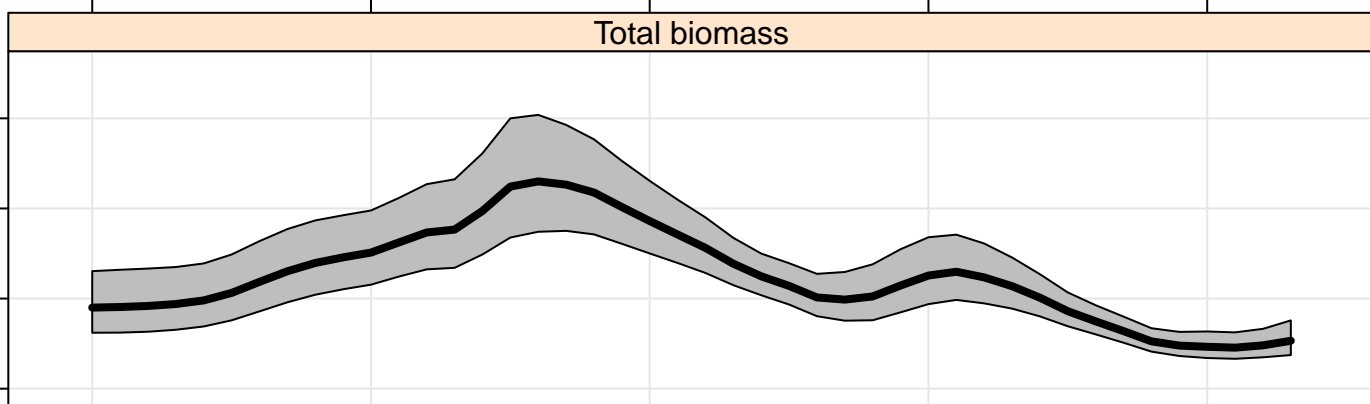
Years

Stock summary

Summary sheet

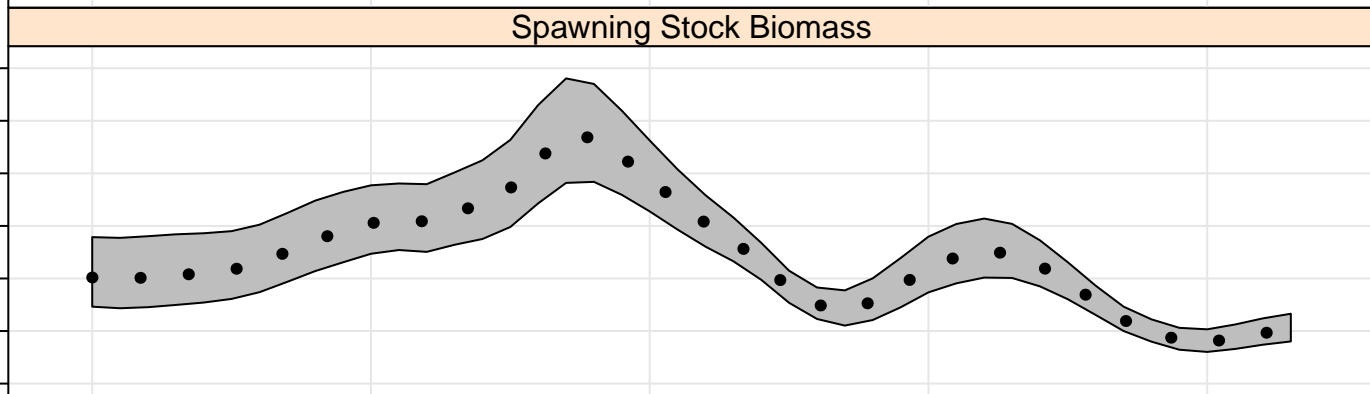
Total biomass

60000
40000
20000
0



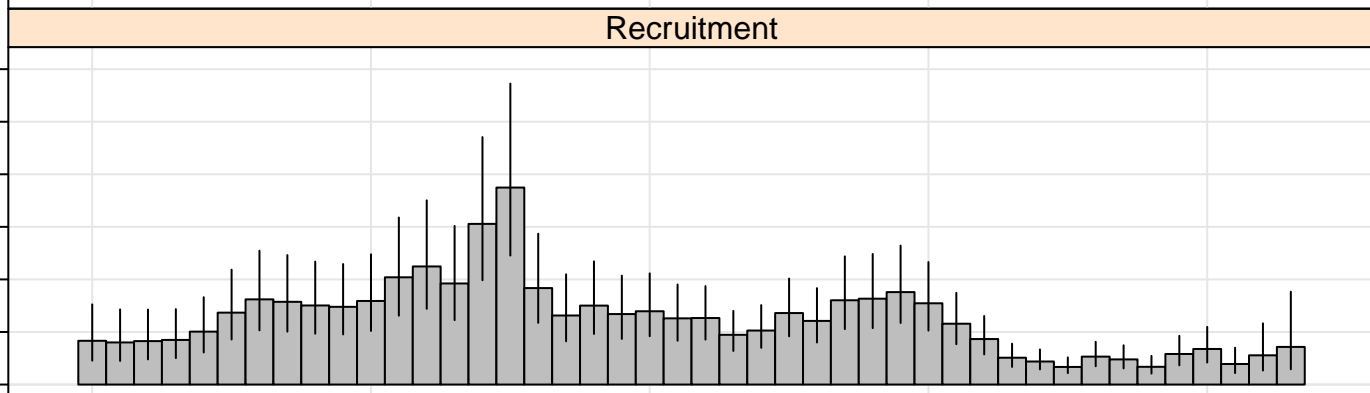
Spawning Stock Biomass

30000
25000
20000
15000
10000
5000
0



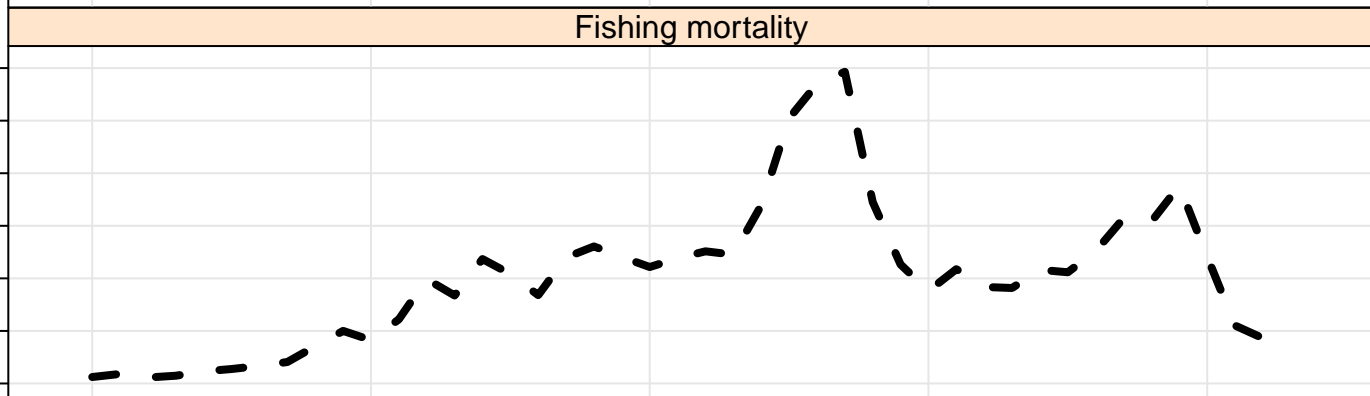
Recruitment

300000
250000
200000
150000
100000
50000
0



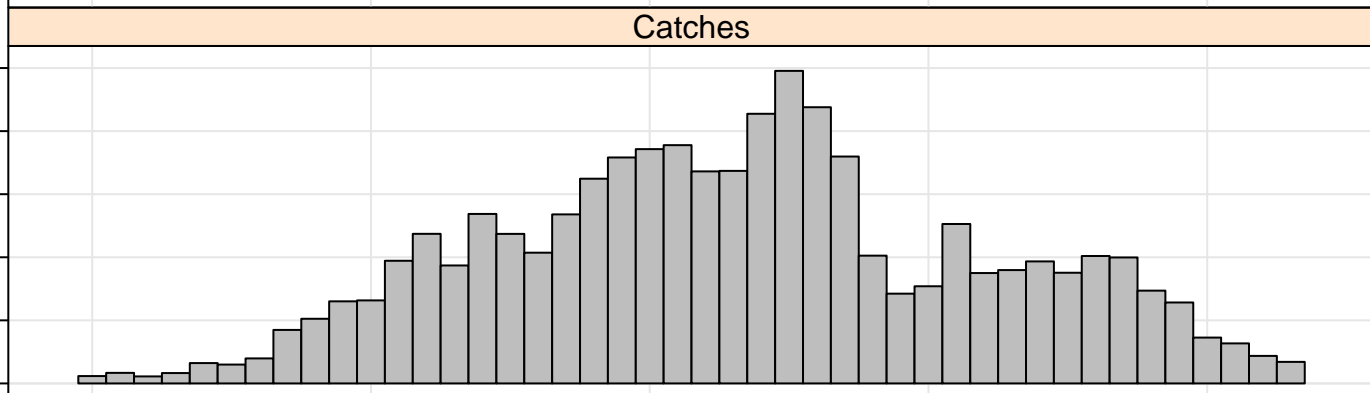
Fishing mortality

0.6
0.5
0.4
0.3
0.2
0.1
0.0



Catches

5000
4000
3000
2000
1000
0



1970

1980

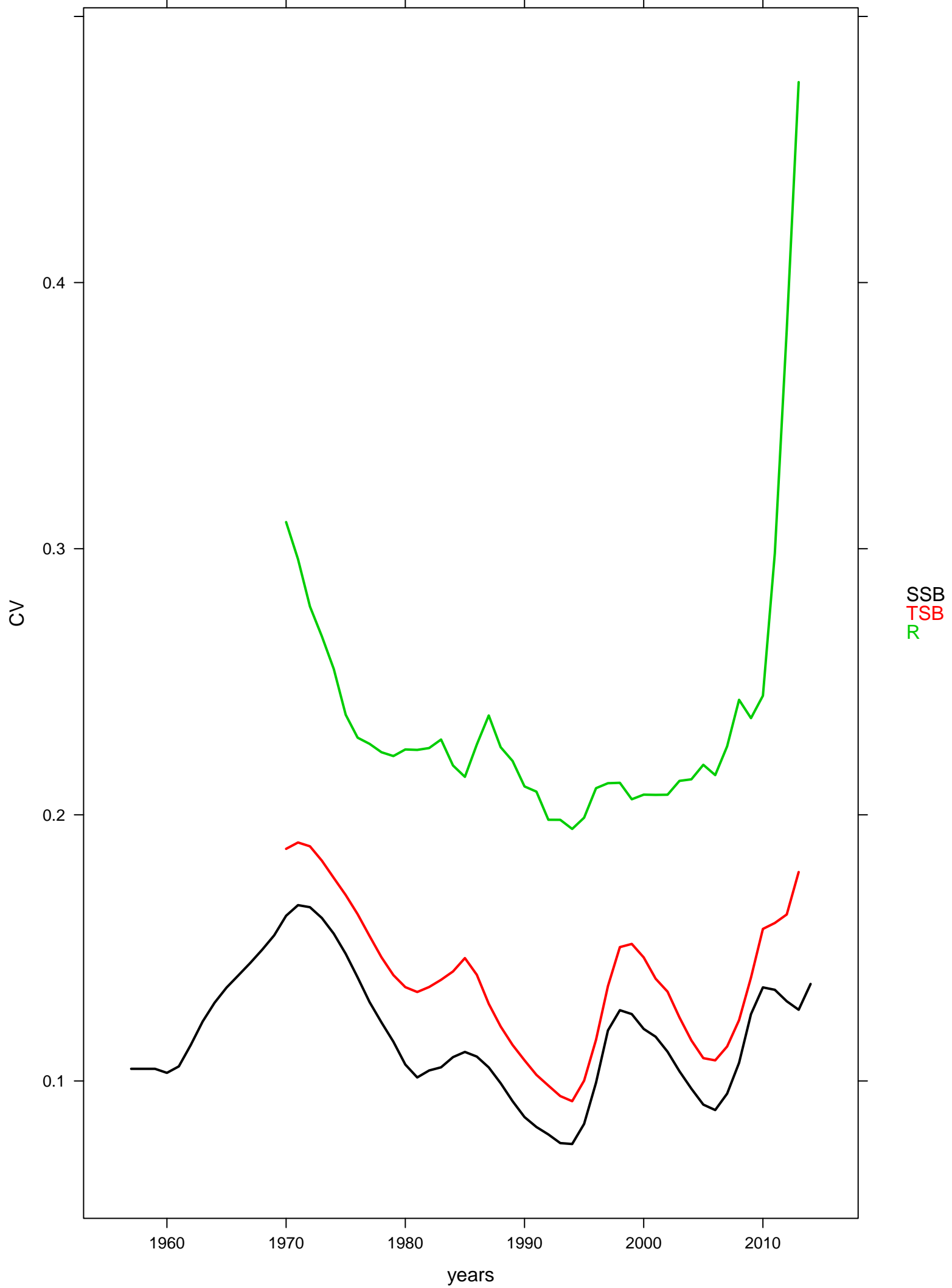
1990

2000

2010

year

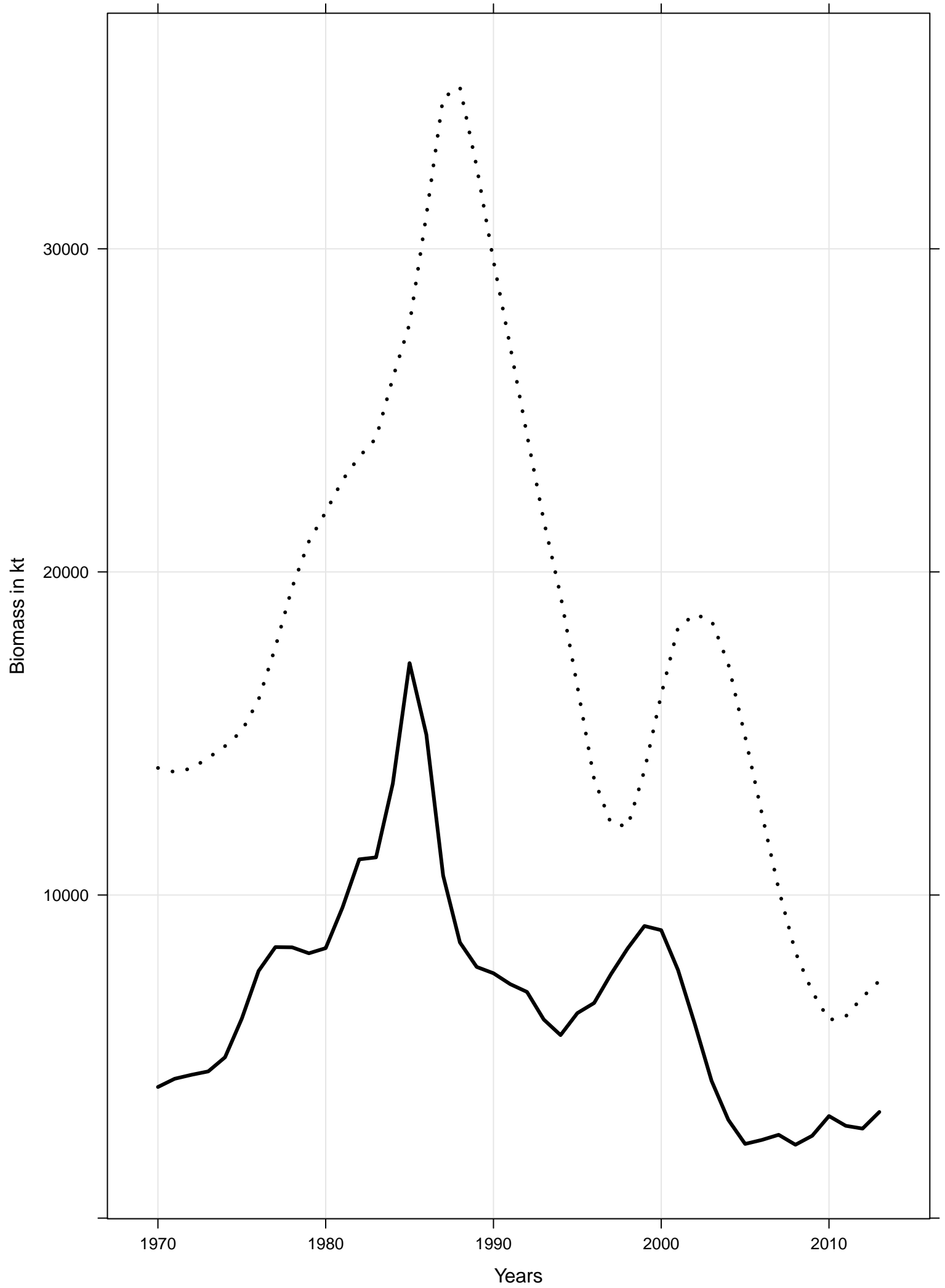
Uncertainty of key parameters



Mature – Immature fish

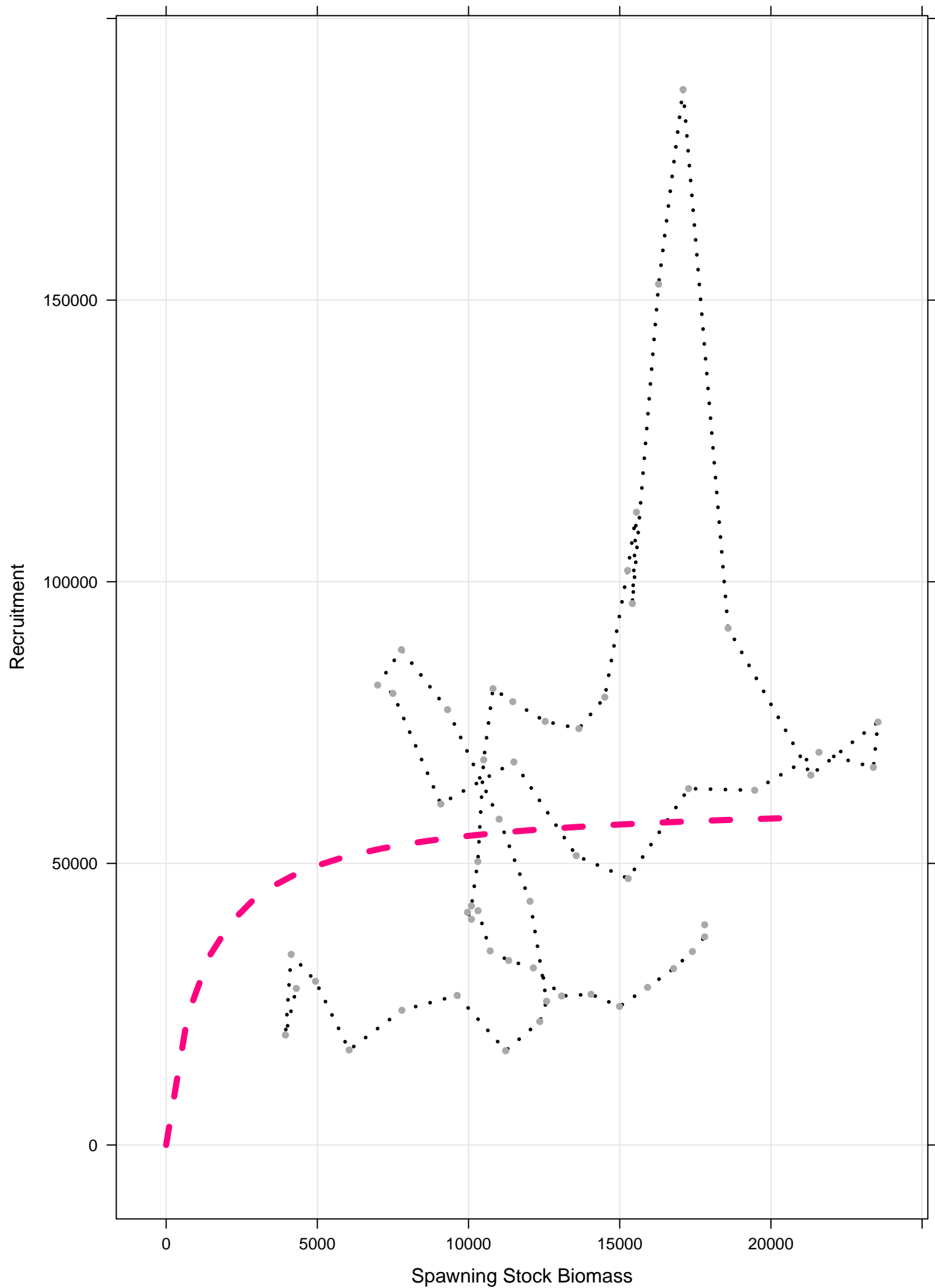
Mature

Immature —



Stock Recruitment

Observed ● Modelled - - -



Fished vs. unfished biomass

Fished



Unfished



Total biomass

50000
40000
30000
20000
10000

1970

1980

1990

2000

2010

Years

