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	365932.555	76214.157	243286.541	550407.081
NAA σ (age 1)	1.157	0.115	0.952	1.407
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	0.093	0.017	0.064	0.132
Block 1: Mean Selectivity for age 2	0.289	0.044	0.210	0.383
Block 1: Mean Selectivity for age 3	0.476	0.058	0.365	0.589
Block 1: Mean Selectivity for age 4	0.597	0.057	0.481	0.702
Block 1: Mean Selectivity for age 5	0.706	0.051	0.597	0.795
Block 1: Mean Selectivity for age 6	0.624	0.058	0.506	0.728
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	0.469	0.226	0.130	0.840
Block 3: Selectivity for age 5	0.240	0.118	0.082	0.529
Block 3: Selectivity for age 6	0.253	0.097	0.110	0.481
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	0.681	0.182	0.293	0.917
Block 4: Selectivity for age 5	0.462	0.118	0.253	0.685
Block 4: Selectivity for age 6	0.409	0.081	0.263	0.572
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	1.133	0.138	0.892	1.440
Block 1: Selectivity RE AR1 ρ (year)	0.083	0.172	-0.251	0.399
Fleet 1 age comp, logistic-normal: σ	9.200	0.327	8.580	9.865
Index 2 age comp, logistic-normal: σ	59.832	7.672	46.535	76.928
Index 3 age comp, logistic-normal: σ	16.011	1.314	13.632	18.806

Table 2. Abundance at age (1000s).

	1	2	3	4	5	6	7	8	9	10+
1968	4574386	1690392	366871	101697	67334	49796	39289	13099	83433	896
1969	1879299	3612276	1261805	263709	71720	46799	34983	29188	8830	56846
1970	2464003	1505788	2752640	910241	182824	47811	32140	24272	17161	38615
1971	896067	1920960	1085292	1879211	604314	118788	31563	22910	15063	34615
1972	818737	699012	1348374	685557	1105974	333086	68793	19320	10484	22734
1973	924829	645291	500997	860974	398995	582458	189411	37104	6865	11803
1974	1246054	656858	374553	256990	416248	184612	278337	111536	15715	7906
1975	1250258	906385	383318	182609	112999	168013	79418	144680	36809	7795
1976	184723	790516	440023	164573	74484	44492	67878	43649	53380	16457
1977	41821	128415	396500	165211	51775	20111	13468	26335	8025	12840
1978	23184	29447	79287	231792	94506	29187	11458	9031	14462	11458
1979	100969	18778	23181	60097	169930	66612	21210	7871	5205	14940
1980	26321	79605	13874	16320	41218	114152	45441	15371	5050	12923
1981	93943	20816	59318	9891	11360	28153	79072	33274	10067	11771
1982	296350	66613	13622	37821	6248	7132	17752	56396	20674	13568
1983	2393101	229767	47528	9203	24866	4024	4664	12617	34795	21127
1984	67639	1869685	169133	33850	6457	17259	2815	3479	8576	38010
1985	160961	54579	1454000	125597	24197	4425	12219	1929	1996	26726
1986	96285	128236	41006	1031535	85801	15969	2997	8563	1157	17228
1987	85753	76489	96133	29268	715249	58057	11004	2166	5461	11726
1988	323041	65995	53813	63944	18946	453703	37381	7769	1318	10463
1989	522646	252652	46651	34330	38043	10559	265641	22972	3584	5435
1990	114045	414083	184090	30591	20623	20730	6203	143876	8231	3231
1991	222031	87274	274982	106876	16290	10164	10828	3552	57627	4591
1992	154901	168687	57781	162978	59480	8608	5582	6705	1664	29139
1993	47710	123137	124590	39034	102507	34641	5318	3315	2889	13271
1994	113085	38047	91610	84505	24403	58206	21196	2833	1149	5600
1995	78855	88182	26390	55558	46288	12043	31105	11236	972	2316
1996	404149	60086	58972	15914	31609	25111	6769	19623	5462	1598
1997	145695	294522	35276	29045	7088	12955	10949	3556	6616	2381
1998	72018	108544	180140	17918	13100	2875	5690	5478	1087	2751

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

	1	2	3	4	5	6	7	8	9	10+
1999	149217	54937	70384	98141	8622	5586	1343	2785	1603	1123
2000	1446425	115060	36195	37681	43839	3116	2379	432	352	344
2001	162552	1147747	84009	23618	22238	22935	1791	1125	118	190
2002	103066	129314	841588	54458	13504	10683	12647	435	81	22
2003	225427	81974	94643	541483	30606	6247	5769	1879	12	3
2004	674000	160134	52065	57543	323696	18092	3723	3974	1089	8
2005	191180	520542	107408	29669	28950	143212	8830	1785	1116	308
2006	467936	145008	320912	49579	10469	7308	46969	1406	55	44
2007	116840	321730	67489	99877	11692	1899	1616	12284	117	8
2008	214600	78945	158230	26459	34762	3707	645	745	3184	33
2009	233320	146921	39489	62321	9142	10812	1247	289	183	790
2010	58357	136738	48949	8710	11033	1361	1830	360	29	99
2011	139199	22558	27810	7646	1226	1448	188	563	42	15
2012	92240	97017	10325	7343	1255	116	210	14	4	0
2013	66127	63256	41288	2277	887	72	12	5	0	0
2014	81202	45727	29405	12351	492	139	14	2	0	0
2015	140674	51730	22314	12630	5027	193	56	8	1	0
2016	262859	104809	29559	8584	3269	759	45	1	0	0
2017	33533	191460	59873	13456	3383	1133	290	20	0	0
2018	99393	25283	114725	25618	4136	670	317	19	0	0
2019	71154	72387	14220	49650	9278	1268	233	125	4	0
2020	88113	53621	43922	6495	17729	2490	425	55	8	0
2021	115940	59816	25986	16345	2085	5049	775	179	12	2
2022	475053	84386	33622	11261	5942	644	1763	308	35	3

Table 3. Total fishing mortality at age.

	1	2	3	4	5	6	7	8	9	10+
1968	0.036	0.092	0.130	0.149	0.164	0.153	0.097	0.194	0.194	0.194
1969	0.022	0.072	0.127	0.166	0.206	0.176	0.166	0.331	0.331	0.331
1970	0.049	0.127	0.182	0.210	0.231	0.215	0.139	0.277	0.277	0.277

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

	1	2	3	4	5	6	7	8	9	10+
1971	0.048	0.154	0.259	0.330	0.396	0.346	0.291	0.582	0.582	0.582
1972	0.038	0.133	0.249	0.341	0.441	0.364	0.417	0.835	0.835	0.835
1973	0.142	0.344	0.468	0.527	0.571	0.538	0.330	0.659	0.659	0.659
1974	0.118	0.339	0.518	0.622	0.707	0.644	0.454	0.909	0.909	0.909
1975	0.258	0.523	0.646	0.697	0.732	0.706	0.399	0.797	0.797	0.797
1976	0.164	0.490	0.780	0.956	1.109	0.995	0.747	1.494	1.494	1.494
1977	0.151	0.282	0.337	0.359	0.373	0.363	0.200	0.399	0.399	0.399
1978	0.011	0.039	0.077	0.110	0.150	0.119	0.175	0.351	0.351	0.351
1979	0.038	0.103	0.151	0.177	0.198	0.182	0.122	0.244	0.244	0.244
1980	0.035	0.094	0.138	0.162	0.181	0.167	0.112	0.223	0.223	0.223
1981	0.144	0.224	0.250	0.259	0.266	0.261	0.138	0.276	0.276	0.276
1982	0.054	0.138	0.192	0.219	0.240	0.225	0.141	0.283	0.283	0.283
1983	0.047	0.106	0.139	0.154	0.165	0.157	0.093	0.186	0.186	0.186
1984	0.015	0.051	0.098	0.136	0.178	0.145	0.178	0.356	0.356	0.356
1985	0.027	0.086	0.143	0.181	0.216	0.190	0.156	0.311	0.311	0.311
1986	0.030	0.088	0.137	0.166	0.191	0.172	0.125	0.250	0.250	0.250
1987	0.062	0.152	0.208	0.235	0.255	0.240	0.148	0.296	0.296	0.296
1988	0.046	0.147	0.249	0.319	0.385	0.335	0.287	0.574	0.574	0.574
1989	0.033	0.117	0.222	0.310	0.407	0.332	0.413	0.826	0.826	0.826
1990	0.068	0.209	0.344	0.430	0.508	0.449	0.357	0.715	0.715	0.715
1991	0.075	0.212	0.323	0.386	0.438	0.399	0.279	0.559	0.559	0.559
1992	0.029	0.103	0.192	0.264	0.341	0.282	0.321	0.642	0.642	0.642
1993	0.026	0.096	0.188	0.270	0.366	0.291	0.430	0.860	0.860	0.860
1994	0.049	0.166	0.300	0.402	0.506	0.427	0.435	0.869	0.869	0.869
1995	0.072	0.202	0.306	0.364	0.412	0.376	0.261	0.521	0.521	0.521
1996	0.116	0.333	0.508	0.609	0.692	0.630	0.444	0.887	0.887	0.887
1997	0.094	0.292	0.477	0.596	0.703	0.623	0.493	0.985	0.985	0.985
1998	0.071	0.233	0.407	0.532	0.652	0.561	0.514	1.029	1.029	1.029
1999	0.060	0.217	0.425	0.606	0.818	0.653	0.934	1.869	1.869	1.869
2000	0.031	0.115	0.227	0.327	0.448	0.354	0.549	1.099	1.099	1.099
2001	0.029	0.110	0.233	0.359	0.533	0.395	1.215	2.431	2.431	2.431

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

	1	2	3	4	5	6	7	8	9	10+
2002	0.029	0.112	0.241	0.376	0.571	0.416	1.707	3.413	3.413	3.413
2003	0.142	0.254	0.298	0.315	0.326	0.318	0.173	0.346	0.346	0.346
2004	0.058	0.199	0.362	0.487	0.615	0.517	0.535	1.070	1.070	1.070
2005	0.076	0.284	0.573	0.842	1.177	0.915	1.637	3.275	3.275	3.275
2006	0.175	0.565	0.967	1.245	1.507	1.309	1.141	2.282	2.282	2.282
2007	0.192	0.510	0.736	0.855	0.949	0.880	0.575	1.150	1.150	1.150
2008	0.179	0.493	0.732	0.863	0.968	0.890	0.602	1.204	1.204	1.204
2009	0.334	0.899	1.312	1.531	1.705	1.576	1.043	2.085	2.085	2.085
2010	0.750	1.393	1.657	1.761	1.831	1.780	0.978	1.956	1.956	1.956
2011	0.161	0.581	1.132	1.607	2.159	1.732	2.411	4.821	4.821	4.821
2012	0.177	0.654	1.312	1.914	2.653	2.076	3.506	7.013	7.013	7.013
2013	0.169	0.566	1.007	1.331	1.655	1.409	1.360	2.721	2.721	2.721
2014	0.251	0.517	0.645	0.699	0.736	0.709	0.403	0.806	0.806	0.806
2015	0.094	0.360	0.755	1.152	1.690	1.265	3.424	6.847	6.847	6.847
2016	0.117	0.360	0.587	0.731	0.860	0.763	0.599	1.198	1.198	1.198
2017	0.082	0.312	0.649	0.980	1.419	1.073	2.550	5.100	5.100	5.100
2018	0.117	0.375	0.638	0.816	0.982	0.856	0.732	1.464	1.464	1.464
2019	0.083	0.300	0.584	0.830	1.116	0.894	1.252	2.503	2.503	2.503
2020	0.187	0.524	0.789	0.936	1.056	0.967	0.665	1.331	1.331	1.331
2021	0.118	0.376	0.636	0.812	0.975	0.852	0.722	1.444	1.444	1.444
2022	0.018	0.052	0.083	0.101	0.116	0.104	0.077	0.154	0.154	0.154