

File = y2010r9c2.2m1s111111111_000.dat

ASAP3 run on Monday, 04 Nov 2019 at 10:46:53

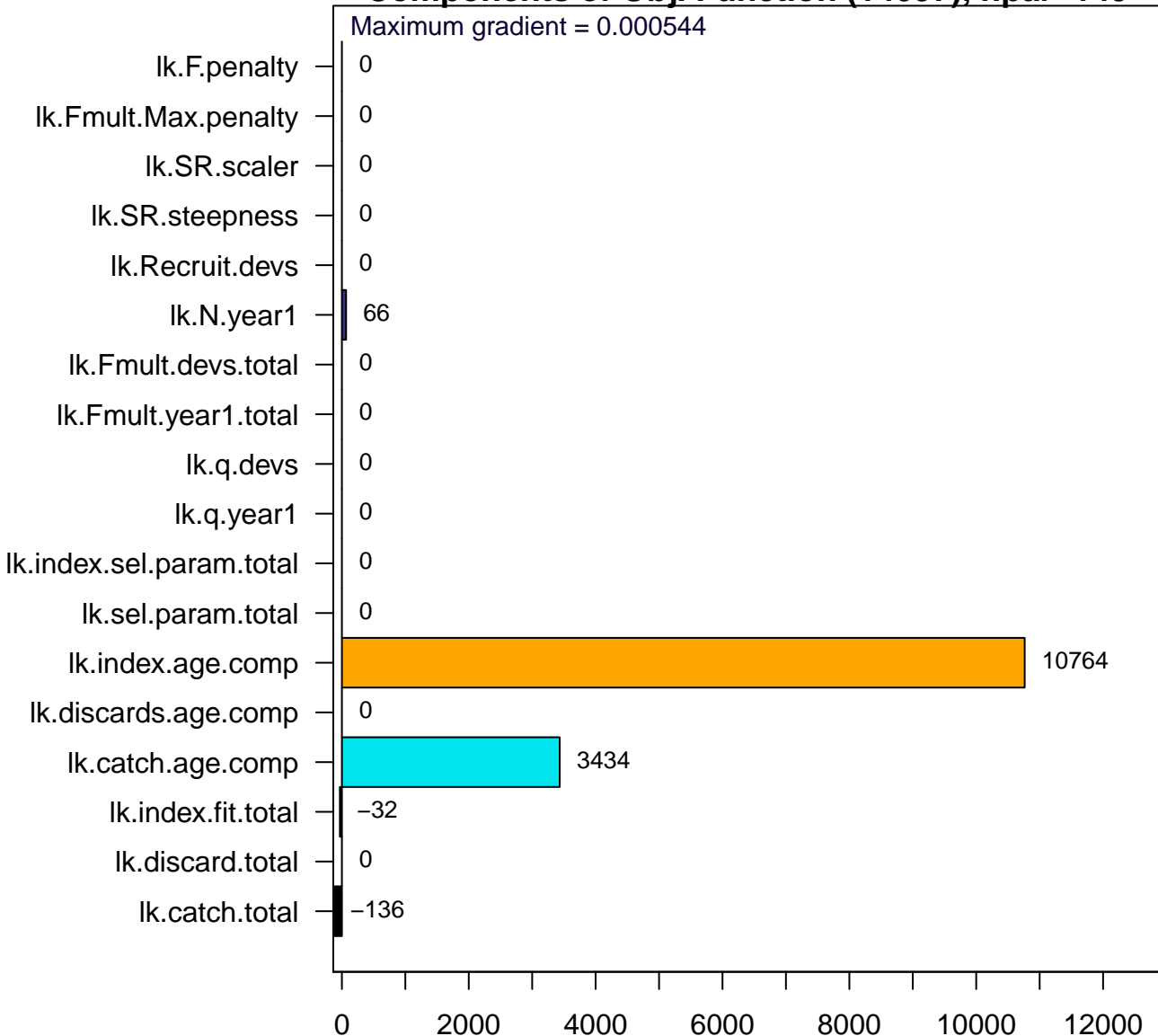
chris.legault\Documents\Working\ICES-WKFORBIAS 2019\WhiteHake\Rose\w

ASAPplots version = 0.2.14

npar = 149, maximum gradient = 0.000544047

Components of Obj. Function (14097), npar=149

Maximum gradient = 0.000544

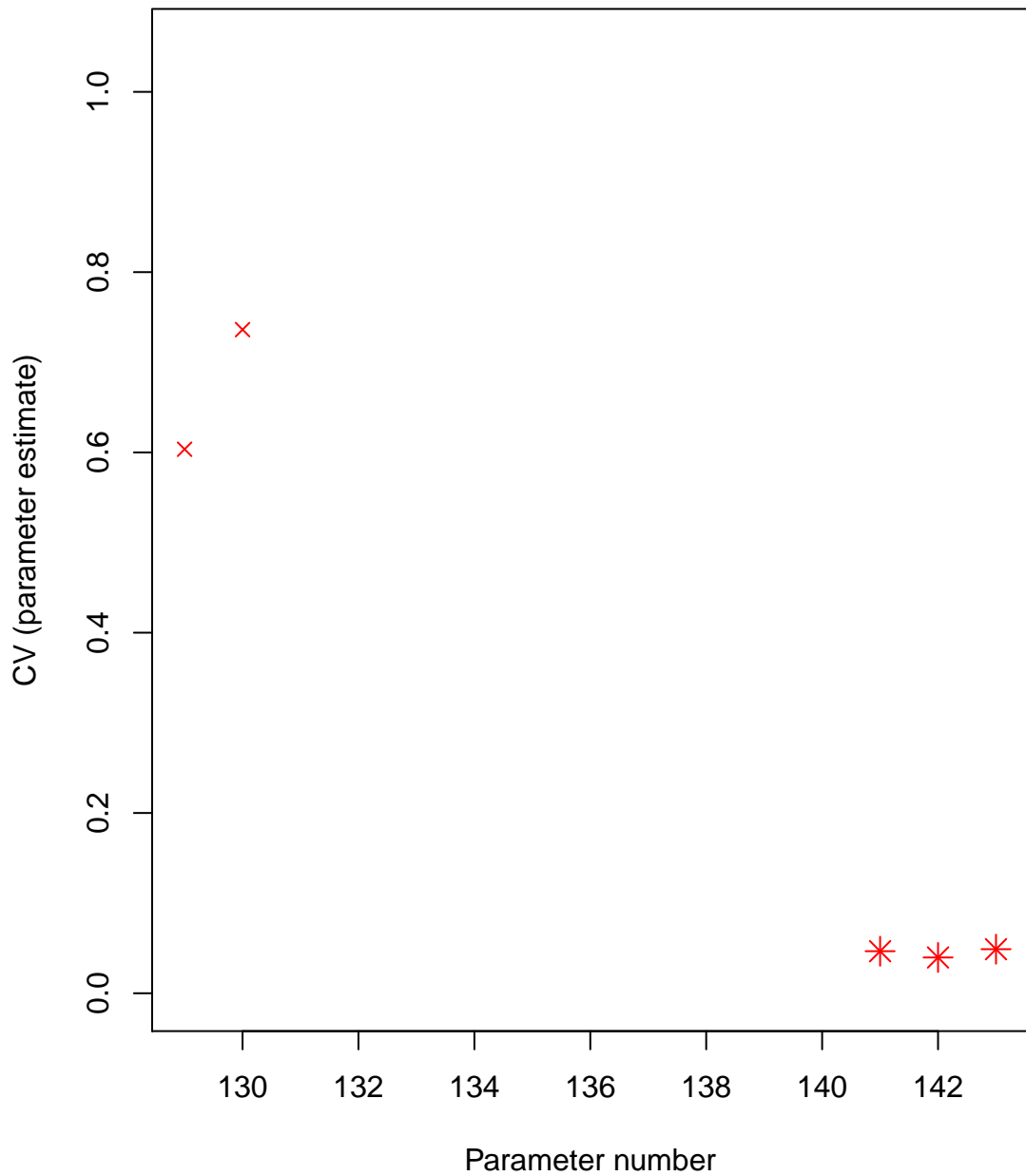


Likelihood Contribution

Model: y2010r9c2.2m1s111111111_000

Monday, 04 Nov 2019 at 10:46

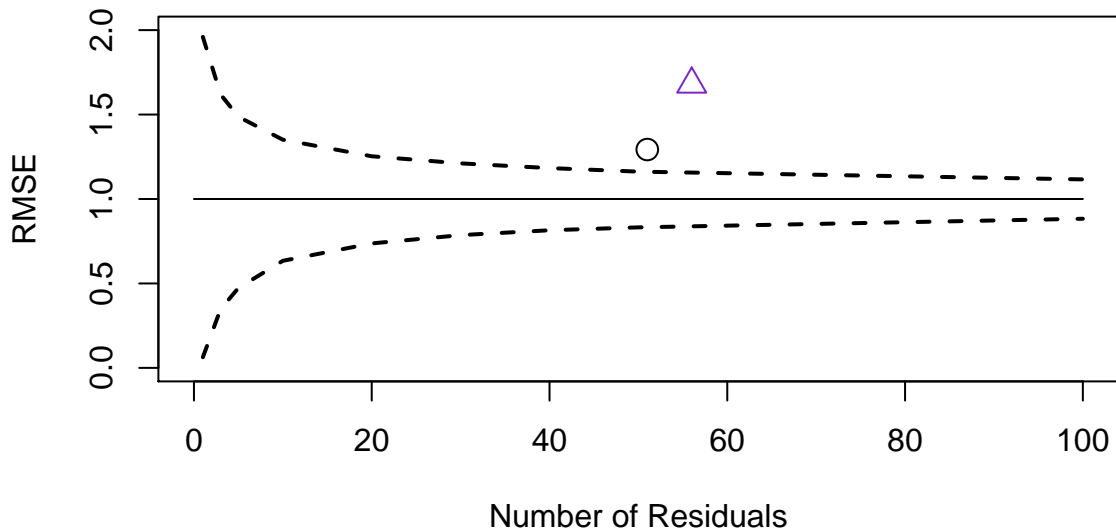




Root Mean Square Error computed from Standardized Residuals

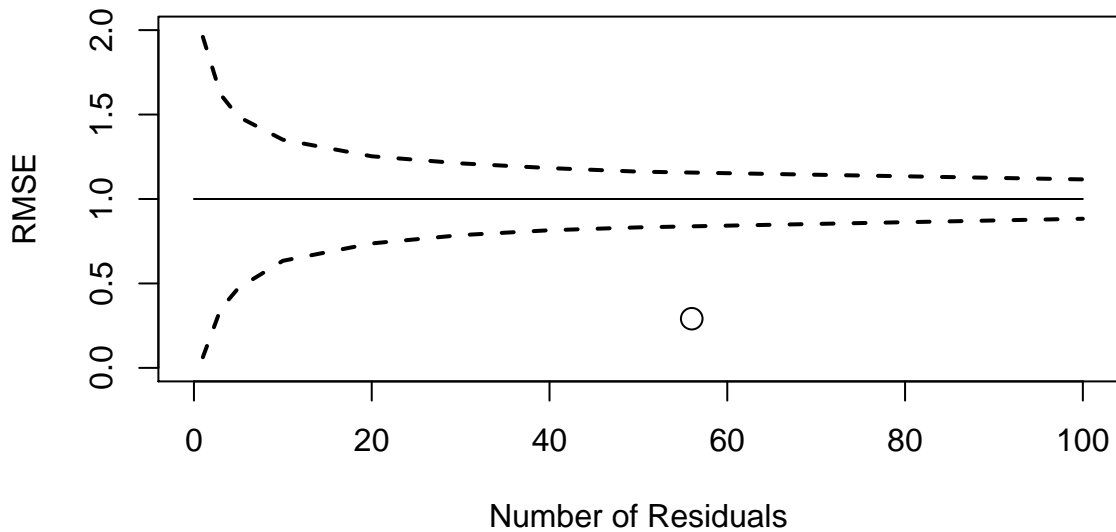
Component	# resids	RMSE
catch.tot	56	0.291
discard.tot	0	0
ind01	51	1.29
ind02	56	1.68
ind.total	107	1.51
N.year1	8	0.614
Fmult.year1	0	0
Fmult.devs.total	0	0
recruit.devs	0	0
fleet.sel.params	0	0
index.sel.params	0	0
q.year1	0	0
q.devs	0	0
SR.steepness	0	0
SR.scaler	0	0

Root Mean Square Error for Indices



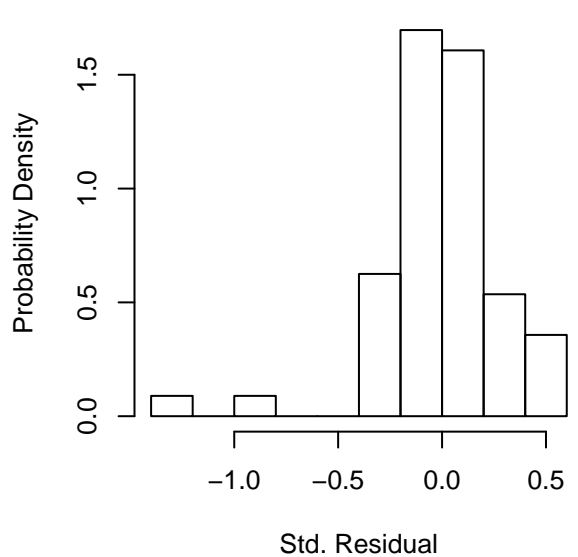
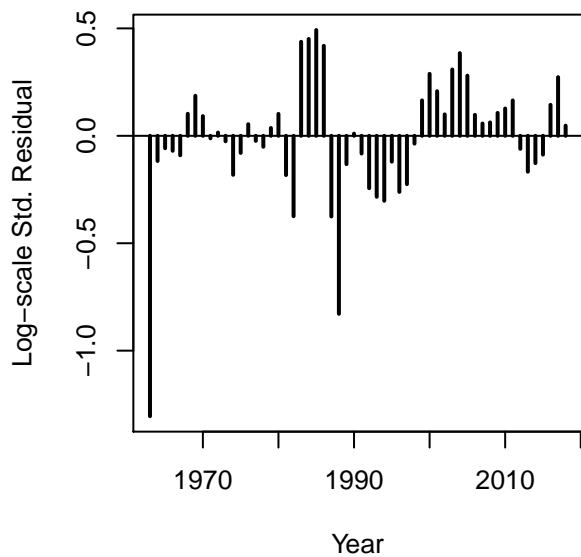
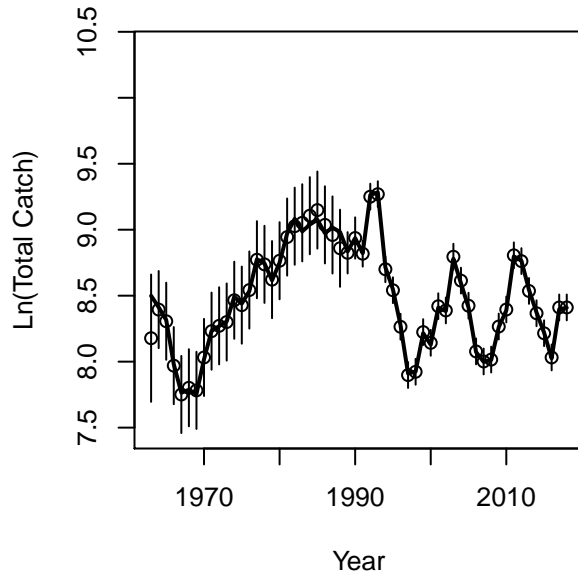
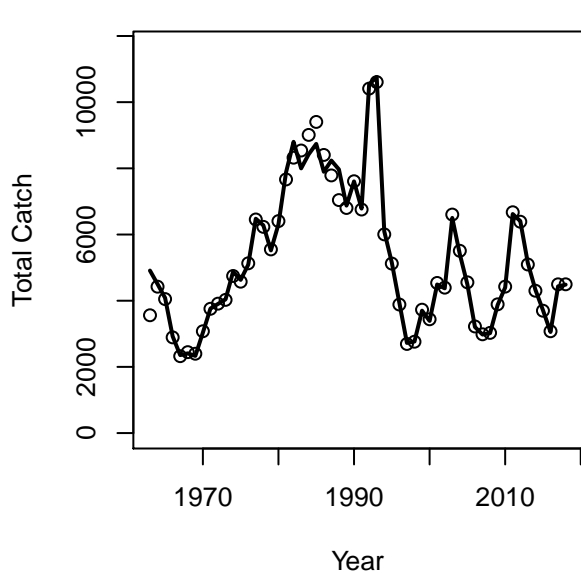
ind total
INDEX-2
INDEX-1

Root Mean Square Error for Catch



○ catch.tot

Fleet 1 Catch (FLEET-1)

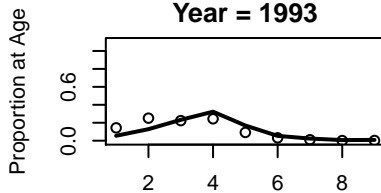


Catch

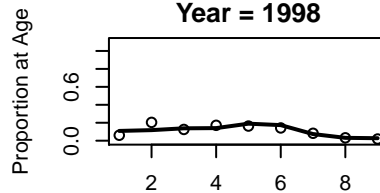
Fleet 1
FLEET-1



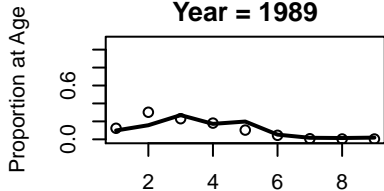
Year = 1993



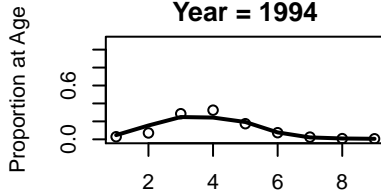
Year = 1998



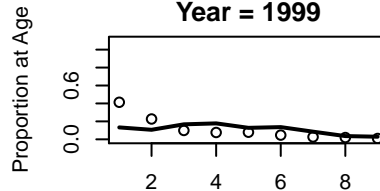
Year = 1989



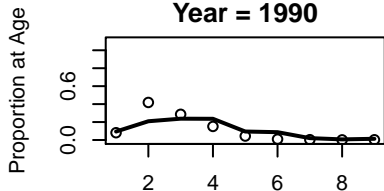
Year = 1994



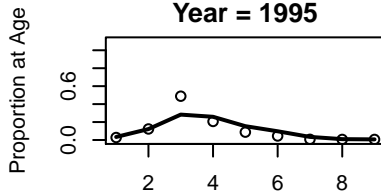
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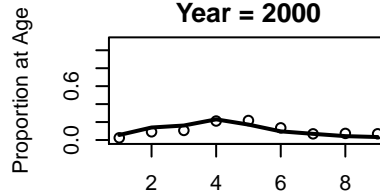
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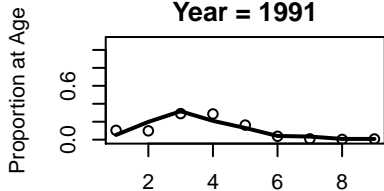
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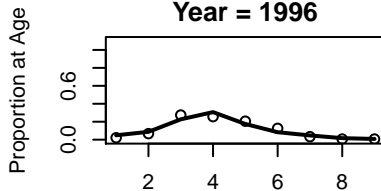
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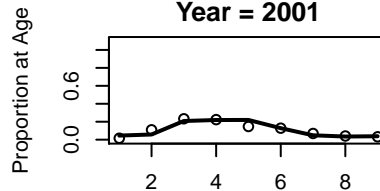
Year = 1991



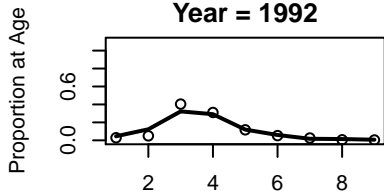
Year = 1996



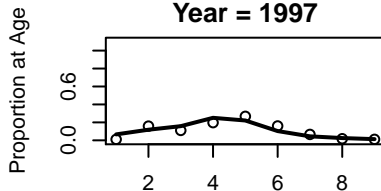
Year = 2001



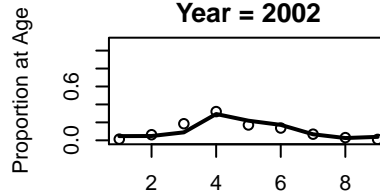
Year = 1992



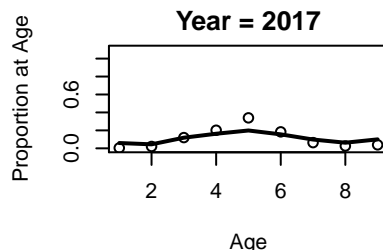
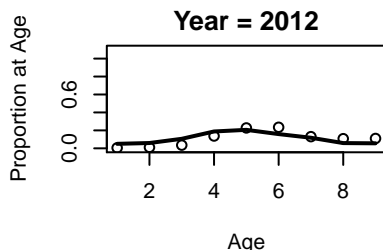
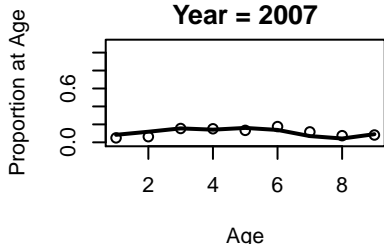
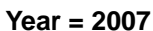
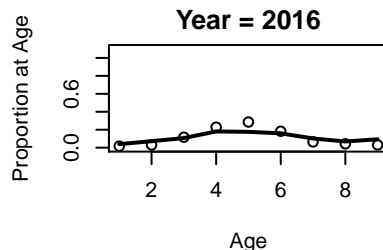
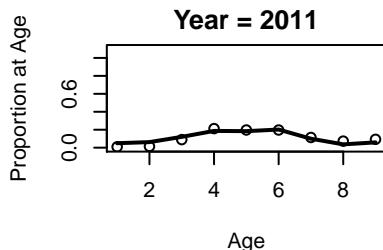
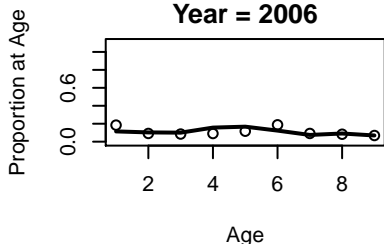
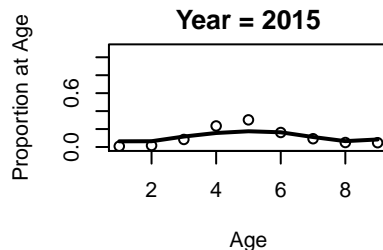
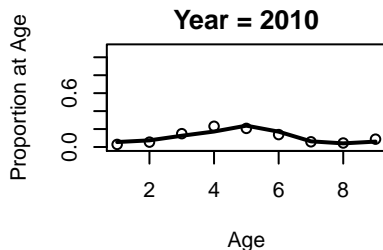
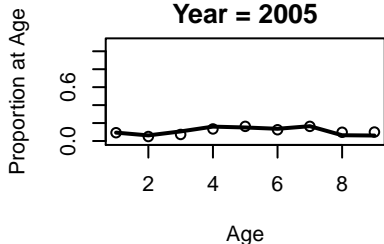
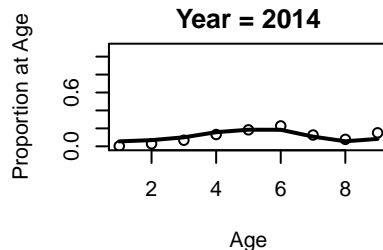
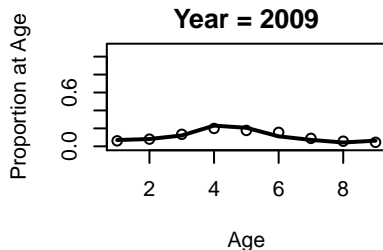
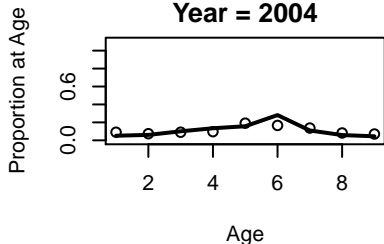
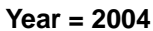
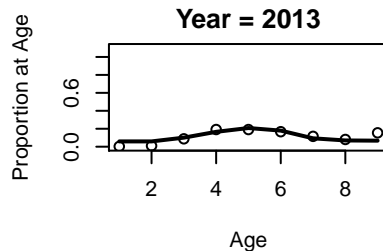
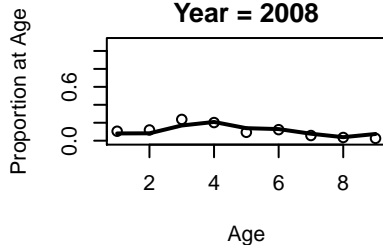
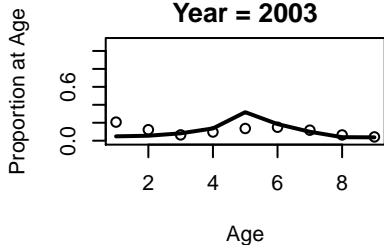
Year = 1997



Year = 2002



Year = 2008



Year = 2018

Proportion at Age

0.0 0.6

2

4

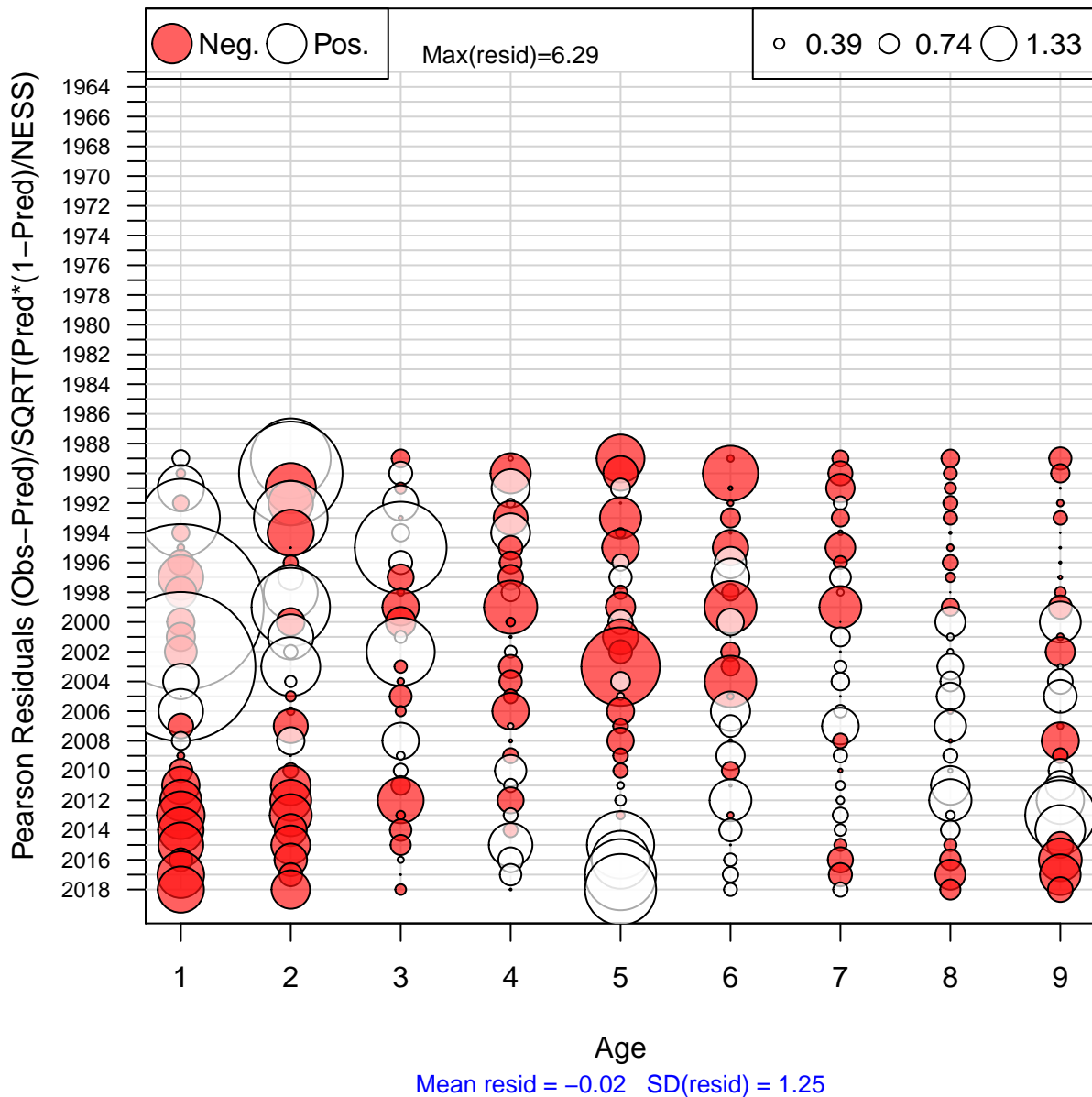
6

8

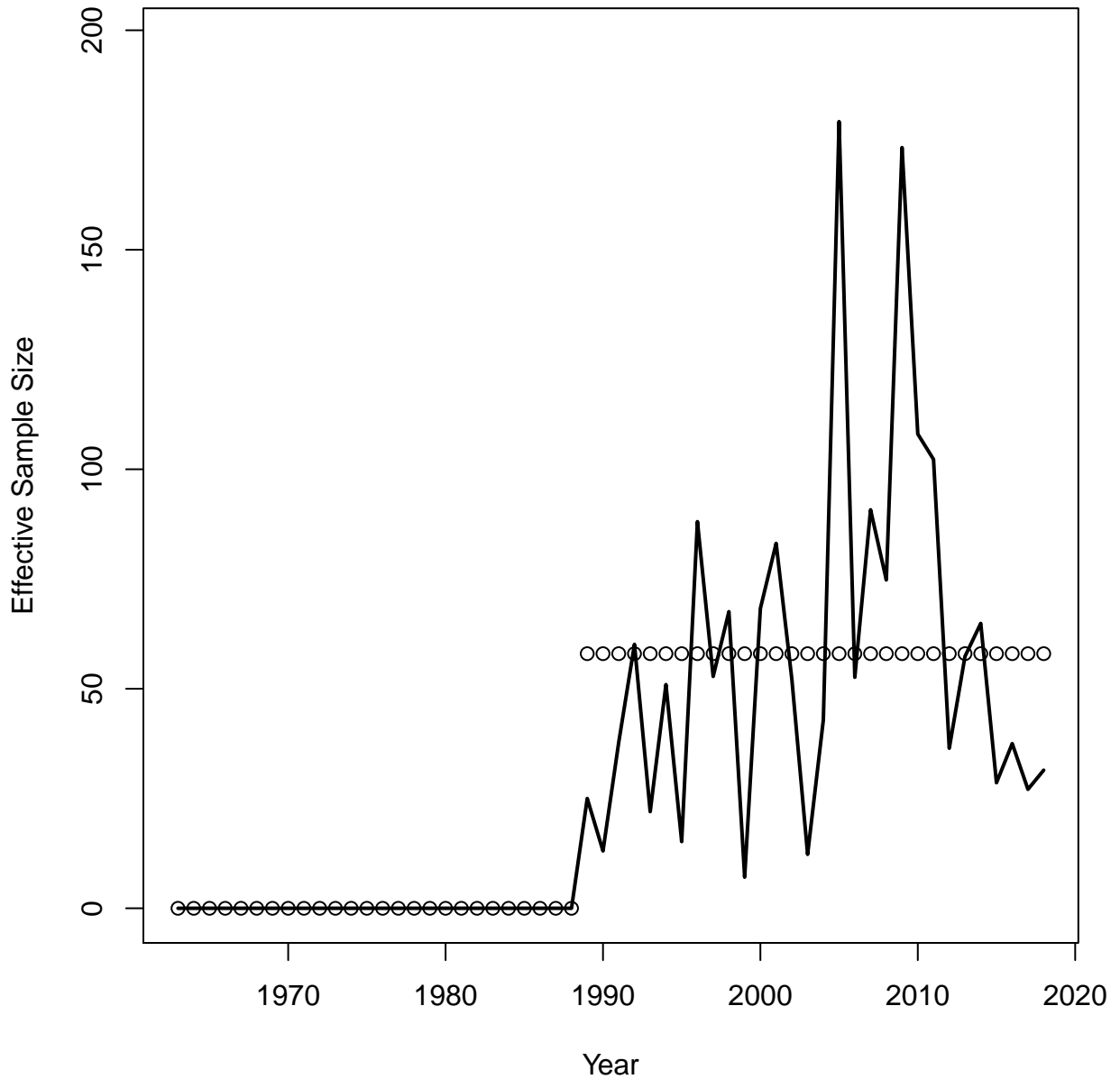
Age

Catch

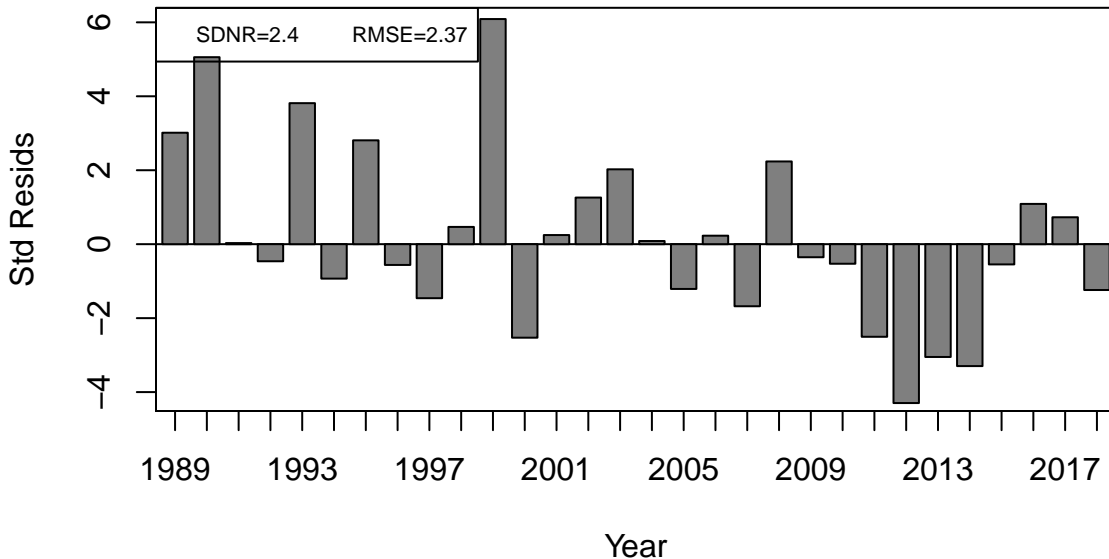
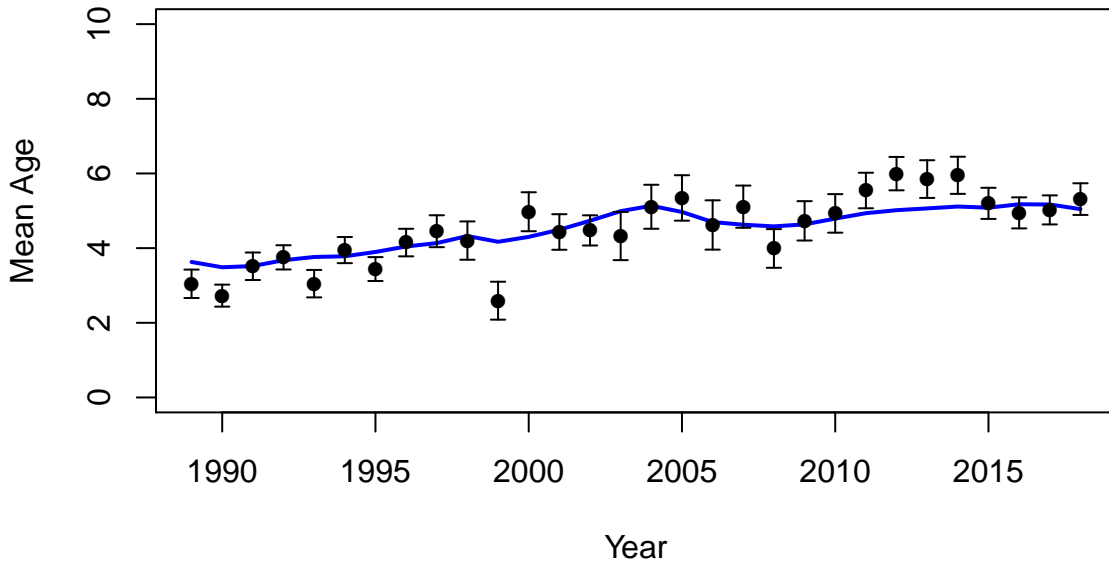
Age Comp Residuals for Catch by Fleet 1 (FLEET-1)



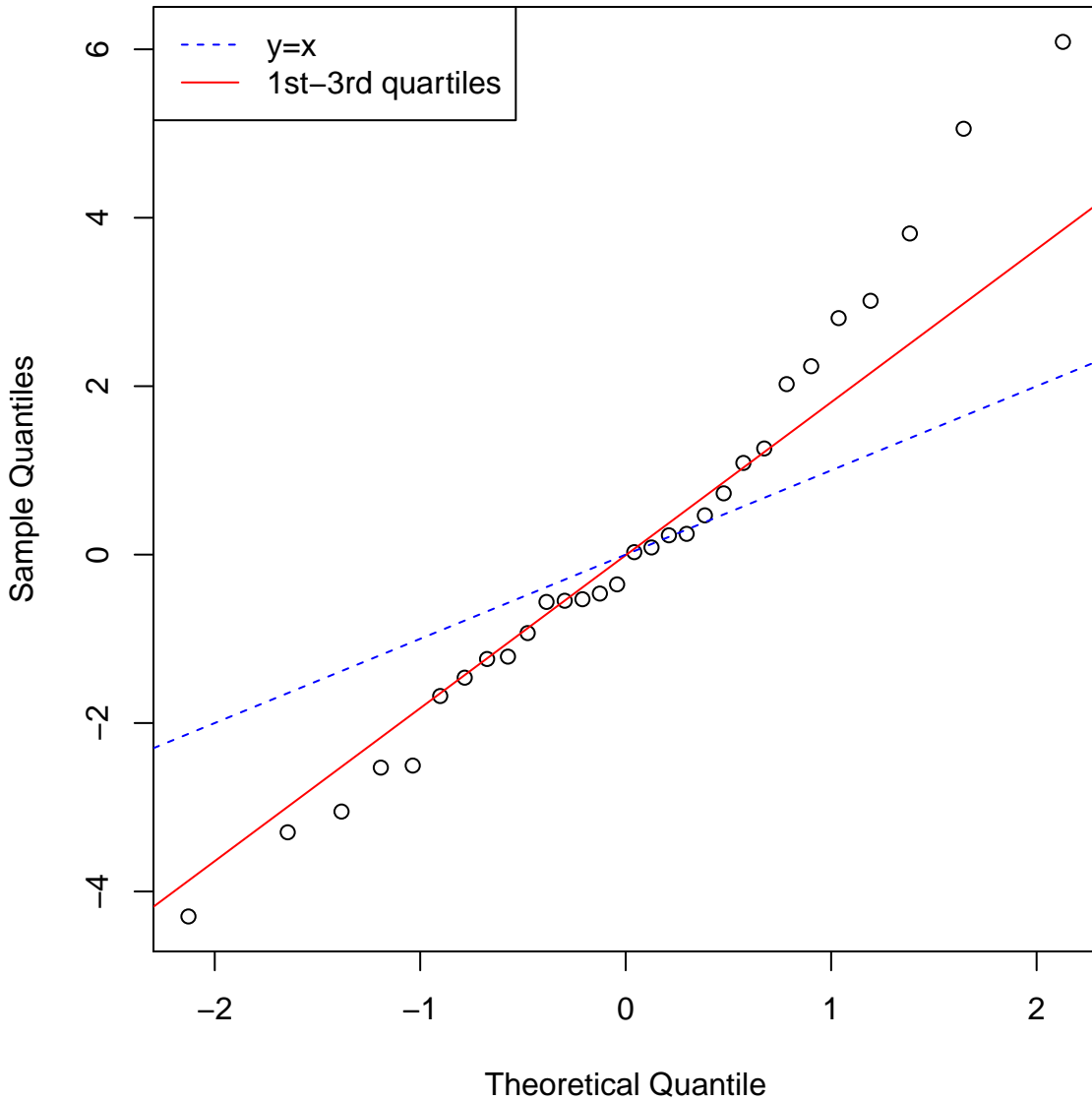
Catch Neff Fleet 1 (FLEET-1)



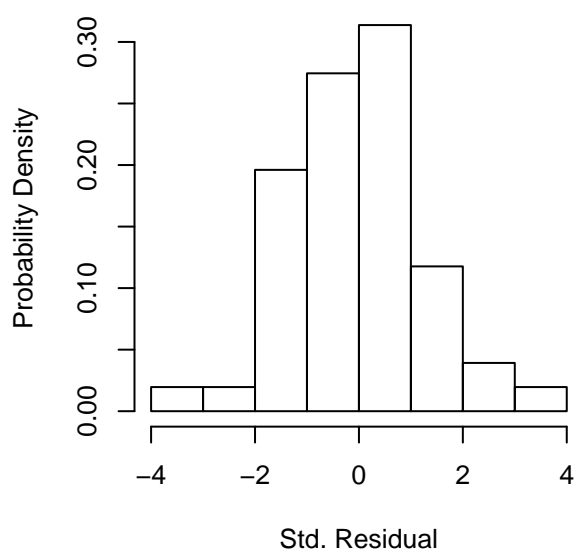
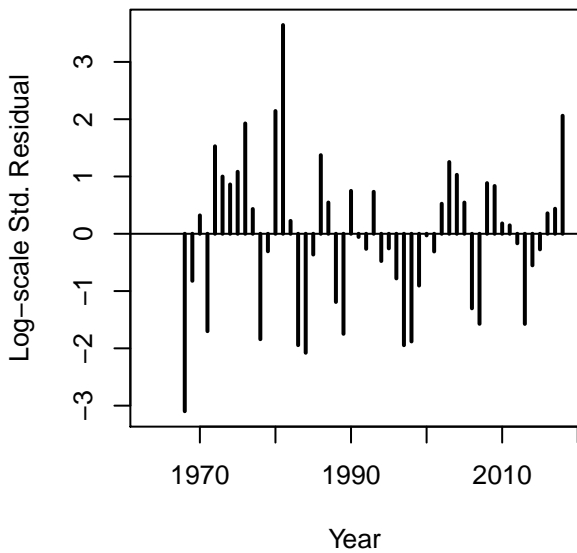
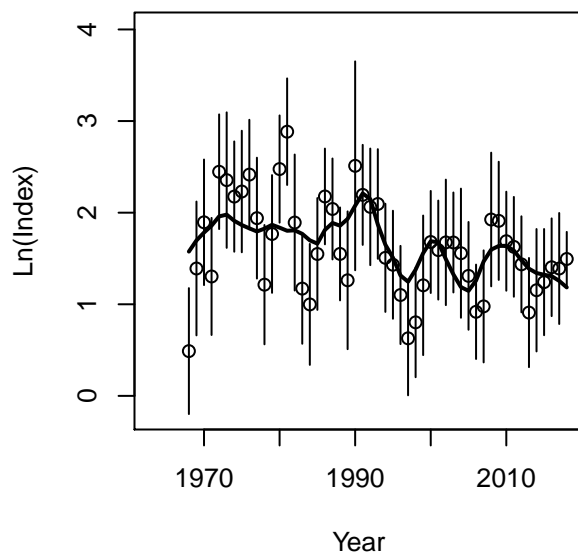
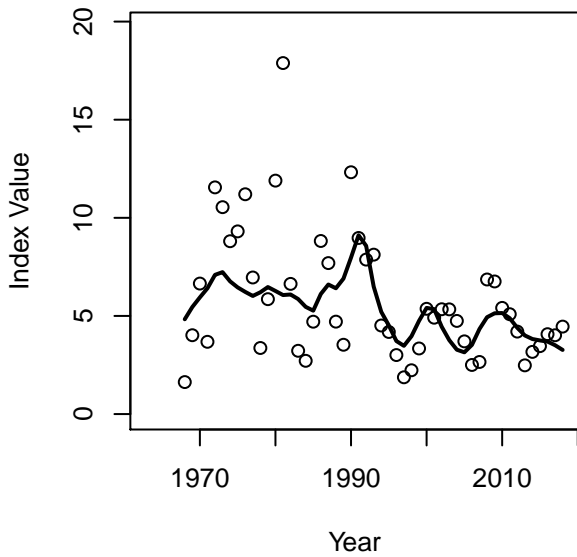
Catch Fleet 1 (FLEET-1) ESS = 58



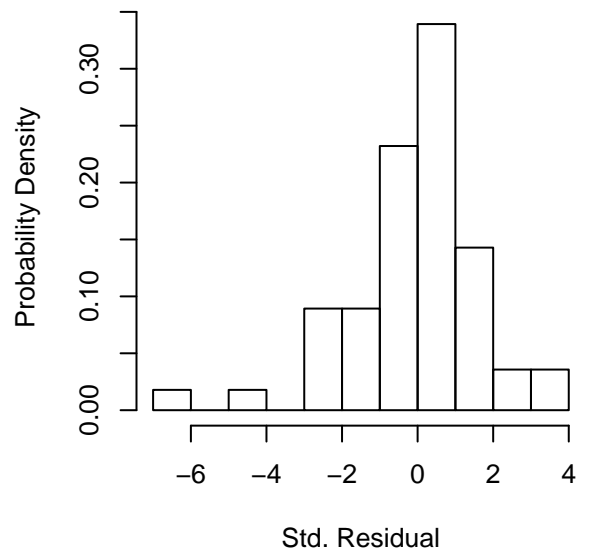
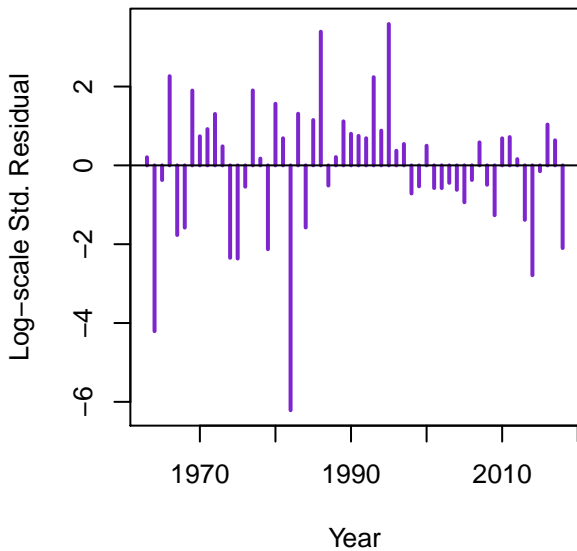
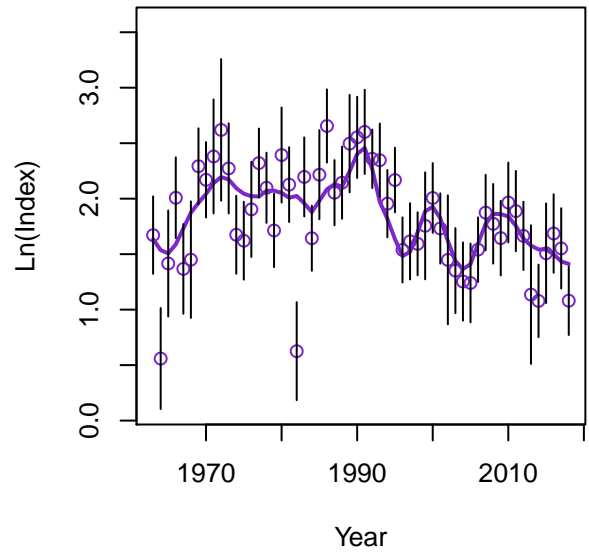
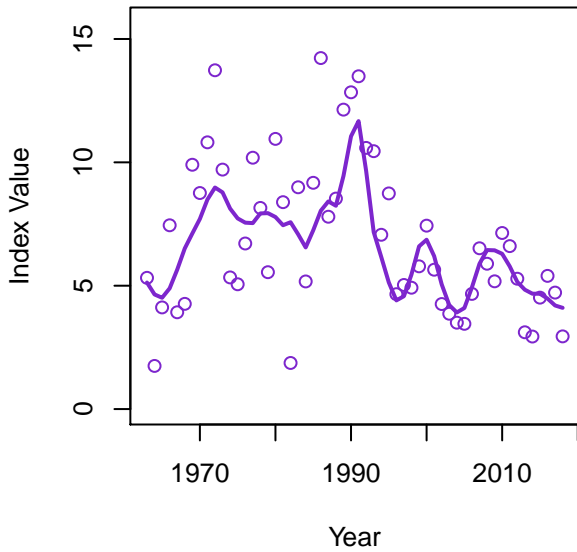
Catch Fleet 1 (FLEET-1) ESS = 58



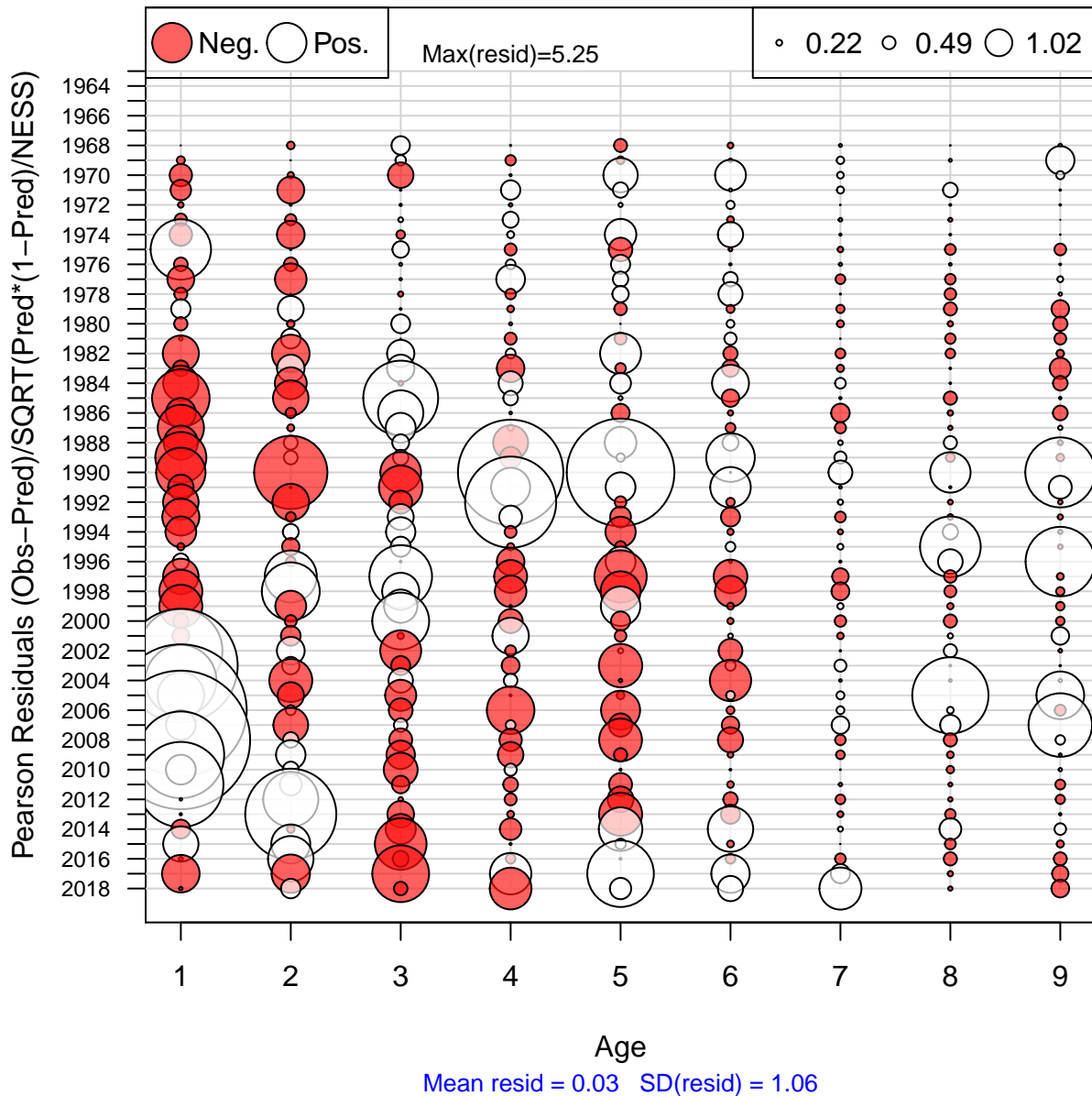
Index 1 (INDEX-1)



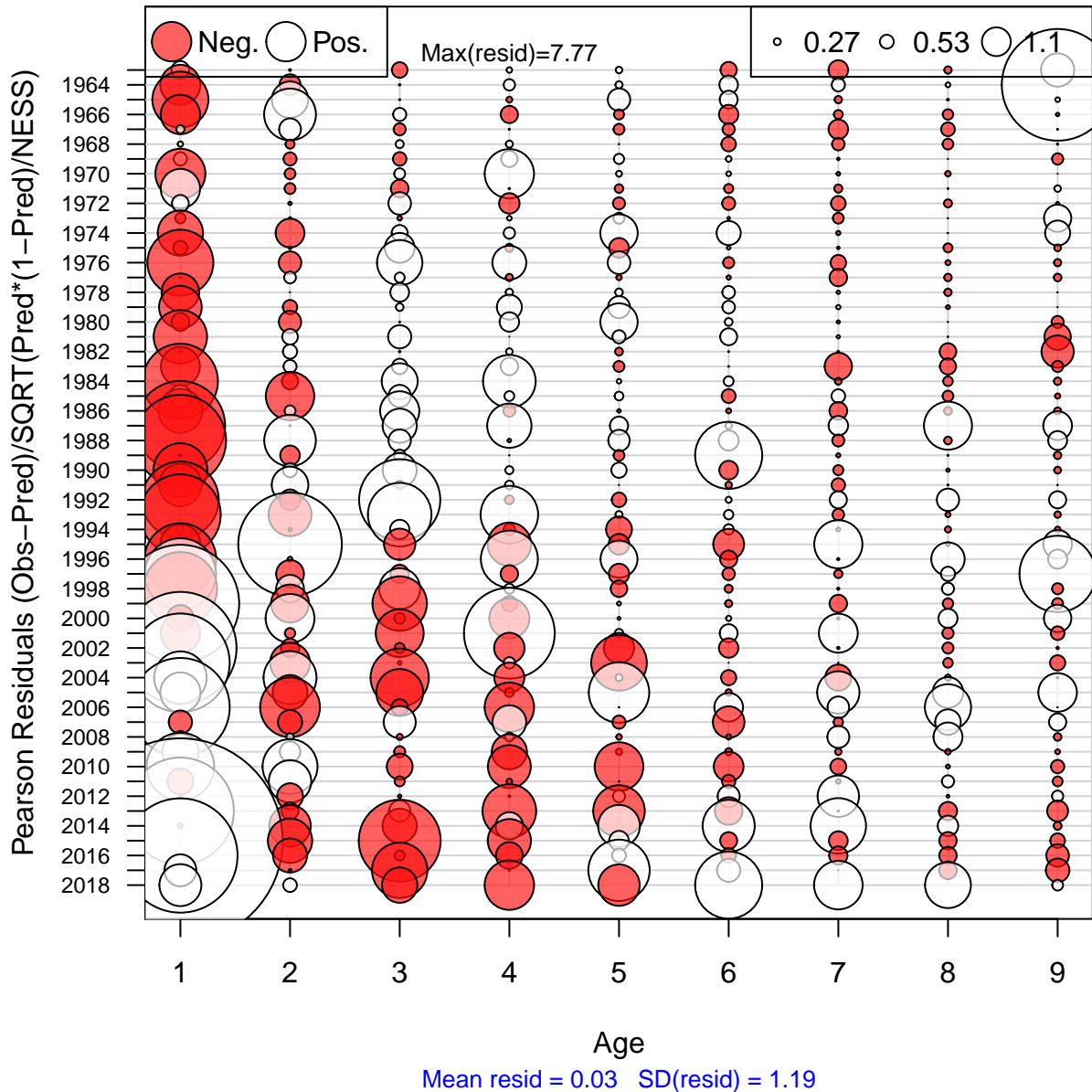
Index 2 (INDEX-2)



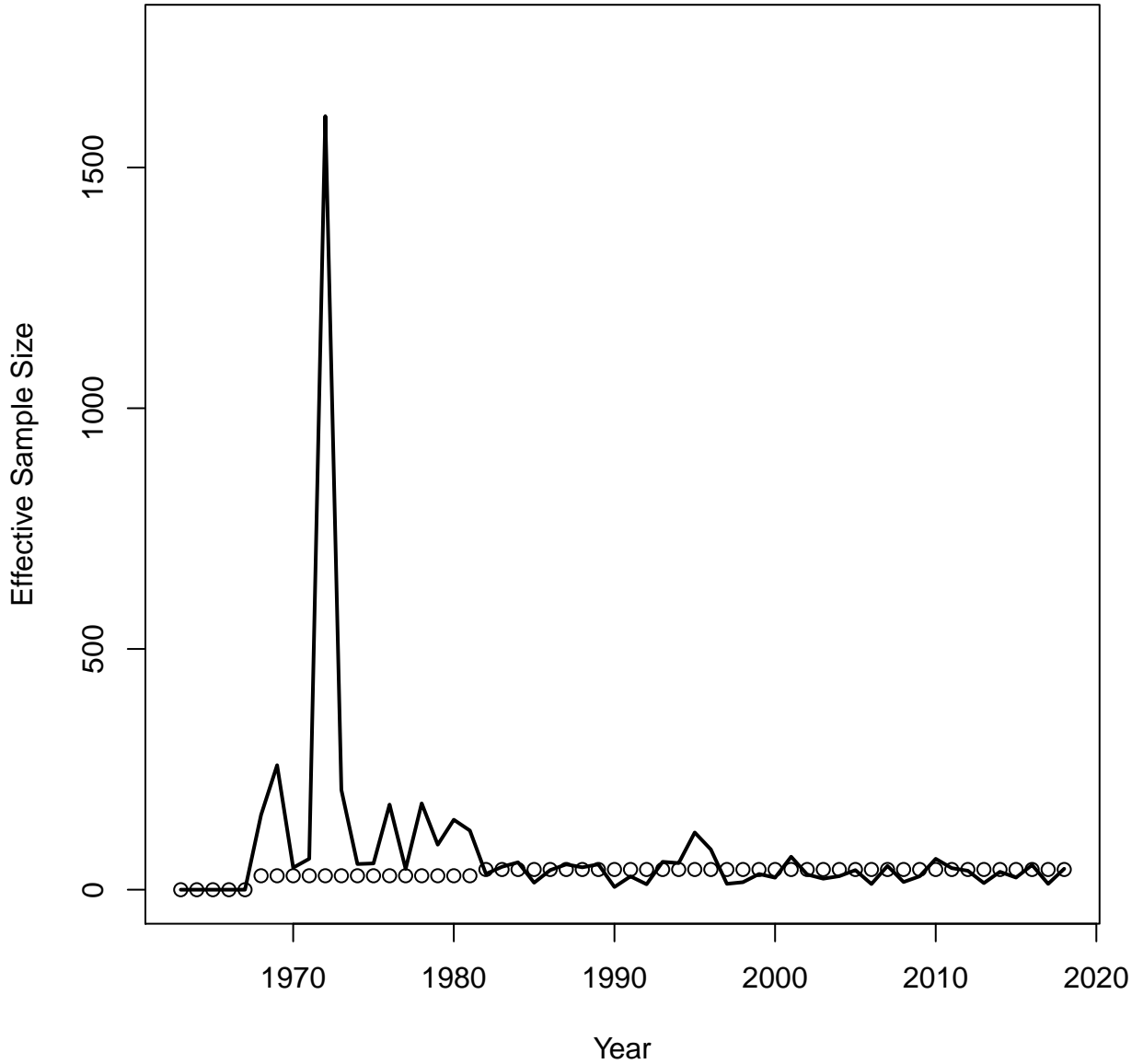
Age Comp Residuals for Index 1 (INDEX-1)



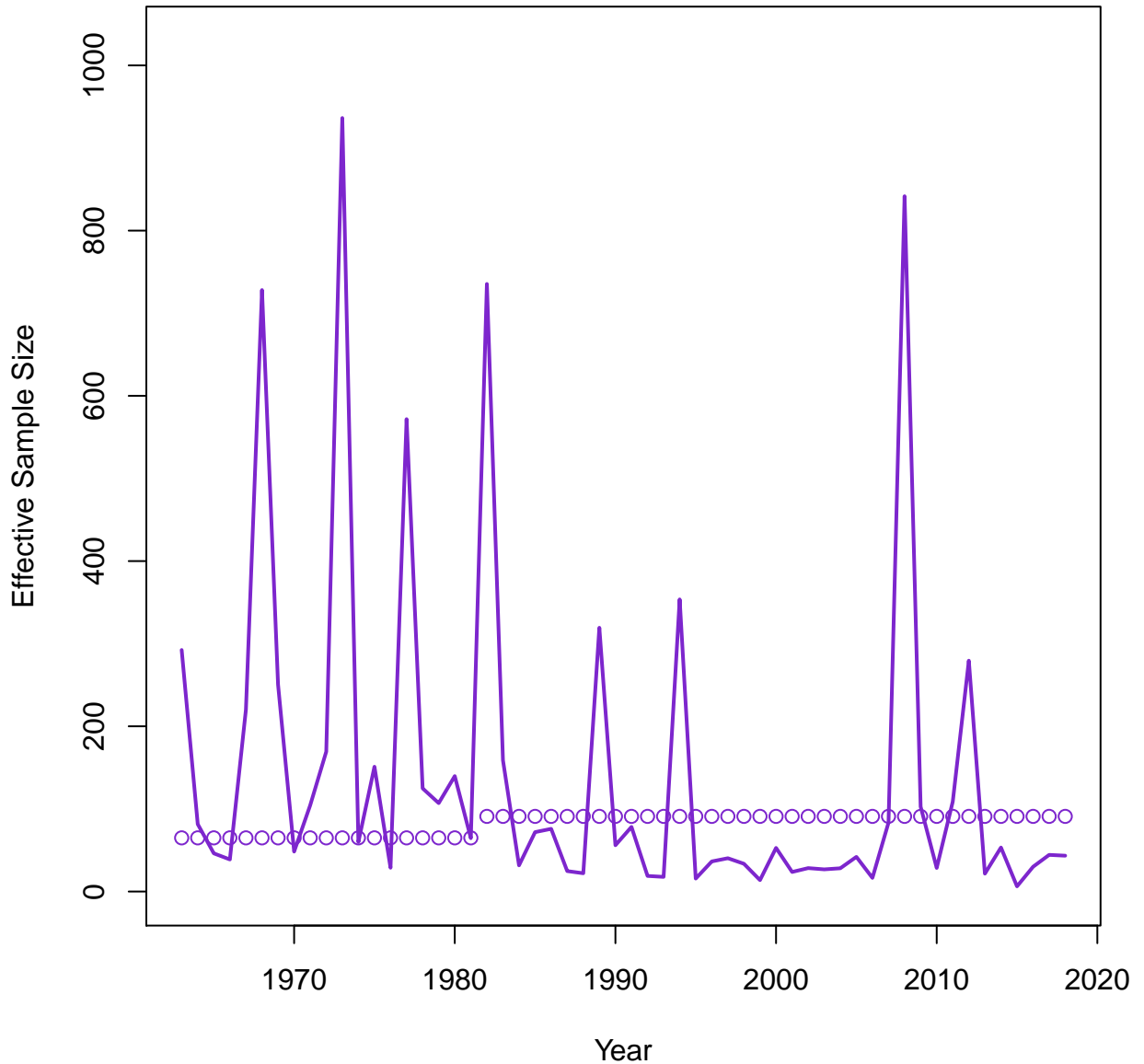
Age Comp Residuals for Index 2 (INDEX-2)



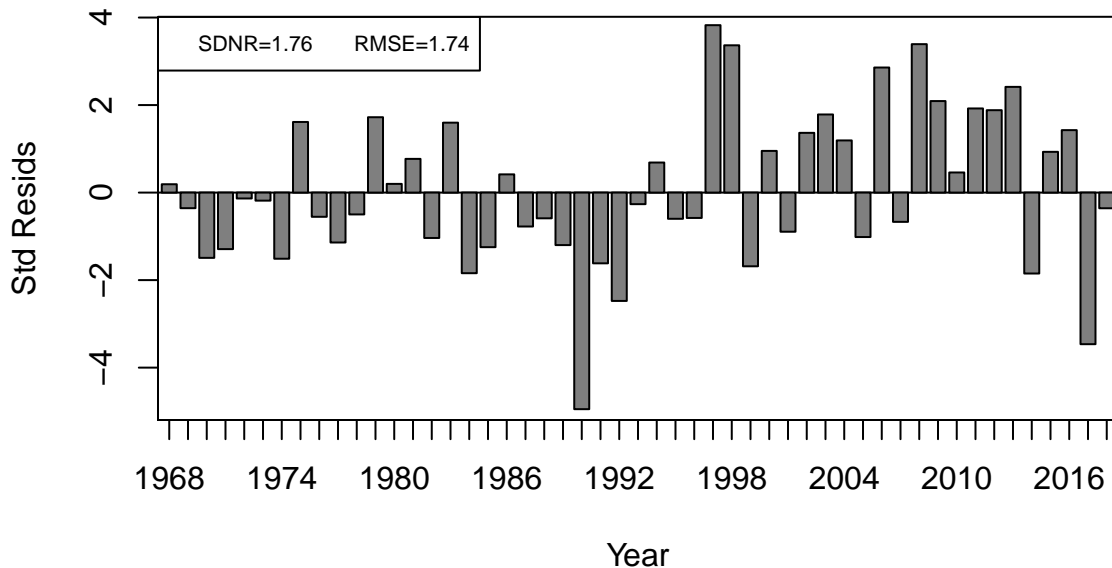
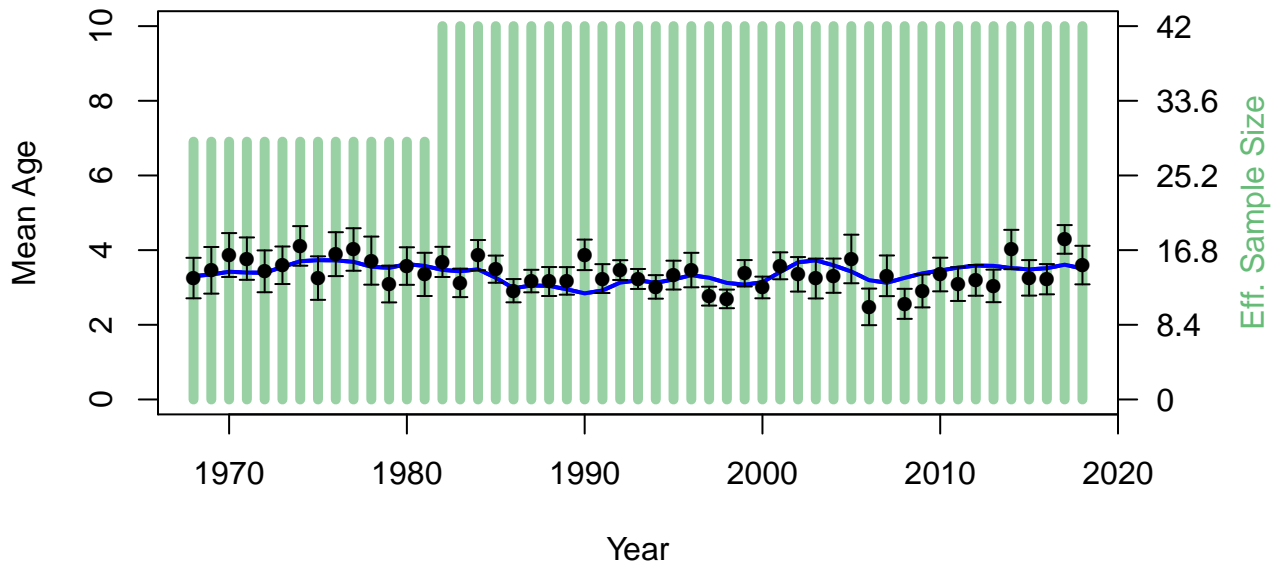
Index Neff 1 (INDEX-1)



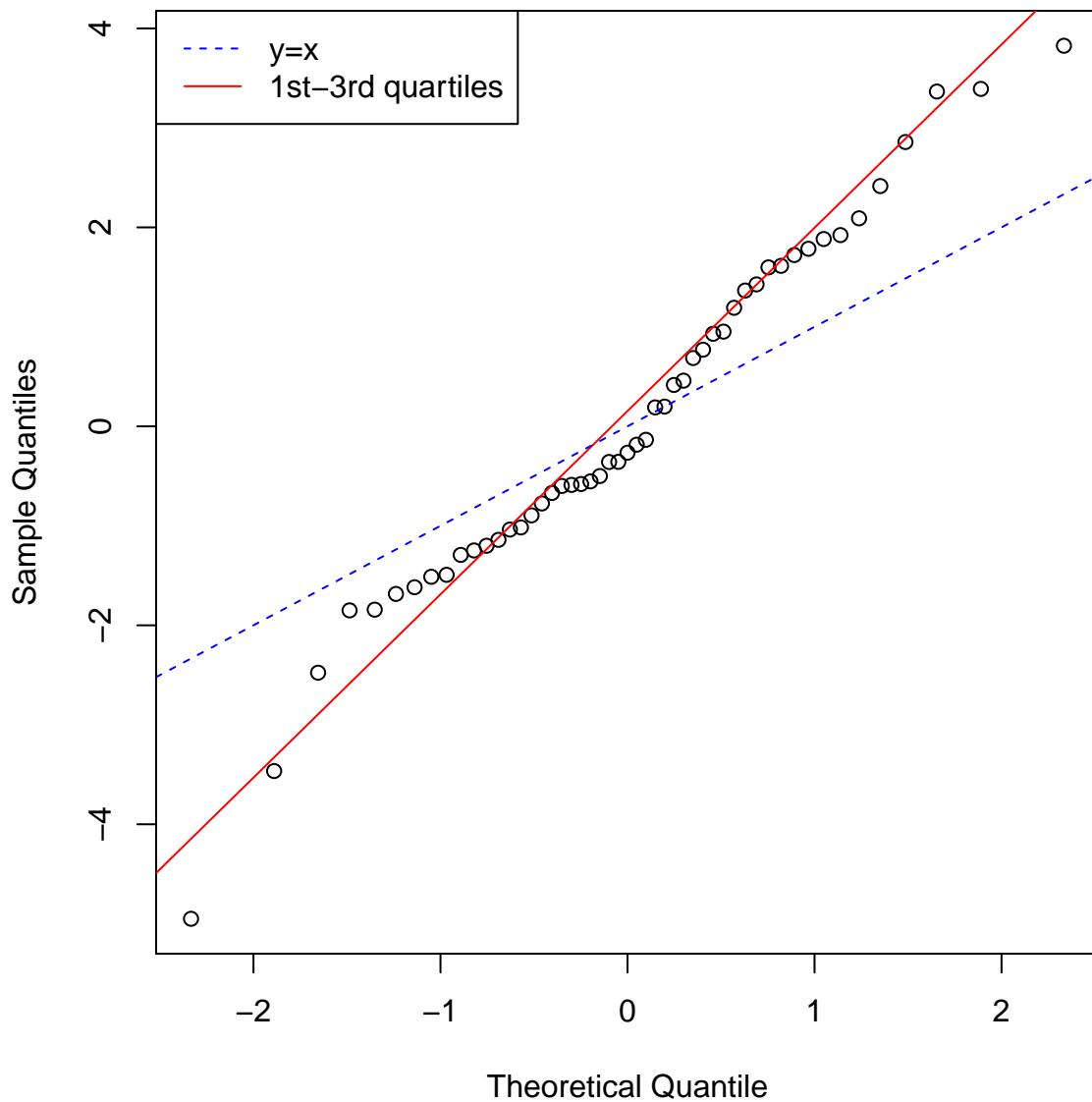
Index Neff 2 (INDEX-2)



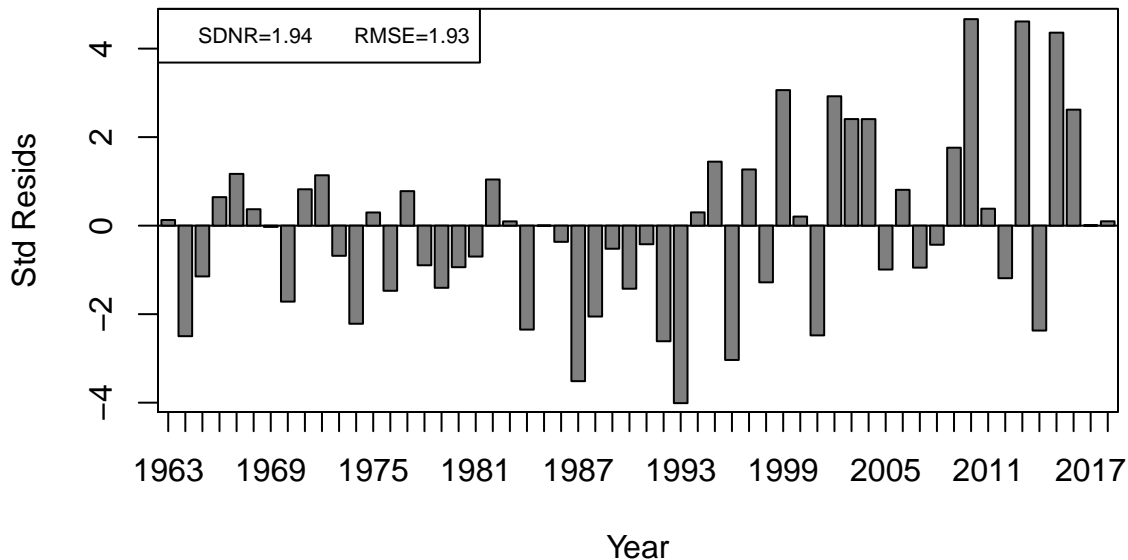
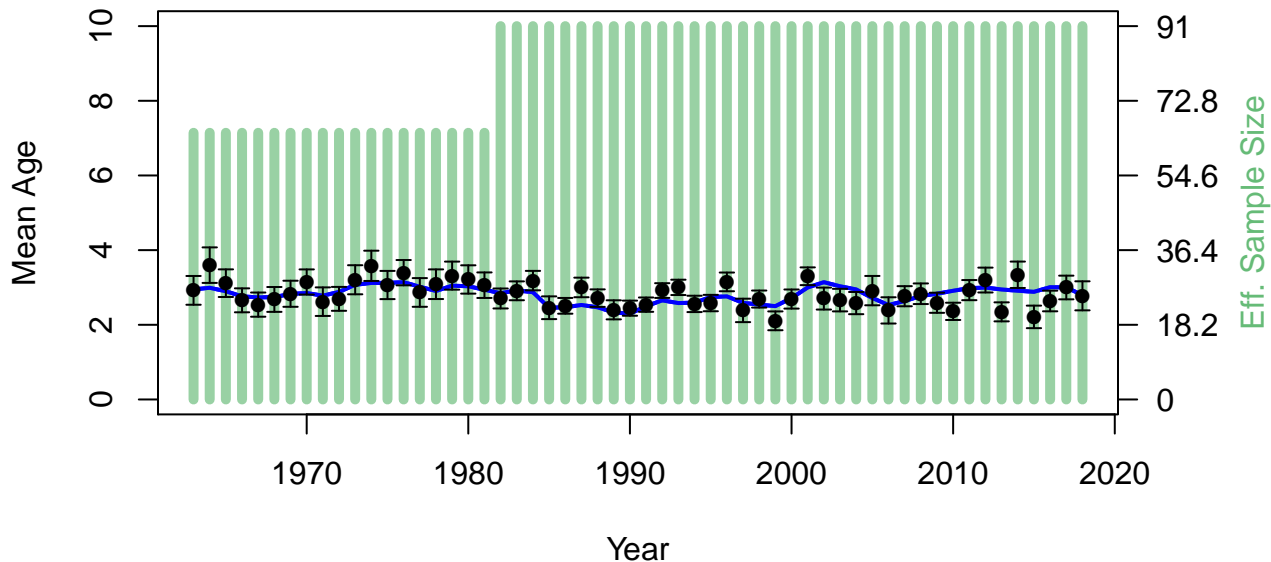
Index 1 (INDEX-1)



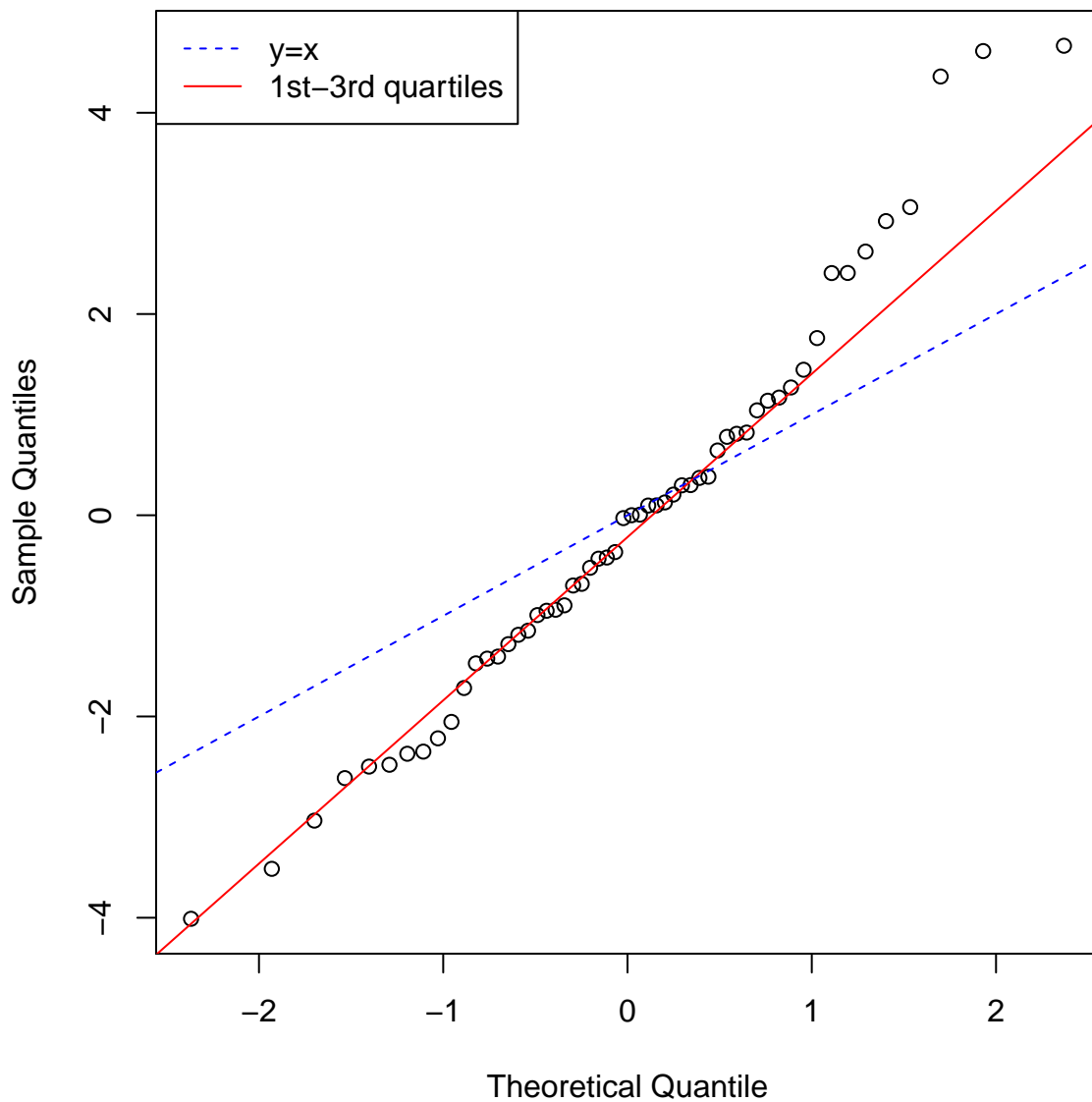
Index 1 (INDEX-1)



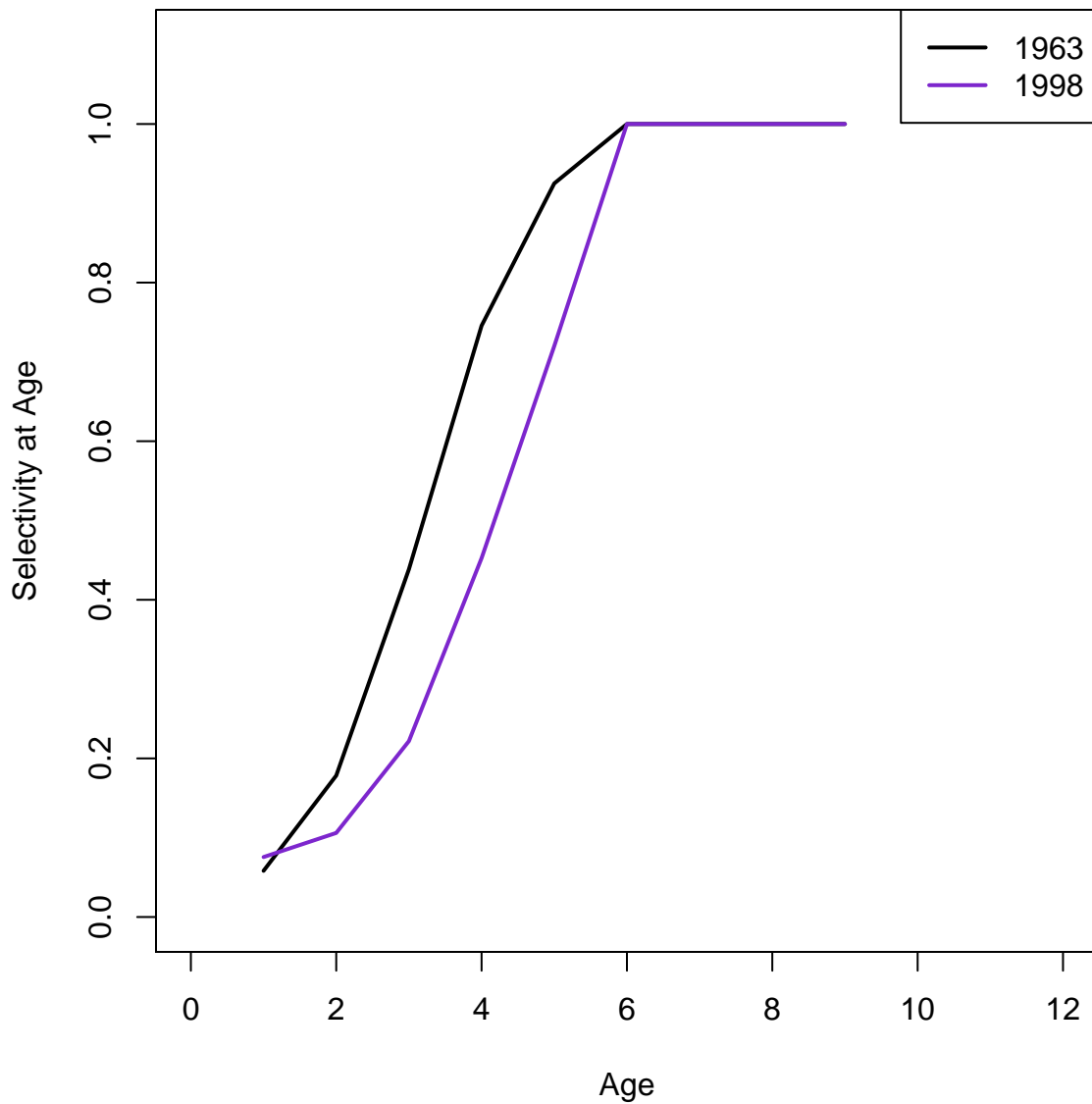
Index 2 (INDEX-2)

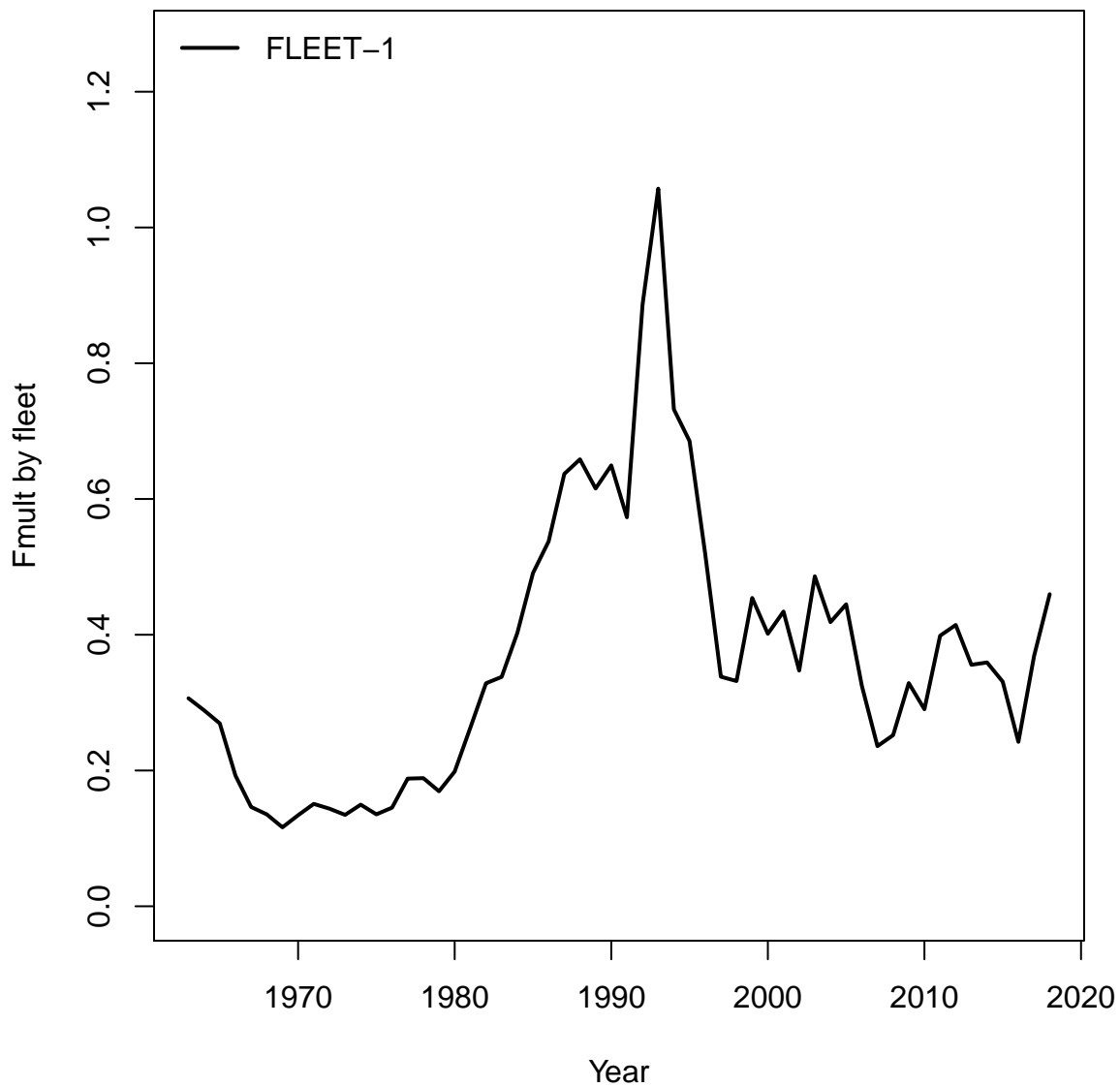


Index 2 (INDEX-2)

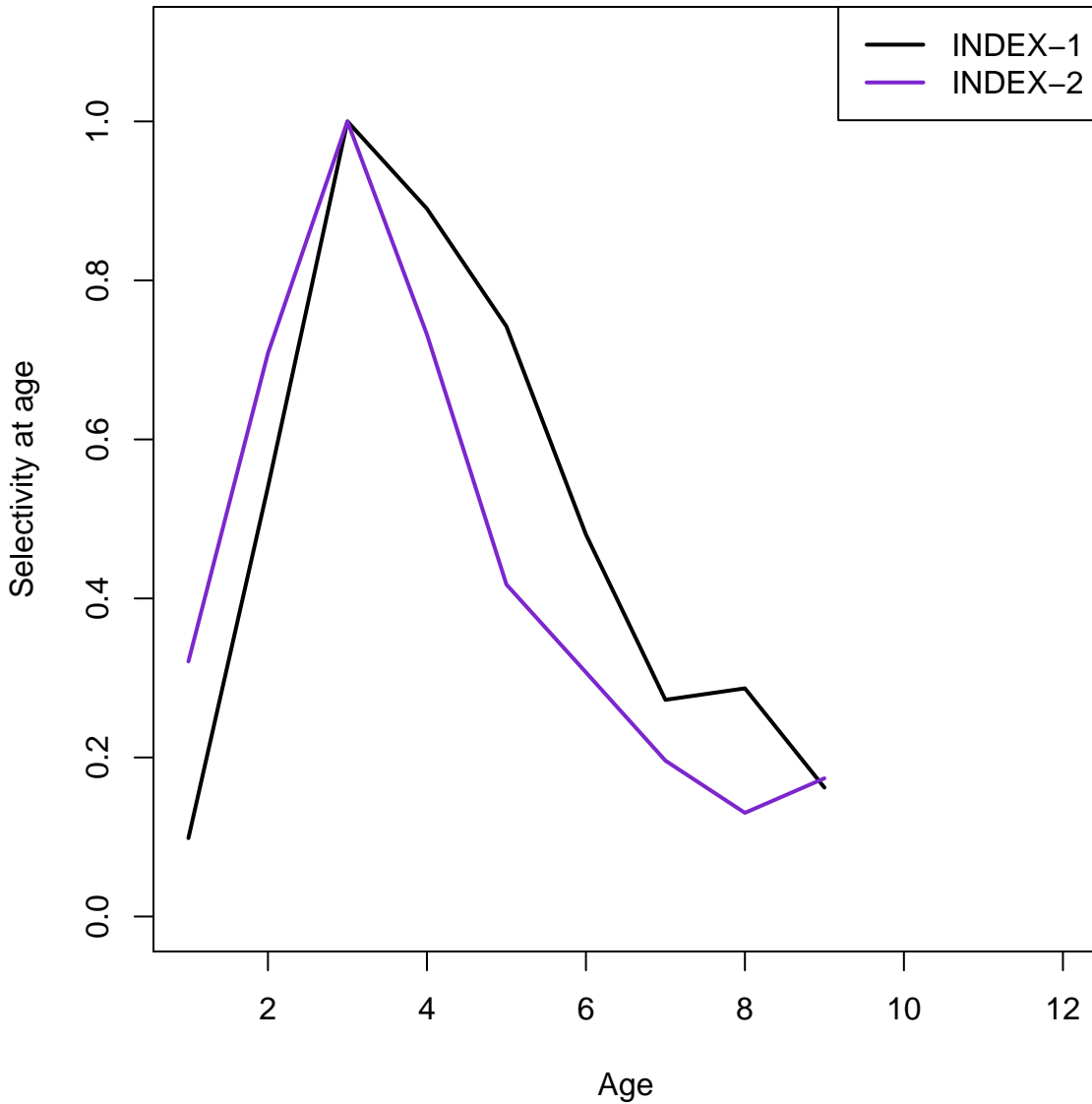


Fleet 1 (FLEET-1)

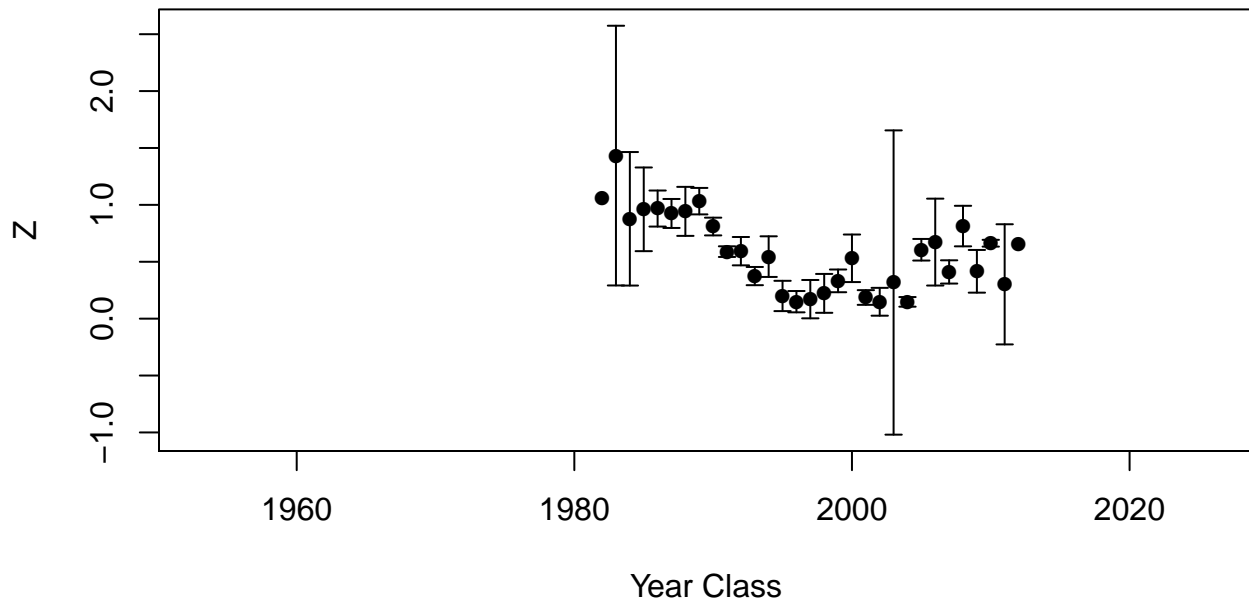
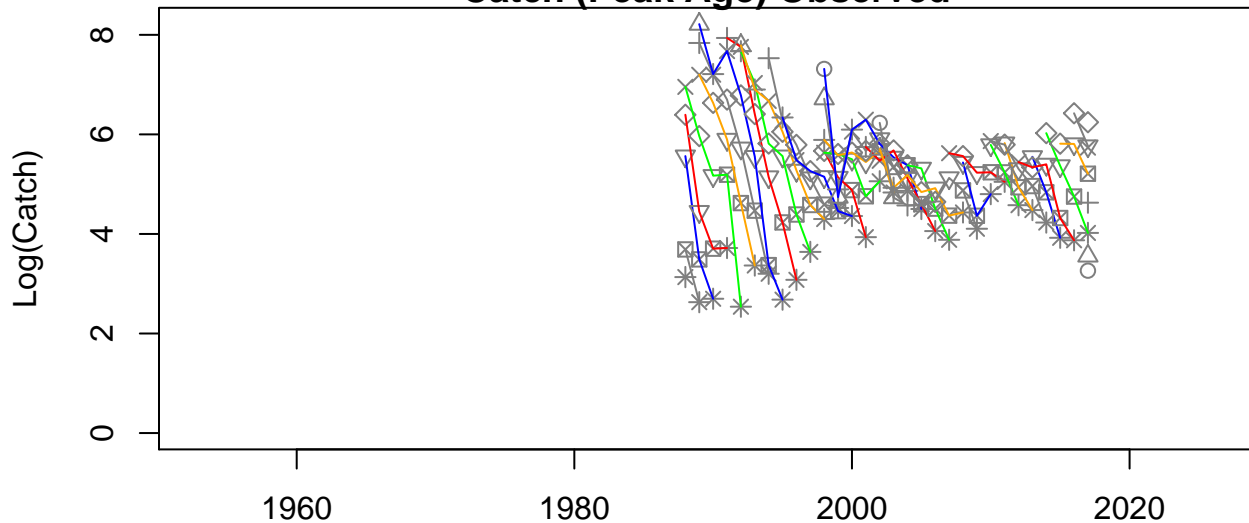




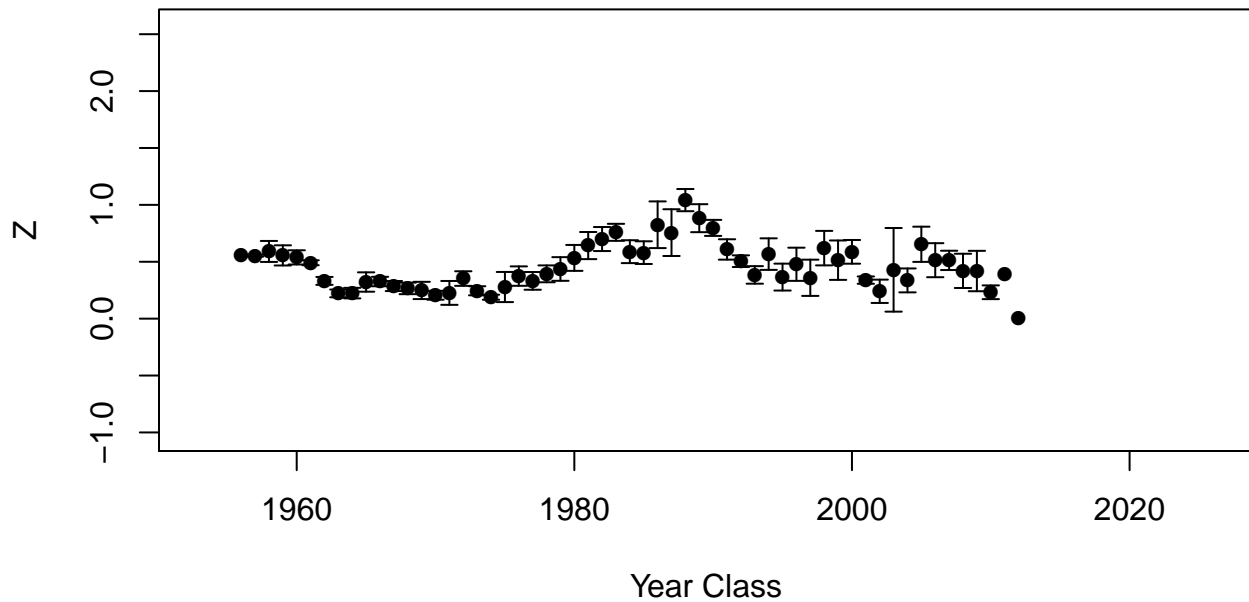
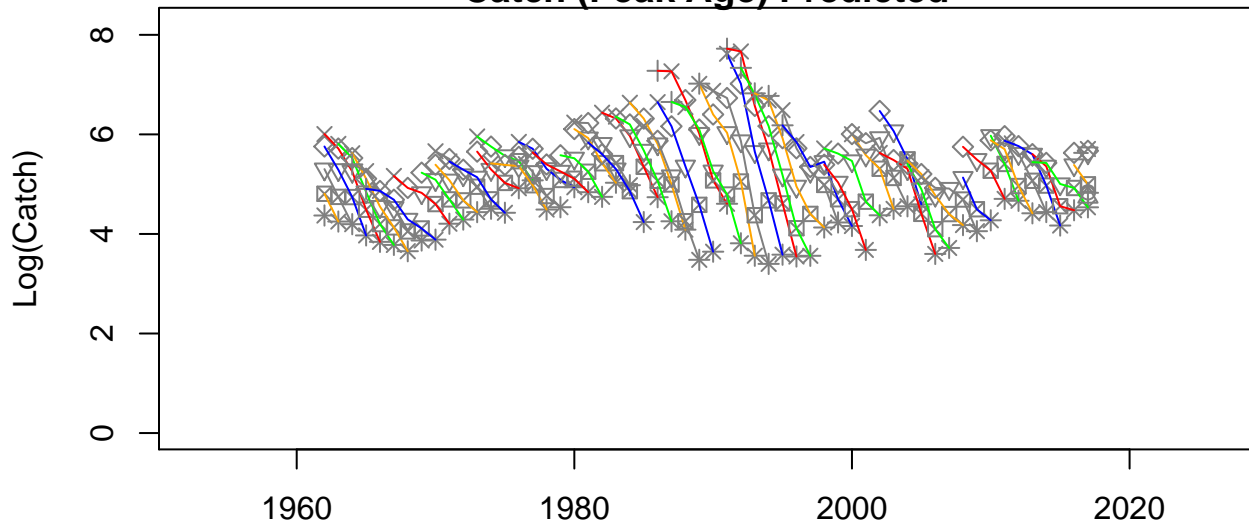
Indices



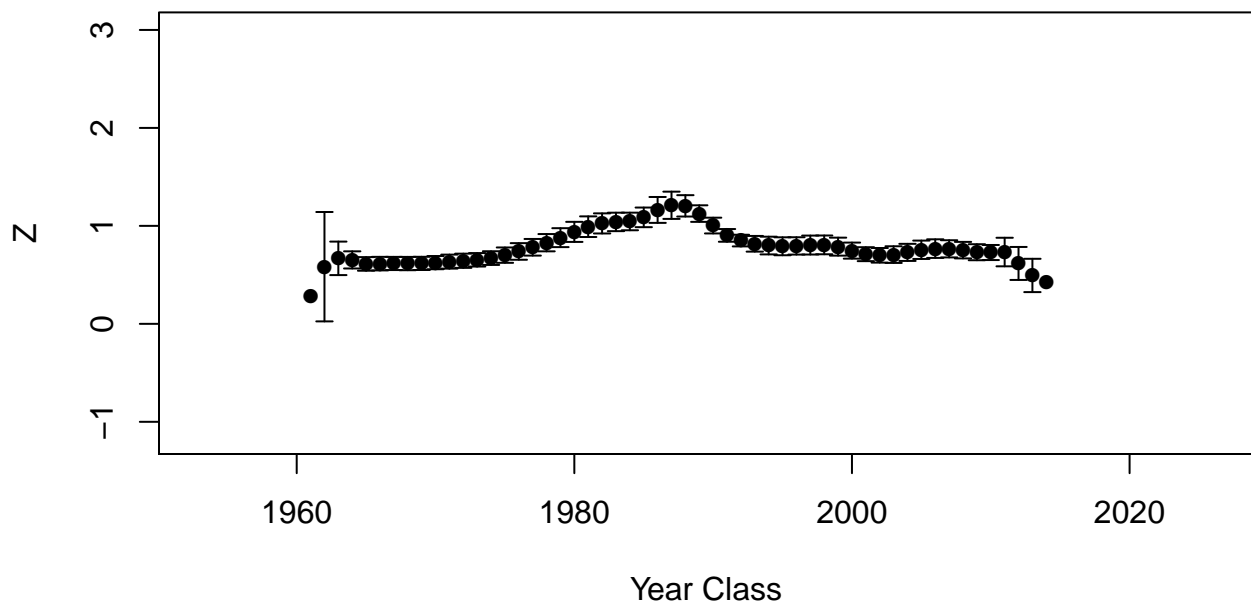
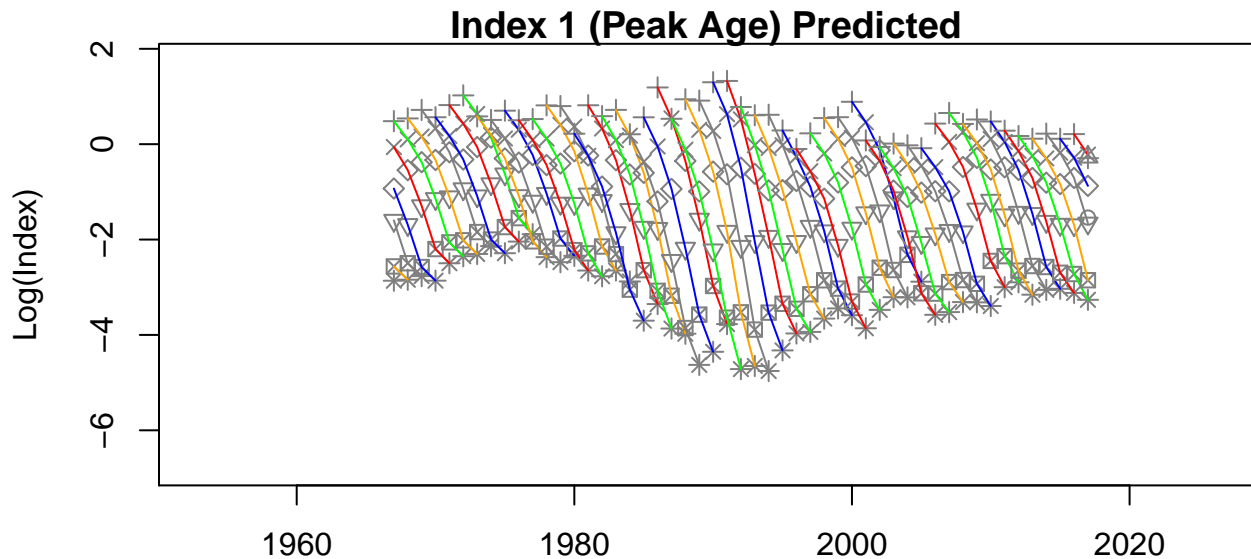
Catch (Peak Age) Observed



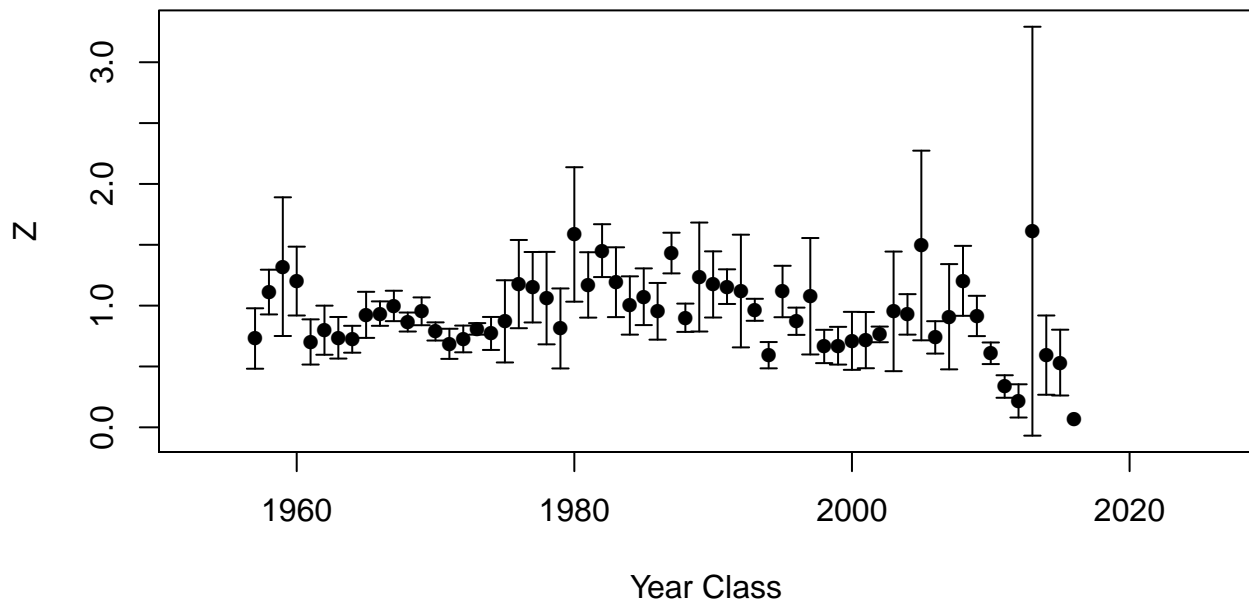
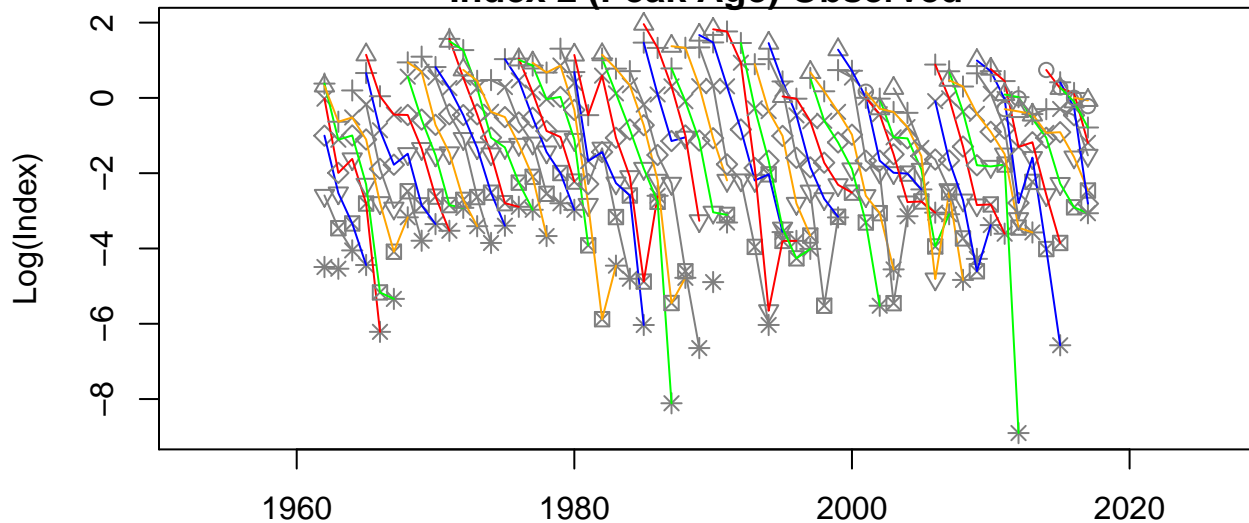
Catch (Peak Age) Predicted



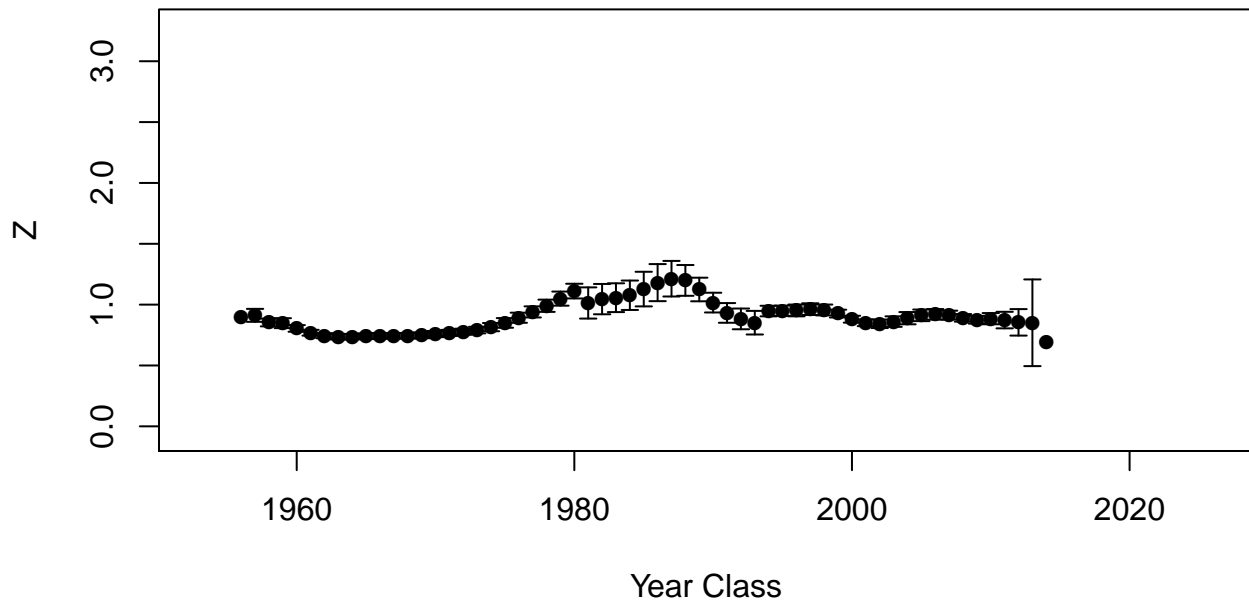
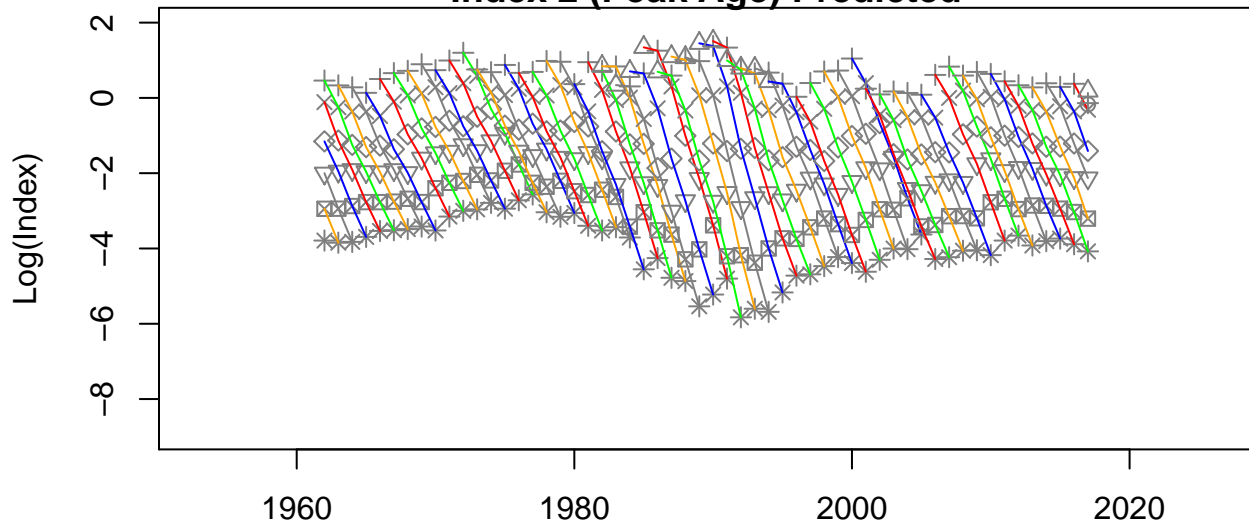




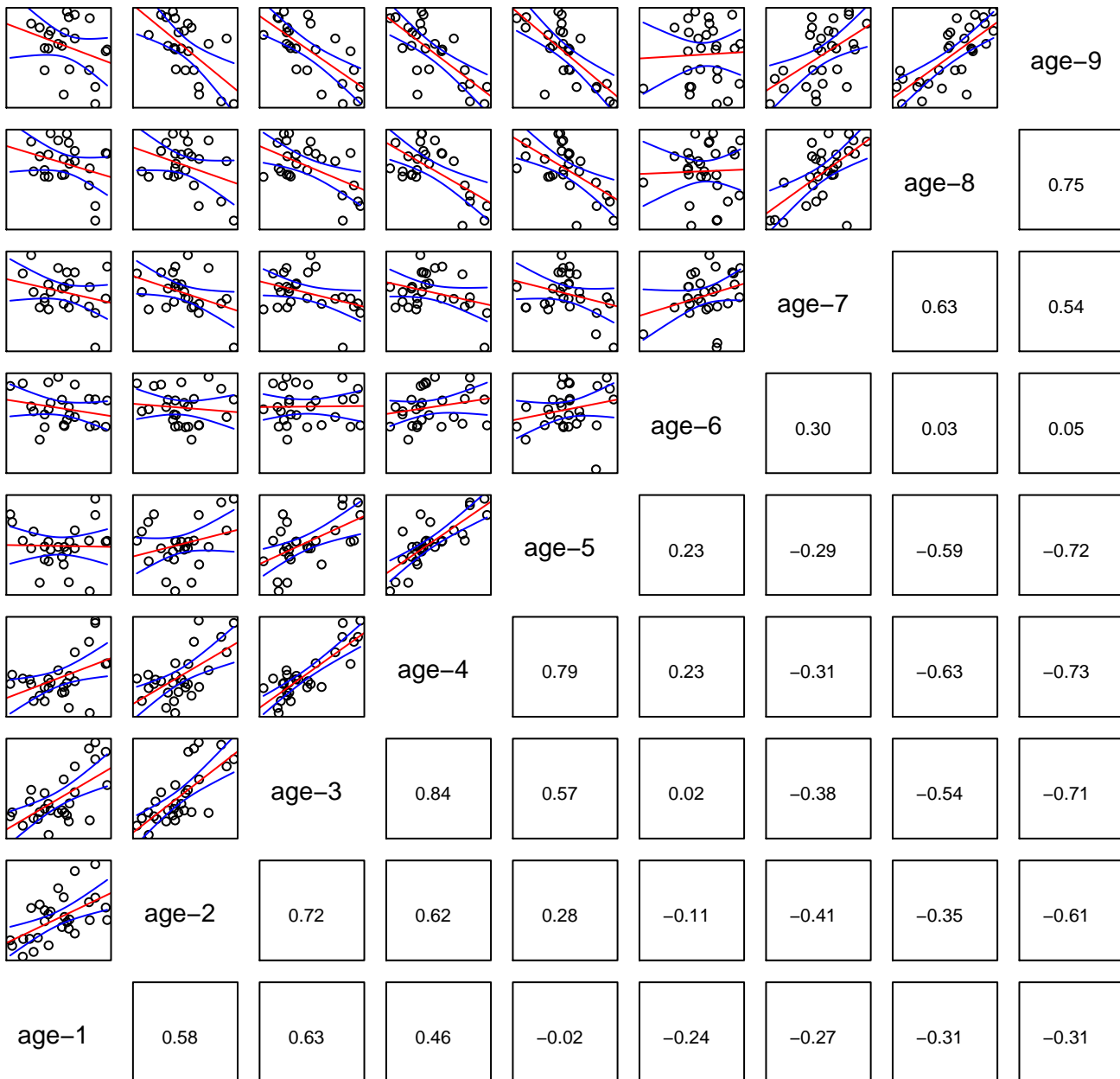
Index 2 (Peak Age) Observed



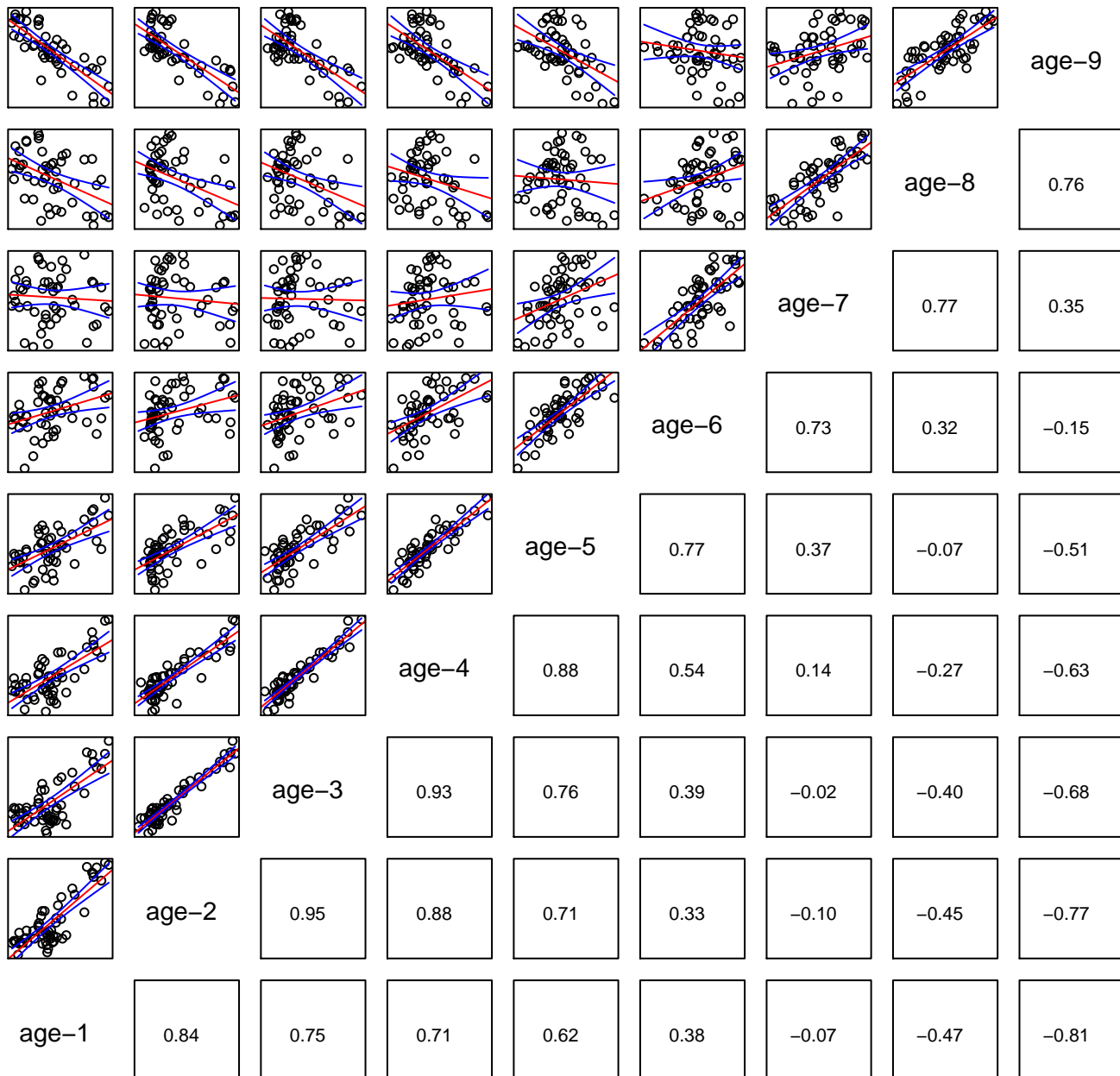
Index 2 (Peak Age) Predicted



Catch Observed



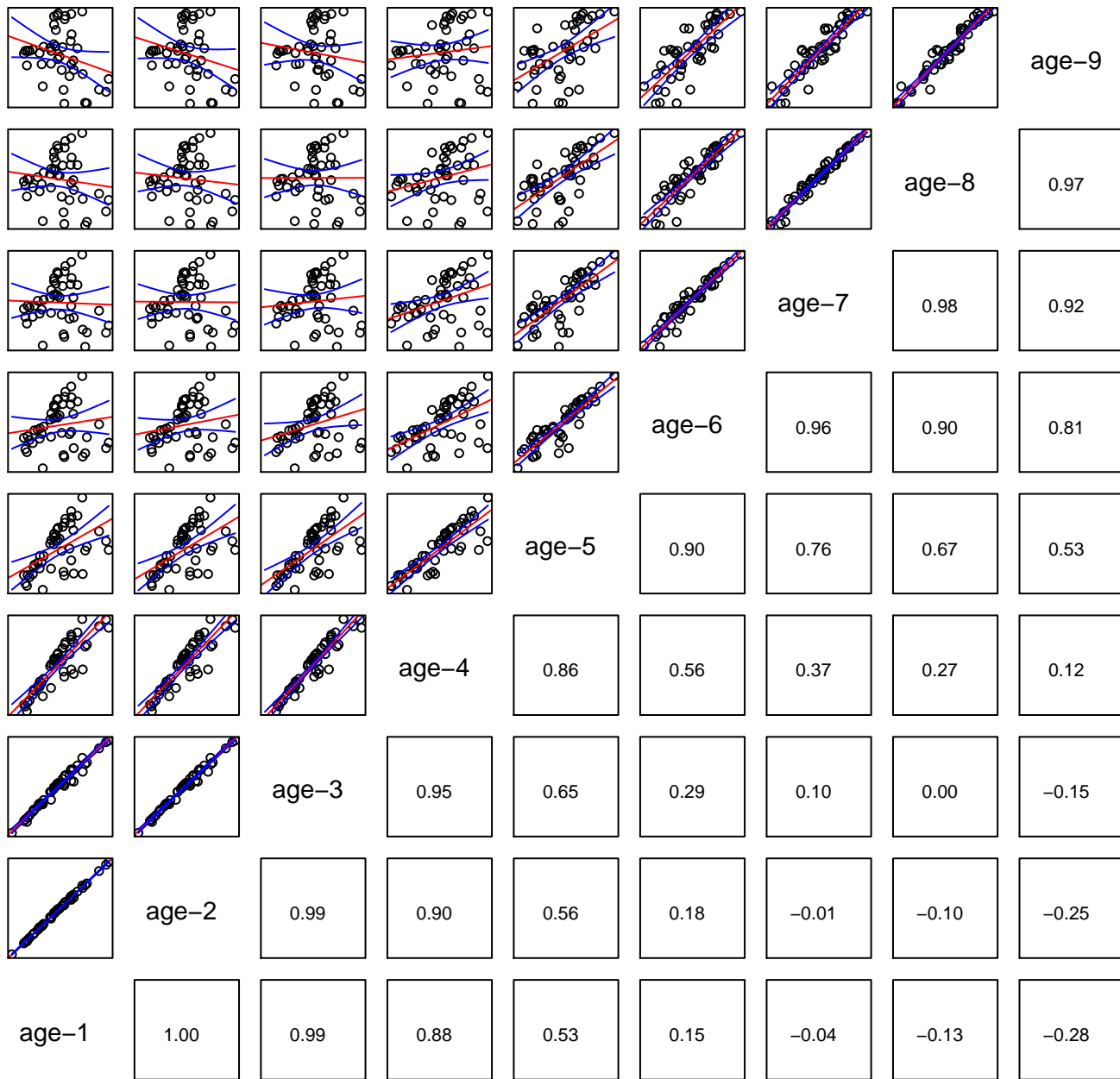
Catch Predicted

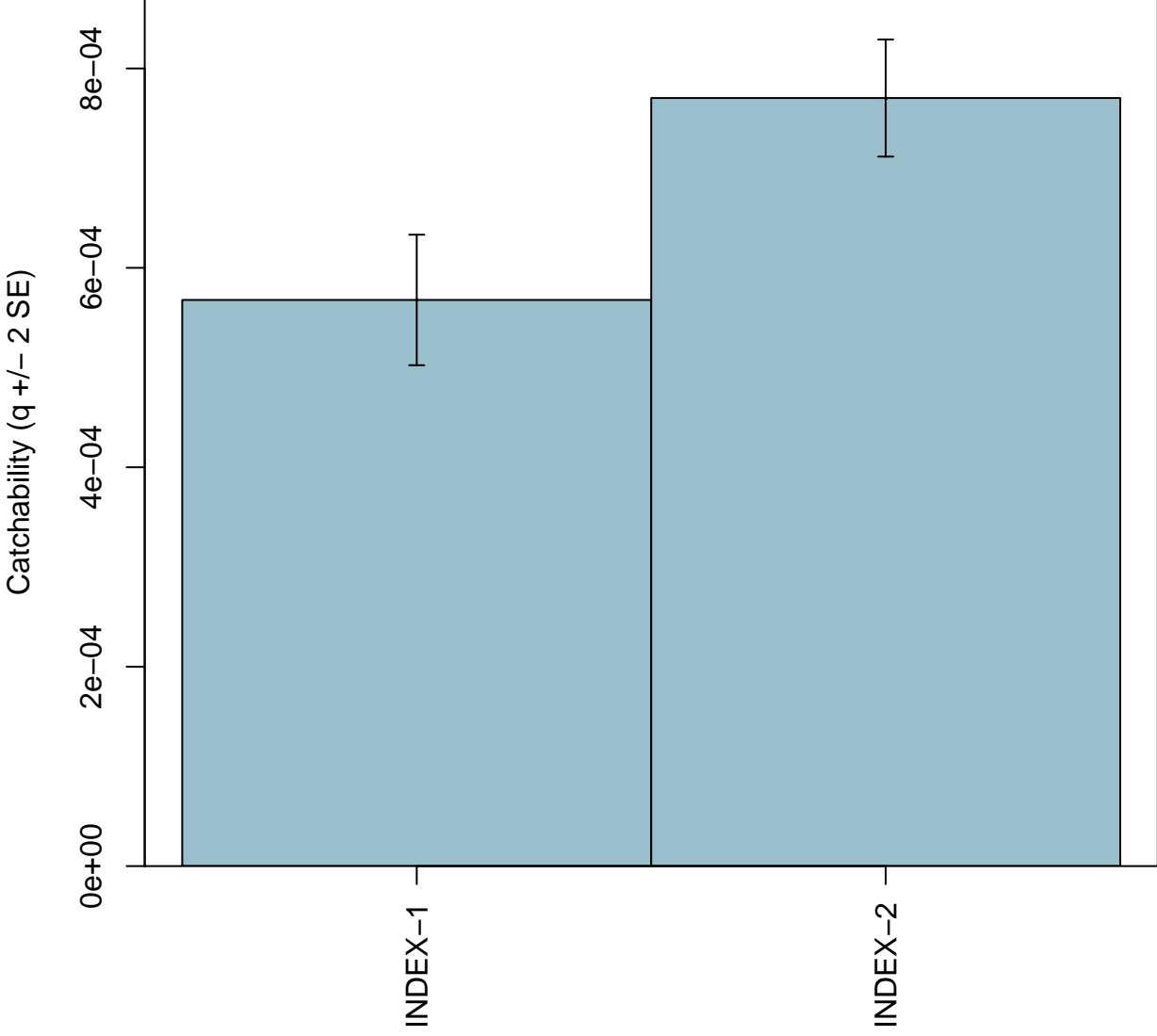


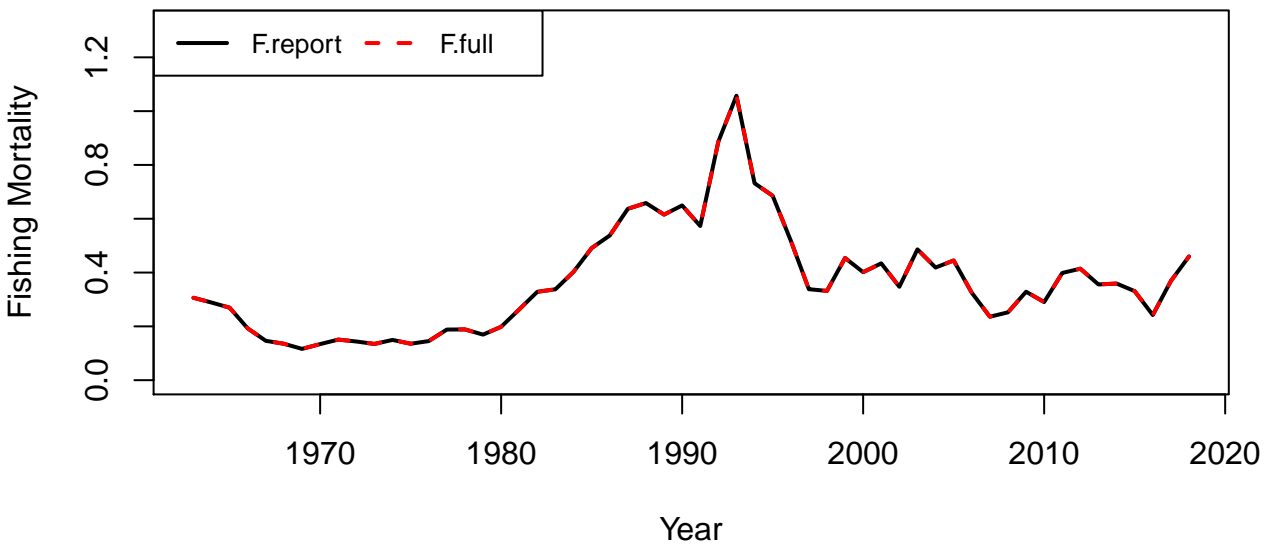
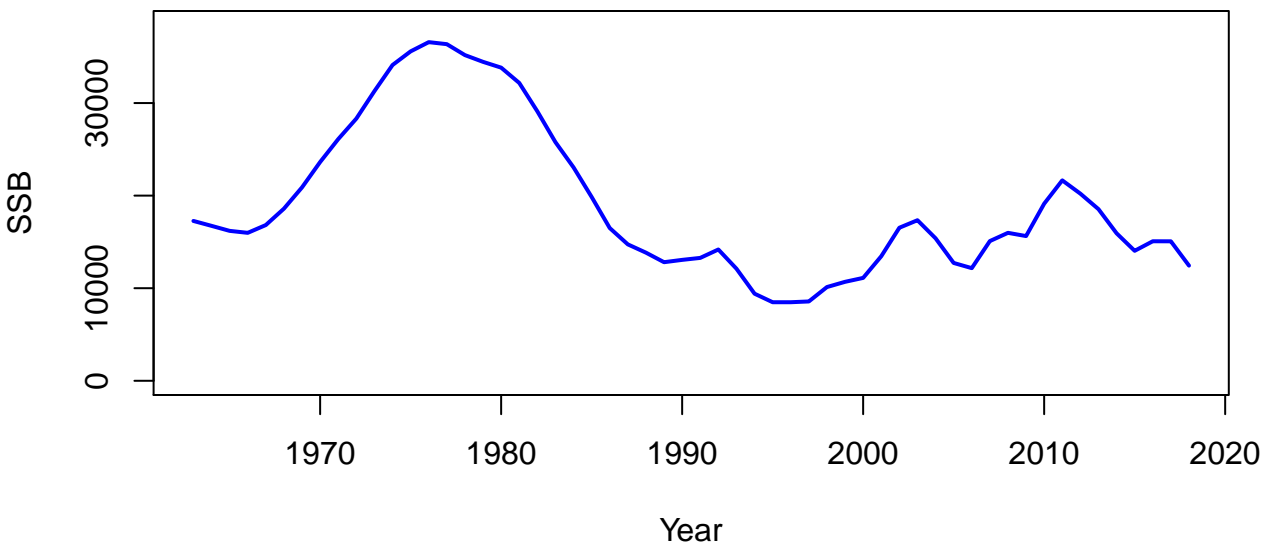
Index 1 (INDEX-1) Observed



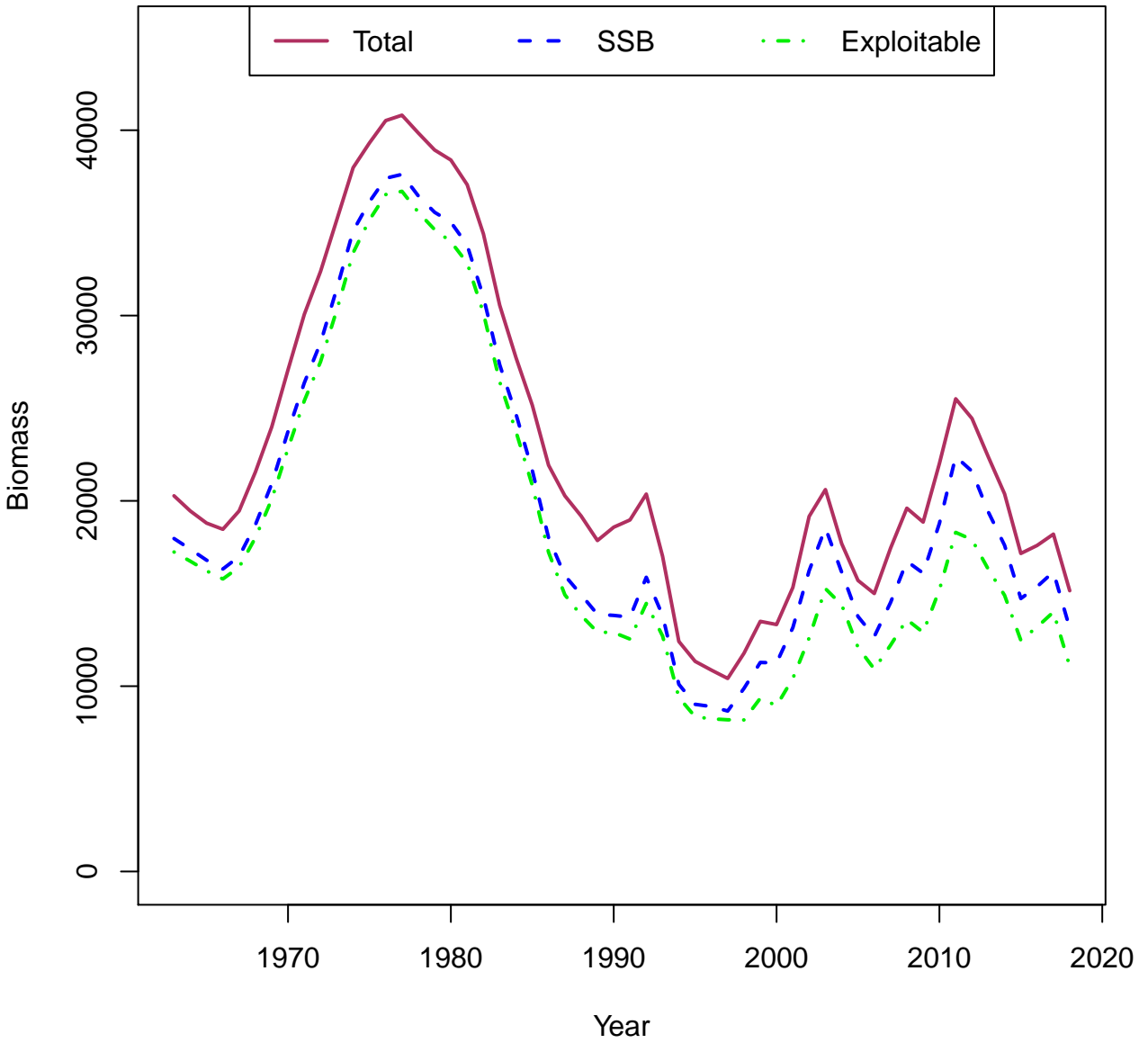
Index 1 (INDEX-1) Predicted

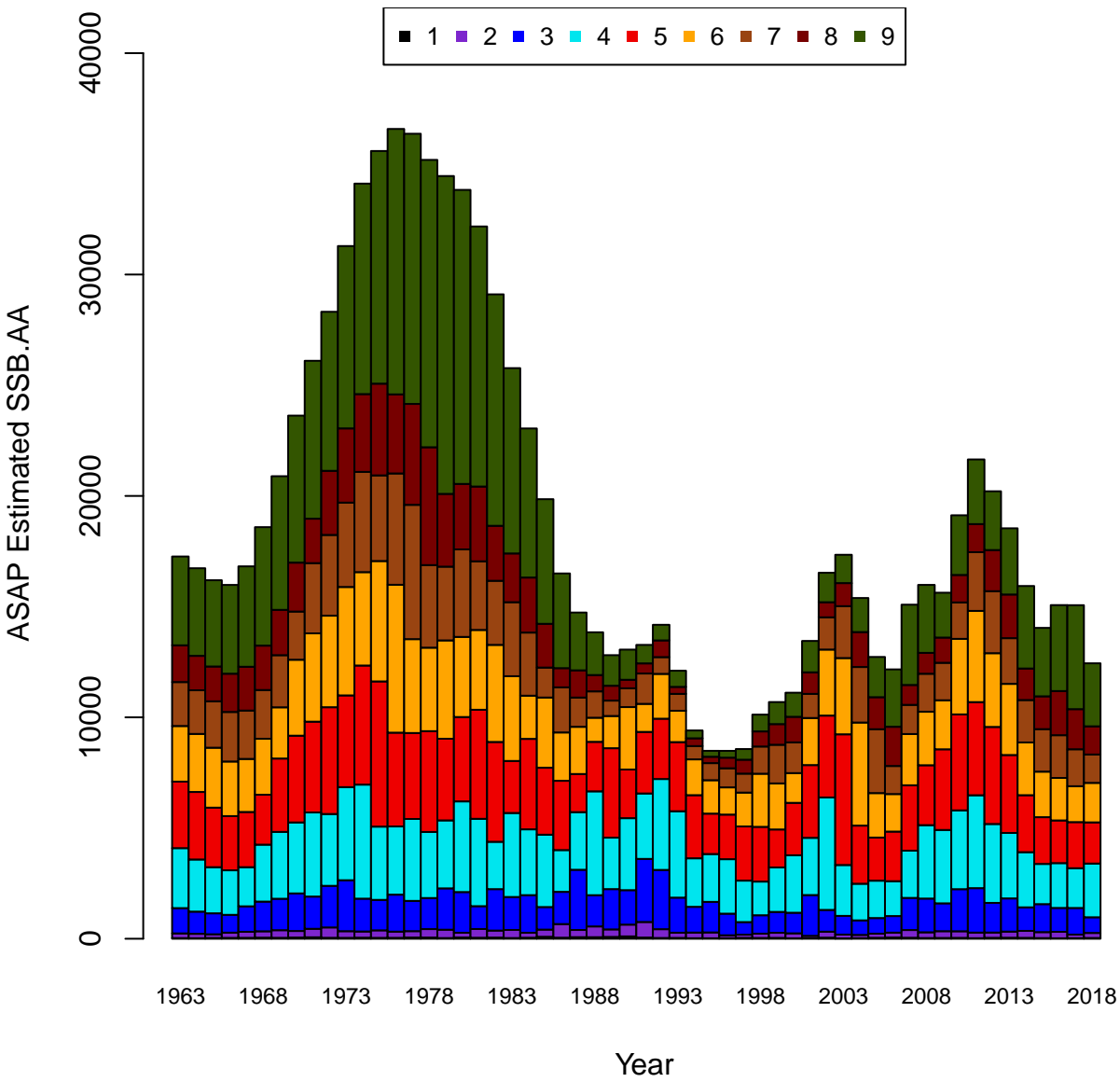


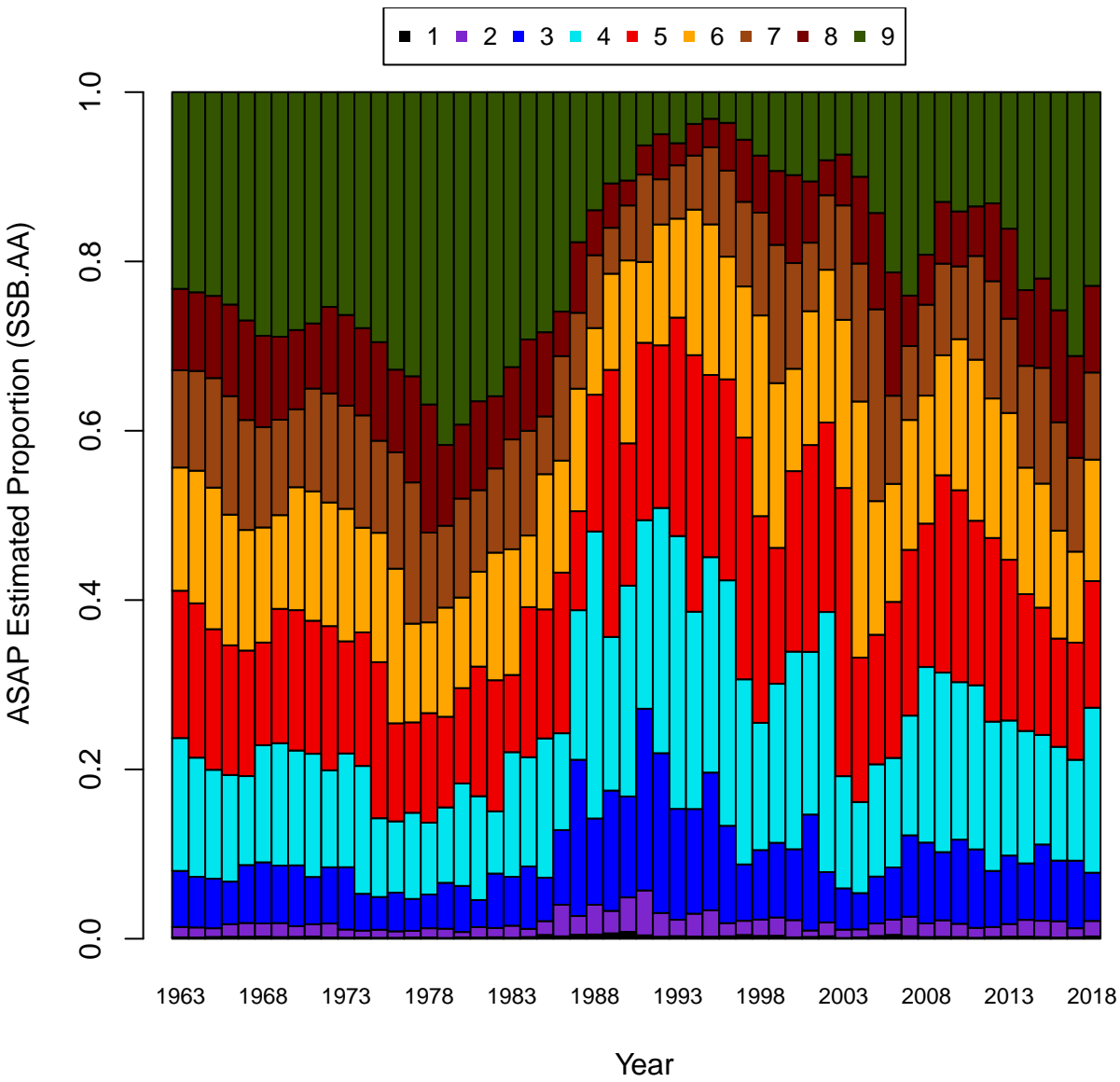


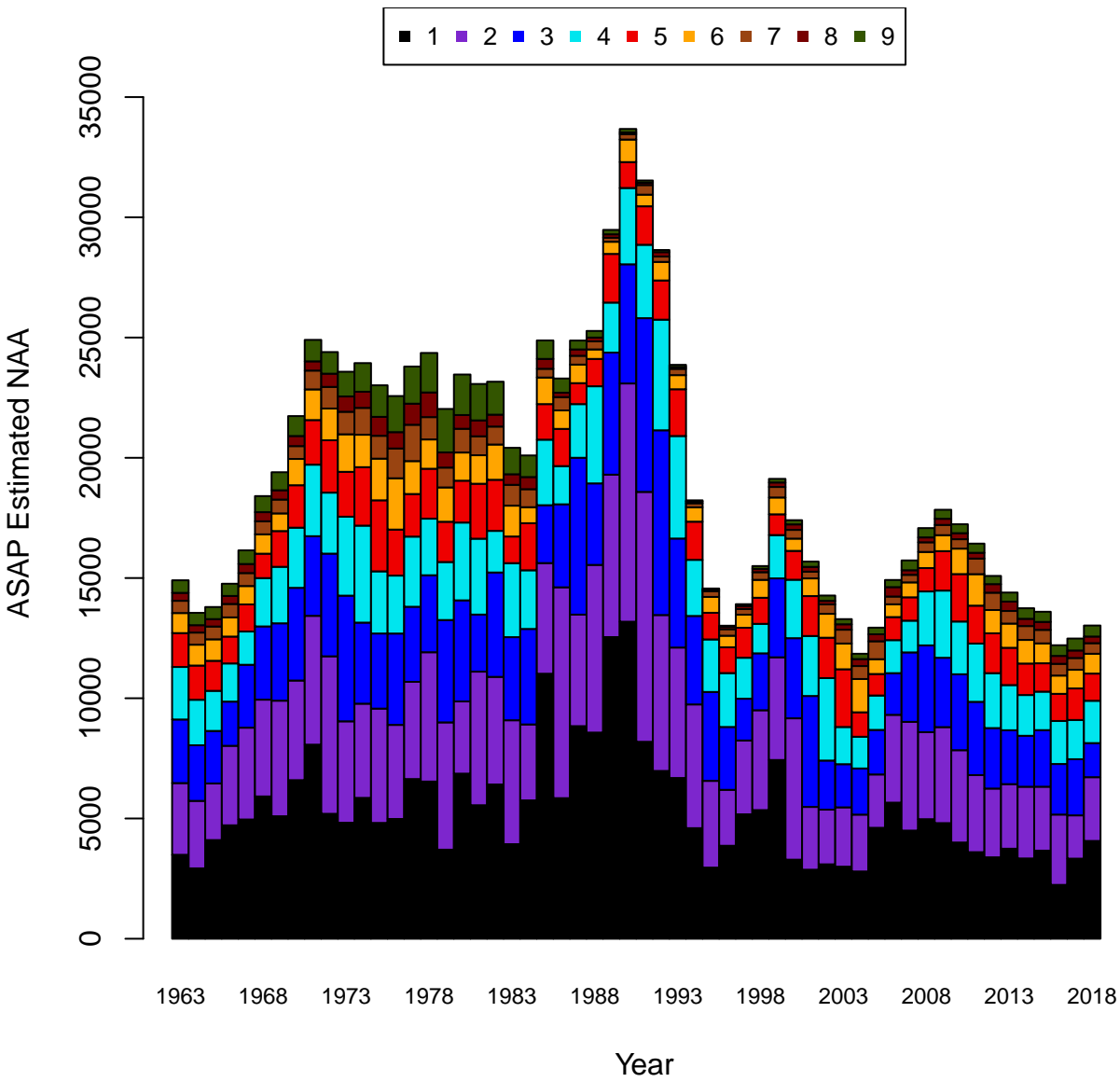


Comparison of January 1 Biomass

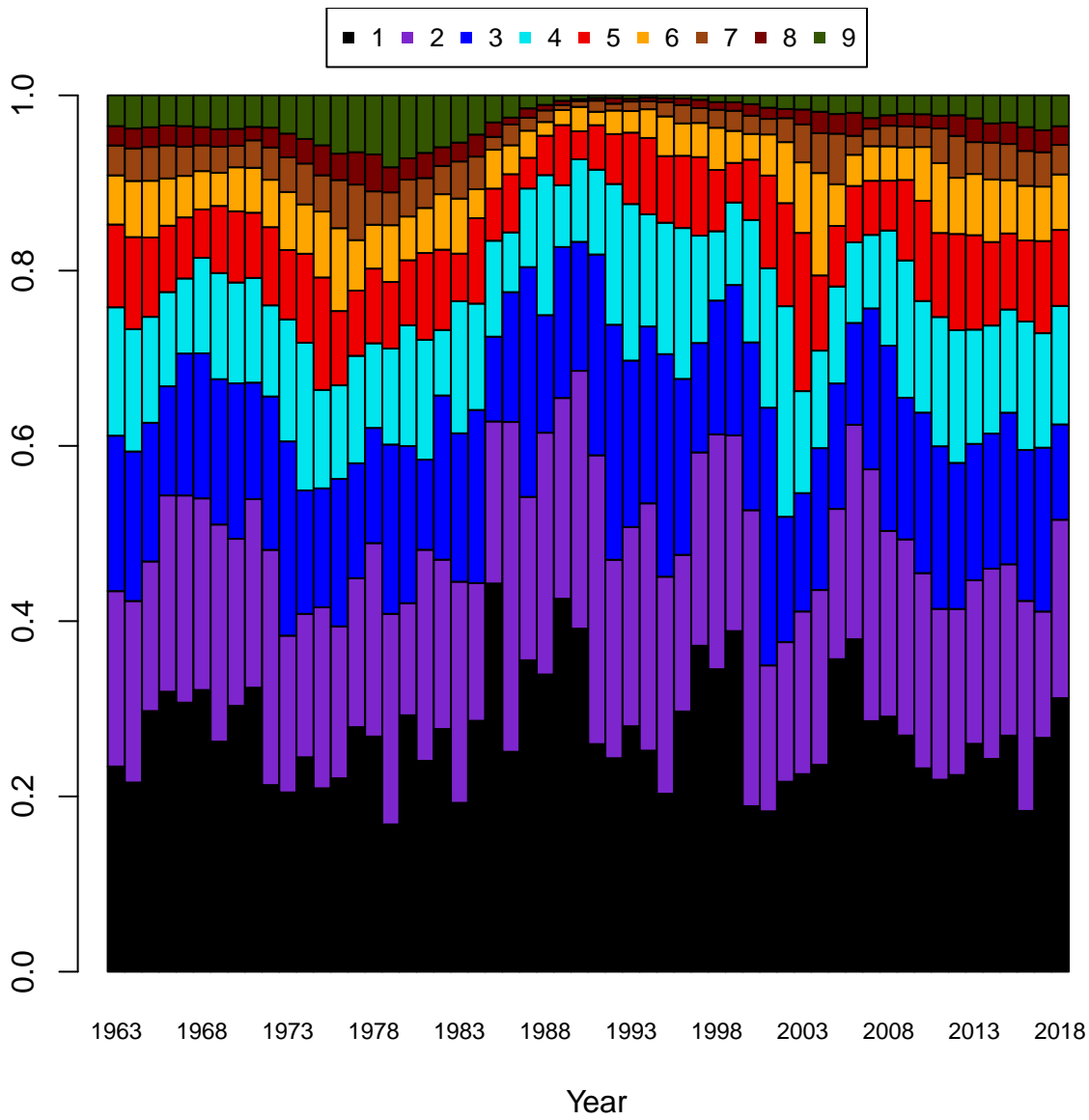


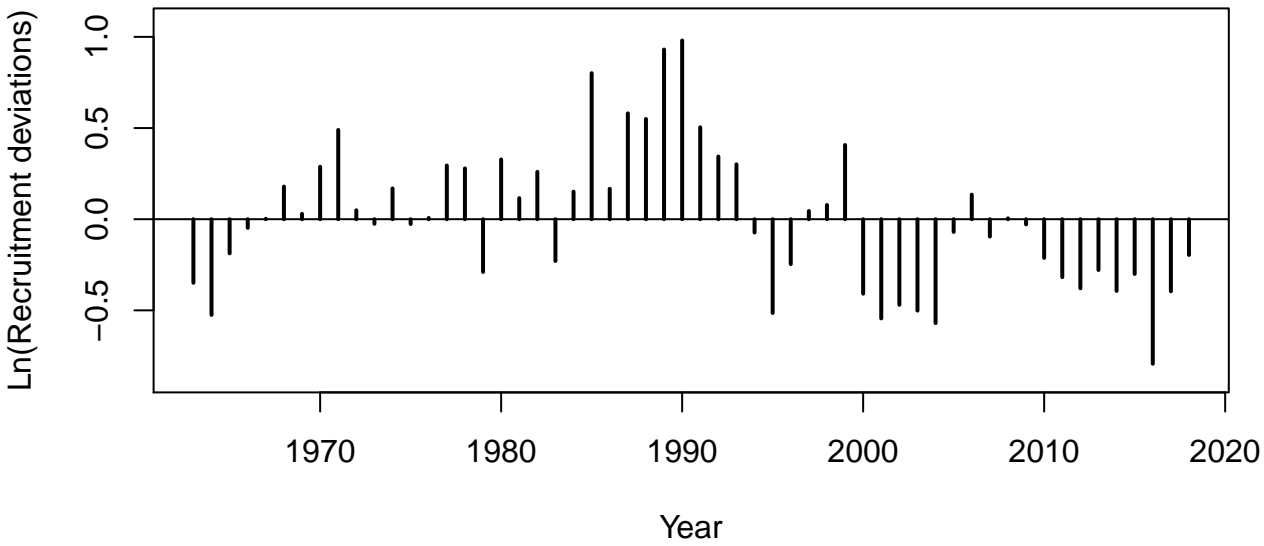
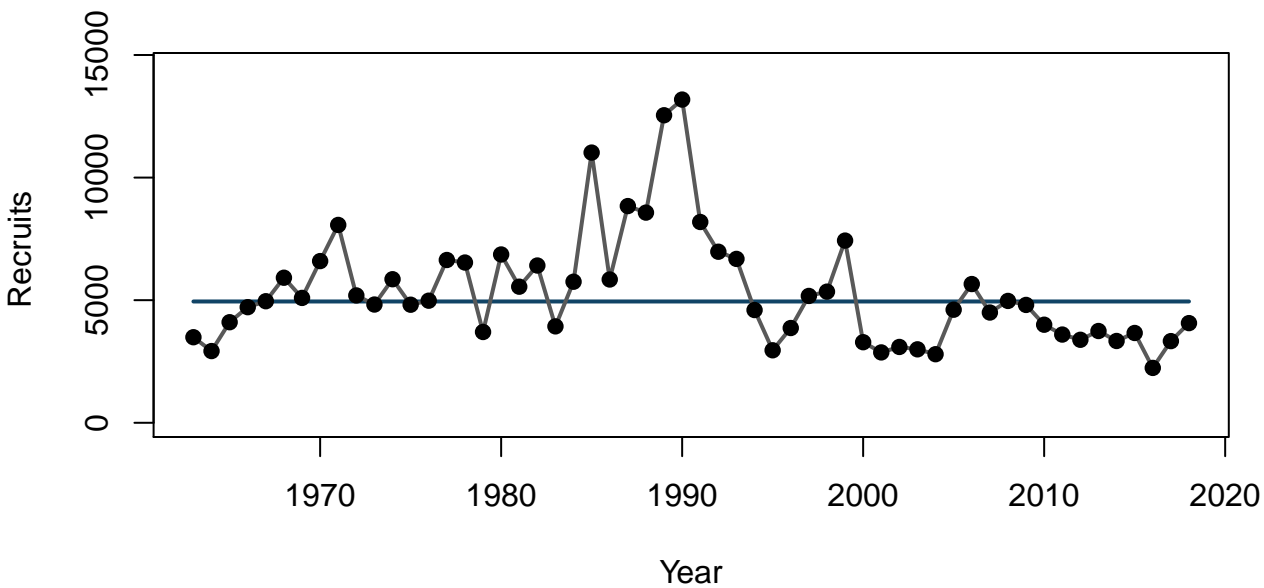


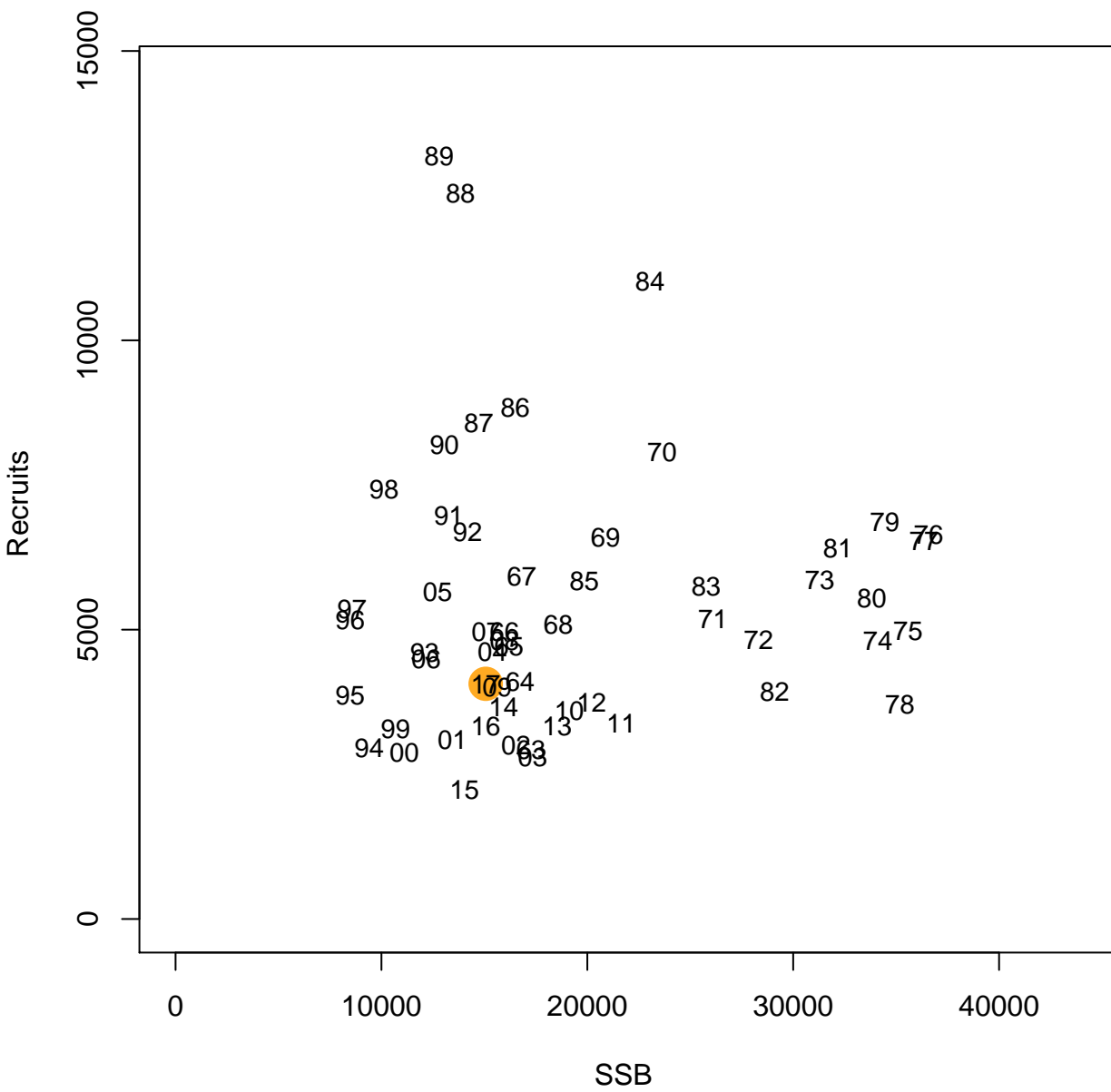


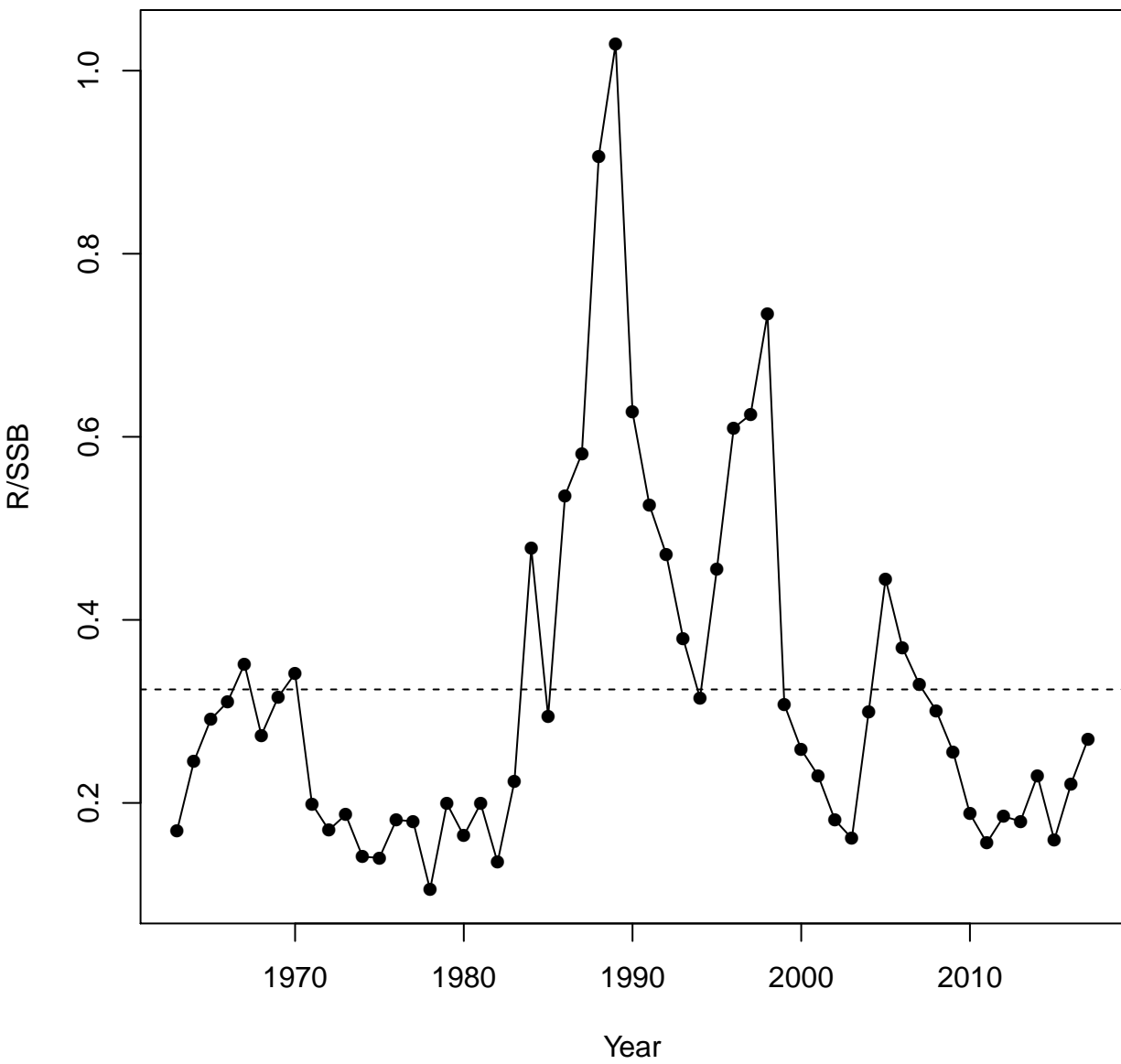


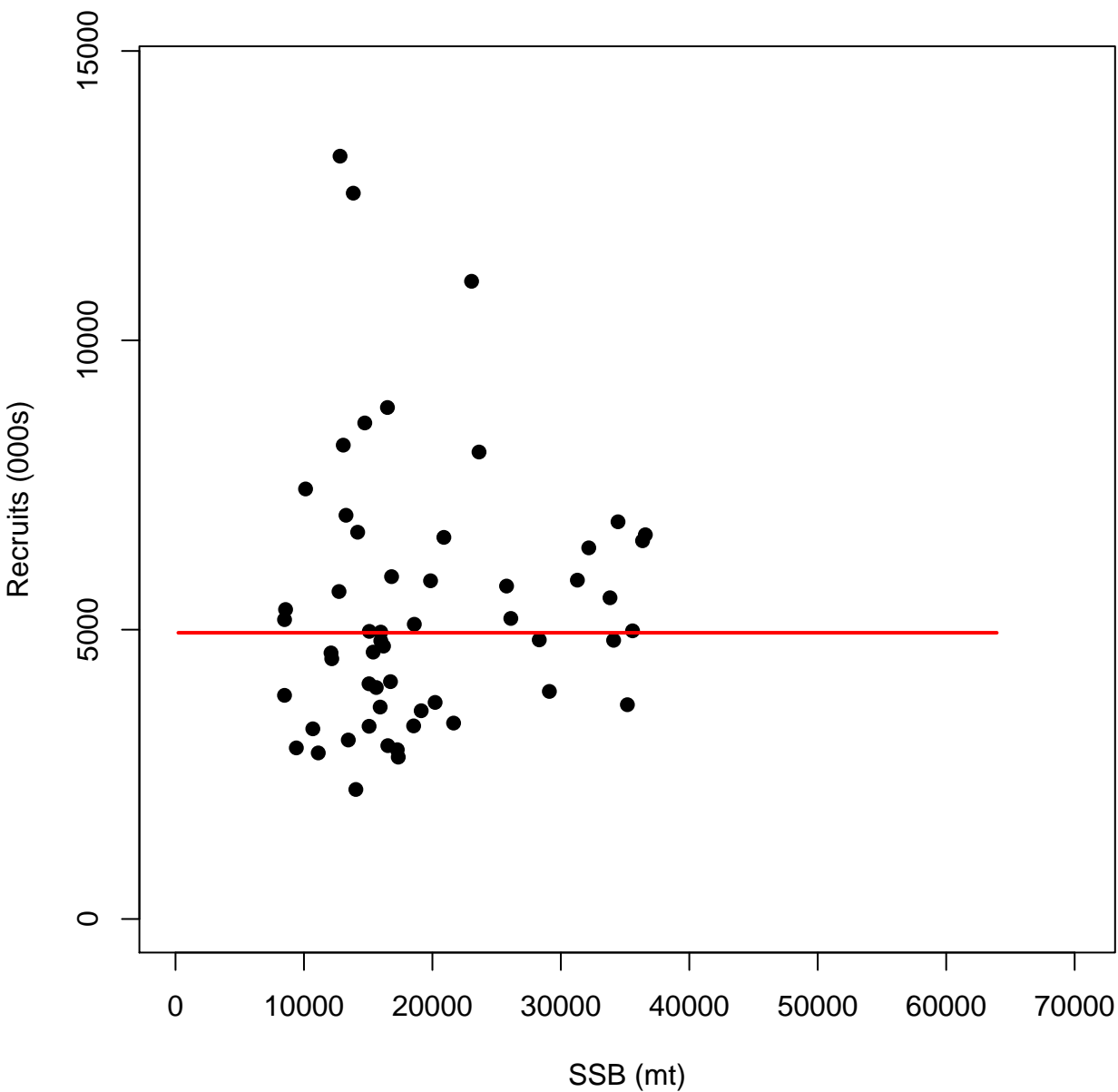
ASAP Estimated Proportion (NAA)

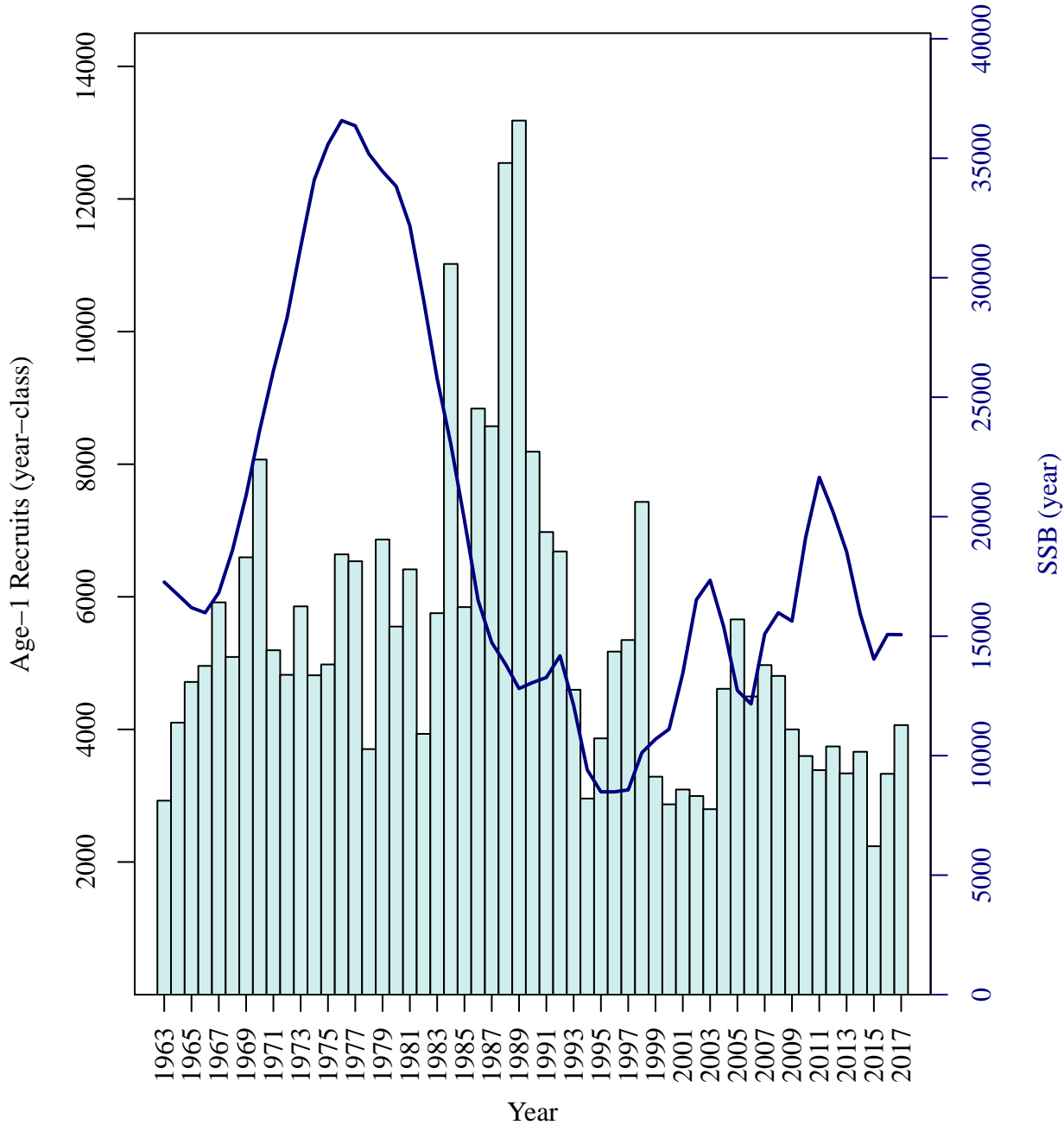




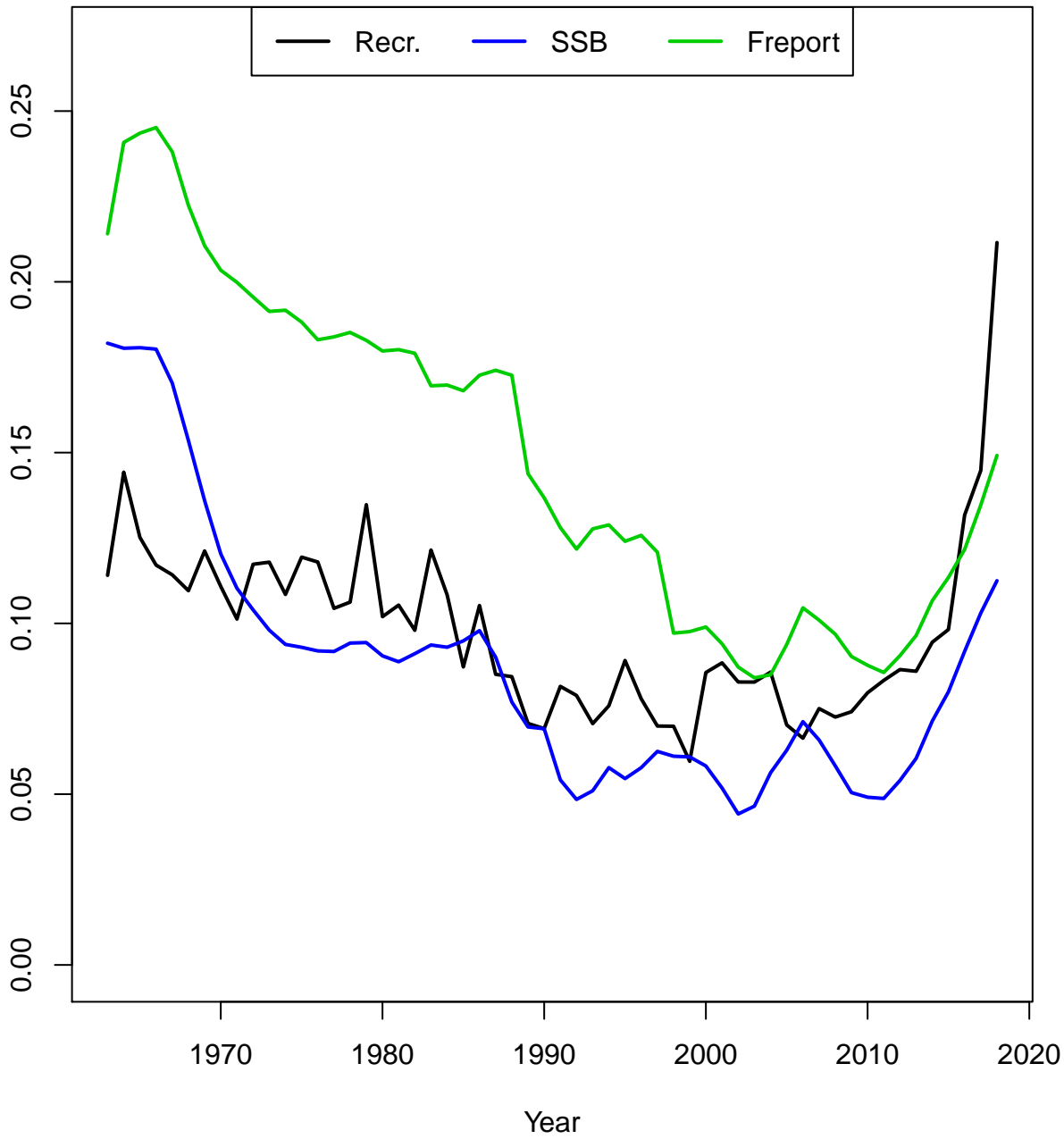




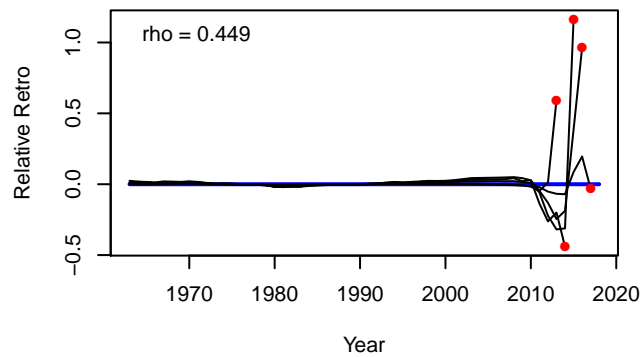
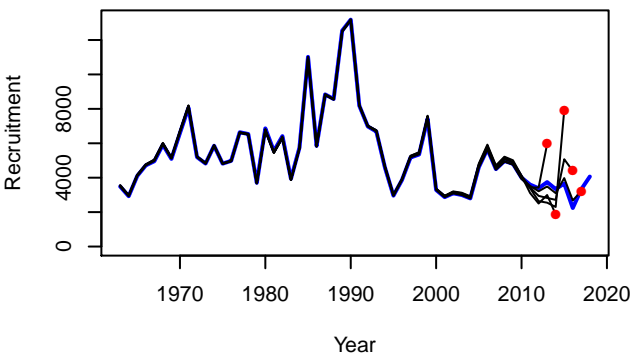
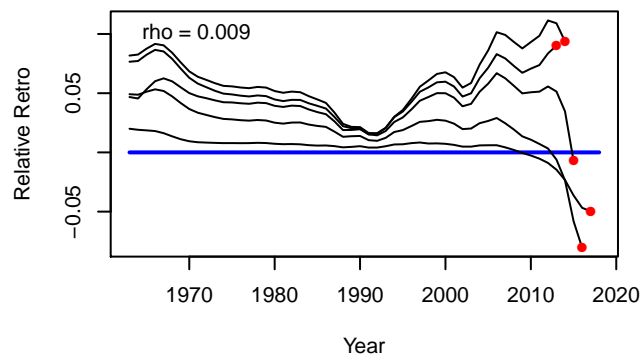
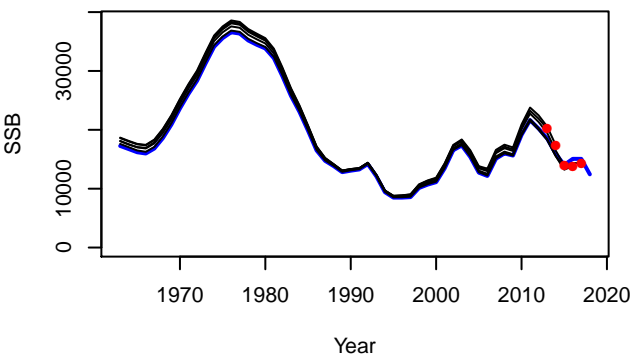
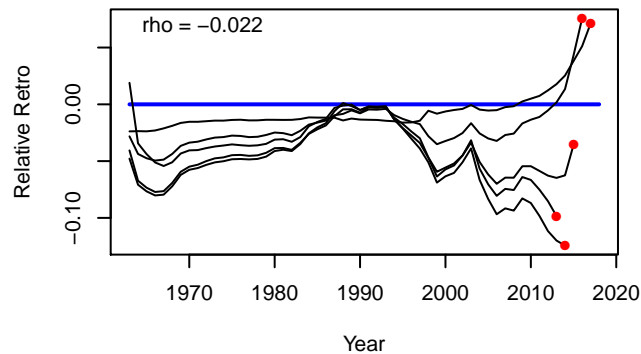
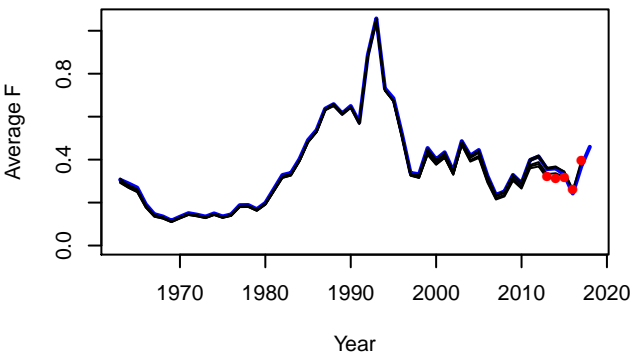




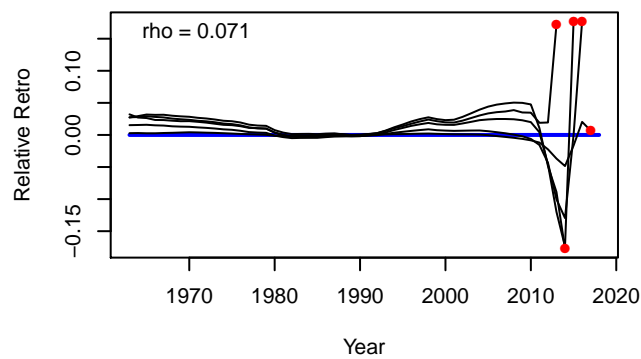
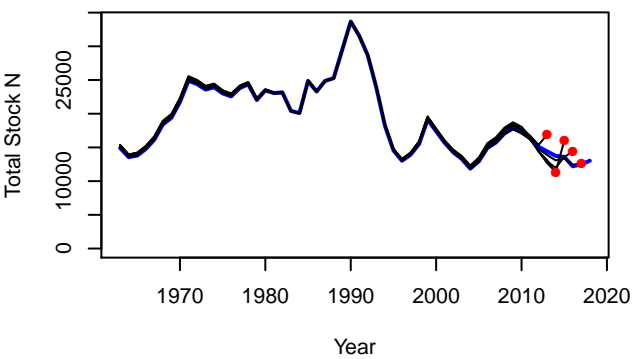
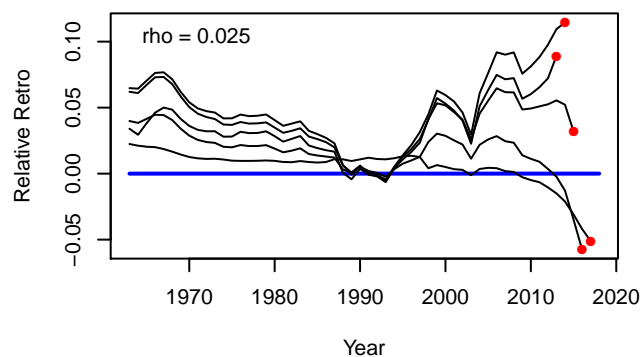
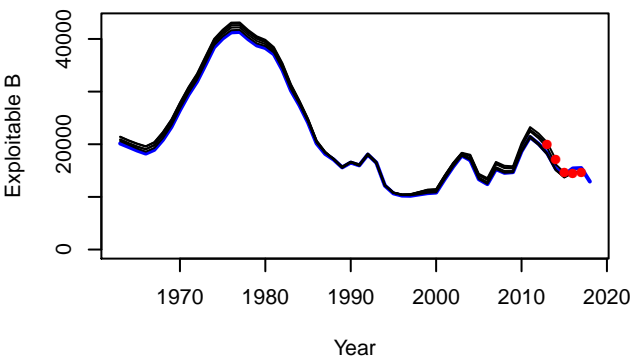
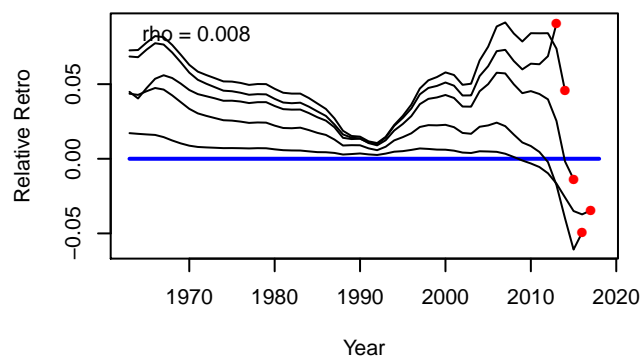
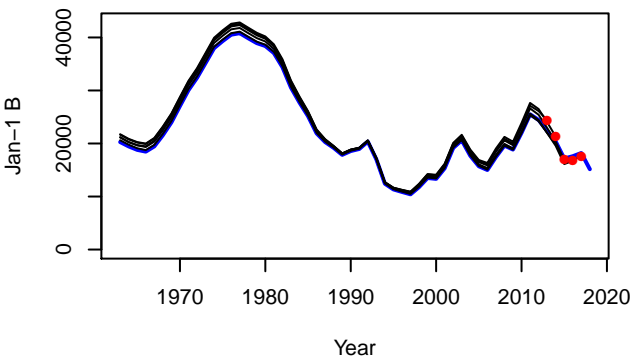
CV



F, SSB, R

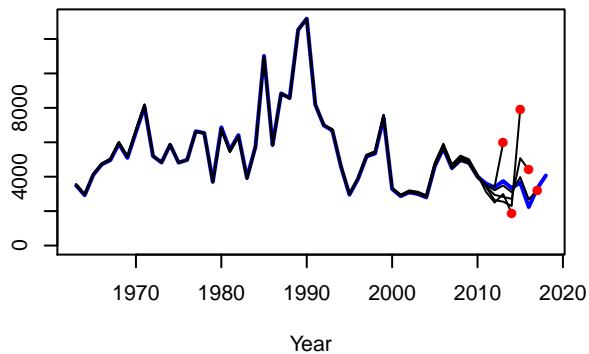


Jan-1 B, Exploitable B, Total Stock N

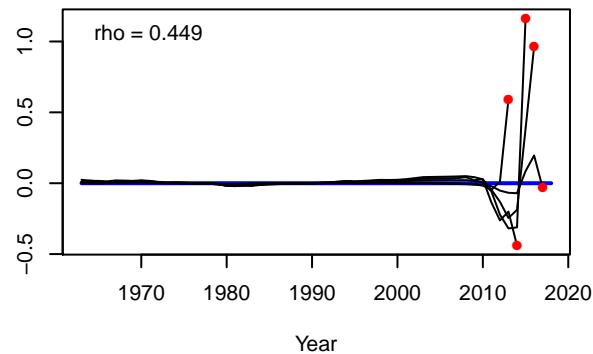


Stock Numbers at Age

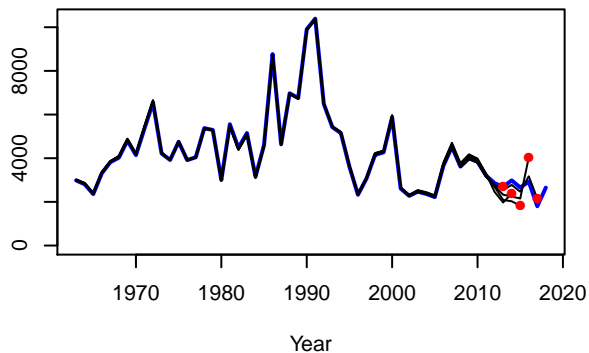
N at Age 1



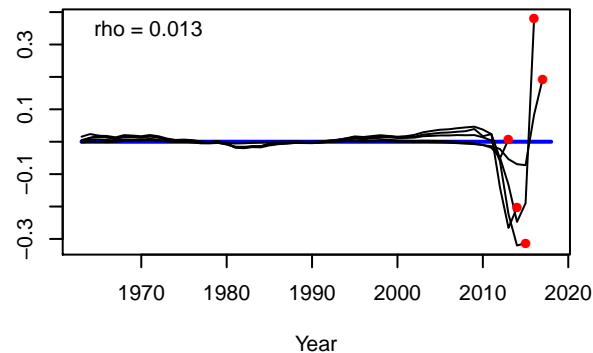
Relative Retro



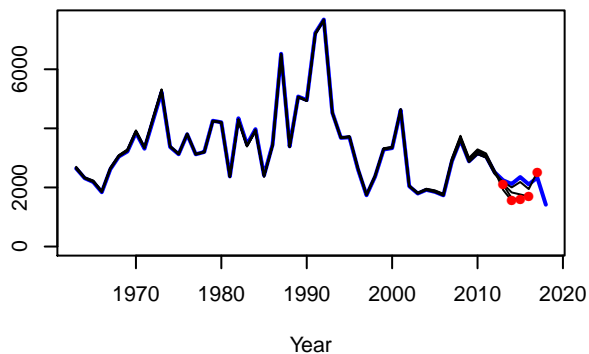
N at Age 2



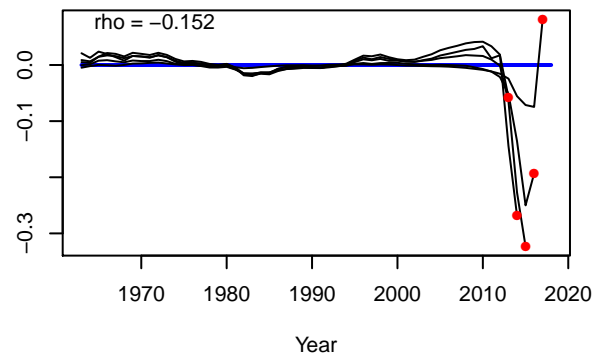
Relative Retro



N at Age 3

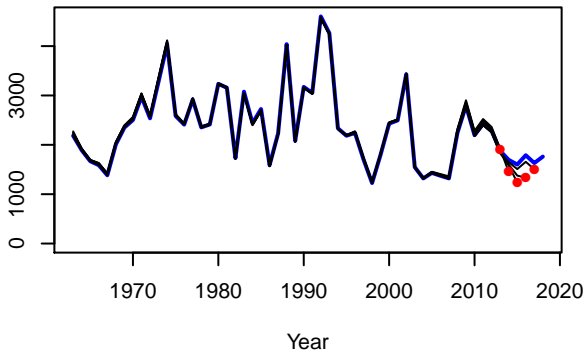


Relative Retro

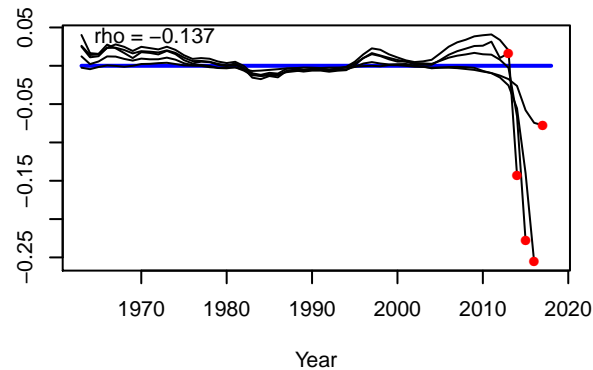


Stock Numbers at Age

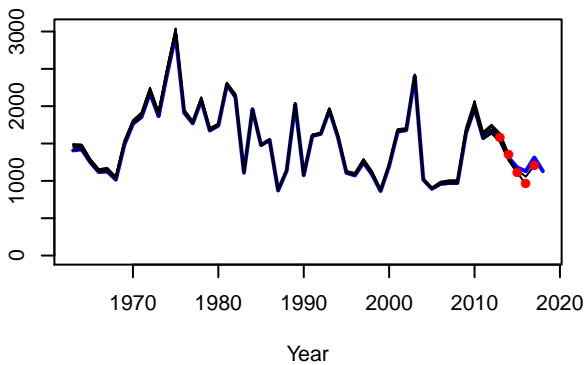
N at Age 4



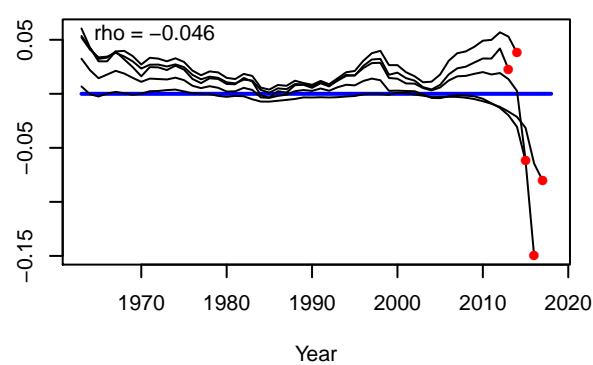
Relative Retro



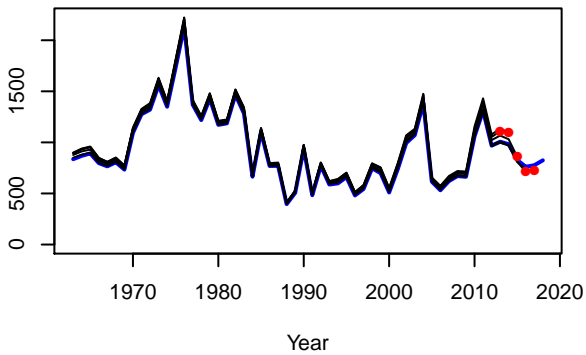
N at Age 5



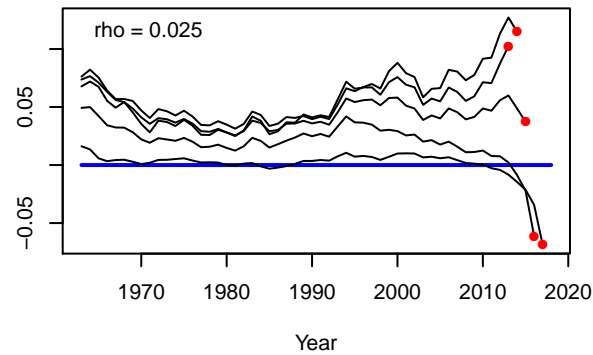
Relative Retro



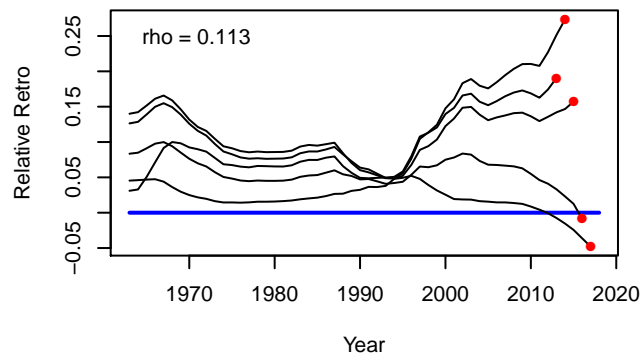
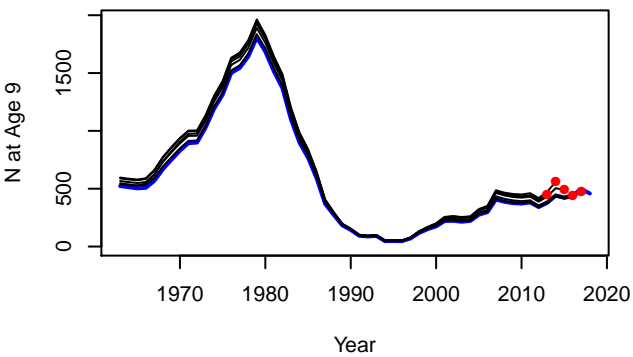
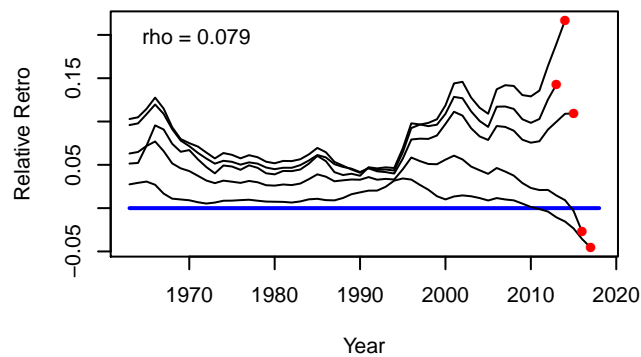
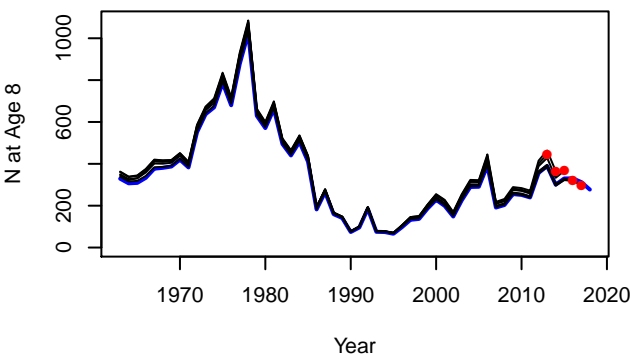
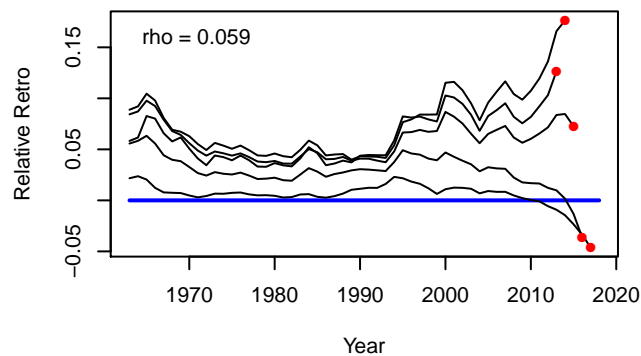
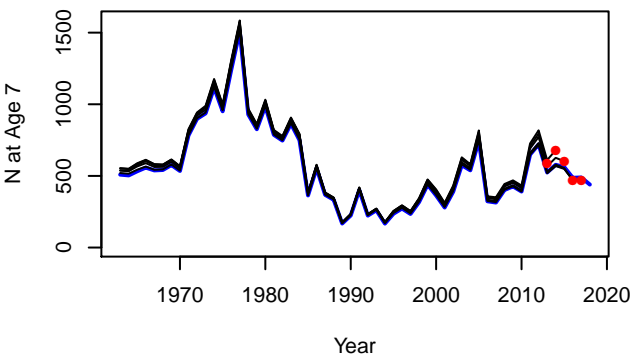
N at Age 6



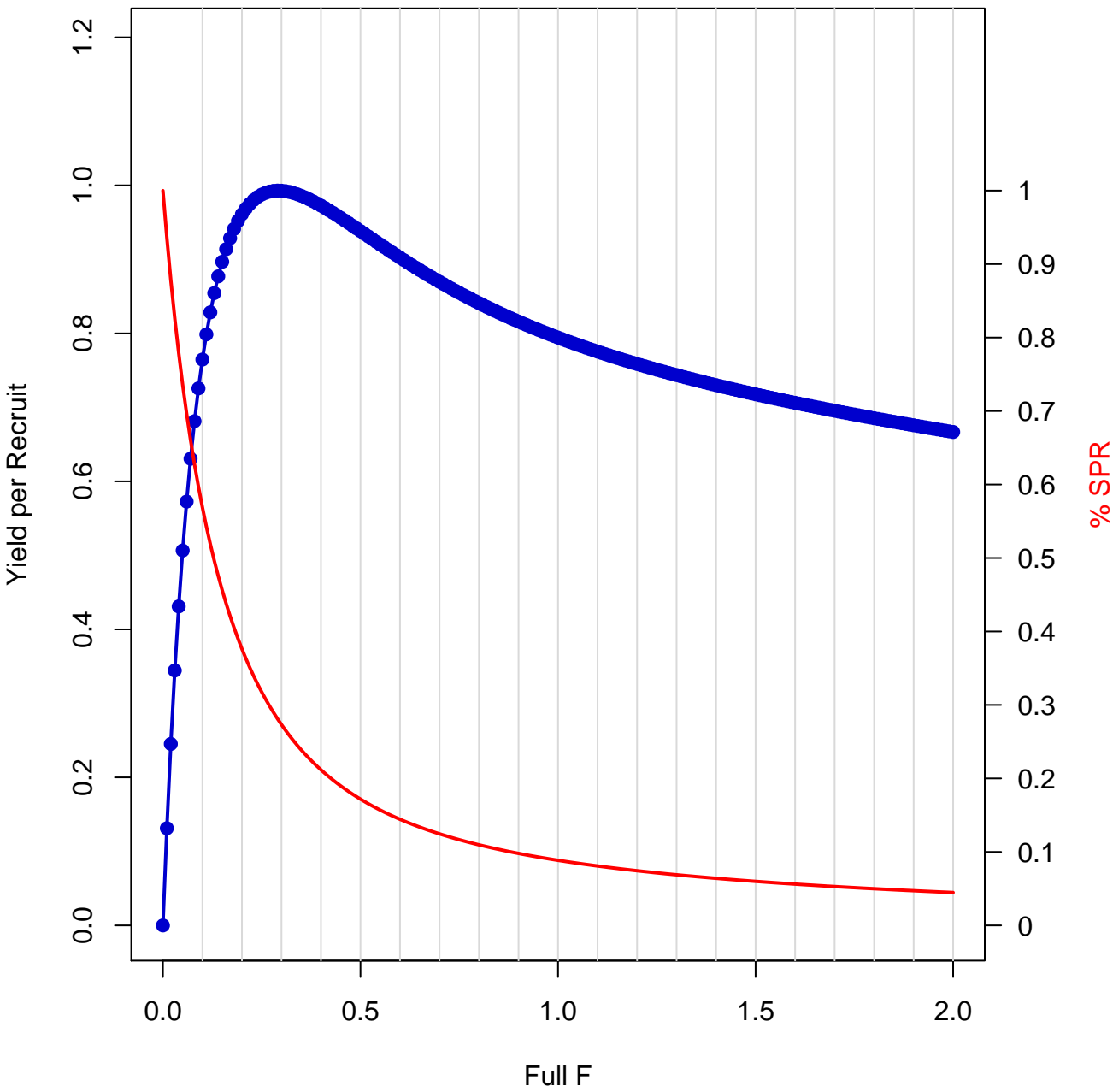
Relative Retro



Stock Numbers at Age



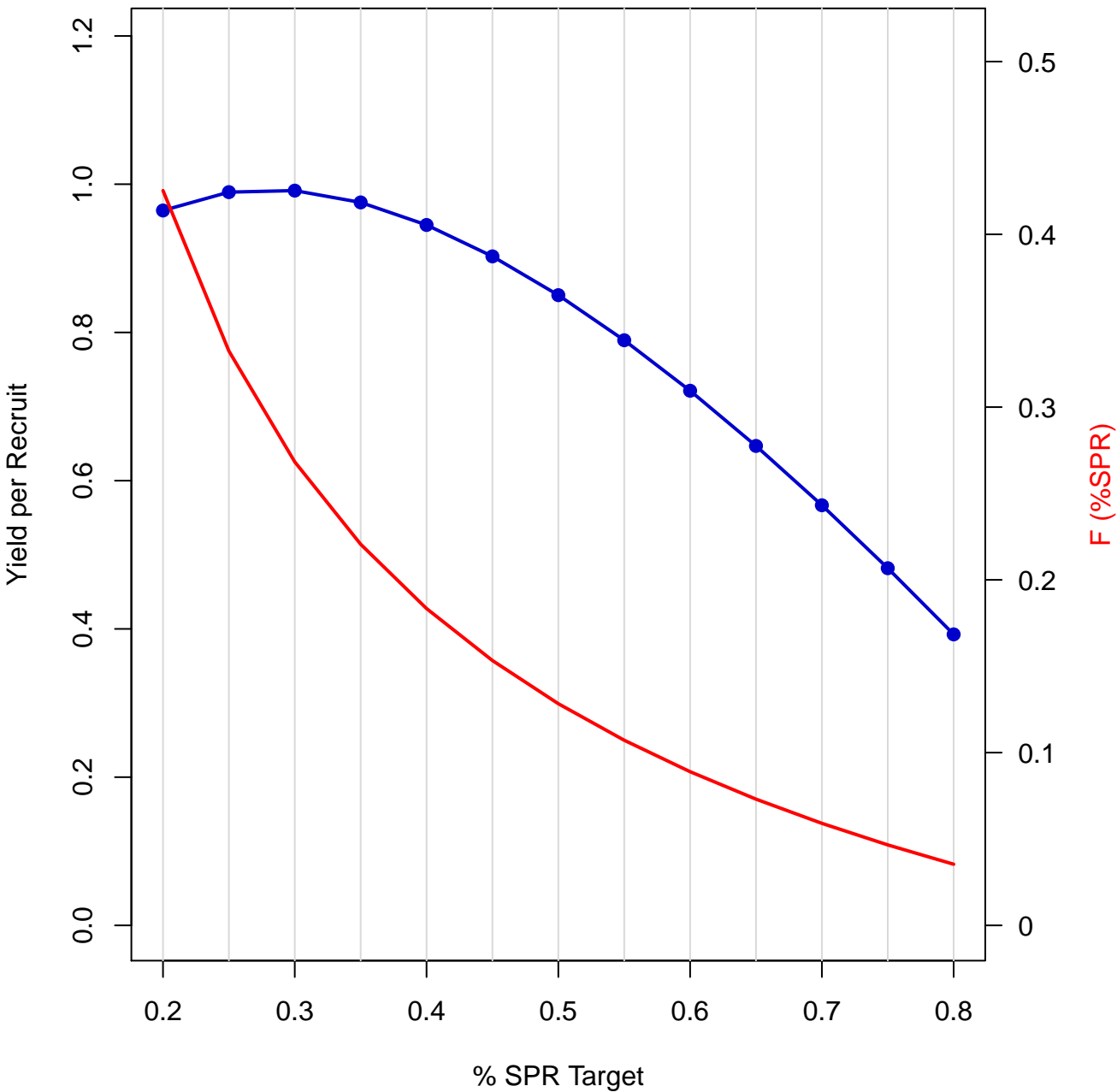
YPR-SPR Reference Points (Years Avg = 5)



YPR–SPR Reference Points (Years Avg = 5)

F	YPR	SPR	F	YPR	SPR	F	YPR	SPR
0	0	1	0.35	0.986	0.2389	0.7	0.8697	0.1246
0.01	0.1313	0.9359	0.36	0.9837	0.2329	0.71	0.8666	0.1229
0.02	0.2453	0.8782	0.37	0.9812	0.2272	0.72	0.8636	0.1212
0.03	0.3445	0.8261	0.38	0.9785	0.2218	0.73	0.8606	0.1196
0.04	0.431	0.7788	0.39	0.9757	0.2166	0.74	0.8577	0.1181
0.05	0.5066	0.7358	0.4	0.9727	0.2117	0.75	0.8548	0.1166
0.06	0.5727	0.6964	0.41	0.9695	0.2069	0.76	0.8519	0.1151
0.07	0.6306	0.6604	0.42	0.9663	0.2023	0.77	0.8491	0.1137
0.08	0.6813	0.6274	0.43	0.963	0.198	0.78	0.8463	0.1123
0.09	0.7257	0.5969	0.44	0.9596	0.1938	0.79	0.8436	0.1109
0.1	0.7646	0.5688	0.45	0.9561	0.1897	0.8	0.8409	0.1096
0.11	0.7987	0.5428	0.46	0.9526	0.1859	0.81	0.8383	0.1083
0.12	0.8284	0.5187	0.47	0.949	0.1822	0.82	0.8356	0.107
0.13	0.8544	0.4964	0.48	0.9454	0.1786	0.83	0.833	0.1058
0.14	0.8771	0.4755	0.49	0.9418	0.1751	0.84	0.8305	0.1046
0.15	0.8968	0.4561	0.5	0.9382	0.1718	0.85	0.828	0.1034
0.16	0.9138	0.438	0.51	0.9346	0.1686	0.86	0.8255	0.1023
0.17	0.9285	0.421	0.52	0.9309	0.1655	0.87	0.8231	0.1012
0.18	0.9412	0.4052	0.53	0.9273	0.1626	0.88	0.8207	0.1001
0.19	0.9519	0.3903	0.54	0.9237	0.1597	0.89	0.8183	0.099
0.2	0.9611	0.3763	0.55	0.9201	0.1569	0.9	0.816	0.0979
0.21	0.9687	0.3631	0.56	0.9165	0.1542	0.91	0.8137	0.0969
0.22	0.9751	0.3507	0.57	0.913	0.1516	0.92	0.8114	0.0959
0.23	0.9803	0.3391	0.58	0.9094	0.1491	0.93	0.8092	0.0949
0.24	0.9844	0.328	0.59	0.9059	0.1467	0.94	0.807	0.094
0.25	0.9876	0.3176	0.6	0.9025	0.1444	0.95	0.8048	0.093
0.26	0.99	0.3078	0.61	0.899	0.1421	0.96	0.8026	0.0921
0.27	0.9916	0.2984	0.62	0.8956	0.1399	0.97	0.8005	0.0912
0.28	0.9925	0.2896	0.63	0.8922	0.1378	0.98	0.7984	0.0903
0.29	0.9929	0.2812	0.64	0.8889	0.1357	0.99	0.7964	0.0894
0.3	0.9928	0.2733	0.65	0.8856	0.1337	1	0.7943	0.0886
0.31	0.9921	0.2657	0.66	0.8823	0.1318	1.01	0.7923	0.0877
0.32	0.9911	0.2585	0.67	0.8791	0.1299	1.02	0.7903	0.0869
0.33	0.9897	0.2516	0.68	0.8759	0.1281	1.03	0.7884	0.0861
0.34	0.988	0.2451	0.69	0.8728	0.1263	1.04	0.7865	0.0853

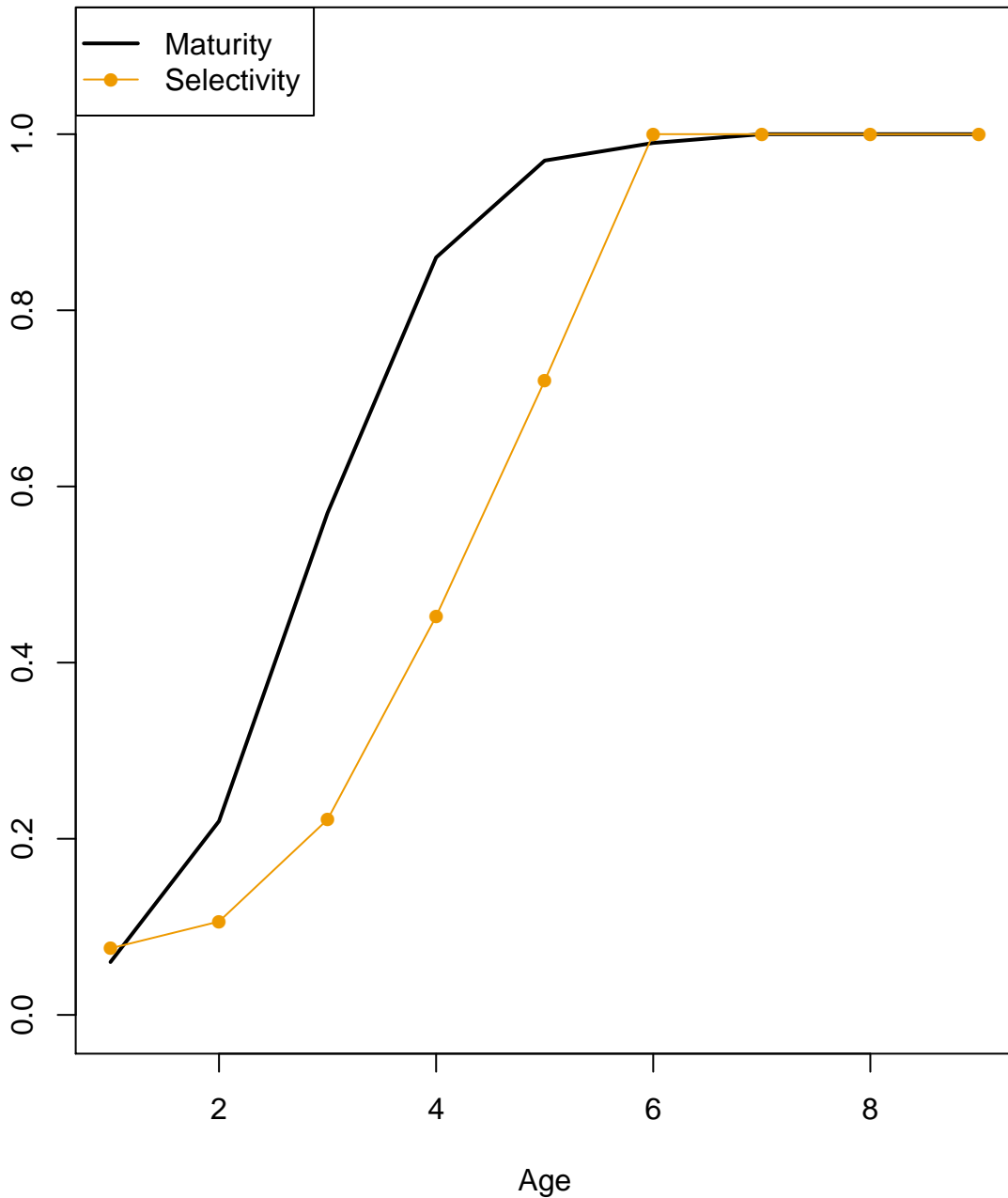
SPR Target Reference Points (Years Avg = 5)



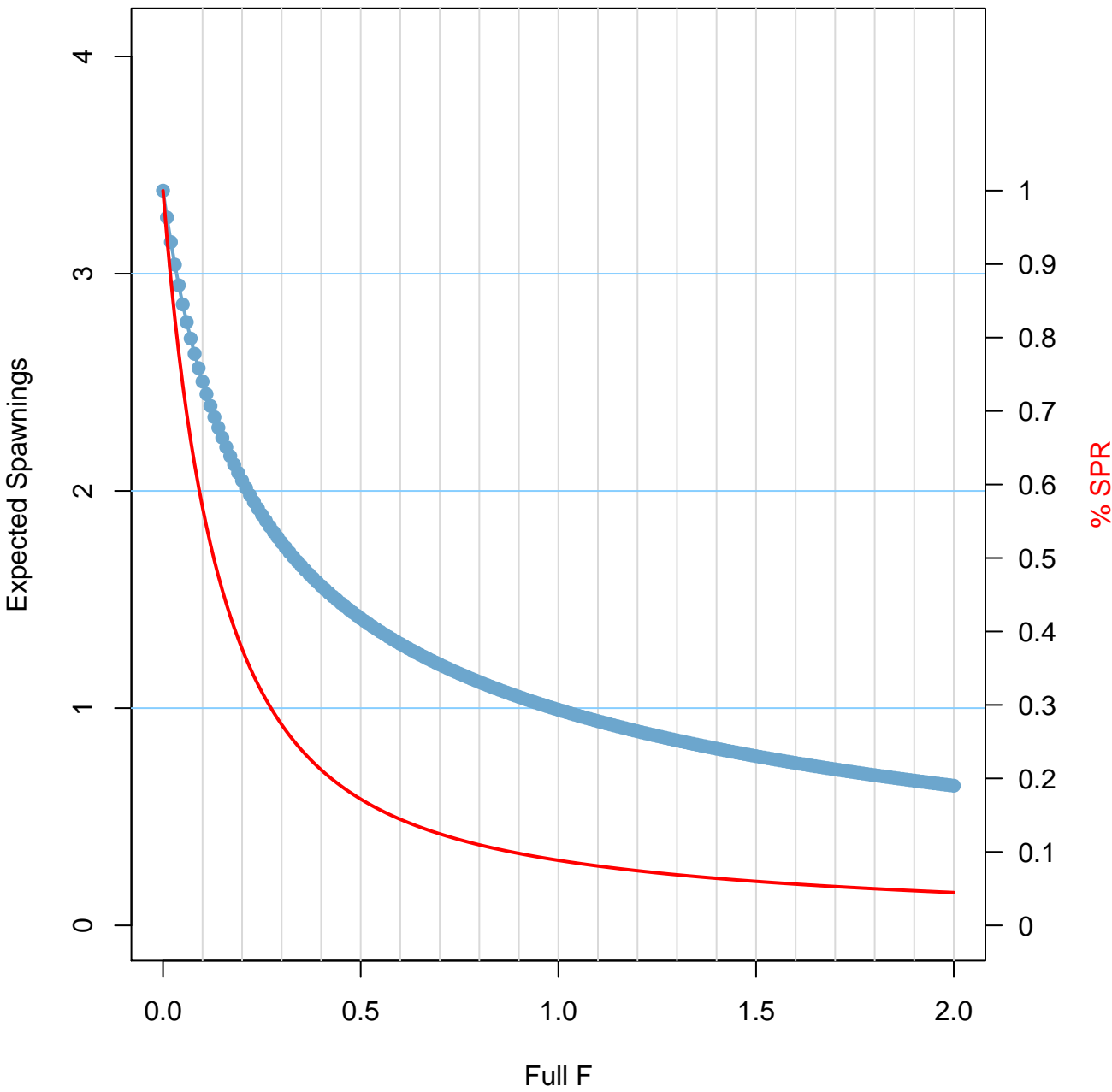
SPR Target Reference Points (Years Avg = 5)

% SPR	F(%SPR)	YPR
0.2	0.4253	0.9645
0.25	0.3325	0.9893
0.3	0.2683	0.9914
0.35	0.2206	0.9754
0.4	0.1834	0.945
0.45	0.1533	0.9027
0.5	0.1283	0.8503
0.55	0.1072	0.7895
0.6	0.089	0.7214
0.65	0.0731	0.6469
0.7	0.0591	0.5669
0.75	0.0466	0.4819
0.8	0.0354	0.3926

Selectivity or Maturity at age



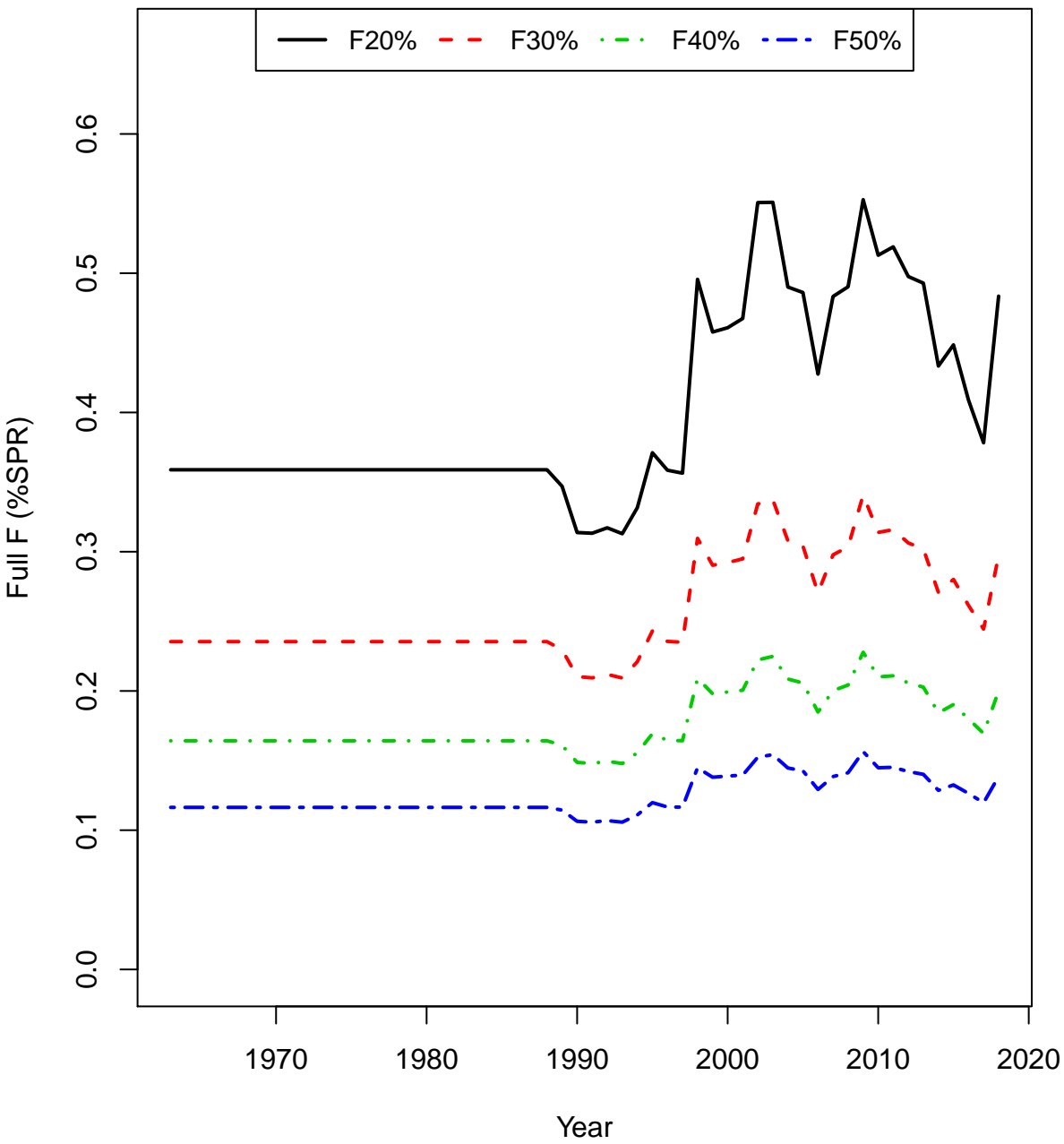
Expected Spawnings and SPR Reference Points (Years Avg = 5)



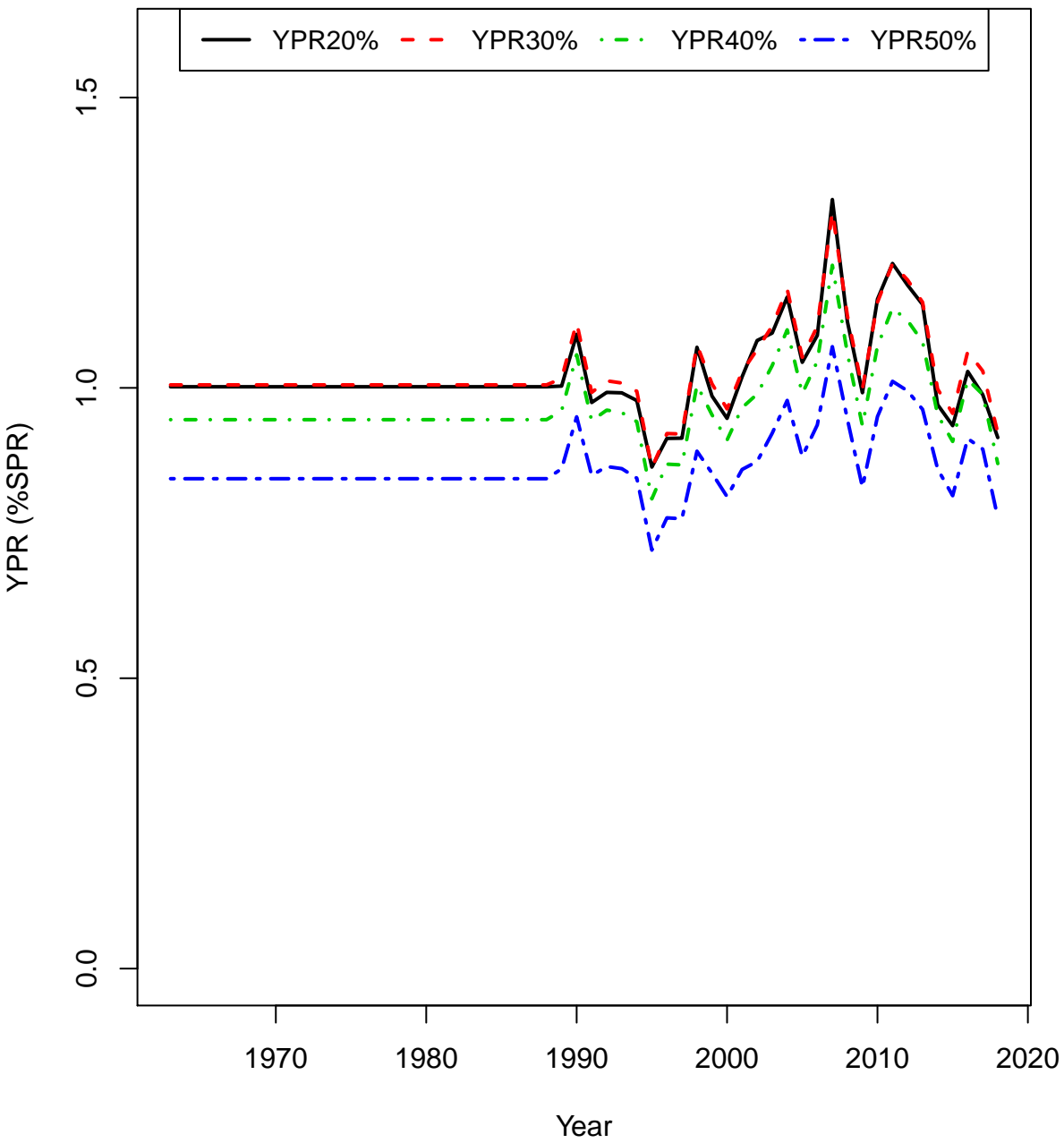
Expected Spawnings & SPR Reference Points (Years Avg = 5)

F	E[Sp]	SPR	F	E[Sp]	SPR	F	E[Sp]	SPR
0	3.3824	1	0.35	1.6545	0.2389	0.7	1.2005	0.1246
0.01	3.2584	0.9359	0.36	1.635	0.2329	0.71	1.1919	0.1229
0.02	3.1453	0.8782	0.37	1.6161	0.2272	0.72	1.1834	0.1212
0.03	3.0417	0.8261	0.38	1.5978	0.2218	0.73	1.1751	0.1196
0.04	2.9465	0.7788	0.39	1.58	0.2166	0.74	1.1669	0.1181
0.05	2.8586	0.7358	0.4	1.5627	0.2117	0.75	1.1588	0.1166
0.06	2.7772	0.6964	0.41	1.5459	0.2069	0.76	1.1509	0.1151
0.07	2.7016	0.6604	0.42	1.5296	0.2023	0.77	1.1431	0.1137
0.08	2.6311	0.6274	0.43	1.5138	0.198	0.78	1.1354	0.1123
0.09	2.5652	0.5969	0.44	1.4983	0.1938	0.79	1.1279	0.1109
0.1	2.5036	0.5688	0.45	1.4833	0.1897	0.8	1.1204	0.1096
0.11	2.4456	0.5428	0.46	1.4686	0.1859	0.81	1.1131	0.1083
0.12	2.3911	0.5187	0.47	1.4543	0.1822	0.82	1.1059	0.107
0.13	2.3398	0.4964	0.48	1.4404	0.1786	0.83	1.0988	0.1058
0.14	2.2912	0.4755	0.49	1.4268	0.1751	0.84	1.0918	0.1046
0.15	2.2452	0.4561	0.5	1.4135	0.1718	0.85	1.085	0.1034
0.16	2.2016	0.438	0.51	1.4005	0.1686	0.86	1.0782	0.1023
0.17	2.1602	0.421	0.52	1.3879	0.1655	0.87	1.0715	0.1012
0.18	2.1209	0.4052	0.53	1.3755	0.1626	0.88	1.0649	0.1001
0.19	2.0833	0.3903	0.54	1.3634	0.1597	0.89	1.0584	0.099
0.2	2.0475	0.3763	0.55	1.3516	0.1569	0.9	1.052	0.0979
0.21	2.0133	0.3631	0.56	1.34	0.1542	0.91	1.0457	0.0969
0.22	1.9806	0.3507	0.57	1.3287	0.1516	0.92	1.0395	0.0959
0.23	1.9493	0.3391	0.58	1.3176	0.1491	0.93	1.0333	0.0949
0.24	1.9193	0.328	0.59	1.3068	0.1467	0.94	1.0272	0.094
0.25	1.8905	0.3176	0.6	1.2961	0.1444	0.95	1.0213	0.093
0.26	1.8628	0.3078	0.61	1.2857	0.1421	0.96	1.0154	0.0921
0.27	1.8362	0.2984	0.62	1.2755	0.1399	0.97	1.0095	0.0912
0.28	1.8105	0.2896	0.63	1.2655	0.1378	0.98	1.0038	0.0903
0.29	1.7858	0.2812	0.64	1.2557	0.1357	0.99	0.9981	0.0894
0.3	1.762	0.2733	0.65	1.2461	0.1337	1	0.9925	0.0886
0.31	1.739	0.2657	0.66	1.2366	0.1318	1.01	0.987	0.0877
0.32	1.7168	0.2585	0.67	1.2273	0.1299	1.02	0.9815	0.0869
0.33	1.6953	0.2516	0.68	1.2182	0.1281	1.03	0.9761	0.0861
0.34	1.6746	0.2451	0.69	1.2093	0.1263	1.04	0.9708	0.0853

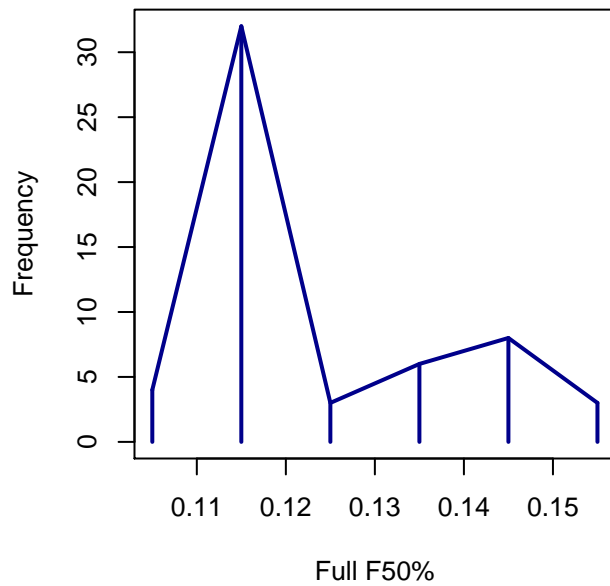
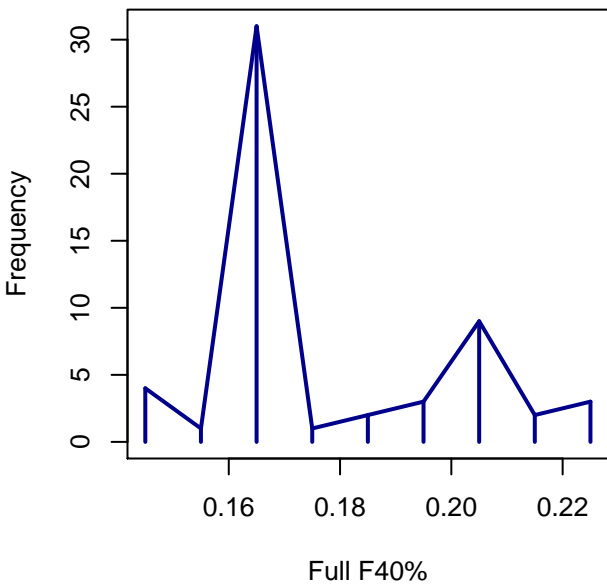
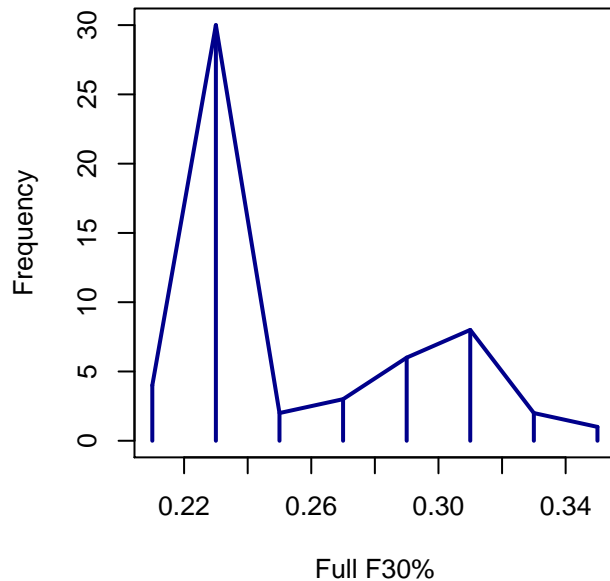
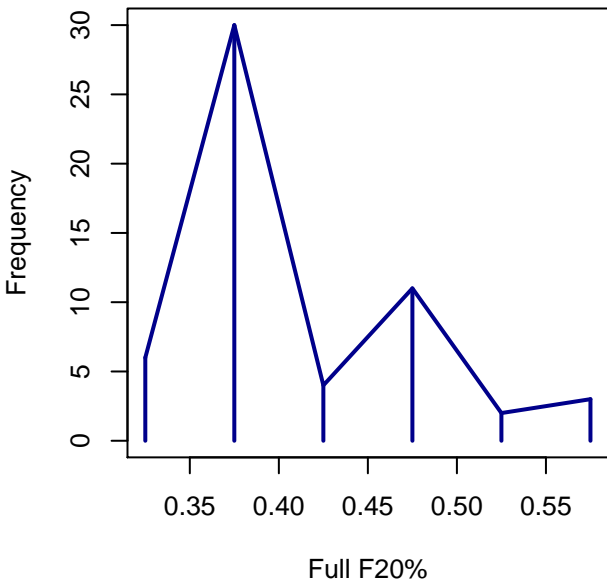
Annual F(%SPR) Reference Points



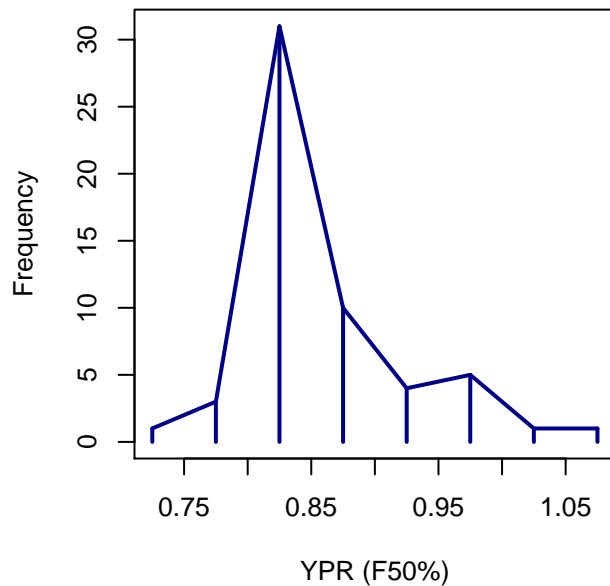
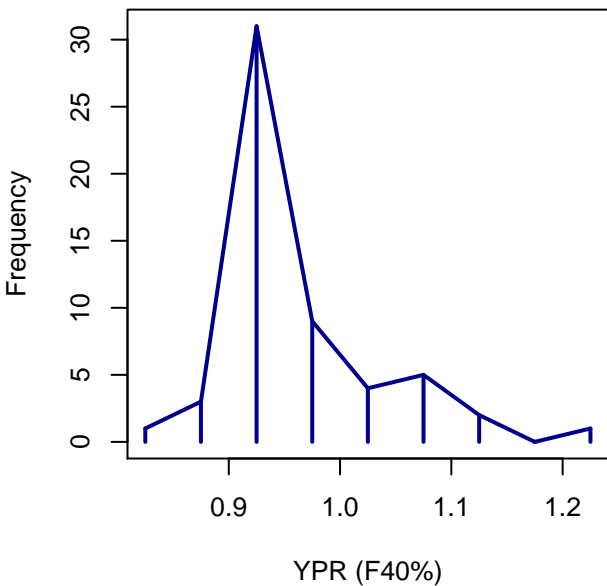
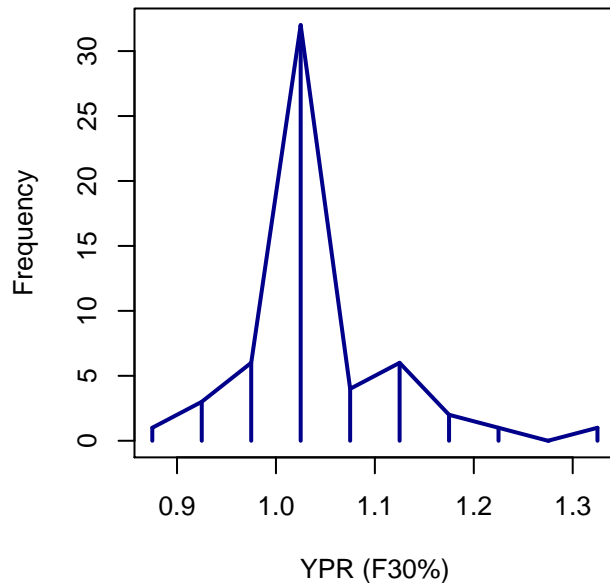
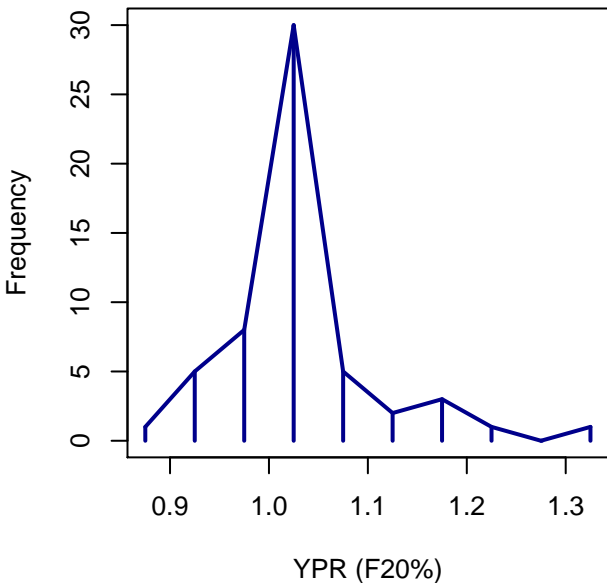
Annual YPR(%SPR) Reference Points

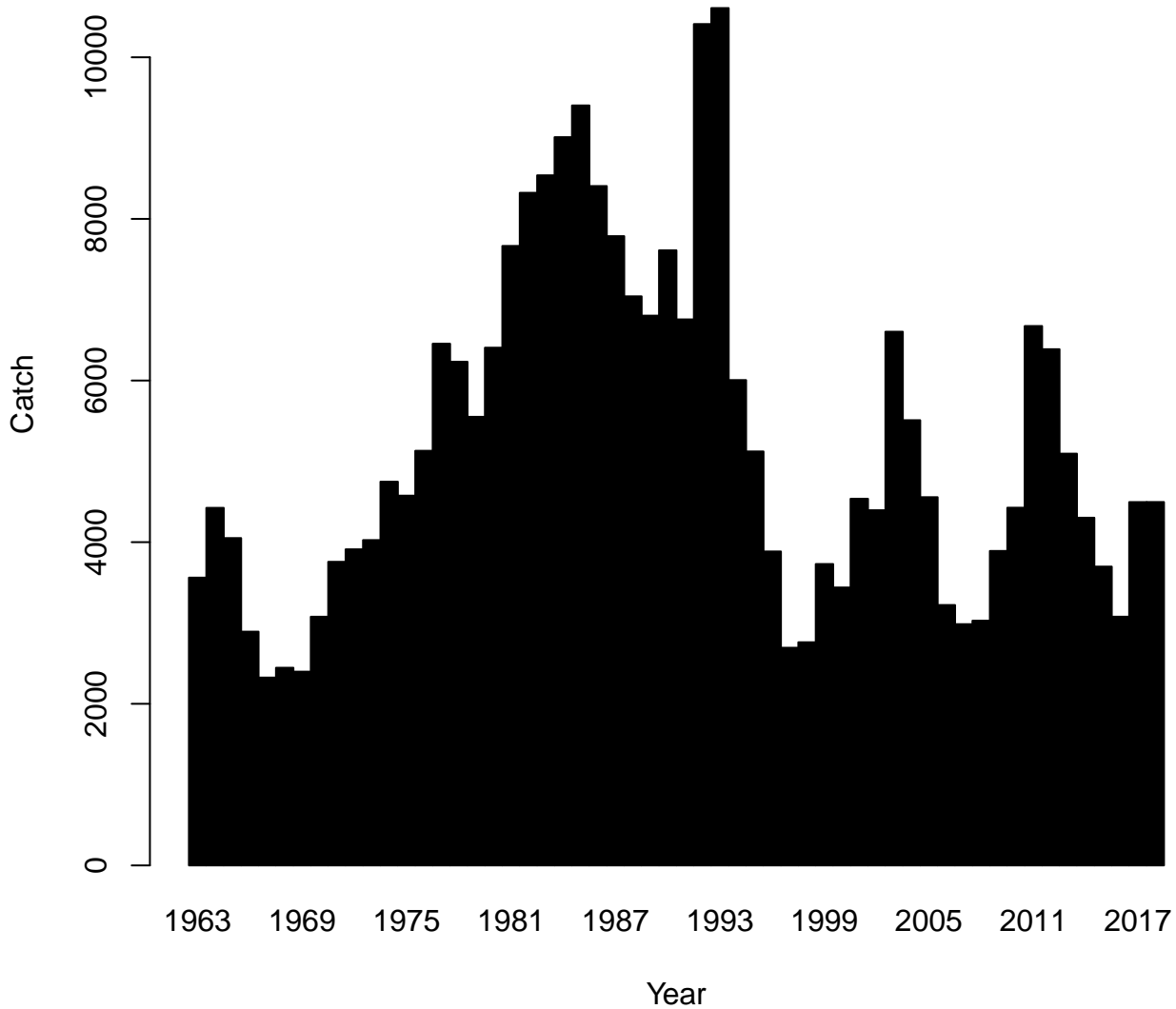


Annual F (%SPR) Reference Points



Annual YPR (%SPR) Reference Points





Age Comps for Catch by Fleet 1 (FLEET-1)





Age Comps for Index 1 (INDEX-1)

• 0.05 • 0.2 • 0.4



Age

Age Comps for Index 2 (INDEX-2)



WAA matrix 1



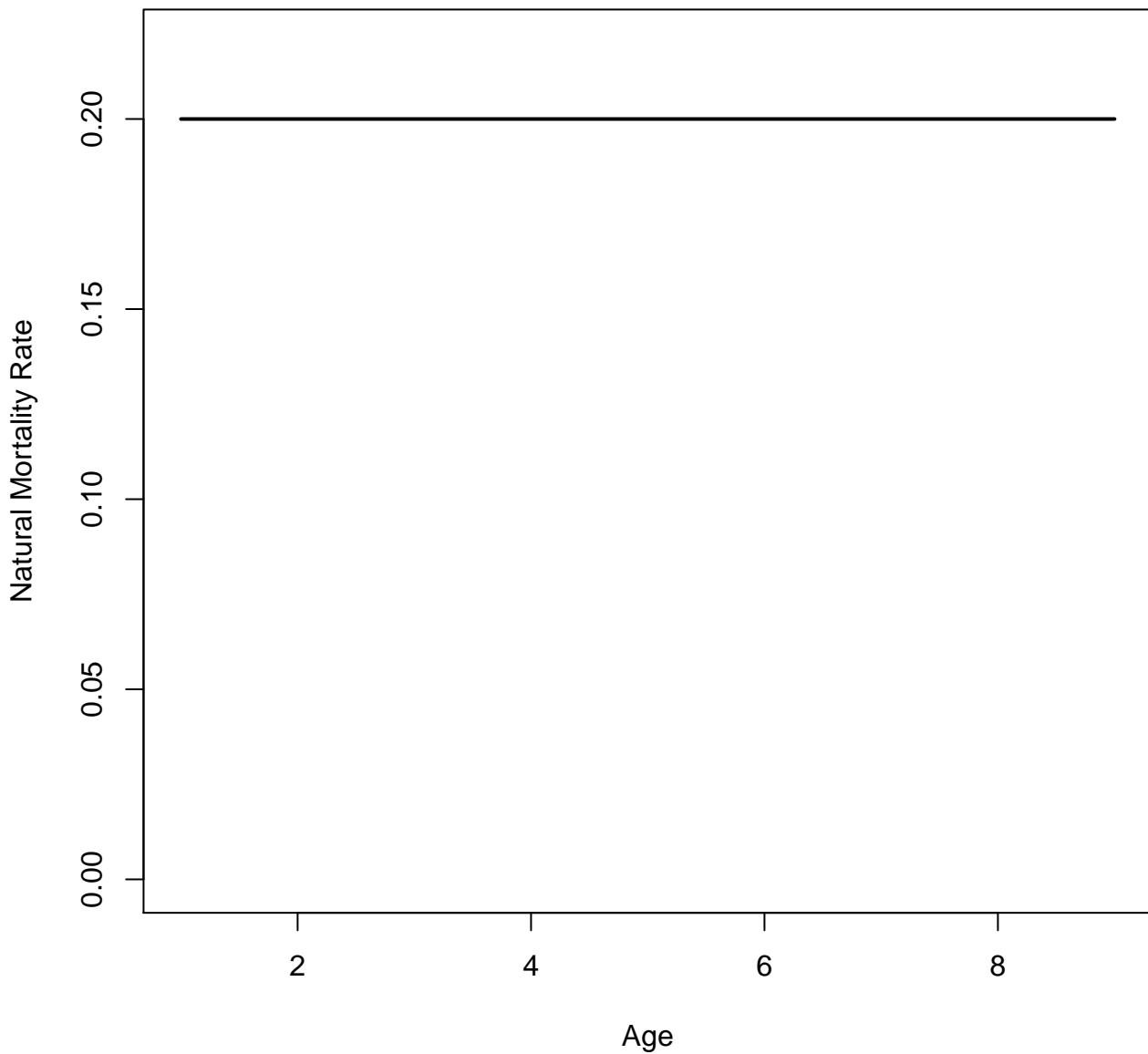
WAA matrix 2



WAA matrix 3



M



Maturity

