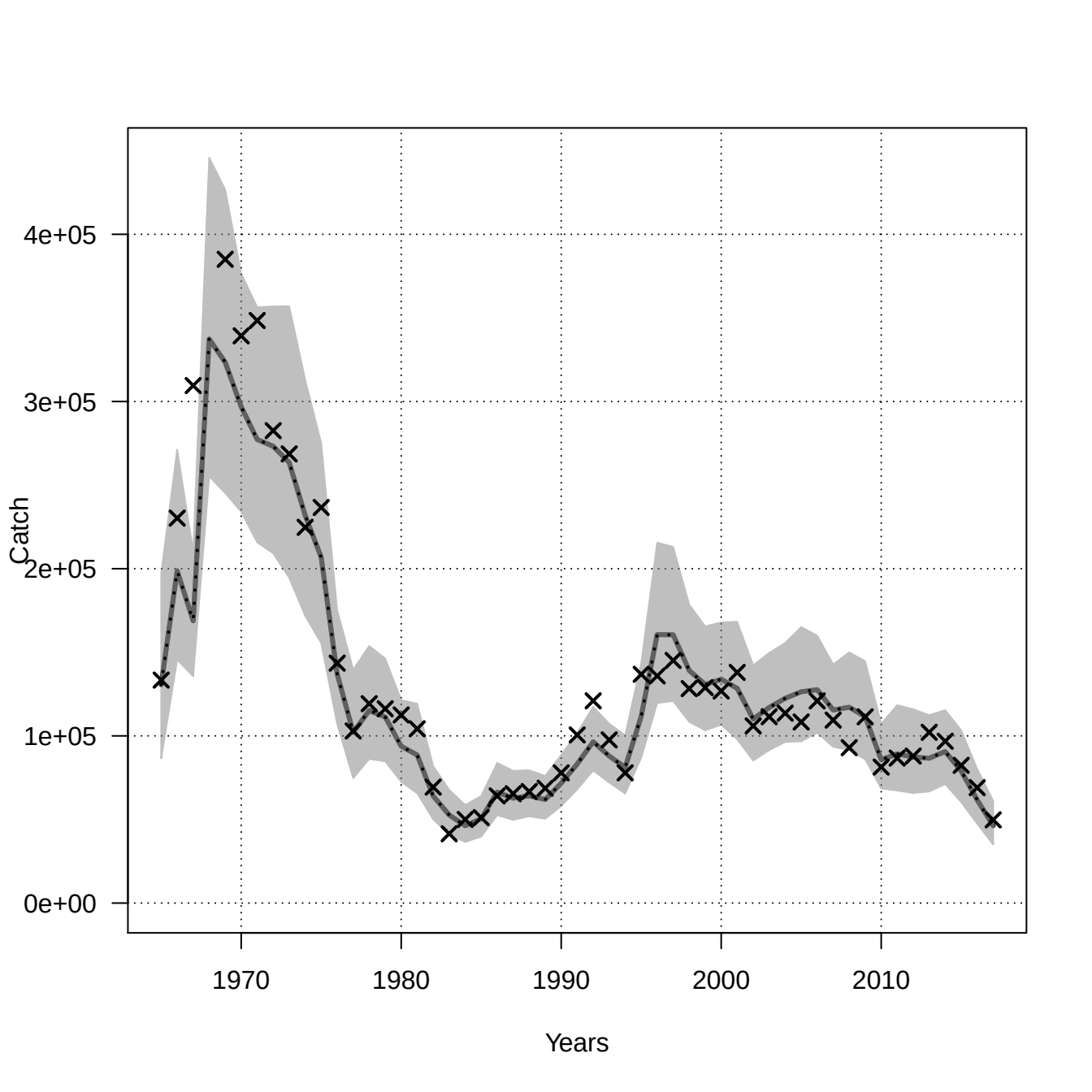
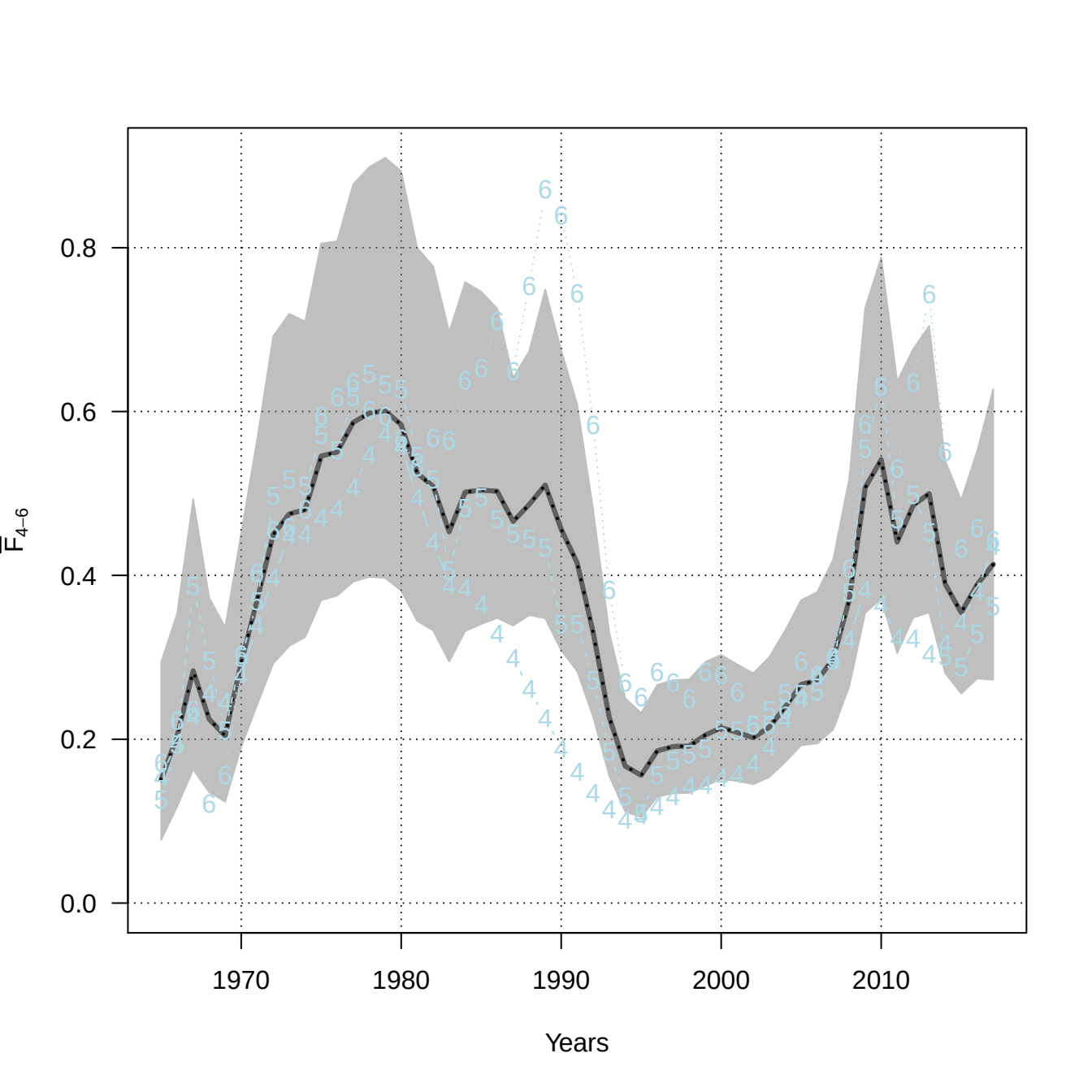
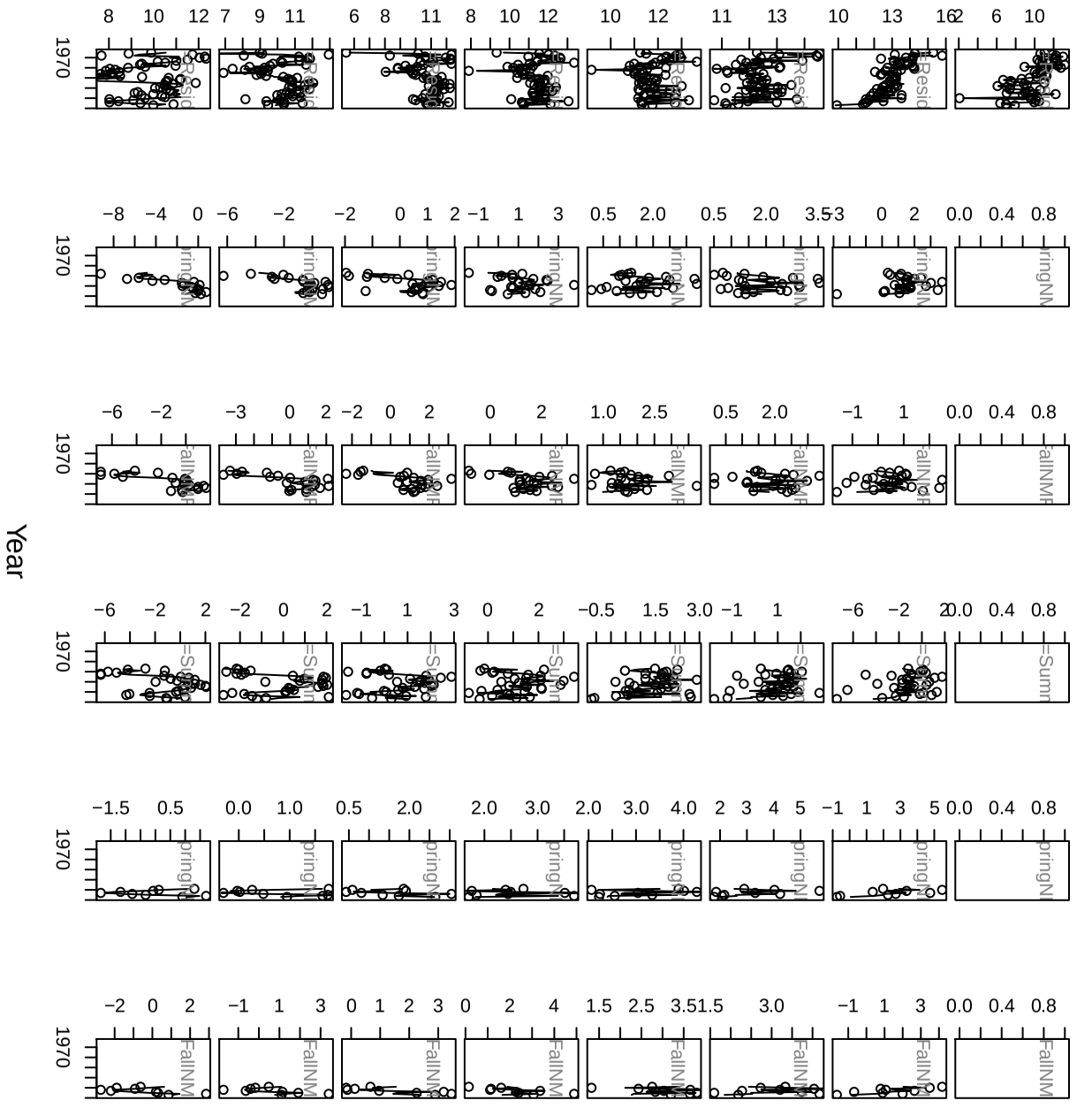
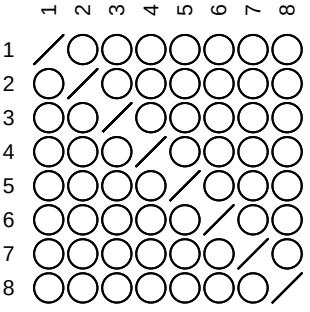

4e+05
3e+05
2e+05
1e+05
0e+00
Catch
1970
1980
1990
2000
2010
Years

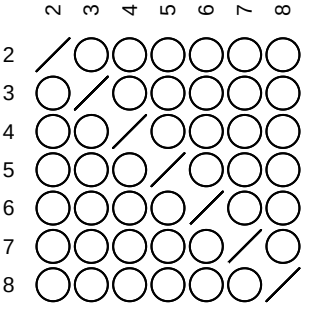

0.0
0.2
0.4
0.6
0.8
$\bar{F}_{4-6}$
1970
1980
1990
2000
2010
Years


Year
1970

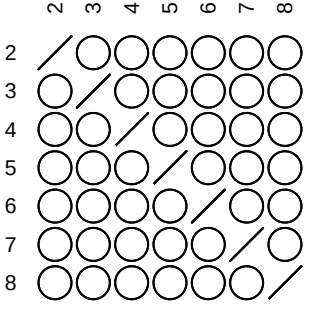
Residual catch



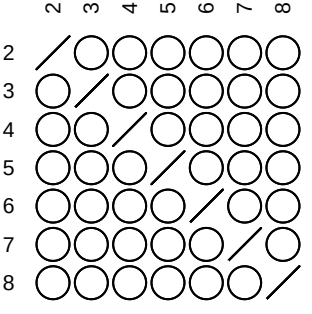
SpringNMFSBigelow



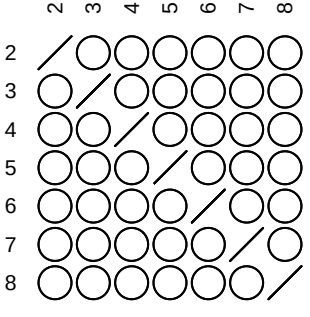
SpringNMFSAlbatross



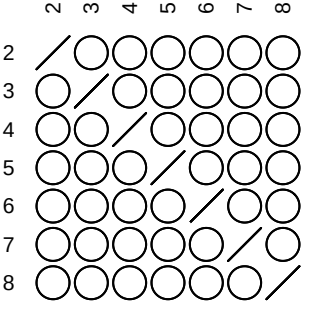
FallNMFSBigelow

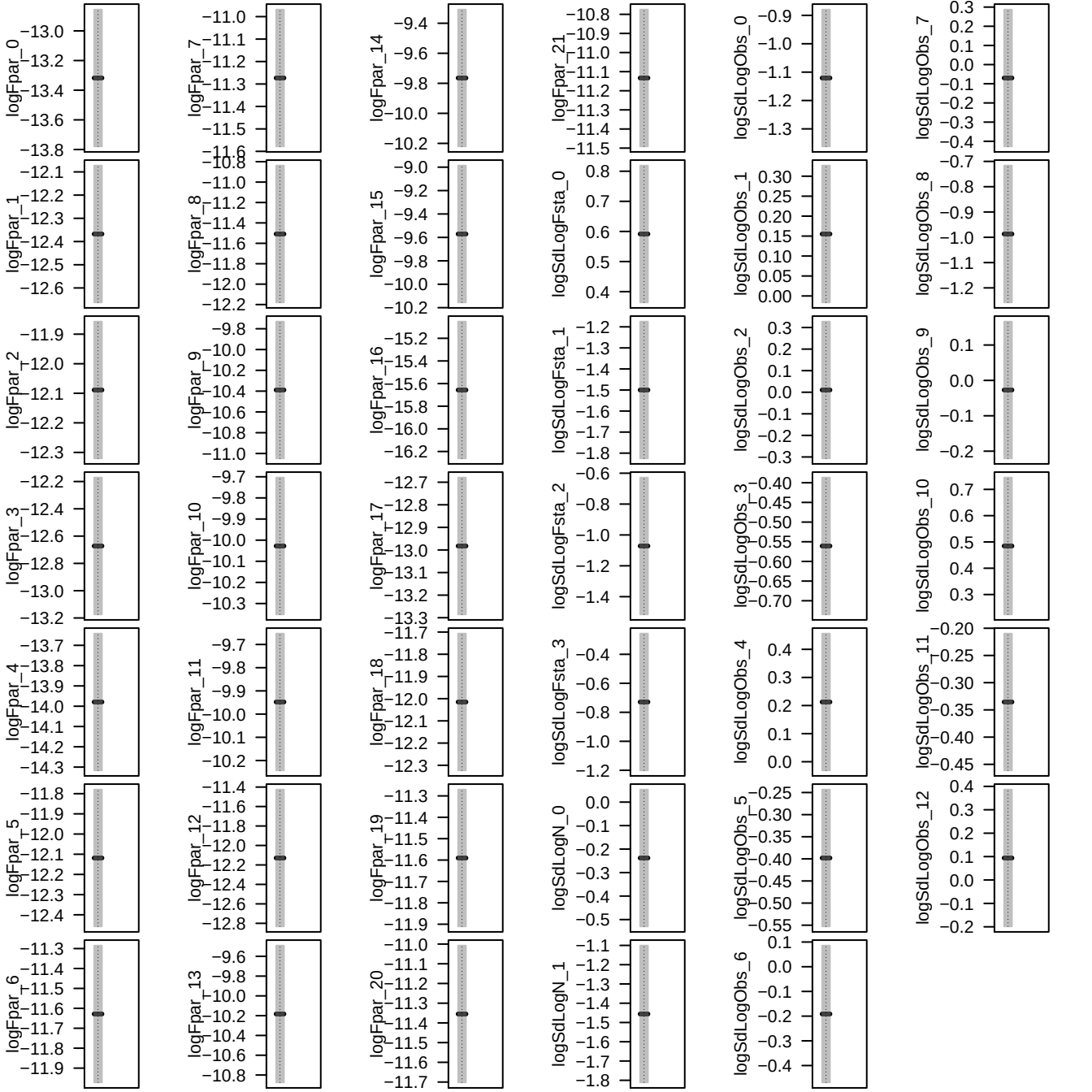


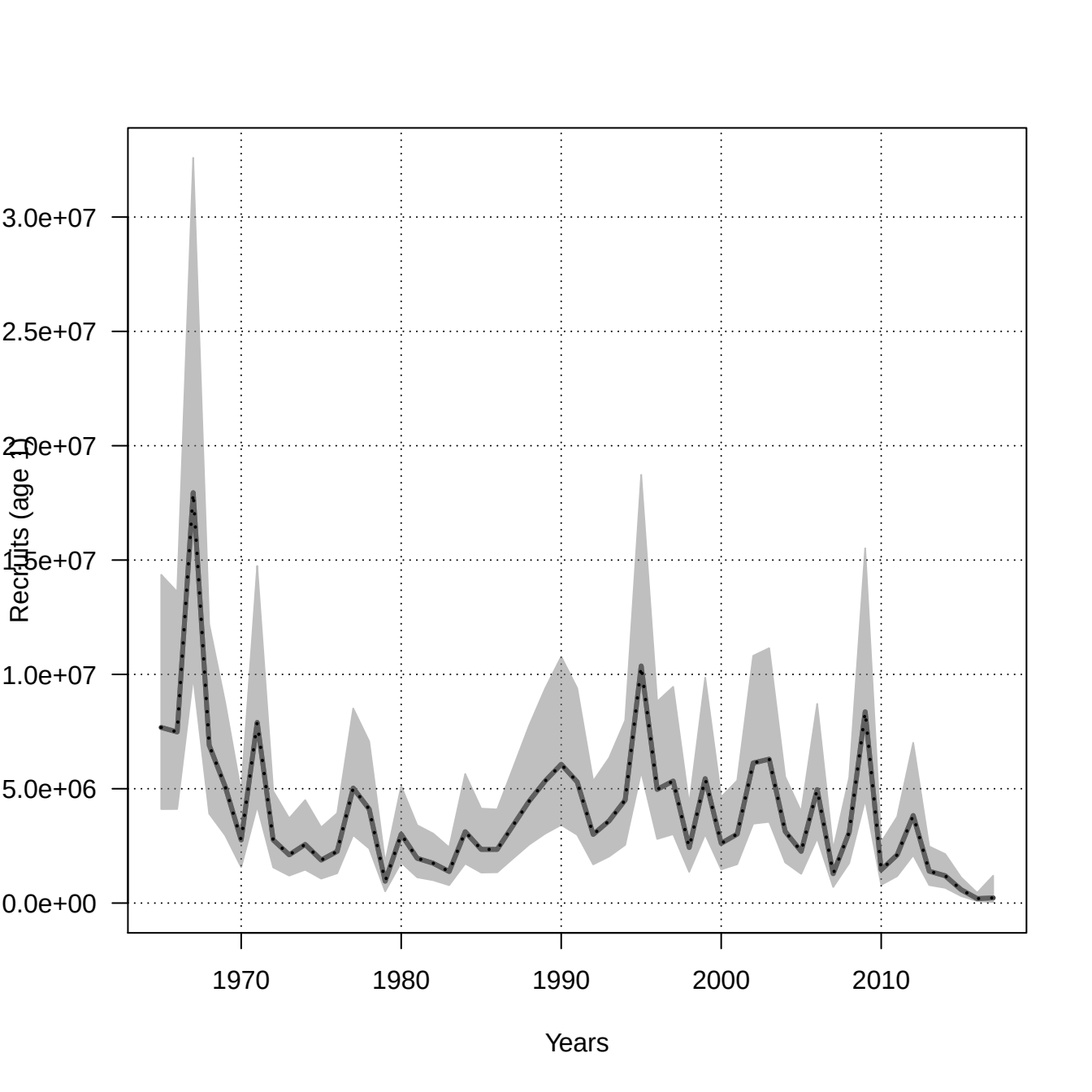
FallNMFSAlbatross

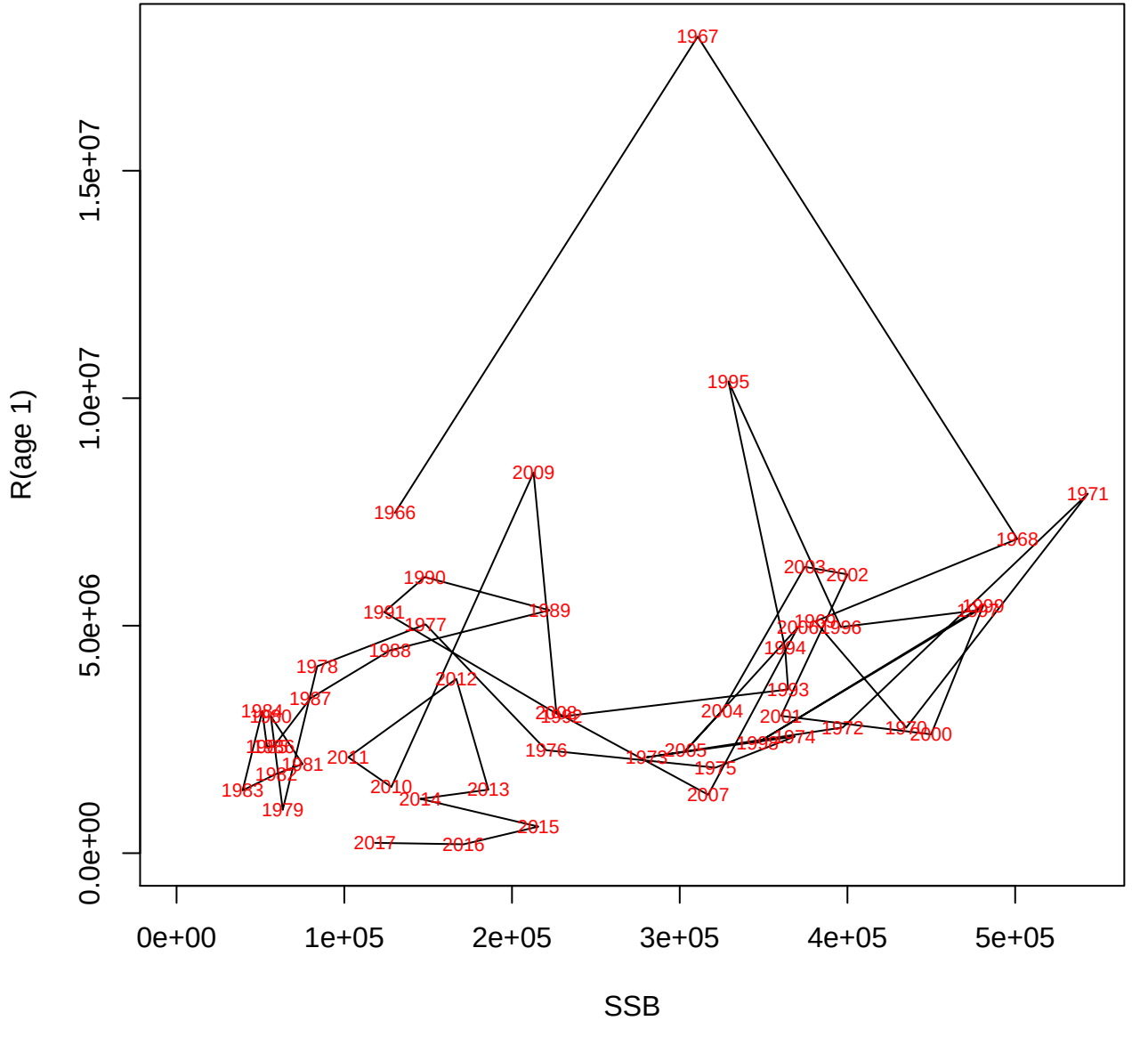


SummerNMFS

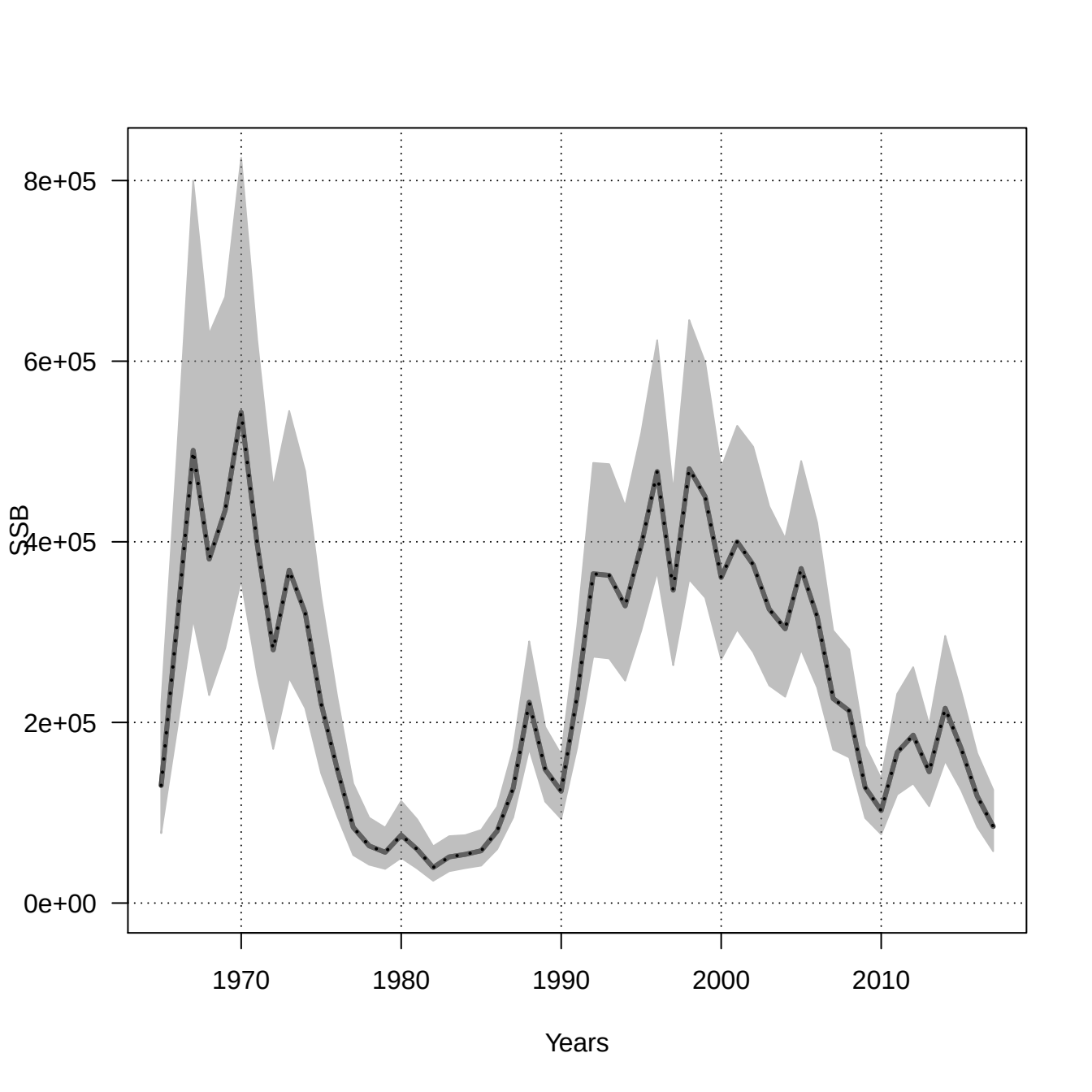


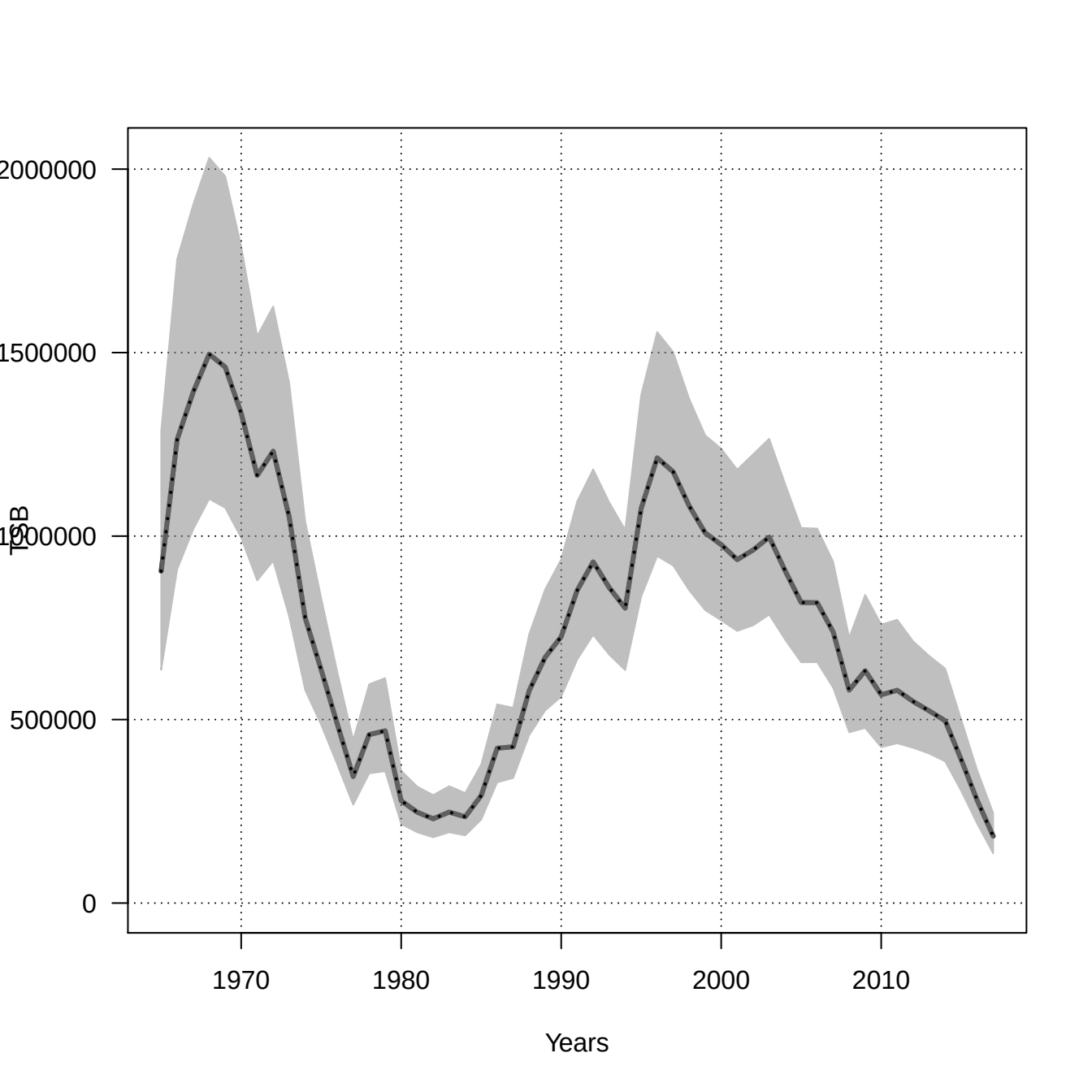

logFpar_0
logFpar_7
logFpar_14
logFpar_21
logSdLogObs_0
logSdLogObs_7
logFpar_1
logFpar_8
logFpar_15
logSdLogFsta_0
logSdLogObs_1
logSdLogObs_8
logFpar_2
logFpar_9
logFpar_16
logSdLogFsta_1
logSdLogObs_2
logSdLogObs_9
logFpar_3
logFpar_10
logFpar_17
logSdLogFsta_2
logSdLogObs_3
logSdLogObs_10
logFpar_4
logFpar_11
logFpar_18
logSdLogFsta_3
logSdLogObs_4
logSdLogObs_11
logFpar_5
logFpar_12
logFpar_19
logSdLogN_0
logSdLogObs_5
logSdLogObs_12
logFpar_6
logFpar_13
logFpar_20
logSdLogN_1
logSdLogObs_6

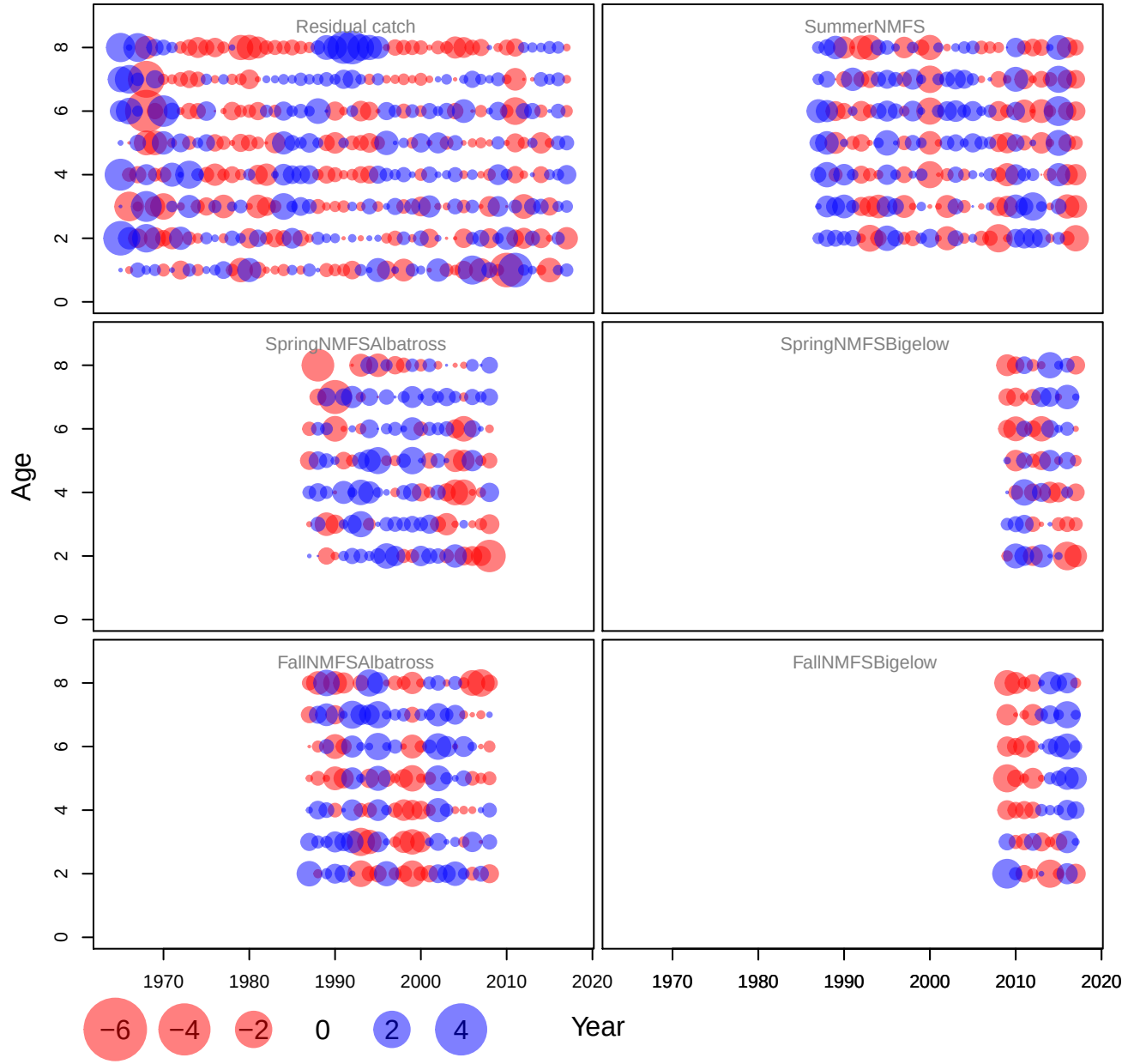

3.0e+07
2.5e+07
2.0e+07
1.5e+07
1.0e+07
5.0e+06
0.0e+00
Recruits (age 1)
1970
1980
1990
2000
2010
Years

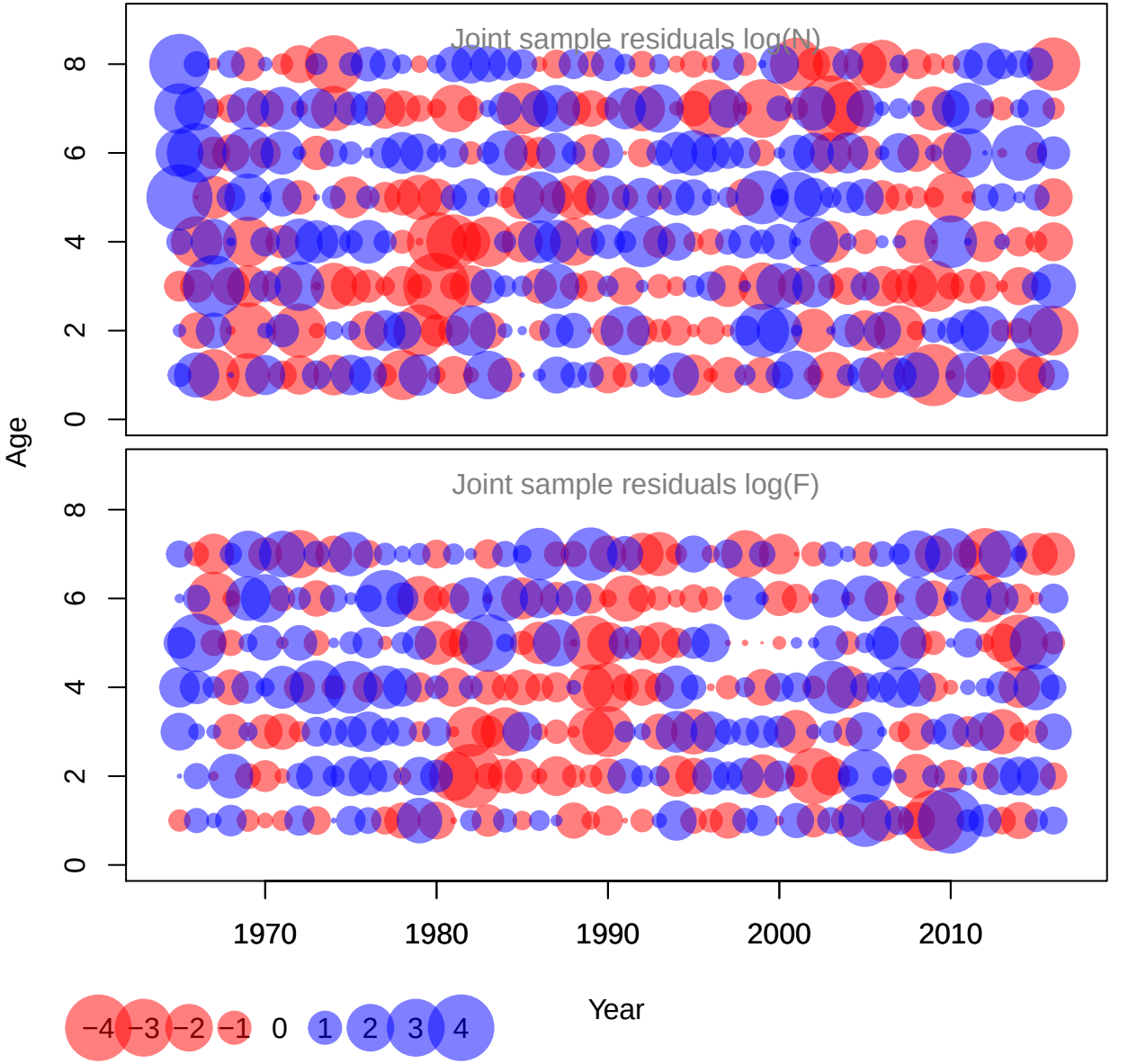


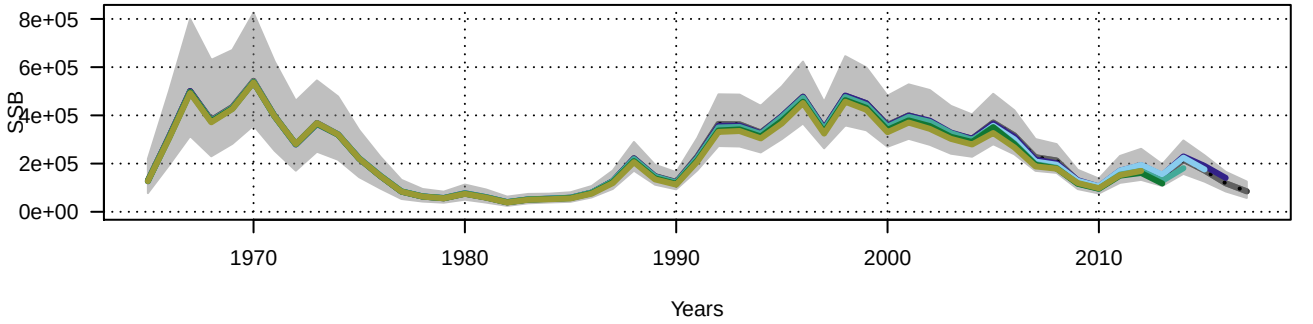
R(age 1)
SSB
0.0e+00
5.0e+06
1.0e+07
1.5e+07
0e+00
1e+05
2e+05
3e+05
4e+05
5e+05
1967
1966
1995
2009
1971
1968
1990
1991
1977
1989
1988
1978
1987
1984
1980
1981
1982
1983
1979
2011
2012
2010
2014
2013
2015
2016
2017
1976
1973
2005
1975
2007
2004
2001
1993
1994
1996
2003
2002
1972
1970
2000
1974

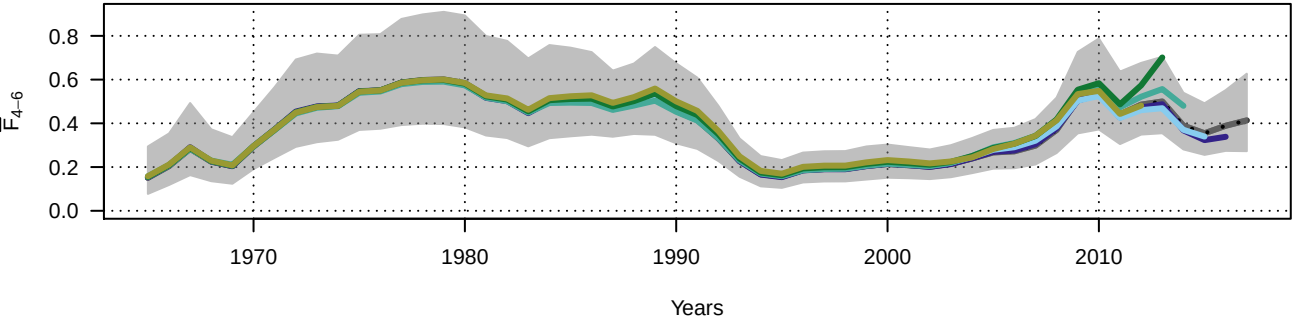

8e+05
6e+05
4e+05
2e+05
0e+00
SSB
1970
1980
1990
2000
2010
Years

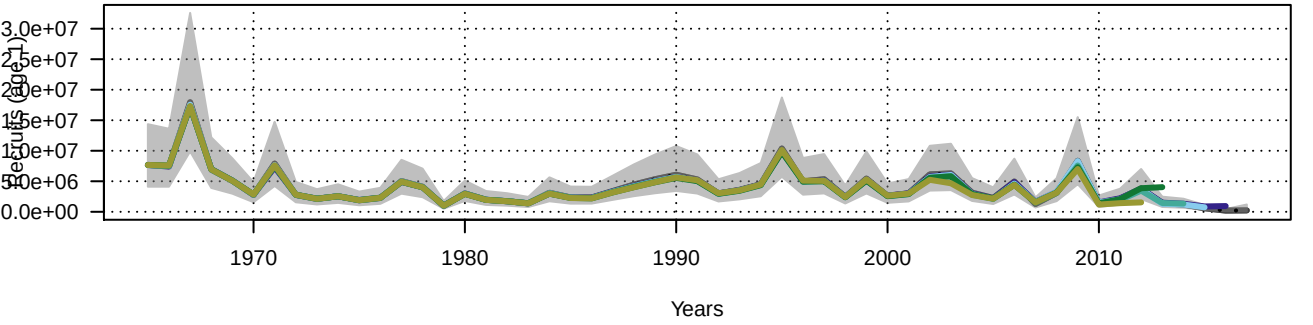

2000000
1500000
1000000
500000
0
TSB
1970
1980
1990
2000
2010
Years

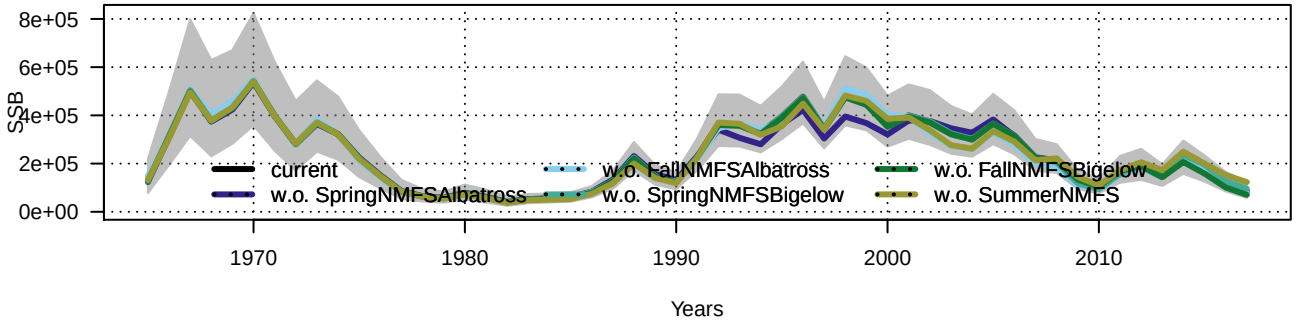

Residual catch
SummerNMFS
SpringNMFSAlbatross
SpringNMFSBigelow
FallNMFSAlbatross
FallNMFSBigelow
Age
Year
0
2
4
6
8
1970
1980
1990
2000
2010
2020
−6
−4
−2
0
2
4

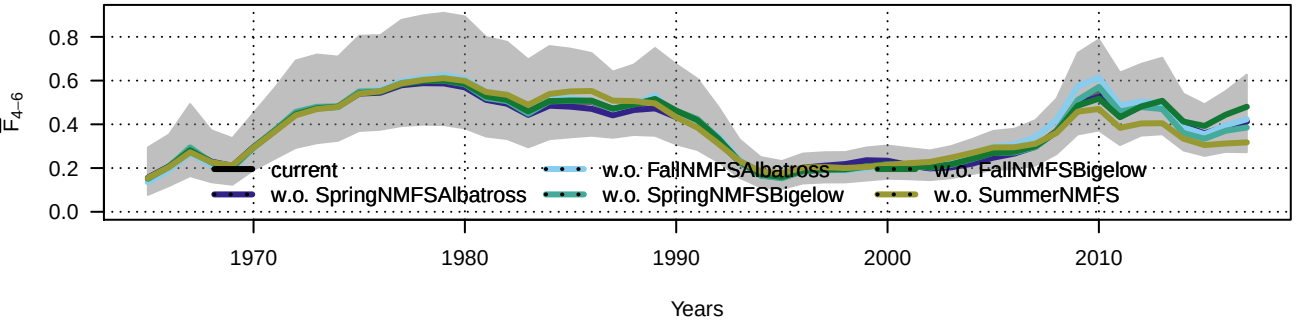

Joint sample residuals log(N)
Joint sample residuals log(F)
Age
0
2
4
6
8
1970
1980
1990
2000
2010
Year
−4
−3
−2
−1
0
1
2
3
4

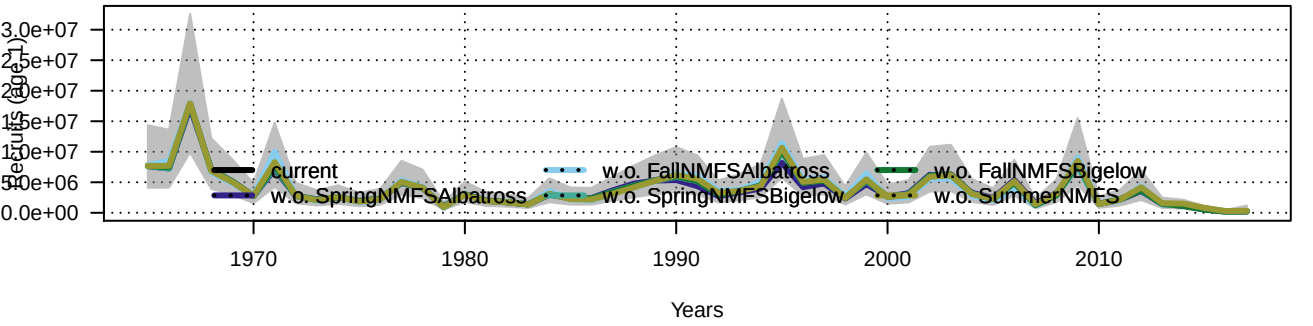

SSB
8e+05
6e+05
4e+05
2e+05
0e+00
1970
1980
1990
2000
2010
Years

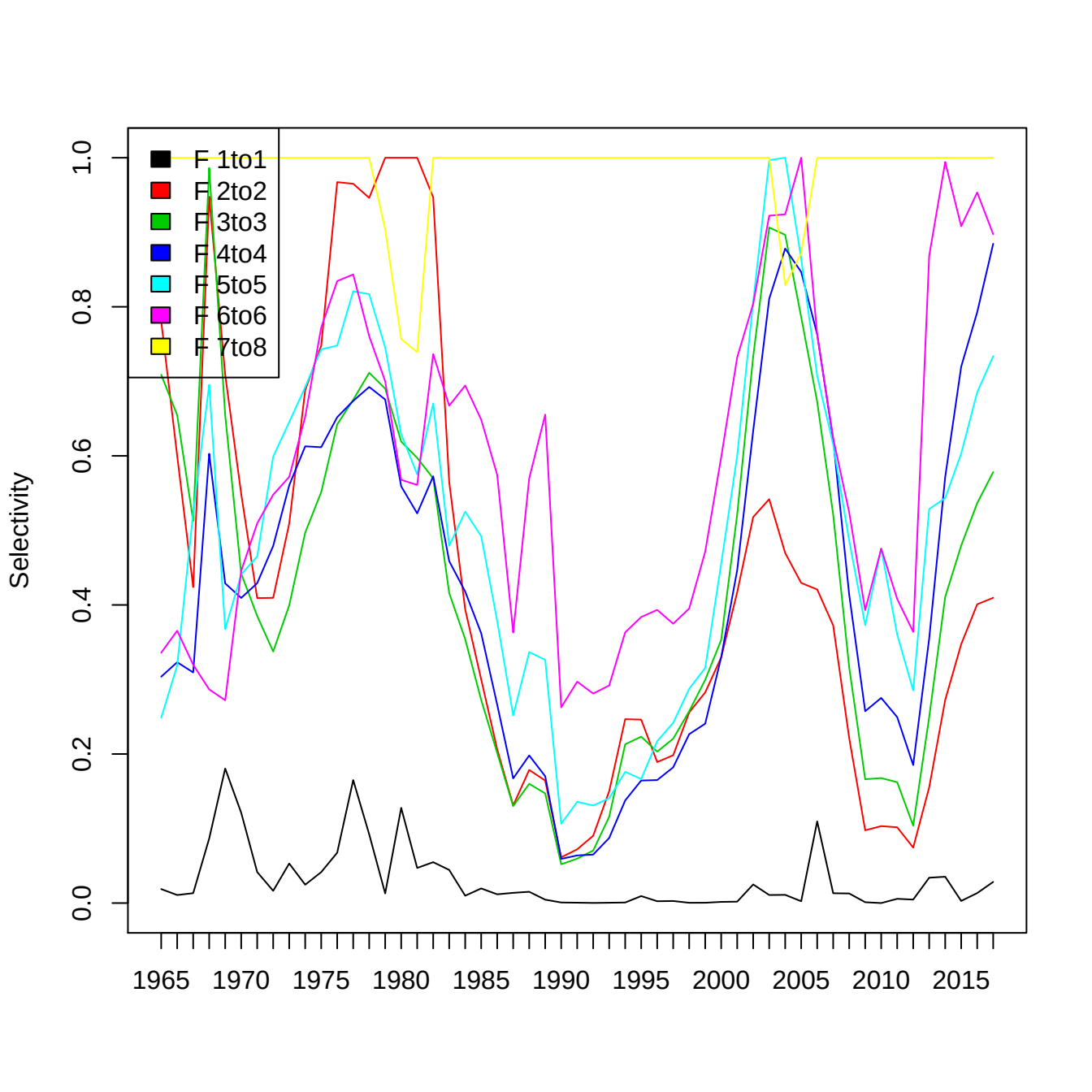

F4–6
0.8
0.6
0.4
0.2
0.0
1970
1980
1990
2000
2010
Years

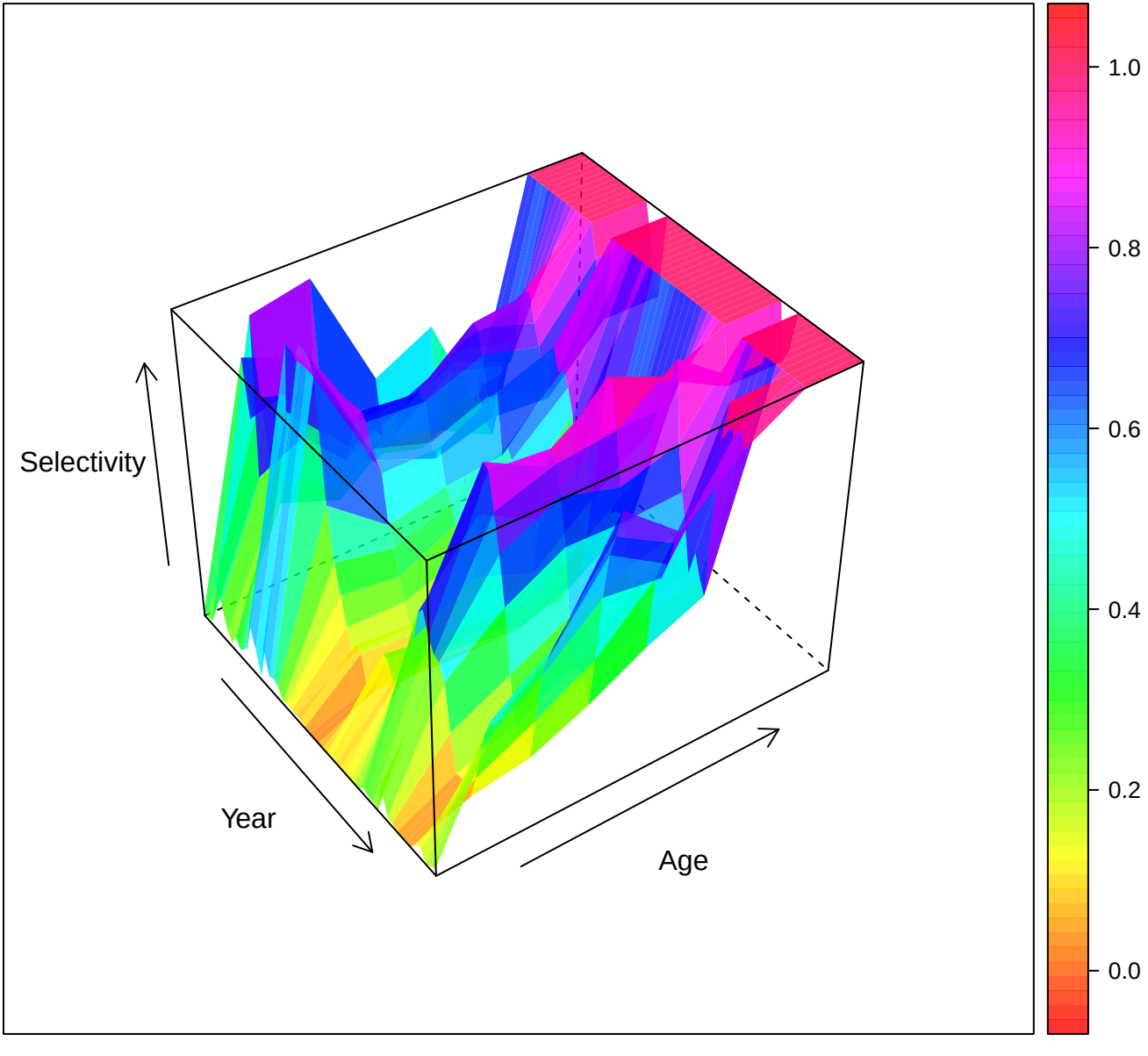

Recruits (age 1)
3.0e+07
2.5e+07
2.0e+07
1.5e+07
1.0e+07
5.0e+06
0.0e+00
1970
1980
1990
2000
2010
Years

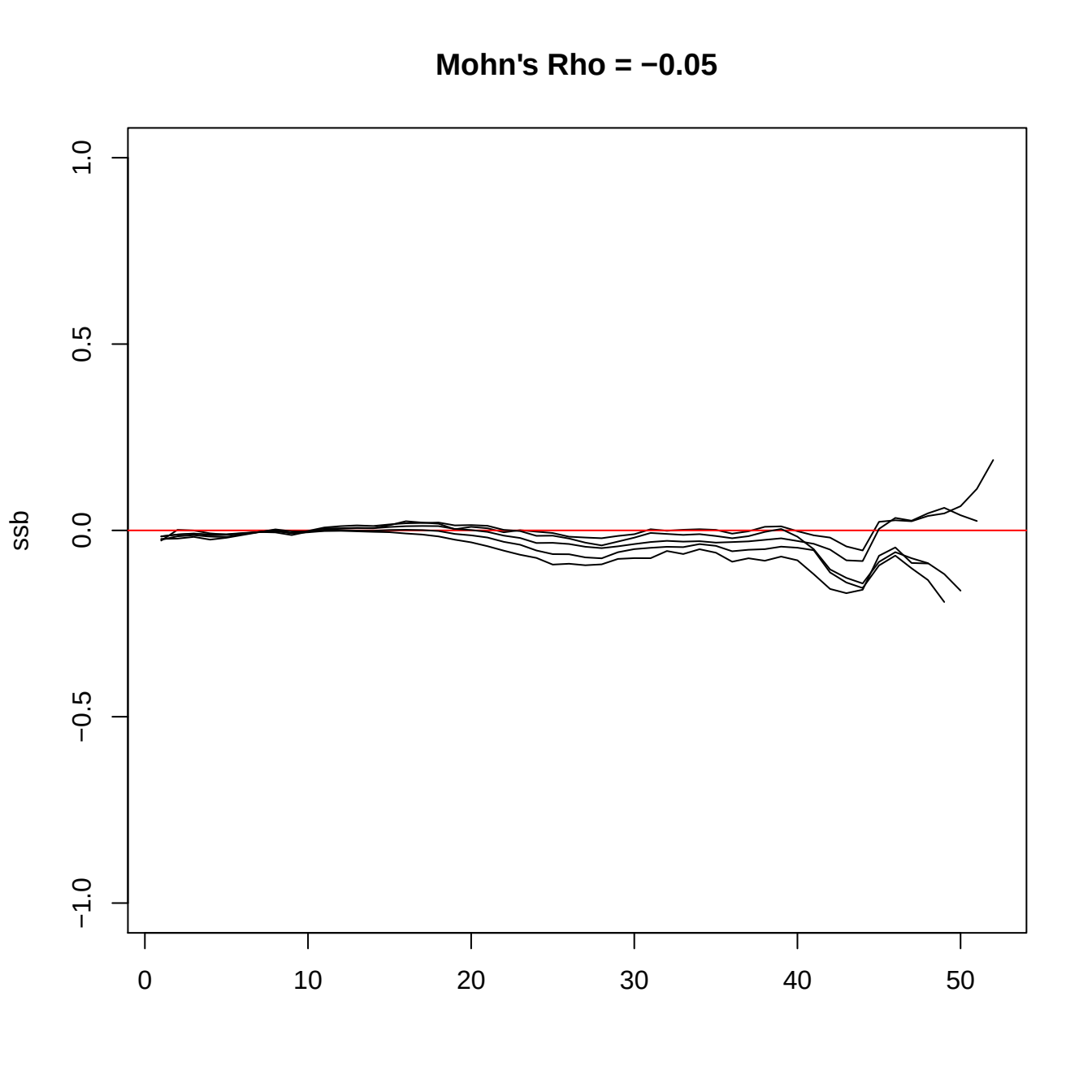

SSB
8e+05
6e+05
4e+05
2e+05
0e+00
1970
1980
1990
2000
2010
Years
current
w.o. SpringNMFSAlbatross
w.o. FallNMFSAlbatross
w.o. SpringNMFSBigelow
w.o. FallNMFSBigelow
w.o. SummerNMFS

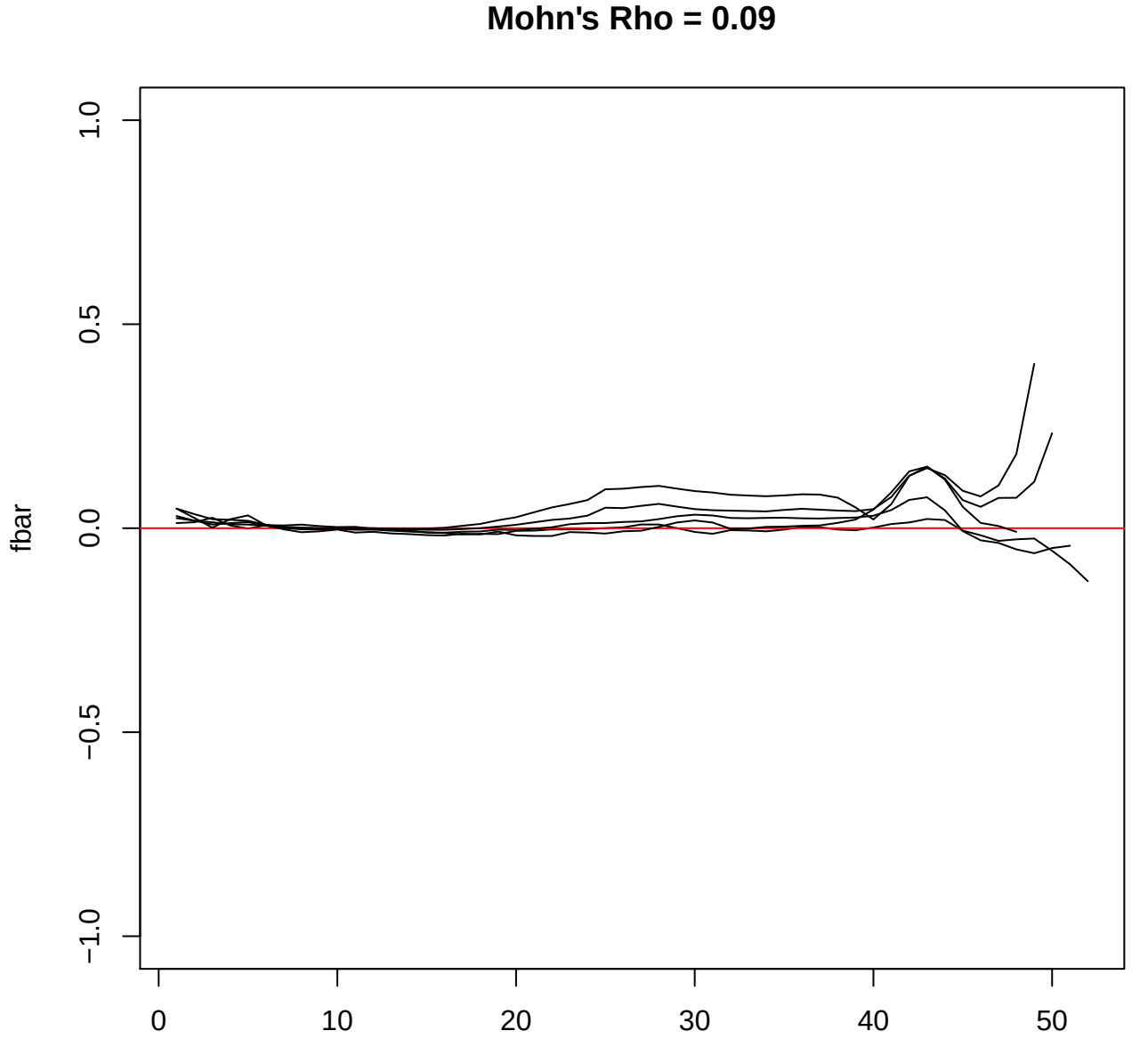

F4–6
0.8
0.6
0.4
0.2
0.0
1970
1980
1990
2000
2010
Years
current
w.o. SpringNMFSAlbatross
w.o. FallNMFSAlbatross
w.o. SpringNMFSBigelow
w.o. FallNMFSBigelow
w.o. SummerNMFS

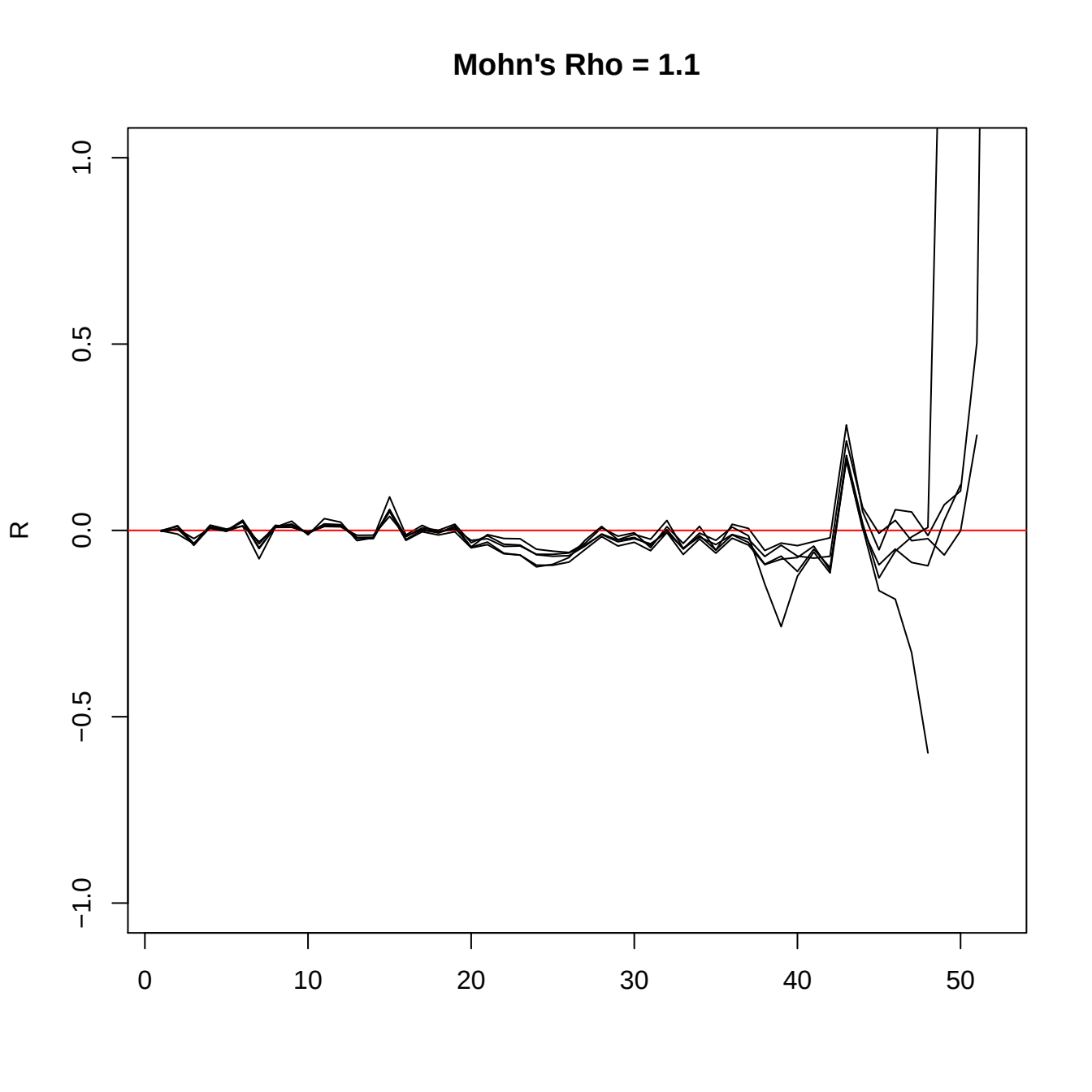

Recruits (age 1)
3.0e+07
2.5e+07
2.0e+07
1.5e+07
1.0e+07
5.0e+06
0.0e+00
1970
1980
1990
2000
2010
Years
current
w.o. SpringNMFSAlbatross
w.o. FallNMFSAlbatross
w.o. SpringNMFSBigelow
w.o. FallNMFSBigelow
w.o. SummerNMFS

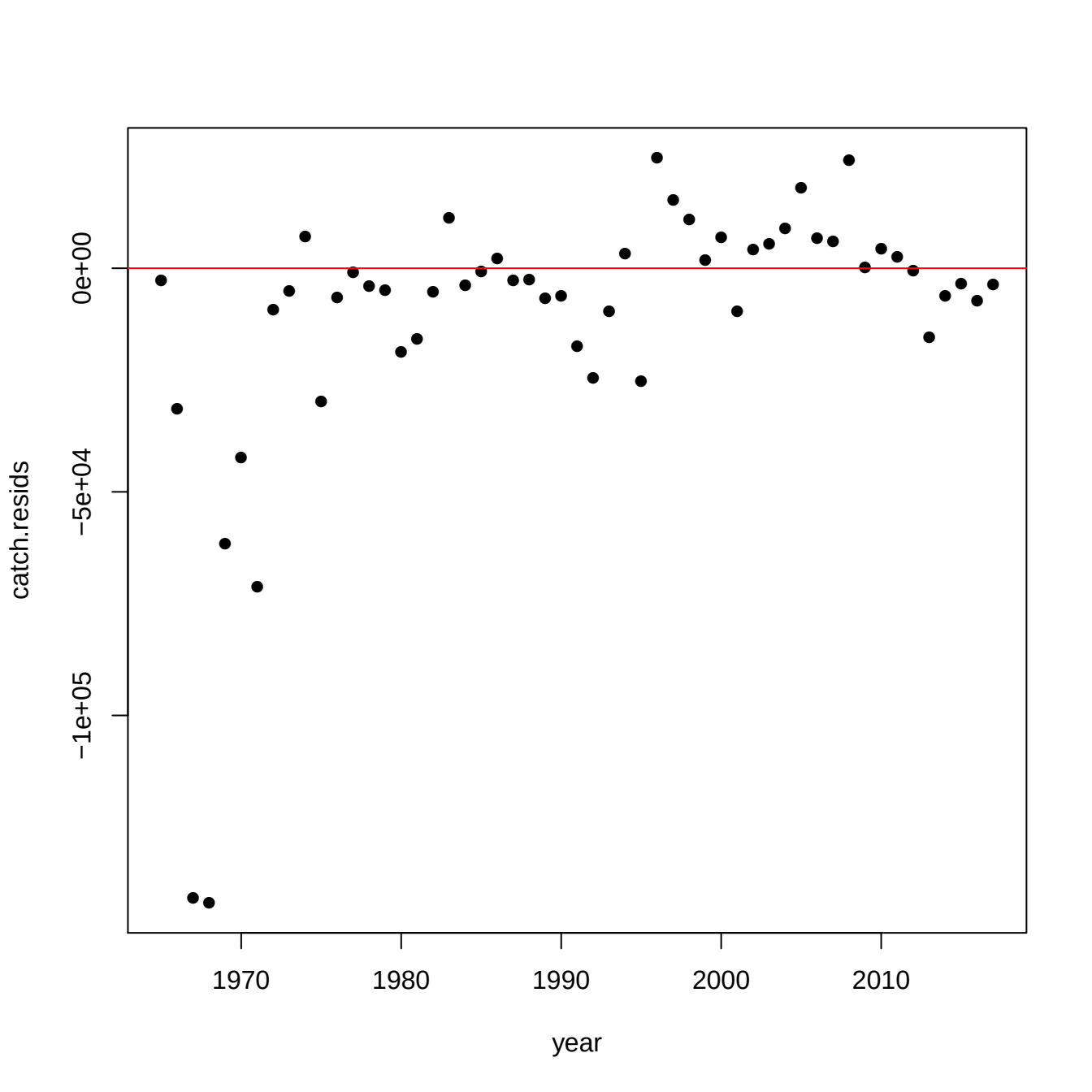

F 1to1
F 2to2
F 3to3
F 4to4
F 5to5
F 6to6
F 7to8
Selectivity
0.0
0.2
0.4
0.6
0.8
1.0
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015

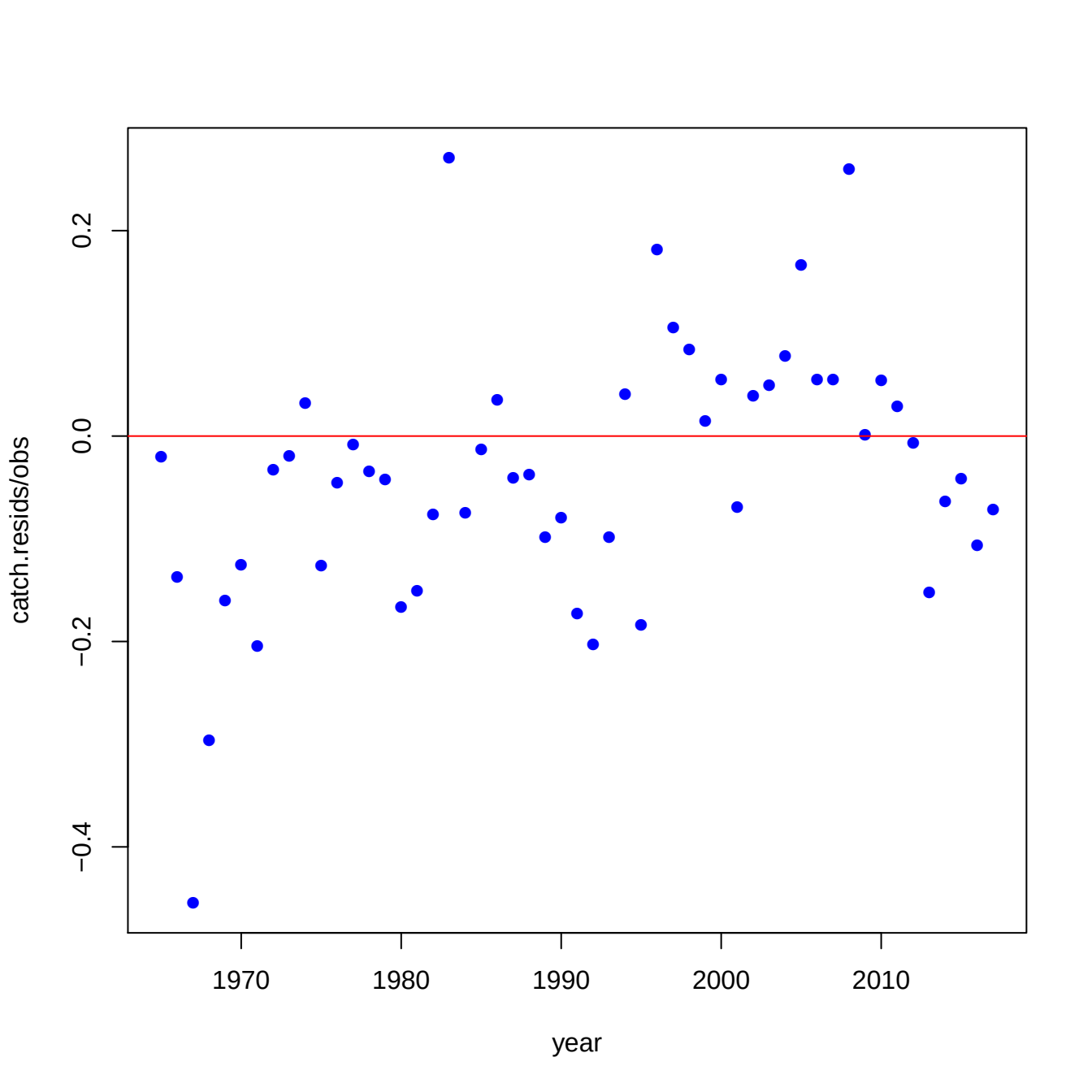

Selectivity
Year
Age
1.0
0.8
0.6
0.4
0.2
0.0

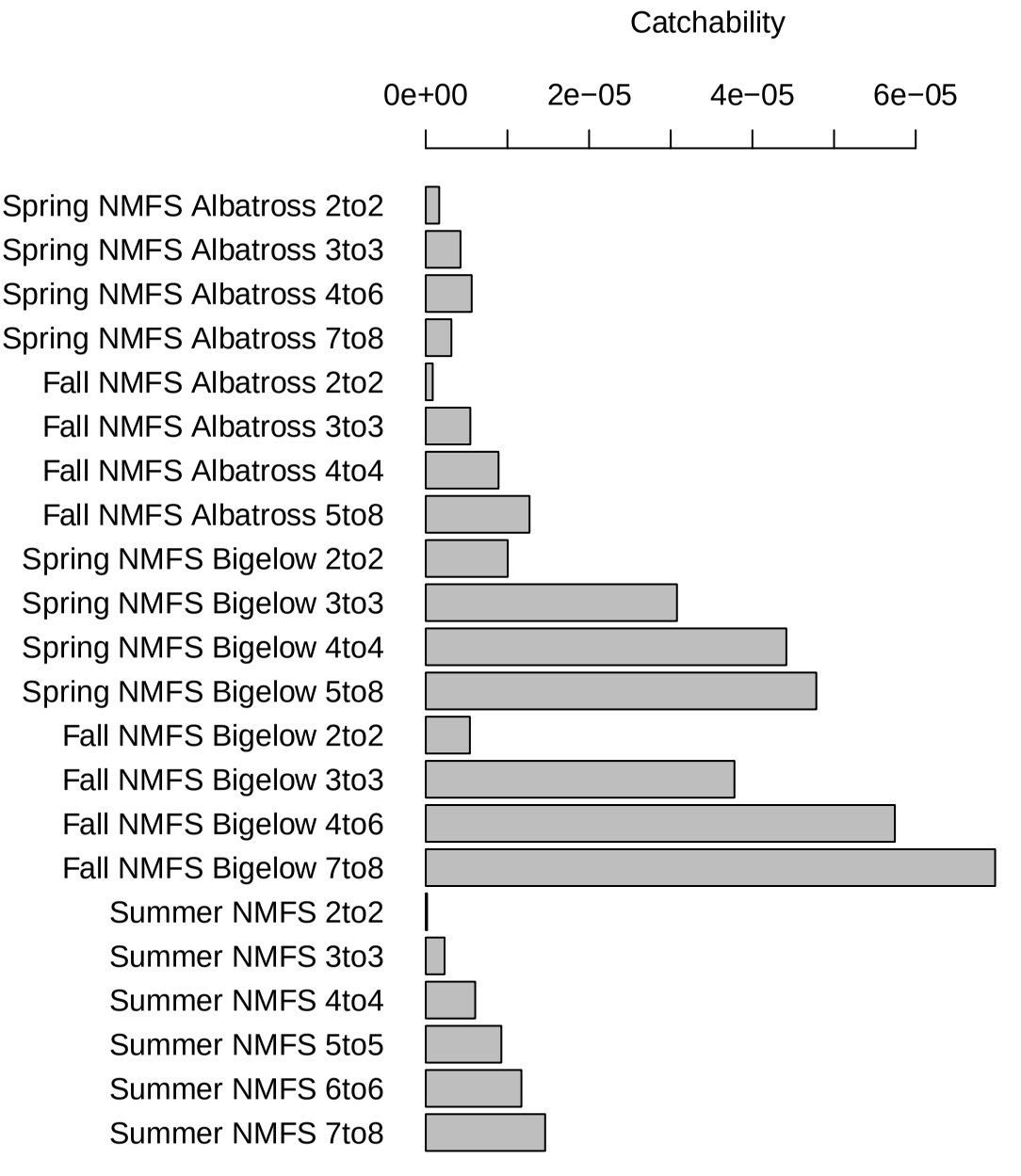

Mohn's Rho = −0.05
ssb
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50

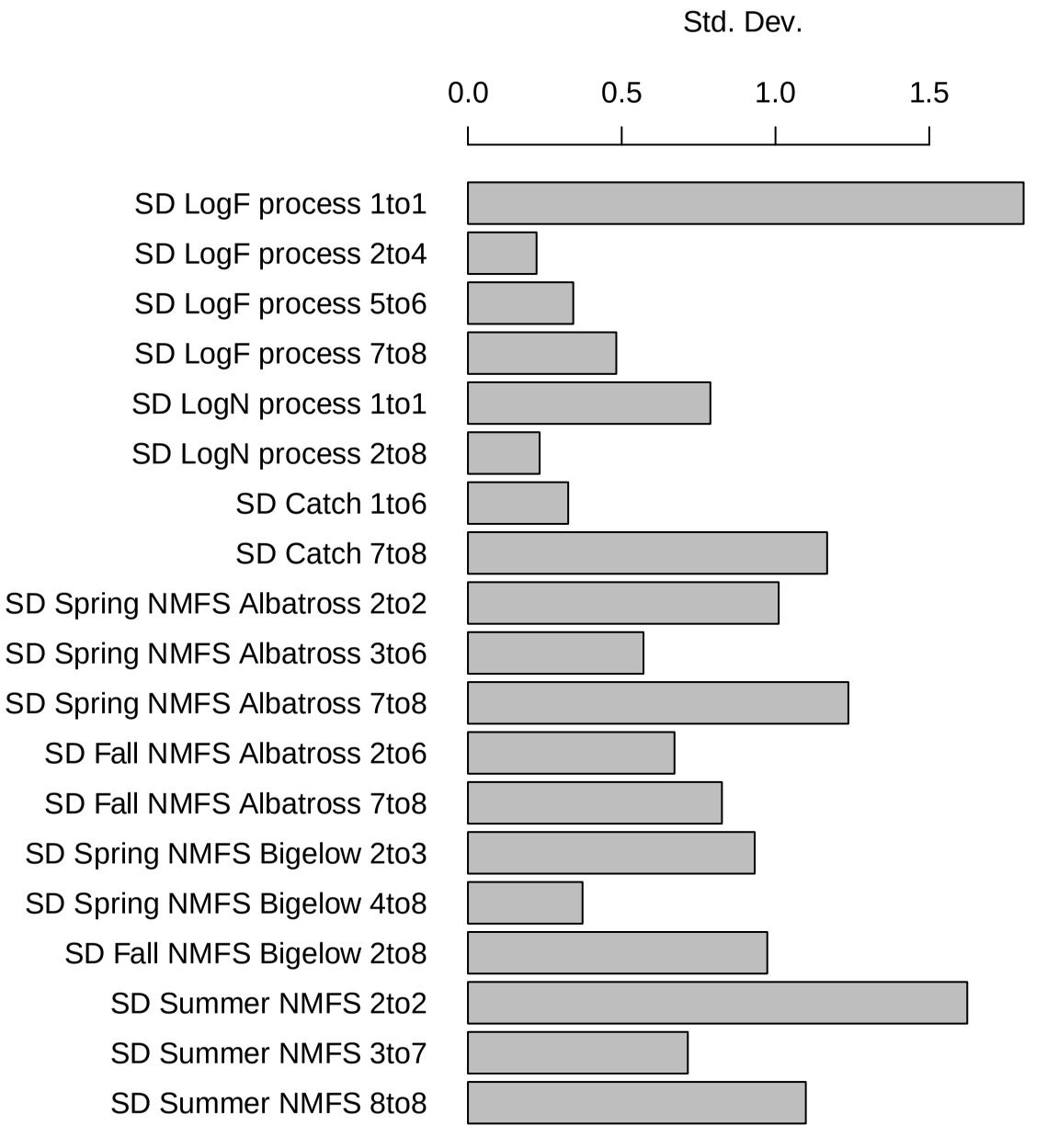

Mohn's Rho = 0.09
fbar
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50


Mohn's Rho = 1.1
R
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50


catch.resids
0e+00
−5e+04
−1e+05
1970
1980
1990
2000
2010
year


catch.resids/obs
0.2
0.0
−0.2
−0.4
1970
1980
1990
2000
2010
year


Catchability
0e+00
2e−05
4e−05
6e−05
Spring NMFS Albatross 2to2
Spring NMFS Albatross 3to3
Spring NMFS Albatross 4to6
Spring NMFS Albatross 7to8
Fall NMFS Albatross 2to2
Fall NMFS Albatross 3to3
Fall NMFS Albatross 4to4
Fall NMFS Albatross 5to8
Spring NMFS Bigelow 2to2
Spring NMFS Bigelow 3to3
Spring NMFS Bigelow 4to4
Spring NMFS Bigelow 5to8
Fall NMFS Bigelow 2to2
Fall NMFS Bigelow 3to3
Fall NMFS Bigelow 4to6
Fall NMFS Bigelow 7to8
Summer NMFS 2to2
Summer NMFS 3to3
Summer NMFS 4to4
Summer NMFS 5to5
Summer NMFS 6to6
Summer NMFS 7to8


Std. Dev.
0.0
0.5
1.0
1.5
SD LogF process 1to1
SD LogF process 2to4
SD LogF process 5to6
SD LogF process 7to8
SD LogN process 1to1
SD LogN process 2to8
SD Catch 1to6
SD Catch 7to8
SD Spring NMFS Albatross 2to2
SD Spring NMFS Albatross 3to6
SD Spring NMFS Albatross 7to8
SD Fall NMFS Albatross 2to6
SD Fall NMFS Albatross 7to8
SD Spring NMFS Bigelow 2to3
SD Spring NMFS Bigelow 4to8
SD Fall NMFS Bigelow 2to8
SD Summer NMFS 2to2
SD Summer NMFS 3to7
SD Summer NMFS 8to8