

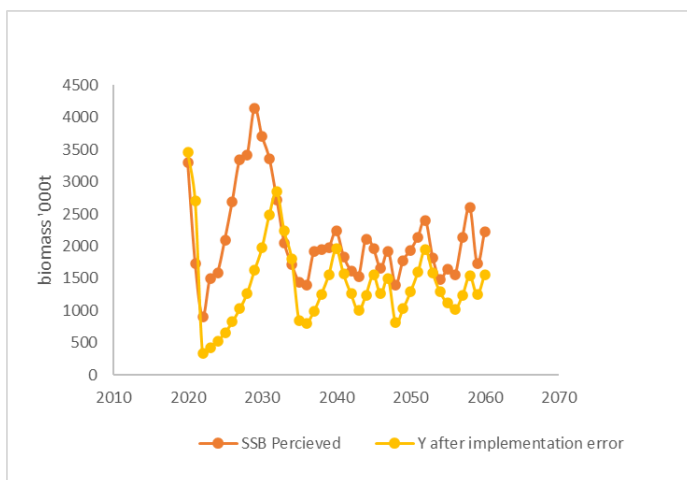
MSE Mackerel

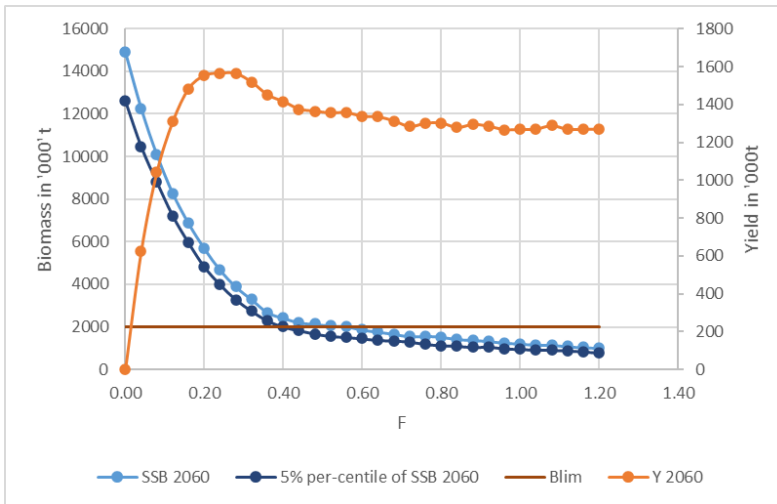
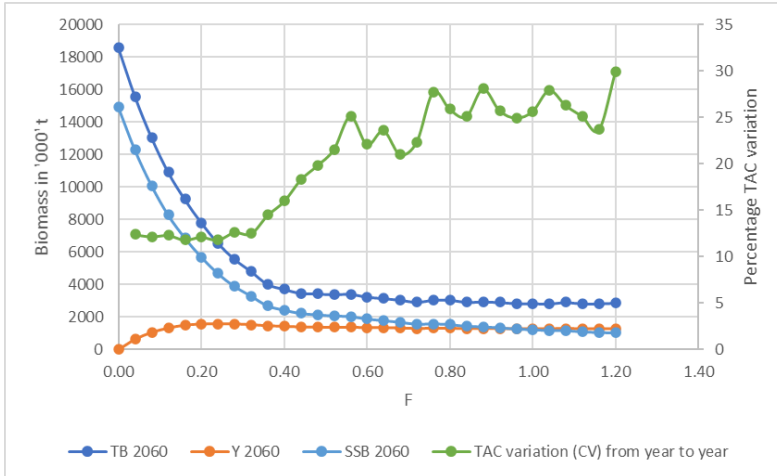
Base case SPM OM with TAC variation restrictions

MSE SPM Perciformes from Thorson et al 20102, MSY/BMSY from Fmsy project, and K fitted to observation 1980-2017 including misreported catches.

Input:		Fmsy =MSY/Bmsy=	0.2412
Bpa =	2500	K=	18556
Blim =	1990	n (called phi in formula)=	0.92 Autocorr.
MSYBtrigger =	2500	SP process error STD=TB*q, q=	0.012 0.00
MS type =	MS2	Observation CV =	0.09 0.00
B year 2020 =	5685	Implementation CV =	0.01 0.00
SSB vs TB coefficients:		a= -0.3735	b= 0.8032
F target (SPM currency) =	0.2412	Ratio F (SPM currency vs F (ICES currency) =	0.6236

Assumed Btrigger = 2.5 million tonnes SSB.





F	TB 2060	Y 2060	Y 2020-2024	Y 2025-2029	SSB 2060	TAC variation (CV) from year to year	5% per-centile of SSB 2060
0.00	18605	0	0	0	14943	-	13009
0.04	15568	621	1575	2534	12271	13	10383
0.08	13026	1050	2878	4595	10073	11	8597
0.12	10945	1306	3990	6000	8300	12	7039
0.16	9155	1471	5693	6547	6806	12	5776
0.2	7779	1559	6447	7555	5667	12	4855
0.24	6563	1585	7060	7580	4683	13	4031
0.28	5566	1557	8115	6953	3889	13	3268
0.32	4752	1512	7736	7895	3249	13	2735

0.36	4131	1464	8705	7643	2763	14	2301
0.4	3767	1413	9561	6811	2463	18	1968
0.44	3576	1399	8725	6810	2284	17	1861
0.48	3394	1367	10483	6130	2118	21	1664
0.52	3265	1338	8902	7192	1988	20	1606
0.56	3238	1350	11481	5797	1923	19	1529
0.60	3258	1344	9180	6667	1887	23	1417
0.64	3129	1319	8515	8030	1765	21	1406
0.68	3027	1305	8666	7160	1663	23	1320
0.72	3034	1307	8090	5140	1621	23	1271
0.76	2990	1300	10025	6426	1553	25	1251
0.8	2893	1287	9620	7052	1459	24	1146
0.84	2883	1274	9414	5334	1411	24	1131
0.88	2866	1278	7821	7830	1360	26	1092
0.92	2918	1288	6957	5968	1341	26	1037
0.96	2845	1278	8510	8280	1265	24	1012
1.00	2819	1272	7201	6640	1211	26	967
1.04	2840	1274	7395	5870	1178	27	927
1.08	2784	1266	10389	5878	1113	21	919
1.12	2807	1272	9776	6807	1080	25	875
1.16	2826	1270	9124	5739	1045	27	793
1.2	2863	1281	8126	6524	1017	24	811