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
NAA σ (age 1)	0.848	0.114	0.651	1.104
NAA σ (age 2-10+)	0.505	0.029	0.451	0.566
NAA residual AR1 ρ age	0.000	–	–	–
NAA residual AR1 ρ year	0.000	–	–	–
Index 1 fully selected q	0.003	0.000	0.002	0.004
Index 2 logit(q) intercept	-16.049	0.260	-16.558	-15.539
Index 3 logit(q) intercept	-18.004	0.297	-18.586	-17.423
Block 1: Selectivity for age 1	0.848	0.387	0.015	1.000
Block 1: Selectivity for age 2	0.848	0.387	0.015	1.000
Block 1: Selectivity for age 3	0.848	0.387	0.015	1.000
Block 1: Selectivity for age 4	0.848	0.387	0.015	1.000
Block 1: Selectivity for age 5	0.848	0.387	0.015	1.000
Block 1: Selectivity for age 6	1.000	–	–	–
Block 1: Selectivity for age 7	0.848	0.387	0.015	1.000
Block 1: Selectivity for age 8	0.848	0.387	0.015	1.000
Block 1: Selectivity for age 9	0.848	0.387	0.015	1.000
Block 1: Selectivity for age 10+	0.848	0.387	0.015	1.000
Block 2: Selectivity for age 1	1.000	–	–	–
Block 2: Selectivity for age 2	1.000	–	–	–
Block 2: Selectivity for age 3	1.000	–	–	–
Block 2: Selectivity for age 4	1.000	–	–	–
Block 2: Selectivity for age 5	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 2: Selectivity for age 6	1.000	—	—	—
Block 2: Selectivity for age 7	1.000	—	—	—
Block 2: Selectivity for age 8	1.000	—	—	—
Block 2: Selectivity for age 9	1.000	—	—	—
Block 2: Selectivity for age 10+	1.000	—	—	—
Block 3: Selectivity for age 1	0.000	—	—	—
Block 3: Selectivity for age 2	0.000	—	—	—
Block 3: Selectivity for age 3	1.000	—	—	—
Block 3: Selectivity for age 4	0.456	0.185	0.163	0.783
Block 3: Selectivity for age 5	0.227	0.093	0.094	0.453
Block 3: Selectivity for age 6	0.215	0.072	0.106	0.386
Block 3: Selectivity for age 7	0.000	—	—	—
Block 3: Selectivity for age 8	0.000	—	—	—
Block 3: Selectivity for age 9	0.000	—	—	—
Block 3: Selectivity for age 10+	0.000	—	—	—
Block 4: Selectivity for age 1	0.000	—	—	—
Block 4: Selectivity for age 2	0.000	—	—	—
Block 4: Selectivity for age 3	1.000	—	—	—
Block 4: Selectivity for age 4	0.721	0.170	0.329	0.931
Block 4: Selectivity for age 5	0.575	0.136	0.314	0.801
Block 4: Selectivity for age 6	0.488	0.093	0.314	0.665
Block 4: Selectivity for age 7	0.000	—	—	—

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 4: Selectivity for age 8	0.000	—	—	—
Block 4: Selectivity for age 9	0.000	—	—	—
Block 4: Selectivity for age 10+	0.000	—	—	—
Block 1: Selectivity RE σ	1.224	0.438	0.607	2.469
Block 1: Selectivity RE AR1 ρ (age)	0.928	0.102	0.207	0.996
Fleet 1 age comp, logistic-normal: σ	17.491	1.077	15.502	19.734
Index 2 age comp, logistic-normal: σ	32.941	5.126	24.283	44.688
Index 3 age comp, logistic-normal: σ	29.042	3.110	23.543	35.825

Table 2. Abundance at age (1000s).

	1	2	3	4	5	6	7	8	9	10+
1968	3831507	2839072	1678778	802022	349139	141538	46149	16229	5414	2674
1969	1410187	4362516	2006551	717441	153433	74991	49592	35592	12590	84311
1970	3997003	1033110	3827844	1277344	294170	64519	39466	39226	37389	43368
1971	1919247	2631043	867984	2580647	751973	153824	36074	22787	20184	62924
1972	1215839	1083042	1526683	738284	1406732	327732	78787	17703	15959	38932
1973	1952869	1108267	768311	877336	524187	639819	136223	35022	9574	15240
1974	1997021	1092961	595958	333249	469841	280604	267919	69293	14285	9683
1975	2212416	1590943	436268	288118	135981	212060	128689	105876	34426	7460
1976	342196	1401410	770635	193332	114640	57078	79435	58644	34567	25620
1977	135487	264878	649848	288318	72064	40566	20746	29793	22201	14052
1978	57853	61294	139836	314654	147316	45722	21449	10958	20393	43399
1979	196522	70493	27064	75125	195304	101052	30306	12727	7987	29406
1980	104923	166996	37326	20906	52030	142443	47235	17247	7874	22588
1981	444515	58470	110819	20733	20510	43084	76993	25977	11717	11593
1982	840052	218805	20761	61646	8729	17818	27891	50960	15377	23520
1983	1696824	618521	131669	15735	31160	4202	5763	20721	36567	26756
1984	134126	1375649	411721	67916	10405	13007	3035	3450	14599	94547
1985	503416	72870	1433607	240234	28357	5070	14620	1975	2103	60162
1986	227748	307202	69404	1124936	163111	15503	3160	13153	1128	31134
1987	219687	151298	137691	51811	824179	100144	11214	2199	9191	15855
1988	437764	130033	66547	57442	32690	536657	52998	6736	1950	15392
1989	380342	316379	86203	45341	34522	14192	371778	22944	3551	10818
1990	189422	378395	255807	48294	30407	24420	7137	237940	10695	5127
1991	143488	131563	330045	148843	21610	17668	13323	4637	118294	4723
1992	166788	121208	66117	193079	87629	11079	7519	6919	2982	62306
1993	127281	120648	81820	39551	116805	45585	6709	3715	4691	29865
1994	254987	54615	111759	73391	23611	71741	22403	3286	1627	10774
1995	285406	161130	22777	73376	56153	13184	39630	11888	1519	3599
1996	224042	188848	93598	10125	43963	46784	7888	23166	6167	1693
1997	194054	141791	98563	44919	5758	17953	18663	4099	10469	3172
1998	84872	149412	76142	44358	15088	3211	8600	8200	1560	4063

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

	1	2	3	4	5	6	7	8	9	10+
1999	114102	58051	87362	37215	18257	5107	872	2986	2394	1739
2000	396967	93084	37653	39281	13535	5339	1442	256	629	620
2001	168561	362220	69387	23268	20480	5562	1212	528	141	159
2002	218202	137828	557662	40152	12207	9017	3391	145	121	63
2003	312592	156076	118149	493002	30210	5765	5861	2636	6	72
2004	448403	249418	69707	52752	257528	11535	2816	1898	2586	33
2005	216143	387426	150357	30231	19067	104413	3903	786	230	509
2006	288286	136082	326619	73483	11125	6219	35832	1091	109	57
2007	112135	248053	84946	125729	19920	2167	1543	8691	183	8
2008	224782	75336	181581	27346	30296	4233	446	336	2128	33
2009	223745	169246	39327	77102	7853	9088	775	77	52	611
2010	84036	135671	59340	8326	14494	1505	1579	124	4	77
2011	93117	24411	30133	8160	1007	1103	116	111	12	14
2012	85688	87312	8050	7731	1467	152	88	10	4	2
2013	82888	56929	34948	1492	1388	224	17	8	1	1
2014	153893	53084	29697	10763	397	144	13	3	1	0
2015	185644	72832	19485	9824	3313	222	17	7	1	0
2016	230089	110573	26310	6819	3721	1589	63	2	2	0
2017	44556	195035	47949	10162	2503	1389	357	17	1	0
2018	91992	20985	127108	23025	4229	776	390	24	4	0
2019	75861	73971	13968	48892	6602	1559	184	71	5	1
2020	87327	50135	49991	7364	16459	2441	446	36	9	2
2021	98422	55648	22060	14948	1918	2937	554	91	12	2
2022	260038	75335	25412	6243	3104	214	747	218	19	3

Table 3. Total fishing mortality at age.

	1	2	3	4	5	6	7	8	9	10+
1968	0.010	0.034	0.057	0.066	0.074	0.097	0.089	0.094	0.095	0.095
1969	0.016	0.051	0.084	0.098	0.110	0.143	0.132	0.140	0.141	0.141
1970	0.025	0.083	0.138	0.161	0.180	0.235	0.216	0.229	0.232	0.231

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

	1	2	3	4	5	6	7	8	9	10+
1971	0.040	0.130	0.215	0.253	0.281	0.368	0.338	0.359	0.363	0.362
1972	0.044	0.144	0.239	0.280	0.312	0.408	0.375	0.398	0.403	0.401
1973	0.064	0.207	0.343	0.402	0.447	0.586	0.538	0.572	0.578	0.576
1974	0.071	0.232	0.384	0.450	0.500	0.655	0.602	0.639	0.646	0.644
1975	0.081	0.266	0.440	0.516	0.574	0.752	0.690	0.733	0.741	0.738
1976	0.093	0.304	0.503	0.589	0.656	0.859	0.788	0.838	0.847	0.844
1977	0.033	0.108	0.179	0.210	0.233	0.305	0.280	0.298	0.301	0.300
1978	0.012	0.040	0.067	0.079	0.087	0.115	0.105	0.112	0.113	0.113
1979	0.018	0.059	0.098	0.115	0.128	0.168	0.154	0.164	0.166	0.165
1980	0.015	0.049	0.082	0.096	0.107	0.140	0.128	0.136	0.138	0.137
1981	0.022	0.072	0.118	0.139	0.155	0.202	0.186	0.197	0.200	0.199
1982	0.021	0.068	0.113	0.132	0.147	0.193	0.177	0.188	0.190	0.189
1983	0.020	0.065	0.108	0.127	0.141	0.185	0.170	0.180	0.182	0.182
1984	0.015	0.050	0.083	0.097	0.108	0.142	0.130	0.139	0.140	0.140
1985	0.023	0.074	0.122	0.143	0.159	0.209	0.191	0.203	0.206	0.205
1986	0.021	0.067	0.111	0.130	0.145	0.190	0.174	0.185	0.187	0.187
1987	0.027	0.088	0.145	0.170	0.189	0.248	0.228	0.242	0.244	0.244
1988	0.031	0.101	0.168	0.197	0.219	0.287	0.263	0.279	0.283	0.282
1989	0.033	0.108	0.179	0.210	0.234	0.307	0.281	0.299	0.302	0.301
1990	0.047	0.153	0.254	0.298	0.331	0.434	0.398	0.423	0.428	0.426
1991	0.040	0.130	0.216	0.253	0.282	0.369	0.339	0.360	0.364	0.363
1992	0.033	0.108	0.178	0.209	0.233	0.305	0.280	0.297	0.300	0.299
1993	0.038	0.123	0.204	0.239	0.266	0.348	0.320	0.340	0.343	0.342
1994	0.047	0.152	0.252	0.296	0.329	0.431	0.396	0.420	0.425	0.423
1995	0.036	0.118	0.195	0.228	0.254	0.333	0.305	0.324	0.328	0.327
1996	0.055	0.179	0.297	0.348	0.387	0.507	0.465	0.494	0.500	0.498
1997	0.069	0.225	0.372	0.436	0.486	0.636	0.584	0.620	0.627	0.625
1998	0.086	0.281	0.465	0.545	0.607	0.795	0.730	0.775	0.784	0.781
1999	0.108	0.352	0.583	0.683	0.760	0.996	0.914	0.971	0.982	0.978
2000	0.084	0.272	0.451	0.529	0.588	0.771	0.707	0.752	0.760	0.757
2001	0.089	0.291	0.482	0.565	0.629	0.823	0.756	0.803	0.812	0.809

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

	1	2	3	4	5	6	7	8	9	10+
2002	0.067	0.217	0.360	0.422	0.470	0.615	0.565	0.600	0.607	0.604
2003	0.059	0.192	0.318	0.373	0.416	0.544	0.500	0.531	0.537	0.535
2004	0.120	0.393	0.650	0.762	0.848	1.111	1.020	1.084	1.096	1.092
2005	0.134	0.437	0.723	0.848	0.943	1.235	1.134	1.205	1.218	1.214
2006	0.173	0.565	0.935	1.096	1.220	1.598	1.466	1.558	1.575	1.570
2007	0.142	0.464	0.769	0.901	1.003	1.314	1.206	1.281	1.295	1.291
2008	0.138	0.449	0.743	0.871	0.970	1.270	1.166	1.239	1.252	1.248
2009	0.213	0.694	1.149	1.347	1.499	1.964	1.802	1.915	1.936	1.929
2010	0.258	0.840	1.390	1.630	1.814	2.376	2.181	2.317	2.343	2.335
2011	0.237	0.773	1.280	1.501	1.670	2.187	2.008	2.133	2.157	2.149
2012	0.220	0.718	1.189	1.394	1.551	2.031	1.864	1.981	2.003	1.996
2013	0.203	0.663	1.097	1.287	1.432	1.876	1.722	1.829	1.849	1.843
2014	0.131	0.427	0.707	0.829	0.922	1.208	1.109	1.178	1.191	1.187
2015	0.116	0.380	0.628	0.737	0.820	1.074	0.986	1.047	1.059	1.055
2016	0.115	0.375	0.621	0.728	0.810	1.062	0.974	1.035	1.047	1.043
2017	0.128	0.418	0.693	0.812	0.904	1.184	1.086	1.154	1.167	1.163
2018	0.119	0.389	0.644	0.755	0.841	1.101	1.011	1.074	1.086	1.082
2019	0.115	0.376	0.622	0.729	0.811	1.063	0.976	1.037	1.048	1.044
2020	0.141	0.460	0.762	0.893	0.994	1.302	1.195	1.270	1.284	1.279
2021	0.138	0.451	0.747	0.876	0.975	1.277	1.172	1.245	1.259	1.254
2022	0.025	0.082	0.135	0.159	0.177	0.232	0.213	0.226	0.228	0.228