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)	0.869	0.117	0.667	1.131
NAA σ (age 2-10+)	0.507	0.030	0.452	0.568
NAA residual AR1 ρ age	0.000	–	–	–
NAA residual AR1 ρ year	0.025	0.092	-0.154	0.202
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	0.108	0.014	0.084	0.138
Block 1: Selectivity for age 2	0.355	0.039	0.282	0.435
Block 1: Selectivity for age 3	0.590	0.059	0.472	0.698
Block 1: Selectivity for age 4	0.688	0.065	0.549	0.800
Block 1: Selectivity for age 5	0.755	0.070	0.594	0.867
Block 1: Selectivity for age 6	1.000	–	–	–
Block 1: Selectivity for age 7	1.000	–	–	–
Block 1: Selectivity for age 8	1.000	–	–	–
Block 1: Selectivity for age 9	1.000	–	–	–
Block 1: Selectivity for age 10+	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	0.450	0.183	0.161	0.778
Block 3: Selectivity for age 5	0.224	0.093	0.092	0.451
Block 3: Selectivity for age 6	0.208	0.070	0.102	0.377
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	0.687	0.161	0.336	0.905
Block 4: Selectivity for age 5	0.522	0.122	0.295	0.740
Block 4: Selectivity for age 6	0.465	0.089	0.301	0.636
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	–	–	–
Fleet 1 age comp, logistic-normal: σ	17.355	1.058	15.400	19.557
Index 2 age comp, logistic-normal: σ	33.807	5.175	25.044	45.635
Index 3 age comp, logistic-normal: σ	29.210	3.126	23.684	36.026

Table 2. Abundance at age (1000s).

	1	2	3	4	5	6	7	8	9	10+
1968	3721956	2758315	1627336	772858	335197	136683	44457	14460	4703	2267
1969	1364041	4257308	1972135	708301	149963	72471	47339	35157	12169	81620
1970	3944115	1008072	3751069	1256405	286680	61937	37254	37641	36920	42344
1971	1851655	2548931	843951	2527144	734739	147906	34165	21594	19559	60721
1972	1128731	1034371	1460136	713195	1369777	315269	74118	16525	15134	37046
1973	1784489	1002025	719217	823310	502536	615534	128511	32364	8943	14267
1974	1832878	969289	500223	299632	423828	262807	251318	63190	12971	8779
1975	1896219	1471862	351188	240726	120631	186832	117676	94272	30552	6558
1976	269340	1133139	671313	158444	95652	49248	68096	49746	29004	21681
1977	98311	198532	427247	212879	53872	30909	15504	21769	16500	10431
1978	41924	44537	96981	206567	104367	32503	15053	7587	13976	30462
1979	153766	52825	19615	53755	136303	73653	22052	9190	5658	21629
1980	82809	139876	27926	15691	39356	103809	34770	12743	5725	17061
1981	369188	47588	102562	16773	16447	35784	58986	19979	8988	9345
1982	715785	183721	17223	53878	7251	14643	22481	40518	12074	19320
1983	1479215	517722	110733	13251	26894	3488	4655	16864	29620	22350
1984	113050	1184441	320064	56698	8780	10995	2472	2805	11875	78550
1985	441152	62040	1171549	202560	24325	4270	12312	1643	1723	51074
1986	200245	271489	59540	951524	142825	13297	2648	11114	932	26692
1987	191104	134411	122639	45692	770016	88960	9584	1873	7886	13886
1988	396029	110467	59128	51635	29614	508610	46894	5813	1683	13652
1989	362768	282668	68102	39313	30712	12785	351491	20564	3118	9636
1990	186049	377380	224744	43143	28342	22569	6588	237024	9997	4775
1991	149976	134626	352134	146998	21335	17429	12750	4430	121289	4662
1992	185729	132121	71049	217408	93467	11639	7692	7002	3029	65848
1993	145549	138390	94387	44256	135240	50253	7155	3947	5030	32870
1994	301642	62710	136424	87119	27115	82214	24598	3602	1818	12185
1995	327029	191901	26776	91017	67572	15331	44129	13198	1743	4138
1996	251991	206145	116511	11634	51872	53615	8820	25263	6872	1913
1997	214369	154280	102167	50335	6423	19952	20523	4511	11436	3468
1998	91163	164404	82697	47044	16563	3453	9243	8727	1716	4360

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

	1	2	3	4	5	6	7	8	9	10+
1999	119945	63126	102293	40742	19644	5565	939	3136	2569	1865
2000	408727	96451	43397	45474	15126	5907	1612	278	698	678
2001	175141	362463	73280	25695	22718	6100	1344	574	155	171
2002	222992	142801	590945	42403	13209	9608	3631	152	126	66
2003	323196	155571	124186	519335	31895	6162	6222	2756	7	76
2004	459753	255496	65416	52858	238906	11832	3044	1991	2643	35
2005	213450	399828	149247	28781	18609	100064	3846	760	224	497
2006	285108	134450	353560	73043	10863	6144	35140	1035	105	56
2007	110238	247759	88854	134796	20447	2227	1610	8422	183	8
2008	224682	73537	195141	28511	32373	4409	469	337	2113	34
2009	230614	164865	37640	76486	8245	9826	853	80	52	628
2010	84791	140402	54513	7992	14221	1514	1674	119	3	76
2011	93197	25004	30287	7829	980	1123	120	106	11	14
2012	83611	87713	8549	7855	1448	157	93	9	4	2
2013	83947	54323	36523	1537	1407	225	18	7	1	1
2014	153151	56644	27131	10744	402	148	14	3	1	0
2015	183318	70051	22432	9588	3290	223	17	6	1	0
2016	230296	107083	24668	7153	3722	1591	61	2	2	0
2017	44136	195683	45385	9872	2546	1412	348	14	0	0
2018	91496	20849	127897	22306	4156	777	394	23	3	0
2019	76462	73365	14301	49897	6524	1558	187	68	5	1
2020	89441	50878	50550	7494	16741	2437	449	35	9	1
2021	103235	58082	22762	15320	1954	2997	571	88	12	2
2022	285577	79514	27645	6695	3319	228	787	229	19	3

Table 3. Total fishing mortality at age.

	1	2	3	4	5	6	7	8	9	10+
1968	0.011	0.035	0.059	0.068	0.075	0.099	0.099	0.099	0.099	0.099
1969	0.016	0.052	0.086	0.100	0.110	0.146	0.146	0.146	0.146	0.146
1970	0.026	0.085	0.141	0.165	0.181	0.239	0.239	0.239	0.239	0.239

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

	1	2	3	4	5	6	7	8	9	10+
1971	0.041	0.134	0.223	0.260	0.286	0.378	0.378	0.378	0.378	0.378
1972	0.046	0.151	0.251	0.293	0.322	0.426	0.426	0.426	0.426	0.426
1973	0.067	0.222	0.368	0.430	0.471	0.624	0.624	0.624	0.624	0.624
1974	0.078	0.257	0.428	0.499	0.548	0.725	0.725	0.725	0.725	0.725
1975	0.091	0.300	0.499	0.582	0.639	0.846	0.846	0.846	0.846	0.846
1976	0.112	0.369	0.613	0.715	0.784	1.038	1.038	1.038	1.038	1.038
1977	0.047	0.155	0.257	0.300	0.329	0.436	0.436	0.436	0.436	0.436
1978	0.018	0.060	0.099	0.115	0.127	0.168	0.168	0.168	0.168	0.168
1979	0.026	0.084	0.140	0.163	0.179	0.237	0.237	0.237	0.237	0.237
1980	0.020	0.066	0.109	0.127	0.140	0.185	0.185	0.185	0.185	0.185
1981	0.026	0.086	0.143	0.167	0.184	0.243	0.243	0.243	0.243	0.243
1982	0.025	0.082	0.137	0.159	0.175	0.232	0.232	0.232	0.232	0.232
1983	0.024	0.078	0.130	0.152	0.166	0.220	0.220	0.220	0.220	0.220
1984	0.018	0.061	0.101	0.118	0.129	0.171	0.171	0.171	0.171	0.171
1985	0.027	0.089	0.148	0.173	0.189	0.251	0.251	0.251	0.251	0.251
1986	0.024	0.079	0.131	0.153	0.168	0.223	0.223	0.223	0.223	0.223
1987	0.029	0.097	0.161	0.188	0.206	0.273	0.273	0.273	0.273	0.273
1988	0.033	0.109	0.181	0.211	0.232	0.307	0.307	0.307	0.307	0.307
1989	0.034	0.113	0.188	0.219	0.240	0.318	0.318	0.318	0.318	0.318
1990	0.047	0.156	0.259	0.303	0.332	0.440	0.440	0.440	0.440	0.440
1991	0.038	0.125	0.207	0.242	0.265	0.351	0.351	0.351	0.351	0.351
1992	0.030	0.098	0.163	0.190	0.208	0.276	0.276	0.276	0.276	0.276
1993	0.033	0.107	0.179	0.208	0.228	0.303	0.303	0.303	0.303	0.303
1994	0.039	0.128	0.212	0.248	0.272	0.360	0.360	0.360	0.360	0.360
1995	0.030	0.098	0.163	0.190	0.209	0.277	0.277	0.277	0.277	0.277
1996	0.047	0.155	0.258	0.301	0.330	0.437	0.437	0.437	0.437	0.437
1997	0.063	0.207	0.344	0.402	0.441	0.584	0.584	0.584	0.584	0.584
1998	0.079	0.259	0.430	0.502	0.551	0.729	0.729	0.729	0.729	0.729
1999	0.096	0.314	0.522	0.609	0.668	0.885	0.885	0.885	0.885	0.885
2000	0.076	0.251	0.417	0.486	0.534	0.707	0.707	0.707	0.707	0.707
2001	0.087	0.286	0.476	0.555	0.609	0.806	0.806	0.806	0.806	0.806

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

	1	2	3	4	5	6	7	8	9	10+
2002	0.062	0.205	0.341	0.398	0.437	0.579	0.579	0.579	0.579	0.579
2003	0.056	0.185	0.307	0.359	0.393	0.521	0.521	0.521	0.521	0.521
2004	0.127	0.418	0.695	0.811	0.889	1.178	1.178	1.178	1.178	1.178
2005	0.133	0.437	0.726	0.847	0.929	1.230	1.230	1.230	1.230	1.230
2006	0.164	0.541	0.899	1.049	1.151	1.524	1.524	1.524	1.524	1.524
2007	0.137	0.450	0.748	0.873	0.957	1.268	1.268	1.268	1.268	1.268
2008	0.132	0.433	0.719	0.839	0.920	1.218	1.218	1.218	1.218	1.218
2009	0.217	0.712	1.184	1.381	1.515	2.007	2.007	2.007	2.007	2.007
2010	0.256	0.840	1.397	1.629	1.788	2.368	2.368	2.368	2.368	2.368
2011	0.232	0.764	1.270	1.482	1.625	2.153	2.153	2.153	2.153	2.153
2012	0.217	0.713	1.185	1.383	1.517	2.010	2.010	2.010	2.010	2.010
2013	0.201	0.662	1.101	1.285	1.409	1.866	1.866	1.866	1.866	1.866
2014	0.131	0.430	0.715	0.834	0.915	1.212	1.212	1.212	1.212	1.212
2015	0.116	0.380	0.632	0.738	0.809	1.072	1.072	1.072	1.072	1.072
2016	0.118	0.389	0.646	0.754	0.827	1.096	1.096	1.096	1.096	1.096
2017	0.130	0.427	0.710	0.829	0.909	1.204	1.204	1.204	1.204	1.204
2018	0.118	0.387	0.643	0.751	0.824	1.091	1.091	1.091	1.091	1.091
2019	0.113	0.372	0.618	0.721	0.791	1.048	1.048	1.048	1.048	1.048
2020	0.137	0.451	0.749	0.874	0.959	1.270	1.270	1.270	1.270	1.270
2021	0.130	0.427	0.709	0.828	0.908	1.202	1.202	1.202	1.202	1.202
2022	0.023	0.076	0.126	0.147	0.161	0.213	0.213	0.213	0.213	0.213