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	360324.152	72128.856	243389.487	533439.206
NAA σ (age 1)	1.124	0.113	0.924	1.368
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: Mean Selectivity for age 1	0.082	0.013	0.061	0.110
Block 1: Mean Selectivity for age 2	0.263	0.035	0.200	0.337
Block 1: Mean Selectivity for age 3	0.439	0.050	0.344	0.538
Block 1: Mean Selectivity for age 4	0.542	0.055	0.434	0.647
Block 1: Mean Selectivity for age 5	0.611	0.058	0.493	0.716
Block 1: Mean Selectivity for age 6	0.652	0.060	0.529	0.758
Block 1: Mean Selectivity for age 7	0.500	–	–	–
Block 1: Mean Selectivity for age 8	1.000	–	–	–
Block 1: Mean Selectivity for age 9	1.000	–	–	–
Block 1: Mean 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	–	–	–
Block 2: Selectivity for age 6	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 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	0.435	0.184	0.151	0.770
Block 3: Selectivity for age 5	0.215	0.093	0.085	0.447
Block 3: Selectivity for age 6	0.208	0.072	0.101	0.382
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	0.694	0.180	0.300	0.923
Block 4: Selectivity for age 5	0.488	0.123	0.267	0.714
Block 4: Selectivity for age 6	0.450	0.088	0.289	0.621
Block 4: Selectivity for age 7	0.000	–	–	–
Block 4: Selectivity for age 8	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 9	0.000	–	–	–
Block 4: Selectivity for age 10+	0.000	–	–	–
Block 1: Selectivity RE σ	0.954	0.071	0.824	1.104
Fleet 1 age comp, logistic-normal: σ	8.903	0.423	8.111	9.773
Index 2 age comp, logistic-normal: σ	50.915	7.270	38.486	67.359
Index 3 age comp, logistic-normal: σ	15.698	1.332	13.293	18.539

Table 2. Abundance at age (1000s).

	1	2	3	4	5	6	7	8	9	10+
1968	4622423	1886823	374014	97889	58377	48389	36982	11094	79058	698
1969	2005701	3651271	1460956	261918	65402	39101	32837	26264	6834	49132
1970	2090462	1630204	2763386	1059289	180934	46471	27783	23640	16627	35429
1971	834737	1598064	1261272	1869498	714884	119872	30609	19366	14029	30893
1972	785822	640711	1108726	904288	1064473	412427	66701	18657	8787	20384
1973	798974	622553	453363	687225	581553	552108	235549	38858	7734	12092
1974	1194180	558825	356364	222723	343634	315347	243344	125353	13442	6858
1975	1310805	897870	299922	162983	98532	150104	157735	122171	38591	6249
1976	175848	863355	458739	143038	66858	38797	58378	77281	35819	13147
1977	41248	132693	426789	166552	55321	20758	12069	23538	15345	9723
1978	26382	30094	86410	260048	96359	33203	11495	7611	11435	12178
1979	111933	21459	23143	63620	191353	69159	23746	8222	4756	14755
1980	28328	87753	14591	16952	44867	136199	45523	16344	4757	11289
1981	96817	22565	65194	9988	12058	31897	98922	32417	10122	9938
1982	322031	71748	15743	44728	6535	8008	21290	69592	19596	12126
1983	2339923	255613	53259	11296	31117	4493	5359	15185	43240	19710
1984	77466	1852104	189842	37862	8062	21971	3213	3927	9960	41289
1985	162062	62822	1455253	133969	26778	5668	14932	2268	2390	31197
1986	99786	120660	48750	1051176	86428	17674	3778	10065	1259	18640
1987	93589	78929	84814	33598	745797	55467	11728	2600	5826	11518
1988	334920	72794	54098	54695	21557	487872	33339	7847	1422	9482
1989	507792	257507	49437	34193	32397	11343	298560	19640	3326	4622
1990	116897	404914	187735	29632	19924	18179	6103	166532	7463	3020
1991	209997	90211	286801	109456	15434	10008	9222	3425	64044	4032
1992	171037	166994	58176	173299	63599	8240	5212	5606	1546	30725
1993	40573	135169	123683	39226	110313	37669	4688	3210	2597	14950
1994	142739	29726	99980	88412	23651	66309	19634	2553	1163	6356
1995	154556	105759	18520	60345	53592	12821	35127	10324	862	2539
1996	231533	117725	72449	11621	35901	33313	7476	21587	4762	1569
1997	194273	177317	71354	37178	6379	17138	16390	4180	8242	2417
1998	95784	147034	119063	35320	16283	3238	7217	8320	1316	3355

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

	1	2	3	4	5	6	7	8	9	10+
1999	161899	74202	90506	72675	14660	6361	1325	3503	2394	1344
2000	1404289	124778	46365	45677	40851	2889	1342	404	399	426
2001	158328	1109687	85093	27306	24236	26171	628	501	69	140
2002	119198	122222	831976	48036	13859	11245	18161	308	147	61
2003	266911	75055	62822	571507	18839	2840	1770	2011	5	3
2004	667457	210675	49663	39211	337969	11206	1626	1157	1049	4
2005	160780	521134	139139	30343	21208	142320	5959	816	355	323
2006	456990	115618	316988	51101	7927	5053	61499	1282	46	38
2007	85723	332074	64245	104499	11005	1392	1164	16521	113	7
2008	208478	64261	186744	23392	32360	3205	402	494	3636	27
2009	206986	149564	34650	77989	7559	9731	873	164	100	744
2010	49593	125578	52543	9027	15913	1435	1953	276	20	103
2011	124083	22864	30069	9633	1492	2194	202	550	27	12
2012	88254	87920	9527	8794	1673	148	45	14	3	0
2013	69783	60526	36083	2058	1647	326	19	9	1	0
2014	86182	44481	26617	9804	474	44	12	2	0	0
2015	126133	54292	20567	9497	2944	230	8	4	0	0
2016	294312	87271	24801	8719	3899	1105	71	2	0	0
2017	34088	211141	46169	11218	3302	1422	317	29	0	0
2018	113629	23374	116239	18446	3628	573	185	18	0	0
2019	68339	83970	15747	45567	6326	1291	184	75	4	0
2020	92192	49583	50659	6600	15156	2188	351	55	8	0
2021	127531	66437	25711	17944	2177	4161	682	139	11	2
2022	381425	97421	38485	11005	6316	619	1519	273	27	2

Table 3. Total fishing mortality at age.

	1	2	3	4	5	6	7	8	9	10+
1968	0.036	0.056	0.156	0.203	0.201	0.188	0.142	0.284	0.284	0.284
1969	0.007	0.079	0.121	0.170	0.142	0.142	0.129	0.257	0.257	0.257
1970	0.069	0.057	0.191	0.193	0.212	0.218	0.161	0.322	0.322	0.322

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

	1	2	3	4	5	6	7	8	9	10+
1971	0.065	0.166	0.133	0.363	0.350	0.386	0.295	0.590	0.590	0.590
1972	0.033	0.146	0.278	0.241	0.456	0.360	0.340	0.681	0.681	0.681
1973	0.157	0.358	0.511	0.493	0.412	0.619	0.431	0.862	0.862	0.862
1974	0.085	0.422	0.582	0.616	0.628	0.493	0.489	0.978	0.978	0.978
1975	0.218	0.472	0.540	0.691	0.732	0.744	0.513	1.027	1.027	1.027
1976	0.082	0.505	0.813	0.750	0.970	0.968	0.708	1.417	1.417	1.417
1977	0.115	0.229	0.295	0.347	0.311	0.391	0.261	0.522	0.522	0.522
1978	0.007	0.063	0.106	0.107	0.132	0.135	0.135	0.270	0.270	0.270
1979	0.043	0.186	0.111	0.149	0.140	0.218	0.174	0.347	0.347	0.347
1980	0.027	0.097	0.179	0.141	0.141	0.120	0.140	0.279	0.279	0.279
1981	0.100	0.160	0.177	0.224	0.209	0.204	0.152	0.303	0.303	0.303
1982	0.031	0.098	0.132	0.163	0.175	0.202	0.138	0.276	0.276	0.276
1983	0.034	0.097	0.141	0.137	0.148	0.135	0.111	0.222	0.222	0.222
1984	0.010	0.041	0.149	0.146	0.152	0.186	0.148	0.296	0.296	0.296
1985	0.095	0.054	0.125	0.238	0.215	0.206	0.194	0.389	0.389	0.389
1986	0.034	0.153	0.172	0.143	0.244	0.210	0.173	0.347	0.347	0.347
1987	0.051	0.178	0.239	0.244	0.224	0.309	0.202	0.404	0.404	0.404
1988	0.063	0.187	0.259	0.324	0.442	0.291	0.329	0.658	0.658	0.658
1989	0.026	0.116	0.312	0.340	0.378	0.420	0.384	0.768	0.768	0.768
1990	0.059	0.145	0.340	0.452	0.489	0.479	0.378	0.756	0.756	0.756
1991	0.029	0.239	0.304	0.343	0.428	0.452	0.298	0.596	0.596	0.596
1992	0.035	0.100	0.194	0.252	0.324	0.364	0.285	0.569	0.569	0.569
1993	0.111	0.102	0.136	0.306	0.309	0.452	0.408	0.816	0.816	0.816
1994	0.100	0.273	0.305	0.301	0.412	0.435	0.443	0.886	0.886	0.886
1995	0.072	0.178	0.266	0.319	0.275	0.339	0.287	0.574	0.574	0.574
1996	0.067	0.301	0.467	0.400	0.539	0.509	0.381	0.763	0.763	0.763
1997	0.079	0.198	0.503	0.626	0.478	0.665	0.478	0.956	0.956	0.956
1998	0.055	0.285	0.294	0.679	0.740	0.694	0.523	1.046	1.046	1.046
1999	0.060	0.270	0.484	0.376	1.424	1.356	0.987	1.973	1.973	1.973
2000	0.035	0.183	0.329	0.434	0.245	1.325	0.785	1.570	1.570	1.570
2001	0.059	0.088	0.372	0.478	0.568	0.165	0.512	1.025	1.025	1.025

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

	1	2	3	4	5	6	7	8	9	10+
2002	0.263	0.466	0.176	0.736	1.385	1.649	2.001	4.002	4.002	4.002
2003	0.037	0.213	0.271	0.325	0.319	0.357	0.226	0.451	0.451	0.451
2004	0.047	0.215	0.293	0.415	0.665	0.432	0.490	0.980	0.980	0.980
2005	0.130	0.297	0.802	1.142	1.234	0.639	1.337	2.673	2.673	2.673
2006	0.119	0.388	0.910	1.335	1.539	1.268	1.114	2.229	2.229	2.229
2007	0.088	0.376	0.810	0.972	1.034	1.043	0.657	1.314	1.314	1.314
2008	0.132	0.418	0.673	0.930	1.002	1.100	0.697	1.394	1.394	1.394
2009	0.300	0.846	1.145	1.389	1.462	1.406	0.952	1.905	1.905	1.905
2010	0.574	1.229	1.496	1.600	1.781	1.763	1.067	2.134	2.134	2.134
2011	0.145	0.675	1.029	1.551	2.112	3.696	2.437	4.873	4.873	4.873
2012	0.177	0.691	1.332	1.475	1.436	1.861	1.430	2.861	2.861	2.861
2013	0.250	0.622	1.103	1.268	3.419	3.121	2.143	4.285	4.285	4.285
2014	0.262	0.571	0.831	1.003	0.526	1.468	0.874	1.749	1.749	1.749
2015	0.168	0.583	0.658	0.690	0.780	0.972	1.138	2.277	2.277	2.277
2016	0.132	0.437	0.593	0.771	0.808	1.048	0.680	1.360	1.360	1.360
2017	0.177	0.397	0.717	0.929	1.551	1.842	2.678	5.357	5.357	5.357
2018	0.102	0.195	0.736	0.870	0.833	0.936	0.697	1.395	1.395	1.395
2019	0.121	0.305	0.670	0.901	0.862	1.102	1.004	2.007	2.007	2.007
2020	0.128	0.457	0.838	0.909	1.093	0.966	0.725	1.451	1.451	1.451
2021	0.069	0.346	0.649	0.844	1.057	0.808	0.715	1.430	1.430	1.430
2022	0.021	0.057	0.075	0.083	0.068	0.056	0.081	0.162	0.162	0.162