

WHAM output tables

Table 1. Parameter estimates, standard errors, and confidence intervals. Rounded to 3 decimal places.

	Estimate	Std. Error	95% CI lower	95% CI upper
Mean Recruitment	41458.877	12847.888	22585.757	76102.760
NAA σ (age 1)	1.215	0.144	0.963	1.534
NAA σ (age 2-6+)	0.725	0.051	0.631	0.833
NAA residual AR1 ρ age	0.000	—	—	—
NAA residual AR1 ρ year	0.000	—	—	—
Index 1 fully selected q	0.411	0.066	0.301	0.563
Index 2 fully selected q	0.141	0.023	0.103	0.193
Block 1: Selectivity for age 1	0.012	0.003	0.007	0.019
Block 1: Selectivity for age 2	0.360	0.069	0.237	0.503
Block 1: Selectivity for age 3	0.737	0.123	0.447	0.907
Block 1: Selectivity for age 4	1.000	—	—	—
Block 1: Selectivity for age 5	1.000	—	—	—
Block 1: Selectivity for age 6+	0.308	0.116	0.133	0.563
Block 2: Selectivity for age 1	0.018	0.004	0.012	0.027
Block 2: Selectivity for age 2	0.292	0.045	0.212	0.387
Block 2: Selectivity for age 3	0.644	0.100	0.436	0.810
Block 2: Selectivity for age 4	1.000	—	—	—
Block 2: Selectivity for age 5	0.914	0.165	0.150	0.998
Block 2: Selectivity for age 6+	0.363	0.139	0.149	0.649
Block 3: Selectivity for age 1	0.303	0.056	0.206	0.422
Block 3: Selectivity for age 2	1.000	—	—	—
Block 3: Selectivity for age 3	1.000	—	—	—

Table 1. Parameter estimates, standard errors, and confidence intervals. Rounded to 3 decimal places. (*continued*)

	Estimate	Std. Error	95% CI lower	95% CI upper
Block 3: Selectivity for age 4	1.000	–	–	–
Block 3: Selectivity for age 5	0.871	0.183	0.218	0.994
Block 3: Selectivity for age 6+	0.440	0.187	0.151	0.777
Fleet 1 age comp, logistic-normal: σ	10.421	0.665	9.196	11.809
Index 1 age comp, logistic-normal: σ	4.700	0.429	3.930	5.622
Index 2 age comp, logistic-normal: σ	6.313	0.464	5.467	7.291

Table 2. Abundance at age (1000s).

	1	2	3	4	5	6+
1973	71243	36077	65475	29880	20766	45929
1974	45028	26879	14054	25598	12180	18371
1975	70735	12460	4366	3610	4904	6169
1976	18872	57045	3432	945	855	6306
1977	118804	14949	15912	1146	503	3062
1978	113069	86468	6428	3090	399	1578
1979	84751	43446	18944	2553	805	716
1980	74870	44234	19397	7831	687	674
1981	159787	144325	23694	6863	2387	1036
1982	75420	255931	50505	7688	2899	1714
1983	54760	124275	98661	10995	2355	819
1984	36180	22892	24097	13408	2716	2973
1985	28806	14057	5468	3515	2291	1091
1986	10591	31844	8249	1706	459	306
1987	42535	4206	6118	1655	411	332
1988	137624	9880	1634	1308	436	318
1989	14802	144499	10182	749	222	46
1990	10330	15009	91925	8135	342	42
1991	14515	5356	19902	11592	721	231
1992	5570	1667	2823	7048	624	63
1993	6453	2163	1293	1990	555	55
1994	30219	3127	671	560	609	375
1995	4440	12349	1472	533	144	870
1996	10032	4480	6765	1299	244	692
1997	30011	9583	7619	2600	402	771
1998	17347	27206	4005	1718	577	448
1999	20752	9135	10538	1093	601	369
2000	6538	16845	7083	2177	144	350
2001	20968	3371	5719	1555	412	289
2002	10281	17960	3353	1440	476	49
2003	21071	1869	2472	1086	351	399

Table 2. Abundance at age (1000s). (*continued*)

	1	2	3	4	5	6+
2004	4248	1772	1215	694	412	355
2005	61939	3216	924	441	478	322
2006	25347	24501	1777	362	183	588
2007	6247	9792	5754	600	254	566
2008	50919	2601	5503	2573	386	309
2009	23561	9391	3009	3568	756	335
2010	16826	37102	7320	2532	2863	1043
2011	27028	5900	5877	3057	1511	1851
2012	8996	26154	3202	2278	1315	3243
2013	13738	2641	8119	1654	876	1324
2014	1411	2237	1212	2584	667	568
2015	770	268	606	473	637	517
2016	10579	403	231	337	250	861

Table 3. Total fishing mortality at age.

	1	2	3	4	5	6+
1973	0.005	0.152	0.311	0.422	0.422	0.130
1974	0.014	0.428	0.877	1.189	1.189	0.366
1975	0.016	0.481	0.986	1.338	1.338	0.412
1976	0.006	0.171	0.351	0.476	0.476	0.147
1977	0.013	0.383	0.785	1.064	1.064	0.328
1978	0.010	0.308	0.632	0.858	0.858	0.264
1979	0.016	0.473	0.970	1.316	1.316	0.405
1980	0.010	0.289	0.593	0.805	0.805	0.248
1981	0.004	0.123	0.251	0.341	0.341	0.105
1982	0.006	0.172	0.352	0.478	0.478	0.147
1983	0.009	0.267	0.546	0.741	0.741	0.228
1984	0.017	0.519	1.063	1.442	1.442	0.444
1985	0.020	0.618	1.268	1.720	1.720	0.530
1986	0.013	0.403	0.827	1.122	1.122	0.345
1987	0.018	0.555	1.138	1.544	1.544	0.476

Table 3. Total fishing mortality at age. (*continued*)

	1	2	3	4	5	6+
1988	0.018	0.548	1.124	1.524	1.524	0.469
1989	0.010	0.291	0.597	0.810	0.810	0.250
1990	0.015	0.465	0.953	1.292	1.292	0.398
1991	0.015	0.450	0.923	1.252	1.252	0.385
1992	0.013	0.405	0.830	1.125	1.125	0.347
1993	0.007	0.211	0.434	0.588	0.588	0.181
1994	0.013	0.386	0.792	1.074	1.074	0.331
1995	0.003	0.083	0.171	0.232	0.232	0.071
1996	0.004	0.107	0.219	0.297	0.297	0.092
1997	0.004	0.120	0.245	0.333	0.333	0.102
1998	0.003	0.095	0.195	0.265	0.265	0.081
1999	0.004	0.125	0.256	0.348	0.348	0.107
2000	0.004	0.115	0.235	0.319	0.319	0.098
2001	0.007	0.218	0.447	0.606	0.606	0.187
2002	0.003	0.097	0.198	0.268	0.268	0.083
2003	0.005	0.163	0.334	0.453	0.453	0.139
2004	0.009	0.259	0.531	0.720	0.720	0.222
2005	0.004	0.122	0.250	0.339	0.339	0.104
2006	0.002	0.055	0.112	0.152	0.152	0.047
2007	0.002	0.072	0.148	0.201	0.201	0.062
2008	0.003	0.076	0.156	0.211	0.211	0.065
2009	0.002	0.048	0.099	0.134	0.134	0.041
2010	0.000	0.014	0.028	0.038	0.038	0.012
2011	0.001	0.032	0.066	0.089	0.089	0.028
2012	0.001	0.042	0.086	0.117	0.117	0.036
2013	0.002	0.075	0.153	0.207	0.207	0.064
2014	0.004	0.132	0.271	0.367	0.367	0.113
2015	0.007	0.198	0.405	0.549	0.549	0.169
2016	0.004	0.129	0.264	0.357	0.357	0.110