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)	0.882	0.101	0.704	1.104
NAA σ (age 2-10+)	0.491	0.029	0.437	0.551
NAA residual AR1 ρ age	0.363	0.097	0.159	0.537
NAA residual AR1 ρ year	-0.022	0.085	-0.187	0.144
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: Mean Selectivity for age 1	0.122	0.018	0.091	0.162
Block 1: Mean Selectivity for age 2	0.397	0.050	0.305	0.498
Block 1: Mean Selectivity for age 3	0.645	0.065	0.511	0.760
Block 1: Mean Selectivity for age 4	0.727	0.062	0.591	0.831
Block 1: Mean Selectivity for age 5	0.815	0.062	0.665	0.908
Block 1: Mean Selectivity for age 6	1.000	–	–	–
Block 1: Mean Selectivity for age 7	1.000	–	–	–
Block 1: Mean Selectivity for age 8	1.000	–	–	–
Block 1: Mean Selectivity for age 9	1.000	0.000	0.000	1.000
Block 1: Mean Selectivity for age 10+	1.000	0.000	0.000	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	0.448	0.184	0.158	0.778
Block 3: Selectivity for age 5	0.220	0.092	0.090	0.447
Block 3: Selectivity for age 6	0.198	0.067	0.097	0.360
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	0.684	0.167	0.322	0.908
Block 4: Selectivity for age 5	0.517	0.126	0.285	0.742
Block 4: Selectivity for age 6	0.446	0.089	0.284	0.620
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	0.249	0.087	0.126	0.495
Block 1: Selectivity RE AR1 ρ (year)	-0.890	0.085	-0.977	-0.553
Fleet 1 age comp, logistic-normal: σ	15.088	0.890	13.441	16.936
Index 2 age comp, logistic-normal: σ	34.733	5.077	26.081	46.255
Index 3 age comp, logistic-normal: σ	31.324	3.113	25.780	38.061

Table 2. Abundance at age (1000s).

	1	2	3	4	5	6	7	8	9	10+
1968	6084919	4155099	2110999	892329	358981	137562	48284	16948	5949	3217
1969	1421035	5257950	2371475	691474	126871	55212	39229	36633	21707	88047
1970	3884026	1073719	3901333	1281534	267973	56567	35546	38890	40019	47141
1971	1744196	2405126	843178	2516742	738980	147193	32874	21286	20289	62529
1972	940175	932321	1357066	701246	1350041	317180	74829	17835	15499	36525
1973	1591477	1018698	720293	790721	468755	569257	118410	31273	8300	14838
1974	1815010	949649	516598	292087	377919	245071	242167	59753	13091	8249
1975	1999898	1342472	343999	217317	116894	167266	108388	92588	27525	7033
1976	290859	1075788	647106	156753	92012	48826	68028	49592	35171	20948
1977	79672	171499	390910	186216	47707	28390	14110	19939	13399	10652
1978	32669	38191	89096	192924	91635	27787	13681	7228	14657	24960
1979	130150	44473	18159	45646	120862	66277	21581	9566	5605	23109
1980	75675	137052	29416	15291	35368	84726	31343	11599	5471	14705
1981	306576	52211	103957	18932	16808	35132	55201	19396	8142	10610
1982	721798	179571	19183	50033	7797	12864	23283	36723	12908	17419
1983	1512546	500462	103774	12960	25982	3230	4054	15682	27647	25192
1984	89490	1084312	313230	50698	7570	12622	2201	2671	12795	67400
1985	373433	56393	990976	185005	20443	3937	12970	1682	1805	54609
1986	205248	281823	62077	916395	136600	12283	2575	11425	963	25705
1987	157349	130864	129788	46100	744794	91923	9735	1987	8223	14921
1988	371034	101783	55250	50225	27345	498883	50325	6554	1906	14261
1989	306381	250771	62749	36595	28789	11936	331621	21764	3280	9679
1990	157670	332087	219740	44613	28915	21929	6645	227195	10335	4843
1991	138612	134377	348912	155068	24861	18482	14404	4894	120064	4936
1992	181614	129395	73328	219509	96593	13149	8398	8231	3574	74964
1993	143871	144994	94838	45495	142209	55488	8671	4931	5897	37233
1994	325403	74393	149327	98044	30419	92140	28623	4302	2034	14633
1995	390179	224901	31649	102240	75434	17914	53640	16237	2006	4918
1996	266991	238393	130019	13581	59691	58706	11072	30598	7671	2310
1997	236747	163676	110897	52455	6397	21788	21682	5131	13142	3803
1998	75734	155981	84404	48971	18729	3510	11218	9963	1859	4794

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

	1	2	3	4	5	6	7	8	9	10+
1999	99187	60998	102105	44219	20538	6044	1002	3571	2892	1932
2000	397217	95533	41901	45639	16515	6124	1721	296	683	726
2001	134472	333524	68261	25285	22753	6964	1571	689	159	177
2002	191769	141151	545797	44499	13178	10601	3807	175	108	66
2003	311716	173488	143699	595258	39061	8628	7218	2310	8	31
2004	435868	231761	62071	47699	222035	12685	3641	2646	2936	26
2005	168229	358105	139206	27635	18445	100239	4396	859	252	504
2006	246345	124611	323587	74942	11453	6720	35189	1122	102	57
2007	89368	228916	87629	141498	22585	2699	1860	9266	179	8
2008	205792	74643	179166	29138	34544	4506	520	380	2280	37
2009	277299	174195	38864	72756	8605	10299	839	80	59	663
2010	71275	134306	53371	8127	14712	1653	1738	99	3	74
2011	103562	23660	29191	7312	988	1407	180	186	16	17
2012	66378	88543	8846	7538	1309	145	62	7	4	1
2013	81883	53442	37185	1830	1633	275	35	8	1	1
2014	131716	56932	27883	10301	382	115	10	3	0	0
2015	210309	75759	22023	10143	3553	237	25	7	1	0
2016	227101	102311	24263	6804	4184	1489	57	2	1	0
2017	41174	187923	46409	10256	2746	1796	366	18	1	0
2018	71327	20176	123187	23809	4618	827	380	24	2	0
2019	75539	73587	15095	48043	6735	1597	206	81	5	1
2020	75331	52466	54544	8368	18002	2401	387	28	9	1
2021	96045	58955	24756	17277	2119	3493	601	103	12	3
2022	259049	82351	27485	6395	2864	228	887	270	28	4

Table 3. Total fishing mortality at age.

	1	2	3	4	5	6	7	8	9	10+
1968	0.012	0.031	0.044	0.047	0.050	0.056	0.056	0.056	0.056	0.056
1969	0.011	0.042	0.078	0.092	0.109	0.151	0.151	0.151	0.151	0.151
1970	0.031	0.092	0.139	0.153	0.168	0.196	0.196	0.196	0.196	0.196

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

	1	2	3	4	5	6	7	8	9	10+
1971	0.044	0.142	0.231	0.261	0.293	0.359	0.359	0.359	0.359	0.359
1972	0.043	0.149	0.258	0.297	0.342	0.443	0.443	0.443	0.443	0.443
1973	0.099	0.288	0.425	0.465	0.506	0.584	0.584	0.584	0.584	0.584
1974	0.068	0.246	0.443	0.518	0.606	0.815	0.815	0.815	0.815	0.815
1975	0.147	0.401	0.569	0.615	0.661	0.746	0.746	0.746	0.746	0.746
1976	0.087	0.325	0.613	0.730	0.872	1.236	1.236	1.236	1.236	1.236
1977	0.089	0.230	0.316	0.339	0.361	0.401	0.401	0.401	0.401	0.401
1978	0.013	0.050	0.098	0.118	0.144	0.214	0.214	0.214	0.214	0.214
1979	0.051	0.133	0.181	0.194	0.207	0.230	0.230	0.230	0.230	0.230
1980	0.015	0.058	0.110	0.131	0.158	0.227	0.227	0.227	0.227	0.227
1981	0.047	0.122	0.168	0.180	0.191	0.212	0.212	0.212	0.212	0.212
1982	0.018	0.068	0.131	0.157	0.189	0.276	0.276	0.276	0.276	0.276
1983	0.037	0.094	0.126	0.135	0.143	0.157	0.157	0.157	0.157	0.157
1984	0.014	0.054	0.106	0.128	0.157	0.236	0.236	0.236	0.236	0.236
1985	0.047	0.125	0.176	0.190	0.203	0.228	0.228	0.228	0.228	0.228
1986	0.021	0.075	0.135	0.157	0.183	0.245	0.245	0.245	0.245	0.245
1987	0.038	0.114	0.175	0.193	0.212	0.250	0.250	0.250	0.250	0.250
1988	0.035	0.117	0.193	0.220	0.248	0.310	0.310	0.310	0.310	0.310
1989	0.040	0.131	0.213	0.240	0.270	0.332	0.332	0.332	0.332	0.332
1990	0.056	0.179	0.288	0.323	0.361	0.439	0.439	0.439	0.439	0.439
1991	0.038	0.126	0.209	0.238	0.269	0.336	0.336	0.336	0.336	0.336
1992	0.033	0.104	0.163	0.182	0.202	0.242	0.242	0.242	0.242	0.242
1993	0.029	0.099	0.166	0.190	0.216	0.274	0.274	0.274	0.274	0.274
1994	0.041	0.126	0.197	0.220	0.243	0.290	0.290	0.290	0.290	0.290
1995	0.025	0.084	0.141	0.161	0.182	0.229	0.229	0.229	0.229	0.229
1996	0.047	0.147	0.231	0.257	0.285	0.341	0.341	0.341	0.341	0.341
1997	0.057	0.191	0.321	0.365	0.415	0.521	0.521	0.521	0.521	0.521
1998	0.085	0.266	0.417	0.465	0.515	0.617	0.617	0.617	0.617	0.617
1999	0.084	0.292	0.504	0.580	0.666	0.859	0.859	0.859	0.859	0.859
2000	0.086	0.263	0.405	0.448	0.494	0.584	0.584	0.584	0.584	0.584
2001	0.089	0.303	0.516	0.590	0.674	0.858	0.858	0.858	0.858	0.858

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

	1	2	3	4	5	6	7	8	9	10+
2002	0.070	0.226	0.366	0.412	0.462	0.566	0.566	0.566	0.566	0.566
2003	0.052	0.168	0.271	0.304	0.341	0.416	0.416	0.416	0.416	0.416
2004	0.148	0.479	0.775	0.872	0.977	1.194	1.194	1.194	1.194	1.194
2005	0.141	0.475	0.798	0.910	1.035	1.304	1.304	1.304	1.304	1.304
2006	0.204	0.638	1.003	1.118	1.240	1.486	1.486	1.486	1.486	1.486
2007	0.126	0.438	0.756	0.870	1.000	1.290	1.290	1.290	1.290	1.290
2008	0.165	0.496	0.752	0.829	0.909	1.065	1.065	1.065	1.065	1.065
2009	0.184	0.658	1.176	1.370	1.597	2.129	2.129	2.129	2.129	2.129
2010	0.405	1.073	1.495	1.609	1.721	1.925	1.925	1.925	1.925	1.925
2011	0.172	0.666	1.313	1.592	1.946	2.933	2.933	2.933	2.933	2.933
2012	0.291	0.752	1.033	1.107	1.180	1.311	1.311	1.311	1.311	1.311
2013	0.159	0.607	1.170	1.406	1.700	2.484	2.484	2.484	2.484	2.484
2014	0.183	0.471	0.644	0.690	0.735	0.815	0.815	0.815	0.815	0.815
2015	0.089	0.337	0.646	0.774	0.932	1.350	1.350	1.350	1.350	1.350
2016	0.155	0.411	0.572	0.616	0.659	0.738	0.738	0.738	0.738	0.738
2017	0.106	0.397	0.751	0.895	1.072	1.526	1.526	1.526	1.526	1.526
2018	0.160	0.450	0.651	0.708	0.765	0.872	0.872	0.872	0.872	0.872
2019	0.097	0.354	0.645	0.758	0.891	1.214	1.214	1.214	1.214	1.214
2020	0.165	0.473	0.694	0.758	0.822	0.945	0.945	0.945	0.945	0.945
2021	0.105	0.376	0.669	0.779	0.907	1.206	1.206	1.206	1.206	1.206
2022	0.028	0.079	0.116	0.127	0.138	0.158	0.158	0.158	0.158	0.158