

## Scup; Tables

Table 1. Commercial landings (mt) of scup by state. One mt was landed in DE in 1995, included with MD 1995 total. Eight mt was landed in PA in 2004 included with MD 2004 total. Landings include revised Massachusetts landings for 1986-1997.

Year	ME	MA	RI	CT	NY	NJ	MD	VA	NC	Total
1979		782	3,123	92	1,422	2,159	21	397	589	8,585
1980	1	706	2,934	17	1,294	2,310	32	531	599	8,424
1981		523	2,959	44	1,595	2,990	9	1,054	682	9,856
1982		545	3,203	25	1,473	1,746	2	1,042	668	8,704
1983		672	2,583	49	1,103	2,536	13	536	302	7,794
1984		540	2,919	32	904	2,217	6	673	478	7,769
1985		387	3,583	41	861	1,493	17	74	271	6,727
1986		875	2,987	67	893	1,895	14	273	172	7,176
1987	5	735	2,162	301	911	1,817		232	113	6,276
1988	9	536	2,832	359	687	1,334	1	127	58	5,943
1989	32	579	1,401	89	603	1,219	1	45	15	3,984
1990	4	696	1,786	165	755	1,005	4	75	81	4,571
1991	16	553	2,902	287	1,223	1,960	15	56	69	7,081
1992		655	2,676	193	1,043	1,475	17	73	127	6,259
1993		556	1,332	148	729	1,822	10	76	53	4,726
1994		354	1,514	142	688	1,456	7	92	139	4,392
1995		310	1,045	90	511	1,084	2	20	11	3,073
1996		436	773	99	377	1,141	20	72	27	2,945
1997		676	486	50	376	596	1	2	1	2,188
1998		435	361	44	282	758	5	4	7	1,896
1999		300	581	44	206	361		13		1,505
2000		161	461	65	287	232		1		1,207
2001		149	734	45	297	479	1	24		1,729
2002		330	1,668	4	714	419		25	13	3,173
2003		407	1,730	64	839	1,033	21	253	58	4,405
2004		353	1,562	116	865	862	21	203	249	4,231
2005		515	1,553	149	989	880	1	130	50	4,266
2006		493	1,653	135	1,096	632	0	36	17	4,062
2007		501	1,785	118	1,054	714	1	10	13	4,196
mean	11	509	1,906	106	830	1,332	10	212	187	5,074

Table 2. Commercial landings (mt) of scup by major gear types. Midwater paired trawl landings are combined with other gears during 1994 and later. Landings include revised Massachusetts landings for 1986-1997.

Year	Otter trawl	Paired trawl	Floating trap	Pound net	Pots and traps	Hand lines	Other gear	Total mt
1979	6,387	146	1,305	429	26	215	77	8,585
1980	6,192	160	1,559	194	8	303	8	8,424
1981	7,836	79	1,291	246	49	306	49	9,856
1982	6,563	104	1,514	244	9	226	44	8,704
1983	5,861	398	850	390	8	265	22	7,794
1984	5,617	272	1,266	295	8	287	24	7,769
1985	4,856	417	1,022	229	5	182	16	6,727
1986	5,163	540	629	332	9	493	10	7,176
1987	4,607	237	590	193	213	423	13	6,276
1988	4,142	166	1,052	53	44	396	90	5,943
1989	3,174	89	193	74	104	334	16	3,984
1990	3,205	200	505	60	239	340	22	4,571
1991	5,217	152	988	40	258	395	31	7,081
1992	4,371	94	934	67	303	450	40	6,259
1993	3,865	46	166	25	202	402	20	4,726
1994	3,416		331	79	76	340	150	4,392
1995	2,204		331	42	57	215	224	3,073
1996	2,196		229	8	120	374	18	2,945
1997	1,491		86	12	104	489	6	2,188
1998	1,379		11	4	98	390	14	1,896
1999	1,005		140	30	77	184	69	1,505
2000	773		56		78	205	95	1,207
2001	1,088		229	65	52	215	80	1,729
2002	2,084		220		221	450	198	3,173
2003	2,777		723		168	445	292	4,405
2004	3,767		20		121	196	127	4,231
2005	3,475		117		174	448	52	4,266
2006	3,422		106		201	291	42	4,062
2007	3,332		181		279	373	31	4,196
mean	3,775	207	574	141	114	332	65	5,074

Table 3. Summary NEFSC Domestic Observer program data for scup. Geometric mean discards to landings ratios (GMDL; retransformed, mean ln-transformed D/L per trip) are stratified by half-year period (HY1, HY2) and trip landings level (< 300 kg, => 300 kg). N is the number of observed trips with both scup landings and discard, which are used to calculate the per-trip discard to landings ratios. Corresponding dealer landings are from the NEFSC database.

1997		Trips <300 kg			Trips =>300 kg				
Period	GM D/L	N	Dealer Landings (mt)	Estimated Discard (mt)	GM D/L	N	Dealer Landings (mt)	Estimated Discard (mt)	
HY 1	0.8957	17	258	231	0.8221	4	1,244	1,023	
HY 2	0.8957	0	279	250	0.8221	0	413	340	
Total			537	481			1,657	1,362	
1998		Trips <300 kg			Trips =>300 kg				
Period	GM D/L	N	Dealer Landings (mt)	Estimated Discard (mt)	GM D/L	N	Dealer Landings (mt)	Estimated Discard (mt)	
HY 1	2.401	7	196	471	121.71	1	920	111,973	
HY 2	3.126	10	281	878	121.71	0	496	60,368	
Total			477	1,349			1,416	172,341	
1999		Trips <300 kg			Trips =>300 kg				
Period	GM D/L	N	Dealer Landings (mt)	Estimated Discard (mt)	GM D/L	N	Dealer Landings (mt)	Estimated Discard (mt)	
HY 1	1.742	6	245	427	3.766	2	785	2,956	
HY 2	1.742	0	178	310	3.766	0	299	1,126	
Total			423	737			1,084	4,082	

Table 3 continued .

2000		Trips <300 kg			Trips =>300 kg			
Period	GM D/L	N	Dealer Landings (mt)	Estimated Discard (mt)	GM D/L	N	Dealer Landings (mt)	Estimated Discard (mt)
HY 1	4.5818	13	196	898	0.6018	2	655	394
HY 2	3.5001	1	292	1,022	0.6018	0	63	38
Total		14	488	1,920		2	718	432

  

2001		Trips <300 kg			Trips =>300 kg			
Period	GM D/L	N	Dealer Landings (mt)	Estimated Discard (mt)	GM D/L	N	Dealer Landings (mt)	Estimated Discard (mt)
HY 1	0.8916	10	180	160	0.9185	4	1,013	930
HY 2	0.4606	2	307	141	0.9185	0	290	266
Total		14	487	302		4	1,303	1,197

  

2002		Trips <300 kg			Trips =>300 kg			
Period	GM D/L	N	Dealer Landings (mt)	Estimated Discard (mt)	GM D/L	N	Dealer Landings (mt)	Estimated Discard (mt)
HY 1	2.6088	11	423	1,104	0.0653	2	1,484	97
HY 2	3.4522	12	829	2,862	3.6028	3	437	1,574
Total		23	1,252	3,965		5	1,921	1,671

Table 3 continued .

2003		Trips <300 kg			Trips =>300 kg				
Period	GM D/L	N	Dealer Landings (mt)	Estimated Discard (mt)	GM D/L	N	Dealer Landings (mt)	Estimated Discard (mt)	
HY 1	0.1371	9	315	43	0.2560	2	2,473	633	
HY 2	1.4299	4	921	1,317	0.2304	5	696	160	
Total		13	1,236	1,360		7	3,169	793	

  

2004		Trips <300 kg			Trips =>300 kg				
Period	GM D/L	N	Dealer Landings (mt)	Estimated Discard (mt)	GM D/L	N	Dealer Landings (mt)	Estimated Discard (mt)	
HY 1	0.3370	40	344	116	0.1685	25	2,353	396	
HY 2	0.4200	64	868	365	0.0309	10	550	17	
Total		104	1,212	480		35	2,903	413	

  

2005		Trips <300 kg			Trips =>300 kg				
Period	GM D/L	N	Dealer Landings (mt)	Estimated Discard (mt)	GM D/L	N	Dealer Landings (mt)	Estimated Discard (mt)	
HY 1	0.7354	31	292	215	0.0732	7	2,390	175	
HY 2	0.2740	67	850	233	0.0563	2	694	39	
Total		98	1,142	448		9	3,084	214	

Table 3 continued .

2006		Trips <300 kg			Trips =>300 kg			
Period	GM D/L	N	Dealer Landings (mt)	Estimated Discard (mt)	GM D/L	N	Dealer Landings (mt)	Estimated Discard (mt)
HY 1	0.6621	37	472	313	0.0740	10	1,814	134
HY 2	0.8573	40	814	698	0.2631	10	921	242
Total		77	1,286	1,010		20	2,735	377

  

2007		Trips <300 kg			Trips =>300 kg			
Period	GM D/L	N	Dealer Landings (mt)	Estimated Discard (mt)	GM D/L	N	Dealer Landings (mt)	Estimated Discard (mt)
HY 1	0.4821	41	461	222	0.2628	10	2,177	572
HY 2	0.9404	54	892	839	0.3389	7	666	226
Total		95	1,353	1,061		17	2,843	798

Table 4. A summary of landings, discards, and geometric mean discards to landings ratio (GMDL), 1997-2007.

Year	Landings (mt)	GMDL Discards (mt)	GMDL D:L ratio	GMDL Discards PSE (%)
1997	2,188	1,843	0.84	61
1998	1,896	173,690	91.61	32
1999	1,507	4,819	3.20	9
2000	1,207	2,352	1.95	48
2001	1,729	1,499	0.87	32
2002	3,173	5,636	1.78	95
2003	4,405	2,153	0.49	41
2004	4,231	893	0.21	25
2005	4,226	662	0.16	29
2006	4,062	1,387	0.34	27
2007	4,196	1,859	0.44	26

Table 5. Total catch (mt) of scup from Maine through North Carolina. Landings include revised Massachusetts landings for 1986-1997. Commercial discards for 1984-1988 calculated as the geometric mean ratio of discards to landings numbers at age for 1989-1993. Commercial discards estimate for 1998 is the mean of 1997 and 1999 estimates.

Year	Commercial Landings	Commercial Discards	Recreational Landings	Recreational Discards	Total Catch
1981	9,856	n/a	2,636	n/a	12,492
1982	8,704	n/a	2,361	n/a	11,065
1983	7,794	n/a	2,836	n/a	10,630
1984	7,769	2,158	1,096	30	11,053
1985	6,727	4,184	2,764	54	13,729
1986	7,176	2,005	5,264	87	14,532
1987	6,276	2,537	2,811	38	11,662
1988	5,943	1,657	1,936	31	9,567
1989	3,984	2,229	2,521	39	8,773
1990	4,571	3,909	1,878	38	10,396
1991	7,081	3,530	3,668	78	14,357
1992	6,259	5,668	2,001	47	13,975
1993	4,726	1,436	1,450	28	7,640
1994	4,392	807	1,192	37	6,428
1995	3,073	2,057	609	13	5,752
1996	2,945	1,522	978	20	5,465
1997	2,188	1,843	543	8	4,582
1998	1,896	3,331	397	14	5,638
1999	1,505	4,819	856	6	7,186
2000	1,207	2,352	2,469	55	6,083
2001	1,729	1,499	1,933	165	5,326
2002	3,173	5,636	1,644	137	10,590
2003	4,405	2,153	3,848	158	10,564
2004	4,231	893	1,923	134	7,181
2005	4,266	662	1,153	165	6,246
2006	4,062	1,387	1,331	185	6,965
2007	4,196	1,859	1,655	157	7,867
mean	4,820	2,506	1,991	72	9,102



Table 6. Summary of the landed fish sampling intensity for scup in the Northeast Region (NER; ME-VA) commercial fishery.

Year	No. of samples	No. of lengths	NER Landings (mt)	Sampling intensity (mt/100 lengths)
1979	10	1,250	8,585	687
1980	26	3,478	8,424	242
1981	16	2,005	9,856	492
1982	81	9,896	8,704	88
1983	72	7,860	7,794	99
1984	60	6,303	7,769	123
1985	31	3,058	6,727	220
1986	54	5,467	7,176	131
1987	61	6,491	6,276	97
1988	85	8,691	5,943	68
1989	46	4,806	3,984	83
1990	46	4,736	4,571	97
1991	31	3,150	7,081	225
1992	33	3,260	6,259	192
1993	23	2,287	4,726	207
1994	22	2,163	4,392	203
1995	22	2,487	3,073	124
1996	61	6,544	2,945	45
1997	37	3,732	2,188	59
1998	41	4,022	1,896	47
1999	56	6,040	1,505	25
2000	22	2,352	1,207	51
2001	40	3,934	1,729	44
2002	26	2,587	3,173	123
2003	78	6,681	4,405	66
2004	144	13,172	4,231	32
2005	124	9,324	4,266	46
2006	152	12,506	4,062	32
2007	198	15,704	4,196	27

Table 7. Commercial fishery scup landings (000s) at age.

Year	0	1	2	3	4	5	6	7	8	9	10	Total
1984	1	2691	6114	7090	5793	1418	536	251	1	0	0	23895
1985	79	3245	6767	7696	2640	346	520	159	0	0	0	21452
1986	9	301	12321	4773	1004	75	106	337	5	0	0	18931
1987	2	1679	9952	10399	1725	177	124	21	18	0	1	24098
1988	17	423	7709	9526	2424	58	127	39	0	0	0	20323
1989	17	1484	4943	7071	685	22	69	24	0	0	0	14315
1990	0	247	10203	6781	1022	355	149	2	0	0	0	18759
1991	0	2412	12956	10202	2161	409	193	0	0	0	0	28334
1992	21	1577	10883	3737	3797	1243	138	0	0	0	0	21396
1993	1	230	6558	6877	1500	1143	124	0	0	0	0	16432
1994	0	1052	13544	6358	836	82	39	0	0	0	0	21911
1995	0	2198	8345	2878	891	248	31	0	0	0	0	14591
1996	0	346	6343	1640	770	469	62	0	0	0	0	9630
1997	0	131	2080	4089	732	84	97	0	0	0	0	7213
1998	0	340	1453	2373	1092	381	2	0	0	0	0	5641
1999	0	1	1148	2688	527	117	0	0	0	0	0	4481
2000	0	0	661	2144	511	15	0	0	0	0	0	3331
2001	0	31	1635	3033	695	46	6	1	1	0	0	5448
2002	0	124	1219	5051	2132	392	5	0	0	0	0	8922
2003	0	185	863	4627	3323	856	34	0	0	0	0	9889
2004	0	1	844	2406	2826	2089	296	40	4	14	0	8520
2005	0	31	683	1558	2361	2515	807	92	3	3	0	8053
2006	0	89	2233	2231	1119	1477	1219	366	28	3	0	8765
2007	0	91	2787	1390	680	940	590	124	12	0	0	9275

Table 8. Commercial fishery scup landings mean weights (kg) at age.

Year	0	1	2	3	4	5	6	7	8	9	10	Total
1984	0.033	0.155	0.190	0.293	0.344	0.398	0.767	1.044	1.545	0.000	0.000	0.288
1985	0.043	0.134	0.197	0.293	0.409	0.517	0.739	1.042	0.000	0.000	0.000	0.272
1986	0.036	0.140	0.219	0.357	0.676	0.670	1.010	1.246	1.616	0.000	0.000	0.302
1987	0.034	0.136	0.203	0.244	0.407	0.544	0.747	1.194	1.068	0.000	0.000	0.237
1988	0.044	0.123	0.201	0.263	0.441	0.636	0.715	0.982	0.000	0.000	0.000	0.263
1989	0.025	0.144	0.188	0.275	0.367	0.651	0.721	1.036	0.000	0.000	0.000	0.240
1990	0.000	0.140	0.189	0.246	0.367	0.518	0.842	0.846	0.000	1.096	0.000	0.230
1991	0.000	0.187	0.194	0.263	0.389	0.511	0.729	0.000	0.000	0.000	0.000	0.241
1992	0.039	0.173	0.199	0.325	0.419	0.503	0.859	0.000	0.000	1.096	0.000	0.280
1993	0.031	0.140	0.197	0.261	0.442	0.510	0.782	0.000	0.000	0.000	0.000	0.272
1994	0.000	0.203	0.193	0.259	0.430	0.663	0.742	0.000	0.000	0.000	0.000	0.224
1995	0.000	0.161	0.209	0.295	0.396	0.480	0.724	0.000	0.000	0.000	0.000	0.236
1996	0.000	0.206	0.200	0.325	0.468	0.554	0.784	0.000	0.000	0.000	0.000	0.264
1997	0.000	0.227	0.253	0.300	0.386	0.529	0.749	0.000	0.000	0.000	0.000	0.303
1998	0.000	0.200	0.254	0.313	0.459	0.556	0.748	0.000	0.000	0.000	0.000	0.336
1999	0.000	0.075	0.220	0.323	0.497	0.748	0.000	0.000	0.000	0.000	0.000	0.328
2000	0.000	0.000	0.221	0.367	0.504	0.674	0.000	0.000	0.000	0.000	0.000	0.360
2001	0.000	0.229	0.265	0.346	0.476	0.562	0.779	1.003	1.003	0.000	0.000	0.340
2002	0.000	0.231	0.281	0.339	0.465	0.577	0.748	0.000	0.000	0.000	0.000	0.370
2003	0.000	0.228	0.308	0.402	0.505	0.635	0.844	0.000	0.000	0.000	0.000	0.447
2004	0.000	0.182	0.313	0.398	0.518	0.591	0.812	1.002	1.370	1.674	0.000	0.496
2005	0.000	0.196	0.269	0.362	0.471	0.652	0.809	1.044	1.099	1.311	0.000	0.529
2006	0.000	0.213	0.283	0.344	0.460	0.591	0.727	0.915	1.108	1.314	0.000	0.463
2007	0.000	0.217	0.265	0.353	0.470	0.646	0.768	0.894	1.077	1.697	0.000	0.452

Table 9. Summary of sampling for scup in the NEFSC Observer Program. OT =number of otter trawl trips sampled with scup discard lengths. HY1 = first half year; HY2 = second half year. GMDL reflects the estimate of discard based on applying geometric mean observed ratios of discards to landings by trip, stratified by landings level (< 300 kg per trip, => 300 kg per trip) to reported dealer landings (from Table 4).

Year	OT trips	Lengths			GMDL Discard (mt)	Intensity (mt/100 lengths)
		HY1	HY2	Total		
1989	61	4,449	2,910	7,359	2,229	30
1990	52	2,582	781	3,363	3,909	116
1991	91	1,237	1,780	3,017	3,530	117
1992	53	1,158	0	1,158	5,668	489
1993	29	275	154	429	1,436	335
1994	7	99	119	218	807	370
1995	18	162	383	545	2,057	377
1996	27	1,093	435	1,528	1,522	100
1997	45	750	1	751	1,843	245
1998	33	618	64	682	3,331	488
1999	35	586	89	675	4,819	714
2000	62	3,981	762	4,743	2,352	50
2001	67	1,231	229	1,460	1,499	103
2002	65	1,422	866	2,288	5,636	246
2003	72	925	284	1,209	2,153	178
2004	80	1,948	1,051	2,999	893	30
2005	73	797	1,159	1,956	662	34
2006	47	1,486	777	2,263	1,387	61
2007	59	1,313	1,058	2,371	1,859	78

Table 10. Commercial fishery scup discards (000s) at age.

Year	0	1	2	3	4	5	6	7	8	9	10	Total
1984	78	10847	6367	924	21	0	0	0	0	0	0	18237
1985	52773	13093	6534	1060	10	0	0	0	0	0	0	73470
1986	78	1180	14040	602	3	0	0	0	0	0	0	15903
1987	78	6814	12215	1366	5	0	0	0	0	0	0	20478
1988	1552	1698	9242	1339	10	0	0	0	0	0	0	13841
1989	387	8943	13603	813	28	0	0	0	0	0	0	23774
1990	822	8269	17249	2801	0	0	0	0	0	0	0	29141
1991	1794	17231	5397	1733	5	0	0	0	0	0	0	26160
1992	38804	10023	26380	72	0	0	0	0	0	0	0	75279
1993	5386	1549	6960	224	0	0	0	0	0	0	0	14119
1994	6858	3099	3422	74	0	0	0	0	0	0	0	13453
1995	1855	50174	335	108	14	0	0	0	0	0	0	52486
1996	199	3009	5990	691	21	1	0	0	0	0	0	9911
1997	1	618	8250	1871	0	0	0	0	0	0	0	10740
1998	18	17524	11849	1127	247	57	0	0	0	0	0	30822
1999	1338	2563	18123	3139	691	201	0	0	0	0	0	26055
2000	853	11206	4890	1475	55	57	0	0	0	0	0	18536
2001	3536	4232	2647	355	281	207	57	0	0	0	0	11315
2002	9561	22393	5834	4431	518	571	75	0	0	0	0	43383
2003	1480	1578	3779	937	752	503	93	0	0	0	0	9122
2004	545	1397	1423	1176	220	187	8	0	0	0	0	4956
2005	480	893	1879	516	79	47	15	0	0	0	0	3909
2006	4809	8083	2354	642	53	13	16	0	0	0	0	15970
2007	1412	3936	5370	1420	94	41	87	0	0	0	0	12360

Table 11. Commercial fishery scup discards mean weights (kg) at age.

Year	0	1	2	3	4	5	6	7	8	9	10	Total
1984	0.033	0.108	0.125	0.198	0.222	0.000	0.000	0.000	0.000	0.000	0.000	0.118
1985	0.033	0.108	0.125	0.198	0.222	0.000	0.000	0.000	0.000	0.000	0.000	0.057
1986	0.033	0.108	0.125	0.198	0.222	0.000	0.000	0.000	0.000	0.000	0.000	0.126
1987	0.033	0.108	0.125	0.198	0.222	0.000	0.000	0.000	0.000	0.000	0.000	0.124
1988	0.033	0.108	0.125	0.198	0.222	0.000	0.000	0.000	0.000	0.000	0.000	0.120
1989	0.039	0.060	0.111	0.198	0.217	0.000	0.000	0.000	0.000	0.000	0.000	0.094
1990	0.026	0.121	0.137	0.187	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.134
1991	0.057	0.127	0.163	0.207	0.252	0.000	0.000	0.000	0.000	0.000	0.000	0.135
1992	0.033	0.078	0.136	0.243	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.075
1993	0.026	0.106	0.154	0.269	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.102
1994	0.024	0.068	0.122	0.198	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.060
1995	0.038	0.037	0.229	0.310	0.331	0.000	0.000	0.000	0.000	0.000	0.000	0.039
1996	0.033	0.110	0.169	0.240	0.268	0.532	0.000	0.000	0.000	0.000	0.000	0.154
1997	0.020	0.028	0.137	0.362	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.170
1998	0.092	0.069	0.147	0.224	0.418	0.564	0.000	0.000	0.000	0.000	0.000	0.108
1999	0.010	0.037	0.158	0.398	0.599	0.690	0.000	0.000	0.000	0.000	0.000	0.183
2000	0.044	0.076	0.195	0.299	0.486	0.768	0.000	0.000	0.000	0.000	0.000	0.127
2001	0.015	0.063	0.168	0.345	0.500	0.670	0.944	0.000	0.000	0.000	0.000	0.108
2002	0.035	0.064	0.201	0.361	0.524	0.757	1.071	0.000	0.000	0.000	0.000	0.123
2003	0.022	0.091	0.212	0.315	0.537	0.784	0.878	0.000	0.000	0.000	0.000	0.236
2004	0.029	0.109	0.166	0.268	0.371	0.453	0.750	0.000	0.000	0.000	0.000	0.180
2005	0.019	0.090	0.154	0.267	0.416	0.652	0.912	0.000	0.000	0.000	0.000	0.153
2006	0.026	0.086	0.166	0.217	0.313	0.549	0.755	0.000	0.000	0.000	0.000	0.087
2007	0.041	0.094	0.163	0.282	0.342	0.597	0.770	0.000	0.000	0.000	0.000	0.148

Table 12. Summary of the landed fish sampling intensity for scup in the recreational fishery (MRFSS sampling).

Year	No. of lengths	Estimated landings (A + B1; mt)	Sampling intensity (mt/100 lengths)
1981	642	2,636	411
1982	1,057	2,361	223
1983	1,384	2,836	205
1984	943	1,096	116
1985	741	2,764	373
1986	2,580	5,264	204
1987	777	2,811	362
1988	2,156	1,936	90
1989	4,111	2,521	61
1990	2,698	1,878	70
1991	4,230	3,668	87
1992	4,419	2,001	45
1993	2,206	1,450	66
1994	1,374	1,192	87
1995	822	609	74
1996	526	978	186
1997	399	543	136
1998	286	397	139
1999	265	856	323
2000	524	2,469	471
2001	1,038	1,933	186
2002	1,006	1,644	163
2003	2,508	3,848	153
2004	1,802	1,923	107
2005	1,794	1,153	64
2006	2,217	1,331	60
2007	2,262	1,655	73

Table 13. Recreational fishery scup landings (000s) at age.

Year	0	1	2	3	4	5	6	7	8	9	10	Total
1984	23	3036	1353	570	182	219	442	86	51	30	66	6058
1985	431	4478	3054	1330	788	441	137	33	0	0	115	10807
1986	538	4353	15570	2617	845	431	87	5	4	57	315	24822
1987	77	2299	4686	1261	824	598	112	0	0	11	46	9914
1988	9	1001	2229	1824	460	216	123	92	20	0	86	6060
1989	311	3978	3371	823	86	235	154	13	0	50	148	9169
1990	169	1352	5091	1102	147	112	36	7	2	3	22	8043
1991	299	4838	3797	3319	700	210	19	0	2	20	68	13272
1992	99	1850	4457	530	672	84	12	6	8	7	30	7755
1993	46	1245	3051	908	254	133	2	2	0	2	7	5650
1994	31	1473	1840	691	95	88	21	6	0	0	0	4245
1995	15	613	1399	225	89	20	3	3	0	0	0	2367
1996	9	351	1467	812	365	54	10	15	0	0	0	3083
1997	32	52	983	562	168	63	33	17	6	0	0	1916
1998	13	223	257	415	248	19	13	23	0	0	0	1211
1999	61	469	2169	359	182	11	0	0	0	0	0	3251
2000	6	912	3443	2113	641	129	0	0	0	0	0	7244
2001	0.3	514	1511	1705	806	244	101	218	0	0	0	5099
2002	7	70	688	1635	1005	179	24	39	0	0	0	3647
2003	0.3	75	1723	2655	3127	1407	350	115	0	0	0	9452
2004	0.9	45	284	1551	1441	1166	470	32	0	0	0	4990
2005	0	13	100	513	700	845	349	26	0	0	0	2546
2006	1	50	658	819	404	431	541	46	0	1	0	2951
2007	3	47	456	1347	775	378	605	206	26	1	0	3844



Table 14. Recreational fishery scup landings mean weights (kg) at age.

Year	0	1	2	3	4	5	6	7	8	9	10	Total
1984	0.044	0.117	0.266	0.373	0.472	0.557	0.678	0.825	0.912	1.002	1.145	0.274
1985	0.038	0.125	0.253	0.340	0.573	0.718	0.913	1.087	0.000	0.000	1.673	0.270
1986	0.052	0.101	0.234	0.374	0.534	0.654	0.801	0.912	1.003	1.003	1.638	0.261
1987	0.029	0.105	0.242	0.381	0.548	0.698	0.737	0.000	0.000	1.003	3.808	0.302
1988	0.026	0.142	0.240	0.325	0.497	0.663	0.794	1.144	1.099	0.000	1.532	0.330
1989	0.035	0.123	0.234	0.376	0.433	0.653	0.696	0.657	0.000	1.003	1.332	0.235
1990	0.057	0.128	0.208	0.325	0.461	0.567	0.761	0.939	1.088	1.202	1.947	0.225
1991	0.064	0.150	0.275	0.361	0.474	0.714	0.675	0.000	1.003	1.003	1.305	0.271
1992	0.092	0.140	0.240	0.373	0.454	0.598	0.804	0.859	1.311	1.003	2.117	0.256
1993	0.087	0.135	0.226	0.336	0.460	0.524	0.912	0.827	0.000	1.026	1.100	0.242
1994	0.054	0.180	0.281	0.357	0.467	0.674	0.905	1.430	0.000	0.000	0.000	0.274
1995	0.065	0.155	0.279	0.450	0.557	0.756	1.044	1.311	0.000	0.000	0.000	0.279
1996	0.093	0.171	0.231	0.368	0.540	0.772	0.876	1.383	0.000	0.000	0.000	0.314
1997	0.083	0.110	0.253	0.299	0.510	0.684	0.819	1.342	0.779	0.000	0.000	0.318
1998	0.072	0.121	0.211	0.312	0.491	0.866	1.066	1.950	0.000	0.000	0.000	0.337
1999	0.095	0.173	0.274	0.451	0.635	0.900	0.000	0.000	0.000	0.000	0.000	0.298
2000	0.075	0.138	0.296	0.424	0.544	0.825	0.000	0.000	0.000	0.000	0.000	0.345
2001	0.092	0.220	0.344	0.485	0.637	0.776	0.875	1.127	0.000	0.000	0.000	0.490
2002	0.110	0.152	0.296	0.427	0.618	0.795	0.932	1.427	0.000	0.000	0.000	0.481
2003	0.092	0.161	0.314	0.416	0.536	0.720	0.908	1.499	0.000	0.000	0.000	0.512
2004	0.094	0.151	0.325	0.437	0.523	0.575	0.858	0.748	0.000	0.000	0.000	0.527
2005	0.000	0.112	0.270	0.384	0.516	0.679	0.881	1.098	0.000	0.000	0.000	0.588
2006	0.092	0.151	0.304	0.411	0.525	0.695	0.883	0.999	0.000	1.311	0.000	0.536
2007	0.111	0.152	0.313	0.418	0.509	0.672	0.882	0.935	1.056	1.322	0.000	0.551

Table 15. Recreational fishery scup discards (000s) at age.

Year	0	1	2	3	4	5	6	7	8	9	10	Total	Metric tons
1984	2	255	0	0	0	0	0	0	0	0	0	257	30
1985	40	417	0	0	0	0	0	0	0	0	0	457	54
1986	100	807	0	0	0	0	0	0	0	0	0	907	87
1987	12	357	0	0	0	0	0	0	0	0	0	369	38
1988	2	219	0	0	0	0	0	0	0	0	0	221	31
1989	24	308	0	0	0	0	0	0	0	0	0	332	39
1990	36	284	0	0	0	0	0	0	0	0	0	320	38
1991	31	505	0	0	0	0	0	0	0	0	0	536	78
1992	17	325	0	0	0	0	0	0	0	0	0	342	47
1993	8	204	0	0	0	0	0	0	0	0	0	212	28
1994	4	203	0	0	0	0	0	0	0	0	0	207	37
1995	63	135	0	0	0	0	0	0	0	0	0	198	13
1996	44	222	0	0	0	0	0	0	0	0	0	266	20
1997	163	10	0	0	0	0	0	0	0	0	0	173	8
1998	80	139	0	0	0	0	0	0	0	0	0	219	14
1999	208	0	0	0	0	0	0	0	0	0	0	208	6
2000	20	561	25	0	0	0	0	0	0	0	0	606	55
2001	0.3	484	325	0	0	0	0	0	0	0	0	809	165
2002	14	199	381	55	0	0	0	0	0	0	0	649	137
2003	1	168	550	63	0	0	0	0	0	0	0	782	158
2004	7	232	242	211	0	0	0	0	0	0	0	692	134
2005	5	88	232	135	44	46	11	0	0	0	0	561	165
2006	1	143	644	66	0	0	0	0	0	0	0	854	185
2007	20	185	375	124	20	2	1	0	0	0	0	727	

Table 16. Recreational fishery scup discards mean weights at age.

Year	0	1	2	3	4	5	6	7	8	9	10	Total
1984	0.044	0.117	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.116
1985	0.038	0.125	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.117
1986	0.052	0.101	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.096
1987	0.029	0.105	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.103
1988	0.026	0.142	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.141
1989	0.035	0.123	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.117
1990	0.057	0.128	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.120
1991	0.064	0.150	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.145
1992	0.092	0.140	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.138
1993	0.087	0.135	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.133
1994	0.054	0.180	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.178
1995	0.063	0.065	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.064
1996	0.075	0.075	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.075
1997	0.043	0.075	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.045
1998	0.061	0.068	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.065
1999	0.028	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.028
2000	0.075	0.087	0.189	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.091
2001	0.092	0.194	0.218	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.204
2002	0.110	0.155	0.238	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.211
2003	0.092	0.141	0.215	0.251	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.202
2004	0.094	0.149	0.206	0.233	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.194
2005	0.035	0.114	0.215	0.311	0.481	0.698	0.810	1.110	0.000	0.000	0.000	0.294
2006	0.092	0.148	0.229	0.243	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.216
2007	0.067	0.127	0.220	0.322	0.408	0.567	0.000	0.000	0.000	0.000	0.000	0.215

Table 17. Total fishery scup catch (000s) at age.

Year	0	1	2	3	4	5	6	7	8	9	10	Total
1984	104	16829	13834	8584	5996	1637	978	337	52	30	66	48447
1985	53323	21233	16355	10086	3438	787	657	192	0	0	115	106186
1986	725	6641	41931	7992	1852	506	193	342	9	57	315	60563
1987	169	11149	26853	13026	2554	775	236	21	18	11	47	54859
1988	1580	3341	19180	12689	2894	274	250	131	20	0	86	40445
1989	739	14712	21917	8707	799	257	223	37	0	50	148	47590
1990	1027	10152	32543	10684	1169	467	185	9	2	3	22	56263
1991	2124	24986	22150	15254	2866	619	212	0	2	20	68	68302
1992	38941	13775	41720	4339	4469	1327	150	6	8	7	30	104772
1993	5441	3228	16569	8009	1754	1276	126	2	0	2	7	36414
1994	6893	5827	18806	7123	931	170	60	6	0	0	0	39816
1995	1933	53120	10079	3211	994	268	34	3	0	0	0	69642
1996	252	3928	13800	3143	1156	524	72	15	0	0	0	22890
1997	196	811	11313	6522	900	147	130	17	6	0	0	20042
1998	111	18226	13559	3915	1587	457	15	23	0	0	0	37893
1999	1607	3033	21440	6186	1400	329	0	0	0	0	0	33995
2000	879	12679	9019	5732	1207	201	0	0	0	0	0	29717
2001	3537	5261	6118	5093	1782	497	164	219	1	0	0	22671
2002	9582	22786	8122	11172	3654	1142	104	39	0	0	0	56601
2003	1481	1823	7007	6629	8432	3041	564	156	5	14	0	29152
2004	553	1675	2793	5344	4487	3442	774	72	4	14	0	19158
2005	465	1025	2894	2722	3184	3453	1182	119	3	3	0	15050
2006	4811	8365	5889	3758	1576	1921	1776	412	28	4	0	28540
2007	1435	4259	8988	5552	2279	1101	1633	796	150	13	0	26206

Table 18. Total fishery scup catch mean weights (kg) at age.

Year	0	1	2	3	4	5	6	7	8	9	10	Total
1984	0.036	0.117	0.168	0.288	0.348	0.419	0.727	0.988	0.924	1.002	1.145	0.222
1985	0.033	0.116	0.179	0.289	0.446	0.629	0.775	1.050	0.000	0.000	1.673	0.122
1986	0.050	0.104	0.193	0.351	0.611	0.656	0.916	1.241	1.344	1.003	1.638	0.236
1987	0.031	0.112	0.174	0.253	0.452	0.663	0.742	1.194	1.068	1.003	3.727	0.206
1988	0.033	0.122	0.169	0.265	0.449	0.657	0.754	1.096	1.099	0.000	1.532	0.223
1989	0.037	0.087	0.147	0.277	0.369	0.653	0.704	0.903	0.000	1.003	1.332	0.165
1990	0.032	0.123	0.164	0.239	0.379	0.530	0.826	0.918	1.088	1.195	1.947	0.179
1991	0.058	0.138	0.201	0.278	0.409	0.580	0.724	0.000	1.003	1.003	1.305	0.206
1992	0.033	0.099	0.164	0.329	0.424	0.509	0.854	0.859	1.311	1.004	2.117	0.131
1993	0.027	0.121	0.184	0.270	0.445	0.512	0.784	0.827	0.000	1.026	1.100	0.200
1994	0.024	0.125	0.189	0.267	0.434	0.669	0.799	1.430	0.000	0.000	0.000	0.174
1995	0.039	0.044	0.219	0.306	0.409	0.501	0.752	1.311	0.000	0.000	0.000	0.088
1996	0.042	0.122	0.190	0.317	0.487	0.577	0.796	1.327	0.000	0.000	0.000	0.221
1997	0.049	0.066	0.168	0.318	0.409	0.595	0.767	1.342	0.779	0.000	0.000	0.231
1998	0.067	0.072	0.160	0.287	0.458	0.570	1.024	1.950	0.000	0.000	0.000	0.149
1999	0.016	0.058	0.173	0.368	0.565	0.718	0.947	1.538	0.000	0.000	0.000	0.212
2000	0.045	0.081	0.235	0.371	0.524	0.798	0.947	1.538	0.000	0.000	0.000	0.205
2001	0.015	0.091	0.240	0.392	0.553	0.712	0.896	1.126	0.000	0.000	0.000	0.253
2002	0.035	0.066	0.223	0.360	0.515	0.701	1.024	1.427	0.000	0.000	0.000	0.186
2003	0.022	0.099	0.247	0.376	0.501	0.708	0.893	1.337	1.241	0.000	0.000	0.396
2004	0.030	0.116	0.230	0.374	0.512	0.578	0.839	0.889	1.370	1.674	0.000	0.412
2005	0.019	0.096	0.190	0.346	0.480	0.659	0.832	1.056	1.099	1.311	0.000	0.433
2006	0.026	0.089	0.233	0.335	0.472	0.614	0.775	0.924	1.108	1.313	0.000	0.253
2007	0.042	0.099	0.205	0.350	0.477	0.653	0.810	0.905	1.073	1.668	0.000	0.316

Table 19. Extended time series of total fishery catch (mt). To estimate commercial discards for 1960-1988, the discards to landings ratio for 1989-1997 = 0.504 was applied to commercial landings. To estimate recreational catch for 1960-1980, 50% of the Mayo 1982 estimates were included.

Year	Comm. Land.	Comm. Disc.	DWF Land.	Rec Catch	Total Catch
1960	22236	11198	0	3765	37,199
1961	20944	10548	0	3716	35,208
1962	20831	10491	0	3667	34,989
1963	18884	9510	5863	3528	37,785
1964	17204	8664	459	3341	29,668
1965	15785	7950	2089	3265	29,089
1966	11960	6023	823	2474	21,280
1967	8748	4406	896	1879	15,929
1968	6630	3339	2251	1473	13,693
1969	5149	2593	485	1107	9,334
1970	4493	2263	288	1003	8,047
1971	3974	2001	889	853	7,717
1972	4203	2117	1647	796	8,763
1973	5024	2530	1783	1118	10,455
1974	7106	3579	958	1,388	13,031
1975	7623	3839	685	1,403	13,550
1976	7302	3677	87	1,183	12,249
1977	8330	4195	28	1,398	13,951
1978	8936	4500	3	1,256	14,695
1979	8585	4324	0	1,198	14,107
1980	8424	4242	16	3,109	15,791
1981	9,856	4964	1	2,636	17,457
1982	8,704	4383	0	2,361	15,448
1983	7,794	3925	0	2,836	14,555
1984	7,769	2158	0	1,126	11,053
1985	6,727	4184	0	2,818	13,729
1986	7,176	2005	0	5,351	14,532
1987	6,276	2537	0	2,849	11,662
1988	5,943	1657	0	1,967	9,567
1989	3,984	2229	0	2,560	8,773
1990	4,571	3909	0	1,916	10,396
1991	7,081	3530	0	3,746	14,357
1992	6,259	5668	0	2,048	13,975
1993	4,726	1436	0	1,478	7,640
1994	4,392	807	0	1,229	6,428
1995	3,073	2,057	0	622	5,752
1996	2,945	1,522	0	998	5,465
1997	2,188	1,843	0	551	4,582
1998	1,896	3,331	0	411	5,638
1999	1,505	4,819	0	862	7,186
2000	1,207	2,352	0	2,524	6,083
2001	1,729	1,499	0	2,098	5,326
2002	3,173	5,636	0	1,781	10,590
2003	4,405	2,153	0	4,006	10,564
2004	4,231	893	0	2,057	7,181
2005	4,266	662	0	1,318	6,246
2006	4,062	1,387	0	1,516	6,965
2007	4,196	1,859	0	1,812	7,867

Table 20. NEFSC spring and fall trawl survey indices for scup. Strata set includes only offshore strata 1-12, 23, 25, and 61-76 for consistency over entire time series. The Fall series strata set excludes inshore strata 1-61 that are included in the 1984 and later indices at age in Table 22.

Year	Spring No./tow	Spring Kg/tow	Spring SSB kg/tow	Spring SSB 3-yr avg	Fall No./tow	Fall Kg/tow
1963					2.12	1.21
1964					118.70	2.23
1965					3.84	0.62
1966					2.00	0.41
1967					29.38	1.46
1968	59.21	2.25	0.94		14.35	0.54
1969	2.26	0.40	0.39	0.88	99.41	4.48
1970	78.50	3.01	1.30	1.09	10.34	0.22
1971	70.91	2.41	1.57	1.28	7.730	0.25
1972	49.80	2.30	0.98	1.21	40.56	2.34
1973	3.62	1.19	1.09	1.38	22.82	0.93
1974	30.28	3.24	2.06	1.92	9.94	1.01
1975	14.01	3.12	2.61	1.73	52.21	3.40
1976	4.09	0.63	0.53	2.50	161.14	7.35
1977	42.46	4.48	4.35	2.49	32.69	1.71
1978	39.85	3.49	2.59	2.77	12.17	1.32
1979	22.42	1.95	1.38	1.69	15.77	0.61
1980	9.31	1.31	1.09	1.12	11.05	0.92
1981	14.72	1.16	0.89	1.00	67.14	3.01
1982	7.88	1.16	1.02	0.65	25.47	1.17
1983	0.80	0.29	0.03	0.46	4.59	0.34
1984	8.52	0.51	0.33	0.24	24.03	1.22
1985	14.67	0.80	0.37	0.68	68.30	3.56
1986	11.74	1.30	1.33	0.98	46.19	1.66
1987	10.82	1.21	1.24	1.10	5.76	0.15
1988	25.41	1.26	0.73	0.66	5.75	0.09
1989	1.63	0.12	0.00	0.35	94.05	3.37
1990	1.17	0.39	0.34	0.26	16.53	0.83
1991	12.61	0.75	0.45	0.32	9.52	0.43
1992	6.79	0.40	0.21	0.32	16.19	1.12
1993	2.93	0.33	0.31	0.18	0.43	0.04
1994	1.54	0.09	0.03	0.15	3.59	0.11
1995	2.90	0.22	0.12	0.06	24.72	0.91
1996	0.53	0.03	0.02	0.08	4.46	0.23
1997	0.91	0.11	0.11	0.06	16.92	0.88
1998	40.04	0.87	0.05	0.08	25.35	0.69
1999	1.70	0.12	0.09	0.08	85.23	2.07
2000	6.71	0.33	0.11	0.25	99.33	4.79
2001	13.03	0.80	0.54	3.30	20.28	1.11
2002	154.86	13.46	9.24	3.31	95.62	3.79
2003	6.01	0.28	0.15	3.74	28.18	0.80
2004	57.58	2.84	1.82	0.69	10.38	0.27
2005	19.22	0.55	0.10	1.32	4.50	0.07
2006	5.71	2.10	2.04	0.76	96.41	1.92
2007	10.60	0.36	0.14	1.16	41.52	2.21
2008	9.68	1.44	1.30			

Table 21. NEFSC spring trawl survey stratified mean number of scup per tow at age. Strata set includes only offshore strata 1-12, 23, 25, and 61-76, corresponding to the spring survey indices in Table 20.

Spring Year	Age											Total	age 2+	age 3+		
	0	1	2	3	4	5	6	7	8	9	10				11	
1977		6.62	32.08	3.54	0.16	0.04	0.01	0.01						42.46	35.84	3.76
1978		26.90	4.67	6.50	1.31	0.32	0.12	0.03						39.85	12.95	8.28
1979		15.63	4.04	0.88	1.28	0.37	0.06	0.13	0.02	0.01				22.42	6.79	2.75
1980		2.39	5.61	0.57	0.17	0.25	0.15	0.08	0.08	0.01				9.31	6.92	1.31
1981		10.78	2.16	1.15	0.17	0.14	0.05	0.15	0.12					14.72	3.94	1.78
1982		3.80	1.77	1.39	0.38	0.17	0.13	0.07	0.07	0.10				7.88	4.08	2.31
1983		0.70	0.03	0.06					0.01					0.80	0.10	0.07
1984		6.14	1.97	0.22	0.12	0.07								8.52	2.38	0.41
1985		12.11	2.32	0.20	0.04									14.67	2.56	0.24
1986		1.05	10.26	0.43										11.74	10.69	0.43
1987		4.57	3.60	1.81	0.74	0.04	0.02	0.03	0.01					10.82	6.25	2.65
1988		16.74	8.36	0.17	0.03	0.01	0.03	0.07						25.41	8.67	0.31
1989		0.79	0.74	0.09	0.01									1.63	0.84	0.10
1990		0.12	0.30	0.30	0.18	0.09	0.13	0.05						1.17	1.05	0.75
1991		10.61	0.70	1.11	0.19									12.61	2.00	1.30
1992		5.72	0.88	0.07	0.05	0.06	0.01							6.79	1.07	0.19
1993		0.61	2.02	0.17	0.11	0.02								2.93	2.32	0.30
1994		1.34	0.16	0.04										1.54	0.20	0.04
1995		2.29	0.44	0.11	0.05	0.01								2.90	0.61	0.17
1996		0.44	0.05	0.03	0.01									0.53	0.09	0.04
1997		0.17	0.64	0.10										0.91	0.74	0.10
1998		39.90	0.12	0.02										40.04	0.14	0.02
1999		1.03	0.67											1.70	0.67	0.00
2000		5.93	0.71	0.07										6.71	0.78	0.07
2001		7.90	5.03	0.08		0.02								13.03	5.13	0.10
2002		109.01	15.60	26.67	3.27	0.31								154.86	45.85	30.25
2003		5.08	0.79	0.07	0.06									6.01	0.92	0.14
2004		38.69	16.15	1.31	0.82	0.60								57.58	18.89	2.74
2005		18.26	0.81	0.13	0.02									19.22	0.96	0.15
2006		1.56	0.51	0.80	0.35	0.70	1.69	0.10						5.71	4.15	3.64
2007		9.73	0.41	0.44	0.00	0.01	0.01							10.60	0.87	0.46



Table 22. NEFSC fall trawl survey stratified mean number of scup per tow at age. Strata set includes offshore strata 1-12, 23, 25, 61-76, and inshore strata 1-61.

Fall Year	Age											Total	age 2+	age 3+	
	0	1	2	3	4	5	6	7	8	9	10				11
1984	47.64	9.20	0.34	0.03	0.01		0.01						59.96	0.39	0.05
1985	61.22	11.53	1.10	0.26	0.06	0.05							74.71	1.47	0.37
1986	70.19	6.58	0.57		0.01								77.36	0.58	0.01
1987	49.93	29.85	0.46	0.01									80.45	0.47	0.01
1988	47.44	15.95	0.67	0.10									64.22	0.77	0.10
1989	176.37	25.92	0.66	0.03									202.99	0.69	0.03
1990	77.45	9.21	0.75	0.04									87.46	0.79	0.04
1991	151.62	12.51	0.07	0.02									164.24	0.09	0.02
1992	25.92	14.51	1.66	0.04	0.02								42.15	1.72	0.06
1993	46.78	9.76	0.32										56.86	0.32	0.00
1994	39.54	3.92	0.04	0.01									43.52	0.05	0.01
1995	33.04	2.61	0.08	0.01									35.74	0.09	0.01
1996	24.42	2.86	0.43	0.01									27.73	0.44	0.01
1997	46.91	0.61	0.02		0.01								47.66	0.03	0.01
1998	57.73	9.64	0.09	0.03	0.01								67.50	0.13	0.04
1999	96.06	9.77	1.37	0.07	0.01								107.28	1.45	0.08
2000	98.72	20.60	3.14	0.48	0.11	0.07							123.12	3.80	0.66
2001	91.84	10.32	1.82	0.12	0.04	0.01							104.15	1.99	0.17
2002	180.09	43.31	0.90	0.35	0.04	0.01							224.70	1.30	0.40
2003	53.70	5.66	2.30	1.33	0.82	0.20	0.02						64.02	4.67	2.37
2004	41.83	33.46	1.14	1.70	0.39	0.12	0.04	0.01					78.69	3.40	2.26
2005	27.26	7.94	1.02	0.14	0.04	0.04							36.43	1.23	0.21
2006	146.85	20.08	0.92	0.07	0.05	0.01	0.03	0.01					168.02	1.09	0.17
2007	113.95	40.28	0.60	0.24	0.05	0.03	0.05	0.02					155.22	0.99	0.39

Table 23. NEFSC 1992-2007 Winter trawl survey indices of abundance for scup, offshore survey strata 1-12 and 61-76.

---

Year	Mean number per tow	Mean kg per tow
1992	65.56	2.87
1993	25.71	2.73
1994	17.09	0.66
1995	69.50	2.26
1996	18.28	1.19
1997	13.90	0.32
1998	46.92	1.20
1999	15.04	0.71
2000	24.21	1.33
2001	55.49	1.58
2002	267.83	7.56
2003	24.16	0.49
2004	380.59	3.82
2005	84.74	1.96
2006	201.96	3.72
2007	101.08	2.95
Mean	88.25	2.21

Table 24. NEFSC 1992-2007 winter trawl survey stratified mean number of scup per tow at age, offshore survey strata 1-12 and 61-76. The 1992, 1993, and 1996 lengths are aged with the corresponding annual spring survey age-length key.

Winter Year	Age									Total	age 2+	age 3+	
	0	1	2	3	4	5	6	7	8				
1992		59.78	4.93	0.20	0.09	0.10	0.46				65.56	5.78	0.85
1993		2.51	22.05	0.56	0.57	0.02					25.71	23.19	1.15
1994		16.31	0.73	0.02	0.02	0.01					17.09	0.78	0.05
1995		67.35	1.94	0.15	0.01	0.01	0.02	0.01			69.50	2.15	0.21
1996		12.94	5.31	0.03	0.01						18.28	5.34	0.04
1997		13.27	0.52	0.11							13.90	0.64	0.11
1998		45.62	0.75	0.22	0.21	0.08	0.03	0.01			46.92	1.30	0.55
1999		12.48	2.41	0.12	0.02	0.01					15.04	2.56	0.15
2000		20.28	3.21	0.68	0.03			0.01			24.21	3.93	0.72
2001		48.54	6.48	0.36	0.09	0.02					55.49	6.95	0.47
2002		257.08	7.44	2.96	0.33	0.01	0.01				267.83	10.75	3.31
2003		23.77	0.28	0.07	0.03		0.02				24.16	0.39	0.11
2004		380.22	0.29	0.07	0.01						380.59	0.37	0.08
2005		80.03	4.62	0.09							84.74	4.71	0.09
2006		198.52	2.64	0.66	0.03	0.04	0.07				201.96	3.44	0.80
2007		99.18	1.86	0.02	0.02						101.08	1.90	0.04

Table 25. MADMF trawl survey mean number of scup per tow and mean weight (kg) per tow for spring (survey regions 1-3) and fall (survey regions 1-5). Time series revised in 2008 to account for stratum area changes effective in 2006.

Year	Spring		Fall	
	No./Tow	Kg/tow	No./Tow	Kg/Tow
1978	90.08	31.71	1859.40	14.82
1979	76.14	18.05	1150.16	12.20
1980	189.82	41.39	1183.02	12.53
1981	298.53	17.63	971.87	14.34
1982	10.46	0.98	2153.76	9.17
1983	25.29	3.51	1623.13	12.90
1984	17.90	6.53	963.49	12.29
1985	67.02	3.40	647.63	12.09
1986	44.17	7.35	773.61	9.15
1987	6.05	1.37	561.61	7.72
1988	13.98	2.09	1396.86	14.15
1989	13.32	2.02	580.73	7.77
1990	144.06	21.45	1128.07	7.21
1991	28.73	6.05	1150.71	10.18
1992	14.49	2.52	2440.96	11.54
1993	19.13	4.23	1023.11	10.06
1994	9.71	2.85	820.31	9.84
1995	49.29	2.76	507.02	4.11
1996	5.18	0.68	1019.96	9.15
1997	3.22	0.71	921.21	7.25
1998	1.37	0.21	709.61	6.94
1999	11.61	1.93	1212.23	18.07
2000	307.00	18.02	867.00	11.63
2001	7.28	2.37	1205.60	9.89
2002	281.36	18.77	1137.64	8.32
2003	0.22	0.07	3209.61	14.87
2004	41.71	13.04	1483.56	10.07
2005	9.32	3.25	4005.89	21.53
2006	92.97	22.41	1231.49	9.46
2007	13.30	2.03	1774.23	11.65
2008	145.72	27.89		
Mean	65.76	9.27	1323.78	11.03

Table 26. RIDFW trawl survey mean number of scup per tow and mean weight (kg) per tow for spring and fall.

Year	Spring		Fall	
	No./Tow	Kg/tow	No./Tow	Kg/Tow
1981	12.49	0.40	196.22	2.54
1982	0.43	0.04	63.87	0.70
1983	3.59	0.32	173.63	2.75
1984	13.24	0.88	589.68	10.57
1985	8.30	0.41	74.27	1.51
1986	1.78	0.33	340.06	4.20
1987	0.04	0.01	314.20	4.73
1988	0.23	0.04	804.00	7.10
1989	0.17	0.04	326.86	6.62
1990	0.64	0.15	527.31	5.66
1991	2.93	0.57	655.69	16.62
1992	1.88	0.61	1105.51	9.10
1993	1.12	0.06	1246.35	8.90
1994	2.08	0.53	236.12	3.66
1995	4.33	0.53	423.02	5.03
1996	0.52	0.07	184.73	3.83
1997	1.93	0.15	597.90	6.04
1998	0.15	0.03	150.38	1.89
1999	0.38	0.07	832.22	12.39
2000	84.05	3.54	588.73	9.11
2001	29.68	5.08	1139.17	11.07
2002	174.80	10.28	716.12	9.27
2003	0.00	0.00	1181.83	11.38
2004	2.59	0.45	1616.24	9.58
2005	2.95	1.63	2216.72	21.35
2006	53.12	3.90	765.90	11.26
2007	1.95	0.24	2410.00	23.76
2008				
Mean	15.01	1.12	721.36	8.17

Table 27. CTDEP spring trawl survey mean number of scup per tow at age, total mean number per tow, and total mean weight (kg) per tow.

Year	Age														Total No./Tow	Total Kg/Tow	Age 2+
	1	2	3	4	5	6	7	8	9	10	11	12	13	14			
1984	0.49	1.31	0.59	0.30	0.08	0.00	0.00	0.00	0.00	0.03	0.02	0.00	0.00	0.00	2.80	0.64	2.31
1985	2.94	2.00	0.33	0.24	0.05	0.02	0.05	0.00	0.00	0.01	0.00	0.00	0.00	0.00	5.61	1.22	2.71
1986	4.44	1.65	0.99	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.40	0.78	2.79
1987	0.43	1.65	0.07	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.17	0.37	1.76
1988	1.18	0.30	0.51	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.11	0.32	0.88
1989	5.63	0.56	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.77	0.63	0.62
1990	2.56	2.06	0.21	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.25	0.61	2.30
1991	4.25	1.44	1.26	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.09	0.94	2.80
1992	0.39	1.21	0.09	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.75	0.48	1.36
1993	0.04	2.29	0.19	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.32	0.49	2.49
1994	0.81	2.03	0.93	0.10	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.88	0.58	3.09
1995	12.94	0.39	0.20	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.24	0.65	0.64
1996	5.20	2.48	0.07	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.73	2.56
1997	3.16	2.61	1.68	0.06	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.23	0.75	4.39
1998	10.07	0.58	0.12	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.25	0.75	0.76
1999	2.71	1.75	0.16	0.07	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.22	0.56	2.02
2000	124.51	17.18	4.24	0.20	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.46	4.56	21.71
2001	1.65	18.99	1.57	0.25	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.20	2.85	20.84
2002	49.15	66.61	123.25	17.44	1.29	0.10	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	257.91	13.16	208.76
2003	0.14	4.05	3.28	4.96	0.61	0.07	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	13.12	2.28	12.98
2004	0.01	3.97	8.96	4.90	8.21	0.76	0.08	0.02	0.01	0.00	0.00	0.00	0.00	0.00	26.92	3.93	26.90
2005	1.16	1.28	1.06	1.51	1.27	1.94	0.22	0.05	0.00	0.00	0.00	0.00	0.00	0.00	8.49	1.65	7.33
2006	18.48	23.72	5.63	2.07	2.56	3.16	2.90	0.53	0.01	0.00	0.00	0.00	0.00	0.00	59.06	10.41	40.58
2007	7.51	15.86	5.84	1.49	0.55	0.54	0.54	0.39	0.07	0.01	0.00	0.00	0.00	0.00	32.80	3.32	25.29

Table 28. CTDEP fall trawl survey mean number of scup per tow at age, total mean number per tow, and total mean weight (kg) per tow.

Year	Age											Total No/Tow	Total Kg/Tow	Age 2+
	0	1	2	3	4	5	6	7	8	9	10			
1984	7.99	1.04	0.78	0.52	0.28	0.09	0.02	0.00	0.00	0.00	0.00	10.72	1.36	1.69
1985	25.01	4.71	0.40	0.59	0.19	0.04	0.03	0.00	0.00	0.00	0.00	30.97	2.50	1.25
1986	13.06	9.98	2.50	0.19	0.01	0.01	0.01	0.00	0.00	0.00	0.00	25.76	2.95	2.72
1987	12.47	4.17	1.25	0.58	0.06	0.01	0.01	0.00	0.00	0.00	0.00	18.55	1.79	1.91
1988	31.89	5.71	1.82	0.24	0.03	0.00	0.00	0.00	0.00	0.00	0.00	39.69	2.27	2.09
1989	40.88	22.60	1.51	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	65.08	3.65	1.60
1990	54.34	7.74	6.95	0.40	0.03	0.01	0.01	0.00	0.00	0.01	0.00	69.49	5.00	7.41
1991	291.58	17.03	1.76	1.04	0.15	0.01	0.00	0.00	0.00	0.00	0.00	311.57	8.30	2.96
1992	50.91	26.58	5.54	0.40	0.29	0.01	0.01	0.00	0.00	0.00	0.00	83.74	4.96	6.25
1993	74.06	1.83	1.02	0.12	0.01	0.01	0.00	0.00	0.00	0.00	0.00	77.05	3.72	1.16
1994	90.76	1.12	0.46	0.18	0.01	0.00	0.00	0.00	0.00	0.00	0.00	92.53	3.33	0.65
1995	32.46	26.52	0.14	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.13	4.63	0.15
1996	51.50	8.56	1.37	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	61.47	3.68	1.41
1997	31.79	8.68	0.63	0.17	0.01	0.00	0.00	0.00	0.00	0.00	0.00	41.28	2.49	0.81
1998	90.40	12.24	0.54	0.07	0.02	0.00	0.00	0.00	0.00	0.00	0.00	103.27	4.50	0.63
1999	498.18	30.93	8.35	0.19	0.02	0.01	0.00	0.00	0.00	0.00	0.00	537.68	22.72	8.57
2000	250.39	261.45	8.32	0.79	0.14	0.01	0.00	0.00	0.00	0.00	0.00	521.10	30.76	9.26
2001	140.51	16.90	18.42	1.61	0.19	0.03	0.00	0.00	0.00	0.00	0.00	177.66	11.28	20.25
2002	259.90	47.62	23.32	16.81	0.67	0.33	0.05	0.00	0.01	0.00	0.00	348.70	23.69	41.18
2003	52.91	15.35	32.07	22.39	26.44	2.49	0.54	0.02	0.02	0.00	0.00	152.23	28.95	83.96
2004	251.05	4.13	8.34	15.08	5.98	6.25	0.53	0.07	0.01	0.02	0.00	291.46	16.31	36.28
2005	373.32	32.56	8.14	2.44	4.01	1.50	1.69	0.33	0.06	0.00	0.00	424.05	13.79	18.17
2006	52.16	51.02	9.52	2.34	0.26	0.35	0.38	0.68	0.04	0.00	0.00	116.75	10.49	13.57
2007	319.89	118.06	29.34	5.93	0.90	0.23	0.30	0.31	0.31	0.03	0.00	475.30	24.15	37.35

Table 29. NYDEC trawl survey indices at ages 0, 1 and 2 and older (2+); NJBMF trawl survey mean number of scup per tow and mean weight (kg) per tow; VIMS age 0 index.

Year	NYDEC Trawl			NJBMF Trawl		VIMS
	Age 0	Age 1	Age 2+	No/tow	Kg/tow	Age 0
1987	0.33	3.43	0.09			
1988	1.19	1.96	0.05			2.07
1989	0.67	11.02	0.04	72.75	2.75	3.07
1990	5.32	1.30	0.14	74.72	3.77	4.92
1991	13.17	2.31	0.22	200.61	6.17	1.90
1992	15.25	1.54	0.06	227.70	7.16	0.65
1993	0.29	0.72	0.04	256.91	5.21	3.36
1994	6.11	0.36	0.06	86.45	3.30	0.90
1995	0.61	7.49	0.03	27.13	2.08	0.39
1996	0.42	0.94	0.15	30.81	1.04	0.54
1997	20.23	0.74	0.20	52.09	3.82	0.21
1998	73.22	1.46	0.05	220.05	4.88	0.50
1999	35.85	2.25	0.03	209.10	10.30	0.27
2000	186.07	16.73	1.02	260.97	6.56	0.13
2001	83.01	2.99	1.22	163.37	4.32	1.34
2002	346.32	5.47	6.01	565.96	25.65	0.24
2003	266.56	0.38	1.35	804.08	10.19	0.96
2004	40.82	0.92	0.70	449.12	11.70	0.46
2005	n/a	n/a	n/a	147.98	4.19	1.11
2006	122.23	3.12	0.35	943.63	16.52	1.58
2007	109.47	4.18	0.61	1185.54	38.27	2.99
Mean	66.36	3.47	0.62	314.68	8.84	1.38



Table 30. University of Rhode Island Graduate School of Oceanography (URIGSO) trawl survey indices for scup (total catch number).

---

Year	Number
1963	80
1964	181
1965	100
1966	124
1967	686
1968	217
1969	142
1970	146
1971	523
1972	345
1973	689
1974	543
1975	1243
1976	2591
1977	1806
1978	1112
1979	1033
1980	510
1981	952
1982	478
1983	1477
1984	1374
1985	1411
1986	1062
1987	809
1988	762
1989	2386
1990	953
1991	1841
1992	654
1993	1775
1994	471
1995	682
1996	628
1997	516
1998	551
1999	1830
2000	3978
2001	3225
2002	5380
2003	2047
2004	468
2005	857
2006	4473
2007	2889

Table 31. VIMS ChesMMAP trawl survey indices for scup. Indices are maximum seasonal values (usually July or September) minimum swept area estimates.

Year	Total N	Total B	Age 0 N	Age 1 N
2002	477,359	77,307	324,291	154,625
2003	624,210	61,501	93,089	500,176
2004	2,166,993	146,627	89,384	1,975,035
2005	3,402,832	197,762	1,864,624	673,437
2006	1,318,855	109,652	1,180,618	566,905
2007	894,289	23,183	0	894,289
2008	52,317	3,488	n/a	n/a
Mean	1,480,756	102,672	592,001	794,078

Table 32. Summary results for 1984-2007 from the 2008 assessment accepted model  
 BASE\_C2007\_T1.

---

Year	SSB (mt)	Recruits (Age 0; 000s)	F
1984	18,151	108,158	0.533
1985	17,010	78,360	0.608
1986	15,953	60,241	0.779
1987	13,531	48,392	0.676
1988	10,621	91,460	0.701
1989	8,894	66,774	0.695
1990	9,438	114,796	0.673
1991	9,211	100,966	1.027
1992	7,928	39,496	1.068
1993	6,147	45,406	1.109
1994	4,428	75,827	1.120
1995	3,993	36,349	0.920
1996	5,103	30,377	0.758
1997	5,609	87,276	0.487
1998	6,772	123,306	0.329
1999	12,367	217,853	0.206
2000	25,727	311,243	0.149
2001	51,511	194,937	0.080
2002	72,536	114,487	0.186
2003	76,533	108,778	0.111
2004	81,638	171,236	0.079
2005	93,754	116,828	0.061
2006	105,645	219,752	0.057
2007	119,343	307,943	0.054

Table 33. January 1 population number (N, 000s) estimates for 1984-2007 from the 2008 assessment accepted model BASE\_C2007\_T1.

Year	Age							
	0	1	2	3	4	5	6	7+
1984	108158	61923	30650	8353	3465	3014	4824	13099
1985	78360	80287	40534	14126	4100	1637	1423	8775
1986	60241	56693	49486	16395	6531	1780	710	4704
1987	48392	44866	36176	21410	6555	2350	641	2148
1988	91460	36323	29465	16671	9319	2643	947	1201
1989	66774	69016	24120	13772	7049	3672	1041	887
1990	114796	49652	44341	10620	5925	2780	1448	794
1991	100966	84717	31624	19059	4624	2402	1127	935
1992	39496	72016	49032	10527	5990	1289	670	611
1993	45406	26601	37486	12722	3136	1615	347	365
1994	75827	31708	14804	11151	3641	810	417	196
1995	36349	55377	19198	5296	3162	929	207	163
1996	30377	25410	31416	6090	1802	999	293	122
1997	87276	22335	15998	12939	2438	670	371	158
1998	123306	65699	14356	8195	6455	1218	335	268
1999	217853	94257	44254	8205	4802	3786	714	358
2000	311243	170265	67634	28464	5449	3191	2515	716
2001	194937	247527	128258	47186	20013	3832	2244	2280
2002	114487	156810	192914	96113	35619	15111	2893	3428
2003	108778	68584	55407	47367	65005	24205	10264	4313
2004	171236	86609	51990	39723	34636	47549	17705	10695
2005	116828	138009	67886	39371	30017	26177	35936	21519
2006	219752	94532	109412	52530	30297	23101	20146	44303
2007	307943	177299	74375	83856	40578	23407	17848	49939

Table 34. Fishing mortality (F) estimates for 1984-2007 from the 2008 assessment accepted model BASE\_C2007\_T1.

Year	Age							
	0	1	2	3	4	5	6	7+
1984	0.098	0.224	0.575	0.512	0.550	0.551	0.551	0.501
1985	0.124	0.284	0.705	0.571	0.634	0.635	0.636	0.564
1986	0.095	0.249	0.638	0.717	0.822	0.822	0.823	0.710
1987	0.087	0.220	0.575	0.632	0.708	0.709	0.709	0.623
1988	0.082	0.209	0.561	0.661	0.731	0.732	0.732	0.649
1989	0.096	0.242	0.620	0.643	0.730	0.731	0.731	0.637
1990	0.104	0.251	0.644	0.632	0.703	0.703	0.704	0.622
1991	0.138	0.347	0.900	0.957	1.077	1.078	1.079	0.945
1992	0.195	0.453	1.149	1.011	1.111	1.112	1.113	0.994
1993	0.159	0.386	1.012	1.051	1.154	1.154	1.155	1.032
1994	0.114	0.302	0.828	1.061	1.166	1.166	1.167	1.040
1995	0.158	0.367	0.948	0.878	0.952	0.953	0.955	0.861
1996	0.108	0.263	0.687	0.715	0.789	0.789	0.790	0.703
1997	0.084	0.242	0.469	0.495	0.494	0.494	0.490	0.460
1998	0.069	0.195	0.359	0.335	0.334	0.334	0.331	0.311
1999	0.046	0.132	0.241	0.209	0.209	0.209	0.207	0.193
2000	0.029	0.083	0.160	0.152	0.152	0.152	0.151	0.139
2001	0.018	0.049	0.089	0.081	0.081	0.081	0.081	0.075
2002	0.312	0.840	1.204	0.191	0.186	0.187	0.185	0.180
2003	0.028	0.077	0.133	0.113	0.113	0.113	0.112	0.104
2004	0.016	0.044	0.078	0.080	0.080	0.080	0.079	0.074
2005	0.012	0.032	0.056	0.062	0.062	0.062	0.061	0.058
2006	0.015	0.040	0.066	0.058	0.058	0.058	0.058	0.054
2007	0.016	0.044	0.073	0.055	0.055	0.055	0.055	0.051

Table 35. 2008 assessment Biological Reference Point input data.

Natural Mortality (M) =		0.20				
Proportion of mortality before spawning =		0.417				
Age	Selectivity on F	Selectivity on M	1-Jan Stock Weights	Catch Weights	1-Jun SSB Weights	Maturity
0	0.21	1.00	0.017	0.028	0.025	0.00
1	0.58	1.00	0.051	0.100	0.089	0.13
2	1.00	1.00	0.142	0.221	0.205	0.75
3	0.91	1.00	0.283	0.356	0.343	0.99
4	0.90	1.00	0.418	0.488	0.476	1.00
5	0.90	1.00	0.564	0.642	0.629	1.00
6	0.90	1.00	0.735	0.830	0.813	1.00
7+	0.90	1.00	1.041	1.041	1.041	1.00

Table 36. Proposed biological reference points and status evaluation for scup from 2008 accepted assessment model BASE\_C2007\_T1. The Northeast Data Poor Stocks Peer Review Panel adopted F40% = 0.177 as the proxy for FMSY, and SSBF40% = 92,044 mt as the proxy for SSBMSY (in **bold**).

BRP	F	Y/R	SSB/R	SSBproxy	MSYproxy	Landproxy	Discproxy
Fmax	0.283	0.146	0.499	57,759	16,903	12,764	4,139
F35%	0.207	0.142	0.683	80,280	16,615	13,236	3,379
<b>F40%</b>	<b>0.177</b>	<b>0.138</b>	<b>0.780</b>	<b>92,044</b>	<b>16,161</b>	<b>13,134</b>	<b>3,027</b>

  

BRP	SSBproxy	SSB07	%SSBproxy	MSYproxy	Catch07	%MSYproxy
Fmax	57,759	119,343	207%	16,903	7,867	47%
F35%	80,280	119,343	149%	16,615	7,867	47%
<b>F40%</b>	<b>92,044</b>	<b>119,343</b>	<b>130%</b>	<b>16,161</b>	<b>7,867</b>	<b>49%</b>