

File = y2005r4c1m2.3s000001111_000.dat

ASAP3 run on Monday, 04 Nov 2019 at 11:33:08

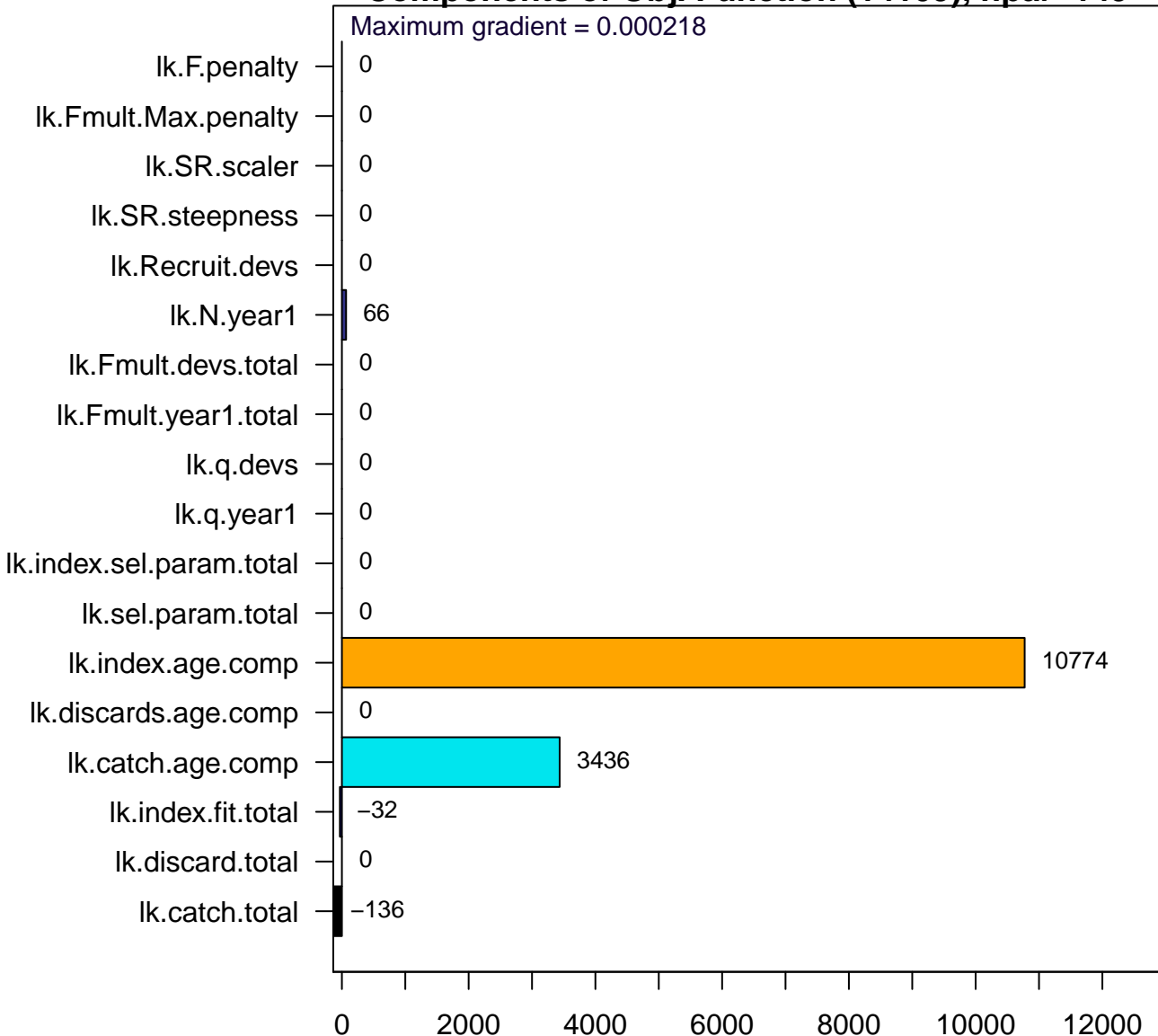
chris.legault\Documents\Working\ICES-WKFORBIAS 2019\WhiteHake\Rose\w

ASAPplots version = 0.2.14

npar = 149, maximum gradient = 0.000218385

Components of Obj. Function (14109), npar=149

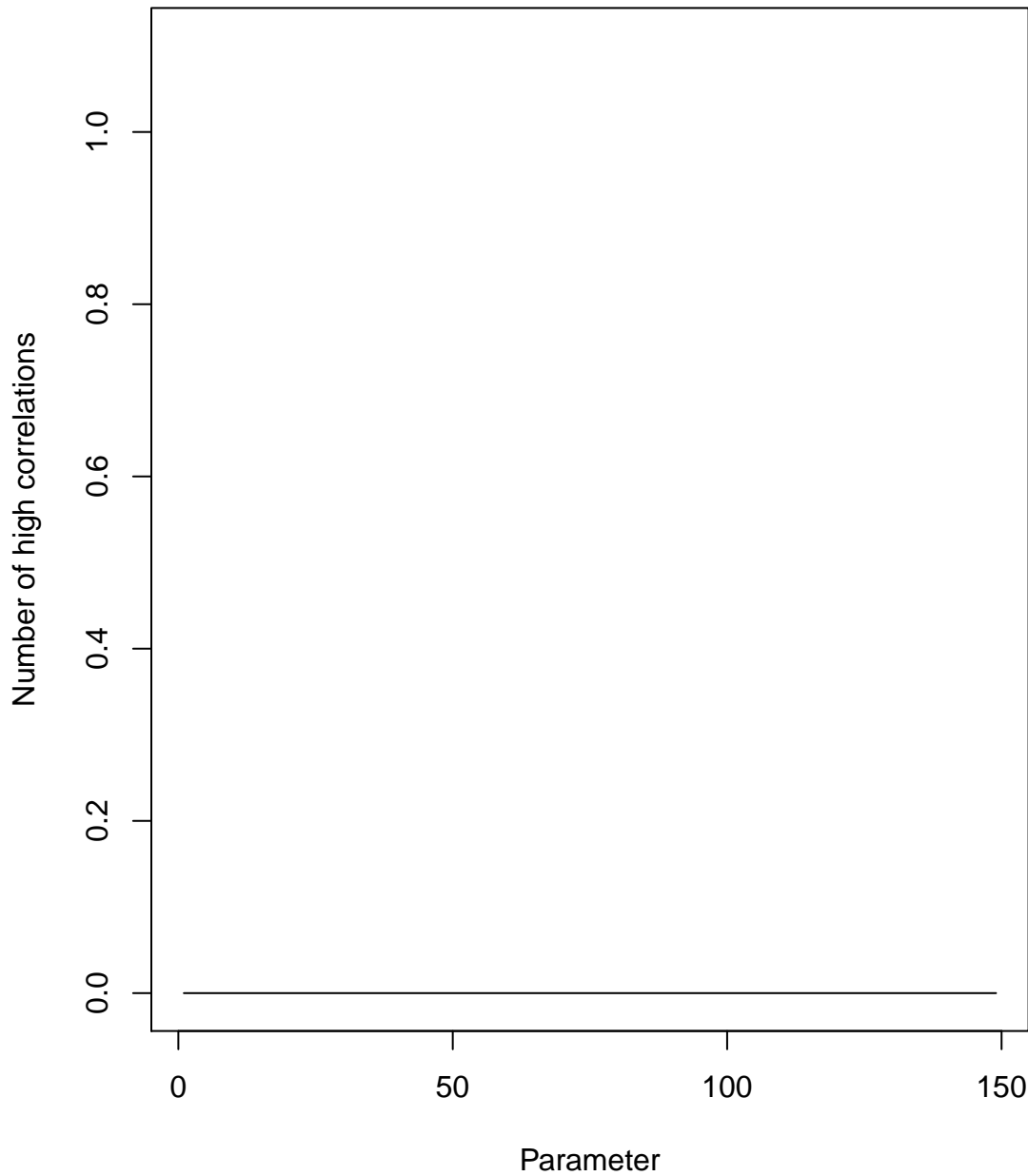
Maximum gradient = 0.000218

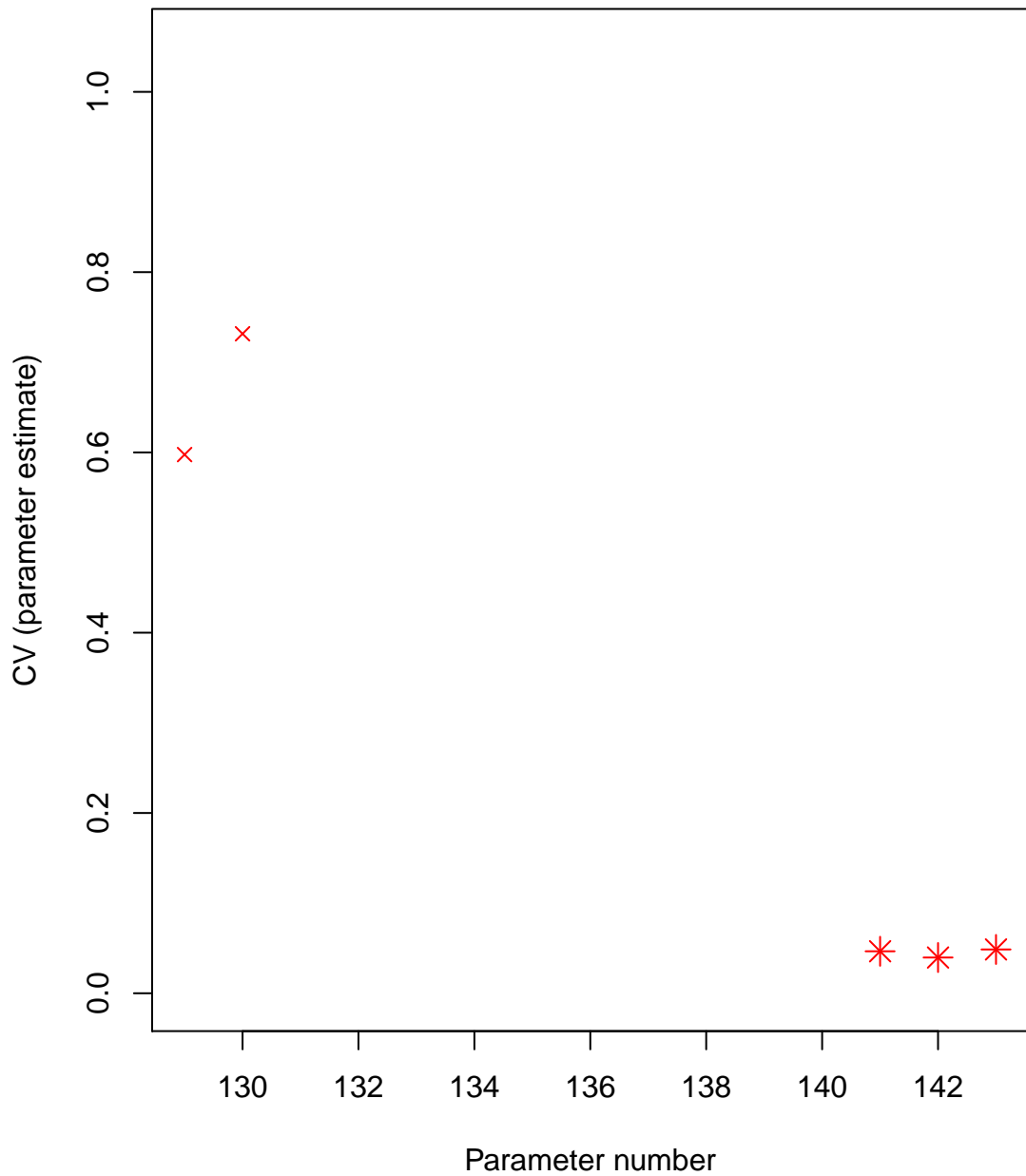


Likelihood Contribution

Model: y2005r4c1m2.3s000001111_000

Monday, 04 Nov 2019 at 11:33

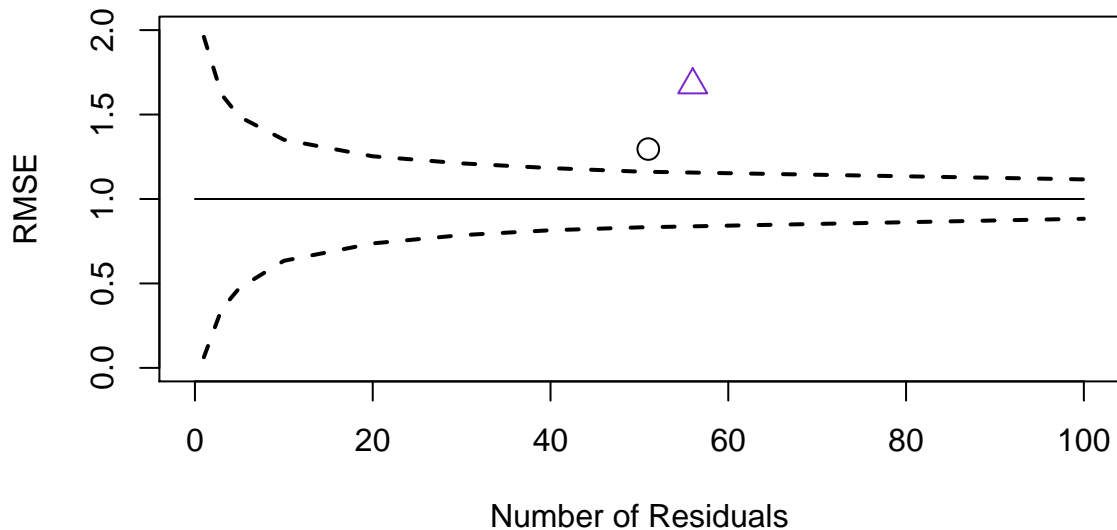




Root Mean Square Error computed from Standardized Residuals

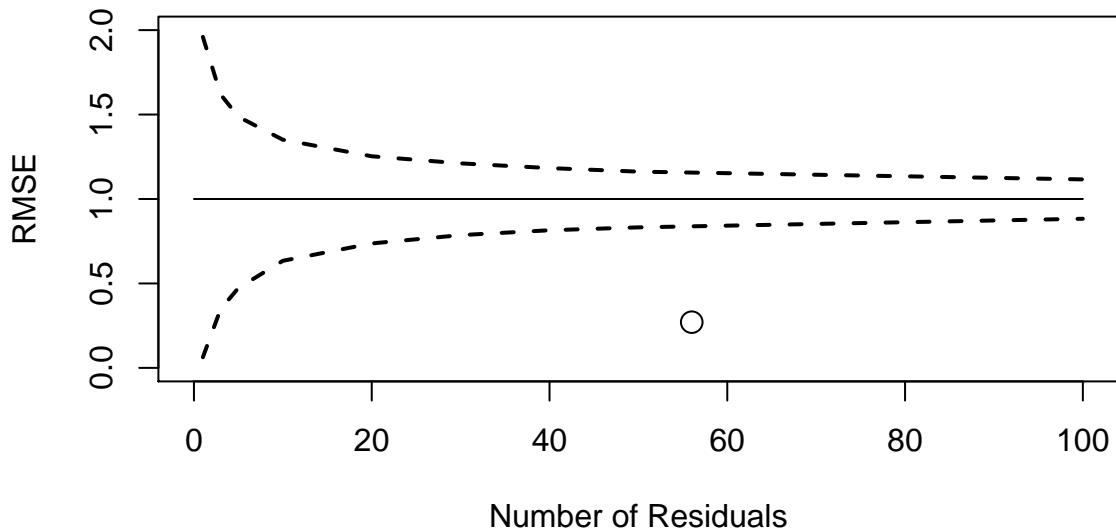
Component	# resids	RMSE
catch.tot	56	0.271
discard.tot	0	0
ind01	51	1.3
ind02	56	1.68
ind.total	107	1.51
N.year1	8	0.582
Fmult.year1	0	0
Fmult.devs.total	0	0
recruit.devs	0	0
fleet.sel.params	0	0
index.sel.params	0	0
q.year1	0	0
q.devs	0	0
SR.steepness	0	0
SR.scaler	0	0

Root Mean Square Error for Indices



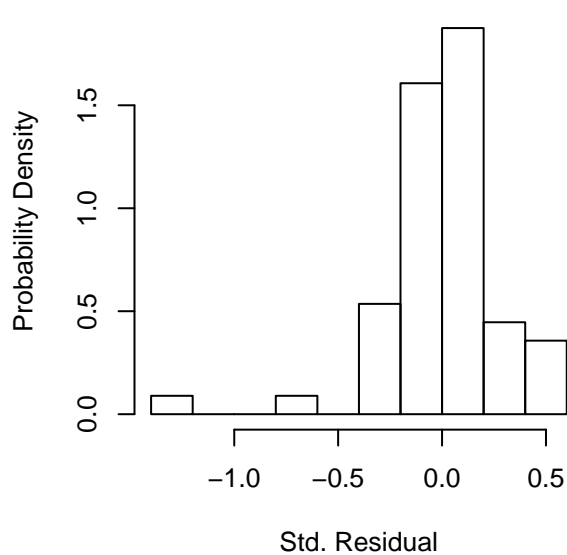
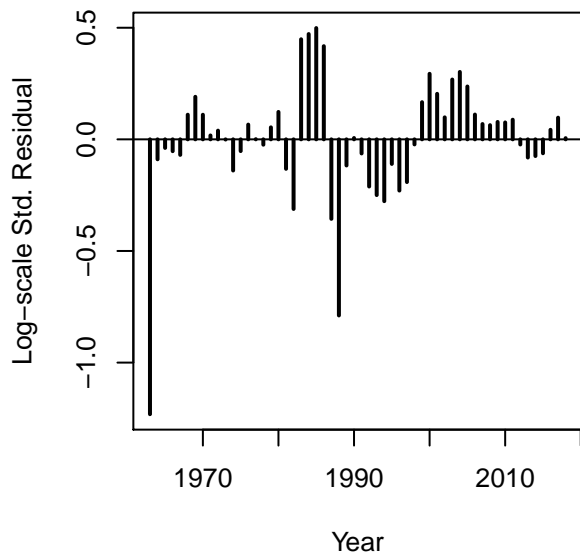
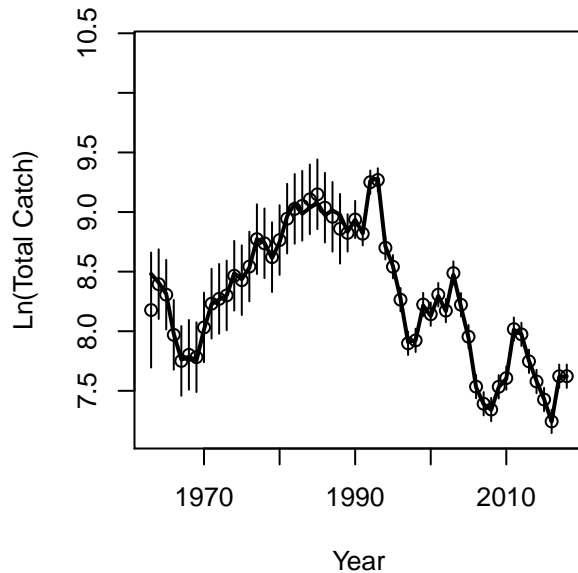
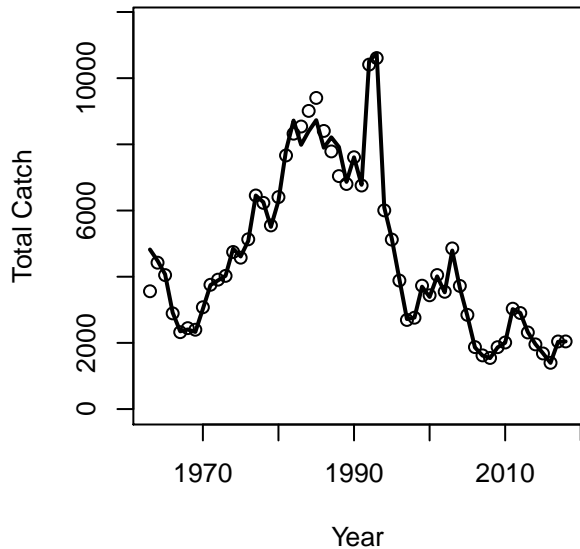
+ ind total
△ INDEX-2
○ INDEX-1

Root Mean Square Error for Catch



○ catch.tot

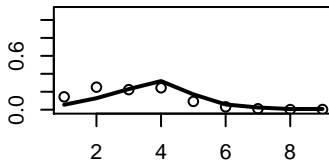
Fleet 1 Catch (FLEET-1)



Catch

Year = 1993

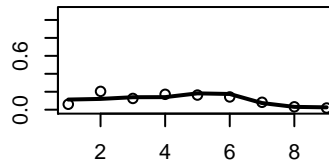
Proportion at Age



Age

Year = 1998

Proportion at Age



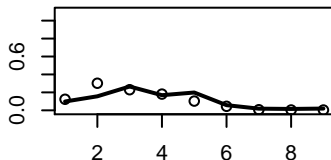
Age

Fleet 1
FLEET-1



Year = 1989

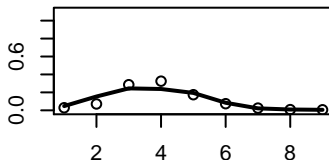
Proportion at Age



Age

Year = 1994

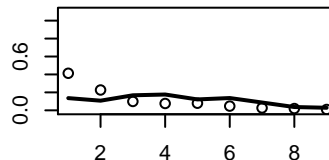
Proportion at Age



Age

Year = 1999

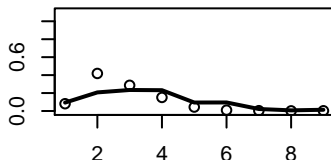
Proportion at Age



Age

Year = 1990

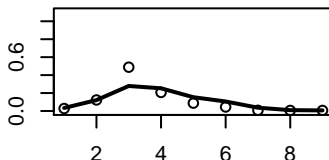
Proportion at Age



Age

Year = 1995

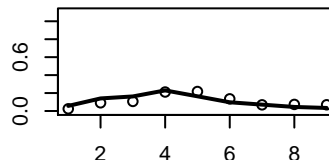
Proportion at Age



Age

Year = 2000

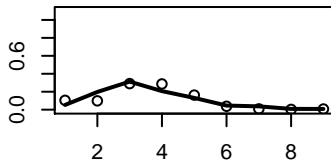
Proportion at Age



Age

Year = 1991

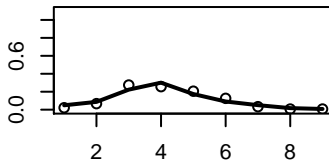
Proportion at Age



Age

Year = 1996

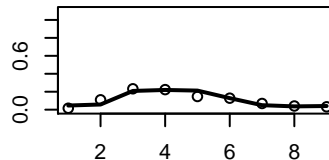
Proportion at Age



Age

Year = 2001

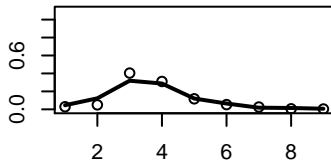
Proportion at Age



Age

Year = 1992

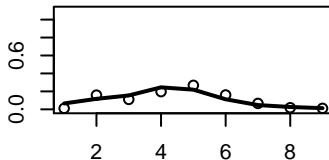
Proportion at Age



Age

Year = 1997

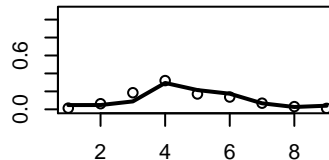
Proportion at Age



Age

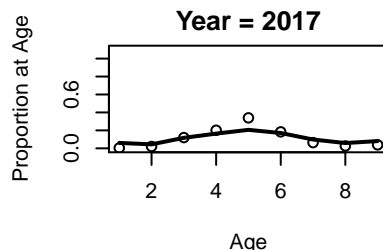
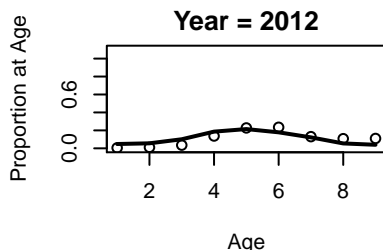
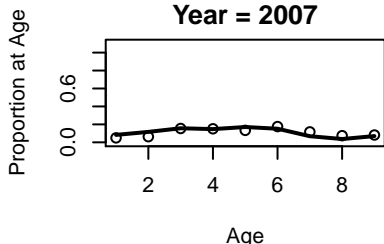
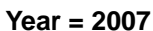
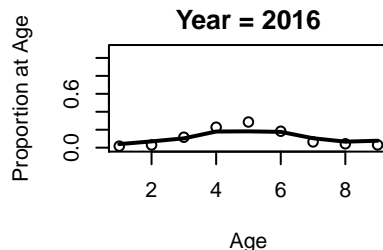
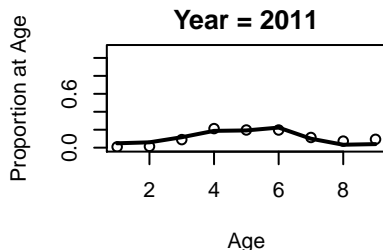
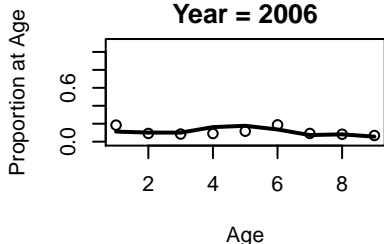
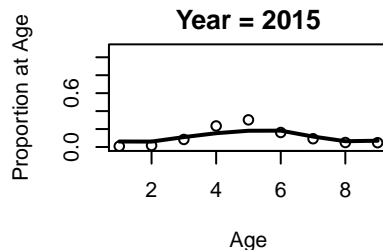
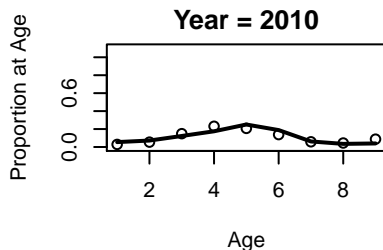
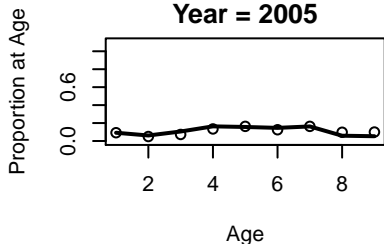
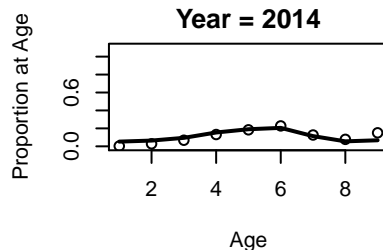
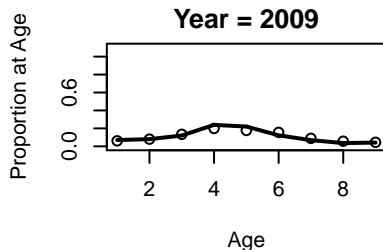
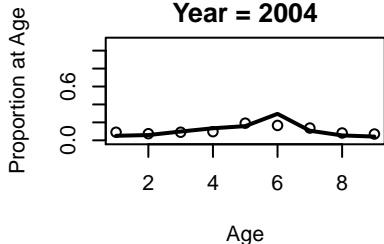
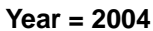
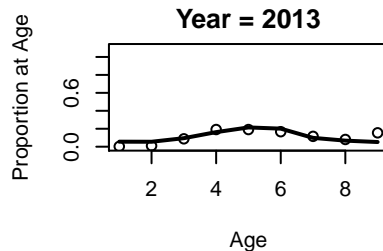
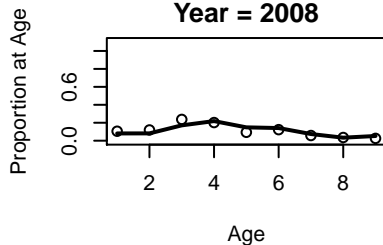
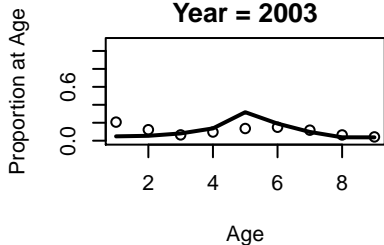
Year = 2002

Proportion at Age

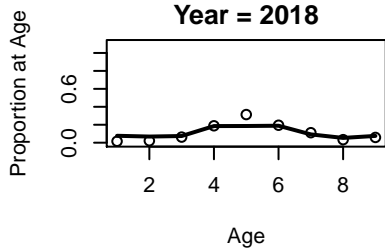


Age

Year = 2008

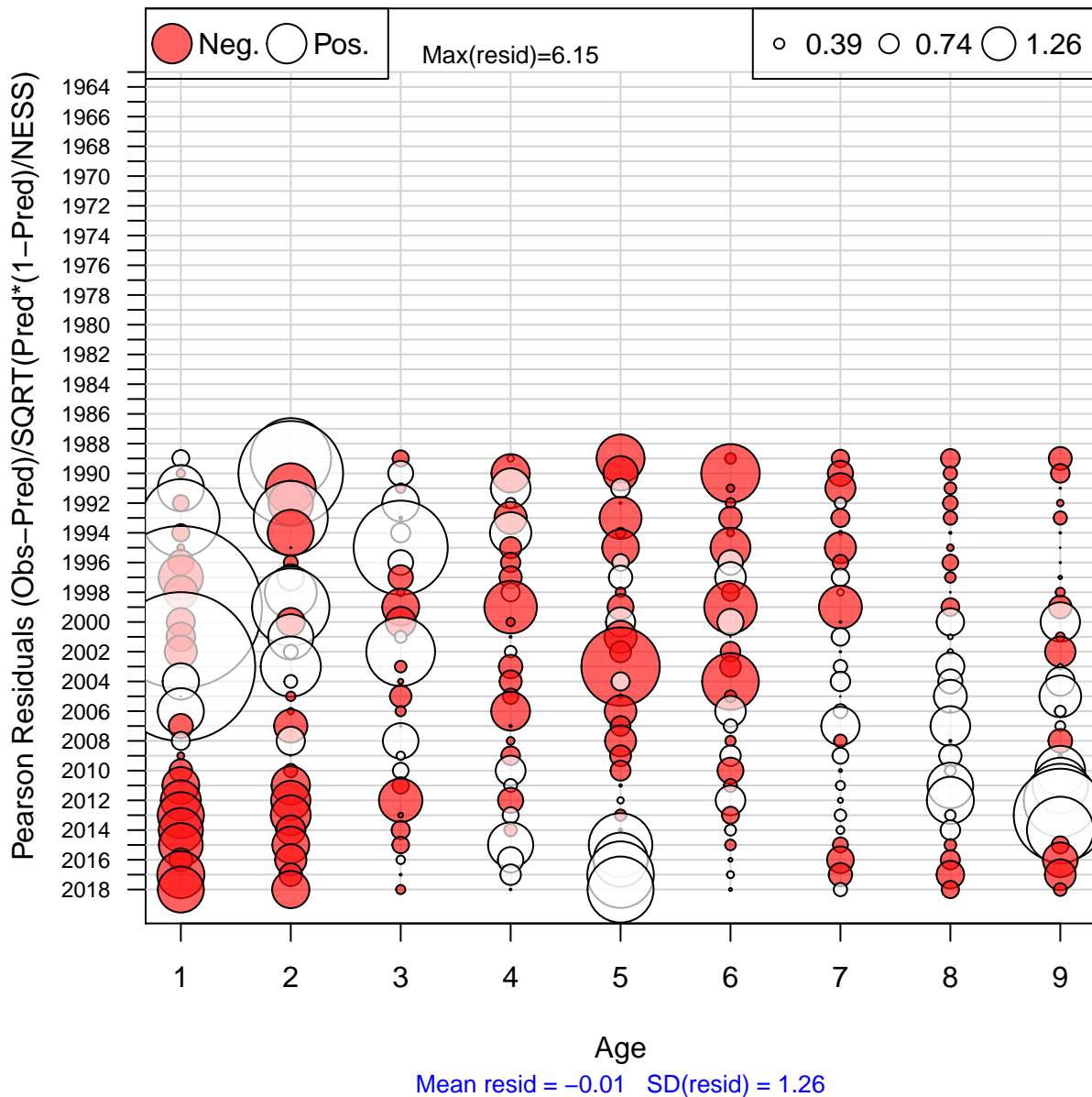


Year = 2018

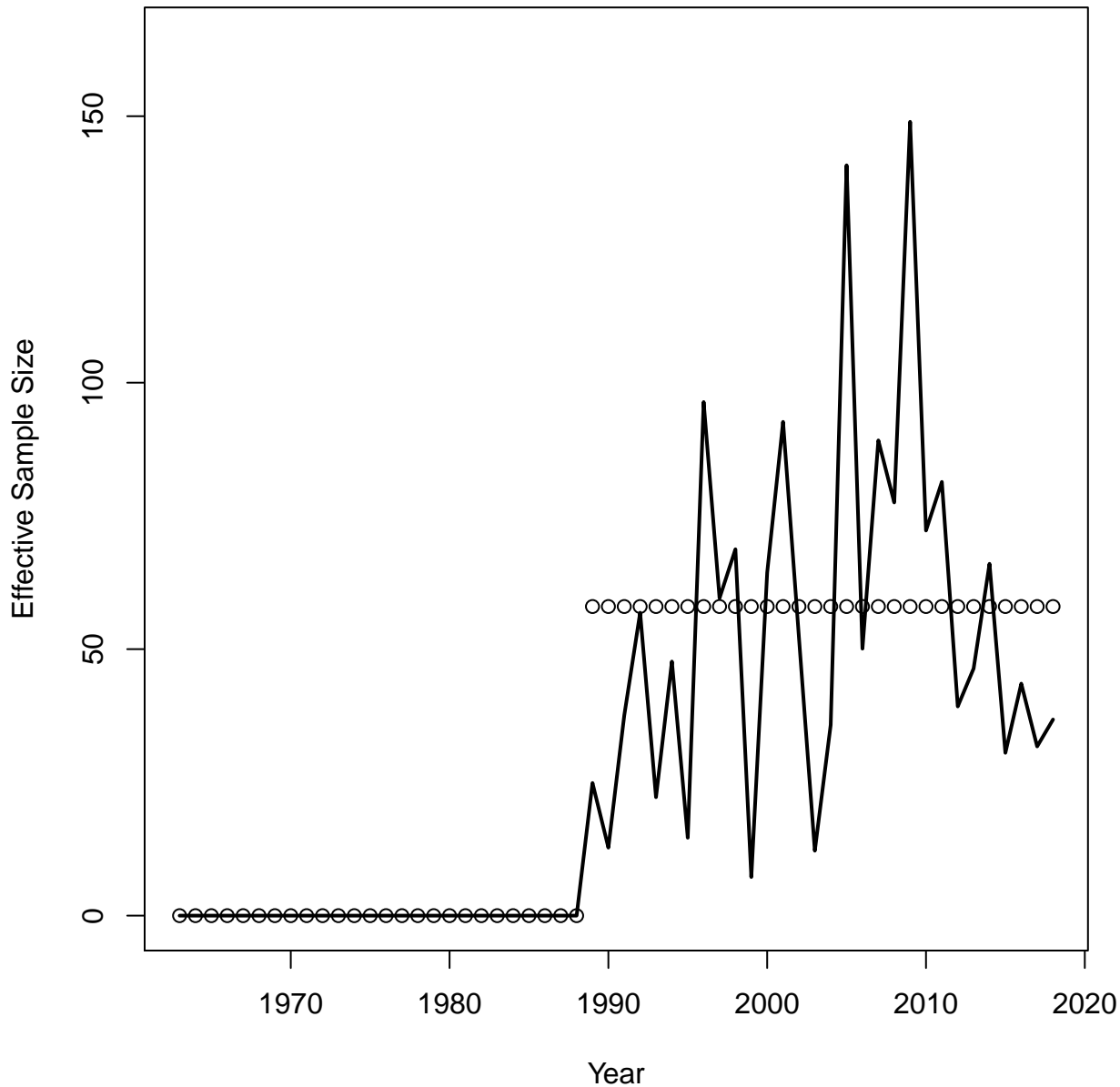


Catch

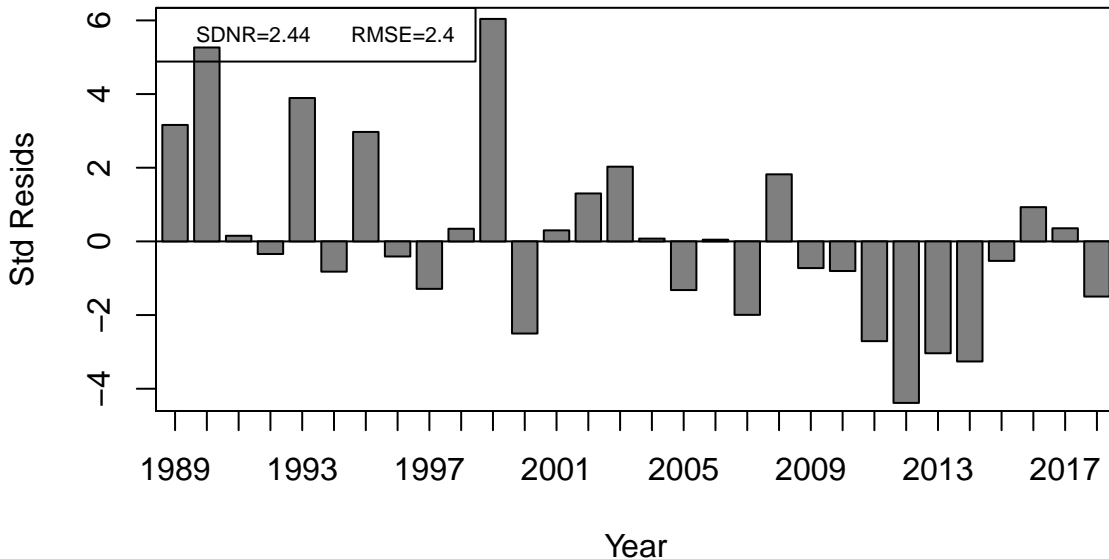
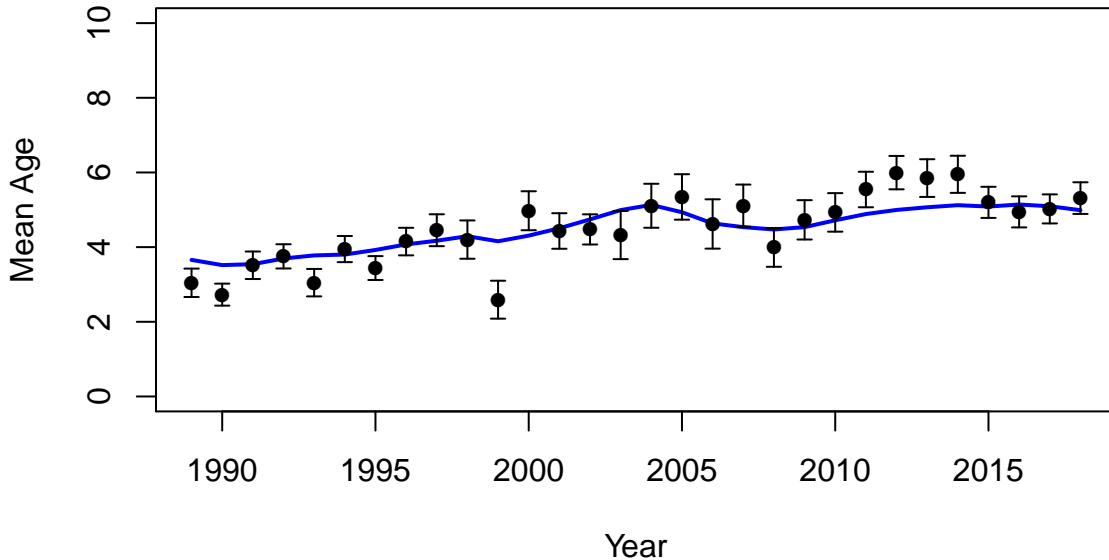
Age Comp Residuals for Catch by Fleet 1 (FLEET-1)



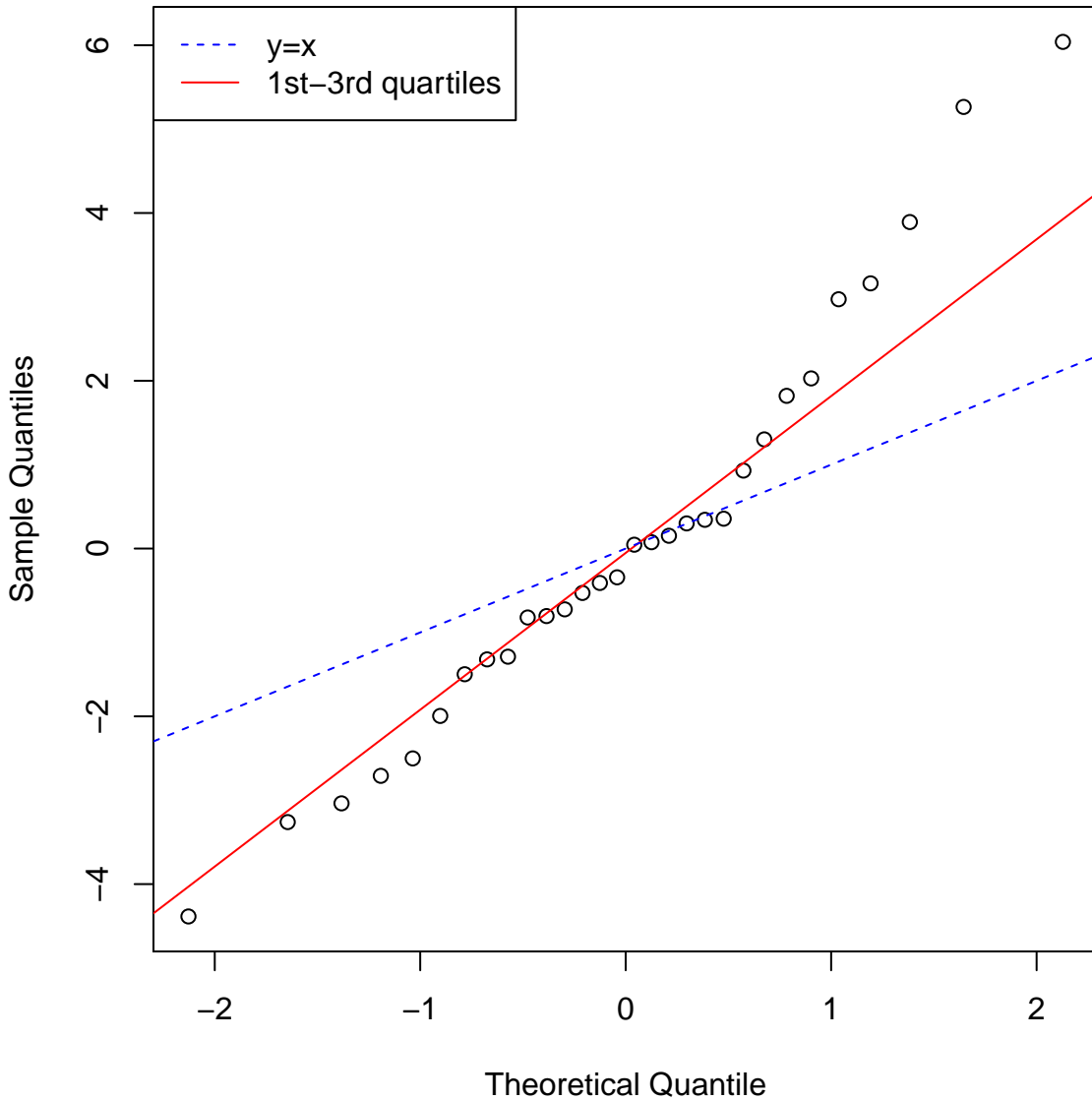
Catch Neff Fleet 1 (FLEET-1)



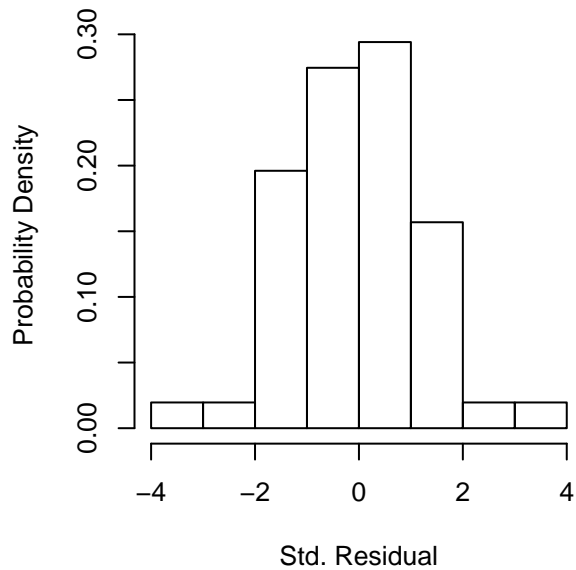
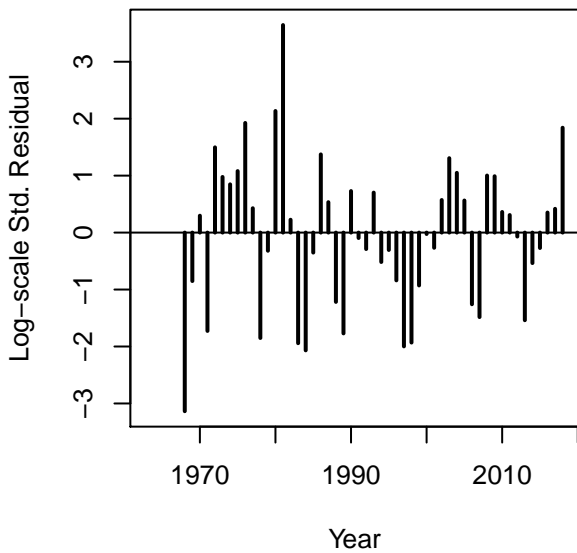
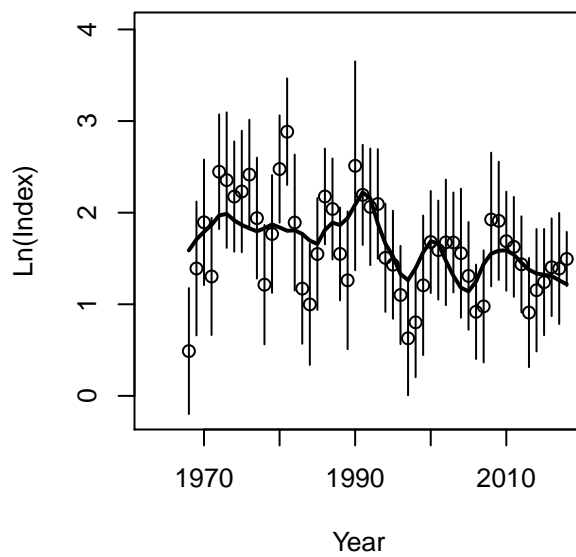
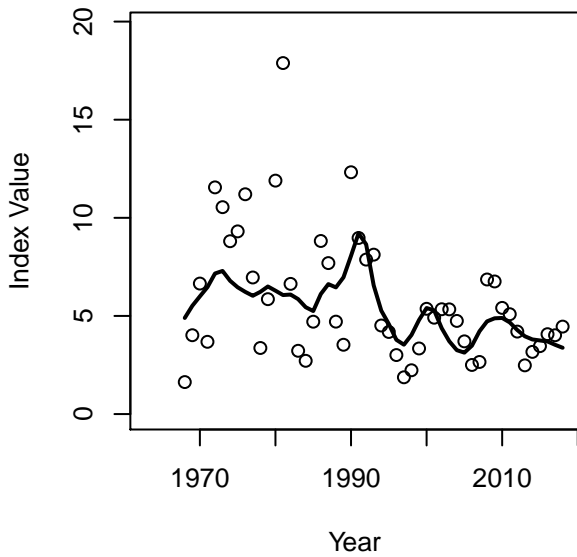
Catch Fleet 1 (FLEET-1) ESS = 58



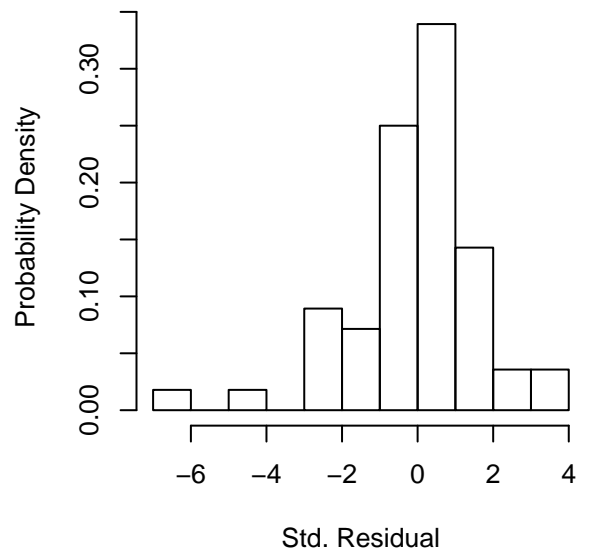
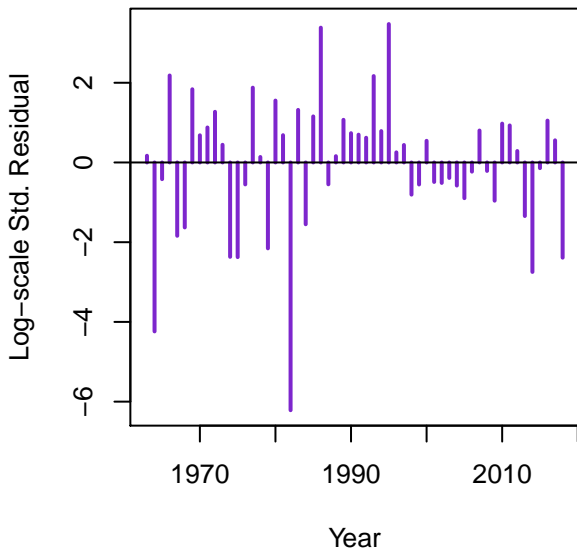
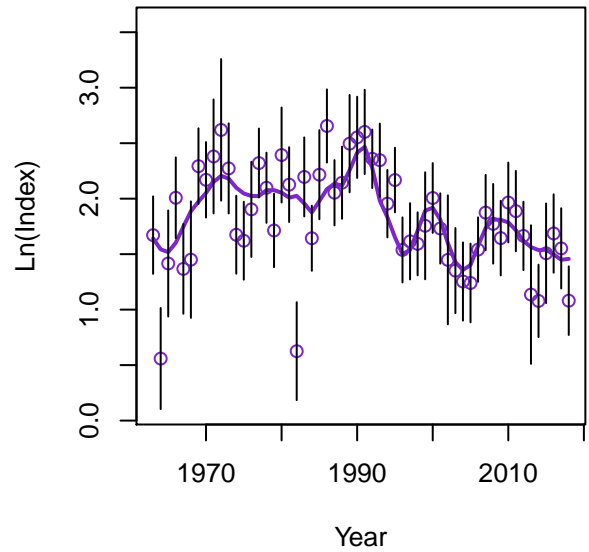
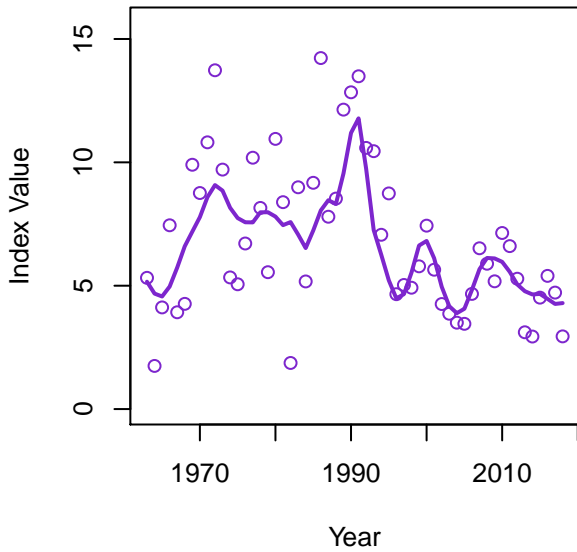
Catch Fleet 1 (FLEET-1) ESS = 58



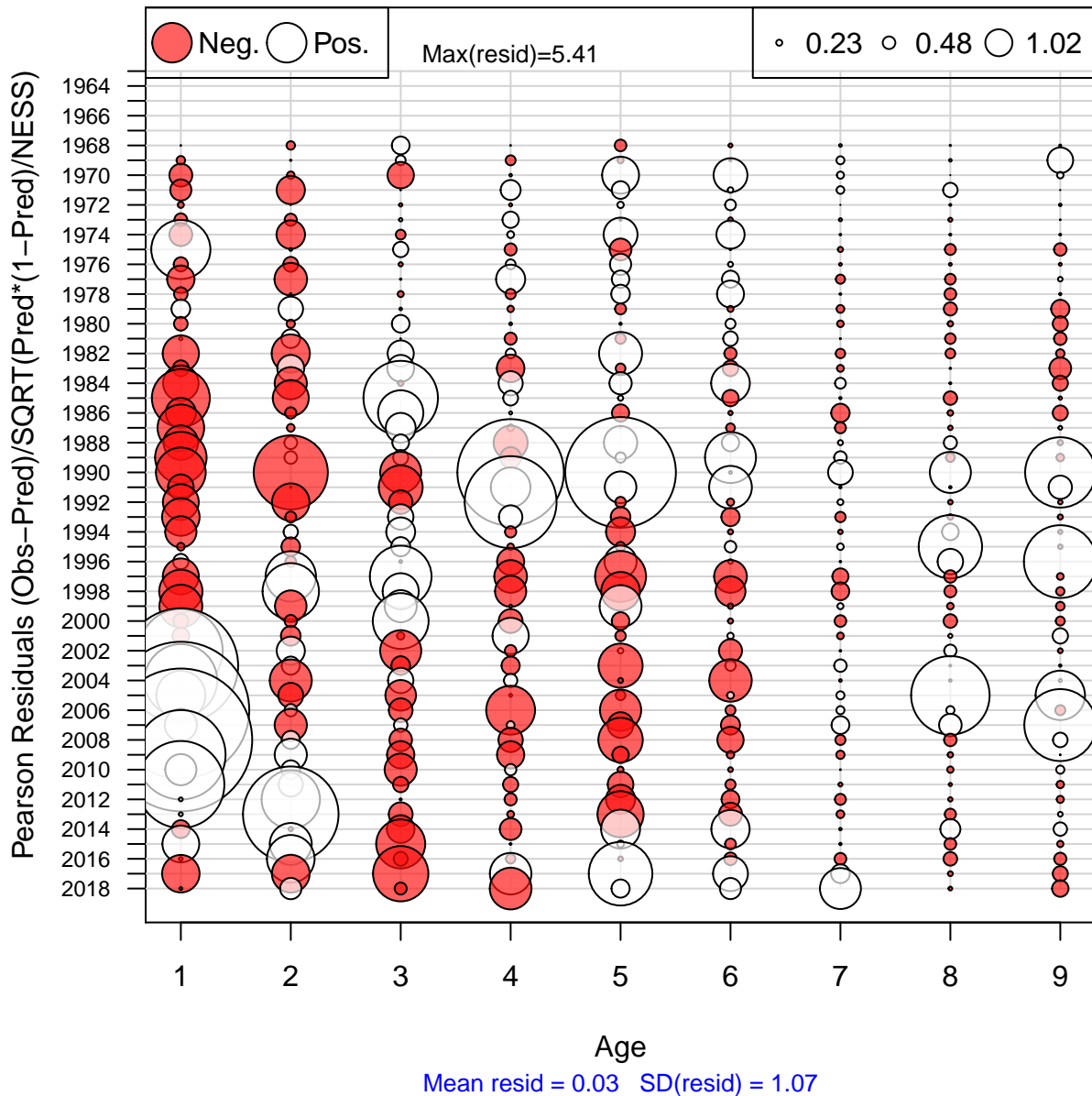
Index 1 (INDEX-1)



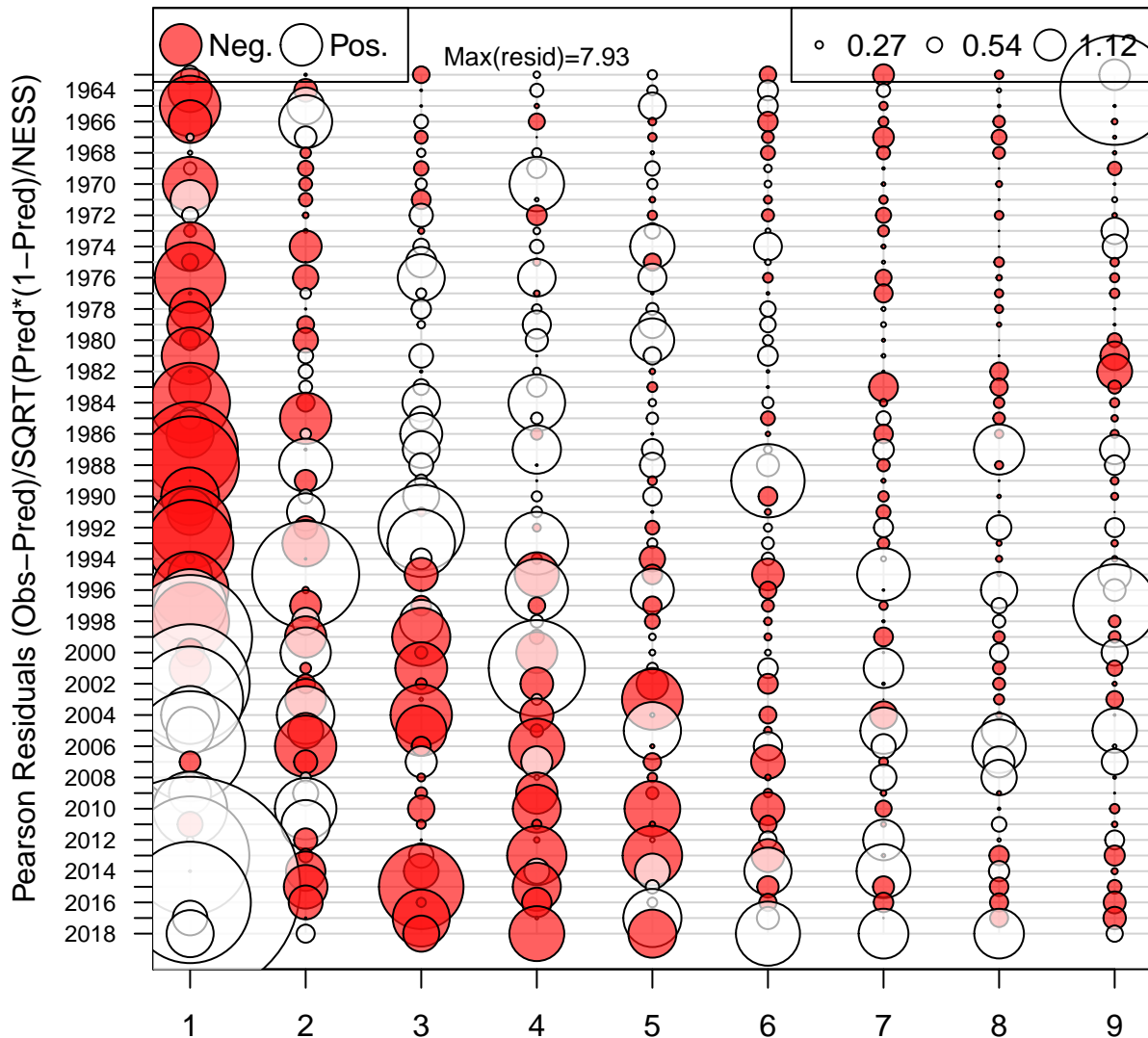
Index 2 (INDEX-2)



Age Comp Residuals for Index 1 (INDEX-1)



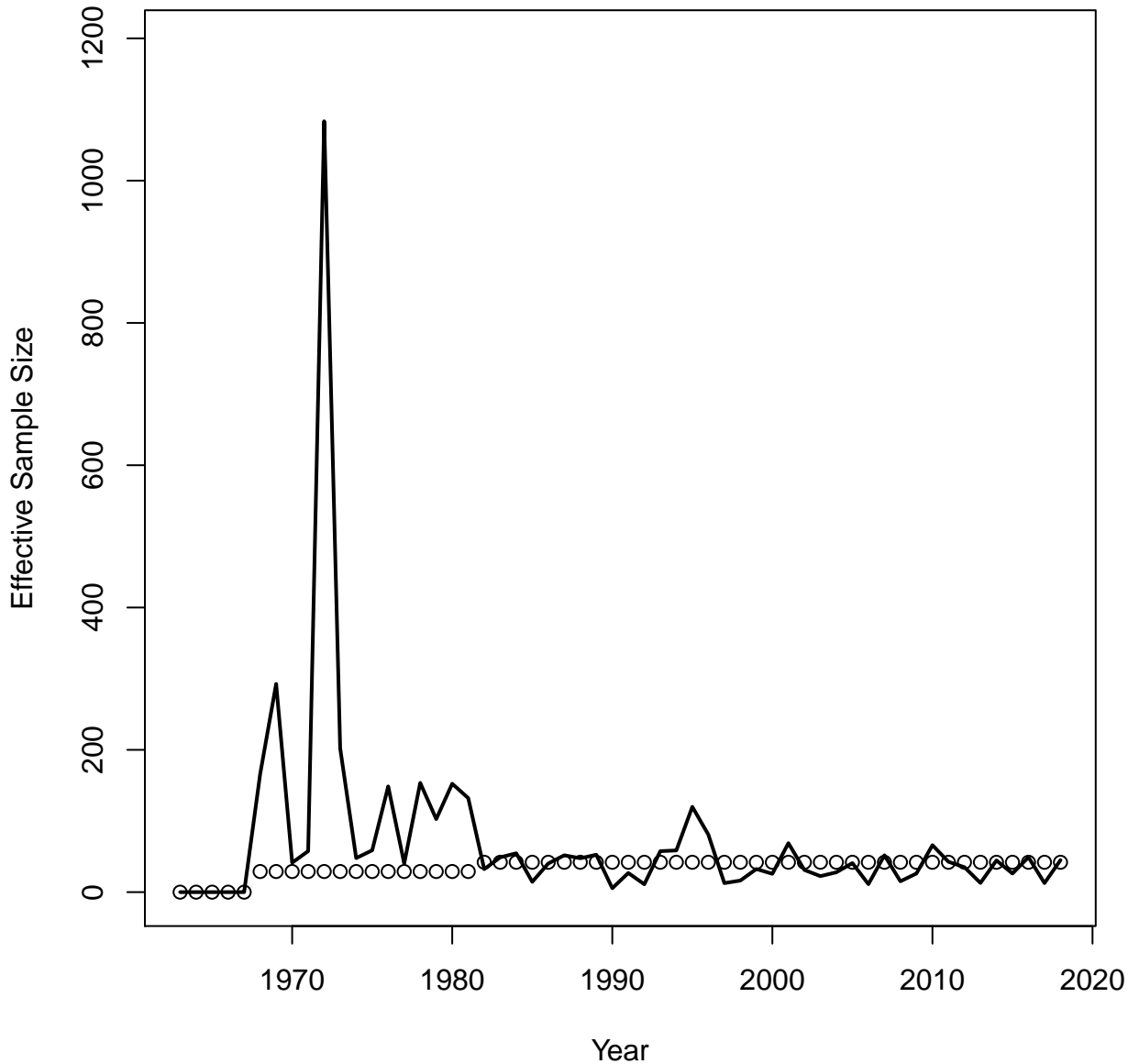
Age Comp Residuals for Index 2 (INDEX-2)



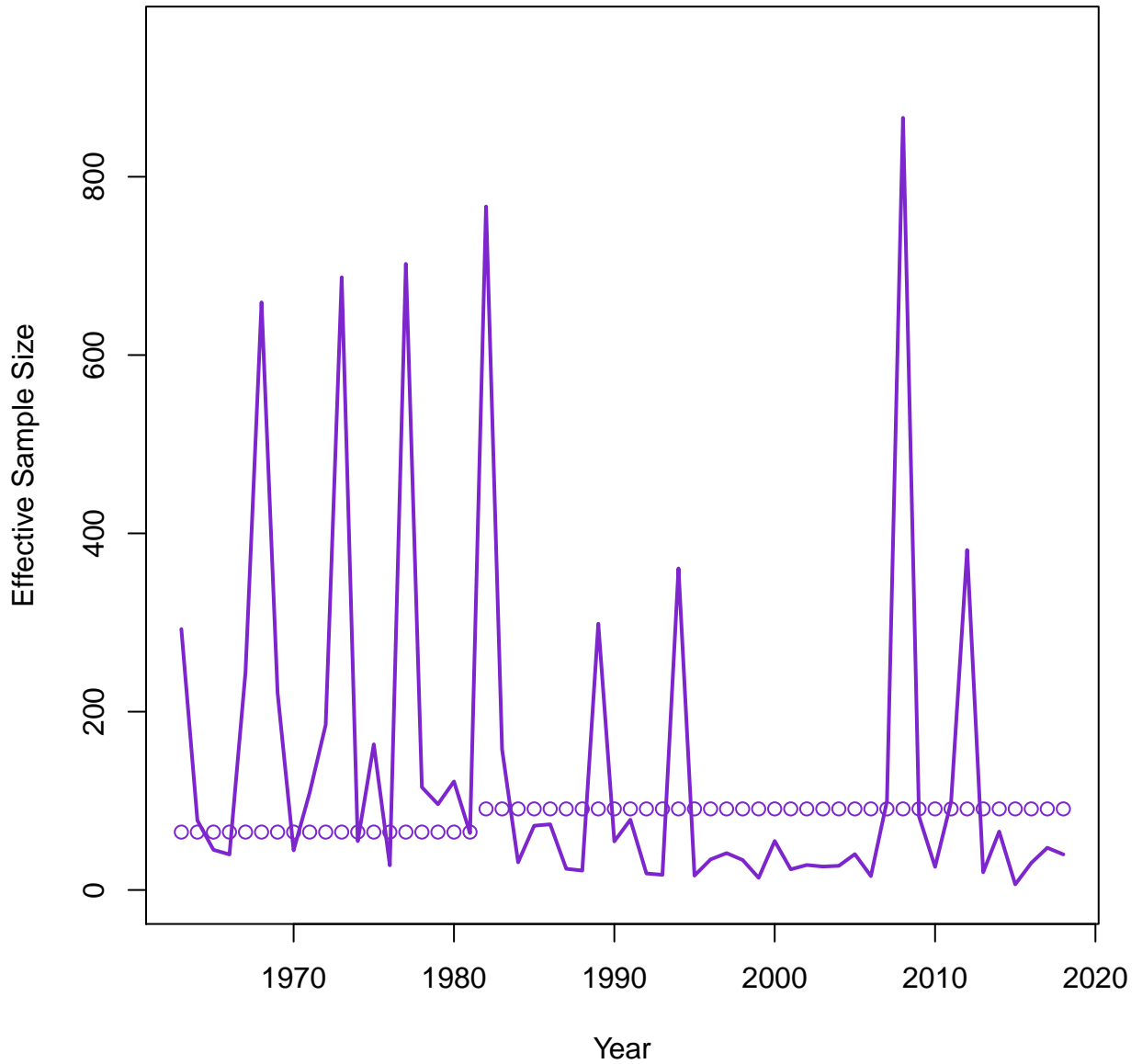
Age

Mean resid = 0.03 SD(resid) = 1.2

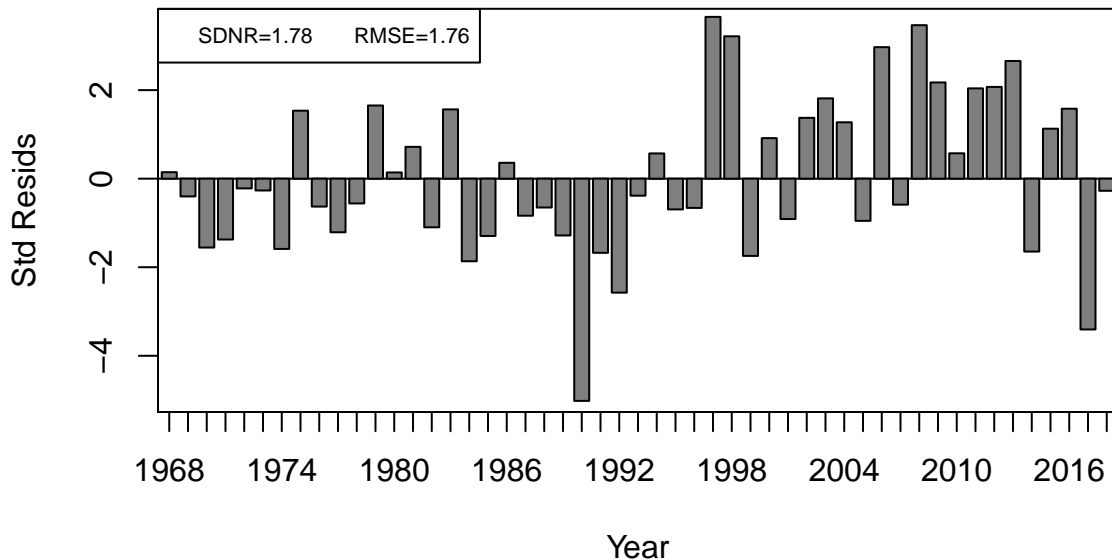
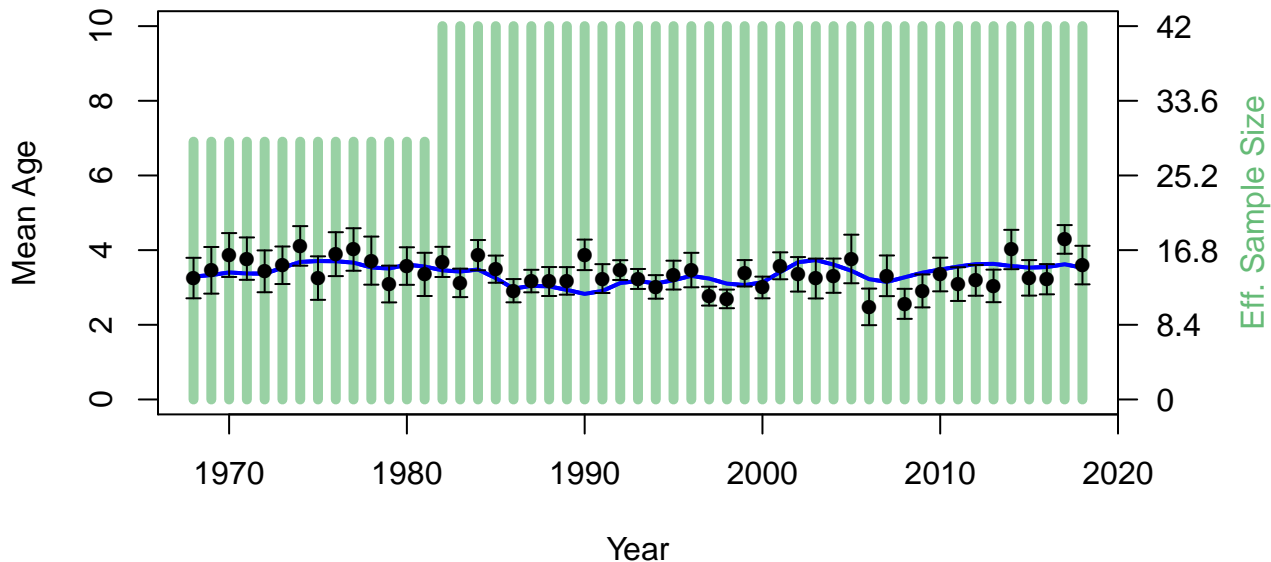
Index Neff 1 (INDEX-1)



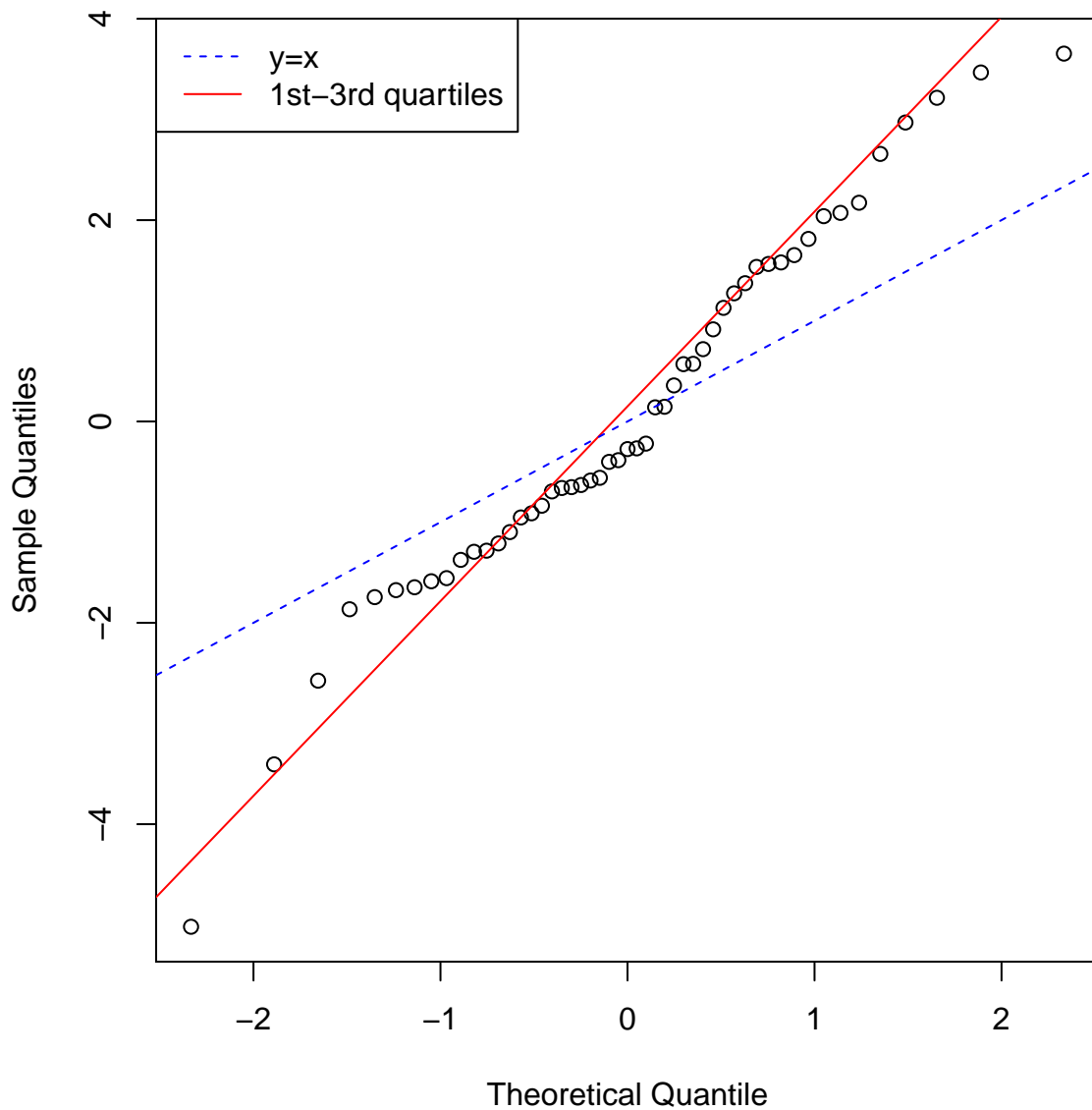
Index Neff 2 (INDEX-2)



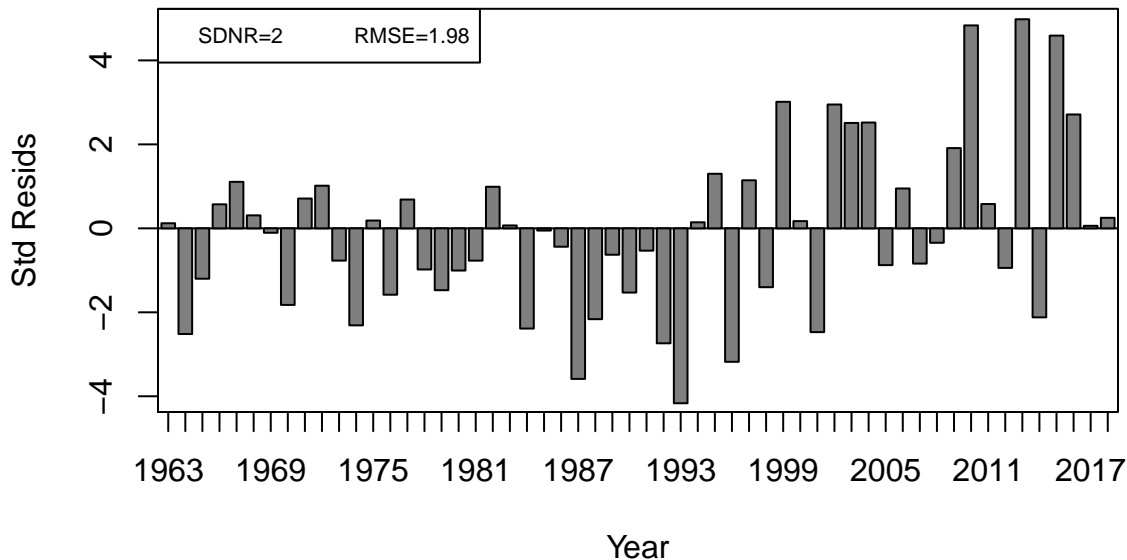
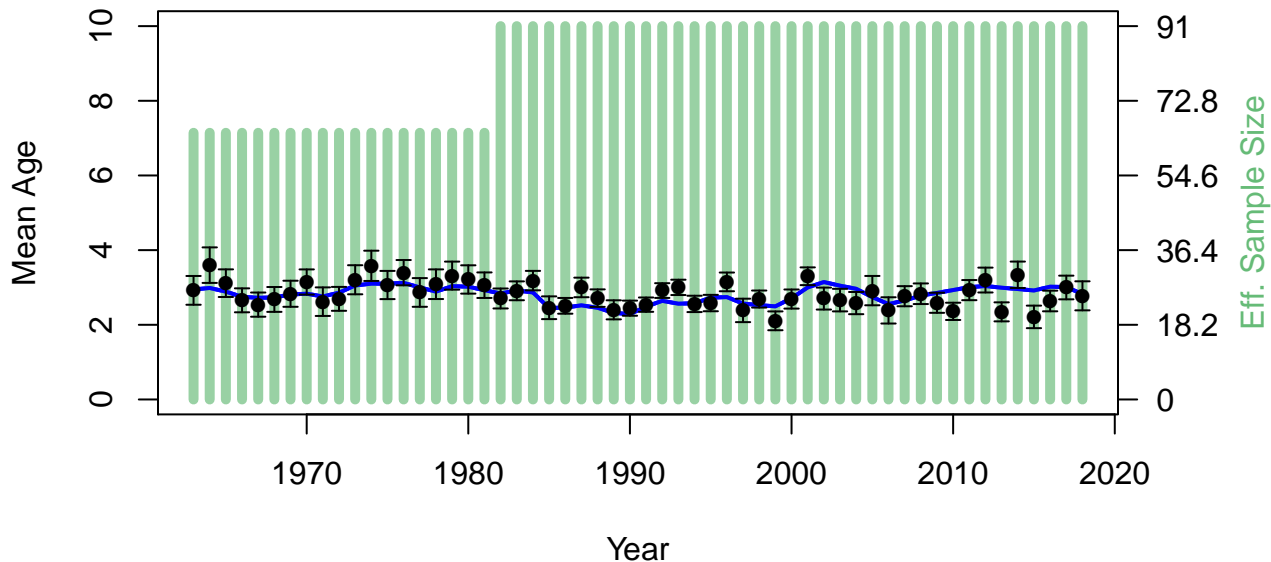
Index 1 (INDEX-1)



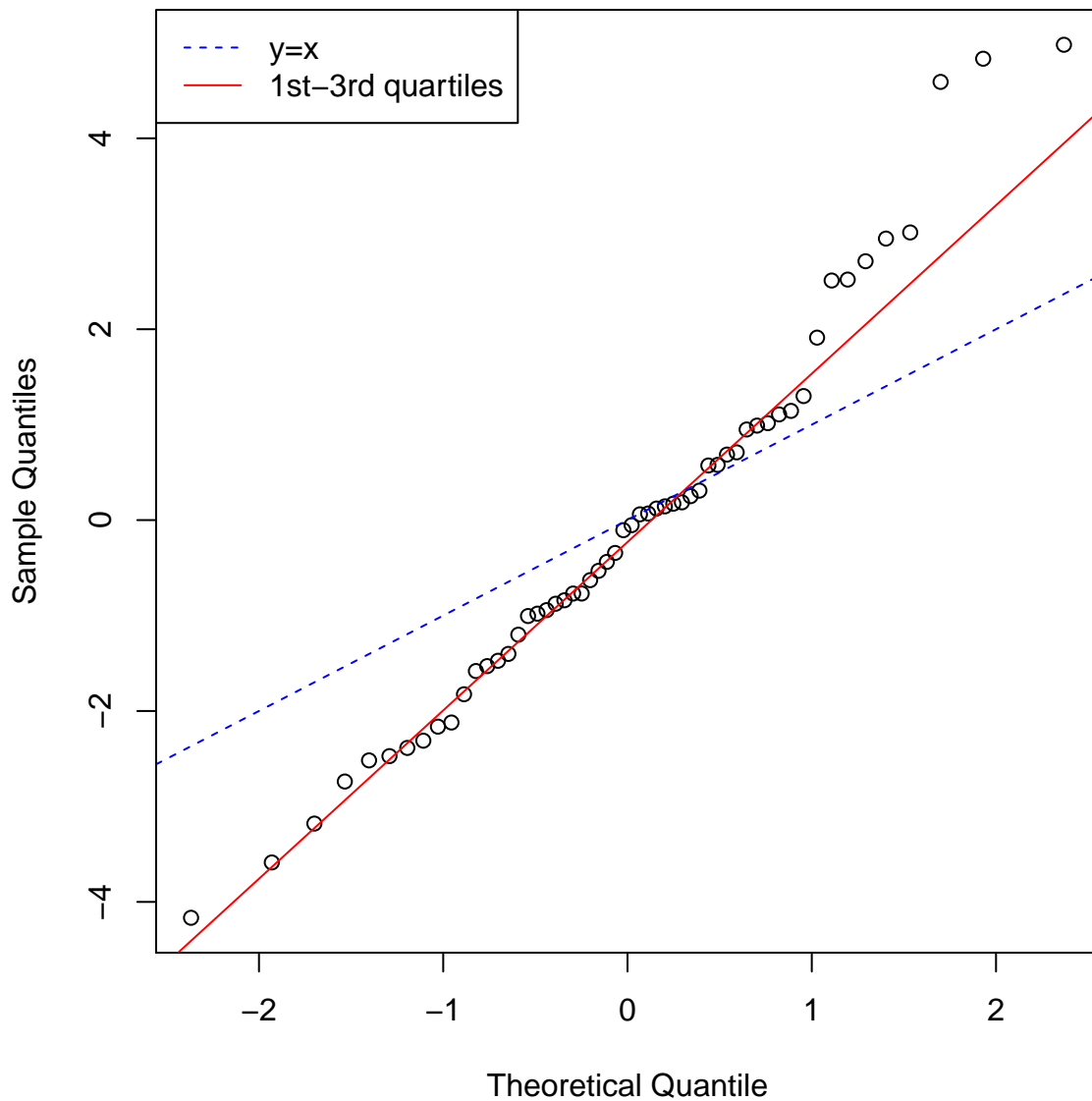
Index 1 (INDEX-1)



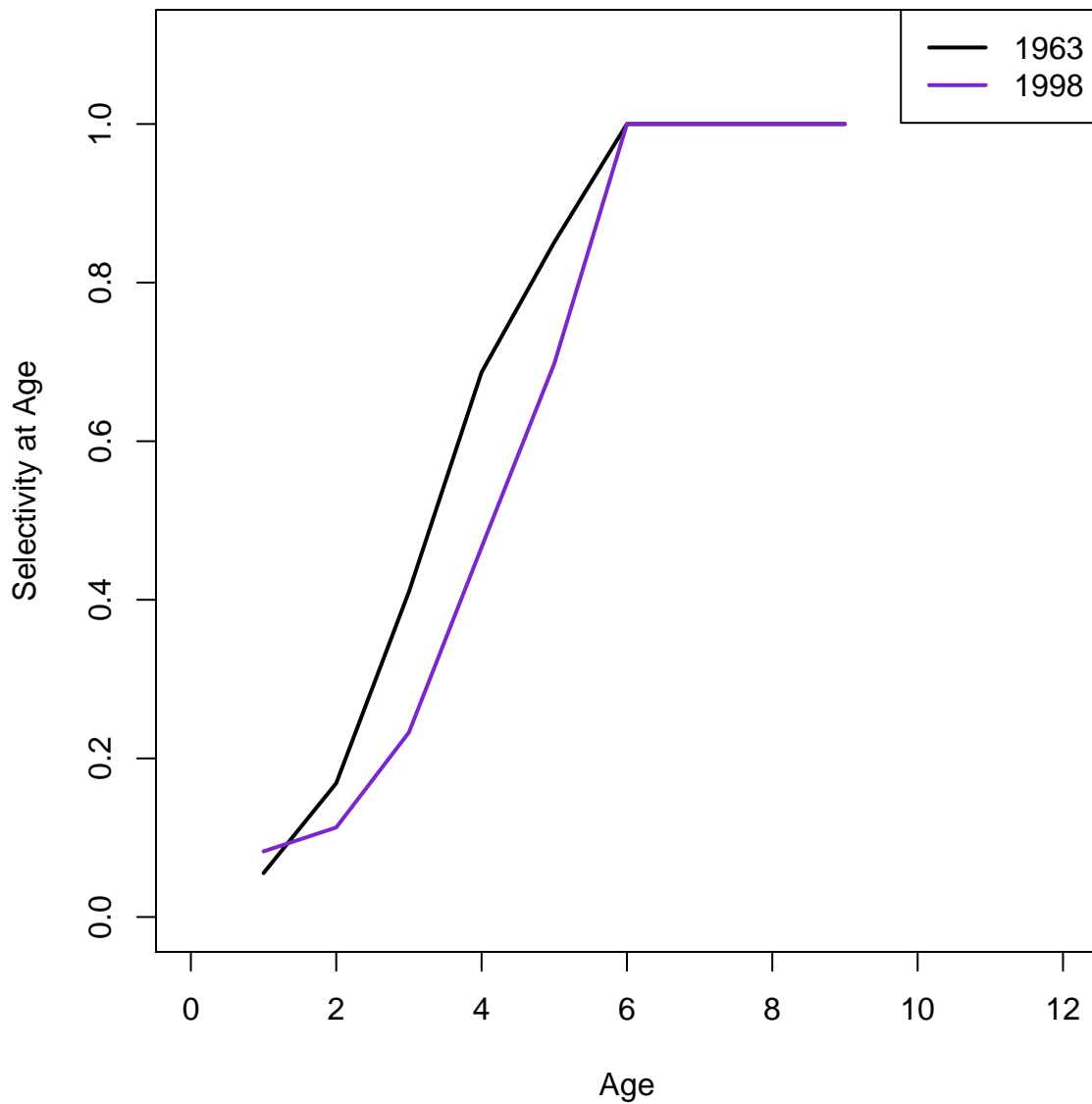
Index 2 (INDEX-2)

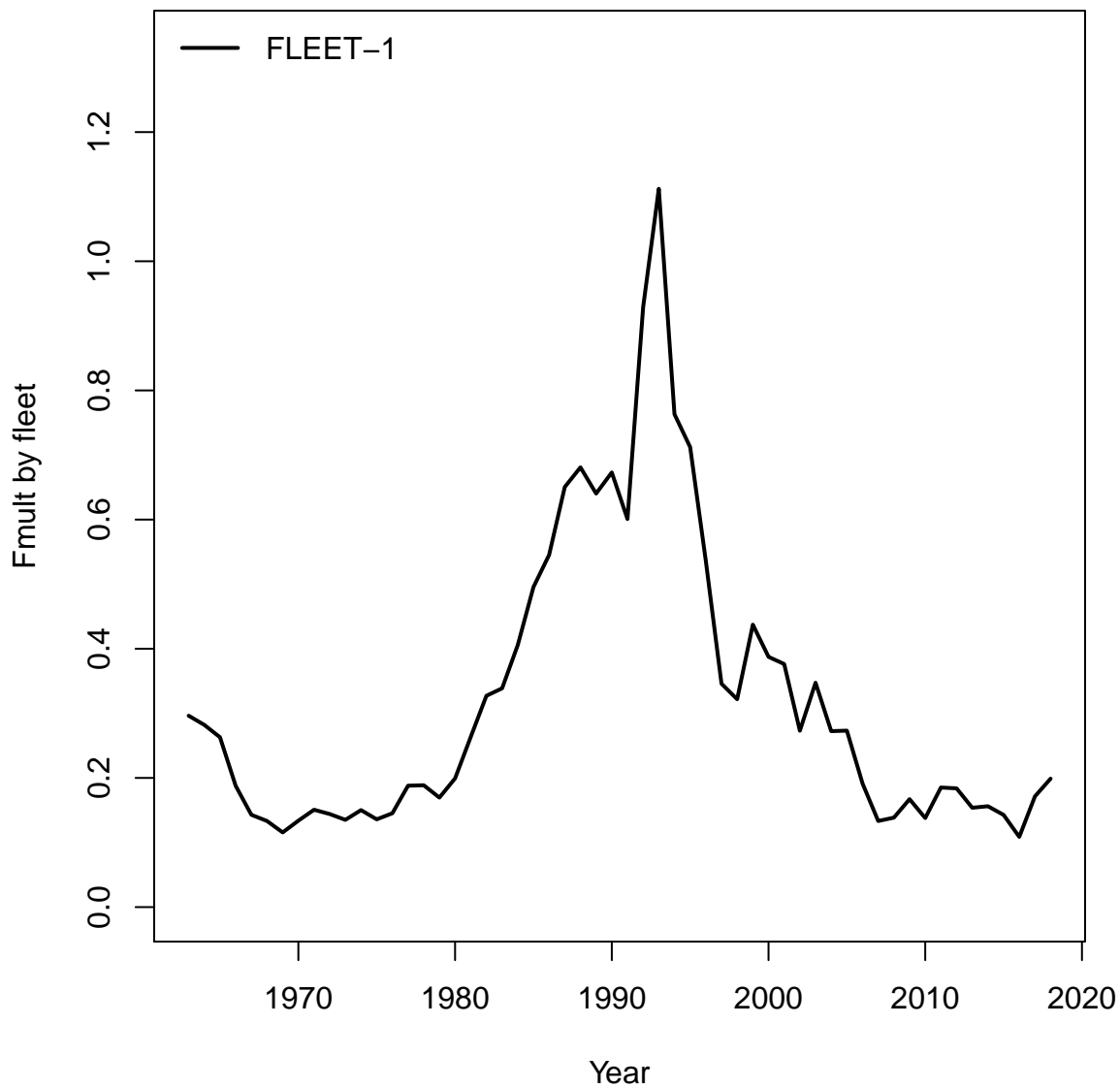


Index 2 (INDEX-2)

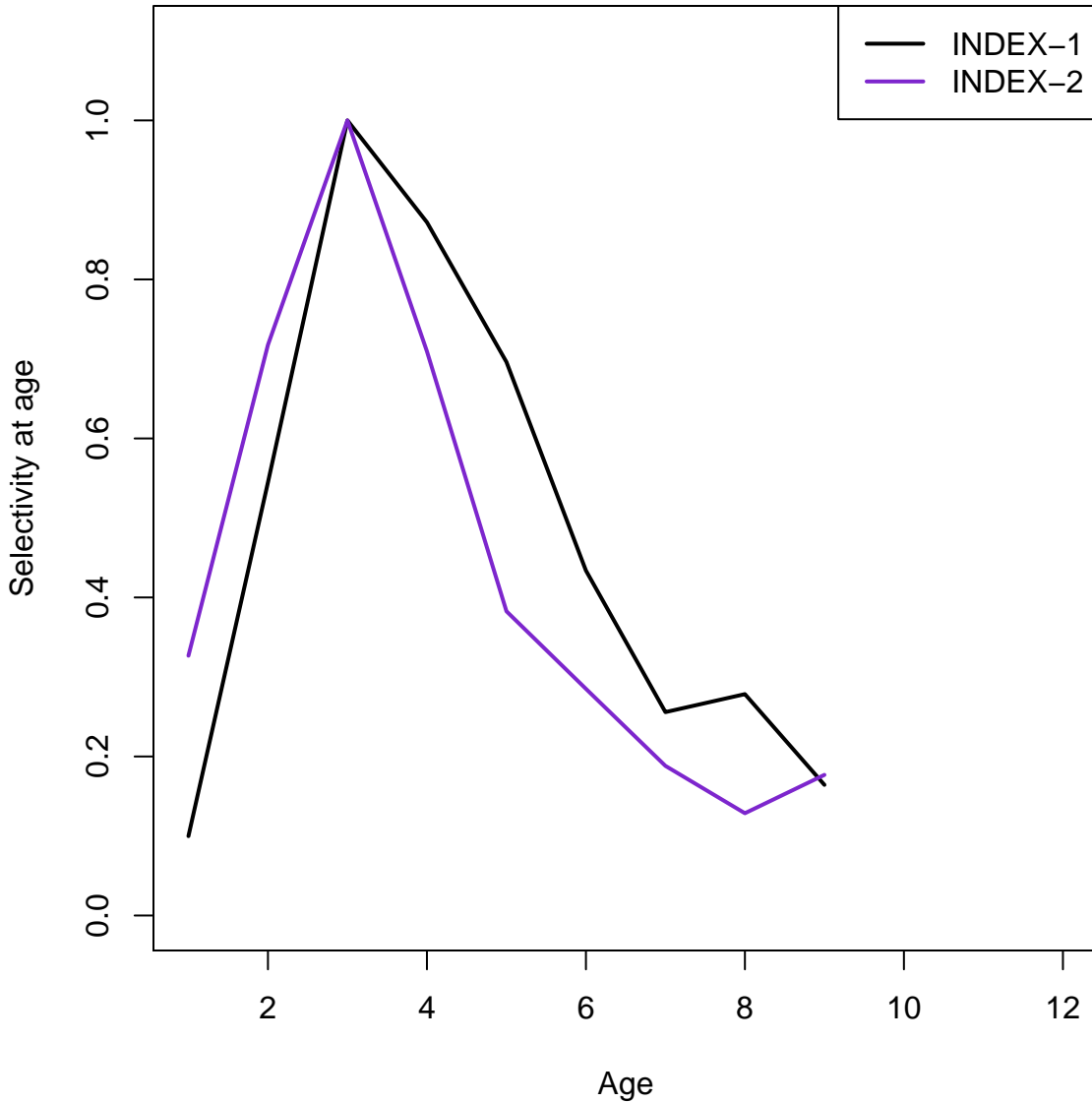


Fleet 1 (FLEET-1)





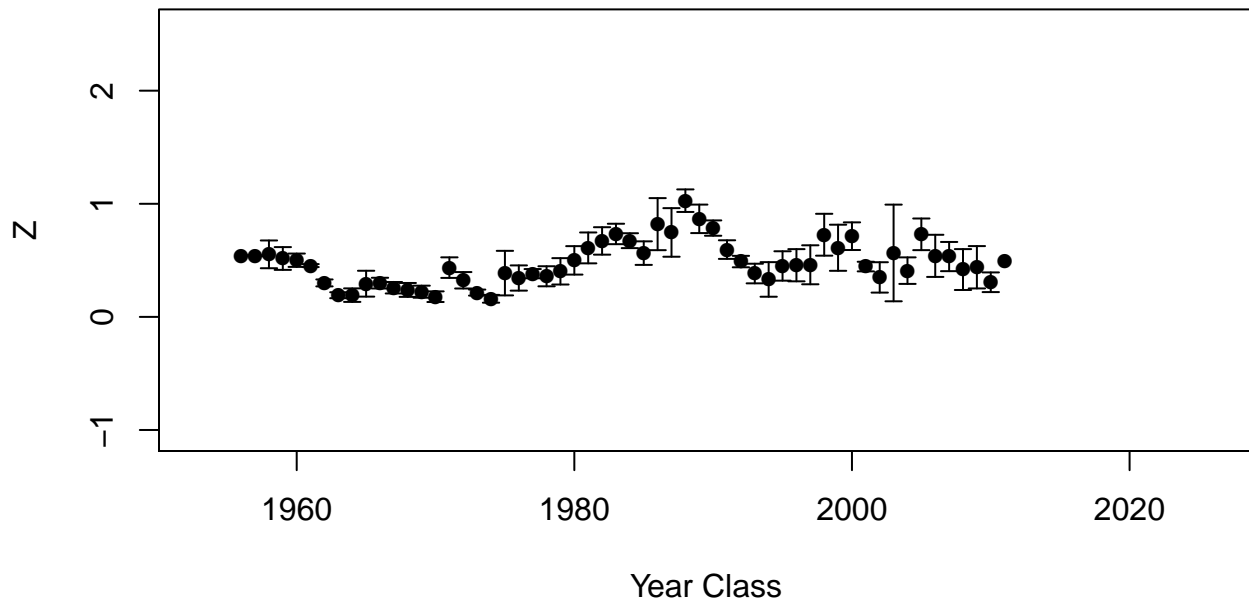
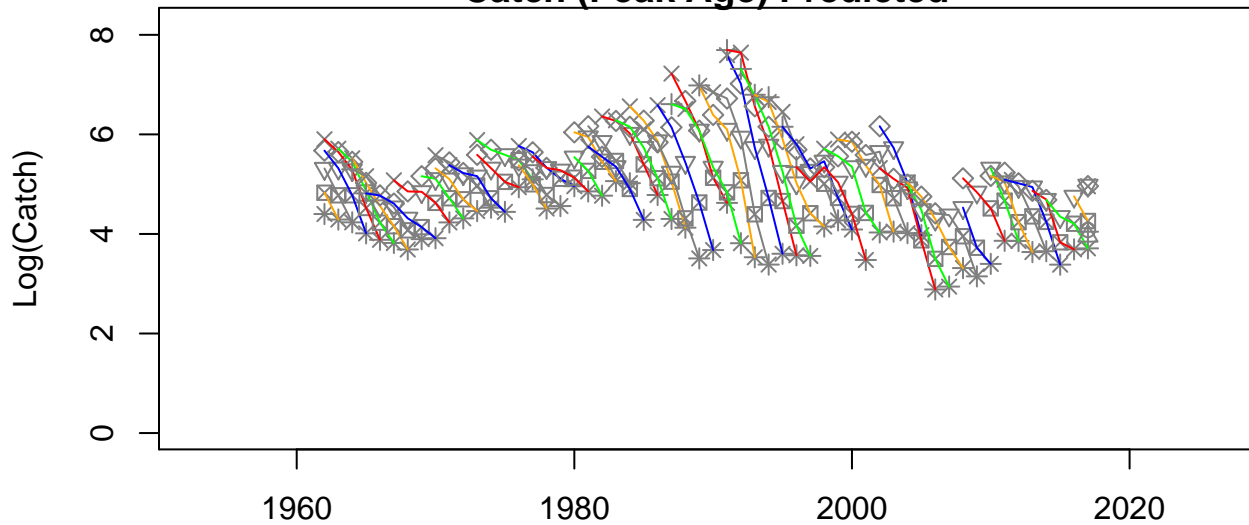
Indices



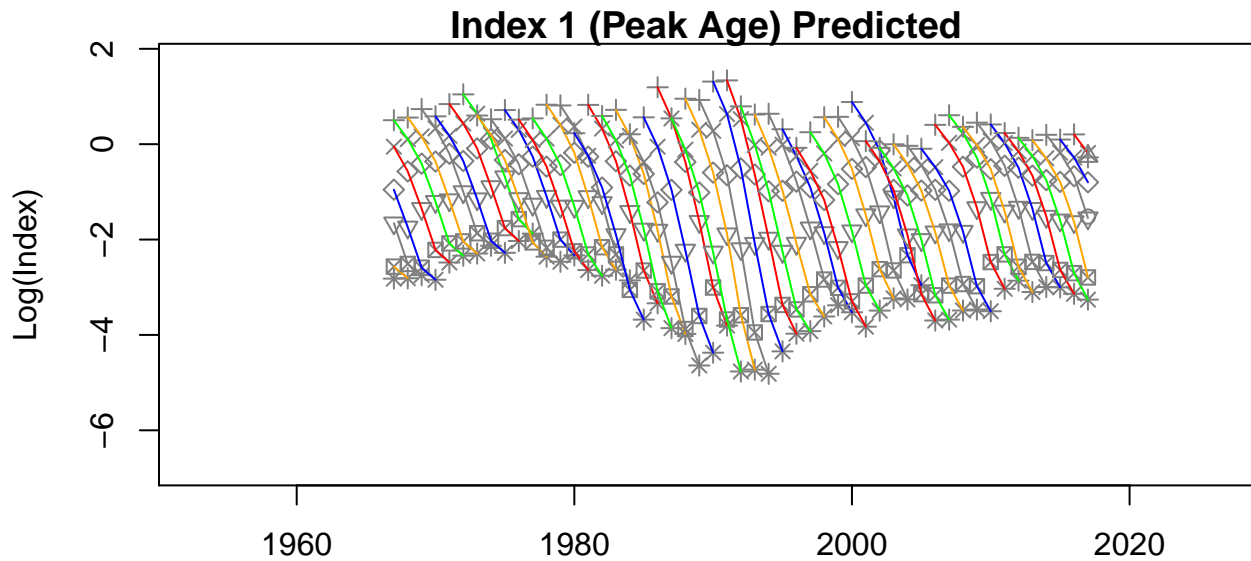
Catch (Peak Age) Observed



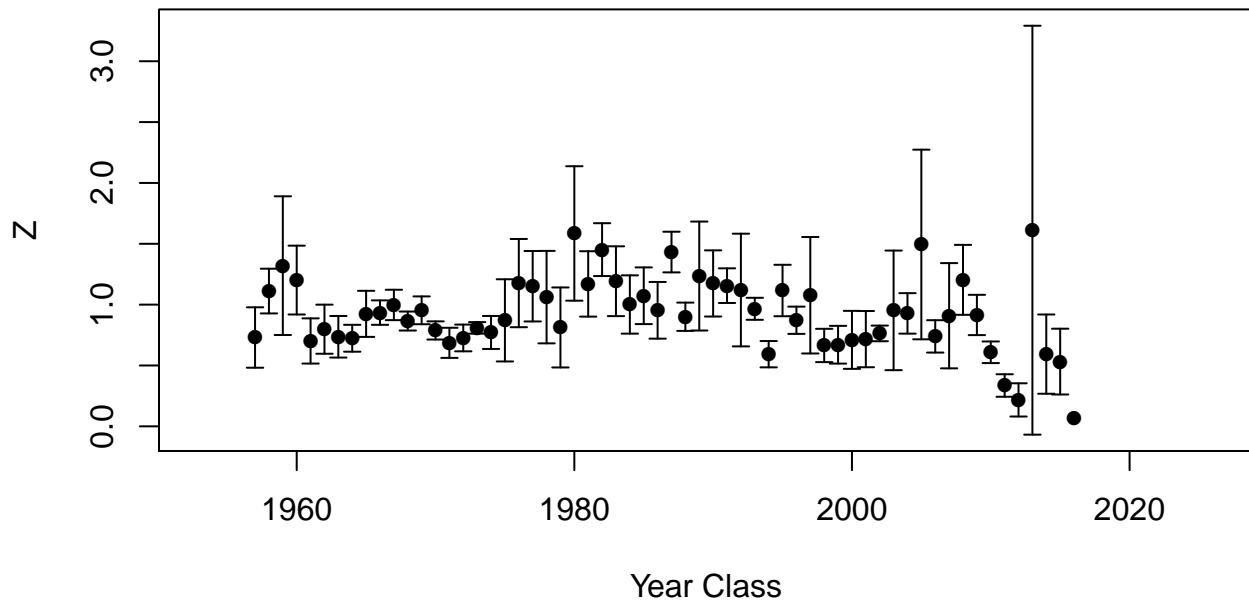
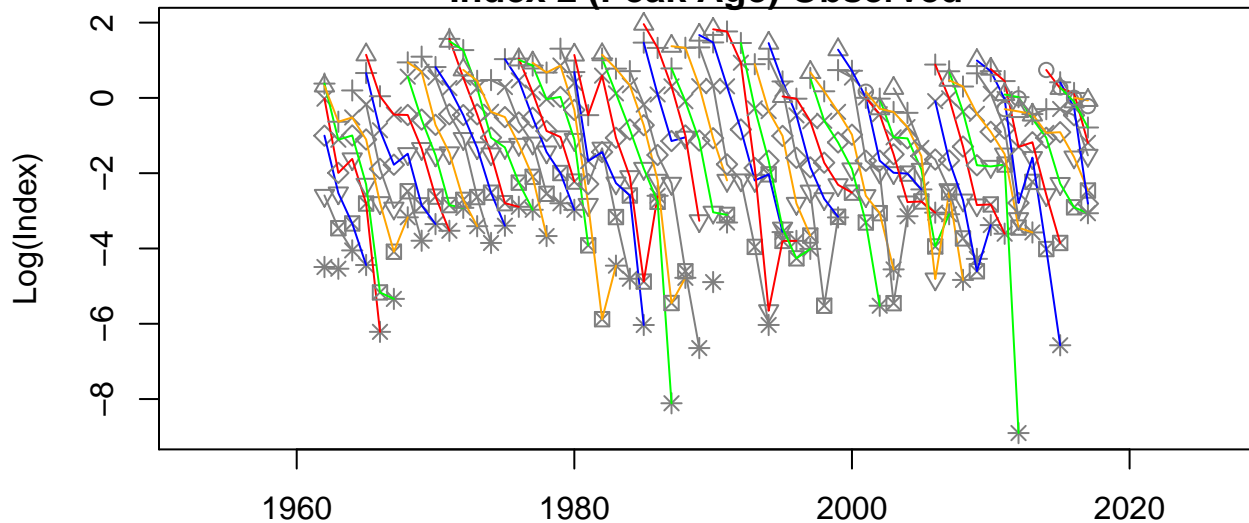
Catch (Peak Age) Predicted



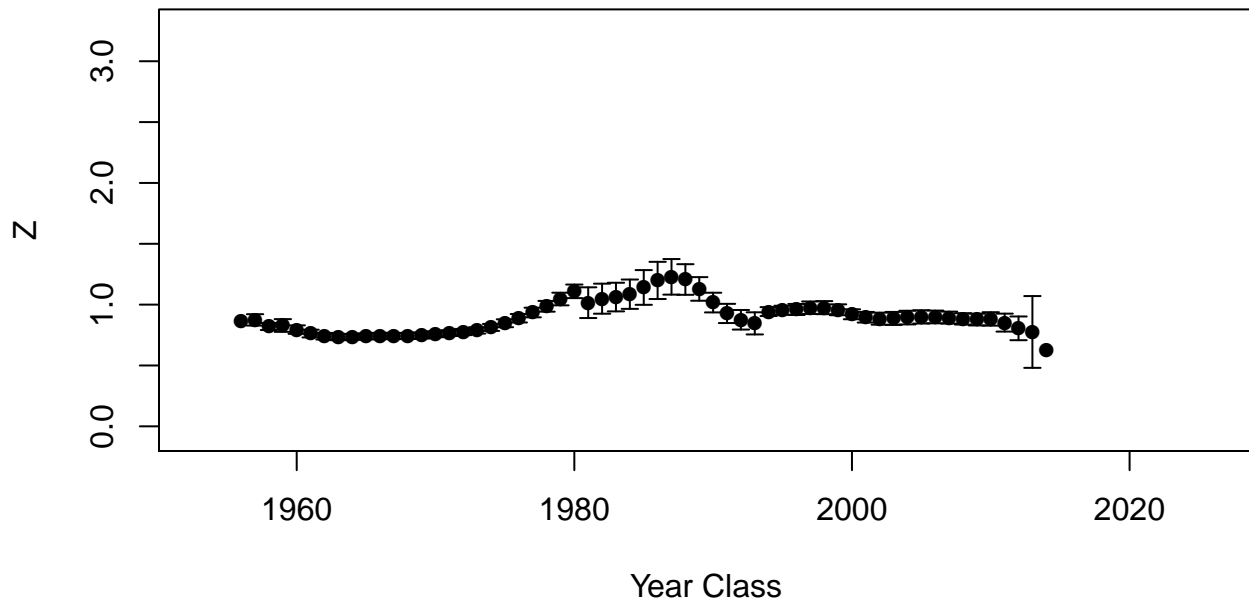
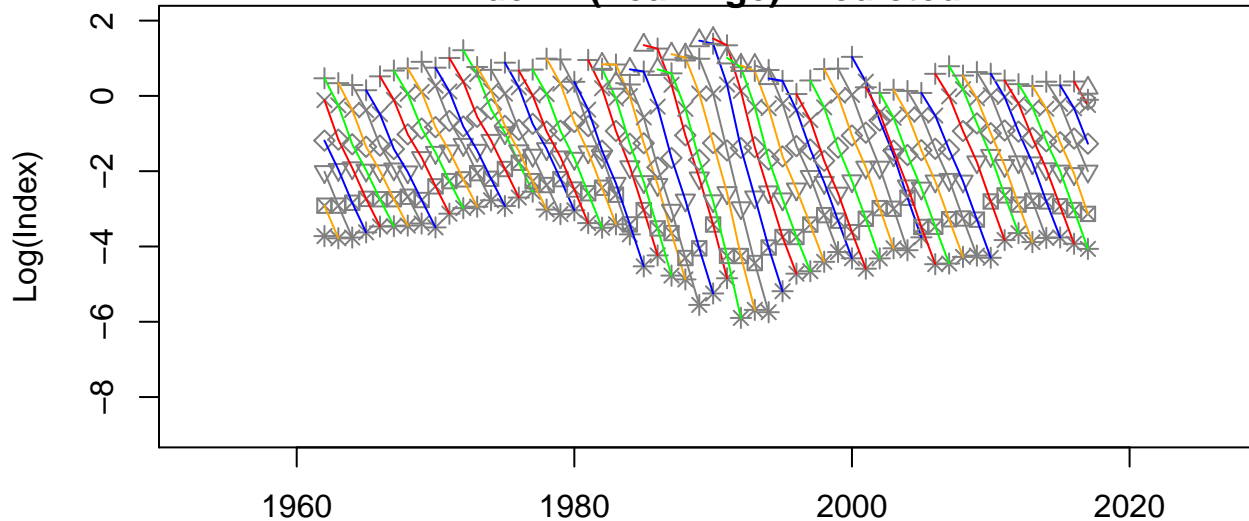




Index 2 (Peak Age) Observed



Index 2 (Peak Age) Predicted



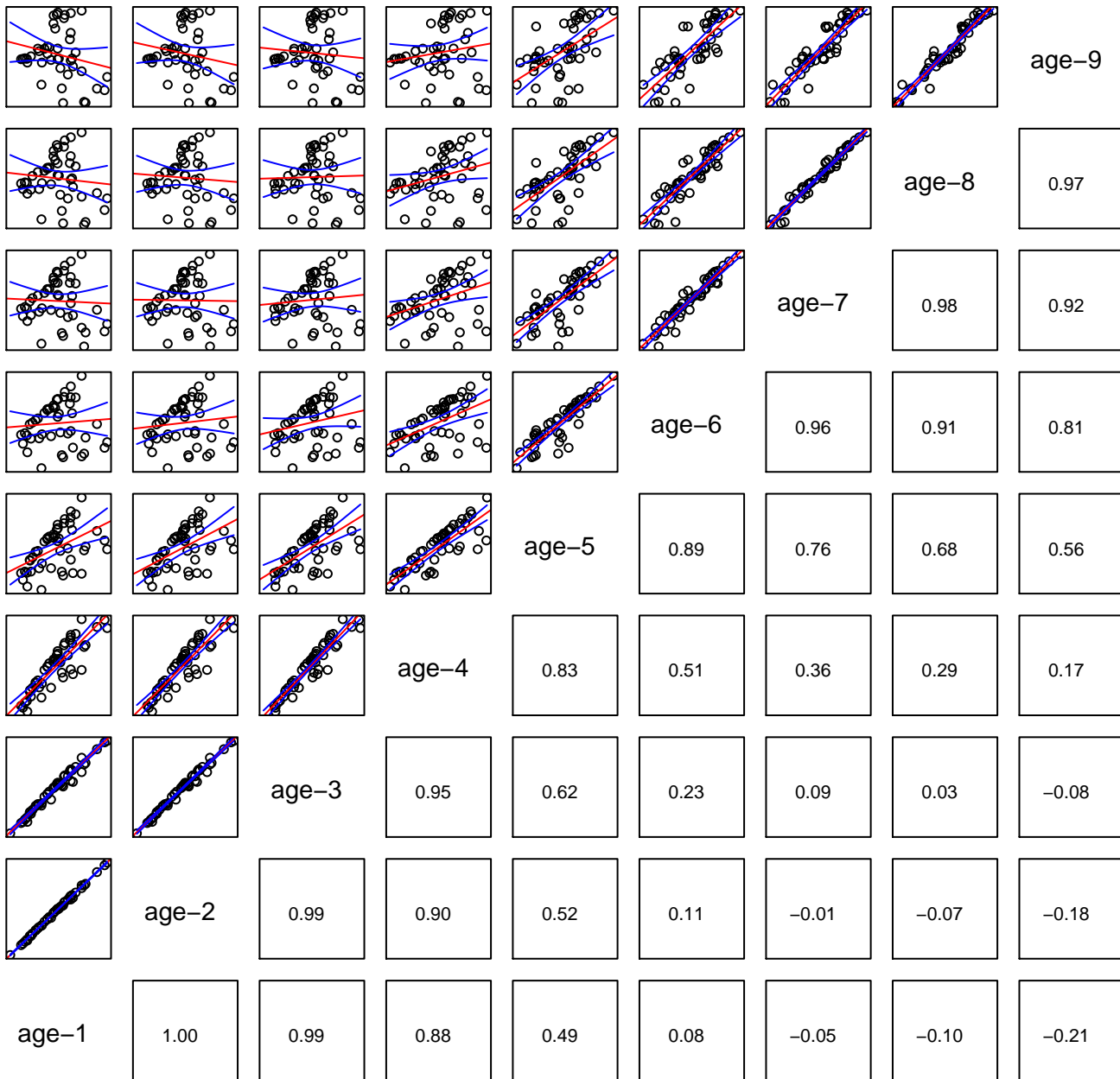
Catch Observed



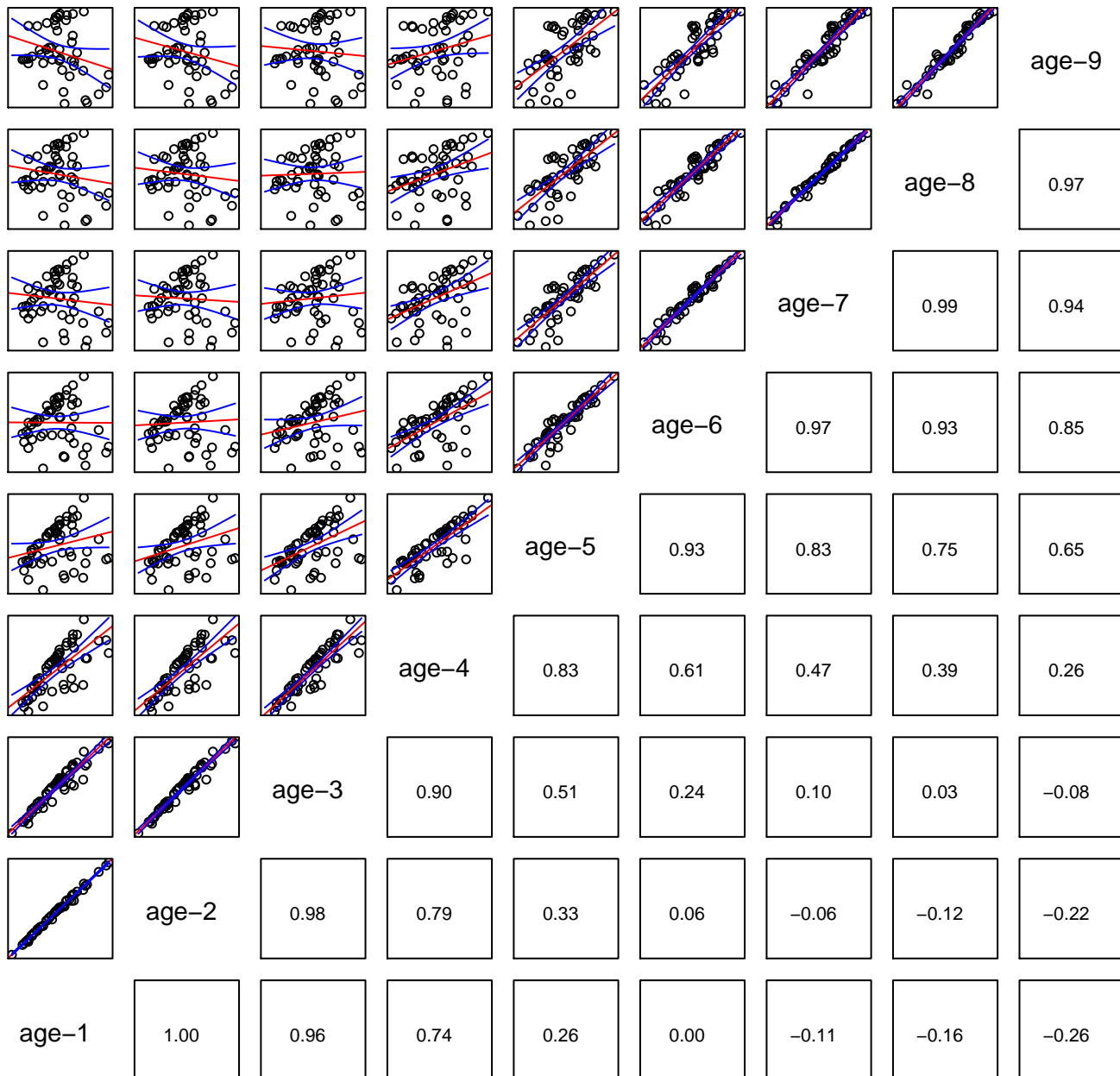
Index 1 (INDEX-1) Observed

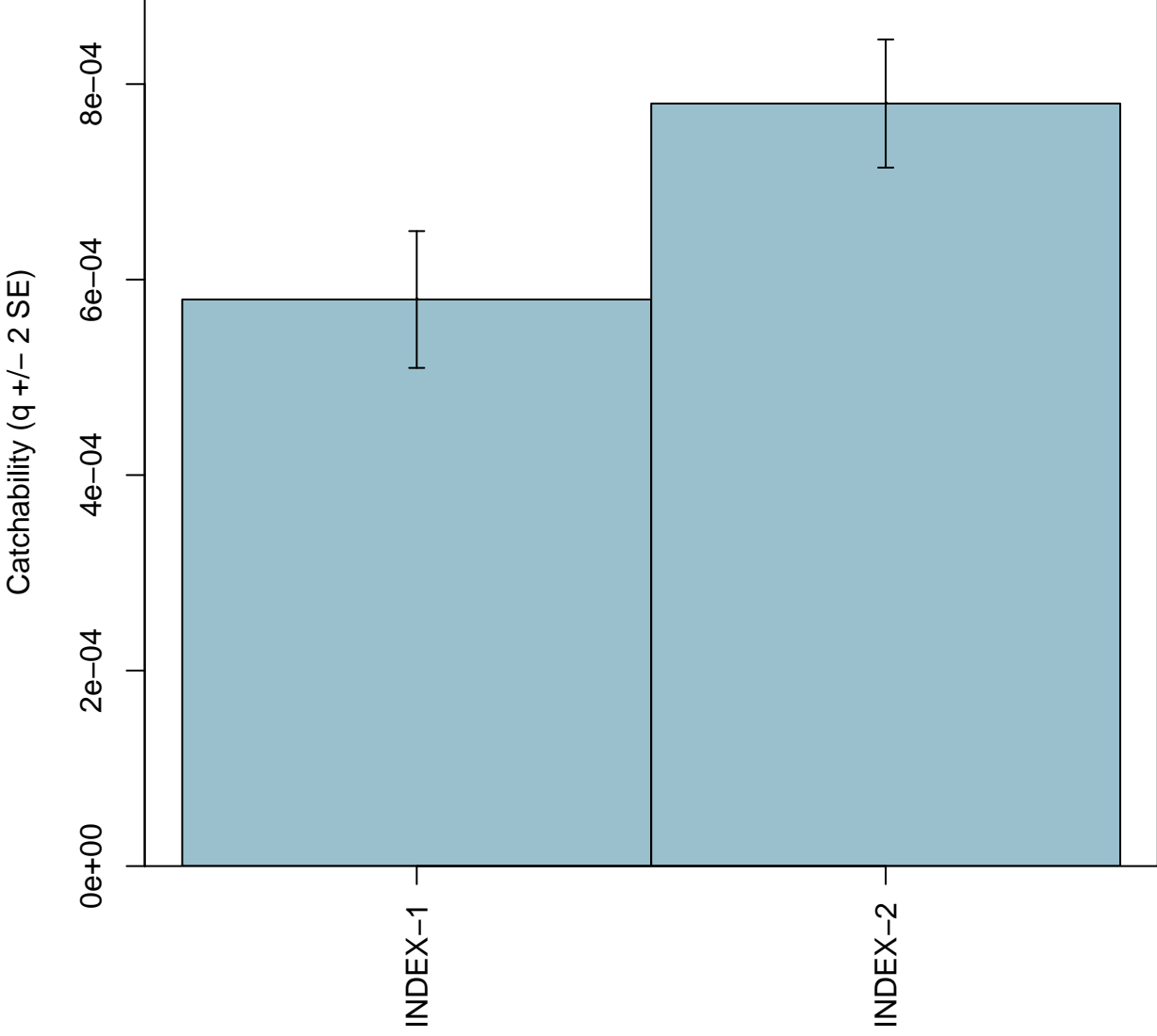


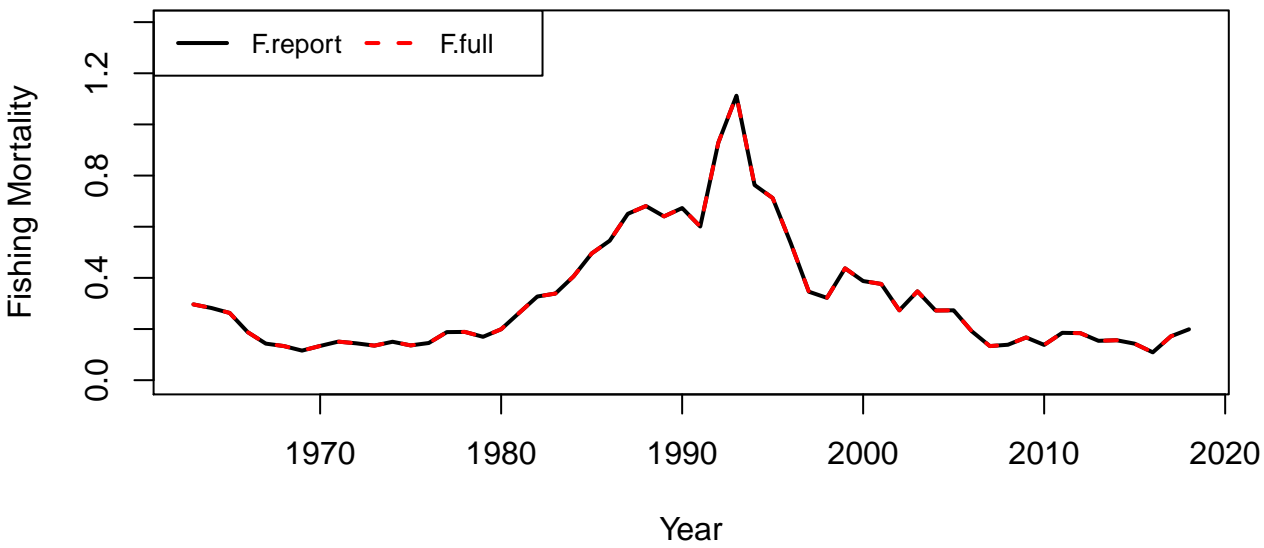
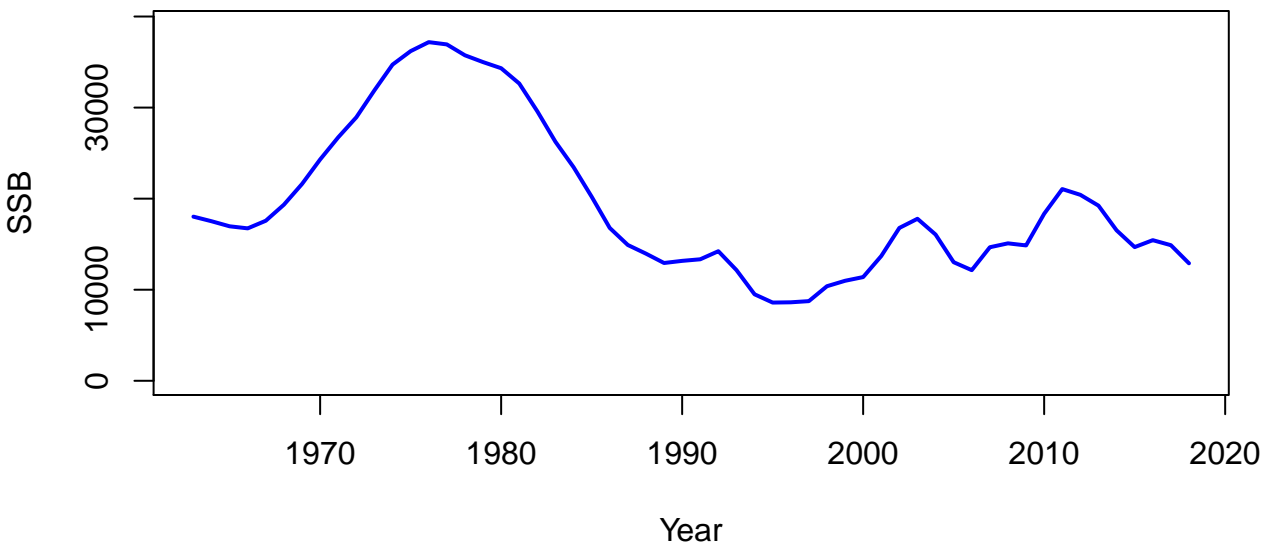
Index 1 (INDEX-1) Predicted



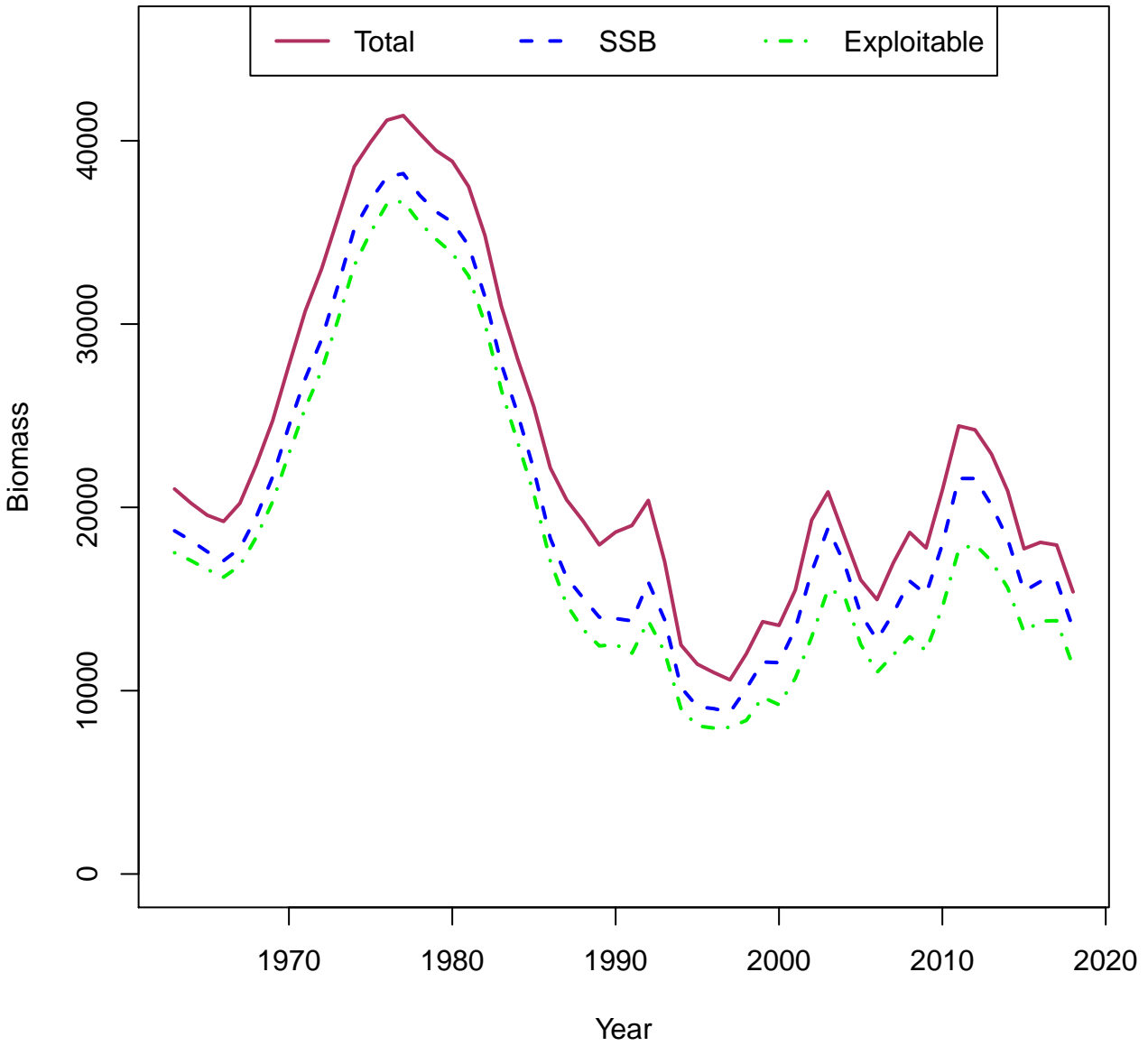
Index 2 (INDEX-2) Predicted

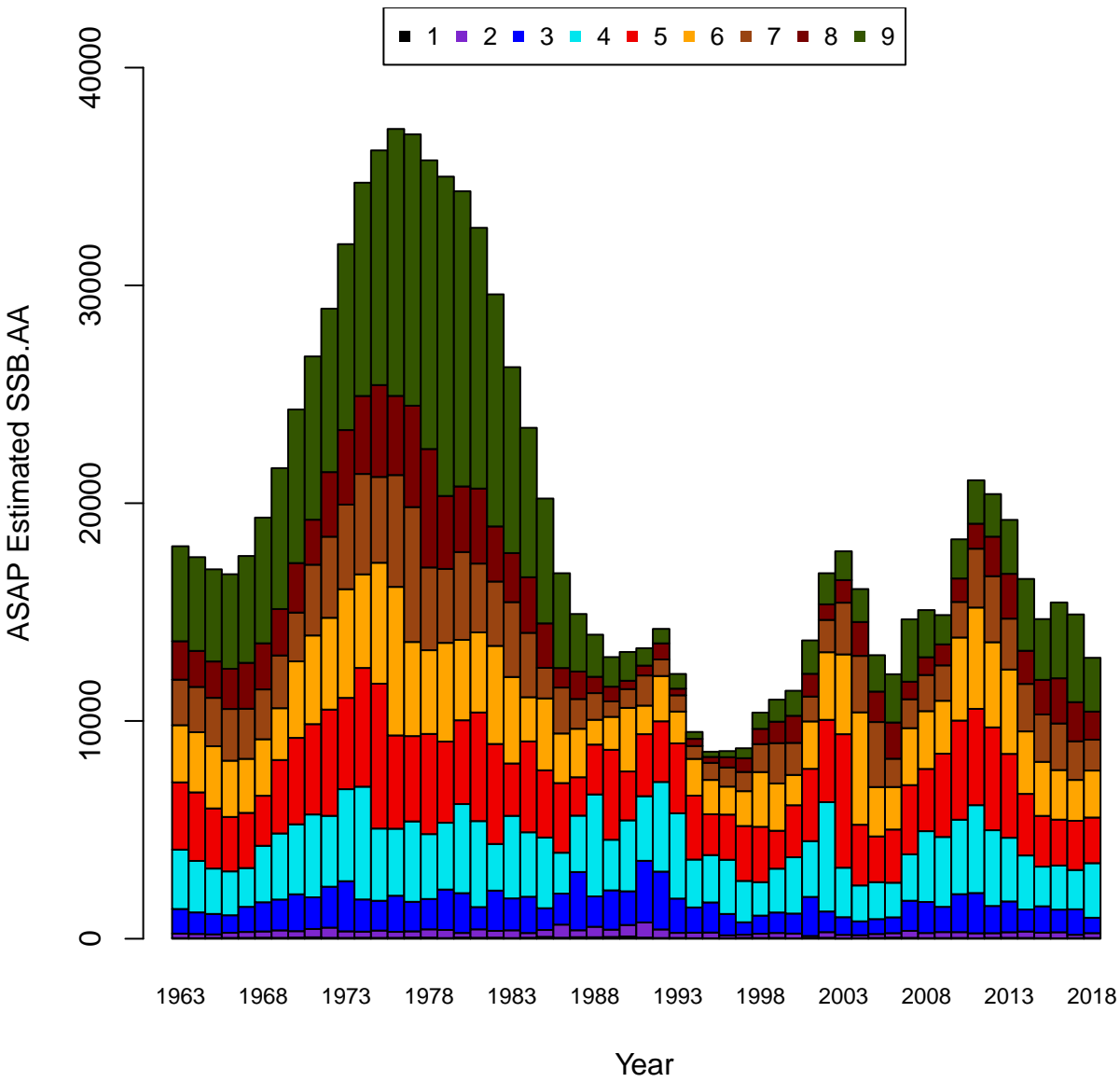


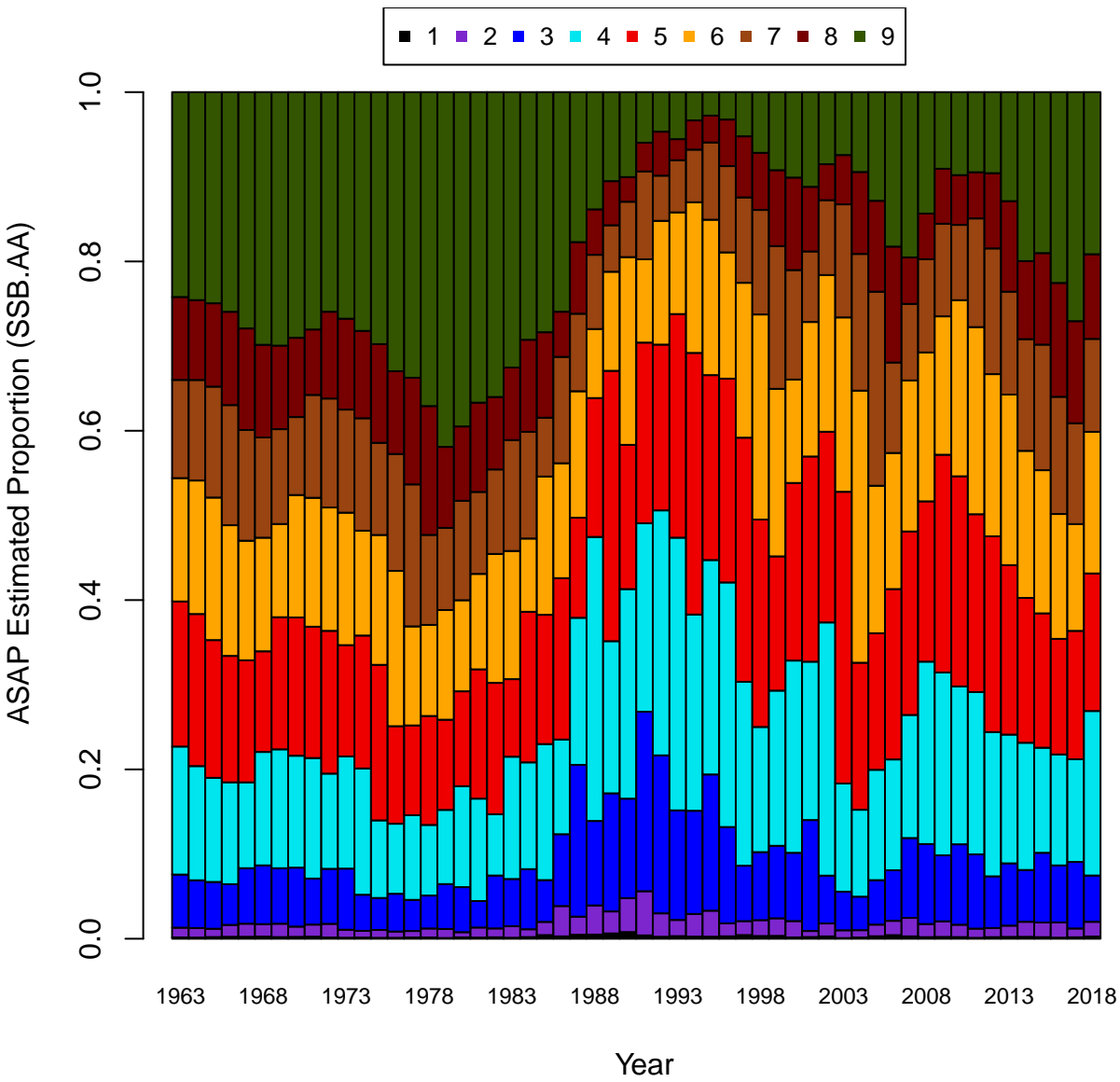


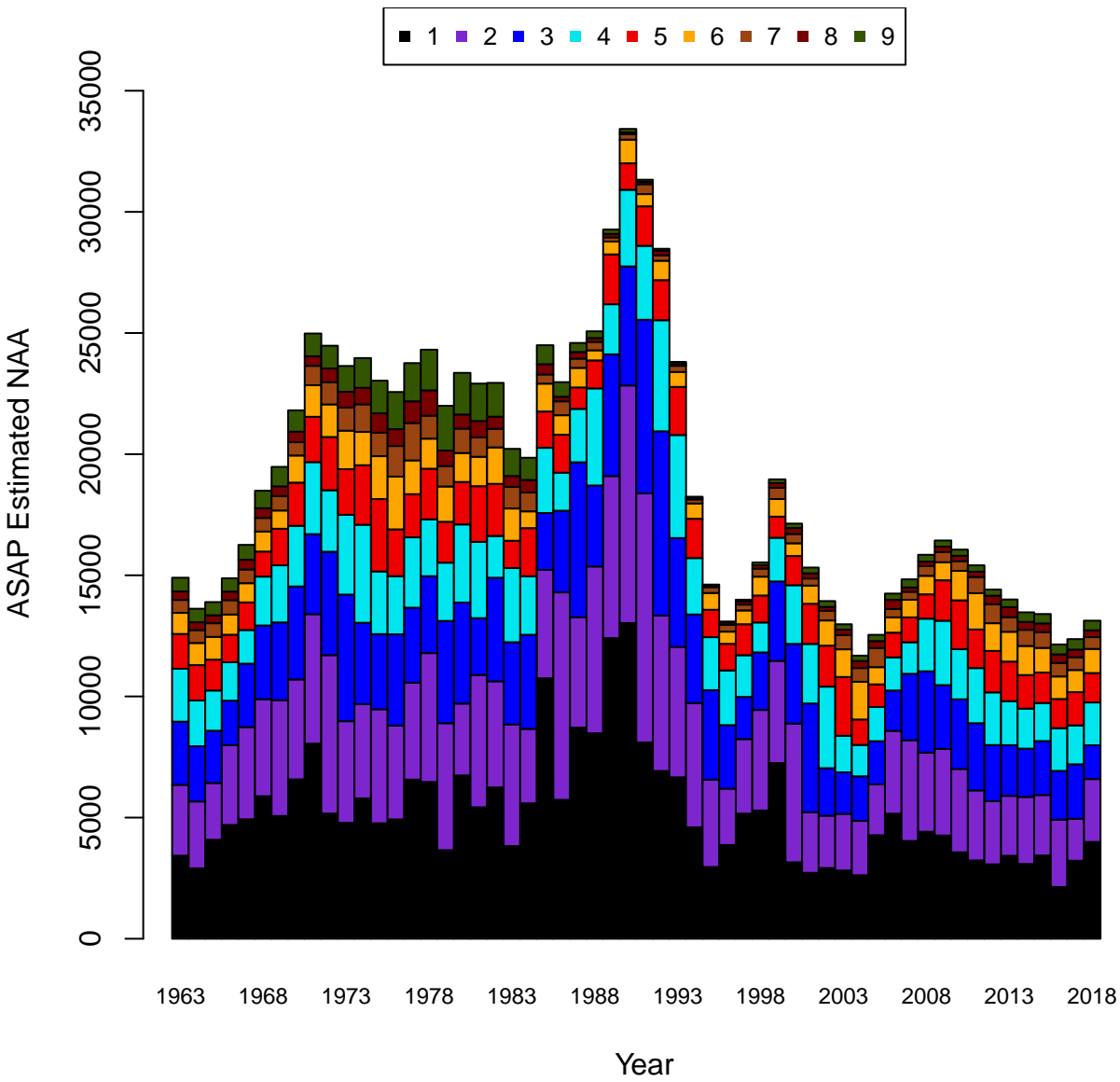


Comparison of January 1 Biomass

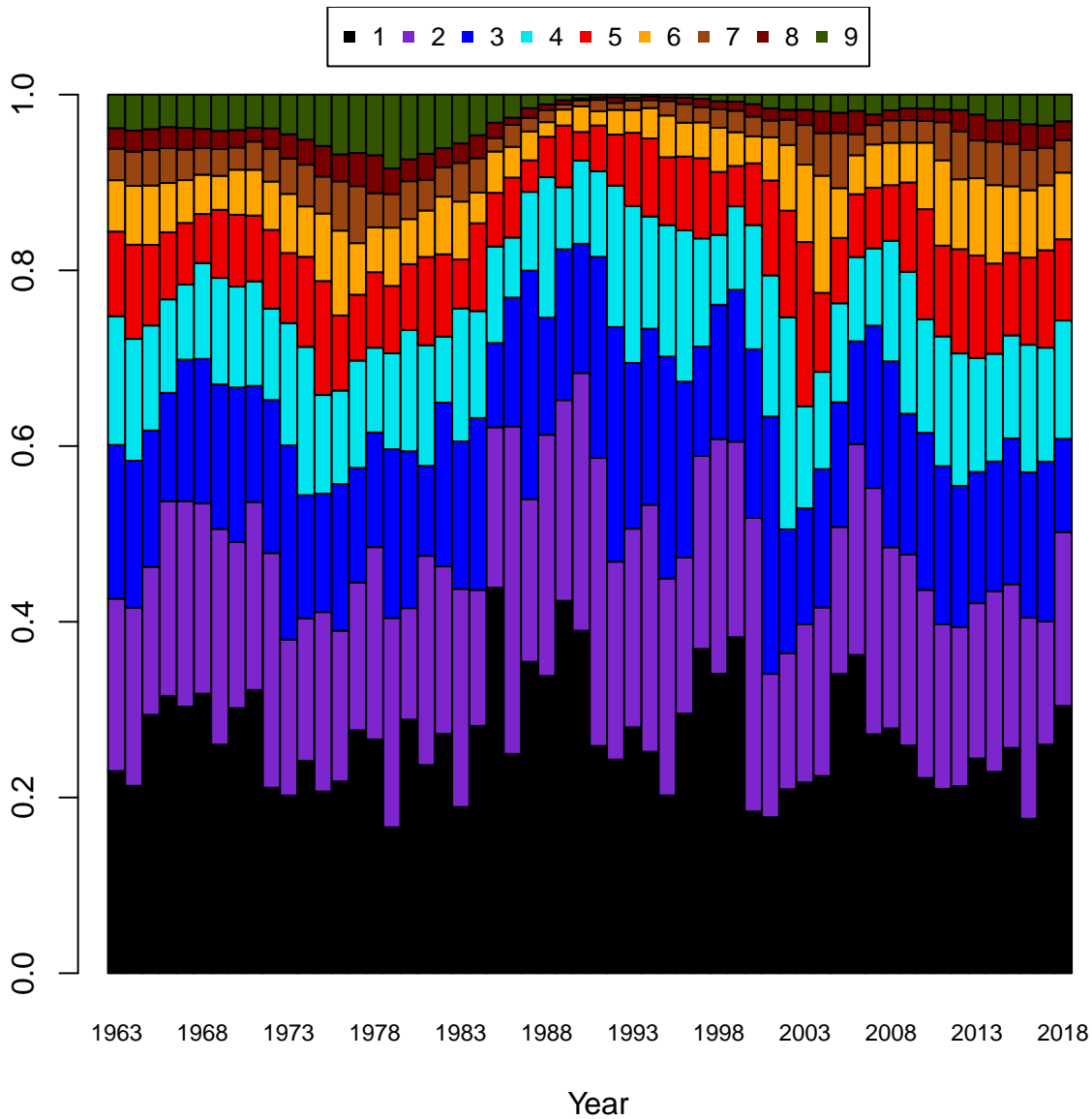


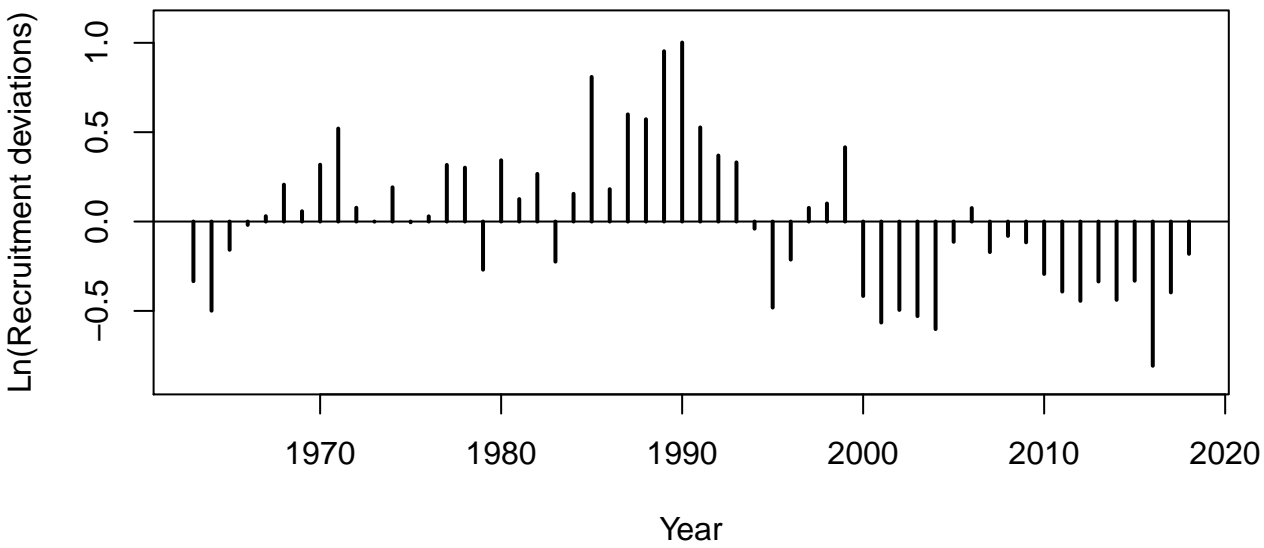
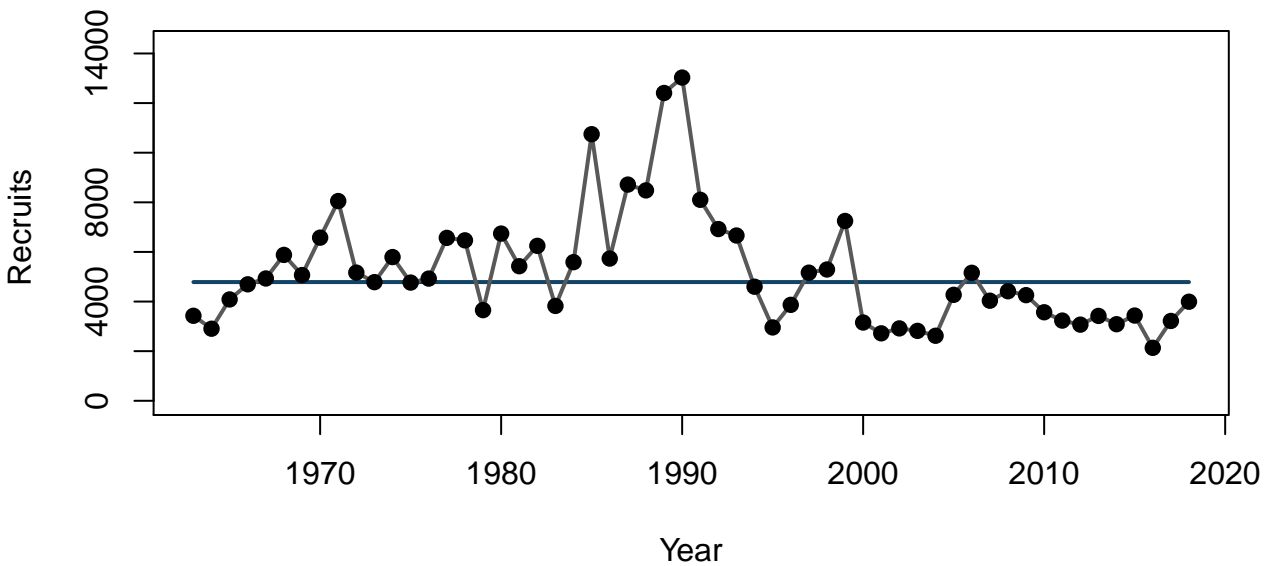


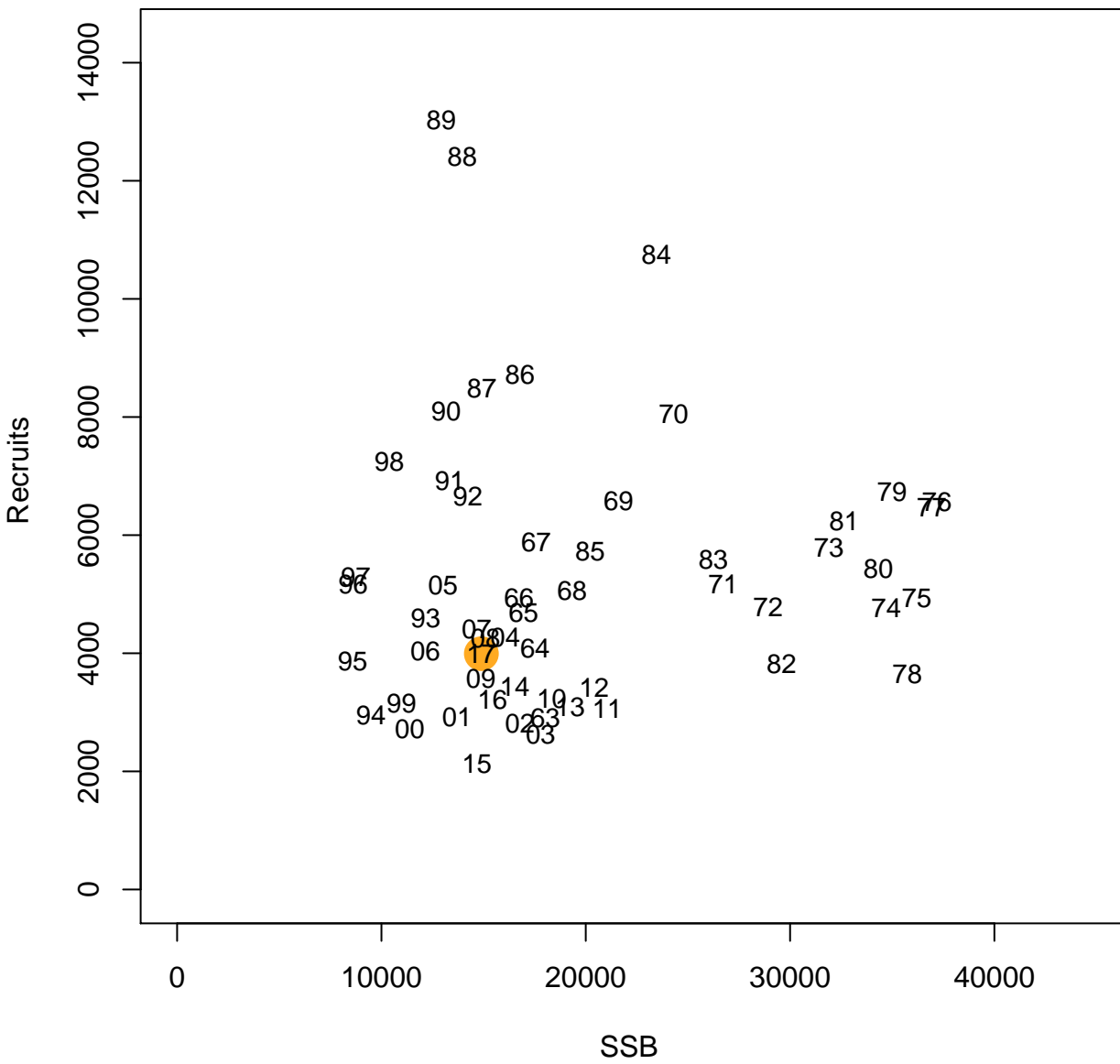


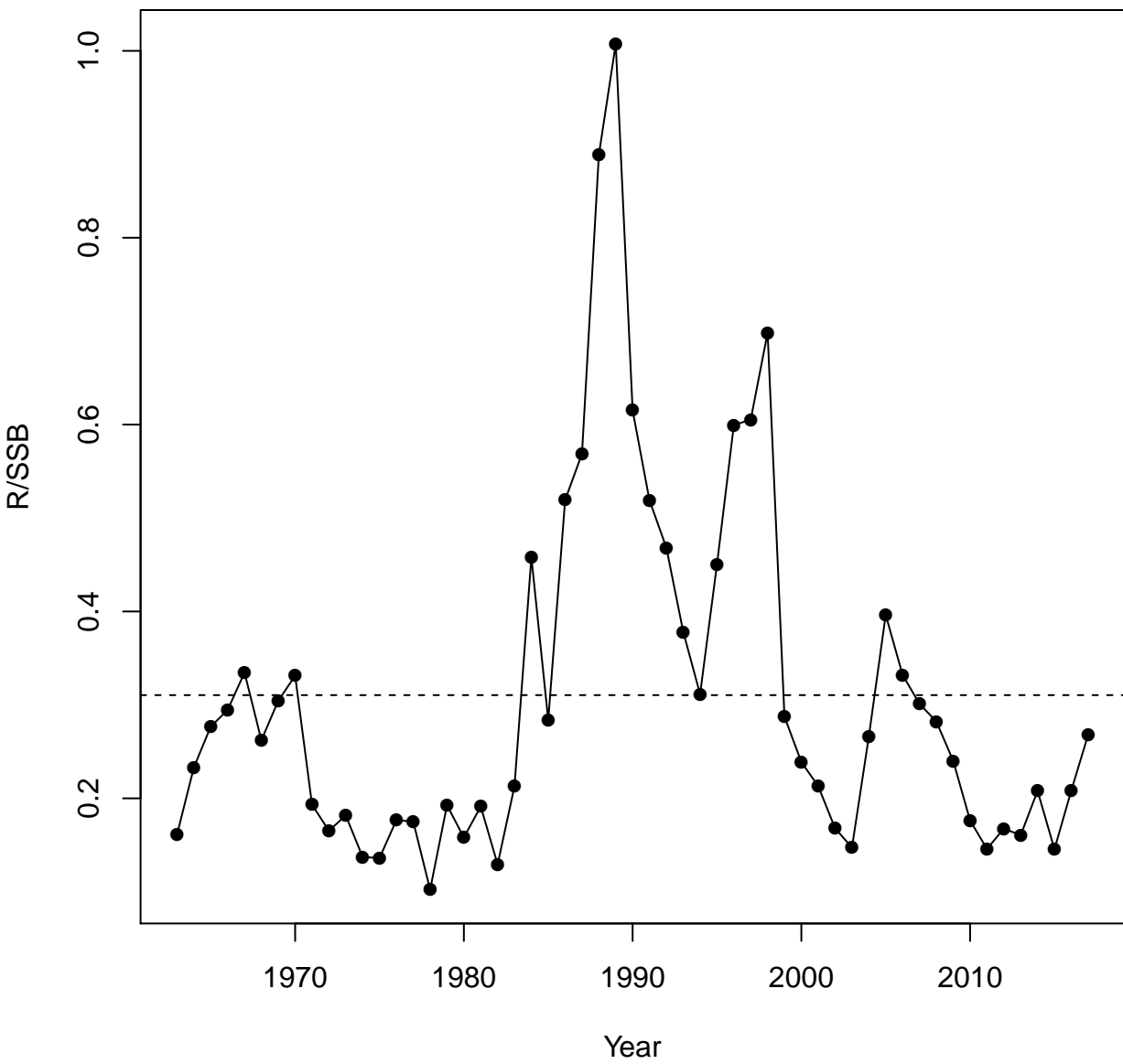


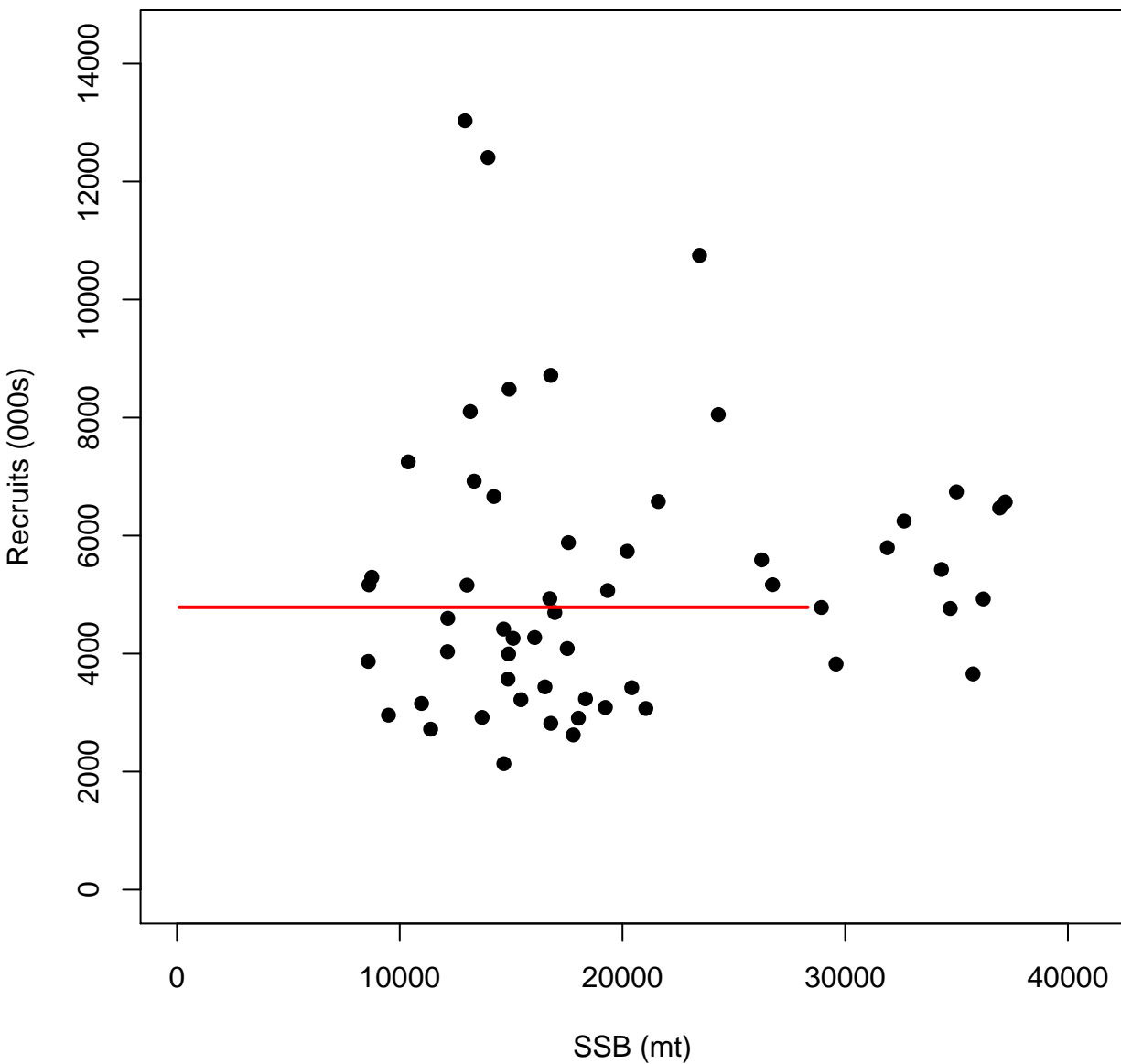
ASAP Estimated Proportion (NAA)

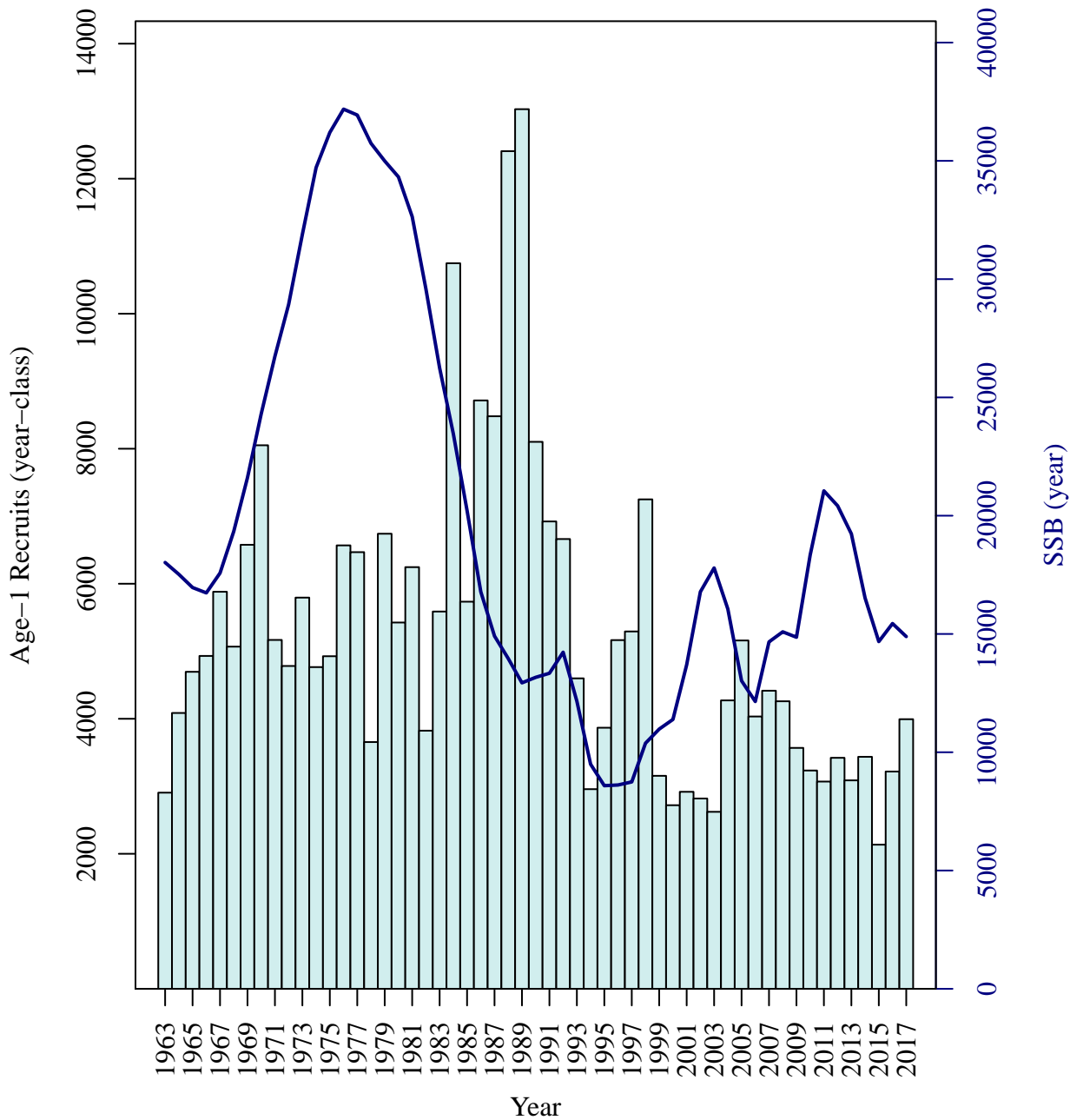




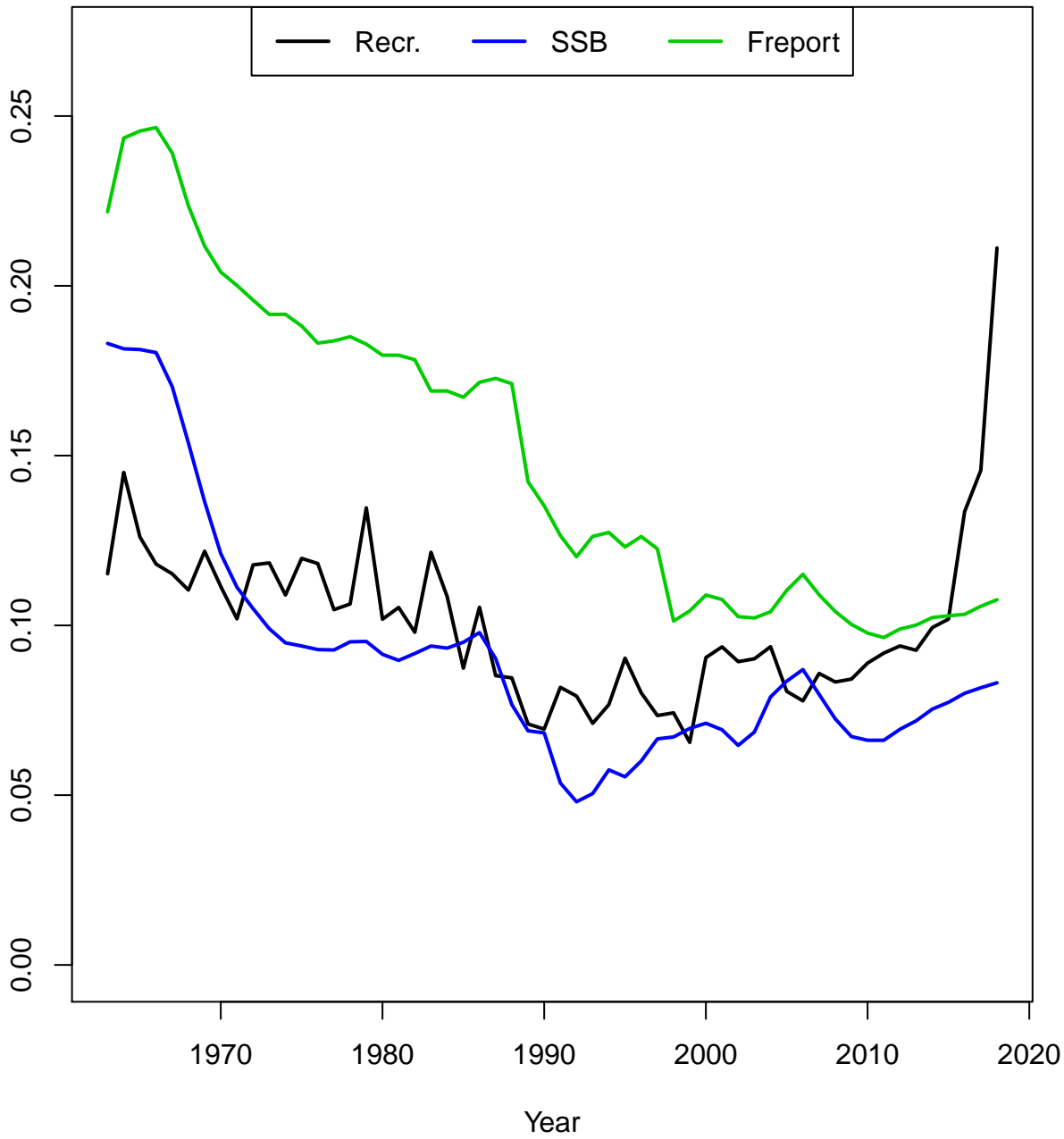




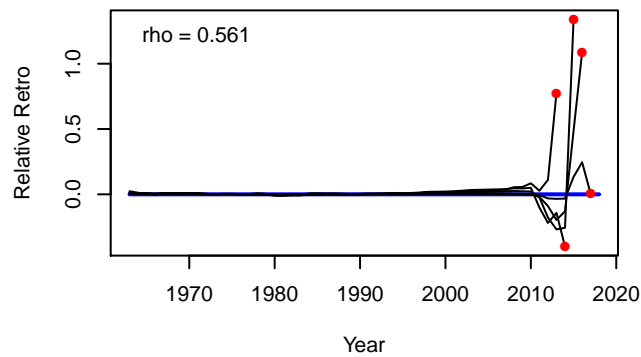
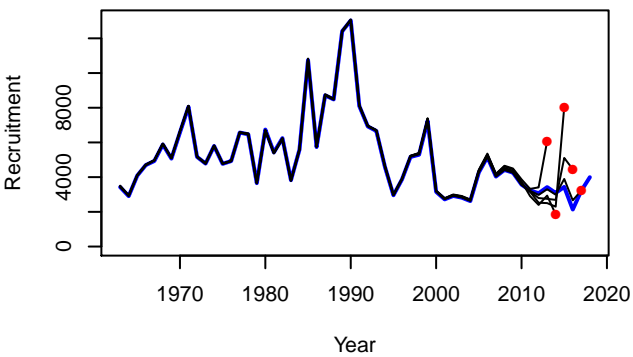
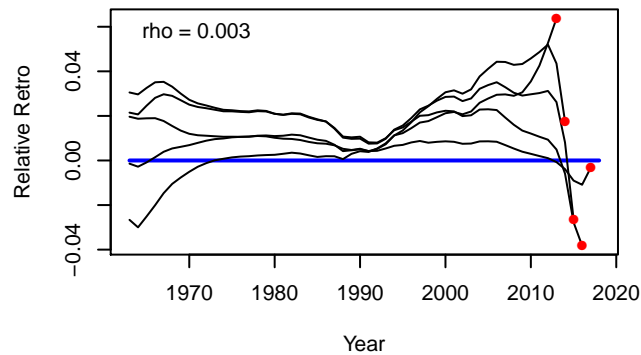
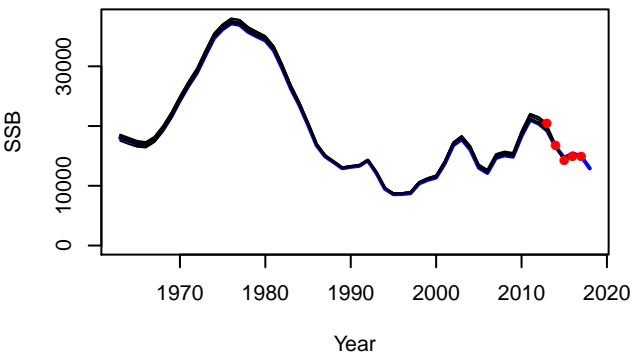
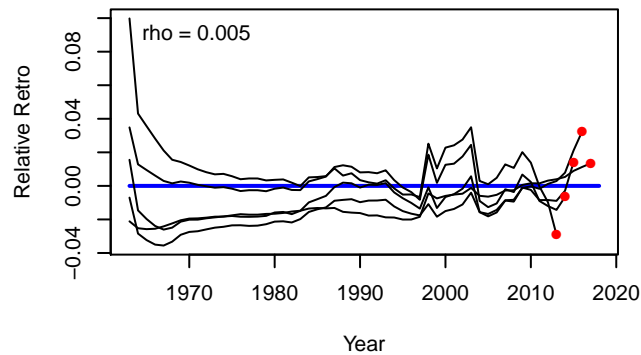
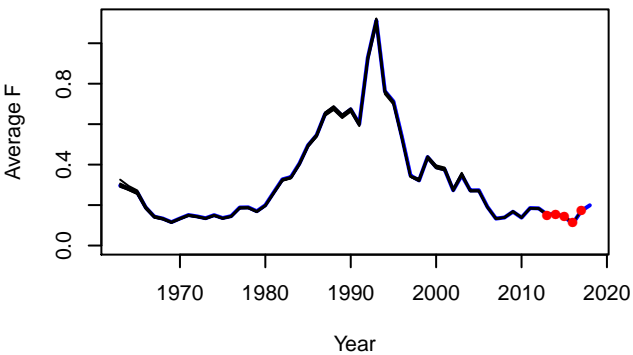




CV

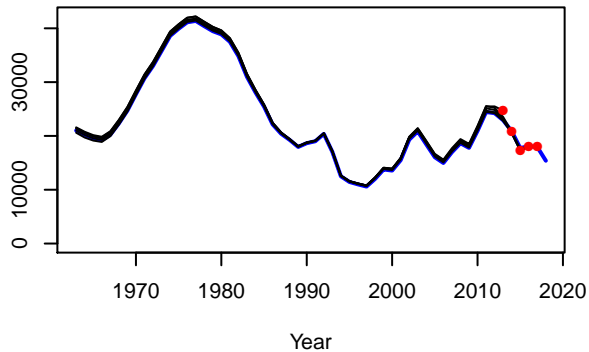


F, SSB, R

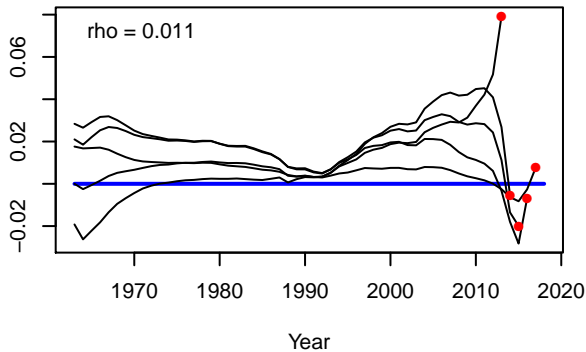


Jan-1 B, Exploitable B, Total Stock N

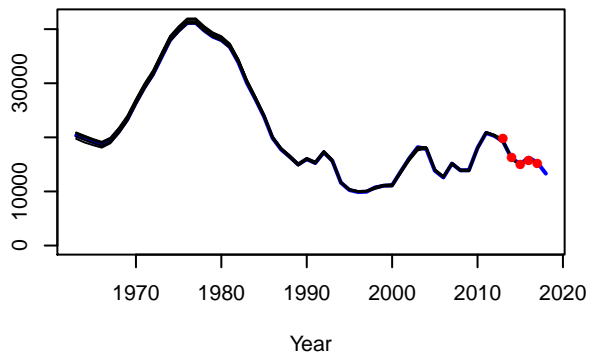
Jan-1 B



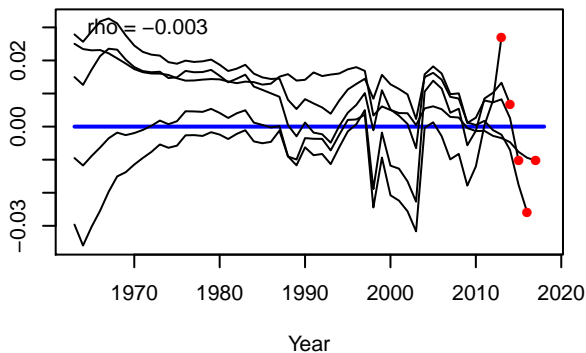
Relative Retro



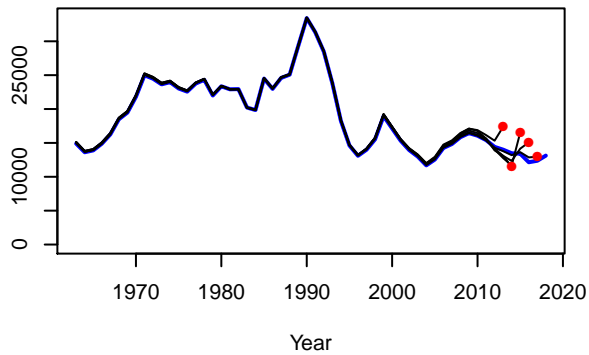
Exploitable B



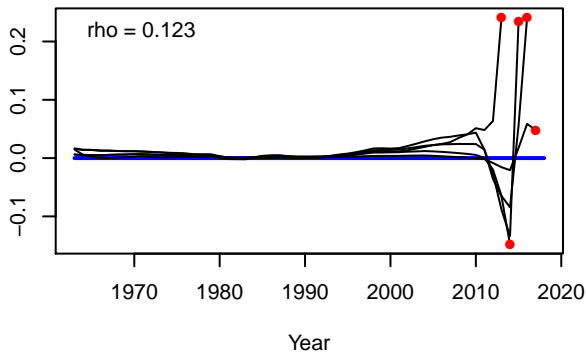
Relative Retro



Total Stock N

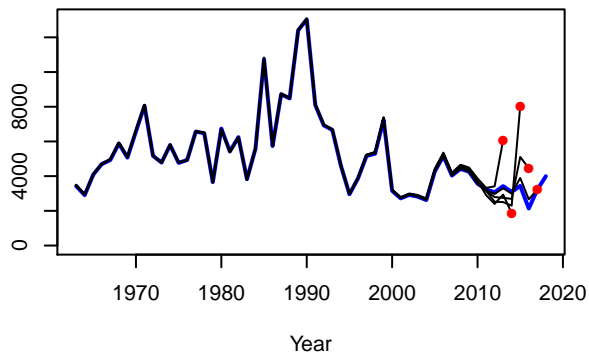


Relative Retro

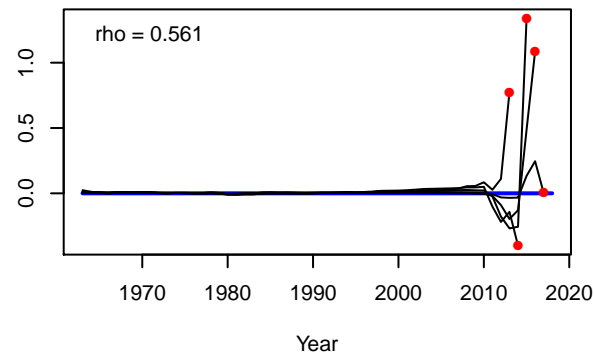


Stock Numbers at Age

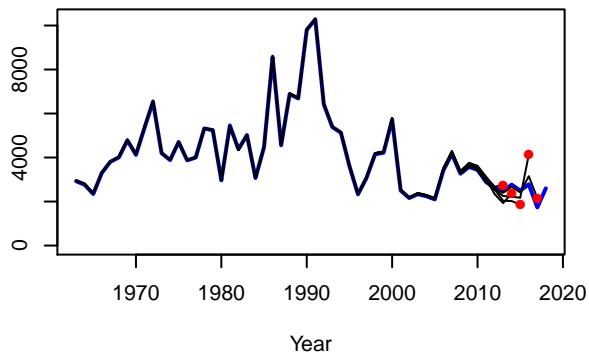
N at Age 1



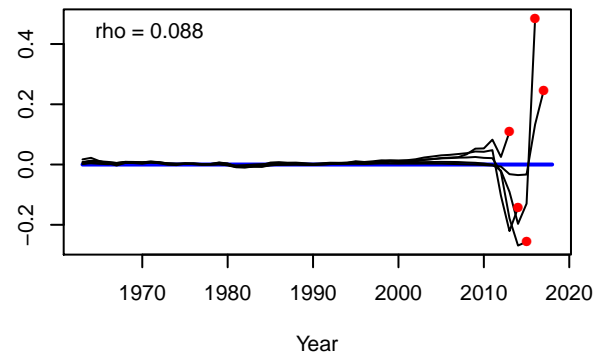
Relative Retro



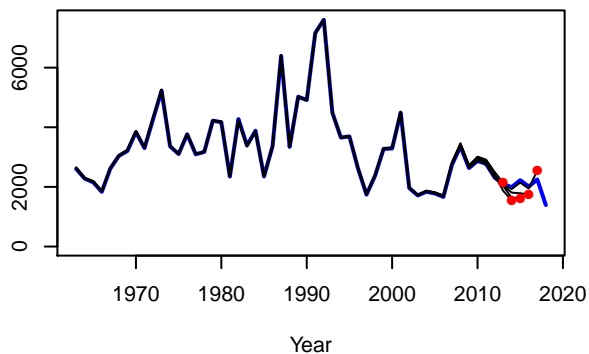
N at Age 2



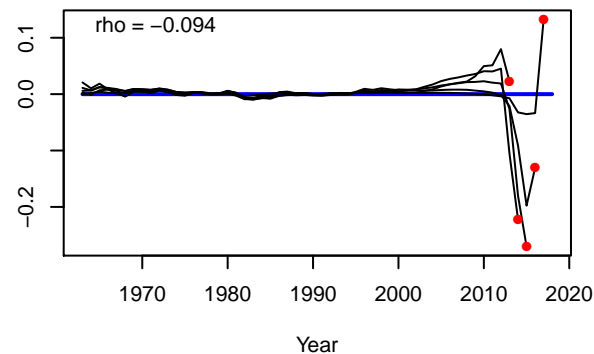
Relative Retro



N at Age 3

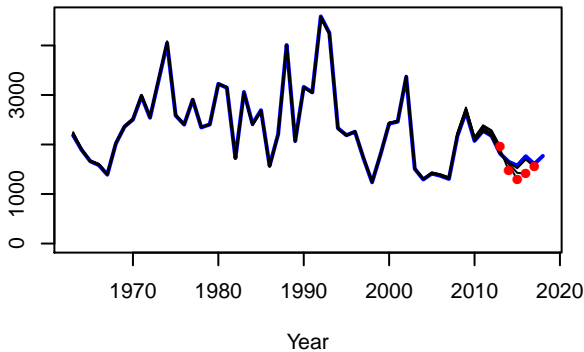


Relative Retro

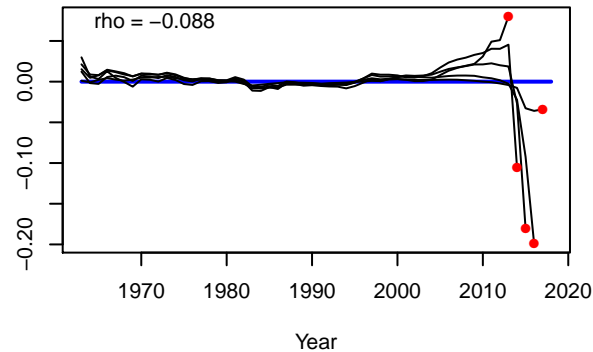


Stock Numbers at Age

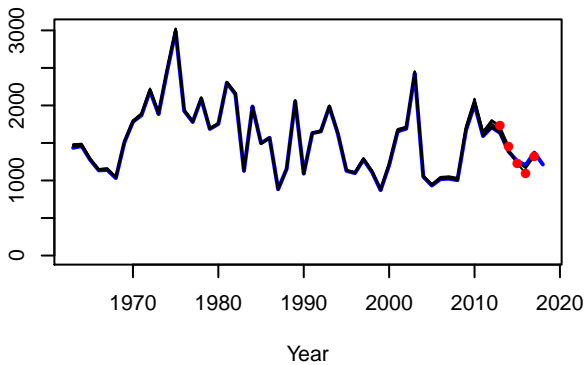
N at Age 4



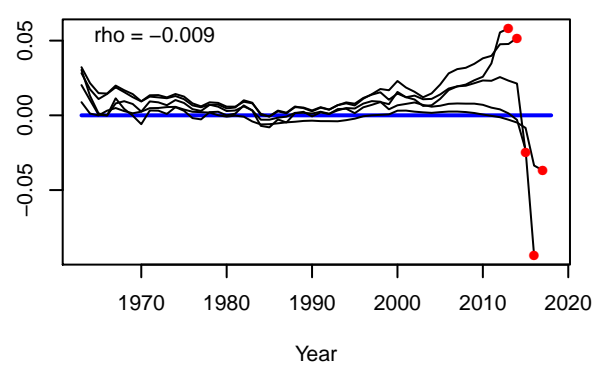
Relative Retro



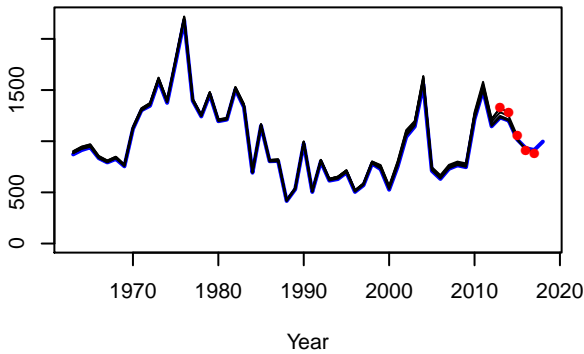
N at Age 5



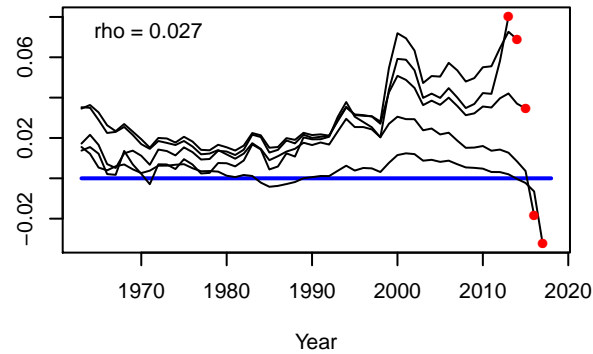
Relative Retro



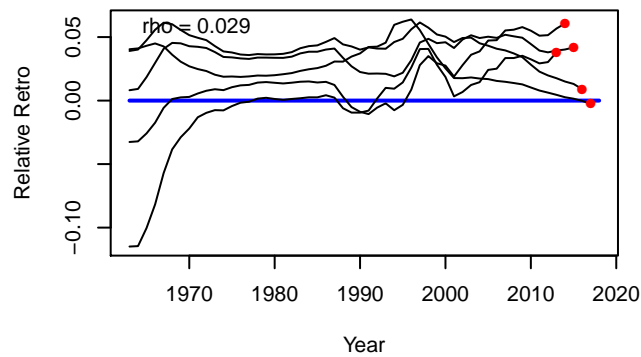
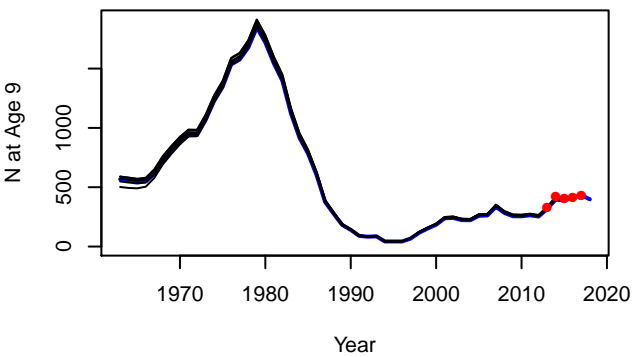
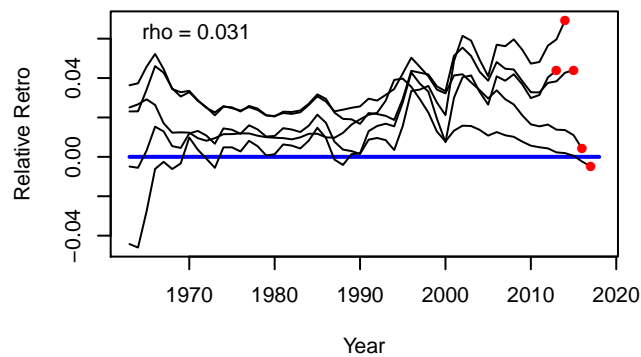
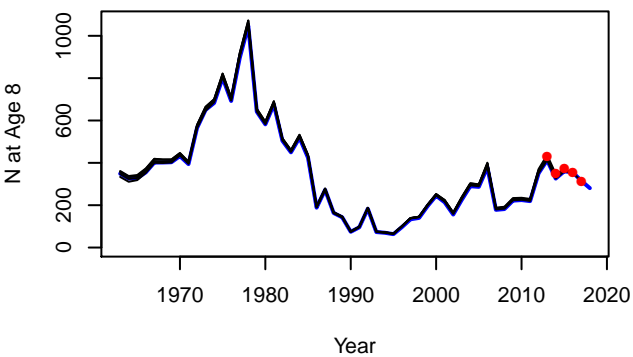
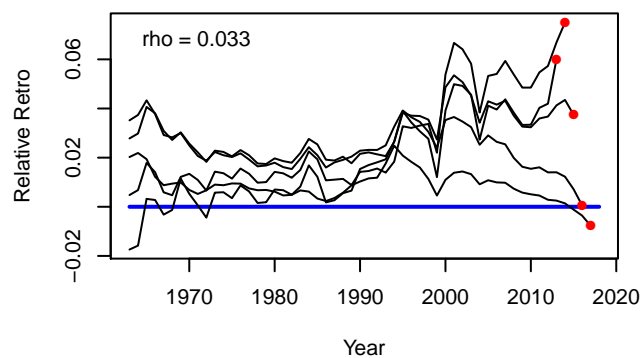
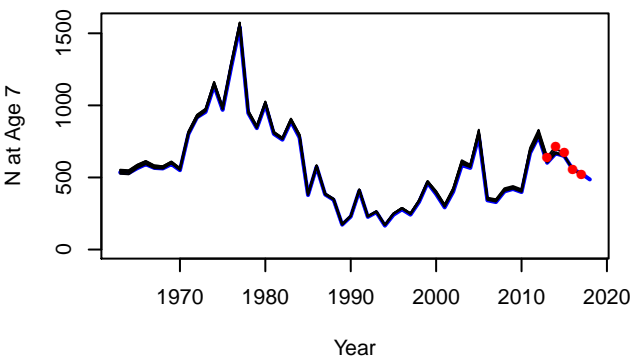
N at Age 6



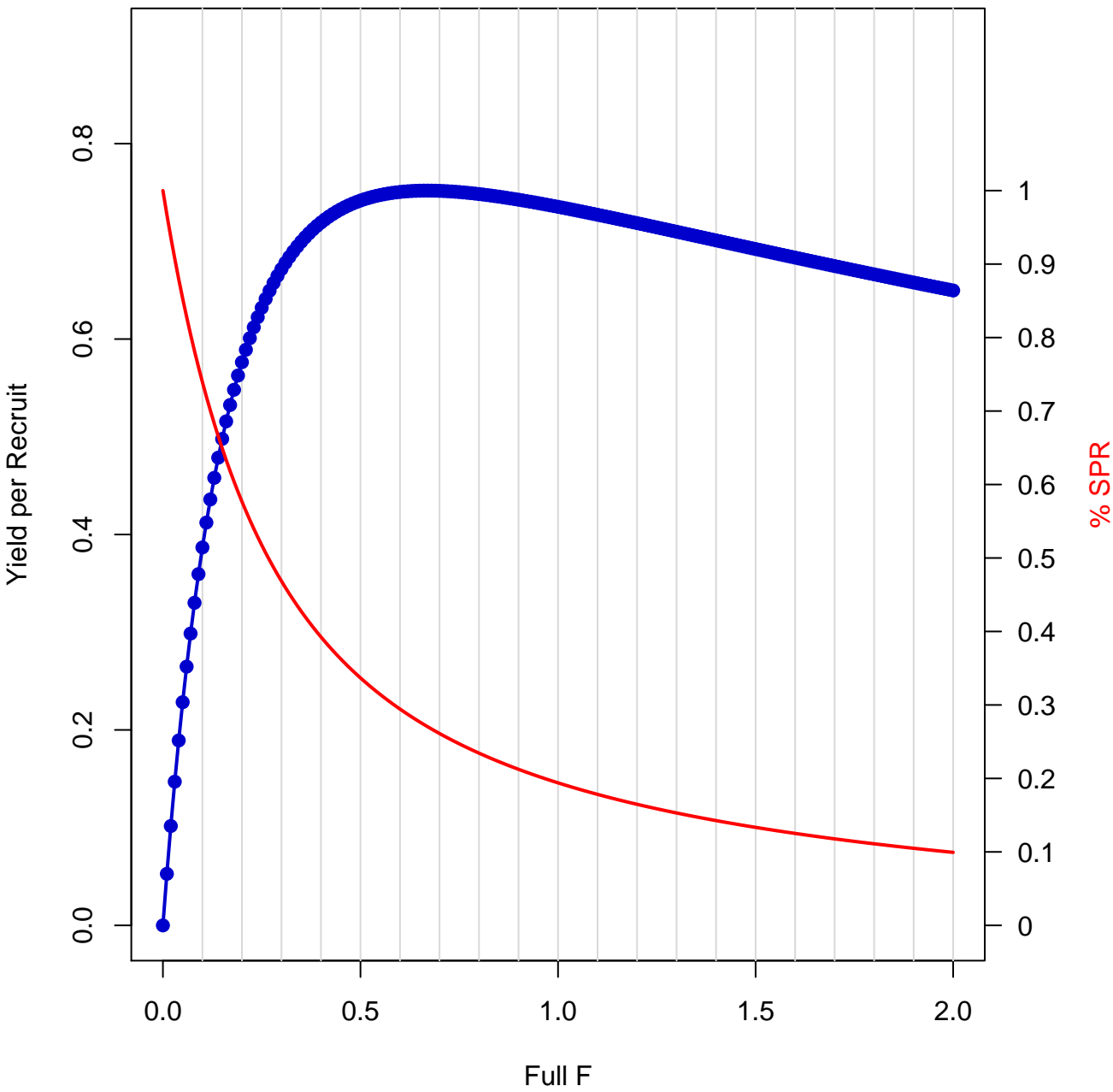
Relative Retro



Stock Numbers at Age



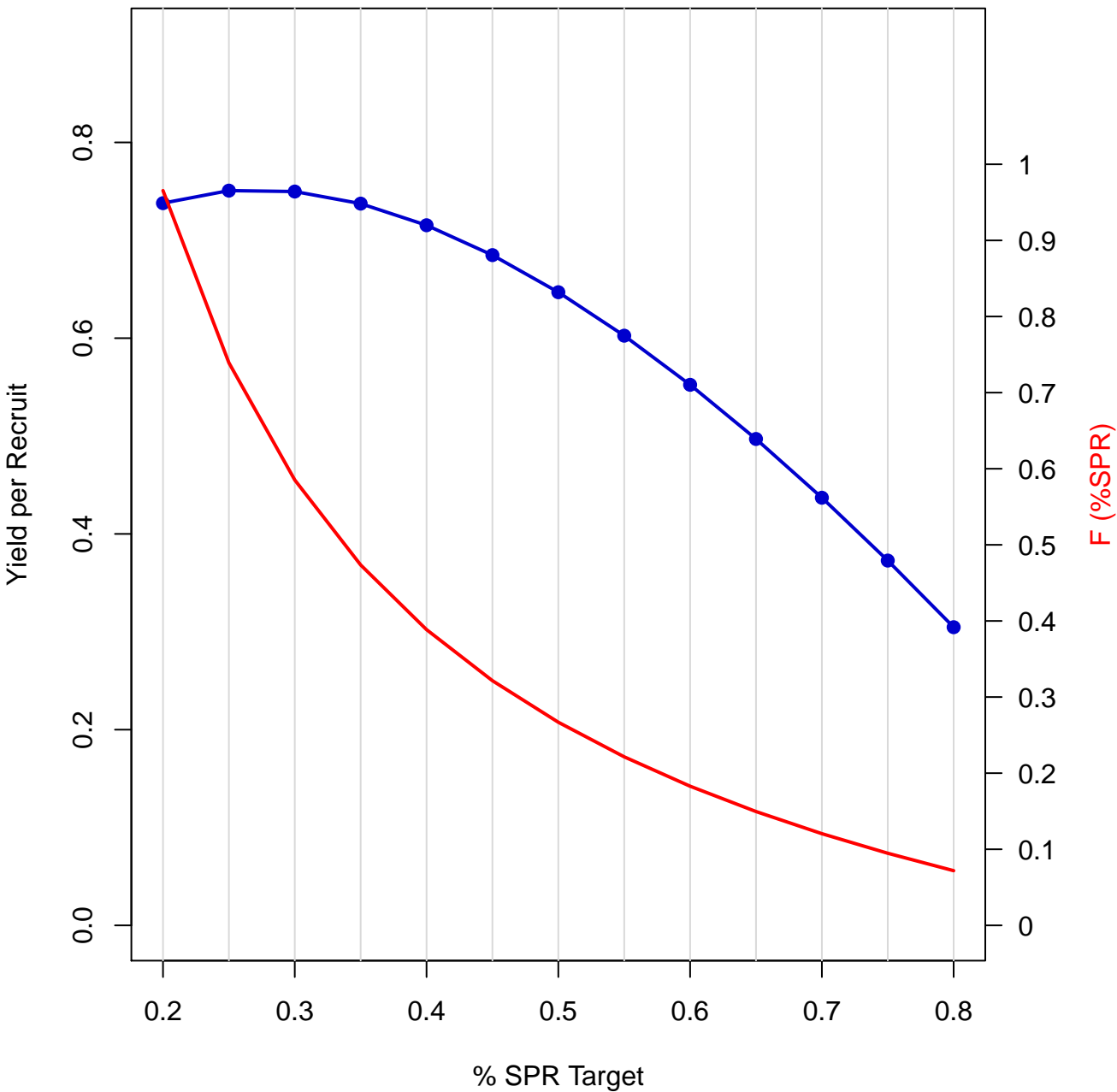
YPR-SPR Reference Points (Years Avg = 5)



YPR–SPR Reference Points (Years Avg = 5)

F	YPR	SPR	F	YPR	SPR	F	YPR	SPR
0	0	1	0.35	0.6996	0.4274	0.7	0.7517	0.2612
0.01	0.0528	0.9674	0.36	0.7041	0.42	0.71	0.7515	0.2582
0.02	0.1017	0.9366	0.37	0.7083	0.4128	0.72	0.7513	0.2554
0.03	0.1471	0.9073	0.38	0.7122	0.4058	0.73	0.751	0.2525
0.04	0.1892	0.8796	0.39	0.7159	0.3991	0.74	0.7508	0.2498
0.05	0.2284	0.8532	0.4	0.7192	0.3925	0.75	0.7504	0.2471
0.06	0.2648	0.8282	0.41	0.7224	0.3862	0.76	0.7501	0.2445
0.07	0.2986	0.8043	0.42	0.7253	0.38	0.77	0.7497	0.2419
0.08	0.3301	0.7816	0.43	0.728	0.3741	0.78	0.7493	0.2393
0.09	0.3595	0.76	0.44	0.7305	0.3683	0.79	0.7489	0.2368
0.1	0.3868	0.7394	0.45	0.7328	0.3626	0.8	0.7484	0.2344
0.11	0.4122	0.7197	0.46	0.7349	0.3572	0.81	0.7479	0.232
0.12	0.4359	0.7009	0.47	0.7368	0.3519	0.82	0.7474	0.2297
0.13	0.458	0.6829	0.48	0.7386	0.3467	0.83	0.7469	0.2274
0.14	0.4786	0.6657	0.49	0.7402	0.3417	0.84	0.7463	0.2251
0.15	0.4978	0.6493	0.5	0.7417	0.3368	0.85	0.7457	0.2229
0.16	0.5158	0.6336	0.51	0.7431	0.332	0.86	0.7451	0.2207
0.17	0.5325	0.6185	0.52	0.7444	0.3274	0.87	0.7445	0.2186
0.18	0.5481	0.604	0.53	0.7455	0.3229	0.88	0.7439	0.2165
0.19	0.5627	0.5901	0.54	0.7465	0.3185	0.89	0.7433	0.2144
0.2	0.5763	0.5768	0.55	0.7474	0.3142	0.9	0.7426	0.2124
0.21	0.589	0.564	0.56	0.7482	0.3101	0.91	0.7419	0.2104
0.22	0.6009	0.5517	0.57	0.7489	0.306	0.92	0.7412	0.2085
0.23	0.612	0.5399	0.58	0.7495	0.302	0.93	0.7405	0.2065
0.24	0.6224	0.5286	0.59	0.7501	0.2982	0.94	0.7398	0.2047
0.25	0.632	0.5176	0.6	0.7505	0.2944	0.95	0.7391	0.2028
0.26	0.6411	0.5071	0.61	0.7509	0.2907	0.96	0.7384	0.201
0.27	0.6495	0.4969	0.62	0.7512	0.2871	0.97	0.7376	0.1992
0.28	0.6574	0.4871	0.63	0.7515	0.2836	0.98	0.7369	0.1974
0.29	0.6647	0.4777	0.64	0.7517	0.2802	0.99	0.7361	0.1957
0.3	0.6716	0.4686	0.65	0.7518	0.2768	1	0.7353	0.194
0.31	0.678	0.4598	0.66	0.7519	0.2735	1.01	0.7345	0.1923
0.32	0.684	0.4513	0.67	0.7519	0.2703	1.02	0.7338	0.1906
0.33	0.6896	0.443	0.68	0.7519	0.2672	1.03	0.733	0.189
0.34	0.6948	0.4351	0.69	0.7518	0.2642	1.04	0.7322	0.1874

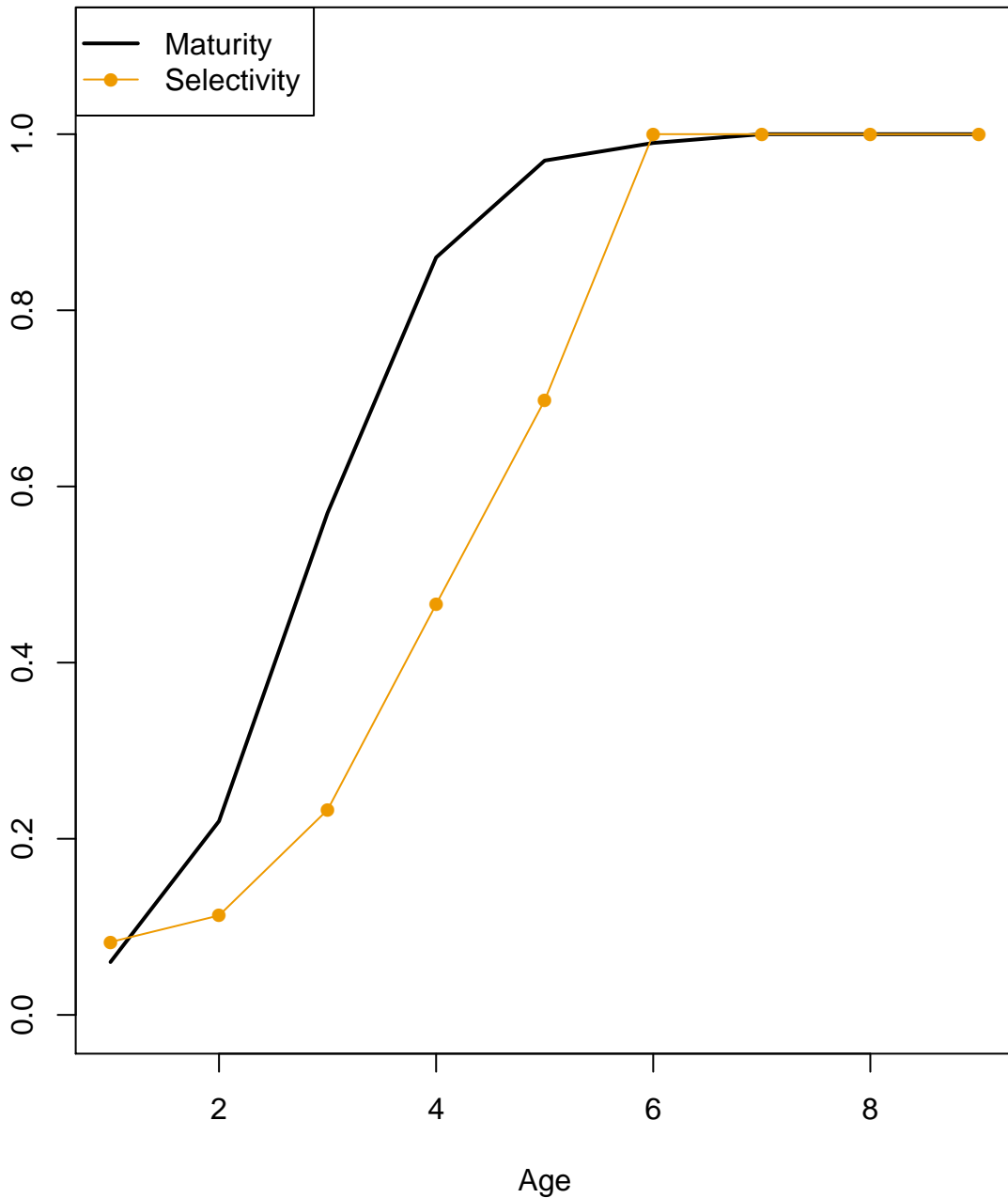
SPR Target Reference Points (Years Avg = 5)



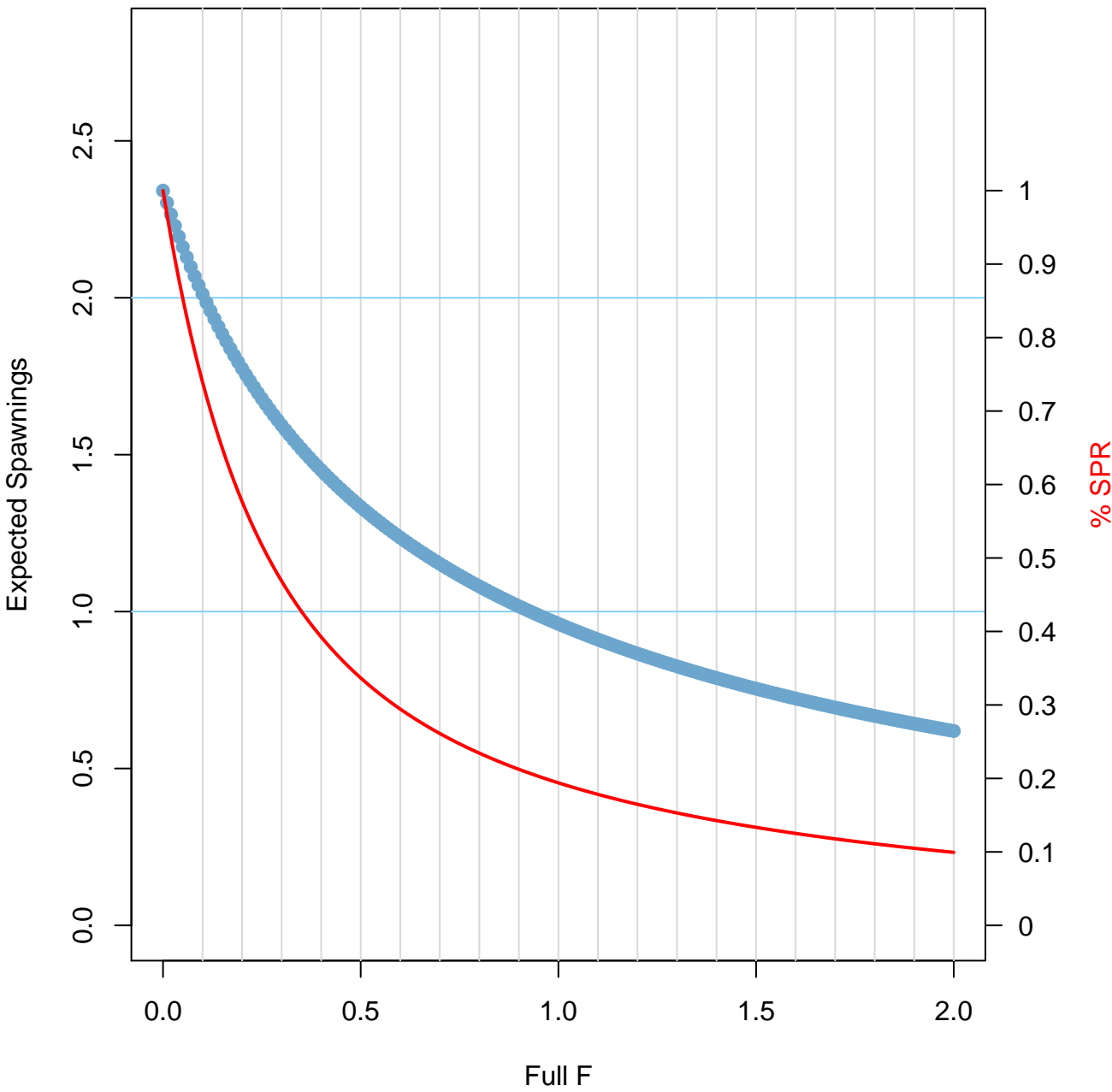
SPR Target Reference Points (Years Avg = 5)

% SPR	F(%SPR)	YPR
0.2	0.9654	0.738
0.25	0.7392	0.7508
0.3	0.5852	0.7498
0.35	0.4736	0.7375
0.4	0.3886	0.7154
0.45	0.3215	0.6849
0.5	0.2669	0.647
0.55	0.2215	0.6026
0.6	0.1829	0.5524
0.65	0.1496	0.497
0.7	0.1205	0.437
0.75	0.0948	0.3728
0.8	0.0719	0.3047

Selectivity or Maturity at age



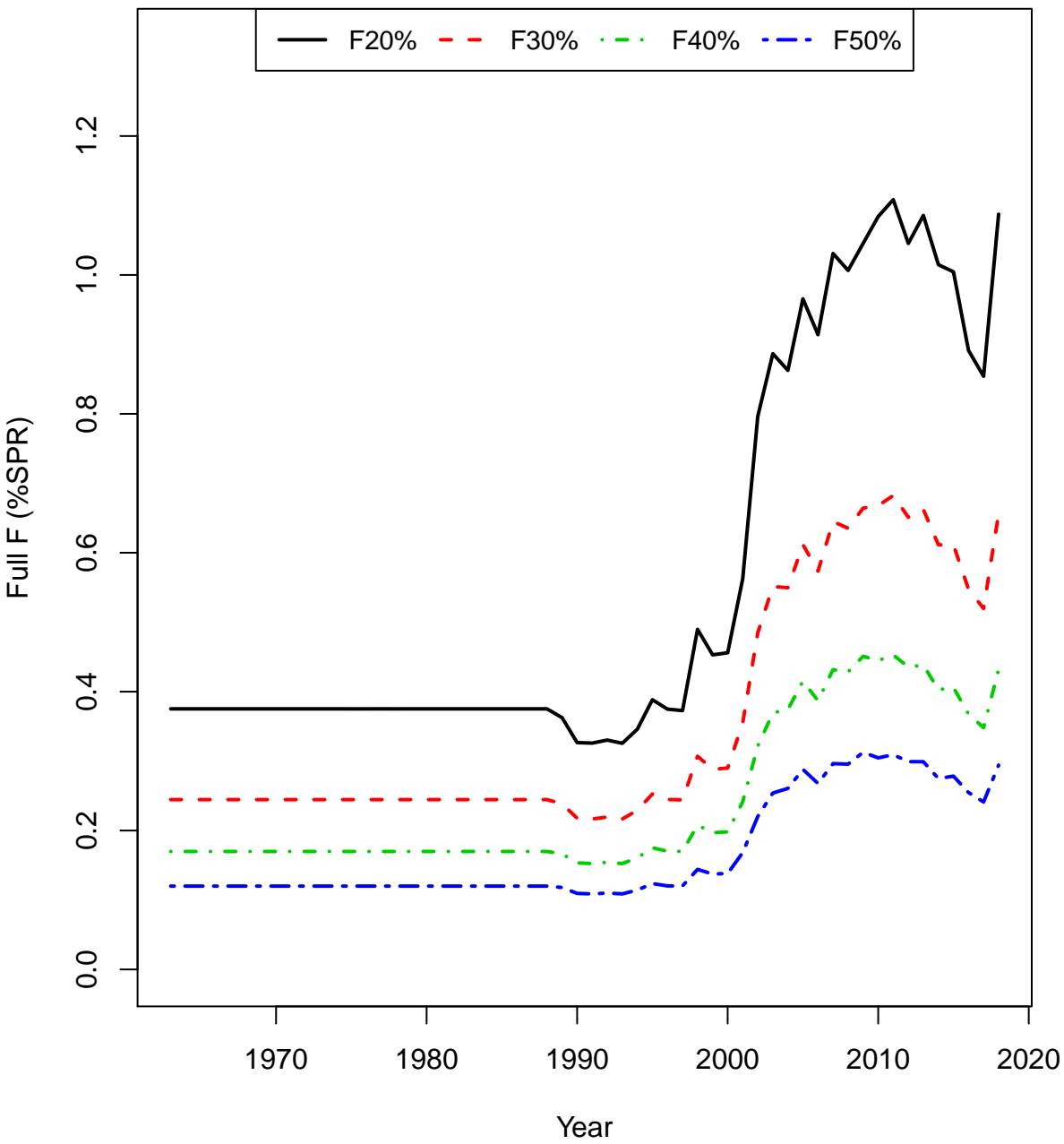
Expected Spawns and SPR Reference Points (Years Avg = 5)



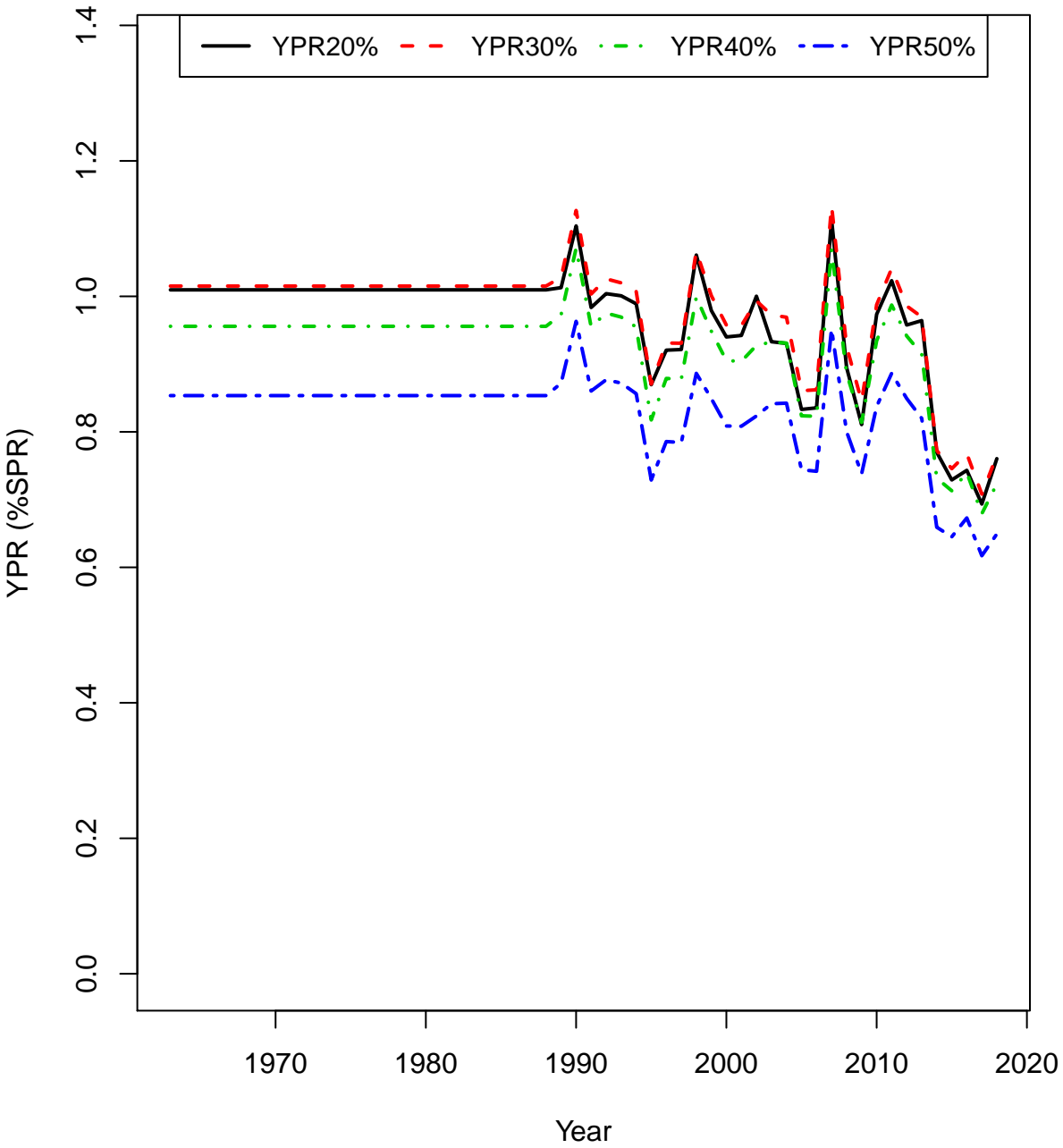
Expected Spawnings & SPR Reference Points (Years Avg = 5)

F	E[Sp]	SPR	F	E[Sp]	SPR	F	E[Sp]	SPR
0	2.3415	1	0.35	1.5184	0.4274	0.7	1.1524	0.2612
0.01	2.3027	0.9674	0.36	1.5043	0.42	0.71	1.1448	0.2582
0.02	2.2654	0.9366	0.37	1.4905	0.4128	0.72	1.1372	0.2554
0.03	2.2296	0.9073	0.38	1.477	0.4058	0.73	1.1297	0.2525
0.04	2.195	0.8796	0.39	1.4637	0.3991	0.74	1.1224	0.2498
0.05	2.1618	0.8532	0.4	1.4507	0.3925	0.75	1.1151	0.2471
0.06	2.1297	0.8282	0.41	1.438	0.3862	0.76	1.1079	0.2445
0.07	2.0987	0.8043	0.42	1.4255	0.38	0.77	1.1009	0.2419
0.08	2.0687	0.7816	0.43	1.4132	0.3741	0.78	1.0939	0.2393
0.09	2.0398	0.76	0.44	1.4012	0.3683	0.79	1.087	0.2368
0.1	2.0118	0.7394	0.45	1.3895	0.3626	0.8	1.0803	0.2344
0.11	1.9847	0.7197	0.46	1.3779	0.3572	0.81	1.0736	0.232
0.12	1.9584	0.7009	0.47	1.3665	0.3519	0.82	1.067	0.2297
0.13	1.933	0.6829	0.48	1.3554	0.3467	0.83	1.0604	0.2274
0.14	1.9083	0.6657	0.49	1.3445	0.3417	0.84	1.054	0.2251
0.15	1.8844	0.6493	0.5	1.3337	0.3368	0.85	1.0476	0.2229
0.16	1.8611	0.6336	0.51	1.3232	0.332	0.86	1.0414	0.2207
0.17	1.8386	0.6185	0.52	1.3128	0.3274	0.87	1.0352	0.2186
0.18	1.8166	0.604	0.53	1.3026	0.3229	0.88	1.029	0.2165
0.19	1.7953	0.5901	0.54	1.2926	0.3185	0.89	1.023	0.2144
0.2	1.7745	0.5768	0.55	1.2827	0.3142	0.9	1.017	0.2124
0.21	1.7543	0.564	0.56	1.273	0.3101	0.91	1.0111	0.2104
0.22	1.7346	0.5517	0.57	1.2635	0.306	0.92	1.0053	0.2085
0.23	1.7155	0.5399	0.58	1.2541	0.302	0.93	0.9995	0.2065
0.24	1.6968	0.5286	0.59	1.2449	0.2982	0.94	0.9938	0.2047
0.25	1.6786	0.5176	0.6	1.2359	0.2944	0.95	0.9882	0.2028
0.26	1.6608	0.5071	0.61	1.2269	0.2907	0.96	0.9827	0.201
0.27	1.6435	0.4969	0.62	1.2181	0.2871	0.97	0.9772	0.1992
0.28	1.6265	0.4871	0.63	1.2095	0.2836	0.98	0.9717	0.1974
0.29	1.61	0.4777	0.64	1.201	0.2802	0.99	0.9664	0.1957
0.3	1.5939	0.4686	0.65	1.1926	0.2768	1	0.9611	0.194
0.31	1.5781	0.4598	0.66	1.1843	0.2735	1.01	0.9558	0.1923
0.32	1.5627	0.4513	0.67	1.1762	0.2703	1.02	0.9506	0.1906
0.33	1.5476	0.443	0.68	1.1681	0.2672	1.03	0.9455	0.189
0.34	1.5329	0.4351	0.69	1.1602	0.2642	1.04	0.9404	0.1874

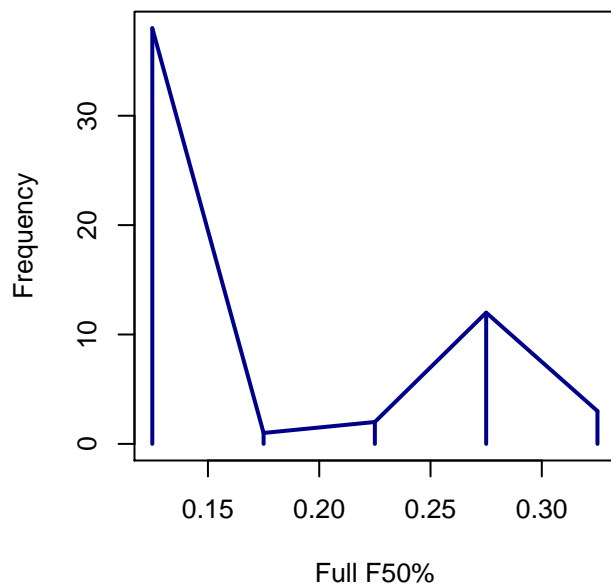
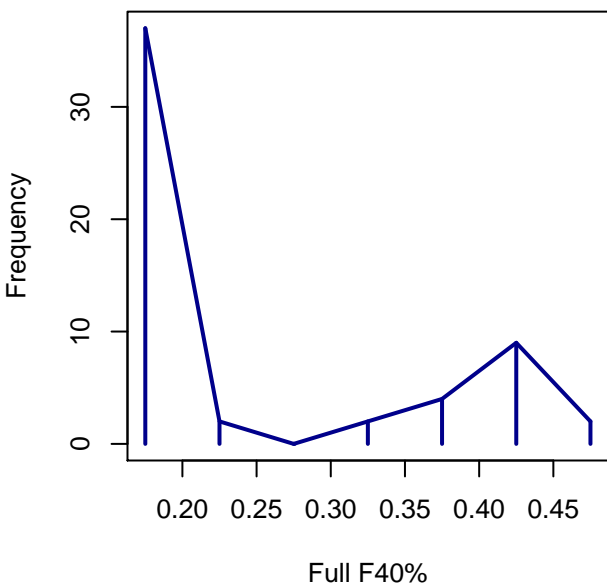
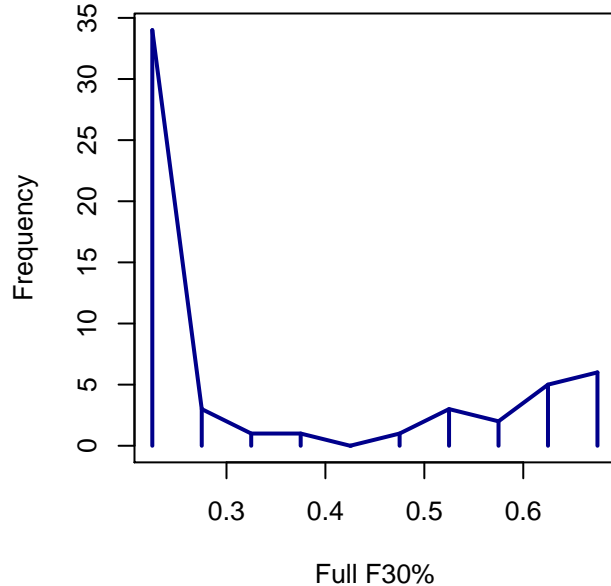
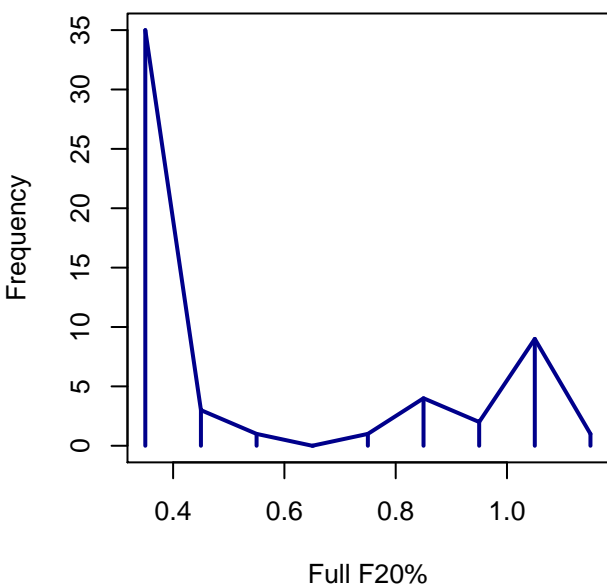
Annual F(%SPR) Reference Points



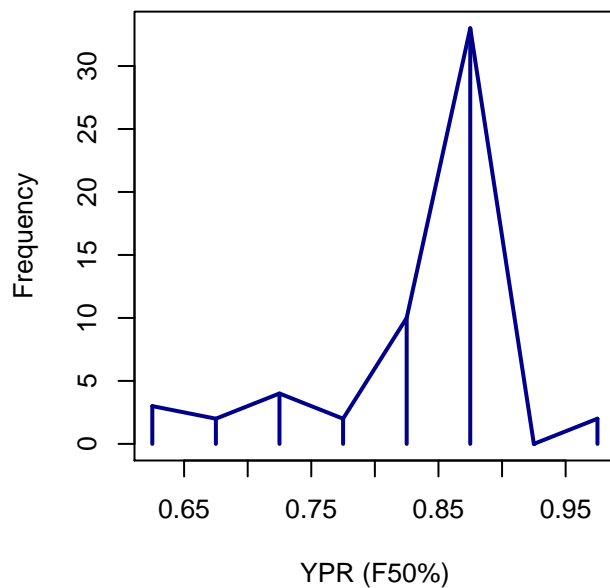
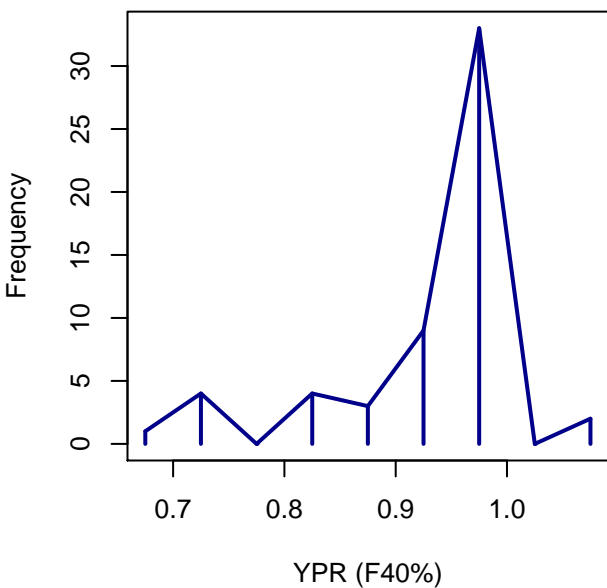
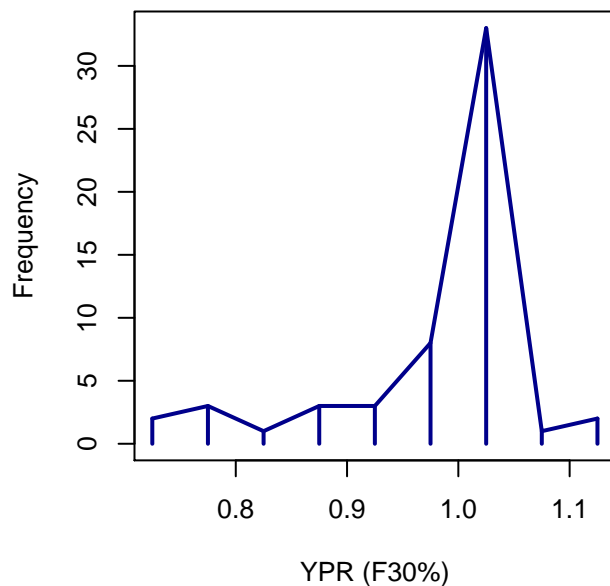
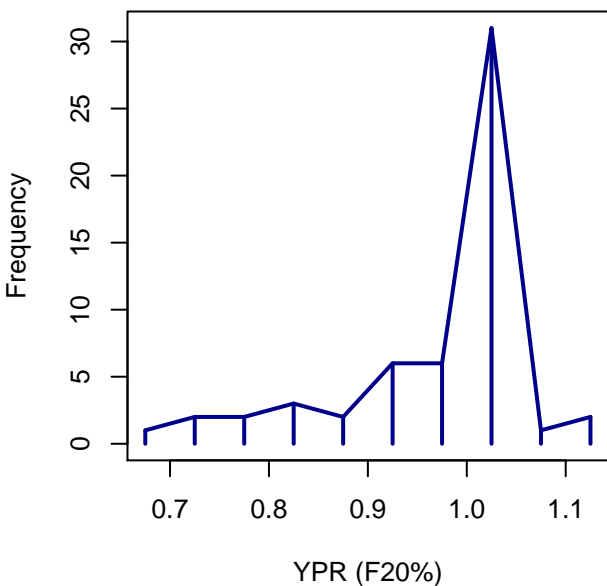
Annual YPR(%SPR) Reference Points



Annual F (%SPR) Reference Points



Annual YPR (%SPR) Reference Points



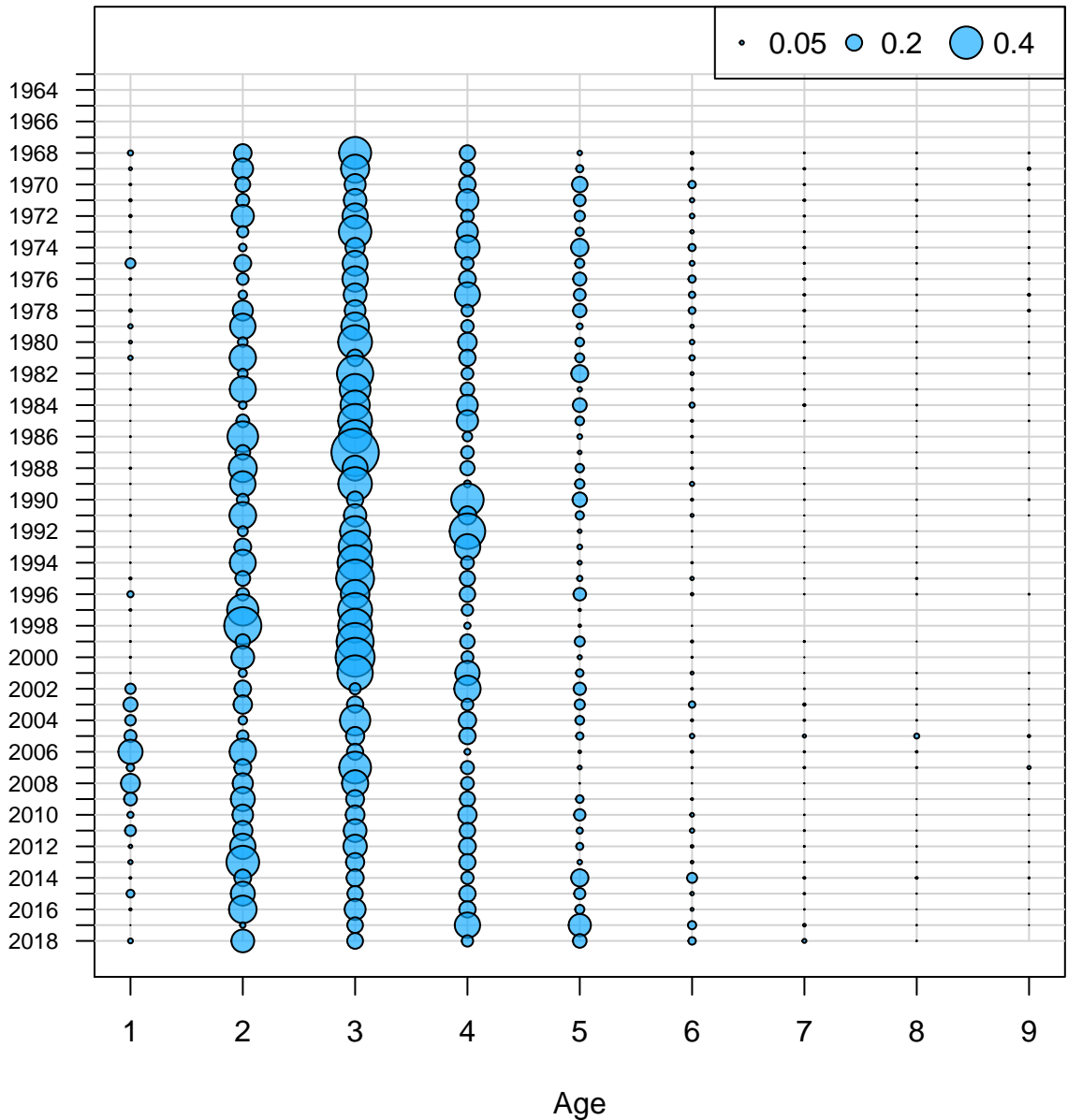


Age Comps for Catch by Fleet 1 (FLEET-1)





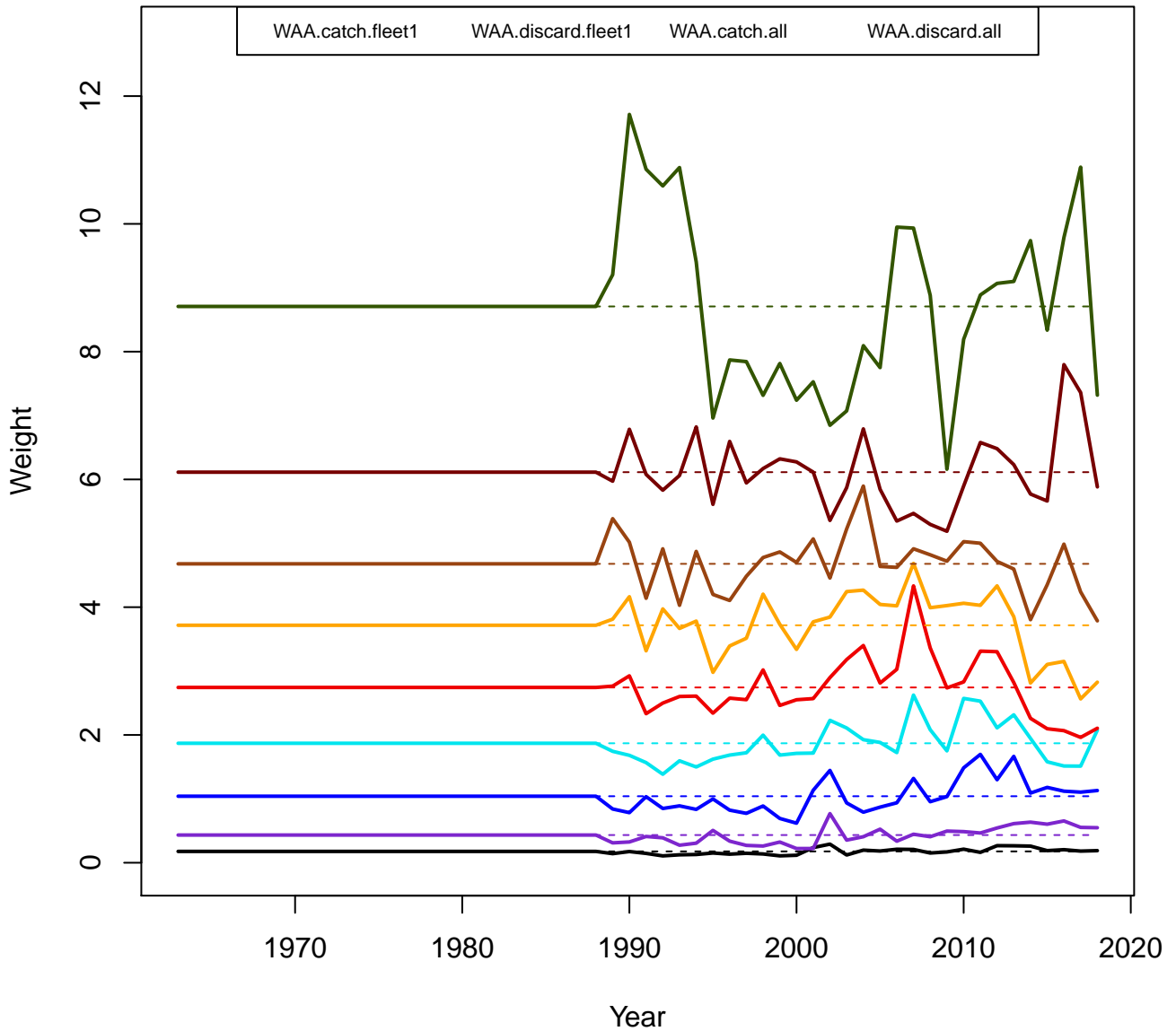
Age Comps for Index 1 (INDEX-1)



Age Comps for Index 2 (INDEX-2)



WAA matrix 1



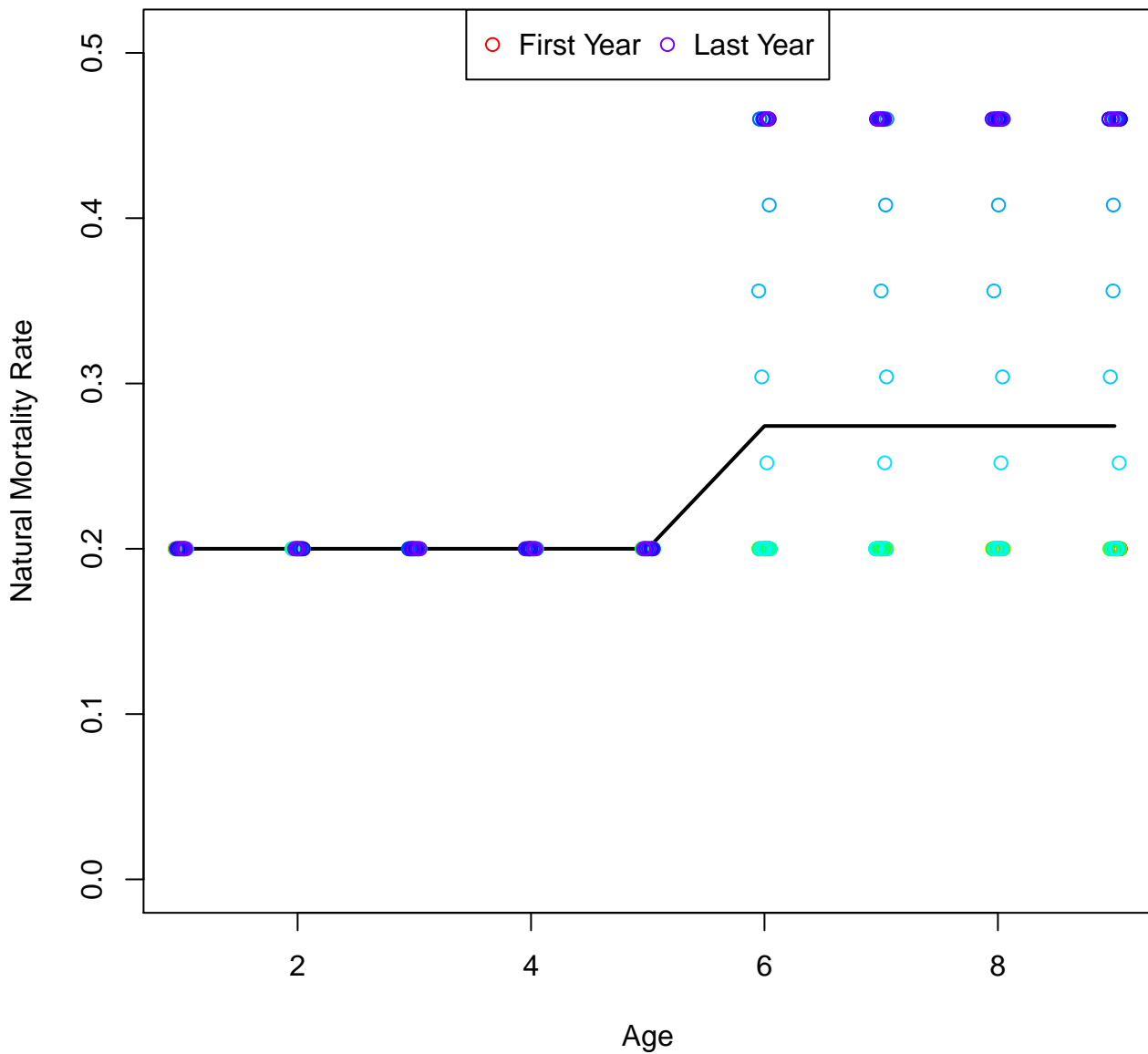
WAA matrix 2



WAA matrix 3



M



Maturity

