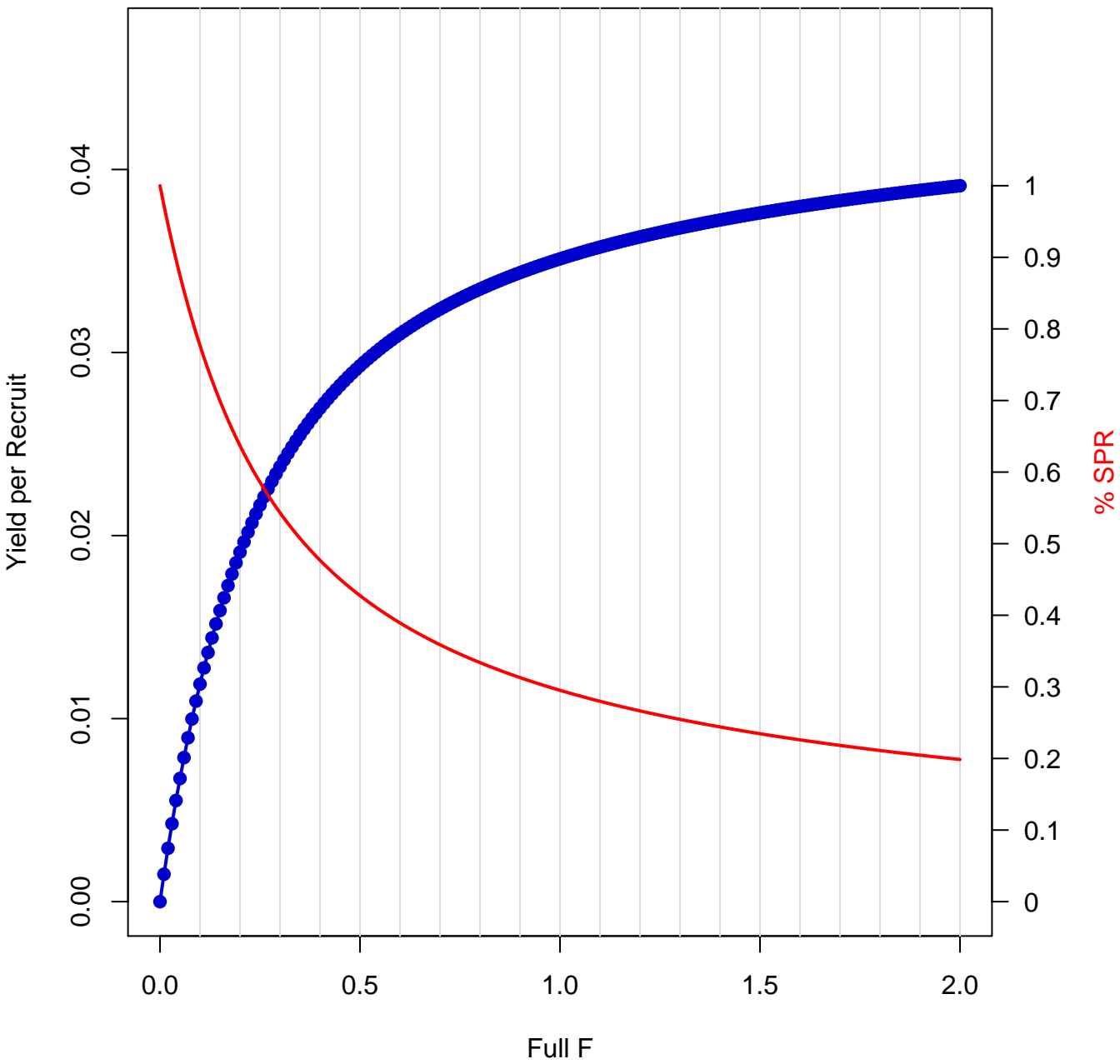


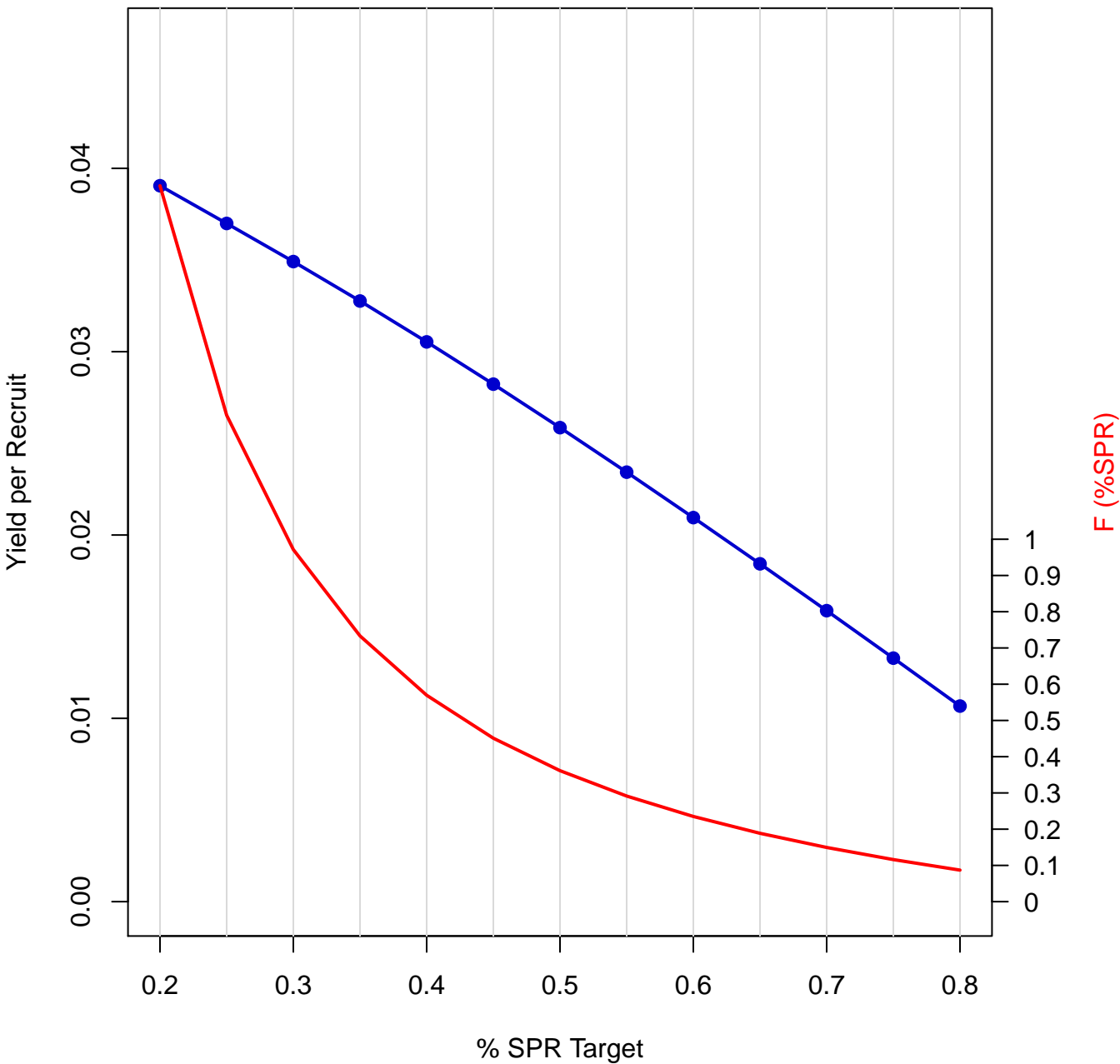
YPR-SPR Reference Points (Years Avg = 5)



YPR–SPR Reference Points (Years Avg = 5)

F	YPR	SPR	F	YPR	SPR	F	YPR	SPR
0	0	1	0.35	0.0255	0.5074	0.7	0.0324	0.3588
0.01	0.0015	0.9722	0.36	0.0258	0.5009	0.71	0.0325	0.3561
0.02	0.0029	0.9459	0.37	0.0261	0.4946	0.72	0.0326	0.3535
0.03	0.0043	0.9209	0.38	0.0264	0.4885	0.73	0.0327	0.3509
0.04	0.0055	0.8971	0.39	0.0267	0.4826	0.74	0.0328	0.3483
0.05	0.0067	0.8745	0.4	0.027	0.4769	0.75	0.033	0.3458
0.06	0.0079	0.853	0.41	0.0272	0.4713	0.76	0.0331	0.3433
0.07	0.009	0.8326	0.42	0.0275	0.4659	0.77	0.0332	0.3409
0.08	0.01	0.8131	0.43	0.0277	0.4606	0.78	0.0333	0.3385
0.09	0.011	0.7945	0.44	0.028	0.4555	0.79	0.0334	0.3362
0.1	0.0119	0.7768	0.45	0.0282	0.4505	0.8	0.0335	0.3339
0.11	0.0128	0.7599	0.46	0.0284	0.4456	0.81	0.0336	0.3316
0.12	0.0136	0.7437	0.47	0.0287	0.4409	0.82	0.0337	0.3294
0.13	0.0144	0.7283	0.48	0.0289	0.4363	0.83	0.0338	0.3272
0.14	0.0152	0.7135	0.49	0.0291	0.4319	0.84	0.0338	0.3251
0.15	0.0159	0.6993	0.5	0.0293	0.4275	0.85	0.0339	0.323
0.16	0.0166	0.6858	0.51	0.0295	0.4233	0.86	0.034	0.3209
0.17	0.0173	0.6728	0.52	0.0297	0.4191	0.87	0.0341	0.3189
0.18	0.0179	0.6603	0.53	0.0298	0.4151	0.88	0.0342	0.3169
0.19	0.0185	0.6484	0.54	0.03	0.4111	0.89	0.0343	0.3149
0.2	0.0191	0.6369	0.55	0.0302	0.4073	0.9	0.0344	0.313
0.21	0.0197	0.6259	0.56	0.0304	0.4035	0.91	0.0344	0.3111
0.22	0.0202	0.6152	0.57	0.0305	0.3998	0.92	0.0345	0.3092
0.23	0.0207	0.605	0.58	0.0307	0.3963	0.93	0.0346	0.3074
0.24	0.0212	0.5952	0.59	0.0309	0.3928	0.94	0.0347	0.3055
0.25	0.0217	0.5857	0.6	0.031	0.3893	0.95	0.0348	0.3038
0.26	0.0221	0.5766	0.61	0.0312	0.386	0.96	0.0348	0.302
0.27	0.0226	0.5678	0.62	0.0313	0.3827	0.97	0.0349	0.3003
0.28	0.023	0.5593	0.63	0.0315	0.3795	0.98	0.035	0.2985
0.29	0.0234	0.5512	0.64	0.0316	0.3764	0.99	0.035	0.2969
0.3	0.0238	0.5432	0.65	0.0317	0.3733	1	0.0351	0.2952
0.31	0.0241	0.5356	0.66	0.0319	0.3703	1.01	0.0352	0.2936
0.32	0.0245	0.5282	0.67	0.032	0.3673	1.02	0.0353	0.292
0.33	0.0248	0.521	0.68	0.0321	0.3644	1.03	0.0353	0.2904
0.34	0.0252	0.5141	0.69	0.0323	0.3616	1.04	0.0354	0.2888

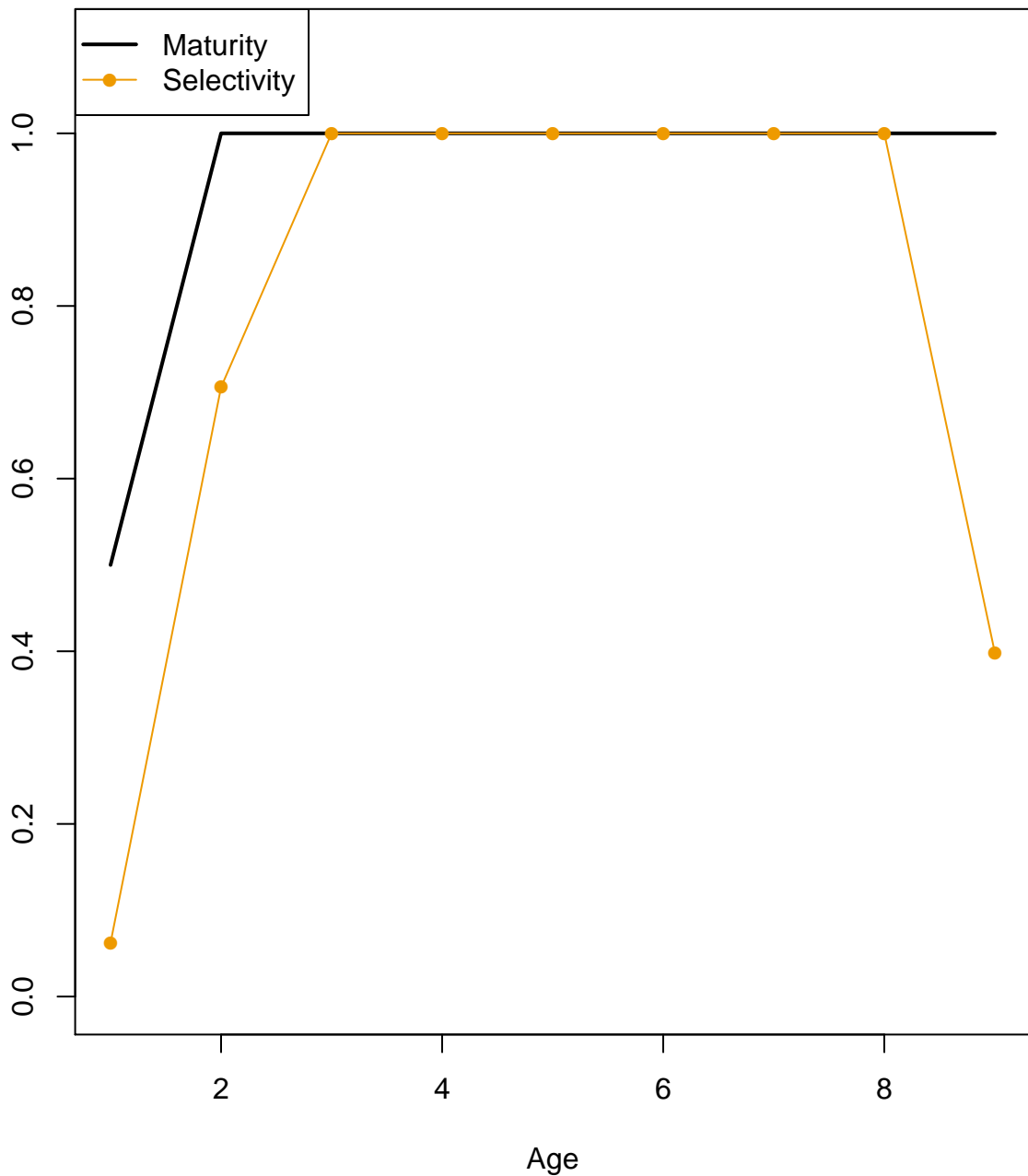
SPR Target Reference Points (Years Avg = 5)



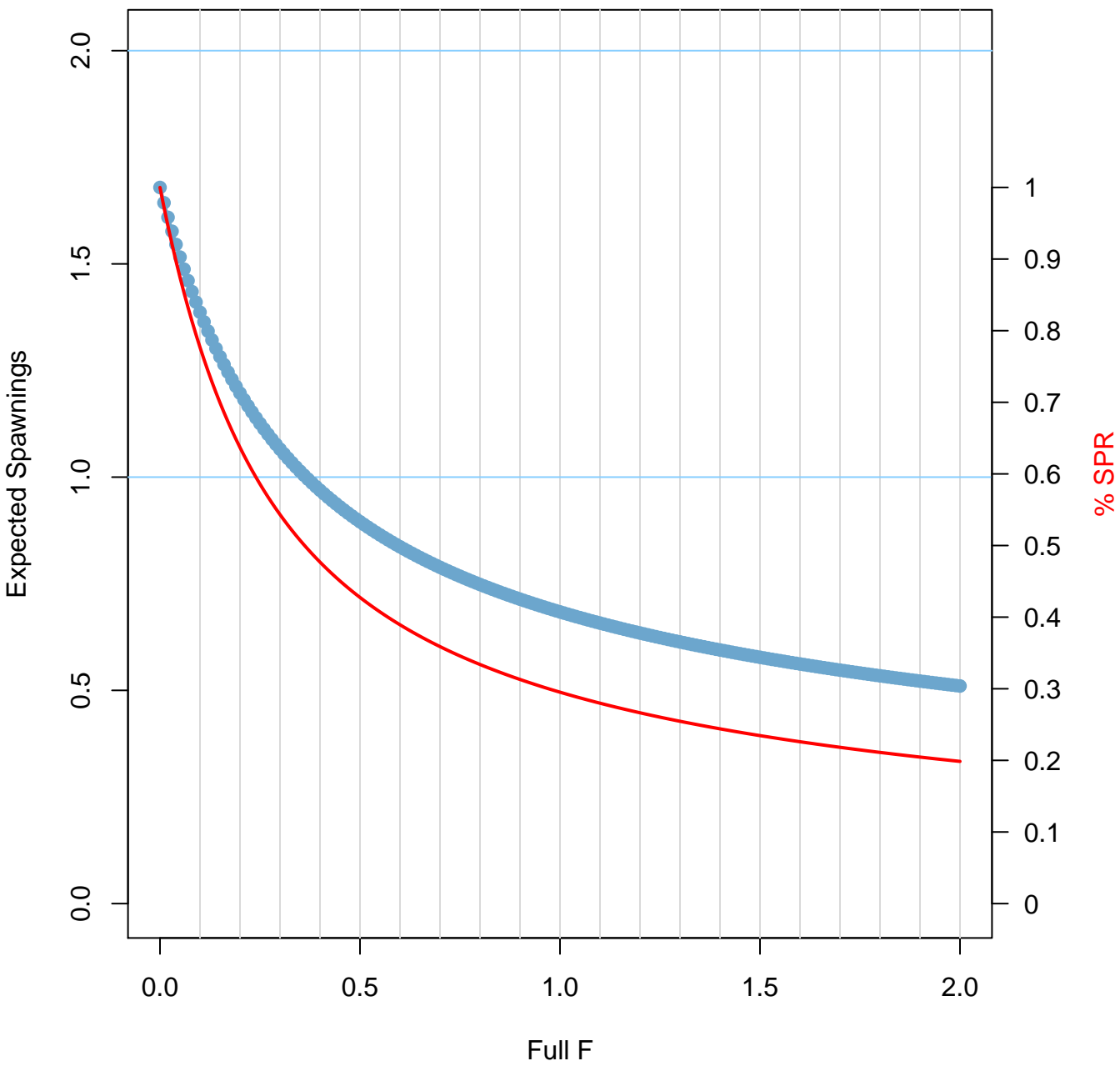
SPR Target Reference Points (Years Avg = 5)

% SPR	F(%SPR)	YPR
0.2	1.9755	0.0391
0.25	1.3421	0.037
0.3	0.9715	0.0349
0.35	0.7333	0.0328
0.4	0.5696	0.0305
0.45	0.451	0.0282
0.5	0.3615	0.0259
0.55	0.2914	0.0234
0.6	0.2351	0.021
0.65	0.1886	0.0184
0.7	0.1495	0.0159
0.75	0.1161	0.0133
0.8	0.087	0.0107

Selectivity or Maturity at age



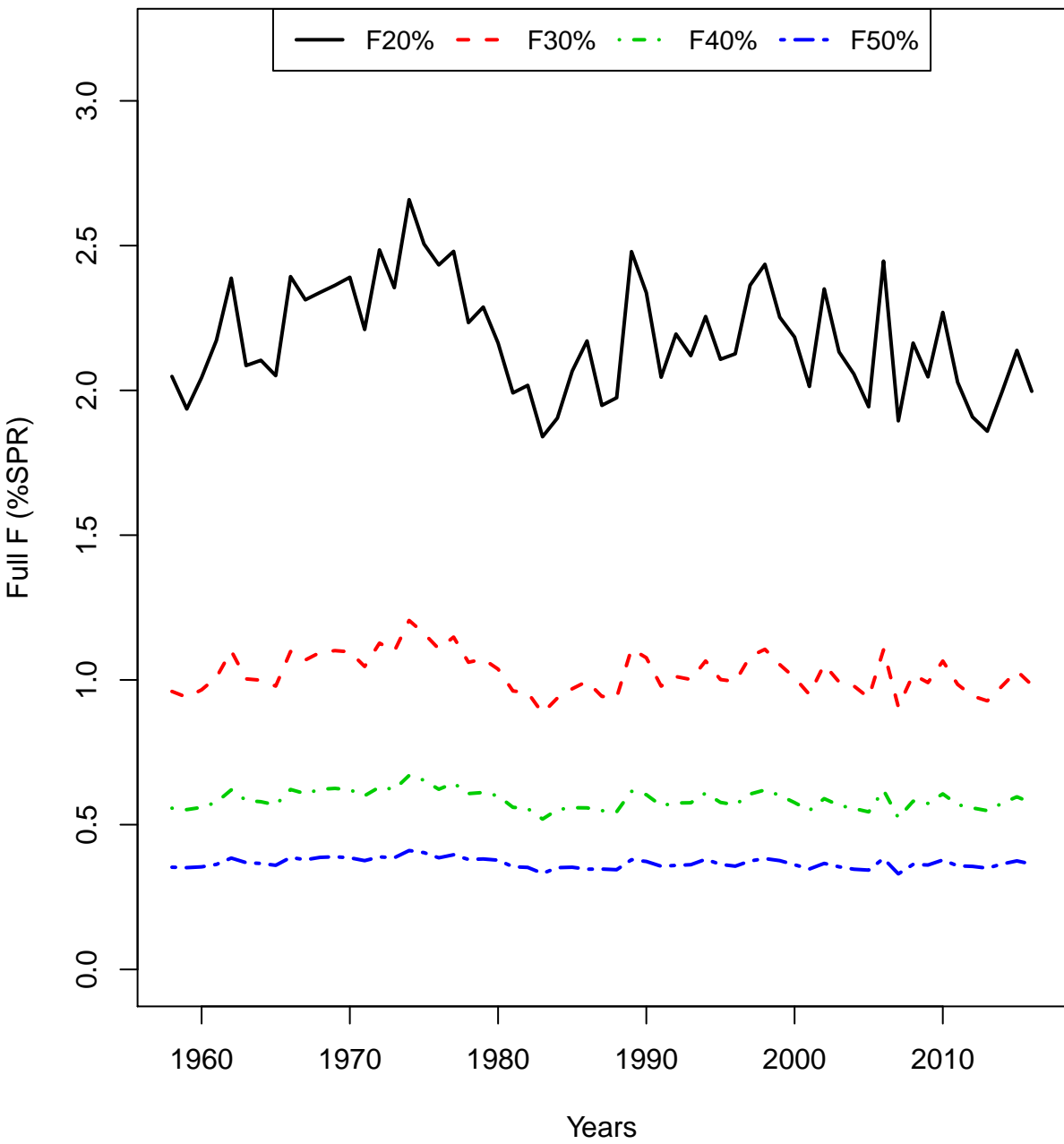
Expected Spawns and SPR Reference Points (Years Avg = 5)



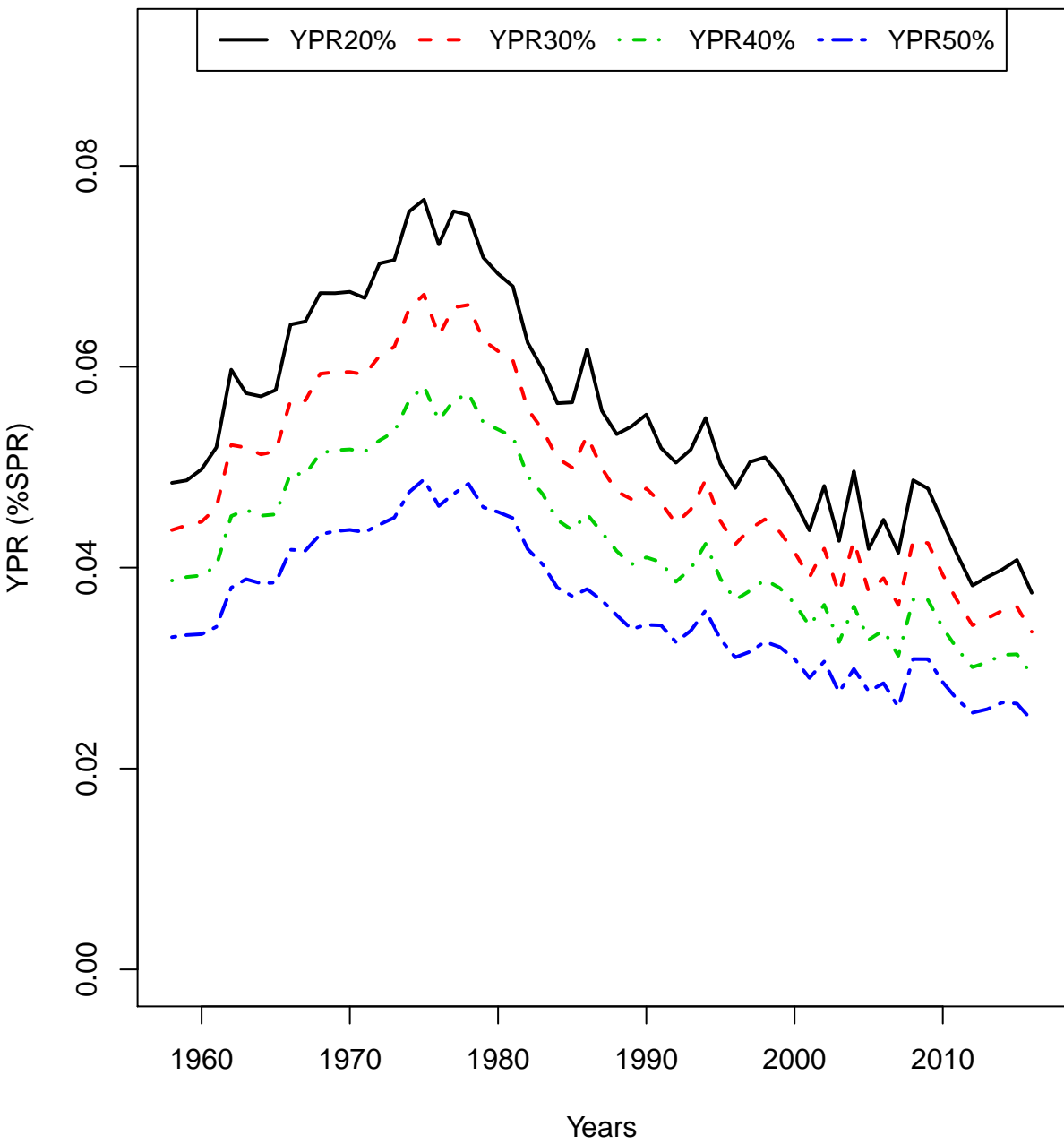
Expected Spawnings & SPR Reference Points (Years Avg = 5)

F	E[Sp]	SPR	F	E[Sp]	SPR	F	E[Sp]	SPR
0	1.6793	1	0.35	1.014	0.5074	0.7	0.7886	0.3588
0.01	1.6434	0.9722	0.36	1.0045	0.5009	0.71	0.7843	0.3561
0.02	1.6092	0.9459	0.37	0.9954	0.4946	0.72	0.78	0.3535
0.03	1.5766	0.9209	0.38	0.9864	0.4885	0.73	0.7758	0.3509
0.04	1.5456	0.8971	0.39	0.9777	0.4826	0.74	0.7717	0.3483
0.05	1.516	0.8745	0.4	0.9693	0.4769	0.75	0.7676	0.3458
0.06	1.4878	0.853	0.41	0.961	0.4713	0.76	0.7636	0.3433
0.07	1.4608	0.8326	0.42	0.953	0.4659	0.77	0.7597	0.3409
0.08	1.435	0.8131	0.43	0.9452	0.4606	0.78	0.7559	0.3385
0.09	1.4103	0.7945	0.44	0.9375	0.4555	0.79	0.7521	0.3362
0.1	1.3867	0.7768	0.45	0.9301	0.4505	0.8	0.7483	0.3339
0.11	1.3641	0.7599	0.46	0.9228	0.4456	0.81	0.7446	0.3316
0.12	1.3424	0.7437	0.47	0.9157	0.4409	0.82	0.741	0.3294
0.13	1.3216	0.7283	0.48	0.9088	0.4363	0.83	0.7374	0.3272
0.14	1.3017	0.7135	0.49	0.9021	0.4319	0.84	0.7339	0.3251
0.15	1.2825	0.6993	0.5	0.8954	0.4275	0.85	0.7305	0.323
0.16	1.2641	0.6858	0.51	0.889	0.4233	0.86	0.727	0.3209
0.17	1.2463	0.6728	0.52	0.8827	0.4191	0.87	0.7237	0.3189
0.18	1.2293	0.6603	0.53	0.8765	0.4151	0.88	0.7204	0.3169
0.19	1.2128	0.6484	0.54	0.8704	0.4111	0.89	0.7171	0.3149
0.2	1.197	0.6369	0.55	0.8645	0.4073	0.9	0.7139	0.313
0.21	1.1817	0.6259	0.56	0.8587	0.4035	0.91	0.7107	0.3111
0.22	1.167	0.6152	0.57	0.8531	0.3998	0.92	0.7076	0.3092
0.23	1.1528	0.605	0.58	0.8475	0.3963	0.93	0.7045	0.3074
0.24	1.139	0.5952	0.59	0.8421	0.3928	0.94	0.7014	0.3055
0.25	1.1258	0.5857	0.6	0.8367	0.3893	0.95	0.6984	0.3038
0.26	1.1129	0.5766	0.61	0.8315	0.386	0.96	0.6955	0.302
0.27	1.1005	0.5678	0.62	0.8264	0.3827	0.97	0.6926	0.3003
0.28	1.0885	0.5593	0.63	0.8213	0.3795	0.98	0.6897	0.2985
0.29	1.0768	0.5512	0.64	0.8164	0.3764	0.99	0.6868	0.2969
0.3	1.0656	0.5432	0.65	0.8116	0.3733	1	0.684	0.2952
0.31	1.0546	0.5356	0.66	0.8068	0.3703	1.01	0.6812	0.2936
0.32	1.044	0.5282	0.67	0.8021	0.3673	1.02	0.6785	0.292
0.33	1.0337	0.521	0.68	0.7976	0.3644	1.03	0.6758	0.2904
0.34	1.0237	0.5141	0.69	0.7931	0.3616	1.04	0.6731	0.2888

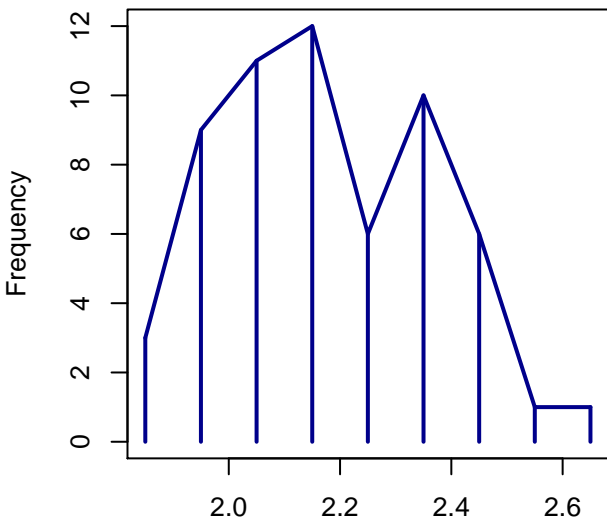
Annual F(%SPR) Reference Points



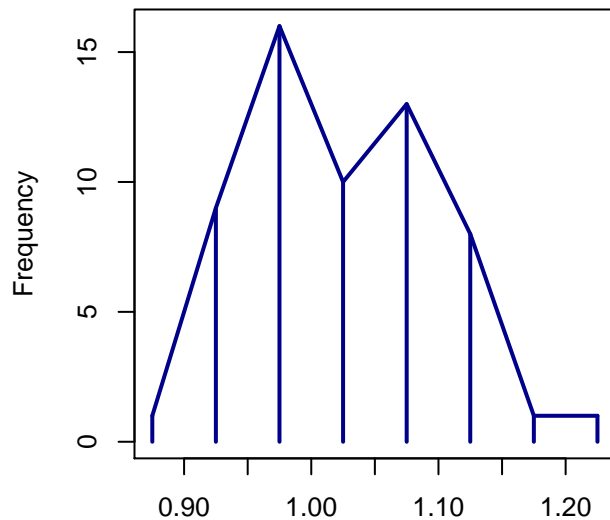
Annual YPR(%SPR) Reference Points



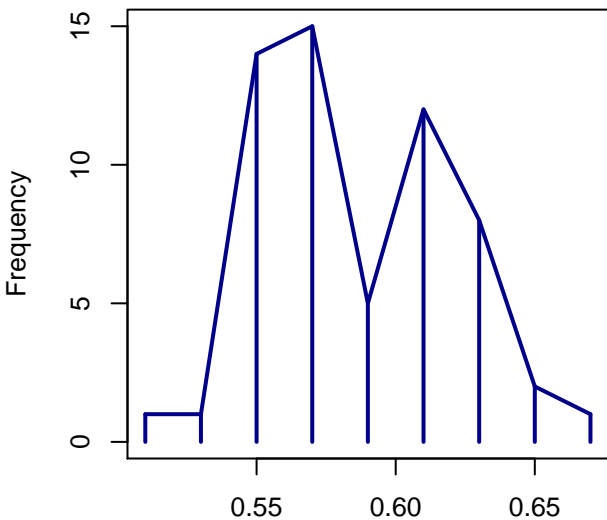
Annual F (%SPR) Reference Points



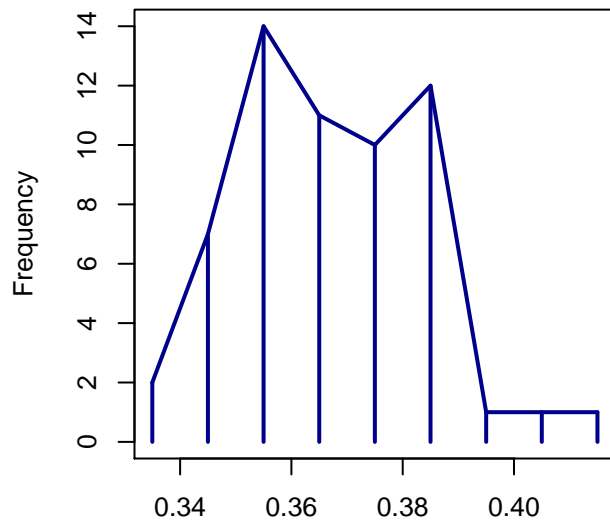
Full F20%



Full F30%



Full F40%



Full F50%

Annual YPR (%SPR) Reference Points

