

File = MTA2023_NEWSET_ESS_V1.dat

ASAP3 run on Tuesday, 16 May 2023 at 15:57:54

dir = C:\NFTData\SCUP\S2023\MTA2023_NEWSET_ESS

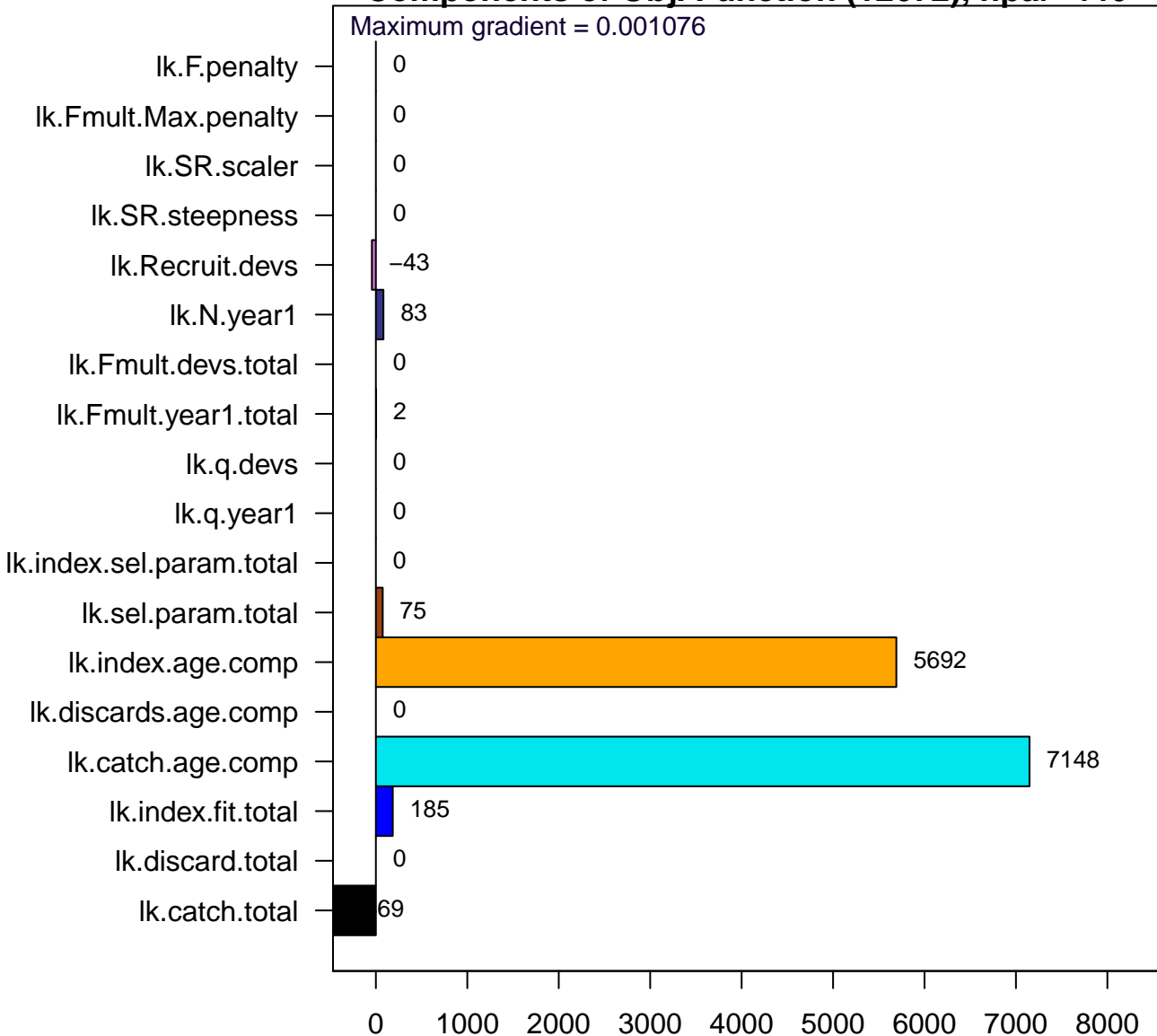
ASAPplots version = 0.2.18

Warning, maximum gradient > 0.001

npar = 446, maximum gradient = 0.00107645

Components of Obj. Function (12672), npar=446

Maximum gradient = 0.001076



Likelihood Contribution

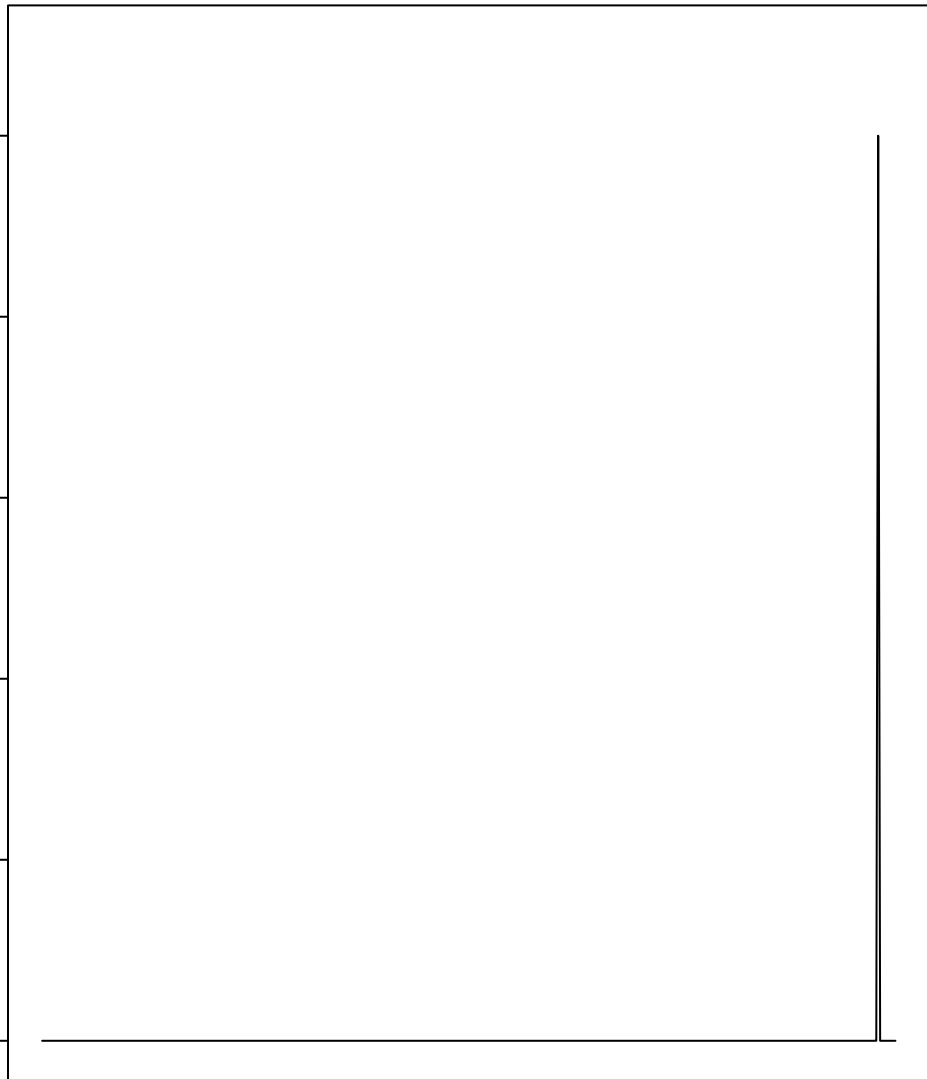
Model: MTA2023_NEWSET_ESS_V1 Tuesday, 16 May 2023 at 15:57:3

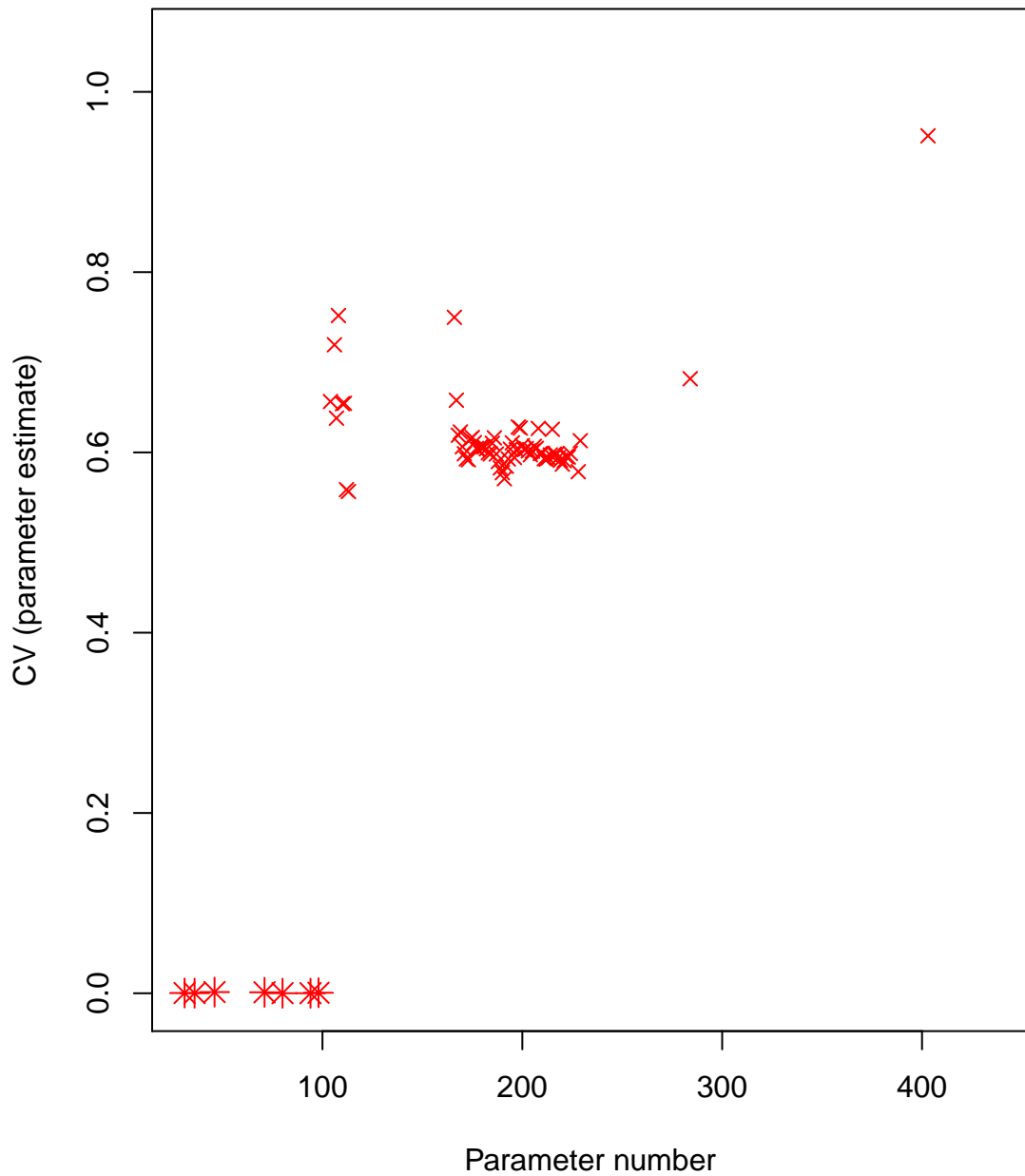
Number of high correlations

1.0
0.8
0.6
0.4
0.2
0.0

0 100 200 300 400

Parameter

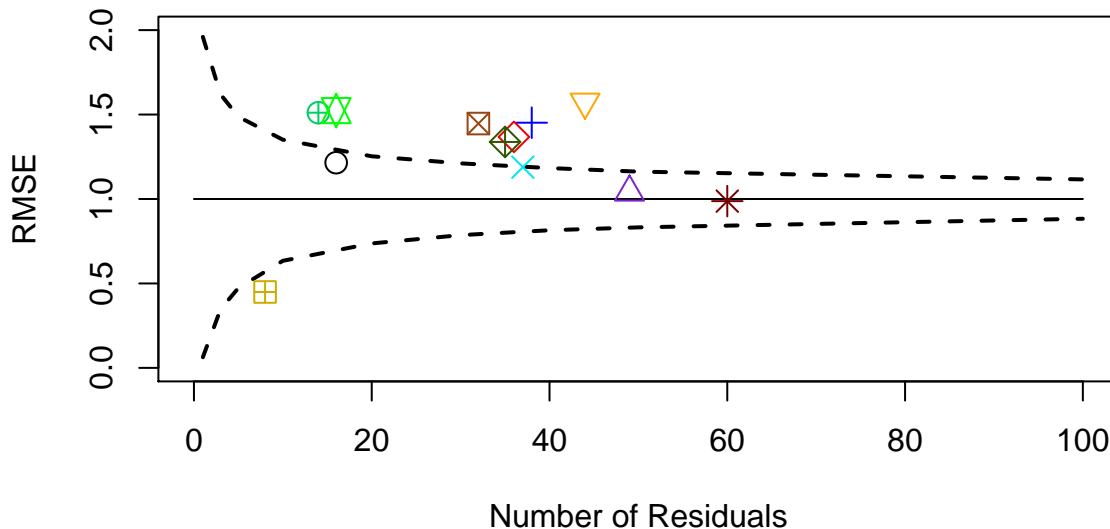




Root Mean Square Error computed from Standardized Residuals

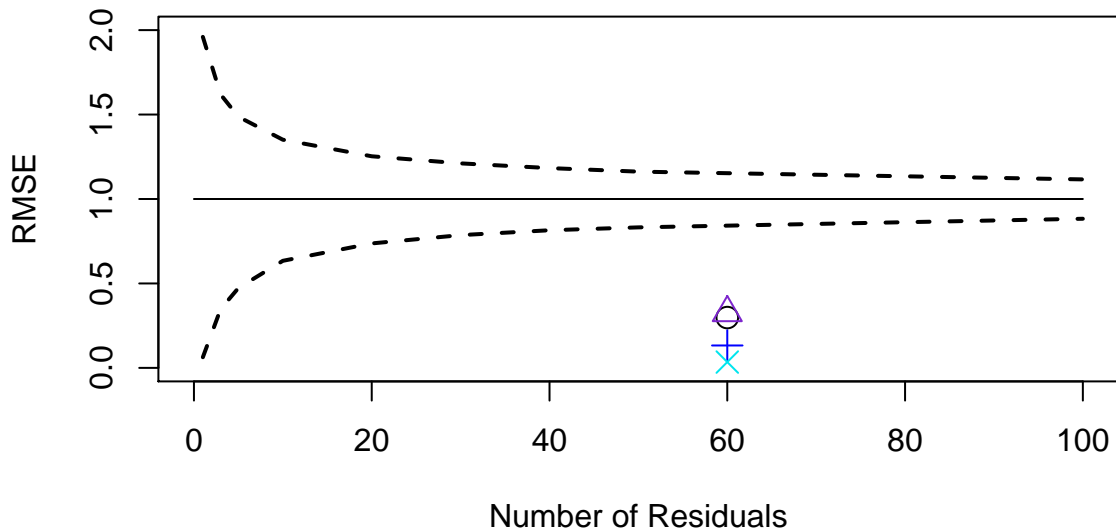
Component	# resids	RMSE
catch.fleet1	60	0.298
catch.fleet2	60	0.326
catch.fleet3	60	0.133
catch.fleet4	60	0.0345
catch.tot	240	0.231
discard.fleet1	0	0
discard.fleet2	0	0
discard.fleet3	0	0
discard.fleet4	0	0
discard.tot	0	0
ind01	16	1.22
ind02	49	1.04
ind03	38	1.45
ind04	37	1.19
ind05	36	1.37
ind06	44	1.57
ind07	32	1.45
ind08	60	0.987
ind09	35	1.34
ind10	14	1.51
ind11	16	1.52
ind12	8	0.449
ind.total	385	1.29
N.year1	7	1.77
Fmult.year1	4	1.18
Fmult.devs.fleet1	0	0
Fmult.devs.fleet2	0	0
Fmult.devs.fleet3	0	0
Fmult.devs.fleet4	0	0
Fmult.devs.total	0	0
recruit.devs	60	0.636
fleet.sel.params	128	1.54
index.sel.params	0	0
q.year1	0	0
q.devs	0	0
SR.steepness	0	0
SR.scaler	0	0

Root Mean Square Error for Indices



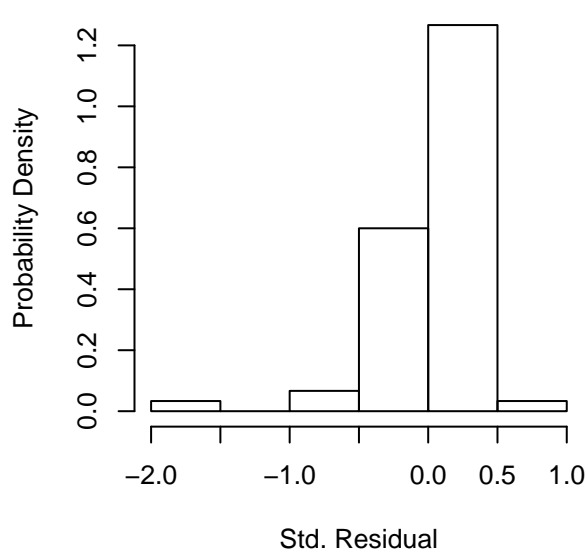
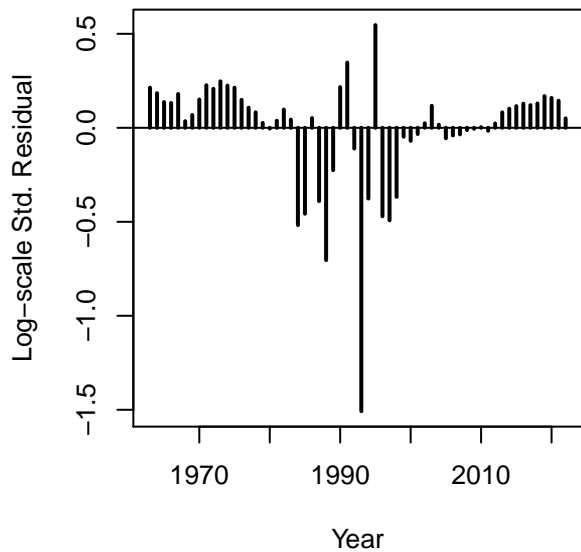
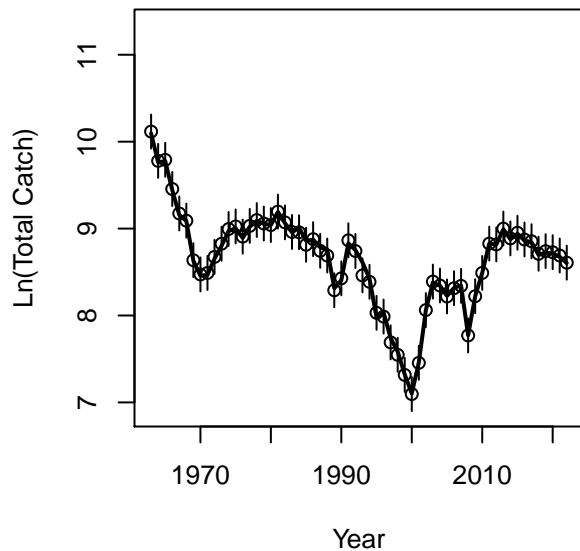
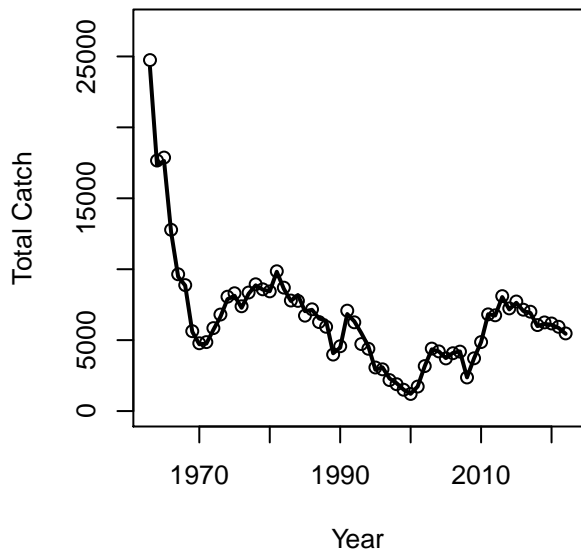
ind total
RLCoop Trap
NEAMAP Fall
NEAMAP Spring
VMSYOY
URIGSO
NUKG
MAFALKG
NYDEC
CTEAL
CTSPR
NECFAL
NECWIN

Root Mean Square Error for Catch

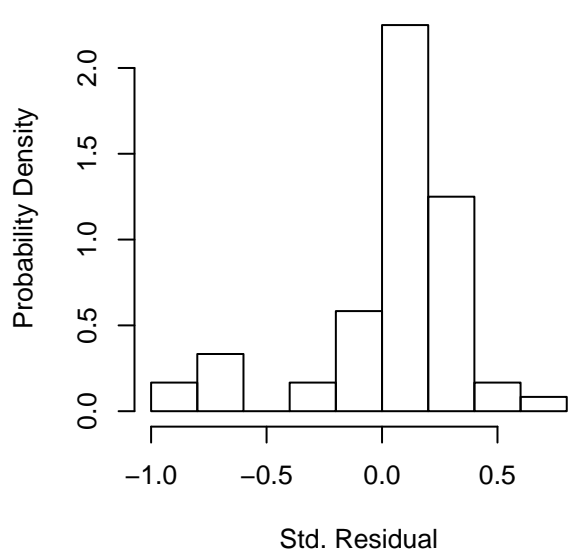
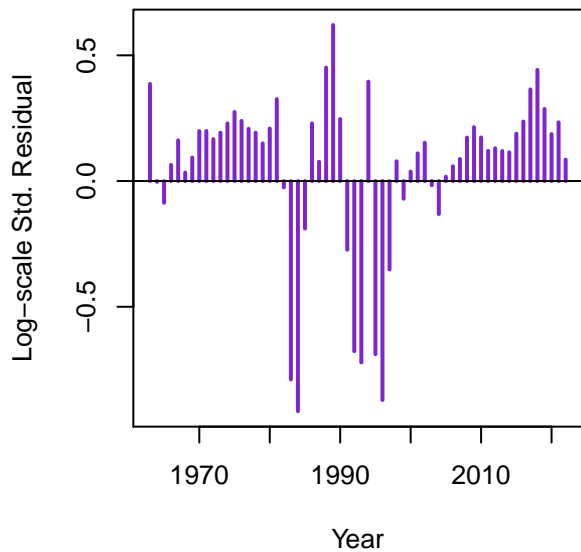
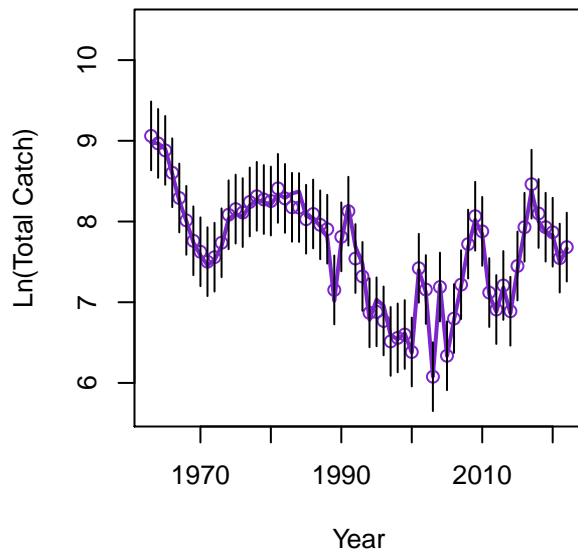
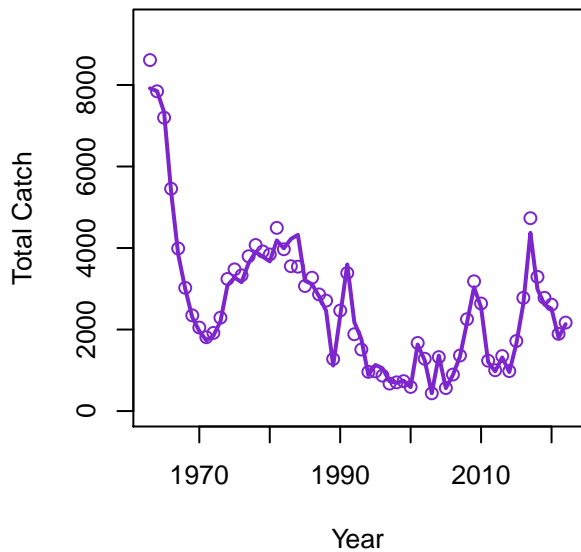


catch.tot
catch.fleet4
catch.fleet3
catch.fleet2
catch.fleet1

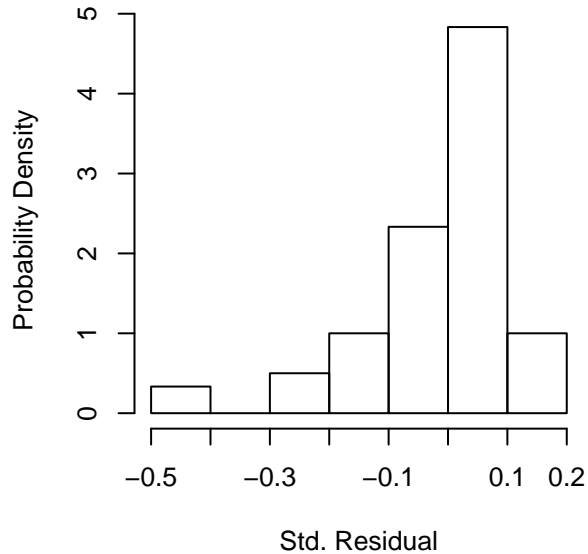
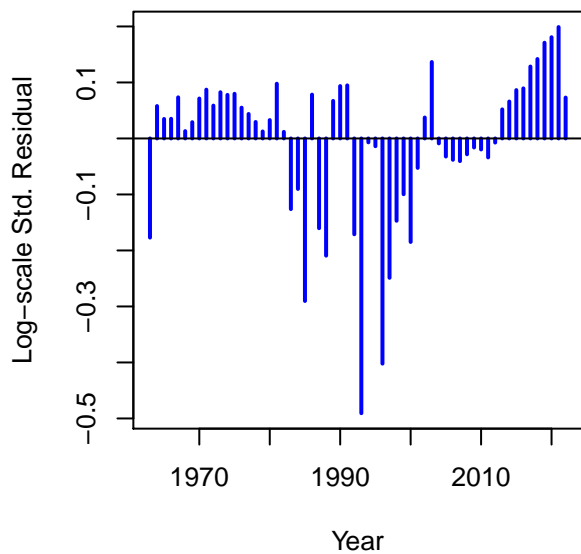
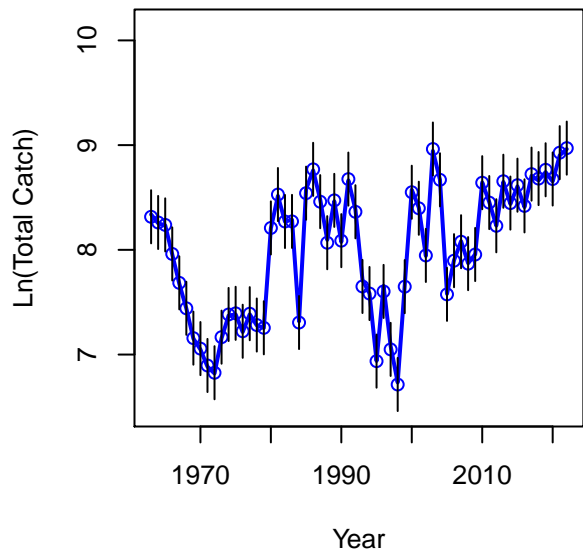
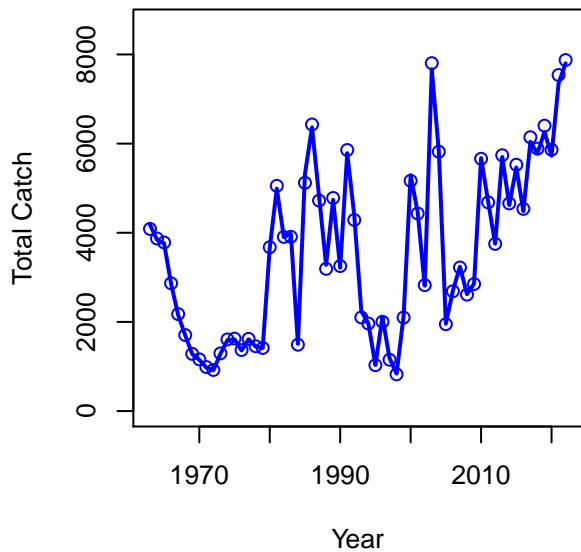
Fleet 1 Catch (COMLAND)



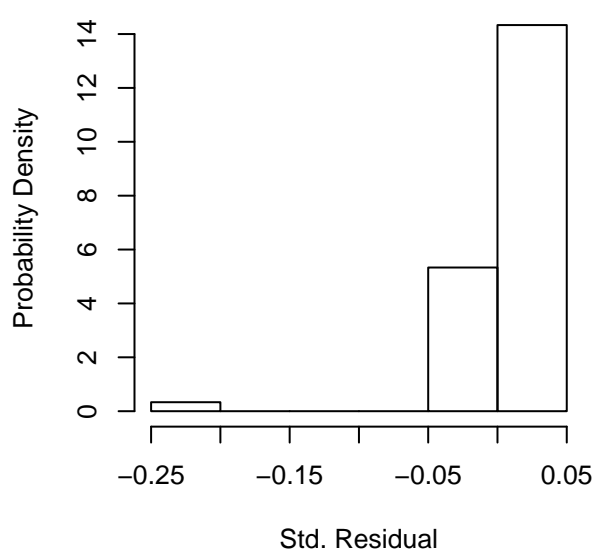
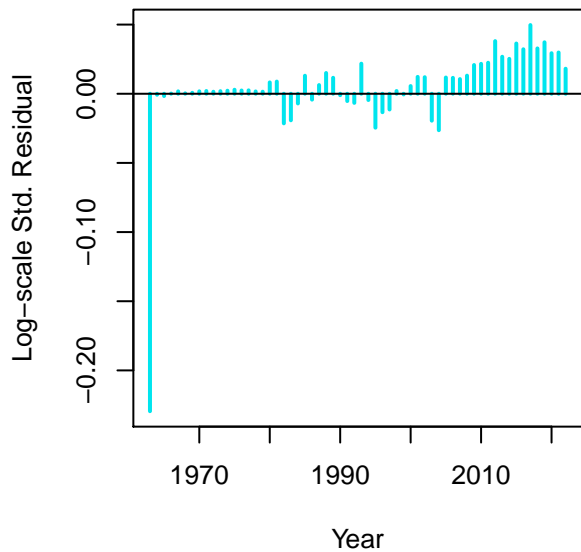
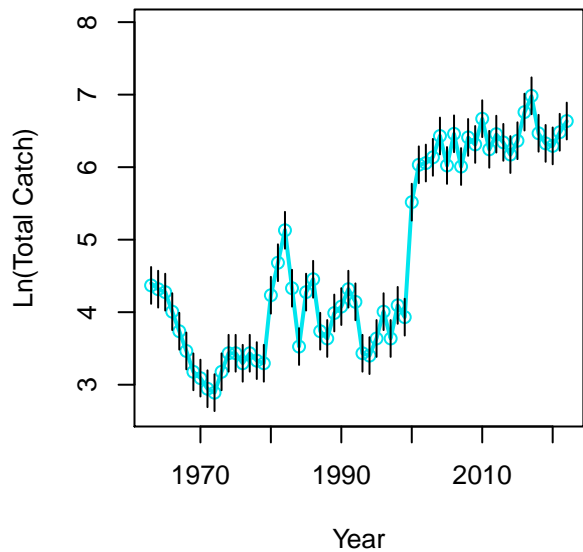
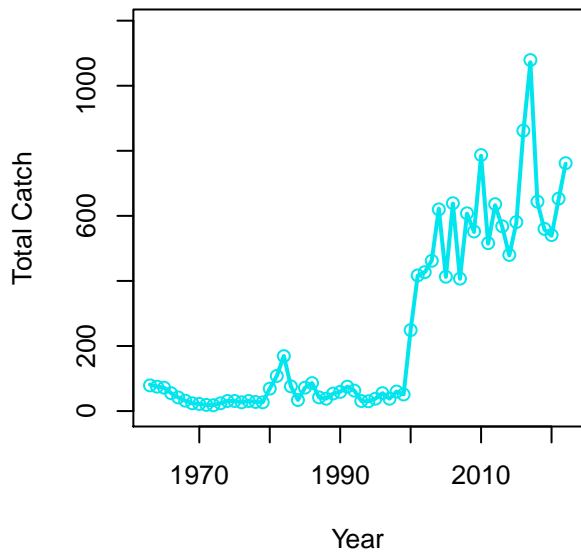
Fleet 2 Catch (COMDISC)



Fleet 3 Catch (RECLAND)



Fleet 4 Catch (RECDISC)

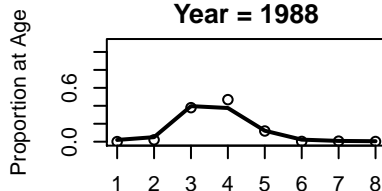


Catch

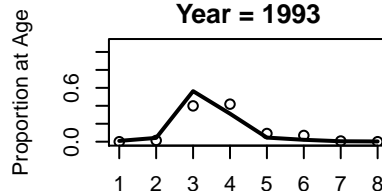
Fleet 1
COMLAND



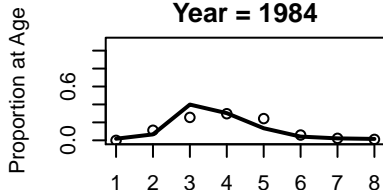
Year = 1988



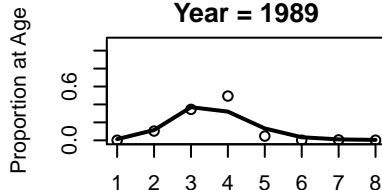
Year = 1993



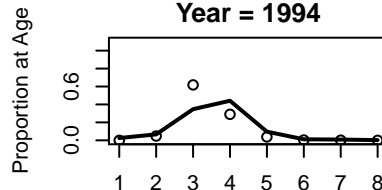
Year = 1984



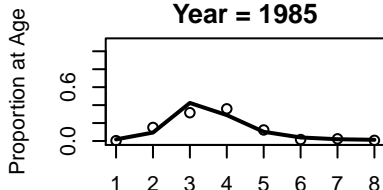
Year = 1989



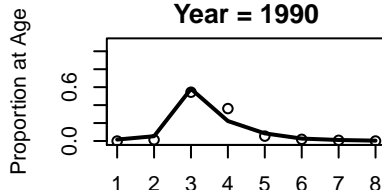
Year = 1994



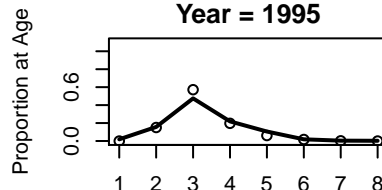
Year = 1985



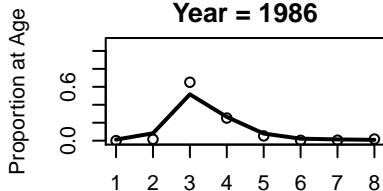
Year = 1990



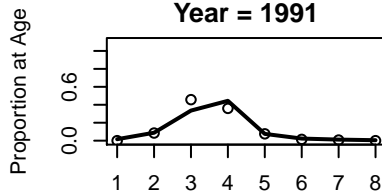
Year = 1995



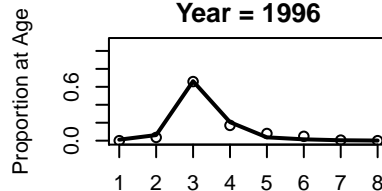
Year = 1986



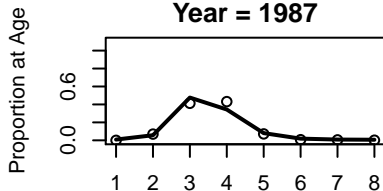
Year = 1991



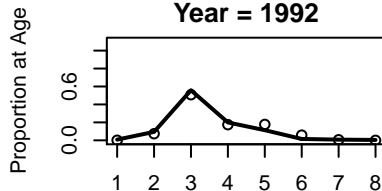
Year = 1996



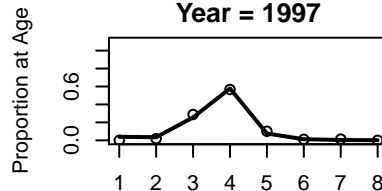
Year = 1987



Year = 1992

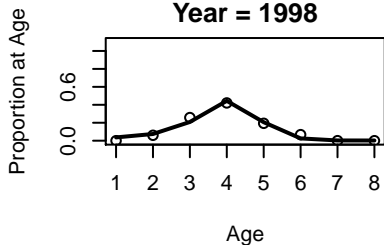


Year = 1997

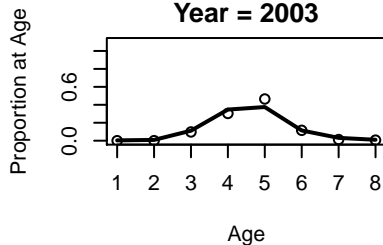


Catch

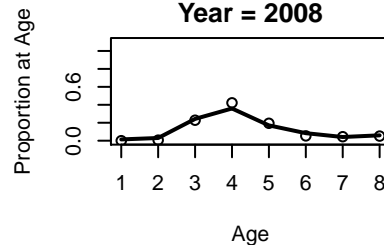
Year = 1998



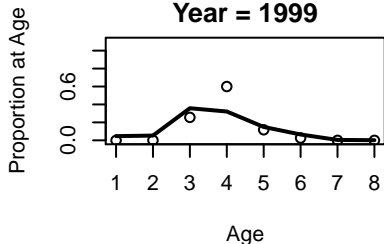
Year = 2003



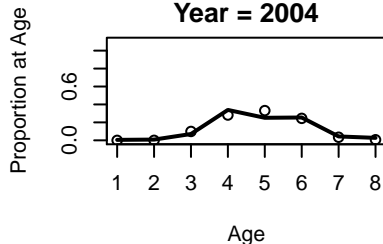
Year = 2008



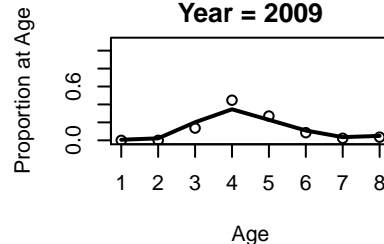
Year = 1999



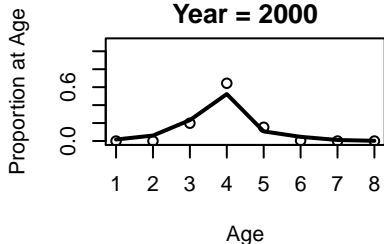
Year = 2004



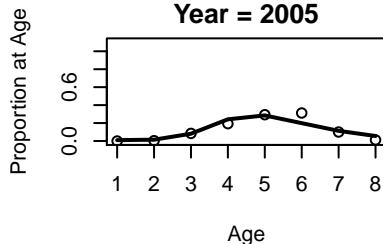
Year = 2009



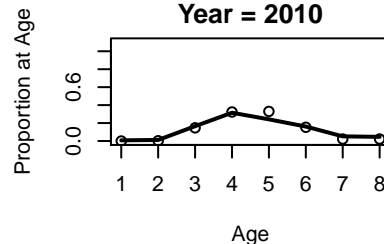
Year = 2000



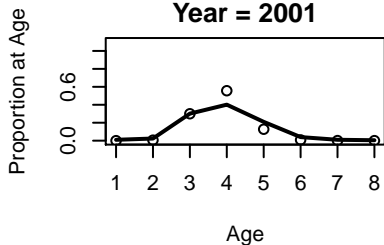
Year = 2005



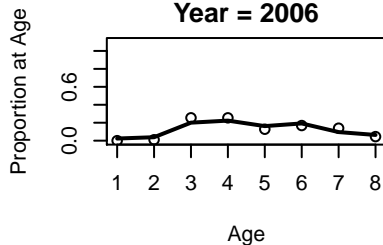
Year = 2010



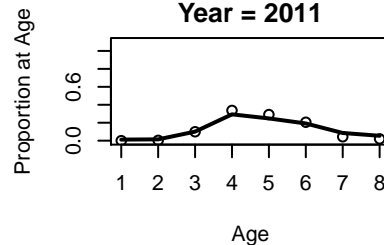
Year = 2001



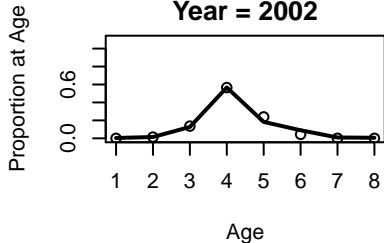
Year = 2006



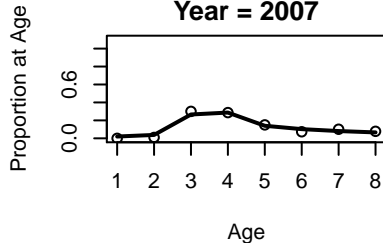
Year = 2011



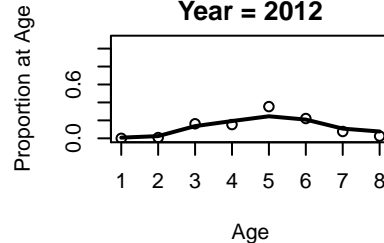
Year = 2002



Year = 2007

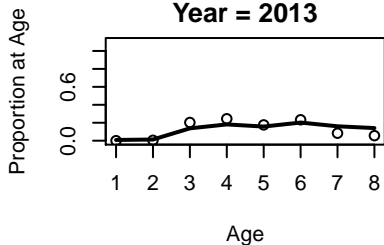


Year = 2012

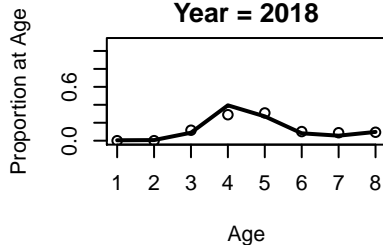


Catch

Year = 2013

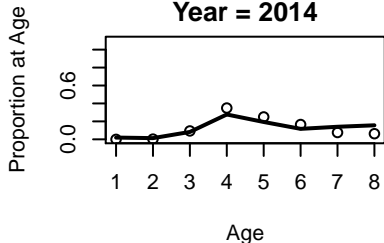


Year = 2018

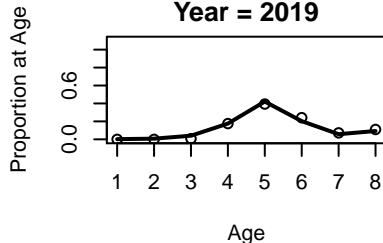


Fleet 2
COMDISC
↓

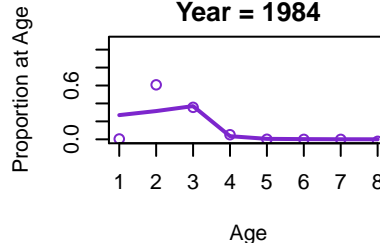
Year = 2014



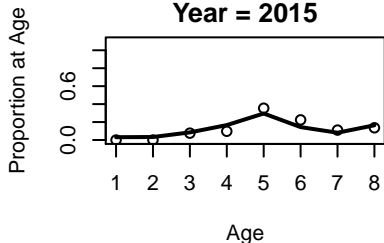
Year = 2019



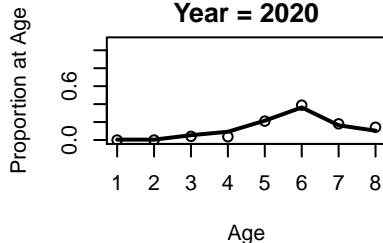
Year = 1984



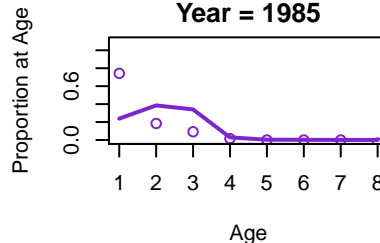
Year = 2015



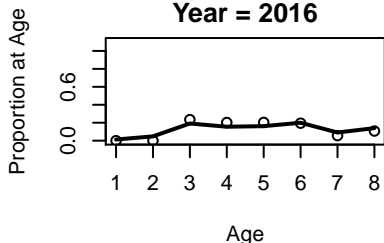
Year = 2020



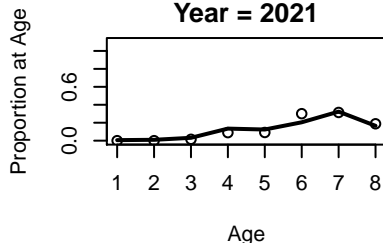
Year = 1985



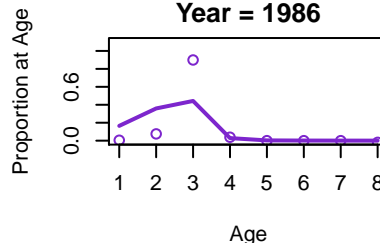
Year = 2016



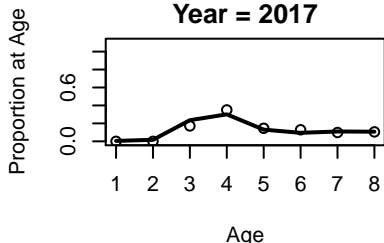
Year = 2021



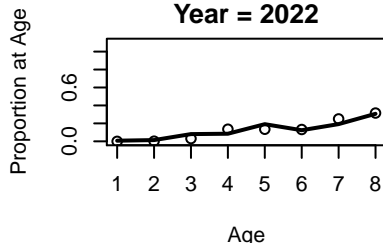
Year = 1986



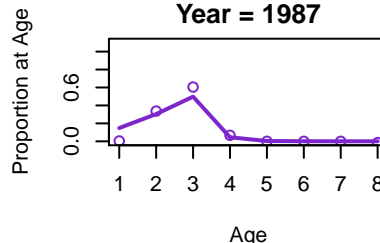
Year = 2017



Year = 2022

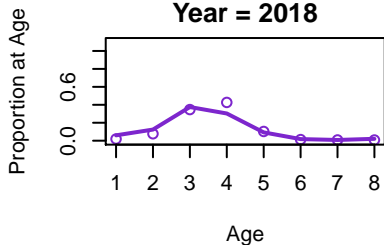


Year = 1987

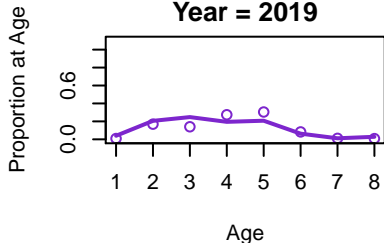


Catch

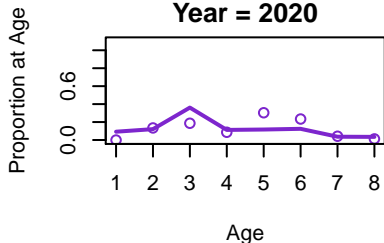
Year = 2018



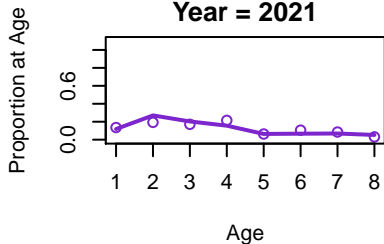
Year = 2019



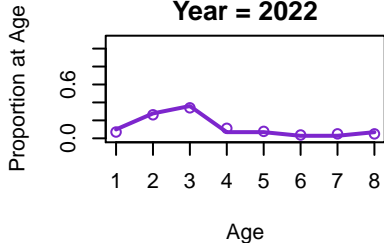
Year = 2020



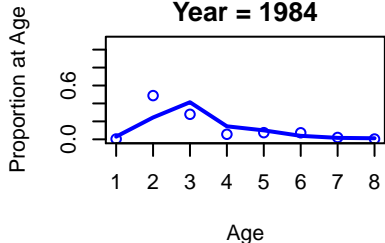
Year = 2021



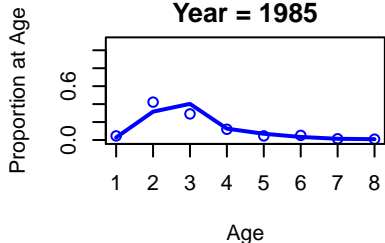
Year = 2022



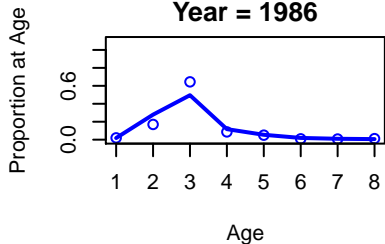
Year = 1984



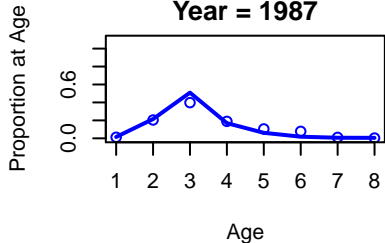
Year = 1985



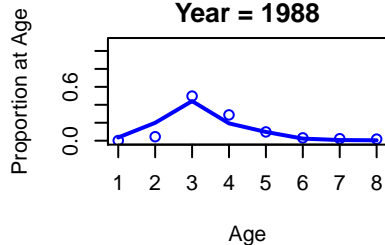
Year = 1986



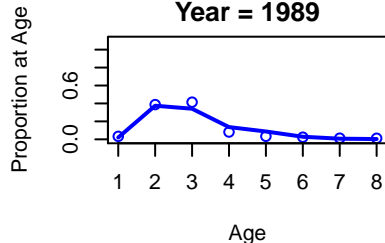
Year = 1987



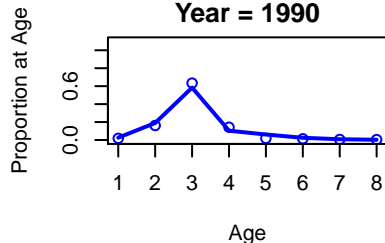
Year = 1988



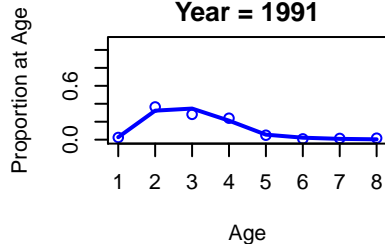
Year = 1989



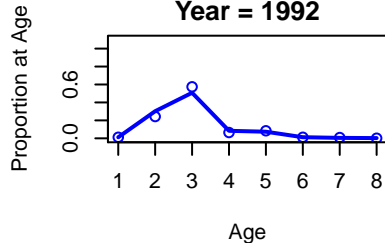
Year = 1990



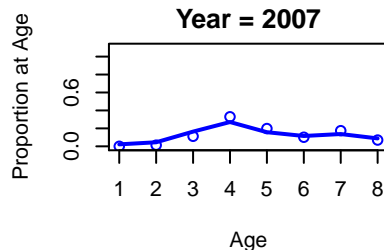
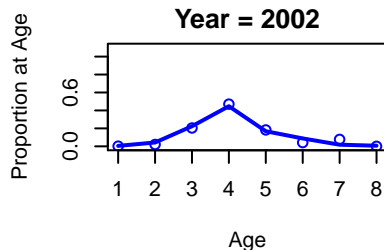
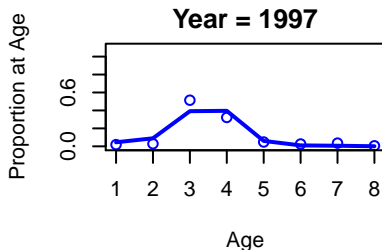
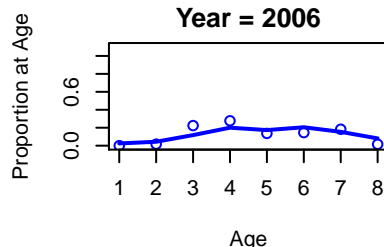
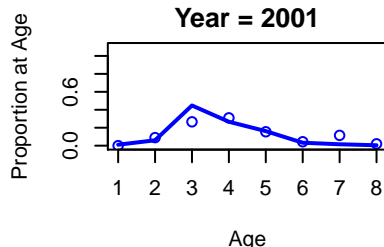
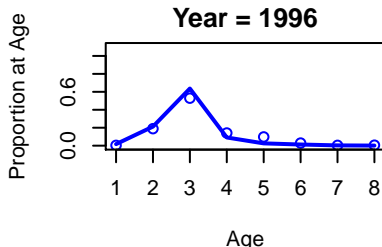
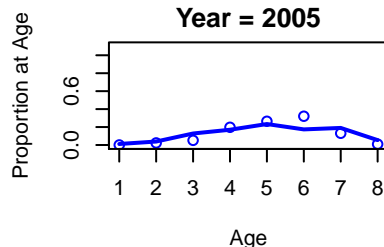
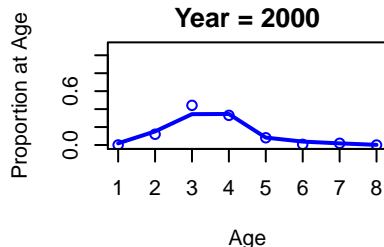
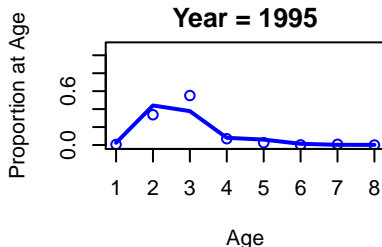
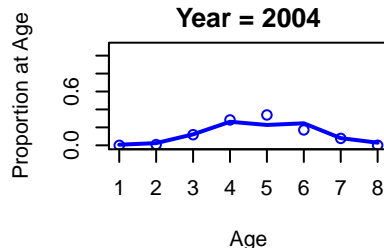
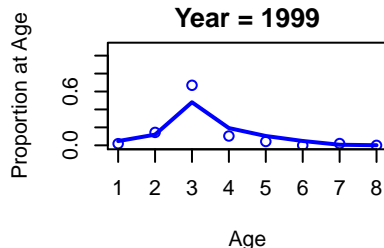
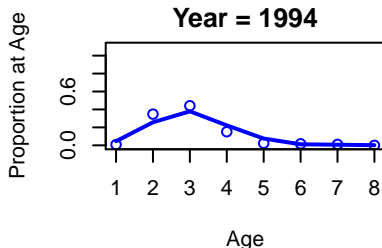
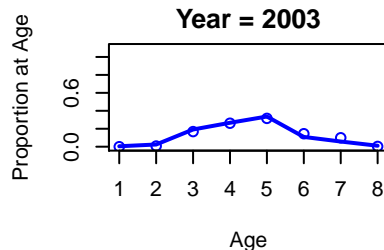
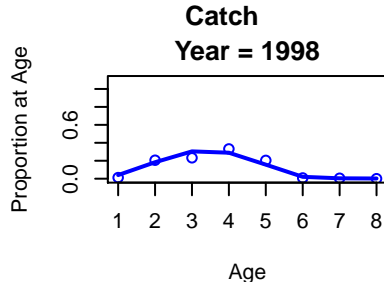
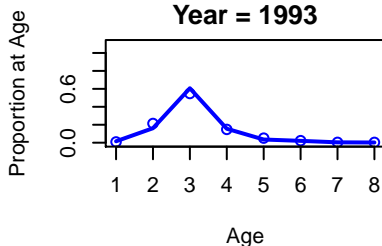
Year = 1991



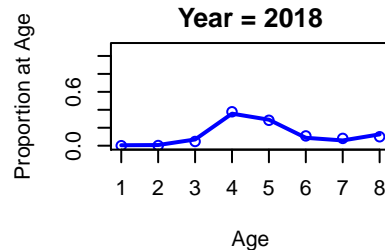
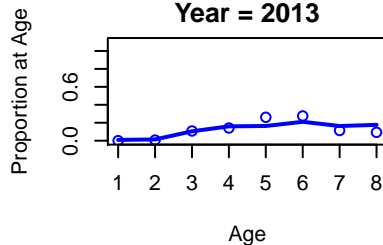
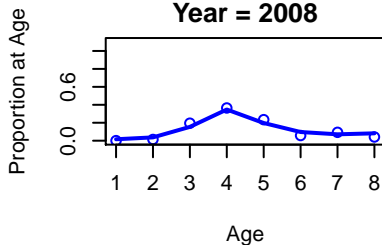
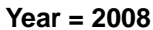
Year = 1992



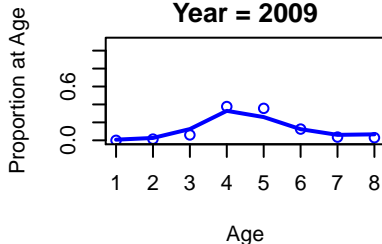
Fleet 3
RECLAND
↓



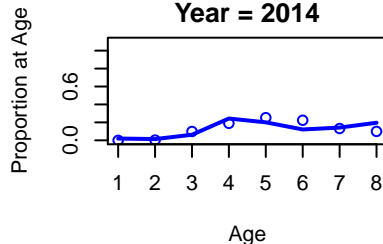
Year = 2013



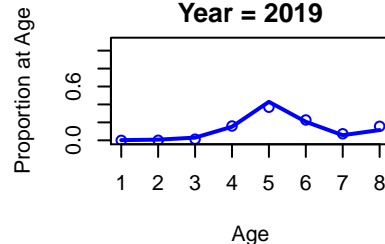
Year = 2009



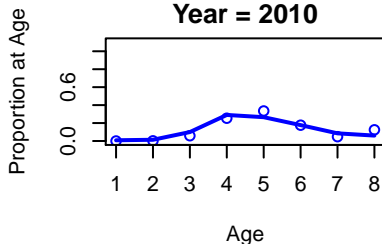
Year = 2014



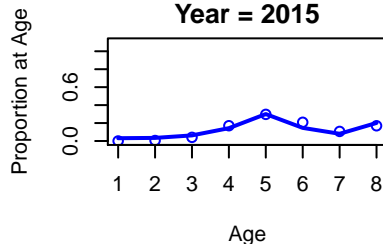
Year = 2019



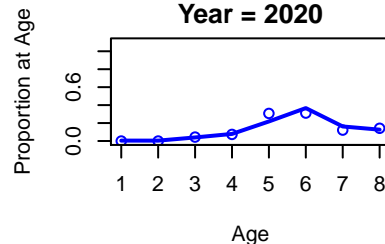
Year = 2010



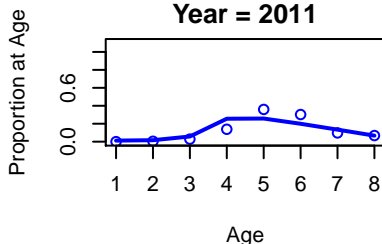
Year = 2015



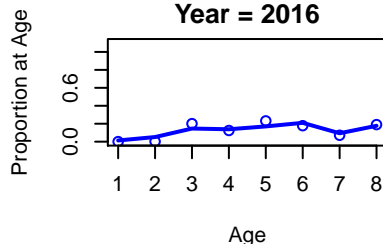
Year = 2020



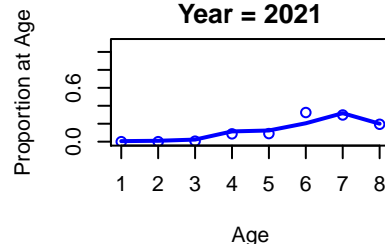
Year = 2011



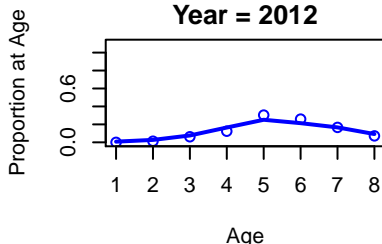
Year = 2016



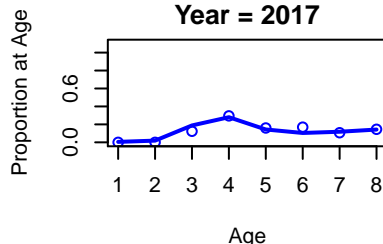
Year = 2021



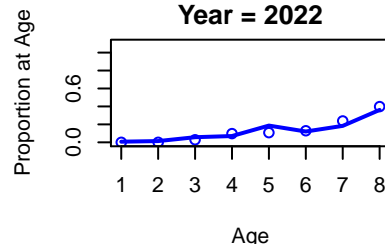
Year = 2012



Year = 2017



Year = 2022

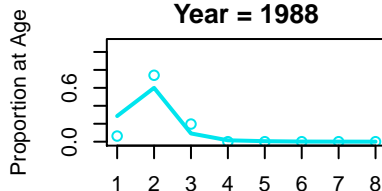


Catch

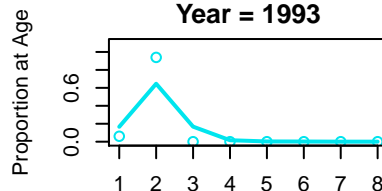
Fleet 4
RECDISC



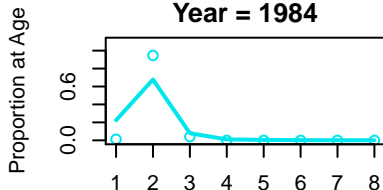
Year = 1988



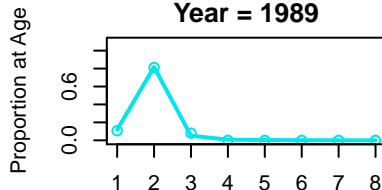
Year = 1993



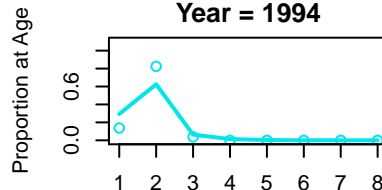
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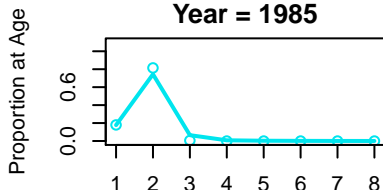
Year = 1989



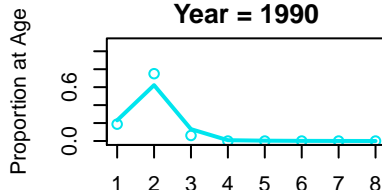
Year = 1994



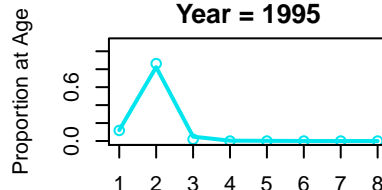
Year = 1985



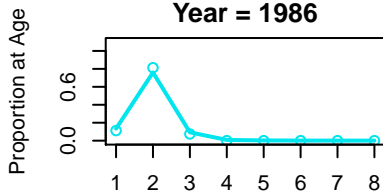
Year = 1990



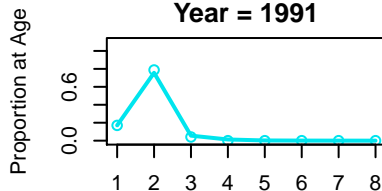
Year = 1995



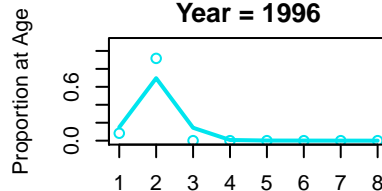
Year = 1986



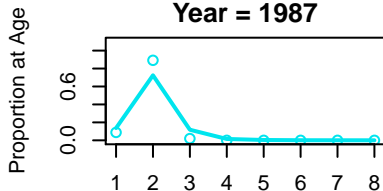
Year = 1991



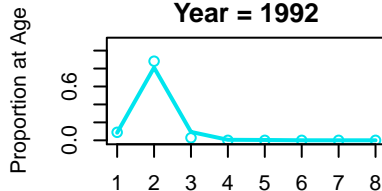
Year = 1996



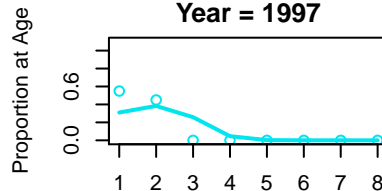
Year = 1987



Year = 1992

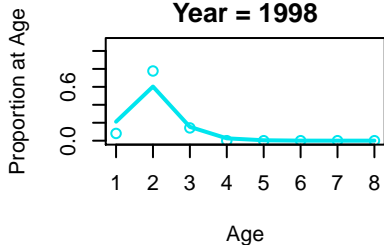


Year = 1997

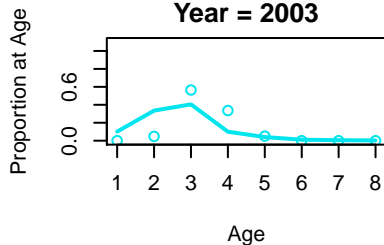


Catch

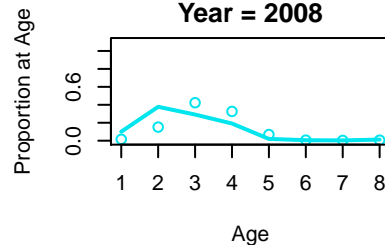
Year = 1998



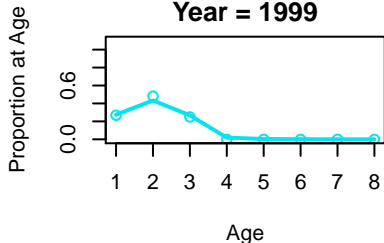
Year = 2003



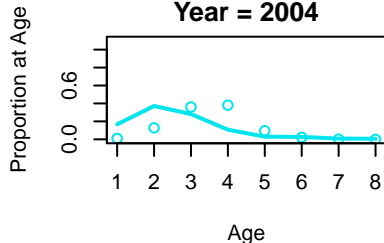
Year = 2008



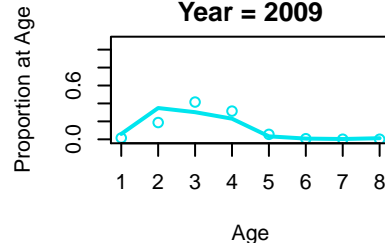
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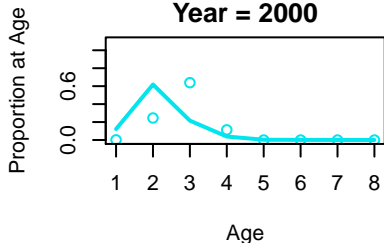
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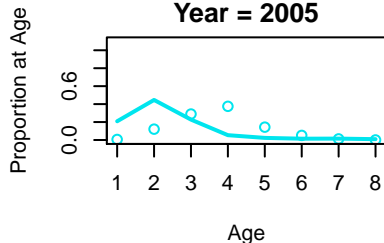
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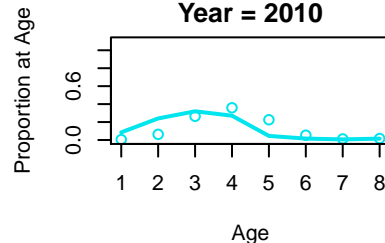
Year = 2000



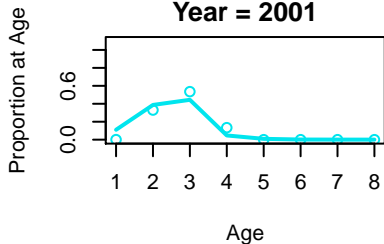
Year = 2005



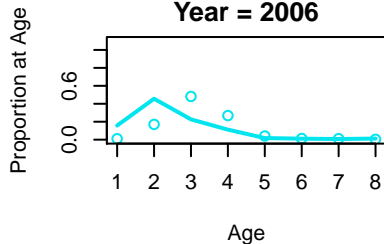
Year = 2010



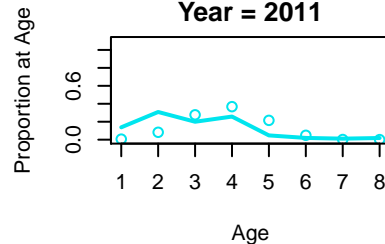
Year = 2001



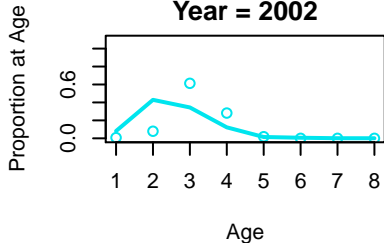
Year = 2006



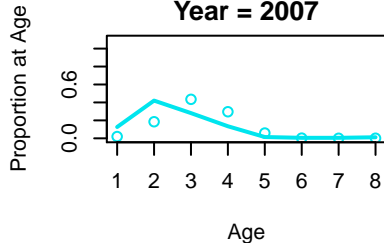
Year = 2011



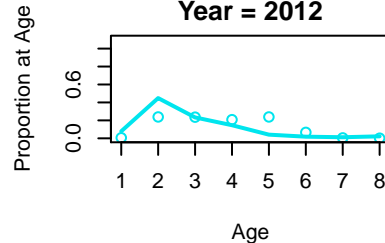
Year = 2002



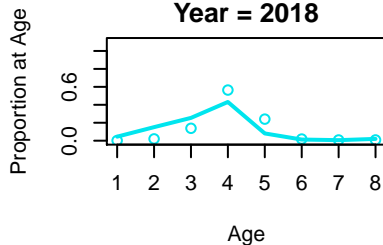
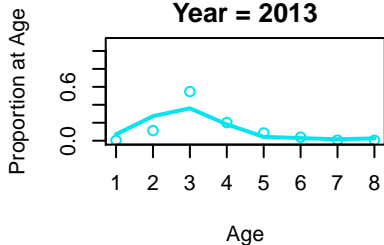
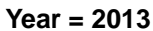
Year = 2007



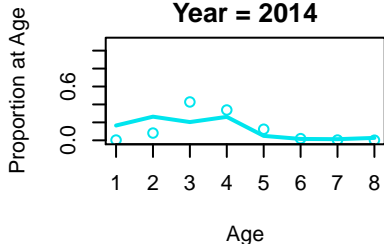
Year = 2012



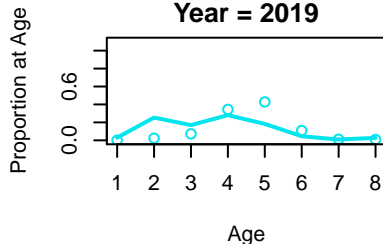
Year = 2018



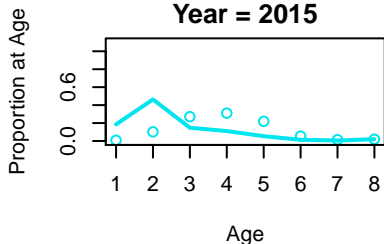
Year = 2014



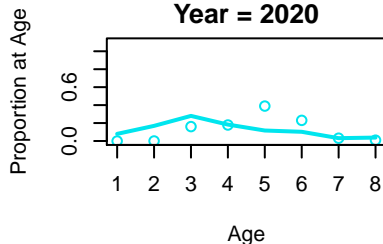
Year = 2019



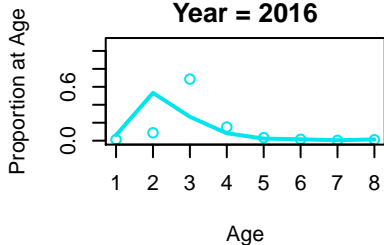
Year = 2015



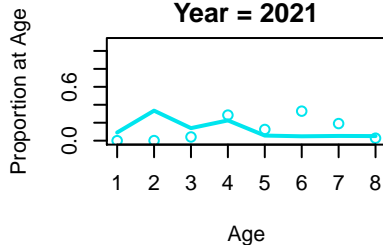
Year = 2020



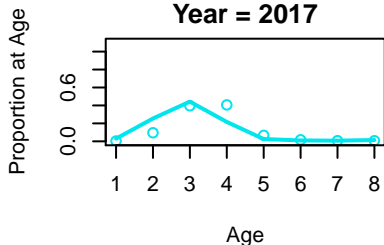
Year = 2016



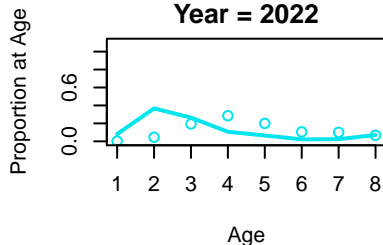
Year = 2021



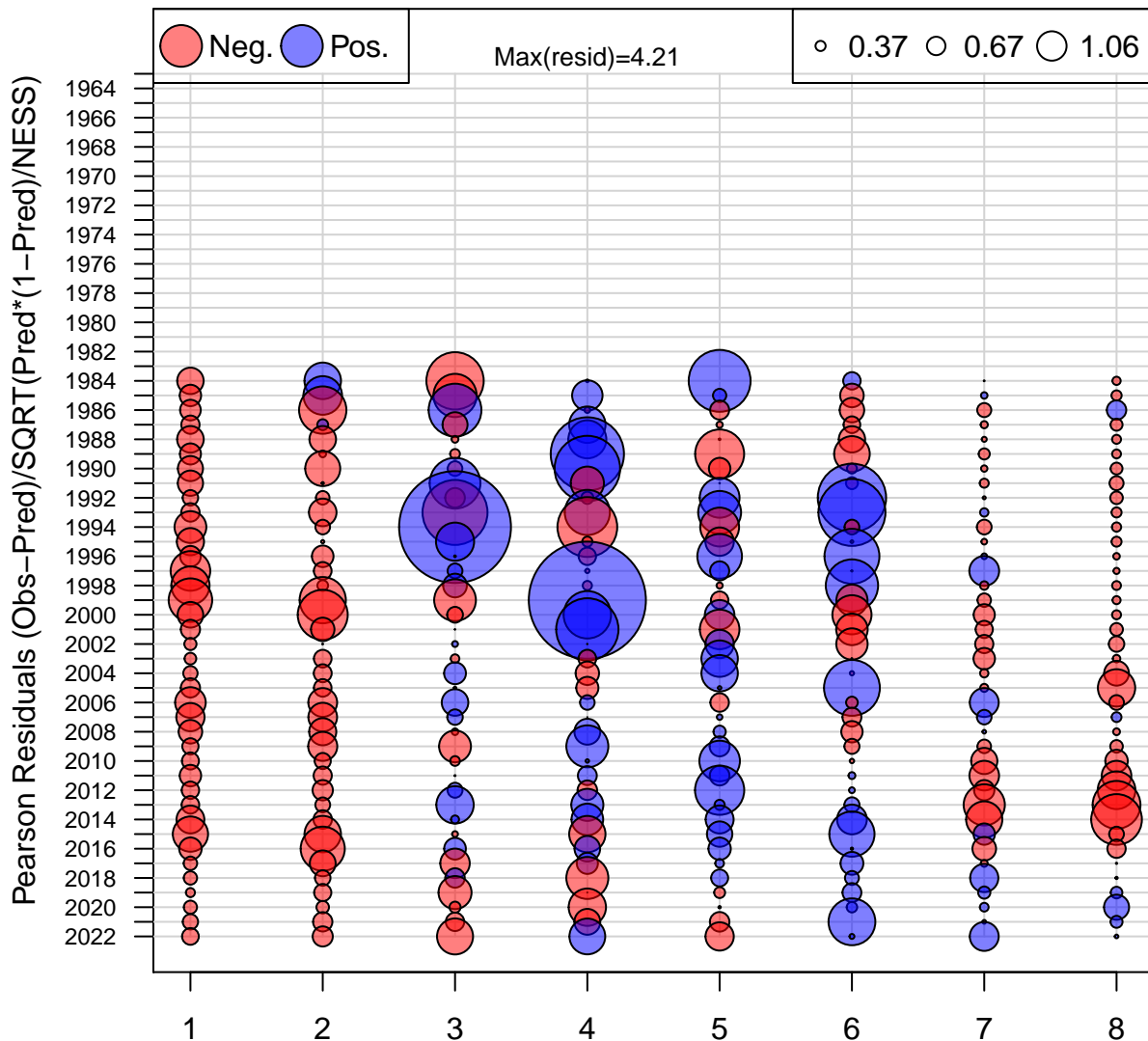
Year = 2017



Year = 2022

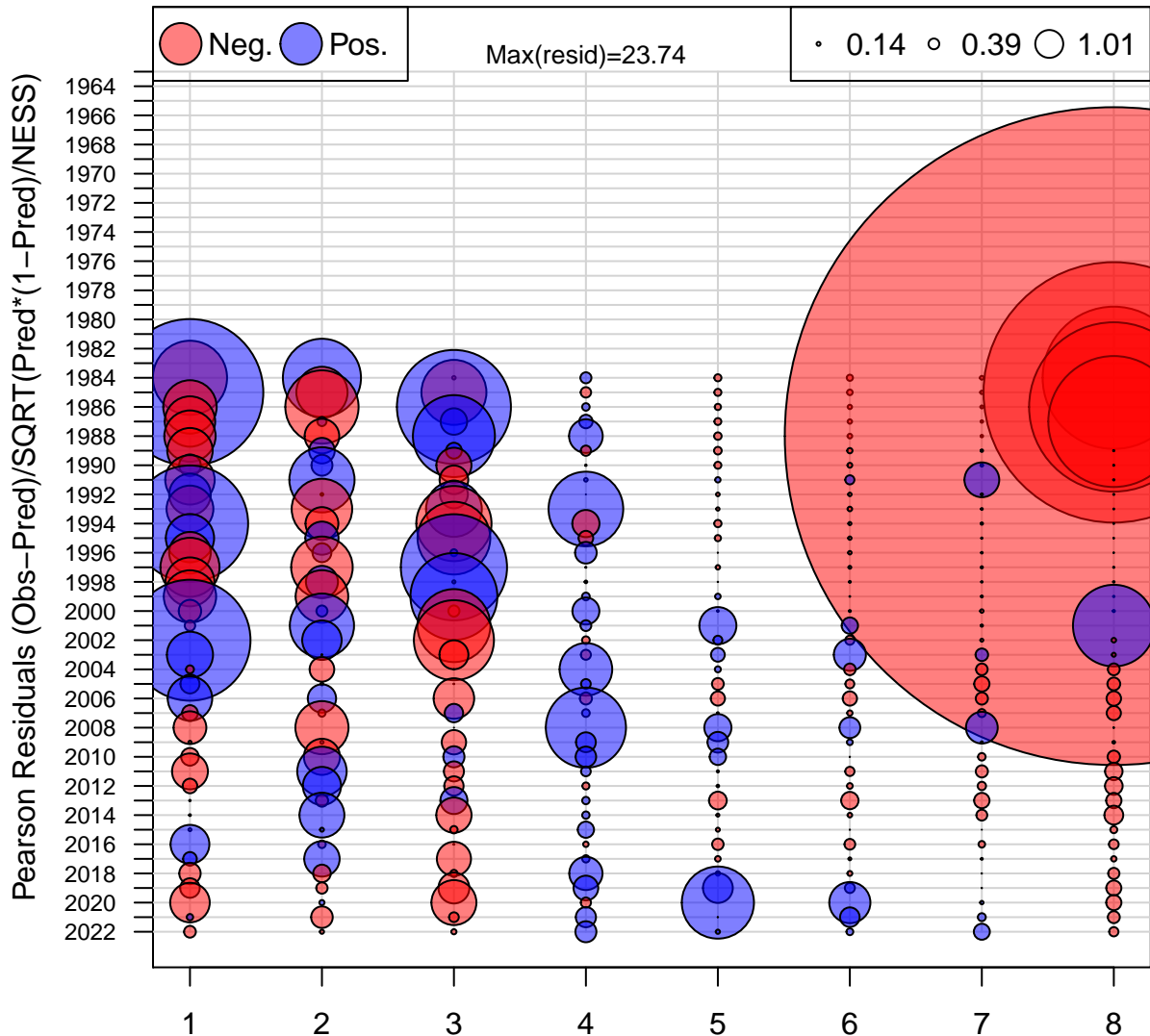


Age Comp Residuals for Catch by Fleet 1 (COMLAND)



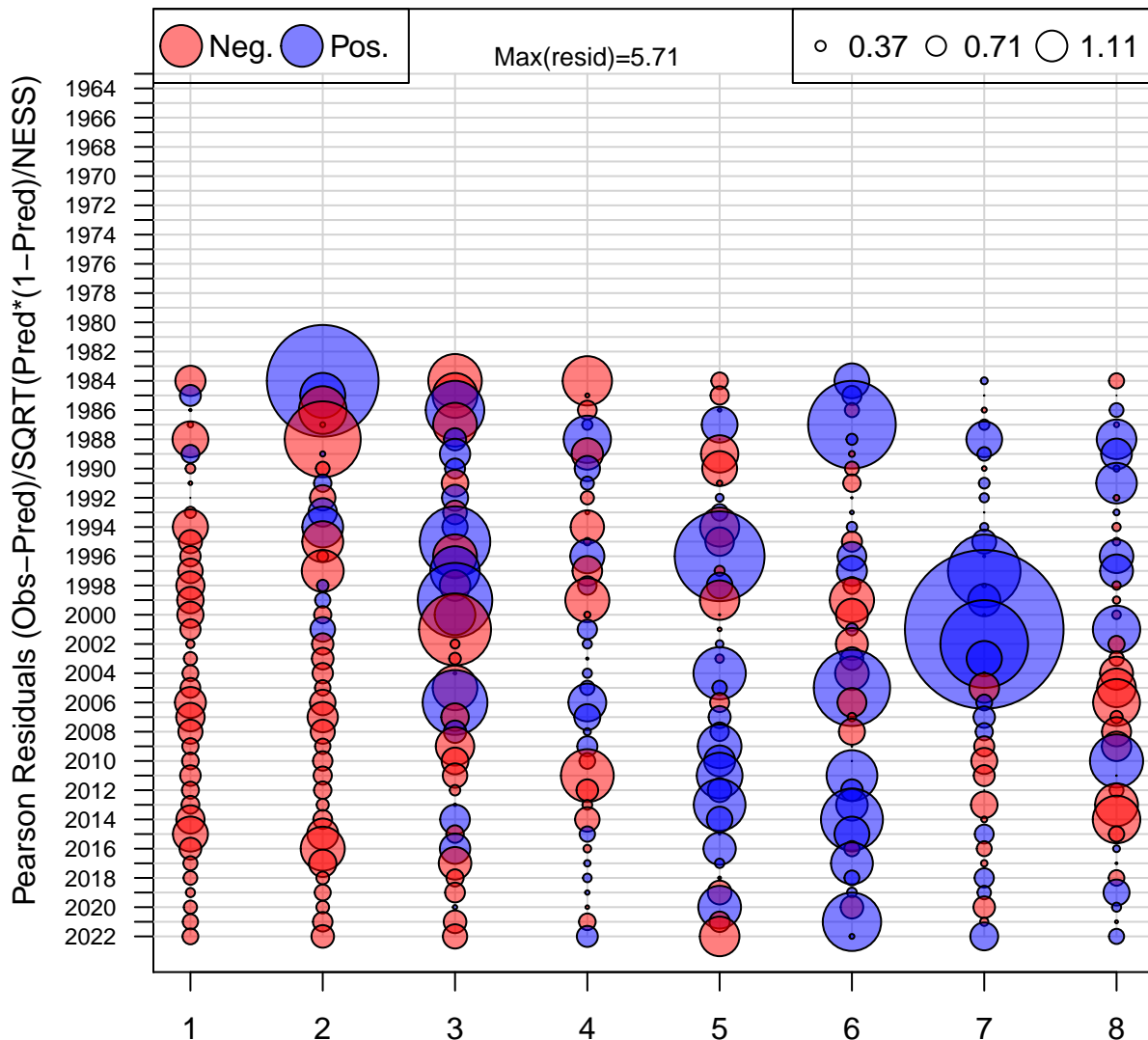
Mean resid = -0.16 SD(resid) = 0.98

Age Comp Residuals for Catch by Fleet 2 (COMDISC)



Mean resid = -0.16 SD(resid) = 1.89

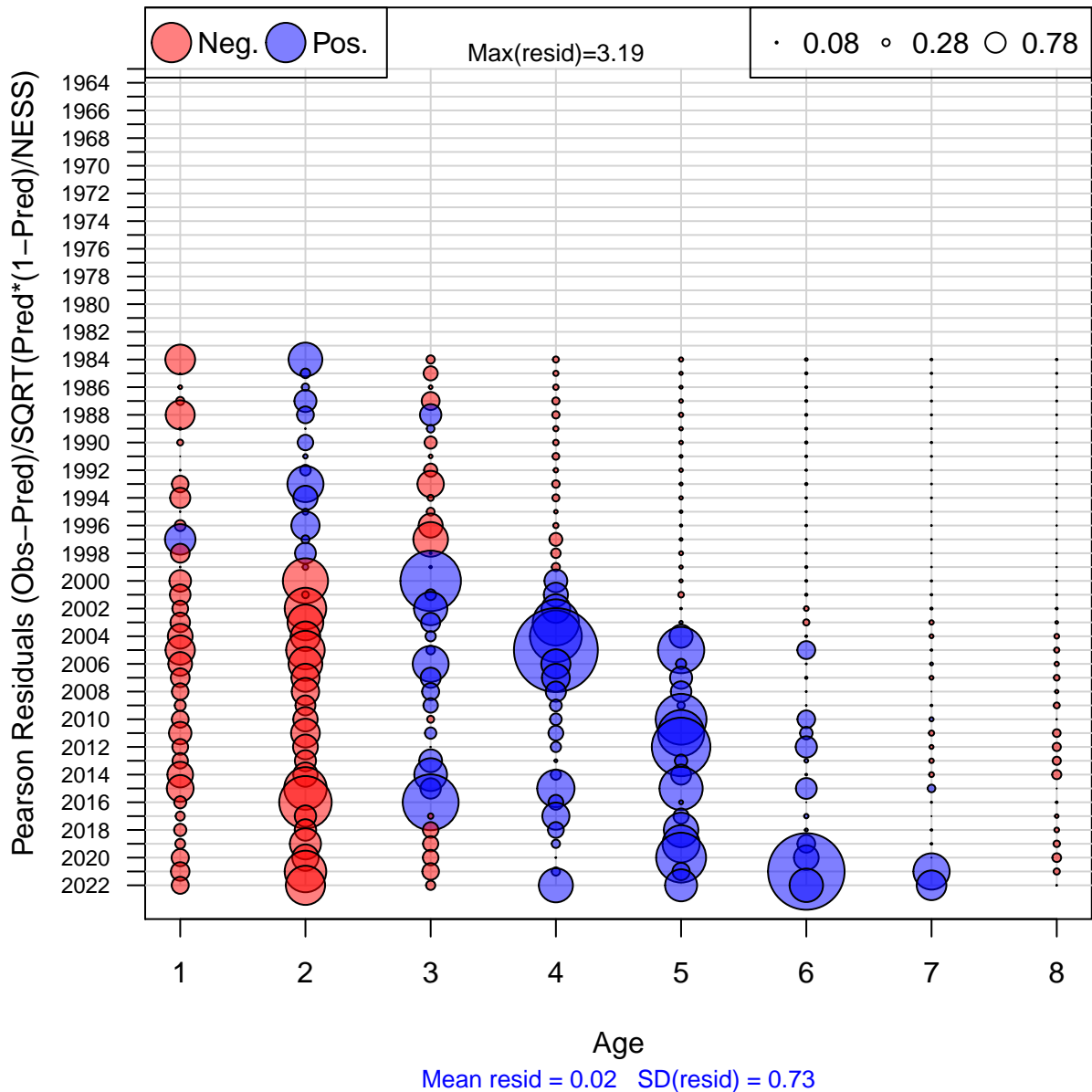
Age Comp Residuals for Catch by Fleet 3 (RECLAND)



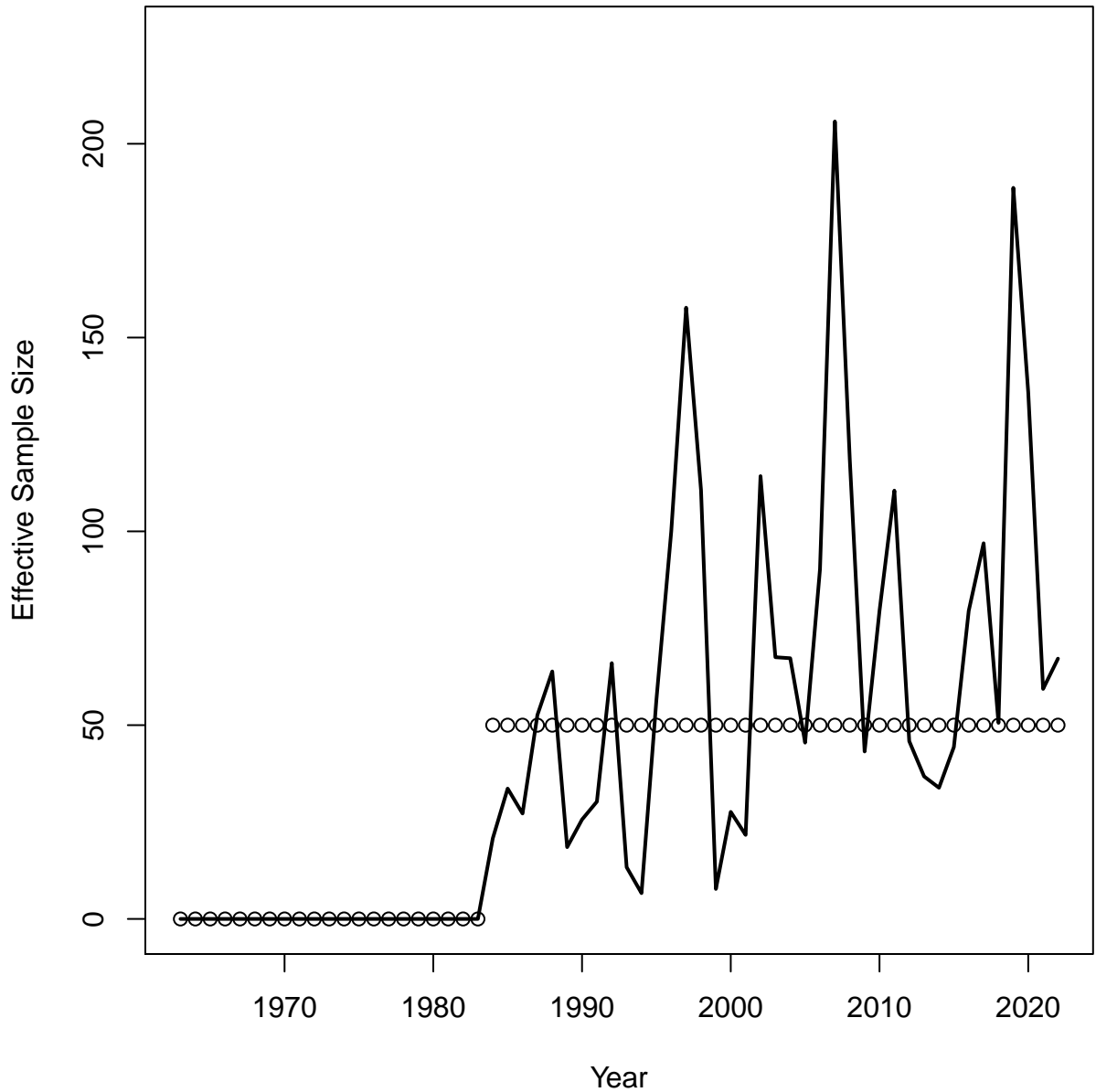
Age

Mean resid = -0.03 SD(resid) = 1.09

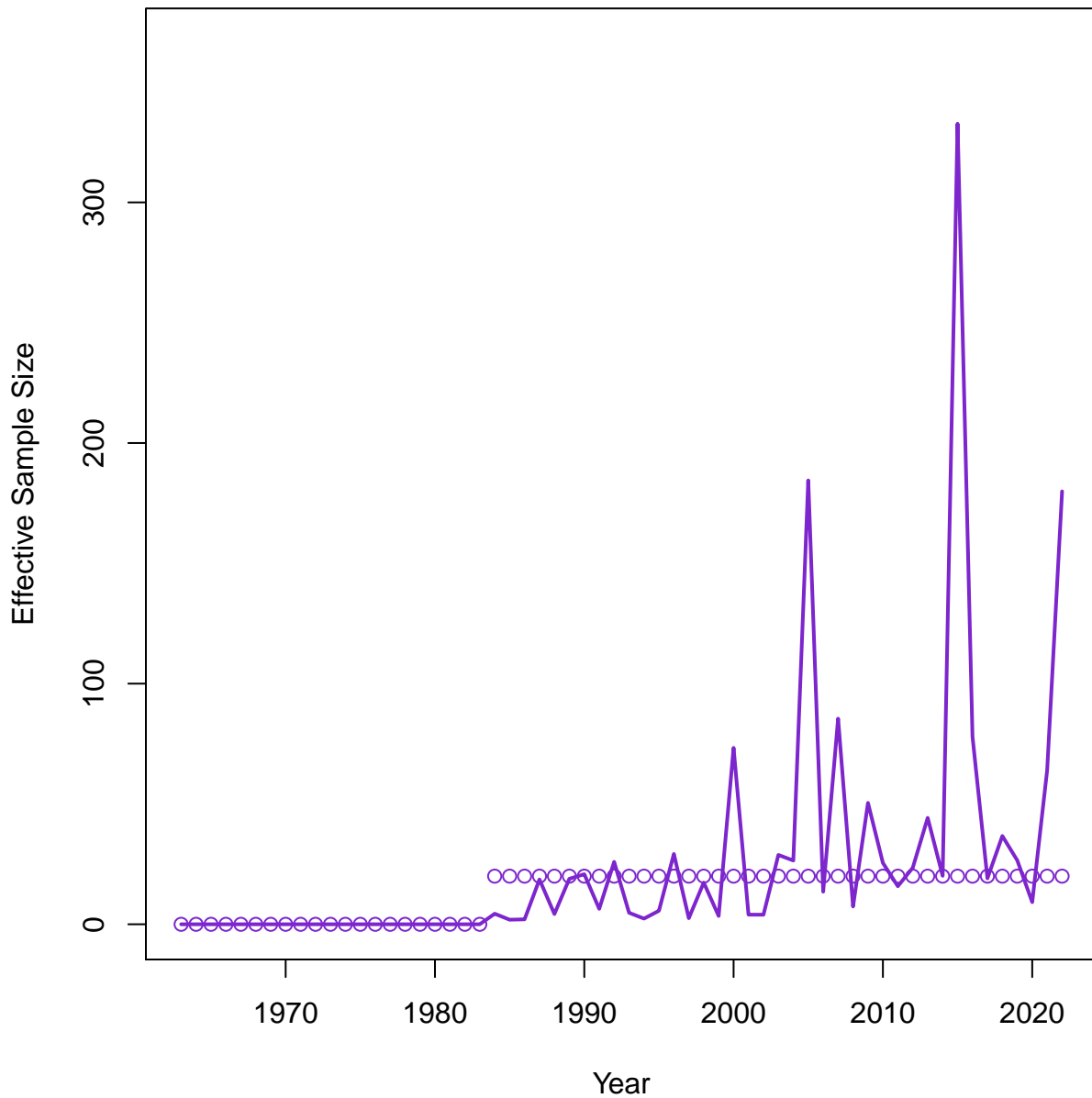
Age Comp Residuals for Catch by Fleet 4 (RECDISC)



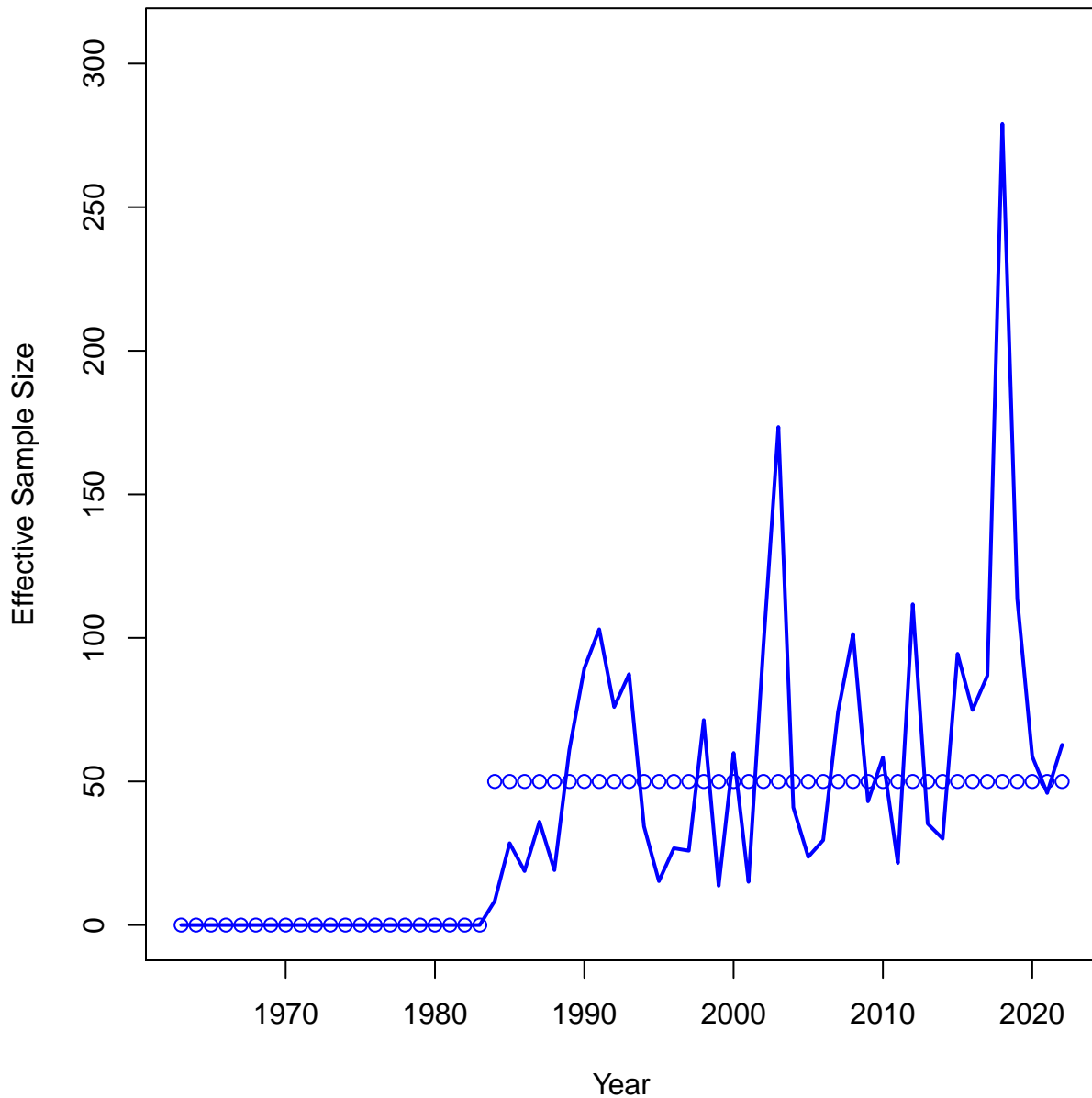
Catch Neff Fleet 1 (COMLAND)



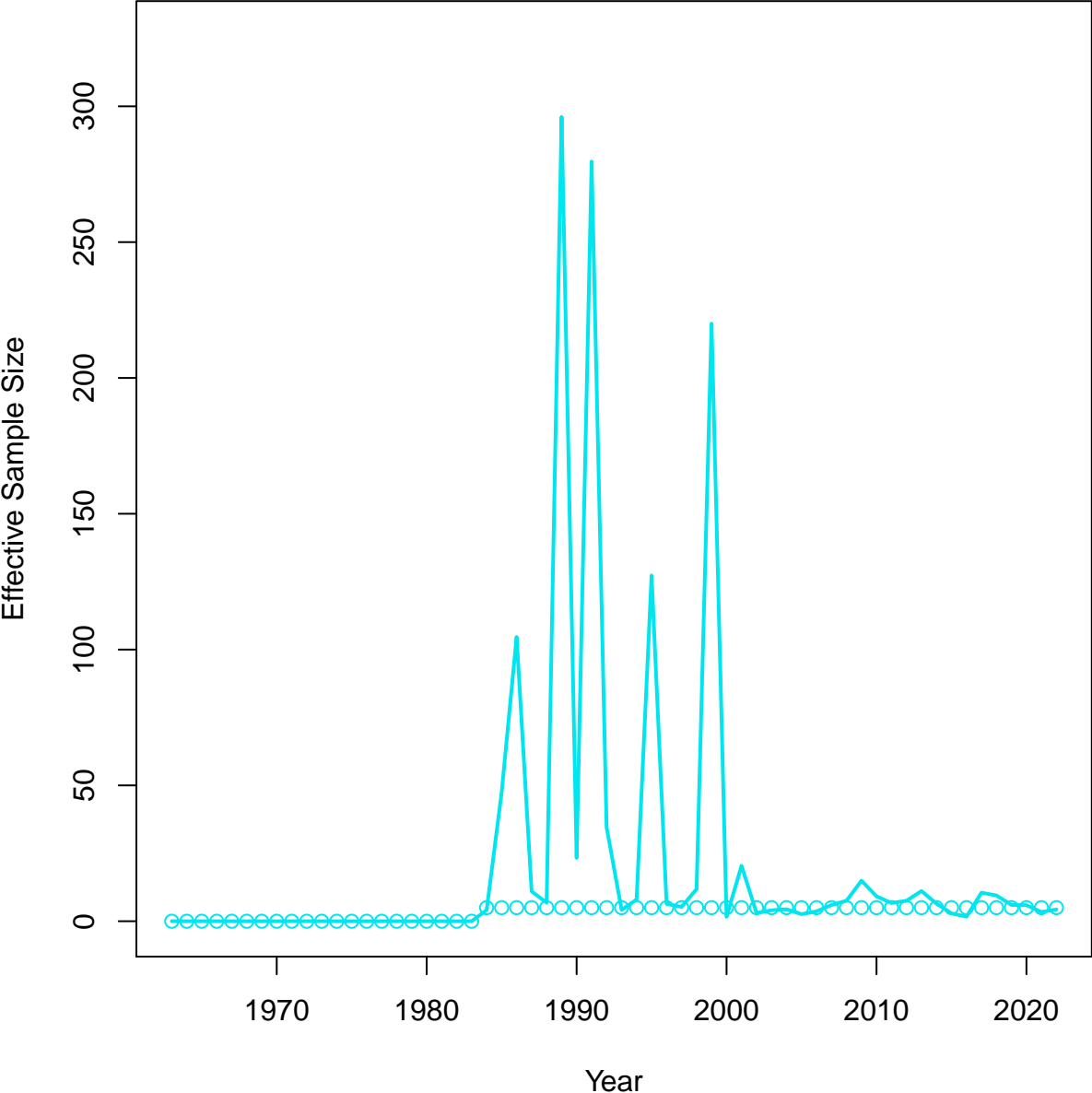
Catch Neff Fleet 2 (COMDISC)



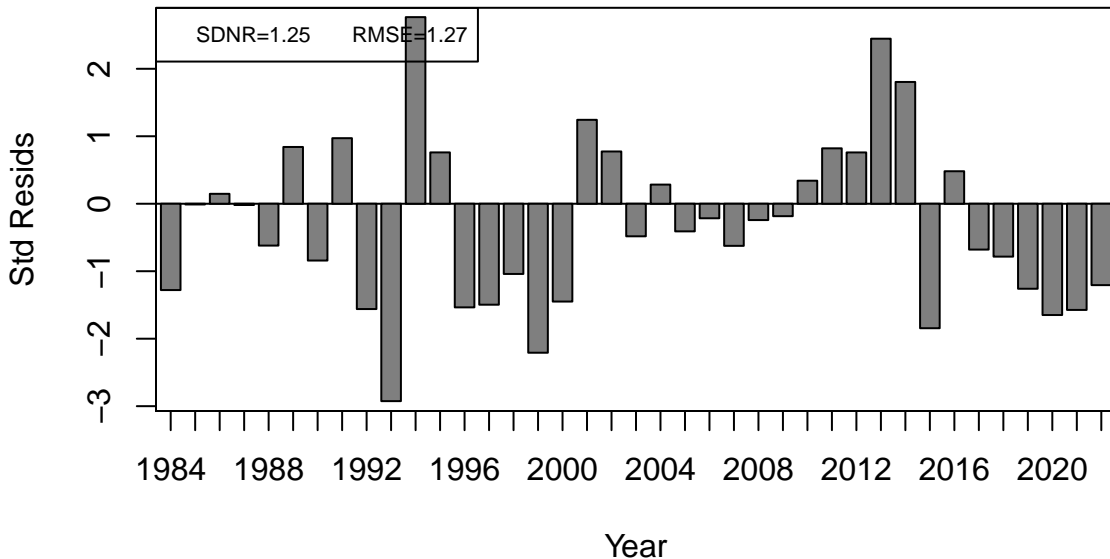
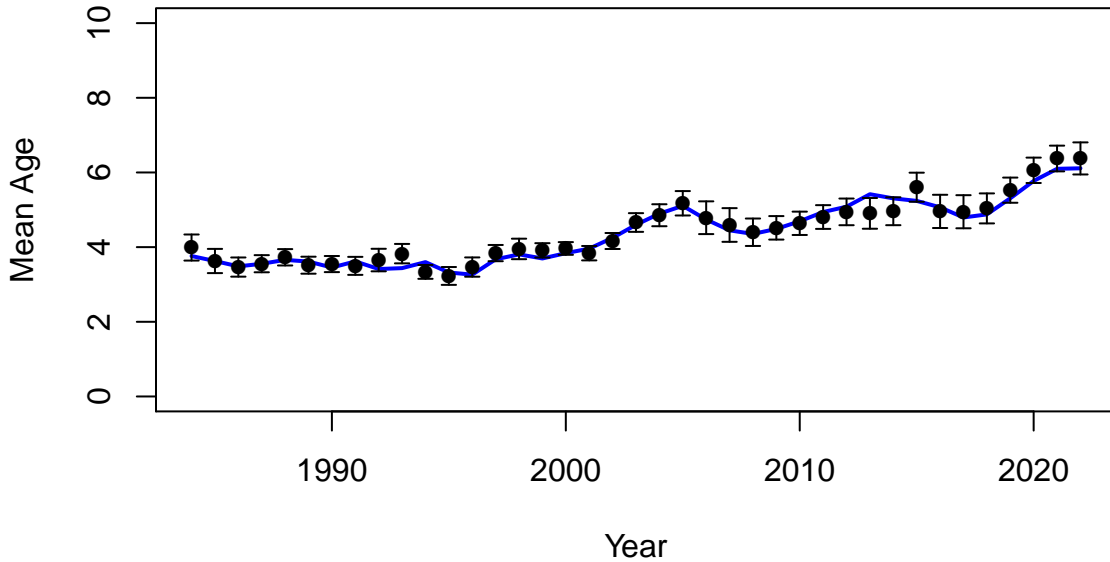
Catch Neff Fleet 3 (RECLAND)



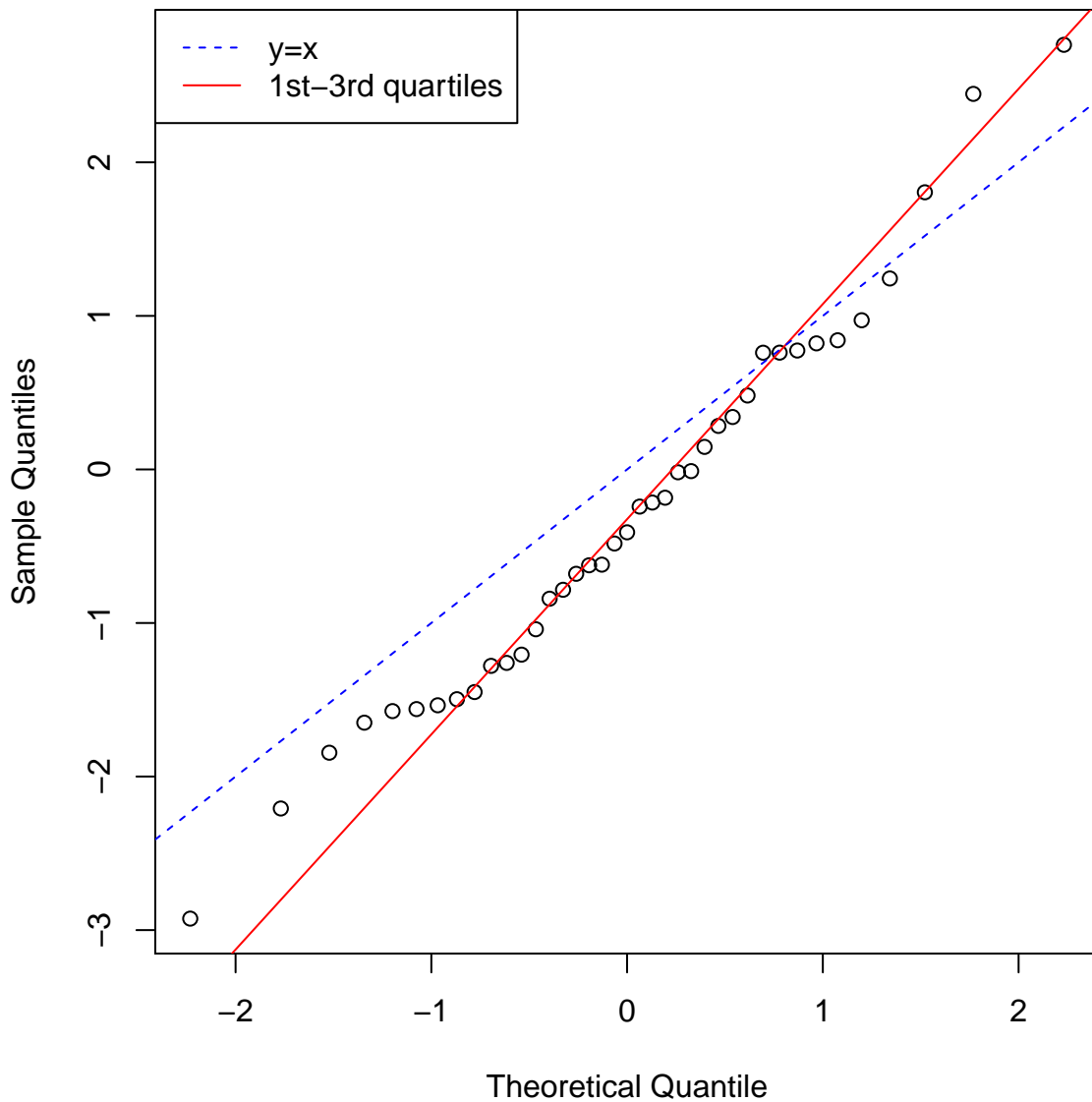
Catch Neff Fleet 4 (RECDISC)



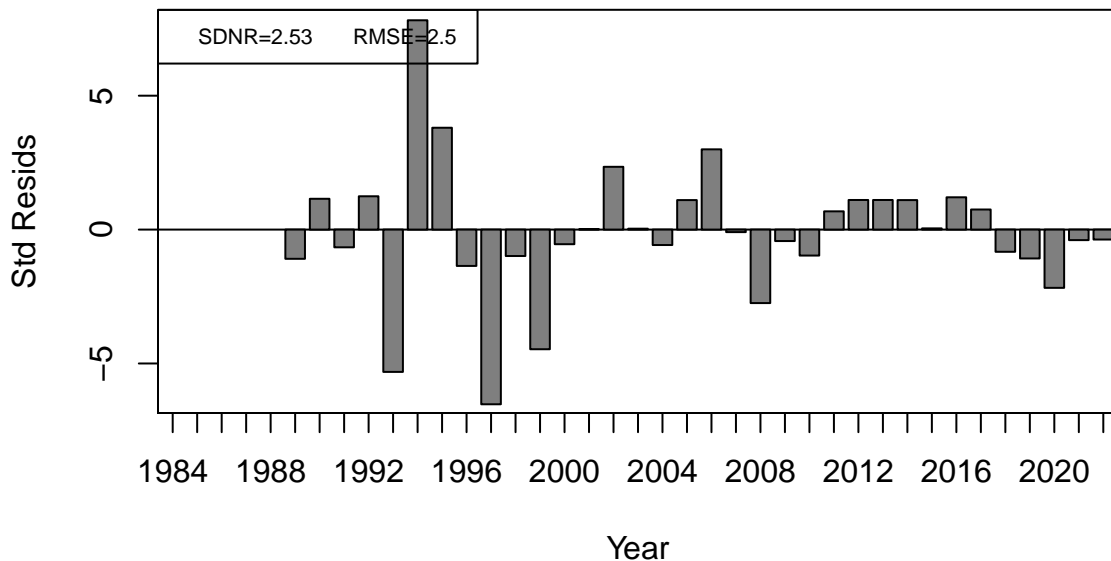
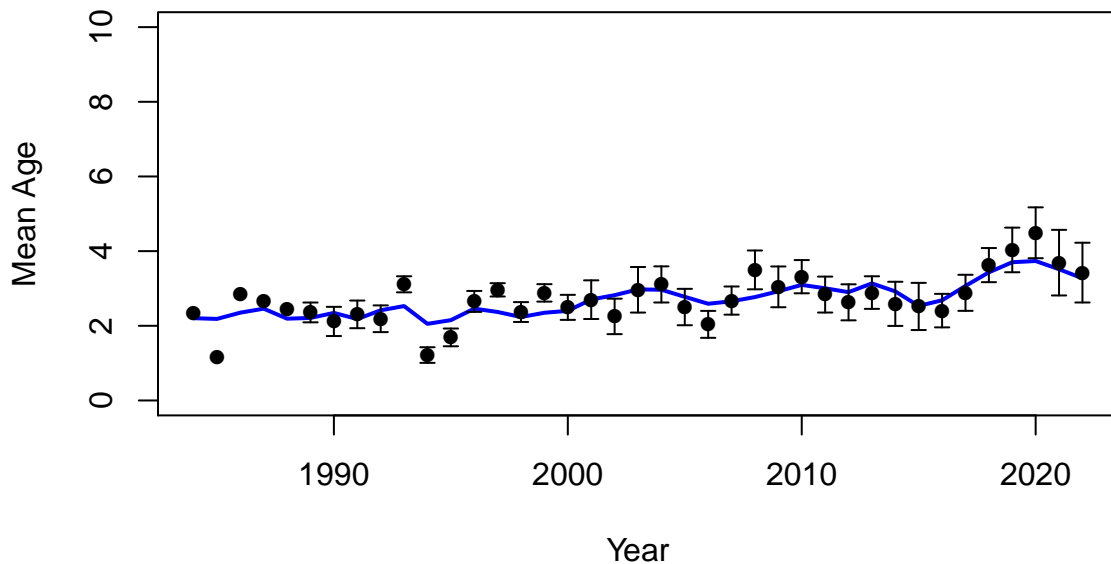
Catch Fleet 1 (COMLAND) ESS = 50



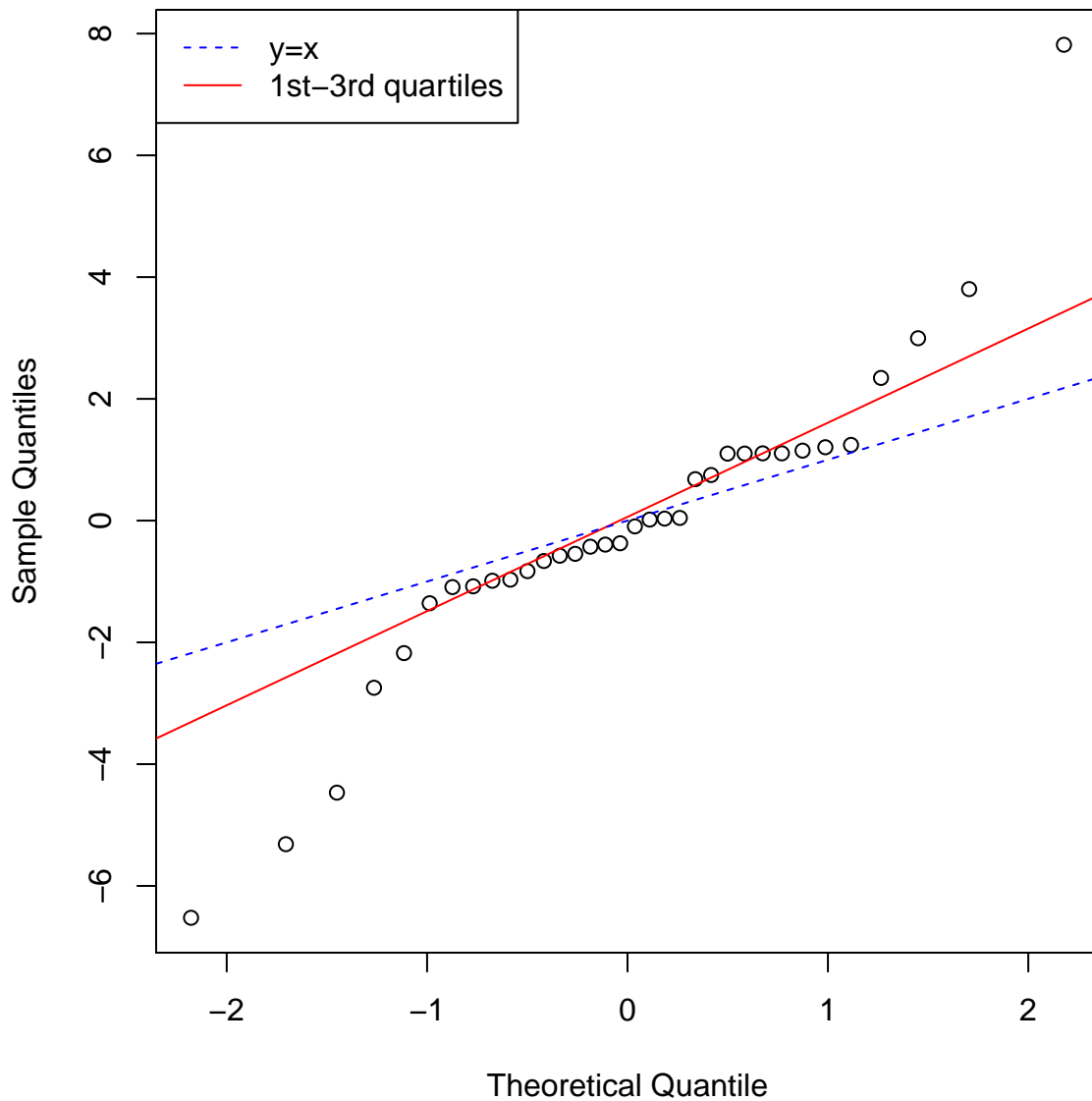
Catch Fleet 1 (COMLAND) ESS = 50



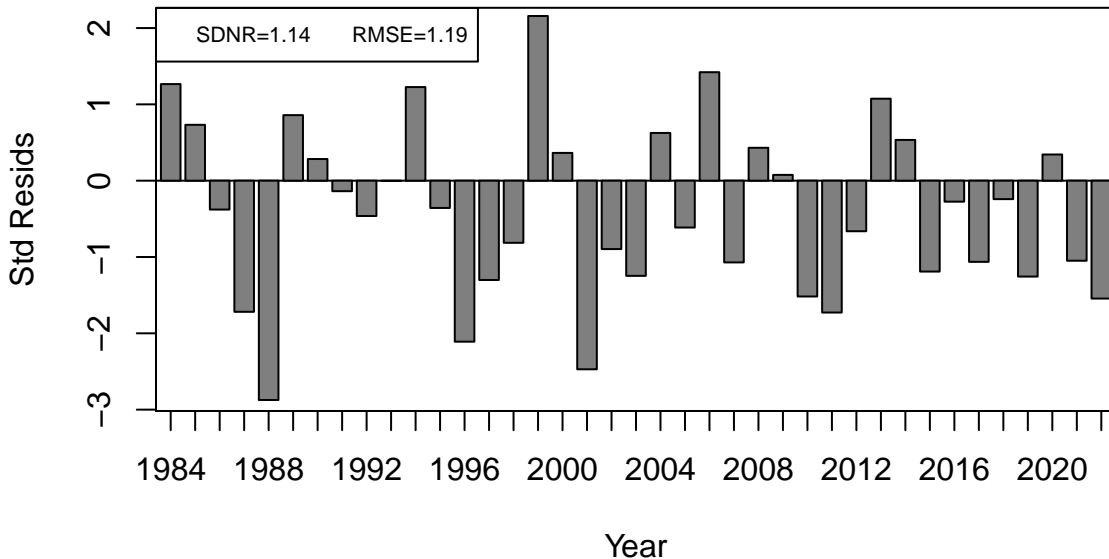
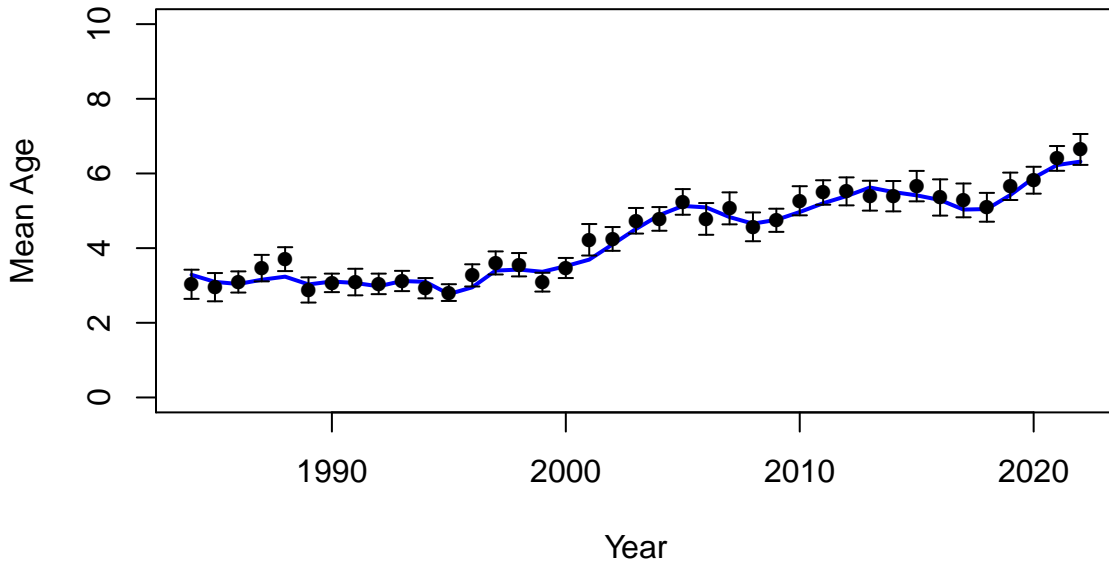
Catch Fleet 2 (COMDISC) ESS = 20



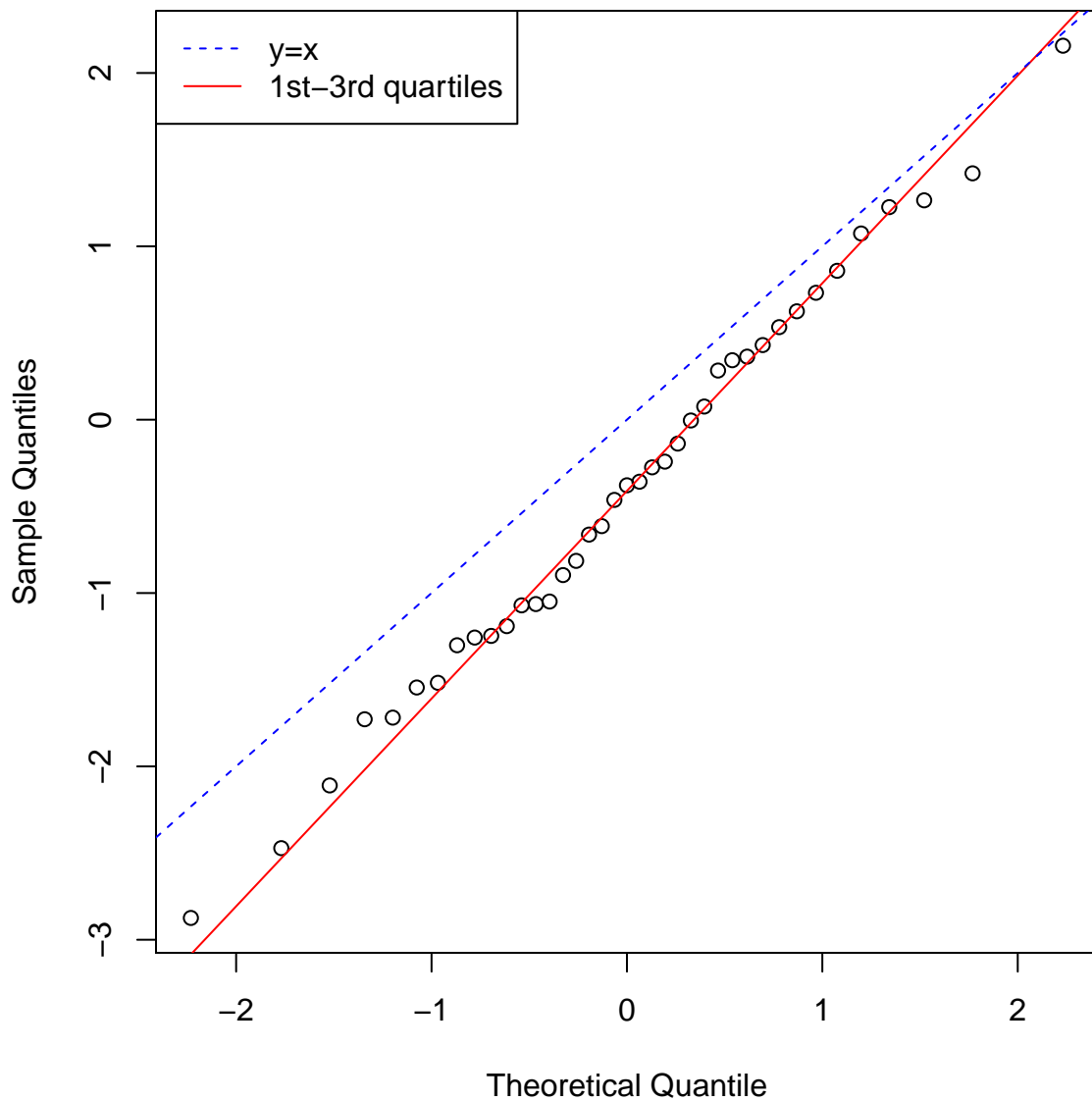
Catch Fleet 2 (COMDISC) ESS = 20



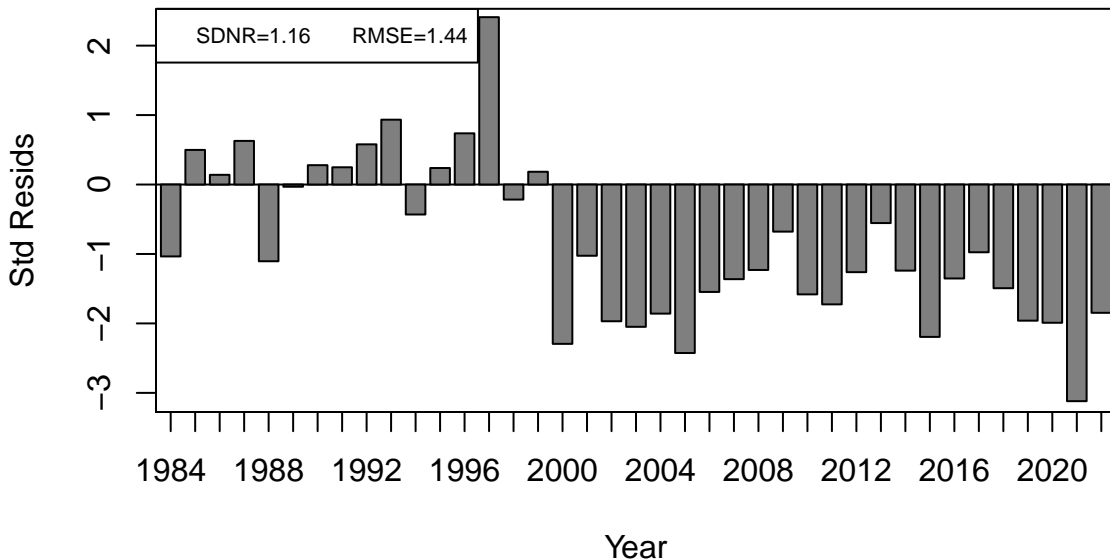
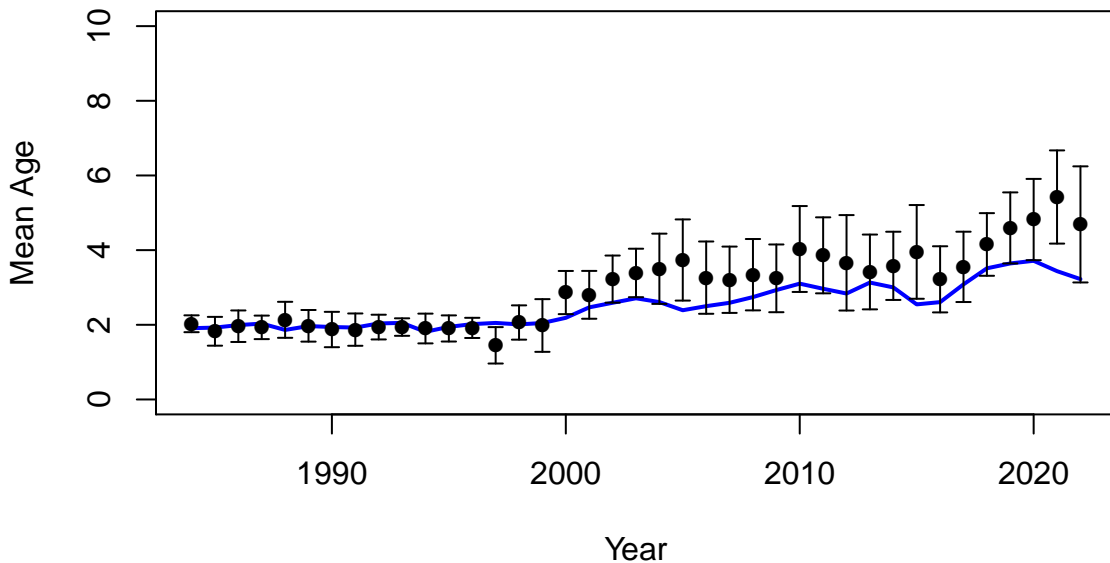
Catch Fleet 3 (RECLAND) ESS = 50



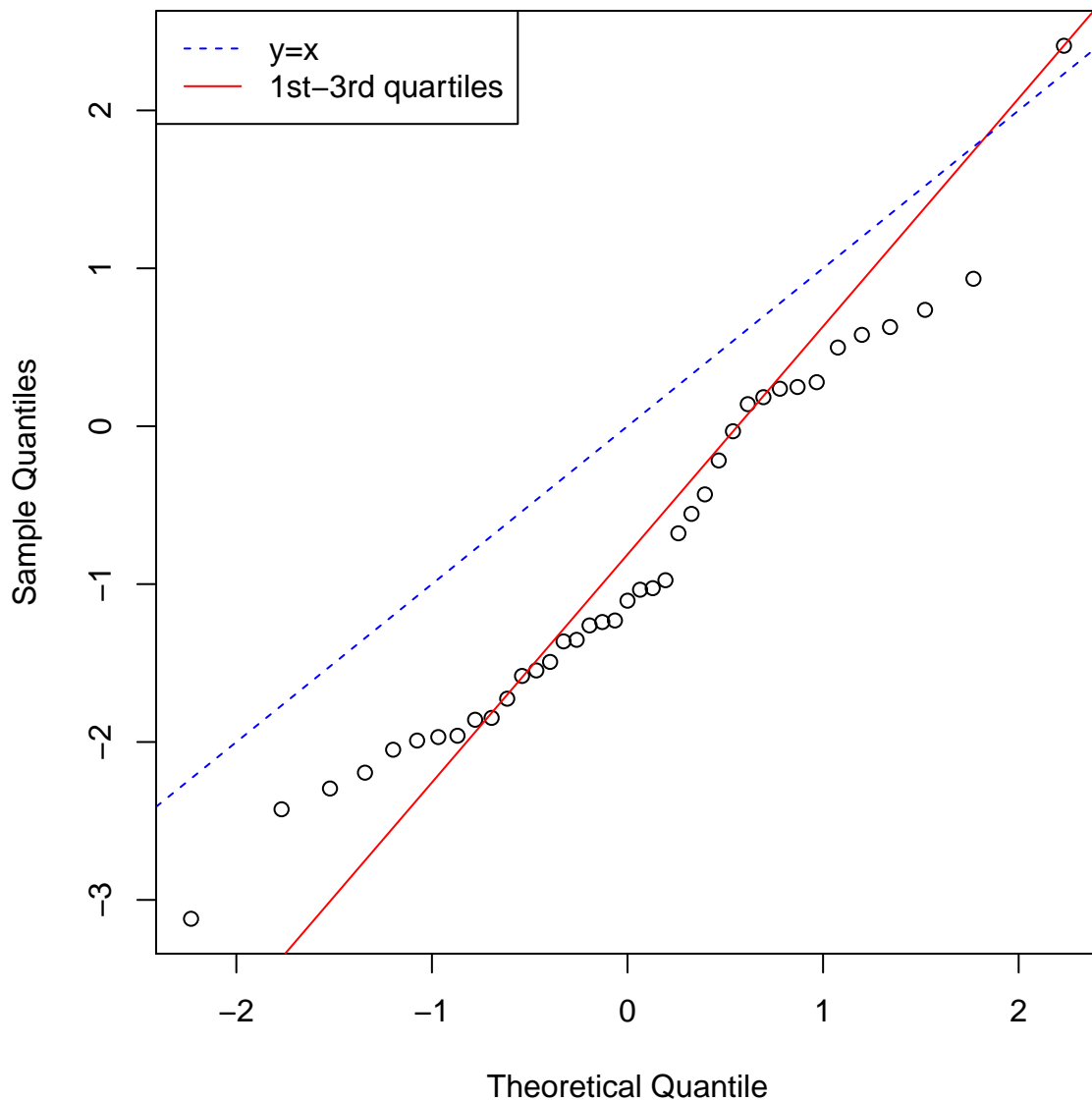
Catch Fleet 3 (RECLAND) ESS = 50



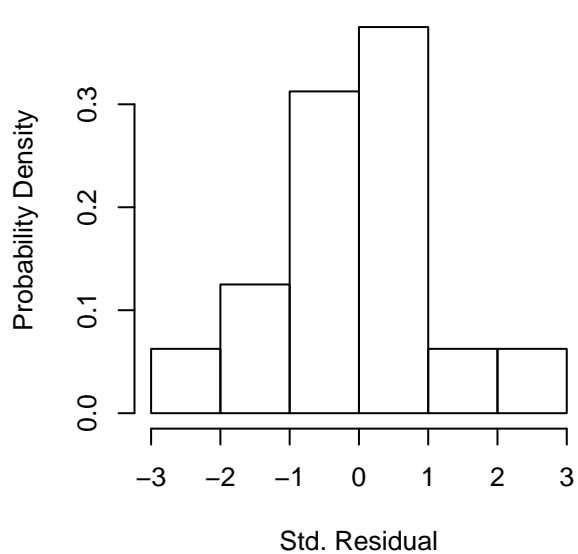
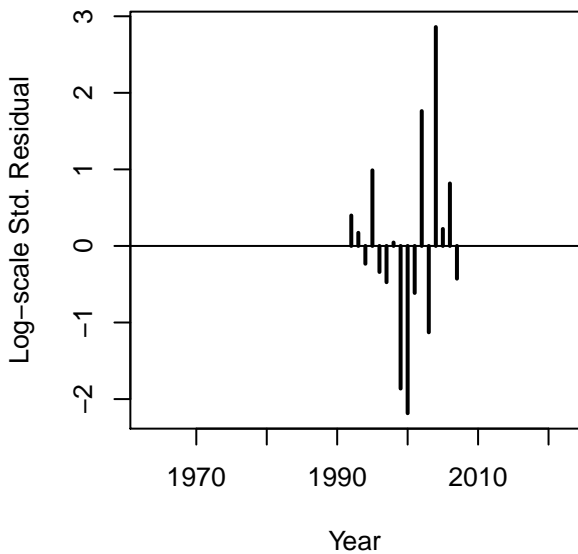
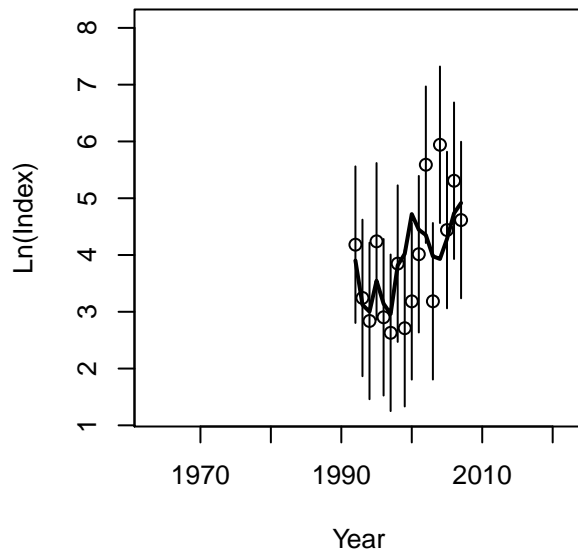
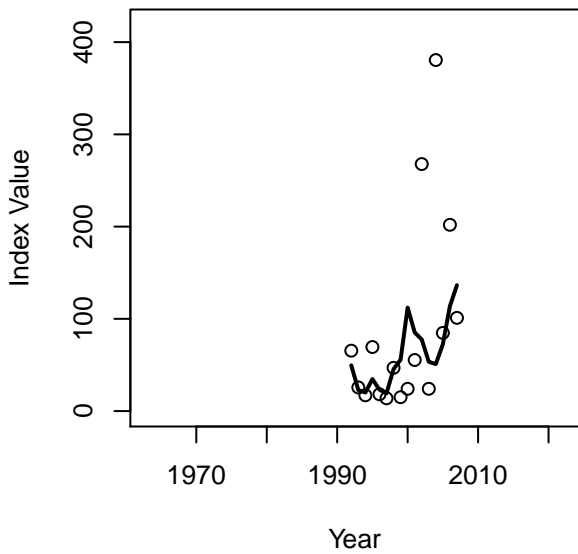
Catch Fleet 4 (RECDISC) ESS = 5



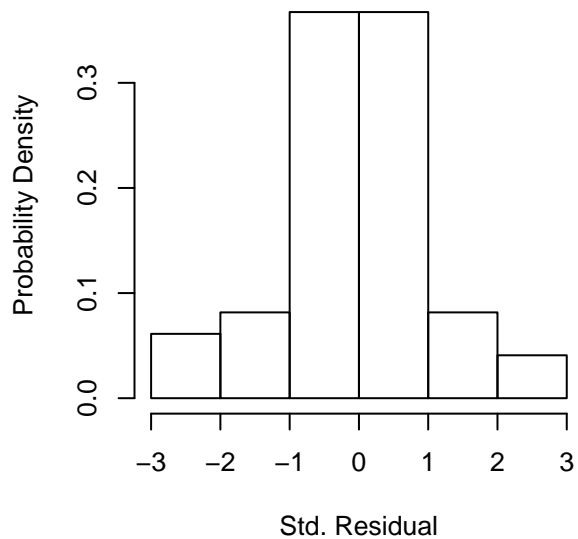
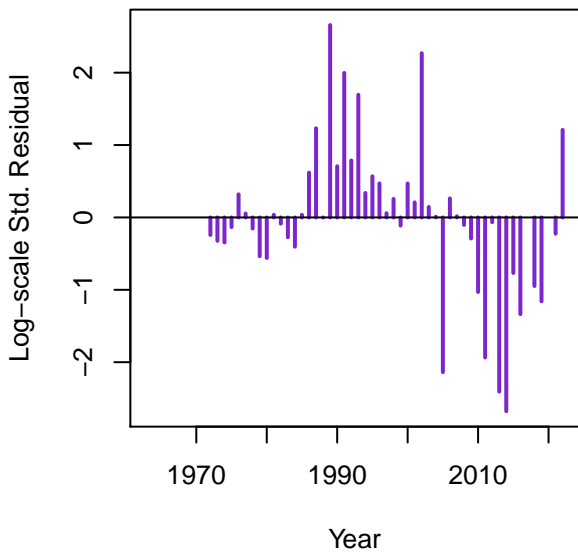
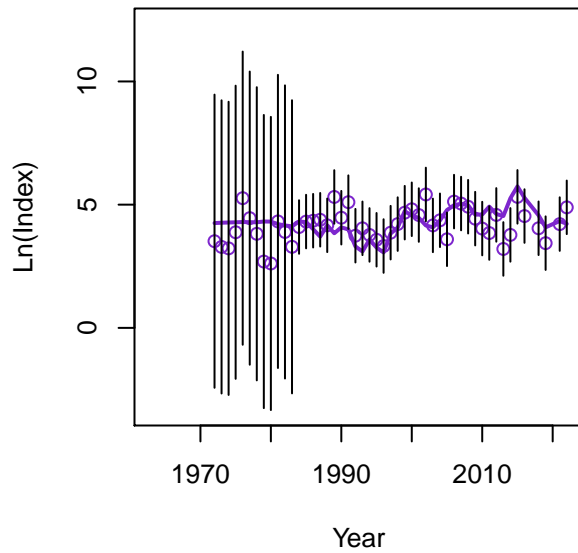
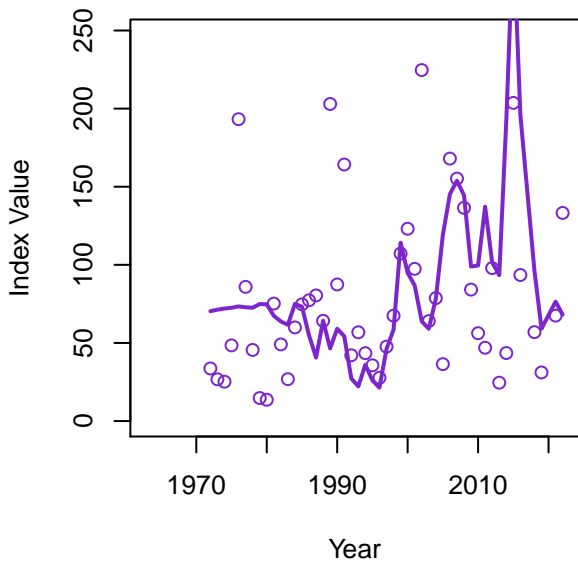
Catch Fleet 4 (RECDISC) ESS = 5



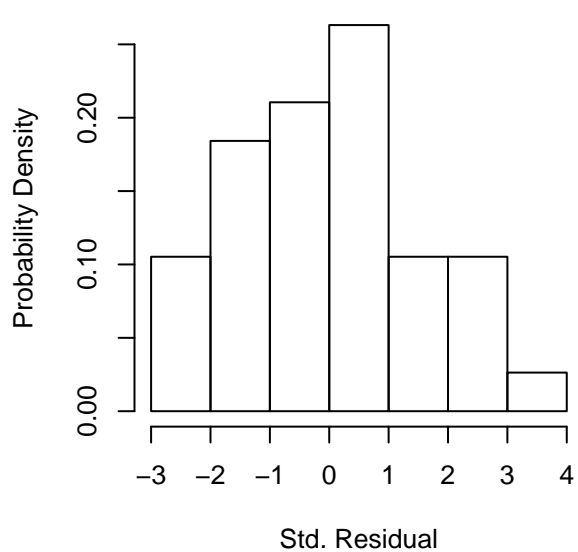
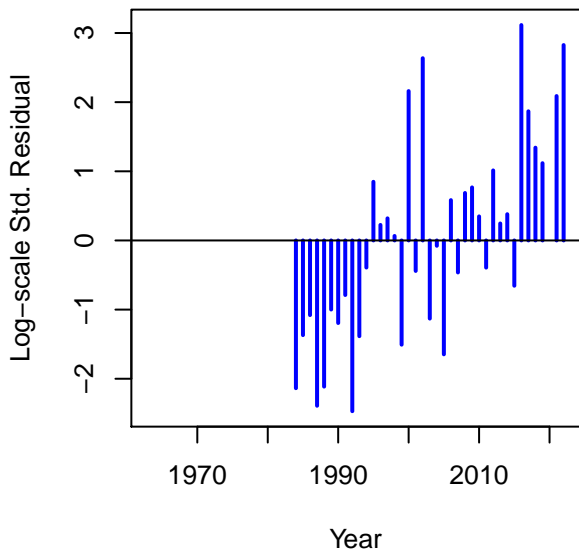
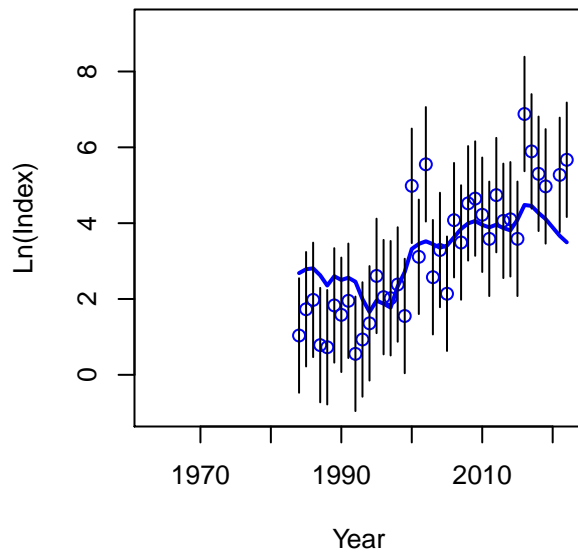
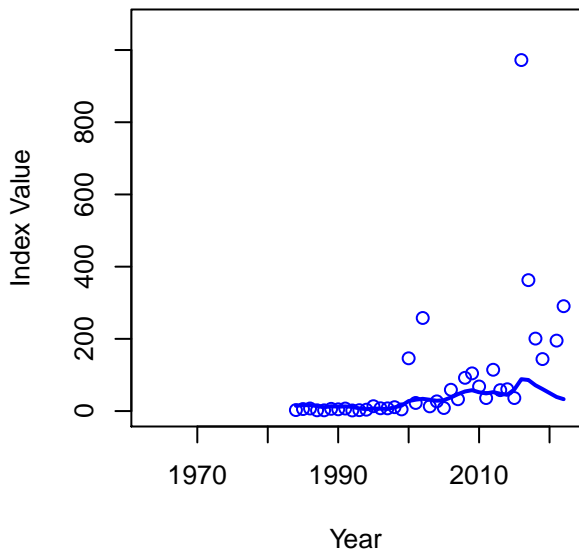
Index 1 (NECWIN)



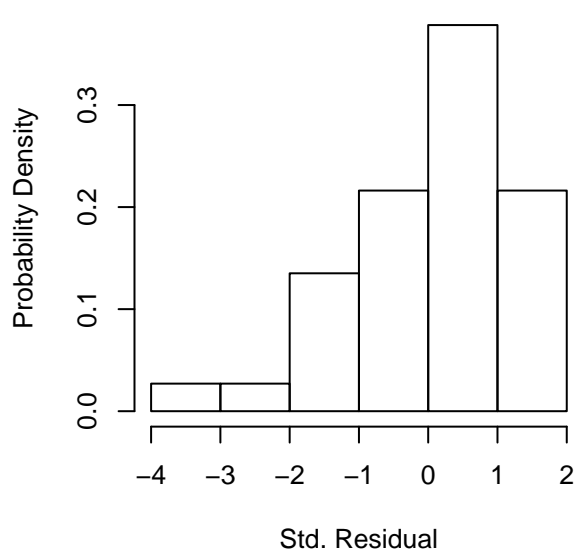
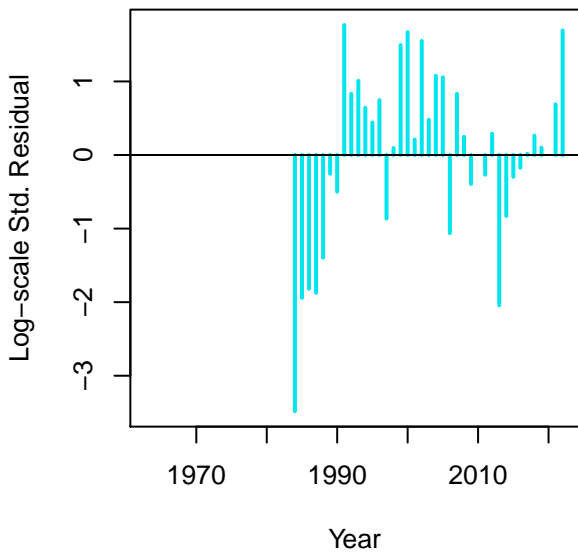
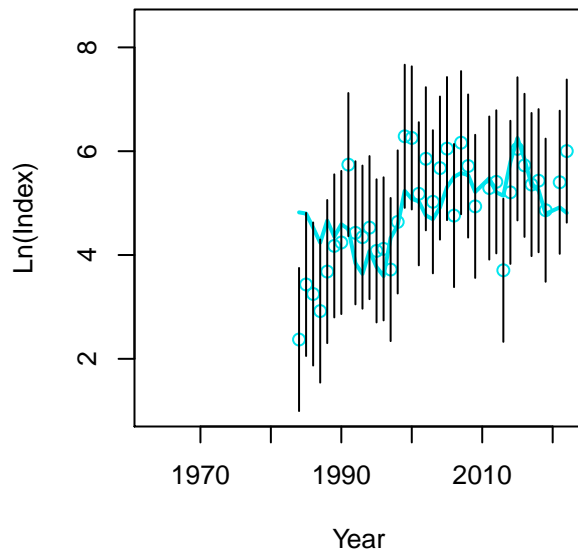
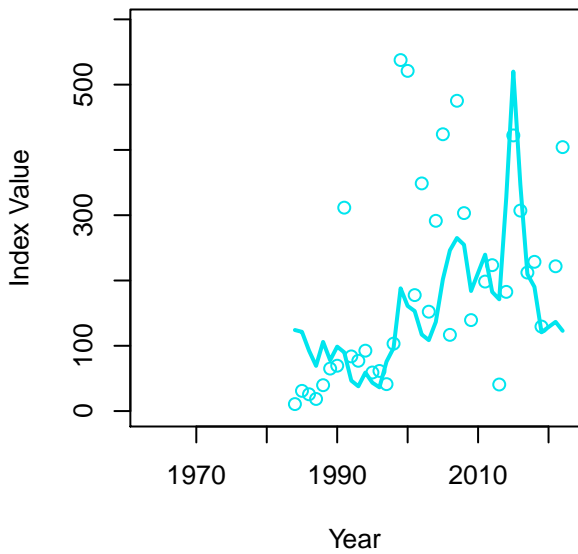
Index 2 (NECFAL)



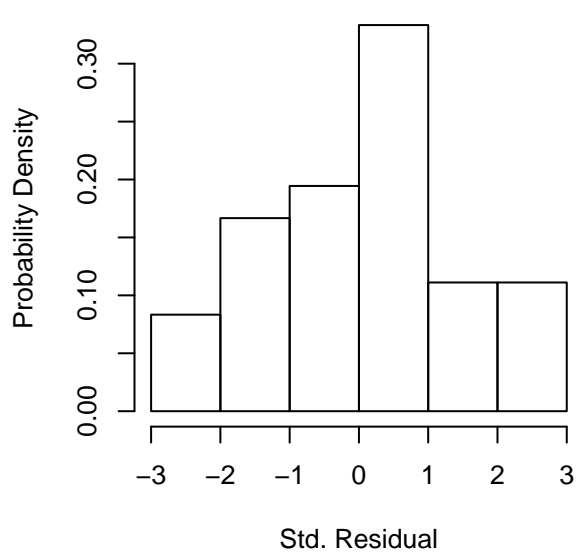
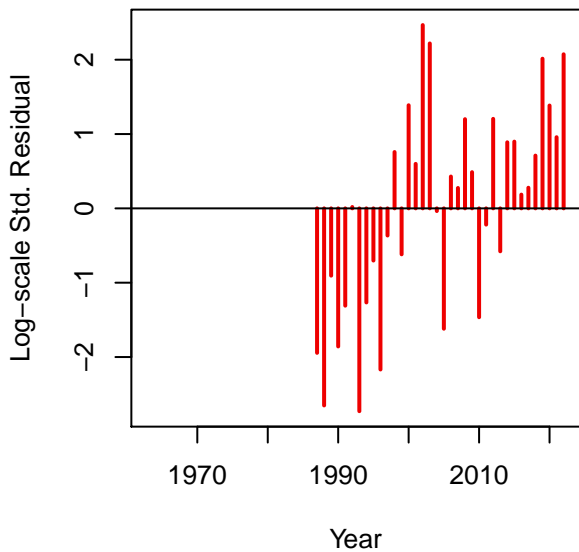
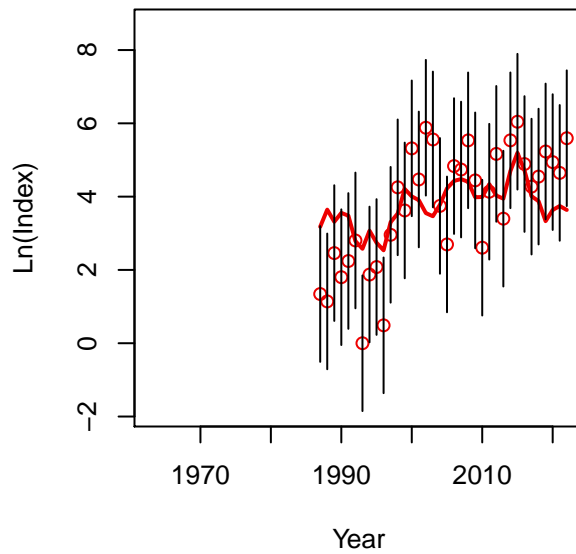
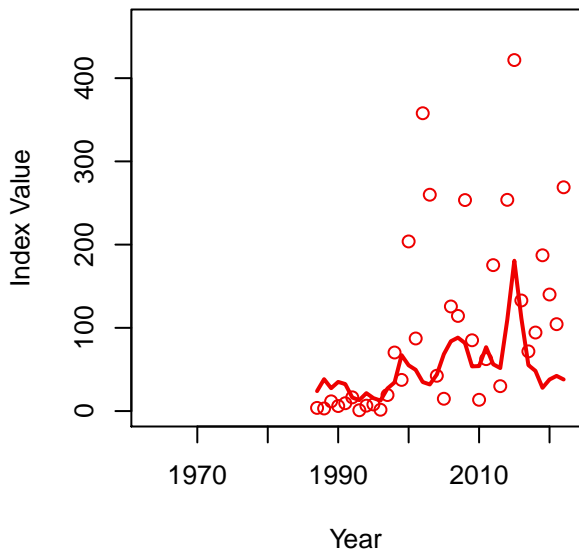
Index 3 (CTSPR)



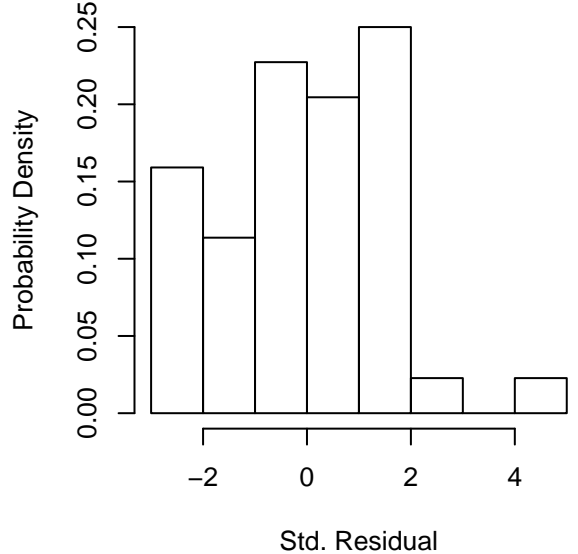
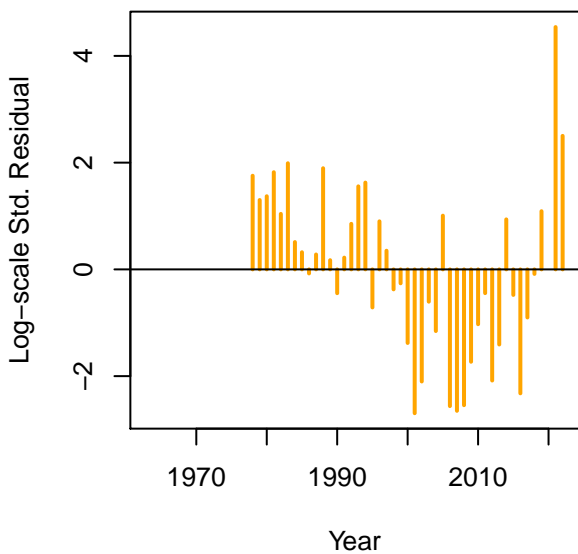
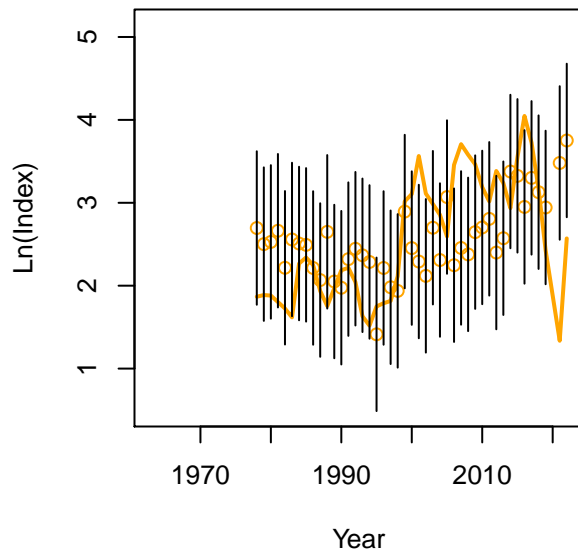
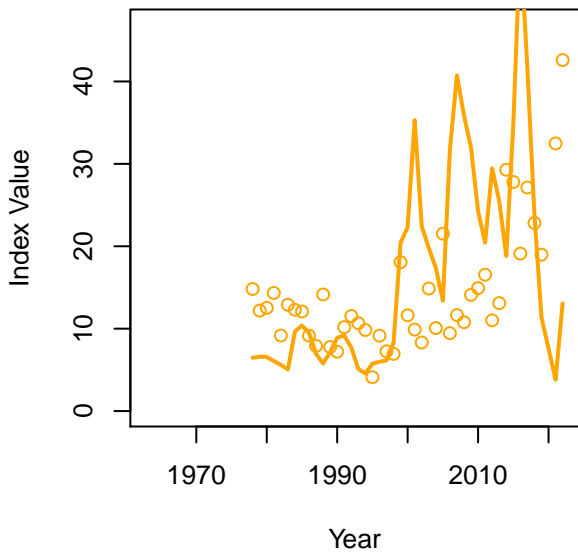
Index 4 (CTFAL)



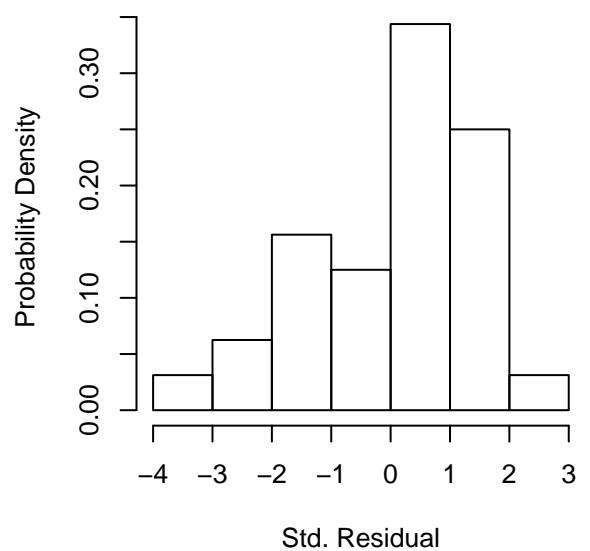
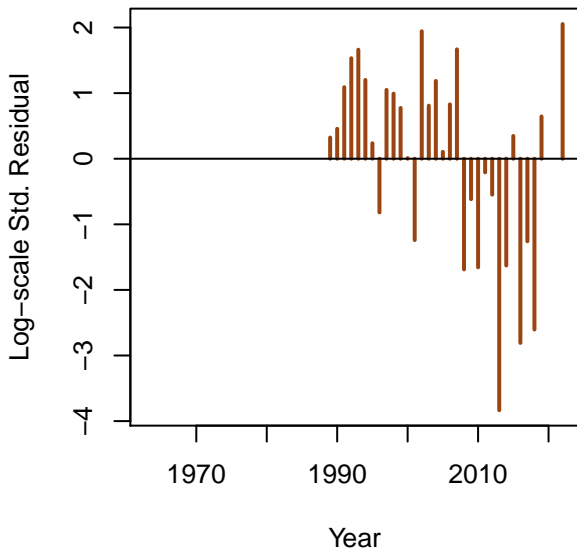
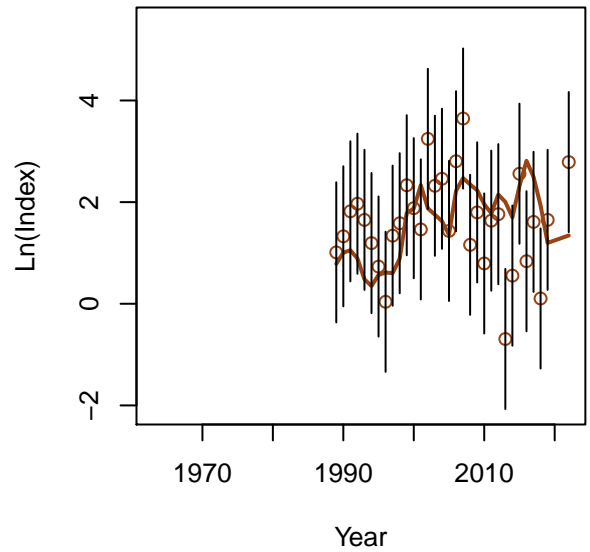
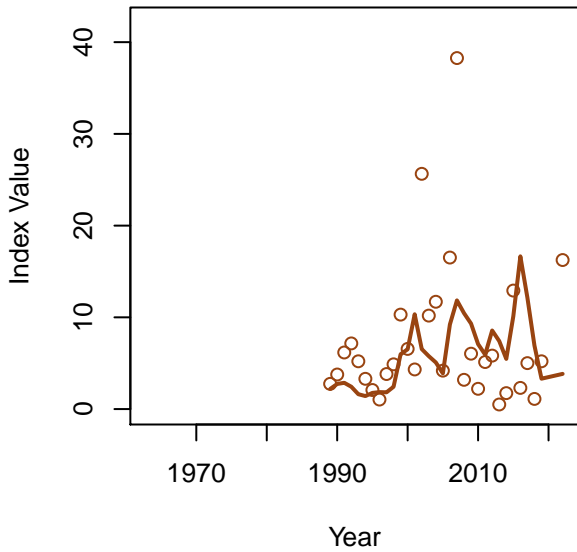
Index 5 (NYDEC)



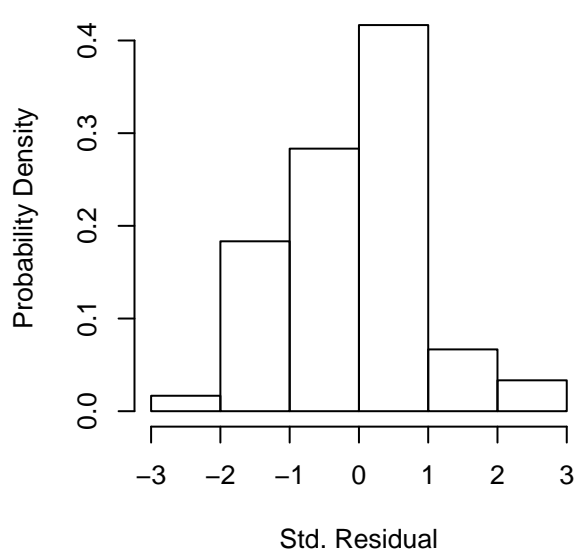
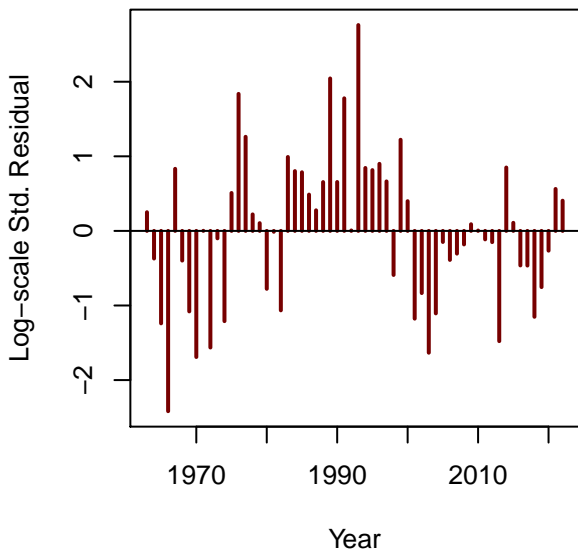
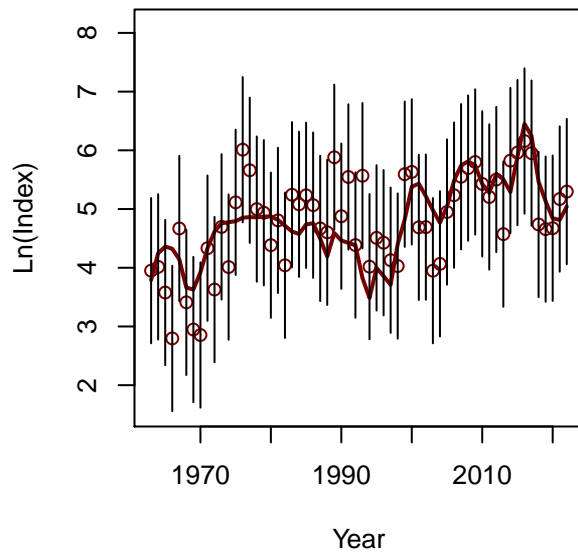
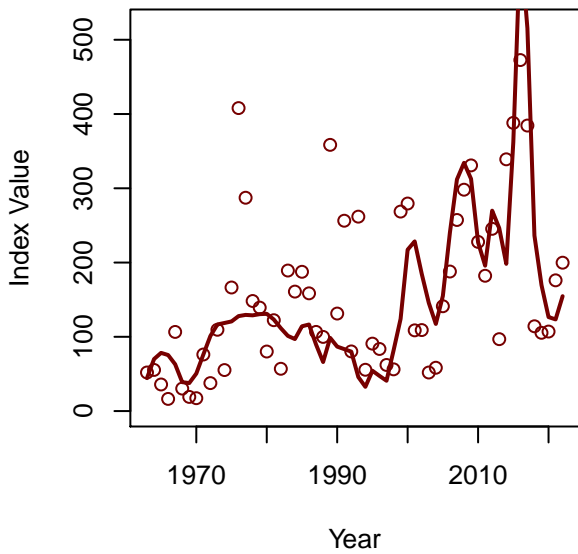
Index 6 (MAFALKG)



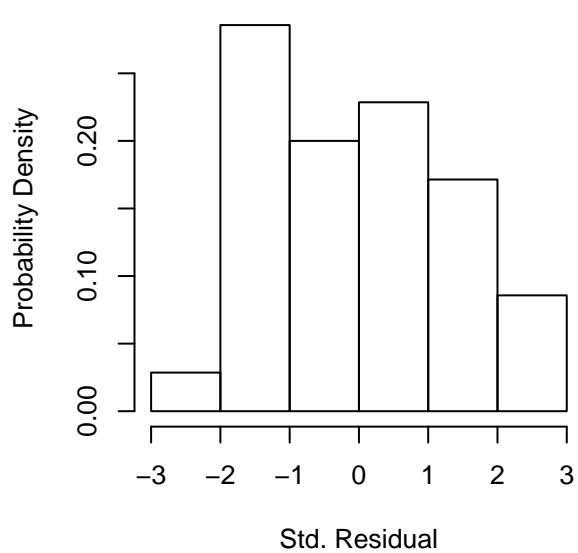
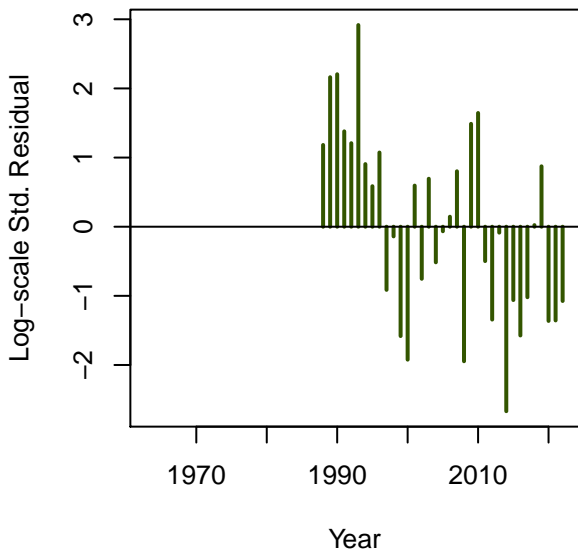
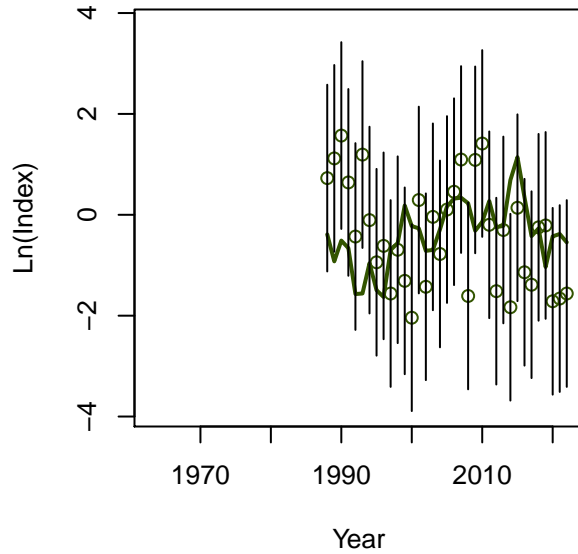
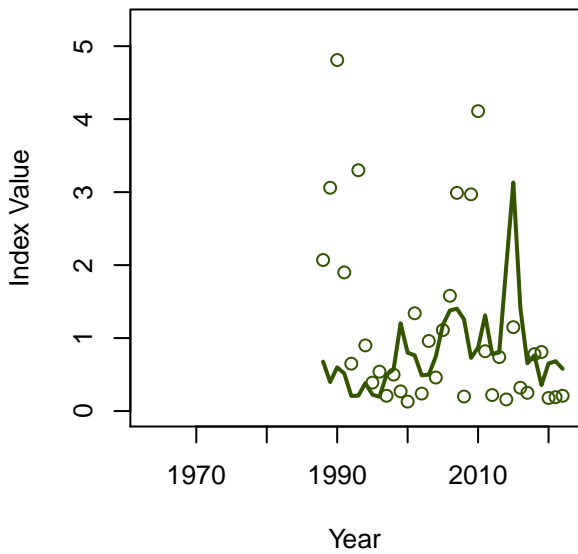
Index 7 (NJKG)



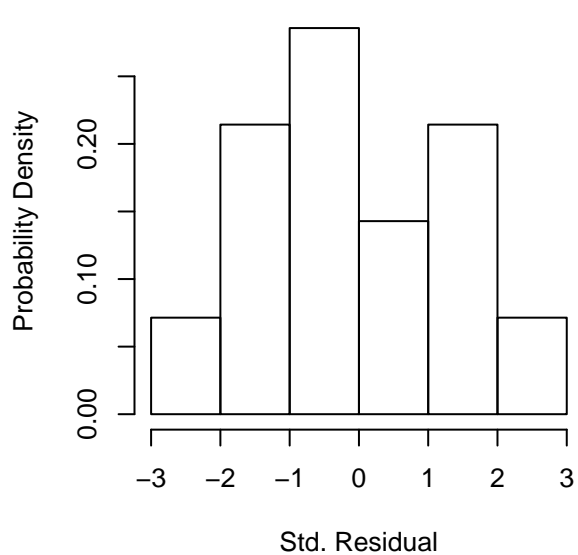
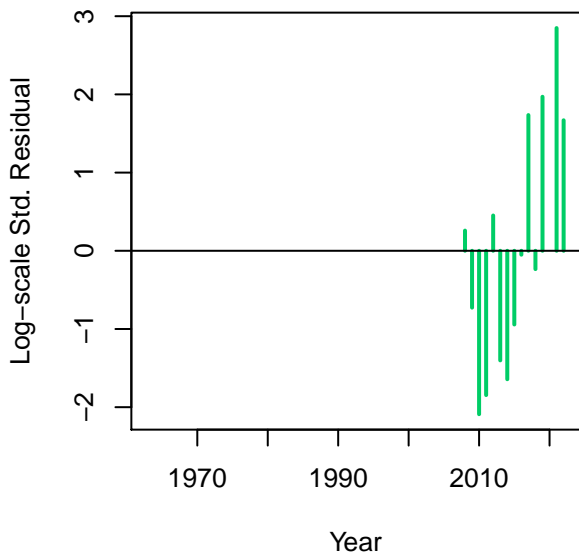
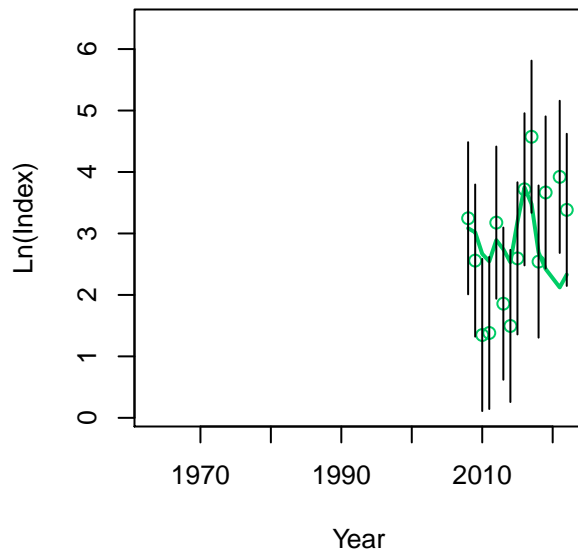
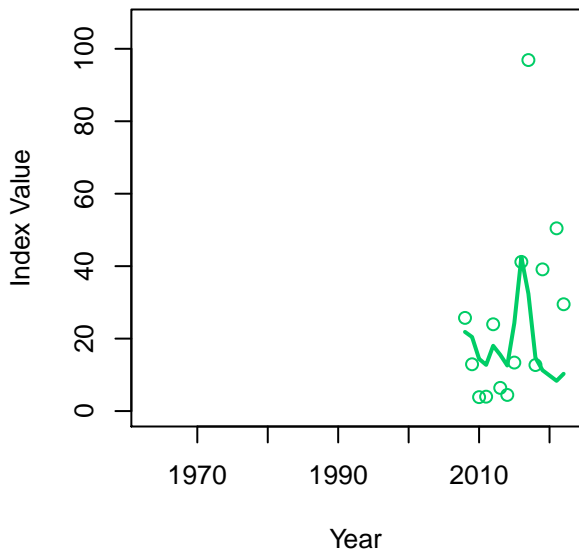
Index 8 (URIGSO)



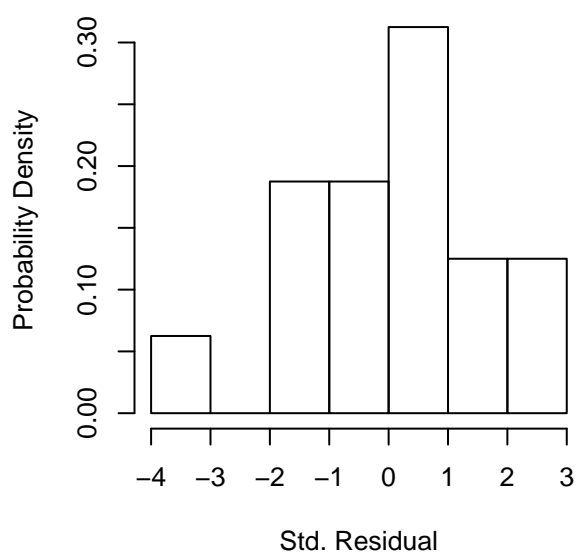
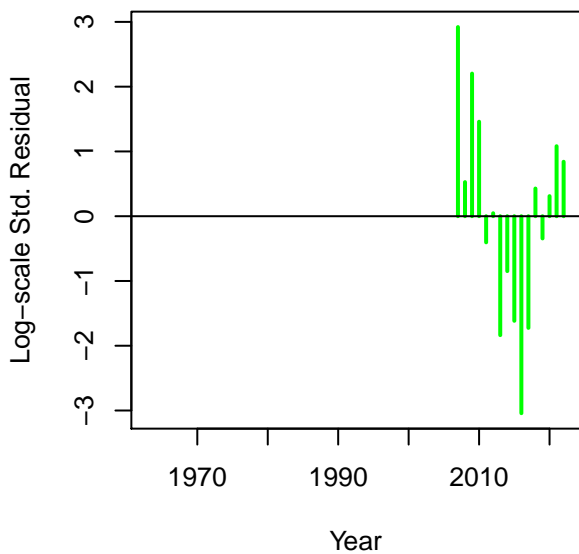
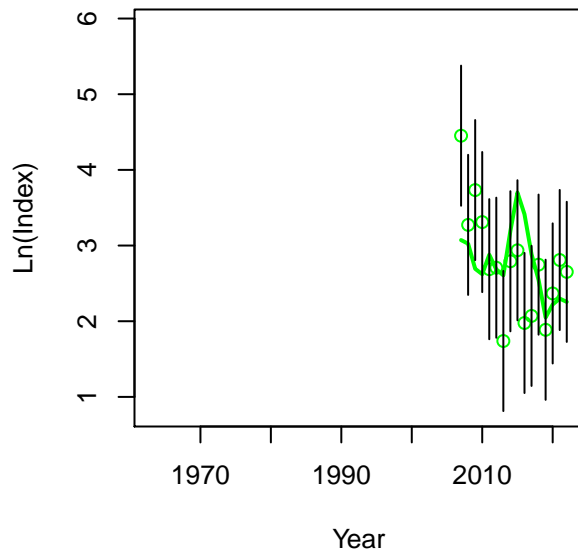
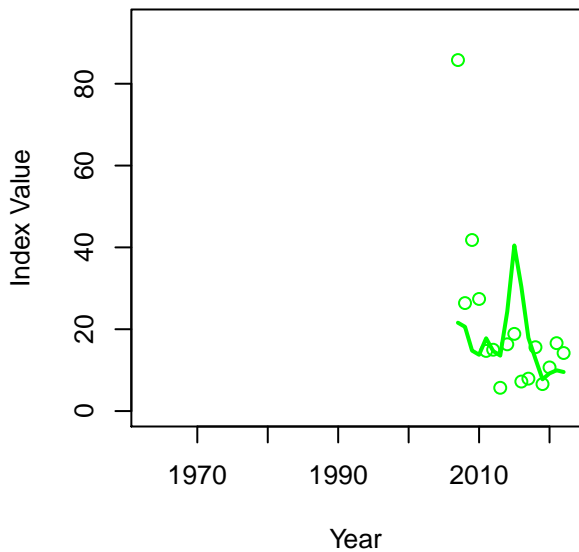
Index 9 (VIMSYOY)



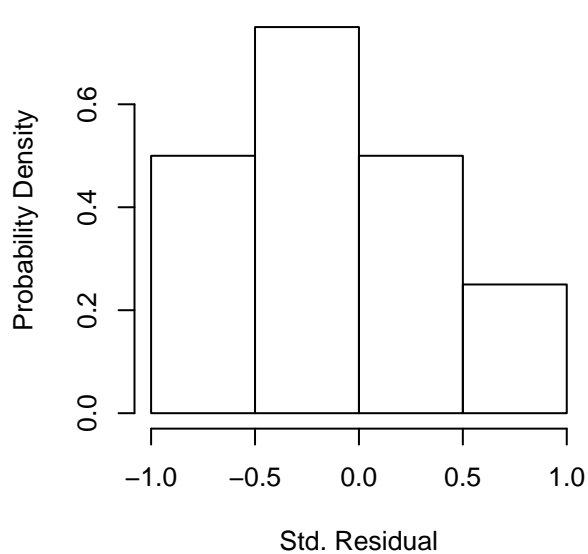
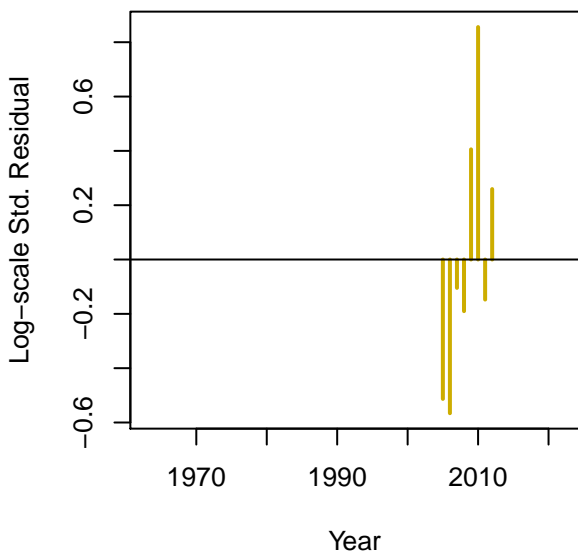
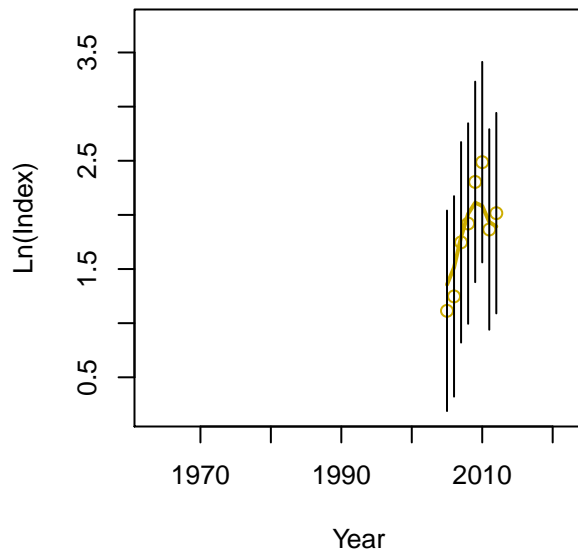
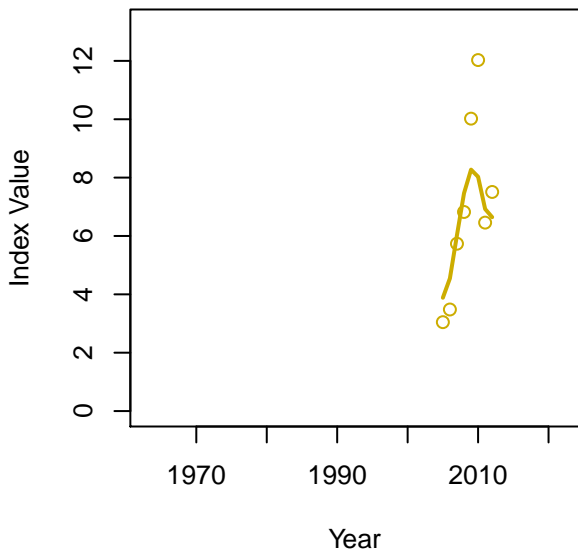
Index 10 (NEAMAP Spring)



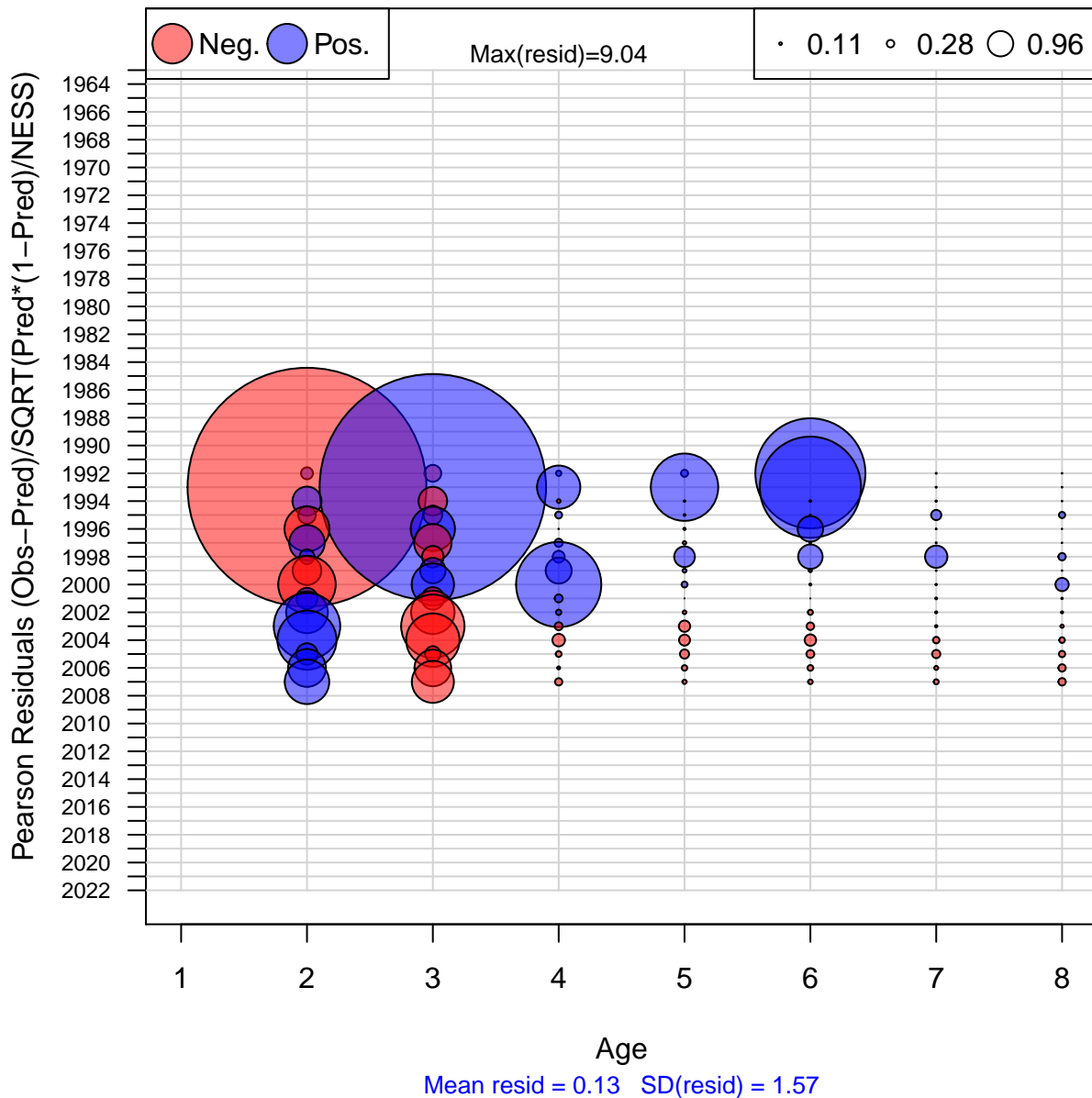
Index 11 (NEAMAP Fall)



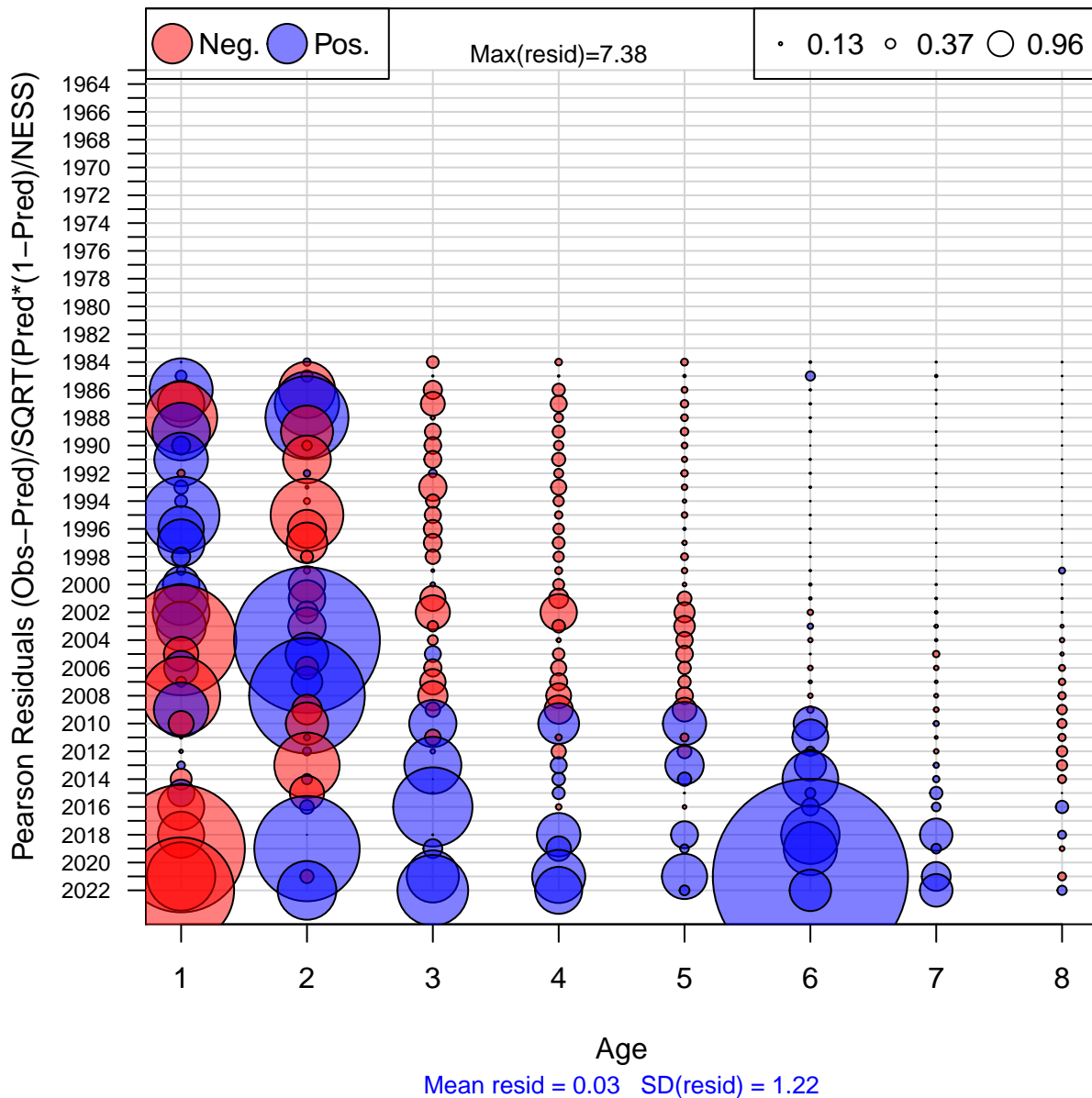
Index 12 (RI Coop Trap)



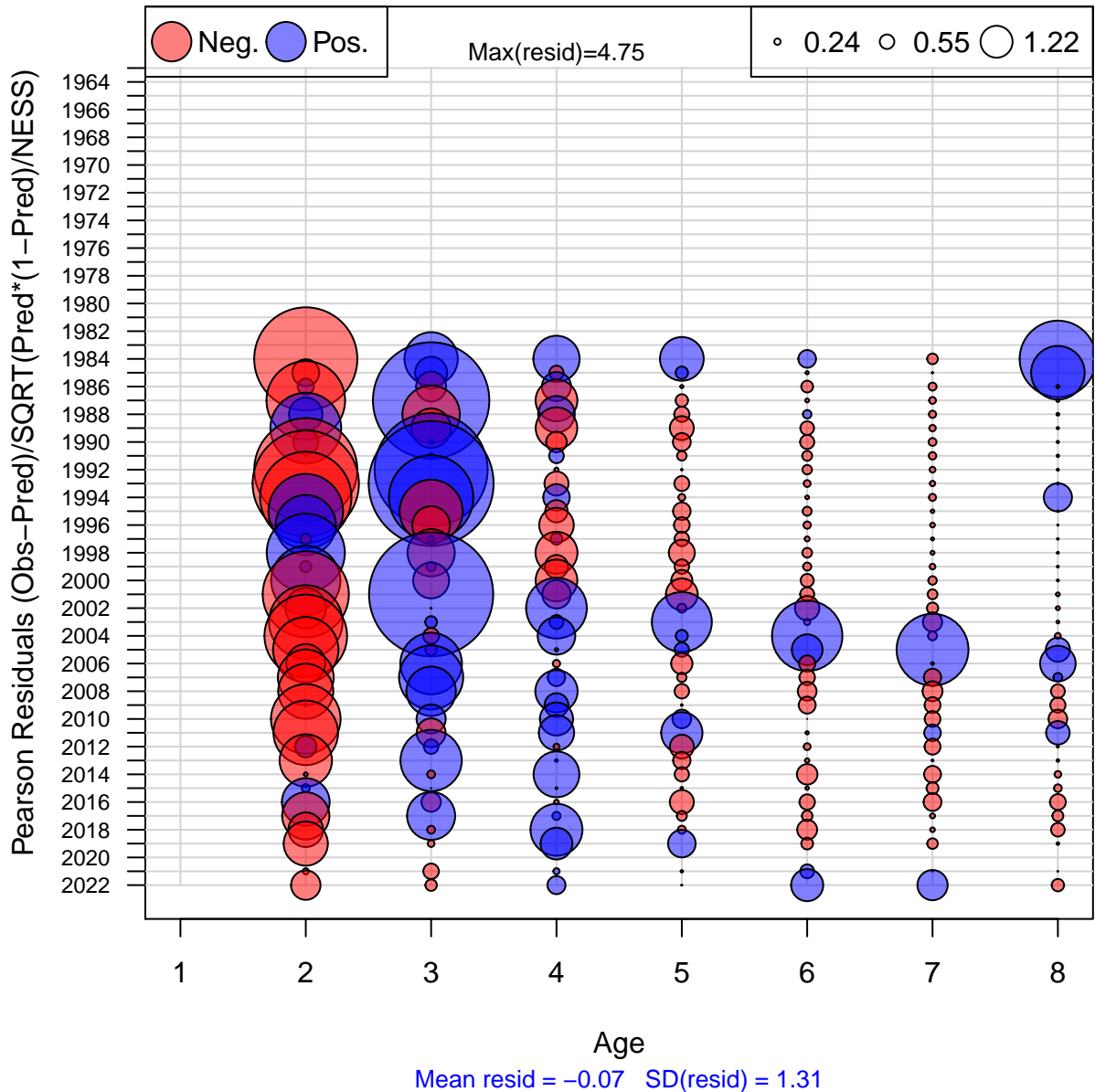
Age Comp Residuals for Index 1 (NECWIN)



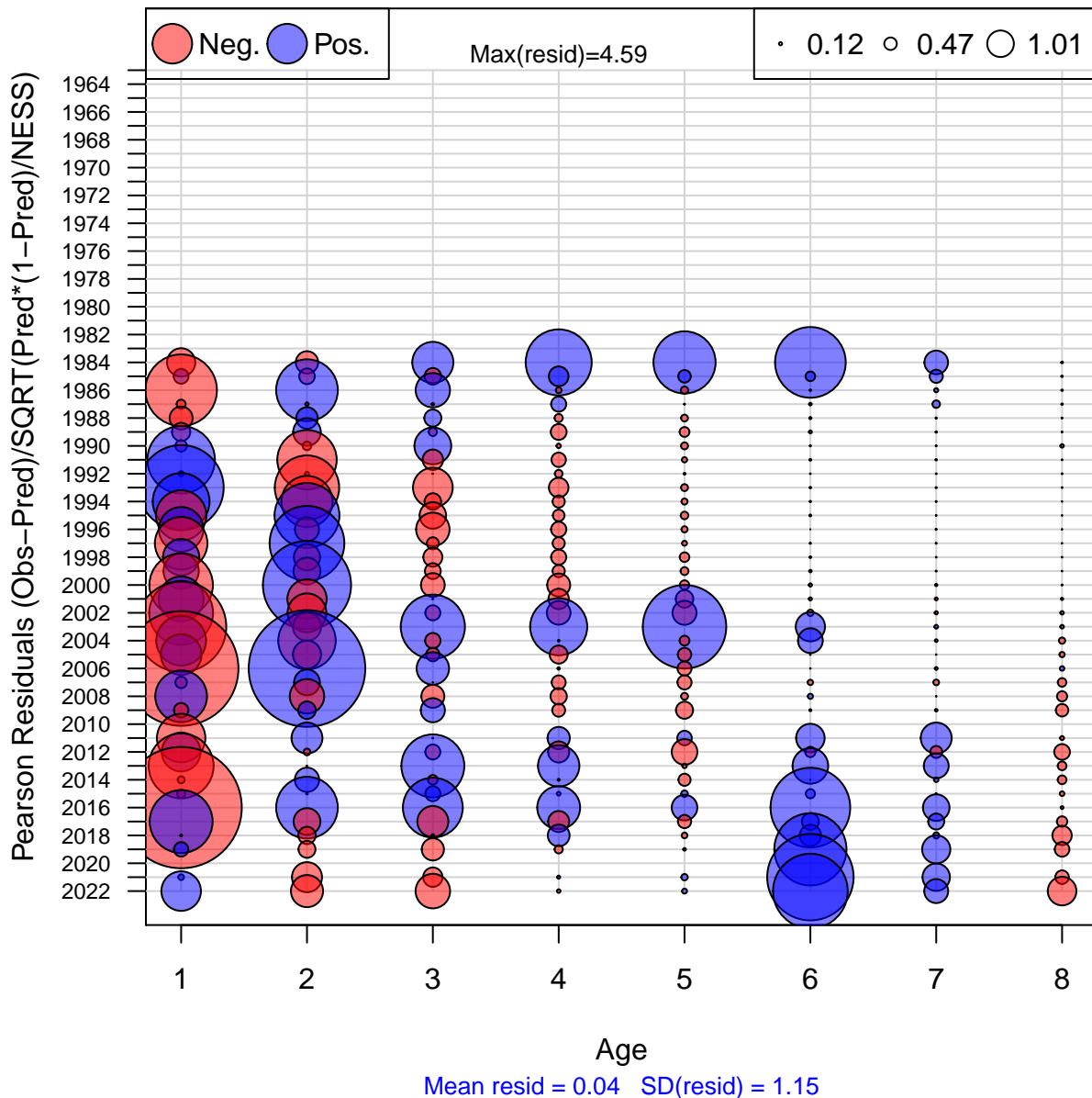
Age Comp Residuals for Index 2 (NECFAL)



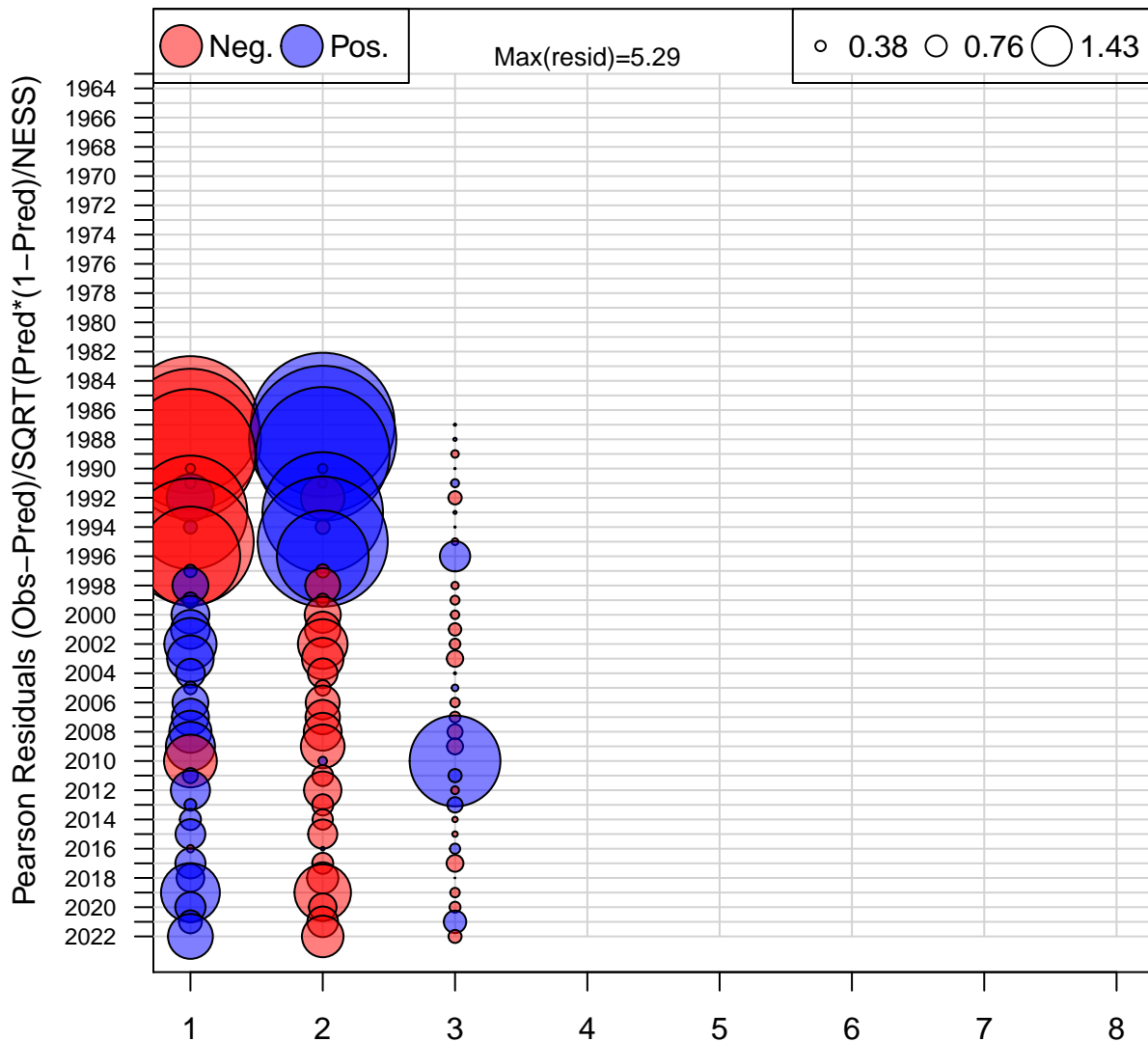
Age Comp Residuals for Index 3 (CTSPR)



Age Comp Residuals for Index 4 (CTFAL)



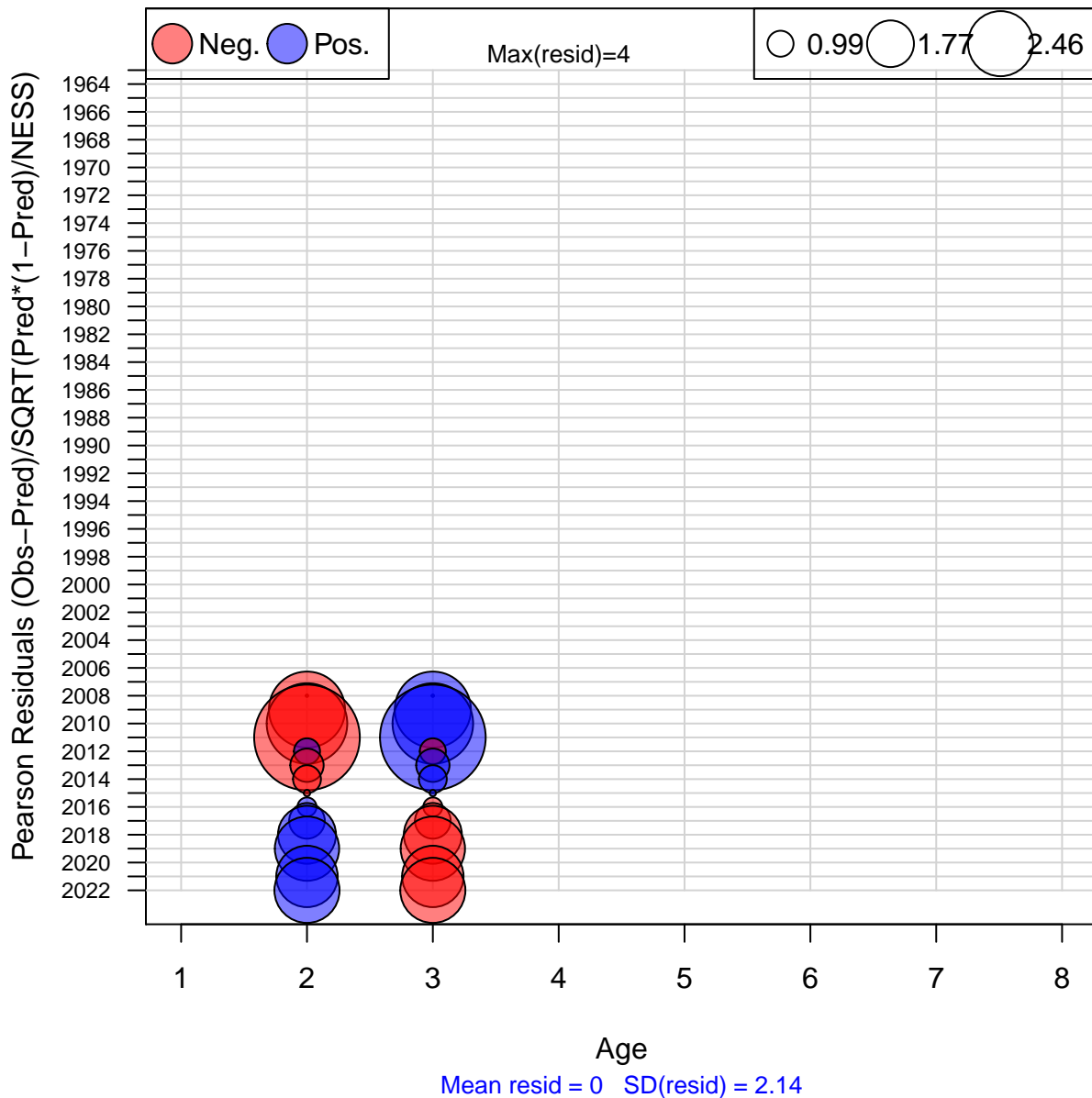
Age Comp Residuals for Index 5 (NYDEC)



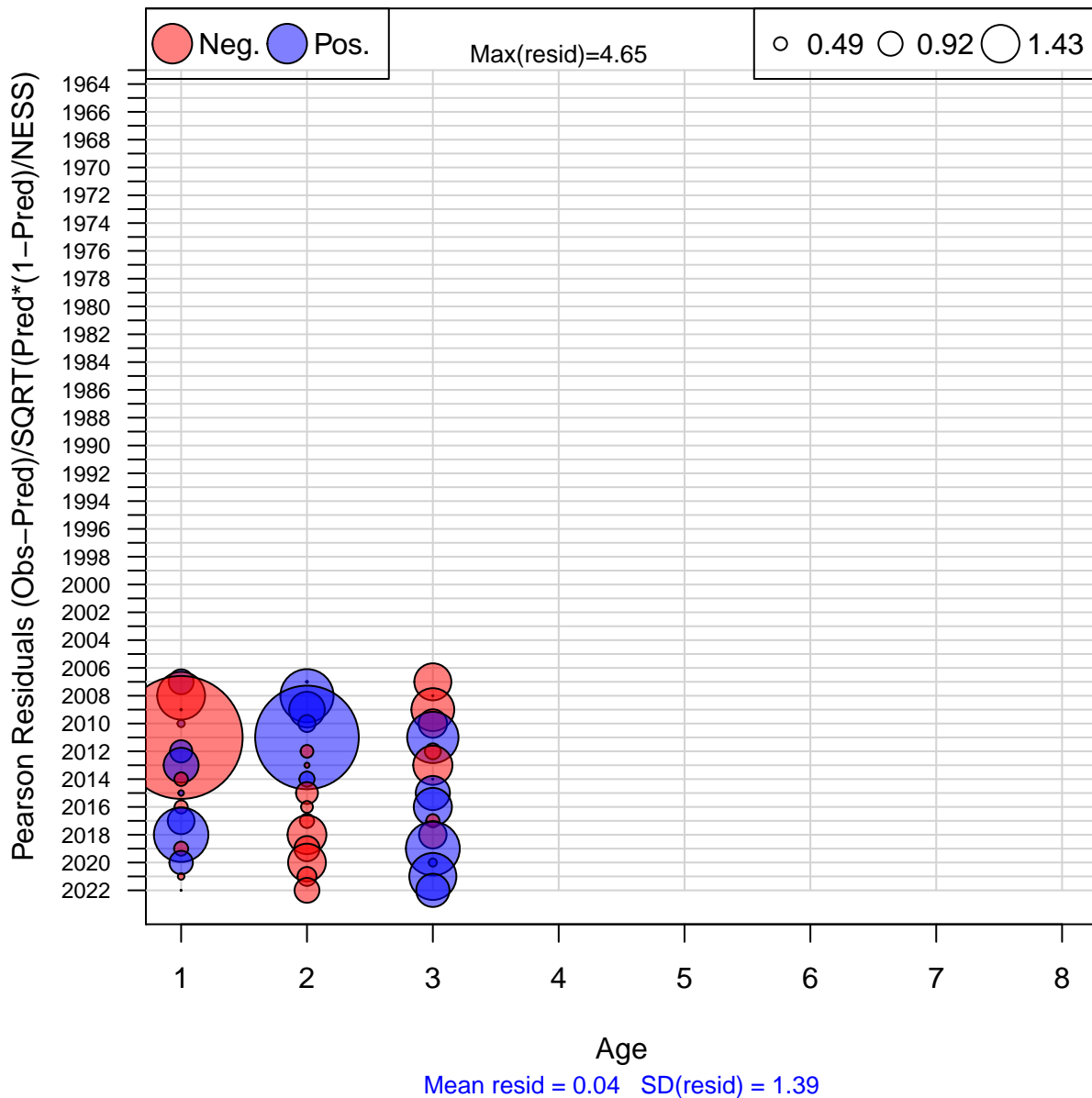
Age

Mean resid = -0.01 SD(resid) = 1.81

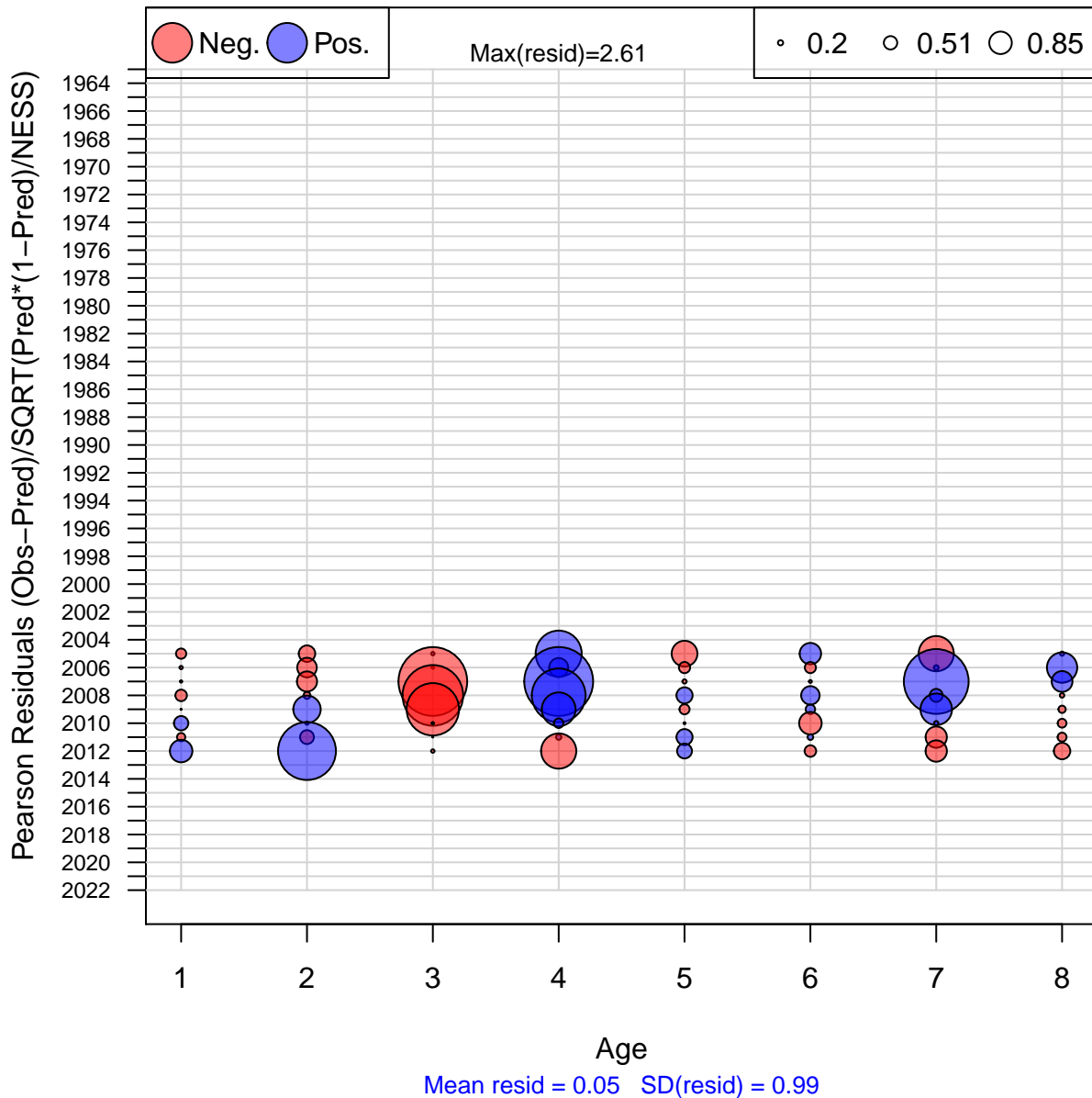
Age Comp Residuals for Index 10 (NEAMAP Spring)



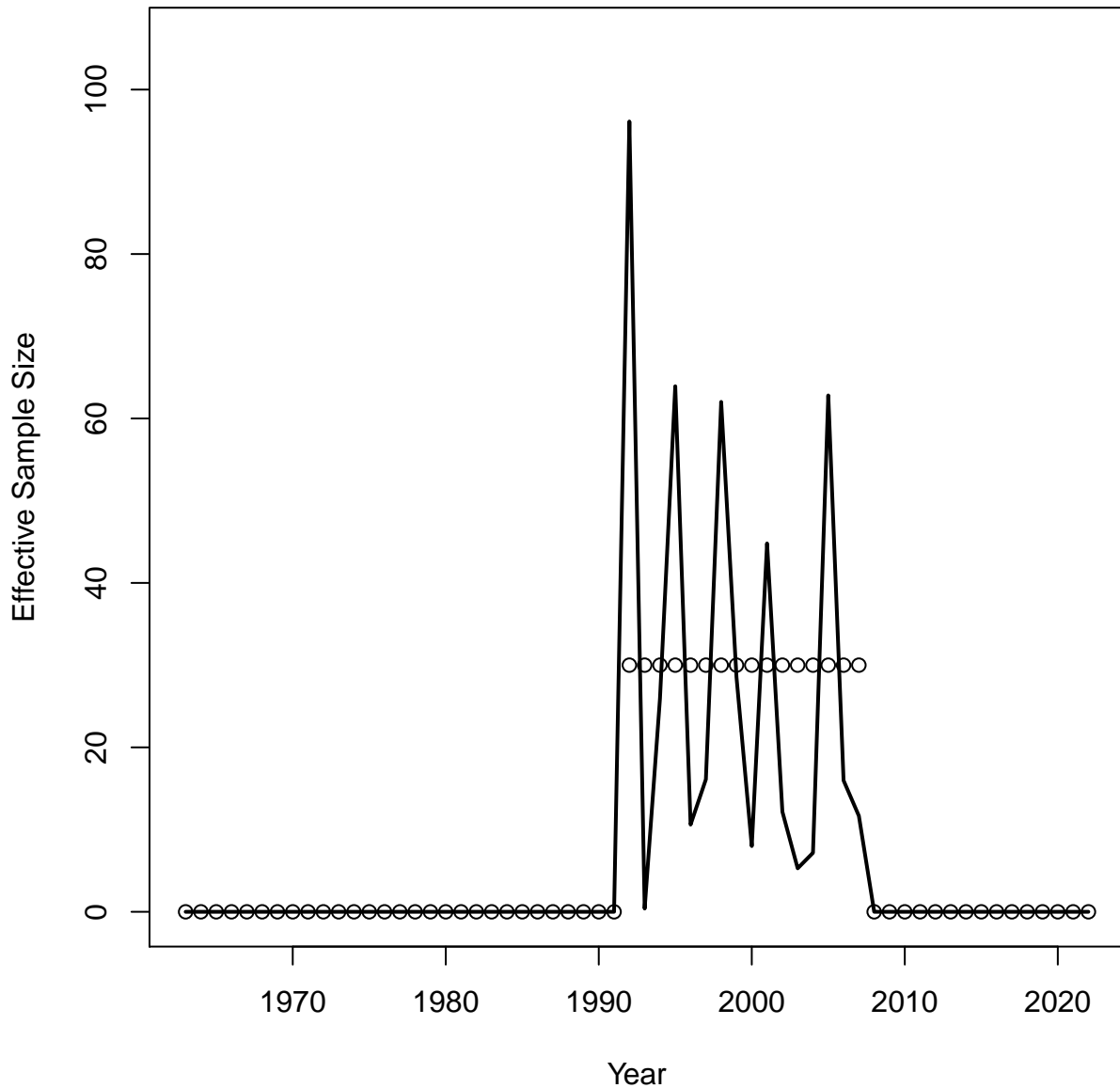
Age Comp Residuals for Index 11 (NEAMAP Fall)



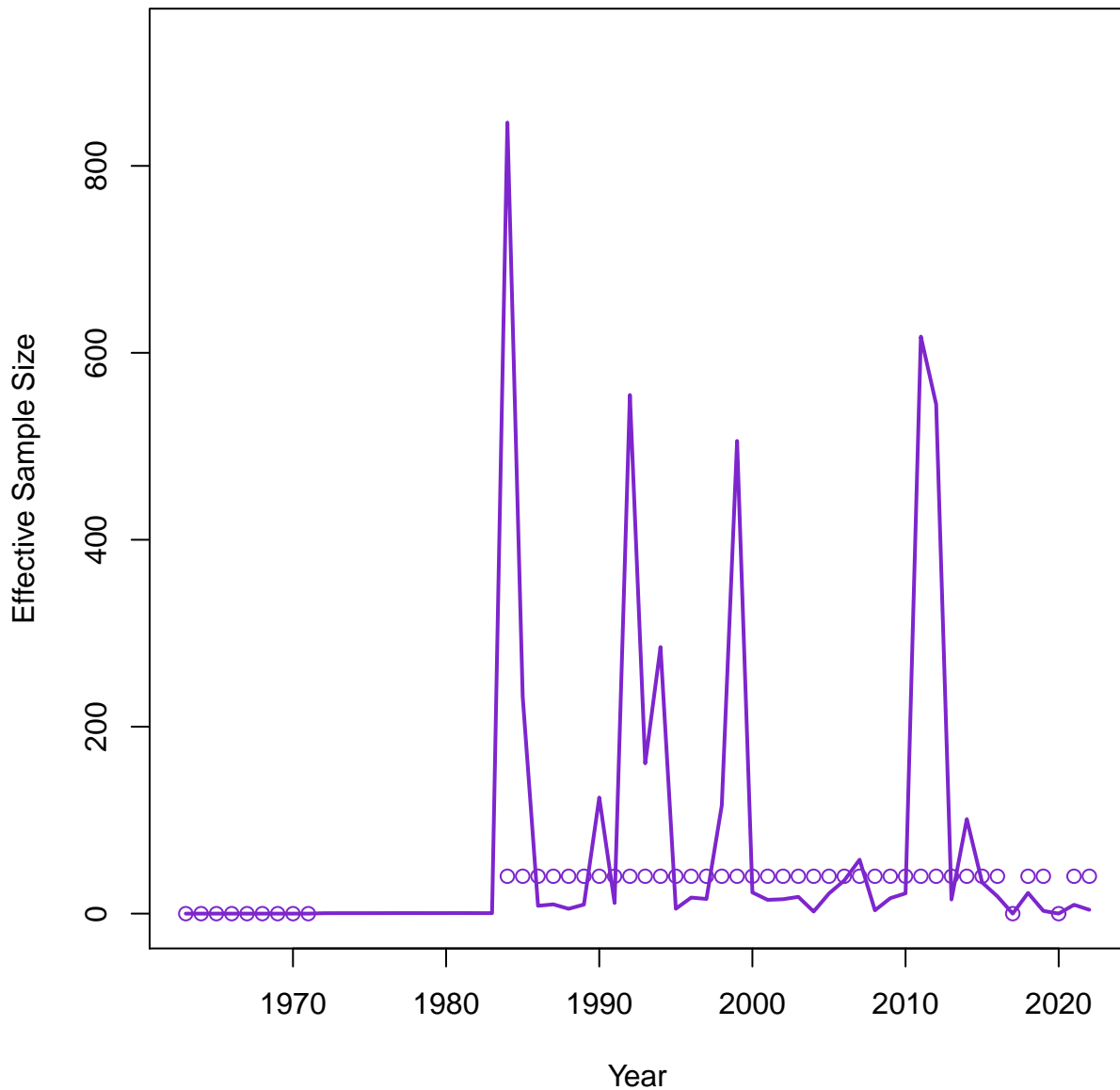
Age Comp Residuals for Index 12 (RI Coop Trap)



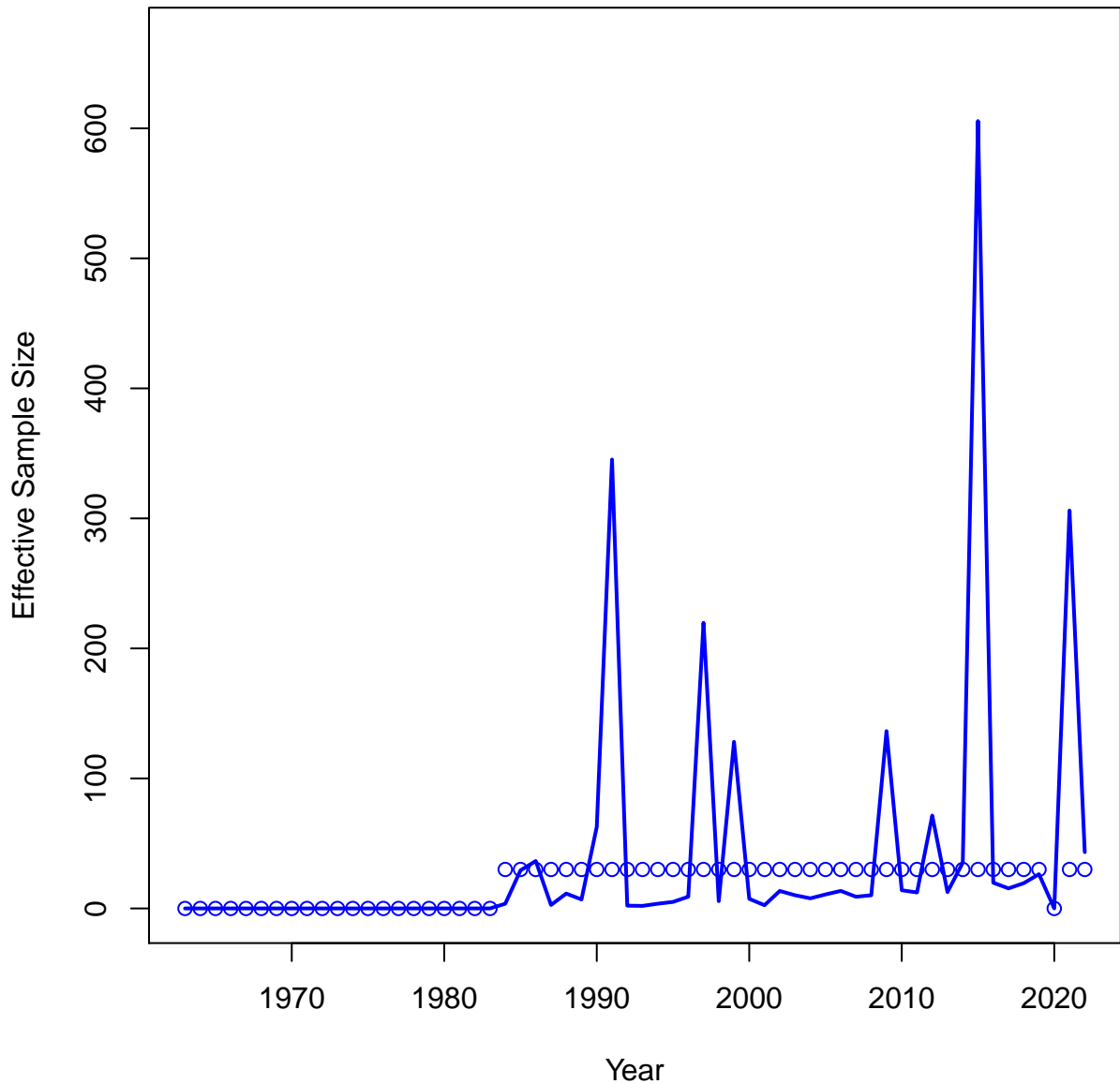
Index Neff 1 (NECWIN)



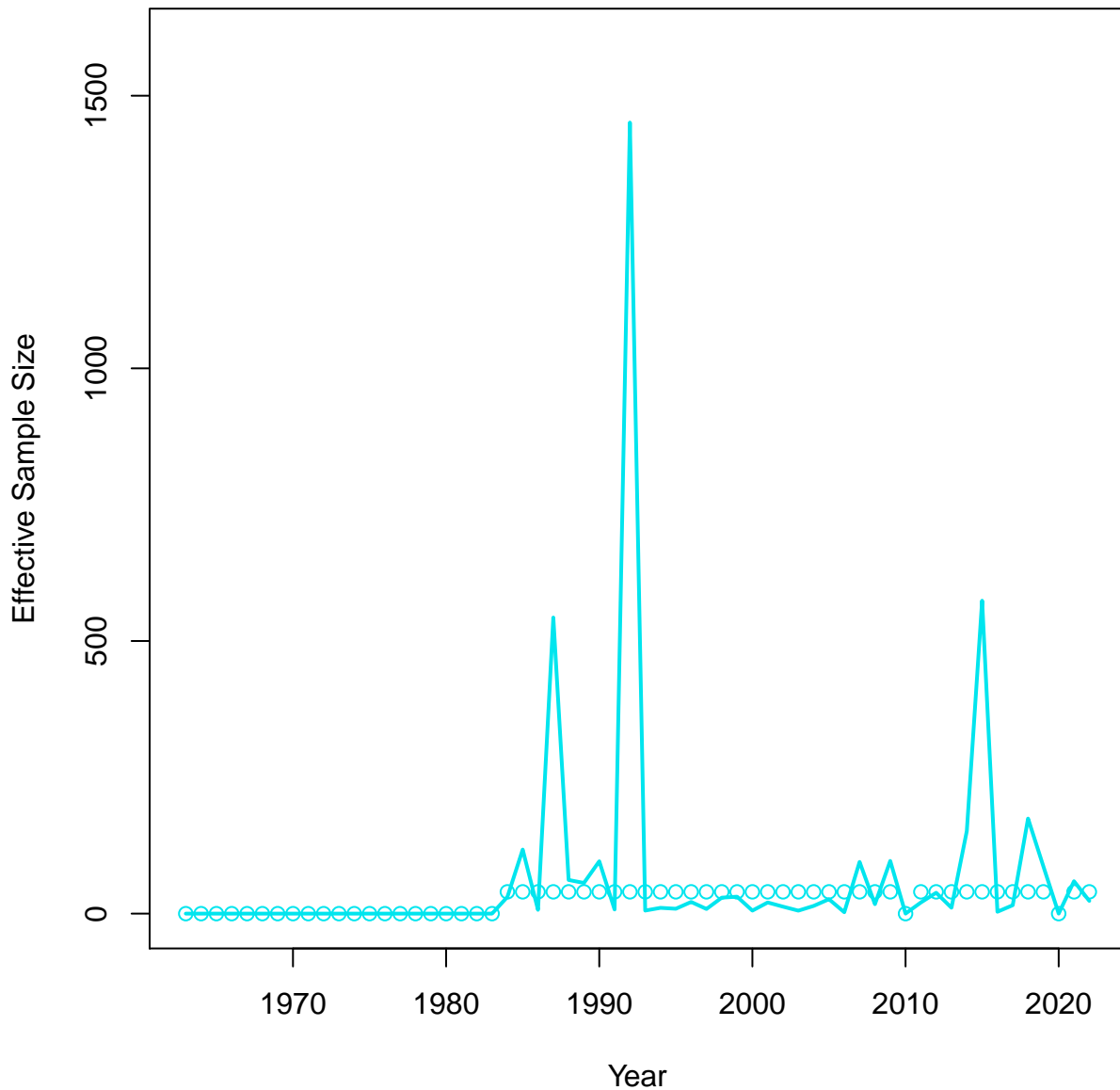
Index Neff 2 (NECFAL)



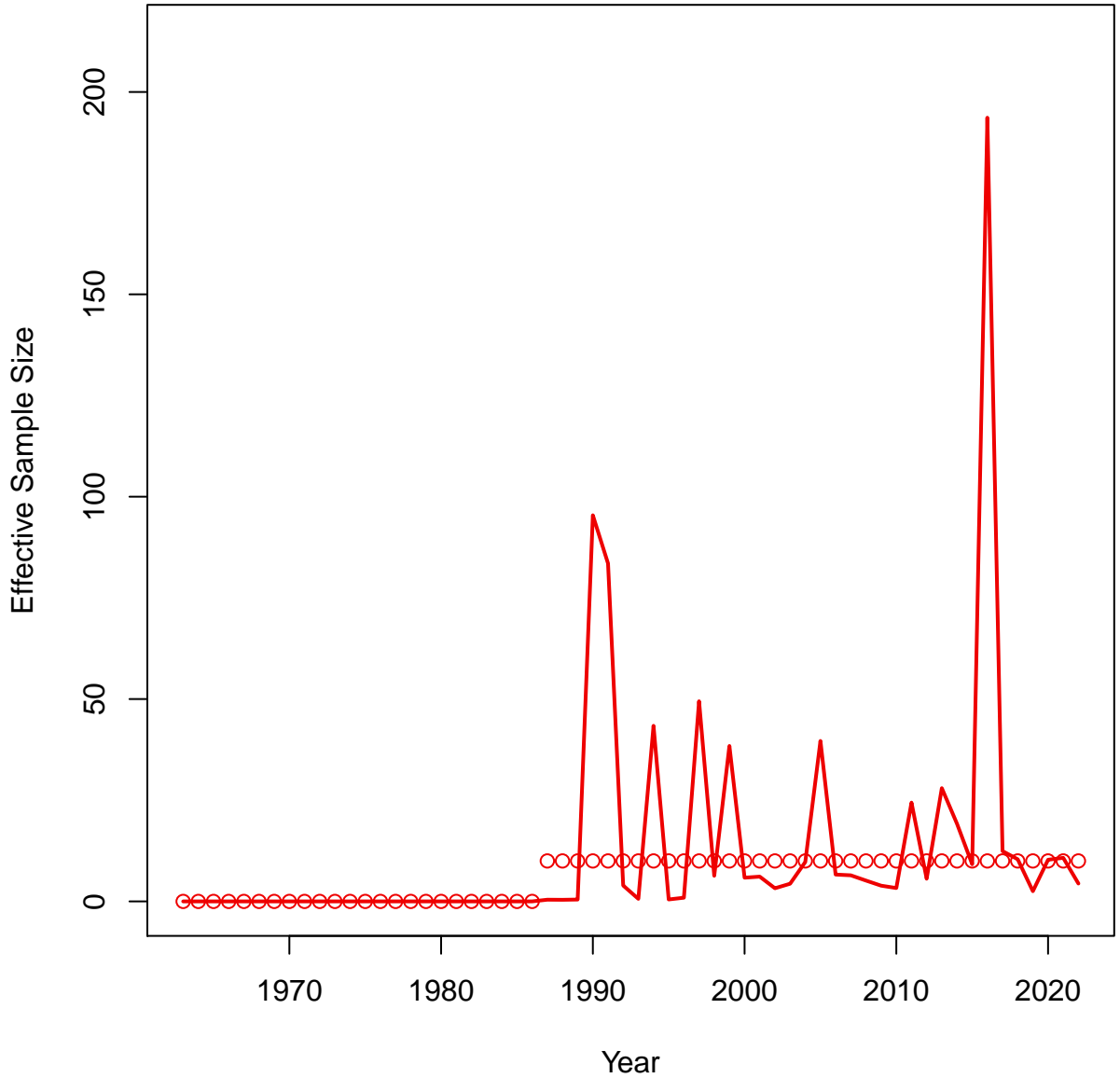
Index Neff 3 (CTSPR)



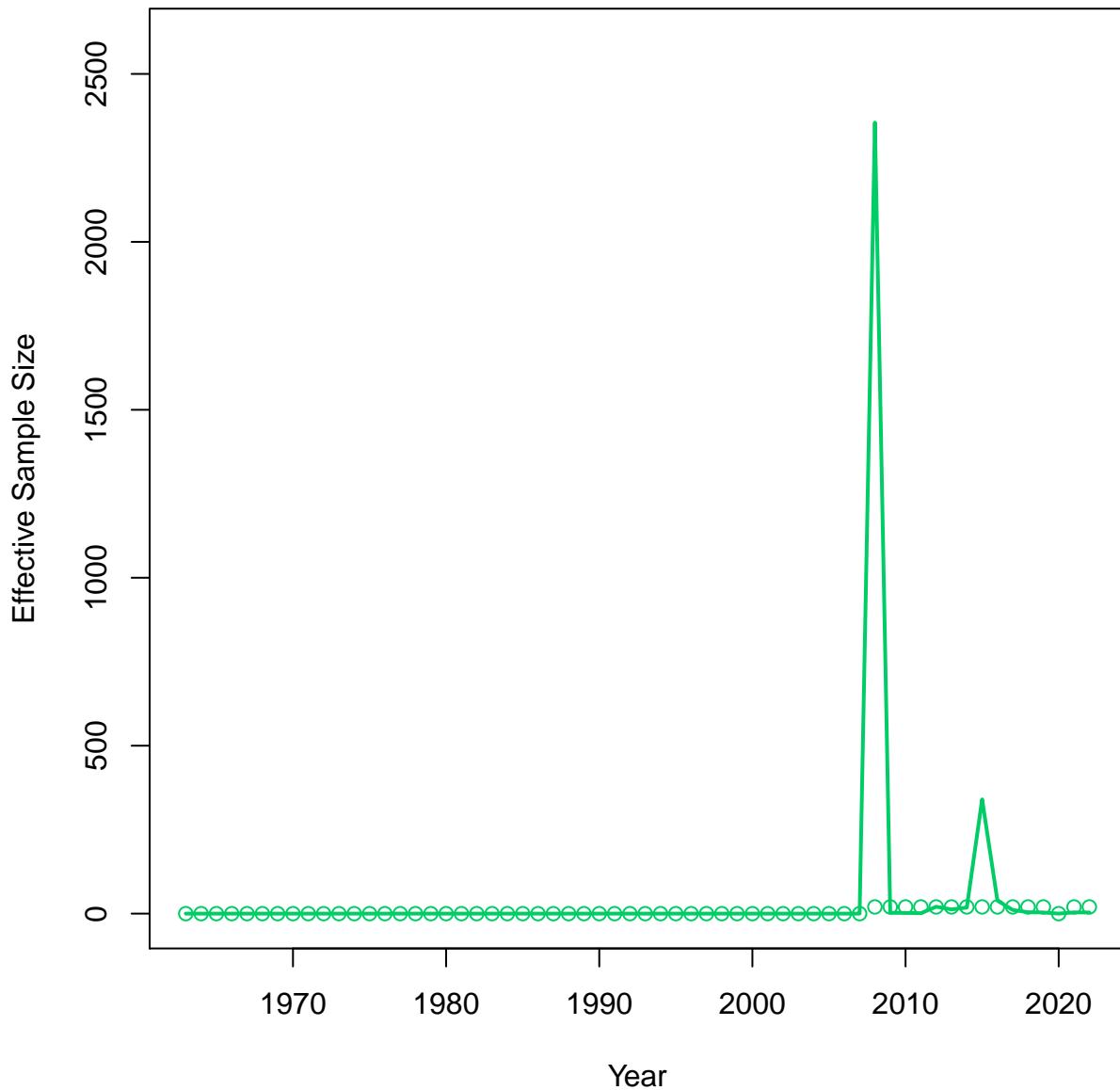
Index Neff 4 (CTFAL)



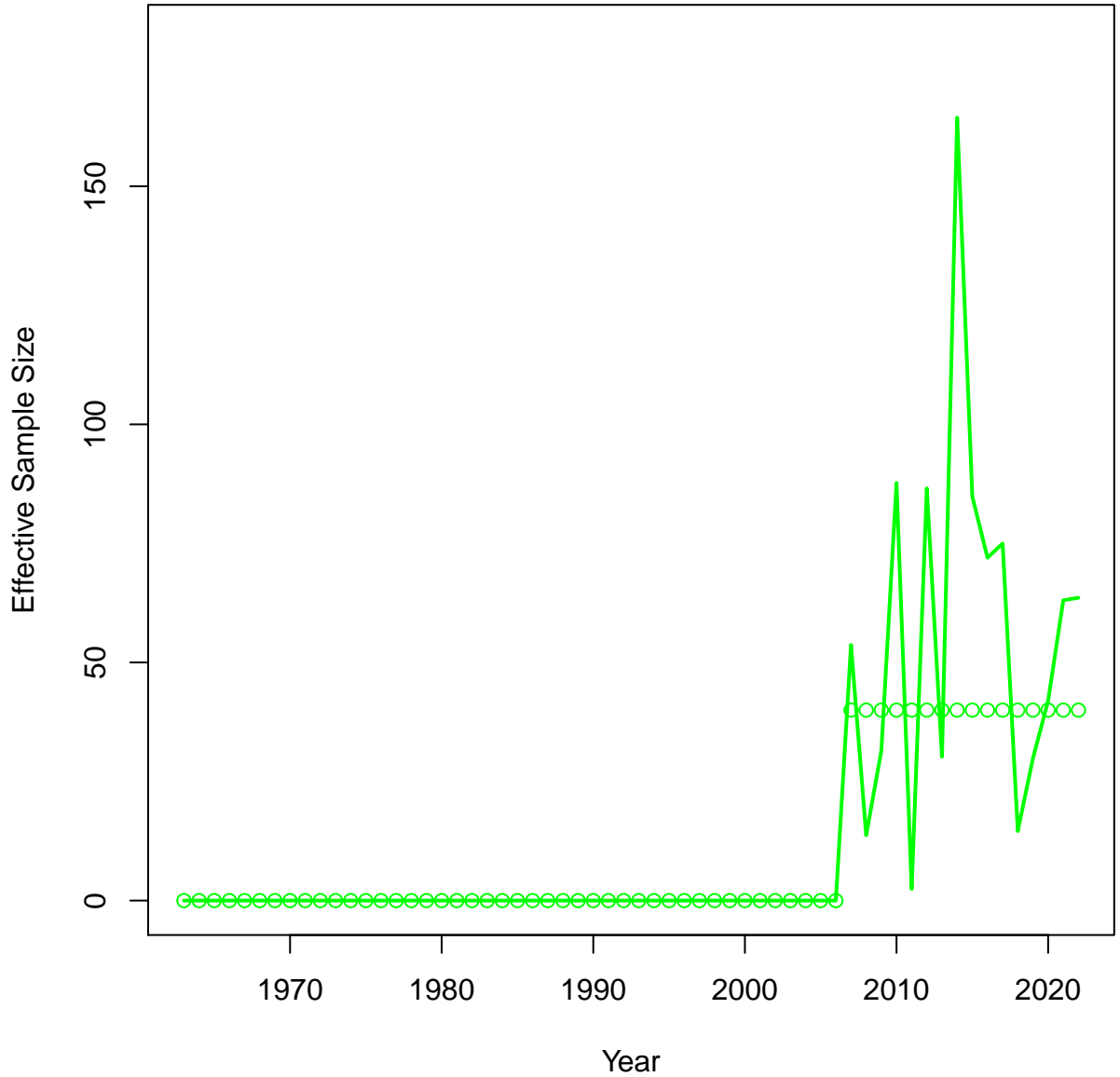
Index Neff 5 (NYDEC)



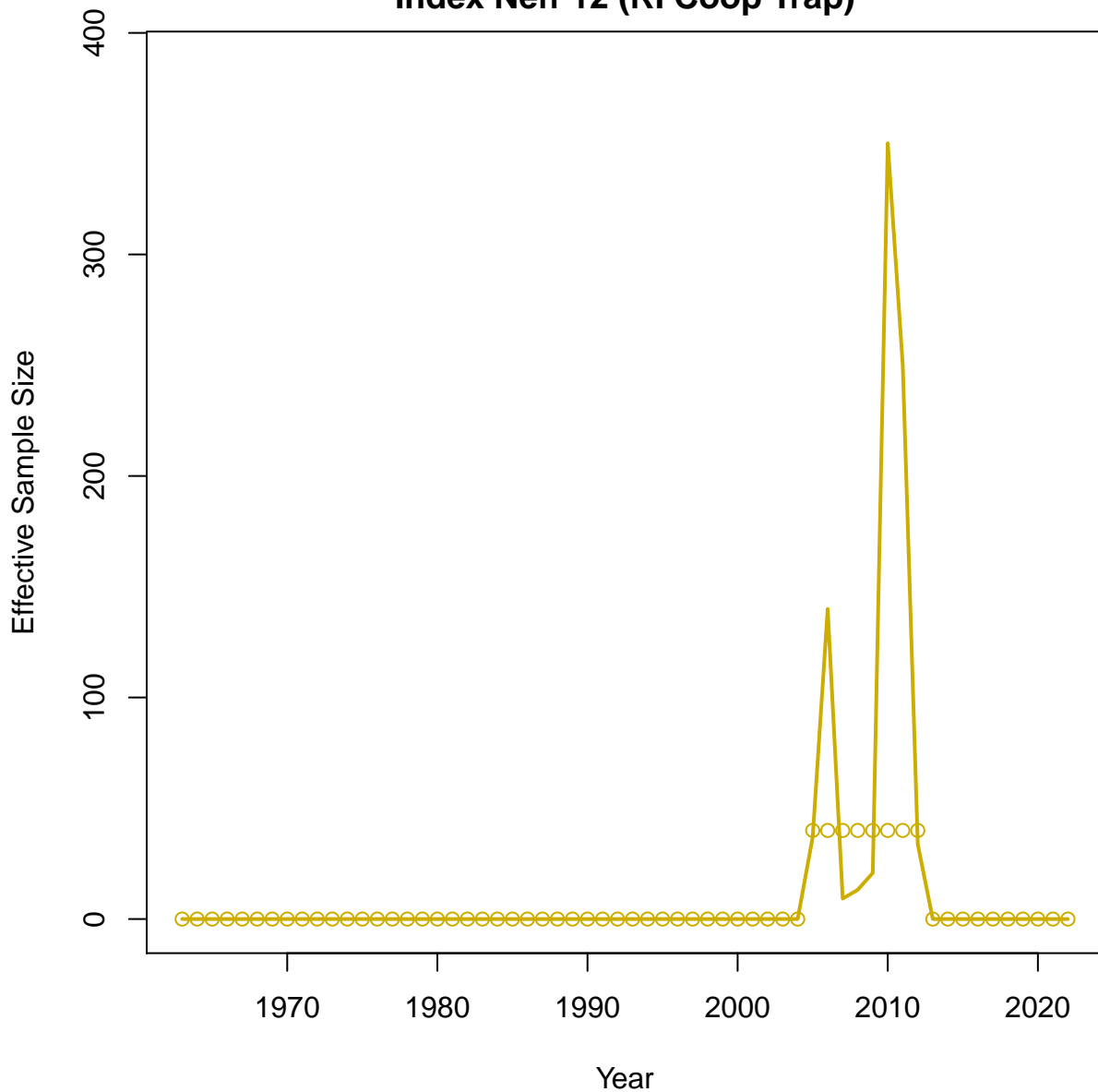
Index Neff 10 (NEAMAP Spring)



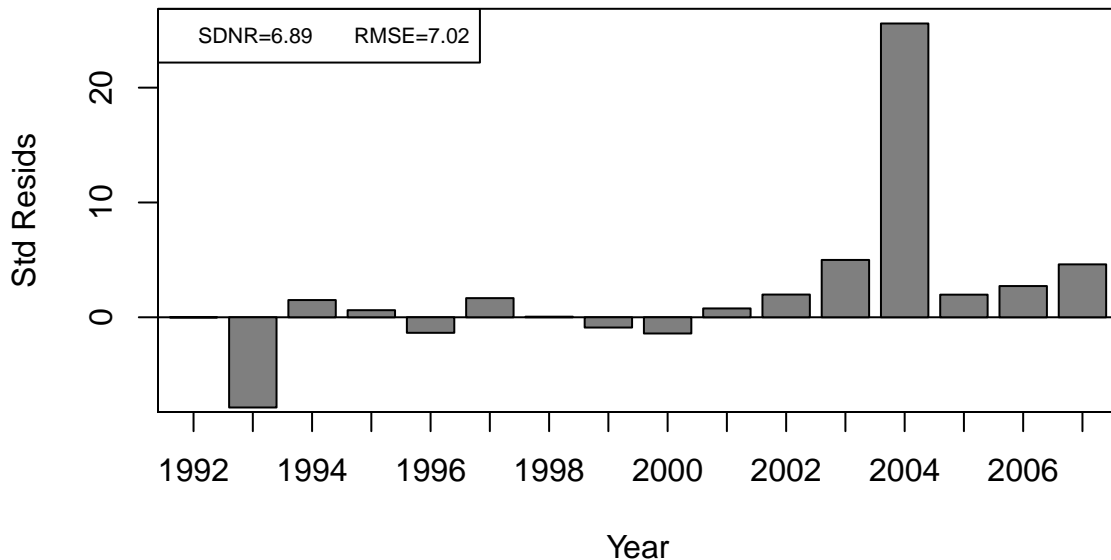
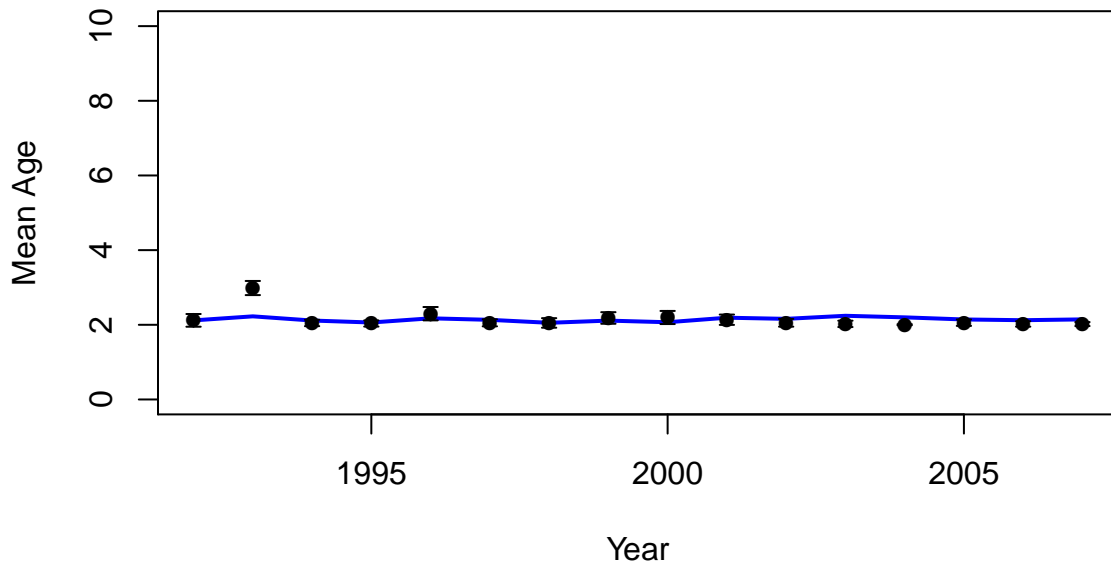
Index Neff 11 (NEAMAP Fall)



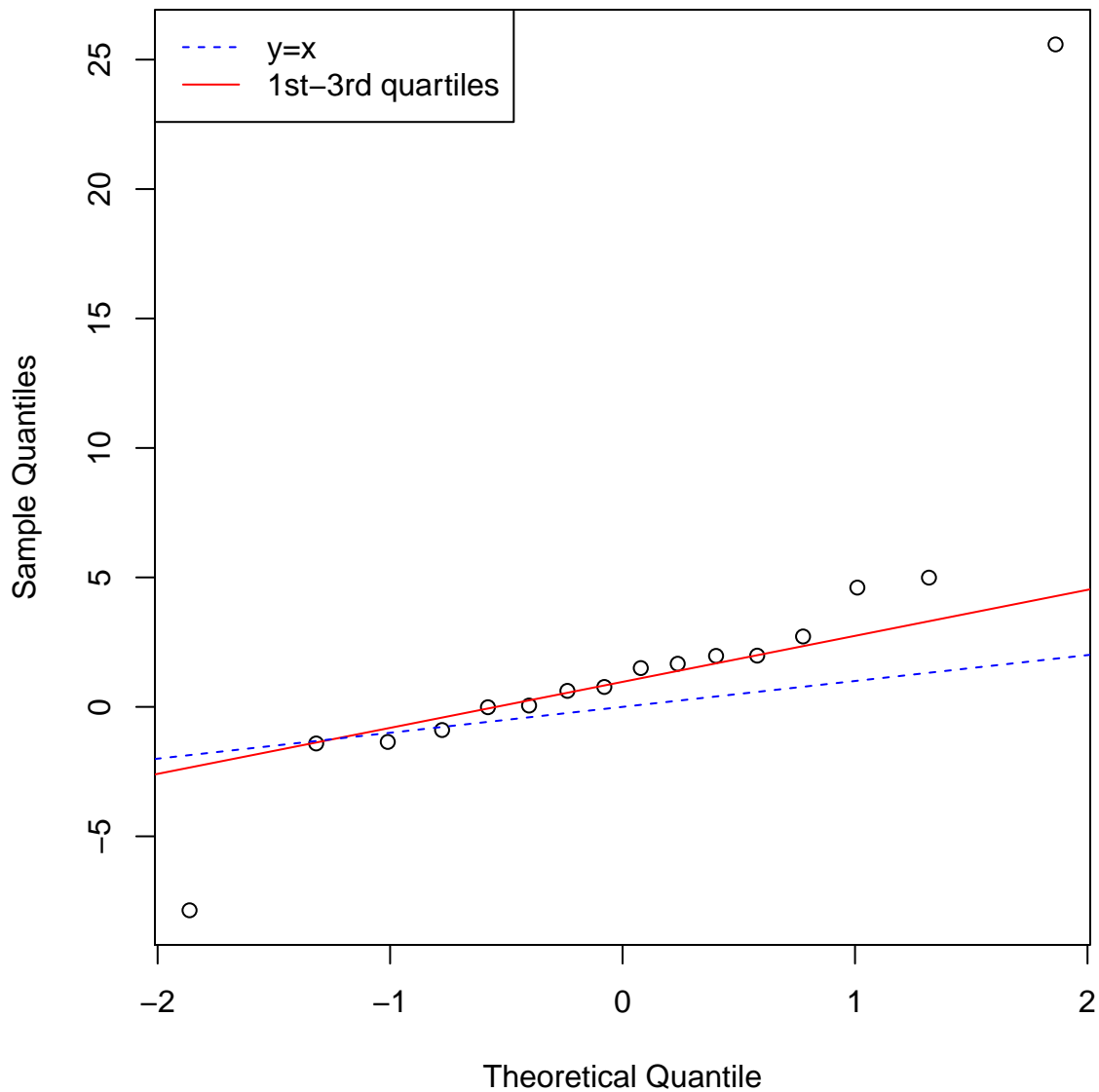
Index Neff 12 (RI Coop Trap)



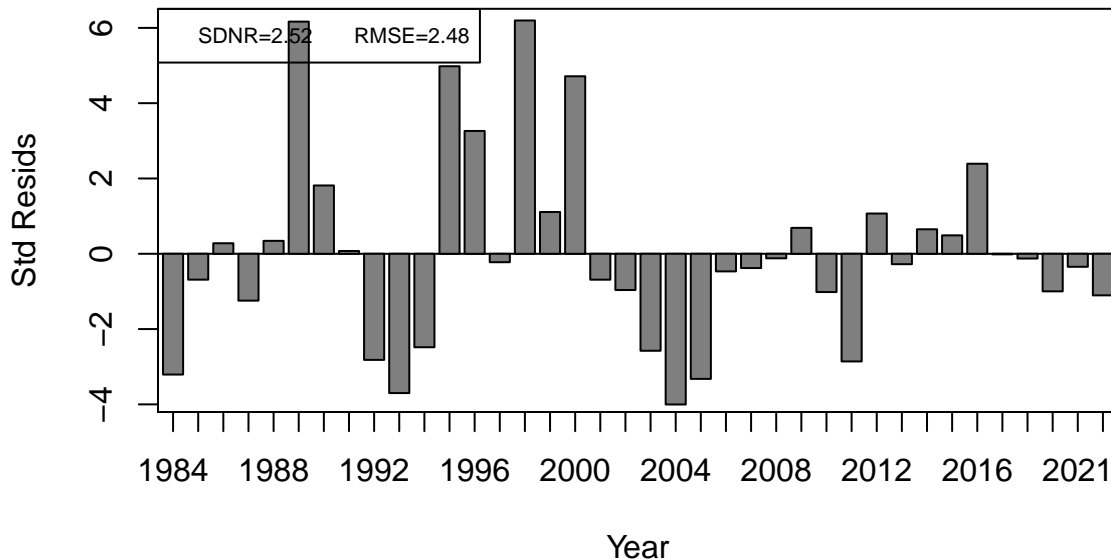
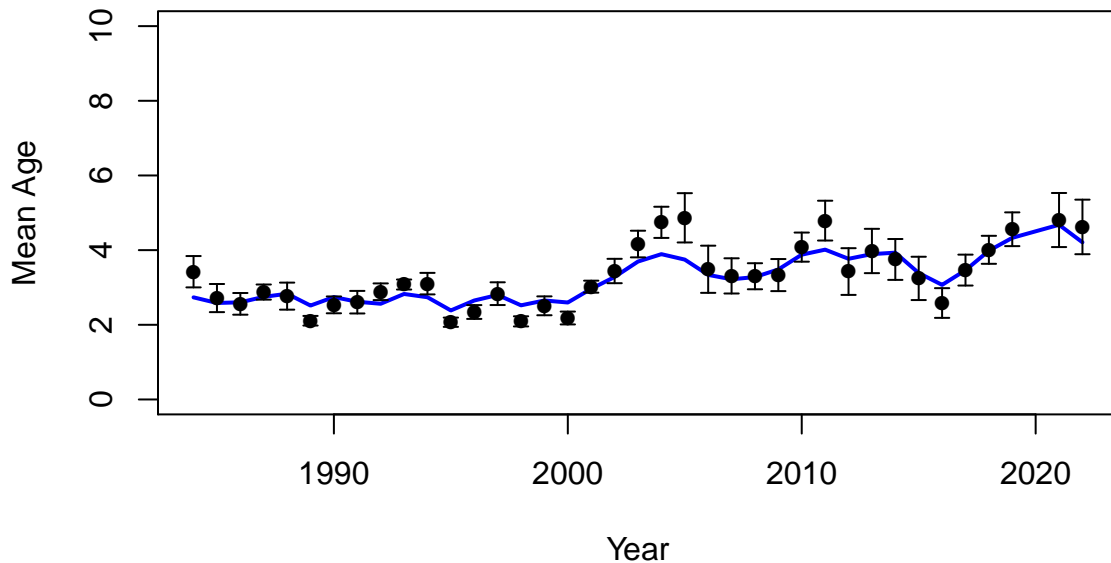
Index 1 (NECWIN) ESS = 30



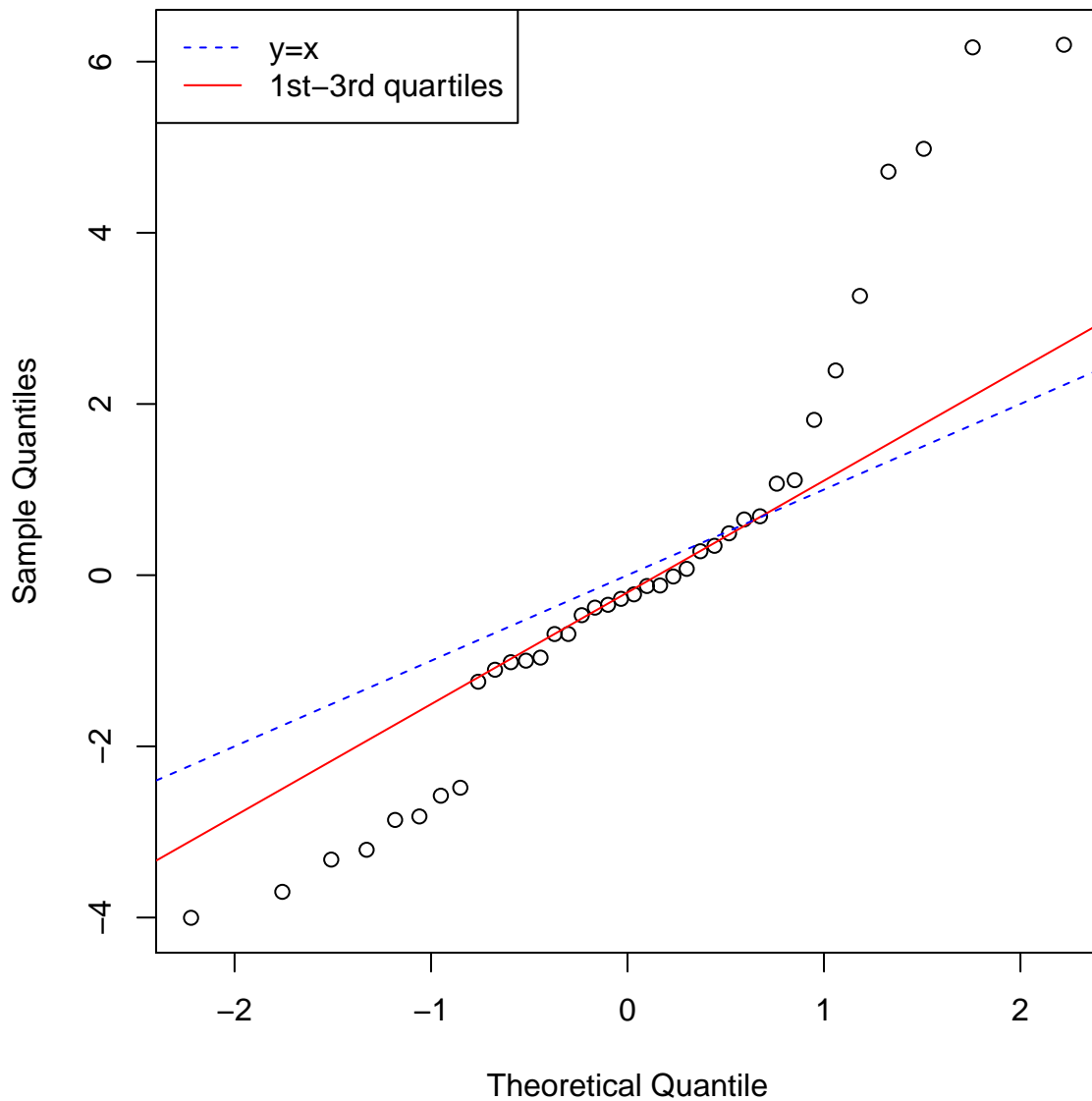
Index 1 (NECWIN) ESS = 30



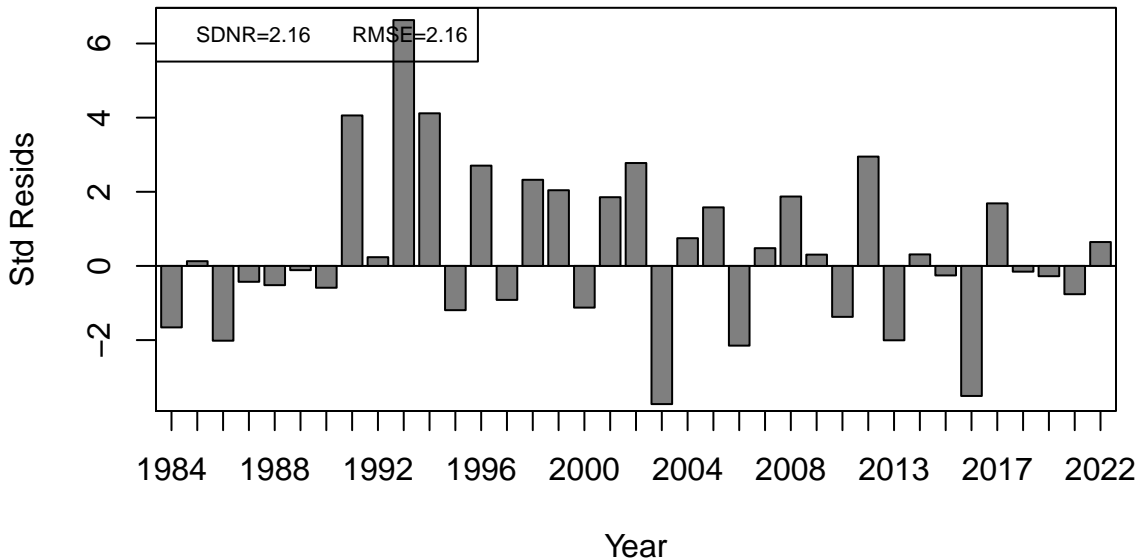
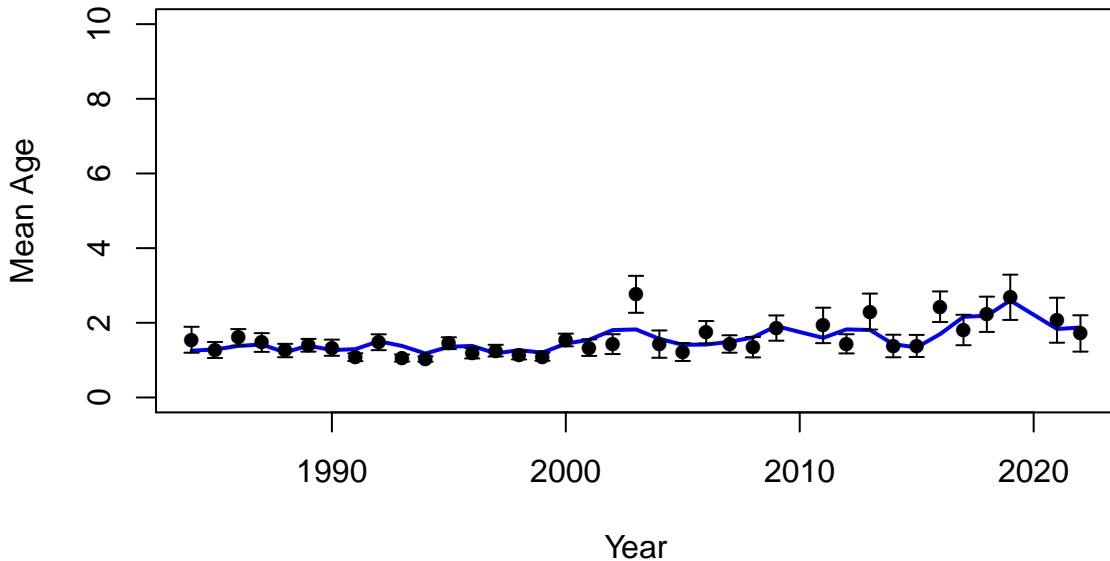
Index 3 (CTSPR) ESS = 30



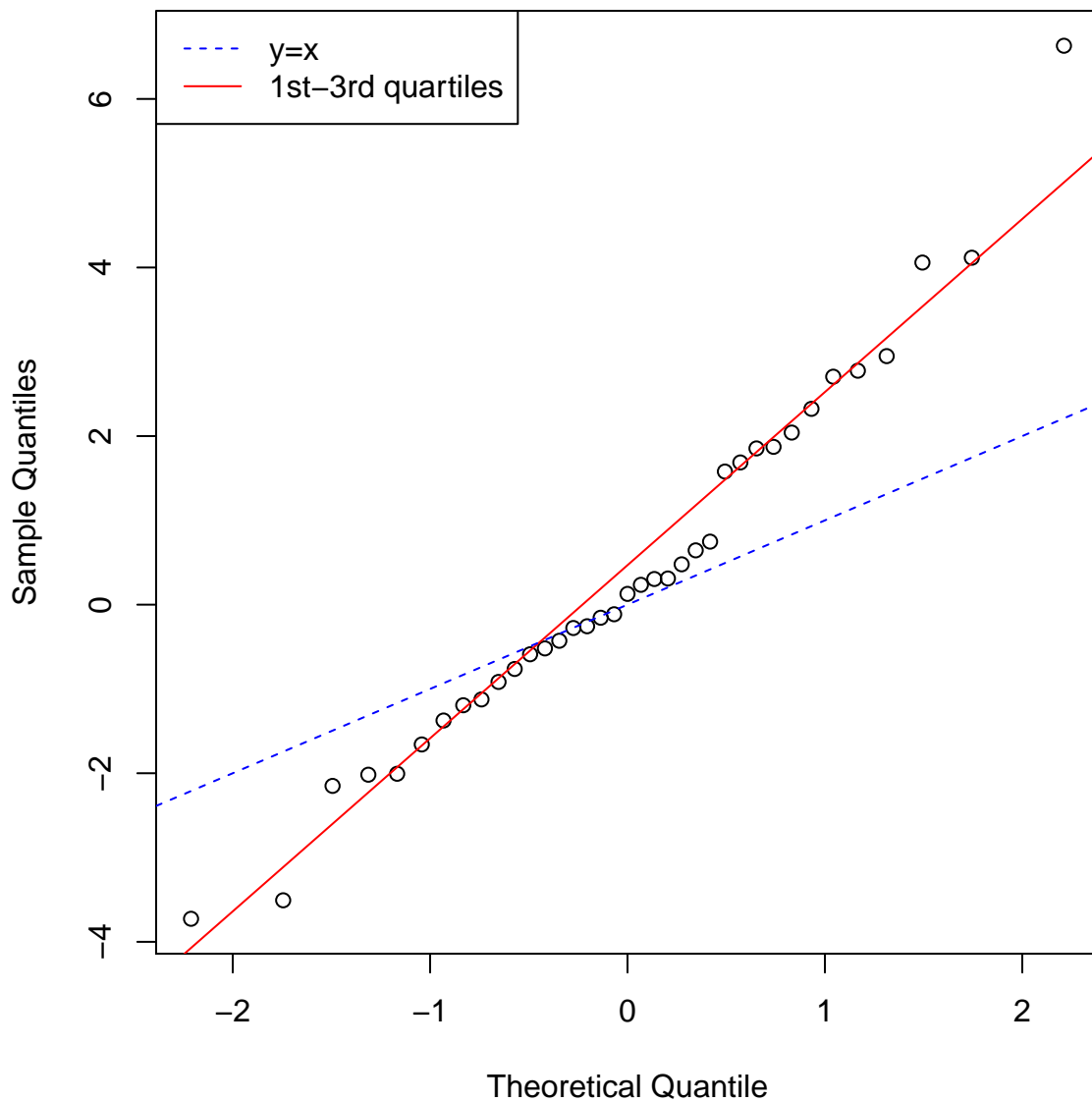
Index 3 (CTSPR) ESS = 30



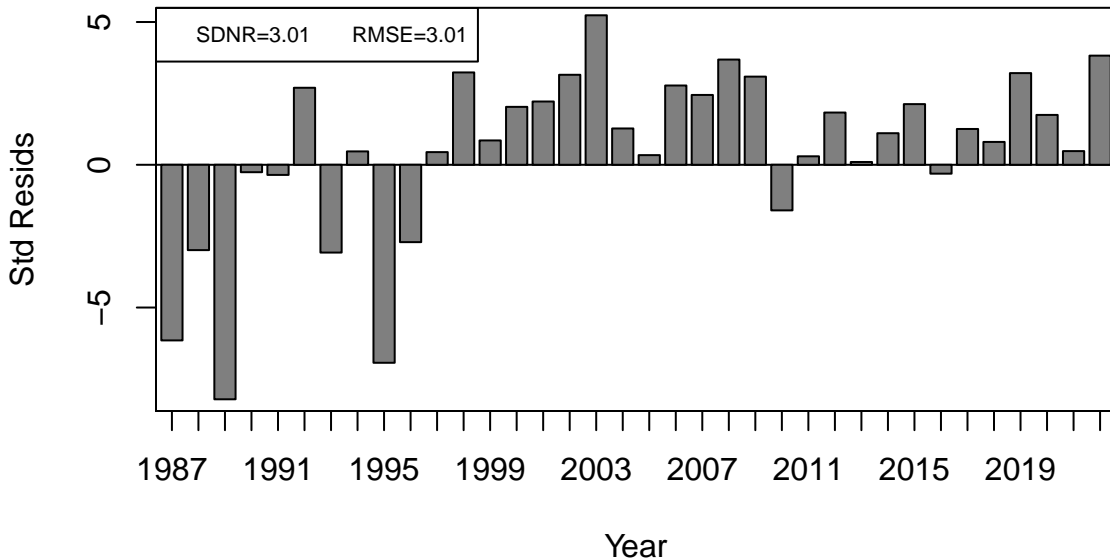
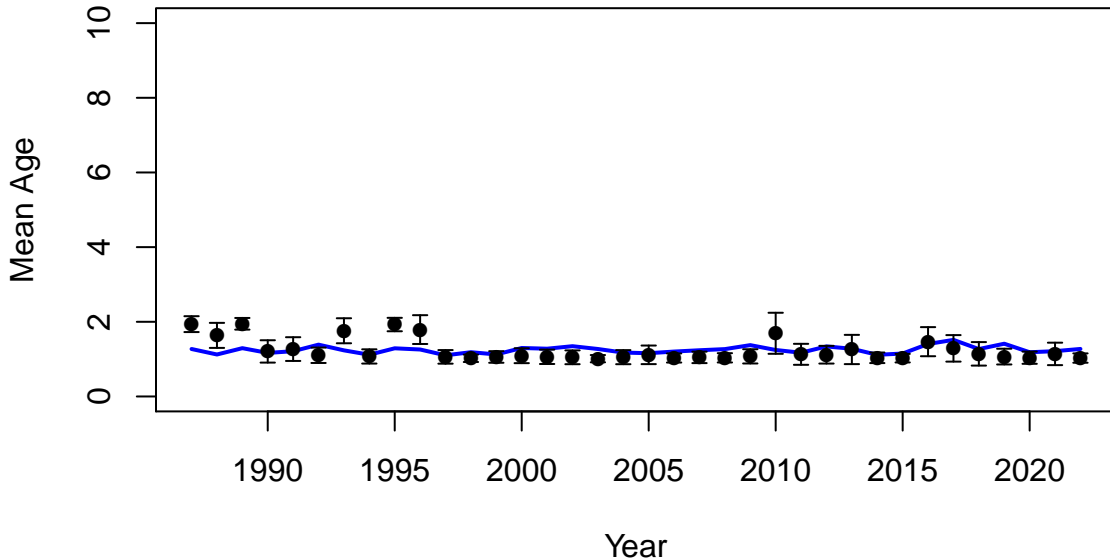
Index 4 (CTFAL) ESS = 40



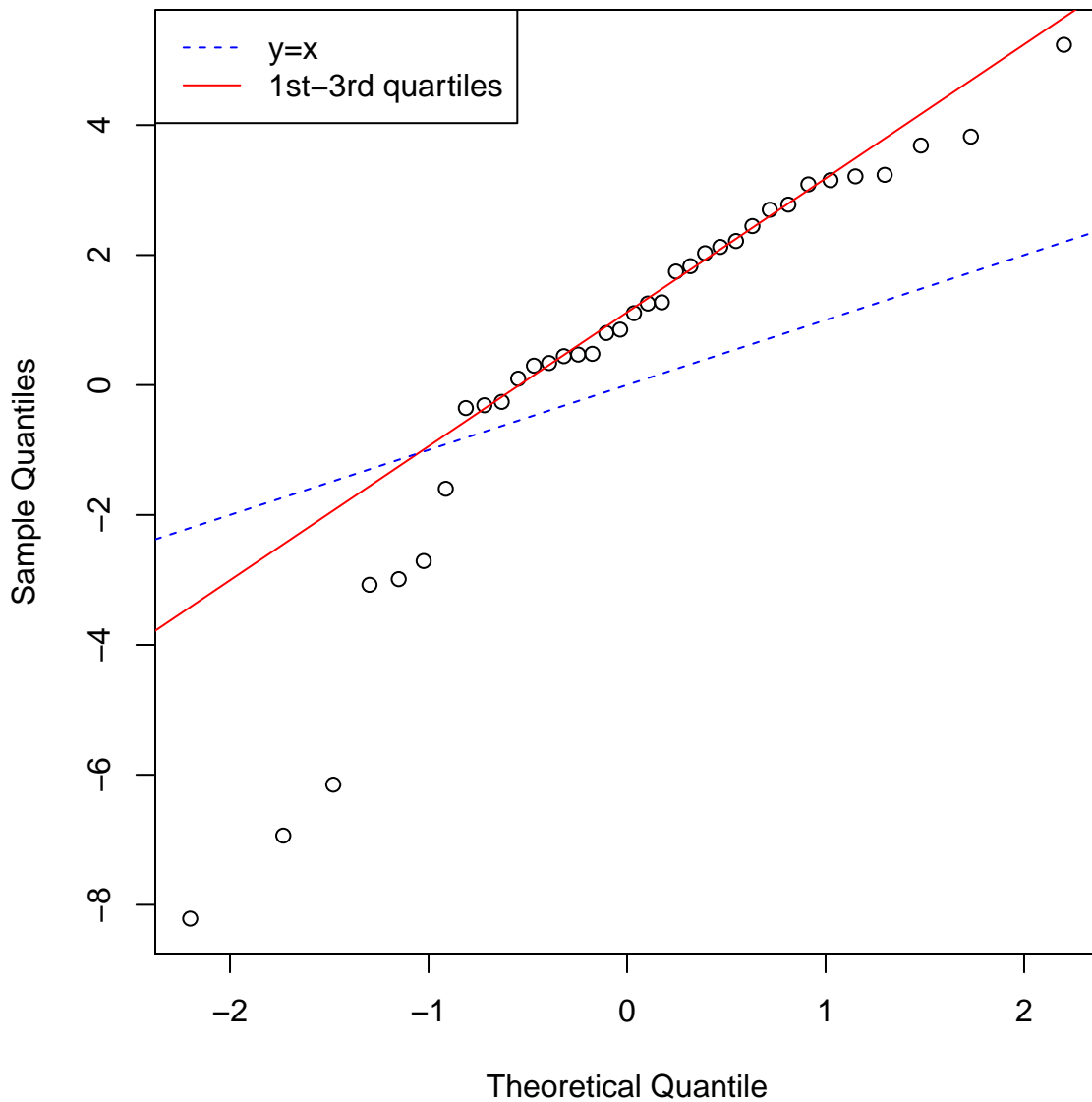
Index 4 (CTFAL) ESS = 40



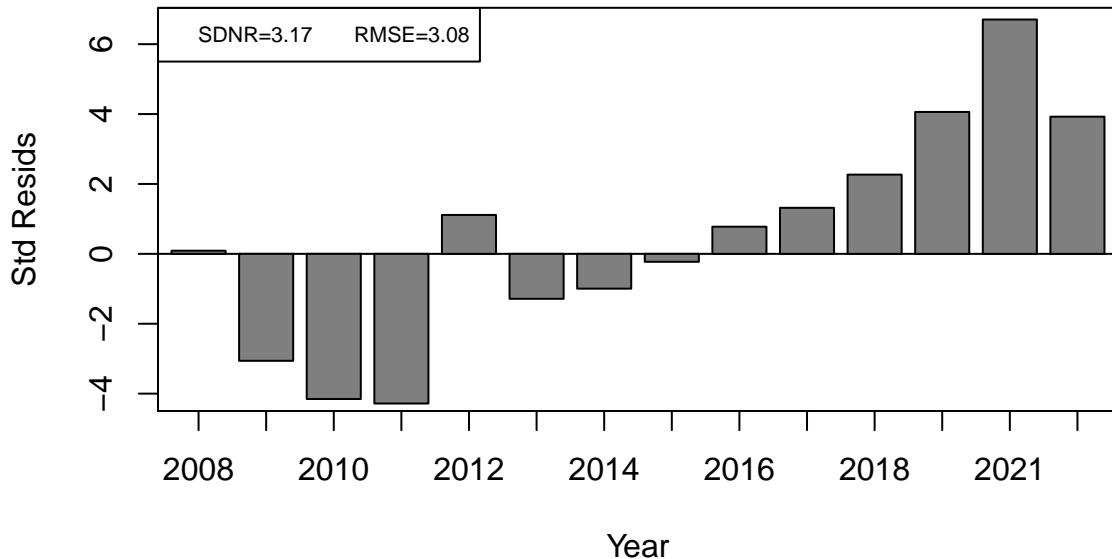
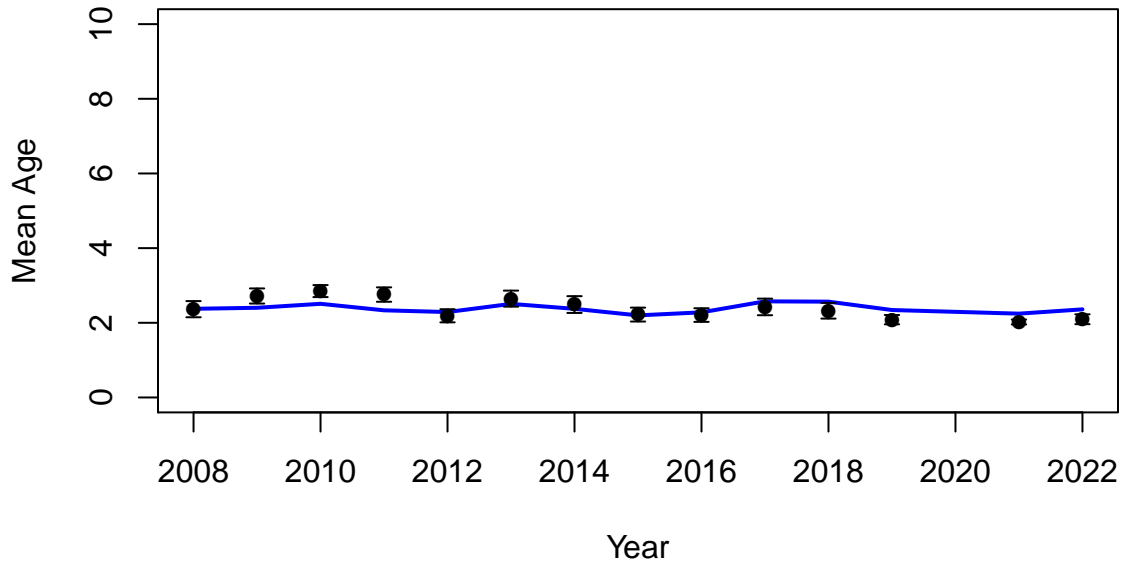
Index 5 (NYDEC) ESS = 10



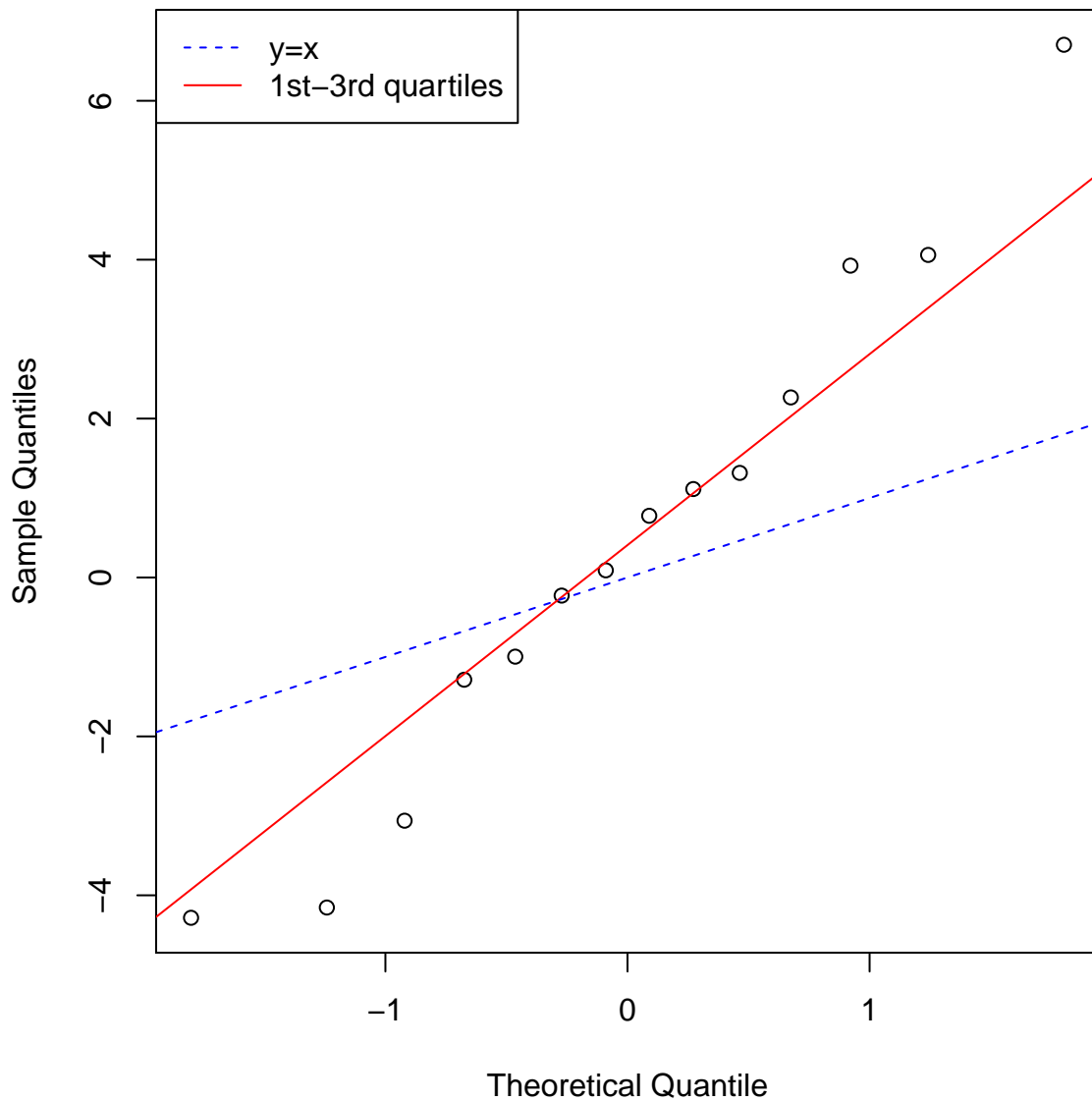
Index 5 (NYDEC) ESS = 10



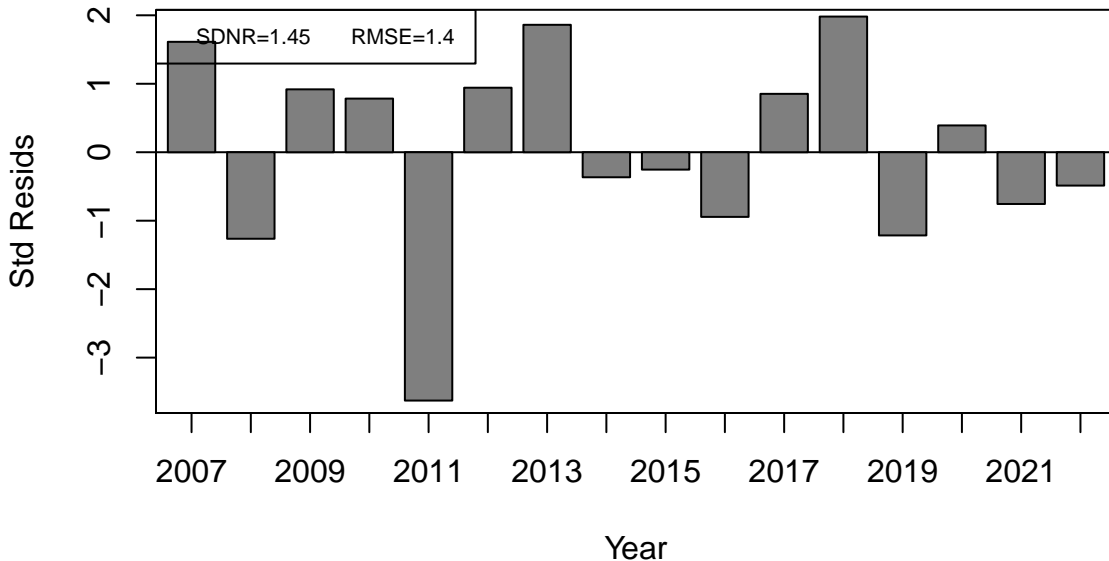
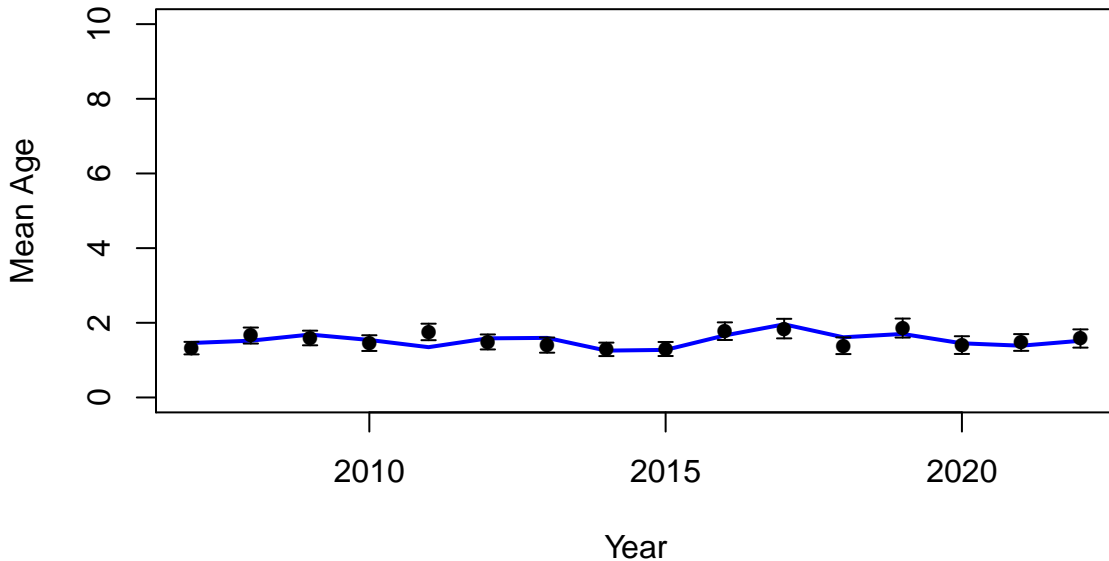
Index 10 (NEAMAP Spring) ESS = 20



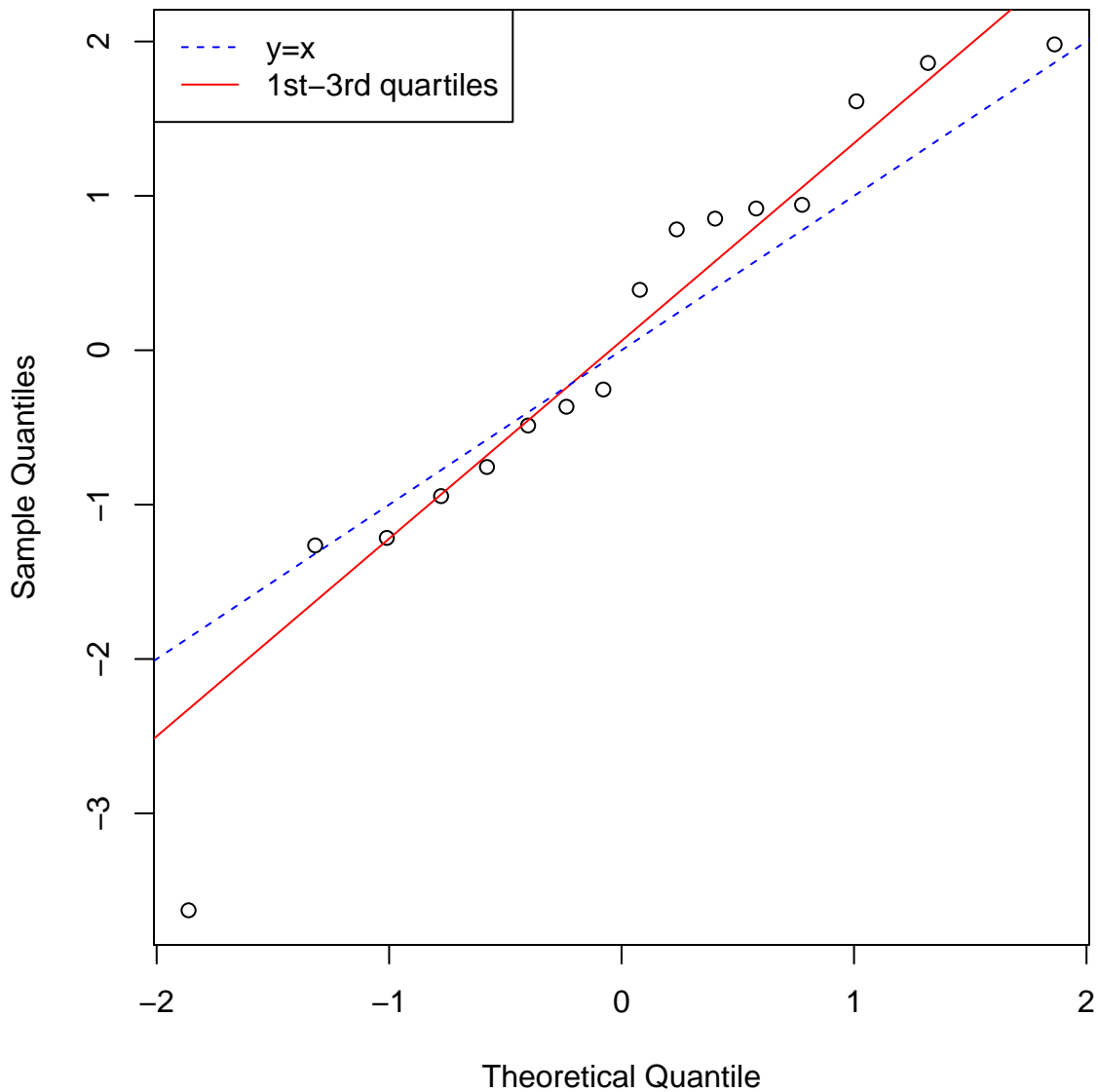
Index 10 (NEAMAP Spring) ESS = 20



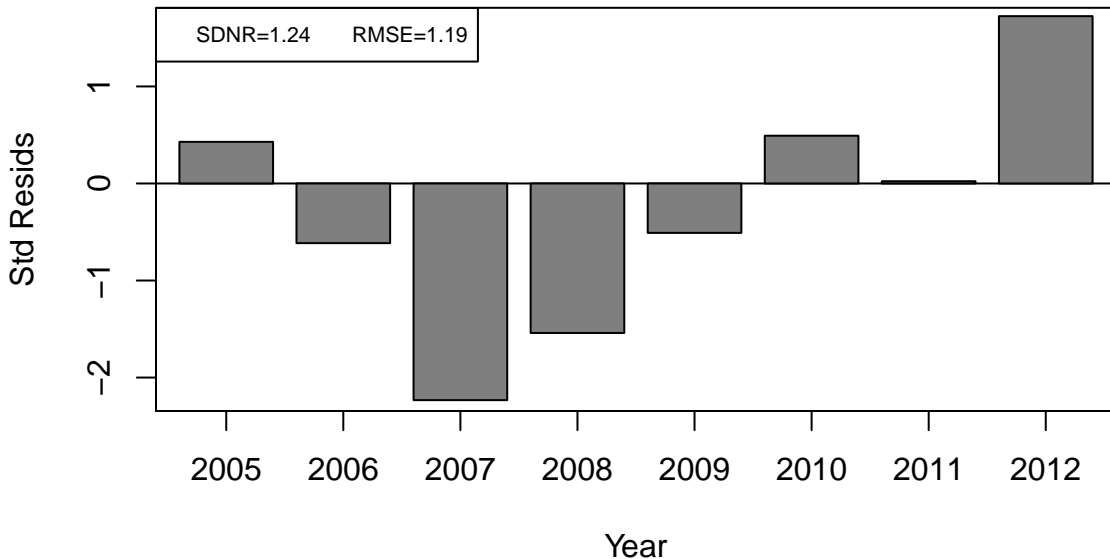
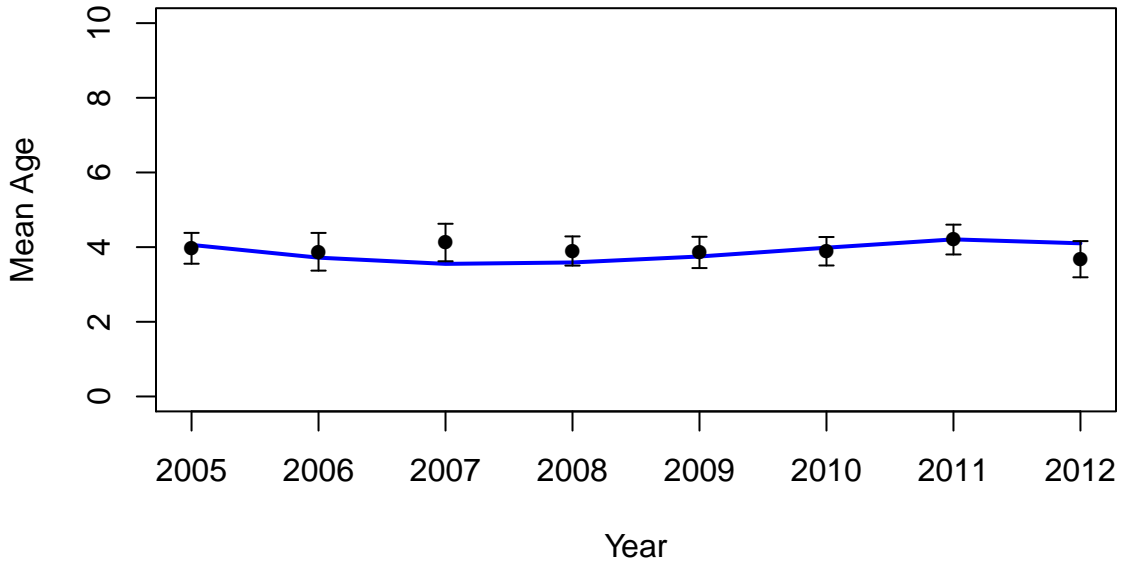
Index 11 (NEAMAP Fall) ESS = 40



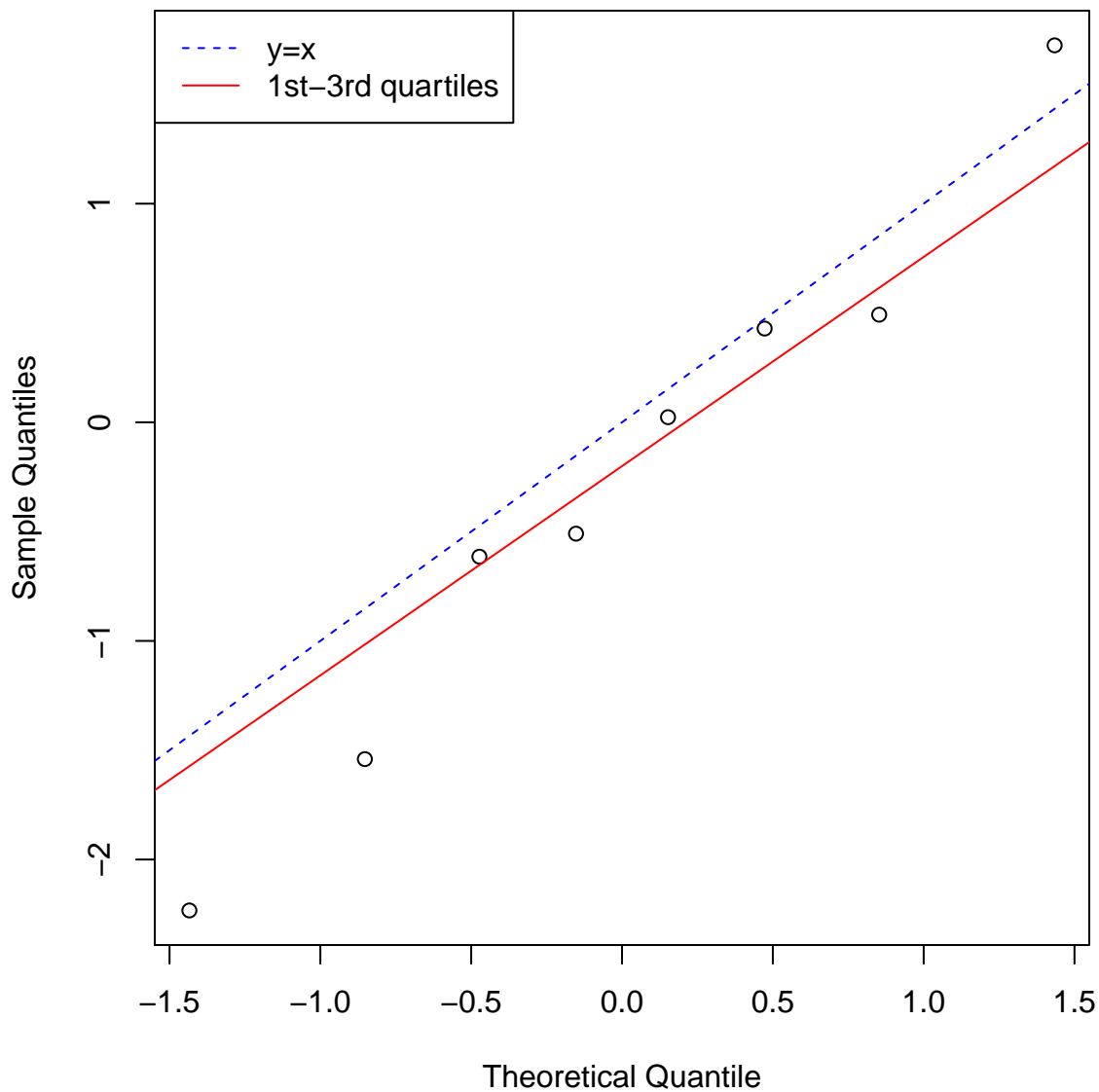
Index 11 (NEAMAP Fall) ESS = 40



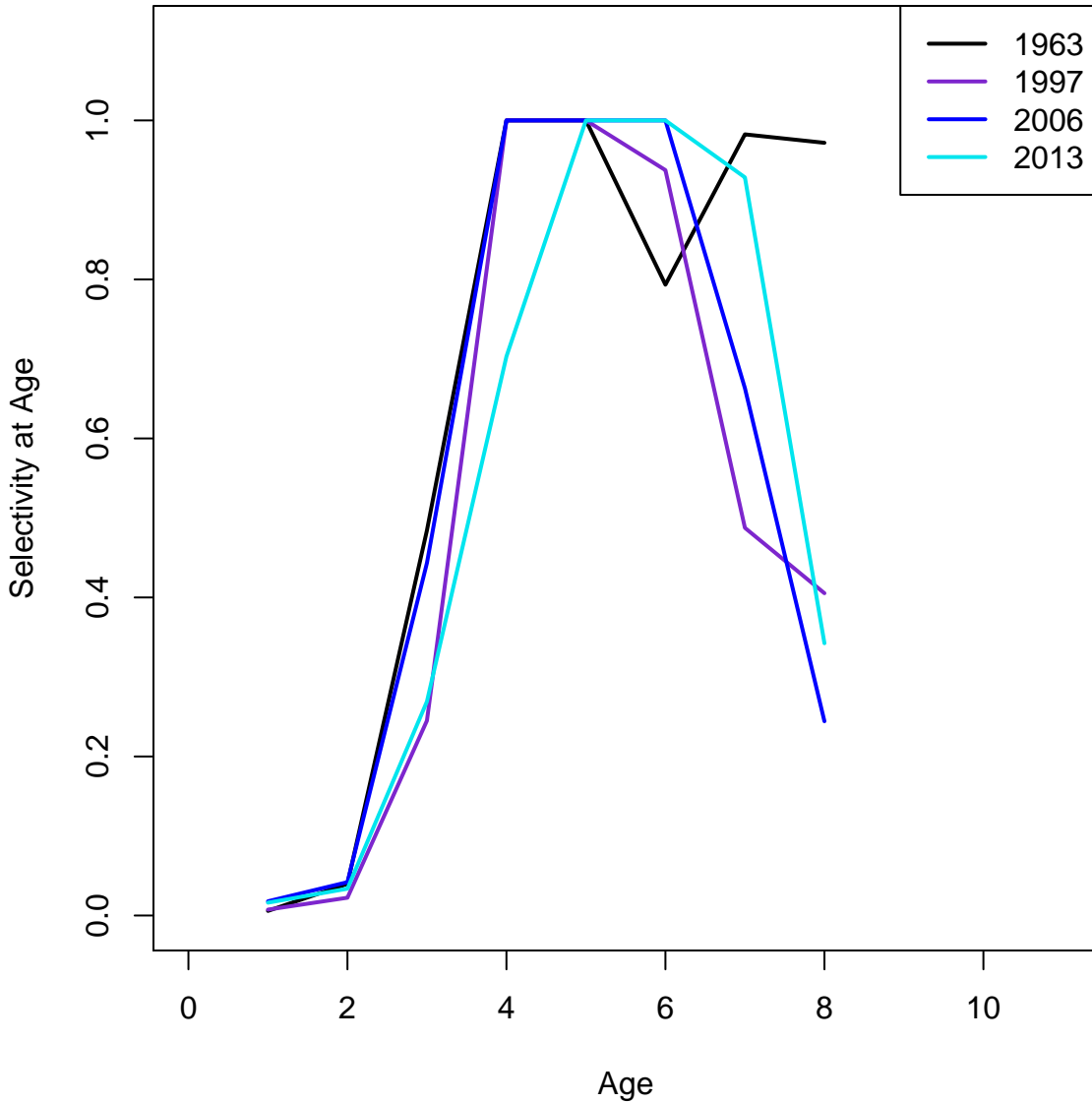
Index 12 (RI Coop Trap) ESS = NA



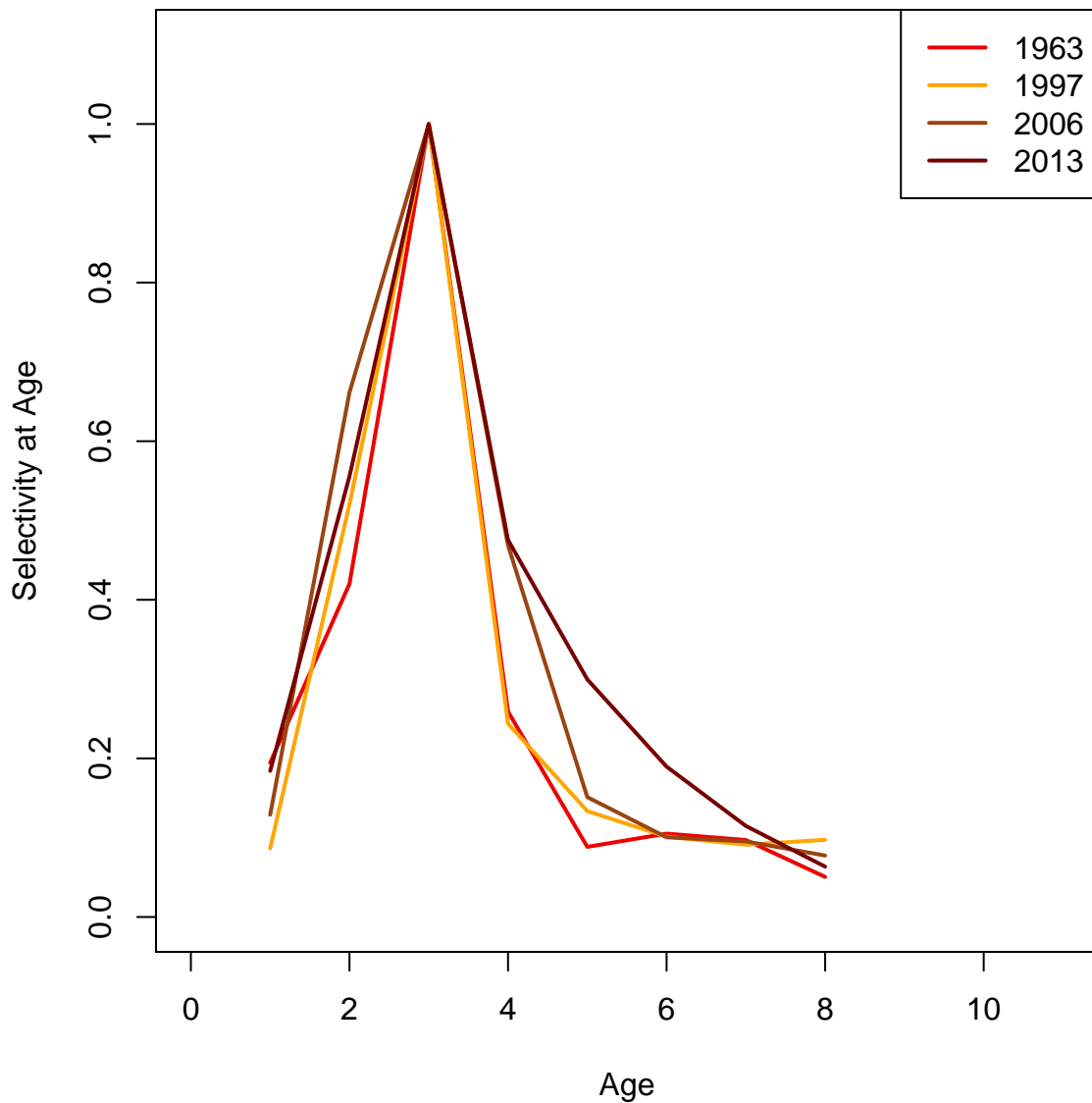
Index 12 (RI Coop Trap) ESS = NA



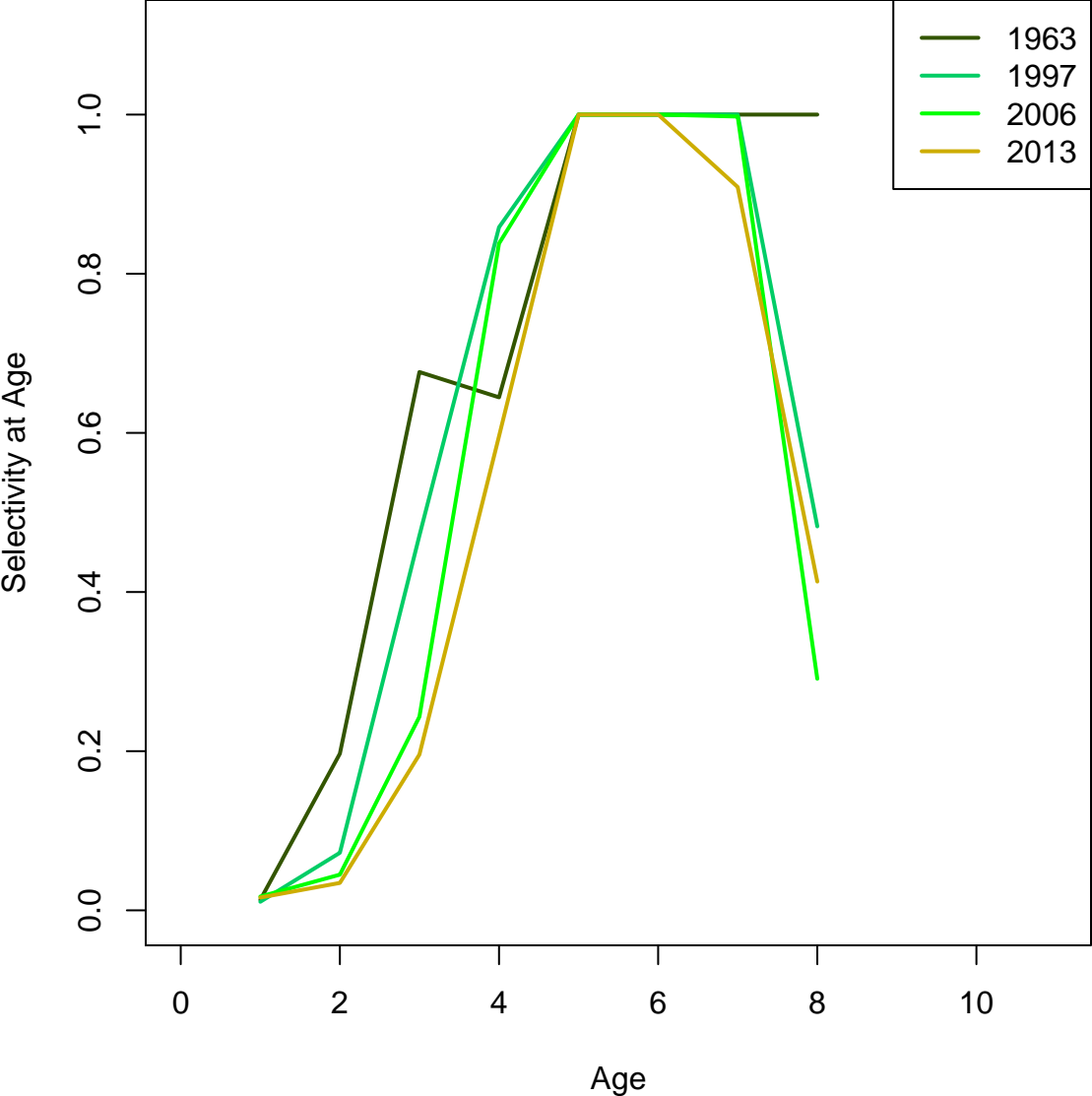
Fleet 1 (COMLAND)



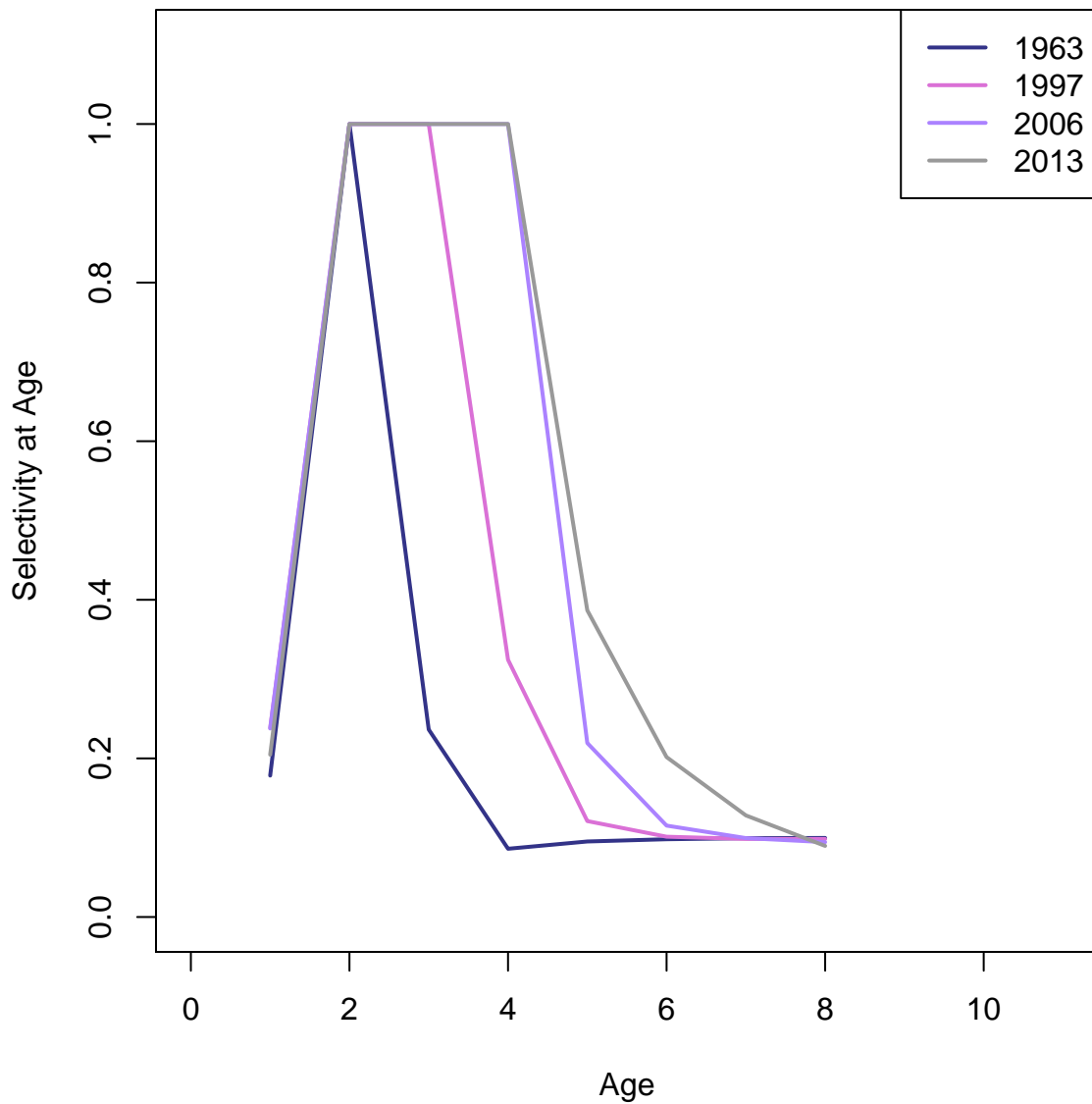
Fleet 2 (COMDISC)

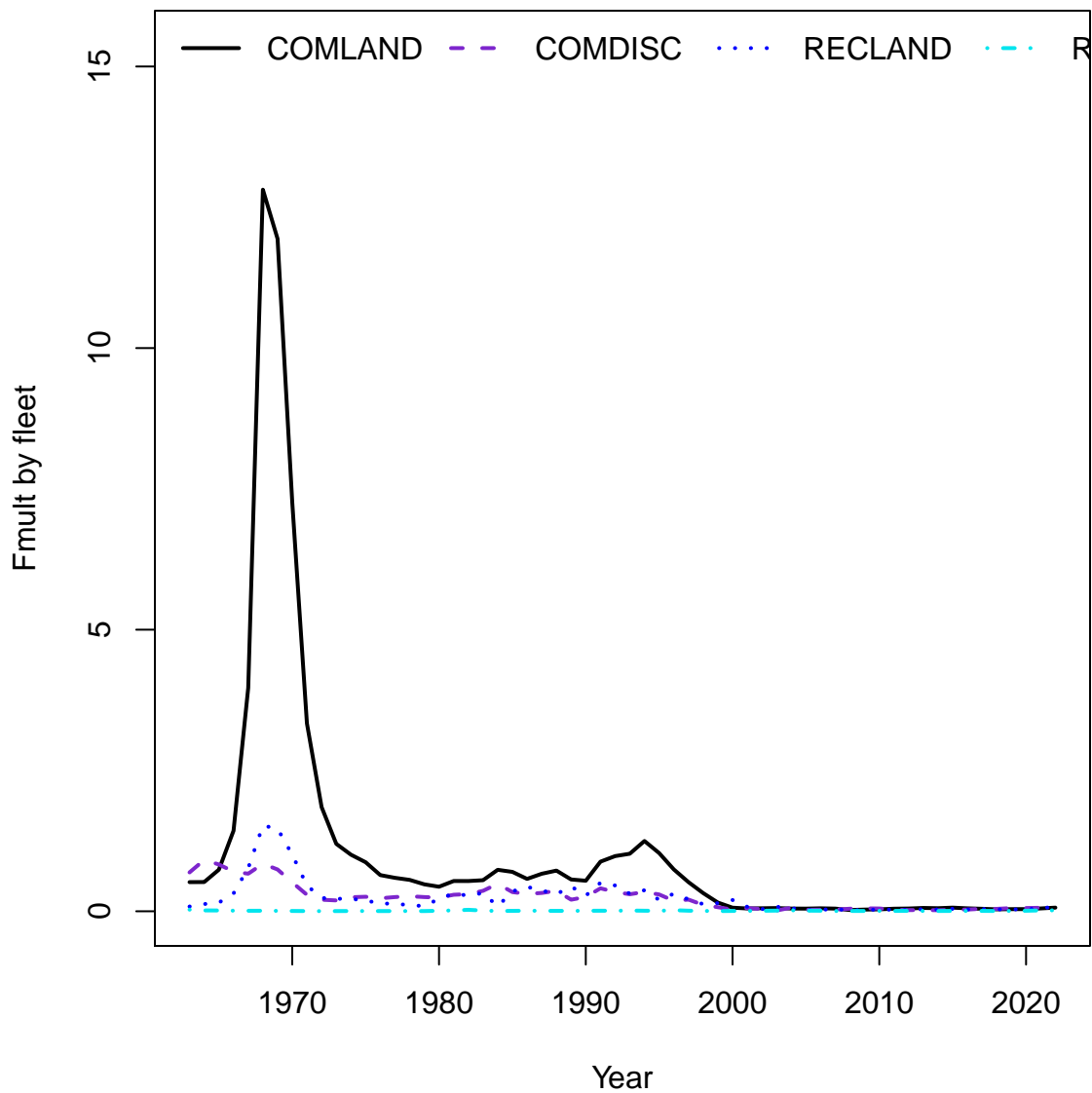


Fleet 3 (RECLAND)

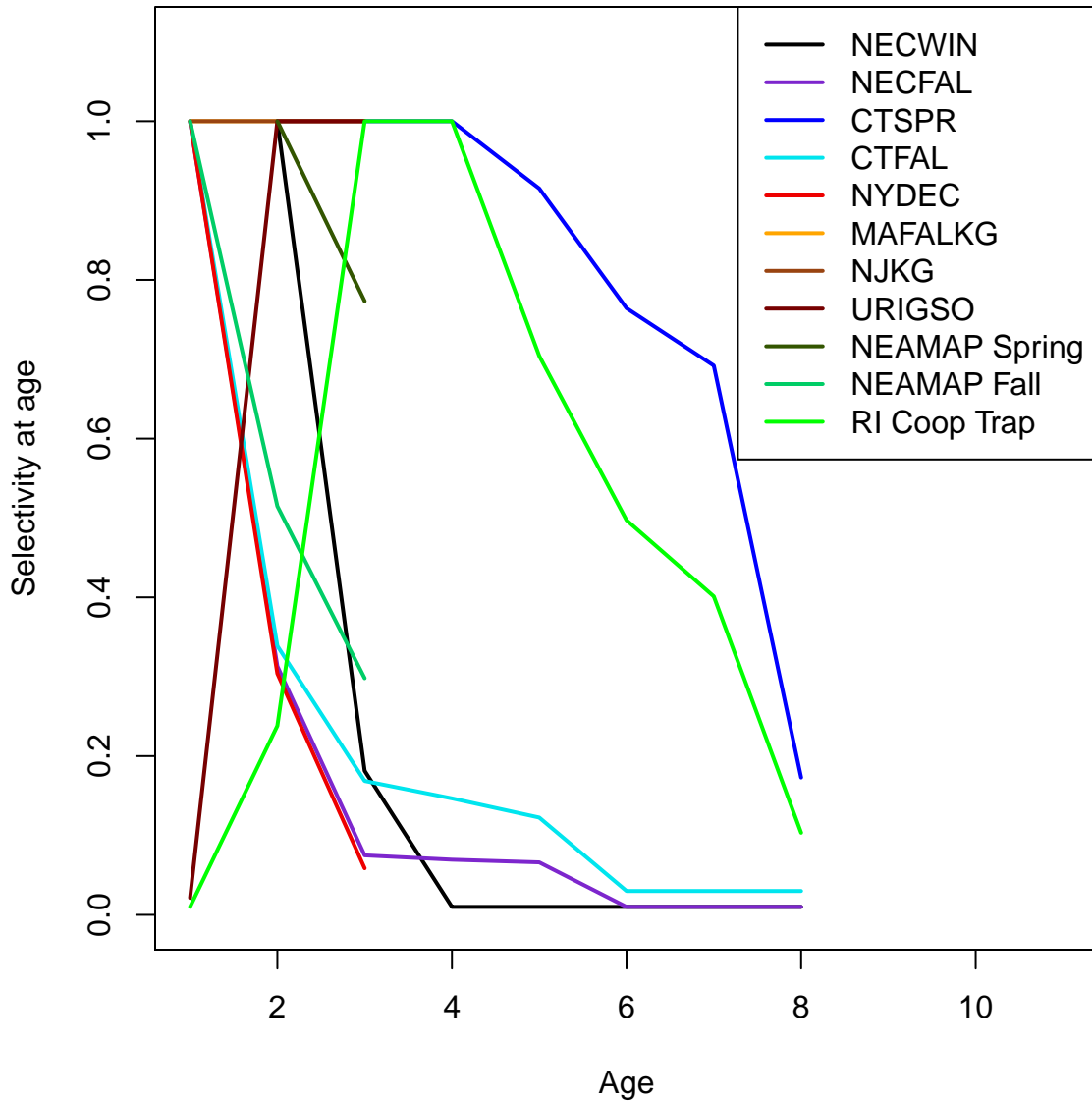


Fleet 4 (RECDISC)

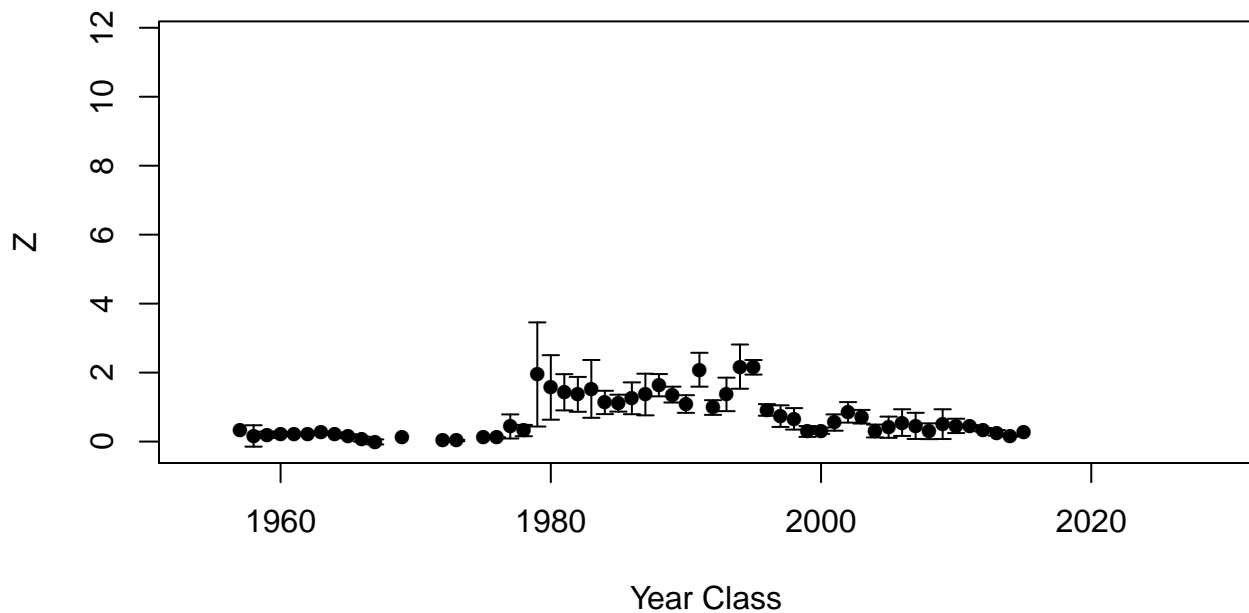
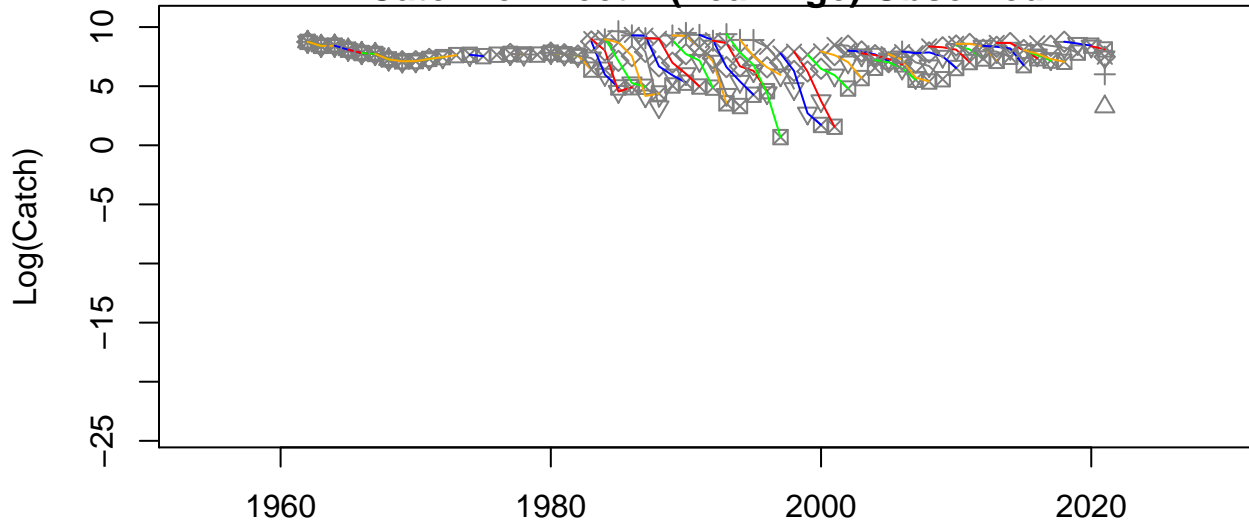




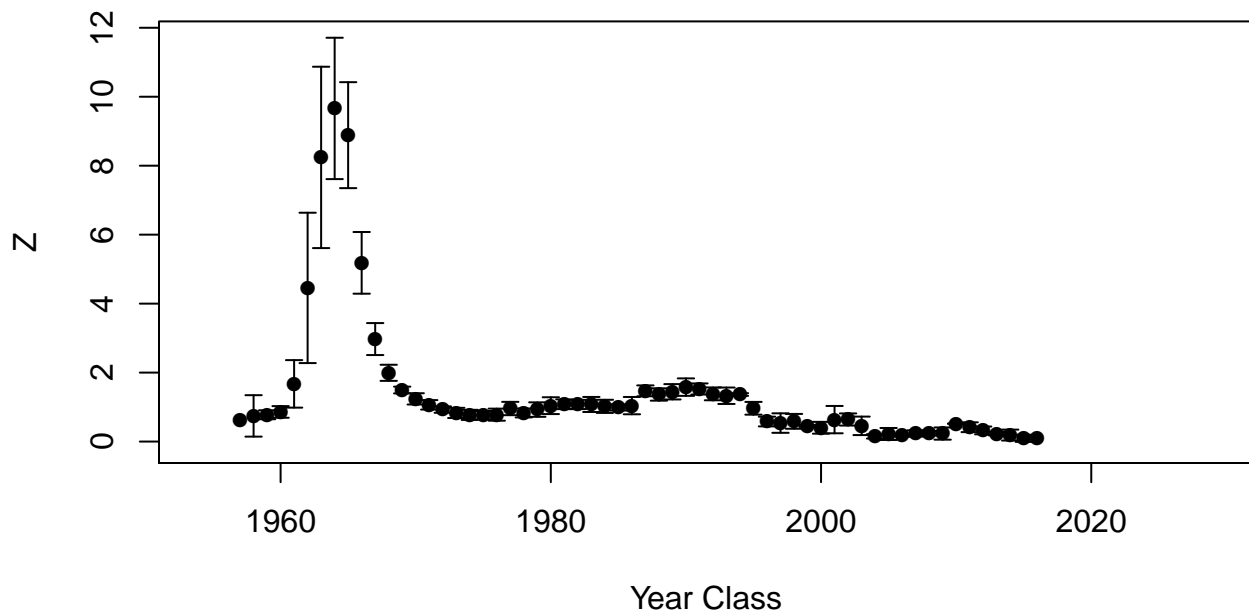
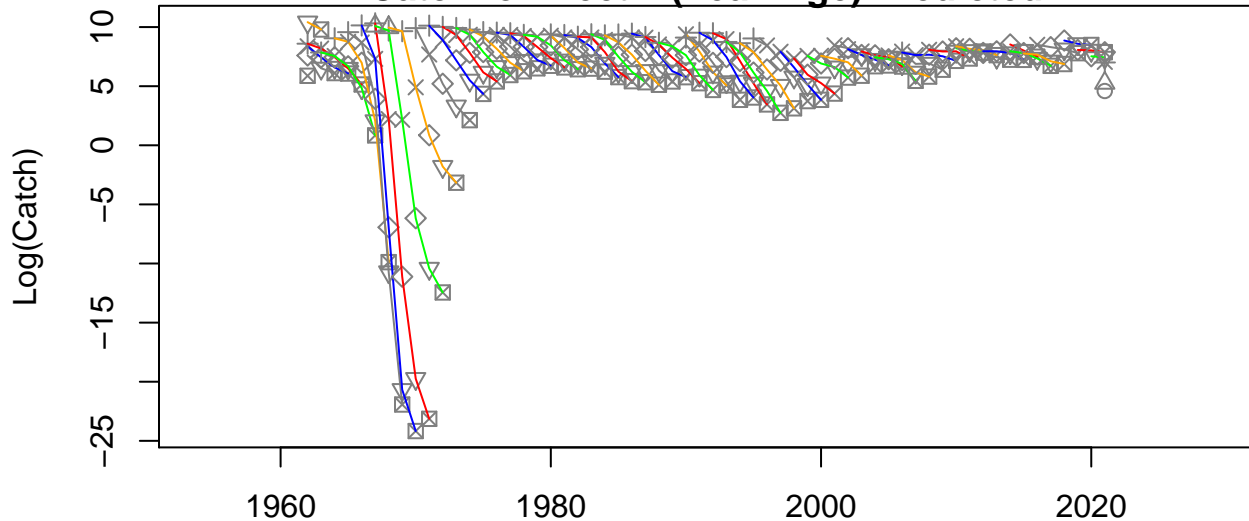
Indices



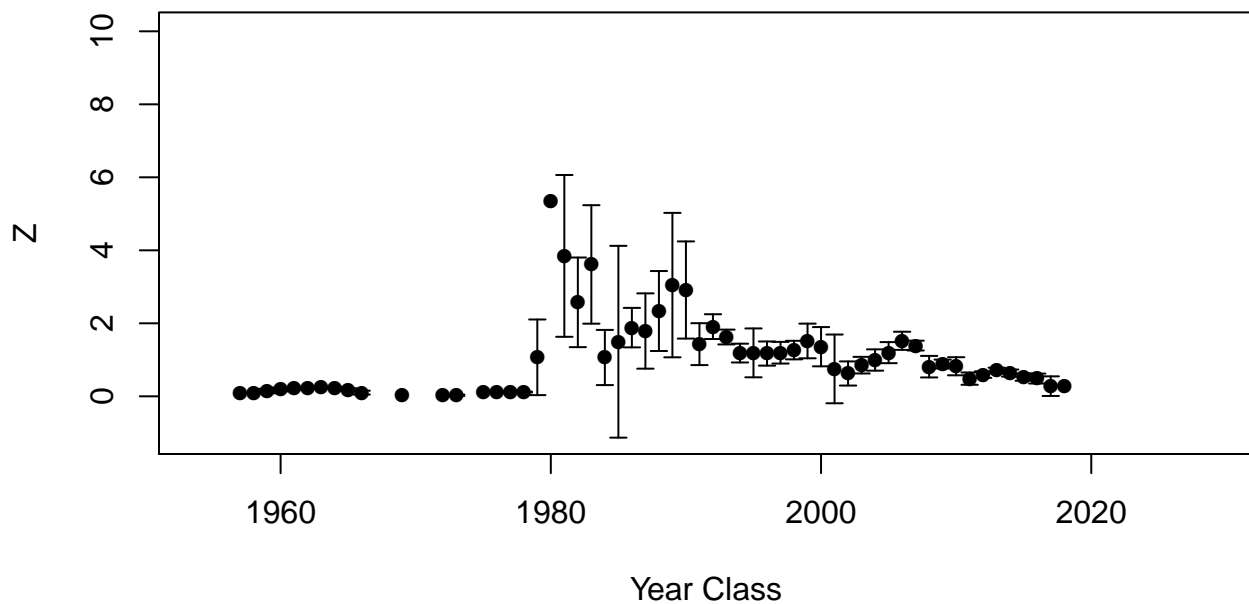
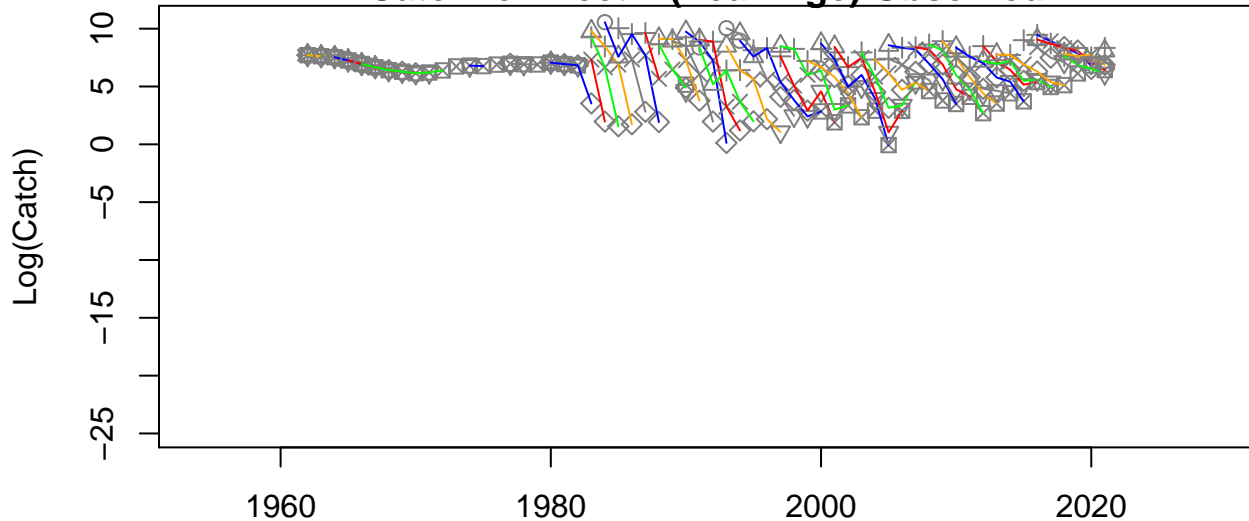
Catch for Fleet 1 (Peak Age) Observed



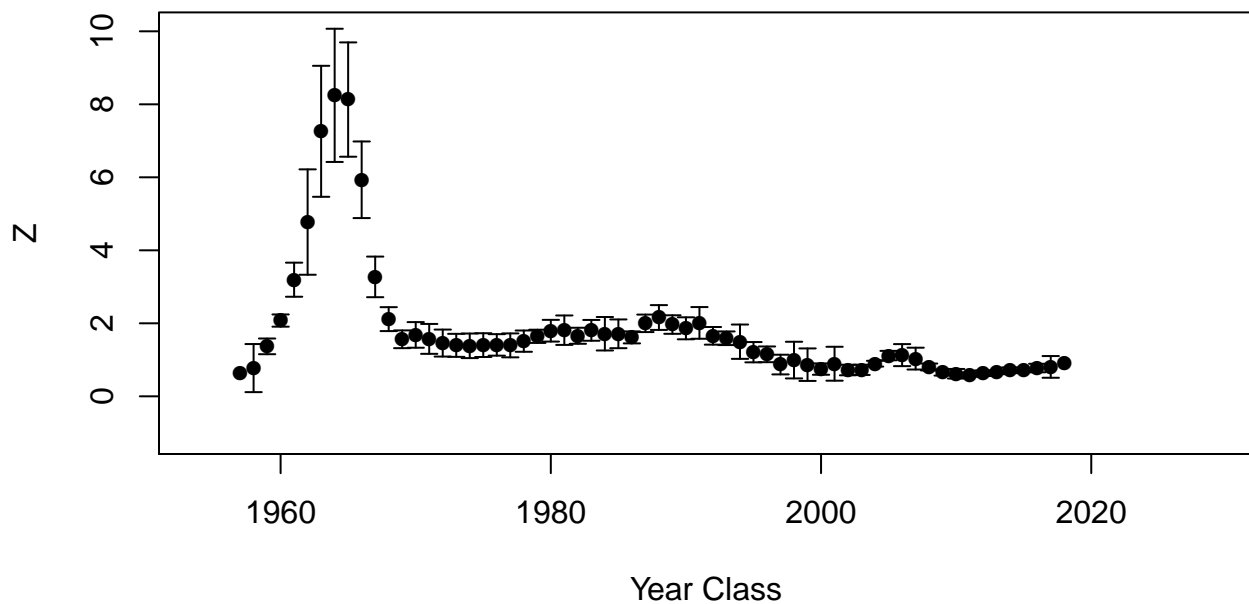
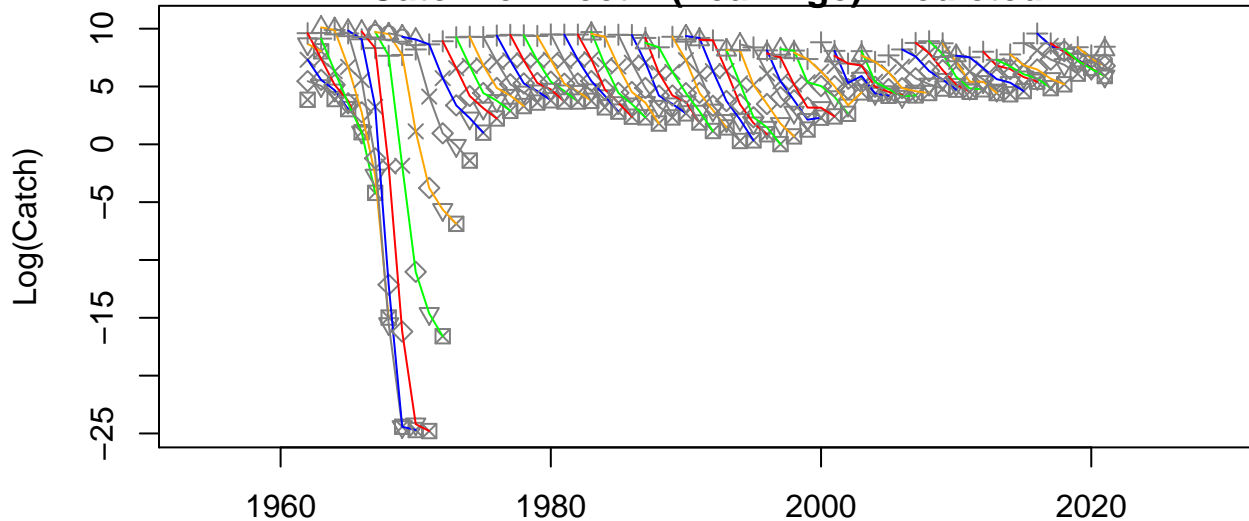
Catch for Fleet 1 (Peak Age) Predicted



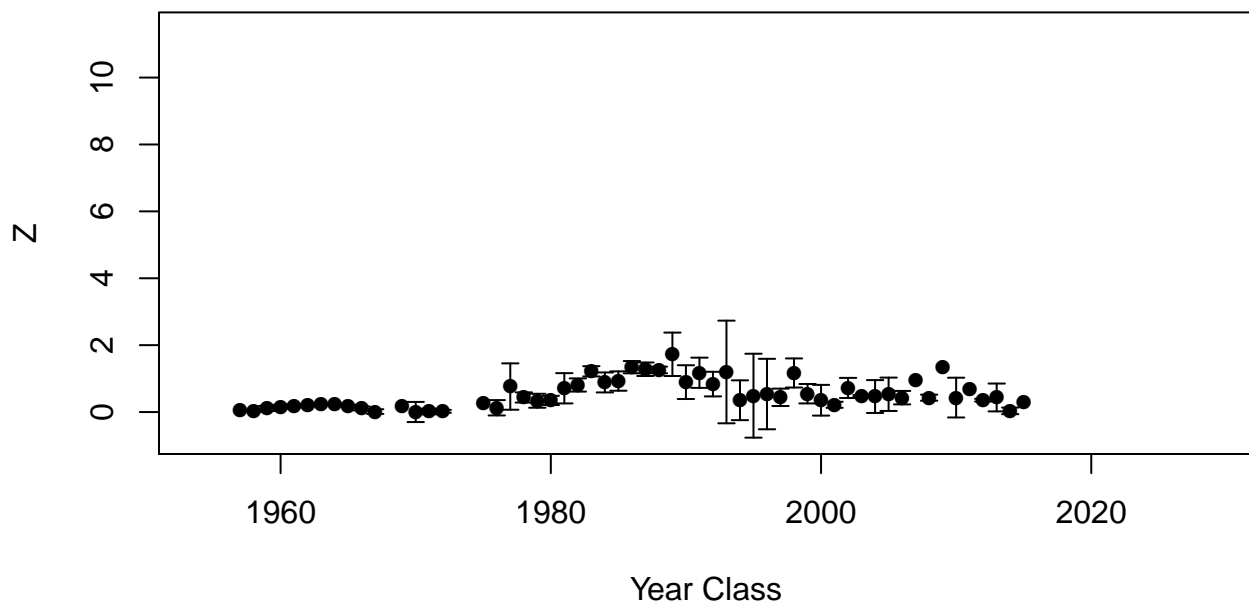
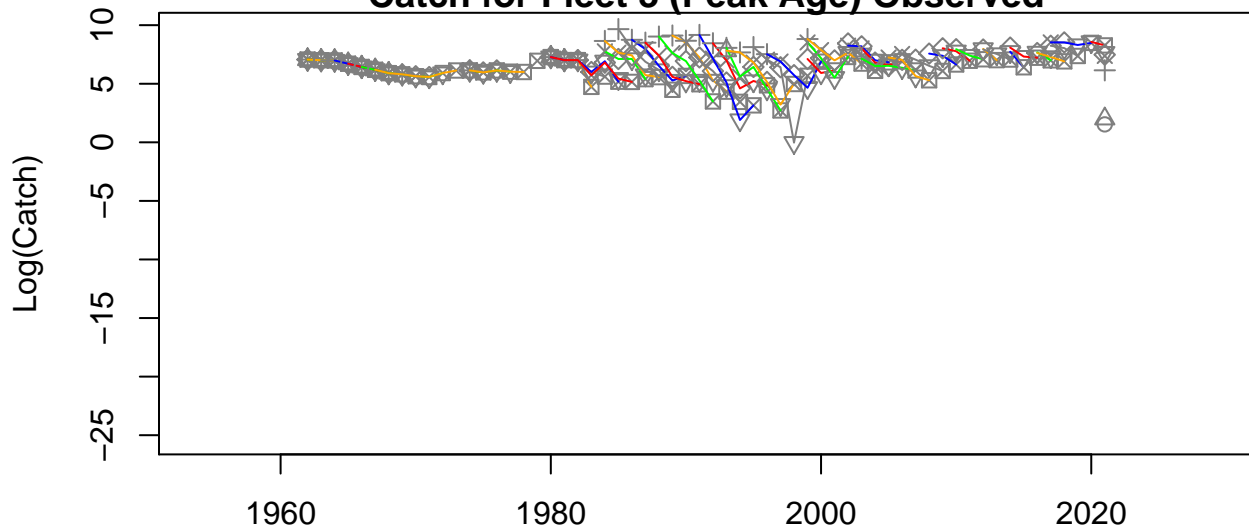
Catch for Fleet 2 (Peak Age) Observed



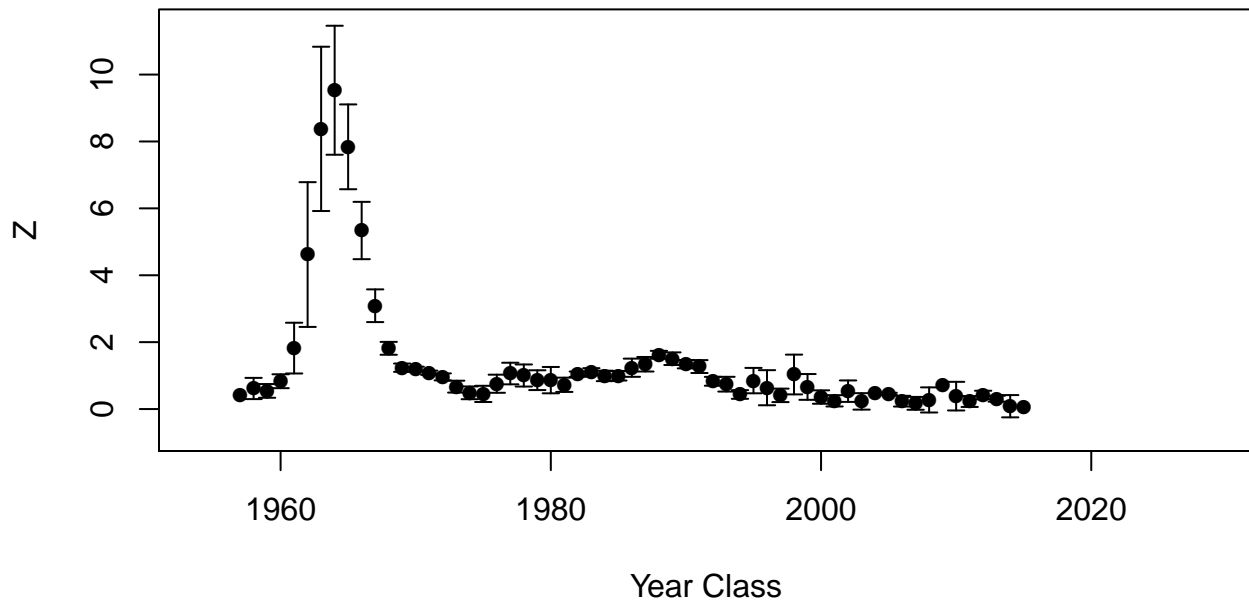
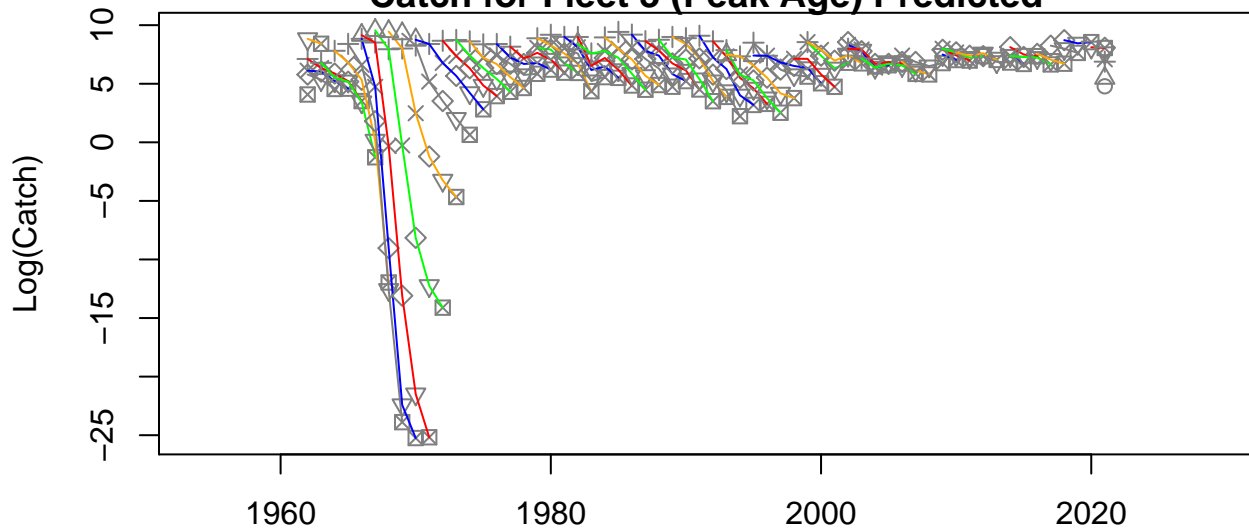
Catch for Fleet 2 (Peak Age) Predicted



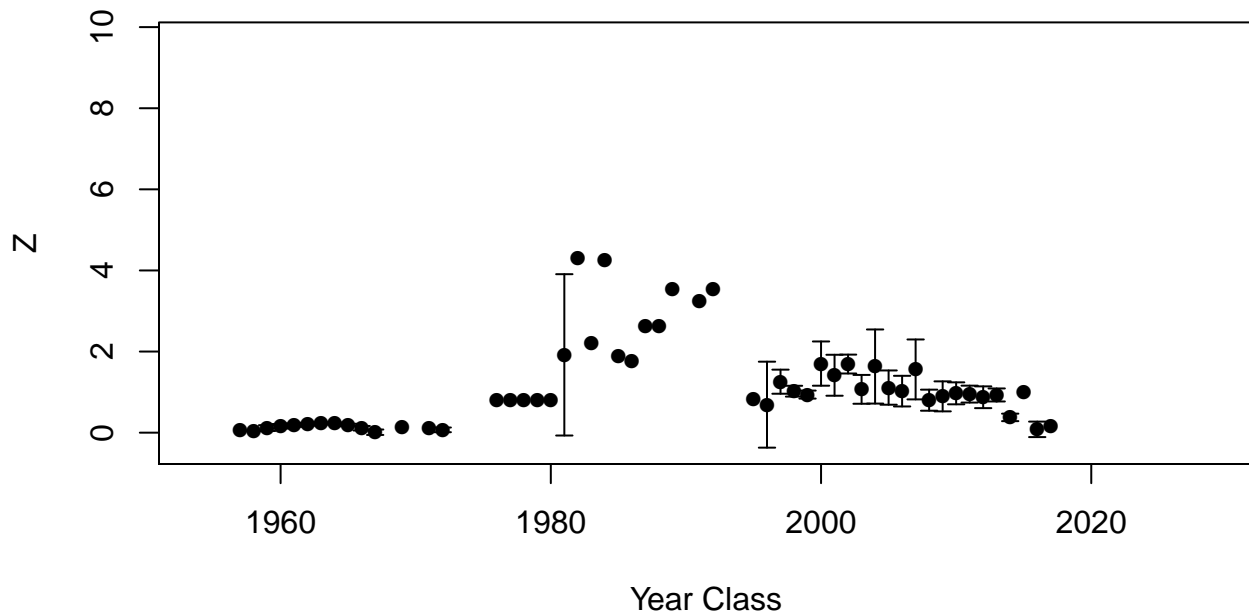
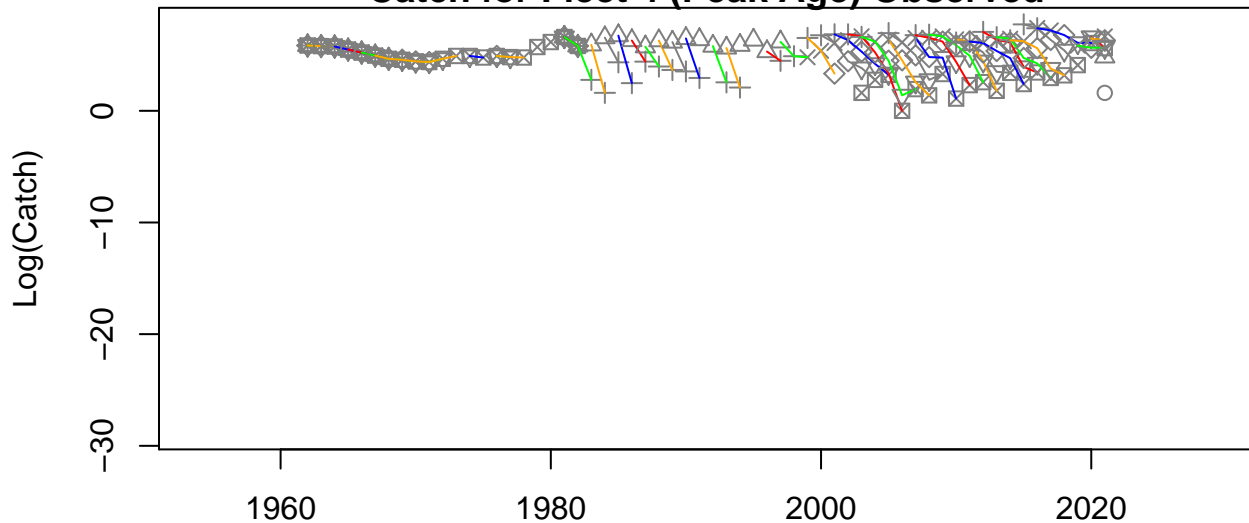
Catch for Fleet 3 (Peak Age) Observed



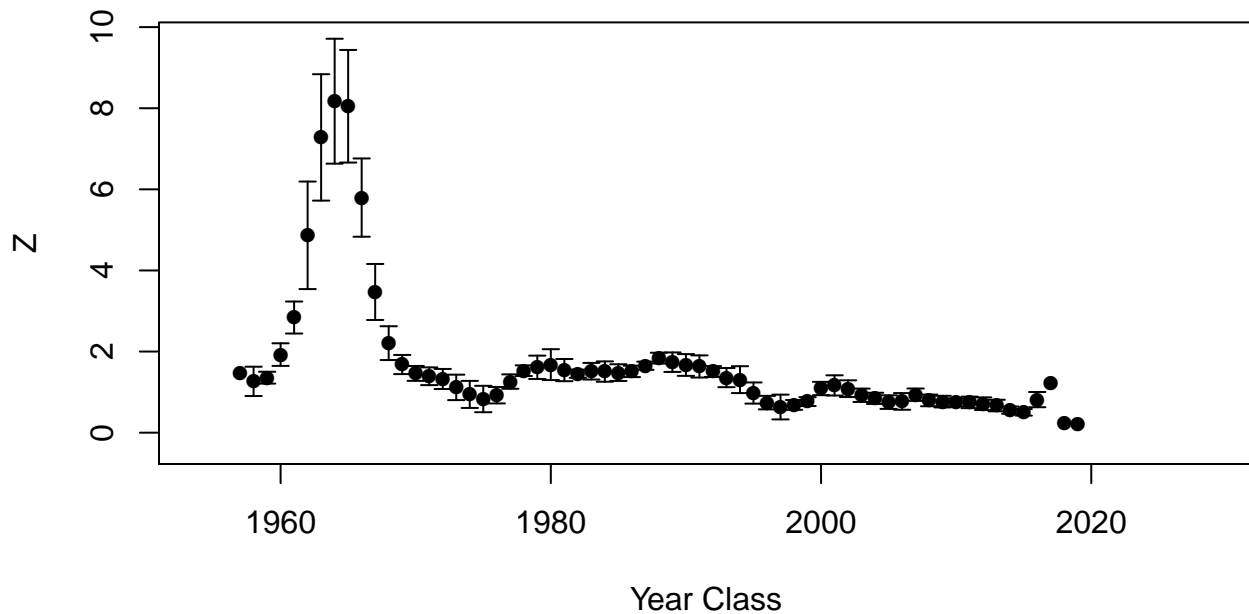
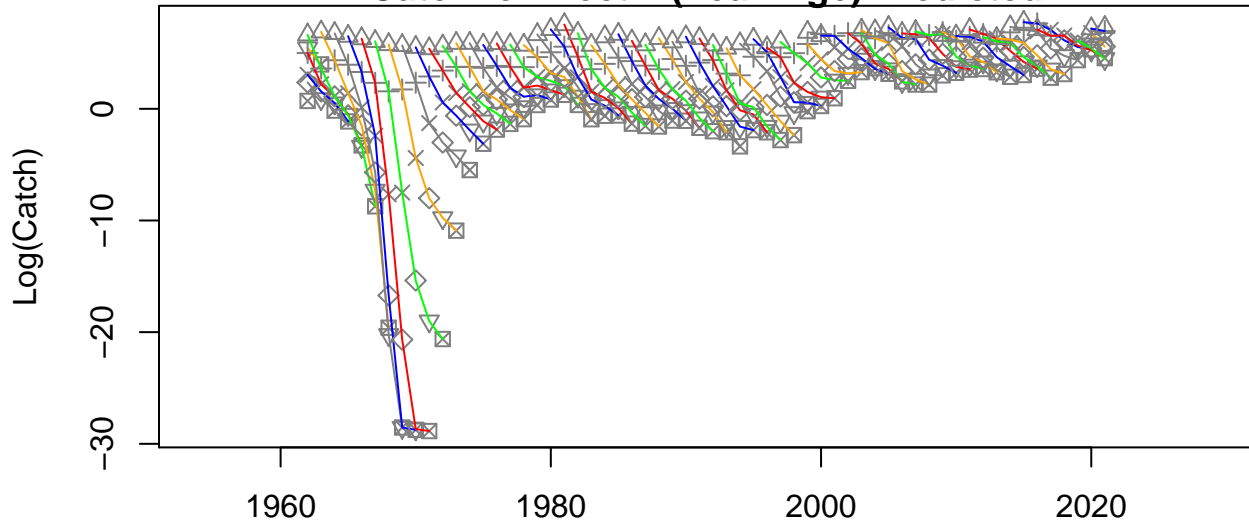
Catch for Fleet 3 (Peak Age) Predicted



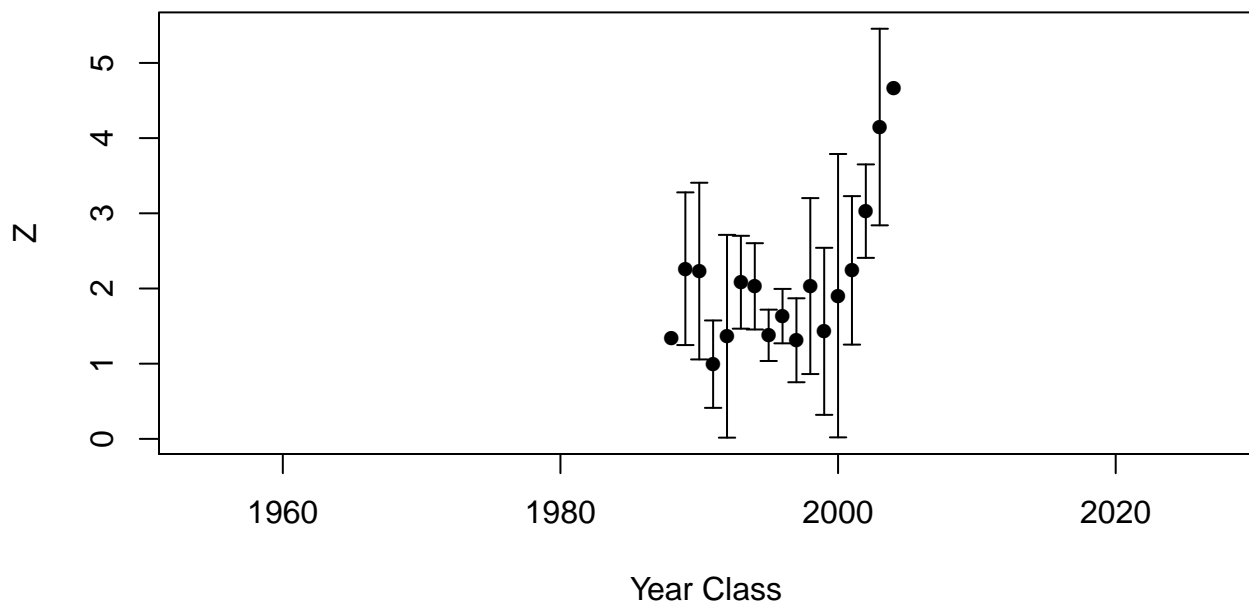
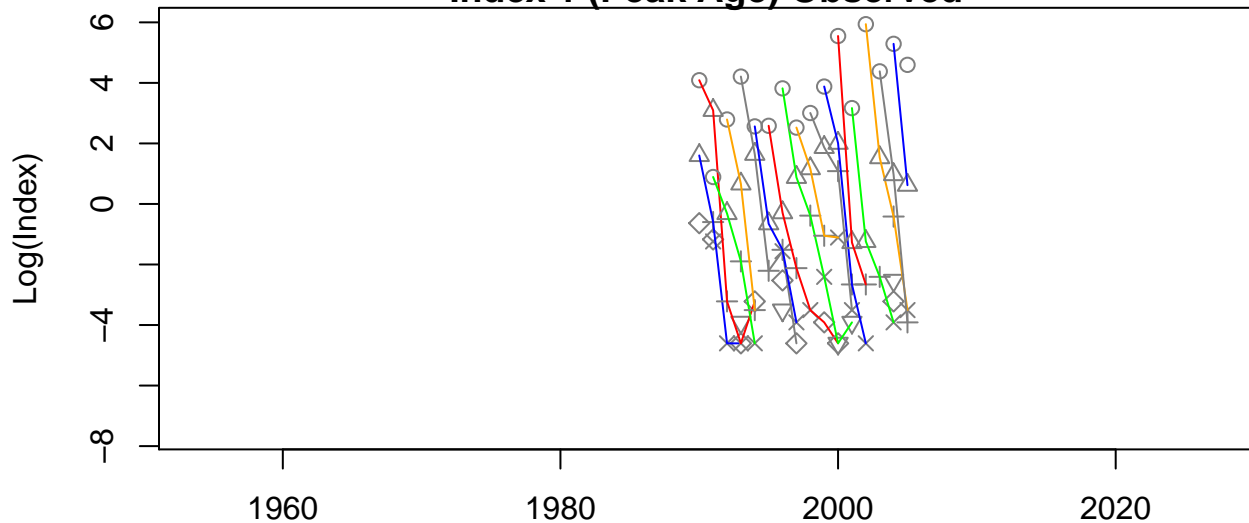
Catch for Fleet 4 (Peak Age) Observed



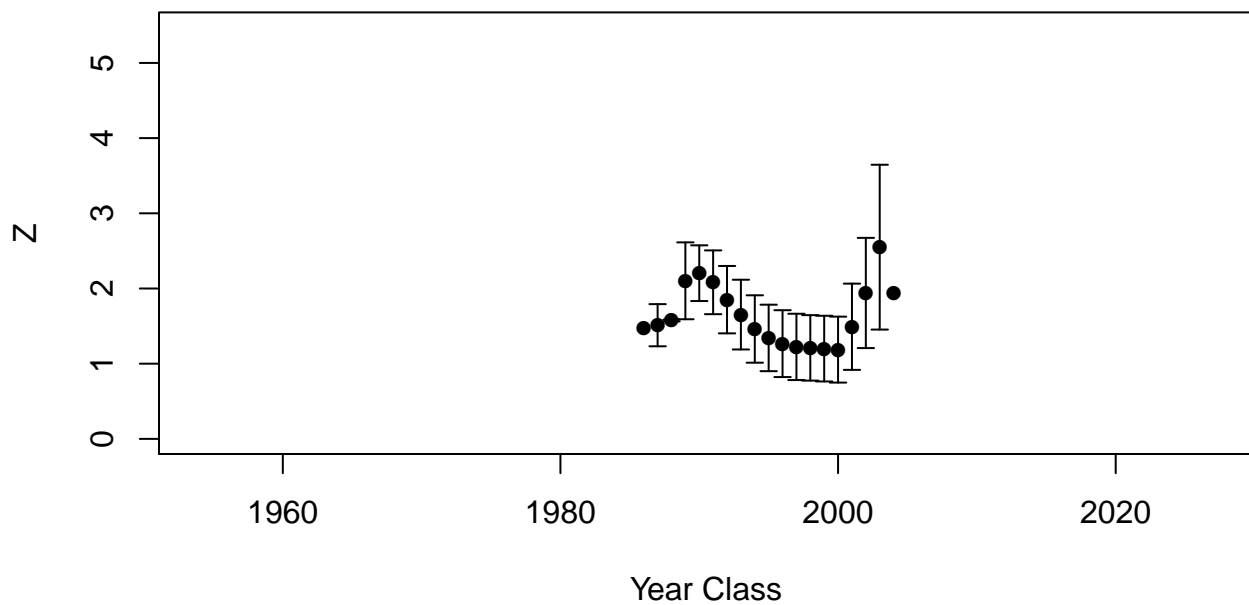
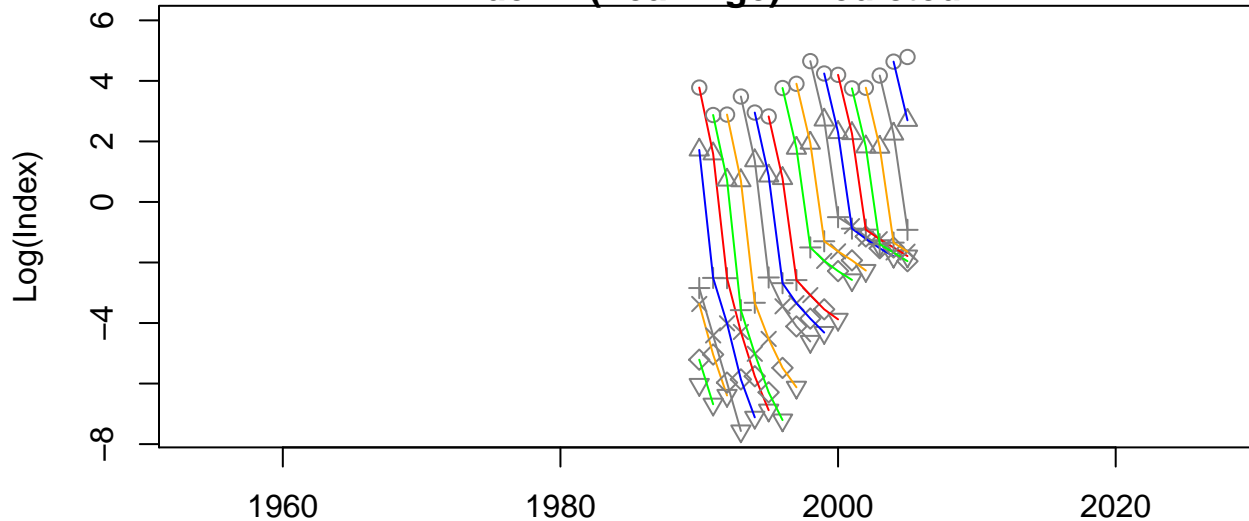
Catch for Fleet 4 (Peak Age) Predicted



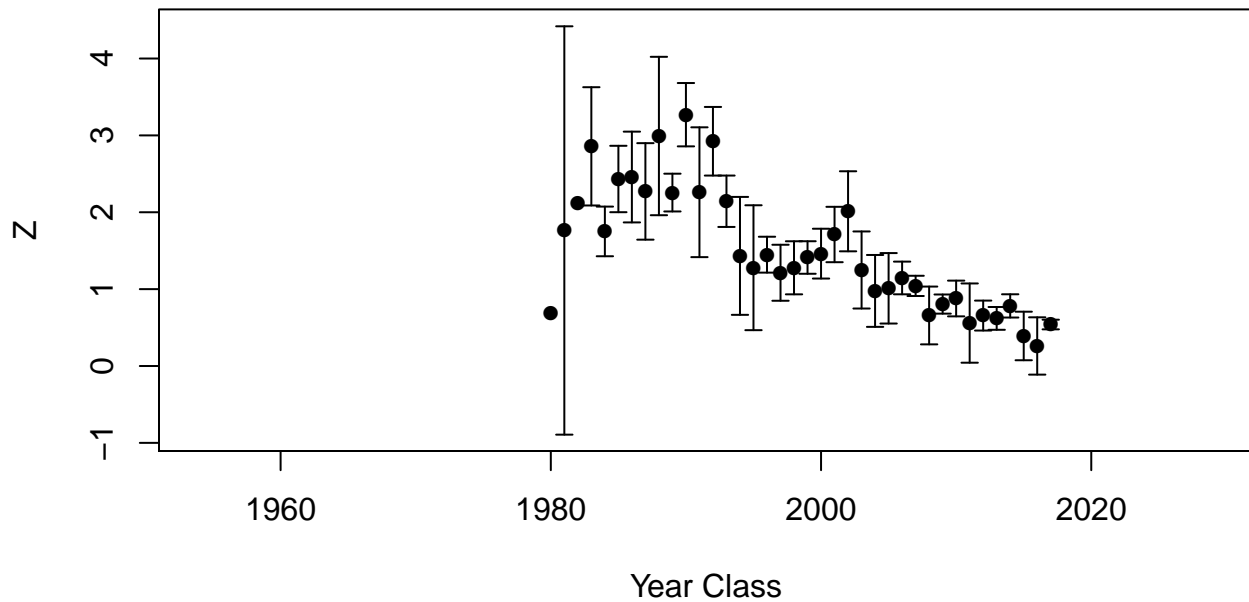
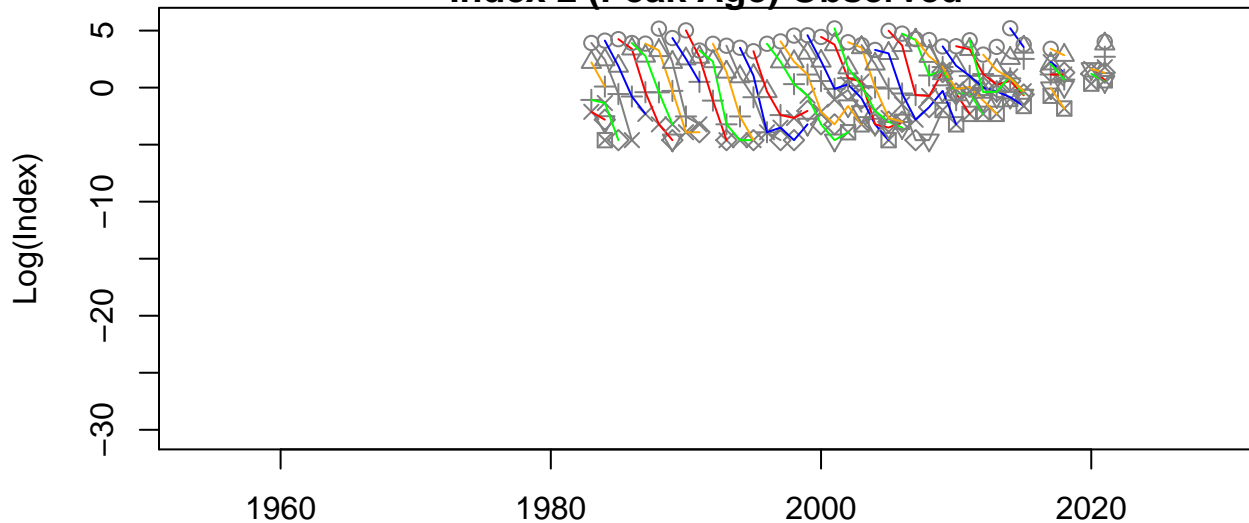
Index 1 (Peak Age) Observed



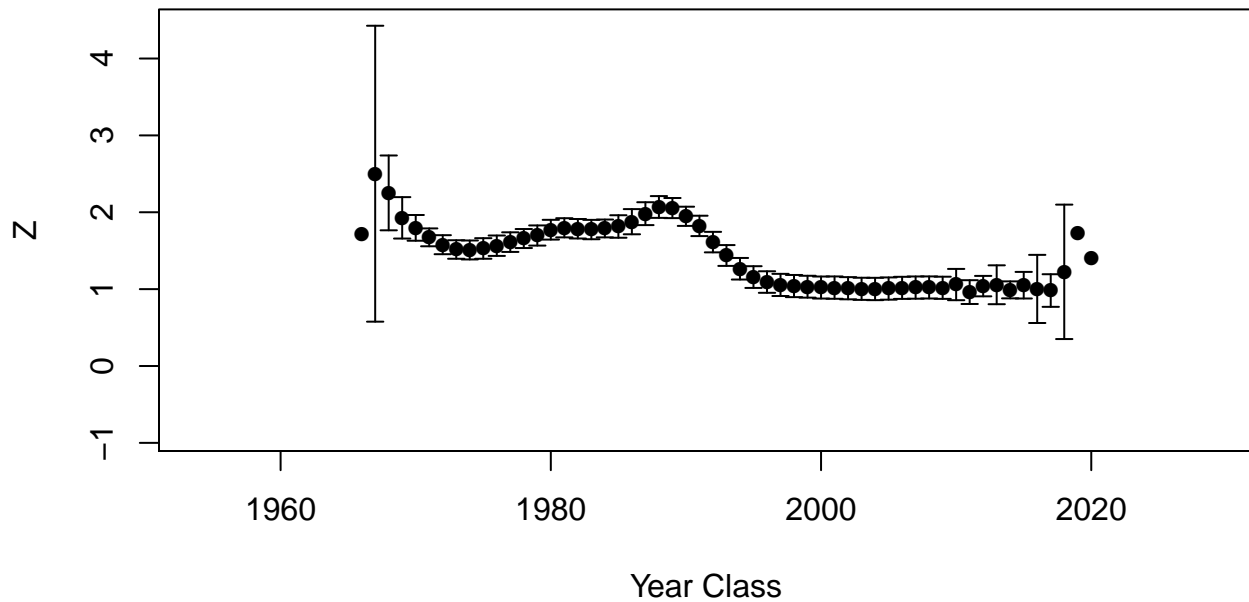
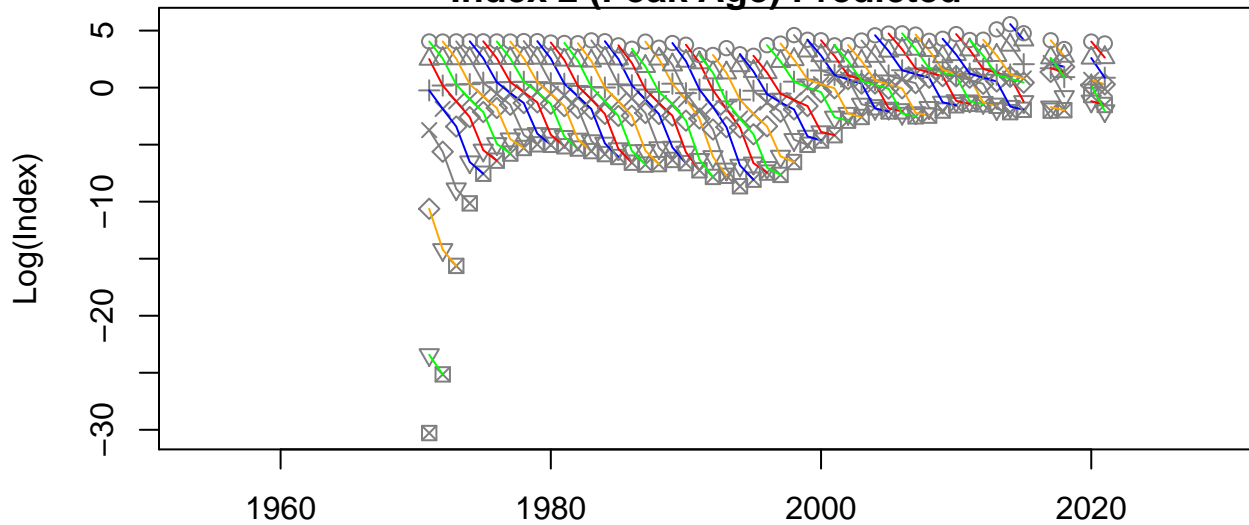
Index 1 (Peak Age) Predicted



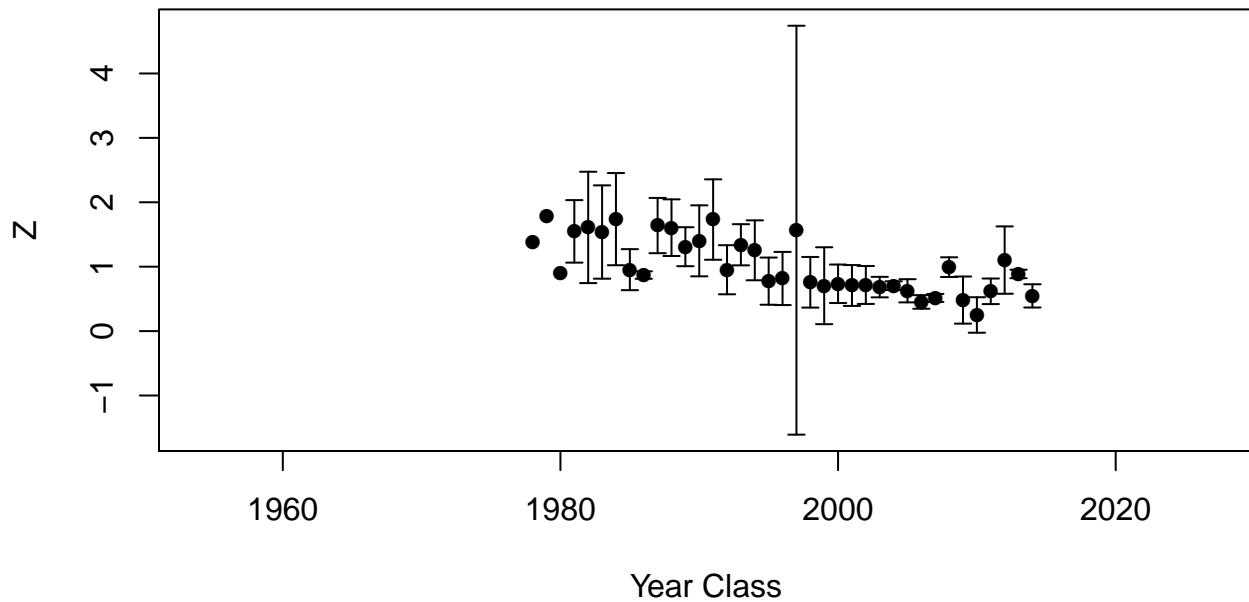
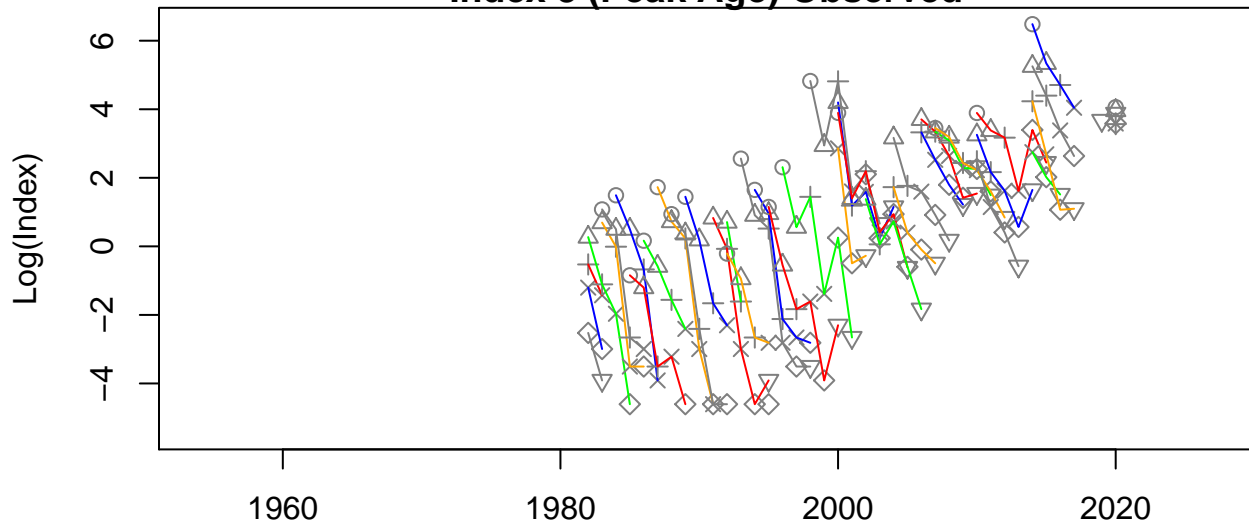
Index 2 (Peak Age) Observed



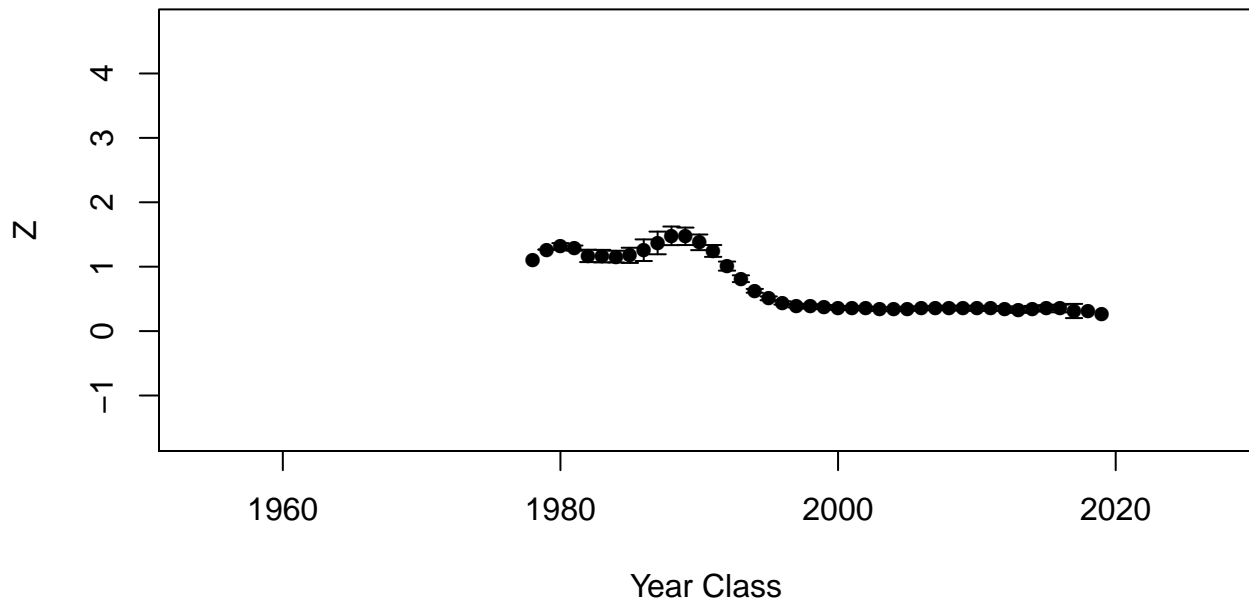
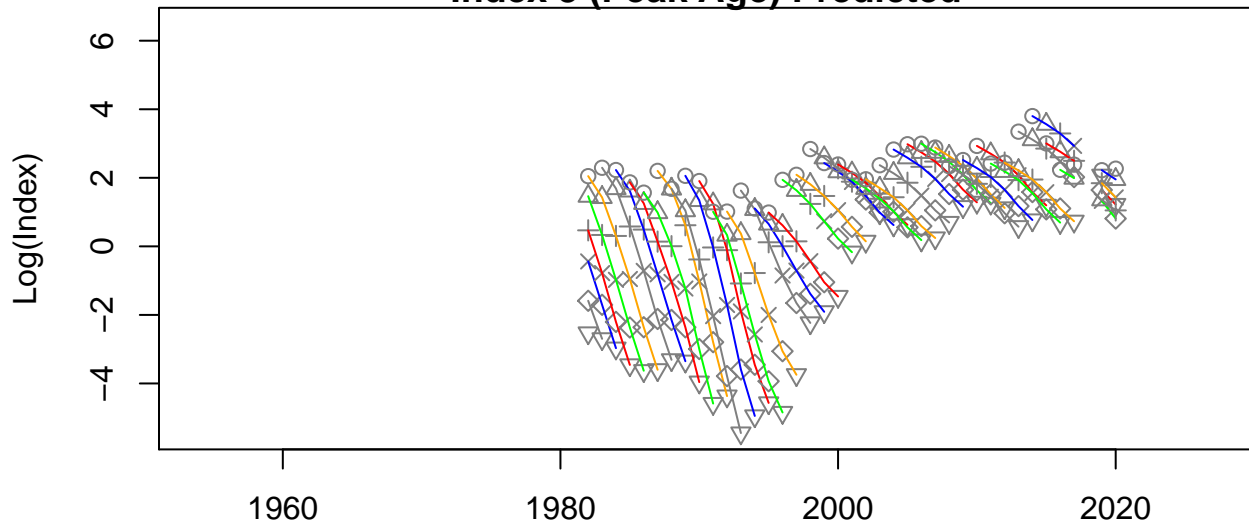
Index 2 (Peak Age) Predicted



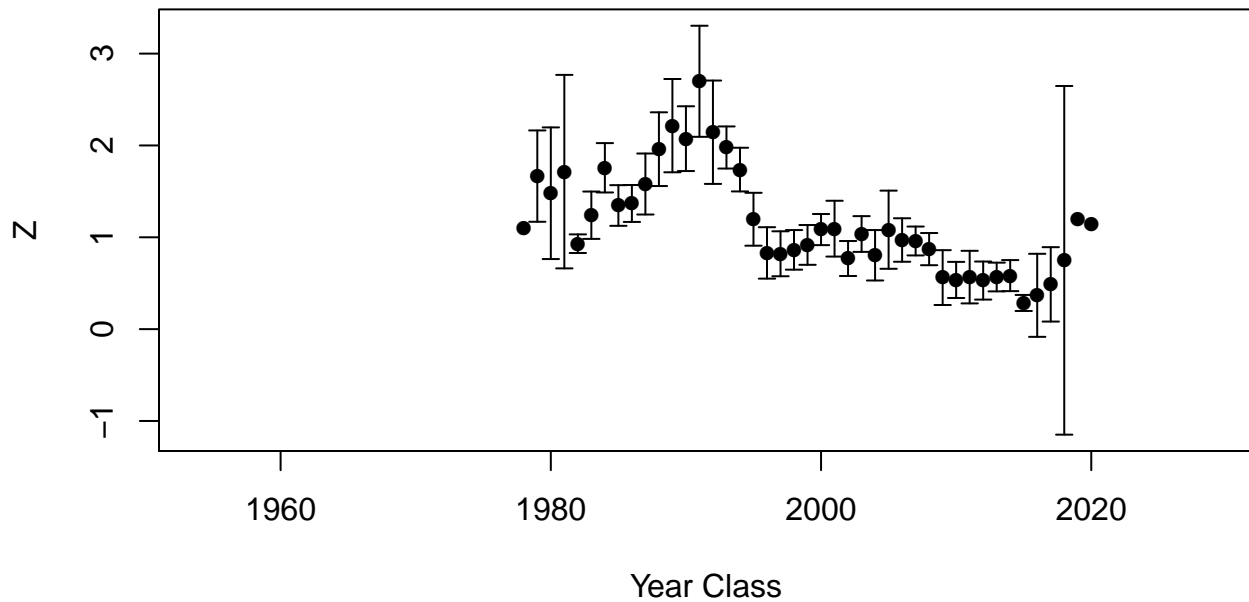
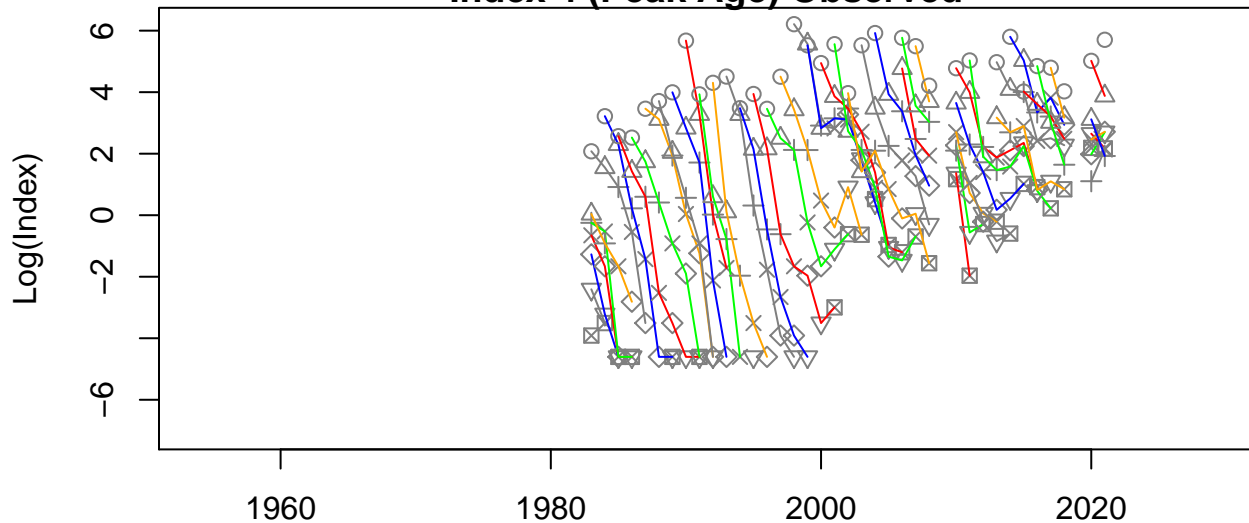
Index 3 (Peak Age) Observed



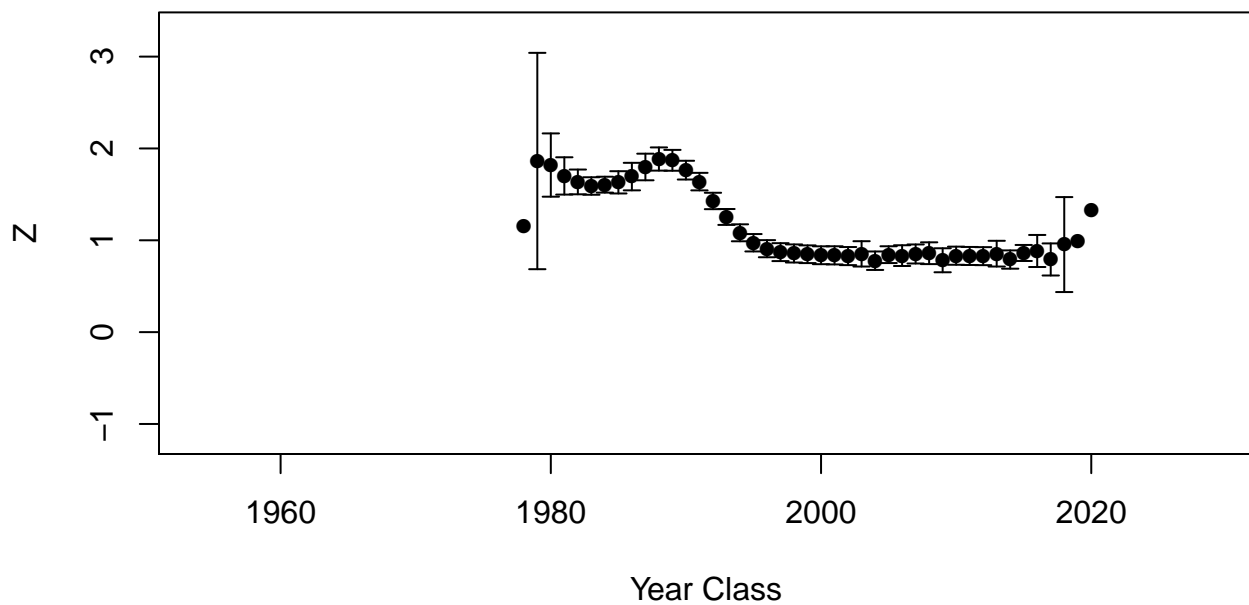
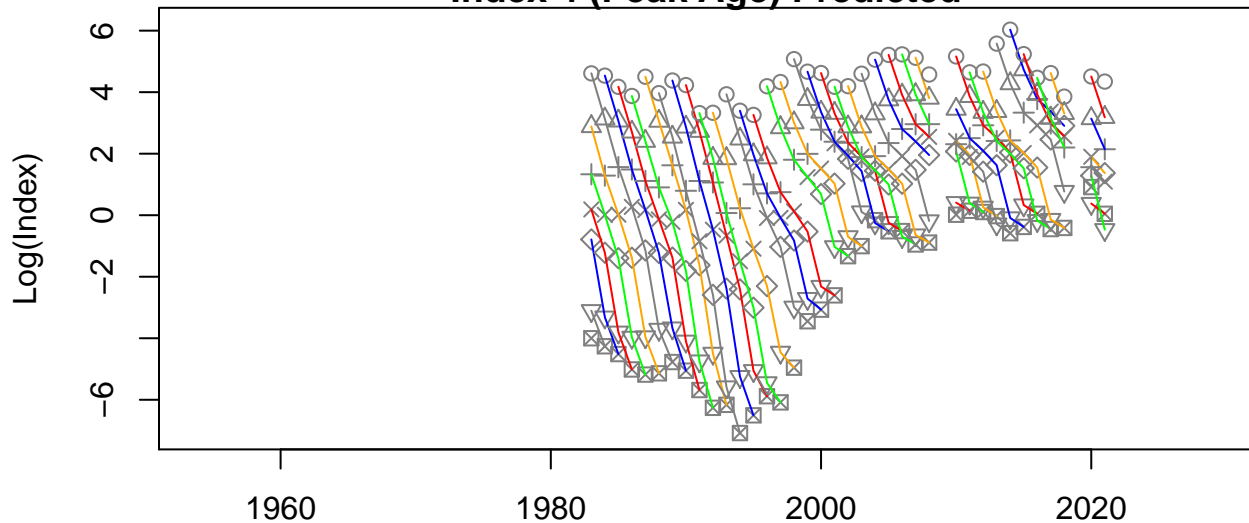
Index 3 (Peak Age) Predicted



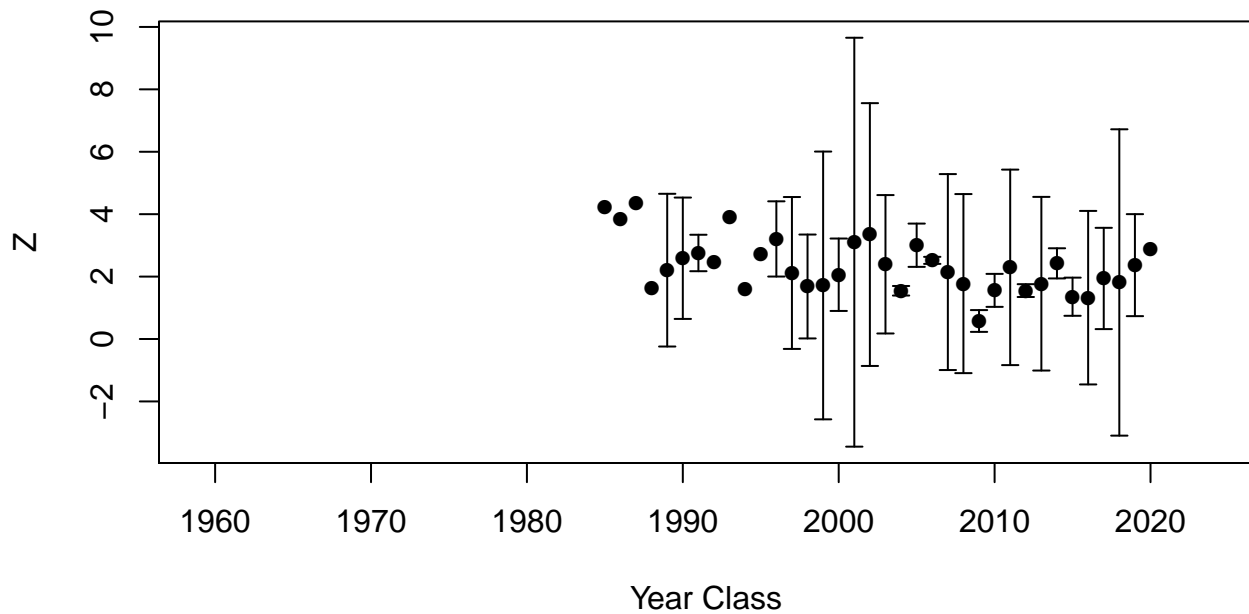
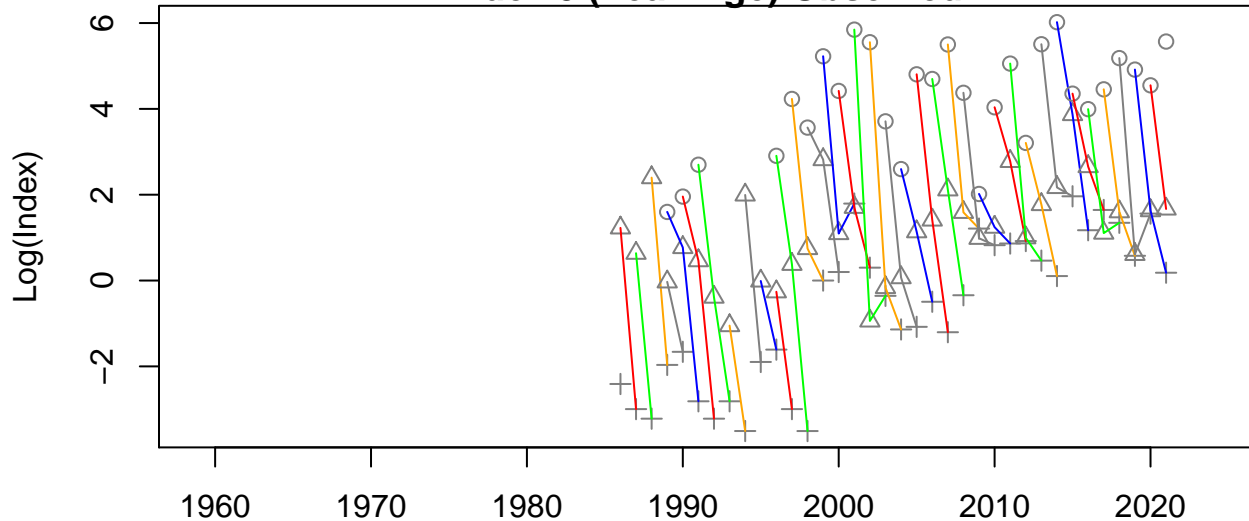
Index 4 (Peak Age) Observed



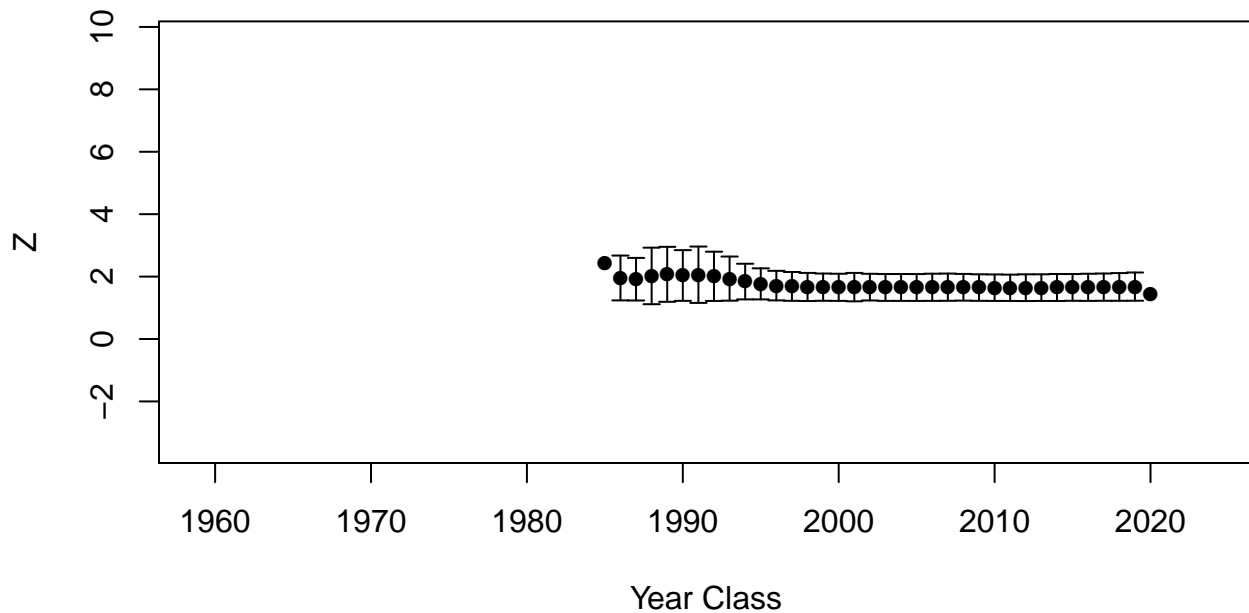
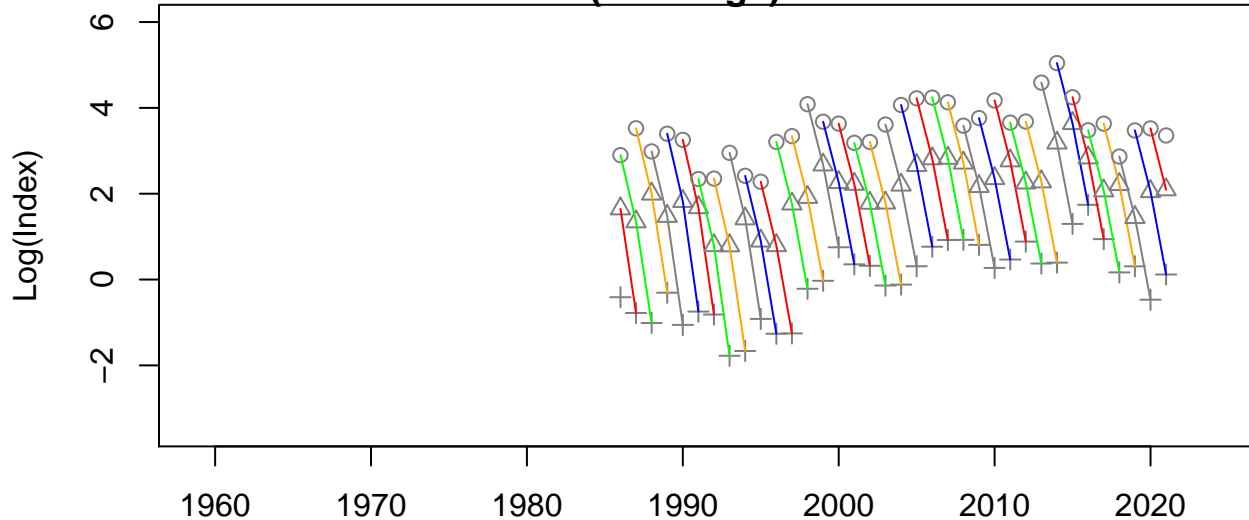
Index 4 (Peak Age) Predicted



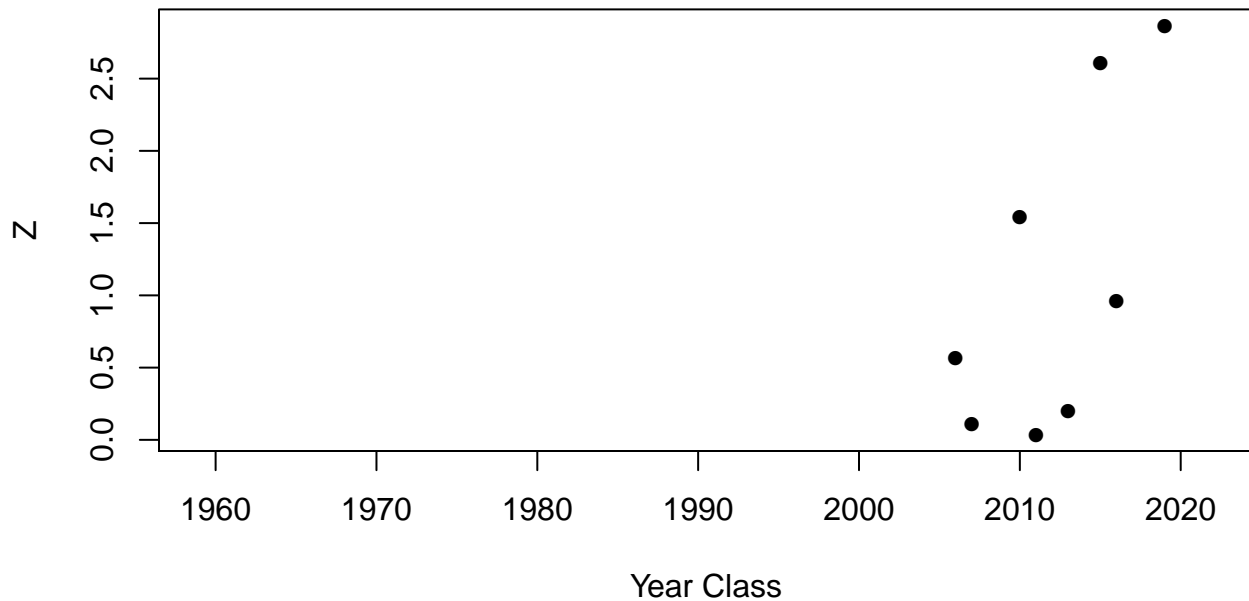
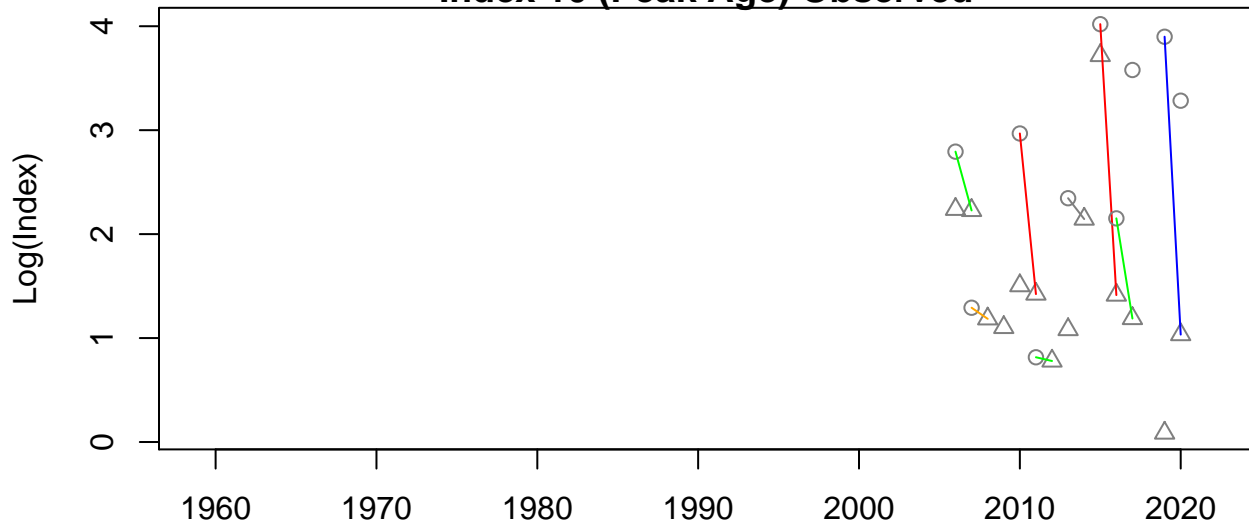
Index 5 (Peak Age) Observed



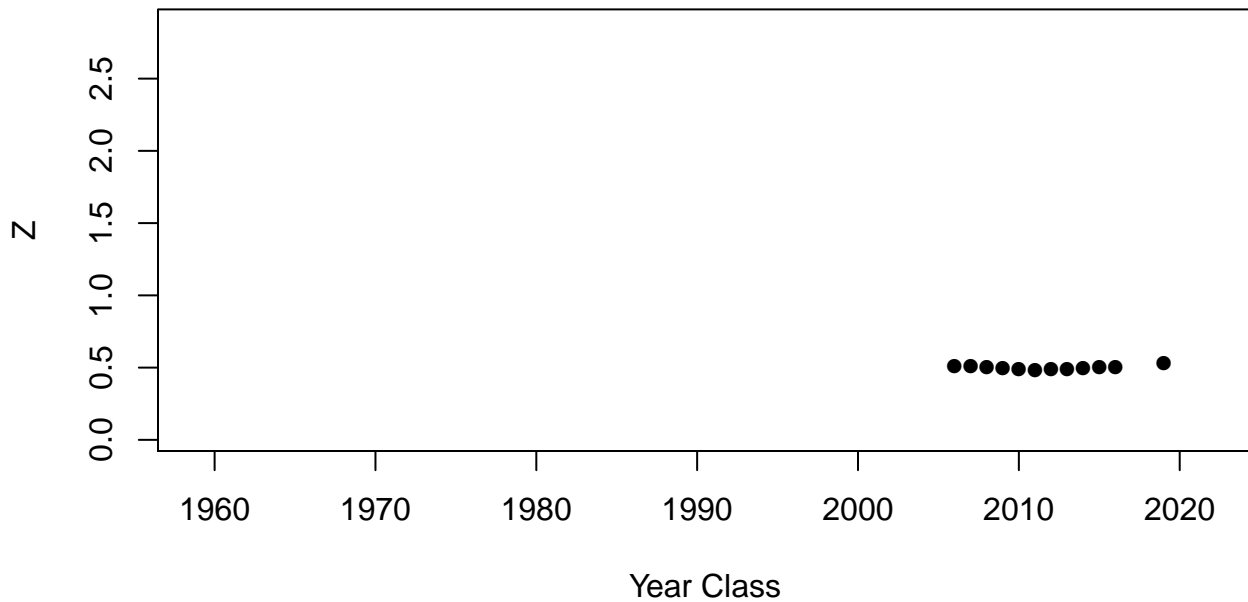
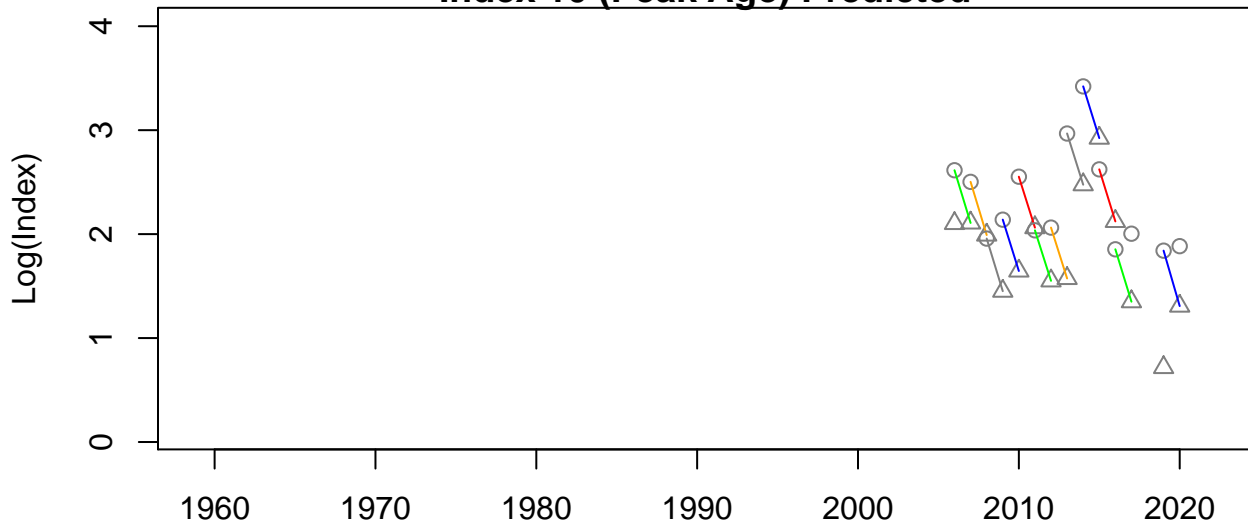
Index 5 (Peak Age) Predicted



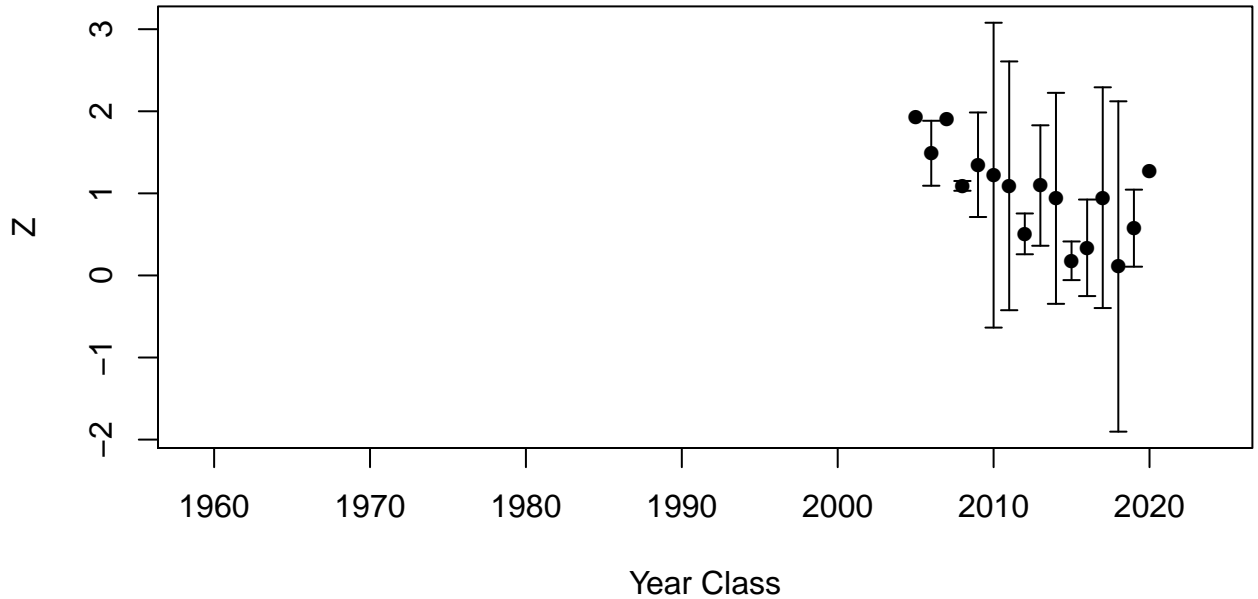
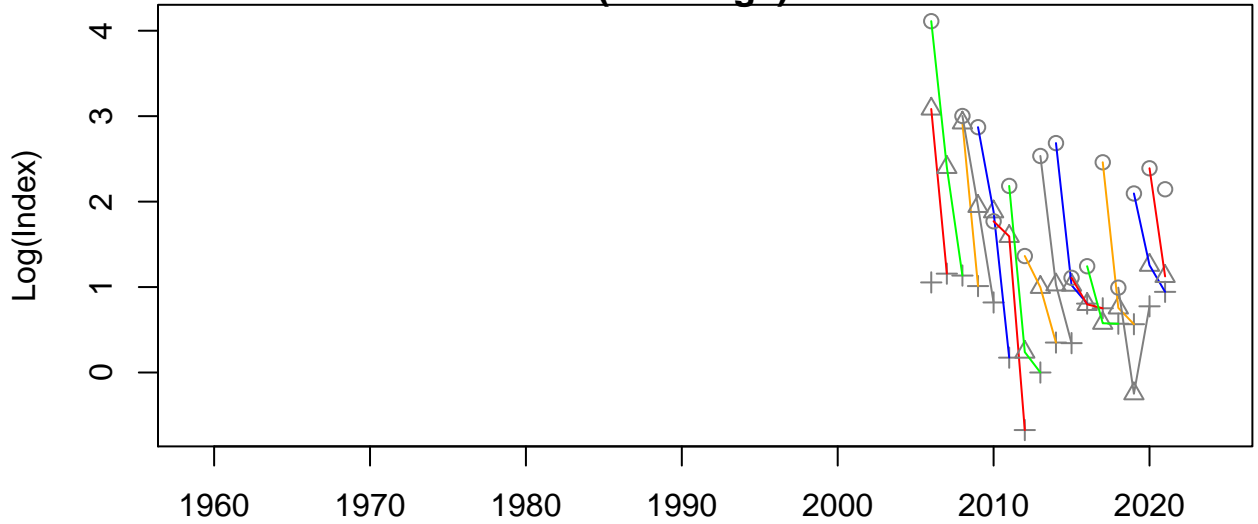
Index 10 (Peak Age) Observed



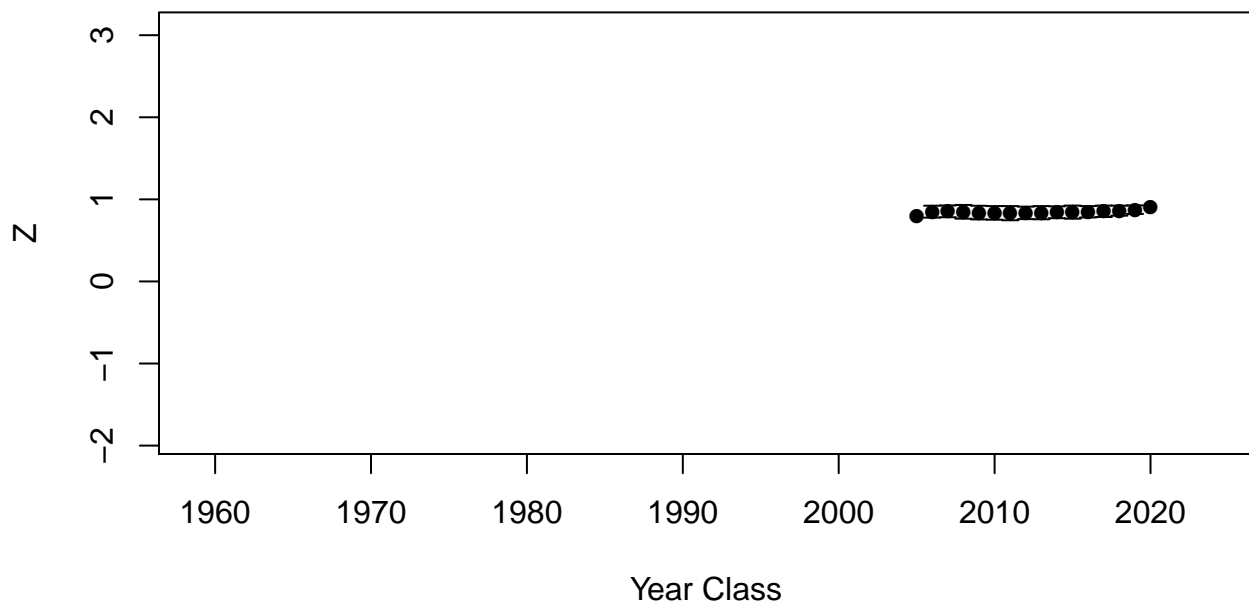
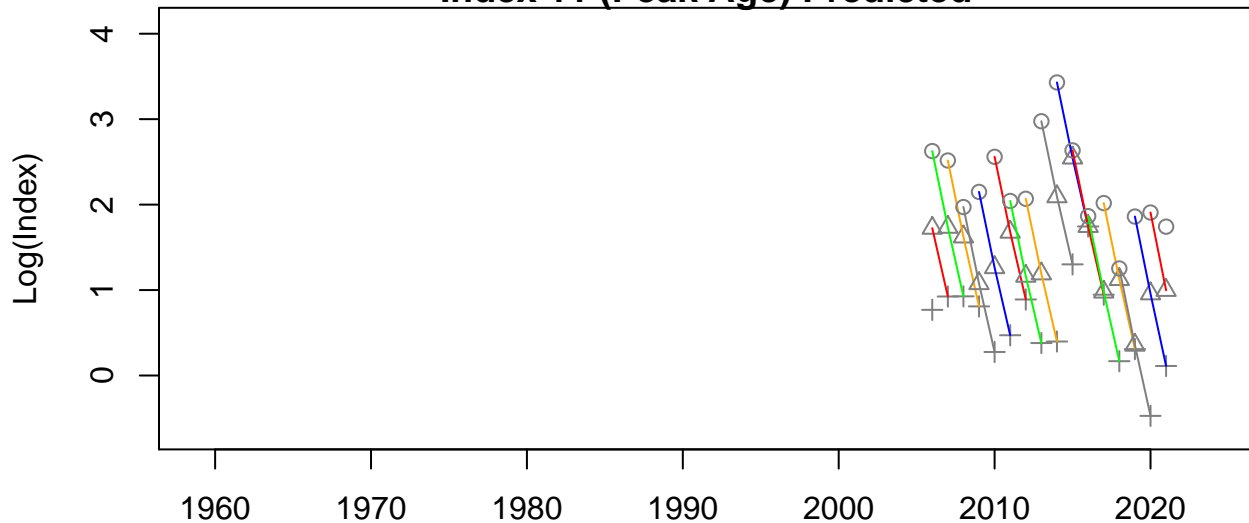
Index 10 (Peak Age) Predicted



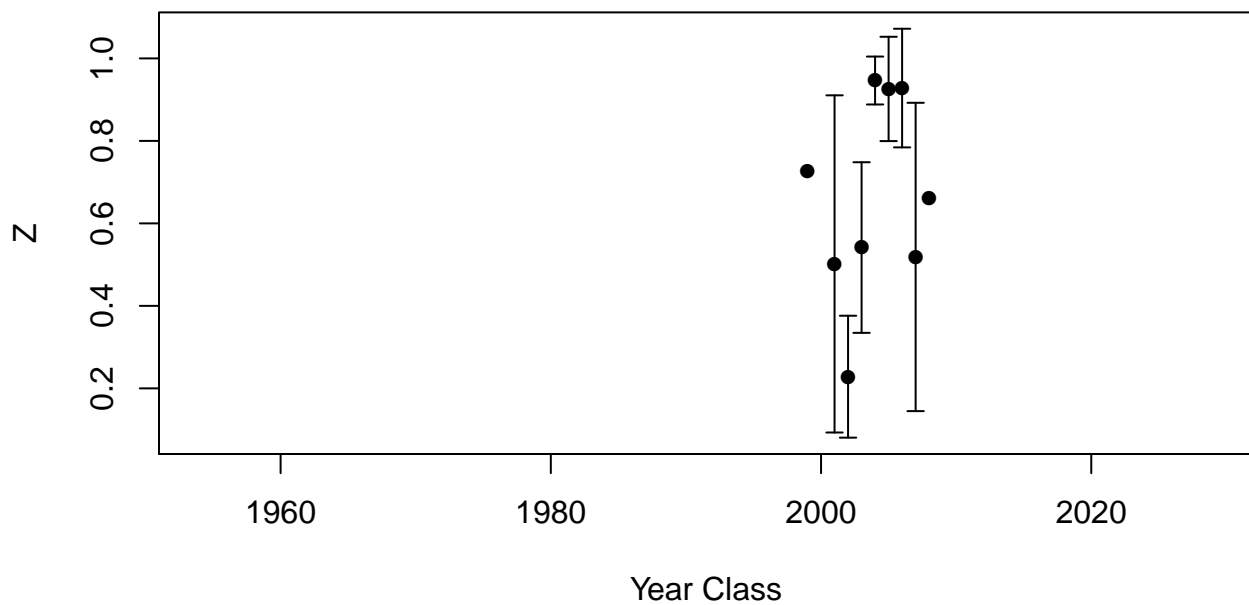
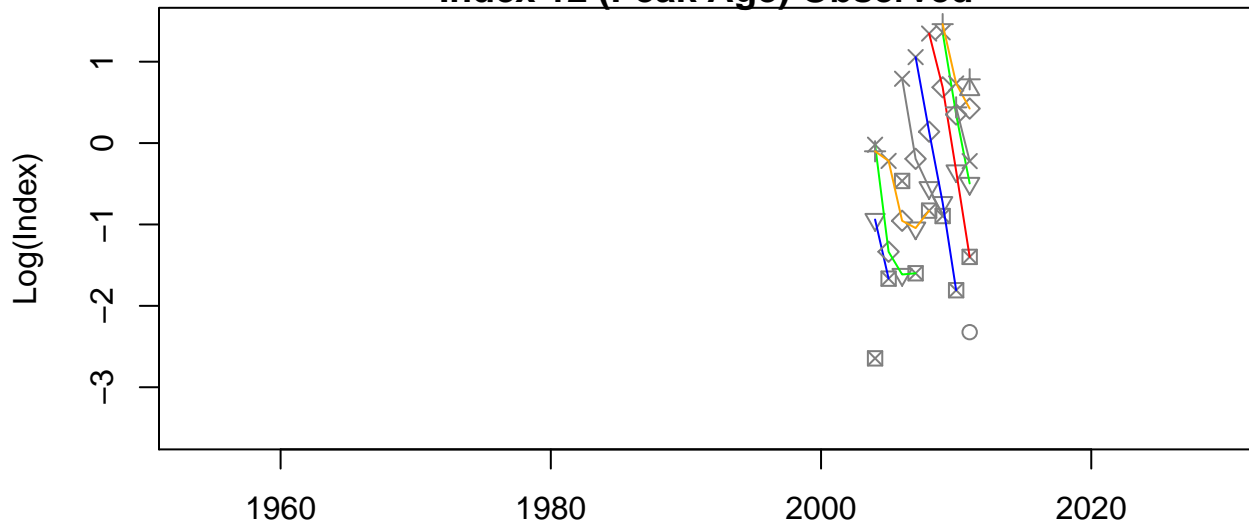
Index 11 (Peak Age) Observed



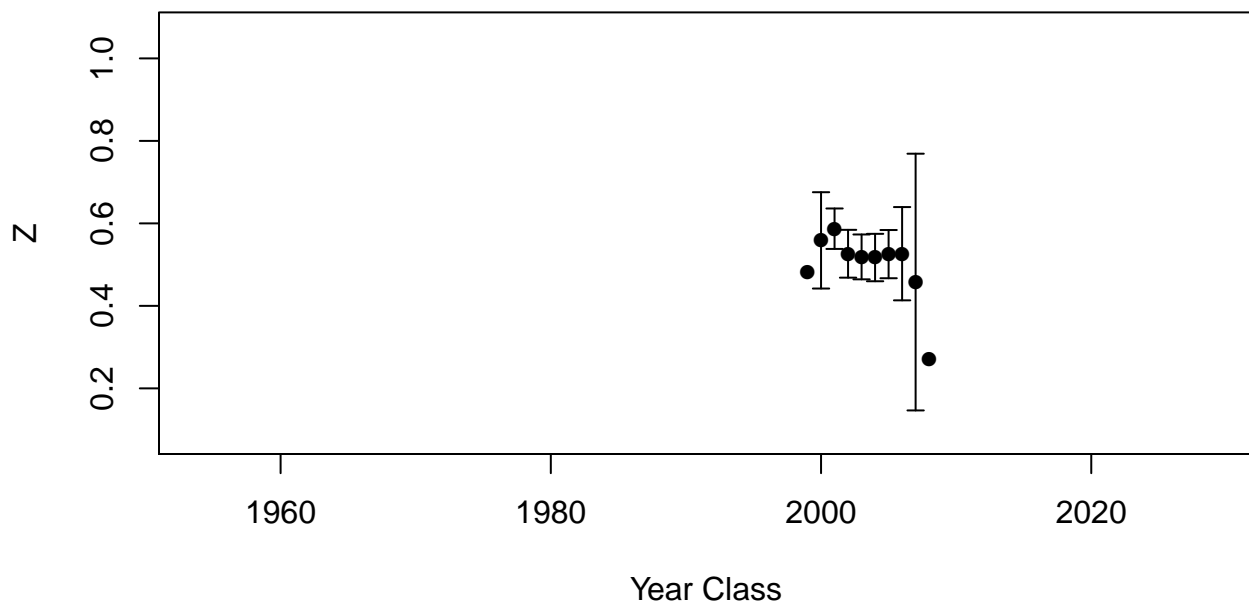
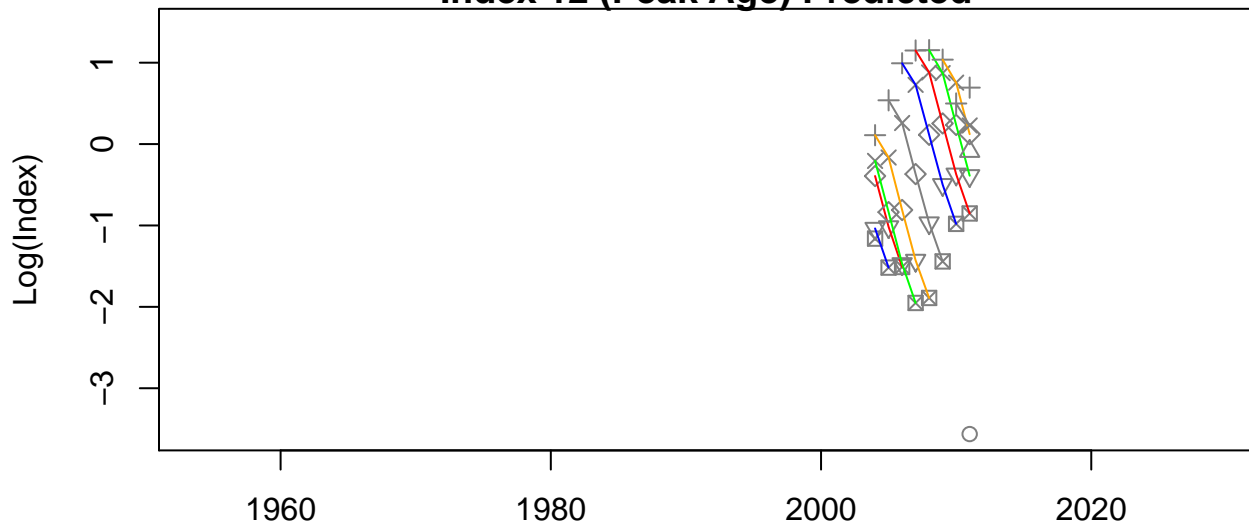
Index 11 (Peak Age) Predicted



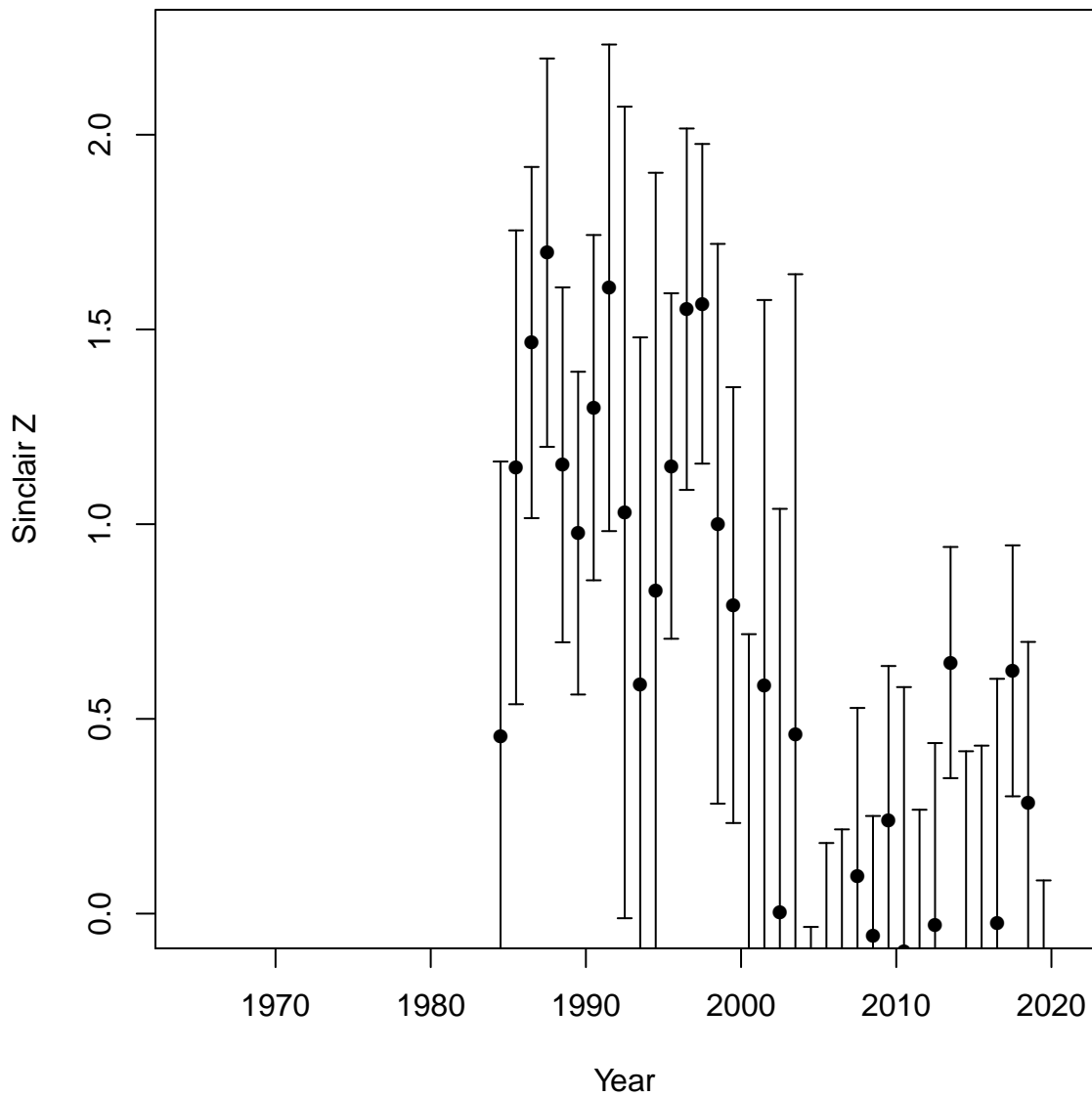
Index 12 (Peak Age) Observed



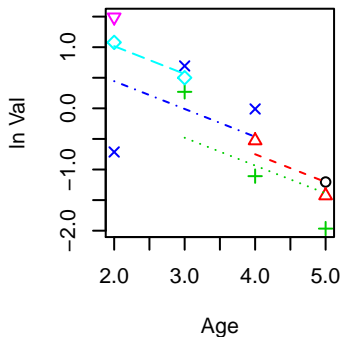
Index 12 (Peak Age) Predicted



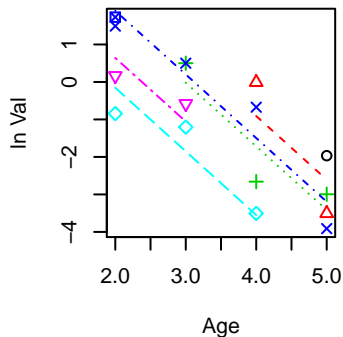
CTSPR



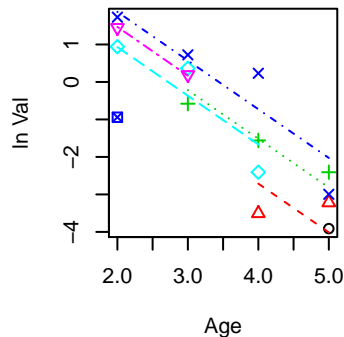
Years 1984 to 1986
Z = 0.454



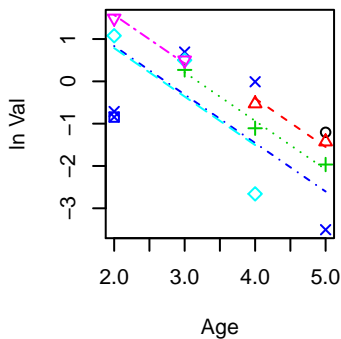
Years 1986 to 1989
Z = 1.697



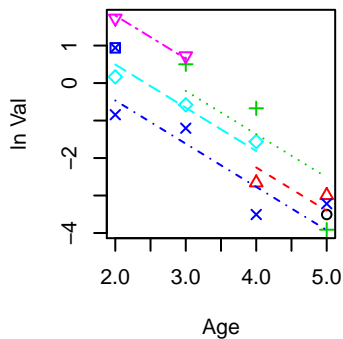
Years 1989 to 1992
Z = 1.299



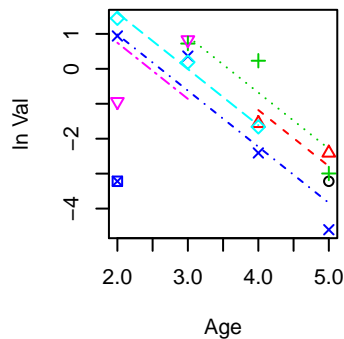
Years 1984 to 1987
Z = 1.146



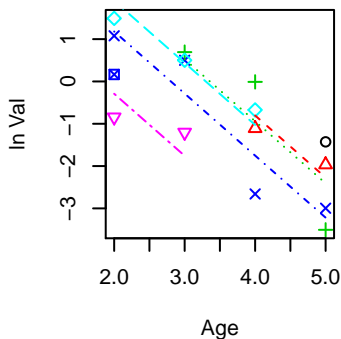
Years 1987 to 1990
Z = 1.152



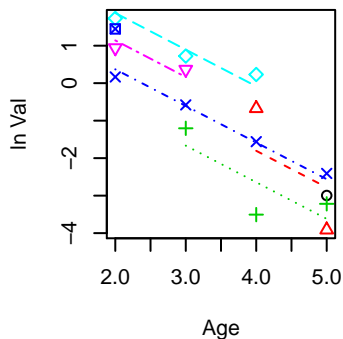
Years 1990 to 1993
Z = 1.607



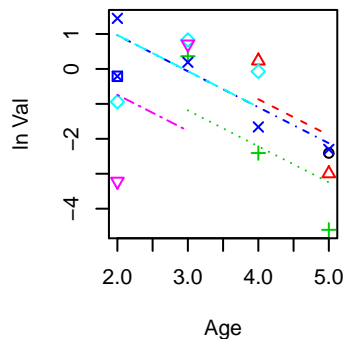
Years 1985 to 1988
Z = 1.466



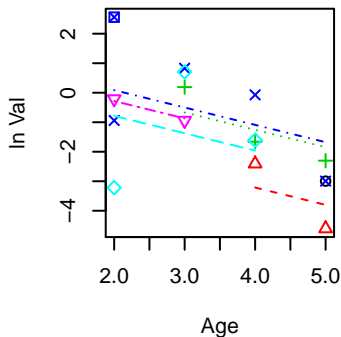
Years 1988 to 1991
Z = 0.977



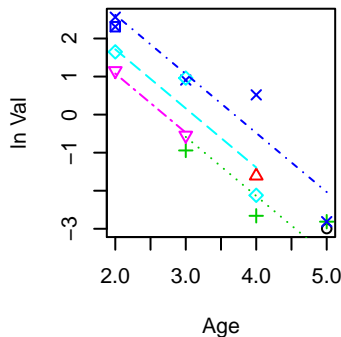
Years 1991 to 1994
Z = 1.03



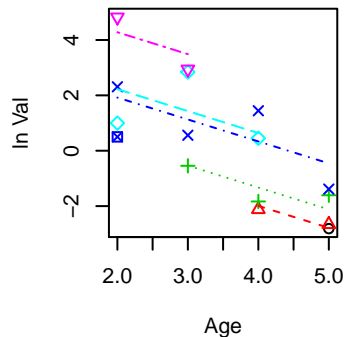
Years 1992 to 1995
Z = 0.588



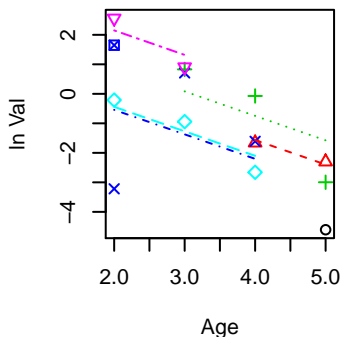
Years 1995 to 1998
Z = 1.552



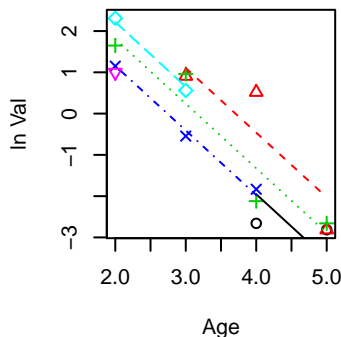
Years 1998 to 2001
Z = 0.792



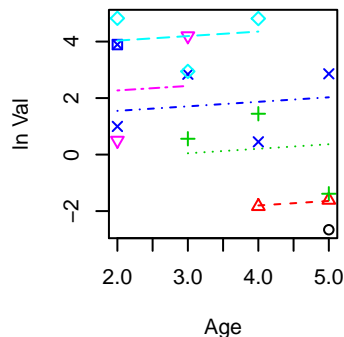
Years 1993 to 1996
Z = 0.83



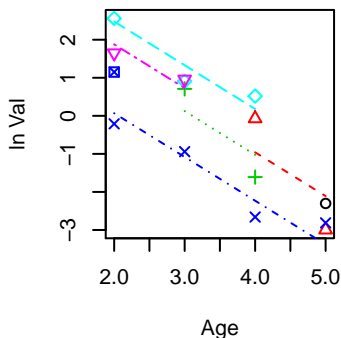
Years 1996 to 1999
Z = 1.566



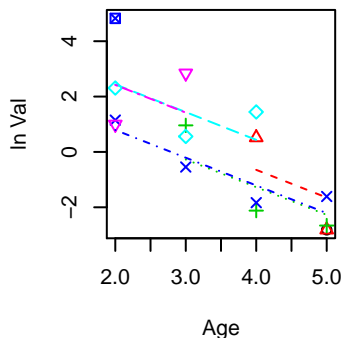
Years 1999 to 2002
Z = -0.16



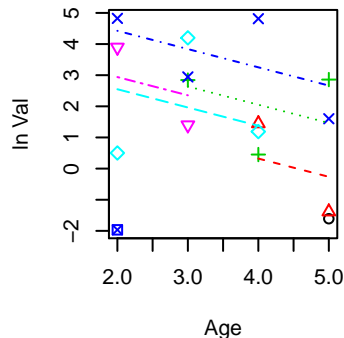
Years 1994 to 1997
Z = 1.149



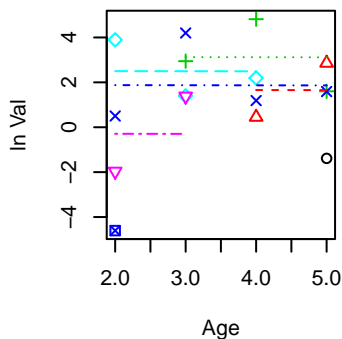
Years 1997 to 2000
Z = 1.001



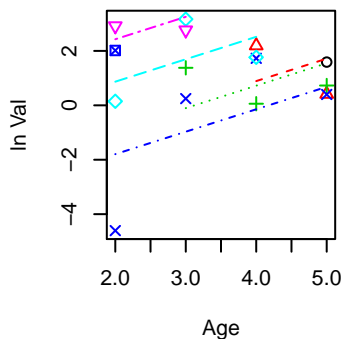
Years 2000 to 2003
Z = 0.586



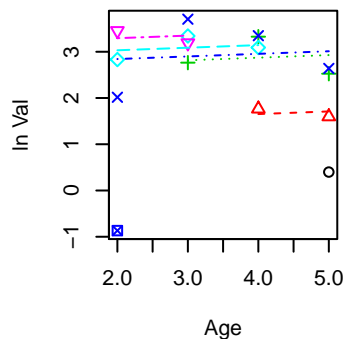
Years 2001 to 2004
Z = 0.004



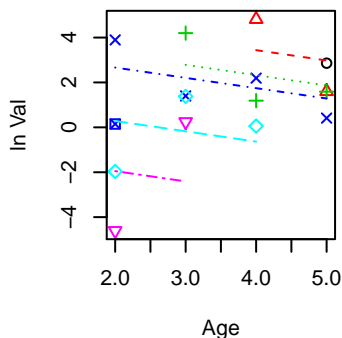
Years 2004 to 2007
Z = -0.824



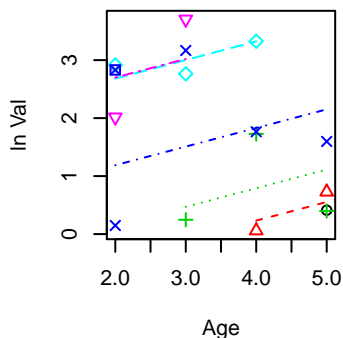
Years 2007 to 2010
Z = -0.056



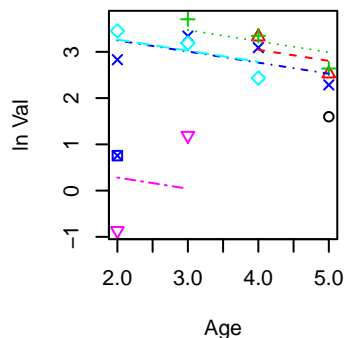
Years 2002 to 2005
Z = 0.459



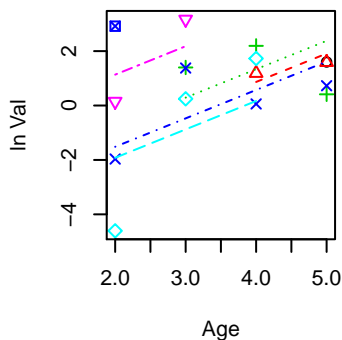
Years 2005 to 2008
Z = -0.321



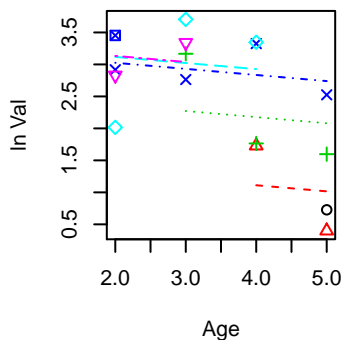
Years 2008 to 2011
Z = 0.24



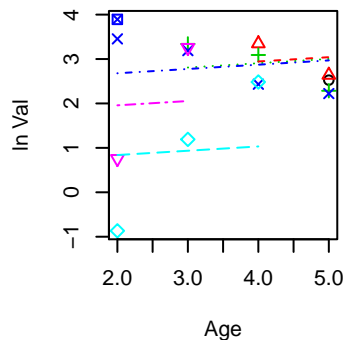
Years 2003 to 2006
Z = -1.044



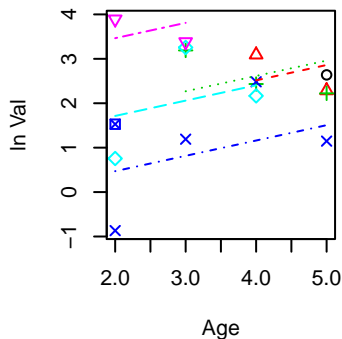
Years 2006 to 2009
Z = 0.096



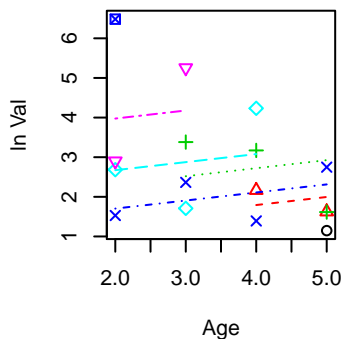
Years 2009 to 2012
Z = -0.097



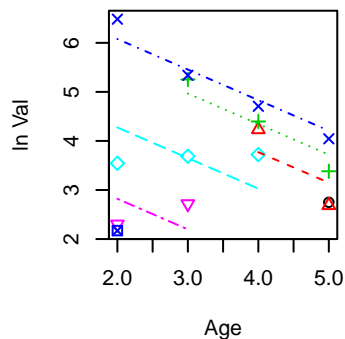
Years 2010 to 2013
Z = -0.345



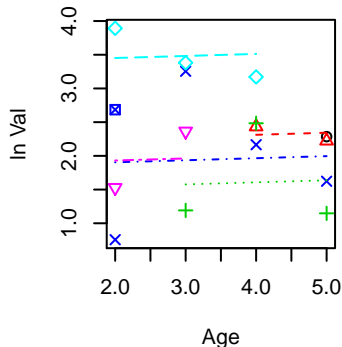
Years 2013 to 2016
Z = -0.203



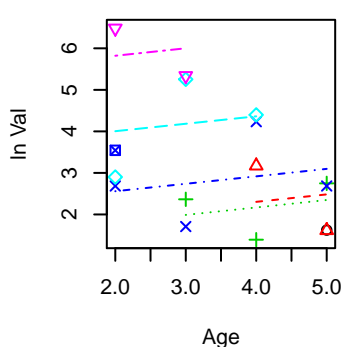
Years 2016 to 2019
Z = 0.623



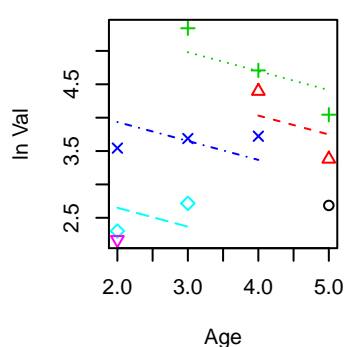
Years 2011 to 2014
Z = -0.03



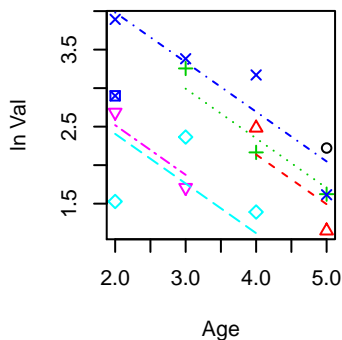
Years 2014 to 2017
Z = -0.179



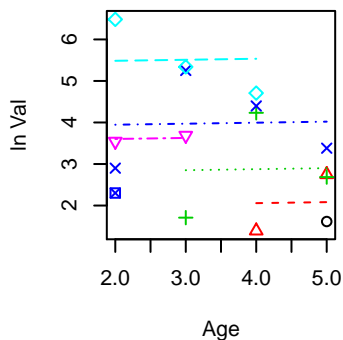
Years 2017 to 2019
Z = 0.283



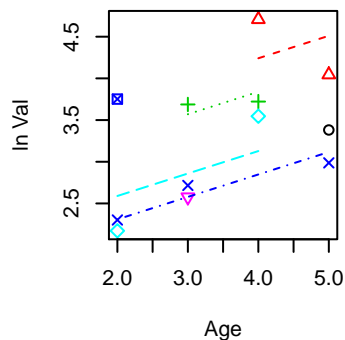
Years 2012 to 2015
Z = 0.645



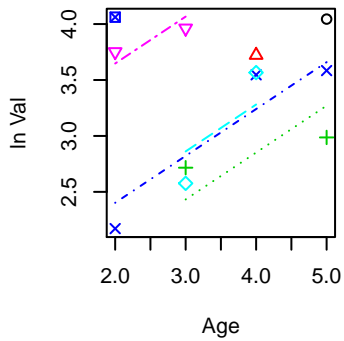
Years 2015 to 2018
Z = -0.025



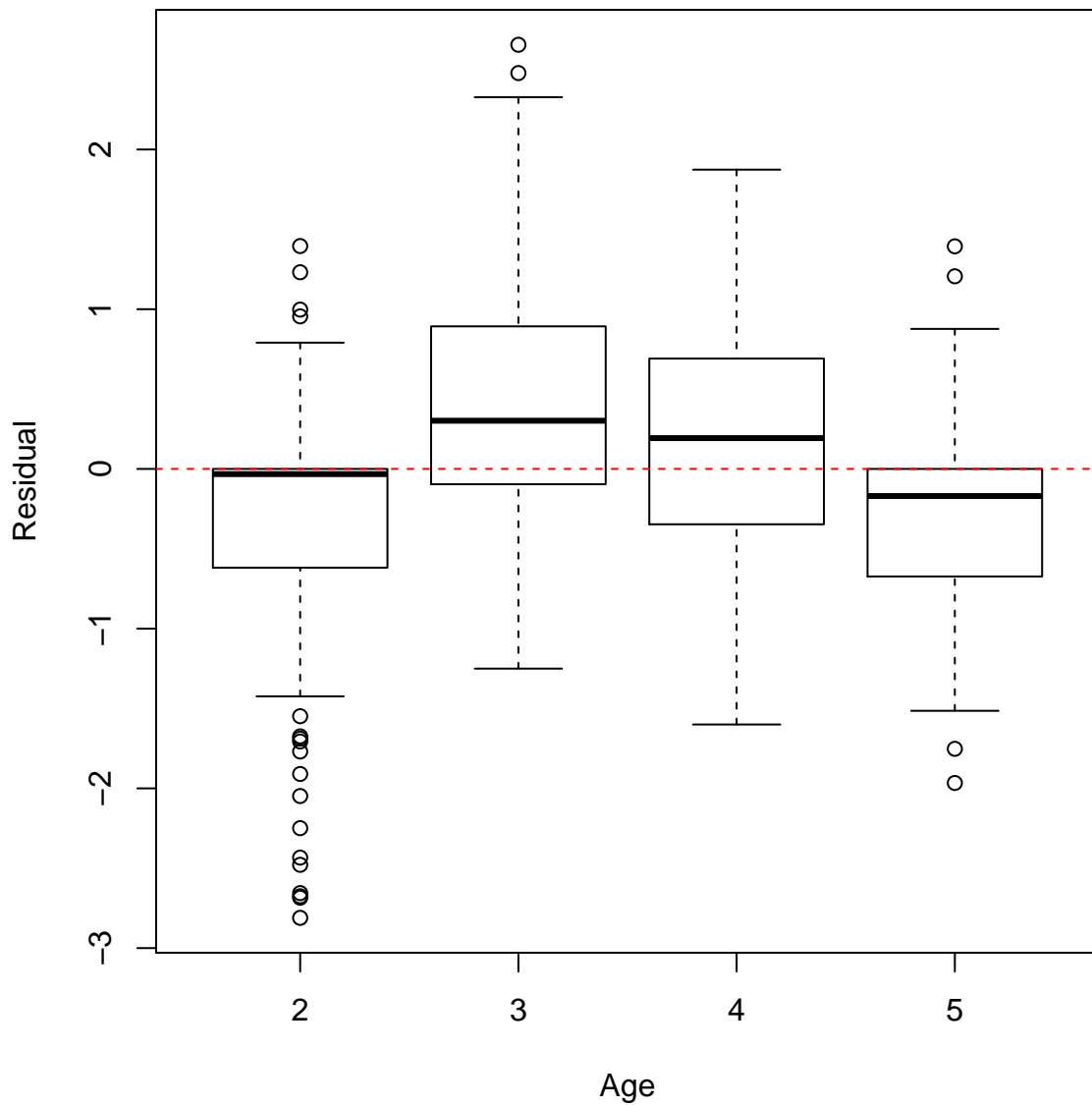
Years 2018 to 2021
Z = -0.269



Years 2019 to 2022
 $Z = -0.419$

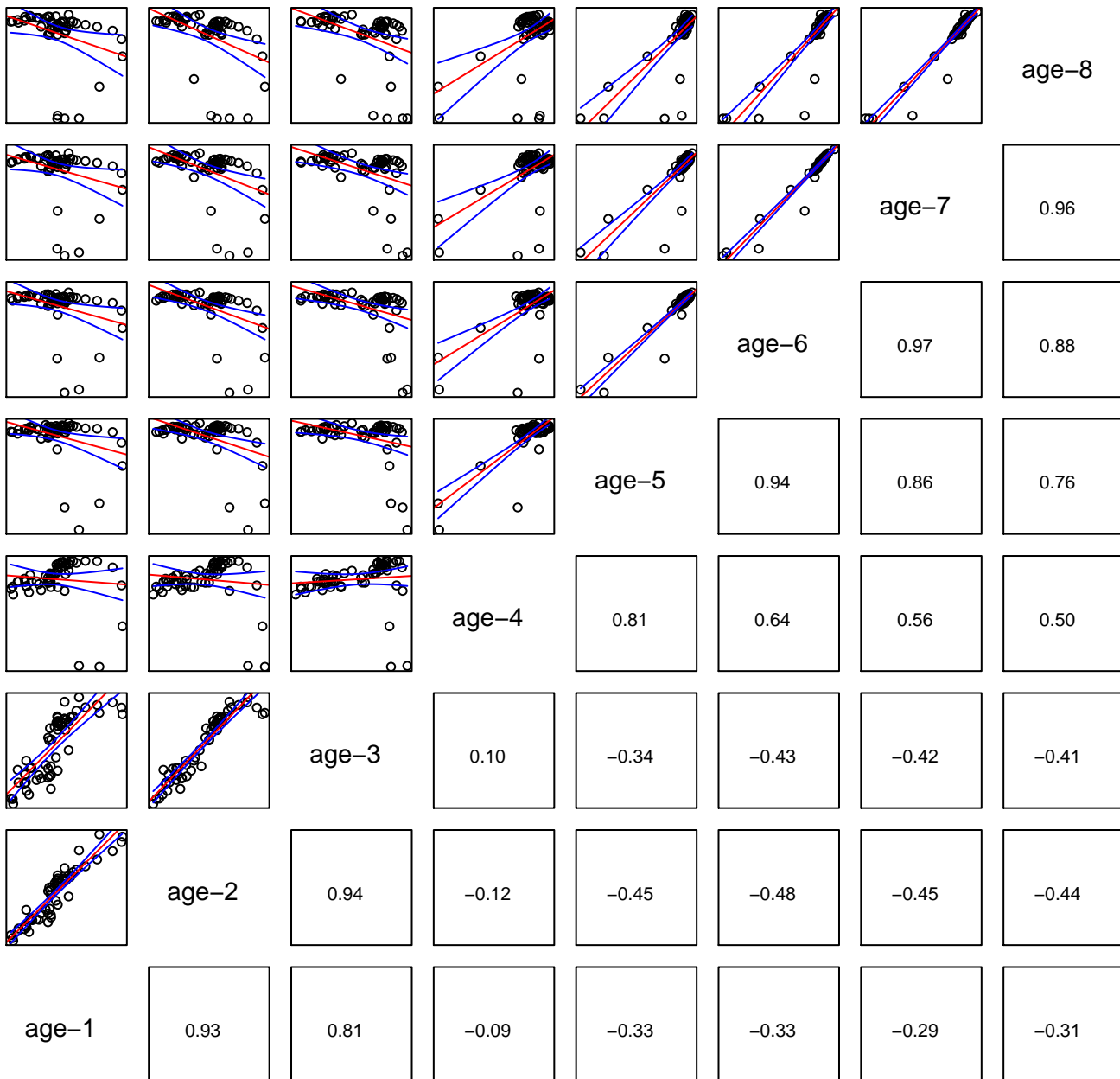


CTSPR

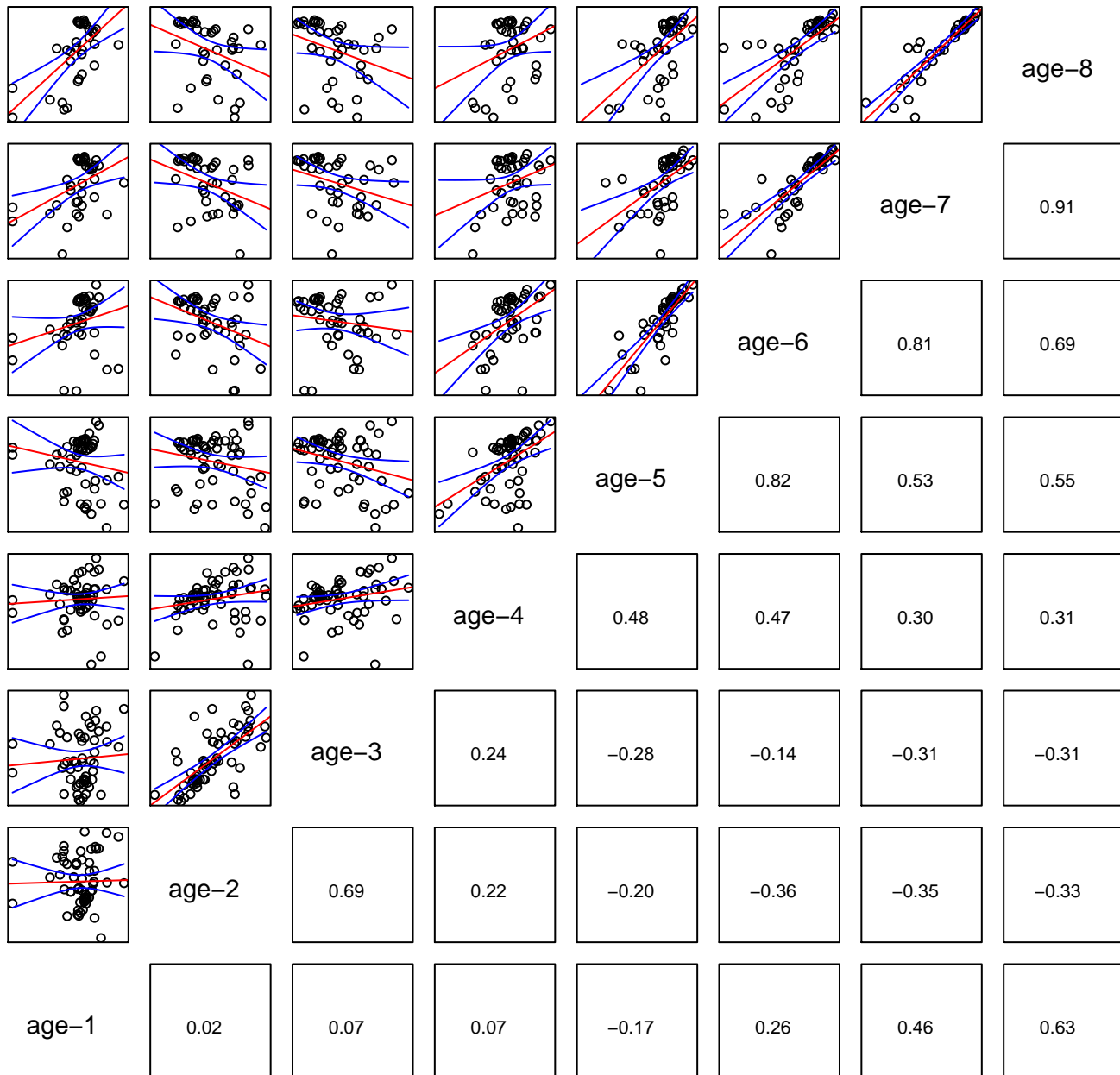


	age-1	age-2	age-3	age-4	age-5	age-6	age-7	age-8
age-1		0.54	-0.75	-0.51	0.26	0.50	0.64	-0.02
age-2			0.56	0.20	-0.07	-0.13	0.07	-0.02
age-3				0.71	-0.09	-0.39	-0.41	-0.24
age-4					0.22	-0.23	-0.28	-0.28
age-5						0.63	0.59	0.39
age-6							0.87	0.86
age-7								0.85
age-8								

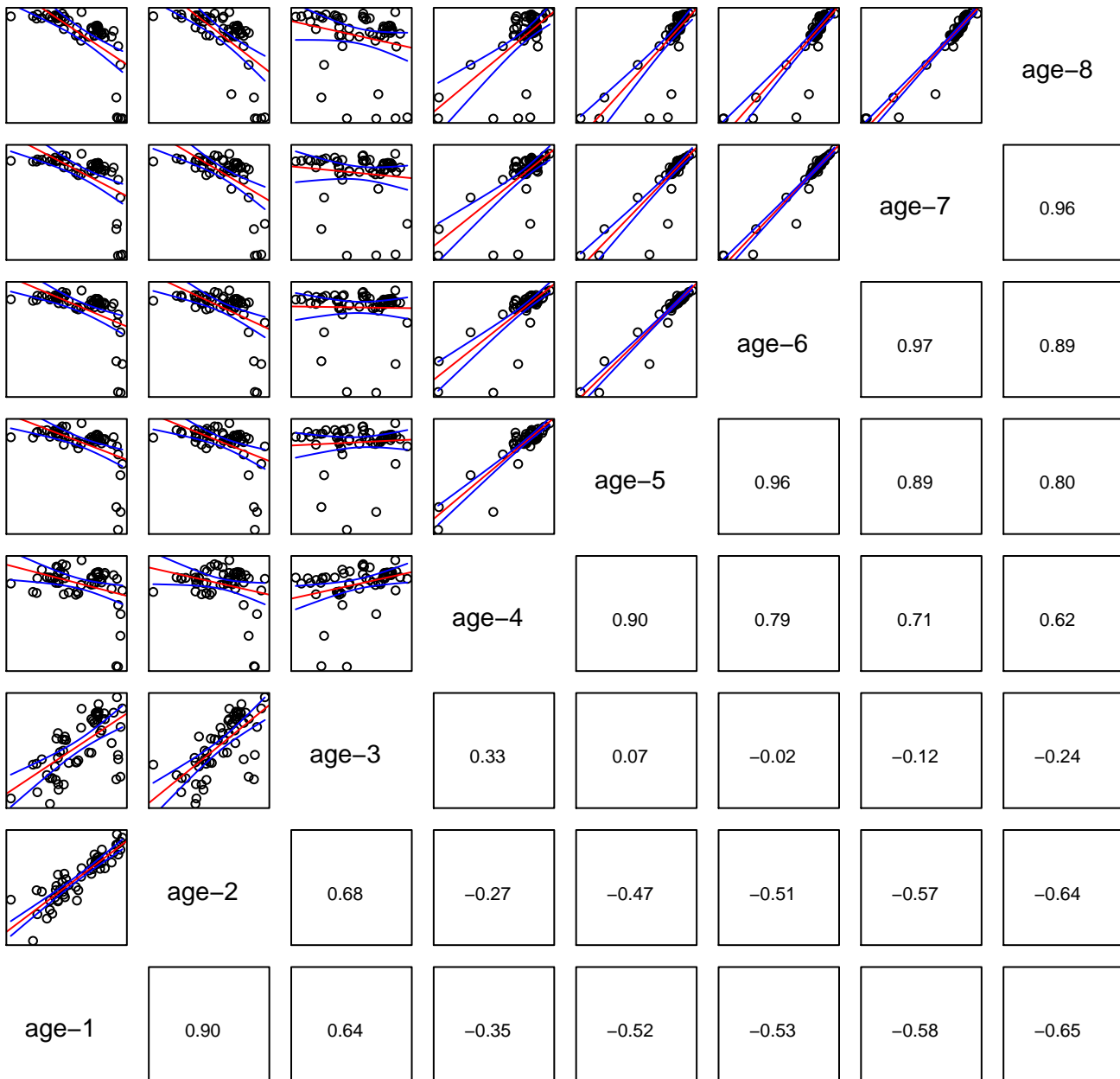
Catch for Fleet 1 (COMLAND) Predicted



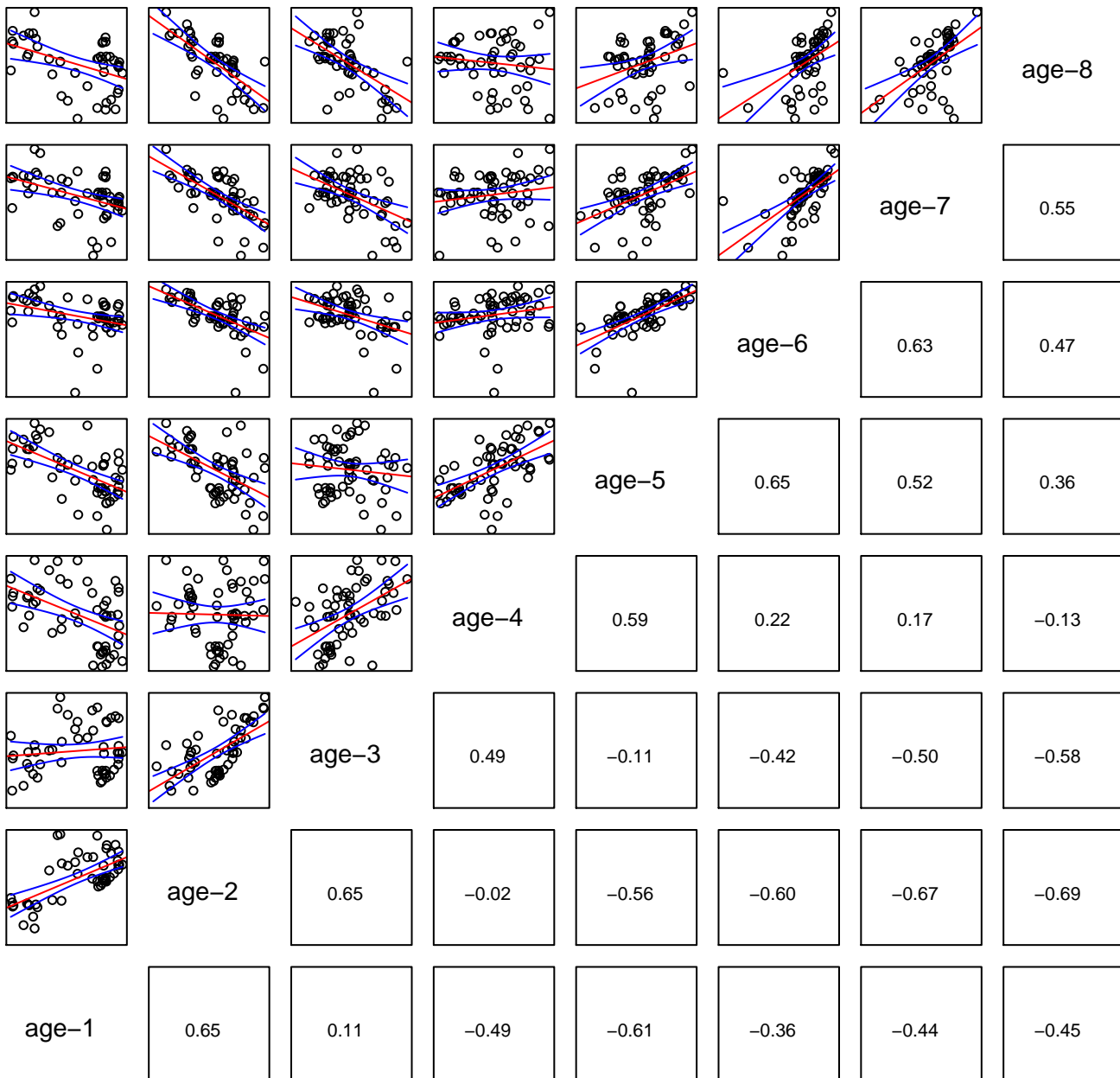
Catch for Fleet 2 (COMDISC) Observed



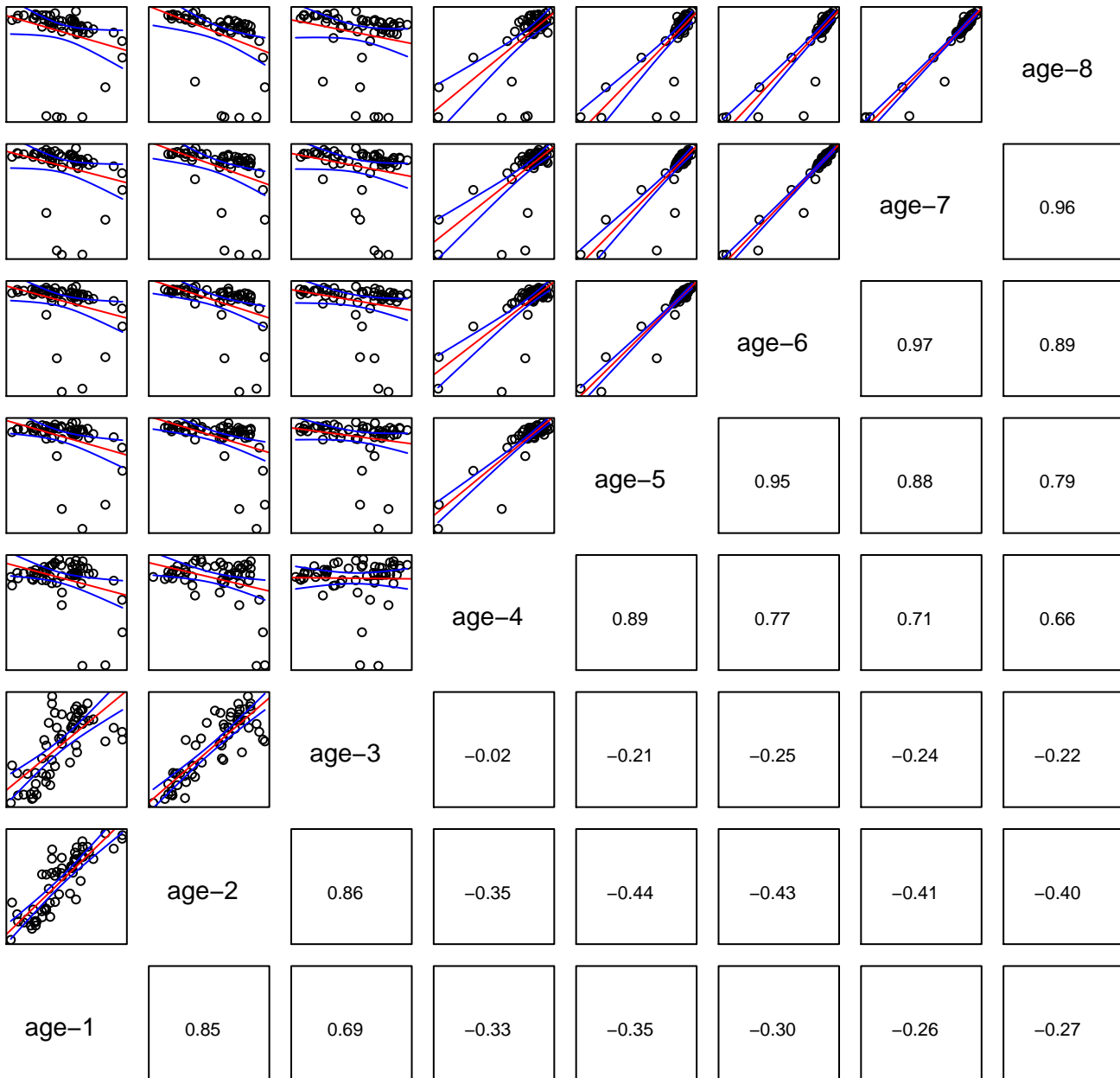
Catch for Fleet 2 (COMDISC) Predicted



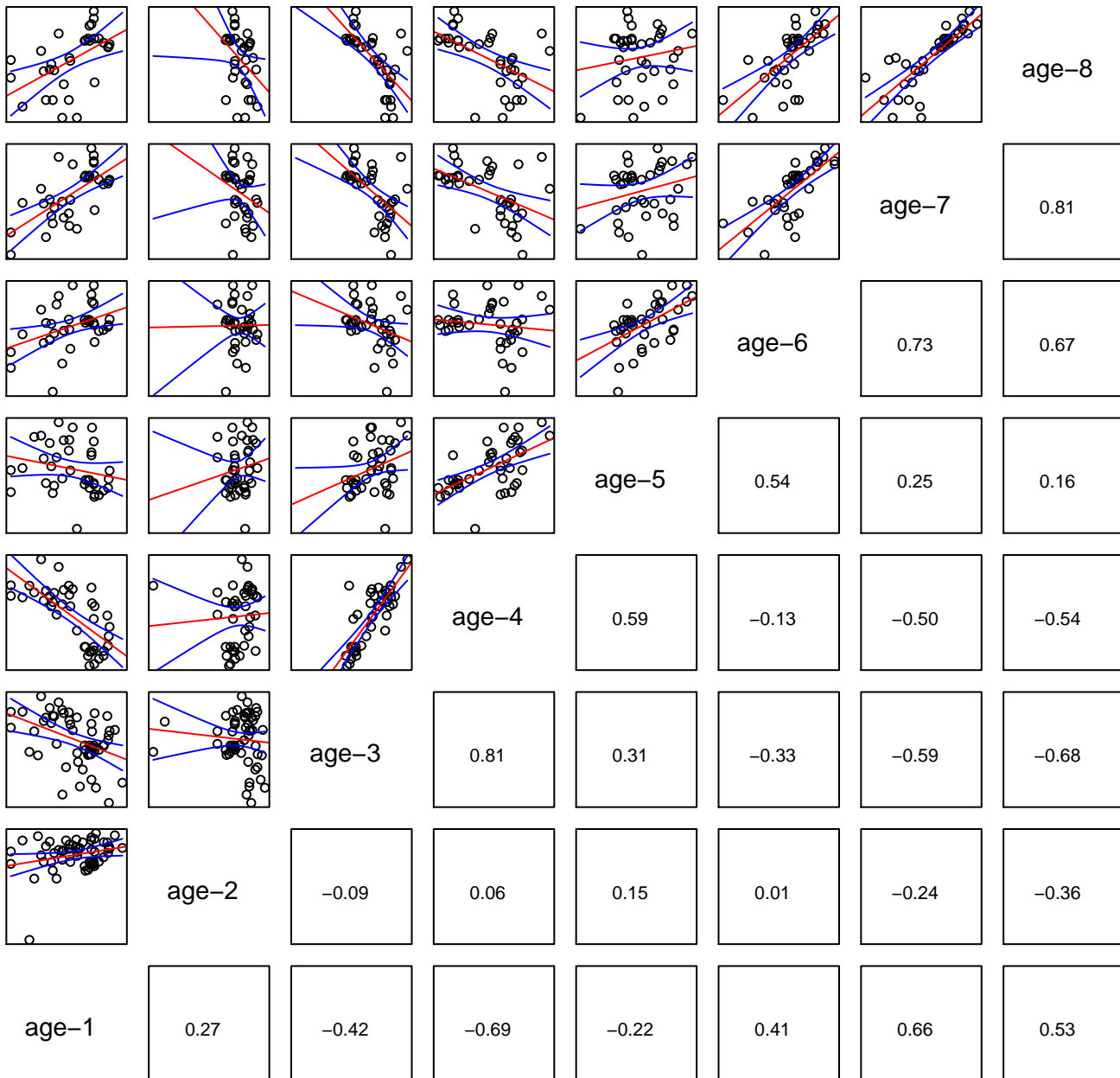
Catch for Fleet 3 (RECLAND) Observed



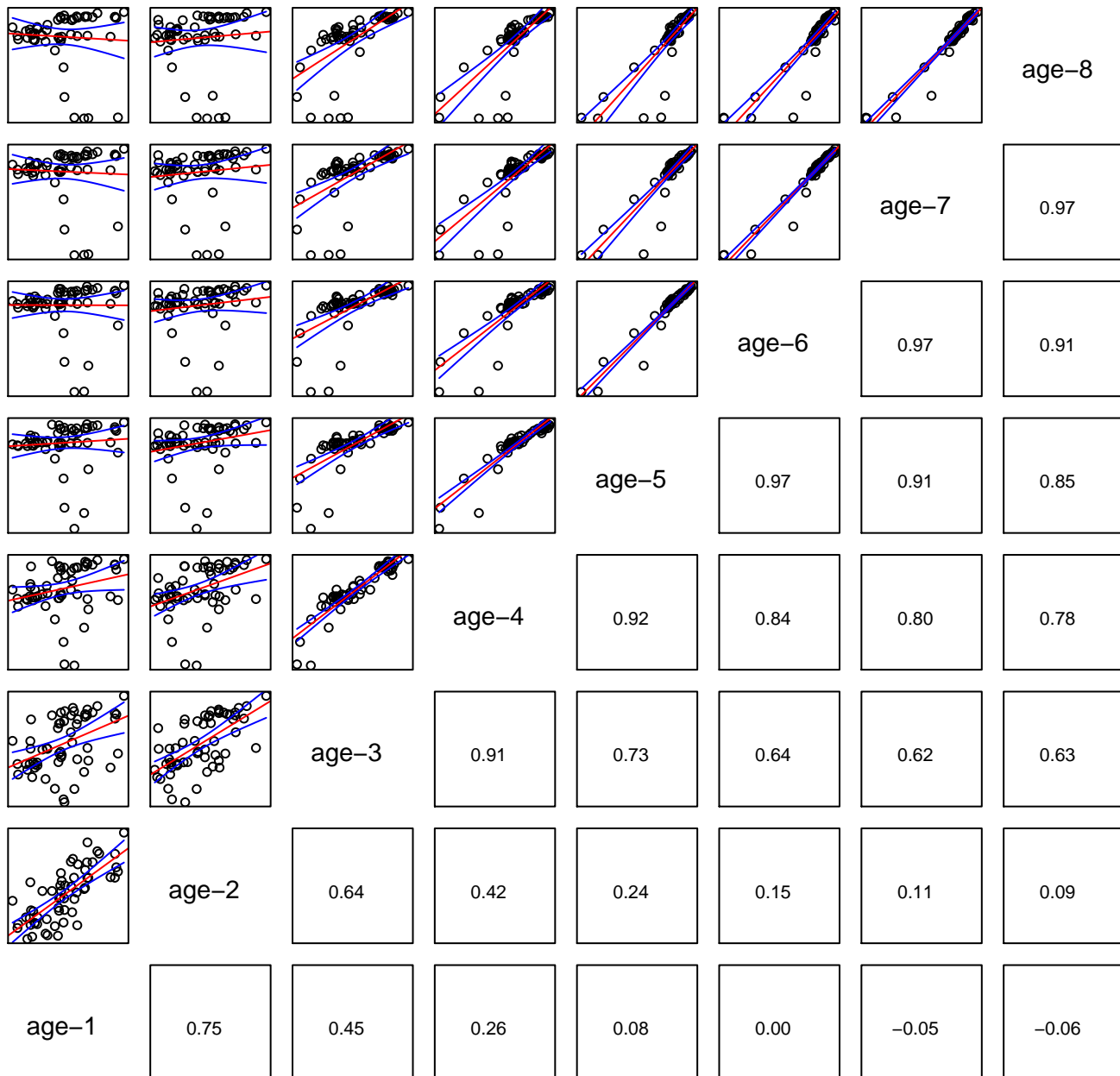
Catch for Fleet 3 (RECLAND) Predicted



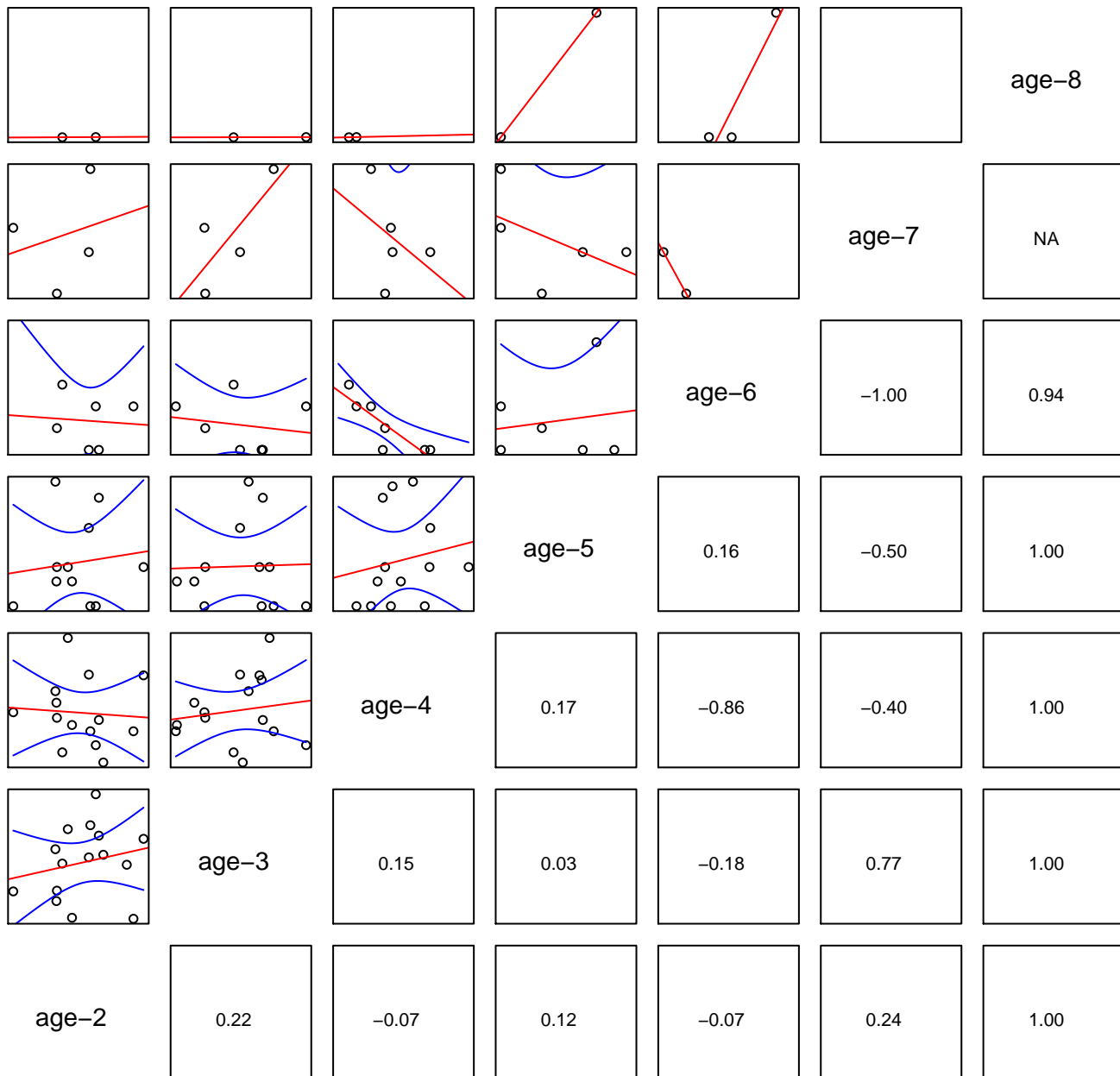
Catch for Fleet 4 (RECDISC) Observed



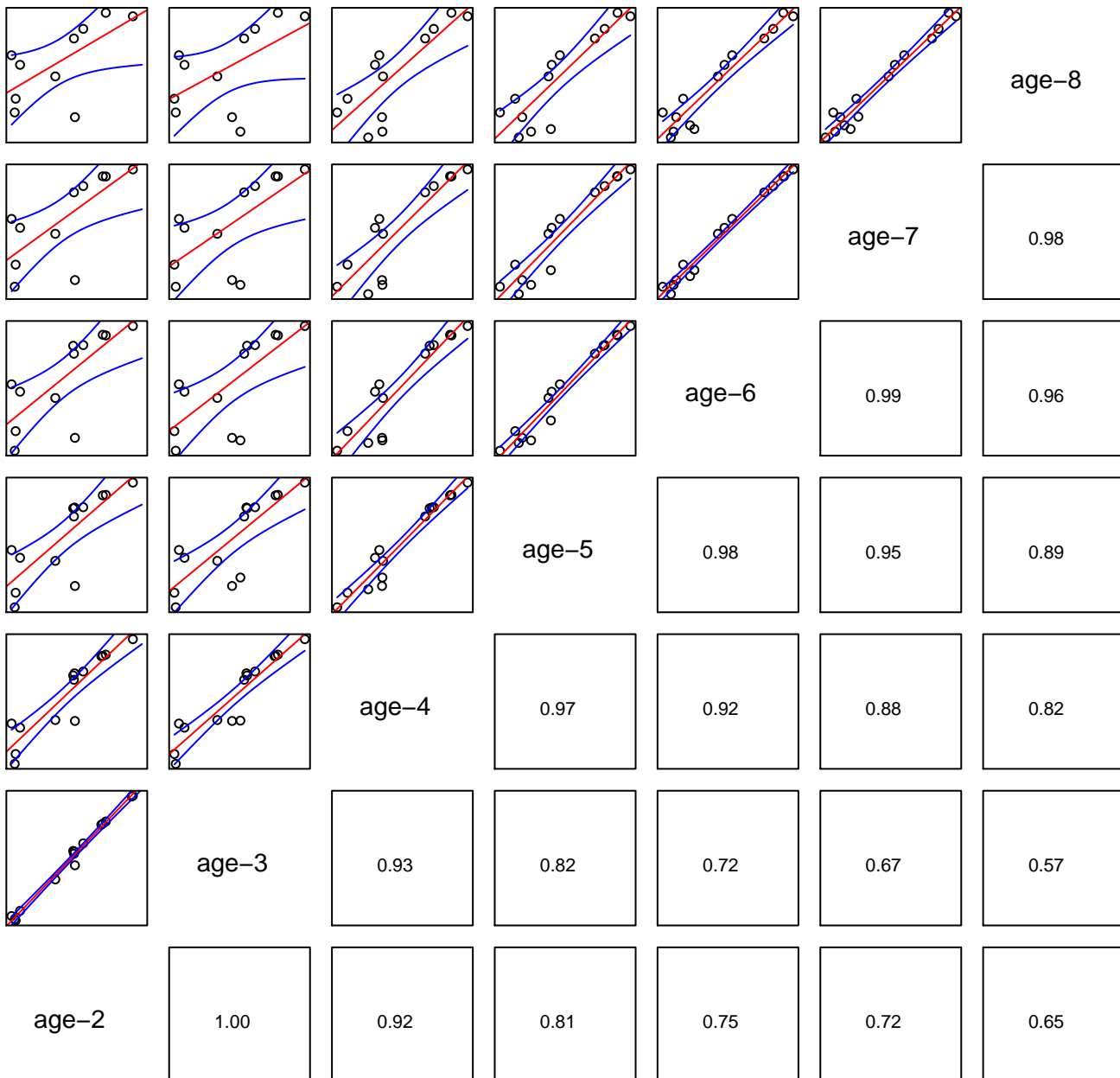
Catch for Fleet 4 (RECDISC) Predicted



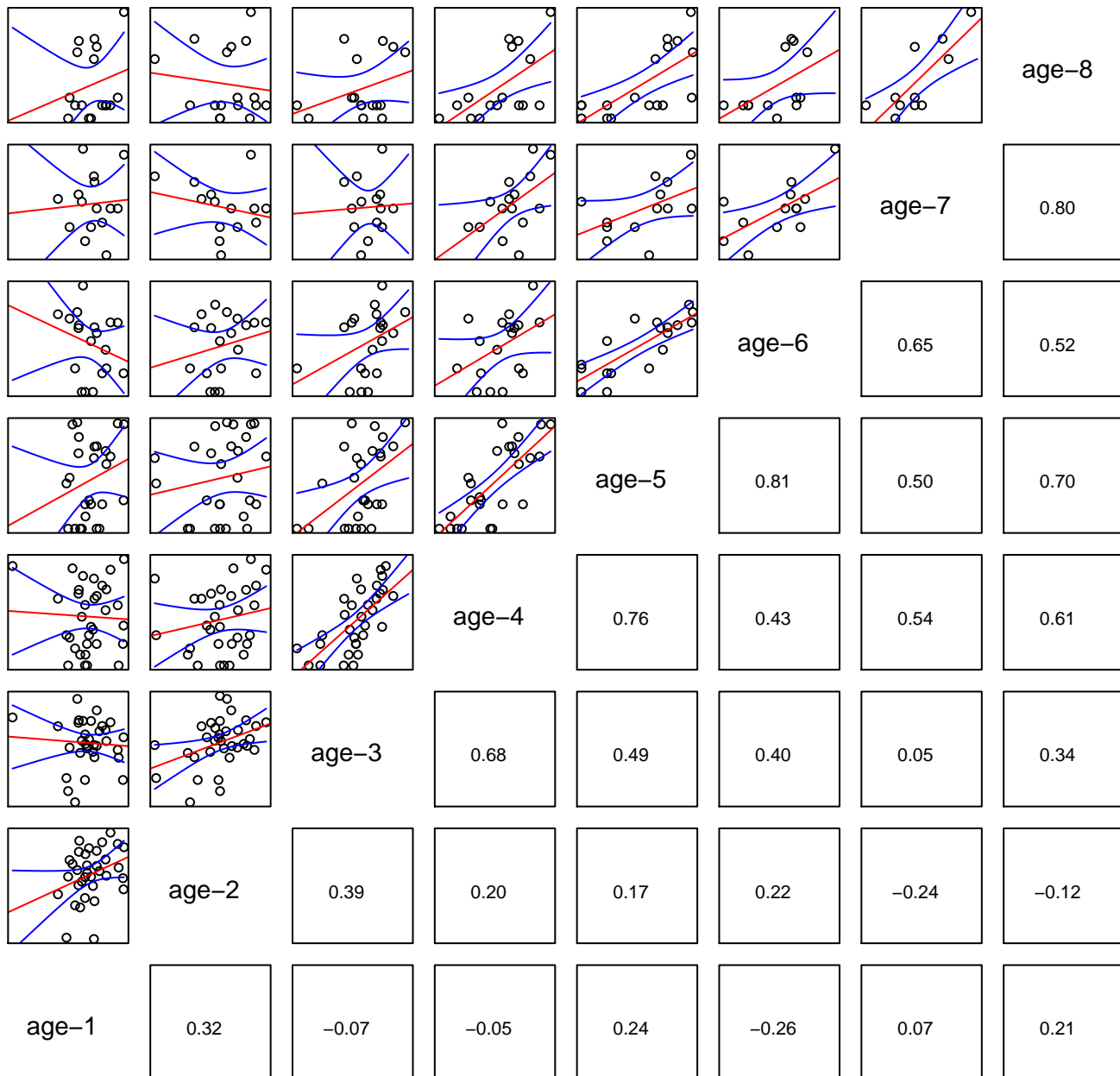
Index 1 (NECWIN) Observed



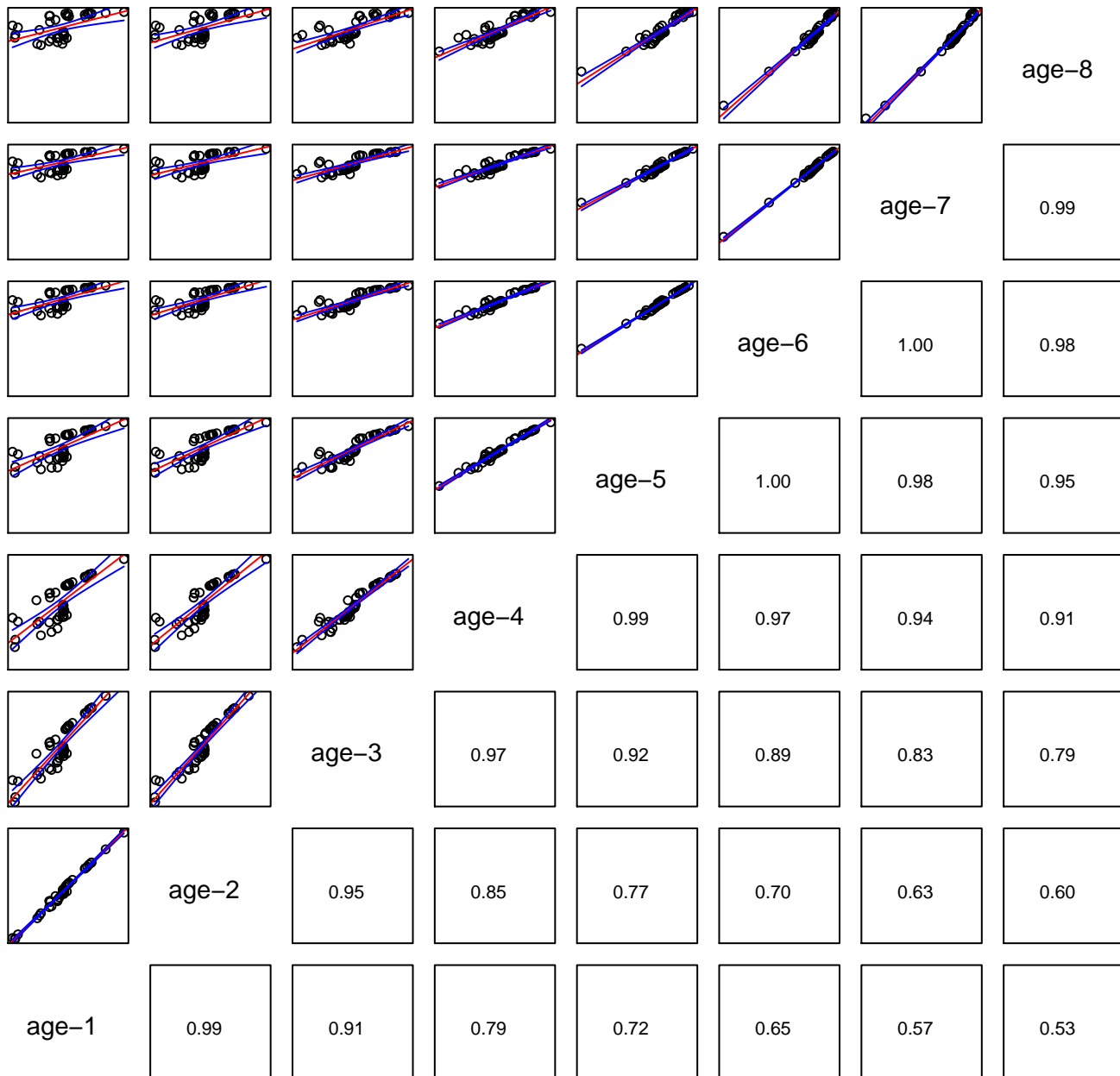
Index 1 (NECWIN) Predicted



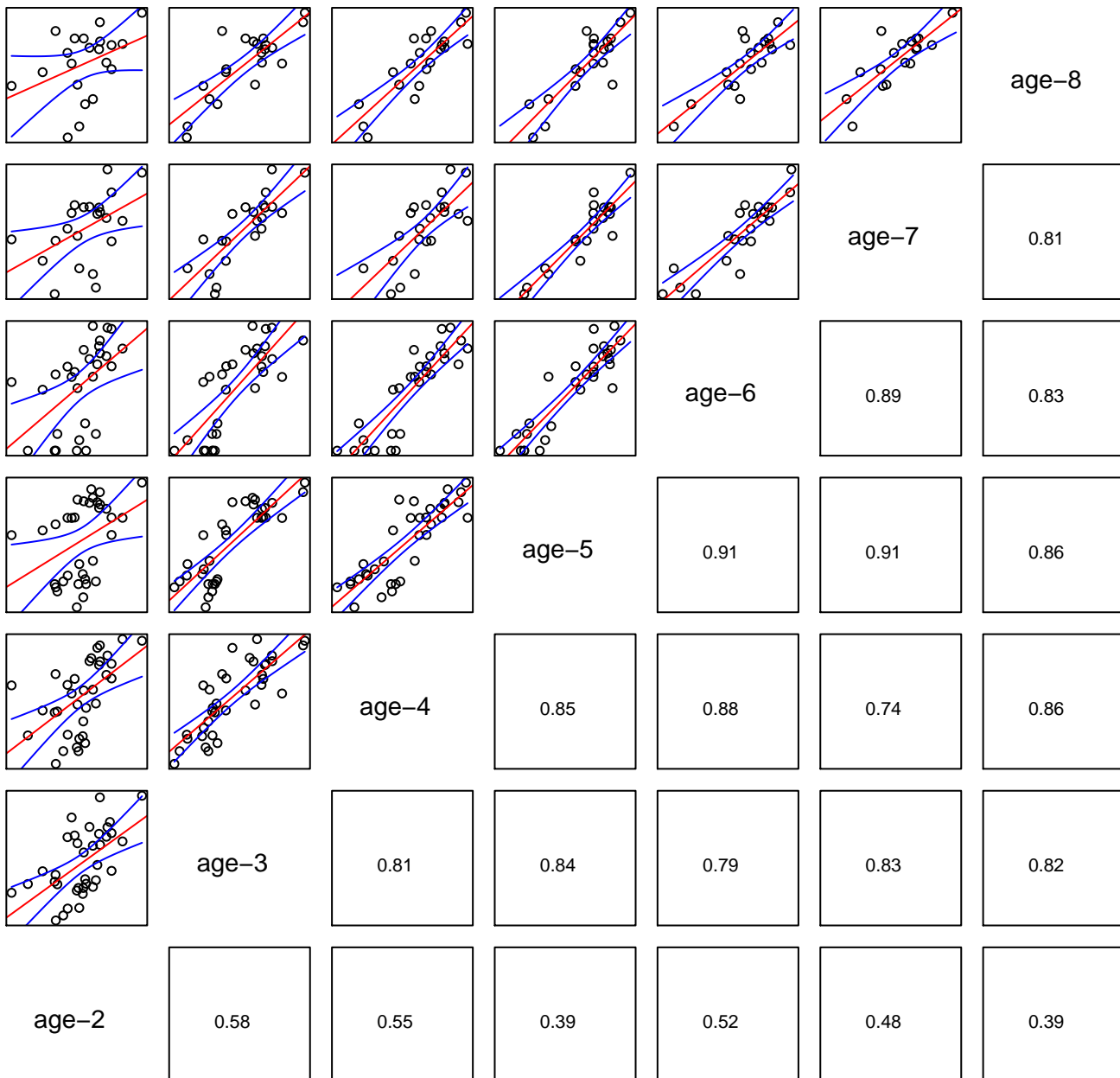
Index 2 (NECFAL) Observed



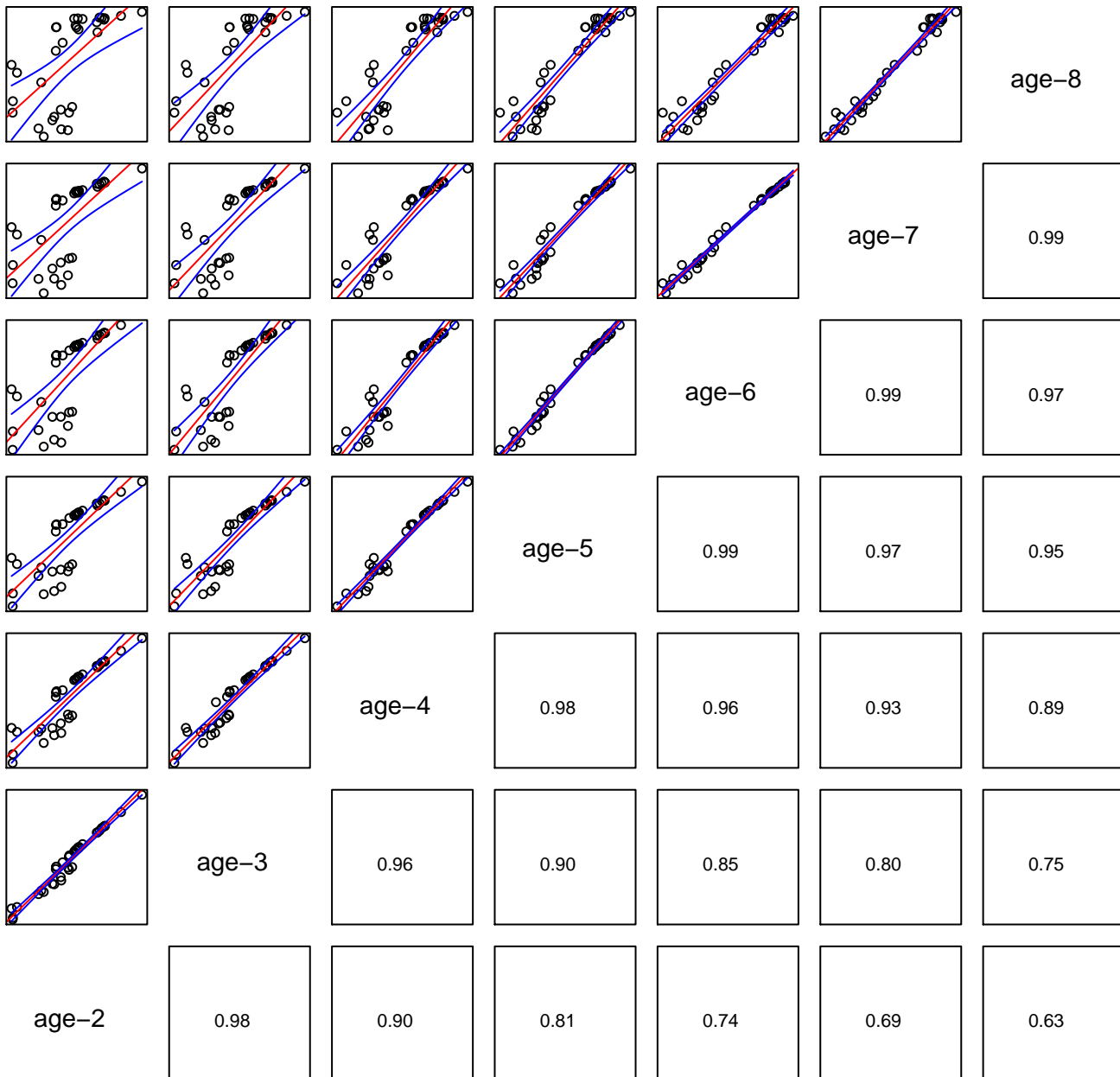
Index 2 (NECFAL) Predicted



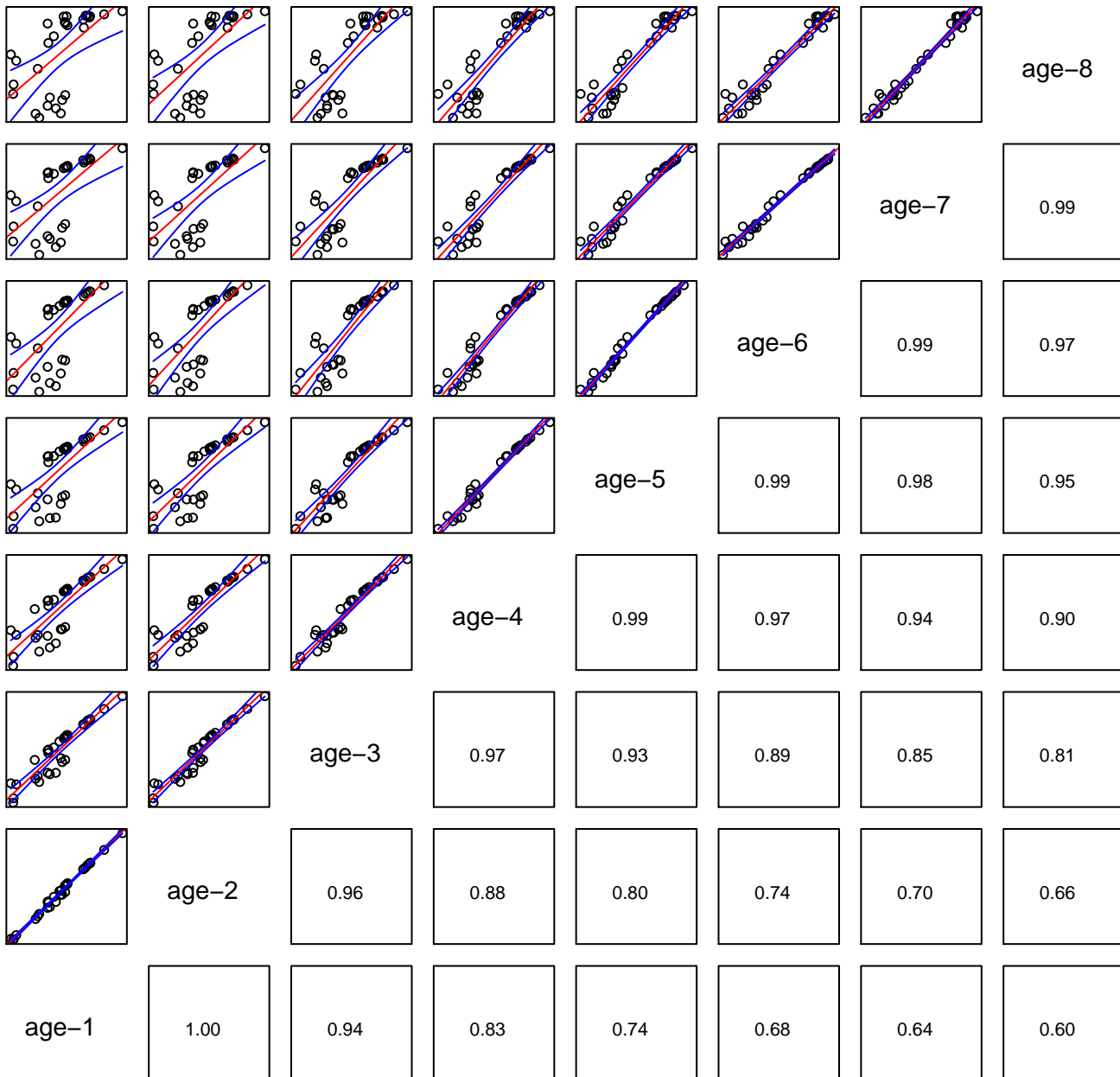
Index 3 (CTSPR) Observed



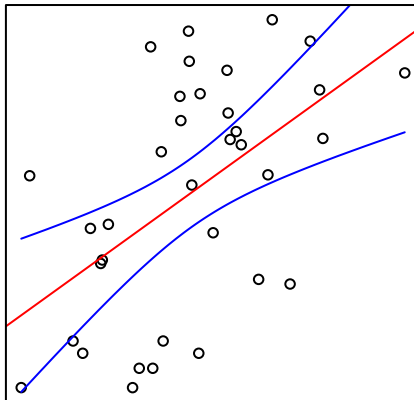
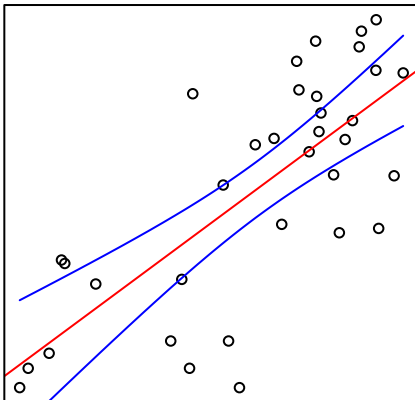
Index 3 (CTSPR) Predicted



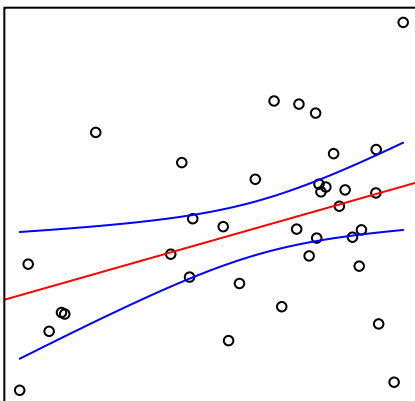
Index 4 (CTFAL) Predicted



Index 5 (NYDEC) Observed



age-3



age-2

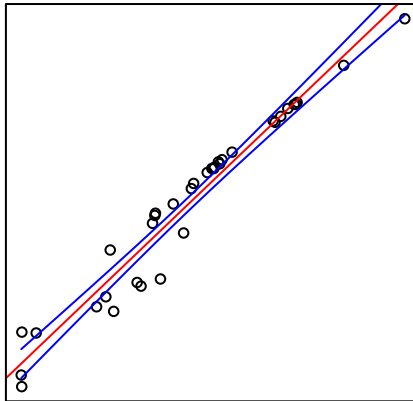
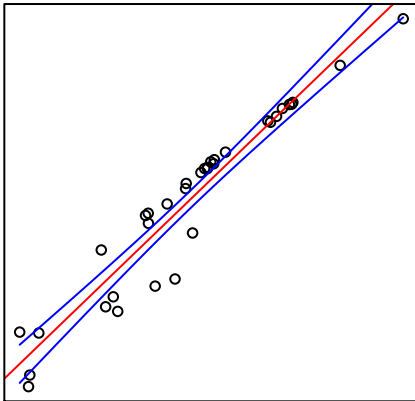
0.53

age-1

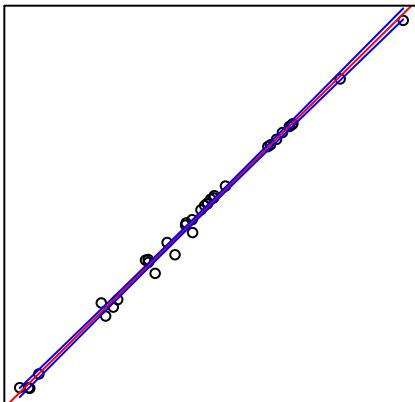
0.39

0.74

Index 5 (NYDEC) Predicted



age-3



age-2

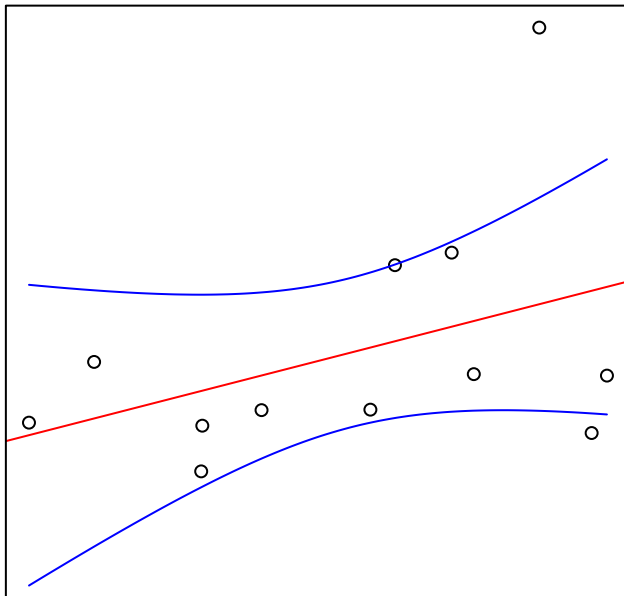
0.98

age-1

1.00

0.96

Index 10 (NEAMAP Spring) Observed

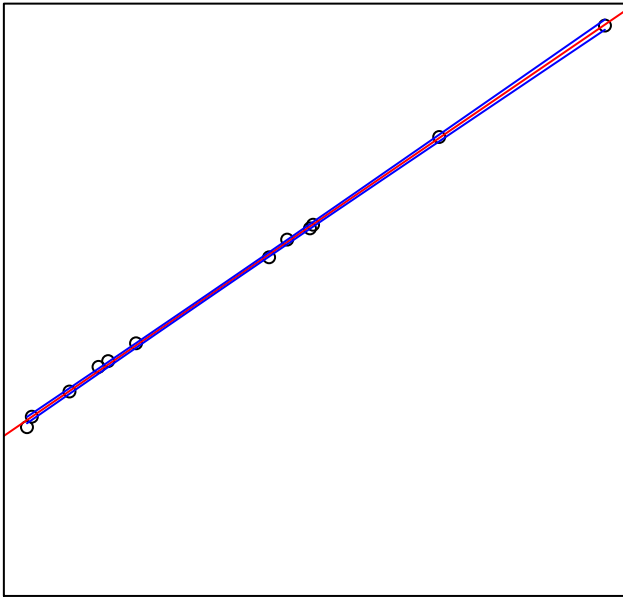


age-3

age-2

0.41

Index 10 (NEAMAP Spring) Predicted

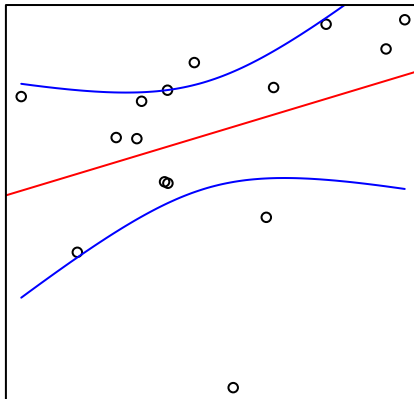
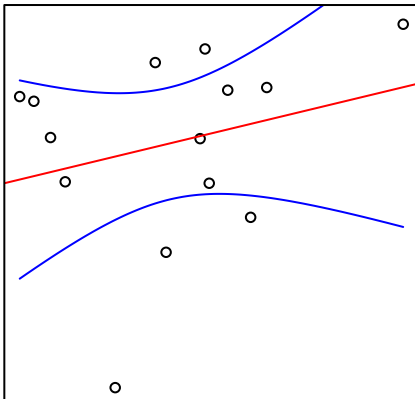


age-3

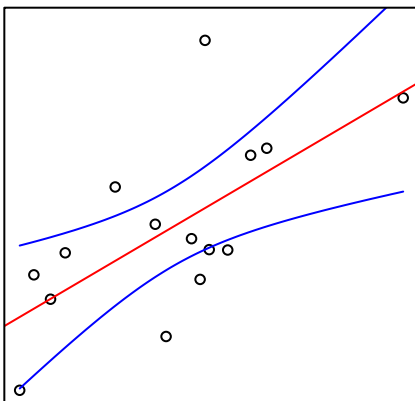
age-2

1.00

Index 11 (NEAMAP Fall) Observed



age-3



age-2

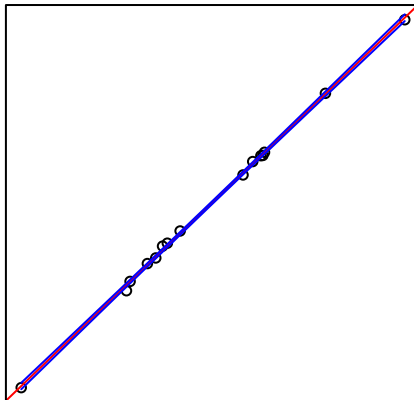
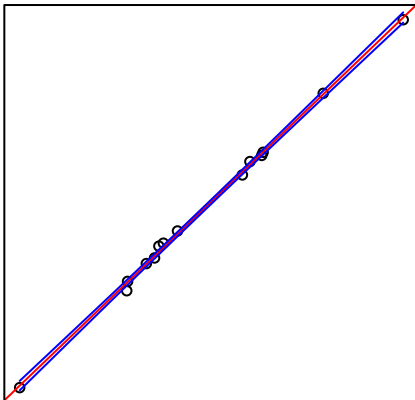
0.34

age-1

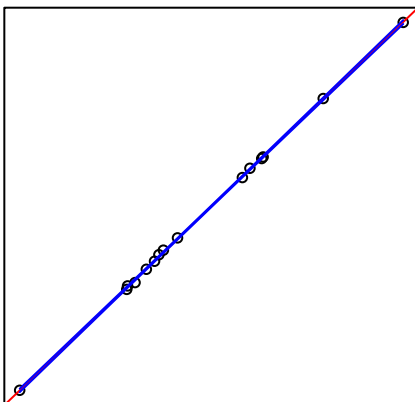
0.66

0.27

Index 11 (NEAMAP Fall) Predicted



age-3



age-2

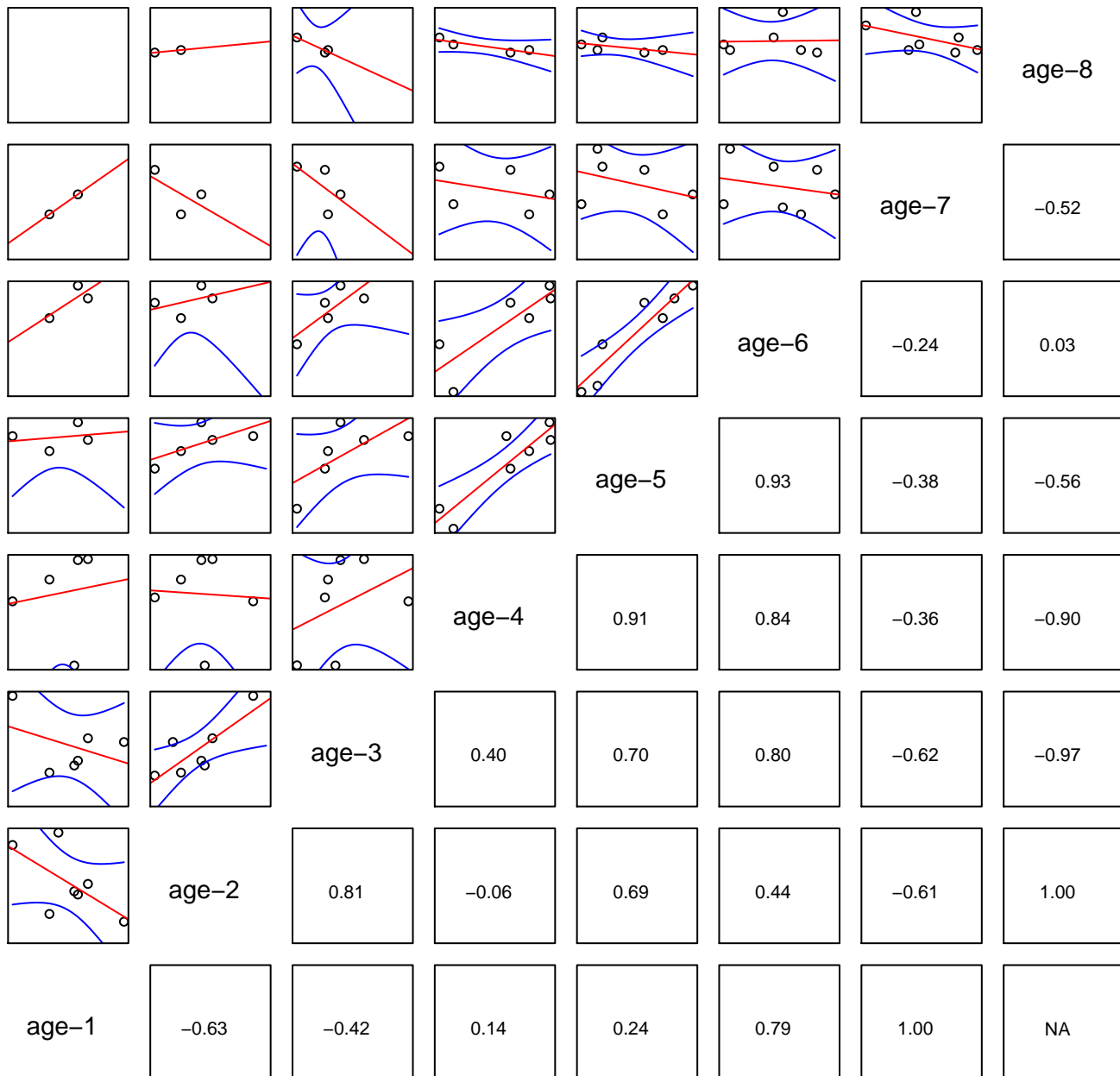
1.00

age-1

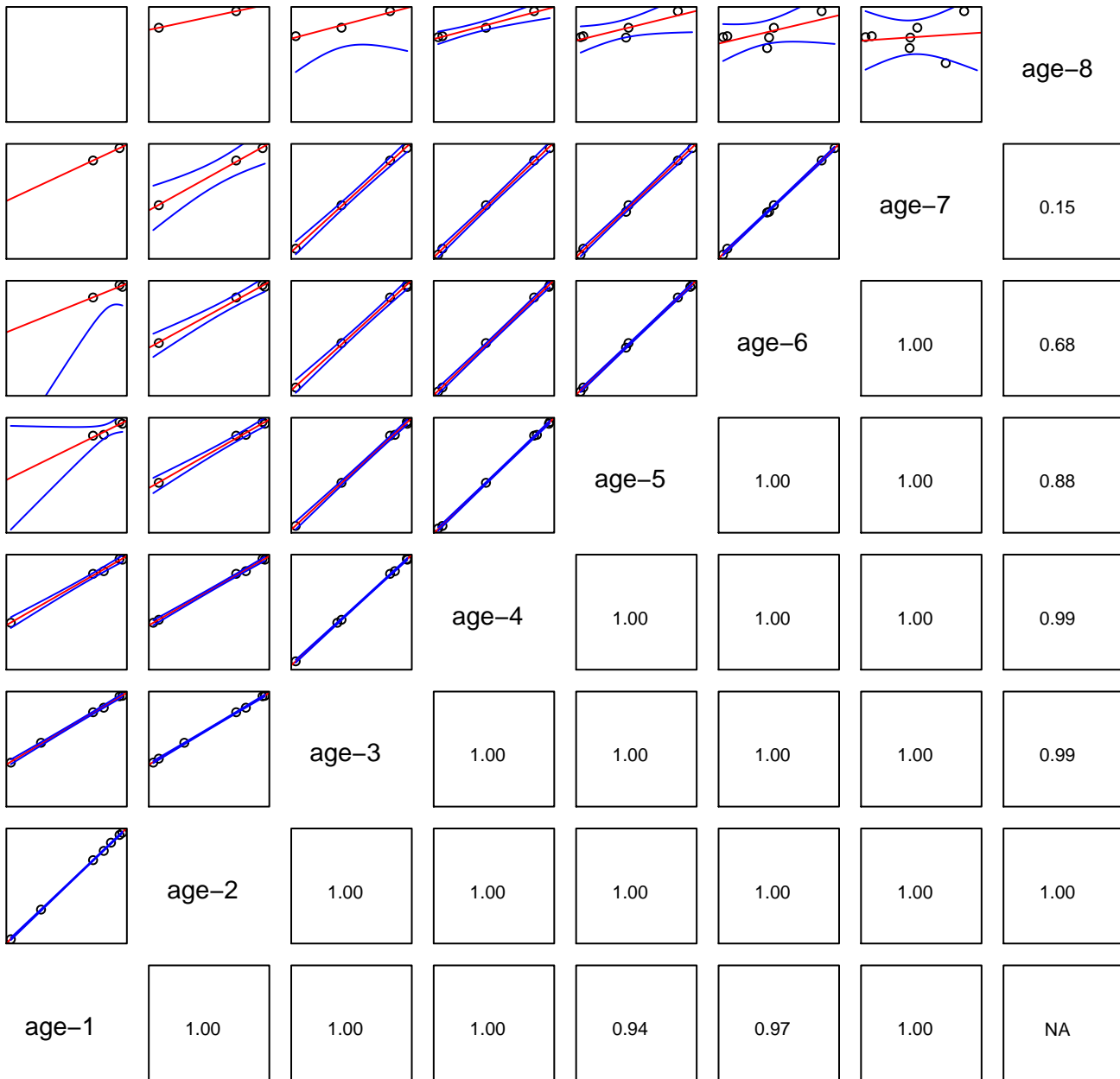
1.00

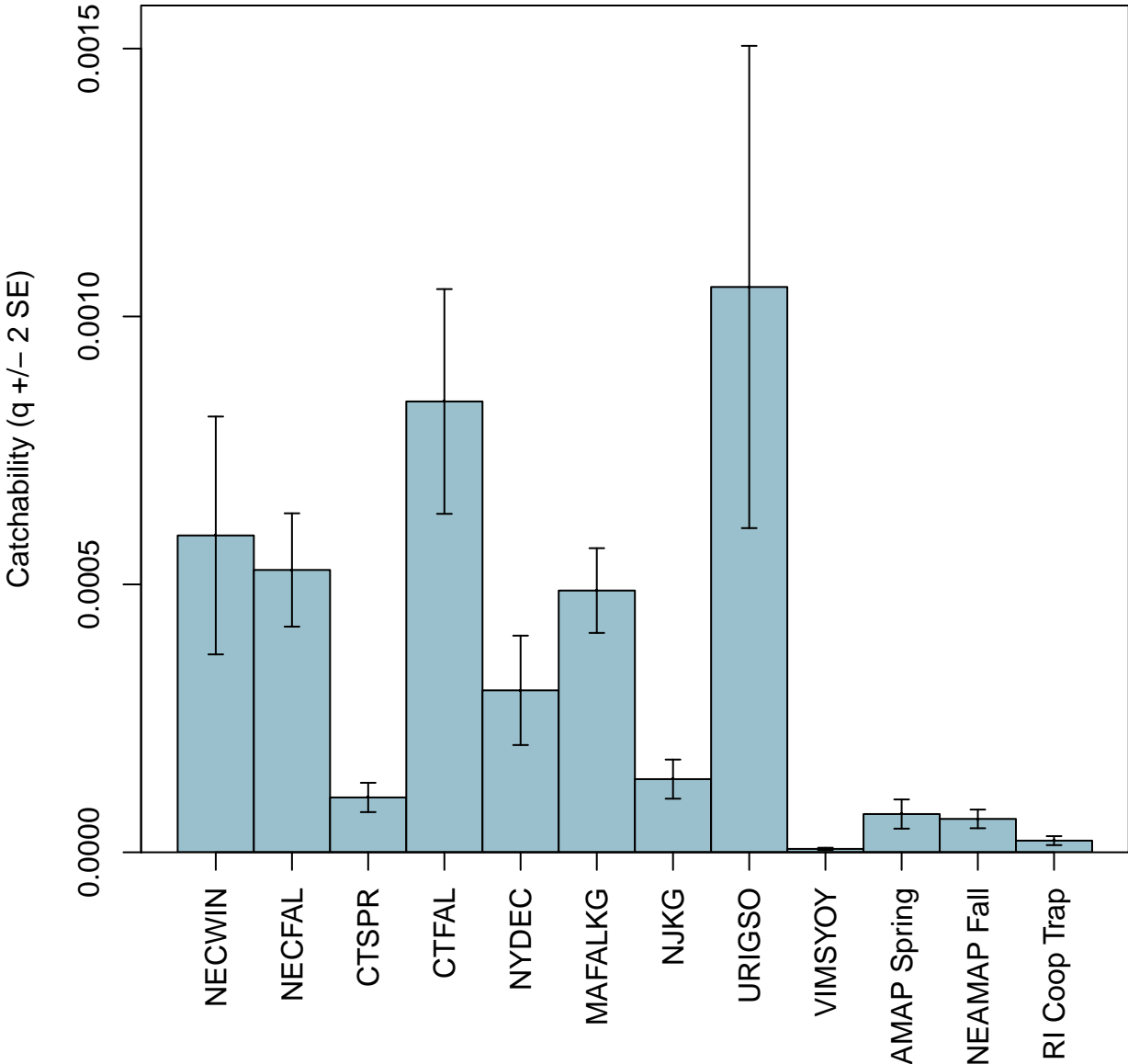
1.00

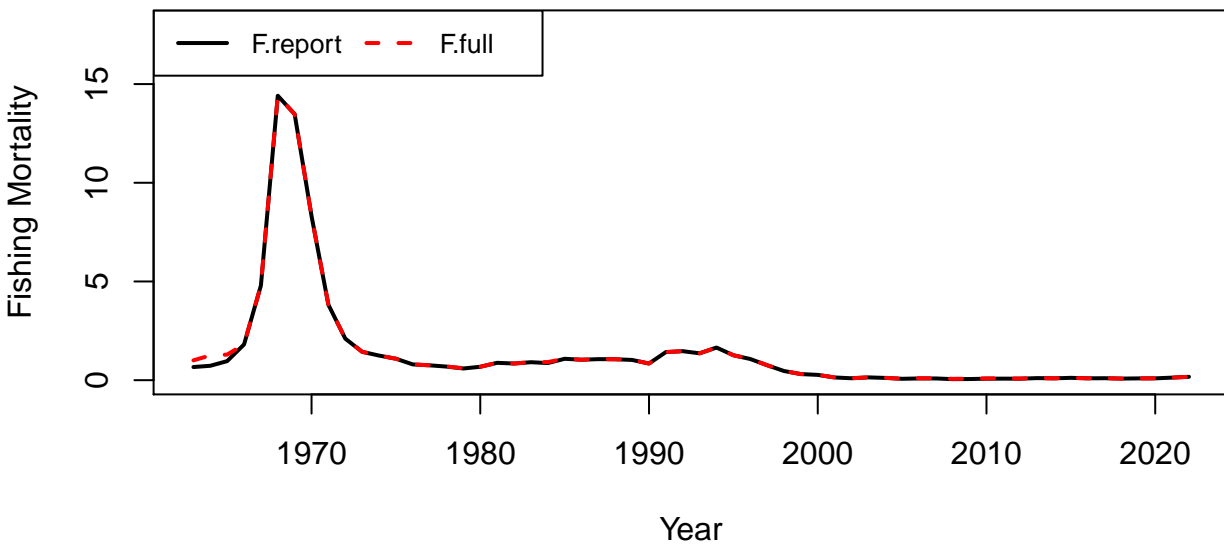
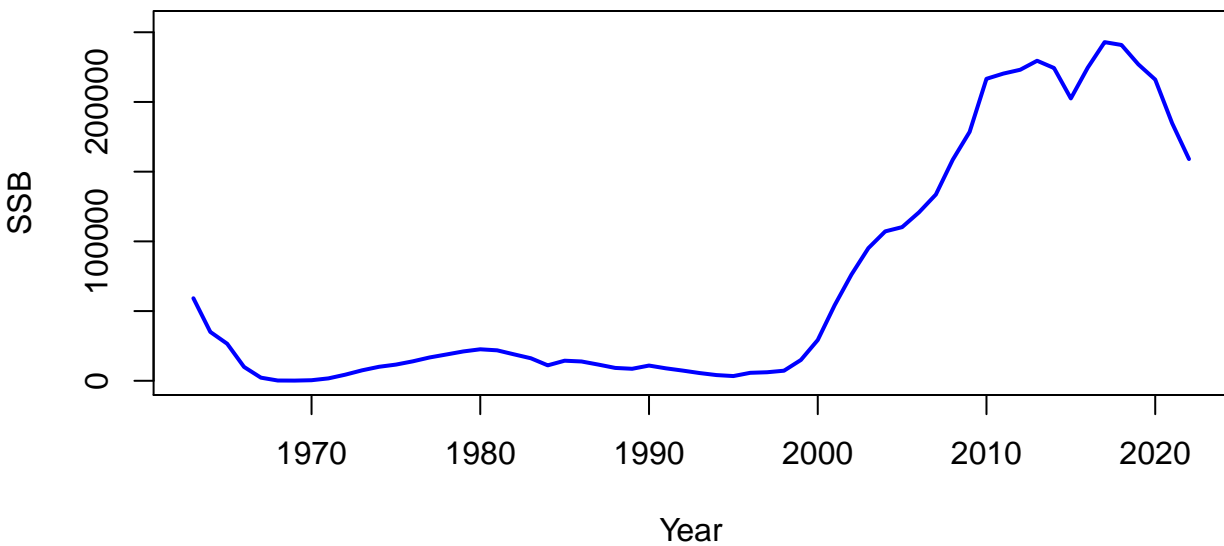
Index 12 (RI Coop Trap) Observed



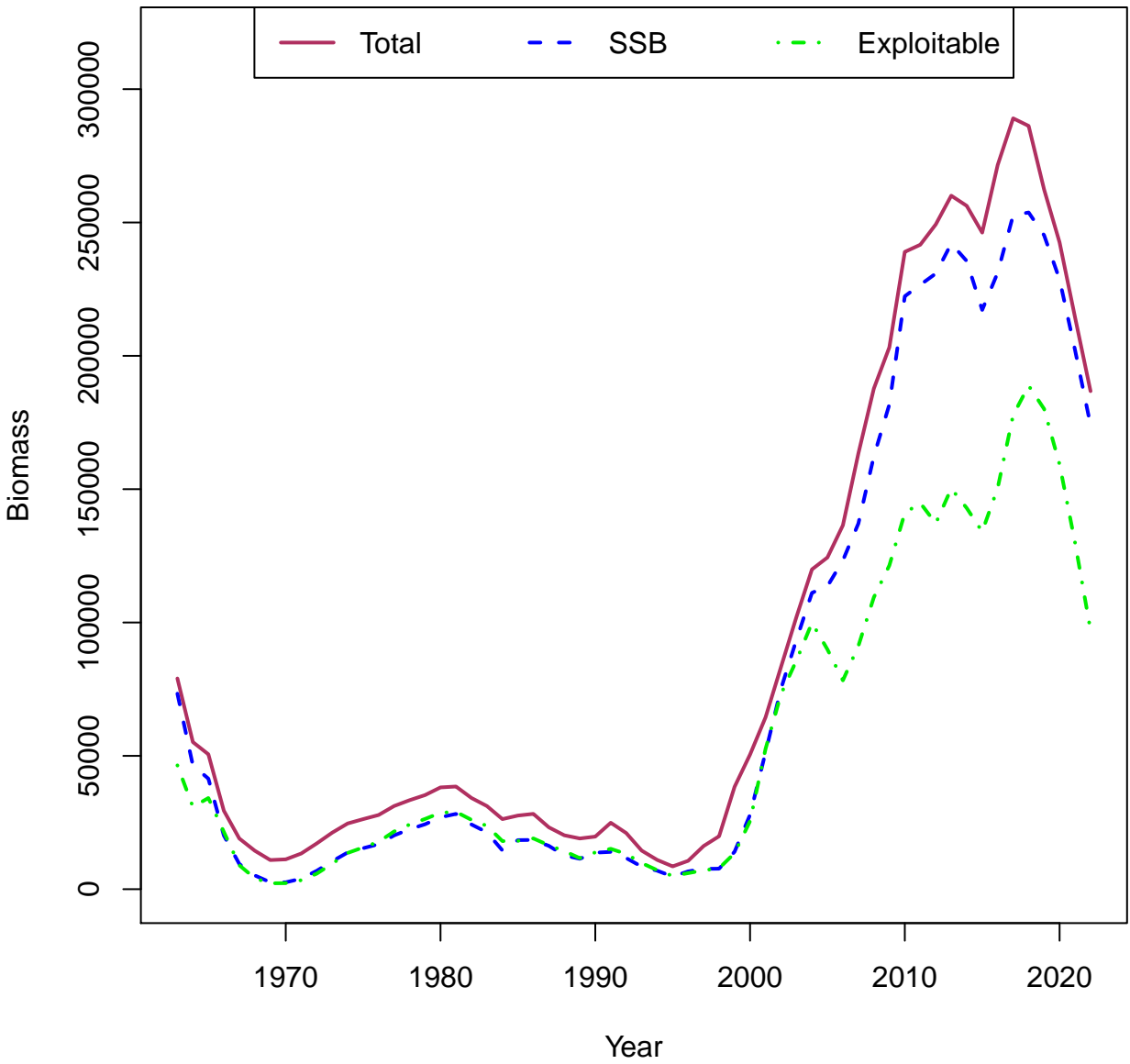
Index 12 (RI Coop Trap) Predicted



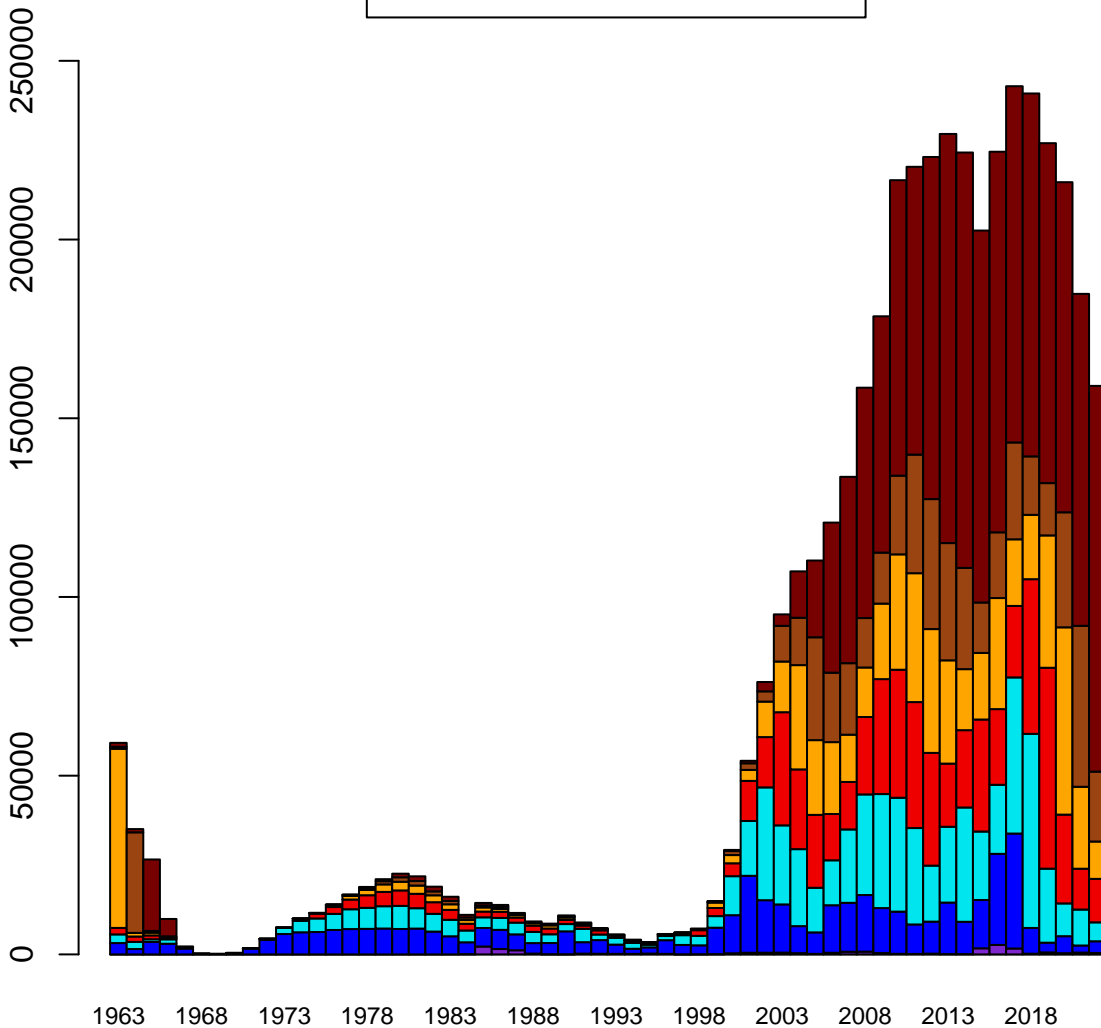




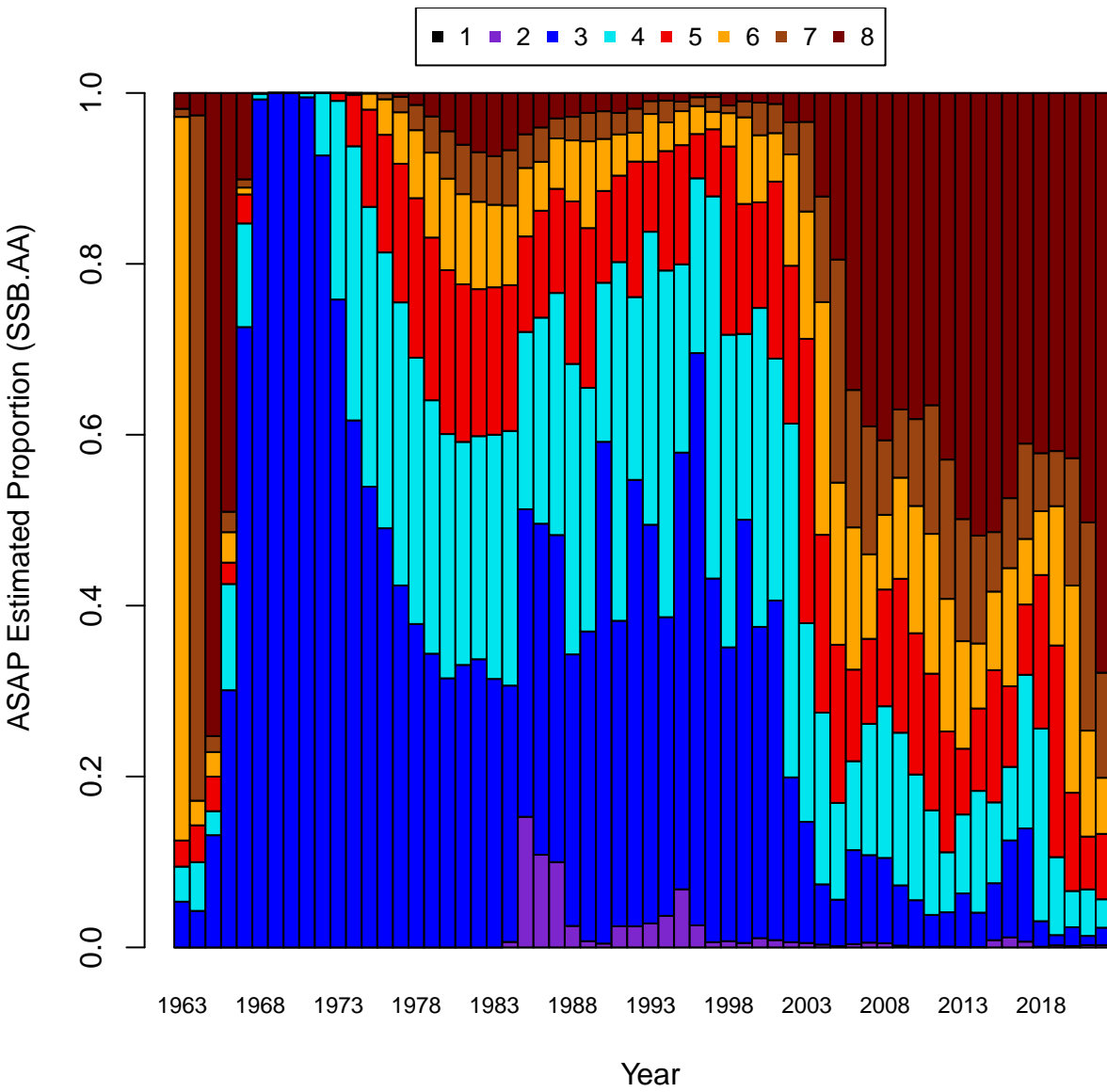
Comparison of January 1 Biomass



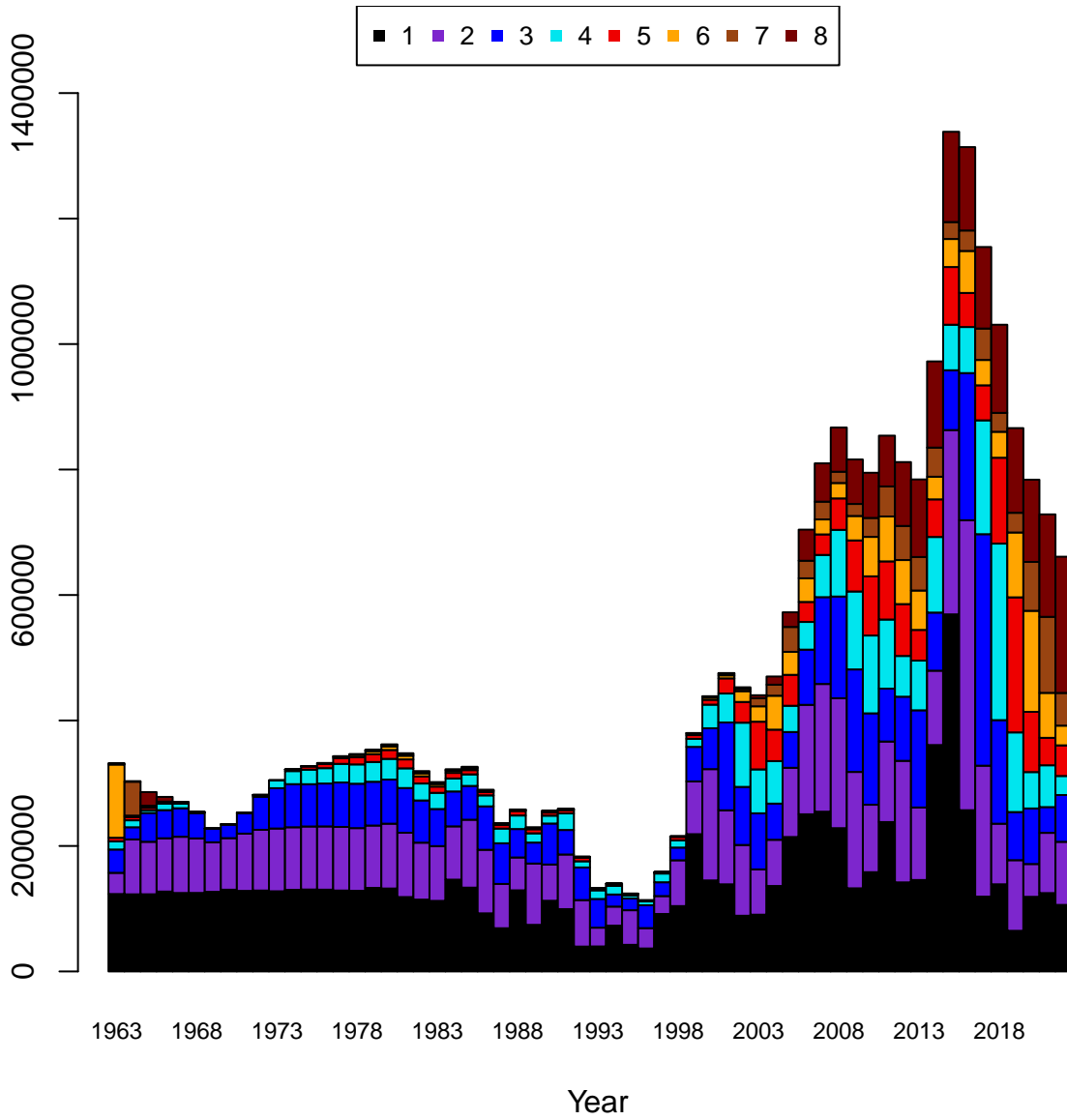
ASAP Estimated SSB.AA



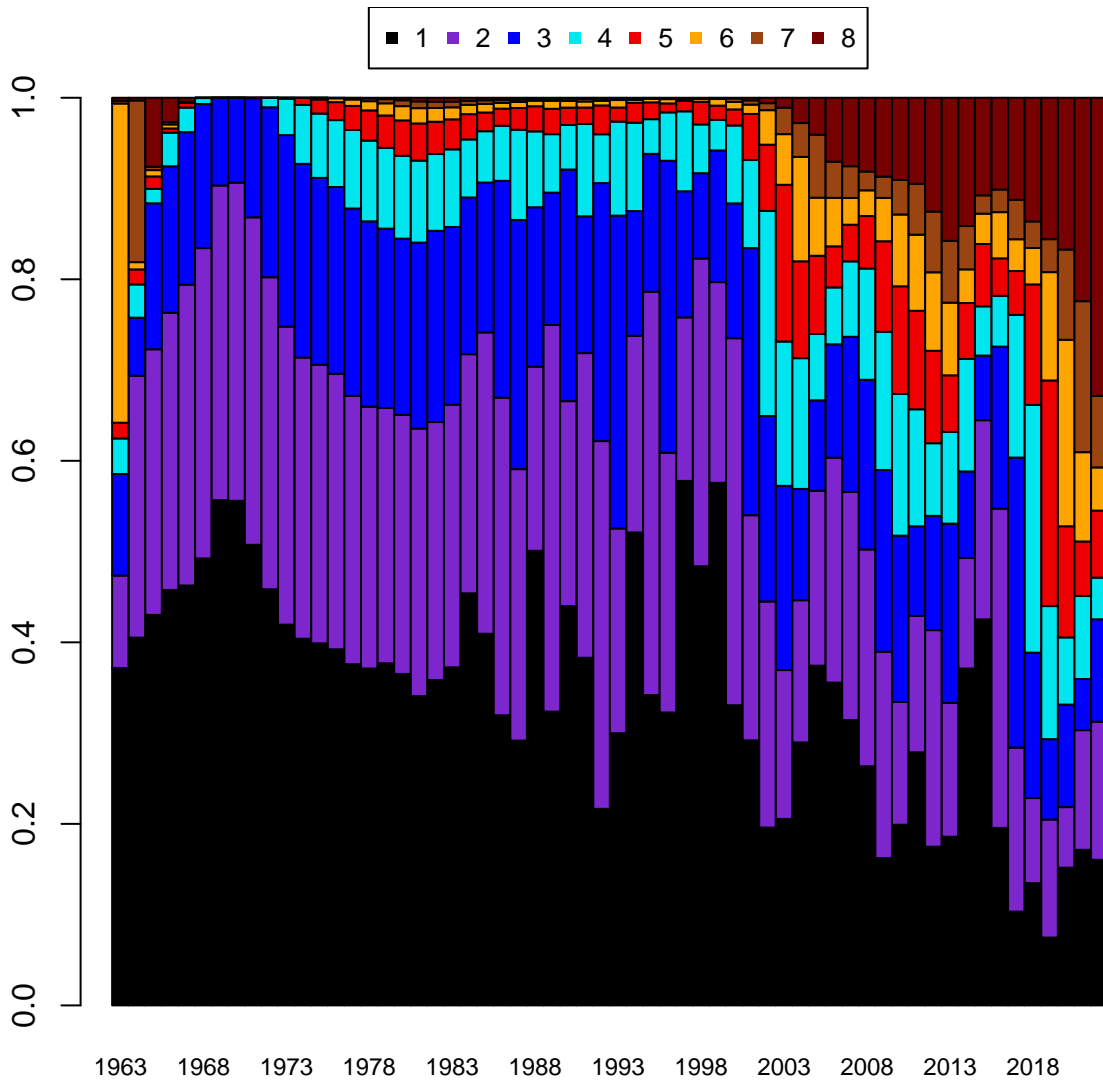
Year

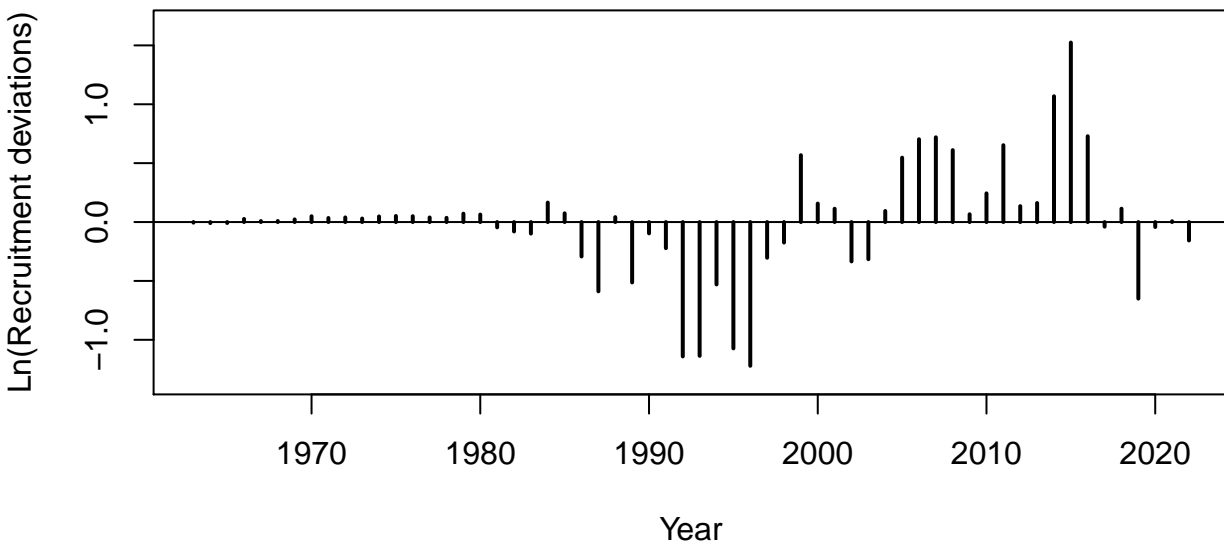
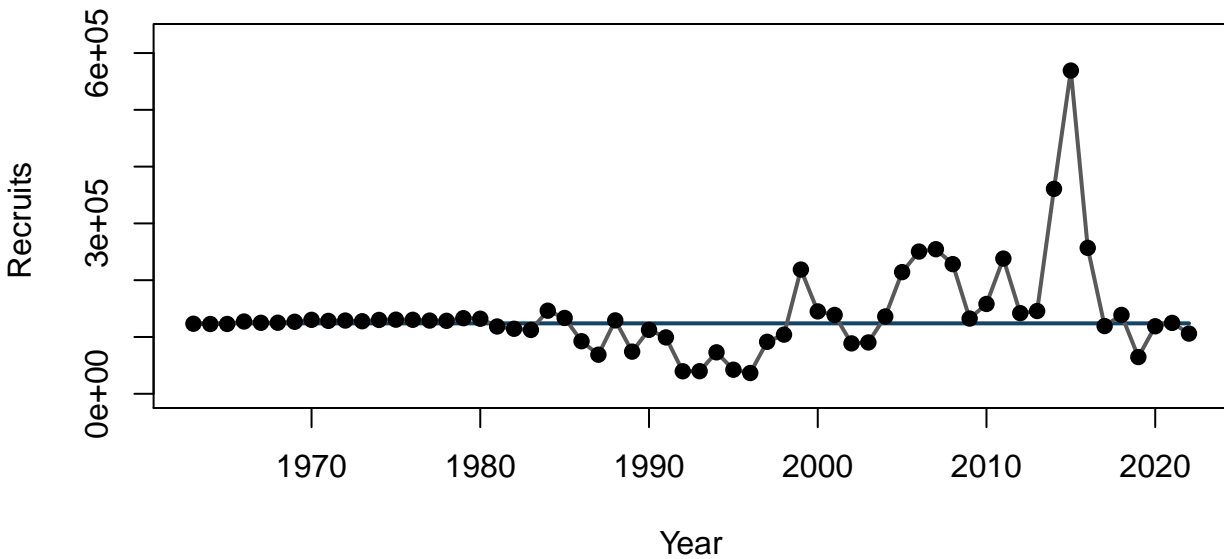


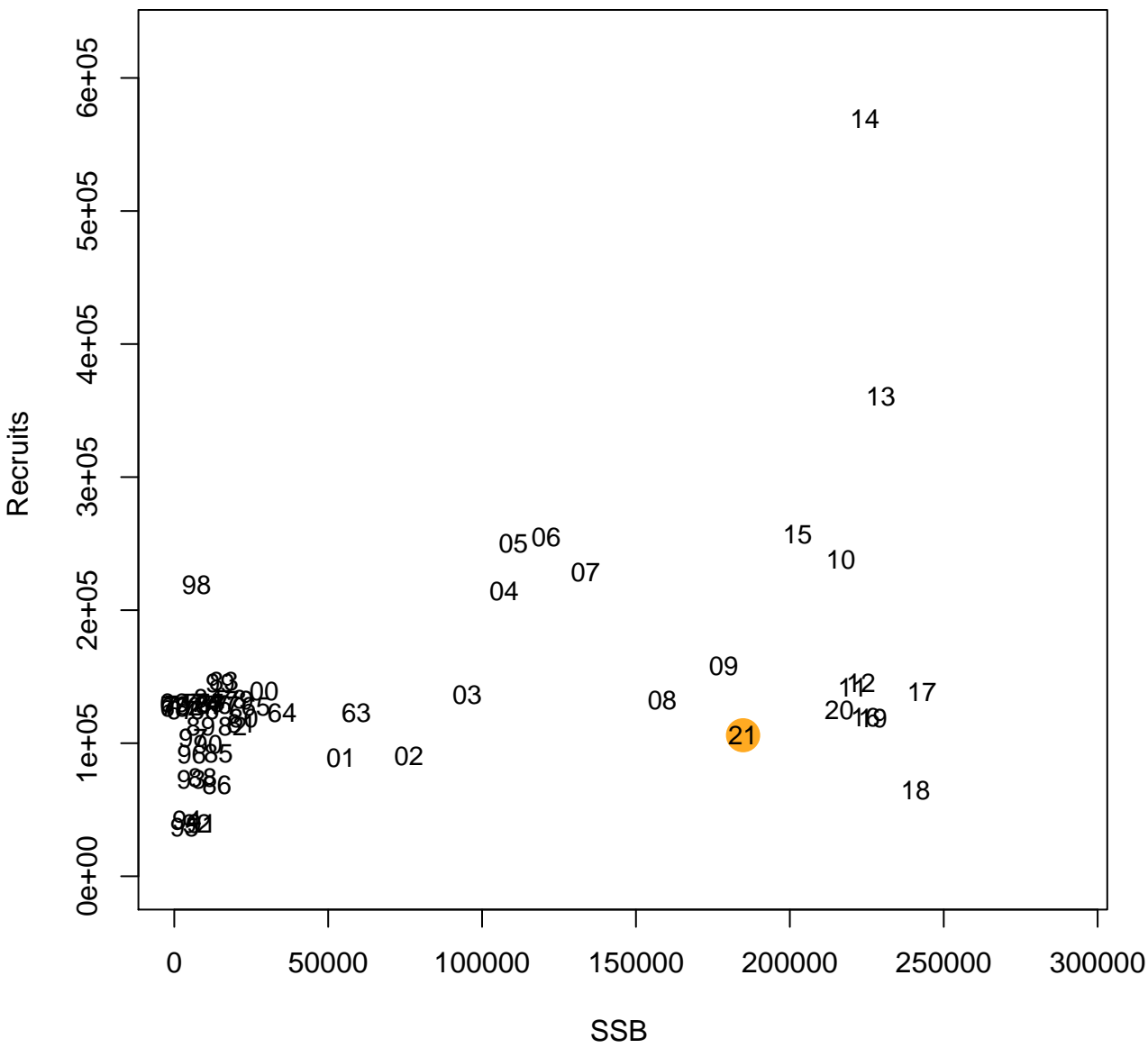
ASAP Estimated NAA

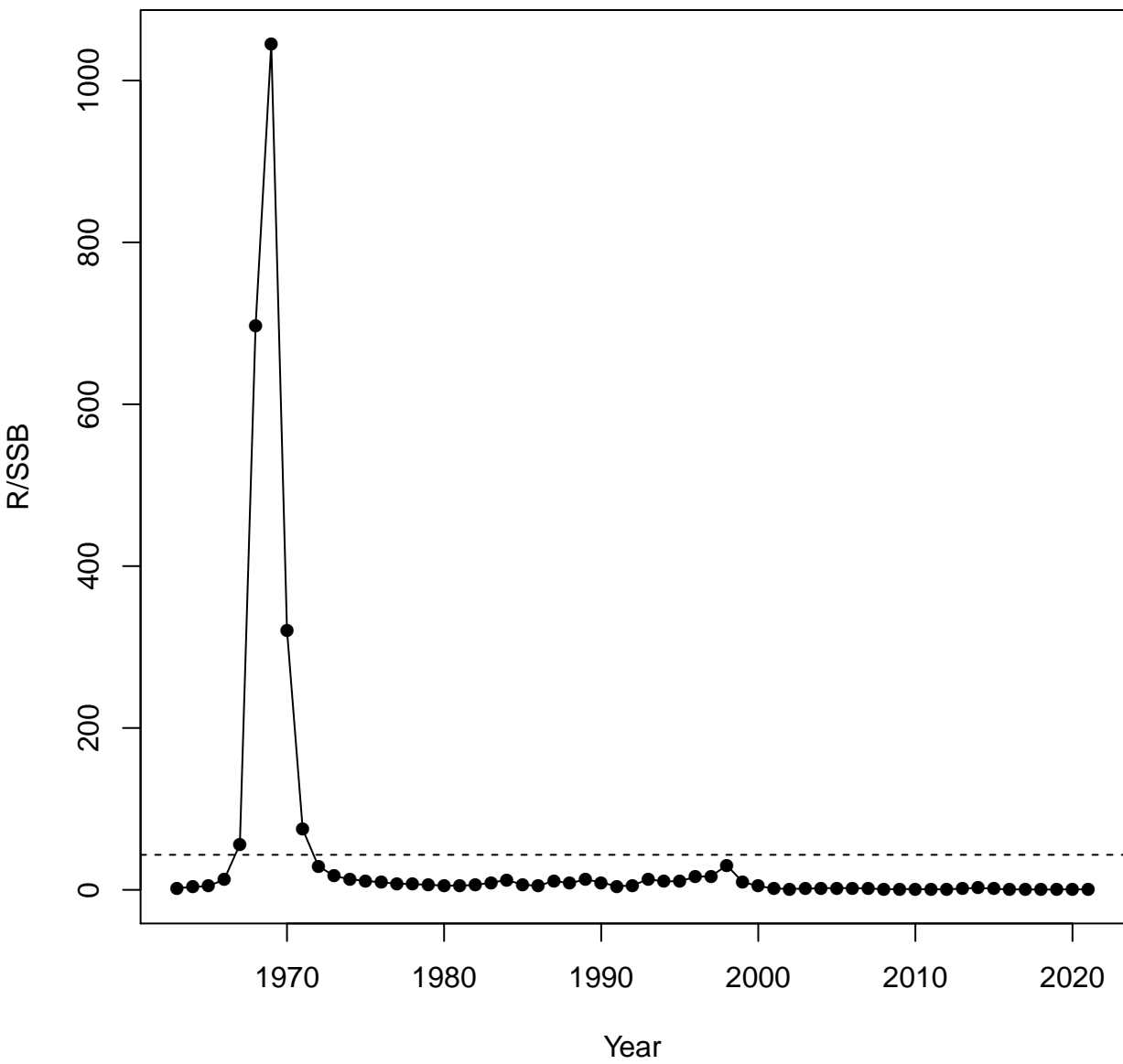


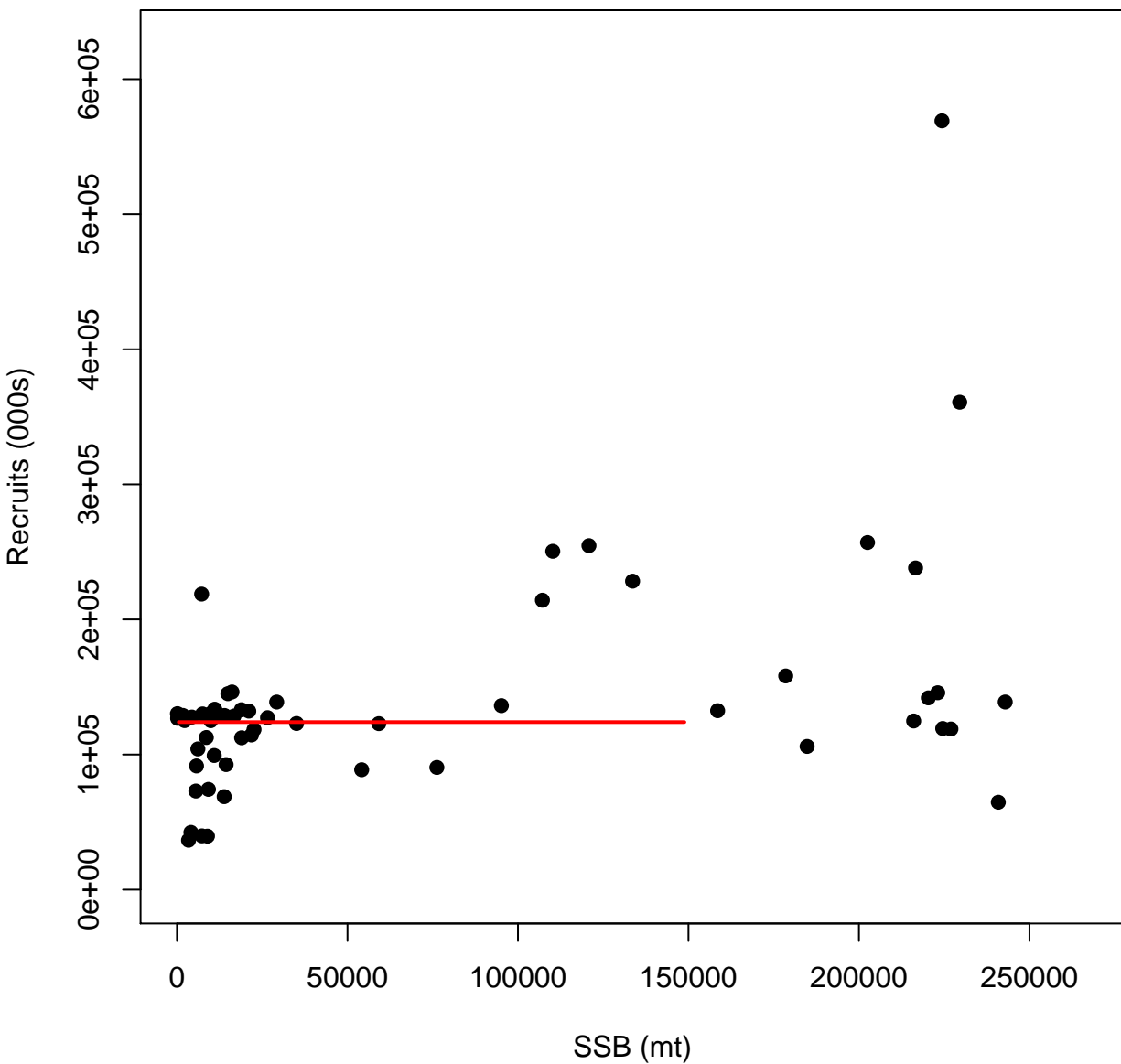
ASAP Estimated Proportion (NAA)

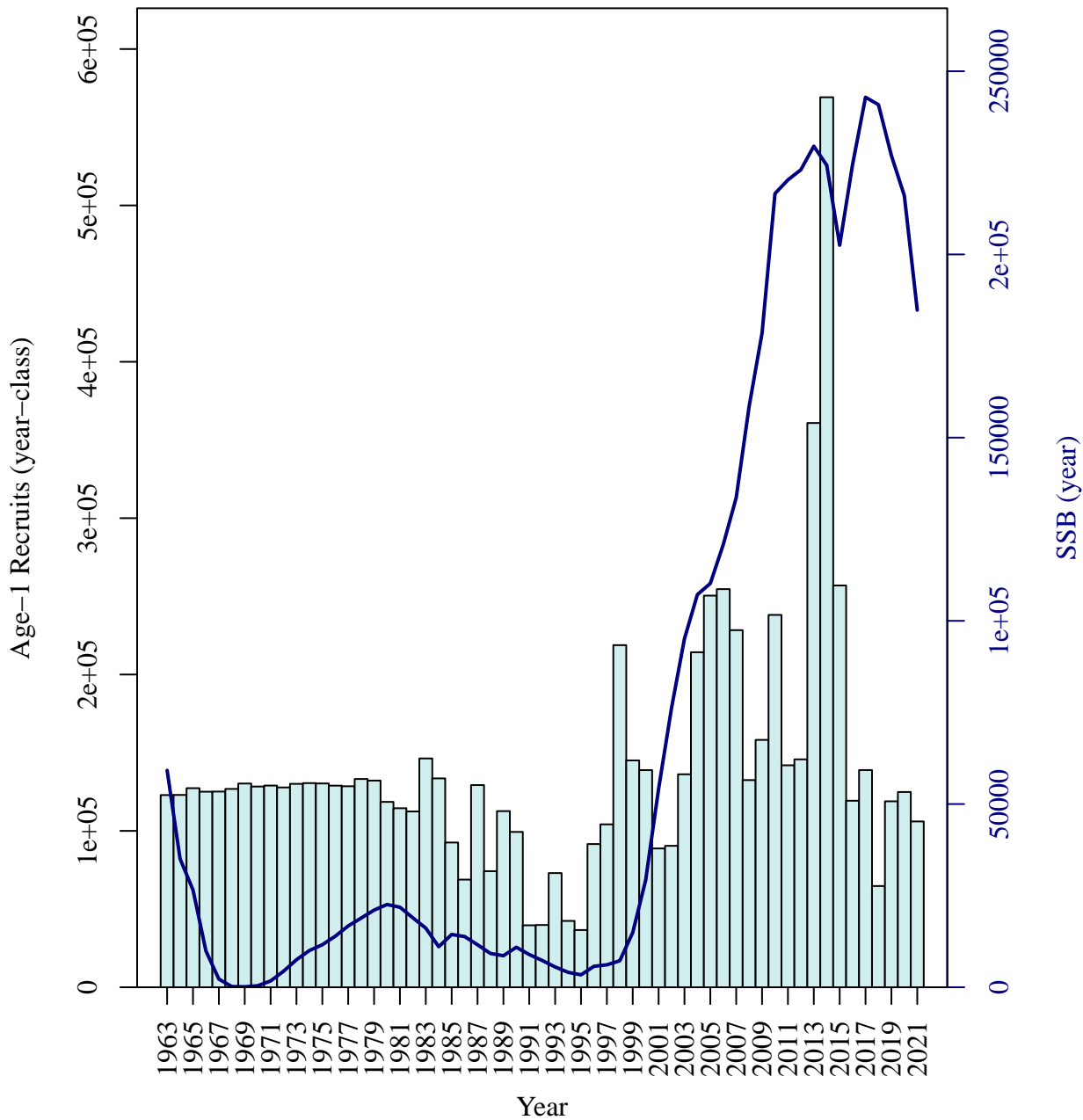




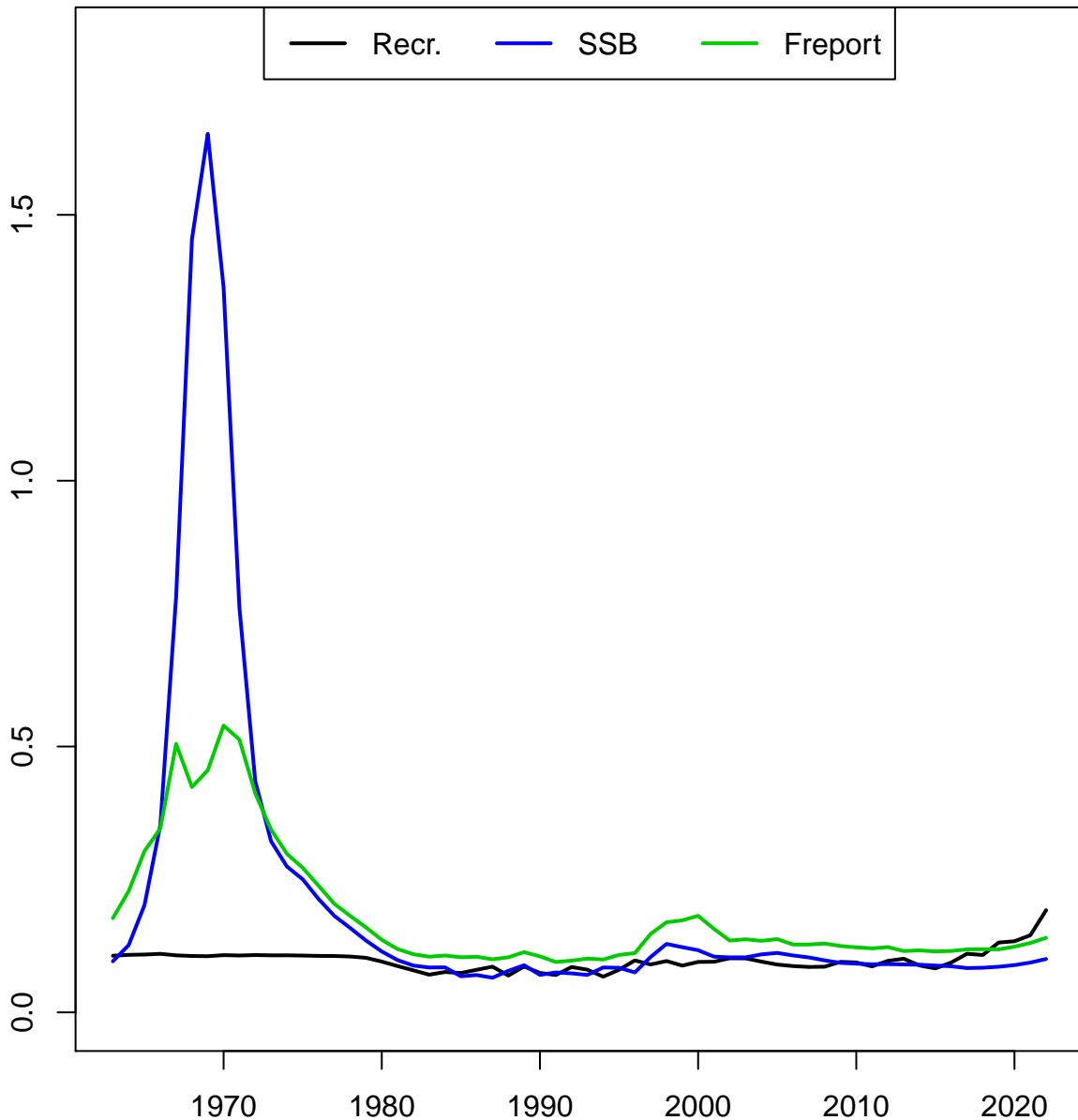






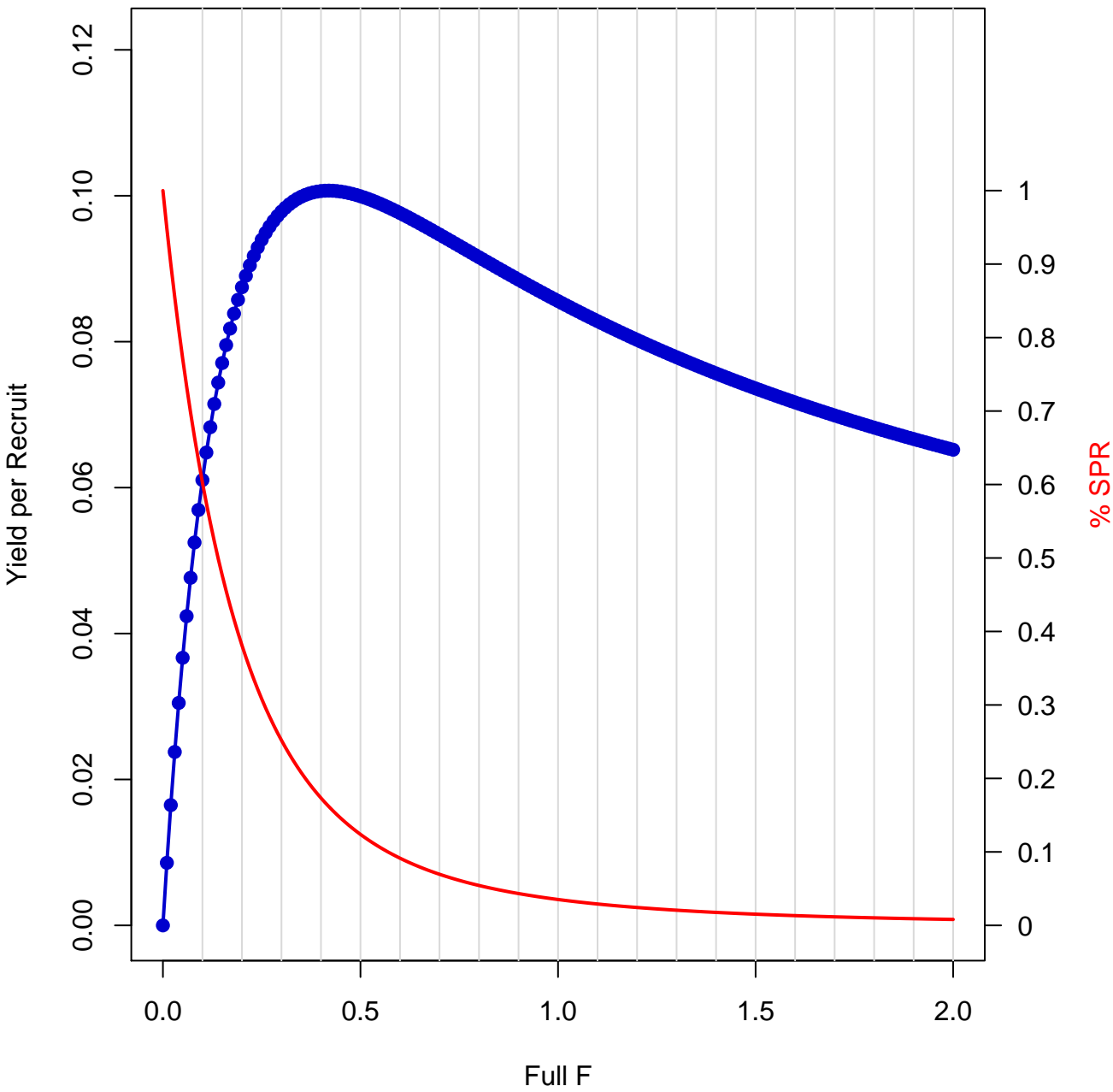


CV



Year

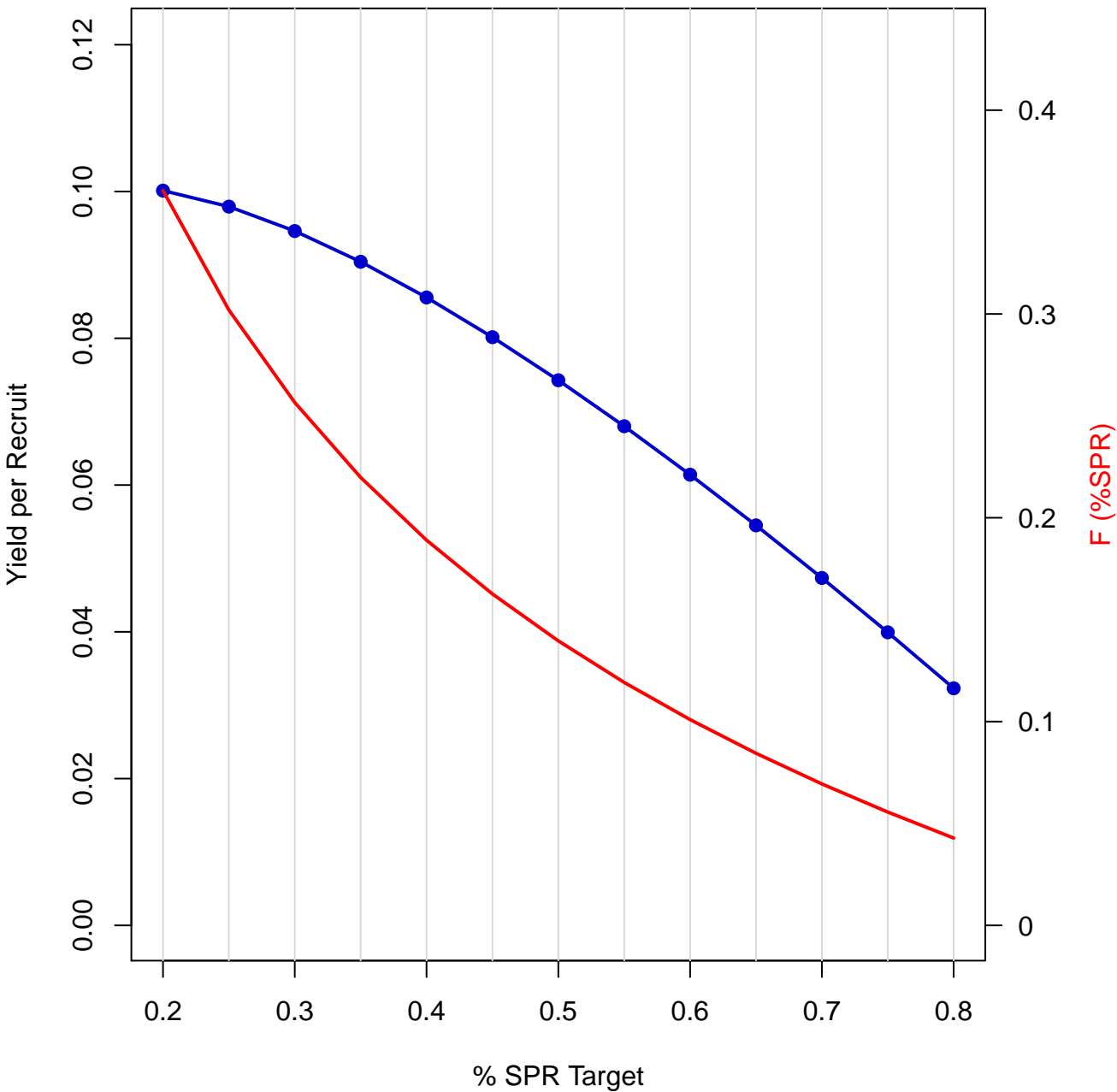
YPR-SPR Reference Points (Years Avg = 5)



YPR–SPR Reference Points (Years Avg = 5)

F	YPR	SPR	F	YPR	SPR	F	YPR	SPR
0	0	1	0.35	0.0999	0.208	0.7	0.0947	0.0696
0.01	0.0086	0.9484	0.36	0.1001	0.2004	0.71	0.0944	0.0678
0.02	0.0165	0.9	0.37	0.1003	0.1932	0.72	0.0941	0.0661
0.03	0.0238	0.8545	0.38	0.1005	0.1863	0.73	0.0938	0.0644
0.04	0.0305	0.8117	0.39	0.1006	0.1797	0.74	0.0935	0.0628
0.05	0.0367	0.7715	0.4	0.1006	0.1734	0.75	0.0931	0.0613
0.06	0.0424	0.7336	0.41	0.1007	0.1674	0.76	0.0928	0.0598
0.07	0.0476	0.6979	0.42	0.1007	0.1616	0.77	0.0925	0.0583
0.08	0.0525	0.6643	0.43	0.1007	0.1561	0.78	0.0922	0.0569
0.09	0.0569	0.6326	0.44	0.1006	0.1509	0.79	0.0919	0.0556
0.1	0.061	0.6028	0.45	0.1006	0.1459	0.8	0.0916	0.0543
0.11	0.0648	0.5746	0.46	0.1005	0.1411	0.81	0.0913	0.053
0.12	0.0683	0.548	0.47	0.1004	0.1365	0.82	0.091	0.0518
0.13	0.0715	0.5228	0.48	0.1002	0.1321	0.83	0.0906	0.0506
0.14	0.0744	0.4991	0.49	0.1001	0.1279	0.84	0.0903	0.0495
0.15	0.0771	0.4766	0.5	0.0999	0.1238	0.85	0.09	0.0484
0.16	0.0795	0.4554	0.51	0.0998	0.12	0.86	0.0897	0.0473
0.17	0.0818	0.4353	0.52	0.0996	0.1163	0.87	0.0894	0.0463
0.18	0.0839	0.4163	0.53	0.0994	0.1127	0.88	0.0891	0.0452
0.19	0.0857	0.3983	0.54	0.0991	0.1093	0.89	0.0888	0.0443
0.2	0.0875	0.3812	0.55	0.0989	0.106	0.9	0.0885	0.0433
0.21	0.089	0.365	0.56	0.0987	0.1029	0.91	0.0882	0.0424
0.22	0.0905	0.3497	0.57	0.0984	0.0998	0.92	0.0879	0.0415
0.23	0.0917	0.3352	0.58	0.0982	0.0969	0.93	0.0876	0.0406
0.24	0.0929	0.3214	0.59	0.0979	0.0941	0.94	0.0873	0.0398
0.25	0.094	0.3083	0.6	0.0976	0.0915	0.95	0.087	0.039
0.26	0.0949	0.2958	0.61	0.0974	0.0889	0.96	0.0867	0.0382
0.27	0.0958	0.284	0.62	0.0971	0.0864	0.97	0.0864	0.0374
0.28	0.0965	0.2728	0.63	0.0968	0.084	0.98	0.0861	0.0367
0.29	0.0972	0.2621	0.64	0.0965	0.0817	0.99	0.0859	0.0359
0.3	0.0978	0.2519	0.65	0.0962	0.0795	1	0.0856	0.0352
0.31	0.0984	0.2422	0.66	0.0959	0.0774	1.01	0.0853	0.0345
0.32	0.0988	0.233	0.67	0.0956	0.0753	1.02	0.085	0.0339
0.33	0.0992	0.2243	0.68	0.0953	0.0733	1.03	0.0847	0.0332
0.34	0.0996	0.2159	0.69	0.095	0.0714	1.04	0.0844	0.0326

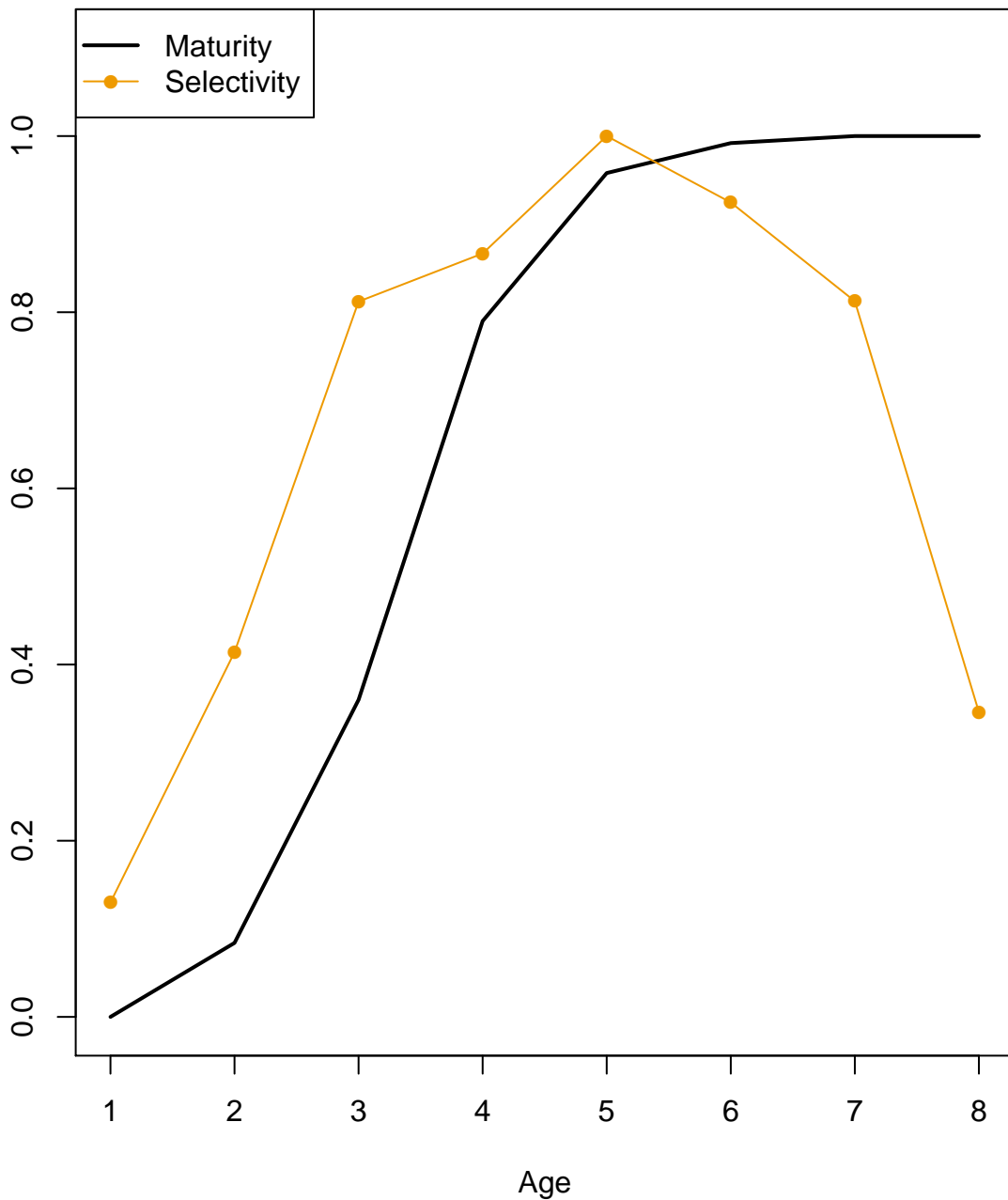
SPR Target Reference Points (Years Avg = 5)



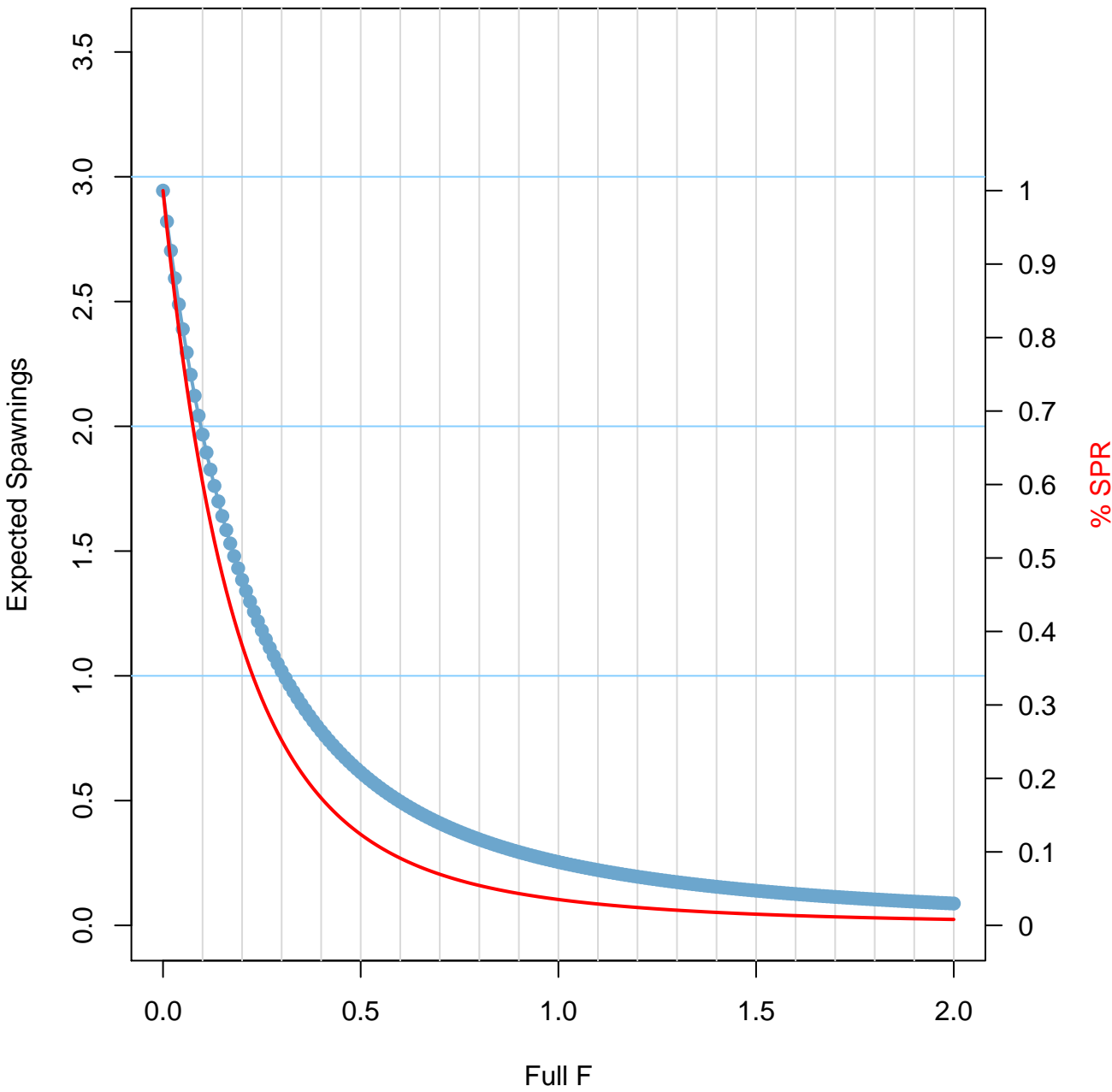
SPR Target Reference Points (Years Avg = 5)

% SPR	F(%SPR)	YPR
0.2	0.3605	0.1001
0.25	0.3019	0.0979
0.3	0.2566	0.0946
0.35	0.2198	0.0904
0.4	0.189	0.0856
0.45	0.1626	0.0802
0.5	0.1396	0.0743
0.55	0.1192	0.068
0.6	0.101	0.0614
0.65	0.0844	0.0545
0.7	0.0694	0.0473
0.75	0.0556	0.0399
0.8	0.0429	0.0323

Selectivity or Maturity at age



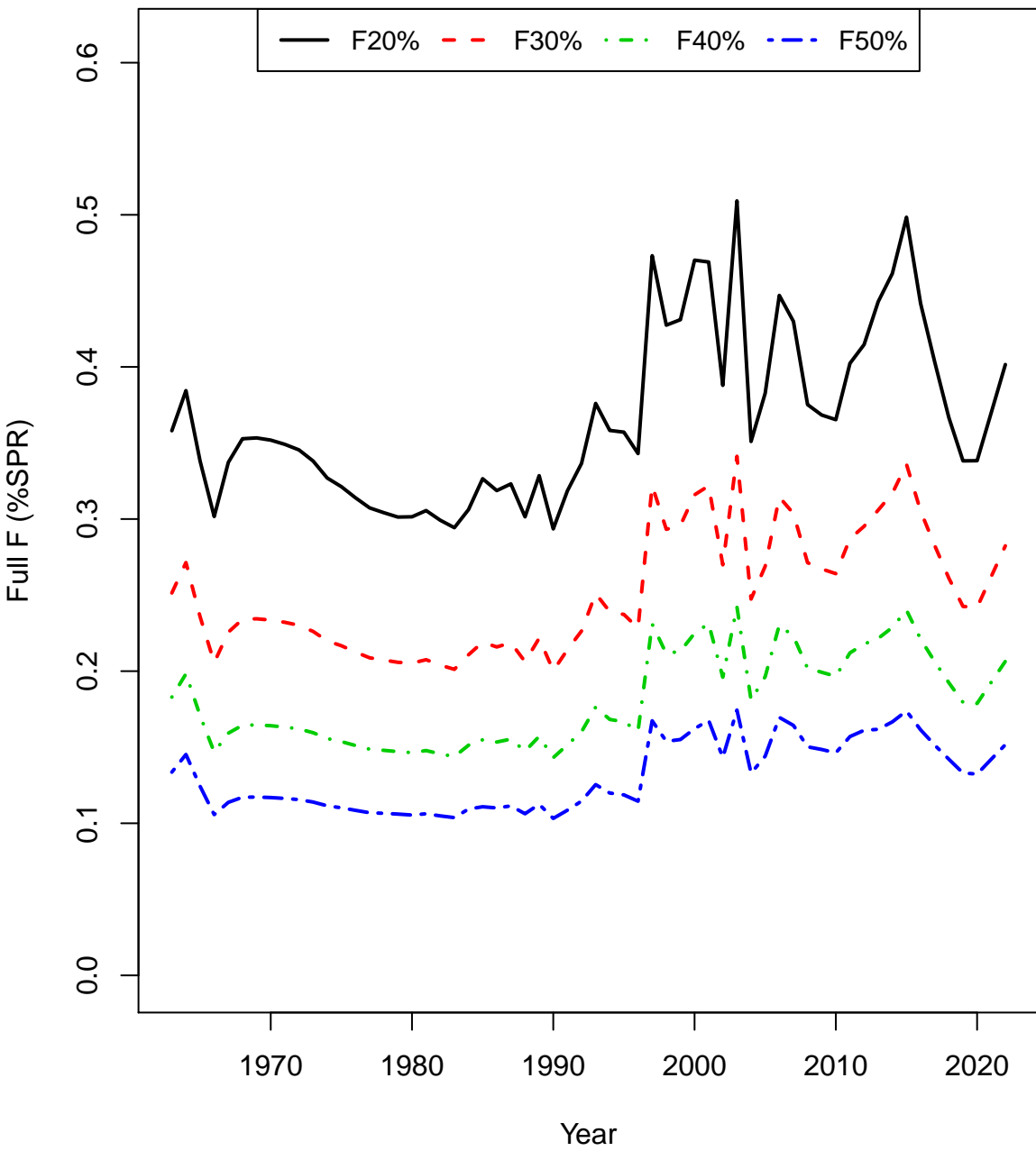
Expected Spawns and SPR Reference Points (Years Avg = 5)



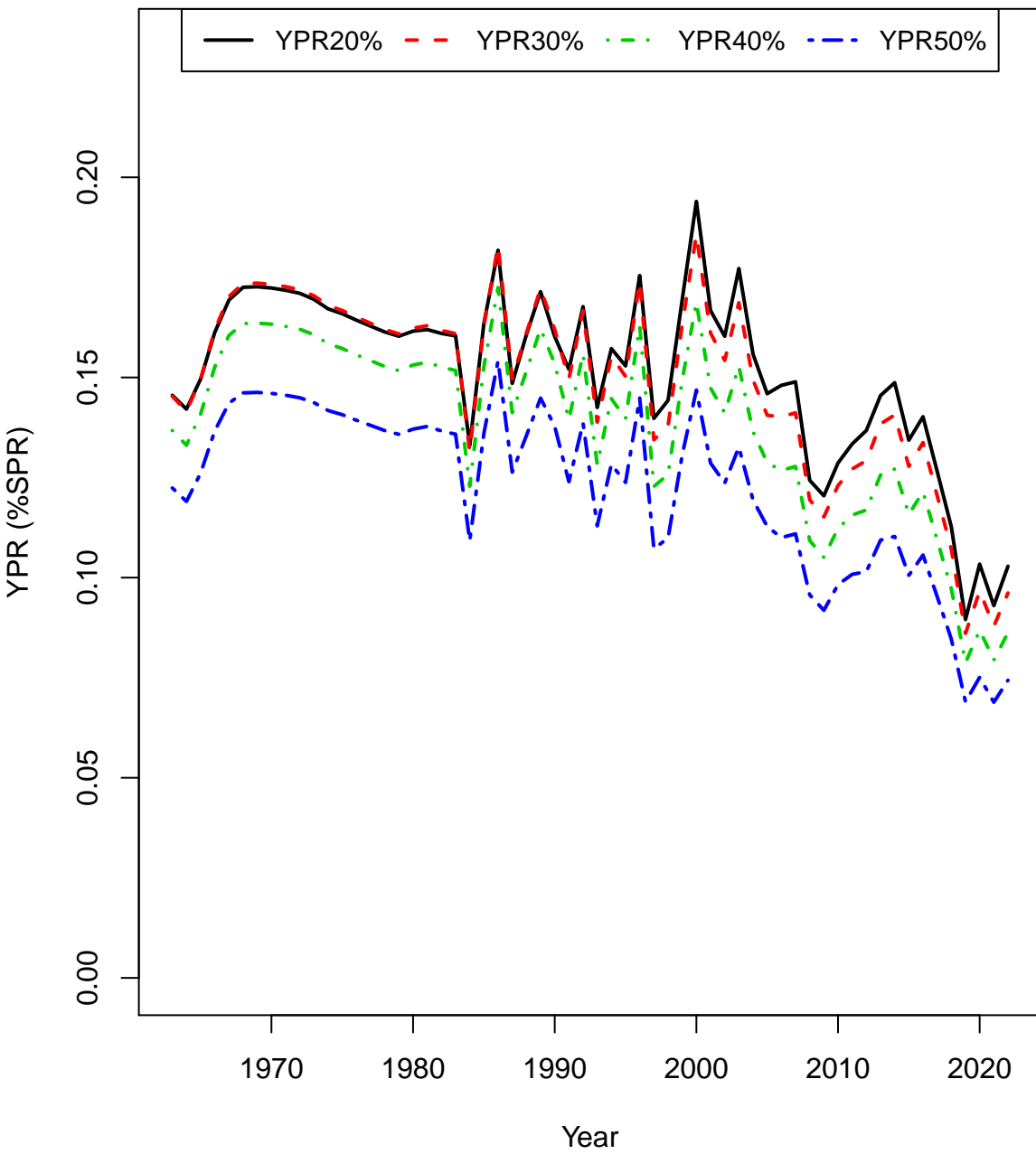
Expected Spawnings & SPR Reference Points (Years Avg = 5)

F	E[Sp]	SPR	F	E[Sp]	SPR	F	E[Sp]	SPR
0	2.9445	1	0.35	0.8868	0.208	0.7	0.4098	0.0696
0.01	2.8207	0.9484	0.36	0.8634	0.2004	0.71	0.4025	0.0678
0.02	2.7037	0.9	0.37	0.8409	0.1932	0.72	0.3953	0.0661
0.03	2.5931	0.8545	0.38	0.8192	0.1863	0.73	0.3884	0.0644
0.04	2.4885	0.8117	0.39	0.7984	0.1797	0.74	0.3816	0.0628
0.05	2.3895	0.7715	0.4	0.7784	0.1734	0.75	0.375	0.0613
0.06	2.2957	0.7336	0.41	0.7591	0.1674	0.76	0.3686	0.0598
0.07	2.2069	0.6979	0.42	0.7404	0.1616	0.77	0.3624	0.0583
0.08	2.1226	0.6643	0.43	0.7225	0.1561	0.78	0.3563	0.0569
0.09	2.0427	0.6326	0.44	0.7052	0.1509	0.79	0.3503	0.0556
0.1	1.9669	0.6028	0.45	0.6885	0.1459	0.8	0.3446	0.0543
0.11	1.8948	0.5746	0.46	0.6725	0.1411	0.81	0.3389	0.053
0.12	1.8263	0.548	0.47	0.6569	0.1365	0.82	0.3334	0.0518
0.13	1.7612	0.5228	0.48	0.6419	0.1321	0.83	0.3281	0.0506
0.14	1.6993	0.4991	0.49	0.6274	0.1279	0.84	0.3228	0.0495
0.15	1.6403	0.4766	0.5	0.6134	0.1238	0.85	0.3177	0.0484
0.16	1.5842	0.4554	0.51	0.5999	0.12	0.86	0.3128	0.0473
0.17	1.5307	0.4353	0.52	0.5868	0.1163	0.87	0.3079	0.0463
0.18	1.4796	0.4163	0.53	0.5741	0.1127	0.88	0.3032	0.0452
0.19	1.431	0.3983	0.54	0.5619	0.1093	0.89	0.2985	0.0443
0.2	1.3846	0.3812	0.55	0.55	0.106	0.9	0.294	0.0433
0.21	1.3402	0.365	0.56	0.5385	0.1029	0.91	0.2896	0.0424
0.22	1.2979	0.3497	0.57	0.5274	0.0998	0.92	0.2852	0.0415
0.23	1.2574	0.3352	0.58	0.5166	0.0969	0.93	0.281	0.0406
0.24	1.2187	0.3214	0.59	0.5062	0.0941	0.94	0.2769	0.0398
0.25	1.1817	0.3083	0.6	0.4961	0.0915	0.95	0.2729	0.039
0.26	1.1463	0.2958	0.61	0.4863	0.0889	0.96	0.2689	0.0382
0.27	1.1124	0.284	0.62	0.4767	0.0864	0.97	0.265	0.0374
0.28	1.0799	0.2728	0.63	0.4675	0.084	0.98	0.2613	0.0367
0.29	1.0488	0.2621	0.64	0.4585	0.0817	0.99	0.2576	0.0359
0.3	1.0189	0.2519	0.65	0.4498	0.0795	1	0.254	0.0352
0.31	0.9903	0.2422	0.66	0.4413	0.0774	1.01	0.2504	0.0345
0.32	0.9628	0.233	0.67	0.4331	0.0753	1.02	0.2469	0.0339
0.33	0.9364	0.2243	0.68	0.4251	0.0733	1.03	0.2435	0.0332
0.34	0.9111	0.2159	0.69	0.4174	0.0714	1.04	0.2402	0.0326

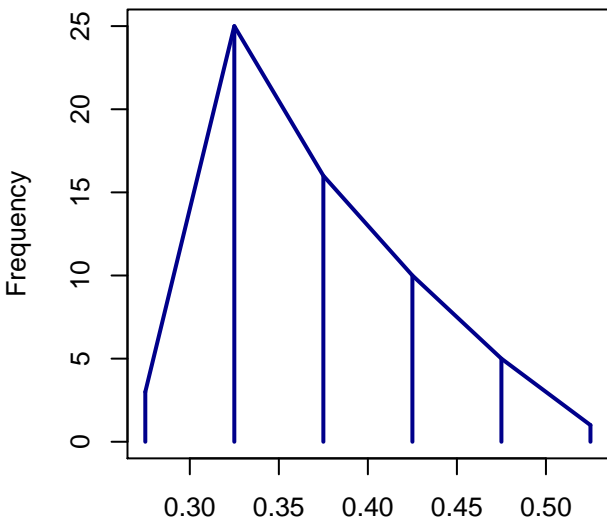
Annual F(%SPR) Reference Points



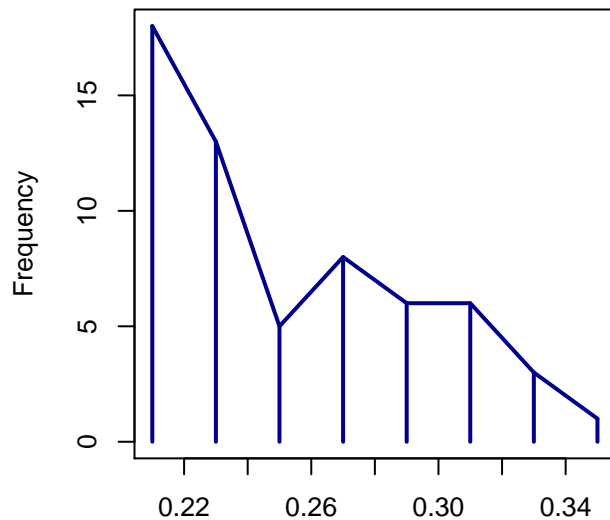
Annual YPR(%SPR) Reference Points



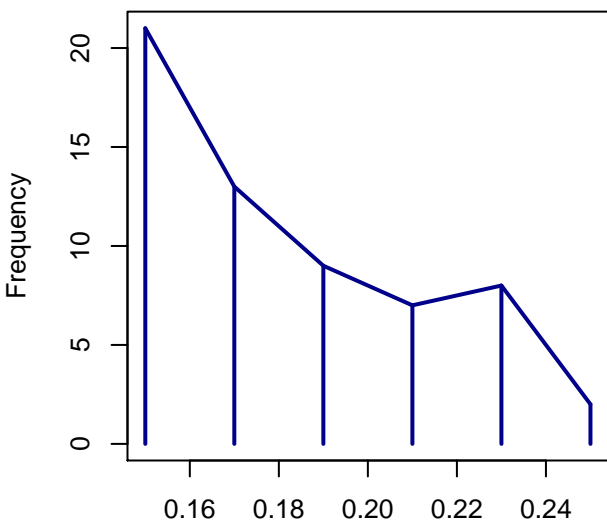
Annual F (%SPR) Reference Points



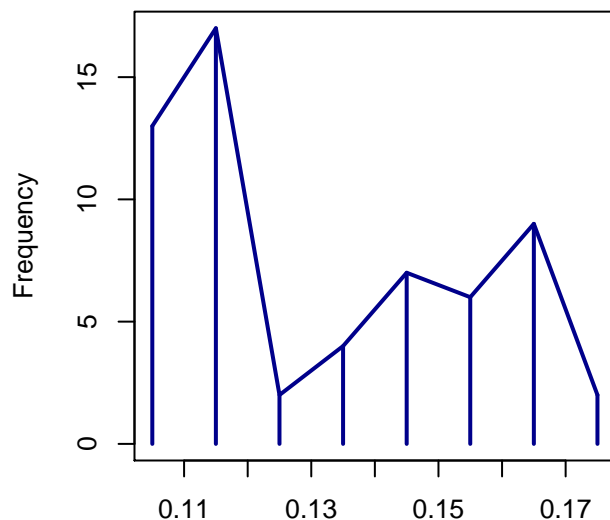
Full F20%



Full F30%

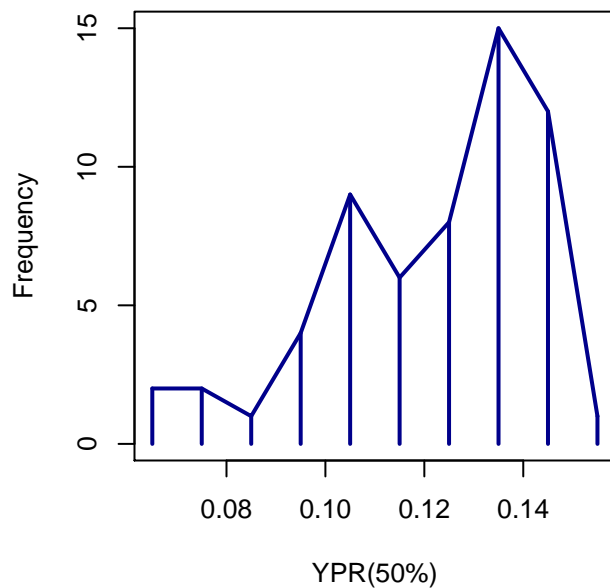
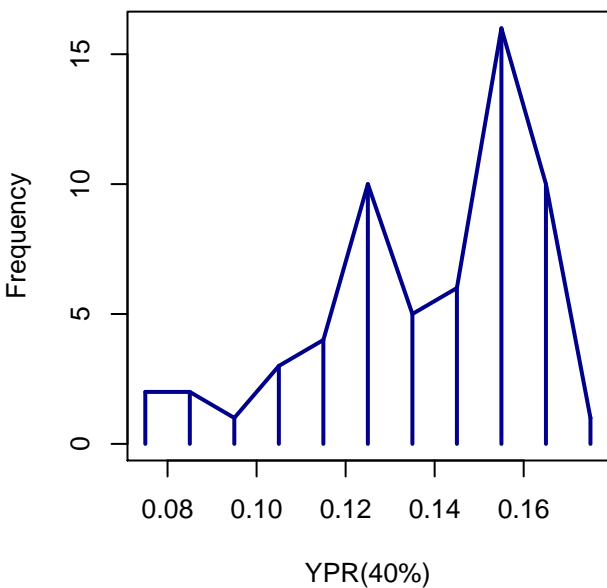
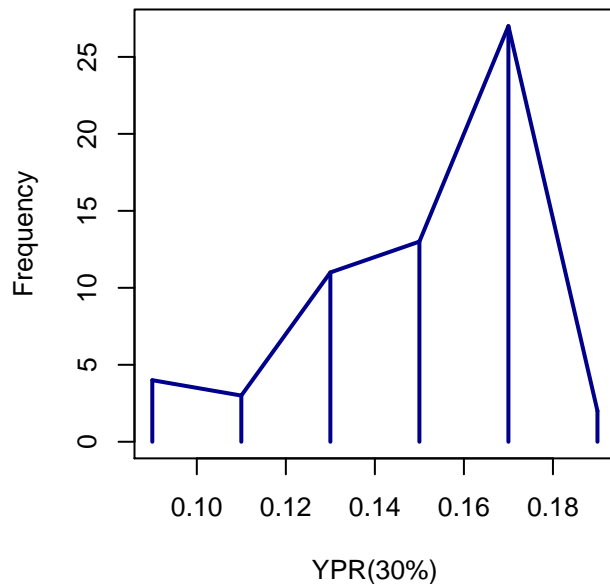
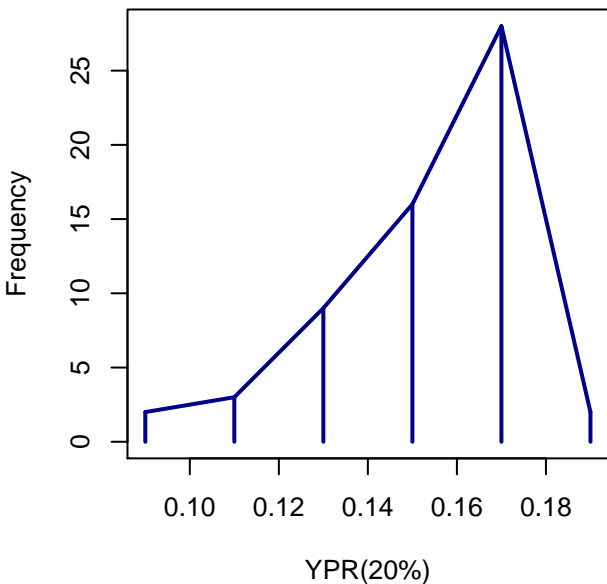


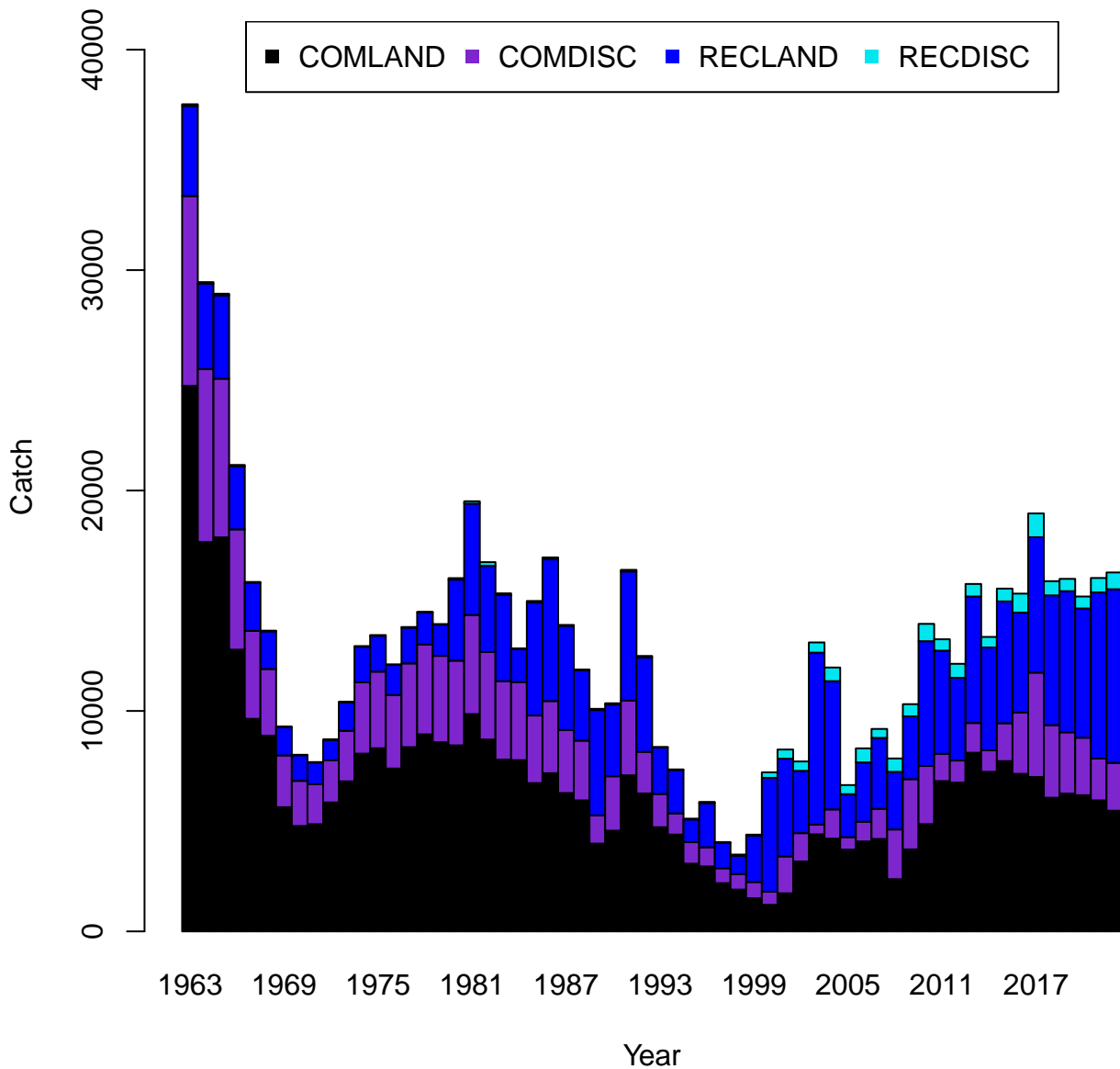
Full F40%

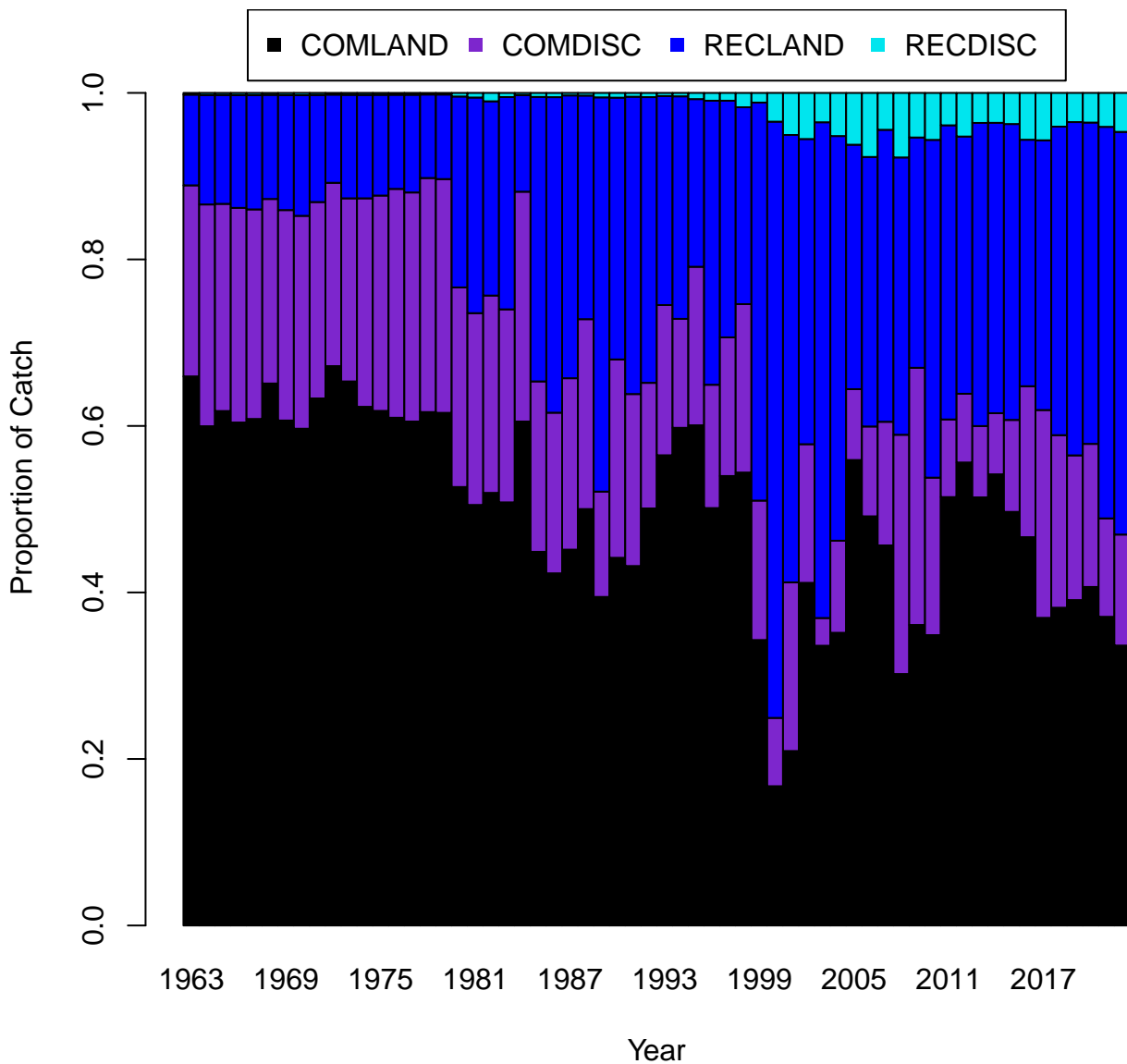


Full F50%

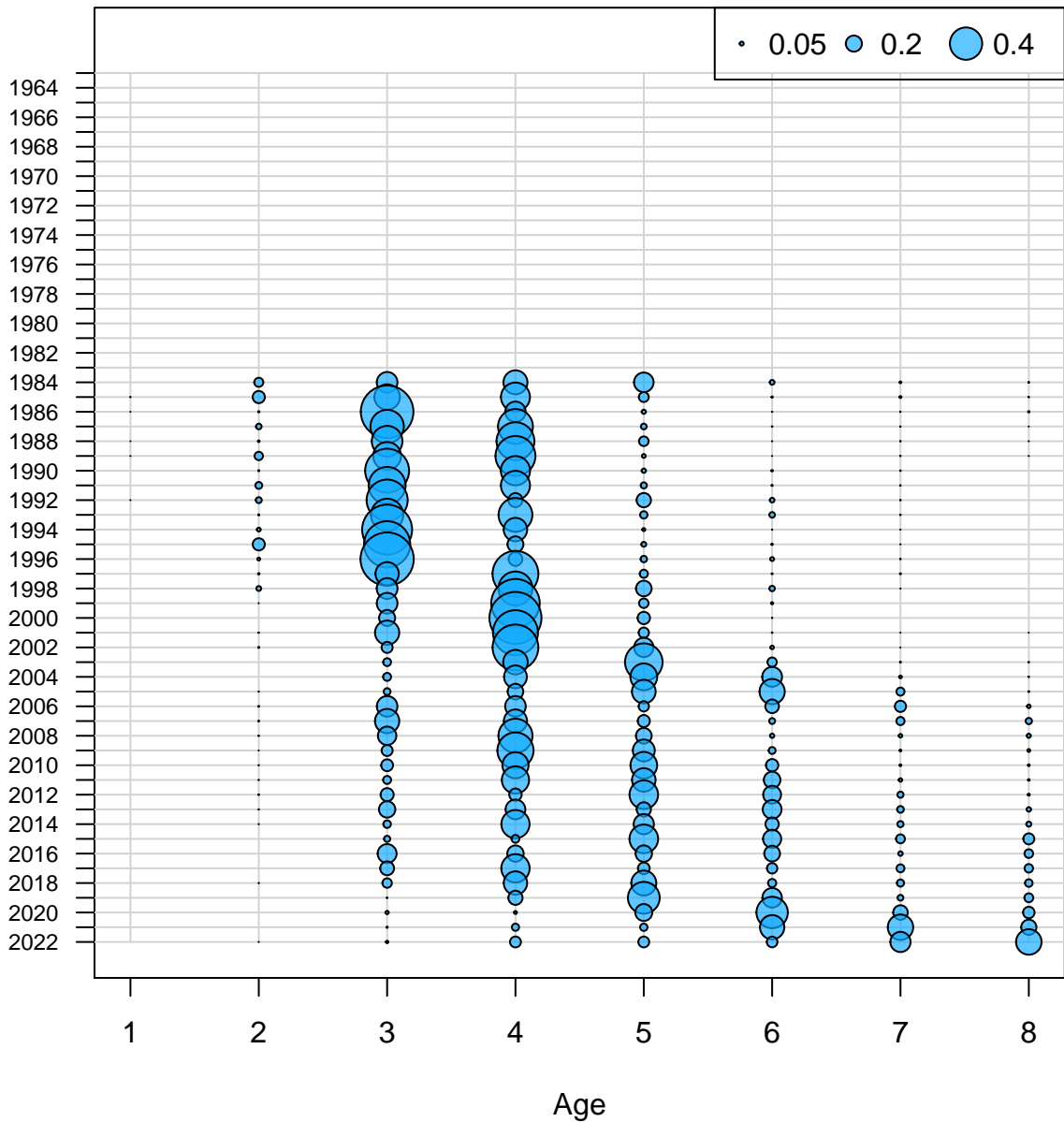
Annual YPR (%SPR) Reference Points



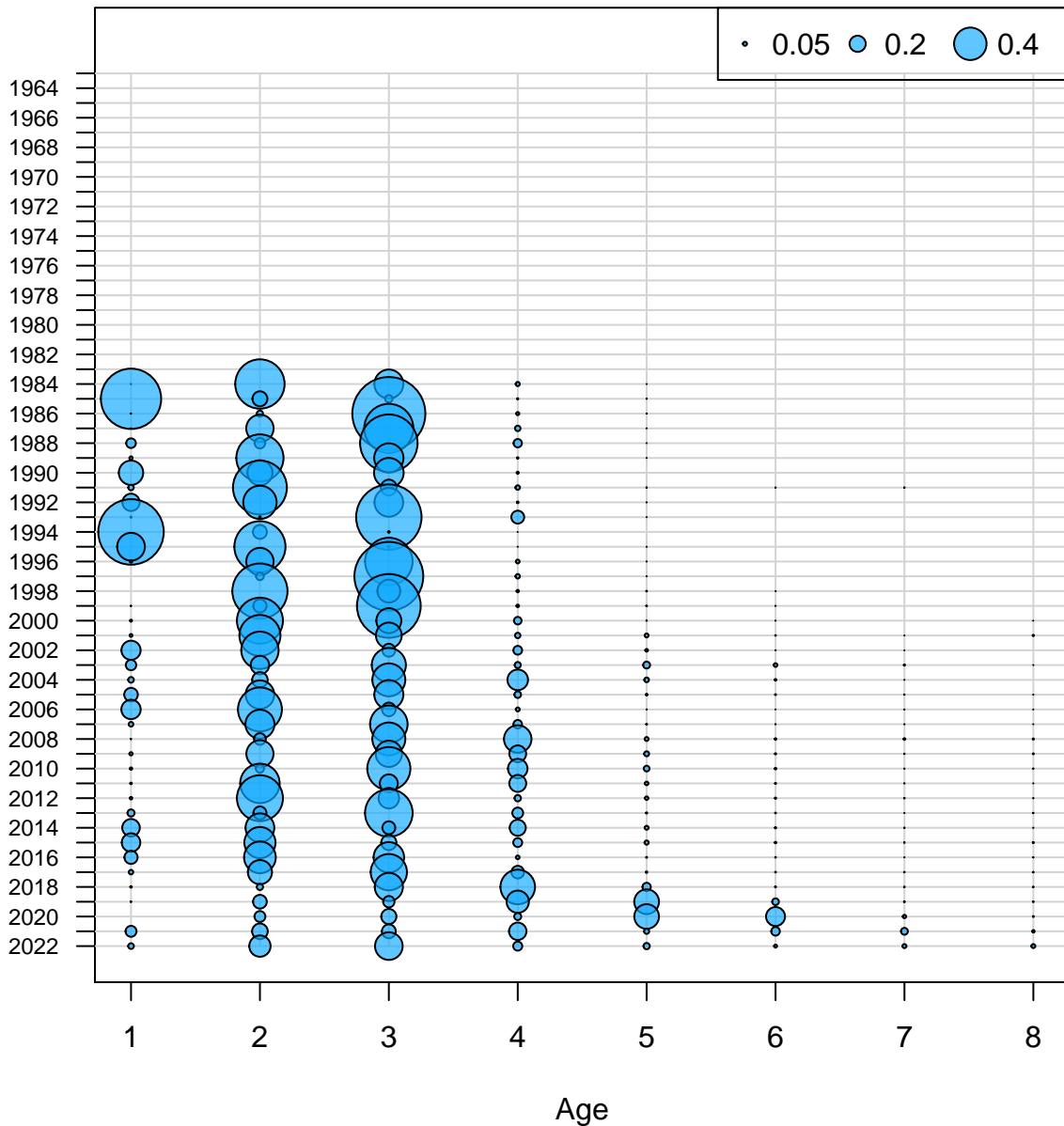




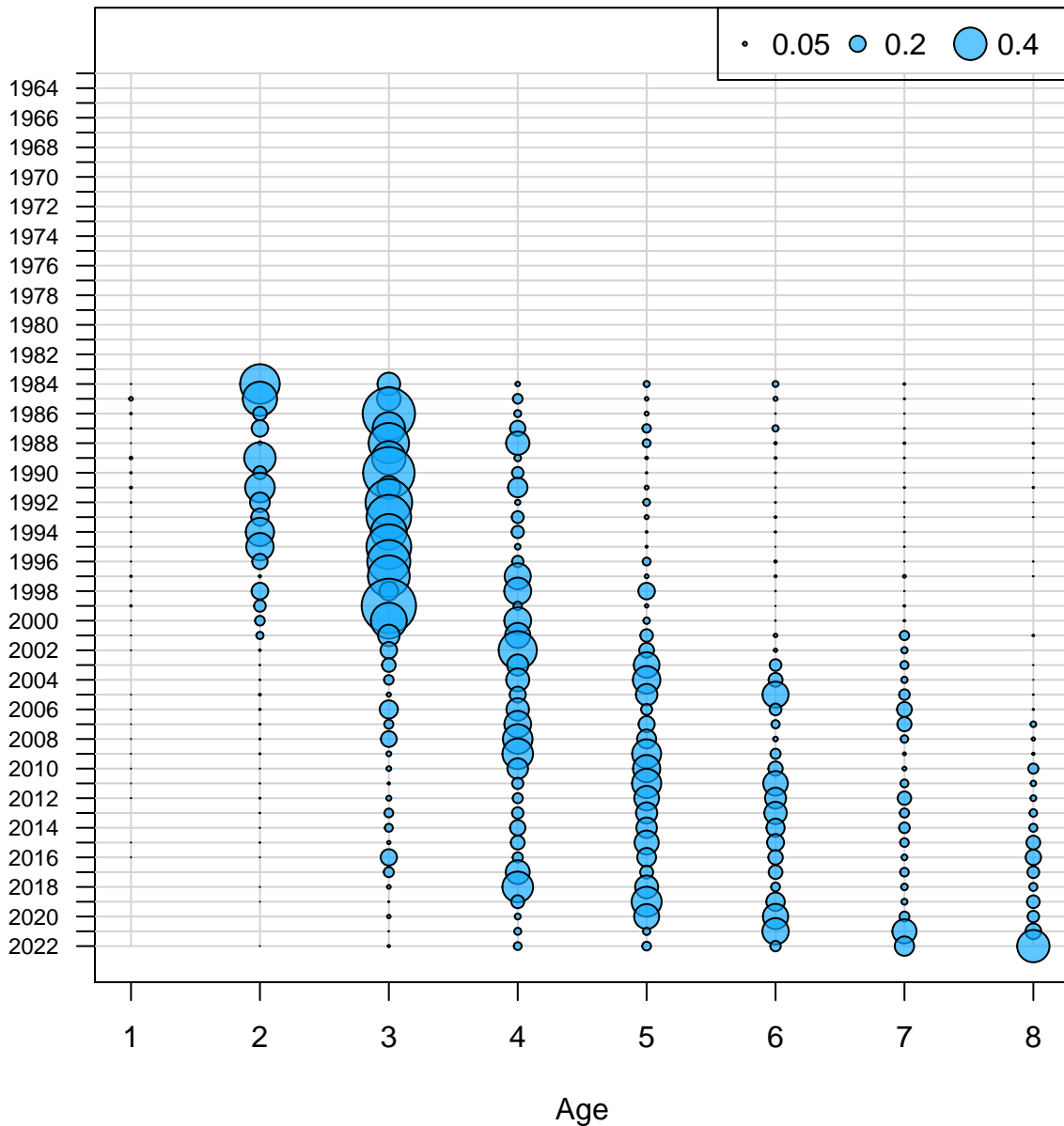
Age Comps for Catch by Fleet 1 (COMLAND)



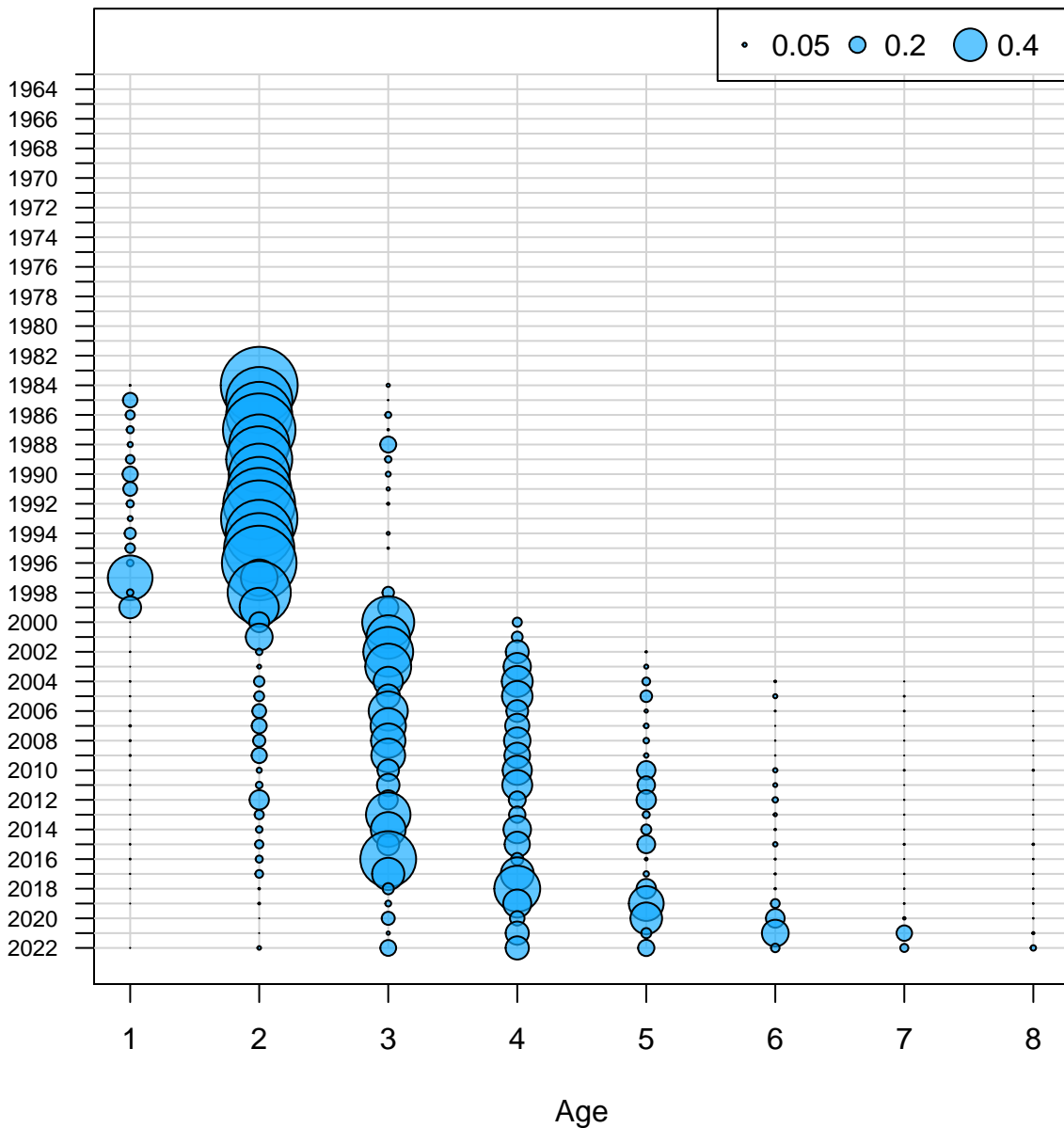
Age Comps for Catch by Fleet 2 (COMDISC)

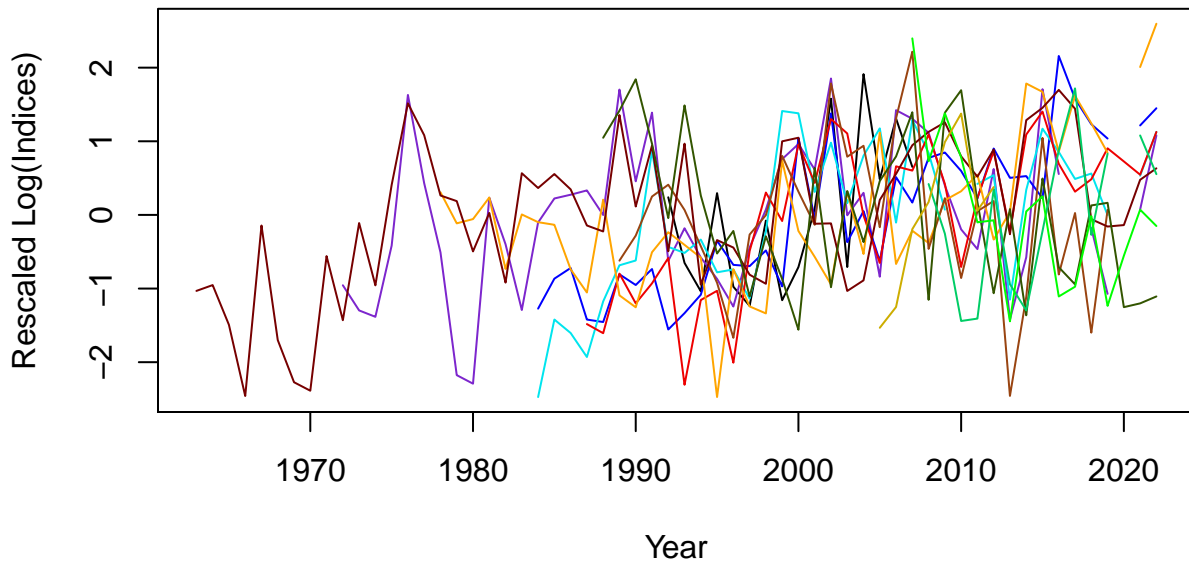
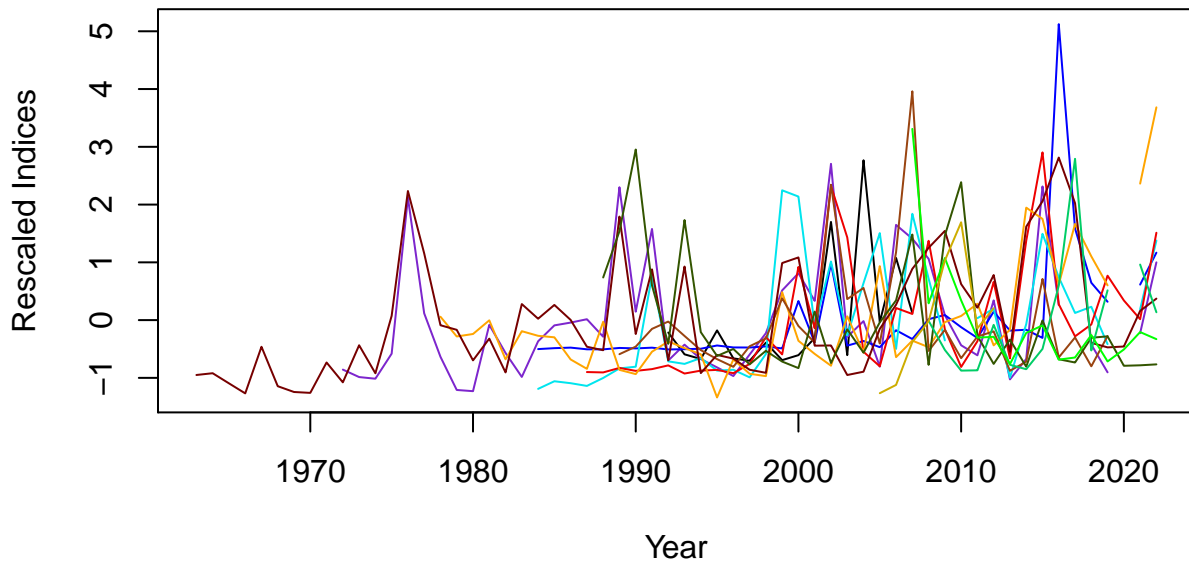


Age Comps for Catch by Fleet 3 (RECLAND)

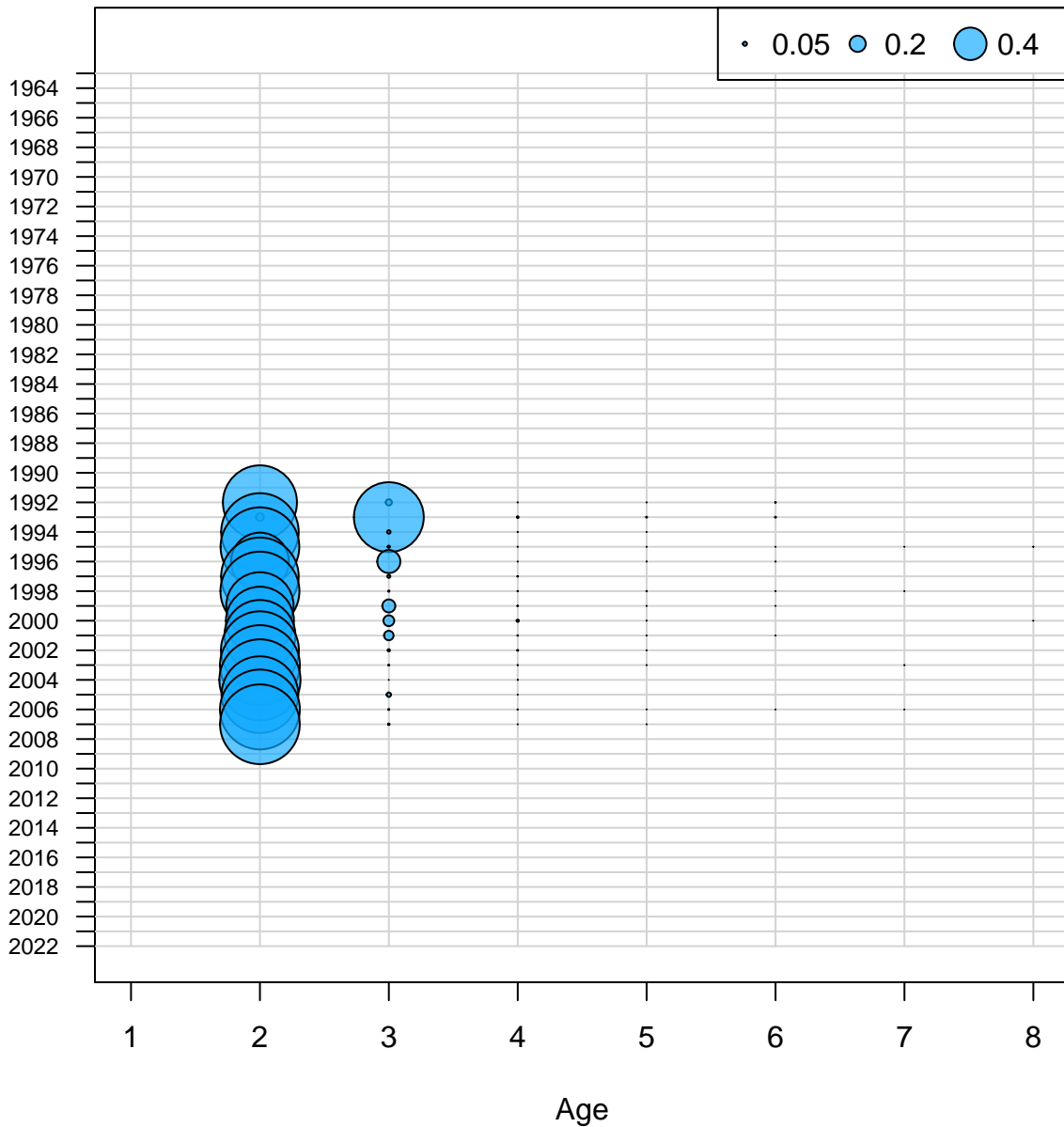


Age Comps for Catch by Fleet 4 (RECDISC)

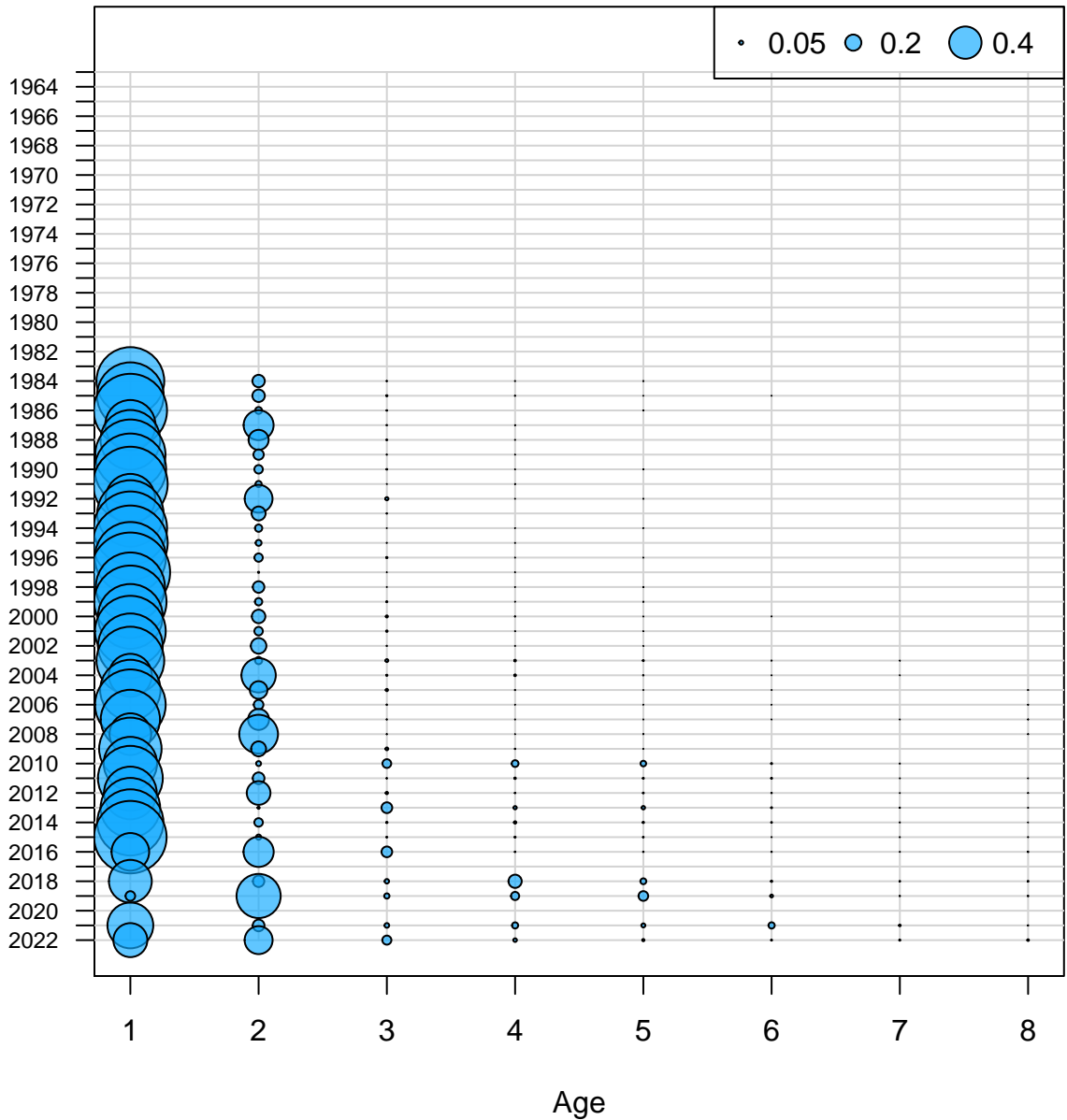




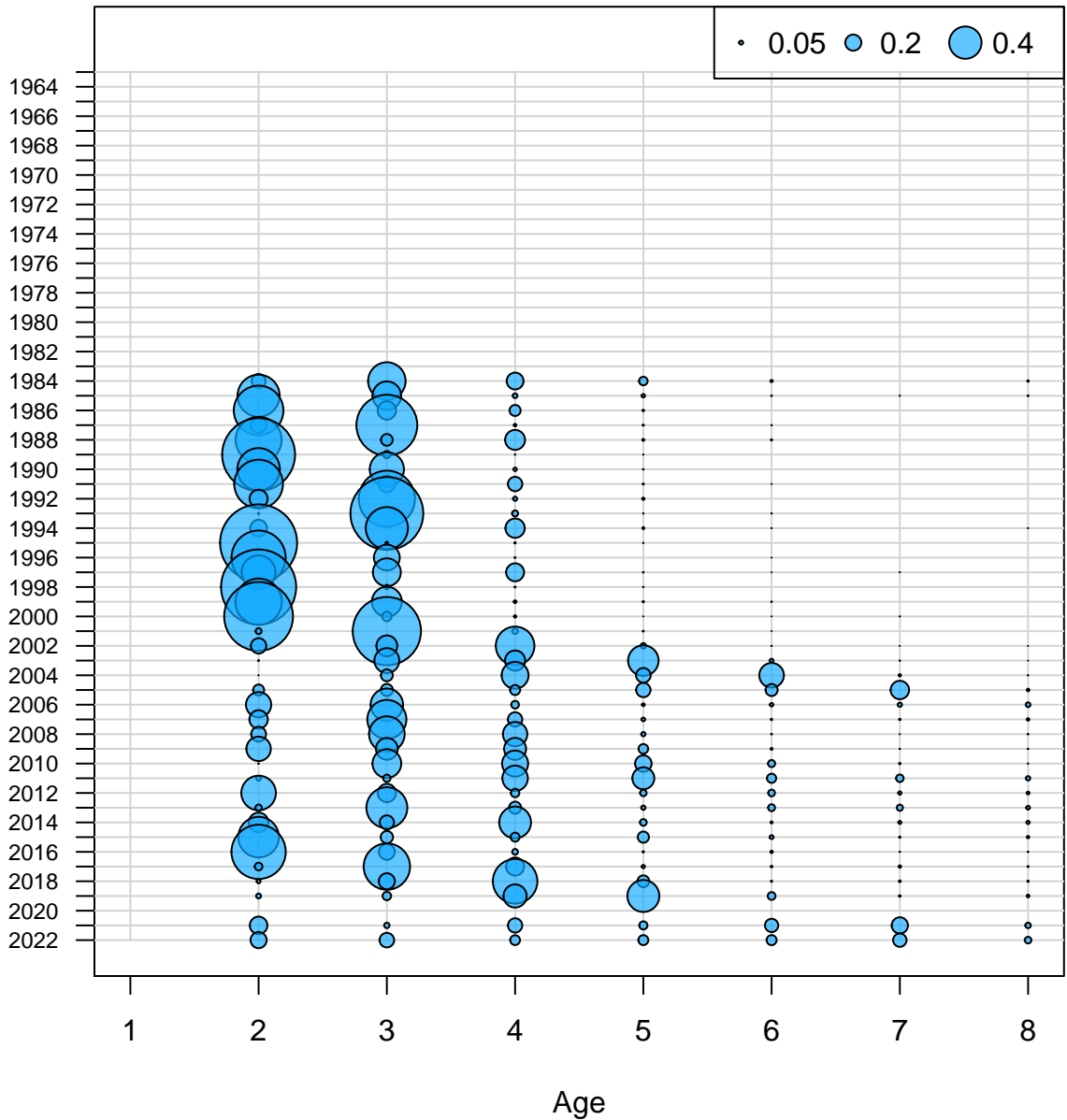
Age Comps for Index 1 (NECWIN)



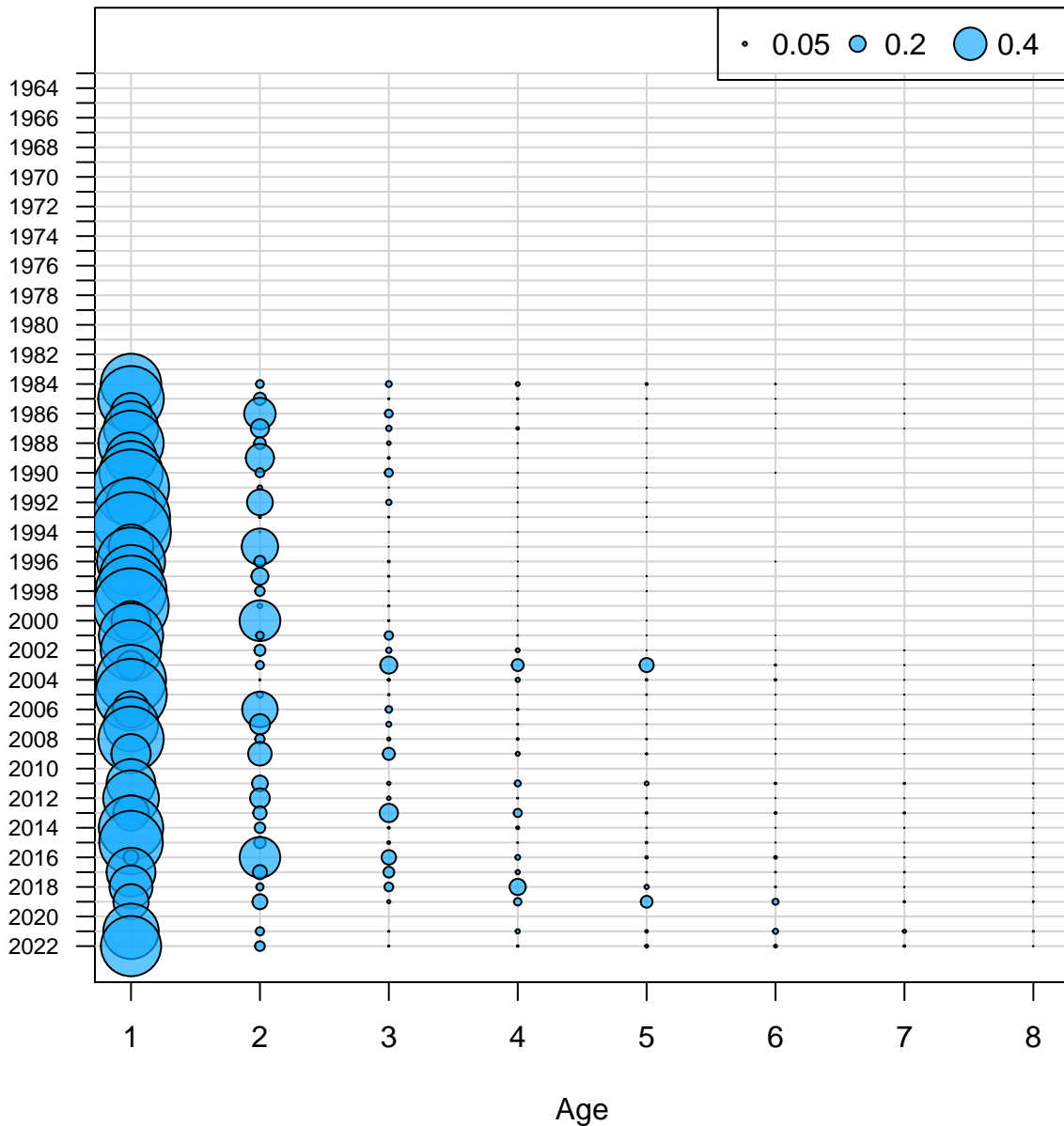
Age Comps for Index 2 (NECFAL)



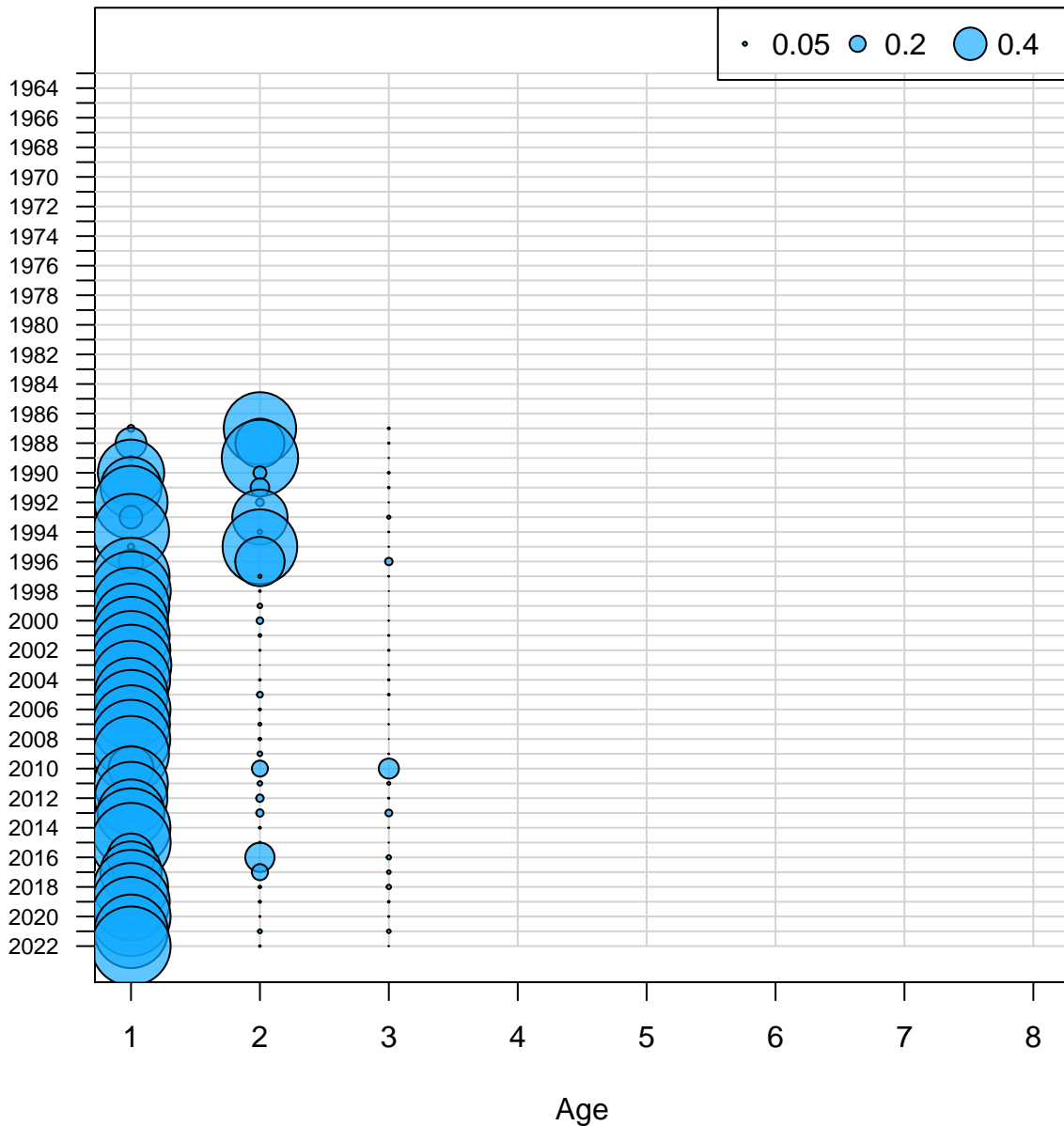
Age Comps for Index 3 (CTSPR)



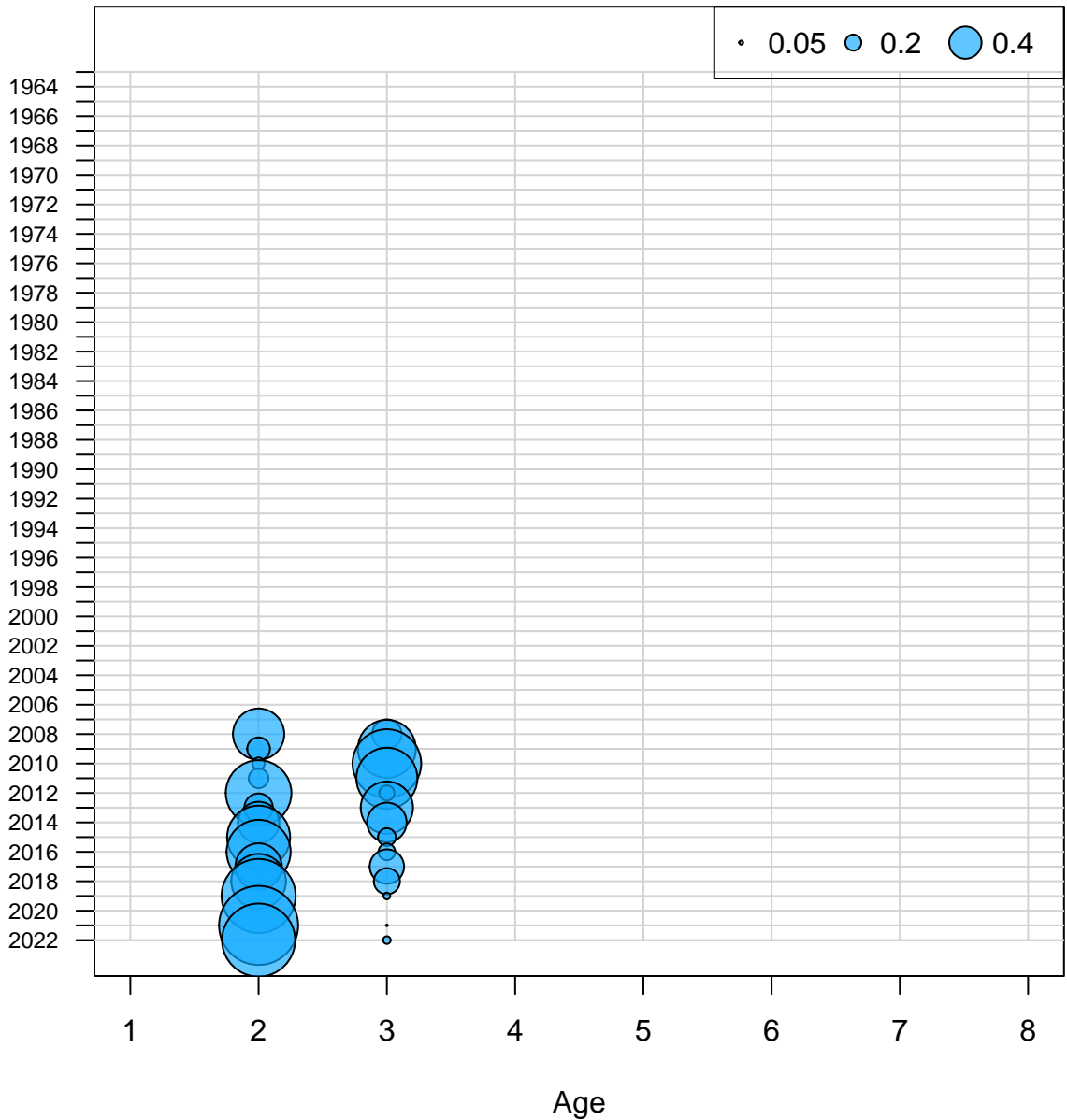
Age Comps for Index 4 (CTFAL)



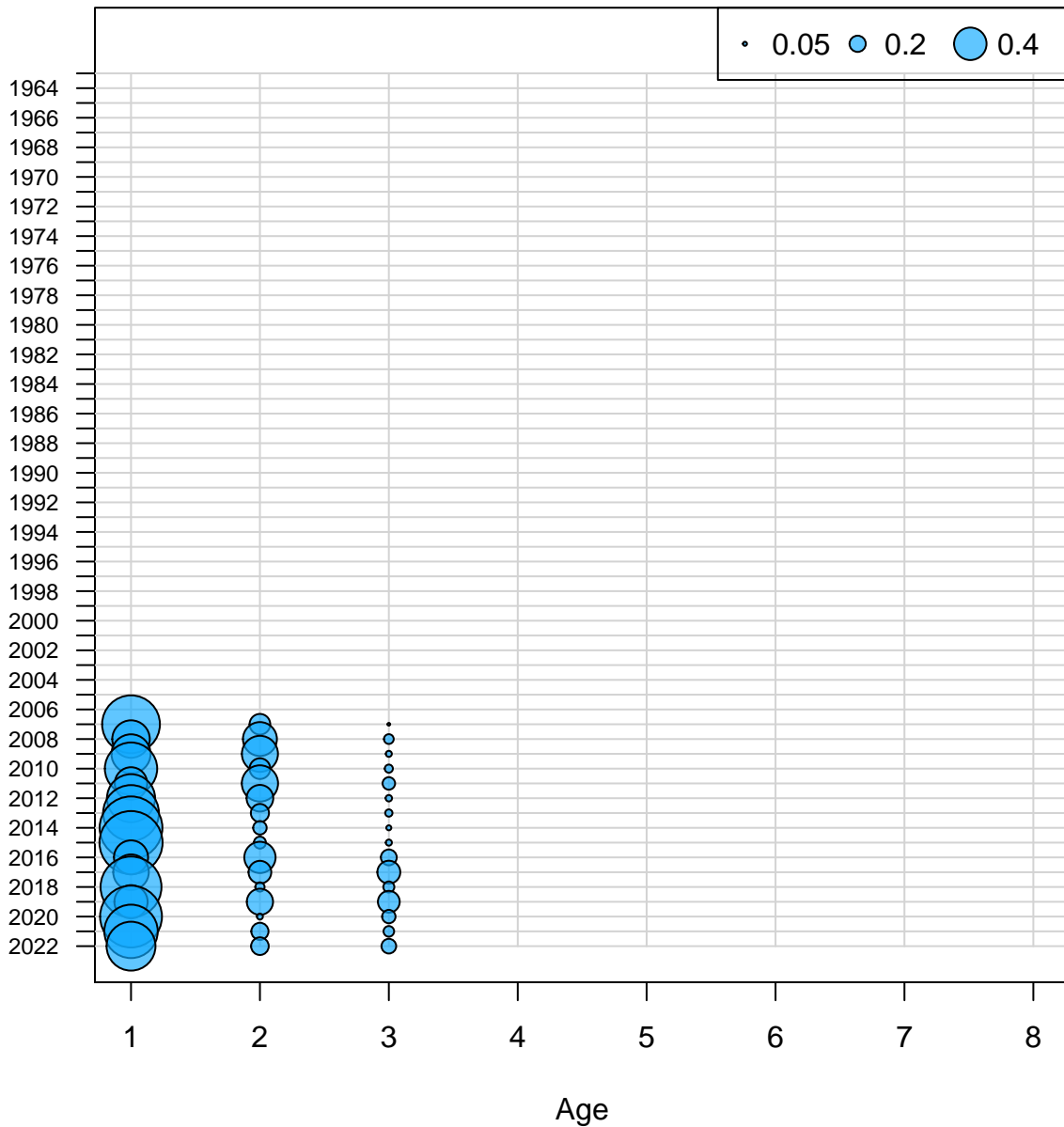
Age Comps for Index 5 (NYDEC)



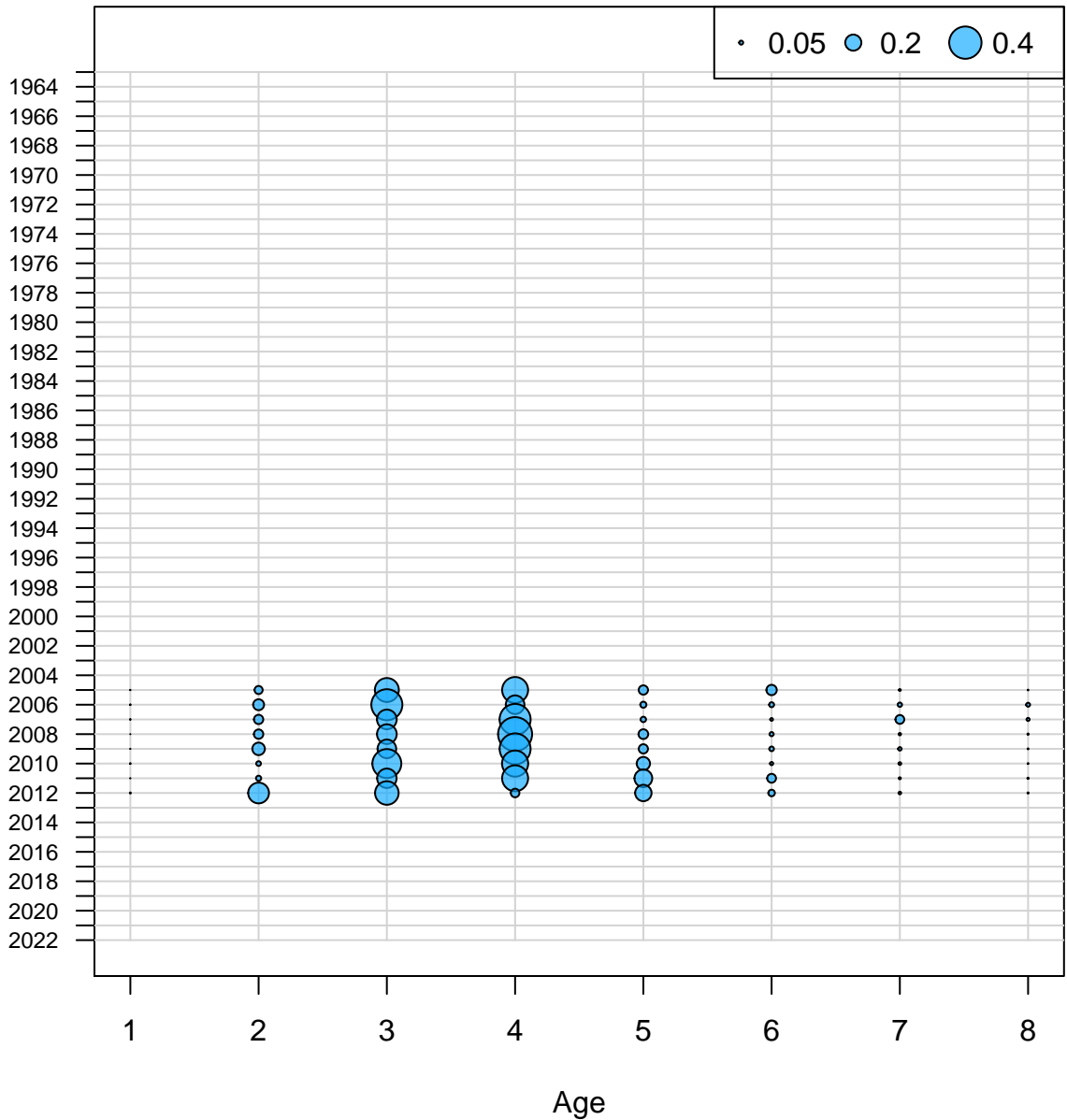
Age Comps for Index 10 (NEAMAP Spring)



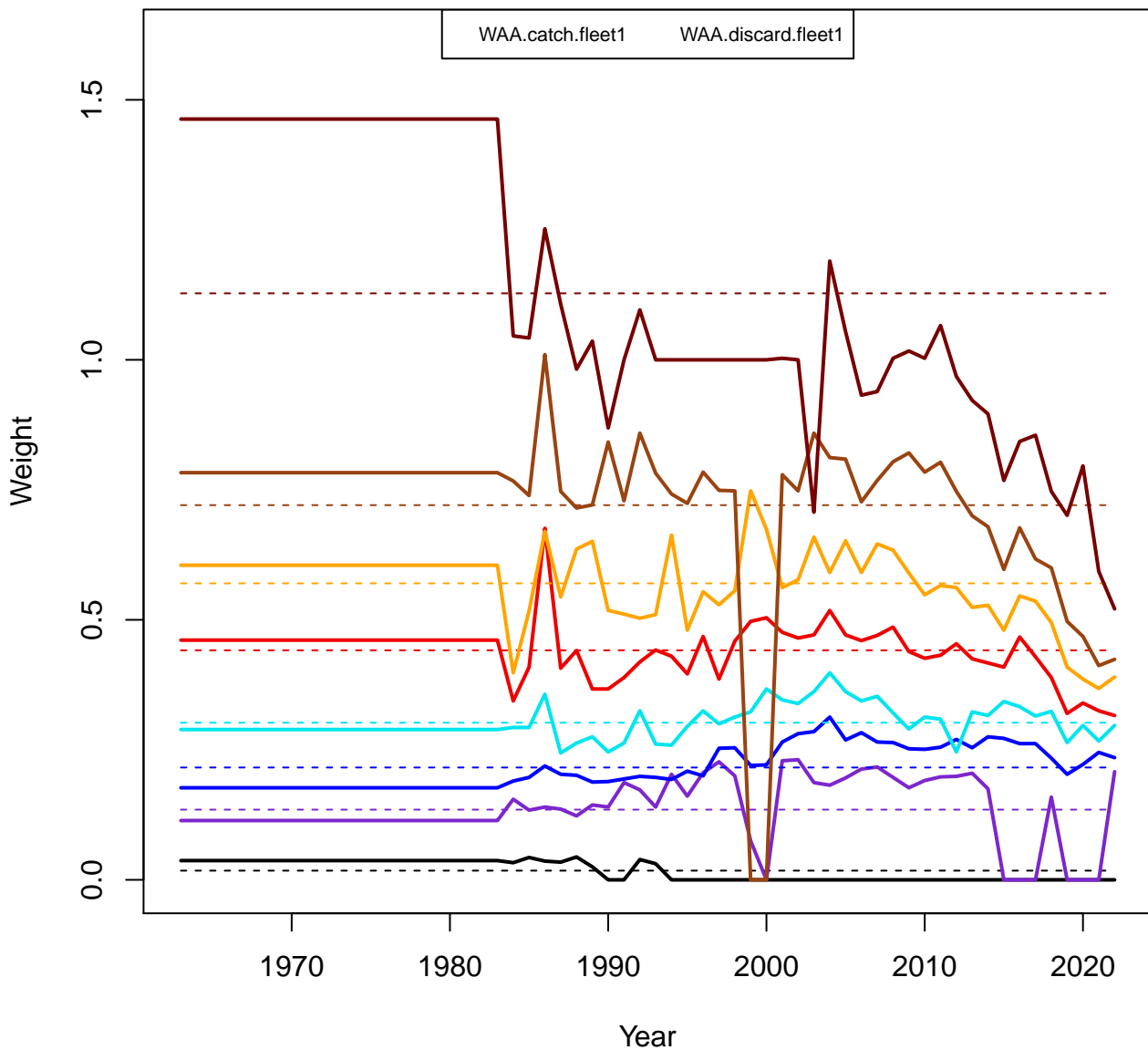
Age Comps for Index 11 (NEAMAP Fall)



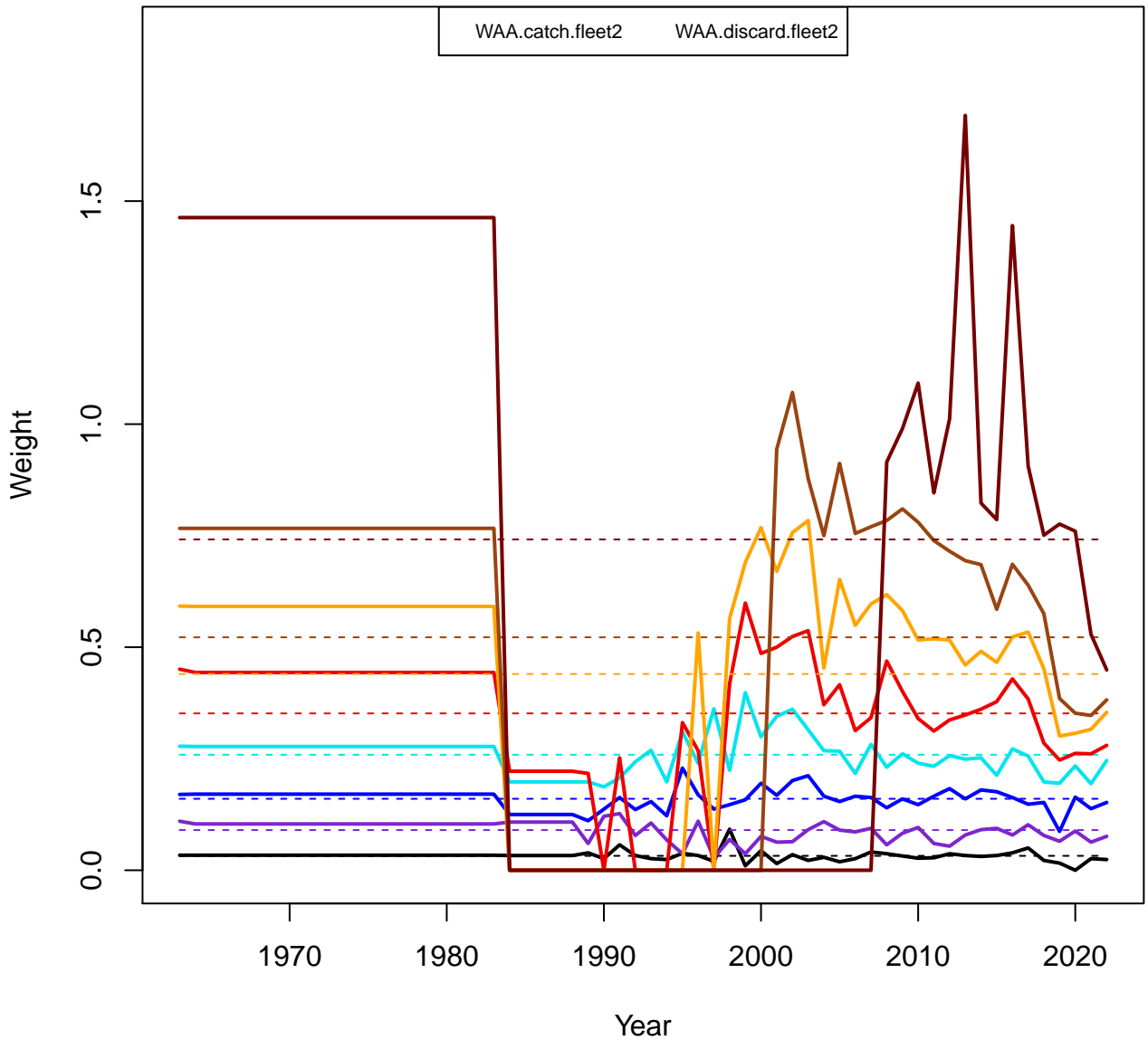
Age Comps for Index 12 (RI Coop Trap)



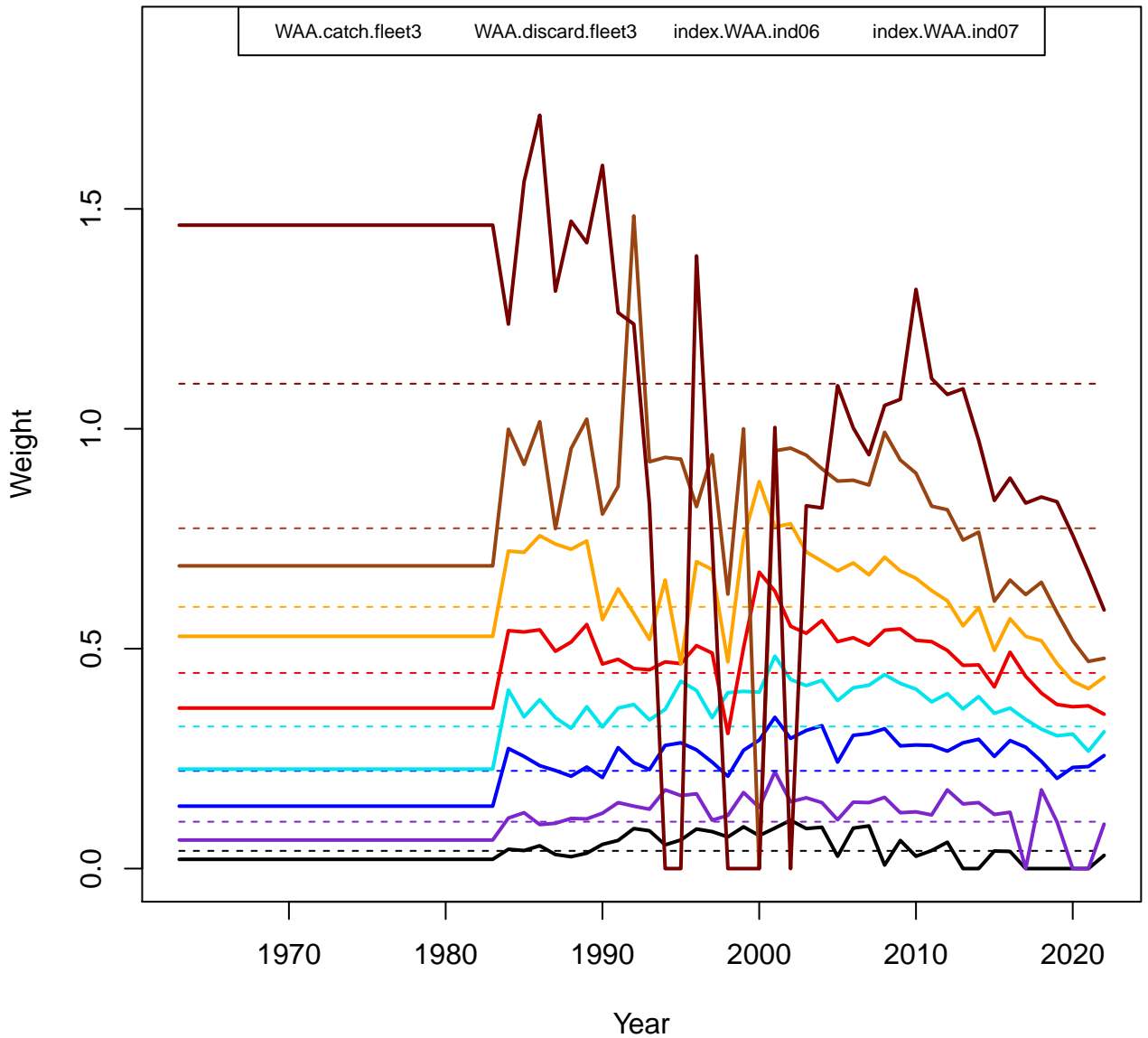
WAA matrix 1



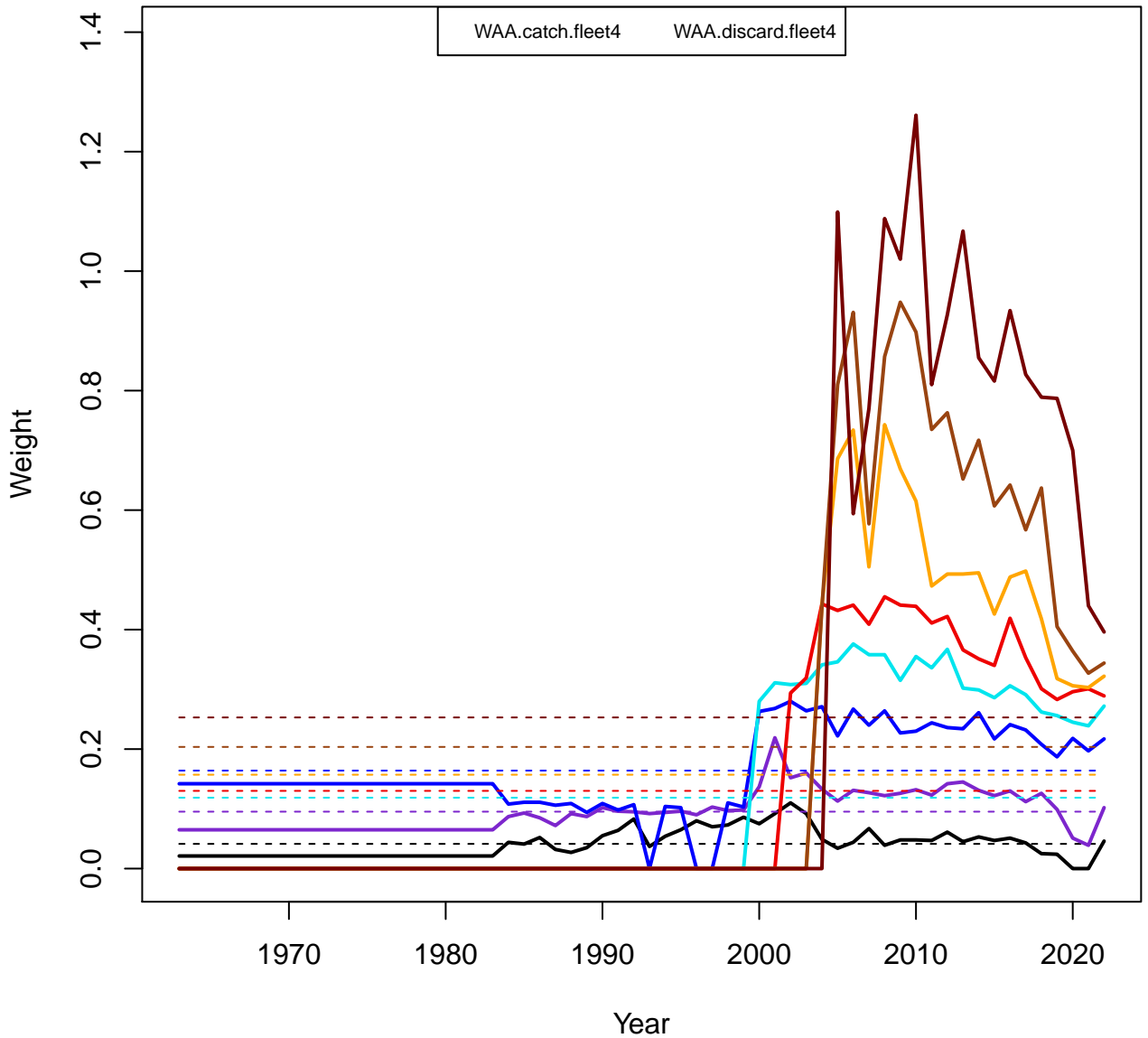
WAA matrix 2



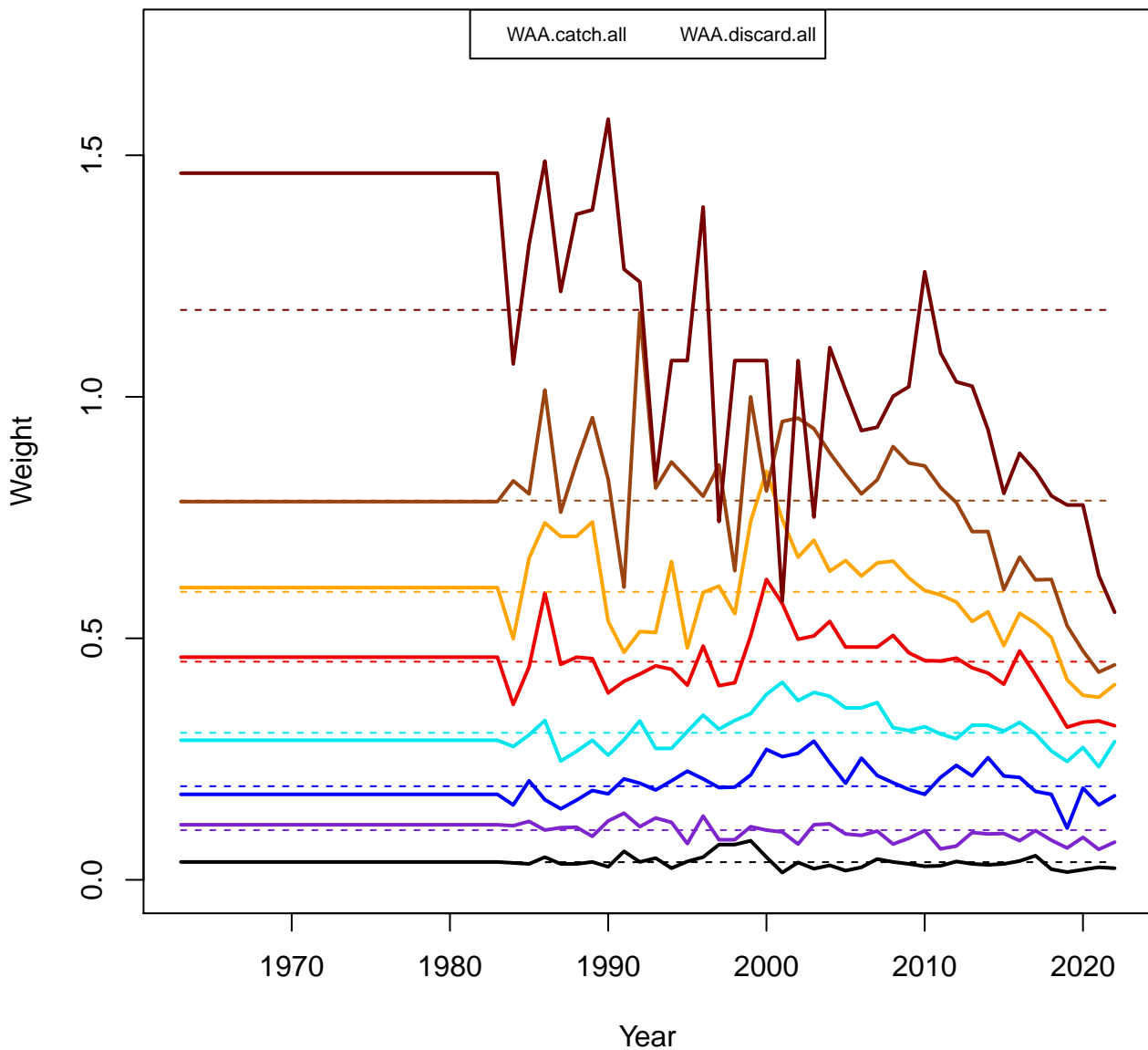
WAA matrix 3



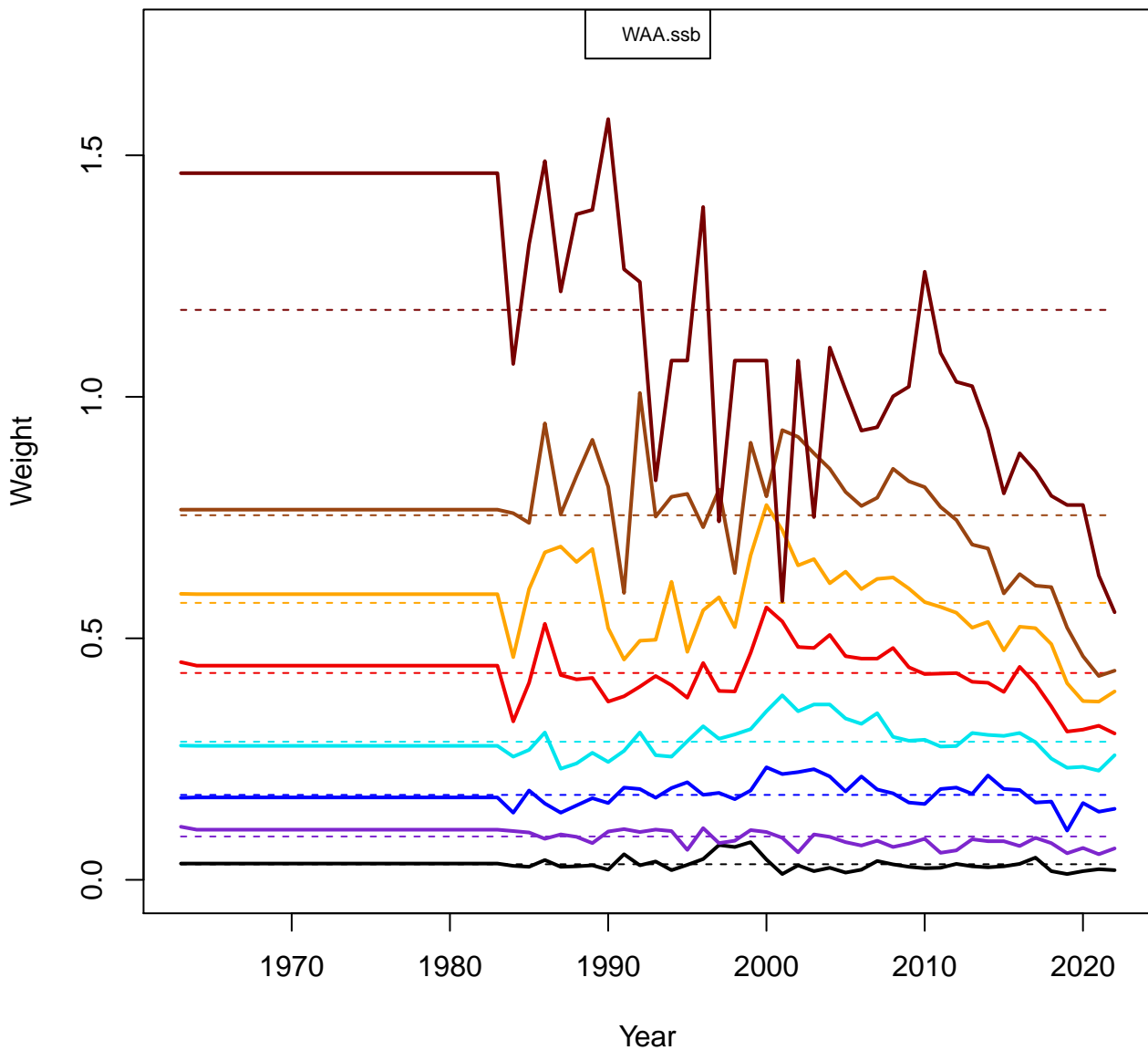
WAA matrix 4



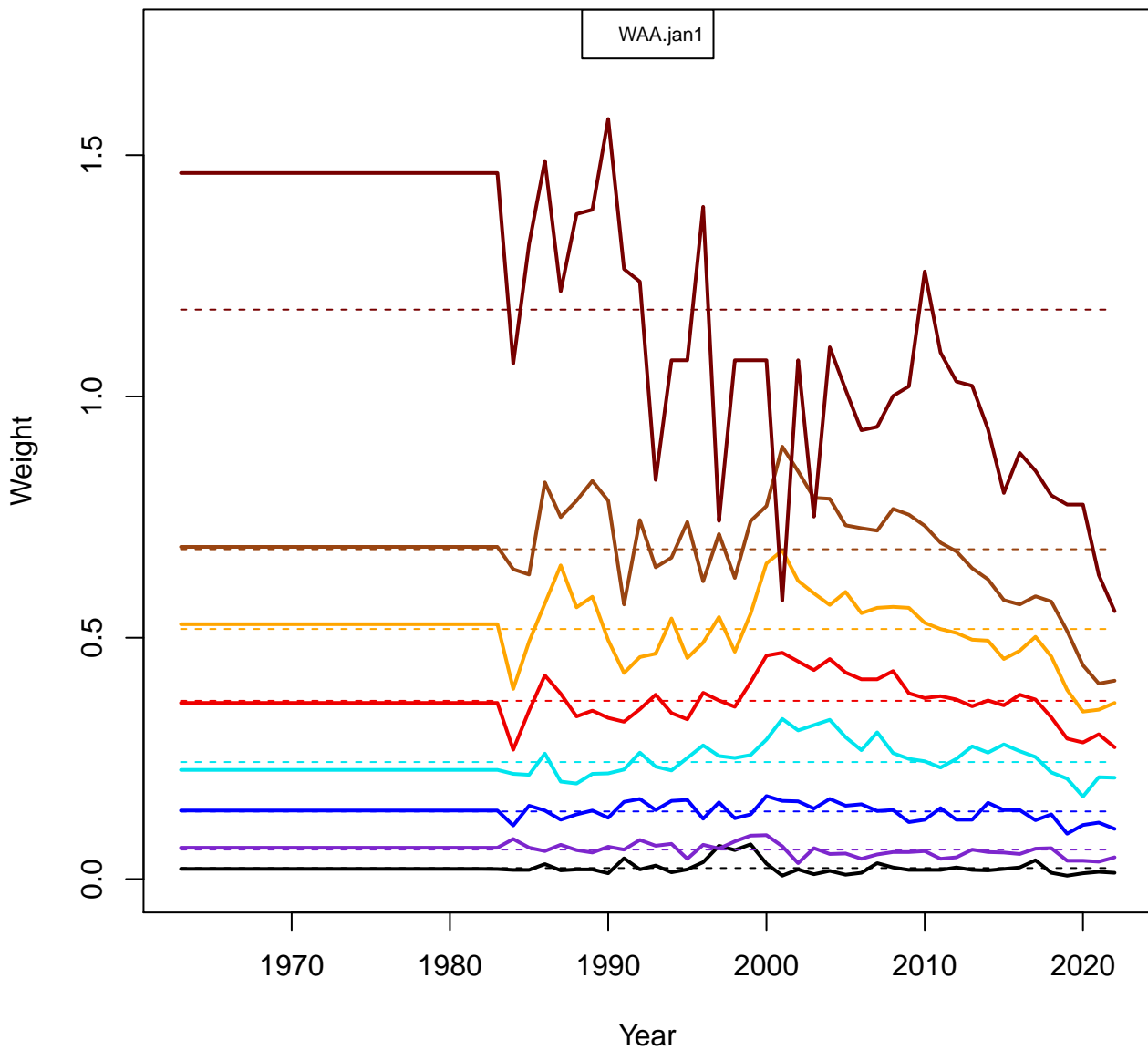
WAA matrix 5



WAA matrix 6



WAA matrix 7



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