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)	0.860	0.114	0.664	1.114
NAA σ (age 2-10+)	0.511	0.030	0.456	0.573
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 fully selected q	0.000	0.000	0.000	0.000
Index 3 fully selected q	0.000	0.000	0.000	0.000
Block 1: Selectivity for age 1	0.849	0.387	0.015	1.000
Block 1: Selectivity for age 2	0.849	0.387	0.015	1.000
Block 1: Selectivity for age 3	0.849	0.387	0.015	1.000
Block 1: Selectivity for age 4	0.849	0.387	0.015	1.000
Block 1: Selectivity for age 5	0.849	0.387	0.015	1.000
Block 1: Selectivity for age 6	1.000	–	–	–
Block 1: Selectivity for age 7	0.849	0.387	0.015	1.000
Block 1: Selectivity for age 8	0.849	0.387	0.015	1.000
Block 1: Selectivity for age 9	0.849	0.387	0.015	1.000
Block 1: Selectivity for age 10+	0.849	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	0.451	0.183	0.161	0.778
Block 3: Selectivity for age 5	0.227	0.094	0.093	0.457
Block 3: Selectivity for age 6	0.213	0.072	0.105	0.385
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	0.689	0.161	0.337	0.906
Block 4: Selectivity for age 5	0.528	0.123	0.299	0.746
Block 4: Selectivity for age 6	0.466	0.089	0.303	0.637
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	1.226	0.439	0.607	2.475
Block 1: Selectivity RE AR1 ρ (age)	0.928	0.102	0.205	0.996
Fleet 1 age comp, logistic-normal: σ	17.425	1.066	15.456	19.644
Index 2 age comp, logistic-normal: σ	33.786	5.177	25.021	45.622
Index 3 age comp, logistic-normal: σ	29.082	3.126	23.557	35.903

Table 2. Abundance at age (1000s).

	1	2	3	4	5	6	7	8	9	10+
1968	3810237	2823411	1666991	794577	345279	139750	45505	15973	5321	2624
1969	1376552	4336159	1988508	708770	149848	73160	48541	35079	12470	83846
1970	3943227	1005399	3783344	1257613	287731	62780	38472	38541	36927	42559
1971	1851027	2564236	843233	2537216	737108	149923	35087	22154	19686	61515
1972	1130237	1032171	1466706	714769	1373416	317744	76295	17060	15494	37606
1973	1794666	1007532	723378	827281	503355	620368	130211	33466	9109	14455
1974	1814800	968856	503616	301586	427186	264472	256510	65189	13313	8929
1975	1892314	1469142	352084	242983	121165	187928	118501	98104	31207	6640
1976	270279	1130948	678523	159845	97233	49841	68460	51517	30054	22123
1977	101166	200588	429451	215005	54552	31558	16015	22961	17063	10674
1978	42610	44914	98961	209424	105924	33195	15729	7946	14632	31504
1979	156575	53559	19790	54511	137724	75124	22997	9575	5832	22131
1980	83563	140755	28306	15871	39735	105700	36344	13292	5925	17553
1981	371895	47895	104354	16961	16698	36227	61388	20813	9253	9549
1982	706608	184490	17167	54212	7291	14984	23441	41986	12476	19761
1983	1474944	517399	112254	13269	26874	3532	4809	17471	30314	22653
1984	112958	1188649	320123	57329	8882	11042	2570	2891	12206	80181
1985	444558	61945	1175130	202008	24319	4374	12659	1688	1756	51787
1986	199835	274030	59784	956458	143106	13442	2730	11458	950	27140
1987	192137	134554	123574	46115	773633	90182	9879	1919	8030	14111
1988	397069	110870	59306	51736	29867	514214	48268	6024	1722	13885
1989	362413	284052	68715	39593	30646	12932	366560	21182	3193	9823
1990	187737	377645	224660	43199	28440	22708	6707	243686	10158	4839
1991	150734	135138	354625	147271	21241	17602	13124	4569	123102	4736
1992	186037	132610	71157	218399	93736	11672	7883	7211	3096	66842
1993	145558	138579	94382	44251	135332	50597	7340	4057	5140	33314
1994	298681	62690	137486	86928	27051	82763	25080	3694	1847	12318
1995	323707	191249	26604	91578	67421	15326	45320	13514	1777	4187
1996	249919	204877	116429	11531	51752	53998	8963	25781	6931	1929
1997	214063	153419	101774	50456	6396	19783	20748	4613	11604	3502
1998	91853	164402	82427	46813	16438	3461	9304	8895	1742	4390

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

	1	2	3	4	5	6	7	8	9	10+
1999	120885	63274	102364	40634	19645	5507	936	3218	2601	1881
2000	411034	97530	43508	45472	15038	5949	1616	285	709	686
2001	176255	364221	73288	25784	22724	6056	1360	594	159	173
2002	225568	143952	592674	42275	13177	9658	3602	157	133	67
2003	322619	156068	124419	521754	31778	6118	6288	2752	7	81
2004	460002	255263	65051	52508	238224	11700	2975	2015	2650	38
2005	214189	400712	149194	28819	18603	99764	3789	782	227	501
2006	286792	134712	354159	72893	10872	6105	34232	1058	107	56
2007	110396	248951	88022	134028	20243	2199	1573	8625	185	8
2008	223834	73263	196020	28160	31879	4297	458	345	2140	34
2009	228650	164397	37395	76937	8178	9554	807	81	54	628
2010	84975	140162	54449	7987	14323	1495	1591	123	4	76
2011	93374	24834	30250	7787	966	1090	115	110	11	14
2012	84507	88219	8553	7937	1445	151	89	10	4	2
2013	84879	54327	36563	1548	1432	225	17	8	1	1
2014	154808	57276	27134	10828	404	146	13	3	1	0
2015	184865	70876	22765	9670	3330	225	17	7	1	0
2016	232038	108056	24872	7252	3751	1605	65	2	2	0
2017	44065	197235	45341	9836	2538	1385	356	17	1	0
2018	91850	20776	128566	22415	4159	771	388	24	4	0
2019	76311	73678	14205	49808	6511	1549	184	71	5	1
2020	88763	50558	50240	7477	16734	2430	448	36	9	2
2021	100159	57023	22444	15110	1948	2999	558	92	12	2
2022	271210	76798	26977	6478	3183	219	785	227	20	3

Table 3. Total fishing mortality at age.

	1	2	3	4	5	6	7	8	9	10+
1968	0.011	0.035	0.057	0.067	0.074	0.097	0.090	0.095	0.096	0.096
1969	0.016	0.051	0.085	0.099	0.111	0.145	0.133	0.141	0.143	0.142
1970	0.026	0.085	0.140	0.164	0.182	0.239	0.219	0.233	0.235	0.234

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

	1	2	3	4	5	6	7	8	9	10+
1971	0.041	0.133	0.221	0.259	0.288	0.376	0.346	0.367	0.371	0.370
1972	0.046	0.150	0.248	0.291	0.323	0.423	0.389	0.413	0.417	0.416
1973	0.067	0.221	0.365	0.428	0.475	0.622	0.572	0.607	0.614	0.611
1974	0.078	0.257	0.425	0.498	0.554	0.725	0.666	0.707	0.715	0.712
1975	0.092	0.301	0.497	0.582	0.648	0.848	0.779	0.827	0.836	0.833
1976	0.112	0.366	0.606	0.710	0.789	1.033	0.949	1.008	1.018	1.015
1977	0.047	0.153	0.254	0.297	0.330	0.432	0.397	0.421	0.426	0.424
1978	0.018	0.058	0.097	0.113	0.126	0.165	0.152	0.161	0.163	0.162
1979	0.025	0.083	0.137	0.160	0.178	0.233	0.214	0.227	0.230	0.229
1980	0.020	0.065	0.108	0.126	0.140	0.183	0.168	0.179	0.181	0.180
1981	0.026	0.086	0.142	0.167	0.185	0.242	0.223	0.236	0.239	0.238
1982	0.025	0.082	0.136	0.159	0.176	0.231	0.212	0.225	0.228	0.227
1983	0.024	0.078	0.129	0.151	0.168	0.219	0.202	0.214	0.216	0.215
1984	0.018	0.061	0.100	0.117	0.131	0.171	0.157	0.167	0.168	0.168
1985	0.027	0.089	0.147	0.173	0.192	0.251	0.231	0.245	0.248	0.247
1986	0.024	0.078	0.130	0.152	0.169	0.221	0.203	0.216	0.218	0.217
1987	0.029	0.095	0.157	0.184	0.205	0.268	0.246	0.262	0.265	0.264
1988	0.033	0.108	0.179	0.210	0.233	0.306	0.281	0.298	0.301	0.300
1989	0.035	0.115	0.189	0.222	0.247	0.323	0.297	0.315	0.318	0.317
1990	0.047	0.156	0.257	0.301	0.335	0.439	0.403	0.428	0.433	0.431
1991	0.038	0.124	0.206	0.241	0.268	0.351	0.322	0.342	0.346	0.344
1992	0.030	0.097	0.161	0.189	0.210	0.275	0.252	0.268	0.271	0.270
1993	0.033	0.107	0.177	0.207	0.230	0.301	0.277	0.294	0.297	0.296
1994	0.039	0.128	0.212	0.248	0.276	0.361	0.332	0.353	0.356	0.355
1995	0.030	0.099	0.163	0.191	0.213	0.278	0.255	0.271	0.274	0.273
1996	0.047	0.155	0.257	0.301	0.335	0.438	0.403	0.428	0.432	0.431
1997	0.064	0.209	0.346	0.405	0.451	0.590	0.542	0.575	0.581	0.579
1998	0.080	0.261	0.431	0.505	0.562	0.735	0.675	0.717	0.725	0.722
1999	0.096	0.314	0.520	0.609	0.677	0.886	0.814	0.864	0.873	0.870
2000	0.076	0.250	0.413	0.484	0.538	0.704	0.647	0.687	0.694	0.691
2001	0.087	0.284	0.470	0.551	0.613	0.802	0.736	0.782	0.790	0.788

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

	1	2	3	4	5	6	7	8	9	10+
2002	0.063	0.206	0.340	0.398	0.443	0.580	0.533	0.566	0.572	0.570
2003	0.056	0.184	0.305	0.357	0.398	0.520	0.478	0.507	0.513	0.511
2004	0.127	0.416	0.688	0.805	0.896	1.172	1.077	1.144	1.156	1.152
2005	0.134	0.438	0.725	0.849	0.944	1.236	1.135	1.205	1.219	1.214
2006	0.167	0.547	0.905	1.060	1.178	1.542	1.416	1.504	1.520	1.515
2007	0.138	0.453	0.749	0.877	0.976	1.277	1.173	1.246	1.259	1.254
2008	0.132	0.433	0.716	0.838	0.932	1.220	1.121	1.190	1.203	1.198
2009	0.217	0.713	1.180	1.381	1.536	2.010	1.847	1.961	1.982	1.975
2010	0.258	0.847	1.402	1.642	1.826	2.389	2.195	2.331	2.356	2.347
2011	0.233	0.765	1.265	1.482	1.648	2.157	1.981	2.104	2.126	2.118
2012	0.216	0.708	1.172	1.373	1.527	1.998	1.835	1.949	1.970	1.962
2013	0.202	0.664	1.098	1.286	1.430	1.872	1.719	1.825	1.845	1.838
2014	0.130	0.427	0.707	0.827	0.920	1.204	1.106	1.175	1.187	1.183
2015	0.114	0.373	0.617	0.722	0.803	1.051	0.966	1.025	1.036	1.032
2016	0.117	0.384	0.635	0.744	0.827	1.082	0.994	1.056	1.067	1.063
2017	0.129	0.424	0.702	0.822	0.914	1.197	1.099	1.167	1.180	1.175
2018	0.118	0.386	0.639	0.748	0.832	1.089	1.000	1.062	1.074	1.070
2019	0.114	0.372	0.616	0.721	0.802	1.050	0.964	1.024	1.035	1.031
2020	0.139	0.455	0.753	0.882	0.981	1.284	1.179	1.253	1.266	1.261
2021	0.134	0.440	0.729	0.853	0.949	1.242	1.141	1.212	1.225	1.220
2022	0.024	0.079	0.130	0.153	0.170	0.222	0.204	0.217	0.219	0.218