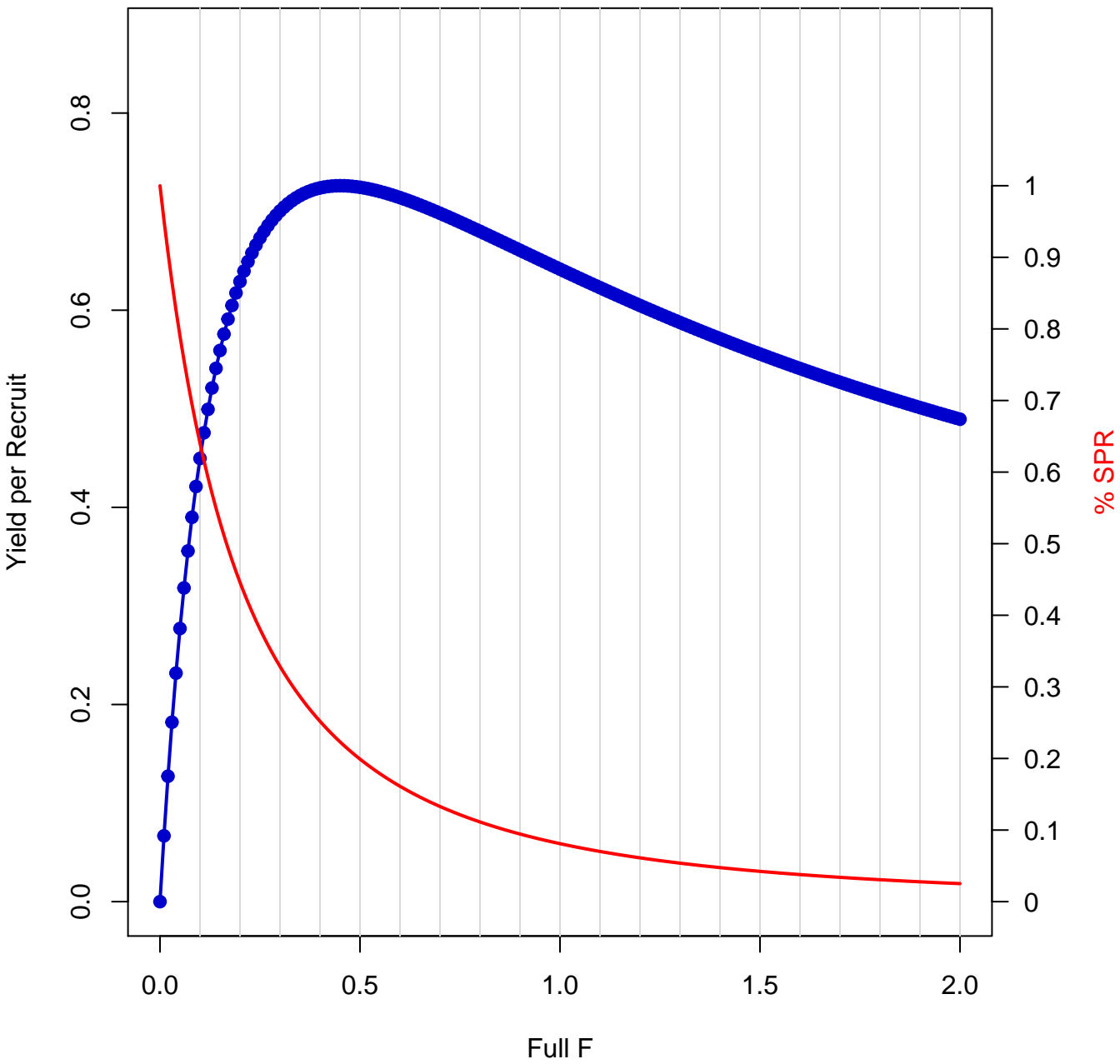


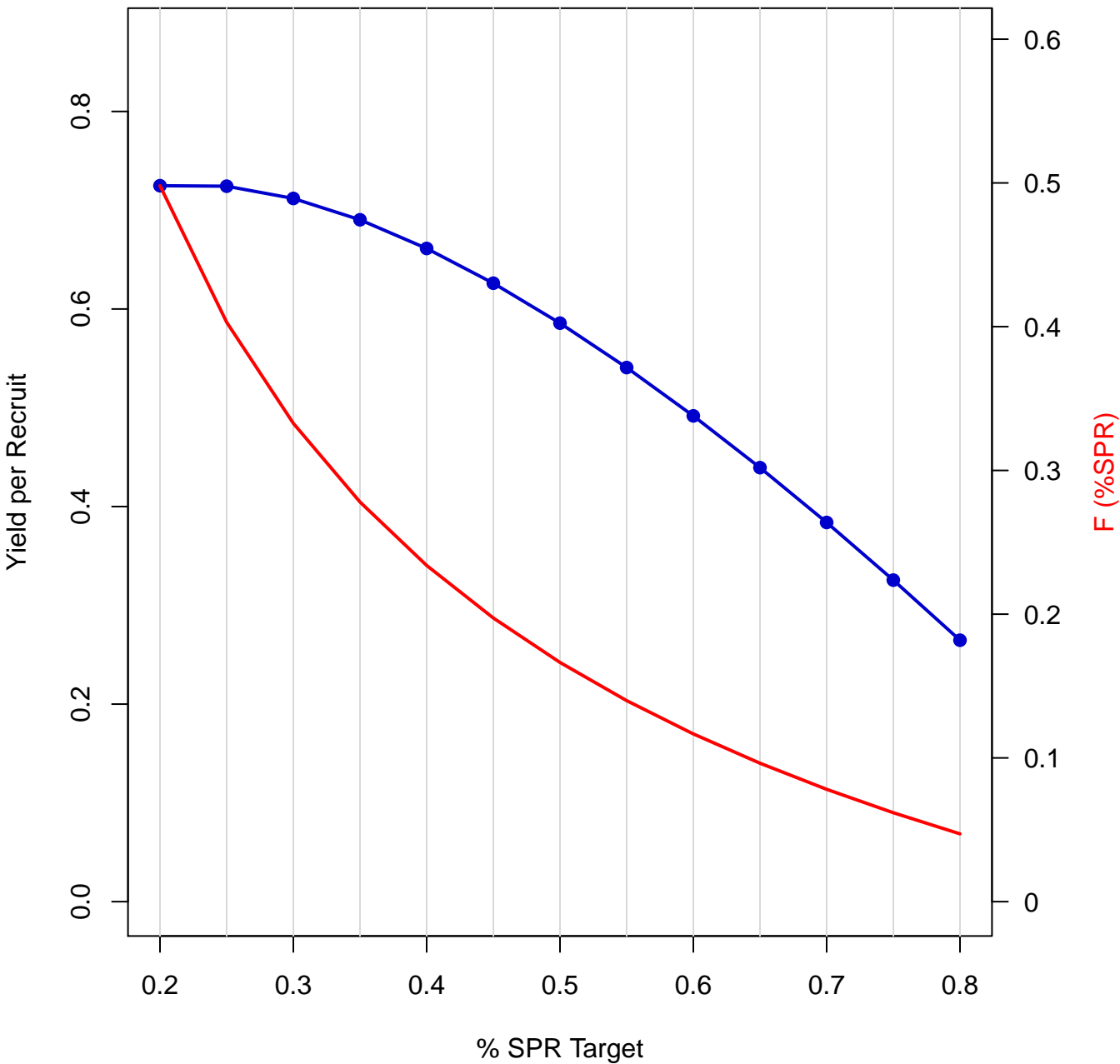
YPR-SPR Reference Points (Years Avg = 5)



YPR–SPR Reference Points (Years Avg = 5)

F	YPR	SPR	F	YPR	SPR	F	YPR	SPR
0	0	1	0.35	0.7163	0.2865	0.7	0.6983	0.1329
0.01	0.0668	0.9516	0.36	0.7184	0.279	0.71	0.6966	0.1305
0.02	0.1272	0.9068	0.37	0.7202	0.2719	0.72	0.6948	0.1281
0.03	0.1821	0.8651	0.38	0.7217	0.265	0.73	0.693	0.1258
0.04	0.2318	0.8262	0.39	0.723	0.2583	0.74	0.6912	0.1236
0.05	0.2771	0.79	0.4	0.724	0.2519	0.75	0.6894	0.1214
0.06	0.3183	0.7561	0.41	0.7249	0.2458	0.76	0.6875	0.1193
0.07	0.3558	0.7244	0.42	0.7255	0.2398	0.77	0.6857	0.1172
0.08	0.39	0.6946	0.43	0.7259	0.2341	0.78	0.6838	0.1152
0.09	0.4212	0.6667	0.44	0.7262	0.2286	0.79	0.6819	0.1132
0.1	0.4496	0.6405	0.45	0.7263	0.2232	0.8	0.68	0.1113
0.11	0.4756	0.6158	0.46	0.7262	0.2181	0.81	0.6781	0.1094
0.12	0.4994	0.5925	0.47	0.726	0.2131	0.82	0.6762	0.1076
0.13	0.5211	0.5705	0.48	0.7257	0.2083	0.83	0.6743	0.1058
0.14	0.541	0.5497	0.49	0.7253	0.2036	0.84	0.6724	0.1041
0.15	0.5592	0.53	0.5	0.7247	0.1991	0.85	0.6705	0.1024
0.16	0.5758	0.5114	0.51	0.724	0.1948	0.86	0.6685	0.1007
0.17	0.591	0.4938	0.52	0.7232	0.1906	0.87	0.6666	0.0991
0.18	0.6048	0.477	0.53	0.7224	0.1865	0.88	0.6647	0.0975
0.19	0.6175	0.4611	0.54	0.7214	0.1825	0.89	0.6628	0.096
0.2	0.6291	0.446	0.55	0.7204	0.1787	0.9	0.6608	0.0944
0.21	0.6397	0.4317	0.56	0.7193	0.175	0.91	0.6589	0.093
0.22	0.6493	0.418	0.57	0.7181	0.1714	0.92	0.657	0.0915
0.23	0.6581	0.4049	0.58	0.7169	0.1679	0.93	0.655	0.0901
0.24	0.6661	0.3925	0.59	0.7156	0.1645	0.94	0.6531	0.0887
0.25	0.6734	0.3806	0.6	0.7142	0.1612	0.95	0.6512	0.0873
0.26	0.68	0.3692	0.61	0.7128	0.158	0.96	0.6493	0.086
0.27	0.6859	0.3584	0.62	0.7113	0.1549	0.97	0.6474	0.0847
0.28	0.6913	0.348	0.63	0.7098	0.1518	0.98	0.6454	0.0835
0.29	0.6962	0.3381	0.64	0.7083	0.1489	0.99	0.6435	0.0822
0.3	0.7006	0.3285	0.65	0.7067	0.146	1	0.6416	0.081
0.31	0.7045	0.3194	0.66	0.7051	0.1433	1.01	0.6397	0.0798
0.32	0.708	0.3107	0.67	0.7035	0.1406	1.02	0.6378	0.0786
0.33	0.7111	0.3023	0.68	0.7018	0.138	1.03	0.6359	0.0775
0.34	0.7139	0.2942	0.69	0.7001	0.1354	1.04	0.6341	0.0764

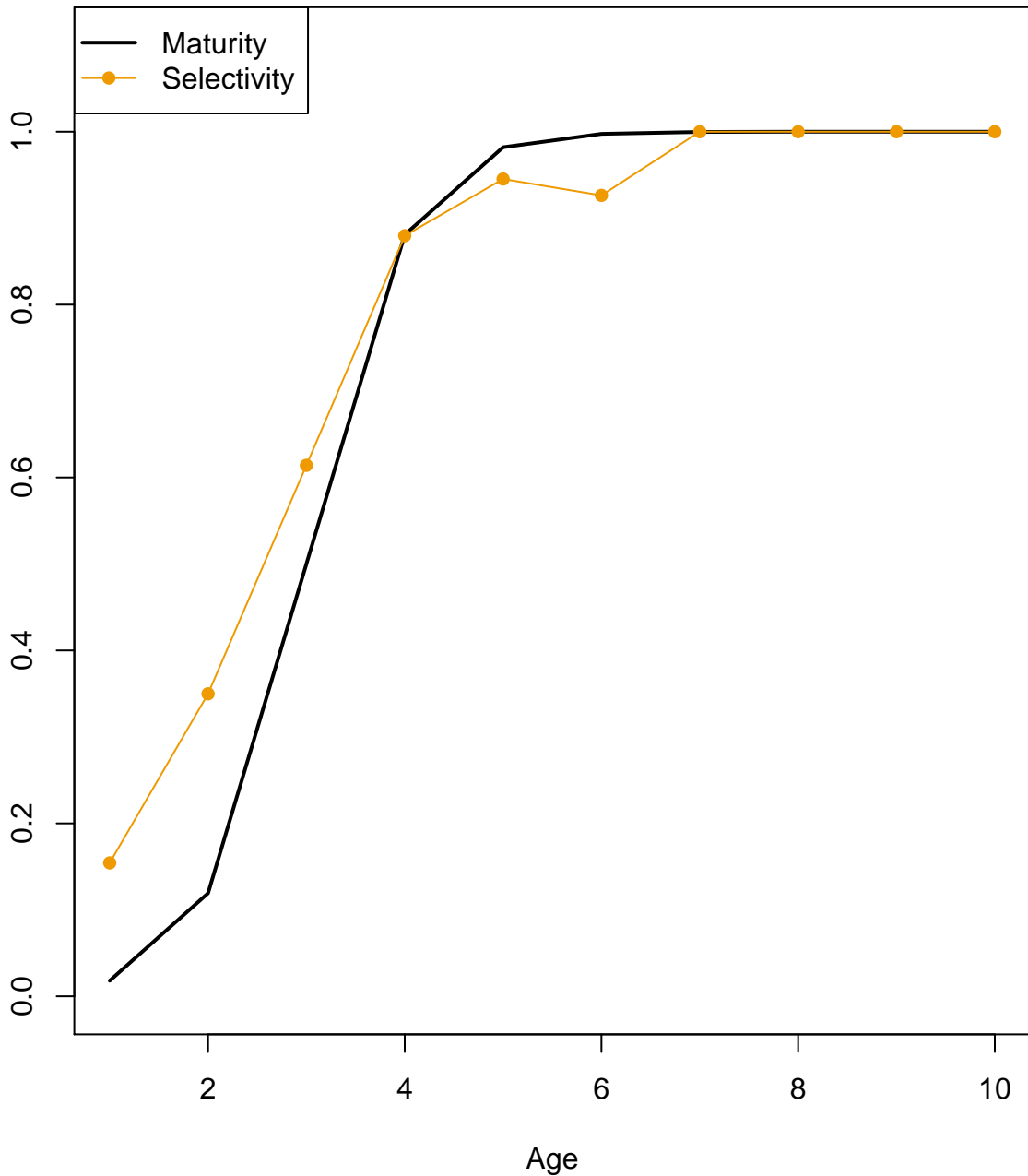
SPR Target Reference Points (Years Avg = 5)



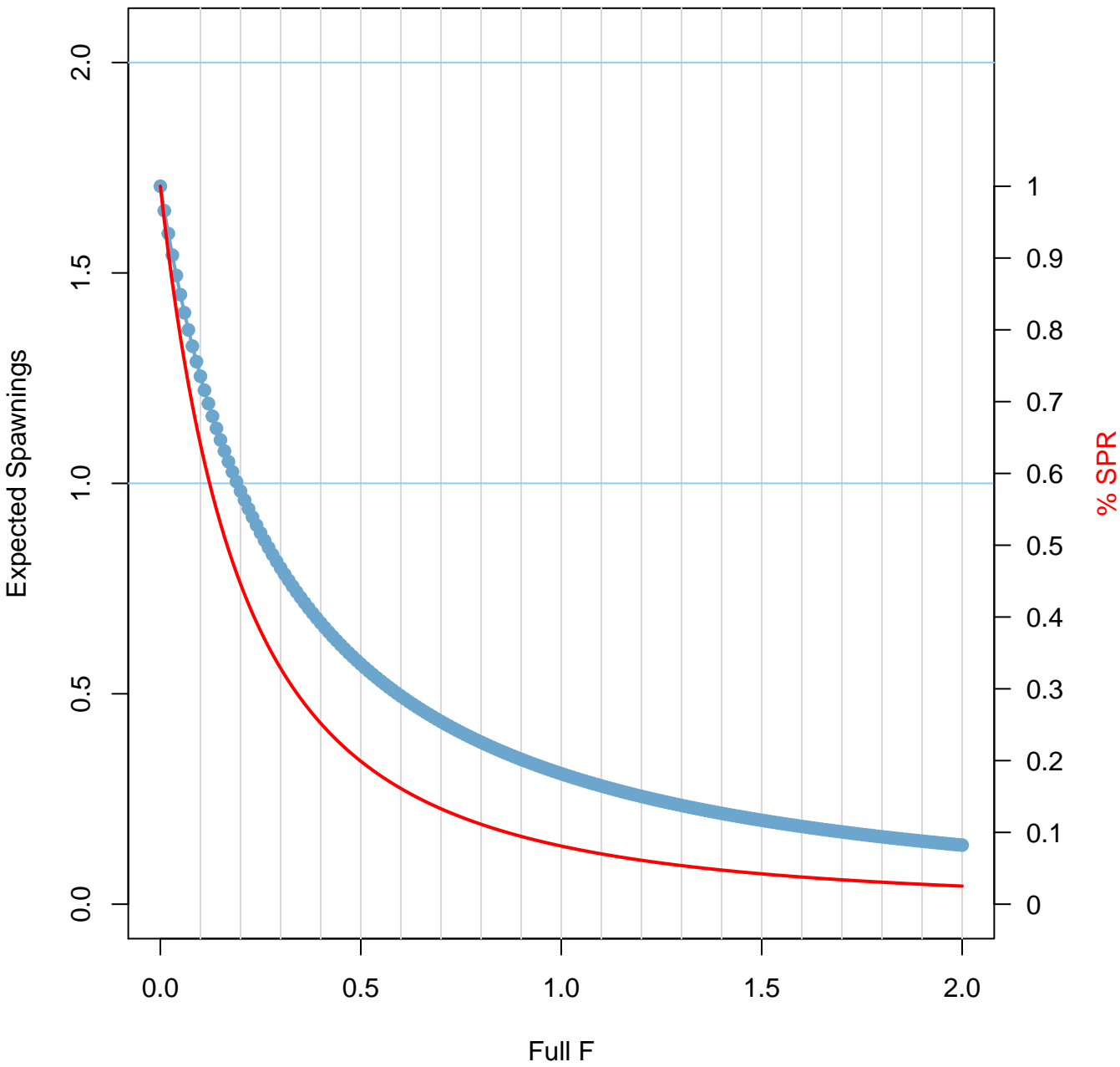
SPR Target Reference Points (Years Avg = 5)

% SPR	F(%SPR)	YPR
0.2	0.4981	0.7248
0.25	0.4031	0.7243
0.3	0.3328	0.7119
0.35	0.278	0.6903
0.4	0.2339	0.6613
0.45	0.1973	0.6261
0.5	0.1664	0.5857
0.55	0.1398	0.5407
0.6	0.1167	0.4918
0.65	0.0963	0.4394
0.7	0.0781	0.3839
0.75	0.0619	0.3255
0.8	0.0472	0.2647

Selectivity or Maturity at age



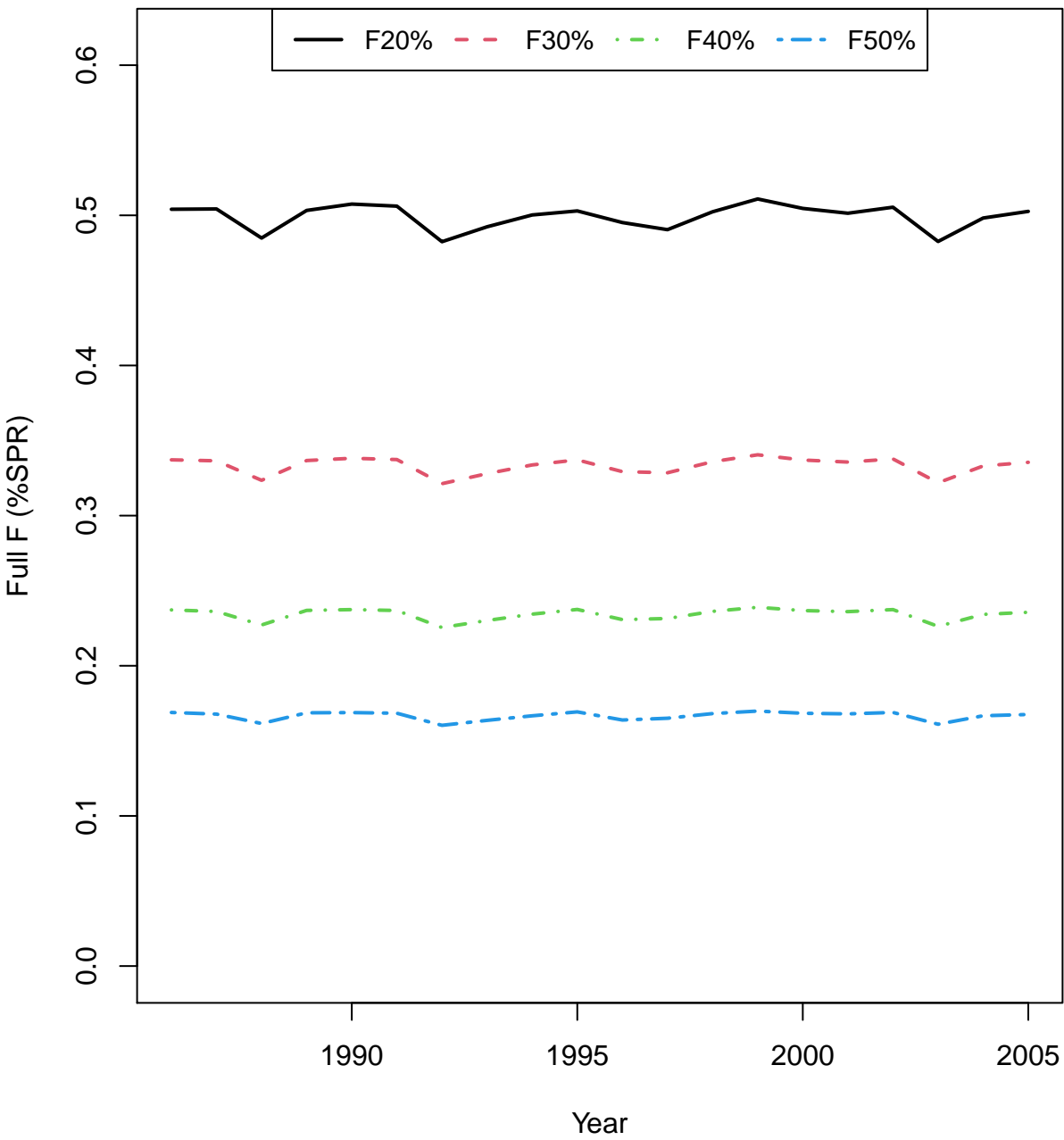
Expected Spawns and SPR Reference Points (Years Avg = 5)



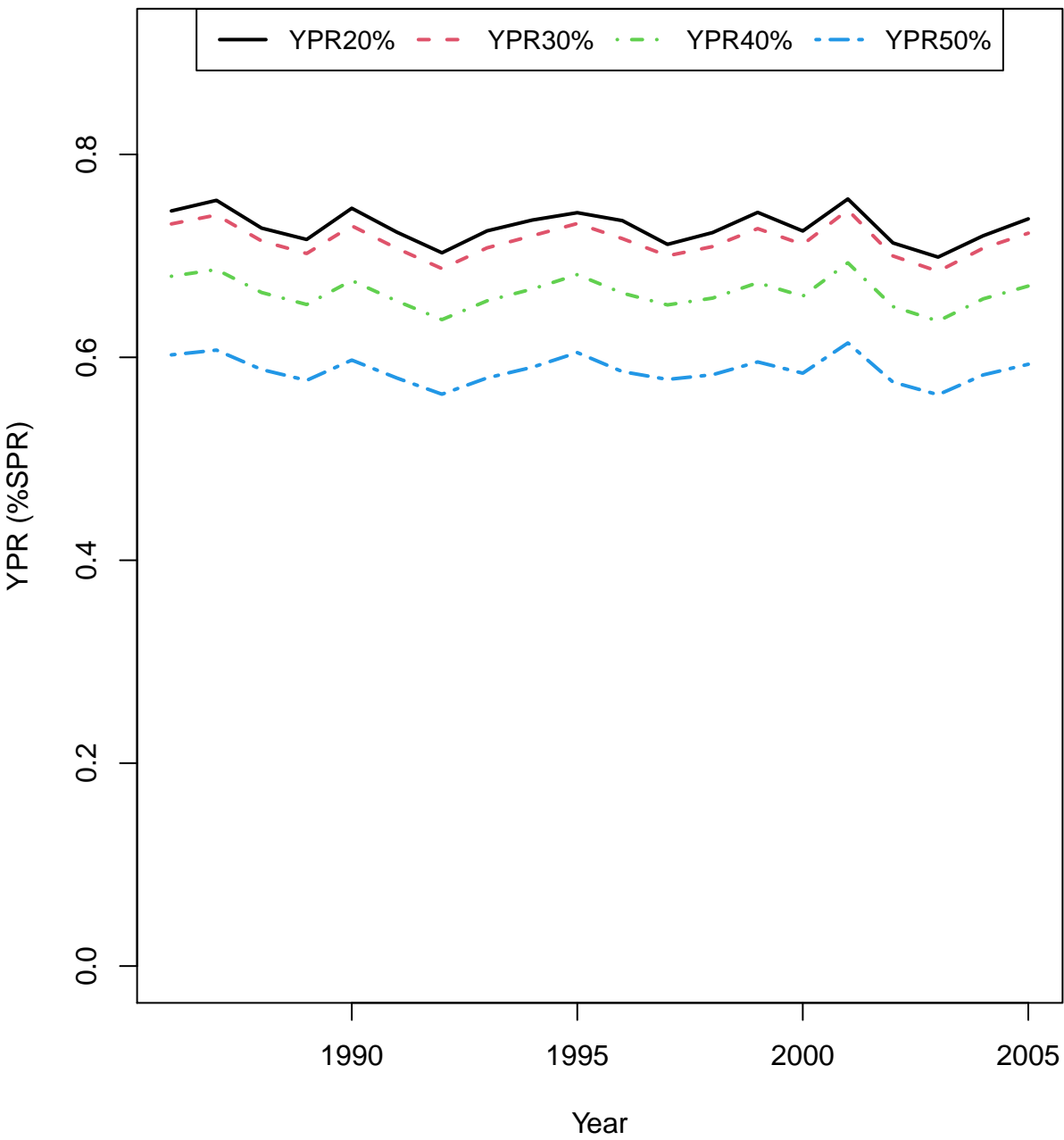
Expected Spawnings & SPR Reference Points (Years Avg = 5)

F	E[Sp]	SPR	F	E[Sp]	SPR	F	E[Sp]	SPR
0	1.706	1	0.35	0.7287	0.2865	0.7	0.4341	0.1329
0.01	1.6479	0.9516	0.36	0.7159	0.279	0.71	0.4287	0.1305
0.02	1.5934	0.9068	0.37	0.7035	0.2719	0.72	0.4234	0.1281
0.03	1.5422	0.8651	0.38	0.6914	0.265	0.73	0.4183	0.1258
0.04	1.4939	0.8262	0.39	0.6797	0.2583	0.74	0.4132	0.1236
0.05	1.4484	0.79	0.4	0.6684	0.2519	0.75	0.4083	0.1214
0.06	1.4053	0.7561	0.41	0.6573	0.2458	0.76	0.4034	0.1193
0.07	1.3646	0.7244	0.42	0.6466	0.2398	0.77	0.3986	0.1172
0.08	1.326	0.6946	0.43	0.6362	0.2341	0.78	0.394	0.1152
0.09	1.2893	0.6667	0.44	0.626	0.2286	0.79	0.3894	0.1132
0.1	1.2544	0.6405	0.45	0.6161	0.2232	0.8	0.3849	0.1113
0.11	1.2212	0.6158	0.46	0.6065	0.2181	0.81	0.3805	0.1094
0.12	1.1896	0.5925	0.47	0.5972	0.2131	0.82	0.3761	0.1076
0.13	1.1594	0.5705	0.48	0.588	0.2083	0.83	0.3719	0.1058
0.14	1.1306	0.5497	0.49	0.5791	0.2036	0.84	0.3677	0.1041
0.15	1.1031	0.53	0.5	0.5705	0.1991	0.85	0.3636	0.1024
0.16	1.0767	0.5114	0.51	0.562	0.1948	0.86	0.3596	0.1007
0.17	1.0514	0.4938	0.52	0.5538	0.1906	0.87	0.3556	0.0991
0.18	1.0272	0.477	0.53	0.5457	0.1865	0.88	0.3517	0.0975
0.19	1.004	0.4611	0.54	0.5379	0.1825	0.89	0.3479	0.096
0.2	0.9816	0.446	0.55	0.5302	0.1787	0.9	0.3442	0.0944
0.21	0.9602	0.4317	0.56	0.5228	0.175	0.91	0.3405	0.093
0.22	0.9395	0.418	0.57	0.5155	0.1714	0.92	0.3369	0.0915
0.23	0.9197	0.4049	0.58	0.5083	0.1679	0.93	0.3333	0.0901
0.24	0.9005	0.3925	0.59	0.5013	0.1645	0.94	0.3298	0.0887
0.25	0.8821	0.3806	0.6	0.4945	0.1612	0.95	0.3264	0.0873
0.26	0.8643	0.3692	0.61	0.4879	0.158	0.96	0.323	0.086
0.27	0.8471	0.3584	0.62	0.4814	0.1549	0.97	0.3197	0.0847
0.28	0.8305	0.348	0.63	0.475	0.1518	0.98	0.3164	0.0835
0.29	0.8145	0.3381	0.64	0.4688	0.1489	0.99	0.3132	0.0822
0.3	0.799	0.3285	0.65	0.4627	0.146	1	0.31	0.081
0.31	0.784	0.3194	0.66	0.4567	0.1433	1.01	0.3069	0.0798
0.32	0.7695	0.3107	0.67	0.4509	0.1406	1.02	0.3039	0.0786
0.33	0.7555	0.3023	0.68	0.4451	0.138	1.03	0.3009	0.0775
0.34	0.7419	0.2942	0.69	0.4395	0.1354	1.04	0.2979	0.0764

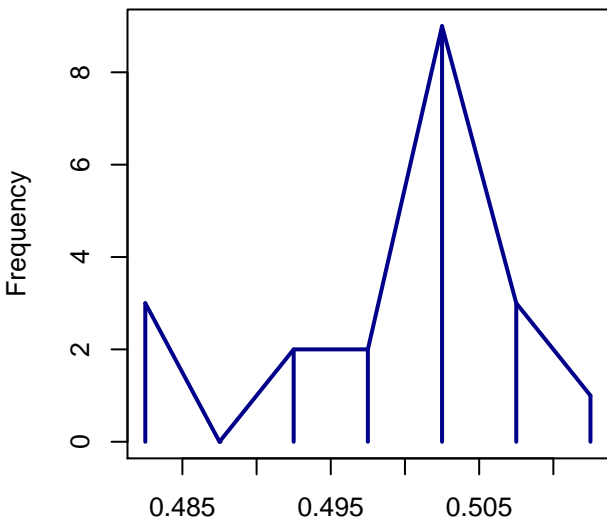
Annual F(%SPR) Reference Points



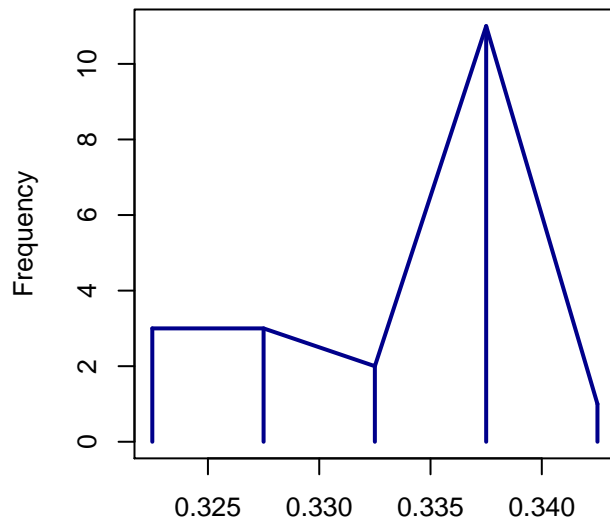
Annual YPR(%SPR) Reference Points



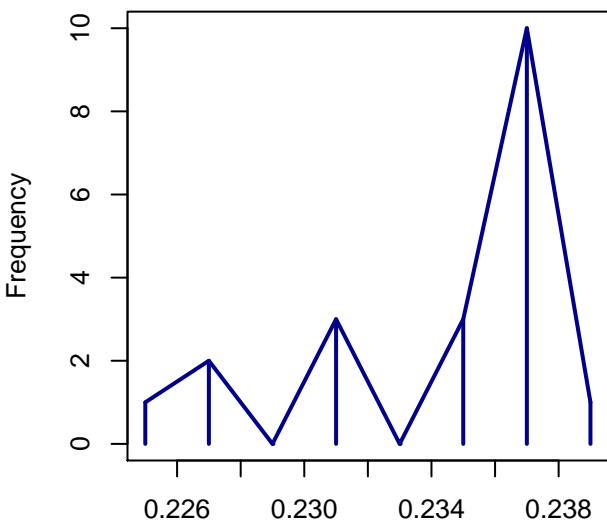
Annual F (%SPR) Reference Points



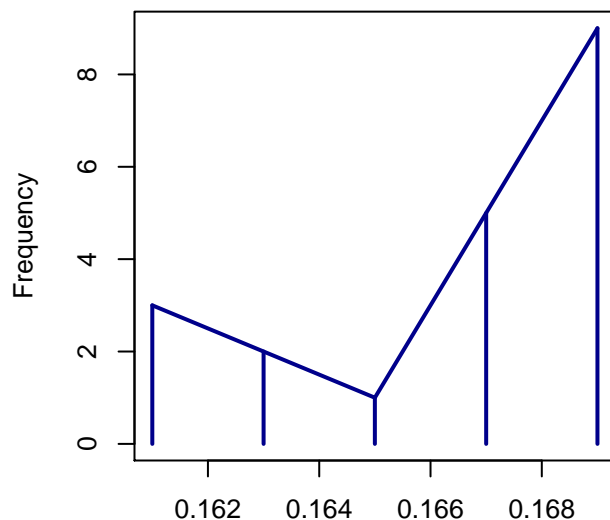
Full F20%



Full F30%

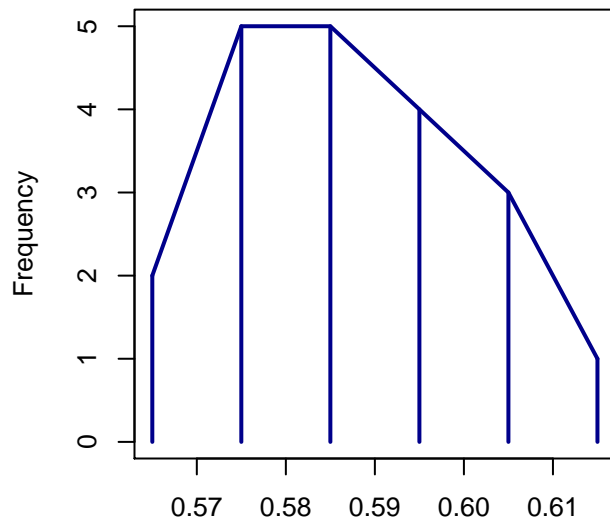
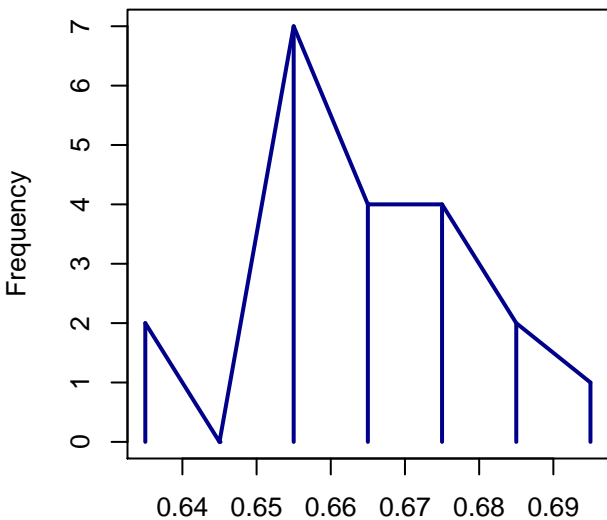
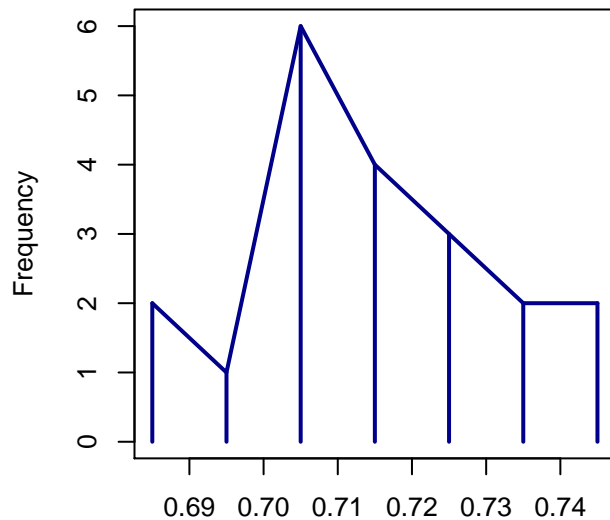
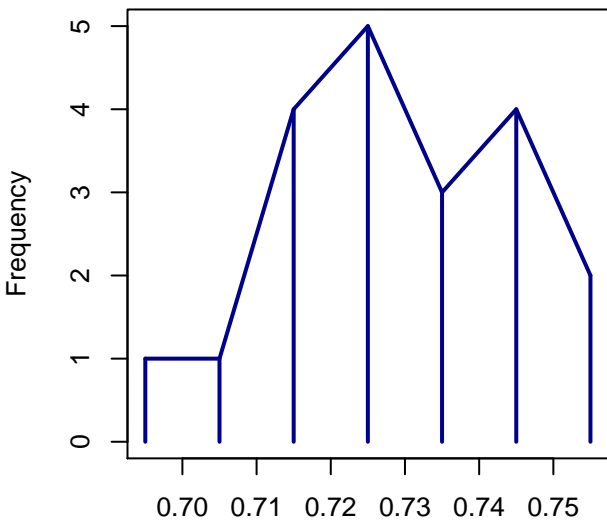


Full F40%

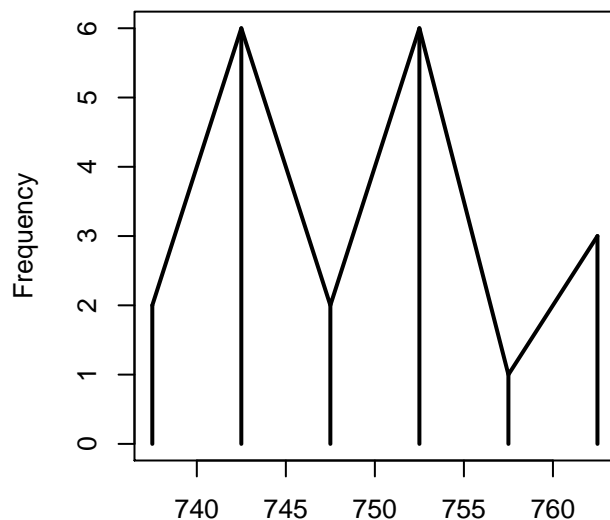
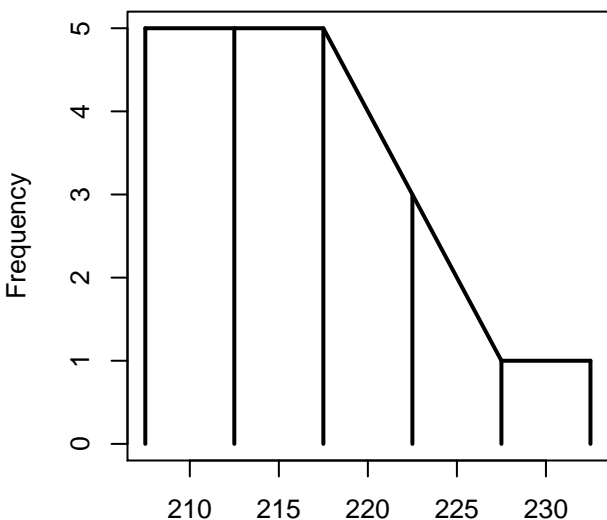
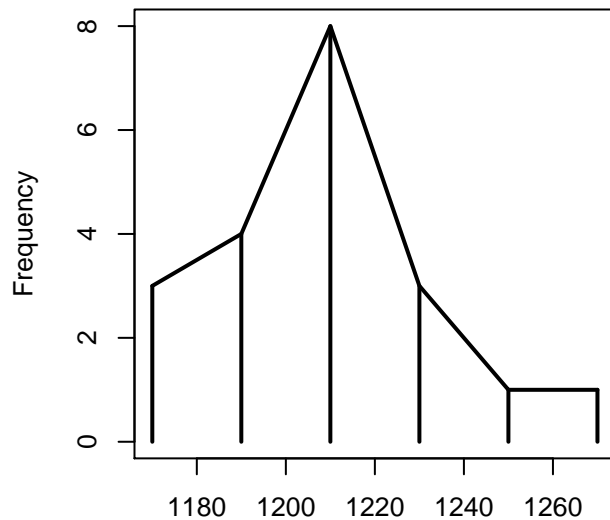
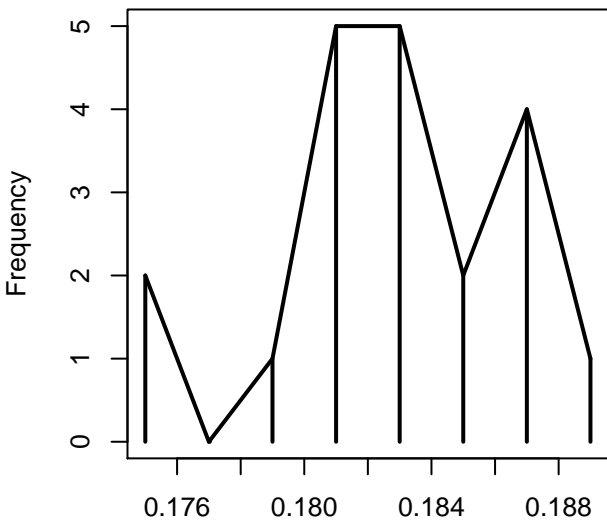


Full F50%

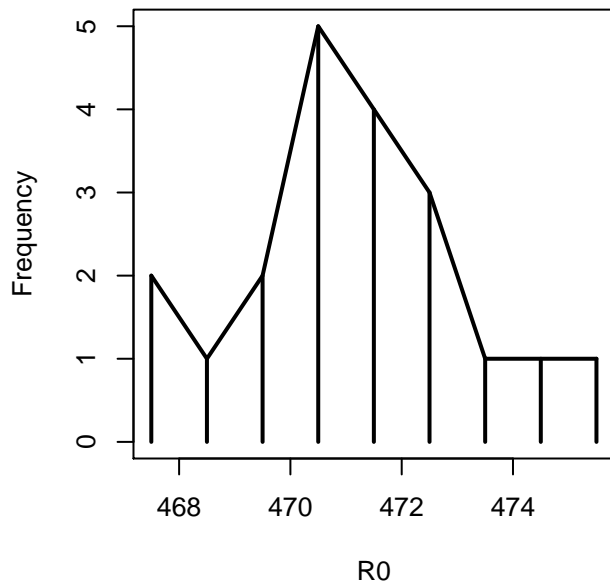
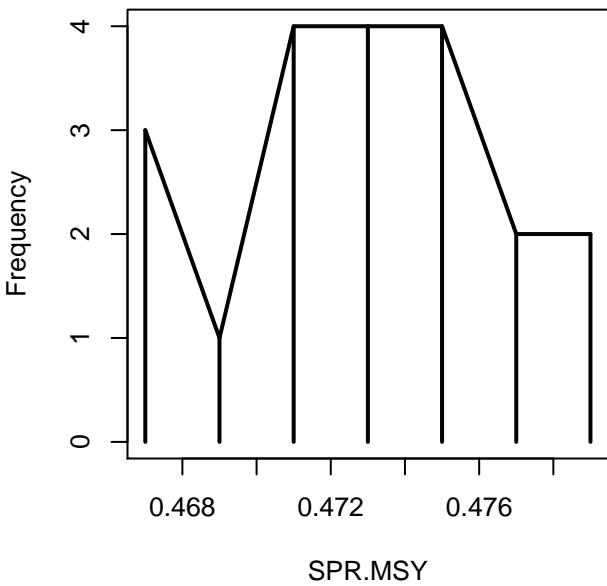
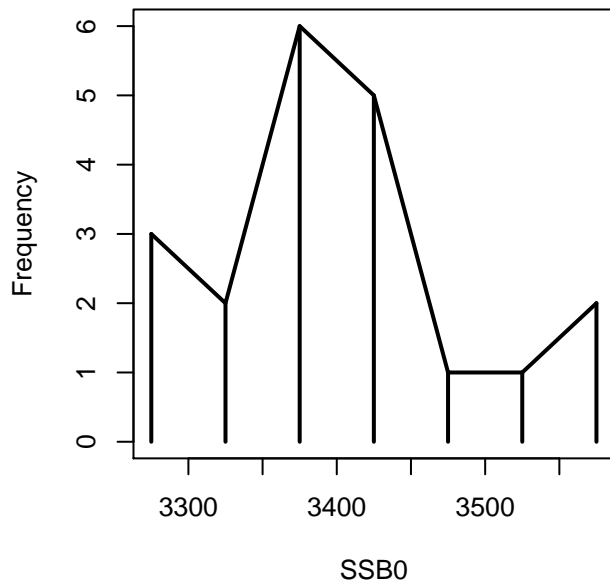
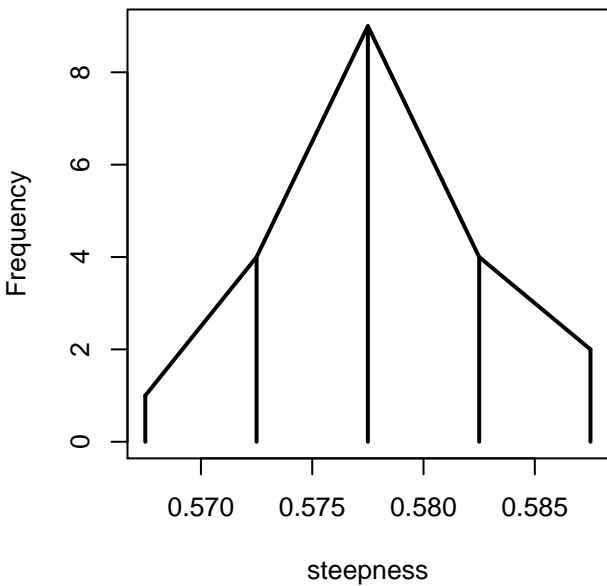
Annual YPR (%SPR) Reference Points



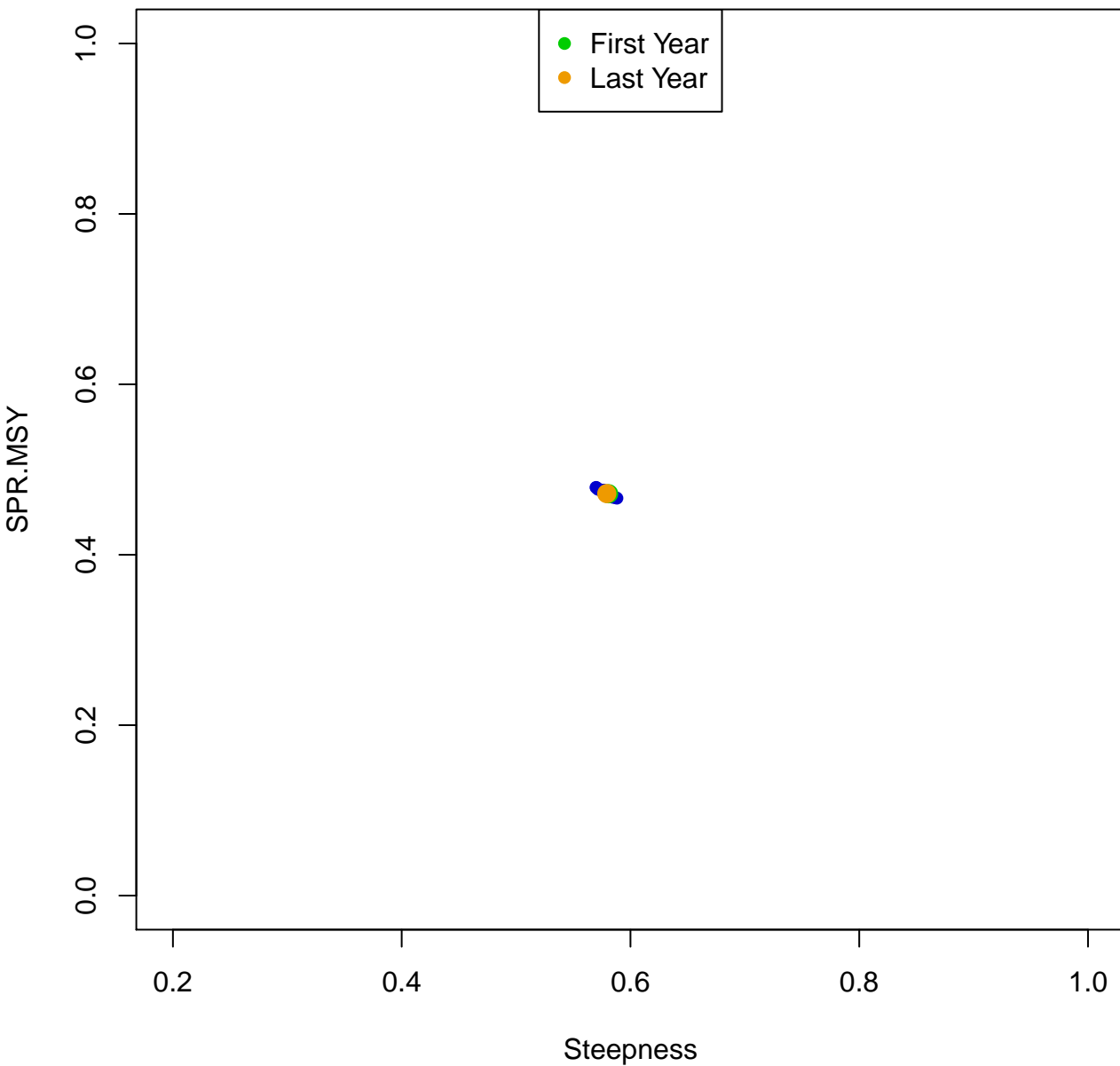
Annual MSY Reference Points (from S-R curve)



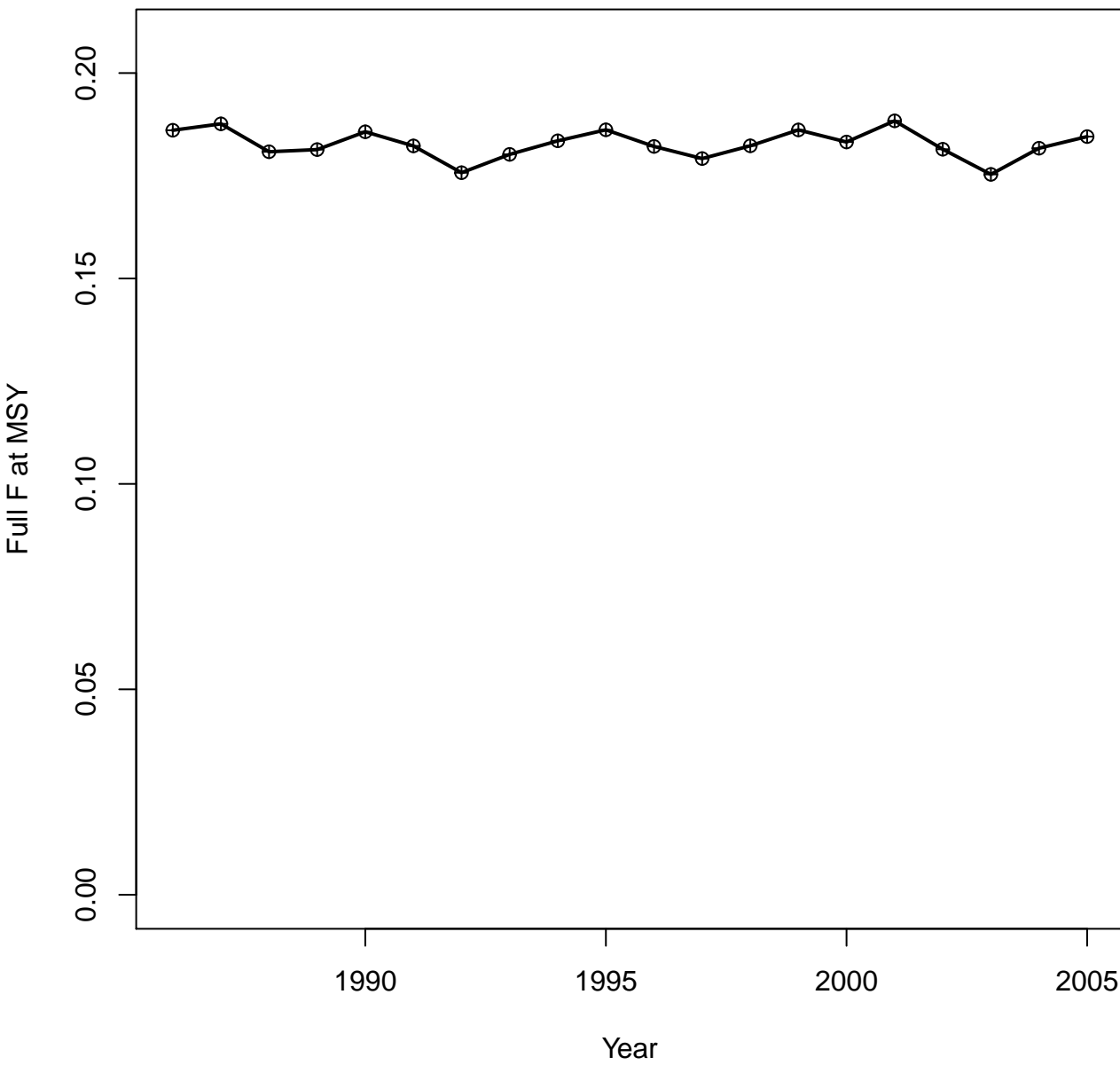
Annual MSY Reference Points (from S-R curve)



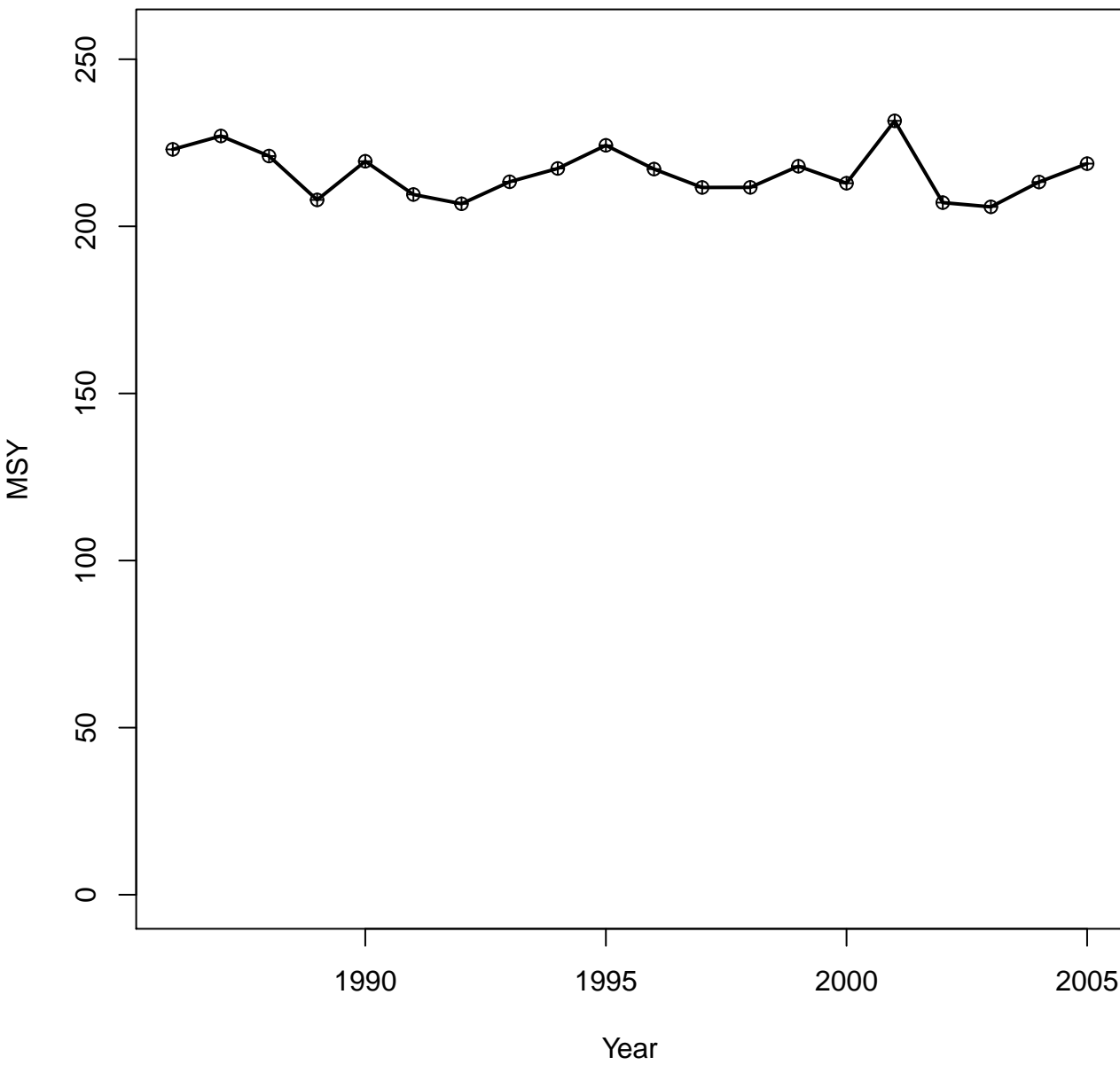
Annual Steepness and SPR.MSY (from S-R curve)



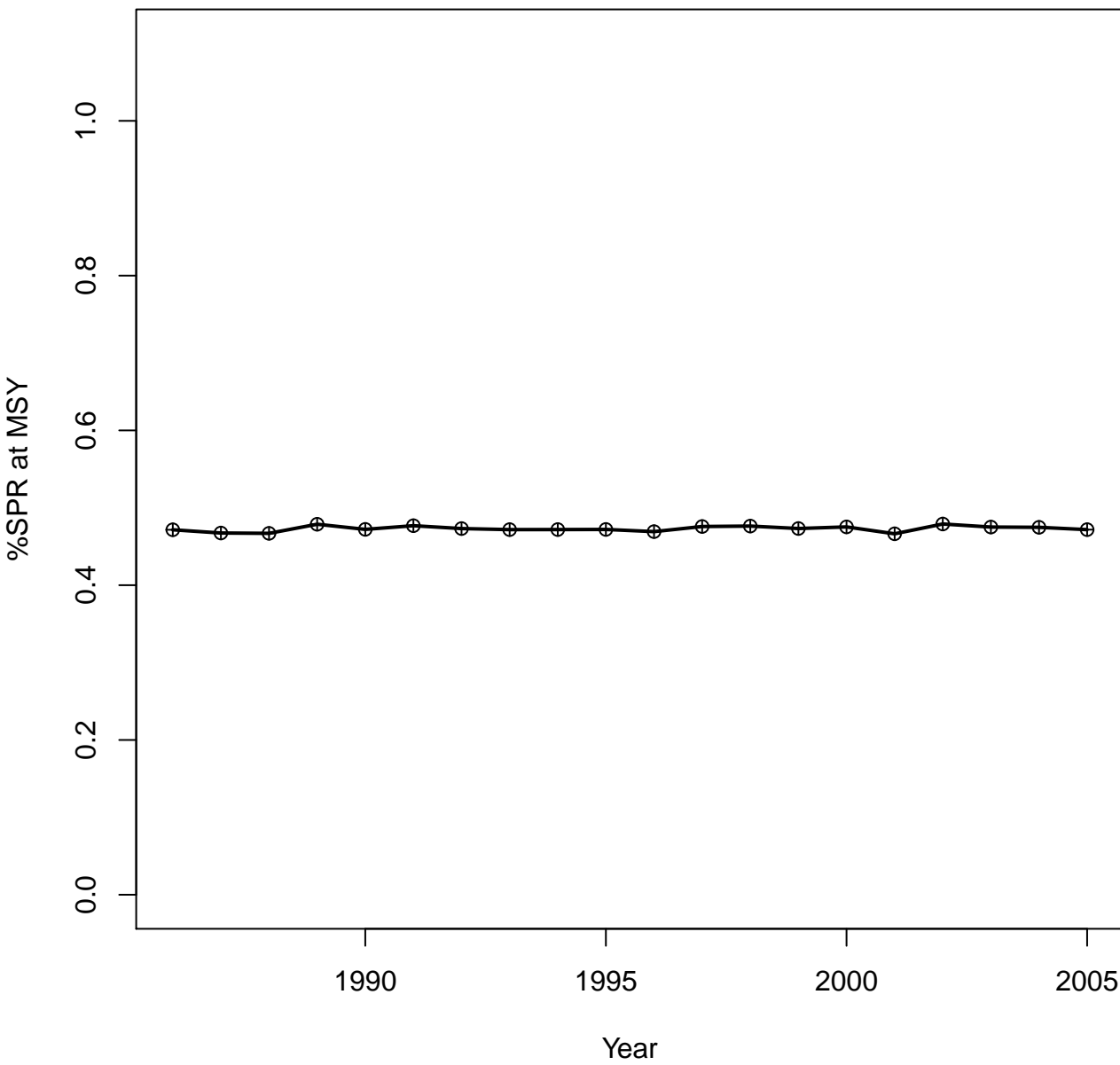
Annual MSY Reference Points (from S-R curve)



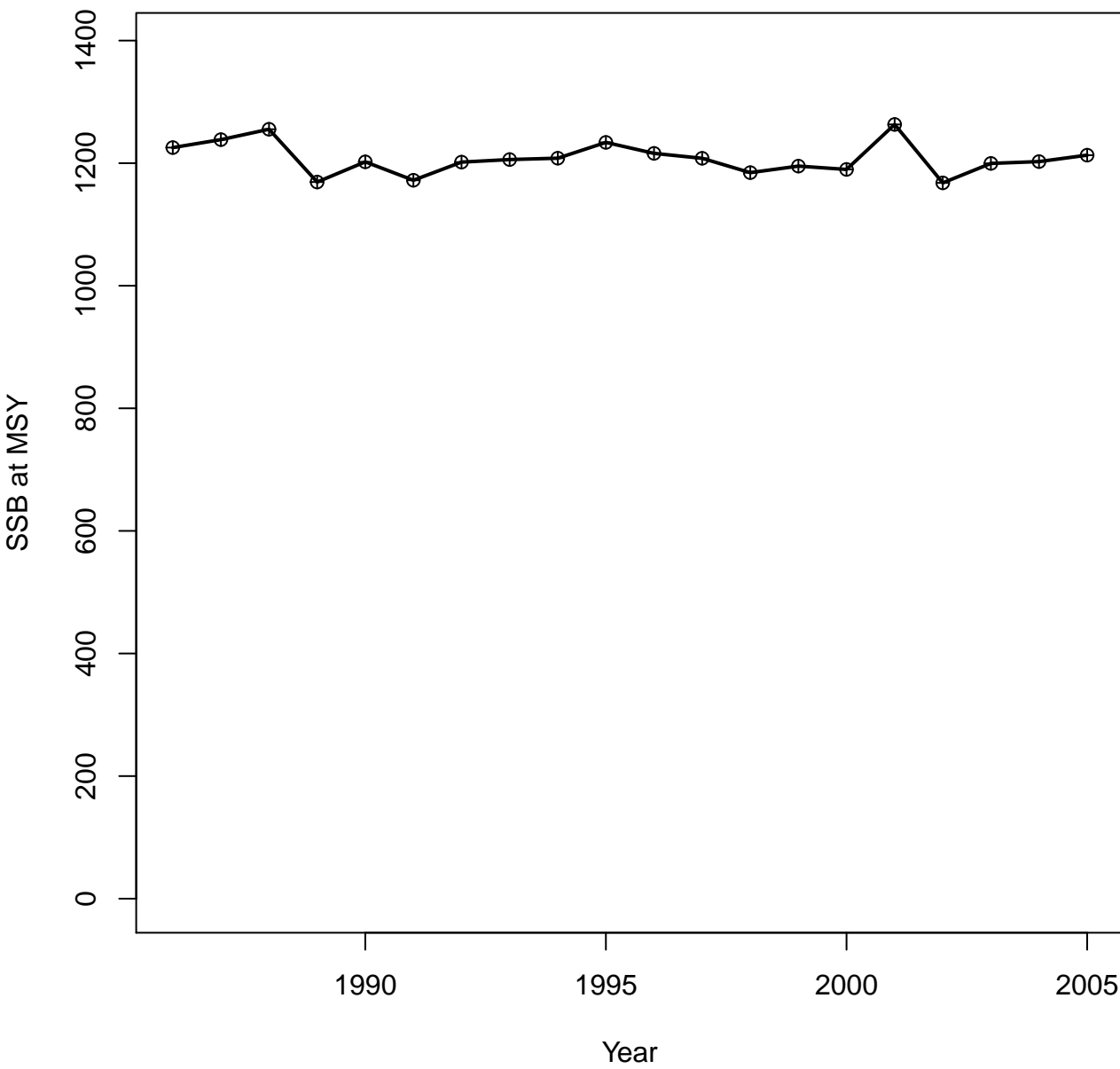
Annual MSY Reference Points (from S-R curve)



Annual MSY Reference Points (from S-R curve)



Annual MSY Reference Points (from S-R curve)



Annual MSY Reference Points (from S-R curve)

