

File = y2015r9c1m2.5s000001111_000.dat

ASAP3 run on Monday, 04 Nov 2019 at 11:39:51

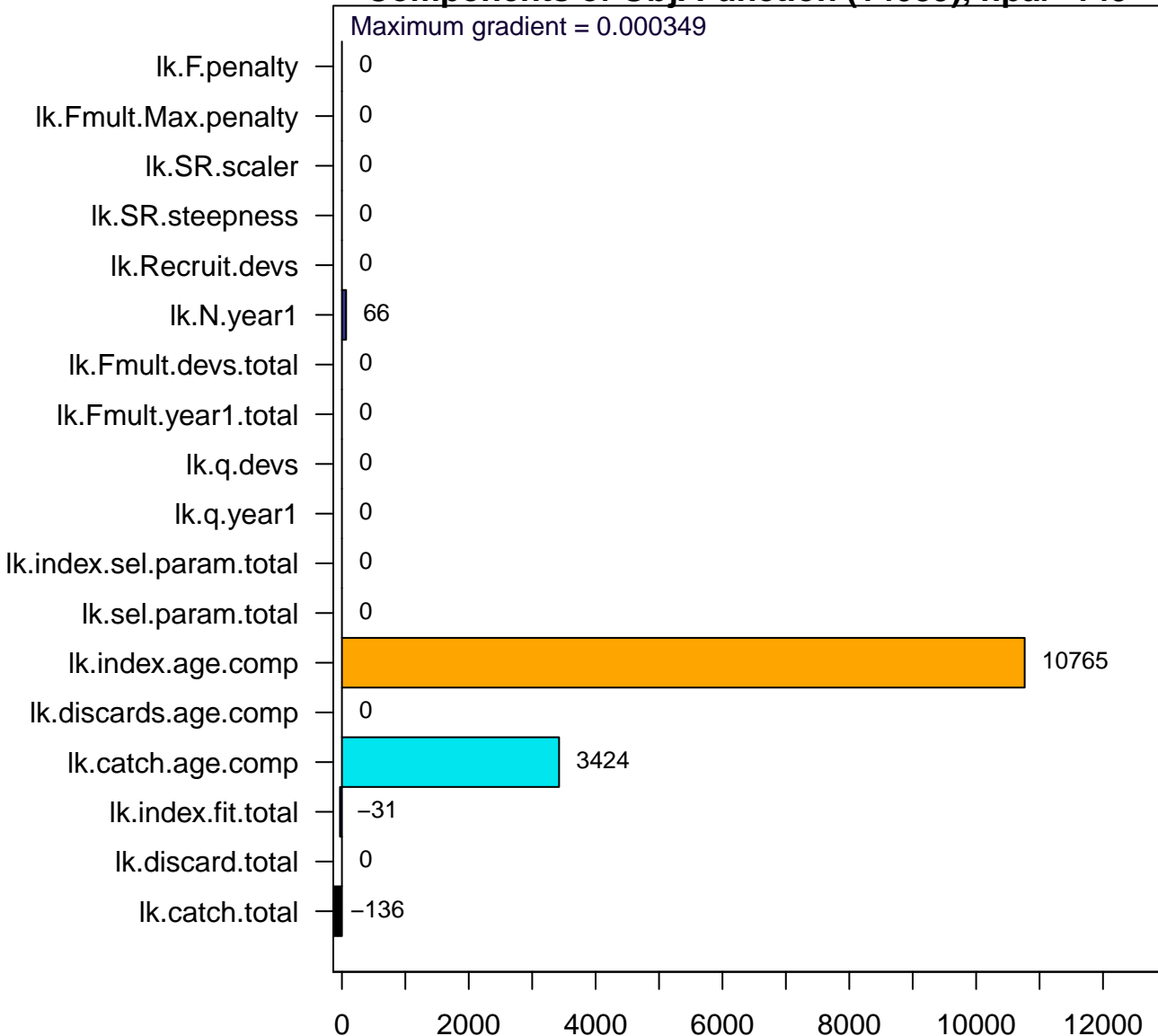
chris.legault\Documents\Working\ICES-WKFORBIAS 2019\WhiteHake\Rose\w

ASAPplots version = 0.2.14

npar = 149, maximum gradient = 0.000349220

Components of Obj. Function (14089), npar=149

Maximum gradient = 0.000349

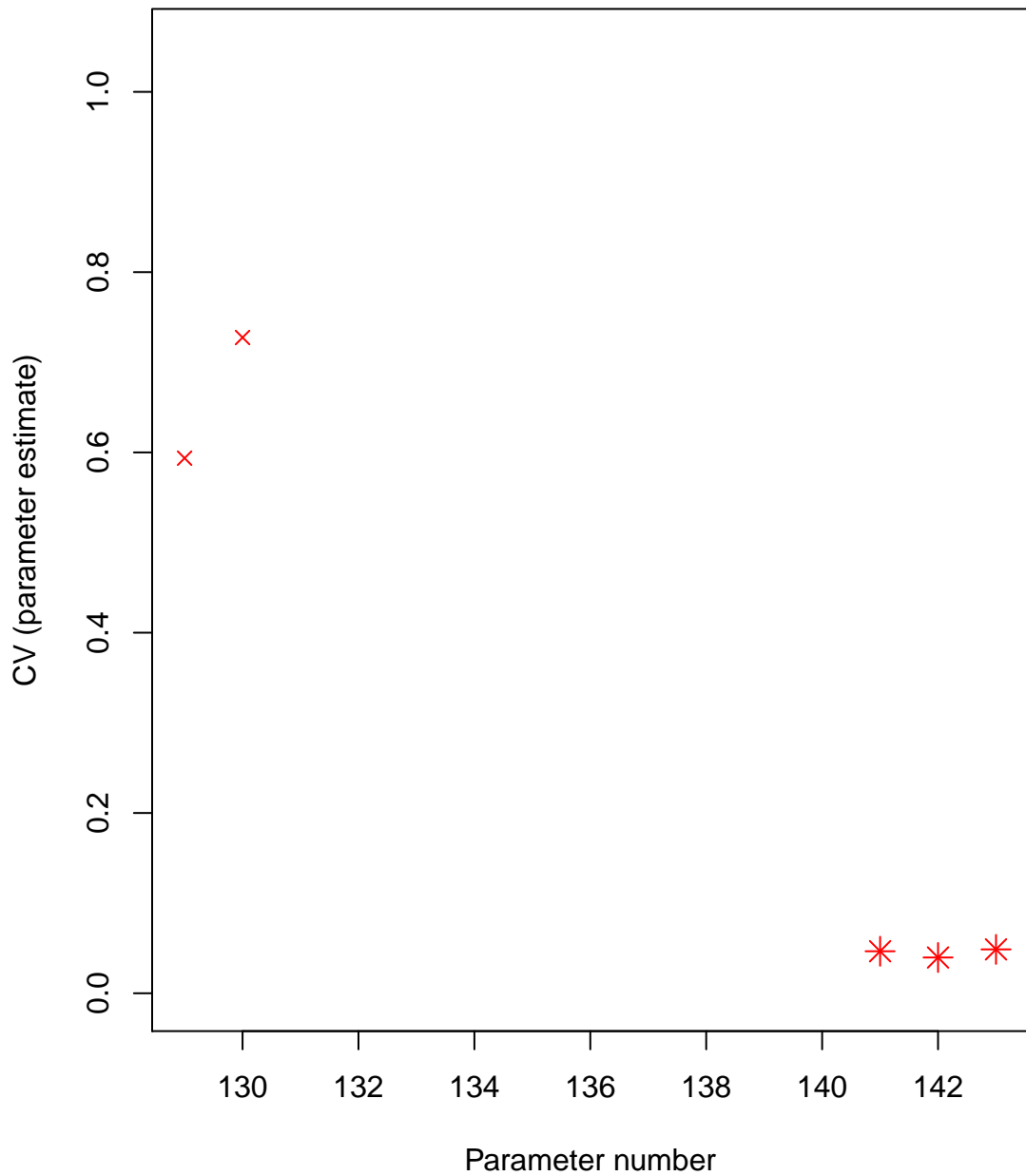


Likelihood Contribution

Model: y2015r9c1m2.5s000001111_000

Monday, 04 Nov 2019 at 11:39

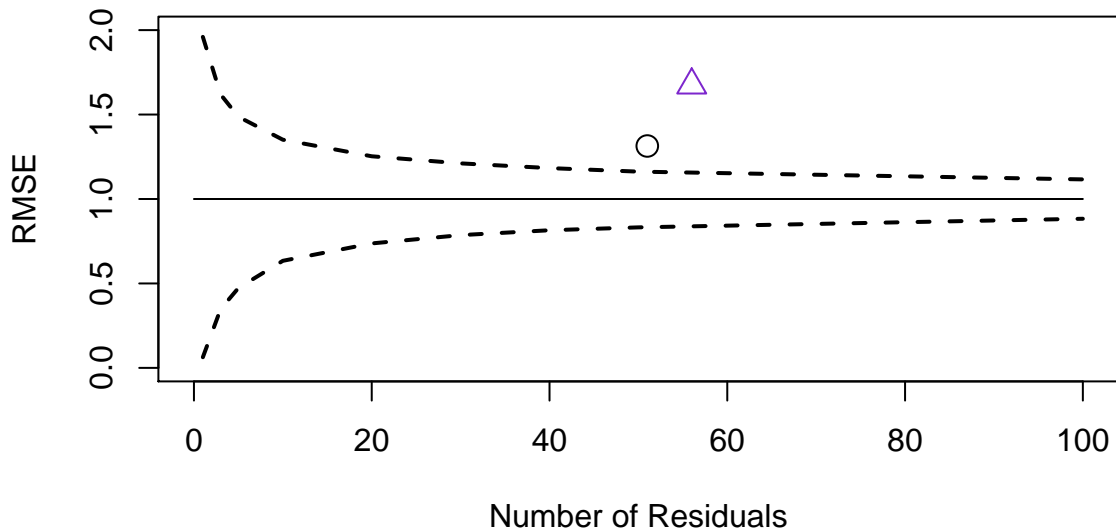




Root Mean Square Error computed from Standardized Residuals

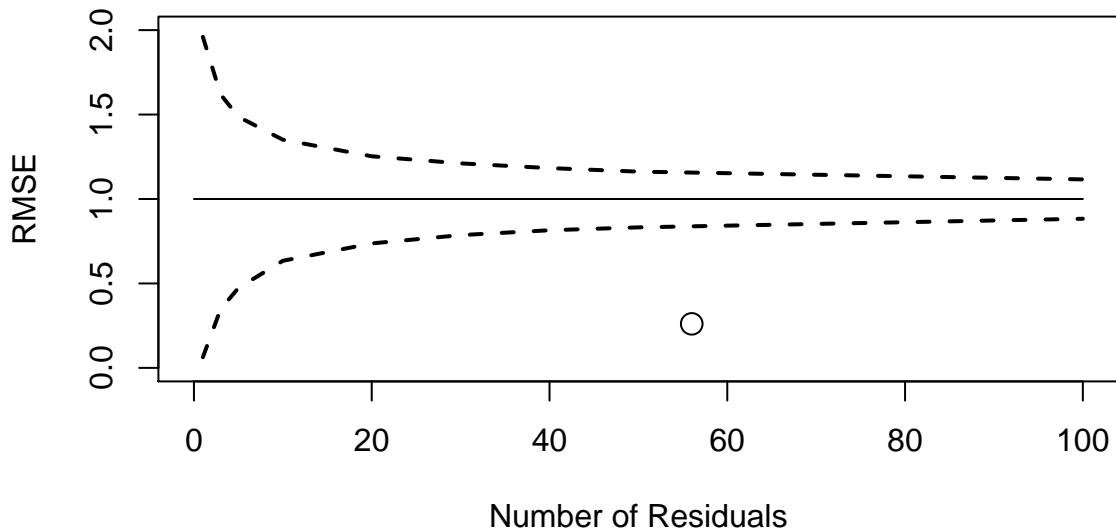
Component	# resids	RMSE
catch.tot	56	0.261
discard.tot	0	0
ind01	51	1.31
ind02	56	1.67
ind.total	107	1.51
N.year1	8	0.572
Fmult.year1	0	0
Fmult.devs.total	0	0
recruit.devs	0	0
fleet.sel.params	0	0
index.sel.params	0	0
q.year1	0	0
q.devs	0	0
SR.steepness	0	0
SR.scaler	0	0

Root Mean Square Error for Indices



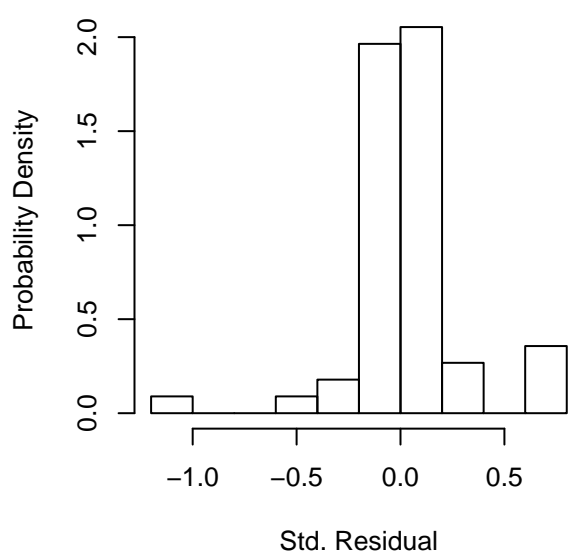
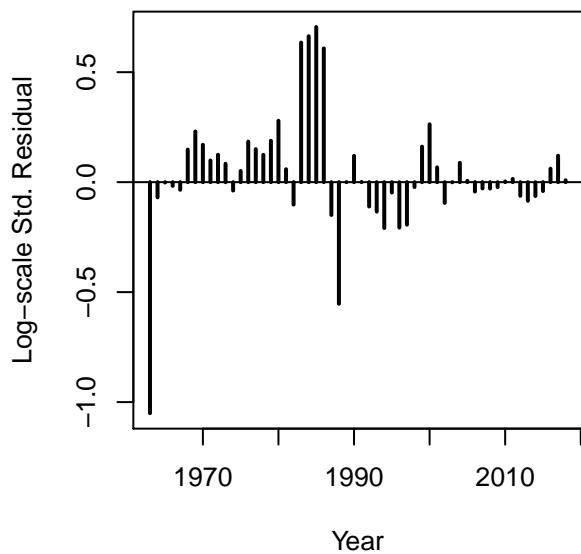
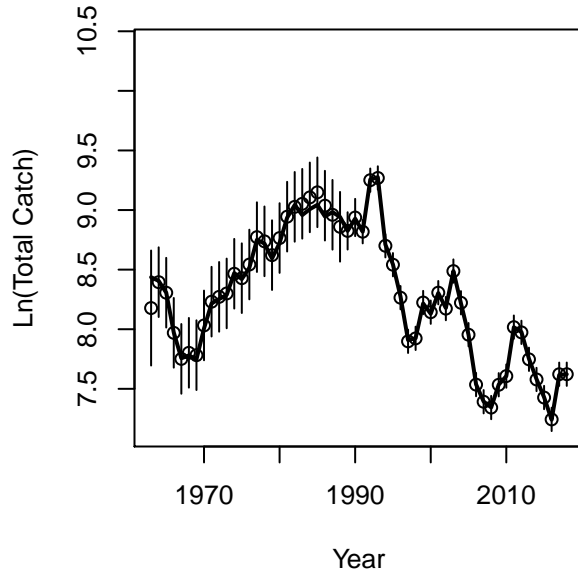
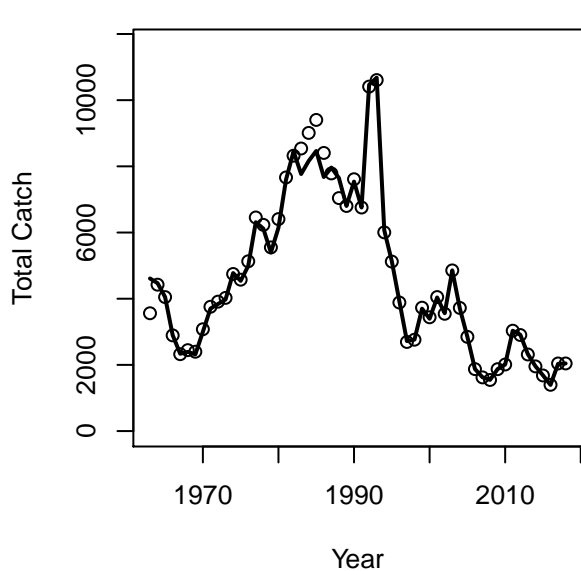
ind total
INDEX-2
INDEX-1

Root Mean Square Error for Catch



○ catch.tot

Fleet 1 Catch (FLEET-1)

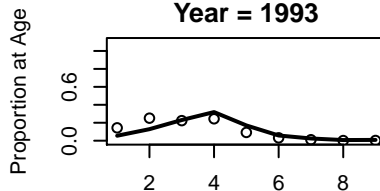


Catch

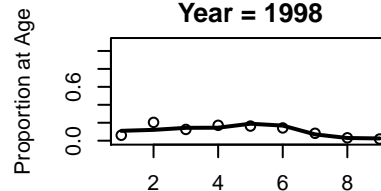
Fleet 1
FLEET-1



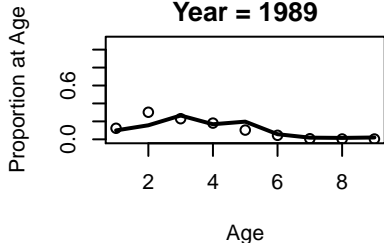
Year = 1993



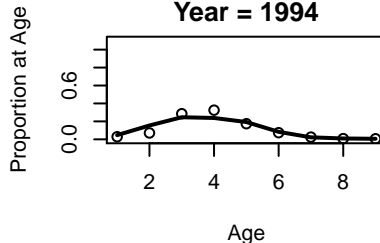
Year = 1998



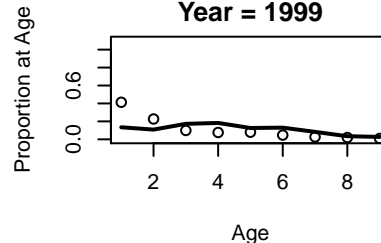
Year = 1989



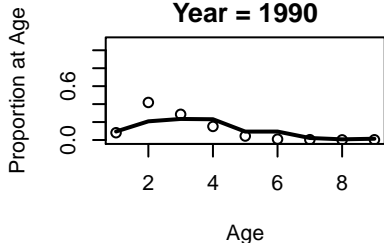
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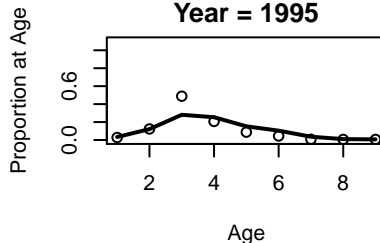
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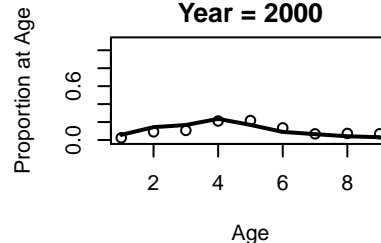
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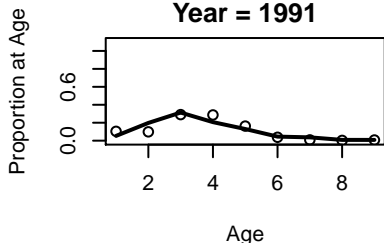
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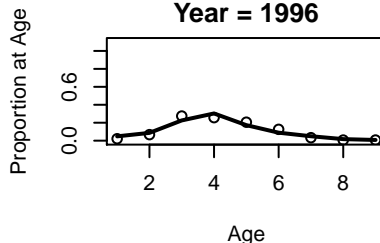
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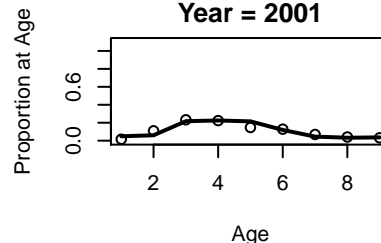
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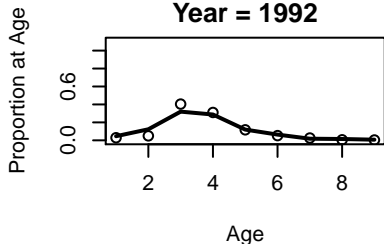
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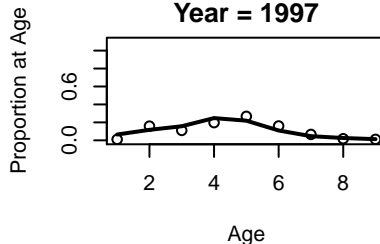
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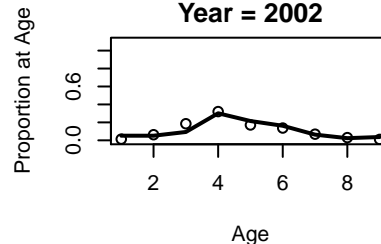
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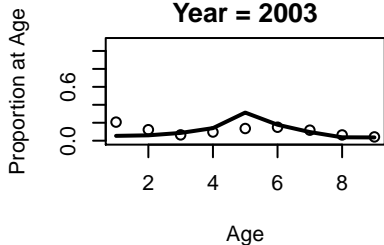
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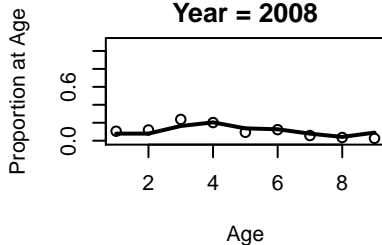
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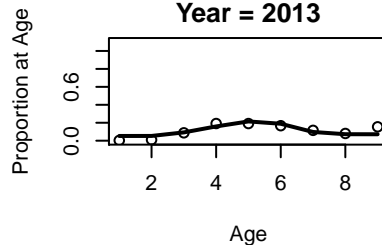
Year = 2008



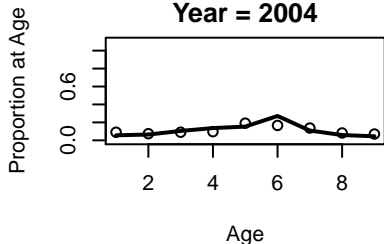
Year = 2008



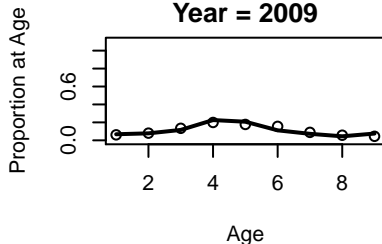
Year = 2013



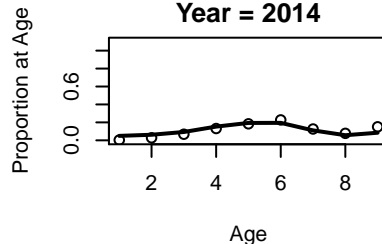
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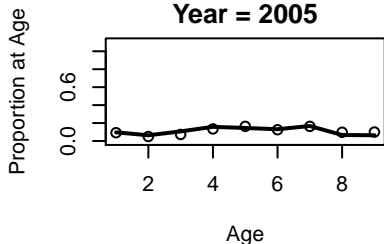
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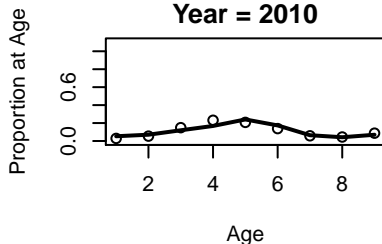
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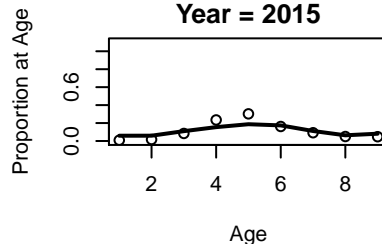
Year = 2005



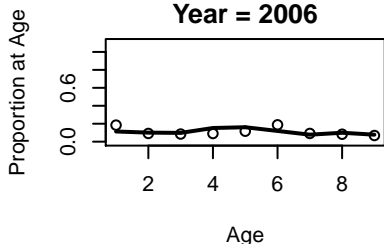
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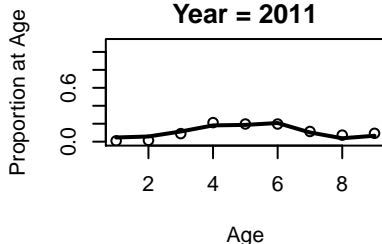
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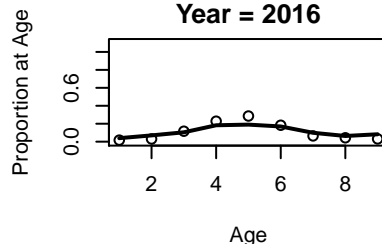
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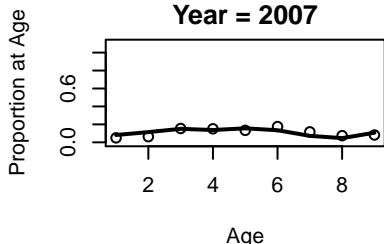
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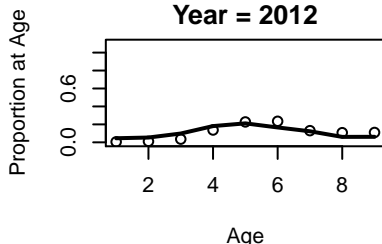
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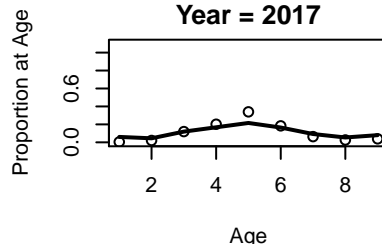
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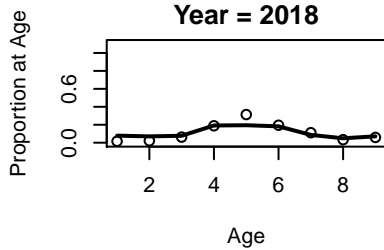
Year = 2012



Year = 2017

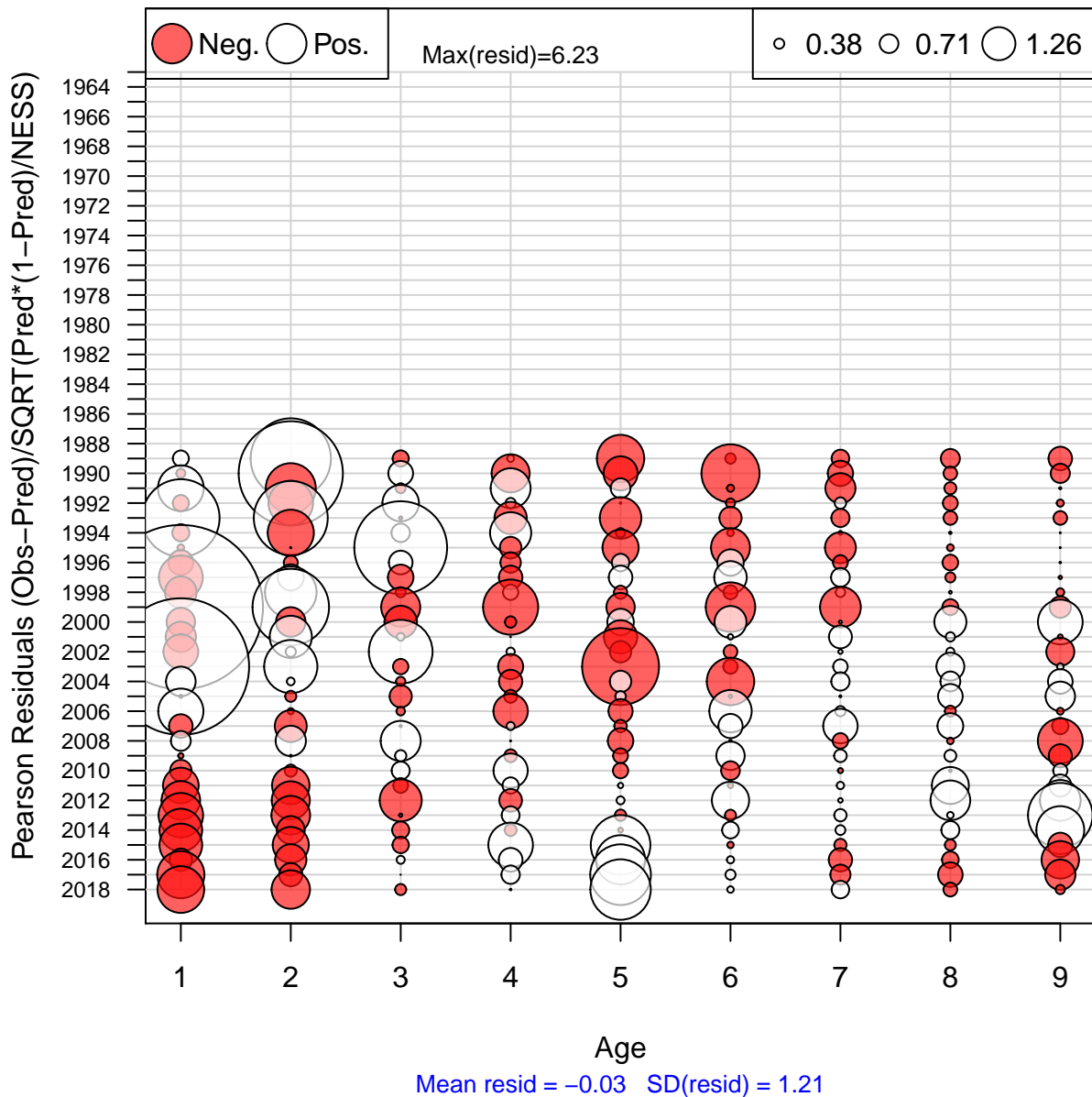


Year = 2018

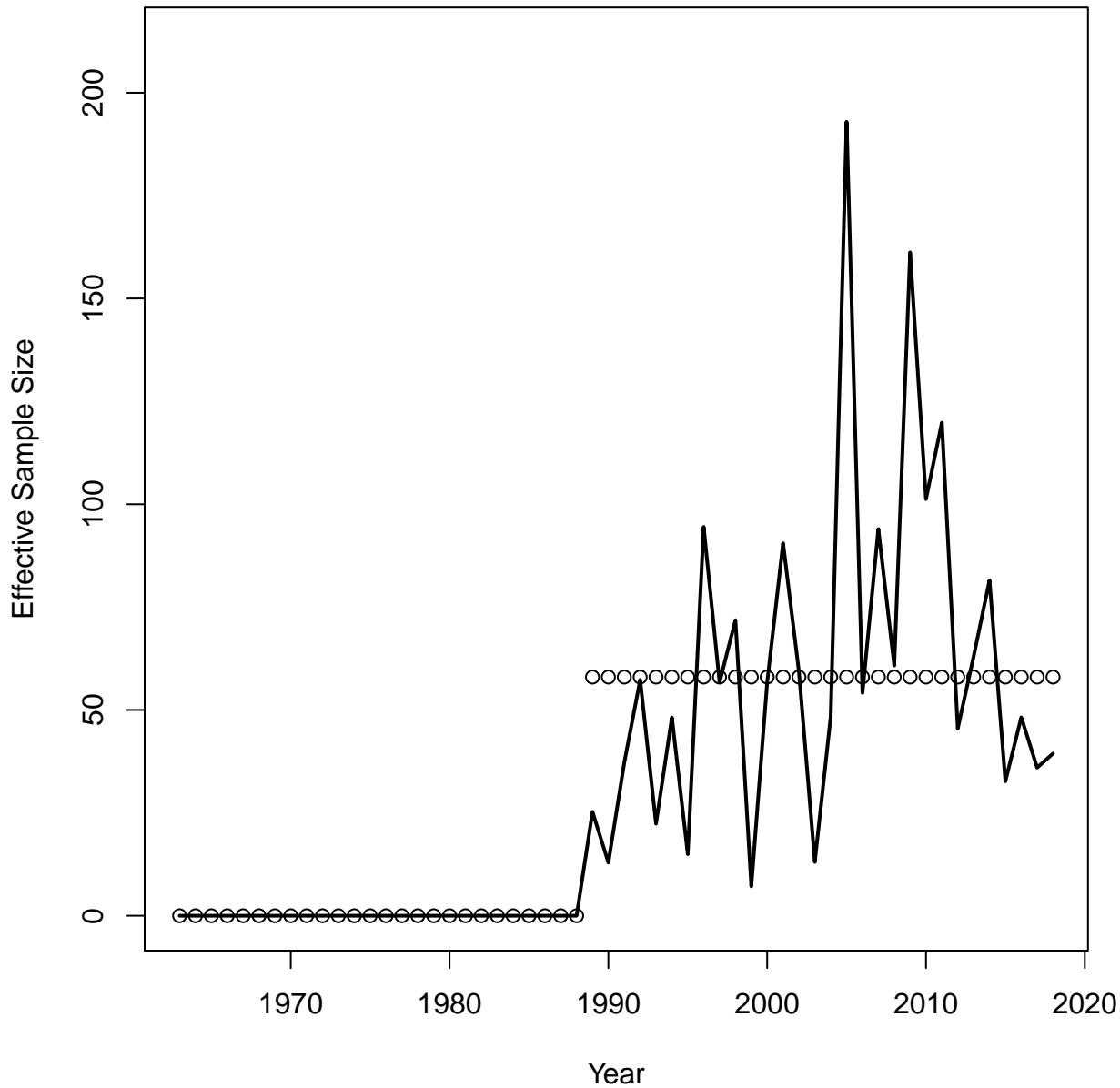


Catch

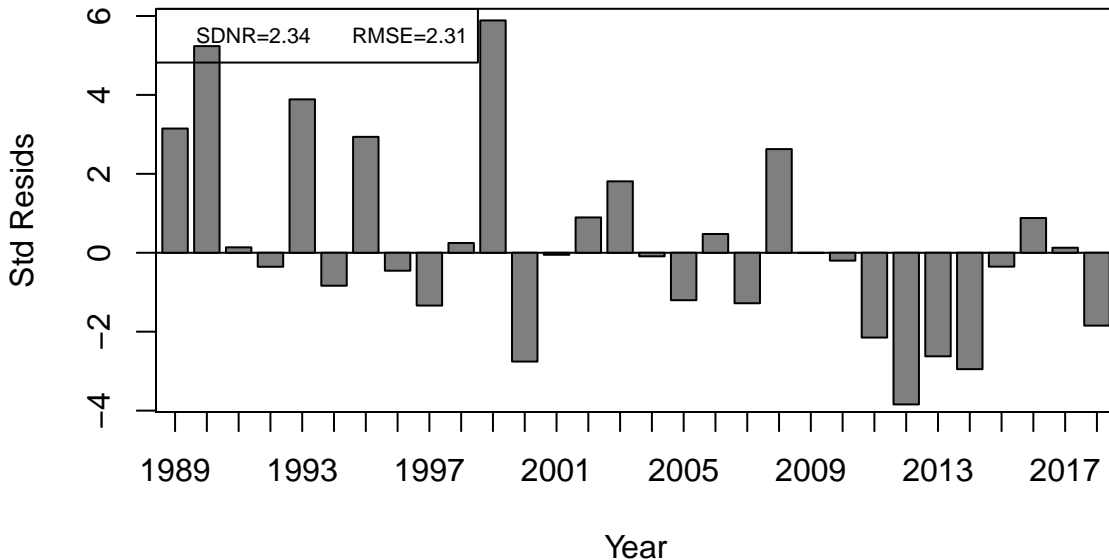
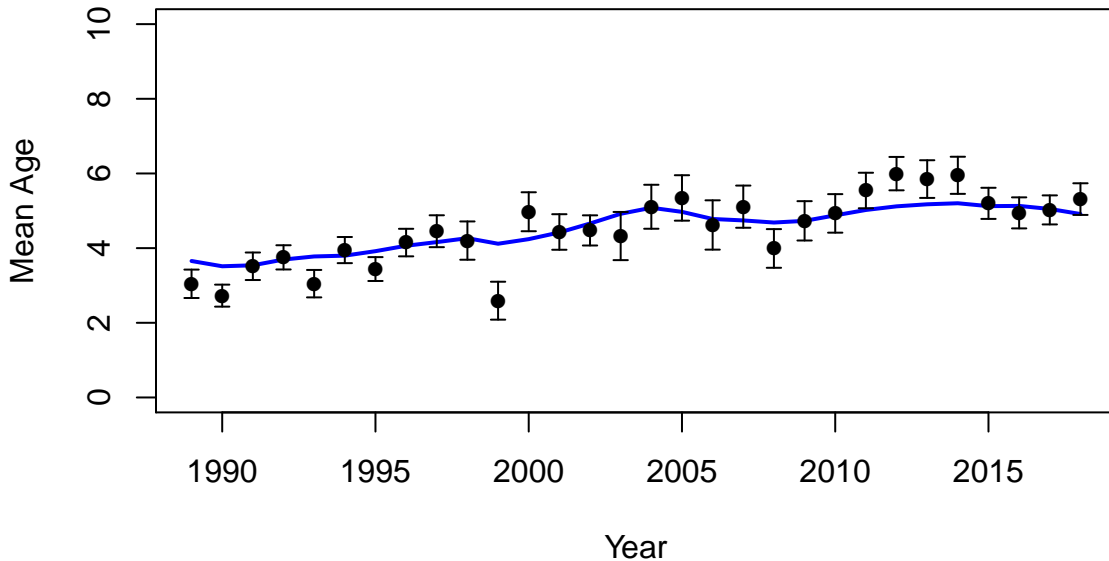
Age Comp Residuals for Catch by Fleet 1 (FLEET-1)



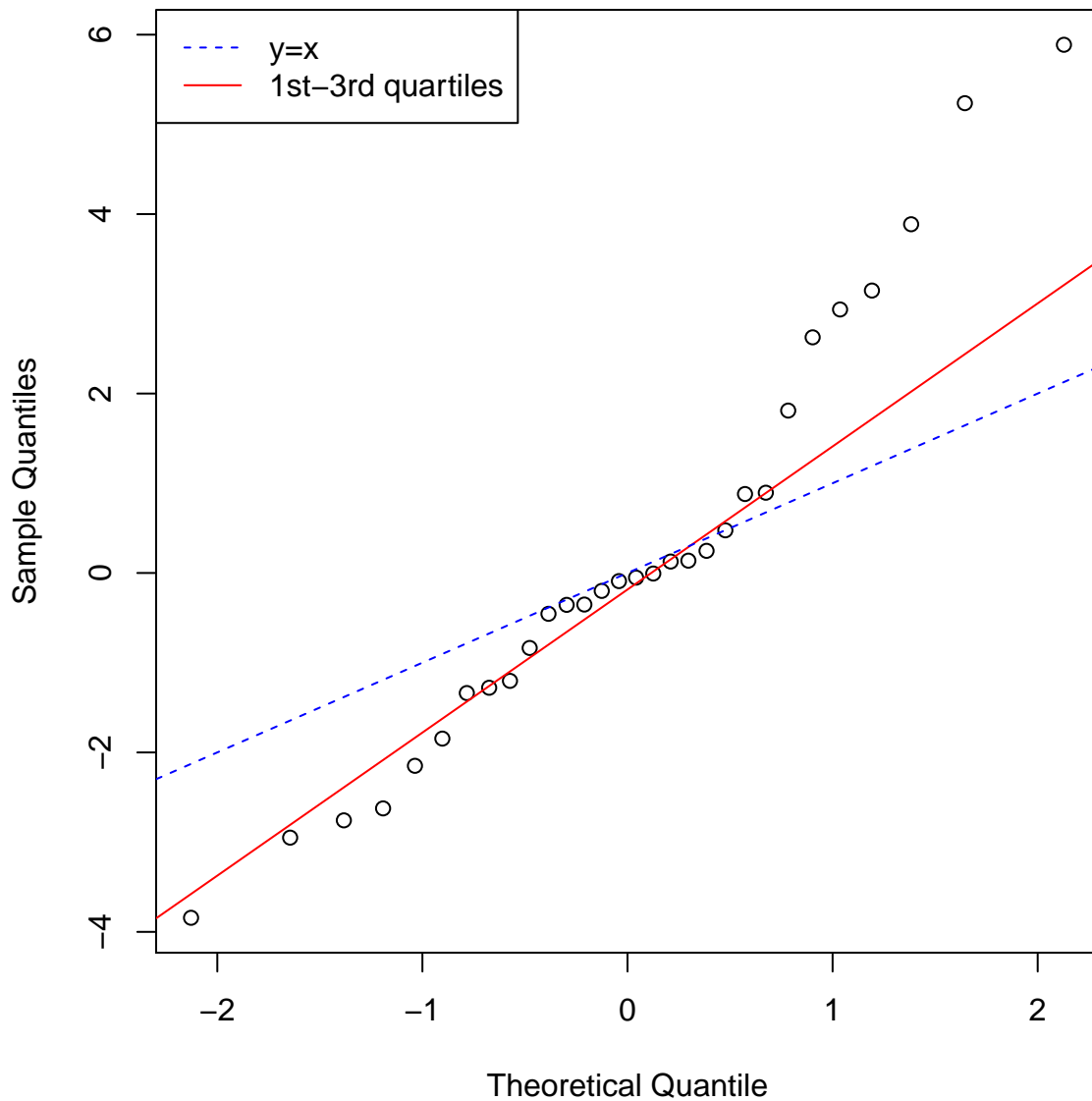
Catch Neff Fleet 1 (FLEET-1)



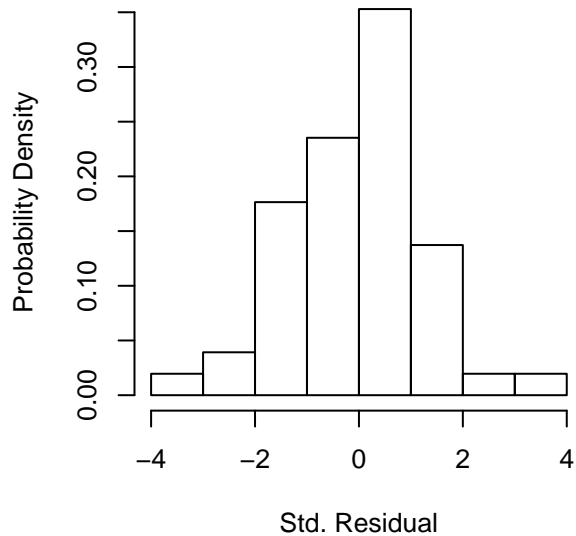
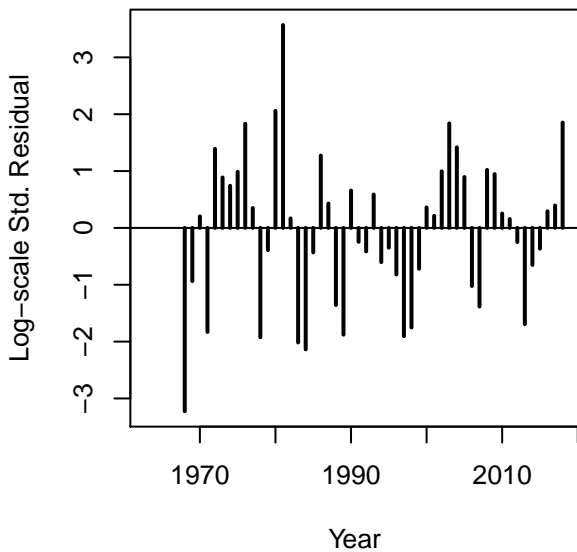
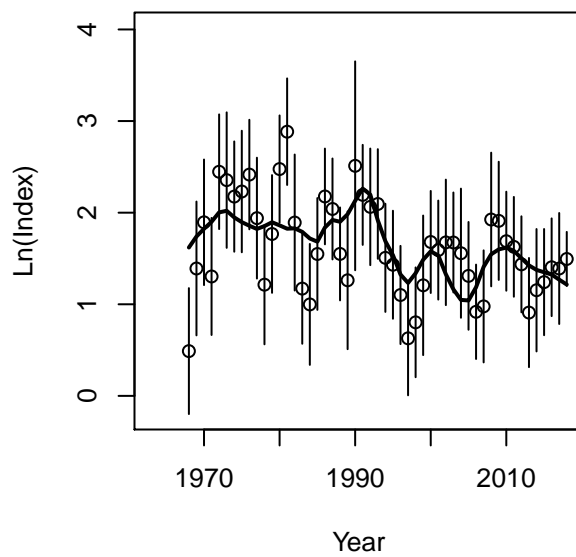
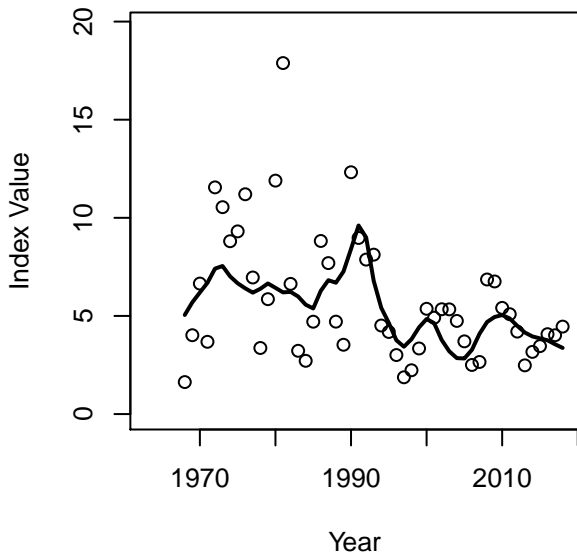
Catch Fleet 1 (FLEET-1) ESS = 58



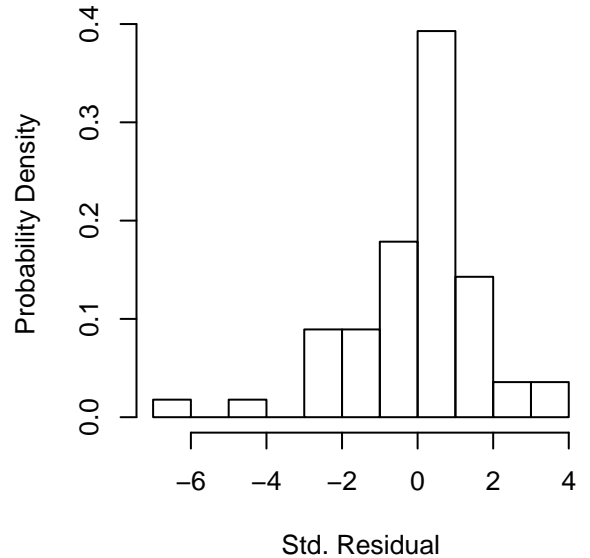
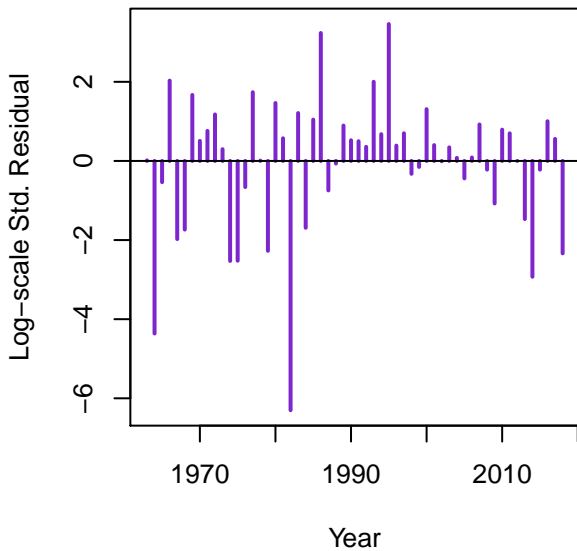
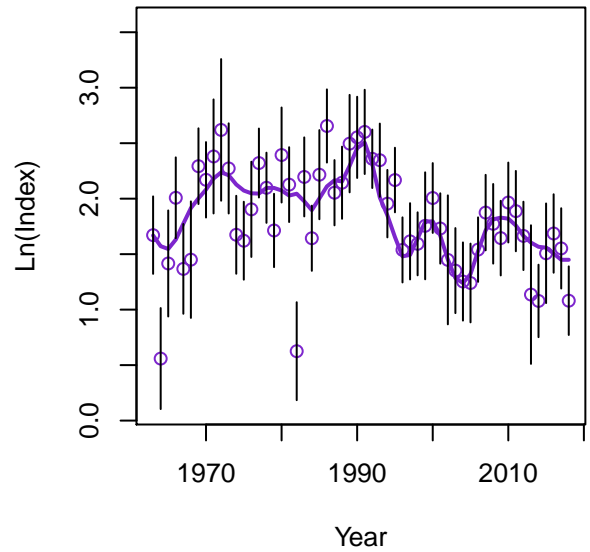
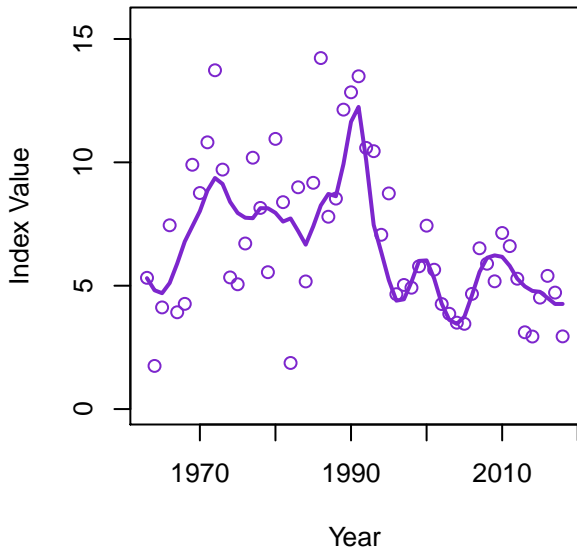
Catch Fleet 1 (FLEET-1) ESS = 58



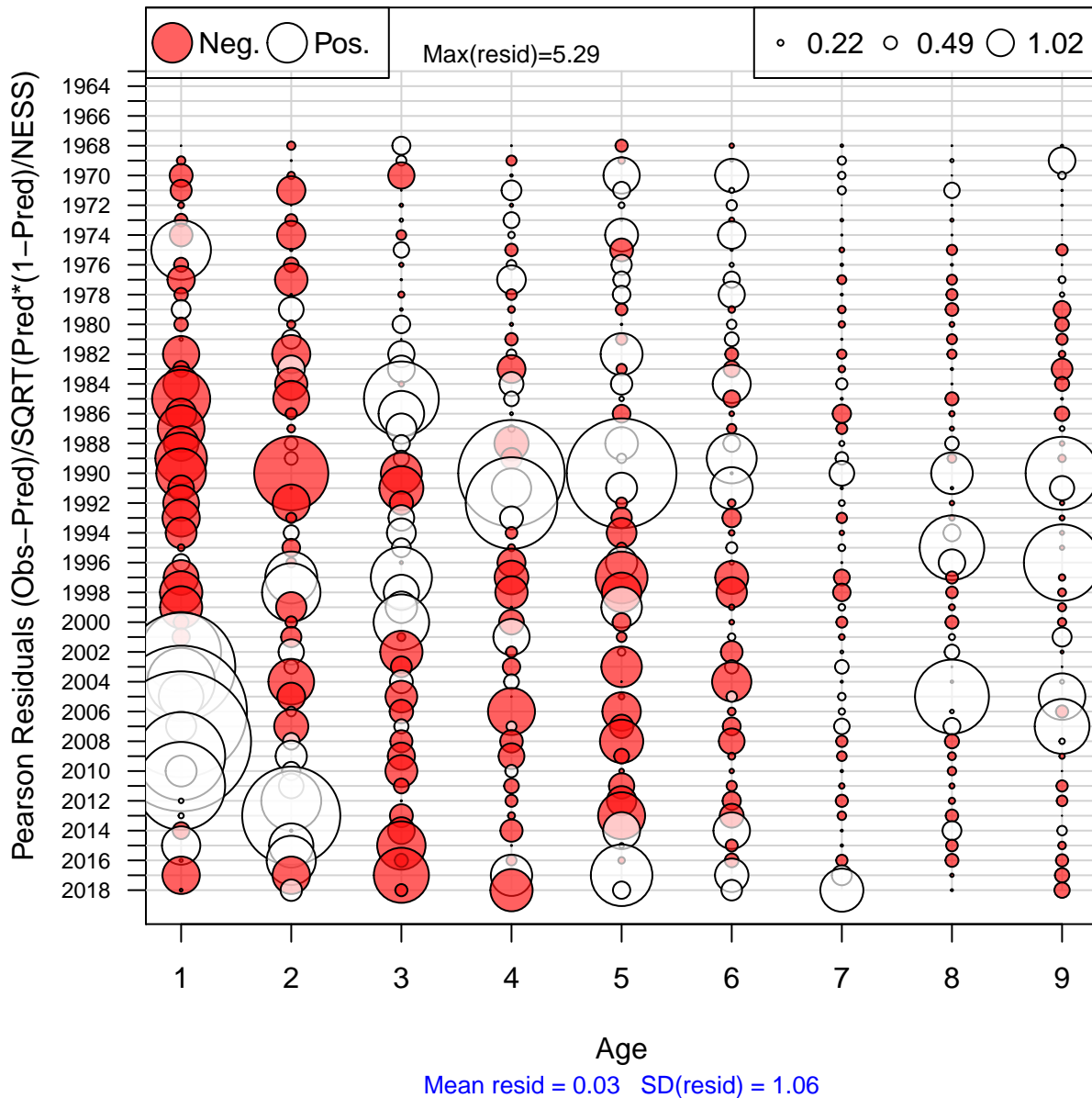
Index 1 (INDEX-1)



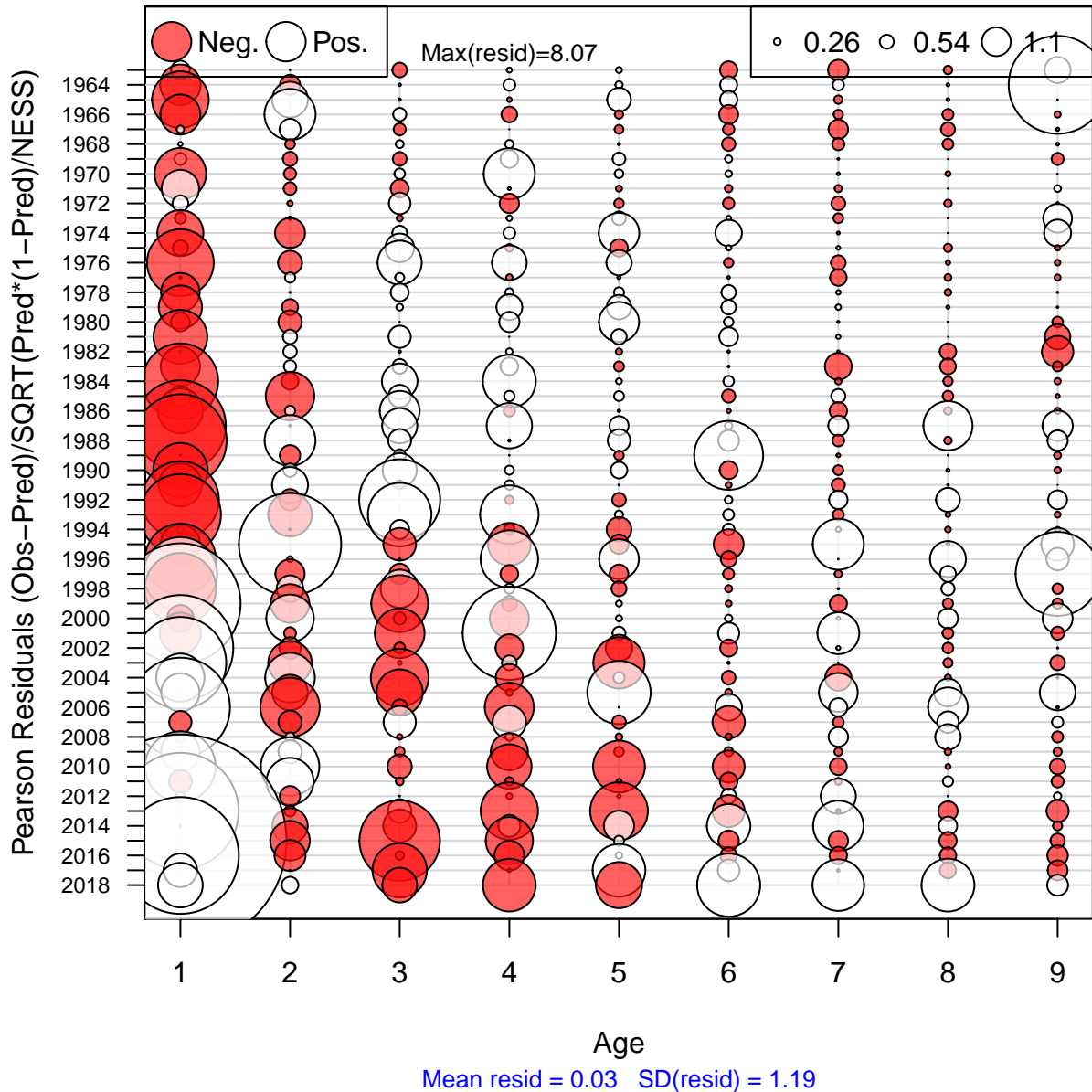
Index 2 (INDEX-2)



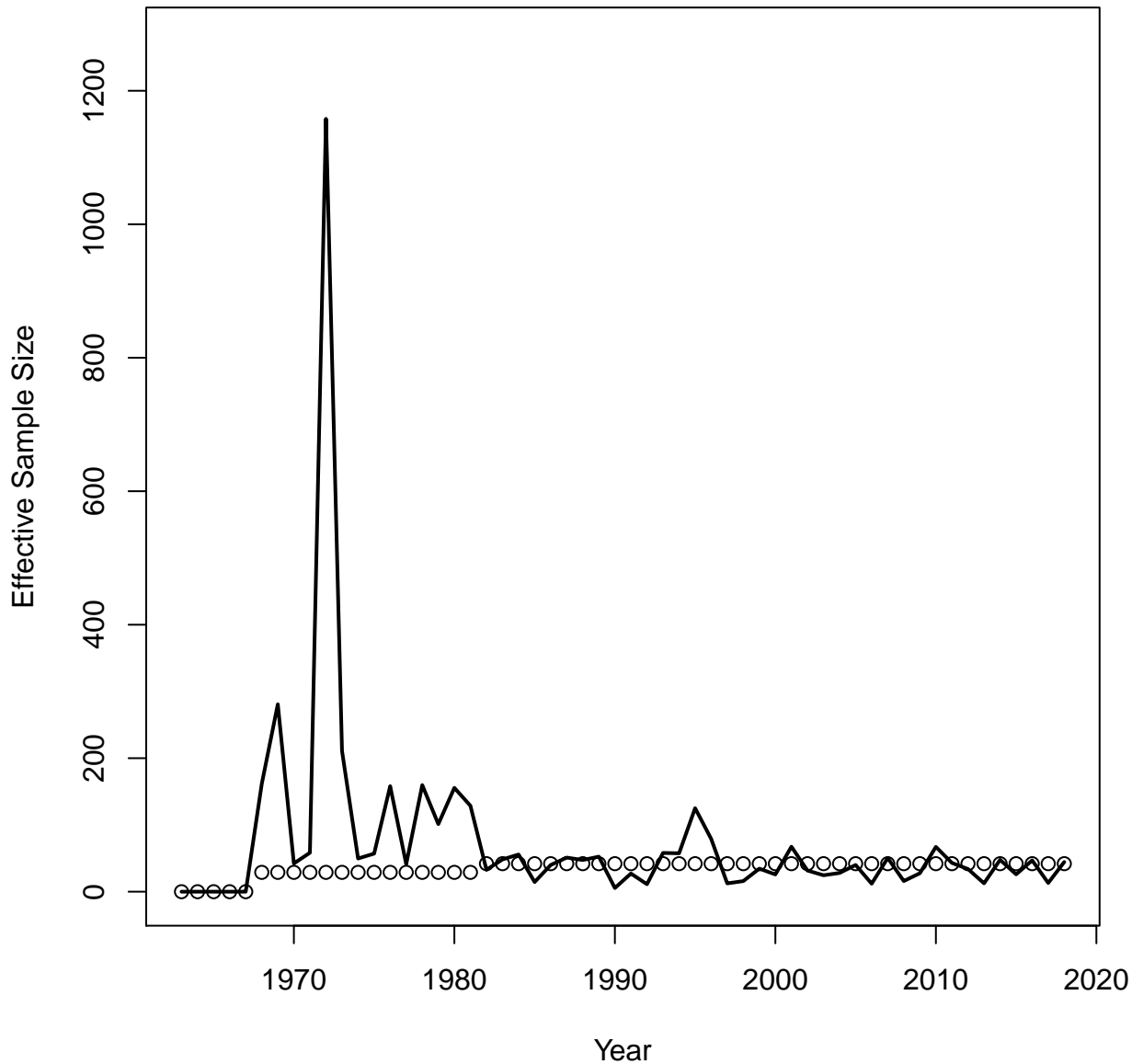
Age Comp Residuals for Index 1 (INDEX-1)



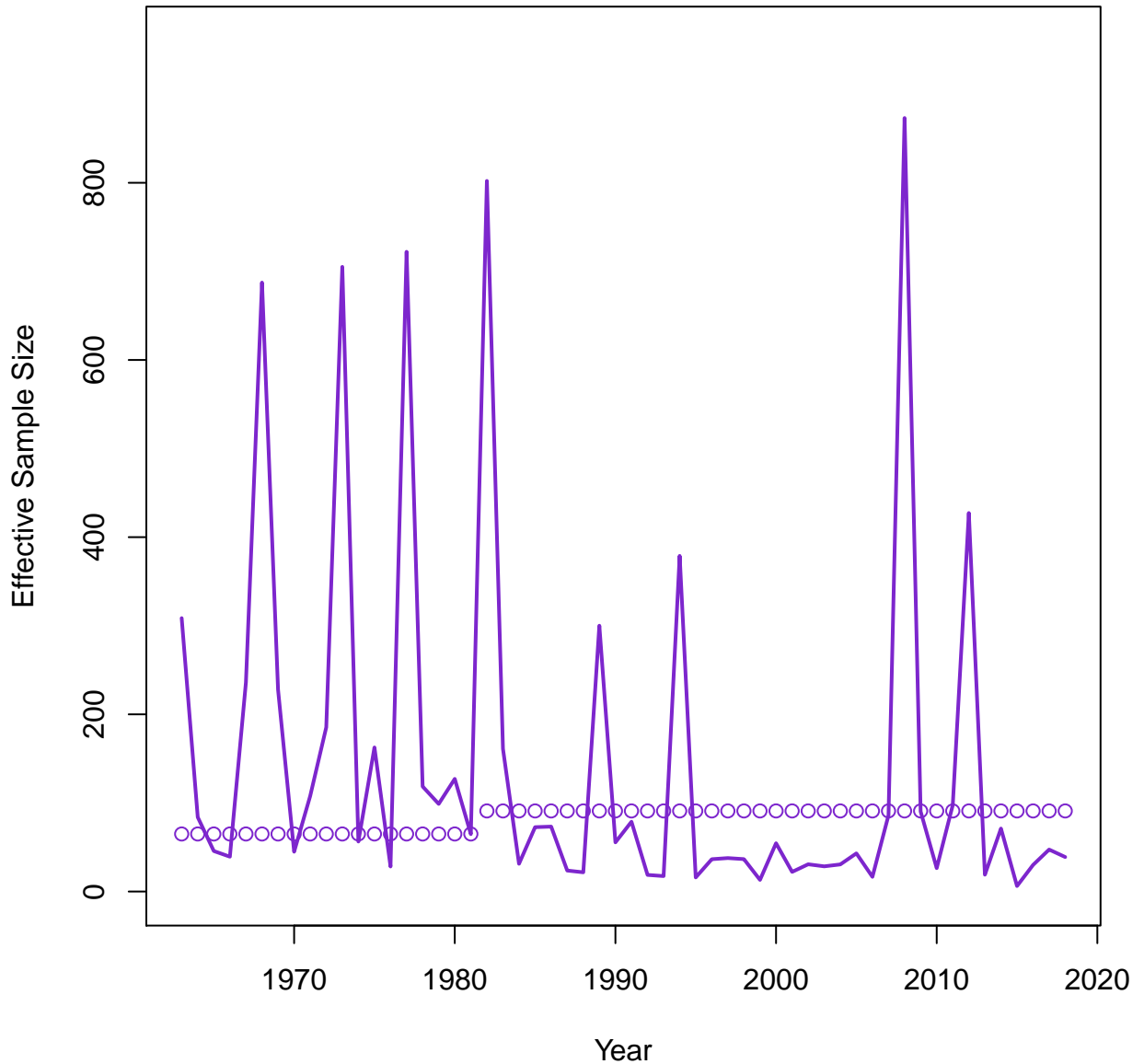
Age Comp Residuals for Index 2 (INDEX-2)



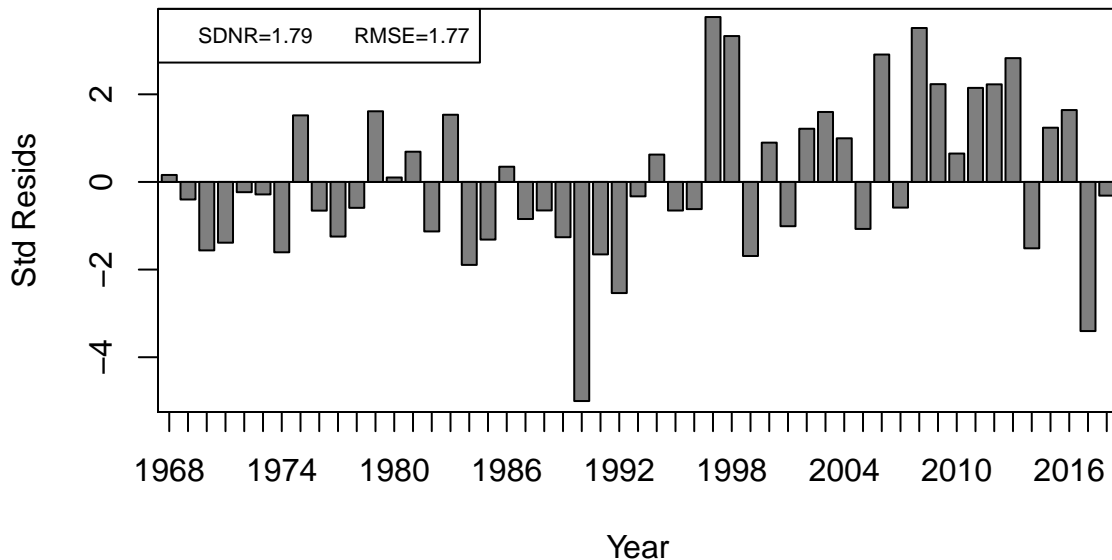
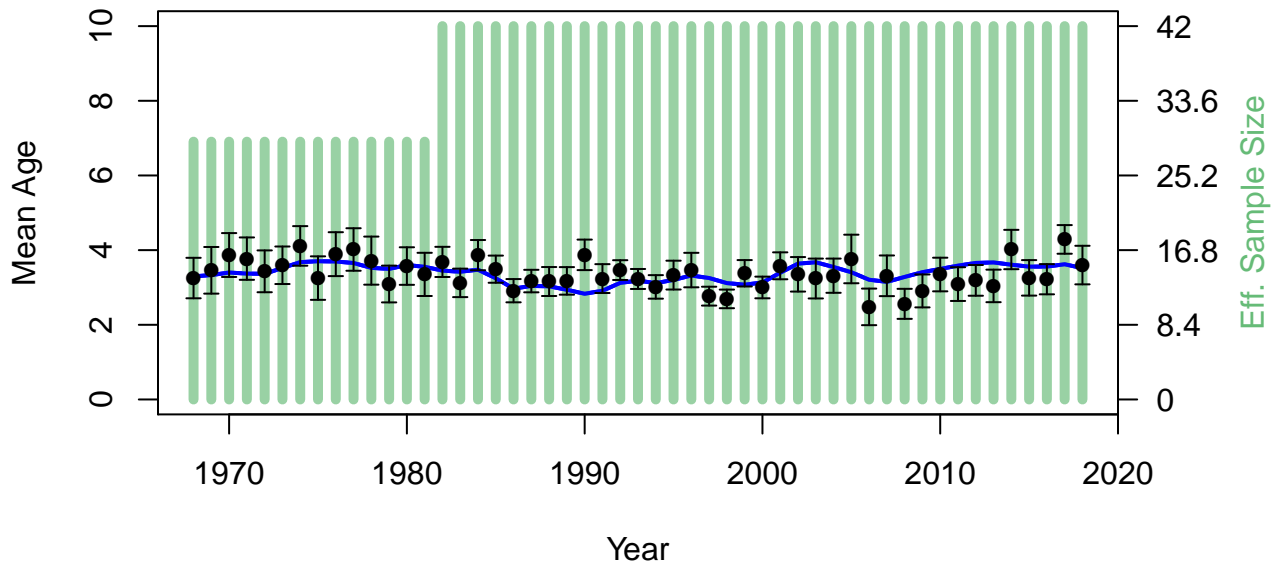
Index Neff 1 (INDEX-1)



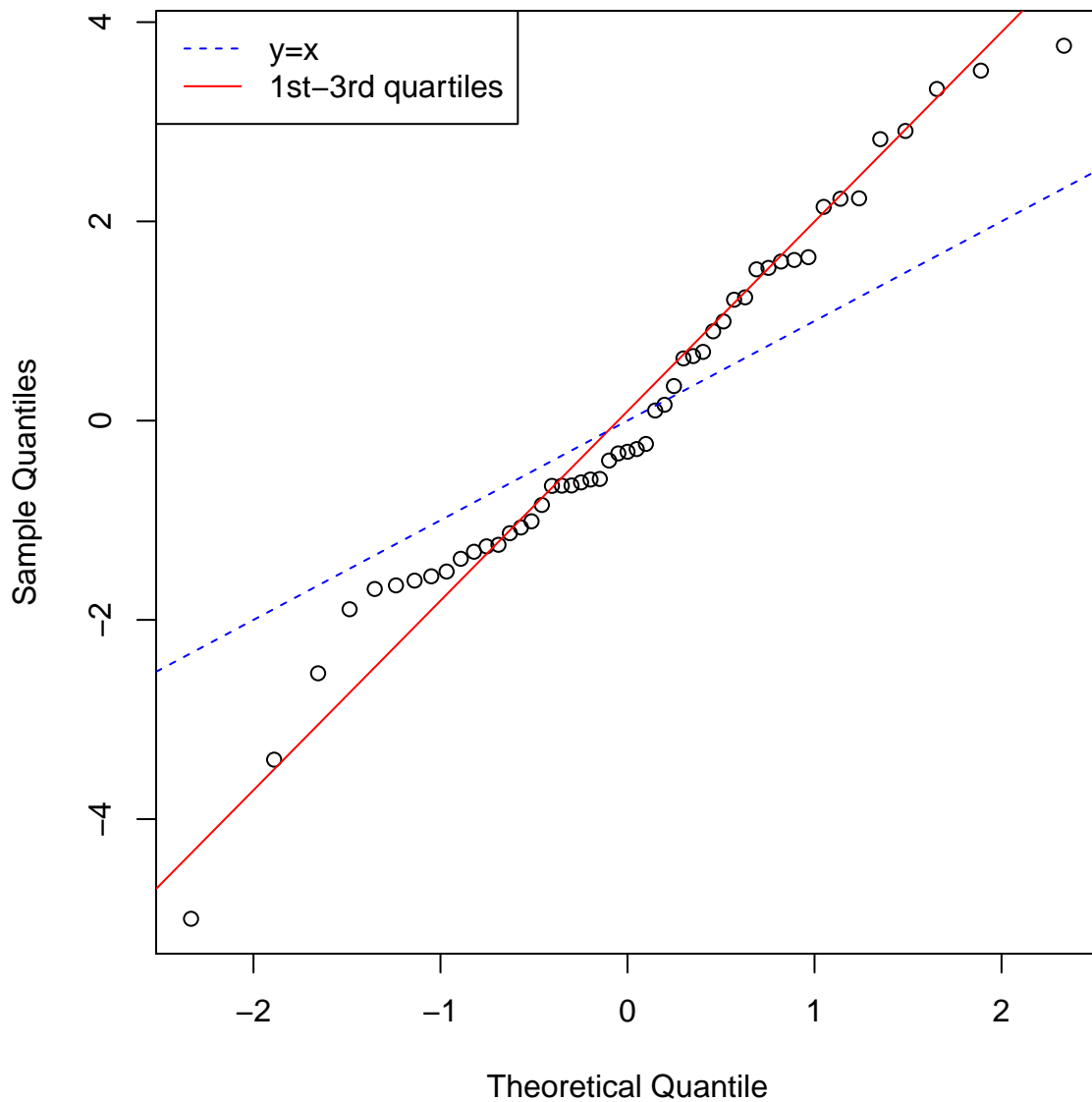
Index Neff 2 (INDEX-2)



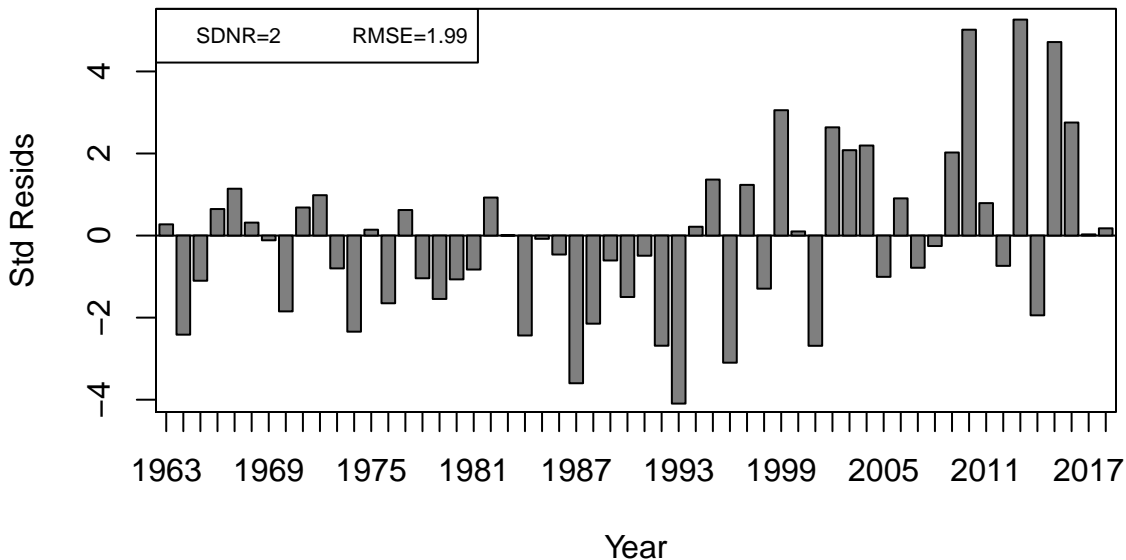
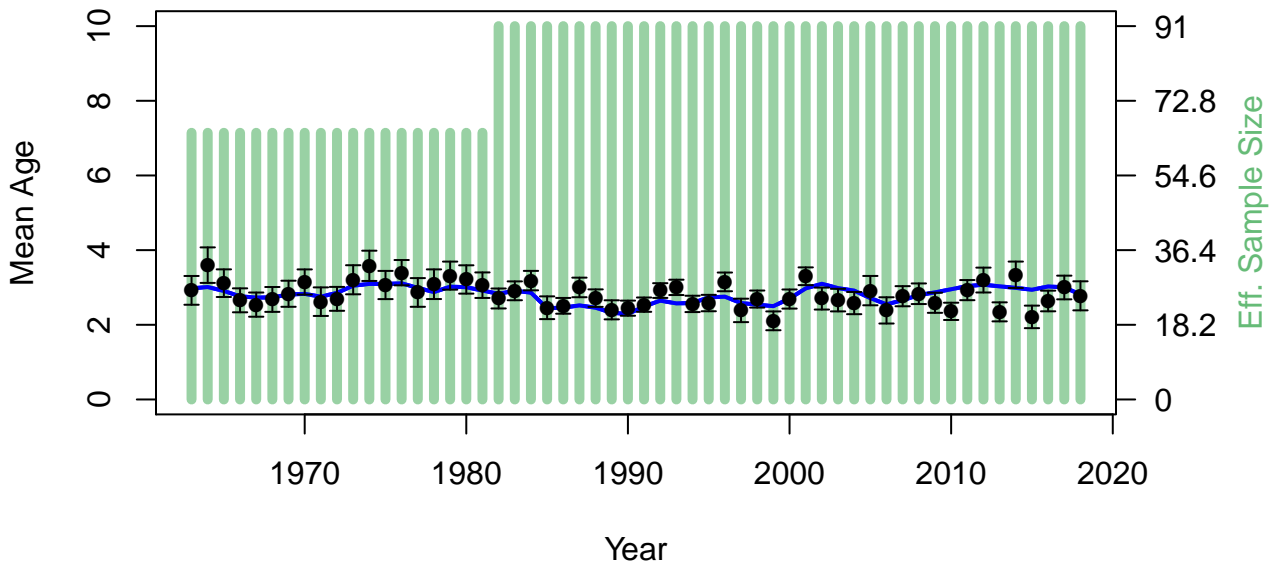
Index 1 (INDEX-1)



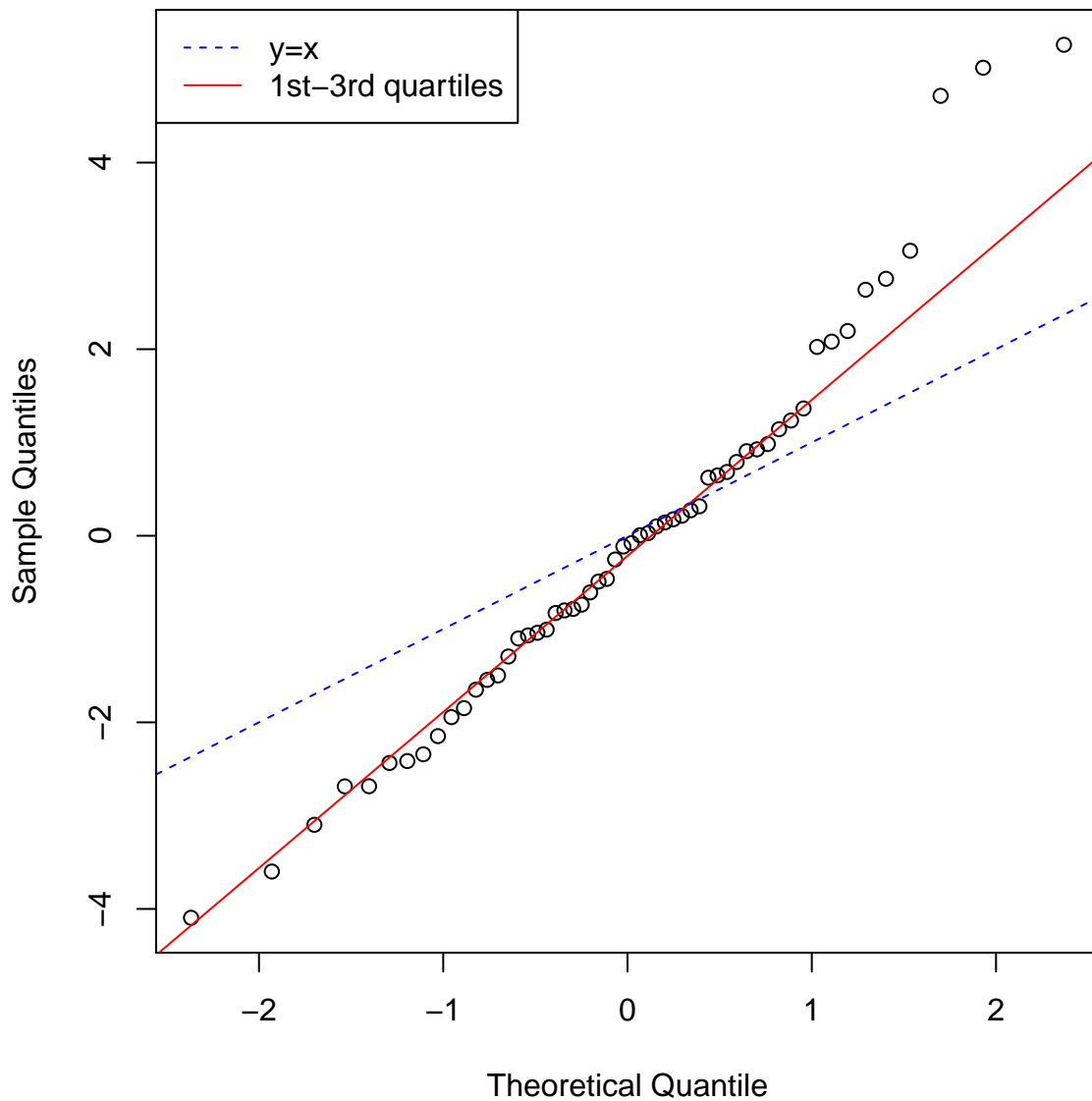
Index 1 (INDEX-1)



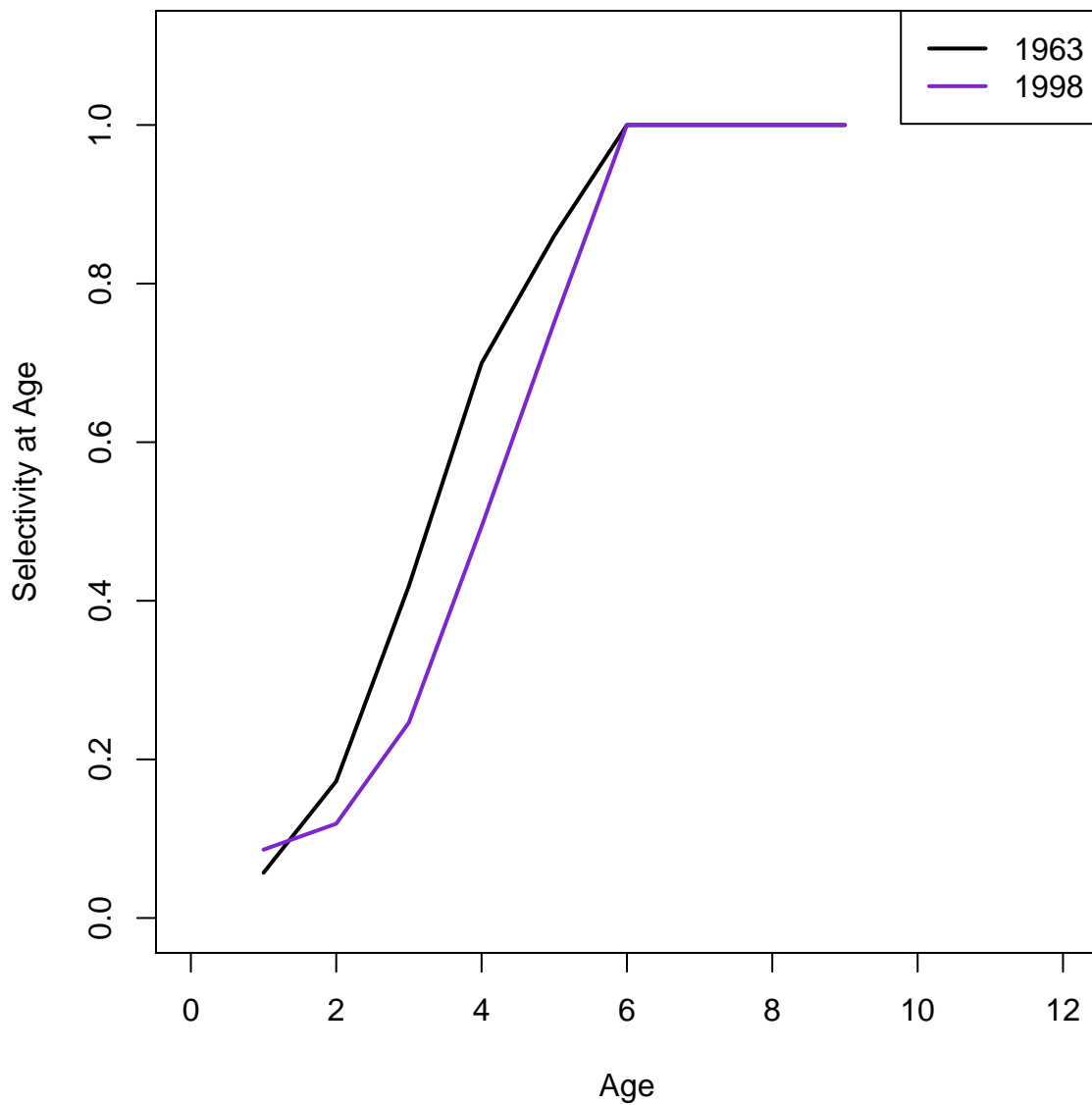
Index 2 (INDEX-2)

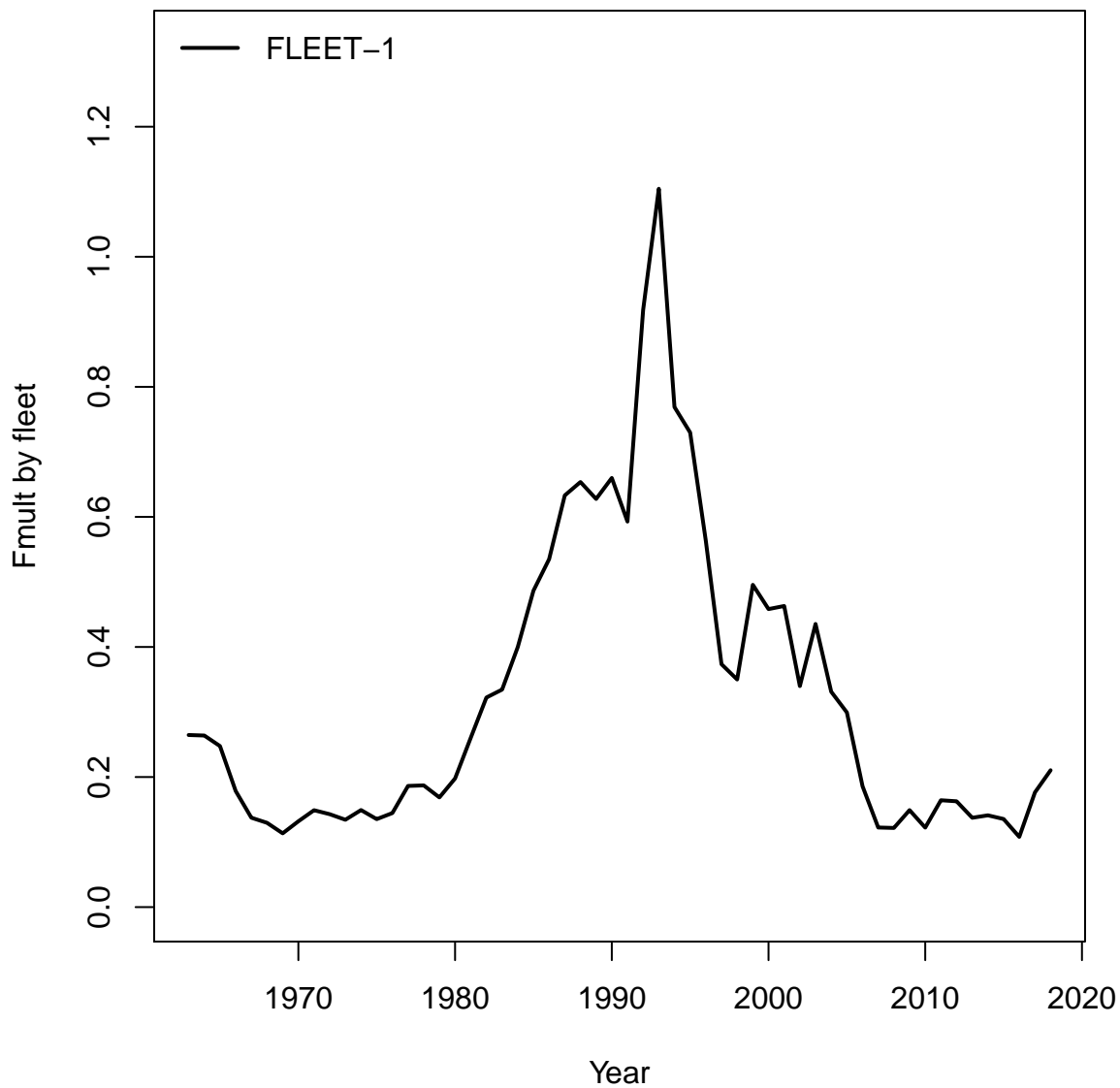


Index 2 (INDEX-2)

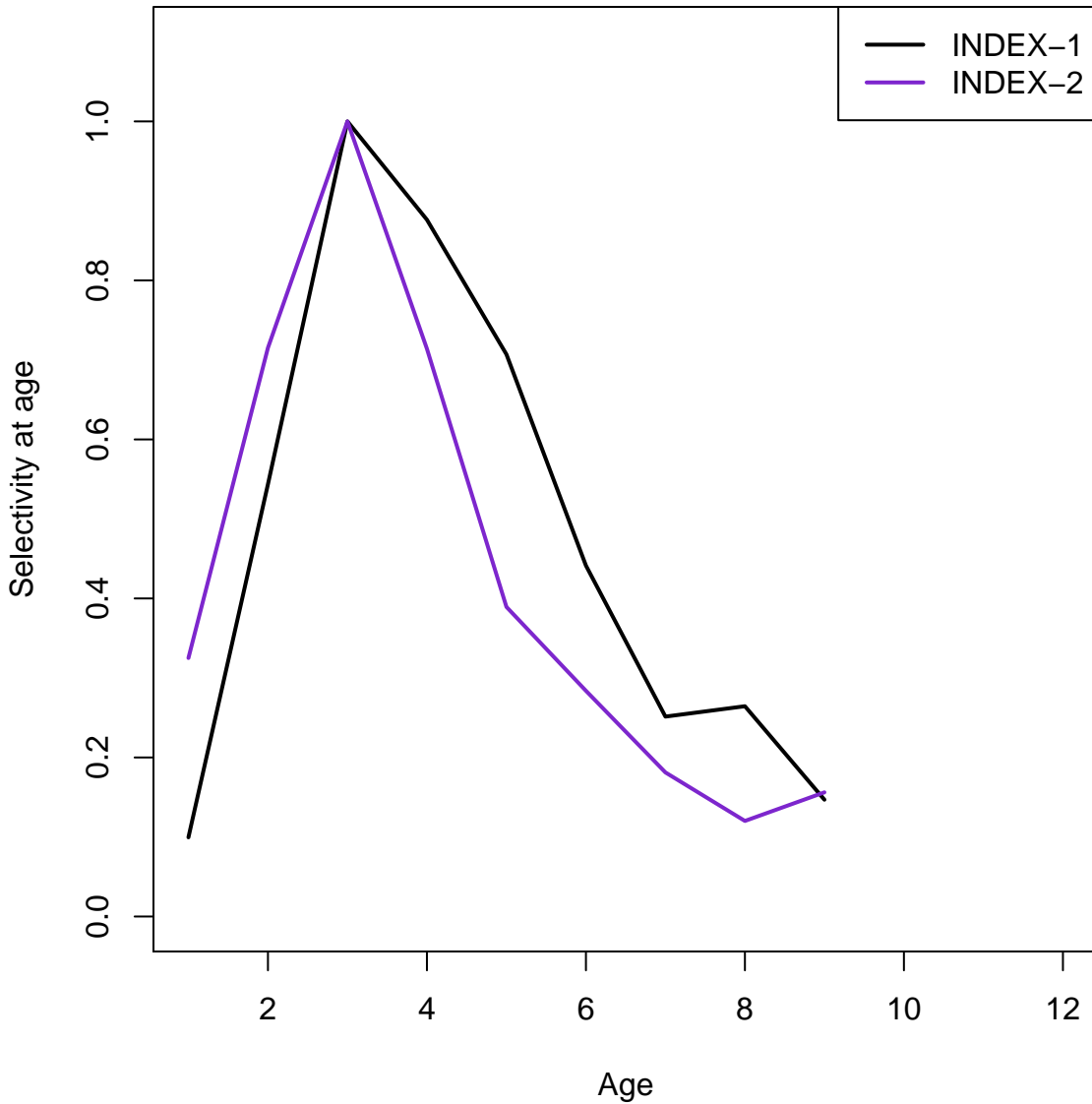


Fleet 1 (FLEET-1)

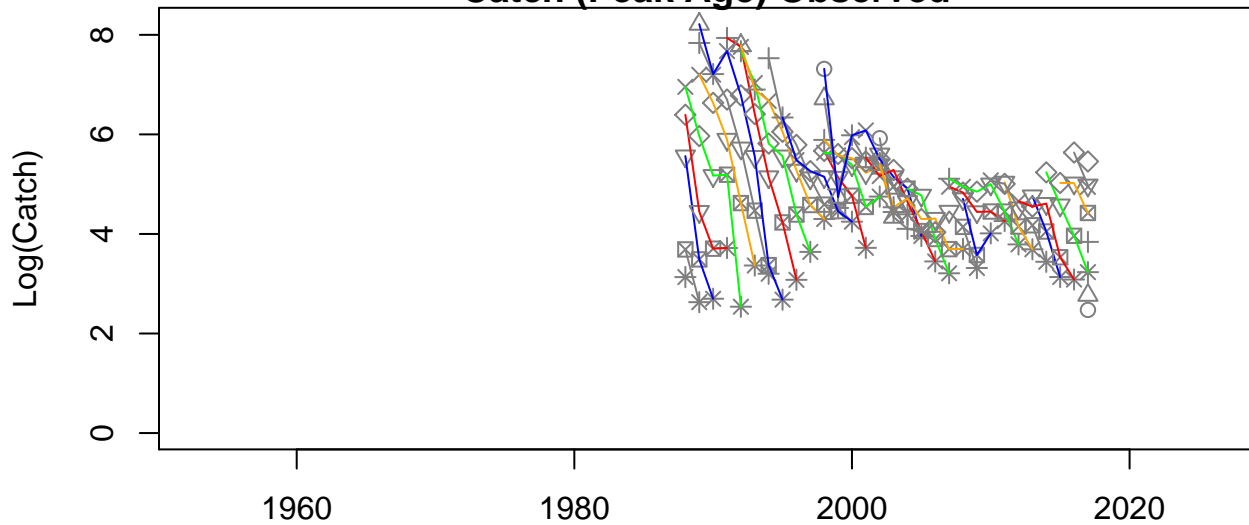




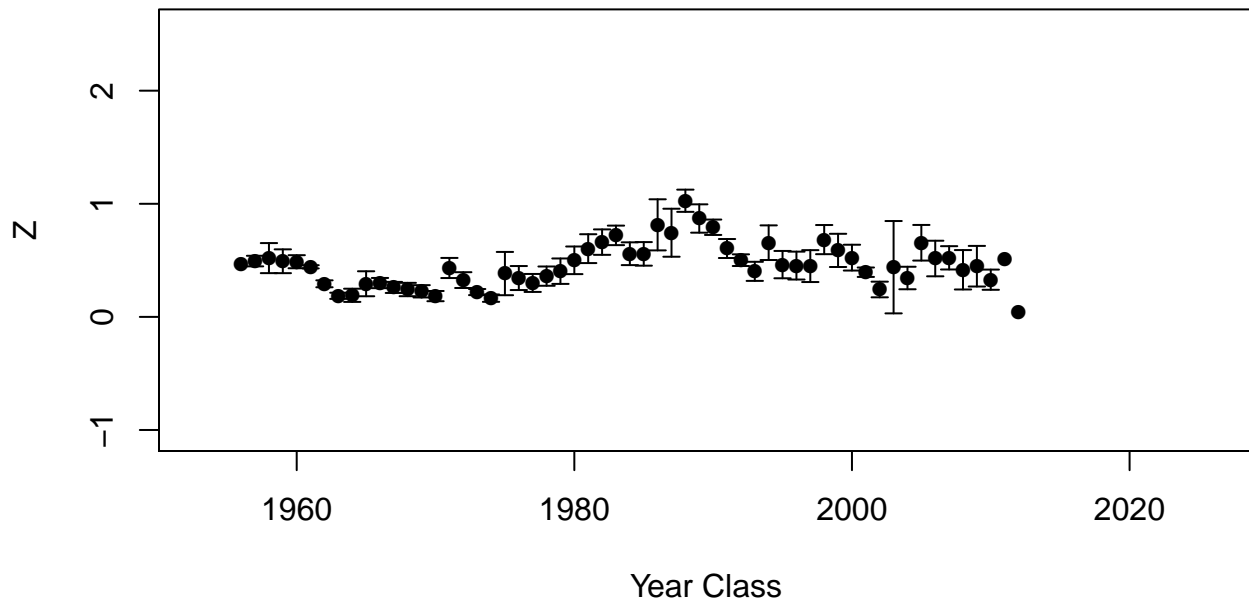
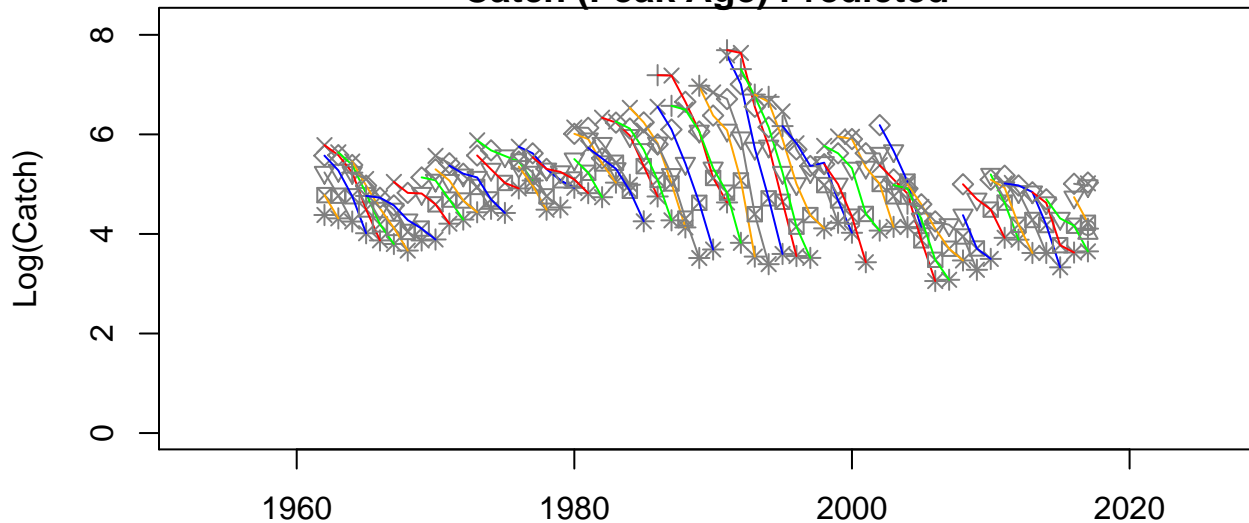
Indices



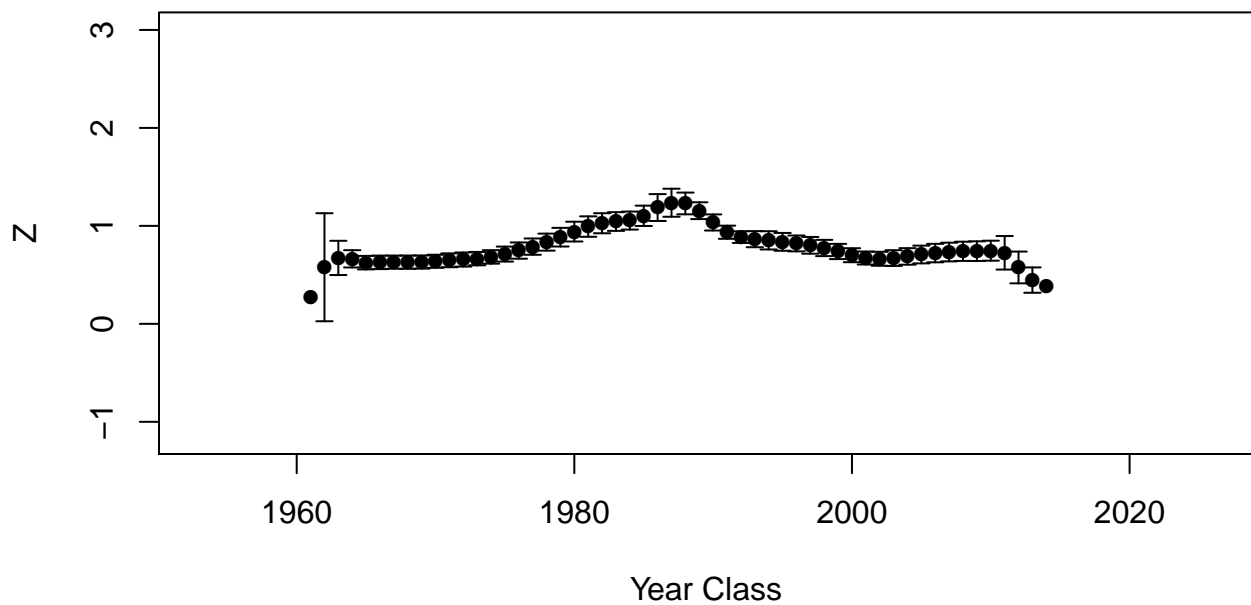
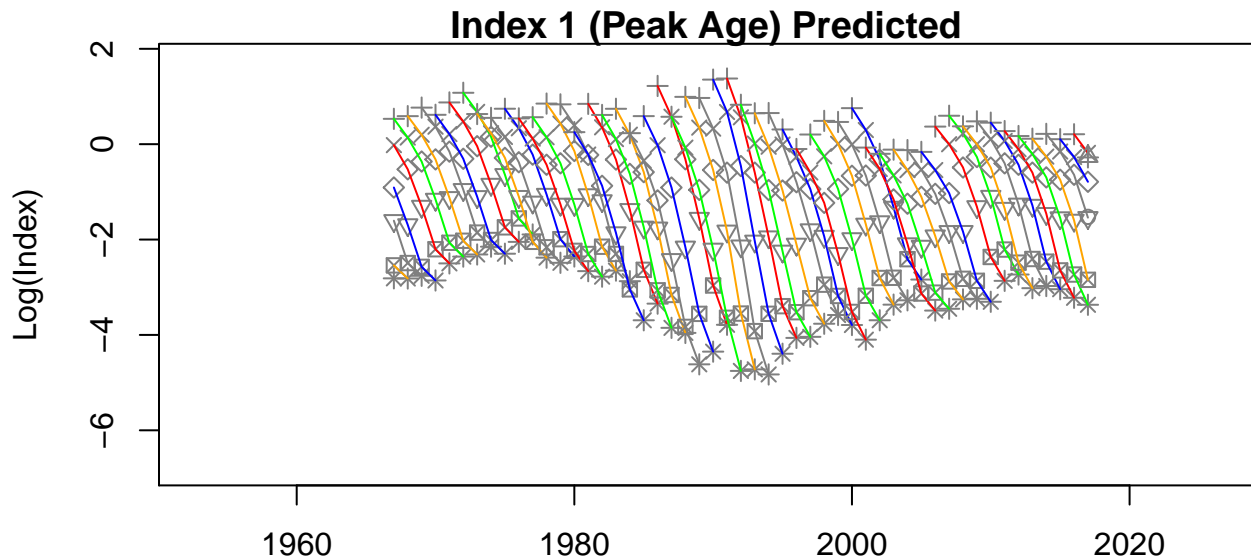
Catch (Peak Age) Observed



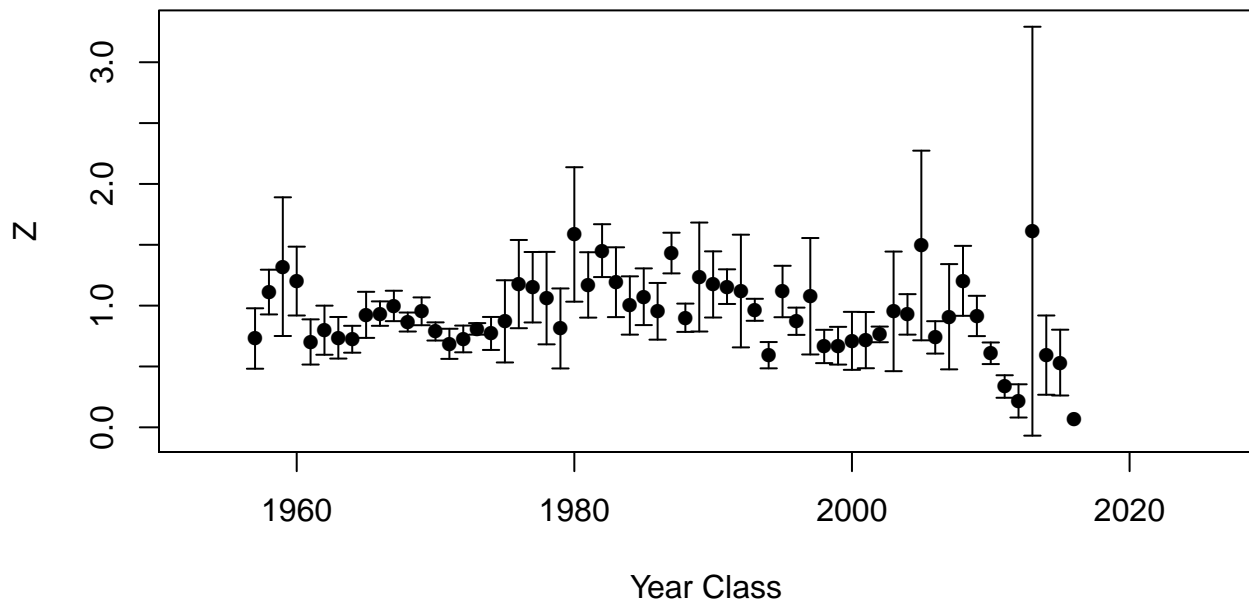
Catch (Peak Age) Predicted



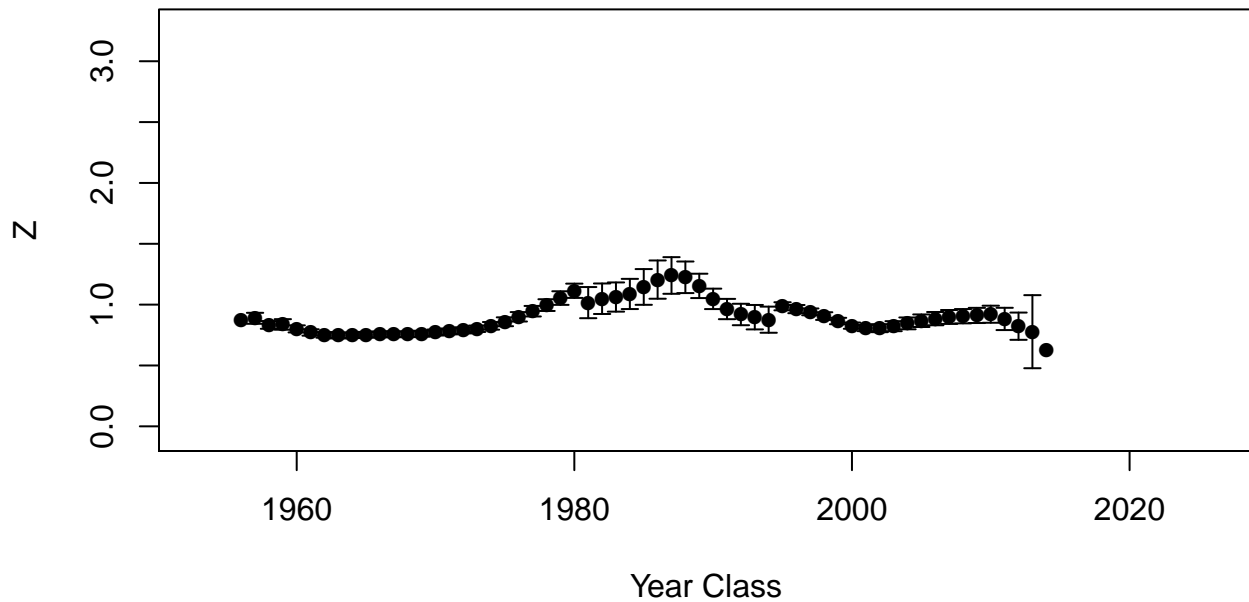
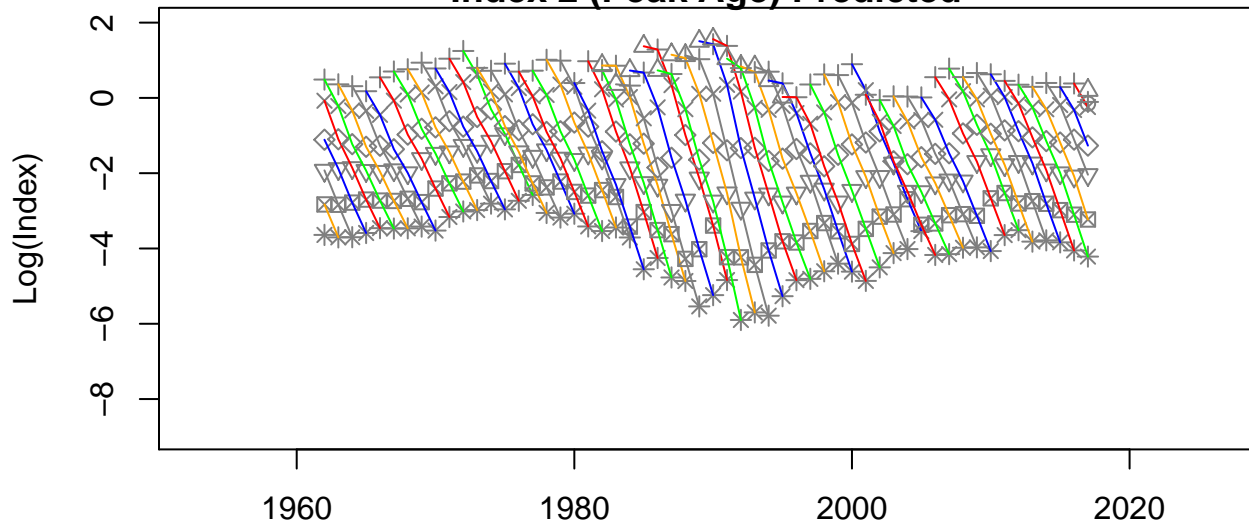




Index 2 (Peak Age) Observed



Index 2 (Peak Age) Predicted



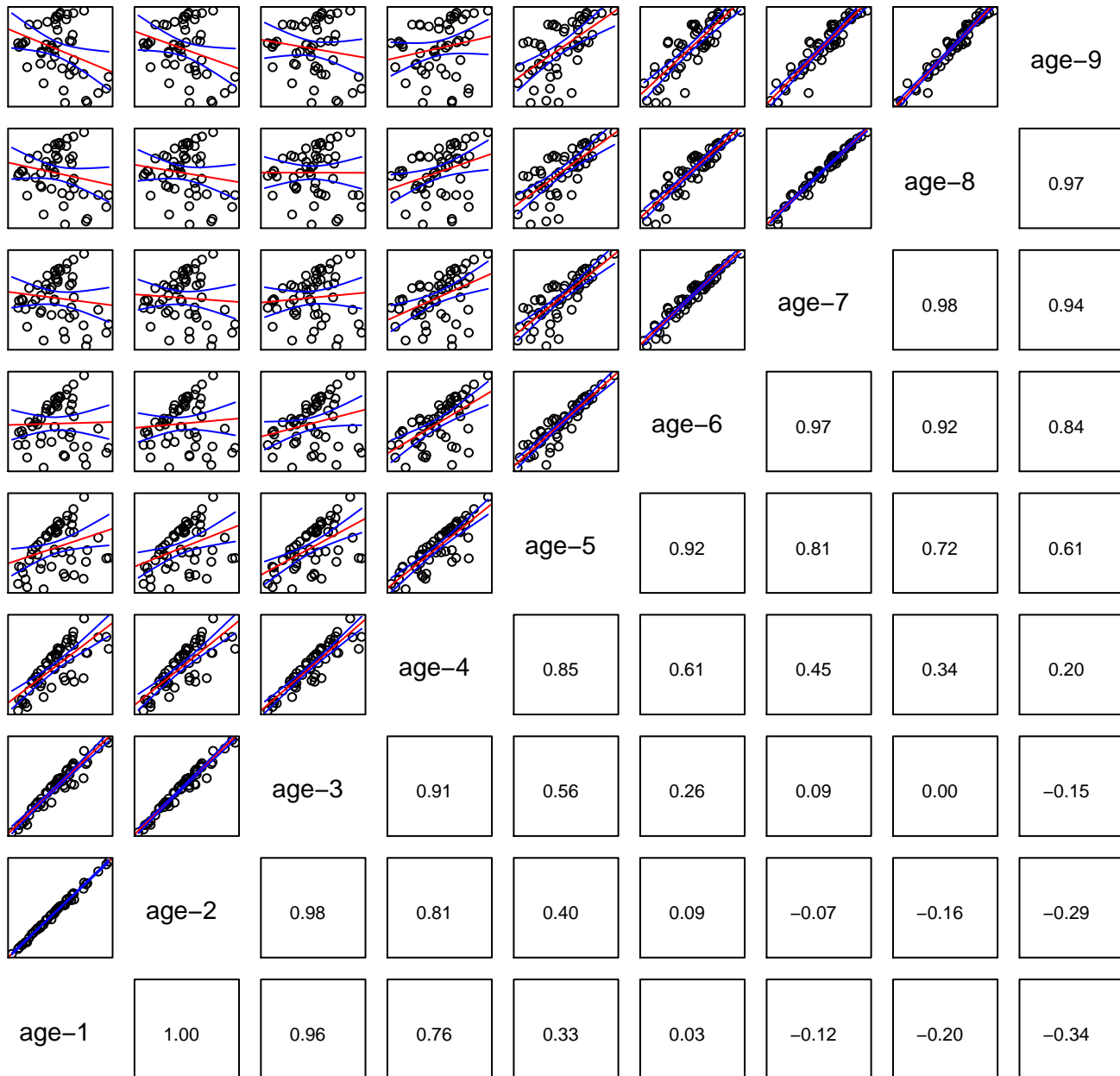
Catch Observed

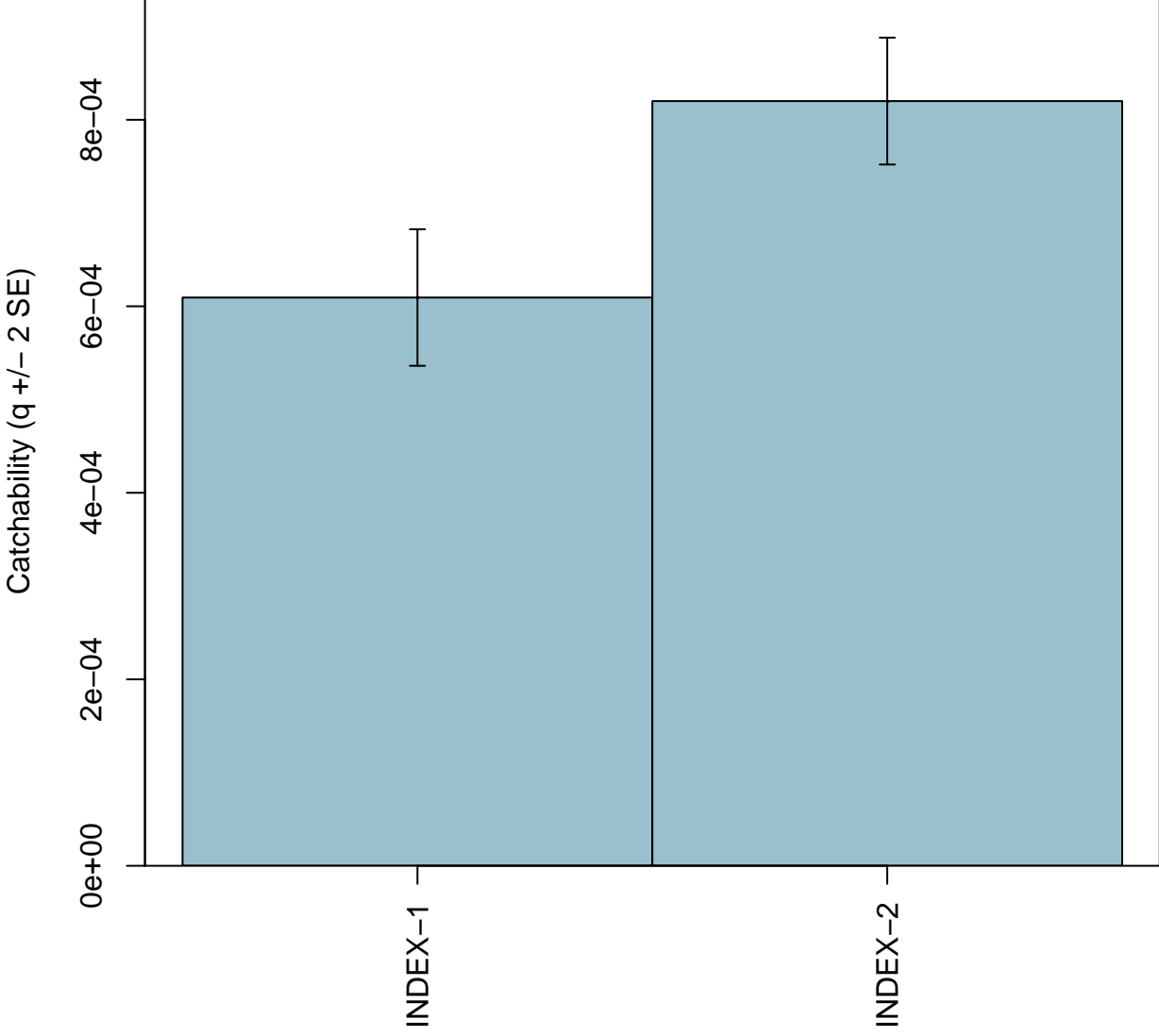


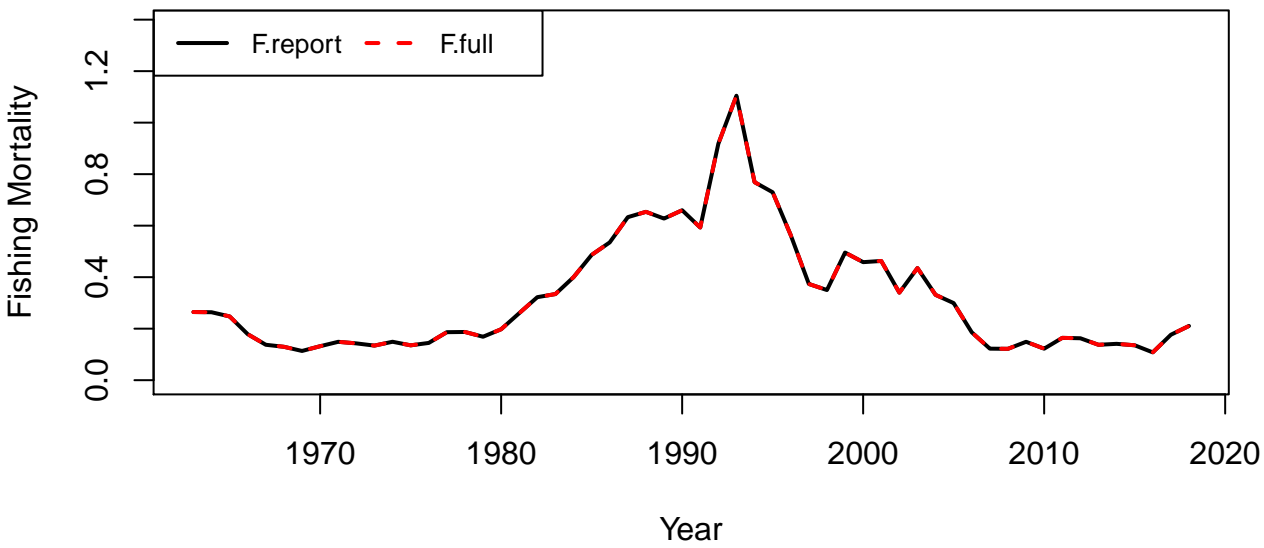
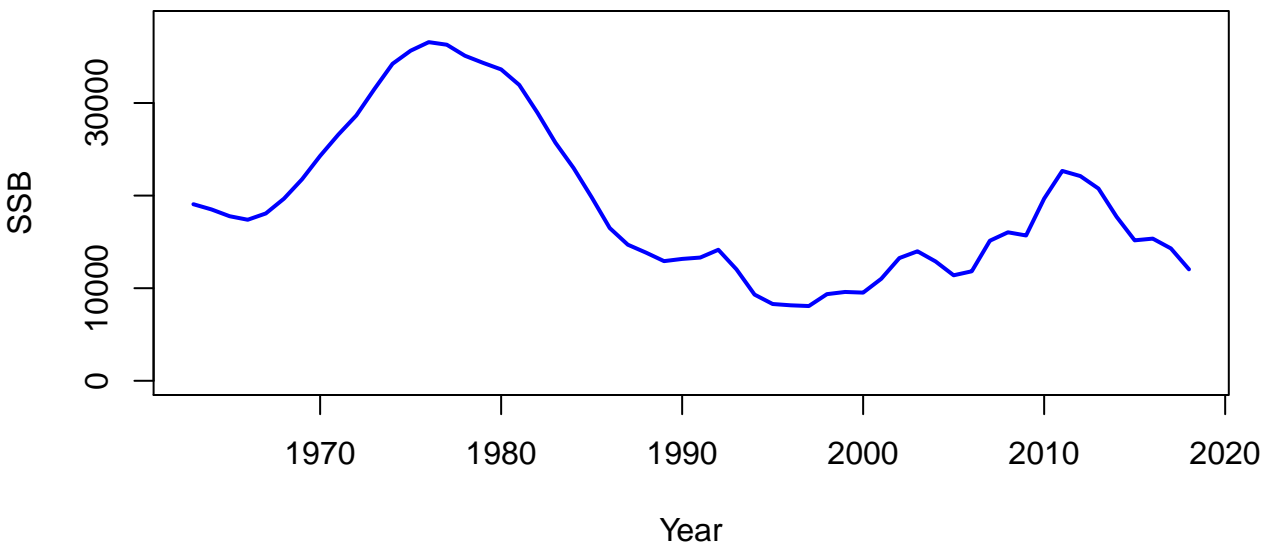
Index 1 (INDEX-1) Observed



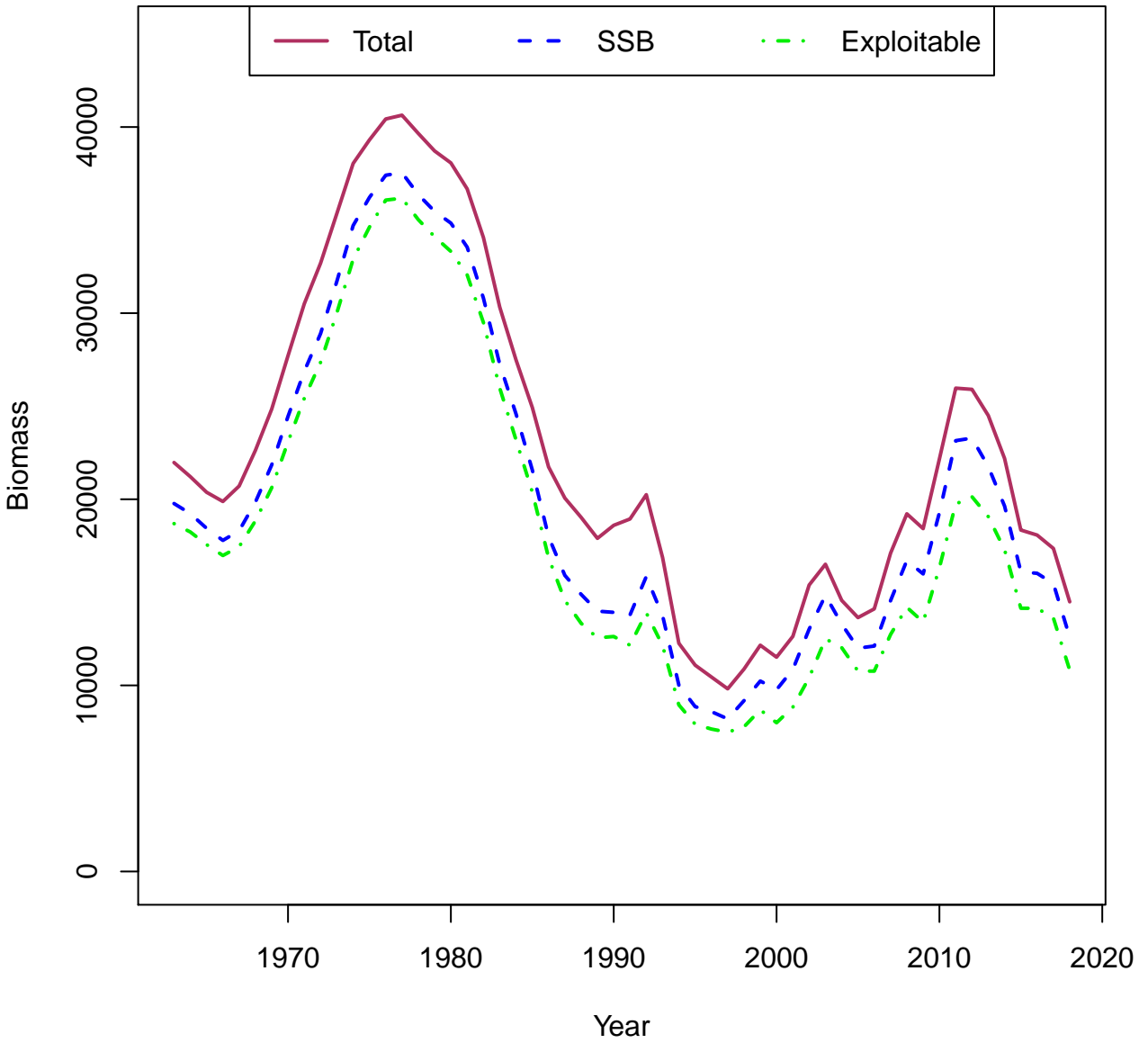
Index 2 (INDEX-2) Predicted

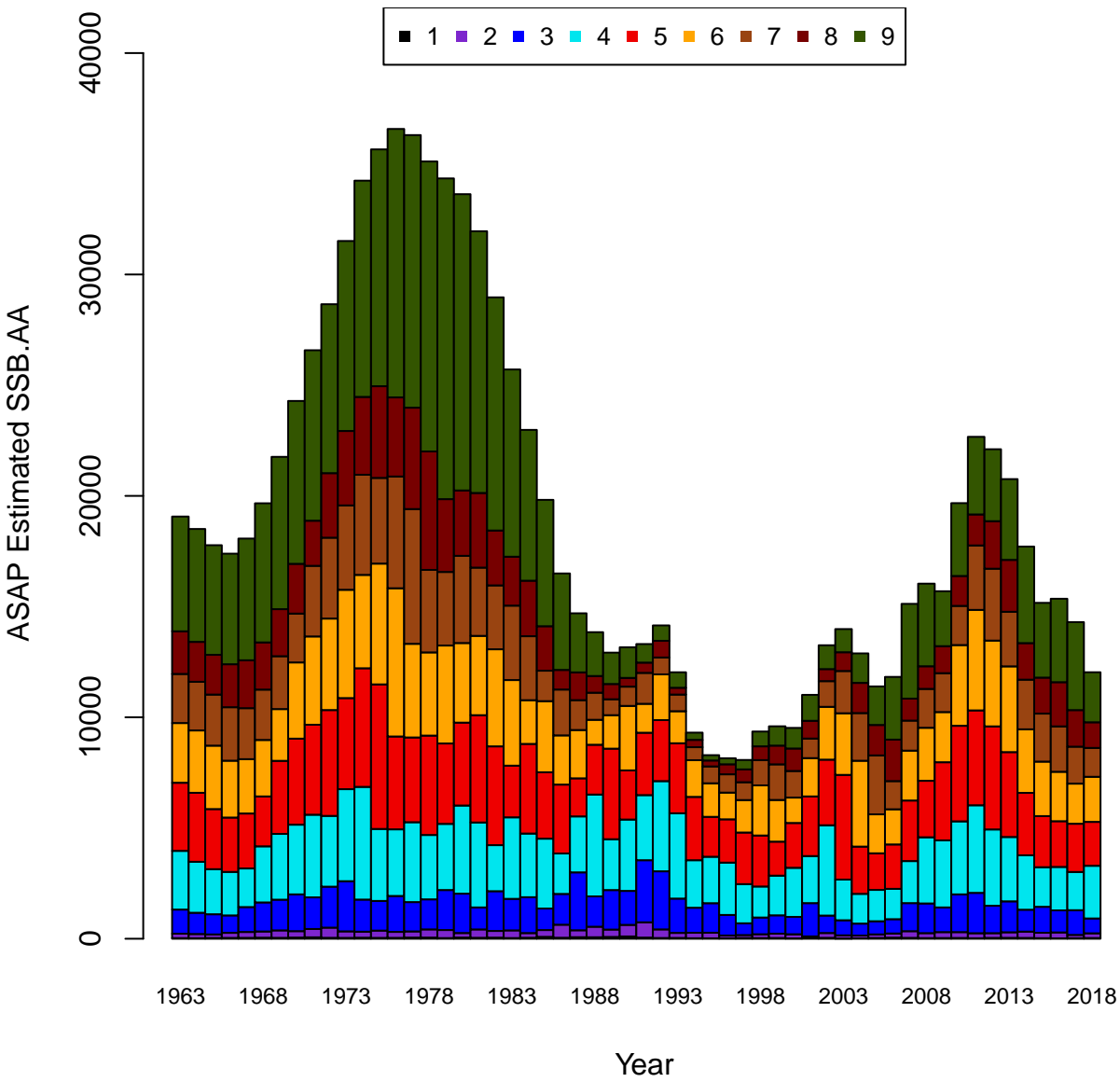


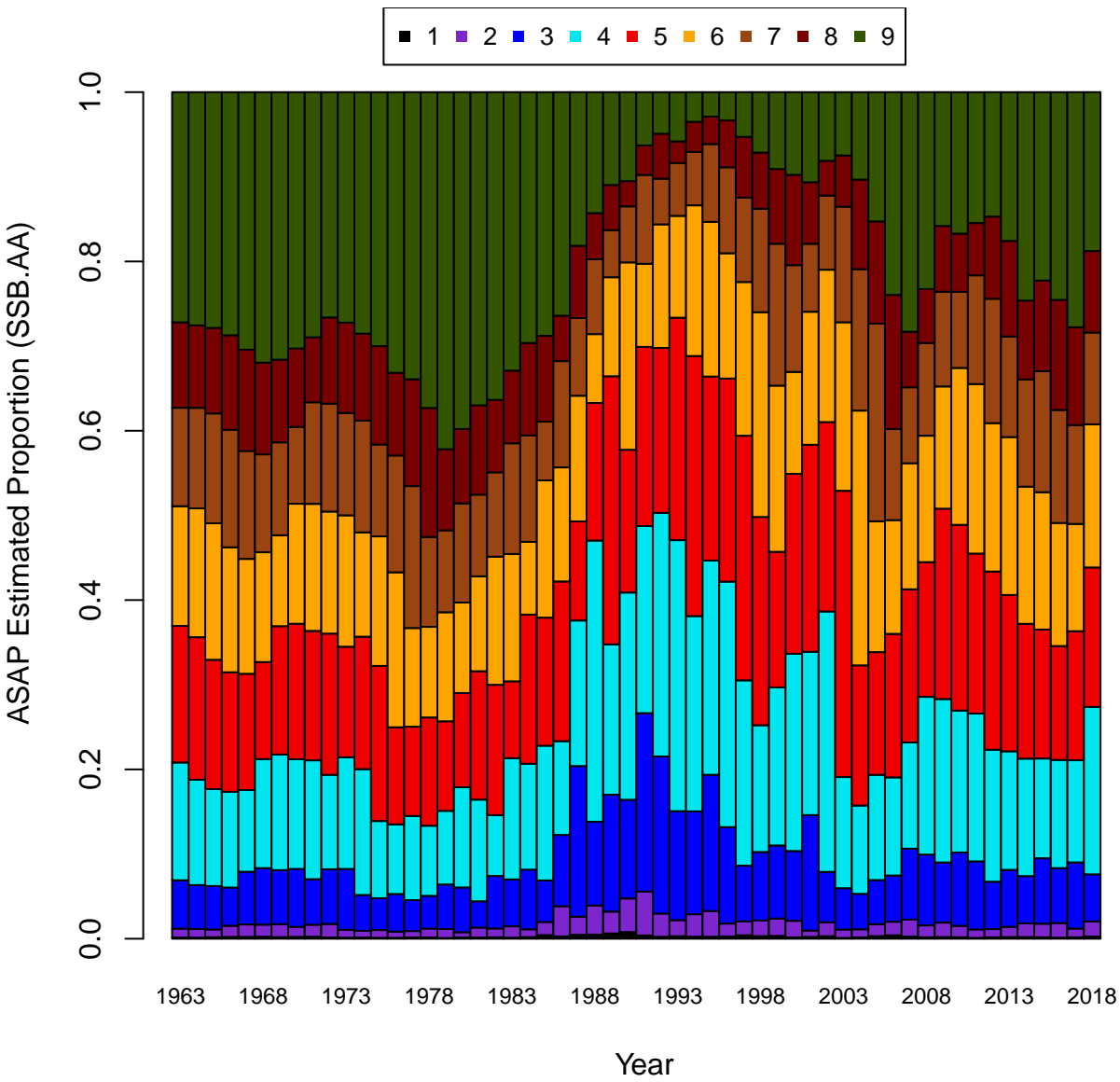


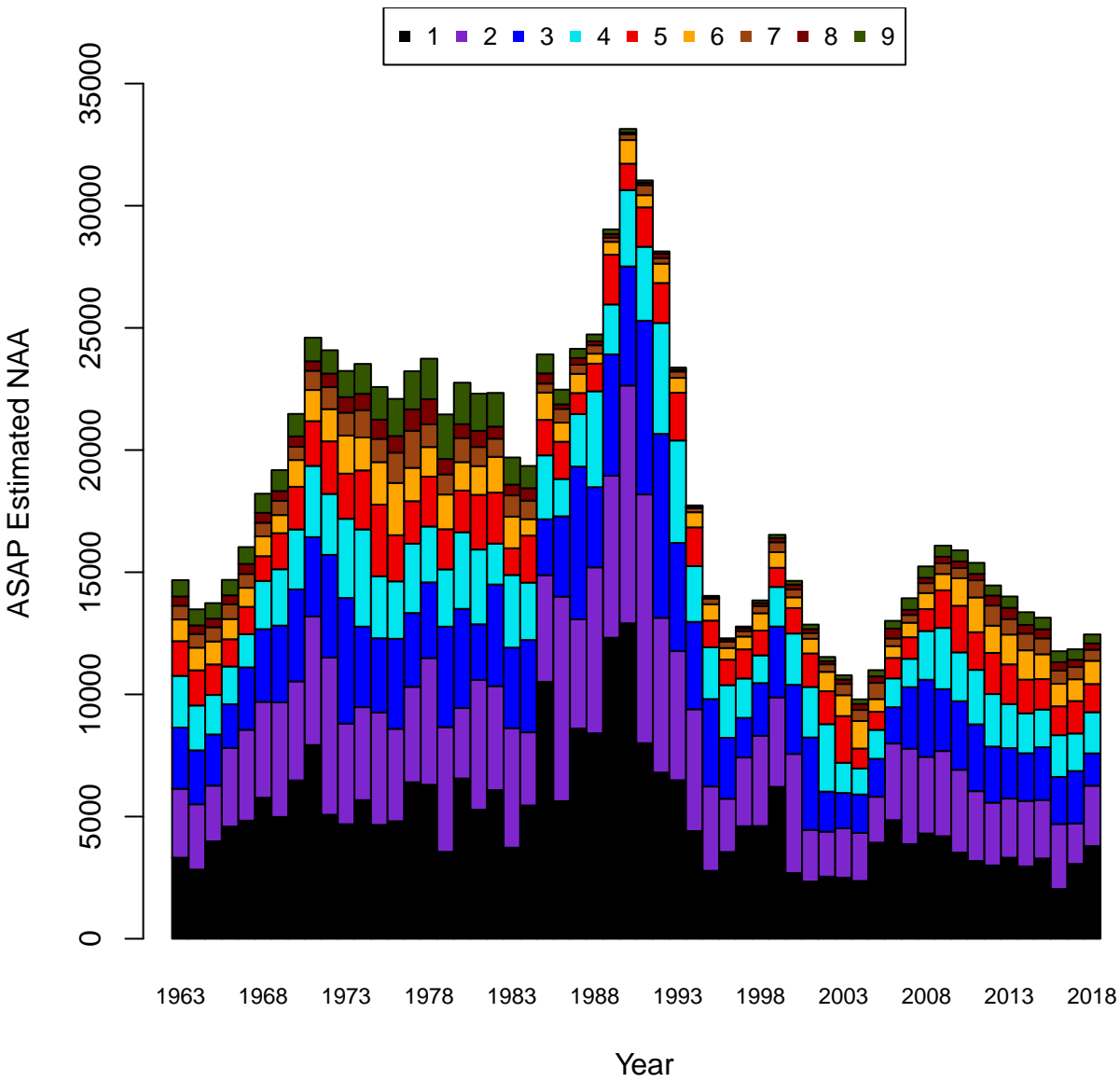


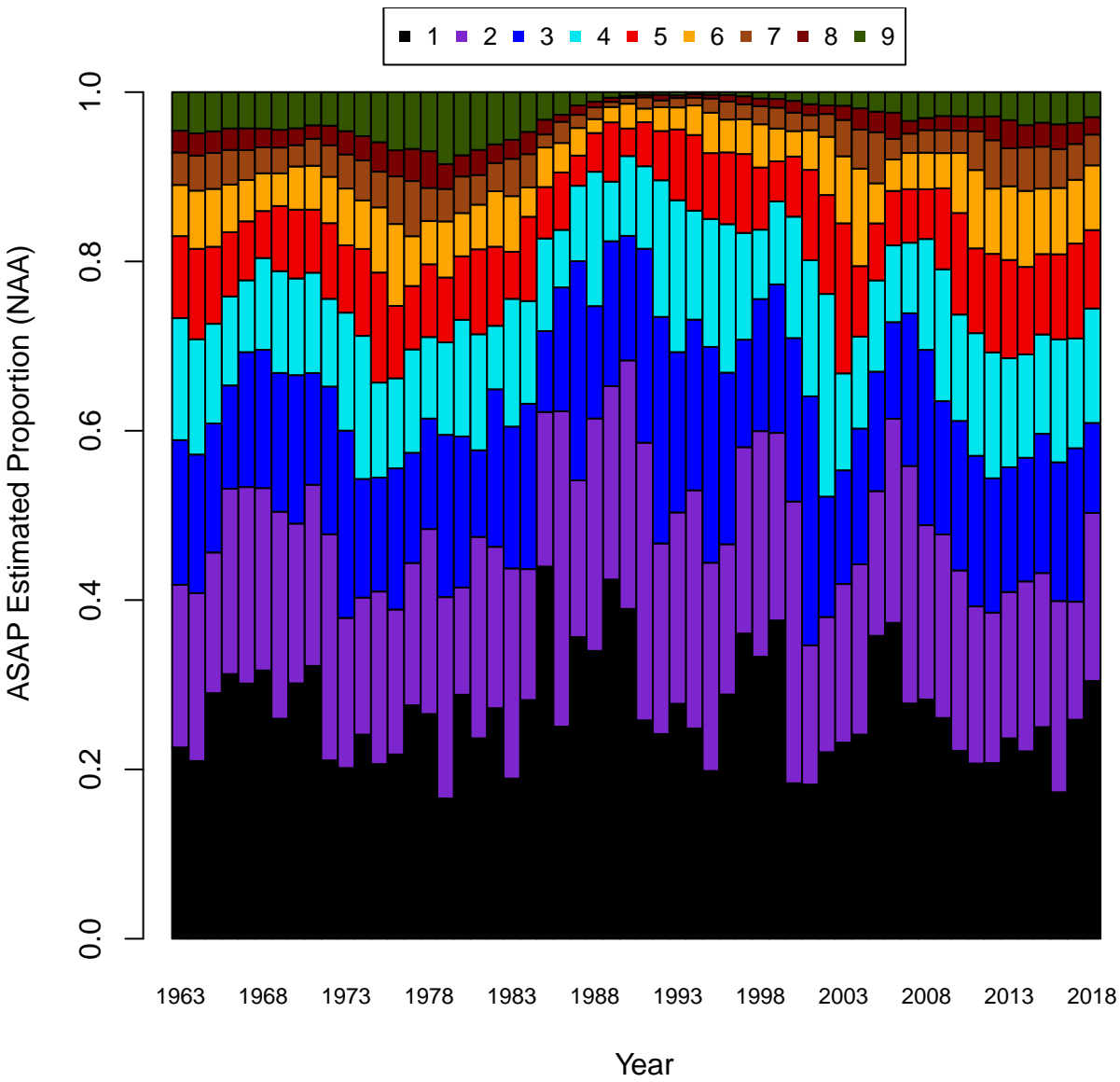
Comparison of January 1 Biomass

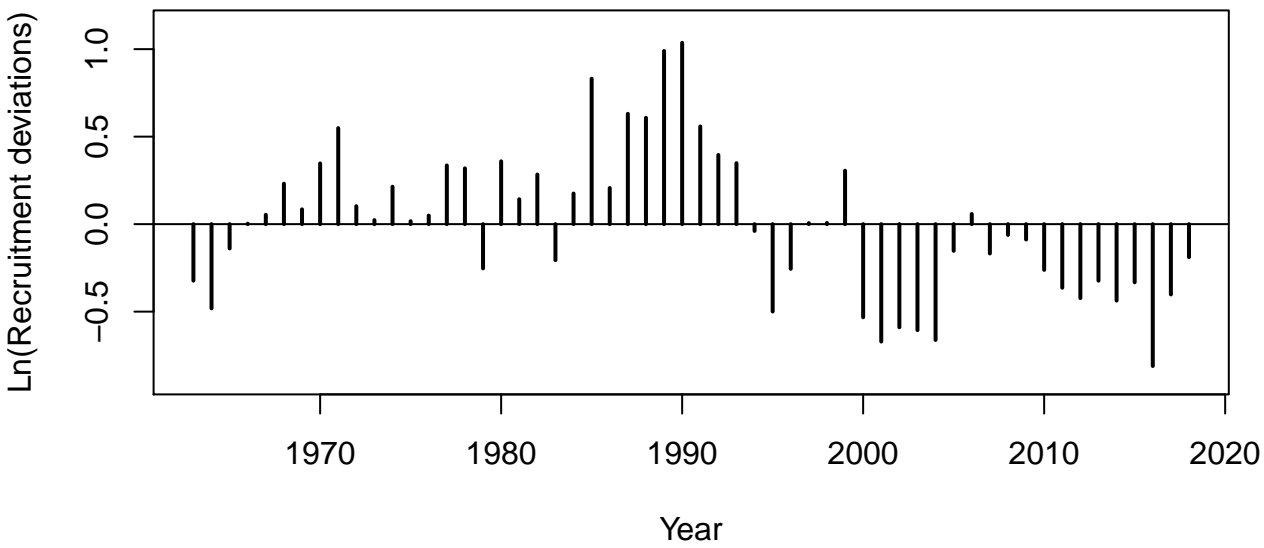
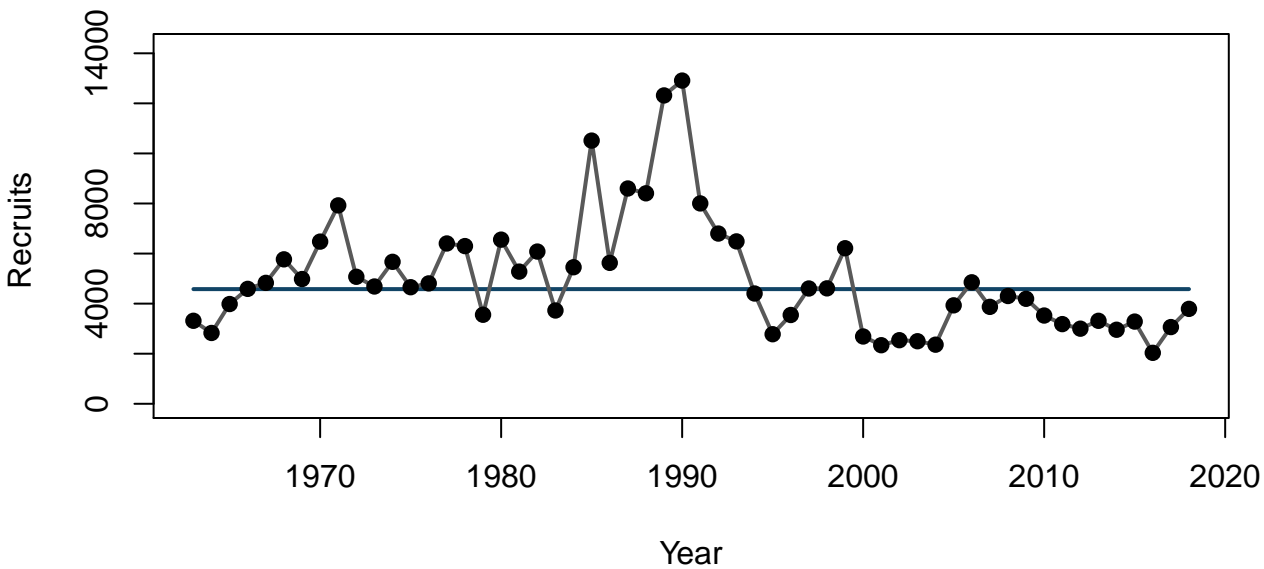


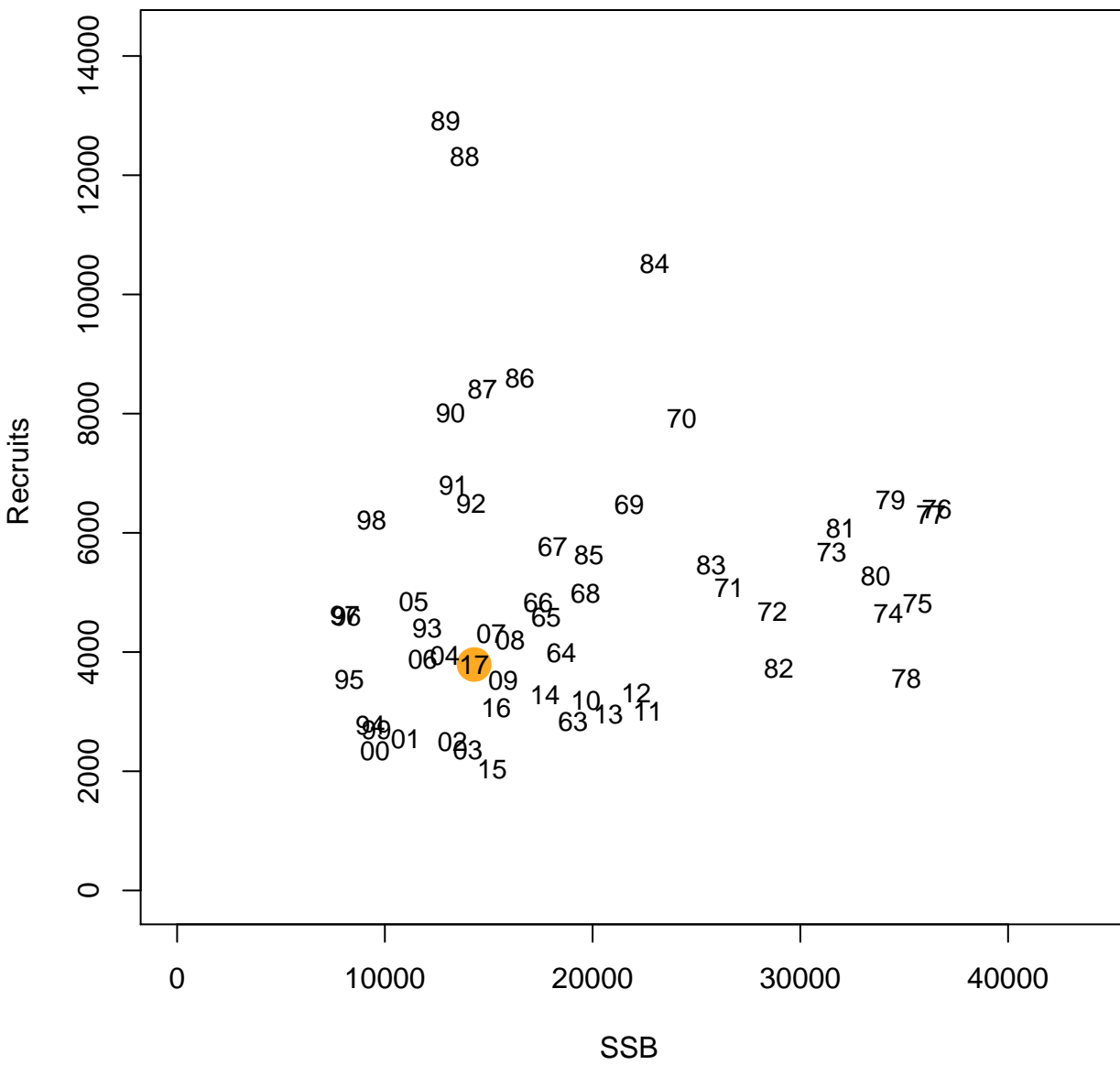


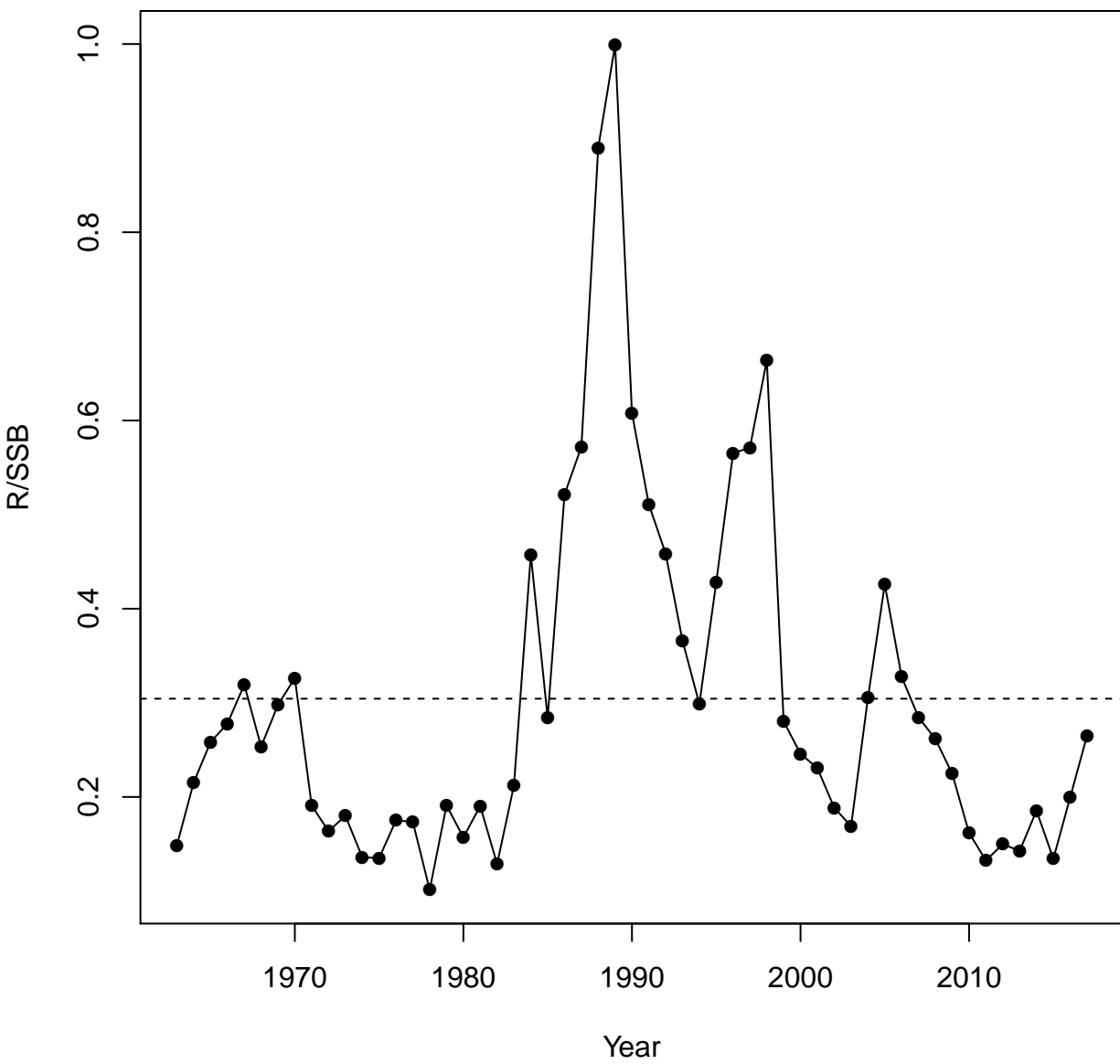


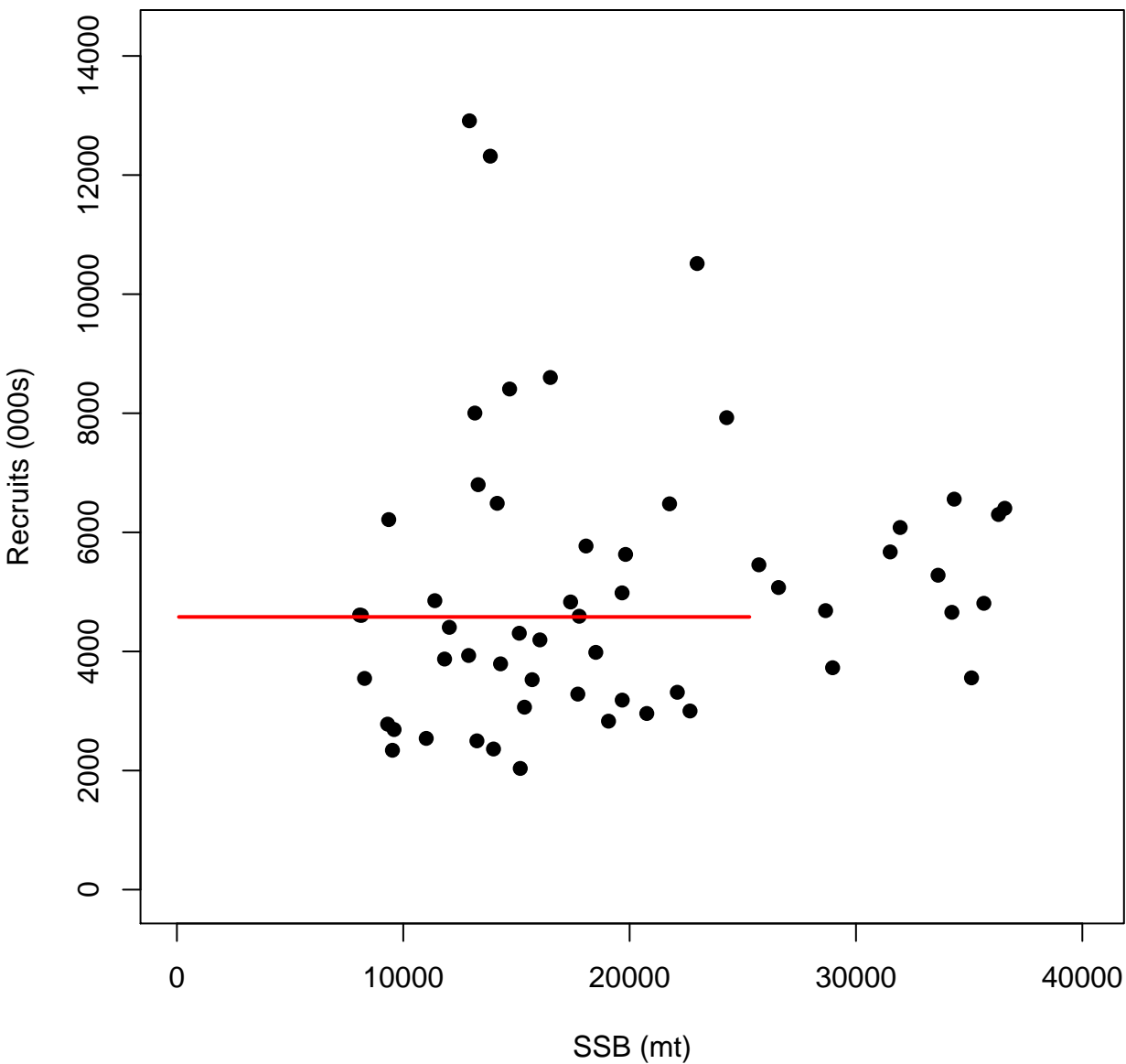


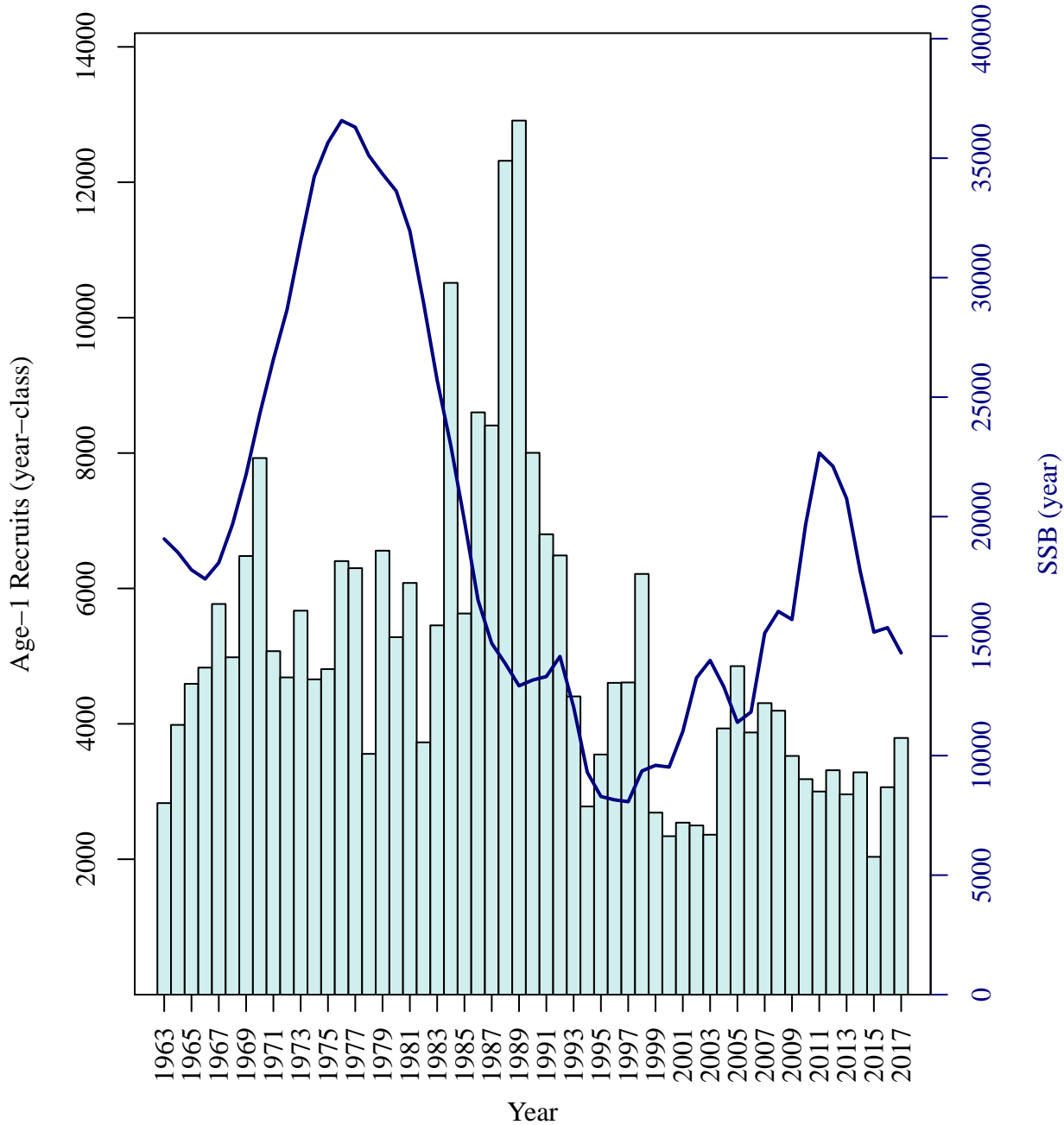




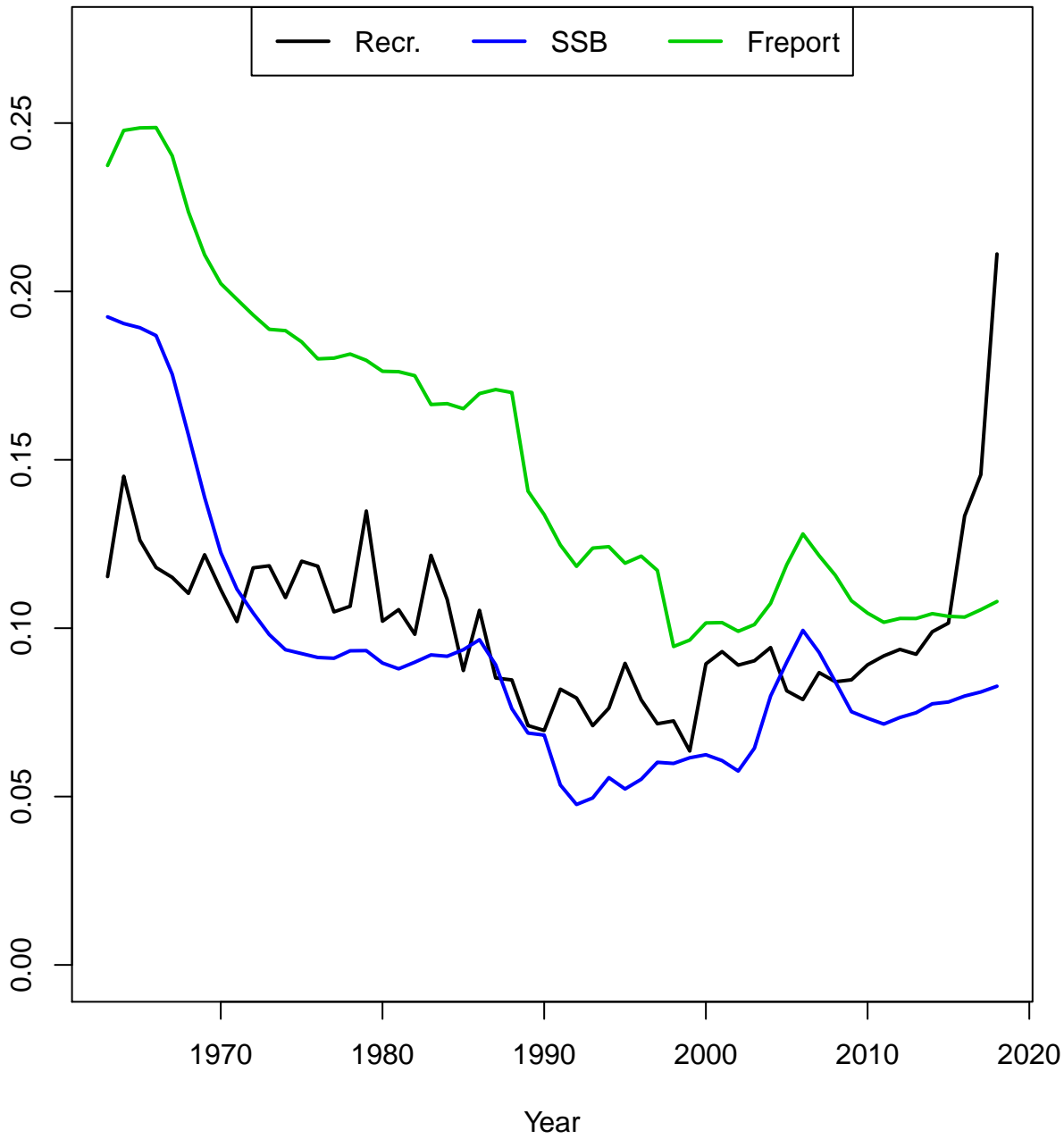




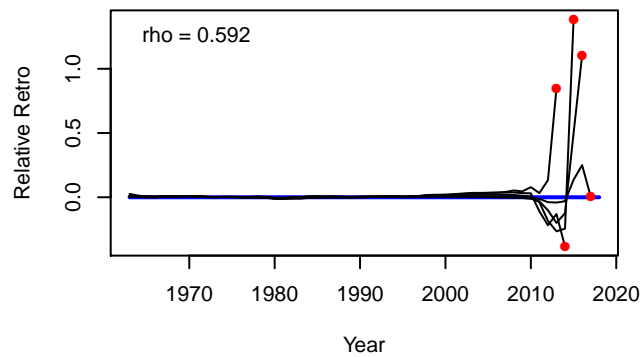
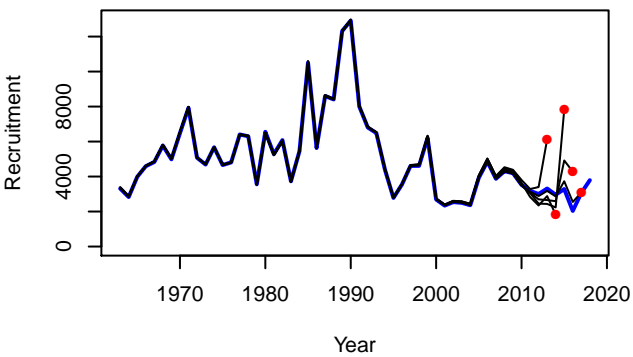
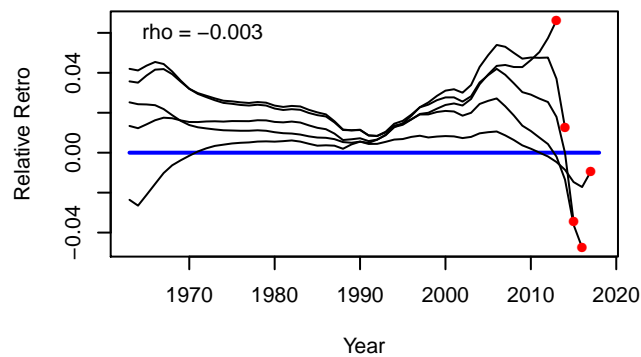
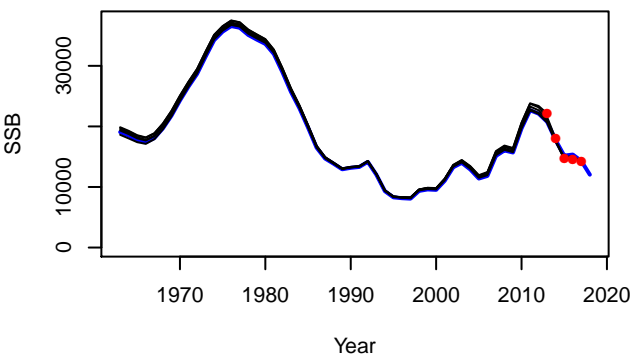
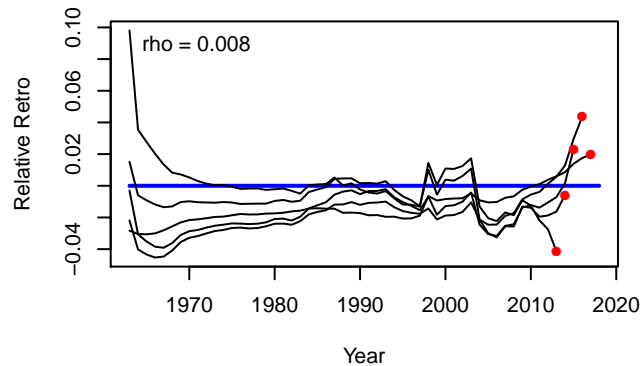
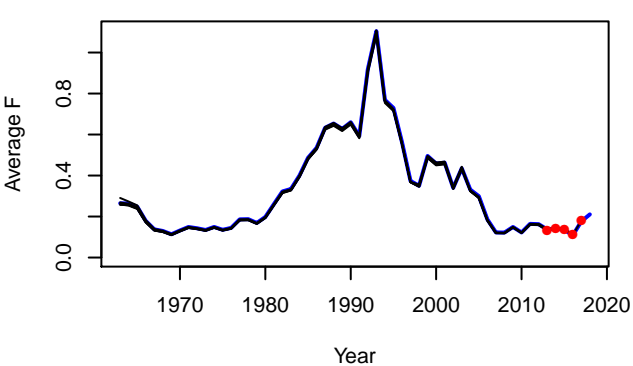




CV

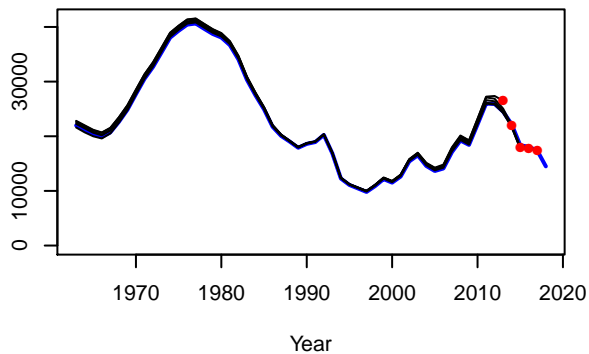


F, SSB, R

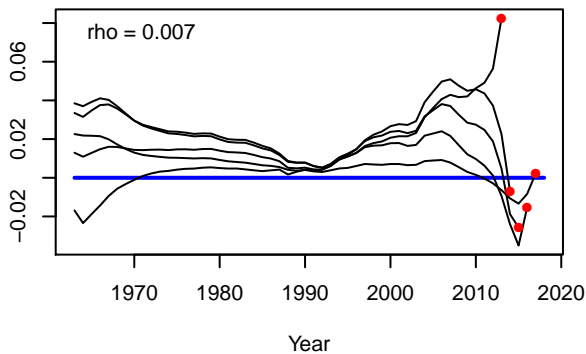


Jan-1 B, Exploitable B, Total Stock N

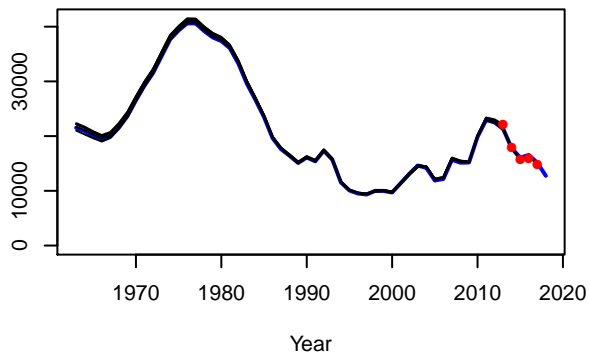
Jan-1 B



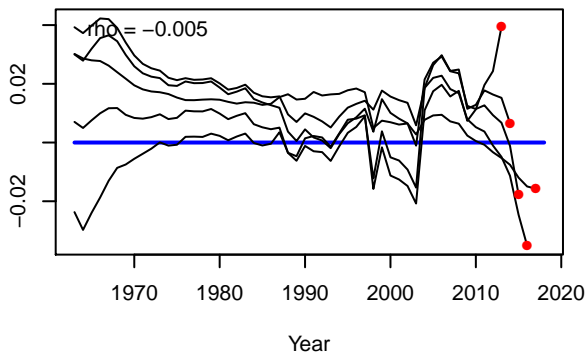
Relative Retro



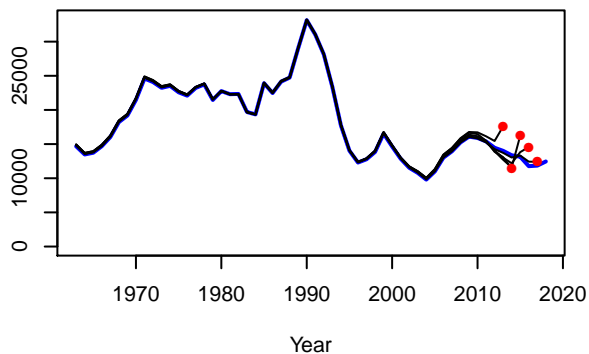
Exploitable B



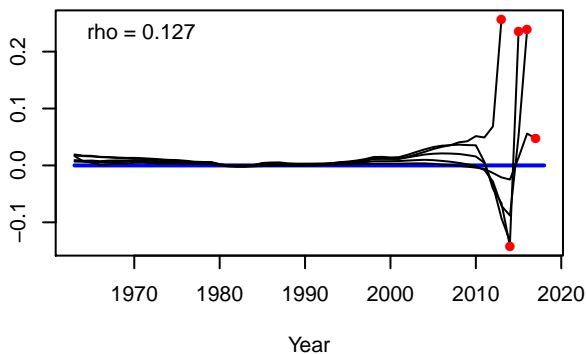
Relative Retro



Total Stock N

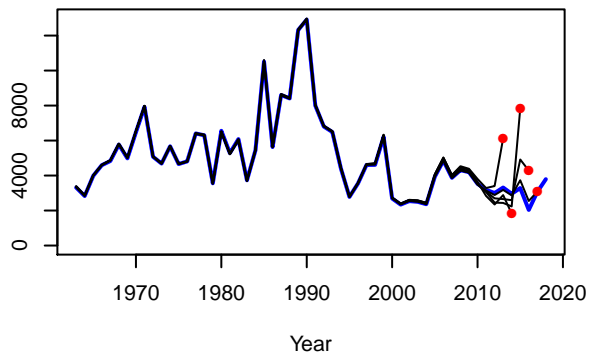


Relative Retro

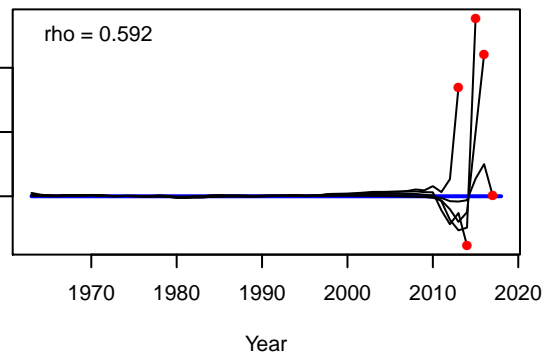


Stock Numbers at Age

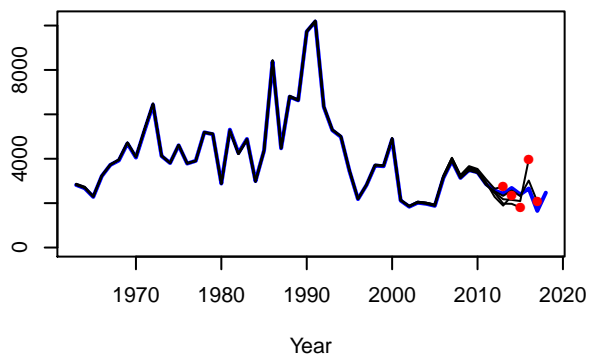
N at Age 1



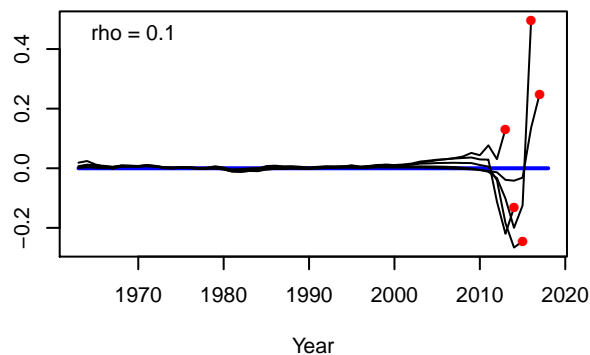
Relative Retro



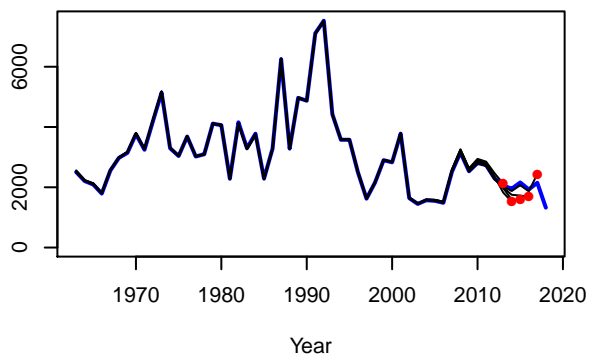
N at Age 2



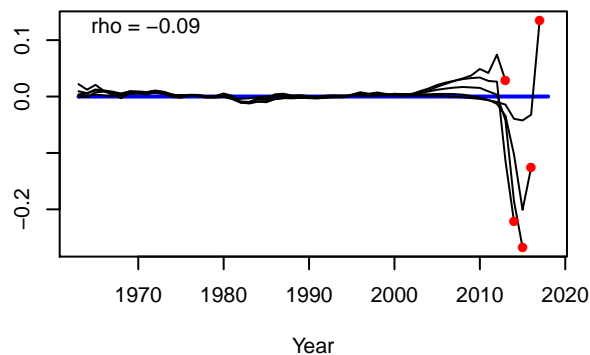
Relative Retro



N at Age 3

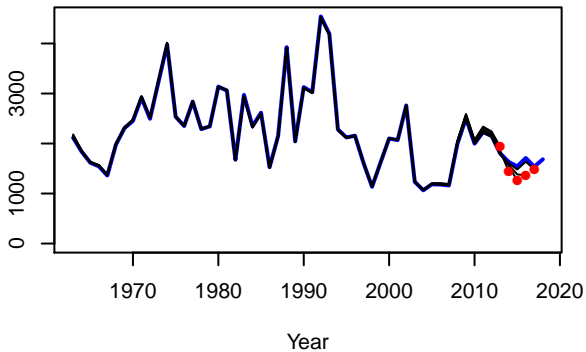


Relative Retro

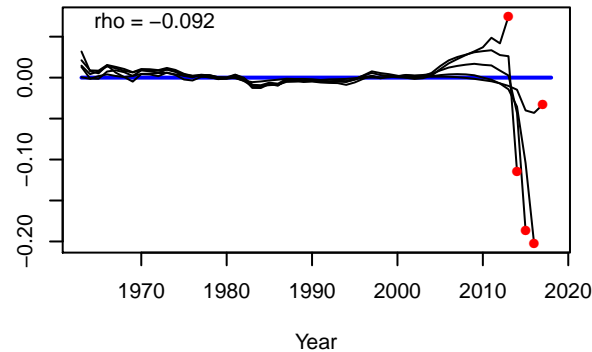


Stock Numbers at Age

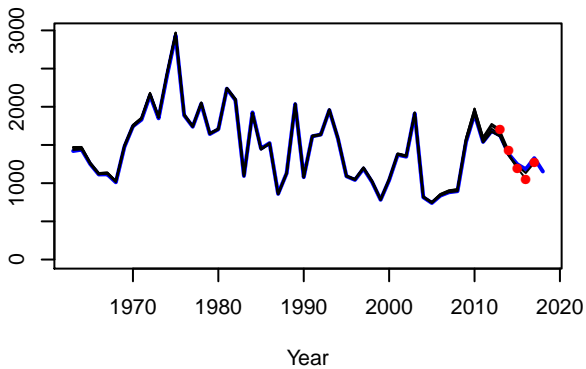
N at Age 4



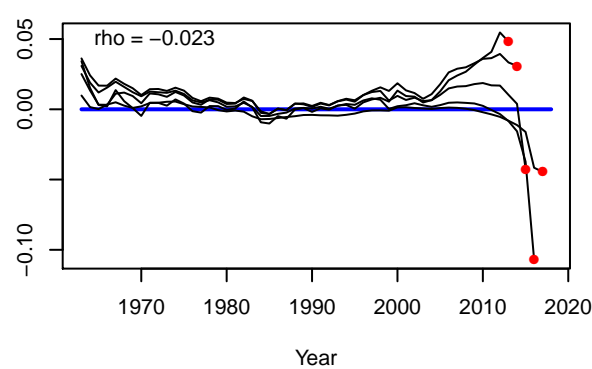
Relative Retro



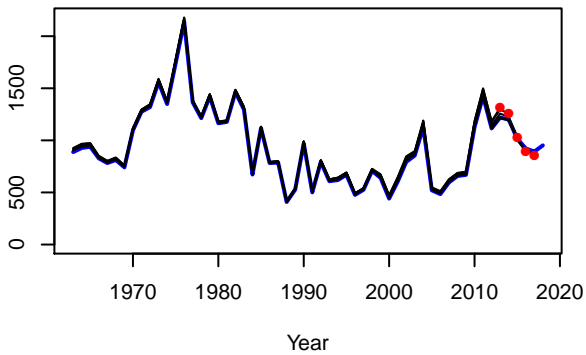
N at Age 5



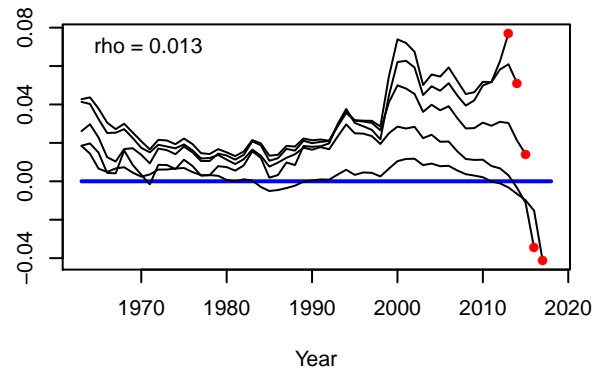
Relative Retro



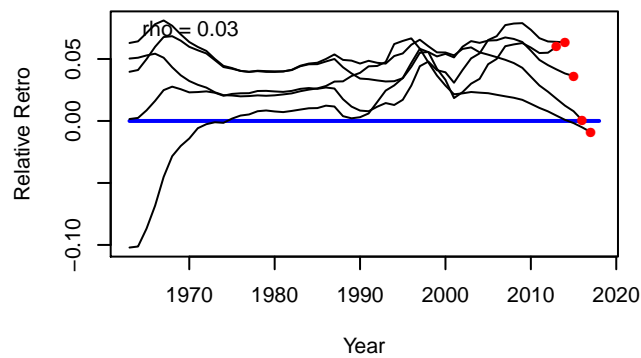
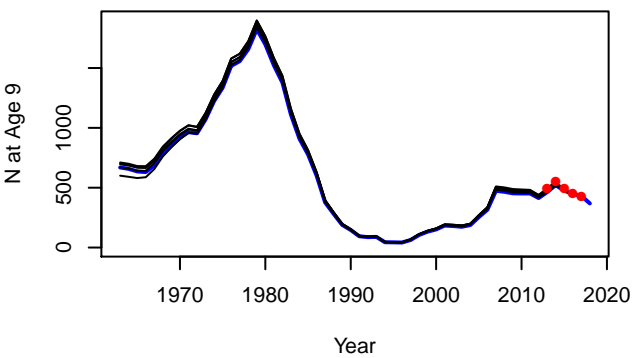
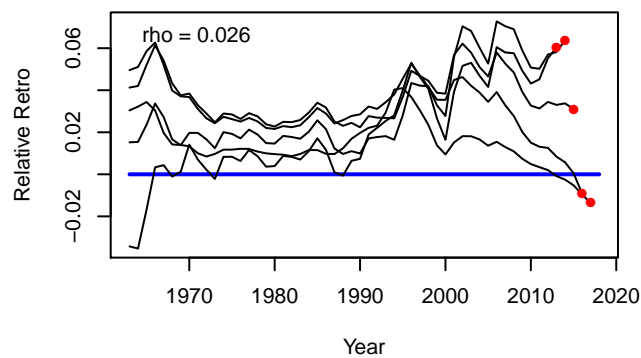
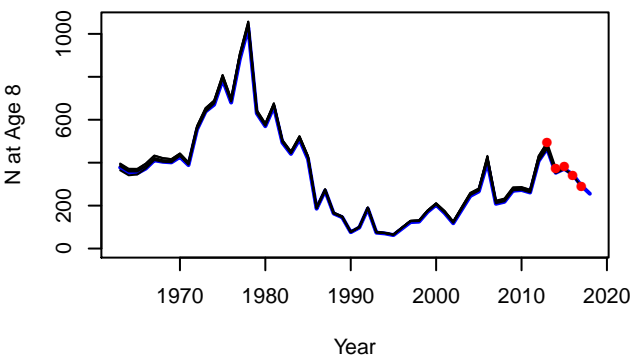
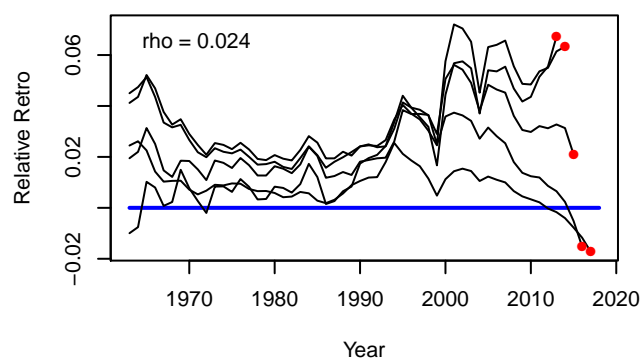
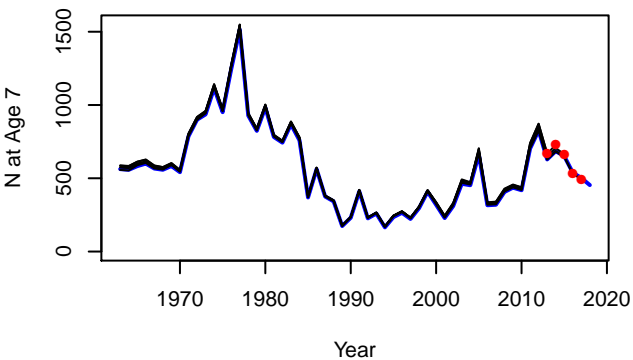
N at Age 6



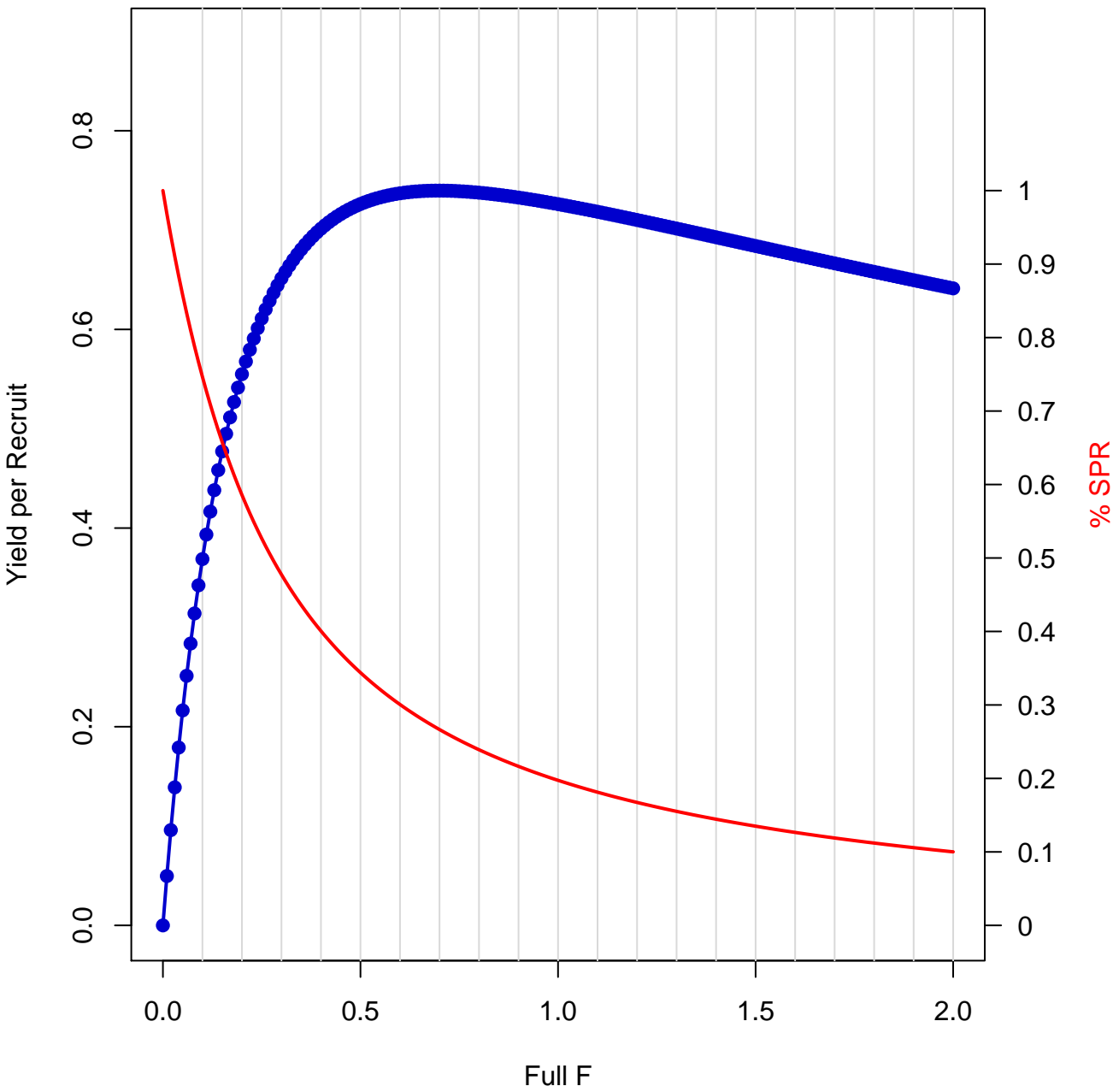
Relative Retro



Stock Numbers at Age



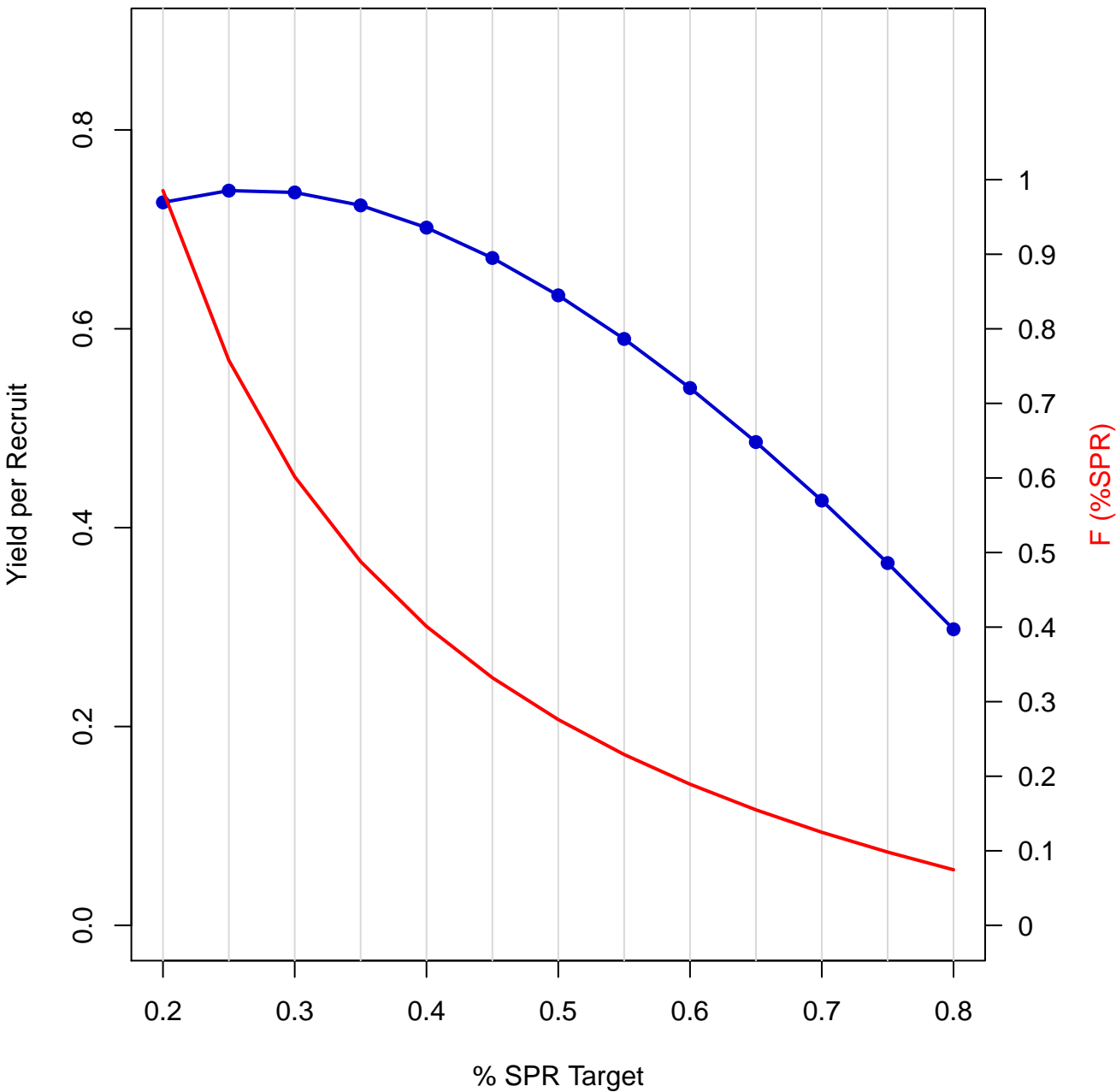
YPR-SPR Reference Points (Years Avg = 5)



YPR–SPR Reference Points (Years Avg = 5)

F	YPR	SPR	F	YPR	SPR	F	YPR	SPR
0	0	1	0.35	0.6806	0.436	0.7	0.7397	0.2665
0.01	0.0497	0.9686	0.36	0.6853	0.4284	0.71	0.7397	0.2635
0.02	0.0959	0.9388	0.37	0.6897	0.4212	0.72	0.7396	0.2606
0.03	0.139	0.9105	0.38	0.6939	0.4141	0.73	0.7395	0.2577
0.04	0.1791	0.8836	0.39	0.6978	0.4073	0.74	0.7393	0.2549
0.05	0.2164	0.8579	0.4	0.7014	0.4006	0.75	0.7392	0.2521
0.06	0.2513	0.8335	0.41	0.7048	0.3942	0.76	0.7389	0.2494
0.07	0.2837	0.8102	0.42	0.7079	0.388	0.77	0.7387	0.2467
0.08	0.3141	0.788	0.43	0.7108	0.3819	0.78	0.7384	0.2441
0.09	0.3424	0.7668	0.44	0.7136	0.376	0.79	0.738	0.2416
0.1	0.3688	0.7466	0.45	0.7161	0.3703	0.8	0.7377	0.239
0.11	0.3935	0.7272	0.46	0.7185	0.3647	0.81	0.7373	0.2366
0.12	0.4166	0.7087	0.47	0.7206	0.3593	0.82	0.7369	0.2342
0.13	0.4382	0.691	0.48	0.7227	0.3541	0.83	0.7364	0.2318
0.14	0.4583	0.6741	0.49	0.7245	0.3489	0.84	0.736	0.2295
0.15	0.4772	0.6578	0.5	0.7262	0.344	0.85	0.7355	0.2272
0.16	0.4949	0.6422	0.51	0.7278	0.3391	0.86	0.735	0.225
0.17	0.5114	0.6272	0.52	0.7293	0.3344	0.87	0.7344	0.2228
0.18	0.5269	0.6129	0.53	0.7306	0.3298	0.88	0.7339	0.2206
0.19	0.5414	0.5991	0.54	0.7318	0.3253	0.89	0.7333	0.2185
0.2	0.555	0.5858	0.55	0.7329	0.3209	0.9	0.7327	0.2164
0.21	0.5677	0.5731	0.56	0.7339	0.3167	0.91	0.7321	0.2144
0.22	0.5796	0.5608	0.57	0.7348	0.3125	0.92	0.7315	0.2123
0.23	0.5907	0.549	0.58	0.7357	0.3085	0.93	0.7309	0.2104
0.24	0.6012	0.5376	0.59	0.7364	0.3045	0.94	0.7303	0.2084
0.25	0.611	0.5267	0.6	0.737	0.3006	0.95	0.7296	0.2065
0.26	0.6202	0.5161	0.61	0.7376	0.2969	0.96	0.7289	0.2046
0.27	0.6288	0.5059	0.62	0.7381	0.2932	0.97	0.7282	0.2028
0.28	0.6368	0.4961	0.63	0.7385	0.2896	0.98	0.7275	0.201
0.29	0.6444	0.4866	0.64	0.7389	0.2861	0.99	0.7268	0.1992
0.3	0.6514	0.4774	0.65	0.7391	0.2826	1	0.7261	0.1974
0.31	0.658	0.4686	0.66	0.7394	0.2793	1.01	0.7254	0.1957
0.32	0.6642	0.46	0.67	0.7395	0.276	1.02	0.7246	0.194
0.33	0.67	0.4517	0.68	0.7397	0.2728	1.03	0.7239	0.1923
0.34	0.6755	0.4437	0.69	0.7397	0.2696	1.04	0.7231	0.1906

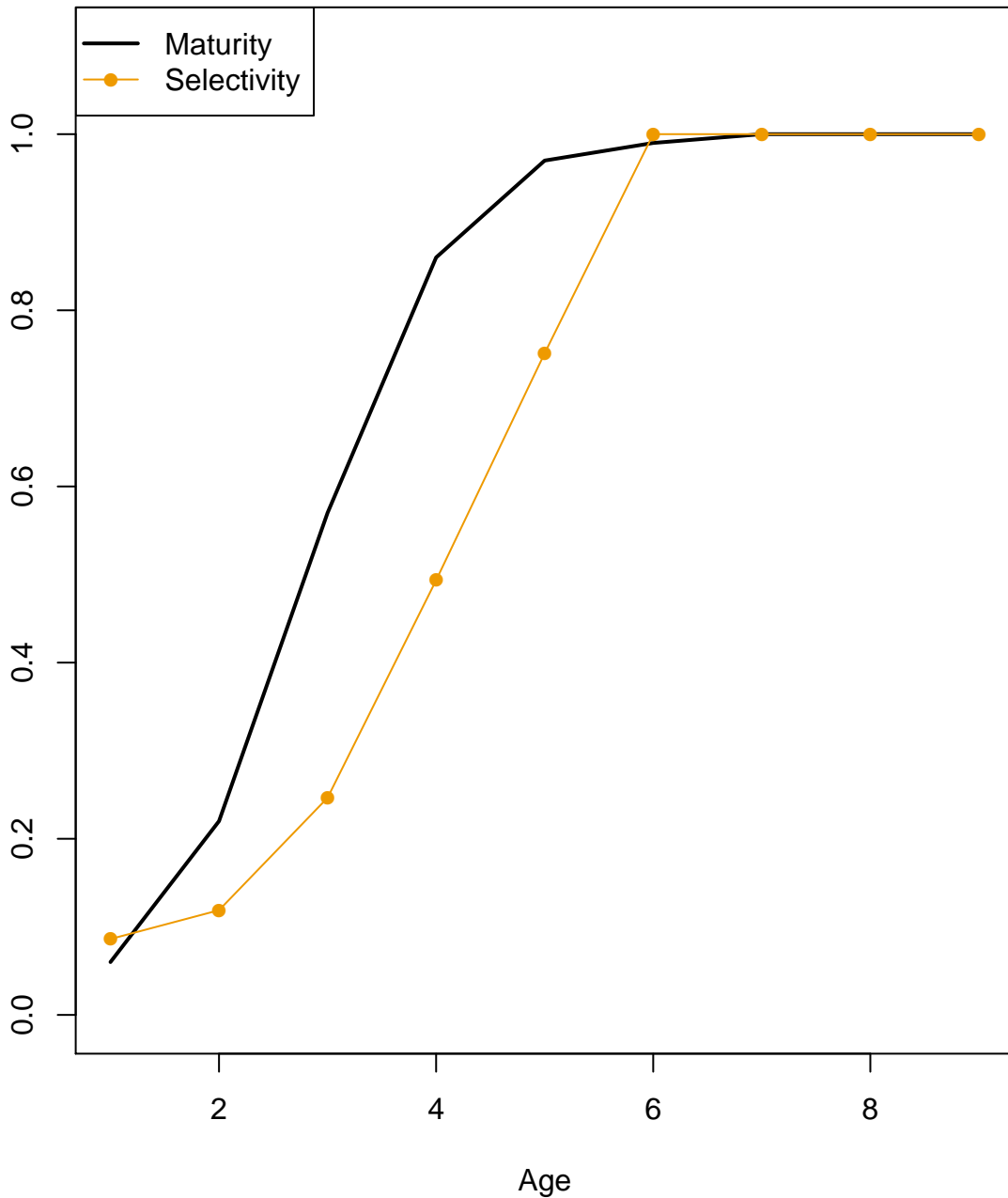
SPR Target Reference Points (Years Avg = 5)



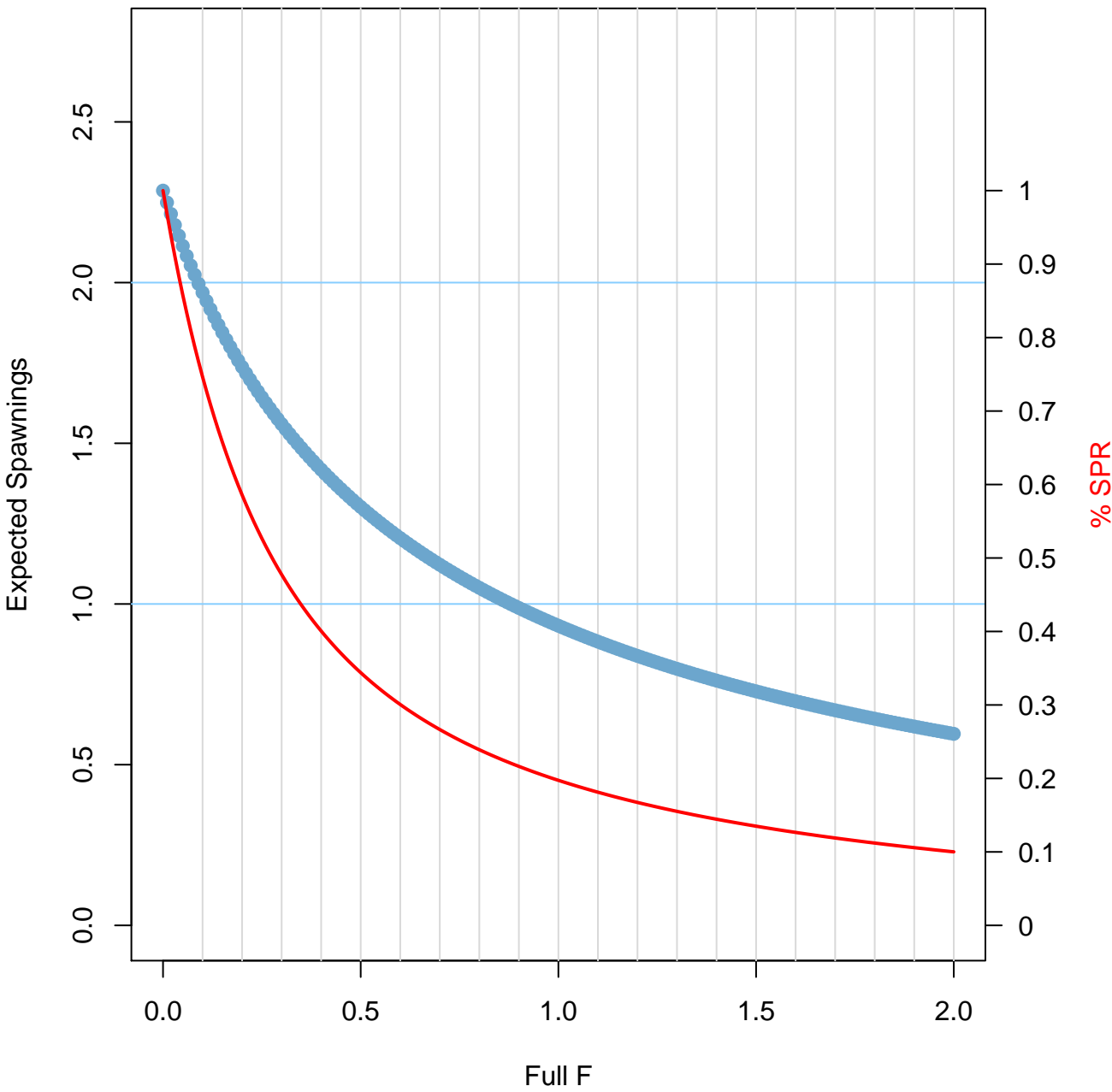
SPR Target Reference Points (Years Avg = 5)

% SPR	F(%SPR)	YPR
0.2	0.9853	0.7272
0.25	0.7577	0.739
0.3	0.6017	0.7371
0.35	0.4879	0.7241
0.4	0.401	0.7017
0.45	0.3321	0.6712
0.5	0.276	0.6336
0.55	0.2291	0.5898
0.6	0.1893	0.5404
0.65	0.1549	0.4861
0.7	0.1249	0.4273
0.75	0.0983	0.3644
0.8	0.0746	0.2978

Selectivity or Maturity at age



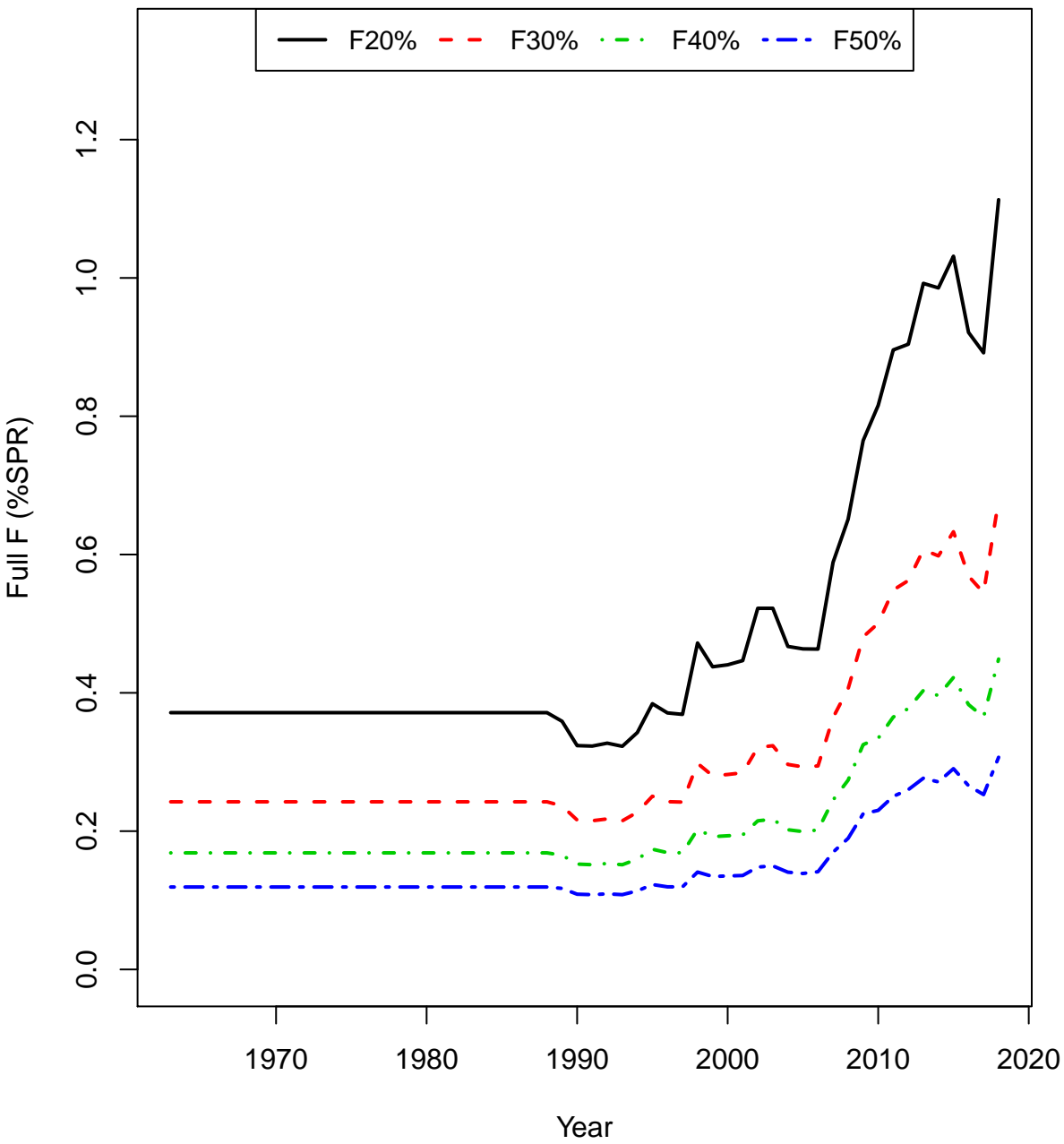
Expected Spawns and SPR Reference Points (Years Avg = 5)



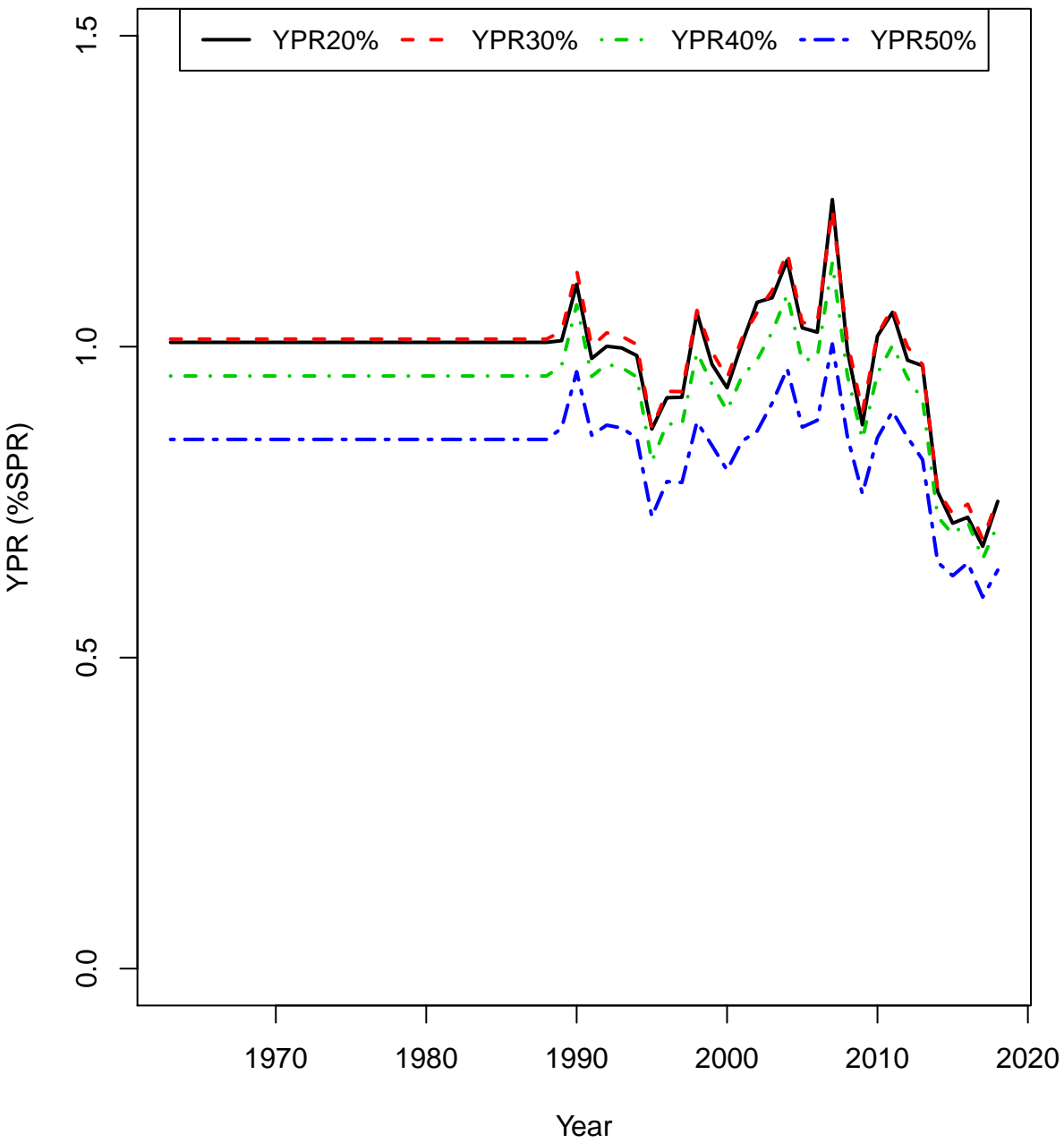
Expected Spawns & SPR Reference Points (Years Avg = 5)

F	E[Sp]	SPR	F	E[Sp]	SPR	F	E[Sp]	SPR
0	2.2862	1	0.35	1.4852	0.436	0.7	1.1221	0.2665
0.01	2.2493	0.9686	0.36	1.4712	0.4284	0.71	1.1145	0.2635
0.02	2.2136	0.9388	0.37	1.4575	0.4212	0.72	1.107	0.2606
0.03	2.1793	0.9105	0.38	1.4441	0.4141	0.73	1.0996	0.2577
0.04	2.1461	0.8836	0.39	1.431	0.4073	0.74	1.0923	0.2549
0.05	2.1141	0.8579	0.4	1.4181	0.4006	0.75	1.0851	0.2521
0.06	2.0832	0.8335	0.41	1.4055	0.3942	0.76	1.078	0.2494
0.07	2.0532	0.8102	0.42	1.3931	0.388	0.77	1.071	0.2467
0.08	2.0243	0.788	0.43	1.381	0.3819	0.78	1.0641	0.2441
0.09	1.9963	0.7668	0.44	1.3691	0.376	0.79	1.0572	0.2416
0.1	1.9691	0.7466	0.45	1.3574	0.3703	0.8	1.0505	0.239
0.11	1.9428	0.7272	0.46	1.3459	0.3647	0.81	1.0439	0.2366
0.12	1.9173	0.7087	0.47	1.3347	0.3593	0.82	1.0373	0.2342
0.13	1.8925	0.691	0.48	1.3236	0.3541	0.83	1.0309	0.2318
0.14	1.8685	0.6741	0.49	1.3128	0.3489	0.84	1.0245	0.2295
0.15	1.8451	0.6578	0.5	1.3021	0.344	0.85	1.0182	0.2272
0.16	1.8224	0.6422	0.51	1.2916	0.3391	0.86	1.0119	0.225
0.17	1.8003	0.6272	0.52	1.2813	0.3344	0.87	1.0058	0.2228
0.18	1.7788	0.6129	0.53	1.2712	0.3298	0.88	0.9997	0.2206
0.19	1.7579	0.5991	0.54	1.2613	0.3253	0.89	0.9937	0.2185
0.2	1.7375	0.5858	0.55	1.2515	0.3209	0.9	0.9878	0.2164
0.21	1.7177	0.5731	0.56	1.2419	0.3167	0.91	0.982	0.2144
0.22	1.6984	0.5608	0.57	1.2324	0.3125	0.92	0.9762	0.2123
0.23	1.6795	0.549	0.58	1.2231	0.3085	0.93	0.9705	0.2104
0.24	1.6612	0.5376	0.59	1.214	0.3045	0.94	0.9648	0.2084
0.25	1.6432	0.5267	0.6	1.205	0.3006	0.95	0.9593	0.2065
0.26	1.6257	0.5161	0.61	1.1961	0.2969	0.96	0.9538	0.2046
0.27	1.6087	0.5059	0.62	1.1874	0.2932	0.97	0.9483	0.2028
0.28	1.592	0.4961	0.63	1.1788	0.2896	0.98	0.9429	0.201
0.29	1.5757	0.4866	0.64	1.1703	0.2861	0.99	0.9376	0.1992
0.3	1.5598	0.4774	0.65	1.162	0.2826	1	0.9324	0.1974
0.31	1.5442	0.4686	0.66	1.1538	0.2793	1.01	0.9272	0.1957
0.32	1.5289	0.46	0.67	1.1457	0.276	1.02	0.922	0.194
0.33	1.514	0.4517	0.68	1.1377	0.2728	1.03	0.917	0.1923
0.34	1.4995	0.4437	0.69	1.1299	0.2696	1.04	0.9119	0.1906

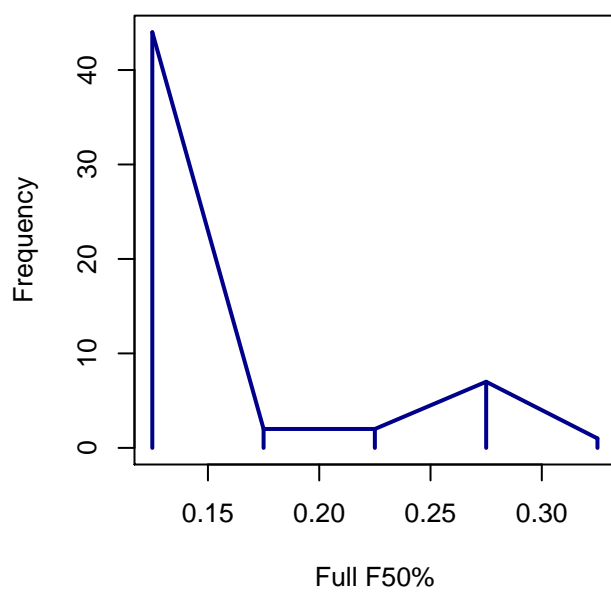
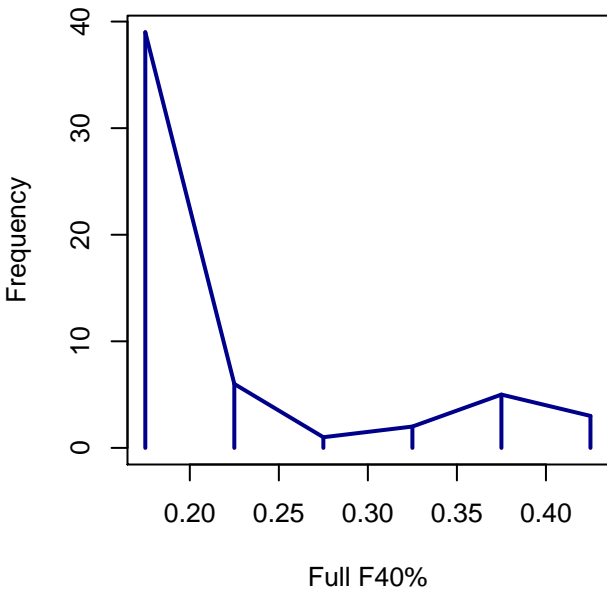
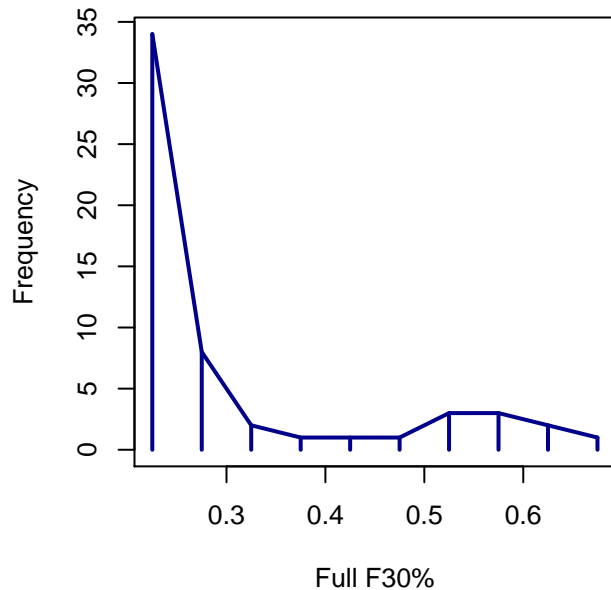
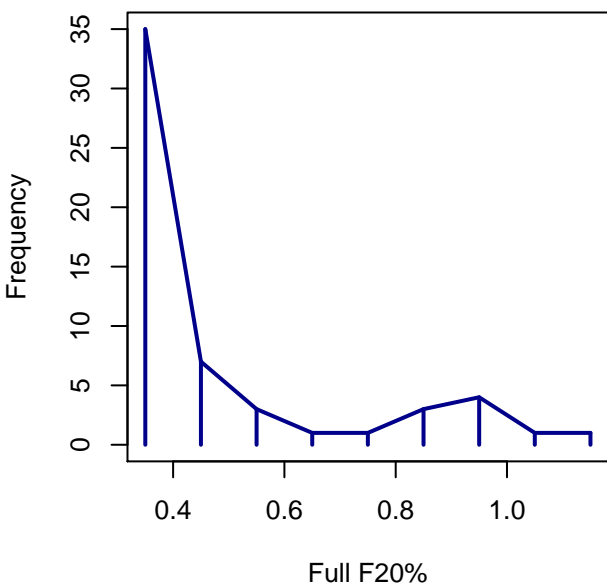
Annual F(%SPR) Reference Points



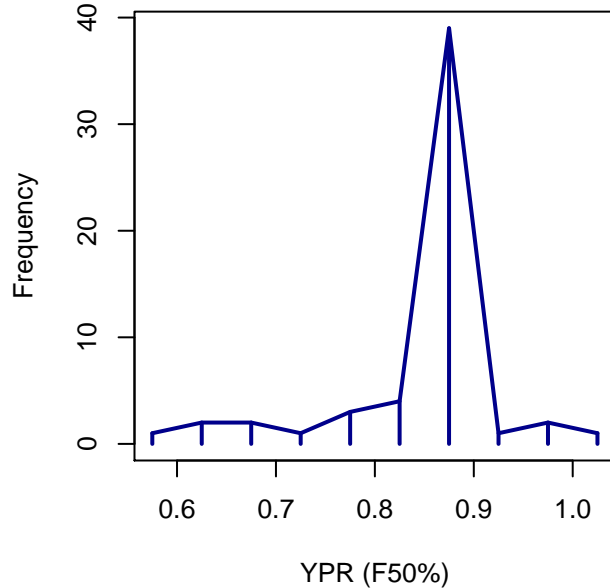
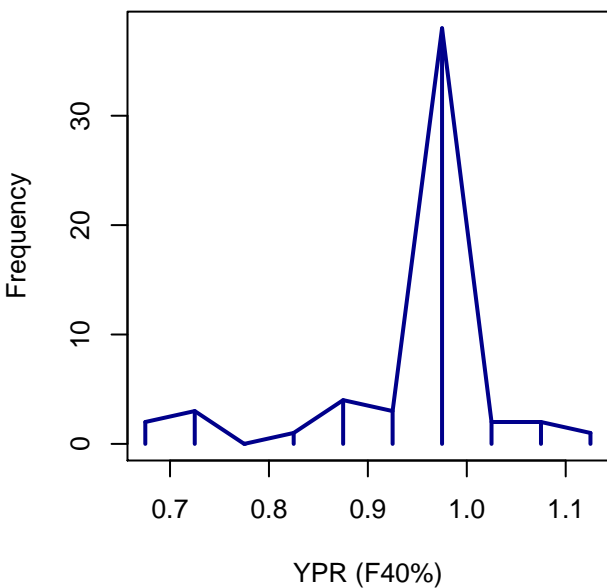
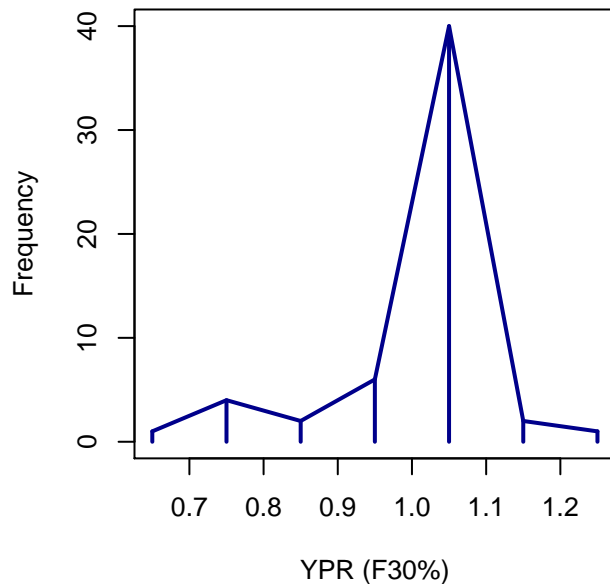
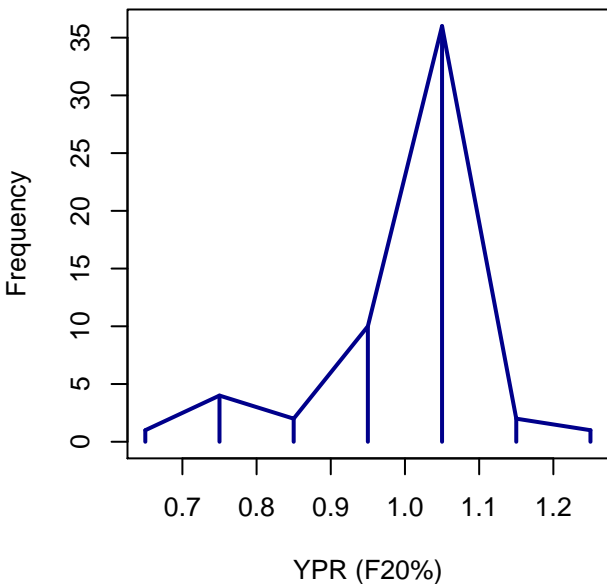
Annual YPR(%SPR) Reference Points



Annual F (%SPR) Reference Points

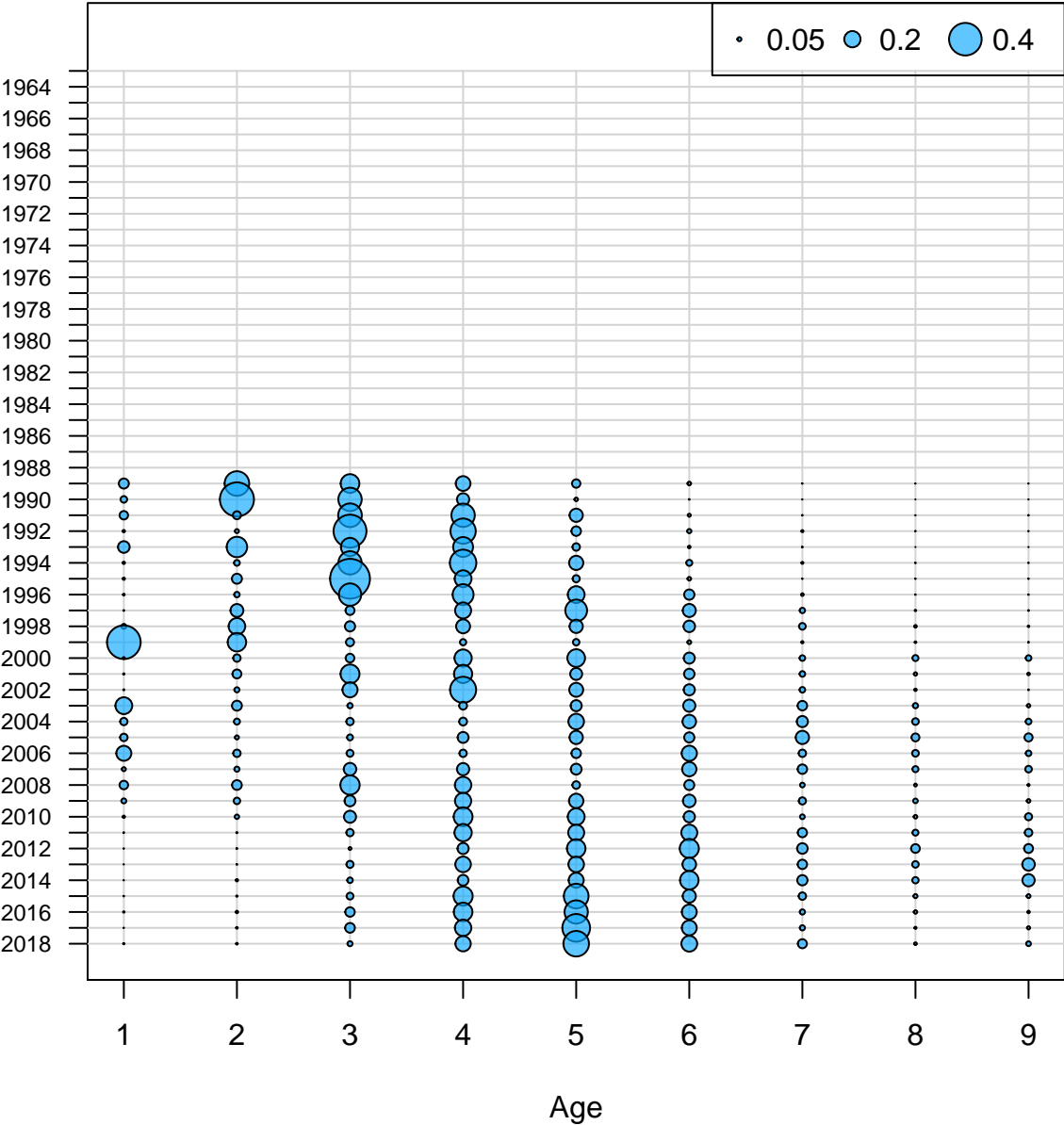


Annual YPR (%SPR) Reference Points



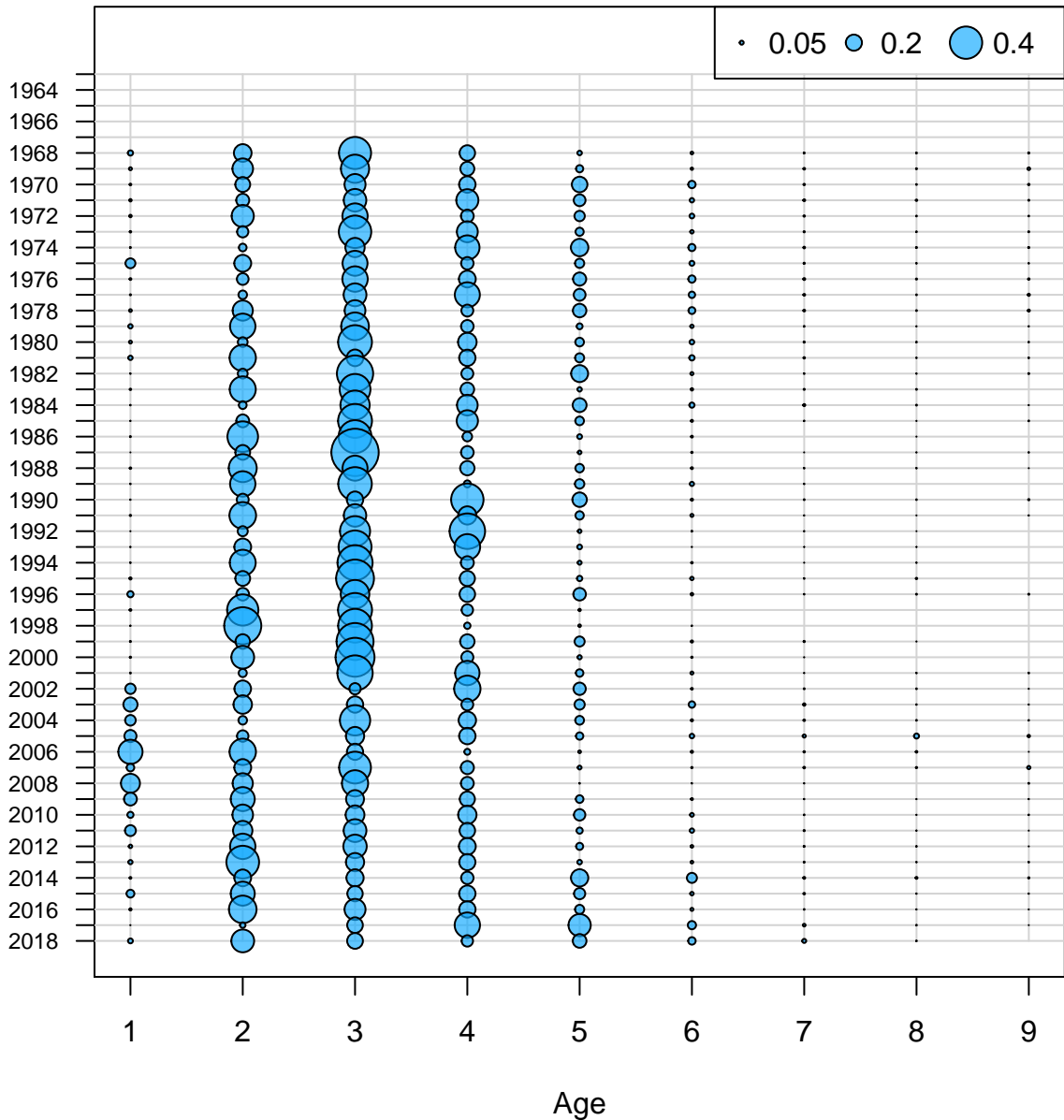


Age Comps for Catch by Fleet 1 (FLEET-1)





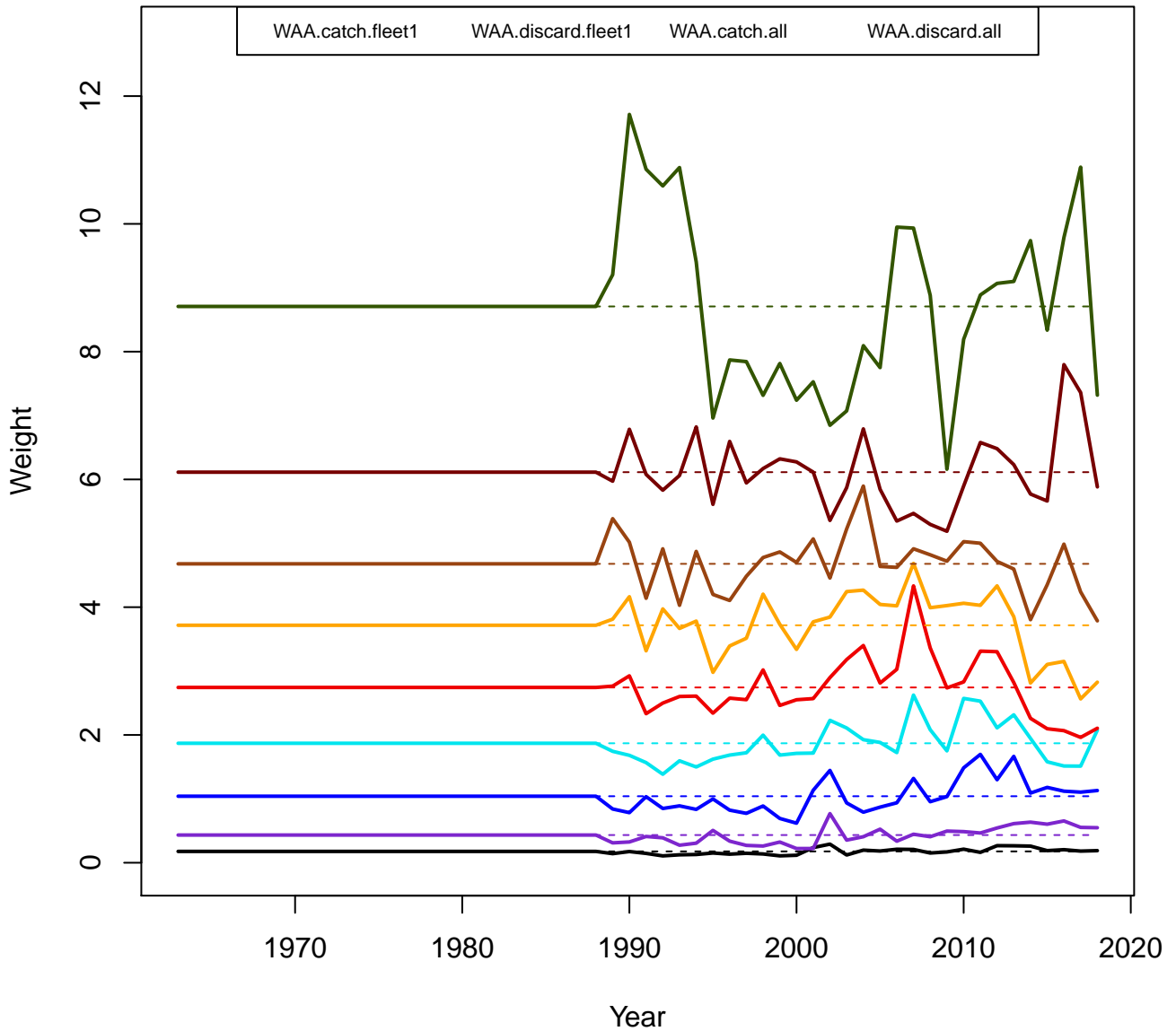
Age Comps for Index 1 (INDEX-1)



Age Comps for Index 2 (INDEX-2)



WAA matrix 1



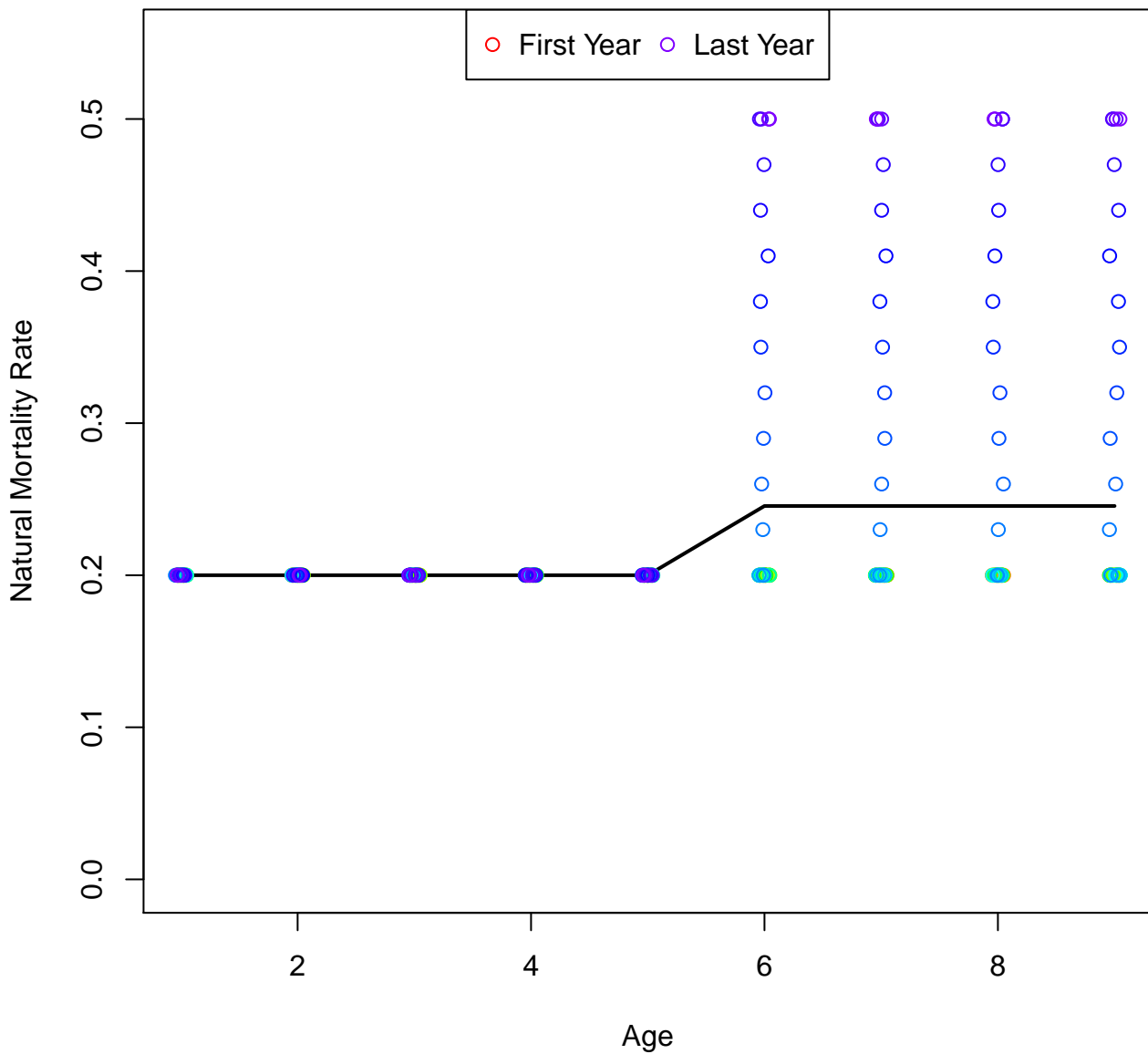
WAA matrix 2



WAA matrix 3



M



Maturity

