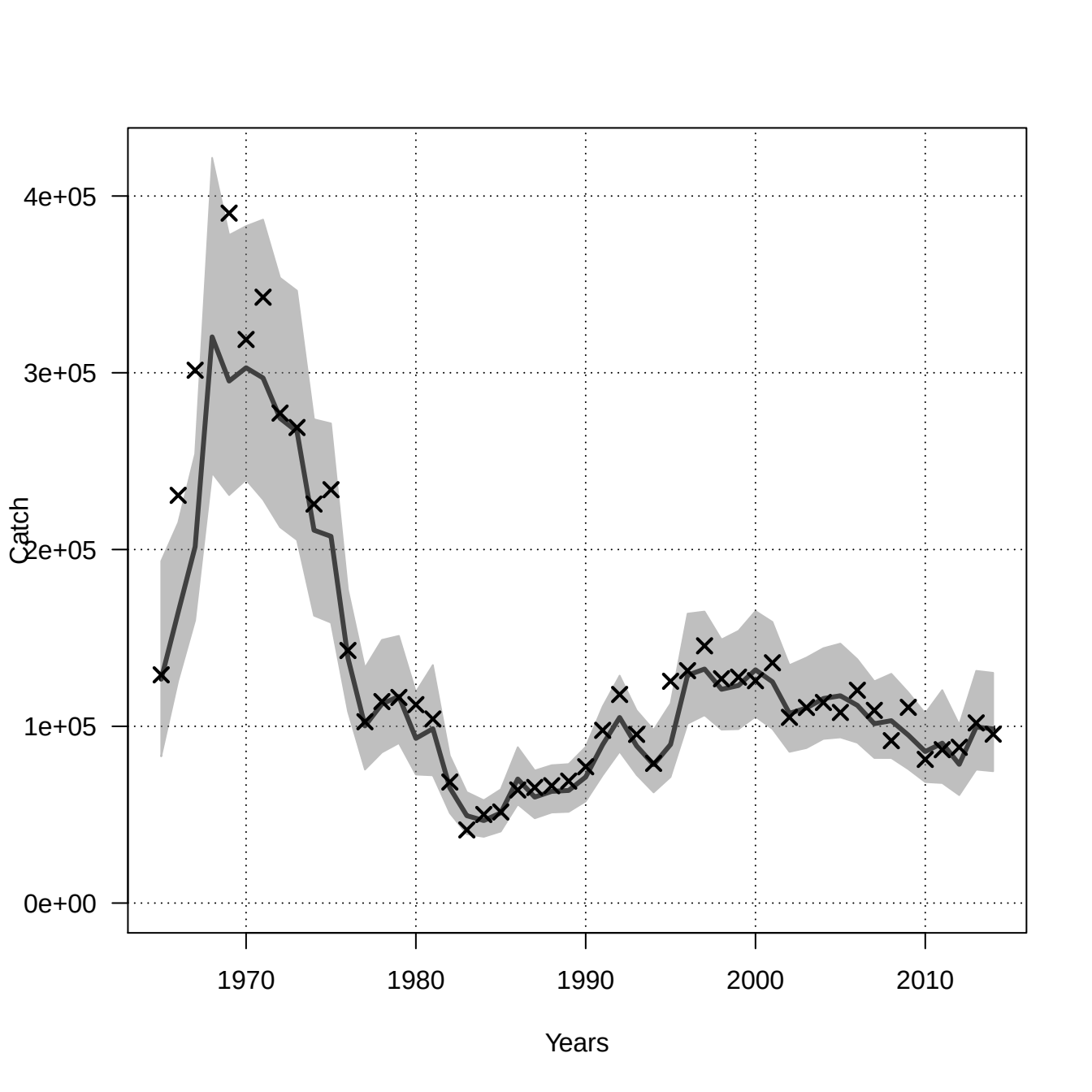
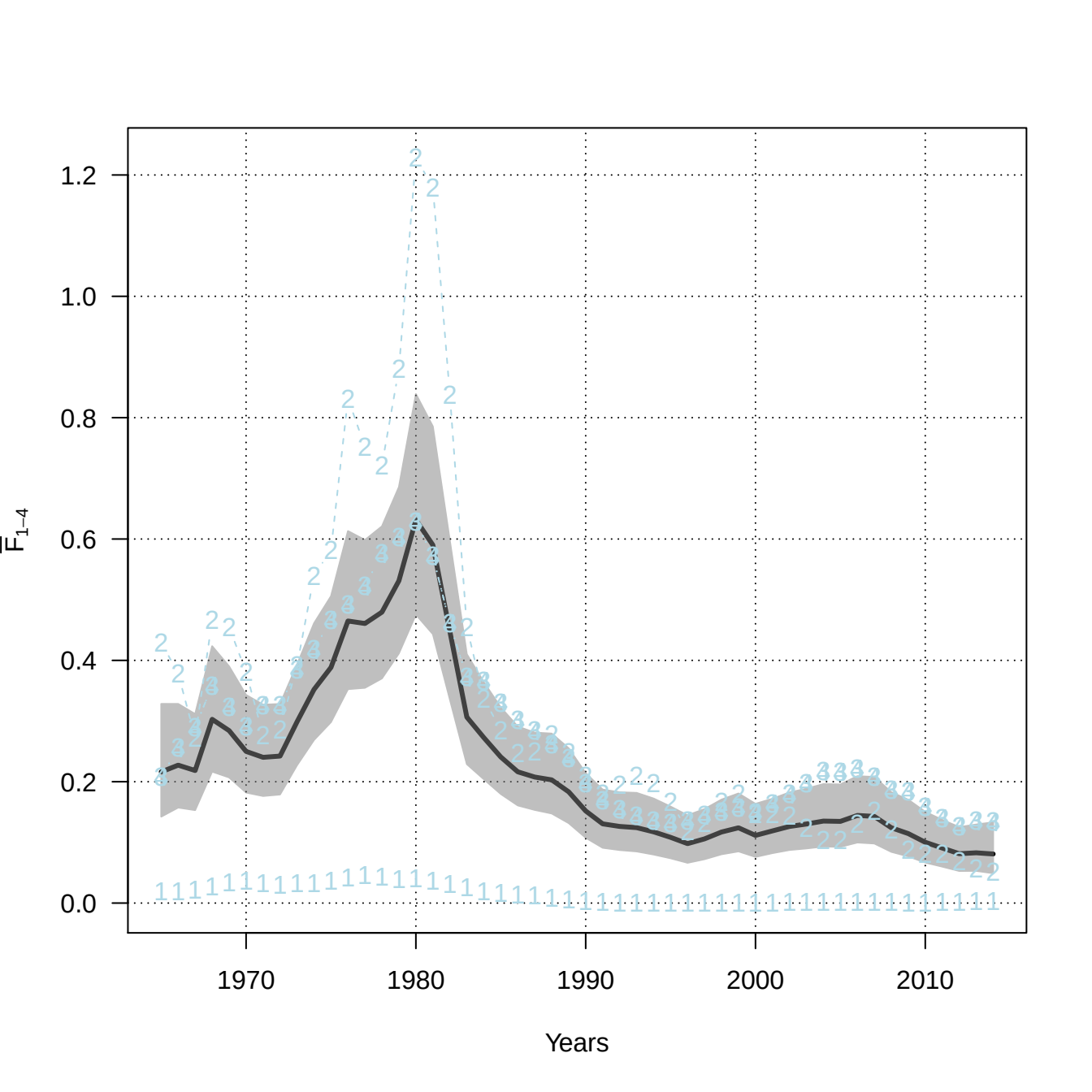
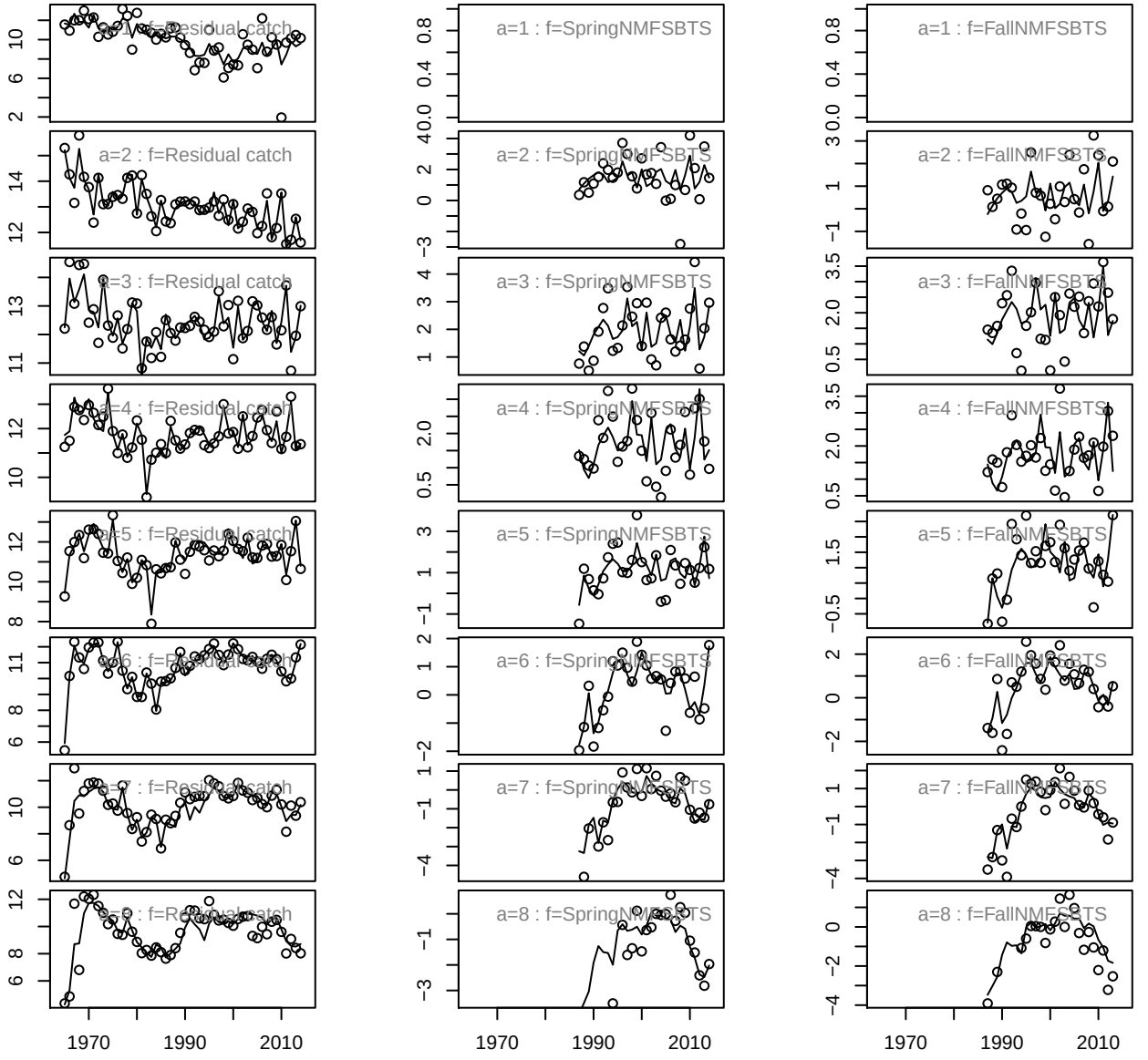
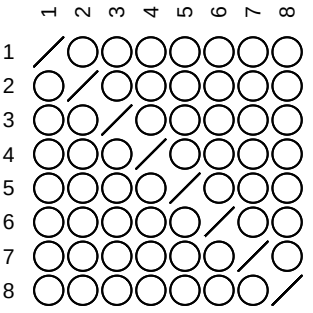

4e+05
3e+05
2e+05
1e+05
0e+00
Catch
1970
1980
1990
2000
2010
Years

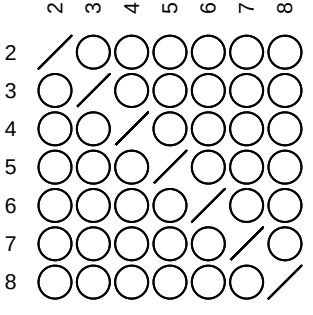

1.2
1.0
0.8
0.6
0.4
0.2
0.0
$\bar{F}_{1-4}$
1970
1980
1990
2000
2010
Years


a=1 : f=Residual catch
a=2 : f=Residual catch
a=3 : f=Residual catch
a=4 : f=Residual catch
a=5 : f=Residual catch
a=6 : f=Residual catch
a=7 : f=Residual catch
a=8 : f=Residual catch
a=1 : f=SpringNMFSBTS
a=2 : f=SpringNMFSBTS
a=3 : f=SpringNMFSBTS
a=4 : f=SpringNMFSBTS
a=5 : f=SpringNMFSBTS
a=6 : f=SpringNMFSBTS
a=7 : f=SpringNMFSBTS
a=8 : f=SpringNMFSBTS
a=1 : f=FallNMFSBTS
a=2 : f=FallNMFSBTS
a=3 : f=FallNMFSBTS
a=4 : f=FallNMFSBTS
a=5 : f=FallNMFSBTS
a=6 : f=FallNMFSBTS
a=7 : f=FallNMFSBTS
a=8 : f=FallNMFSBTS
1970
1990
2010
Year

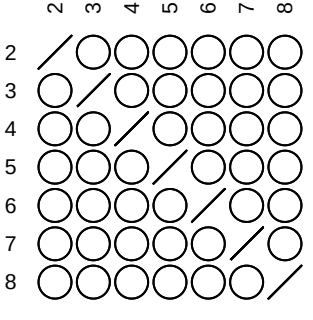
Residual catch

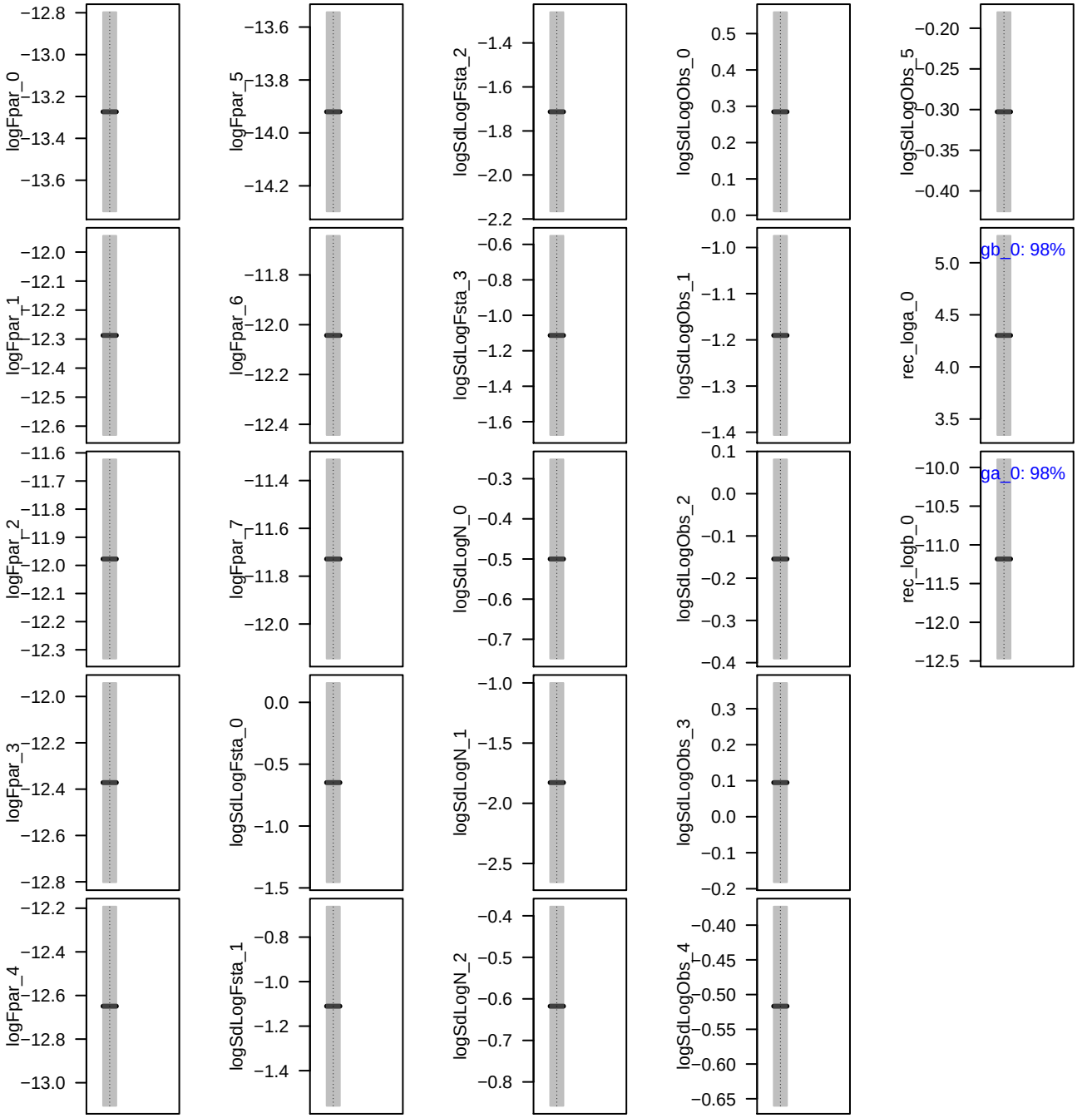


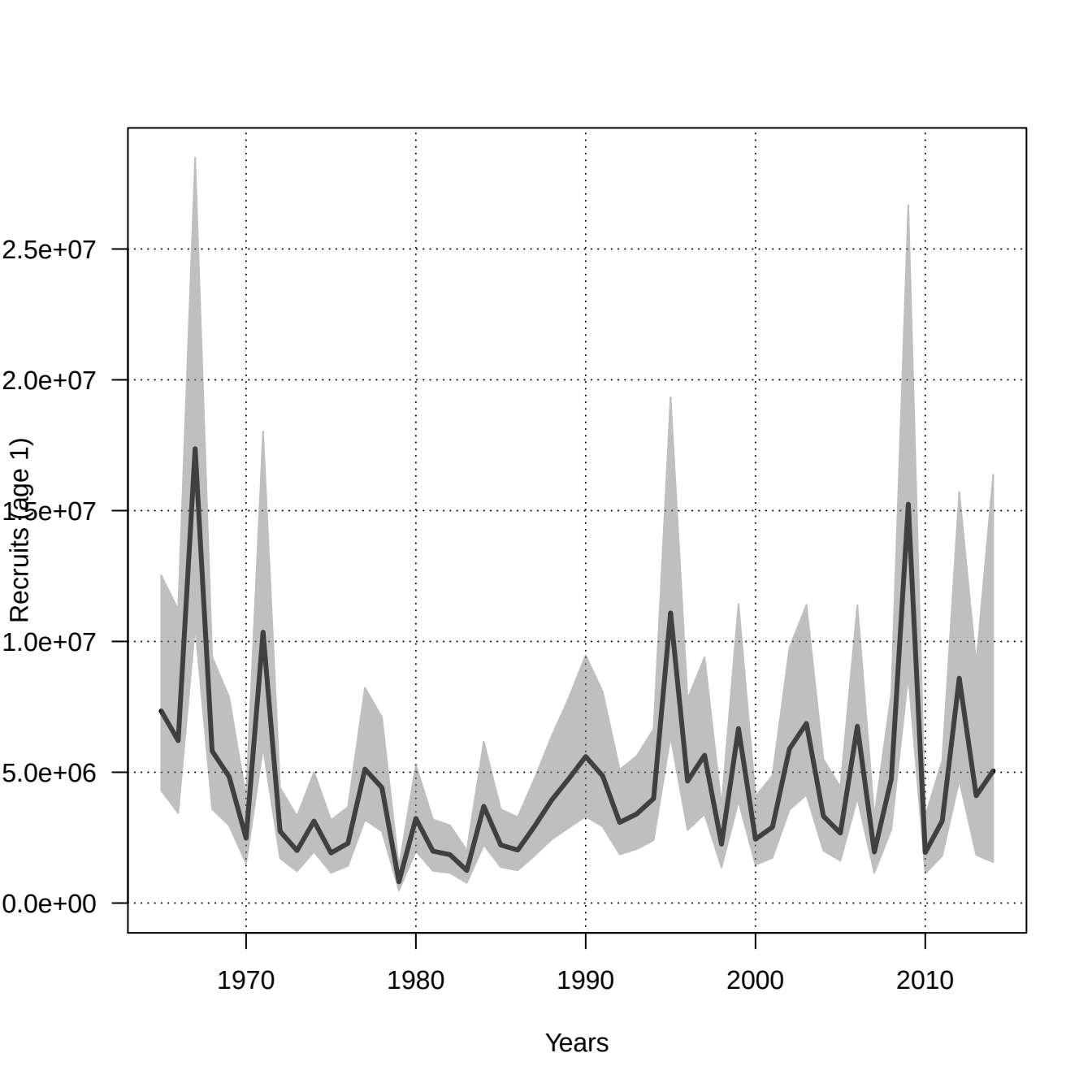
SpringNMFSBTS

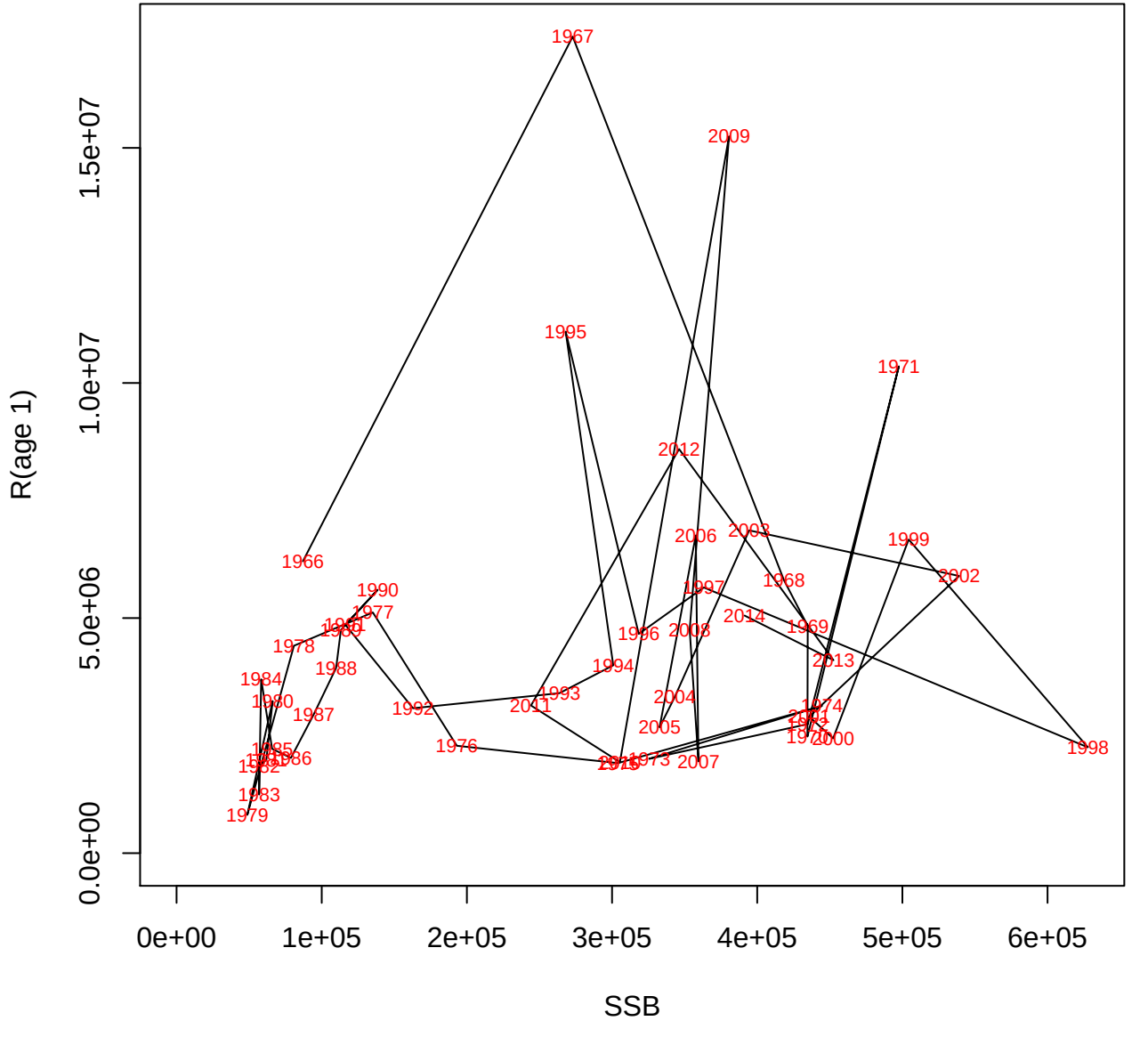


FallNMFSBTS

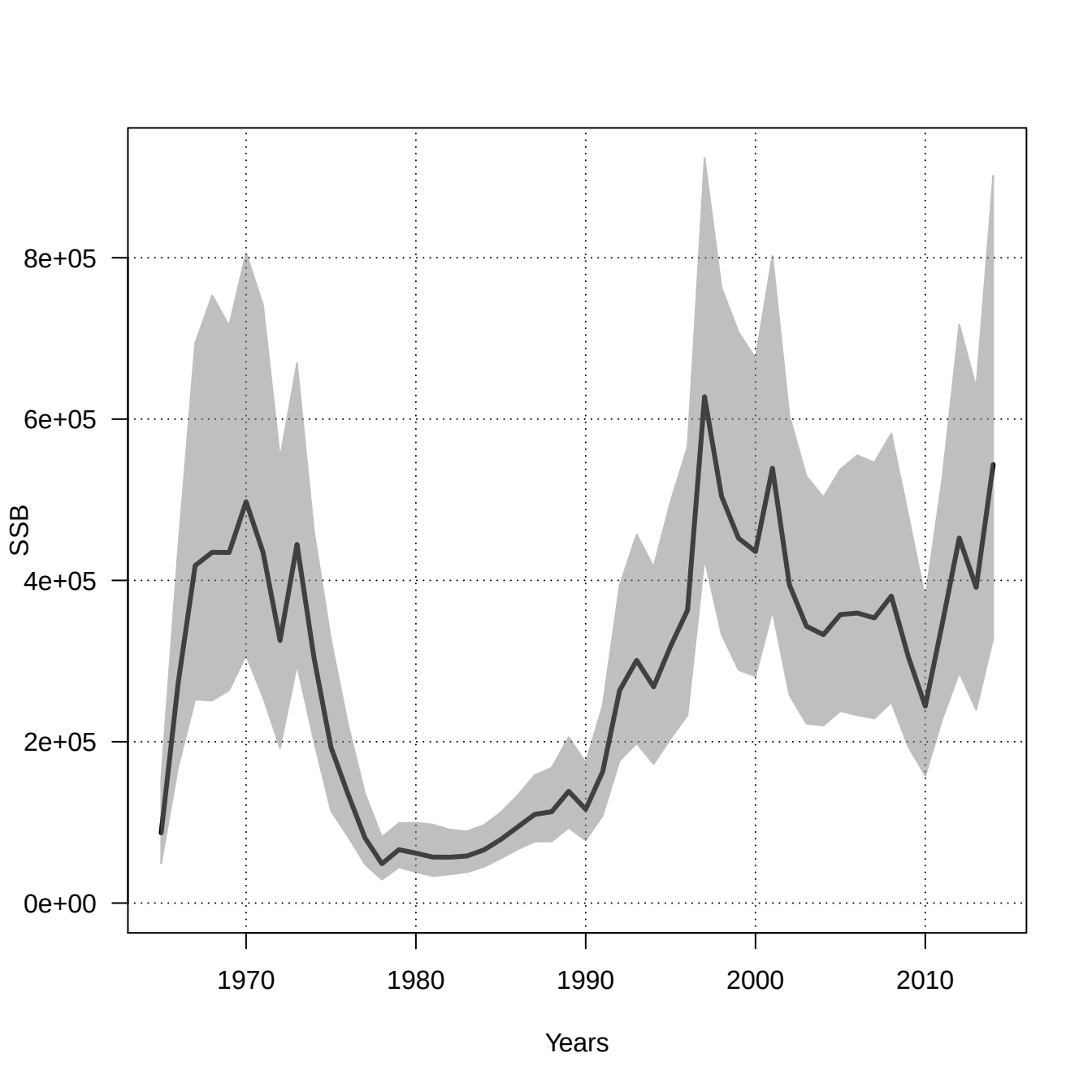


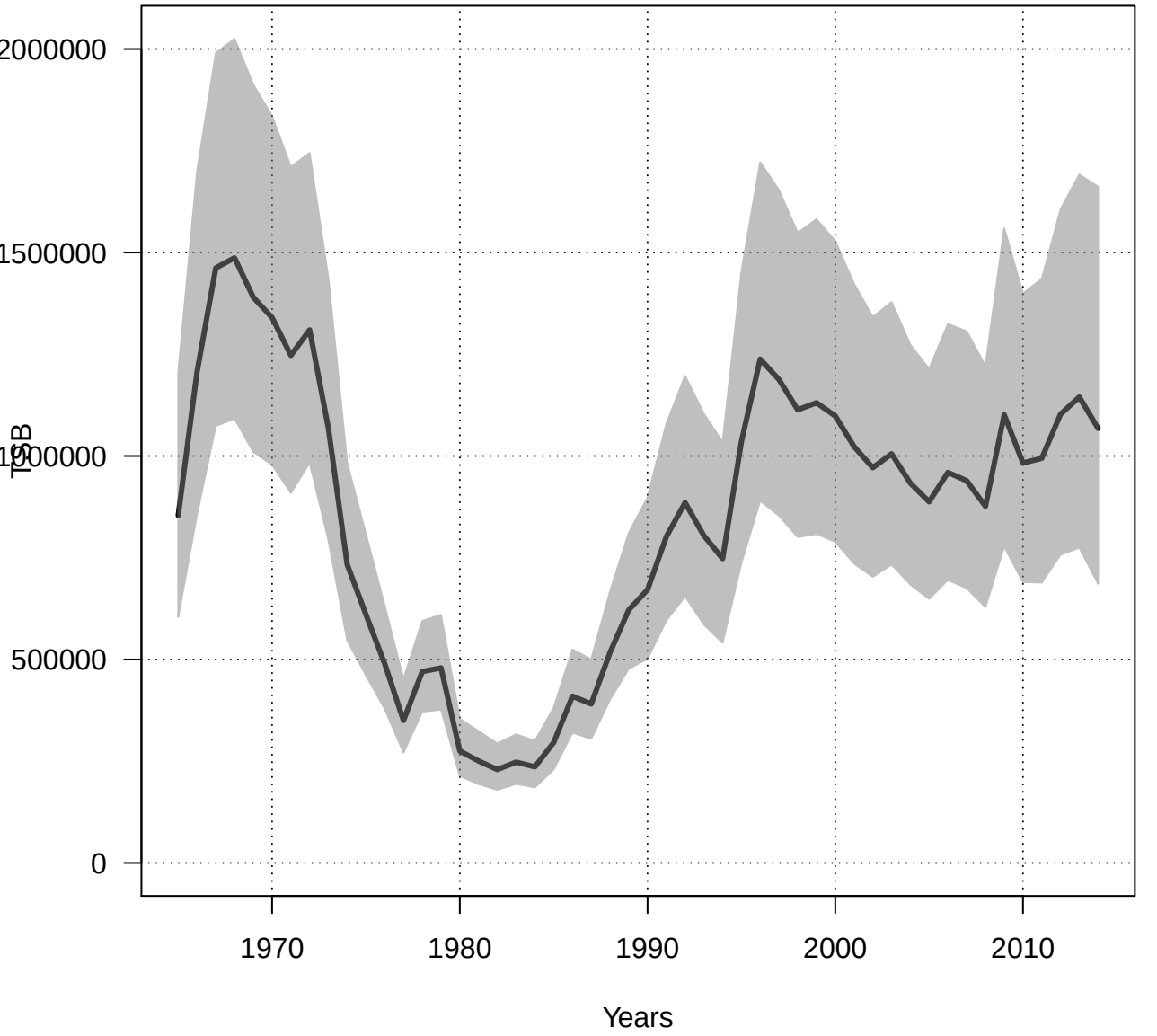

logFpar_0
logFpar_5
logSdLogFsta_2
logSdLogObs_0
logSdLogObs_5
logFpar_1
logFpar_6
logSdLogFsta_3
logSdLogObs_1
rec_loga_0
gb_0: 98%
logFpar_2
logFpar_7
logSdLogN_0
logSdLogObs_2
rec_logb_0
ga_0: 98%
logFpar_3
logSdLogFsta_0
logSdLogN_1
logSdLogObs_3
logFpar_4
logSdLogFsta_1
logSdLogN_2
logSdLogObs_4

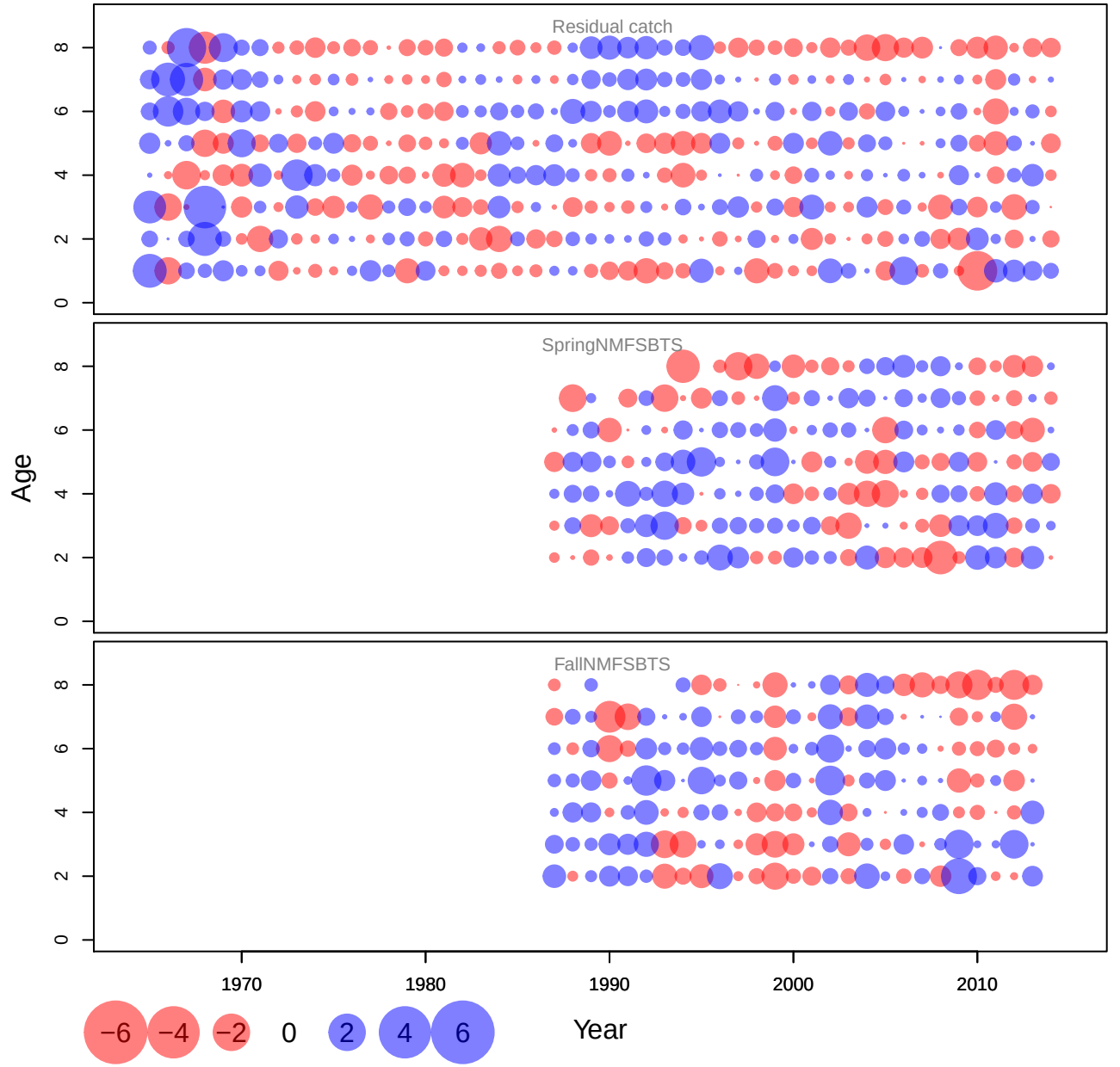

2.5e+07
2.0e+07
1.5e+07
1.0e+07
5.0e+06
0.0e+00
Recruits (age 1)
1970
1980
1990
2000
2010
Years

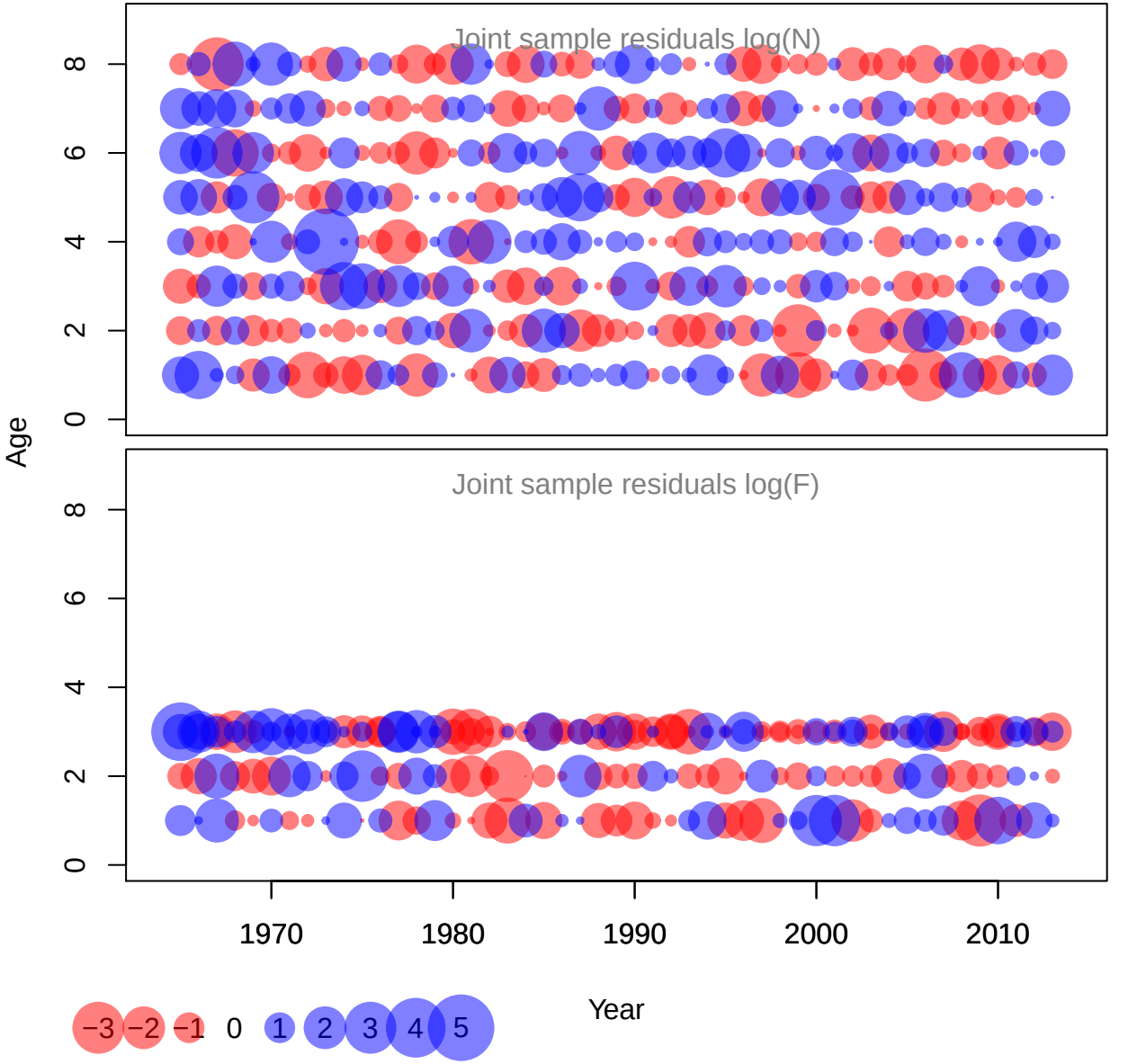


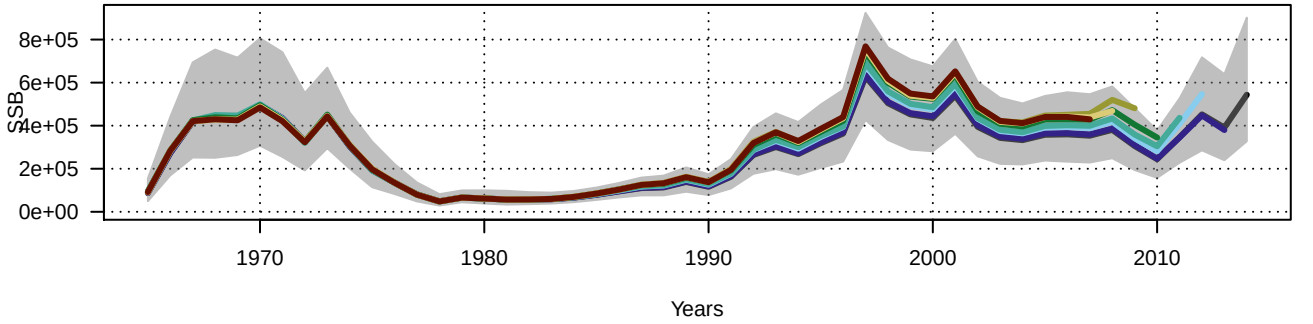
R(age 1)
0.0e+00
5.0e+06
1.0e+07
1.5e+07
SSB
0e+00
1e+05
2e+05
3e+05
4e+05
5e+05
6e+05
1967
2009
1995
1971
2012
2006
2003
1999
1966
1968
2002
1990
1997
1977
2014
1969
1996
2008
1978
2013
1988
1994
1984
1993
2004
1980
1992
2011
1974
1987
2005
1976
2000
1998
1986
2007
1983
1979

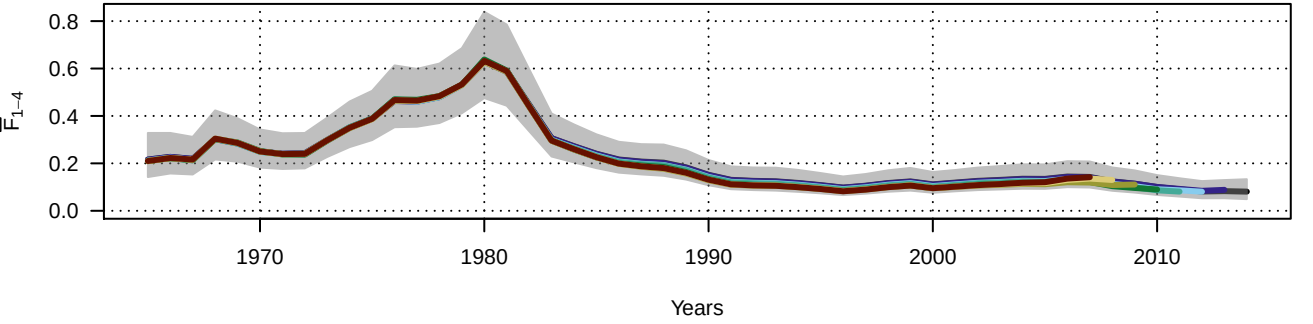

8e+05
6e+05
4e+05
2e+05
0e+00
SSB
1970
1980
1990
2000
2010
Years

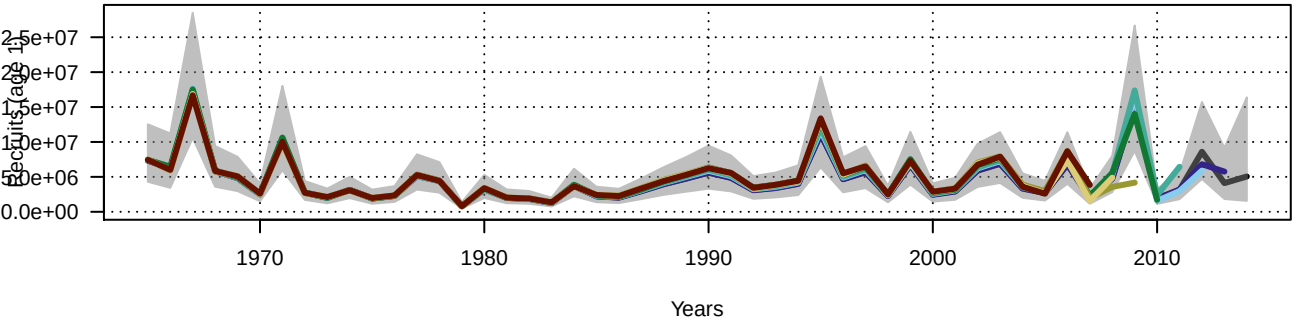

2000000
1500000
1000000
500000
0
TSB
1970
1980
1990
2000
2010
Years

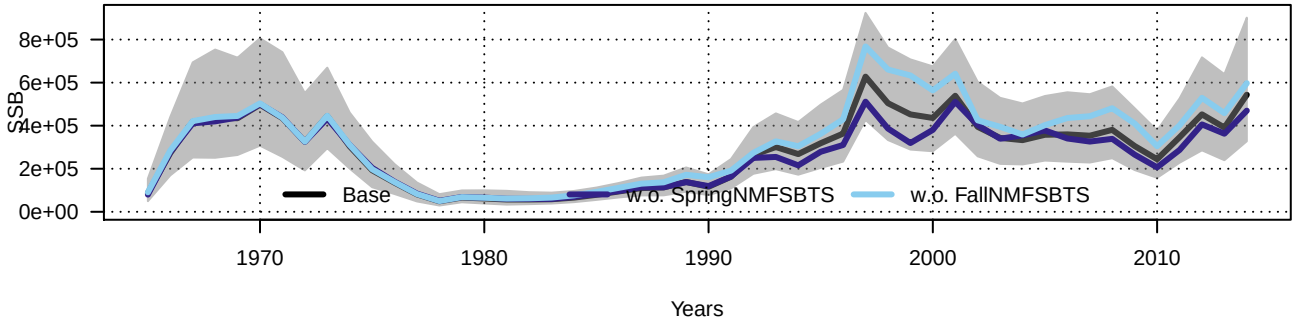

Residual catch
SpringNMFSBTS
FallNMFSBTS
Age
0
2
4
6
8
1970
1980
1990
2000
2010
Year
−6
−4
−2
0
2
4
6

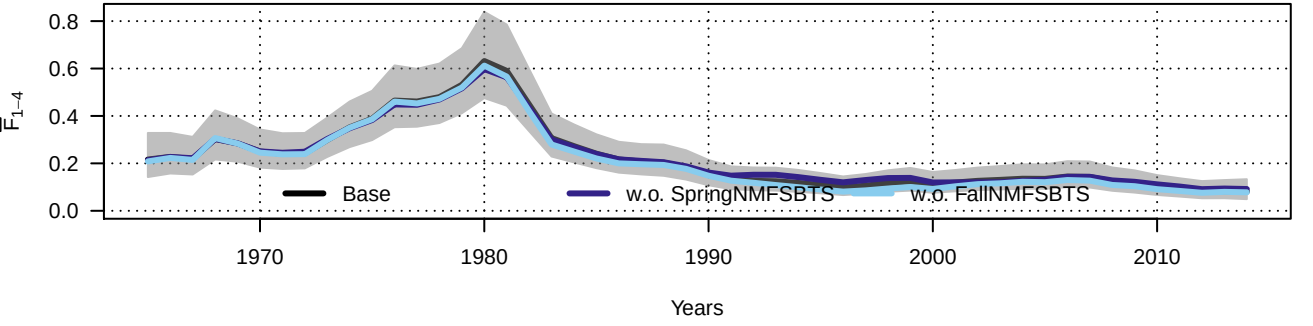

Joint sample residuals log(N)
Joint sample residuals log(F)
Age
0
2
4
6
8
1970
1980
1990
2000
2010
Year
−3
−2
−1
0
1
2
3
4
5

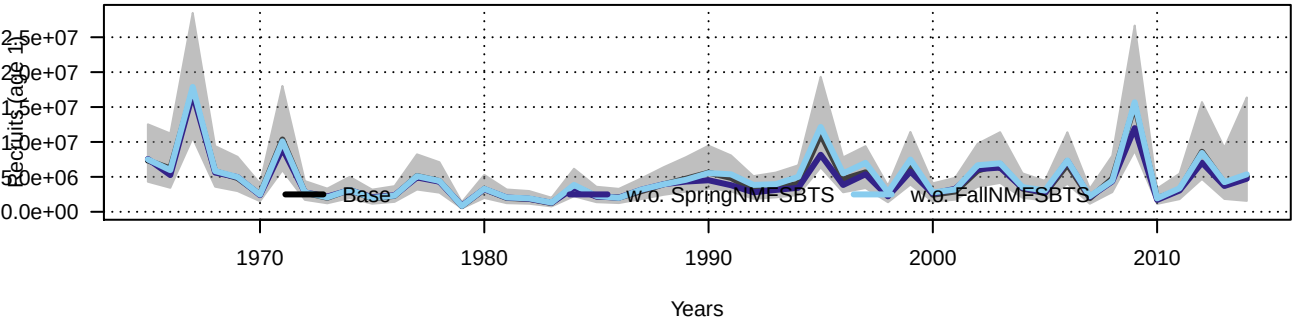

SSB
8e+05
6e+05
4e+05
2e+05
0e+00
1970
1980
1990
2000
2010
Years

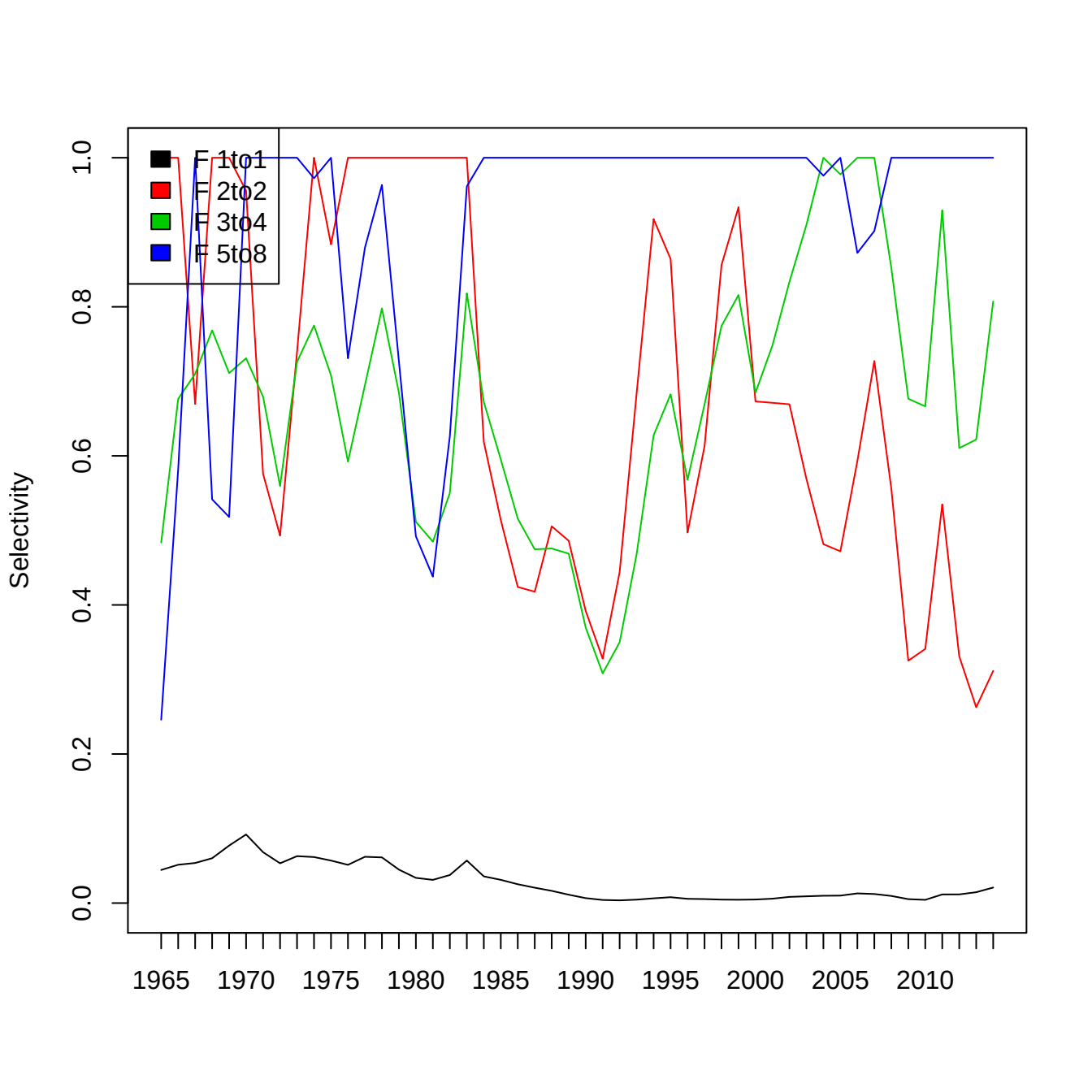

F_{1-4}
0.8
0.6
0.4
0.2
0.0
1970
1980
1990
2000
2010
Years

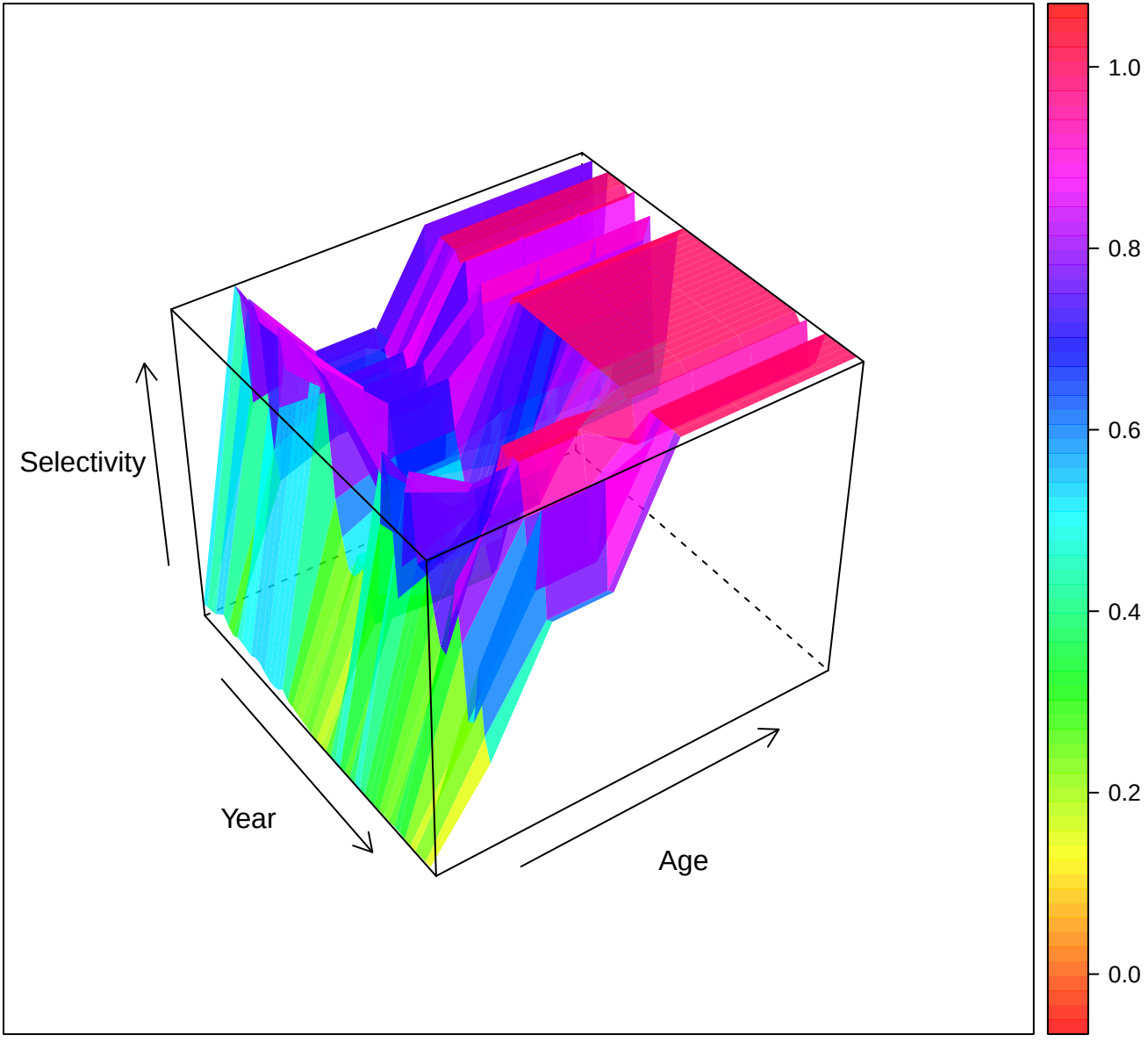

Recruits, age 1
2.5e+07
2.0e+07
1.5e+07
1.0e+07
5.0e+06
0.0e+00
1970
1980
1990
2000
2010
Years

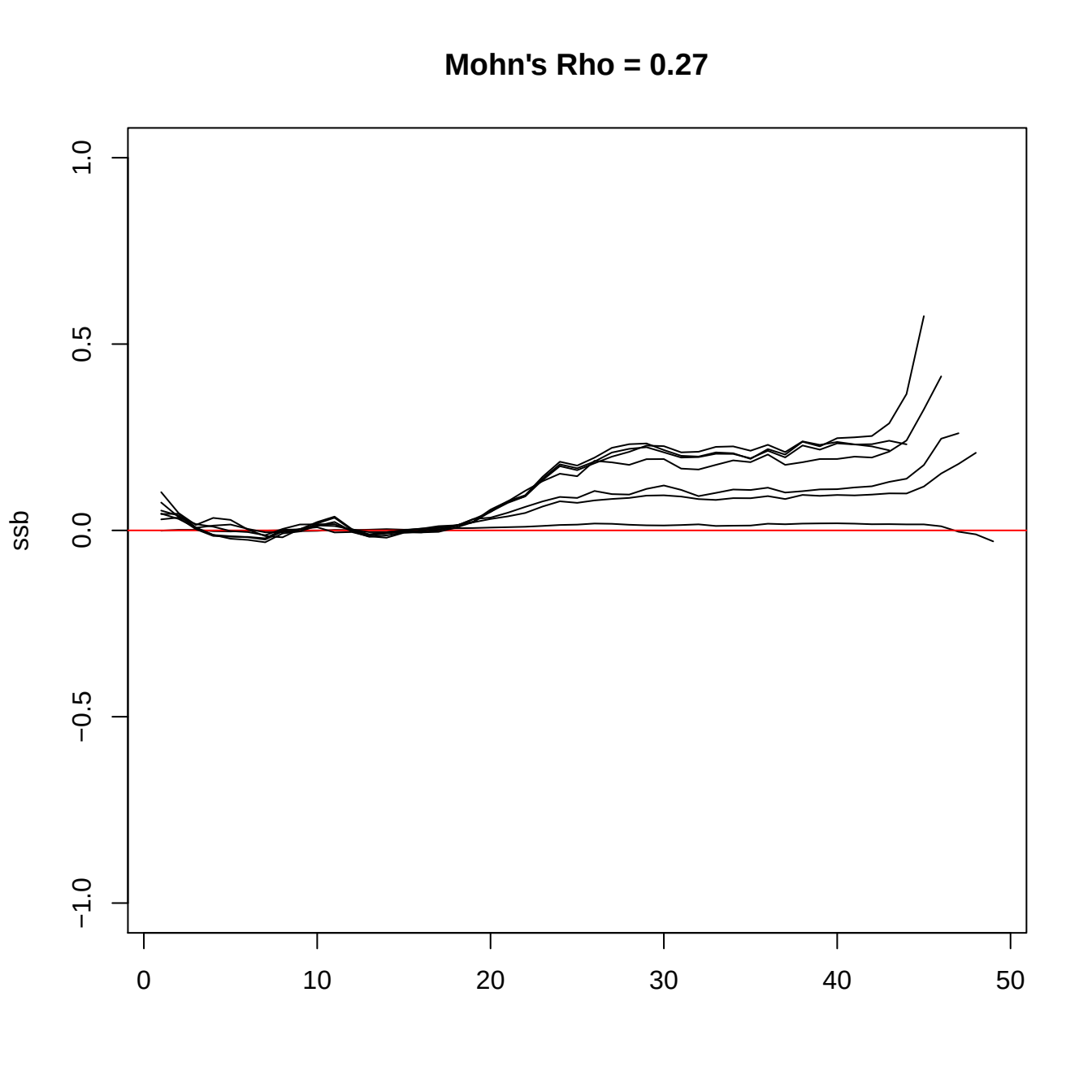

SSB
8e+05
6e+05
4e+05
2e+05
0e+00
Base
w.o. SpringNMFSBTS
w.o. FallNMFSBTS
1970
1980
1990
2000
2010
Years

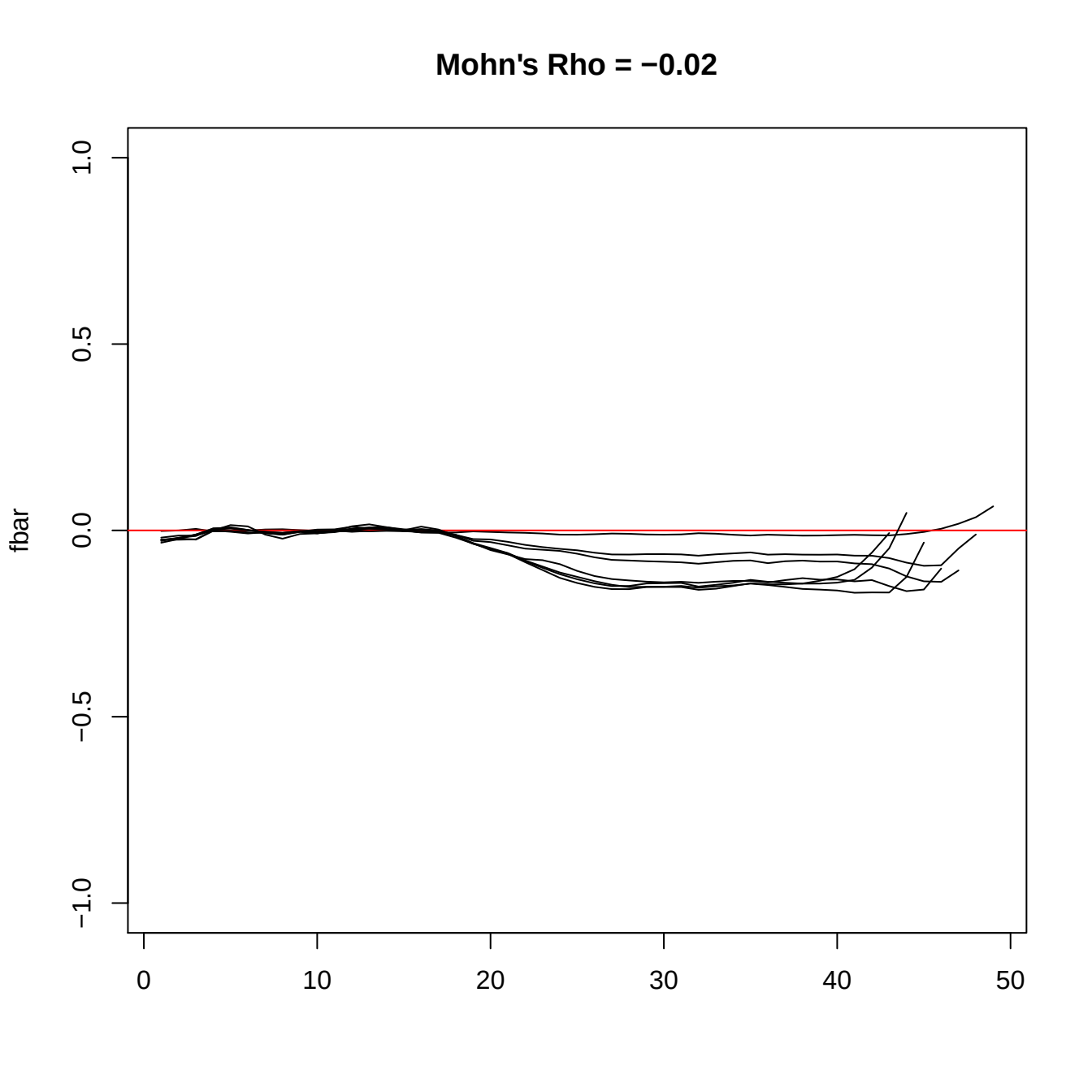

F1–4
0.8
0.6
0.4
0.2
0.0
Base
w.o. SpringNMFSBTS
w.o. FallNMFSBTS
1970
1980
1990
2000
2010
Years

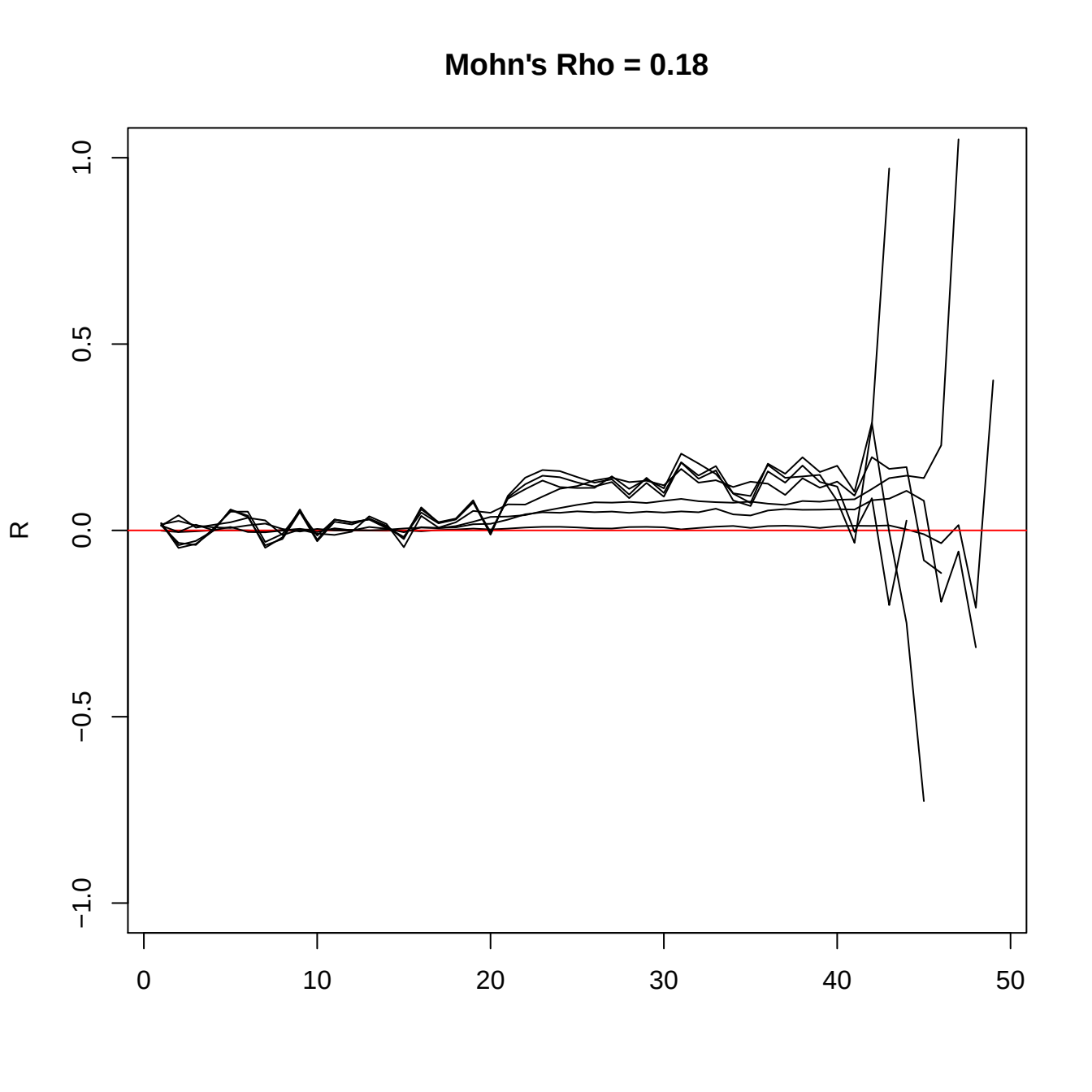

Recruits, age 1
2.5e+07
2.0e+07
1.5e+07
1.0e+07
5.0e+06
0.0e+00
Base
w.o. SpringNMFSBTS
w.o. FallNMFSBTS
1970
1980
1990
2000
2010
Years

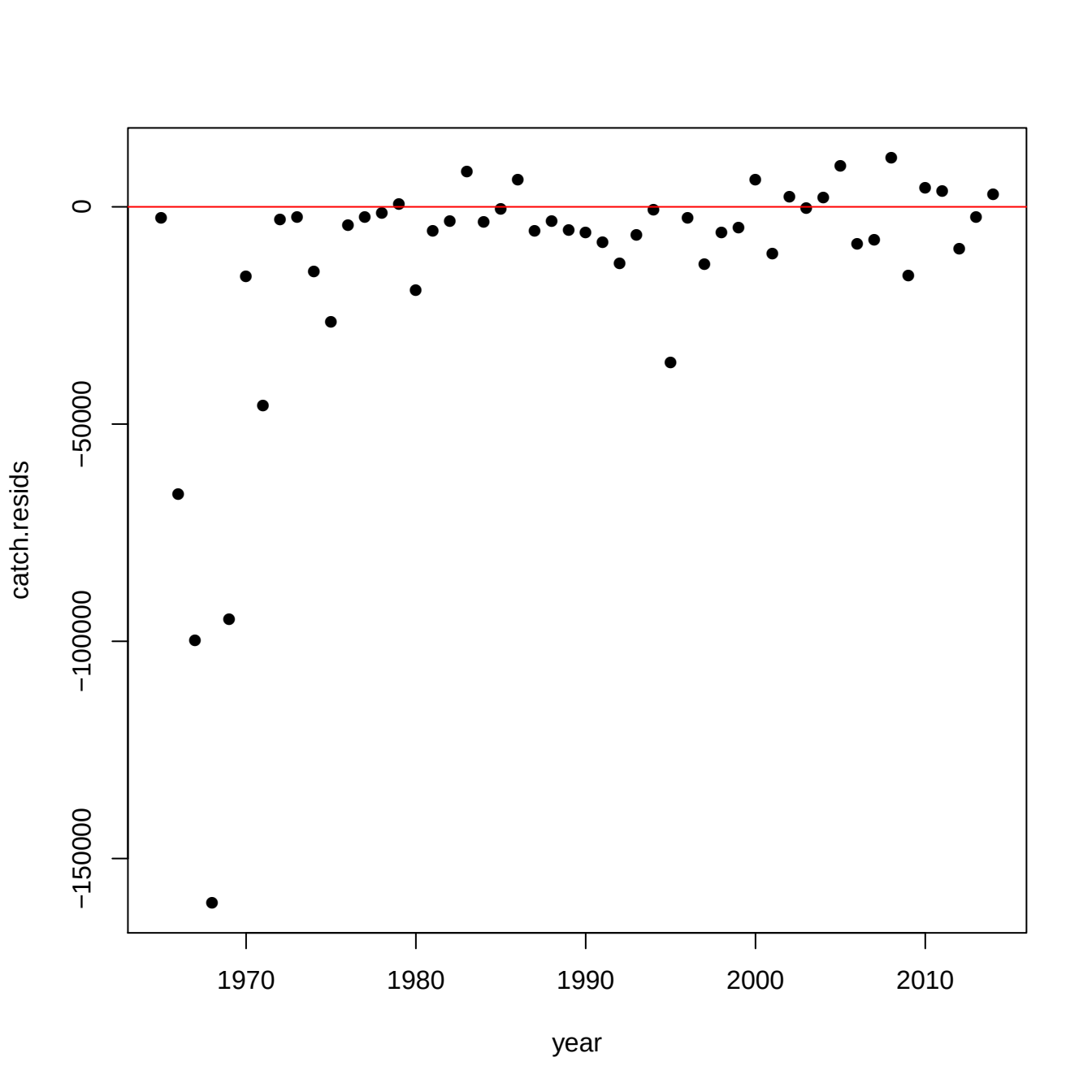

F 1to1
F 2to2
F 3to4
F 5to8
Selectivity
0.0
0.2
0.4
0.6
0.8
1.0
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010

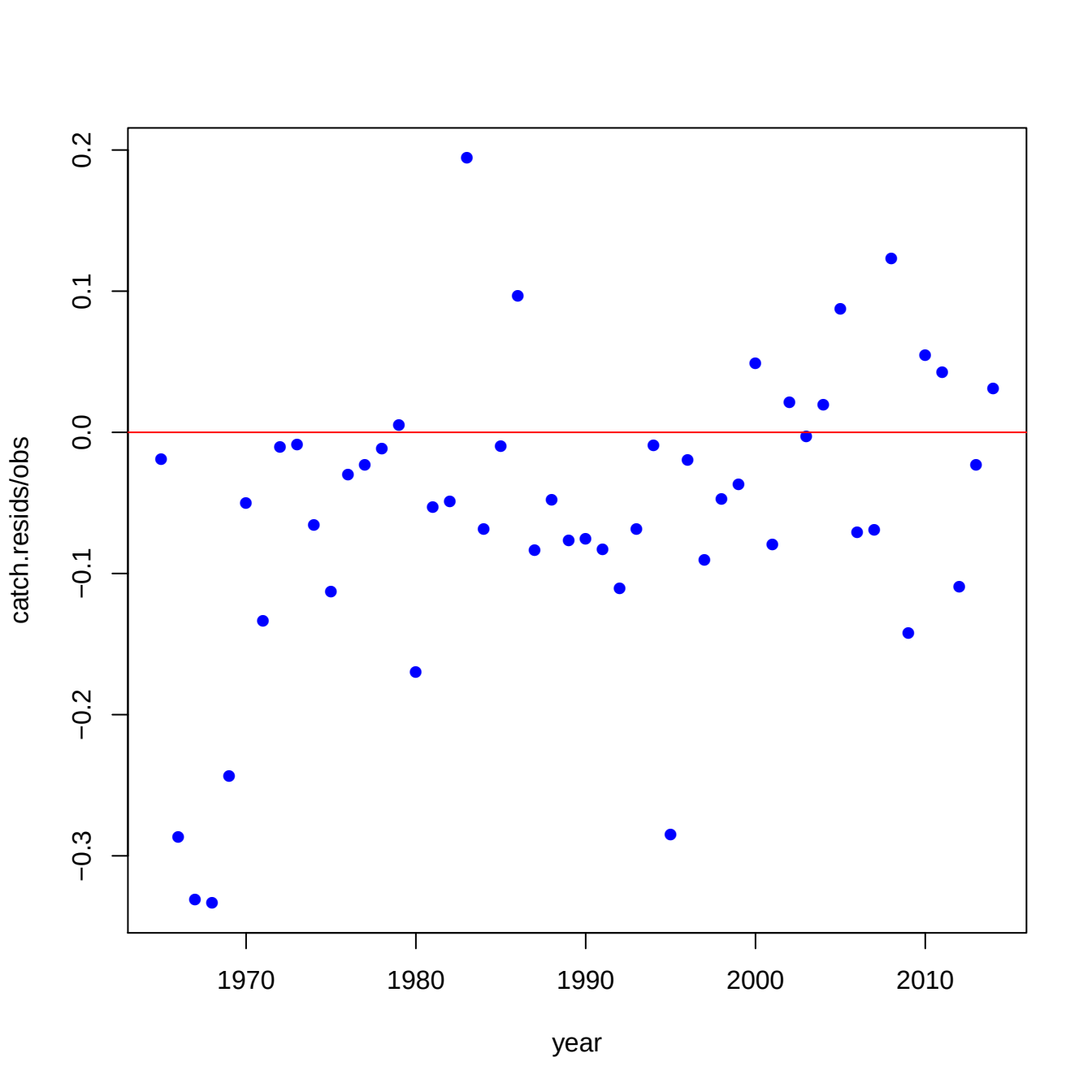

Selectivity
Year
Age
1.0
0.8
0.6
0.4
0.2
0.0

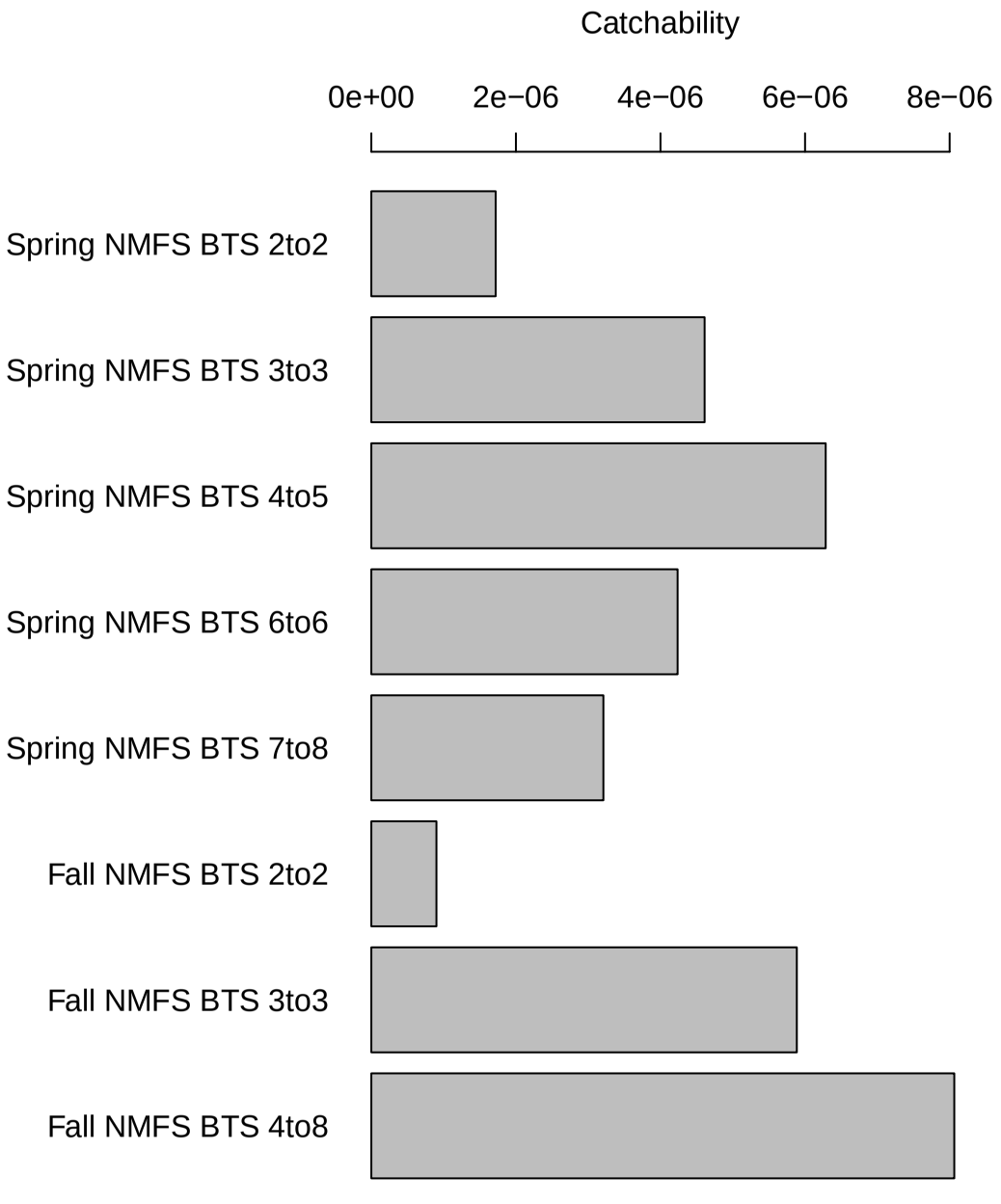

Mohn's Rho = 0.27
ssb
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50

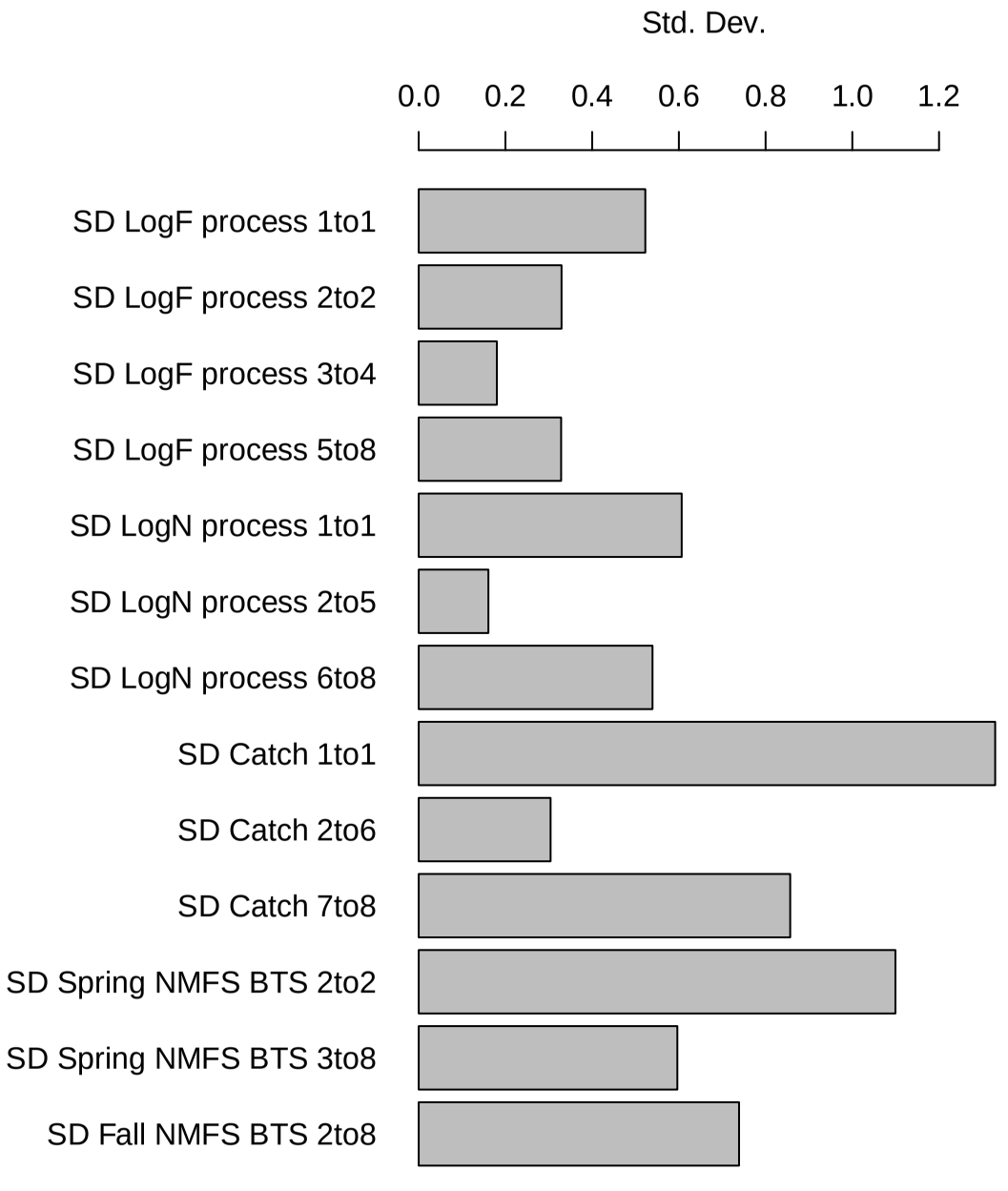

Mohn's Rho = −0.02
fbar
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50


Mohn's Rho = 0.18
R
1.0
0.5
0.0
−0.5
−1.0
0
10
20
30
40
50


catch.resids
0
−50000
−100000
−150000
1970
1980
1990
2000
2010
year


catch.resids/obs
0.2
0.1
0.0
−0.1
−0.2
−0.3
1970
1980
1990
2000
2010
year


Catchability
0e+00
2e−06
4e−06
6e−06
8e−06
Spring NMFS BTS 2to2
Spring NMFS BTS 3to3
Spring NMFS BTS 4to5
Spring NMFS BTS 6to6
Spring NMFS BTS 7to8
Fall NMFS BTS 2to2
Fall NMFS BTS 3to3
Fall NMFS BTS 4to8


Std. Dev.
0.0
0.2
0.4
0.6
0.8
1.0
1.2
SD LogF process 1to1
SD LogF process 2to2
SD LogF process 3to4
SD LogF process 5to8
SD LogN process 1to1
SD LogN process 2to5
SD LogN process 6to8
SD Catch 1to1
SD Catch 2to6
SD Catch 7to8
SD Spring NMFS BTS 2to2
SD Spring NMFS BTS 3to8
SD Fall NMFS BTS 2to8