

# **Appendix VII**

## **Target TAC Projection Output**

FW 42 Target TAC projections in this appendix were calculated using:

GARM II starting conditions

Recruitment assumptions adopted by GARM II

F2004=F2005

AGEPRO VERSION 3.1

PROJECTION RUN:  
GMCOD FW42 F2004=F2005 & A13 Frebuild for 2006-09, Mar-06

INPUT FILE:  
C:\DATA\GROUND FISH\_PDT\FW42\MARCH\_2006\GMCOD\_FW42\_MAR\_2006.IN

OUTPUT FILE:  
C:\DATA\GROUND FISH\_PDT\FW42\MARCH\_2006\GMCOD\_FW42\_MAR\_2006.OUT

RECRUITMENT MODEL: 5  
NUMBER OF BOOTSTRAP REALIZATIONS: 1000  
NUMBER OF SIMULATIONS PER BOOTSTRAP REALIZATION: 100  
TOTAL NUMBER OF SIMULATIONS: 100000  
NUMBER OF FEASIBLE SIMULATIONS: 100000  
PROPORTION OF SIMULATIONS THAT ARE FEASIBLE: 1.000000000000000

F-BASED PROJECTIONS

TIME-VARYING F

YEAR F  
2005 0.580  
2006 0.230  
2007 0.230  
2008 0.230  
2009 0.210

SPAWNING STOCK BIOMASS (THOUSAND MT)

YEAR AVG SSB (000 MT) STD  
2005 24.274 4.160  
2006 36.763 10.584  
2007 47.797 14.266  
2008 55.199 14.561  
2009 60.421 14.798

PERCENTILES OF SPAWNING STOCK BIOMASS (000 MT)

YEAR 1% 5% 10% 25% 50% 75% 90% 95% 99%  
2005 16.147 17.982 19.384 21.431 23.865 26.692 29.554 31.617 36.387  
2006 20.527 22.989 25.323 29.297 34.922 42.364 49.603 57.342 69.189  
2007 25.972 29.630 32.466 37.735 45.165 55.207 65.199 75.273 93.676  
2008 31.602 36.123 39.144 44.894 52.866 62.983 73.595 82.041 100.869  
2009 35.295 40.431 43.675 49.903 58.272 68.621 79.647 87.409 105.710

ANNUAL PROBABILITY THAT SSB EXCEEDS THRESHOLD: 82.830 THOUSAND MT

YEAR Pr(SSB >= Threshold Value) FOR FEASIBLE SIMULATIONS  
2005 0.000  
2006 0.003  
2007 0.023  
2008 0.046  
2009 0.076

Pr(SSB >= Threshold Value) AT LEAST ONCE:= 0.077

MEAN BIOMASS (THOUSAND MT) FOR AGES: 1 TO 7

YEAR AVG MEAN B (000 MT) STD  
2005 32.390 7.613  
2006 46.875 14.474  
2007 52.865 14.714  
2008 57.964 14.133  
2009 63.658 14.831

PERCENTILES OF MEAN STOCK BIOMASS (000 MT)

YEAR 1% 5% 10% 25% 50% 75% 90% 95% 99%  
2005 19.941 22.125 24.096 26.957 31.215 36.818 41.595 46.352 55.563  
2006 24.932 28.505 31.348 36.655 44.197 54.358 64.493 74.996 93.489  
2007 29.648 33.920 36.829 42.501 50.362 60.614 71.187 80.408 99.957  
2008 34.209 38.958 42.067 47.927 55.895 65.715 76.288 83.811 101.462  
2009 37.751 43.292 46.638 53.100 61.652 72.112 83.037 90.655 107.964

ANNUAL PROBABILITY THAT MEAN BIOMASS EXCEEDS THRESHOLD: 33.000 THOUSAND MT  
 YEAR Pr(MEAN B >= Threshold Value) FOR FEASIBLE SIMULATIONS

2005	0.407
2006	0.858
2007	0.961
2008	0.994
2009	0.999

Pr(MEAN B >= Threshold Value) AT LEAST ONCE:= 0.999

F WEIGHTED BY MEAN BIOMASS FOR AGES: 1 TO 7

YEAR	AVG F_WT_B	STD
2005	0.267	0.054
2006	0.104	0.013
2007	0.175	0.015
2008	0.171	0.016
2009	0.158	0.015

PERCENTILES OF F WEIGHTED BY MEAN BIOMASS FOR AGES: 1 TO 7

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	0.149	0.180	0.197	0.228	0.268	0.307	0.336	0.357	0.392
2006	0.079	0.085	0.088	0.094	0.102	0.112	0.121	0.127	0.138
2007	0.133	0.147	0.154	0.165	0.176	0.185	0.193	0.197	0.204
2008	0.129	0.142	0.149	0.161	0.173	0.183	0.192	0.196	0.204
2009	0.120	0.133	0.139	0.149	0.160	0.169	0.176	0.180	0.187

ANNUAL PROBABILITY THAT F WEIGHTED BY MEAN BIOMASS EXCEEDS THRESHOLD: 0.310  
 YEAR Pr(F\_WT\_B > Threshold Value) FOR FEASIBLE SIMULATIONS

2005	0.230
2006	0.000
2007	0.000
2008	0.000
2009	0.000

TOTAL STOCK BIOMASS (THOUSAND MT)

YEAR	AVG TOTAL B (000 MT)	STD
2005	40.580	8.764
2006	54.300	16.478
2007	63.490	17.987
2008	69.447	17.021
2009	75.789	17.713

PERCENTILES OF TOTAL STOCK BIOMASS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	25.732	28.567	30.827	34.443	39.230	45.706	51.639	56.152	66.737
2006	29.238	33.283	36.633	42.676	51.260	62.811	74.367	86.350	107.059
2007	35.267	40.373	43.942	50.819	60.397	72.935	85.795	97.269	121.149
2008	40.940	46.624	50.357	57.360	66.936	78.769	91.451	100.528	122.133
2009	44.907	51.487	55.492	63.163	73.395	85.857	98.891	108.022	128.776

ANNUAL PROBABILITY THAT TOTAL STOCK BIOMASS EXCEEDS THRESHOLD: 90.300 THOUSAND MT  
 YEAR Pr(B >= Threshold Value) FOR FEASIBLE SIMULATIONS

2005	0.001
2006	0.030
2007	0.075
2008	0.109
2009	0.185

Pr(B >= Threshold Value) AT LEAST ONCE:= 0.189

RECRUITMENT UNITS ARE: 1000.0000000000 FISH

YEAR	AVG RECRUITMENT	STD
2005	8583.883	4870.603
2006	9321.158	5254.207
2007	9686.666	5502.527

2008 9899.599 5587.609  
 2009 10009.788 5659.651

PERCENTILES OF RECRUITMENT UNITS ARE: 1000.00000000000 FISH

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	2194.739	3149.210	3792.489	5247.617	7474.783	10650.980	14634.591	17799.170	25547.600
2006	2357.823	3416.174	4131.535	5687.340	8118.686	11576.488	15978.669	19317.149	27517.259
2007	2461.683	3526.132	4278.825	5886.369	8429.120	12039.347	16547.214	20063.362	28912.543
2008	2519.211	3610.410	4386.741	6042.400	8625.551	12313.608	16900.923	20553.741	29251.859
2009	2579.167	3671.417	4440.511	6108.444	8702.783	12438.859	17110.288	20648.943	29794.871

LANDINGS FOR F-BASED PROJECTIONS

YEAR	AVG LANDINGS (000 MT)	STD
2005	9.410	1.577
2006	5.320	1.165
2007	10.701	3.748
2008	11.040	3.082
2009	11.294	2.999

PERCENTILES OF LANDINGS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	6.135	7.013	7.562	8.322	9.301	10.341	11.438	12.135	13.822
2006	3.296	3.718	4.053	4.496	5.146	6.010	6.777	7.390	8.766
2007	5.089	5.971	6.671	8.076	10.020	12.587	15.264	17.960	22.781
2008	6.246	7.092	7.717	8.871	10.491	12.646	14.846	16.913	20.937
2009	6.310	7.306	7.938	9.159	10.839	12.911	15.184	16.810	20.567

PERCENTILES OF INITIAL PERIOD NUMBERS AT AGE VECTOR (000s FISH)

AGE	1%	5%	10%	25%	50%	75%	90%	95%	99%
1	5876.	5985.	6068.	6182.	6314.	6449.	6566.	6637.	6815.
2	5259.	7734.	9440.	13050.	18089.	24610.	31891.	37734.	51553.
3	978.	1243.	1376.	1681.	2082.	2533.	3049.	3472.	4104.
4	2058.	2478.	2727.	3133.	3636.	4251.	4909.	5370.	6293.
5	64.	89.	104.	136.	177.	221.	272.	295.	387.
6	334.	445.	513.	606.	744.	886.	1023.	1123.	1314.
7+	273.	329.	371.	434.	517.	594.	689.	741.	883.

PERCENTILES OF FINAL PERIOD NUMBERS AT AGE VECTOR (000s FISH)

AGE	1%	5%	10%	25%	50%	75%	90%	95%	99%
1	2519.	3610.	4387.	6042.	8626.	12314.	16901.	20554.	29252.
2	2015.	2887.	3503.	4819.	6901.	9857.	13548.	16426.	23672.
3	1579.	2288.	2767.	3810.	5438.	7754.	10703.	12939.	18432.
4	1132.	1625.	1957.	2708.	3857.	5496.	7551.	9184.	13182.
5	1972.	2009.	2037.	2075.	2119.	2165.	2204.	2228.	2288.
6	1401.	2060.	2515.	3476.	4819.	6556.	8496.	10052.	13733.
7+	699.	802.	850.	948.	1060.	1192.	1318.	1399.	1553.

ANNUAL PROBABILITY FULLY-RECRUITED F EXCEEDS THRESHOLD: 0.230

YEAR	Pr(F > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	1.000
2006	0.000
2007	0.000
2008	0.000
2009	0.000

AGEPRO VERSION 3.02

PROJECTION RUN:  
GBCOD GARM2 Projected A13 Catches 2005-2009

INPUT FILE:  
C:\Data\GARM2\AGEBASED\_STOCKS\GBCOD\GBCOD\_GARM2.in

OUTPUT FILE:  
C:\DATA\GARM2\AGEBASED\_STOCKS\GBCOD\GBCOD\_GARM2.OUT

RECRUITMENT MODEL: 5  
NUMBER OF BOOTSTRAP REALIZATIONS: 1000  
NUMBER OF SIMULATIONS PER BOOTSTRAP REALIZATION: 100  
TOTAL NUMBER OF SIMULATIONS: 100000  
NUMBER OF FEASIBLE SIMULATIONS: 100000  
PROPORTION OF SIMULATIONS THAT ARE FEASIBLE: 1.0000000000000000

F-BASED PROJECTIONS  
TIME-VARYING F

YEAR	F
2005	0.240
2006	0.210
2007	0.210
2008	0.210
2009	0.180

SPAWNING STOCK BIOMASS (THOUSAND MT)

YEAR	AVG SSB (000 MT)	STD
2005	28.875	4.163
2006	47.086	11.090
2007	60.385	20.202
2008	68.714	23.373
2009	76.930	25.574

PERCENTILES OF SPAWNING STOCK BIOMASS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	20.325	22.828	23.880	25.918	28.432	31.333	34.618	36.192	39.687
2006	29.266	32.577	34.788	39.392	44.922	53.174	61.310	66.705	82.279
2007	33.449	38.589	41.379	48.287	56.373	67.858	81.237	93.583	134.169
2008	37.129	42.911	46.644	54.376	64.158	77.238	93.618	107.782	154.205
2009	40.625	47.401	51.881	60.557	72.152	87.138	105.752	121.287	170.450

ANNUAL PROBABILITY THAT SSB EXCEEDS THRESHOLD: 216.780 THOUSAND MT

YEAR	Pr(SSB > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	0.000
2006	0.000
2007	0.002
2008	0.002
2009	0.003

Pr(SSB > Threshold Value) AT LEAST ONCE:= 0.003

MEAN BIOMASS (THOUSAND MT) FOR AGES: 1 TO 10

YEAR	AVG MEAN B (000 MT)	STD
2005	43.192	9.910
2006	58.530	17.219
2007	67.554	23.139
2008	75.522	24.476
2009	85.329	27.087

PERCENTILES OF MEAN STOCK BIOMASS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	27.485	30.882	32.694	36.667	41.313	47.833	55.456	60.176	77.837
2006	33.704	38.440	41.214	47.497	55.299	66.017	77.418	89.014	122.878
2007	36.825	42.481	46.033	53.566	63.012	75.741	91.631	105.659	151.627
2008	40.635	47.159	51.510	59.884	71.002	85.304	103.005	117.800	165.390
2009	44.759	52.652	57.683	67.340	80.531	97.306	117.348	133.082	179.690

ANNUAL PROBABILITY THAT MEAN BIOMASS EXCEEDS THRESHOLD: 108.000 THOUSAND MT

YEAR Pr(MEAN B > Threshold Value) FOR FEASIBLE SIMULATIONS

2005	0.001
2006	0.016
2007	0.045
2008	0.078
2009	0.152

Pr(MEAN B > Threshold Value) AT LEAST ONCE:= 0.153

F WEIGHTED BY MEAN BIOMASS FOR AGES: 1 TO 10

YEAR	AVG F_WT_B	STD
2005	0.110	0.020
2006	0.120	0.016
2007	0.138	0.011
2008	0.148	0.014
2009	0.127	0.012

PERCENTILES OF F WEIGHTED BY MEAN BIOMASS FOR AGES: 1 TO 10

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	0.060	0.078	0.085	0.097	0.109	0.123	0.137	0.142	0.152
2006	0.064	0.091	0.100	0.112	0.122	0.130	0.137	0.140	0.146
2007	0.107	0.118	0.123	0.131	0.139	0.146	0.151	0.155	0.160
2008	0.110	0.124	0.130	0.140	0.149	0.158	0.164	0.168	0.174
2009	0.094	0.106	0.111	0.120	0.128	0.136	0.142	0.145	0.152

ANNUAL PROBABILITY THAT F WEIGHTED BY MEAN BIOMASS EXCEEDS THRESHOLD: 0.320

YEAR Pr(F\_WT\_B > Threshold Value) FOR FEASIBLE SIMULATIONS

2005	0.000
2006	0.000
2007	0.000
2008	0.000
2009	0.000

TOTAL STOCK BIOMASS (THOUSAND MT)

YEAR	AVG TOTAL B (000 MT)	STD
2005	50.183	11.089
2006	68.305	19.588
2007	79.575	27.042
2008	89.433	28.935
2009	100.076	31.824

PERCENTILES OF TOTAL STOCK BIOMASS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	32.426	36.296	38.465	42.800	48.009	55.391	63.720	69.179	88.484
2006	39.703	45.230	48.401	55.660	64.637	77.057	90.081	103.323	142.780
2007	43.621	50.242	54.355	63.221	74.257	89.198	107.799	124.112	177.446
2008	48.305	55.972	61.076	70.987	84.077	100.910	121.726	139.197	195.996
2009	52.636	61.847	67.732	79.020	94.406	114.009	137.517	156.053	211.118

ANNUAL PROBABILITY THAT TOTAL STOCK BIOMASS EXCEEDS THRESHOLD: 0.000 THOUSAND MT

YEAR Pr(B > Threshold Value) FOR FEASIBLE SIMULATIONS

2005	1.000
2006	1.000
2007	1.000
2008	1.000
2009	1.000

Pr(B > Threshold Value) AT LEAST ONCE:= 1.000

RECRUITMENT UNITS ARE: 1000000.00000000 FISH

YEAR	AVG RECRUITMENT	STD
2005	9.134	6.164
2006	12.671	8.571
2007	14.494	9.957
2008	15.549	10.622
2009	16.478	11.216

PERCENTILES OF RECRUITMENT UNITS ARE: 1000000.0000000 FISH									
YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	1.849	2.791	3.466	5.038	7.575	11.442	16.523	20.666	31.499
2006	2.488	3.810	4.764	6.922	10.470	15.867	23.135	28.906	43.740
2007	2.843	4.301	5.377	7.845	11.957	18.153	26.542	33.104	50.943
2008	3.019	4.625	5.804	8.458	12.858	19.492	28.390	35.556	54.018
2009	3.277	4.943	6.178	8.957	13.596	20.645	30.060	37.554	57.965

LANDINGS FOR F-BASED PROJECTIONS

YEAR	AVG LANDINGS (000 MT)	STD
2005	5.288	0.726
2006	7.768	1.637
2007	10.471	3.285
2008	12.676	4.238
2009	12.190	4.269

PERCENTILES OF LANDINGS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	3.824	4.207	4.413	4.770	5.235	5.738	6.273	6.593	7.204
2006	4.974	5.602	5.920	6.638	7.458	8.669	9.936	10.694	12.825
2007	5.945	6.841	7.296	8.467	9.822	11.767	13.871	16.009	22.585
2008	6.885	7.934	8.604	10.045	11.855	14.293	17.244	19.848	27.935
2009	6.371	7.435	8.150	9.535	11.368	13.765	16.796	19.373	27.883

PERCENTILES OF INITIAL PERIOD NUMBERS AT AGE VECTOR (000s FISH)

AGE	1%	5%	10%	25%	50%	75%	90%	95%	99%
1	1496.722	2815.681	3885.762	5915.695	9973.270	16181.367	27479.526	36863.896	76490.858
2	6893.504	9065.284	10457.266	13224.093	17509.964	22927.299	28446.469	32411.382	42348.598
3	695.050	881.502	1007.284	1215.950	1512.573	1879.116	2271.765	2525.552	3128.153
4	736.926	947.564	1053.830	1225.170	1460.607	1787.755	2109.819	2348.645	2892.951
5	500.813	639.056	712.825	847.034	1037.447	1216.774	1432.067	1647.394	1945.953
6	574.254	726.626	805.922	976.823	1178.882	1445.182	1723.019	1866.522	2174.841
7	271.631	407.749	482.637	608.103	771.960	992.779	1240.967	1411.226	1839.263
8	30.044	45.069	57.246	77.487	103.669	142.646	188.513	214.335	269.639
9	75.905	93.498	100.644	114.352	131.579	150.591	169.184	183.708	202.574
10+	36.252	39.793	42.484	46.667	52.463	59.108	66.035	70.440	77.017

PERCENTILES OF FINAL PERIOD NUMBERS AT AGE VECTOR (000s FISH)

AGE	1%	5%	10%	25%	50%	75%	90%	95%	99%
1	3019.027	4624.913	5804.379	8458.131	12858.485	19492.289	28390.489	35555.827	54018.394
2	2327.956	3521.441	4402.412	6422.641	9789.944	14862.689	21730.621	27103.528	41708.838
3	1647.136	2522.226	3153.647	4581.799	6930.701	10502.900	15313.969	19133.415	28952.660
4	889.165	1341.699	1666.239	2422.427	3641.974	5501.236	7944.188	9936.472	15144.683
5	498.066	936.978	1293.070	1968.573	3318.817	5384.693	9144.396	12267.244	25453.957
6	1856.104	2440.864	2815.661	3560.640	4714.628	6173.268	7659.326	8726.895	11402.531
7	151.288	191.872	219.250	264.669	329.234	409.017	494.483	549.723	680.888
8	145.545	187.147	208.135	241.975	288.475	353.087	416.696	463.865	571.367
9	94.276	120.300	134.187	159.452	195.296	229.054	269.582	310.117	366.320
10+	261.998	304.901	329.854	375.195	431.982	502.744	570.506	613.437	704.120

ANNUAL PROBABILITY FULLY-RECRUITED F EXCEEDS THRESHOLD: 0.175

YEAR	Pr(F > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	1.000
2006	1.000
2007	1.000
2008	1.000
2009	1.000

AGEPRO VERSION 3.02

PROJECTION RUN:  
GBHAD GARM2 Projected A13 Catches, 2005-2009

INPUT FILE:  
C:\GARM2\AGEBASED\_STOCKS\GBHAD\GBHAD\_GARM2.in

OUTPUT FILE:  
C:\GARM2\AGEBASED\_STOCKS\GBHAD\GBHAD\_GARM2.OUT

RECRUITMENT MODEL: 15  
NUMBER OF BOOTSTRAP REALIZATIONS: 1000  
NUMBER OF SIMULATIONS PER BOOTSTRAP REALIZATION: 100  
TOTAL NUMBER OF SIMULATIONS: 100000  
NUMBER OF FEASIBLE SIMULATIONS: 100000  
PROPORTION OF SIMULATIONS THAT ARE FEASIBLE: 1.0000000000000000

F-BASED PROJECTIONS  
TIME-VARYING F

YEAR	F
2005	0.240
2006	0.260
2007	0.260
2008	0.260
2009	0.240

SPAWNING STOCK BIOMASS (THOUSAND MT)

YEAR	AVG SSB (000 MT)	STD
2005	277.738	74.137
2006	601.636	217.696
2007	662.904	244.014
2008	578.058	202.830
2009	496.163	165.609

PERCENTILES OF SPAWNING STOCK BIOMASS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	152.829	179.181	189.990	223.836	267.771	320.056	384.606	416.686	467.591
2006	247.604	304.257	350.739	440.179	571.952	728.124	902.992	1003.583	1164.766
2007	264.054	328.006	381.991	482.623	630.479	804.149	1000.615	1109.123	1317.272
2008	241.677	301.628	342.768	428.860	550.456	692.649	856.668	946.992	1128.652
2009	219.553	272.930	306.476	377.849	472.002	586.412	719.686	799.463	983.445

ANNUAL PROBABILITY THAT SSB EXCEEDS THRESHOLD: 250.300 THOUSAND MT

YEAR	Pr(SSB > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	0.601
2006	0.989
2007	0.995
2008	0.986
2009	0.972

Pr(SSB > Threshold Value) AT LEAST ONCE:= 0.996

MEAN BIOMASS (THOUSAND MT) FOR AGES: 1 TO 9

YEAR	AVG MEAN B (000 MT)	STD
2005	371.416	115.684
2006	602.049	215.694
2007	632.994	226.444
2008	546.976	185.438
2009	475.863	153.599

PERCENTILES OF MEAN STOCK BIOMASS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	178.091	213.562	238.081	287.351	356.485	438.306	533.780	587.498	669.225
2006	249.317	306.589	352.984	442.393	572.938	727.275	900.538	997.665	1178.705
2007	259.807	323.886	370.845	465.667	602.702	763.035	945.801	1045.160	1236.144
2008	237.203	293.870	331.400	411.854	521.405	652.222	800.668	883.687	1056.076
2009	218.403	268.781	300.163	366.459	453.415	558.963	681.955	756.415	936.013

ANNUAL PROBABILITY THAT MEAN BIOMASS EXCEEDS THRESHOLD: 0.000 THOUSAND MT

YEAR	Pr(MEAN B > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	1.000
2006	1.000
2007	1.000
2008	1.000
2009	1.000

Pr(MEAN B > Threshold Value) AT LEAST ONCE:= 1.000

F WEIGHTED BY MEAN BIOMASS FOR AGES:			1 TO	9
YEAR	AVG F_WT_B	STD		
2005	0.079	0.019		
2006	0.080	0.010		
2007	0.160	0.007		
2008	0.224	0.020		
2009	0.195	0.020		

PERCENTILES OF F WEIGHTED BY MEAN BIOMASS FOR AGES:											1 TO	9
YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%			
2005	0.047	0.054	0.057	0.065	0.077	0.090	0.105	0.115	0.132			
2006	0.064	0.067	0.069	0.073	0.078	0.085	0.094	0.099	0.111			
2007	0.128	0.149	0.154	0.158	0.161	0.163	0.166	0.167	0.171			
2008	0.151	0.185	0.199	0.215	0.228	0.237	0.244	0.247	0.253			
2009	0.128	0.157	0.169	0.184	0.198	0.209	0.217	0.221	0.228			

ANNUAL PROBABILITY THAT F WEIGHTED BY MEAN BIOMASS EXCEEDS THRESHOLD: 0.000

YEAR	Pr(F_WT_B > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	1.000
2006	1.000
2007	1.000
2008	1.000
2009	1.000

TOTAL STOCK BIOMASS (THOUSAND MT)		
YEAR	AVG TOTAL B (000 MT)	STD
2005	424.952	129.111
2006	689.475	244.380
2007	753.694	269.524
2008	671.757	229.179
2009	576.423	186.539

PERCENTILES OF TOTAL STOCK BIOMASS (000 MT)										
YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%	
2005	208.974	247.124	275.889	331.545	408.035	499.560	606.476	666.630	758.237	
2006	289.715	354.913	407.279	508.370	656.322	831.353	1027.144	1137.801	1342.614	
2007	309.548	386.147	441.871	554.547	717.519	908.564	1125.859	1244.887	1472.327	
2008	289.465	358.580	404.978	504.133	640.258	802.250	986.074	1087.196	1296.910	
2009	263.536	324.082	362.253	443.305	549.501	678.333	828.368	916.542	1123.984	

ANNUAL PROBABILITY THAT TOTAL STOCK BIOMASS EXCEEDS THRESHOLD: 0.000 THOUSAND MT

YEAR	Pr(B > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	1.000
2006	1.000
2007	1.000
2008	1.000
2009	1.000

Pr(B > Threshold Value) AT LEAST ONCE:= 1.000

RECRUITMENT UNITS ARE:			1000000.00000000	FISH
YEAR	AVG			
CLASS	RECRUITMENT	STD		
2005	74.398	83.822		
2006	74.129	83.058		
2007	73.874	83.473		
2008	74.311	84.101		
2009	74.195	83.142		

PERCENTILES OF RECRUITMENT UNITS ARE: 1000000.0000000 FISH									
YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	0.641	1.323	5.189	38.297	60.169	98.046	126.706	137.962	559.985
2006	0.642	1.322	5.285	38.294	60.113	97.247	126.740	139.088	549.669
2007	0.644	1.278	5.081	37.800	60.021	96.527	126.434	137.968	555.117
2008	0.629	1.329	5.235	38.121	60.163	96.722	126.397	137.417	560.600
2009	0.661	1.329	5.272	38.546	60.175	98.031	126.721	136.217	556.446

LANDINGS FOR F-BASED PROJECTIONS

YEAR	AVG LANDINGS (000 MT)	STD
2005	30.973	4.786
2006	51.723	14.027
2007	108.707	39.167
2008	127.953	47.431
2009	97.571	34.189

PERCENTILES OF LANDINGS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	21.879	23.938	25.100	27.516	30.481	33.907	37.665	39.491	43.793
2006	28.090	32.914	35.203	41.673	49.829	59.795	71.902	78.273	88.024
2007	45.004	55.103	63.497	79.531	103.329	131.437	163.229	180.864	213.782
2008	50.349	62.919	73.372	92.907	121.681	155.356	193.639	214.562	254.919
2009	40.853	50.959	57.886	72.456	92.888	116.937	144.460	159.727	190.385

PERCENTILES OF INITIAL PERIOD NUMBERS AT AGE VECTOR (000s FISH)

AGE	1%	5%	10%	25%	50%	75%	90%	95%	99%
1	1522.087	2897.442	3907.269	6605.587	10382.591	15905.788	22838.078	29218.898	41210.496
2	219752.352	298716.844	362797.545	483517.016	651744.165	854275.218	*****	*****	*****
3	382.343	487.799	548.905	675.898	860.052	1078.534	1297.146	1452.104	1782.772
4	1476.935	1831.987	2004.538	2376.887	2863.820	3366.144	3913.818	4307.744	5005.789
5	19929.130	23412.877	25680.094	30367.672	35662.461	40498.327	46705.762	50675.455	57886.331
6	3164.808	3791.831	4172.119	4846.134	5652.880	6604.350	7455.825	8139.458	9184.645
7	3074.054	4112.862	4759.675	5751.490	7143.454	8600.930	9924.218	10832.587	12690.020
8	394.268	588.394	721.965	910.453	1157.546	1436.082	1710.657	1897.915	2349.567
9+	2718.598	3171.265	3453.514	3812.909	4233.428	4716.613	5163.500	5383.727	5765.127

PERCENTILES OF FINAL PERIOD NUMBERS AT AGE VECTOR (000s FISH)

AGE	1%	5%	10%	25%	50%	75%	90%	95%	99%
1	628.733	1328.934	5234.569	38121.234	60163.017	96721.926	126396.501	137416.972	560600.238
2	525.075	1042.148	4143.697	30828.595	48951.200	78723.512	103114.733	112521.612	452733.386
3	419.170	863.599	3451.220	25007.378	39255.925	63505.635	82765.148	90829.082	358951.313
4	324.197	669.394	2626.281	19382.703	30452.048	49621.892	64127.173	69823.766	283413.664
5	536.837	1021.921	1378.085	2329.775	3661.916	5609.935	8054.937	10305.437	14534.846
6	60087.457	81678.924	99200.677	132209.316	178208.103	233586.695	299728.155	329006.722	394858.756
7	82.631	105.421	118.627	146.073	185.871	233.089	280.335	313.823	385.286
8	262.134	325.151	355.776	421.863	508.286	597.441	694.646	764.562	888.455
9+	5908.791	6657.043	7082.181	7839.254	8709.294	9650.925	10637.119	11323.452	12594.699

ANNUAL PROBABILITY FULLY-RECRUITED F EXCEEDS THRESHOLD: 0.263

YEAR	Pr(F > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	0.000
2006	0.000
2007	0.000
2008	0.000
2009	0.000

AGEPRO VERSION 3.02

PROJECTION RUN:  
SNEMAYT GARM2 Projected A13 Catches 2005-2009

INPUT FILE:  
H:\Jon\GARM\GARM2005\SNEMAYT\_GARM2.in

OUTPUT FILE:  
H:\JON\GARM\GARM2005\SNEMAYT\_GARM2.OUT

RECRUITMENT MODEL: 14  
NUMBER OF BOOTSTRAP REALIZATIONS: 1000  
NUMBER OF SIMULATIONS PER BOOTSTRAP REALIZATION: 100  
TOTAL NUMBER OF SIMULATIONS: 100000  
NUMBER OF FEASIBLE SIMULATIONS: 100000  
PROPORTION OF SIMULATIONS THAT ARE FEASIBLE: 1.00000000000000

F-BASED PROJECTIONS  
TIME-VARYING F

YEAR	F
2005	0.990
2006	0.260
2007	0.260
2008	0.260
2009	0.170

SPAWNING STOCK BIOMASS (THOUSAND MT)

YEAR	AVG SSB (000 MT)	STD
2005	0.804	0.181
2006	0.946	0.242
2007	1.386	0.344
2008	1.821	0.413
2009	2.223	0.465

PERCENTILES OF SPAWNING STOCK BIOMASS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	0.493	0.549	0.597	0.672	0.781	0.897	1.064	1.139	1.334
2006	0.525	0.623	0.673	0.767	0.901	1.094	1.287	1.397	1.597
2007	0.761	0.894	0.973	1.133	1.344	1.605	1.860	2.010	2.308
2008	1.028	1.200	1.308	1.518	1.788	2.091	2.377	2.549	2.877
2009	1.296	1.512	1.643	1.887	2.193	2.528	2.845	3.039	3.402

ANNUAL PROBABILITY THAT SSB EXCEEDS THRESHOLD: 69.500 THOUSAND MT

YEAR	Pr(SSB > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	0.000
2006	0.000
2007	0.000
2008	0.000
2009	0.000

Pr(SSB > Threshold Value) AT LEAST ONCE:= 0.000

MEAN BIOMASS (THOUSAND MT) FOR AGES: 1 TO 7

YEAR	AVG MEAN B (000 MT)	STD
2005	1.051	0.237
2006	1.316	0.323
2007	1.800	0.413
2008	2.226	0.470
2009	2.626	0.515

PERCENTILES OF MEAN STOCK BIOMASS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	0.631	0.726	0.782	0.874	1.023	1.200	1.385	1.458	1.714
2006	0.738	0.863	0.936	1.080	1.270	1.515	1.767	1.913	2.184
2007	1.016	1.189	1.294	1.496	1.763	2.069	2.358	2.538	2.872
2008	1.297	1.512	1.643	1.886	2.194	2.534	2.856	3.051	3.418
2009	1.586	1.834	1.983	2.256	2.595	2.965	3.313	3.524	3.917

ANNUAL PROBABILITY THAT MEAN BIOMASS EXCEEDS THRESHOLD: 130.200 THOUSAND MT

YEAR	Pr(MEAN B > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	0.000
2006	0.000
2007	0.000
2008	0.000
2009	0.000

Pr(MEAN B > Threshold Value) AT LEAST ONCE:= 0.000

F WEIGHTED BY MEAN BIOMASS FOR AGES:			1 TO	7
YEAR	AVG F_WT_B	STD		
2005	0.469	0.078		
2006	0.117	0.022		
2007	0.125	0.020		
2008	0.144	0.020		
2009	0.105	0.012		

PERCENTILES OF F WEIGHTED BY MEAN BIOMASS FOR AGES:											1 TO	7
YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%			
2005	0.297	0.340	0.365	0.412	0.475	0.523	0.563	0.598	0.638			
2006	0.073	0.083	0.089	0.101	0.115	0.132	0.146	0.155	0.171			
2007	0.083	0.093	0.100	0.111	0.125	0.139	0.152	0.160	0.172			
2008	0.100	0.112	0.119	0.130	0.144	0.158	0.170	0.177	0.189			
2009	0.076	0.084	0.089	0.097	0.106	0.114	0.121	0.125	0.132			

ANNUAL PROBABILITY THAT F WEIGHTED BY MEAN BIOMASS EXCEEDS THRESHOLD: 0.150

YEAR	Pr(F_WT_B > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	1.000
2006	0.075
2007	0.120
2008	0.394
2009	0.000

TOTAL STOCK BIOMASS (THOUSAND MT)		
YEAR	AVG TOTAL B (000 MT)	STD
2005	1.449	0.309
2006	1.535	0.370
2007	2.109	0.480
2008	2.633	0.554
2009	3.049	0.597

PERCENTILES OF TOTAL STOCK BIOMASS (000 MT)										
YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%	
2005	0.890	1.026	1.089	1.222	1.410	1.635	1.876	2.003	2.308	
2006	0.871	1.016	1.101	1.264	1.483	1.763	2.050	2.216	2.523	
2007	1.200	1.400	1.522	1.757	2.065	2.421	2.759	2.969	3.360	
2008	1.539	1.791	1.946	2.233	2.594	2.996	3.376	3.605	4.038	
2009	1.844	2.132	2.302	2.620	3.011	3.441	3.845	4.091	4.549	

ANNUAL PROBABILITY THAT TOTAL STOCK BIOMASS EXCEEDS THRESHOLD: 130.200 THOUSAND MT

YEAR	Pr(B > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	0.000
2006	0.000
2007	0.000
2008	0.000
2009	0.000

Pr(B > Threshold Value) AT LEAST ONCE:= 0.000

RECRUITMENT UNITS ARE:			1000.000000000000	FISH
YEAR	AVG			
CLASS	RECRUITMENT	STD		
2005	2661.416	1201.160		
2006	2658.552	1201.474		
2007	2648.404	1202.728		
2008	2658.308	1198.280		
2009	2661.567	1199.460		

PERCENTILES OF RECRUITMENT UNITS ARE: 1000.0000000000 FISH									
YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	840.716	996.510	1184.843	1869.766	2501.123	3302.571	4434.022	5107.513	5644.252
2006	840.948	996.459	1192.261	1869.763	2475.218	3296.616	4435.960	5114.208	5638.270
2007	841.287	983.874	1176.448	1869.220	2432.361	3291.239	4418.315	5107.549	5641.429
2008	838.639	998.289	1188.361	1869.573	2498.371	3292.697	4416.167	5104.275	5644.609
2009	844.241	998.422	1191.297	1870.040	2504.055	3302.464	4434.875	5097.142	5642.200

LANDINGS FOR F-BASED PROJECTIONS

YEAR	AVG LANDINGS (000 MT)	STD
2005	0.486	0.108
2006	0.150	0.035
2007	0.224	0.057
2008	0.321	0.078
2009	0.276	0.062

PERCENTILES OF LANDINGS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	0.288	0.329	0.359	0.408	0.474	0.545	0.632	0.685	0.781
2006	0.091	0.104	0.110	0.125	0.146	0.169	0.197	0.215	0.251
2007	0.124	0.147	0.159	0.182	0.213	0.258	0.305	0.331	0.376
2008	0.177	0.208	0.226	0.263	0.312	0.371	0.428	0.462	0.529
2009	0.157	0.183	0.199	0.231	0.272	0.317	0.360	0.385	0.434

PERCENTILES OF INITIAL PERIOD NUMBERS AT AGE VECTOR (000s FISH)

AGE	1%	5%	10%	25%	50%	75%	90%	95%	99%
1	380.000	380.000	380.000	1120.000	1413.000	2039.000	3152.000	4253.000	4253.000
2	368.000	483.000	575.000	747.000	1009.000	1394.000	1840.000	2069.000	3068.000
3	510.000	655.000	730.000	905.000	1165.000	1452.000	1836.000	2132.000	2608.000
4	136.000	169.000	192.000	237.000	302.000	379.000	461.000	502.000	628.000
5	24.000	32.000	40.000	53.000	70.000	91.000	115.000	128.000	164.000
6	28.000	38.000	47.000	63.000	83.000	108.000	136.000	153.000	195.000
7+	12.000	16.000	20.000	27.000	36.000	46.000	59.000	66.000	84.000

PERCENTILES OF FINAL PERIOD NUMBERS AT AGE VECTOR (000s FISH)

AGE	1%	5%	10%	25%	50%	75%	90%	95%	99%
1	838.639	998.289	1188.361	1869.573	2498.371	3292.697	4416.167	5104.275	5644.609
2	686.999	803.436	960.693	1526.414	1986.277	2687.642	3608.017	4170.849	4606.818
3	539.331	639.066	764.641	1199.148	1587.449	2114.242	2844.946	3279.932	3616.032
4	366.081	433.920	515.927	814.170	1089.087	1438.069	1930.747	2224.012	2457.729
5	103.697	103.697	103.697	305.633	385.588	556.415	860.138	1160.585	1160.585
6	69.580	91.324	108.719	141.241	190.779	263.574	347.902	391.201	580.089
7+	82.726	102.330	110.375	130.609	157.563	188.015	229.455	254.989	300.764

ANNUAL PROBABILITY FULLY-RECRUITED F EXCEEDS THRESHOLD: 0.260

YEAR	Pr(F > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	1.000
2006	1.000
2007	1.000
2008	1.000
2009	0.000

AGEPRO VERSION 3.02

PROJECTION RUN:  
SNEWIN GARM2 Projected A13 Catches 2005-2009

INPUT FILE:  
C:\GARM2\AGEBASED\_STOCKS\SNEWIN\SNEWIN\_GARM2.in

OUTPUT FILE:  
C:\GARM2\AGEBASED\_STOCKS\SNEWIN\SNEWIN\_GARM2.OUT

RECRUITMENT MODEL: 5  
NUMBER OF BOOTSTRAP REALIZATIONS: 1000  
NUMBER OF SIMULATIONS PER BOOTSTRAP REALIZATION: 100  
TOTAL NUMBER OF SIMULATIONS: 100000  
NUMBER OF FEASIBLE SIMULATIONS: 100000  
PROPORTION OF SIMULATIONS THAT ARE FEASIBLE: 1.00000000000000

F-BASED PROJECTIONS  
TIME-VARYING F

YEAR	F
2005	0.380
2006	0.320
2007	0.320
2008	0.320
2009	0.230

SPAWNING STOCK BIOMASS (THOUSAND MT)

YEAR	AVG SSB (000 MT)	STD
2005	3.243	0.378
2006	5.776	0.780
2007	7.950	1.196
2008	9.218	1.421
2009	11.532	1.925

PERCENTILES OF SPAWNING STOCK BIOMASS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	2.437	2.648	2.782	2.976	3.230	3.497	3.702	3.870	4.251
2006	4.227	4.589	4.825	5.236	5.736	6.253	6.752	7.078	7.916
2007	5.539	6.137	6.537	7.089	7.857	8.709	9.472	9.905	11.074
2008	6.408	7.112	7.511	8.222	9.107	10.077	11.063	11.712	13.135
2009	7.822	8.706	9.232	10.173	11.350	12.687	14.047	14.987	16.897

ANNUAL PROBABILITY THAT SSB EXCEEDS THRESHOLD: 30.100 THOUSAND MT

YEAR	Pr(SSB > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	0.000
2006	0.000
2007	0.000
2008	0.000
2009	0.000

Pr(SSB > Threshold Value) AT LEAST ONCE:= 0.000

MEAN BIOMASS (THOUSAND MT) FOR AGES: 1 TO 7

YEAR	AVG MEAN B (000 MT)	STD
2005	7.545	0.955
2006	10.241	1.458
2007	12.161	1.786
2008	14.922	2.349
2009	18.788	3.108

PERCENTILES OF MEAN STOCK BIOMASS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	5.573	6.112	6.382	6.859	7.465	8.168	8.744	9.098	10.091
2006	7.280	8.048	8.487	9.217	10.139	11.171	12.101	12.670	14.157
2007	8.593	9.493	10.002	10.911	12.020	13.256	14.469	15.298	17.030
2008	10.322	11.438	12.101	13.267	14.722	16.339	18.000	19.101	21.430
2009	12.769	14.219	15.059	16.597	18.500	20.673	22.869	24.348	27.395

ANNUAL PROBABILITY THAT MEAN BIOMASS EXCEEDS THRESHOLD: 0.000 THOUSAND MT

YEAR	Pr(MEAN B > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	1.000
2006	1.000
2007	1.000
2008	1.000
2009	1.000

Pr(MEAN B > Threshold Value) AT LEAST ONCE:= 1.000

F WEIGHTED BY MEAN BIOMASS FOR AGES:			1 TO	7
YEAR	AVG F_WT_B	STD		
2005	0.192	0.016		
2006	0.212	0.013		
2007	0.218	0.015		
2008	0.209	0.015		
2009	0.154	0.011		

PERCENTILES OF F WEIGHTED BY MEAN BIOMASS FOR AGES:											1 TO	7
YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%			
2005	0.156	0.165	0.171	0.179	0.192	0.203	0.213	0.219	0.229			
2006	0.178	0.189	0.195	0.204	0.213	0.221	0.227	0.231	0.237			
2007	0.180	0.192	0.198	0.208	0.219	0.229	0.237	0.242	0.250			
2008	0.172	0.183	0.189	0.199	0.210	0.220	0.229	0.233	0.242			
2009	0.128	0.136	0.140	0.148	0.155	0.162	0.168	0.171	0.177			

ANNUAL PROBABILITY THAT F WEIGHTED BY MEAN BIOMASS EXCEEDS THRESHOLD: 0.000

YEAR	Pr(F_WT_B > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	1.000
2006	1.000
2007	1.000
2008	1.000
2009	1.000

TOTAL STOCK BIOMASS (THOUSAND MT)		
YEAR	AVG TOTAL B (000 MT)	STD
2005	9.126	1.113
2006	12.502	1.769
2007	14.893	2.168
2008	18.198	2.833
2009	22.323	3.678

PERCENTILES OF TOTAL STOCK BIOMASS (000 MT)										
YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%	
2005	6.858	7.457	7.767	8.347	9.043	9.861	10.520	10.960	12.178	
2006	8.911	9.835	10.374	11.257	12.374	13.633	14.754	15.431	17.234	
2007	10.543	11.651	12.264	13.377	14.730	16.219	17.687	18.693	20.781	
2008	12.629	13.991	14.793	16.201	17.955	19.915	21.903	23.232	26.023	
2009	15.191	16.913	17.905	19.735	21.983	24.549	27.143	28.886	32.516	

ANNUAL PROBABILITY THAT TOTAL STOCK BIOMASS EXCEEDS THRESHOLD: 0.000 THOUSAND MT

YEAR	Pr(B > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	1.000
2006	1.000
2007	1.000
2008	1.000
2009	1.000

Pr(B > Threshold Value) AT LEAST ONCE:= 1.000

RECRUITMENT UNITS ARE:			1000.000000000000	FISH
YEAR	AVG			
CLASS	RECRUITMENT	STD		
2005	15313.151	5581.912		
2006	22060.272	8001.075		
2007	25979.120	9461.346		
2008	27837.706	10072.367		
2009	30531.868	11031.978		

PERCENTILES OF RECRUITMENT UNITS ARE: 1000.0000000000 FISH									
YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	6327.142	8048.638	9170.917	11344.736	14385.919	18246.894	22576.207	25777.644	32898.200
2006	9102.906	11640.498	13186.730	16370.978	20737.679	26304.451	32561.296	36937.612	47049.563
2007	10754.537	13680.903	15533.155	19222.706	24419.040	30956.500	38355.954	43644.943	55273.549
2008	11497.698	14643.056	16678.635	20668.429	26171.962	33162.434	40966.205	46711.362	58962.394
2009	12778.398	16180.210	18345.448	22670.626	28720.459	36366.965	44872.206	51057.475	64890.712

LANDINGS FOR F-BASED PROJECTIONS

YEAR	AVG LANDINGS (000 MT)	STD
2005	1.775	0.181
2006	2.513	0.366
2007	3.051	0.455
2008	3.628	0.566
2009	3.364	0.571

PERCENTILES OF LANDINGS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	1.393	1.506	1.542	1.647	1.772	1.890	2.004	2.074	2.261
2006	1.790	1.967	2.065	2.251	2.481	2.752	2.981	3.103	3.499
2007	2.137	2.373	2.506	2.730	3.016	3.331	3.632	3.833	4.325
2008	2.520	2.791	2.949	3.230	3.577	3.969	4.363	4.631	5.214
2009	2.270	2.530	2.685	2.961	3.309	3.705	4.110	4.384	4.976

PERCENTILES OF INITIAL PERIOD NUMBERS AT AGE VECTOR (000s FISH)

AGE	1%	5%	10%	25%	50%	75%	90%	95%	99%
1	4529.965	5811.734	6643.126	8121.446	10735.689	13784.137	17112.279	19356.244	24840.981
2	10277.367	12063.200	13044.536	15121.084	17927.949	21088.968	24004.203	25857.685	30520.245
3	1583.574	1877.132	2027.129	2300.201	2600.672	2939.906	3322.627	3594.023	4152.744
4	1048.160	1201.469	1318.973	1478.318	1679.729	1936.400	2175.723	2349.599	2603.921
5	1097.446	1306.039	1406.536	1602.751	1827.244	2093.102	2353.768	2504.420	2775.864
6	165.912	274.198	317.030	398.752	502.511	629.190	733.204	817.589	990.081
7+	30.193	52.513	65.547	98.692	148.502	226.031	329.128	404.356	567.316

PERCENTILES OF FINAL PERIOD NUMBERS AT AGE VECTOR (000s FISH)

AGE	1%	5%	10%	25%	50%	75%	90%	95%	99%
1	11497.698	14643.056	16678.635	20668.429	26171.962	33162.434	40966.205	46711.362	58962.394
2	8776.939	11165.190	12676.841	15687.939	19928.745	25264.064	31302.869	35619.292	45109.572
3	5705.289	7295.737	8264.845	10260.588	12997.438	16486.439	20407.946	23150.823	29488.536
4	2521.487	3207.536	3654.785	4521.093	5733.063	7271.735	8997.048	10272.882	13110.559
5	1072.631	1376.135	1572.997	1923.042	2542.057	3263.886	4051.942	4583.281	5881.988
6	1752.677	2057.228	2224.583	2578.712	3057.388	3596.460	4093.617	4409.705	5204.847
7+	643.452	700.893	725.240	779.402	835.579	897.548	959.988	994.699	1090.174

ANNUAL PROBABILITY FULLY-RECRUITED F EXCEEDS THRESHOLD: 0.320

YEAR	Pr(F > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	1.000
2006	1.000
2007	1.000
2008	1.000
2009	0.000

AGEPRO VERSION 3.02

PROJECTION RUN:  
CCGOM Yellowtail GARM2 Projected A13 Catches 2005-2009

INPUT FILE:  
C:\GARM2\AGEBASED\_STOCKS\CCGOMYT\CCGOMYT\_GARM2.in

OUTPUT FILE:  
C:\GARM2\AGEBASED\_STOCKS\CCGOMYT\CCGOMYT\_GARM2.OUT

RECRUITMENT MODEL: 14  
NUMBER OF BOOTSTRAP REALIZATIONS: 1000  
NUMBER OF SIMULATIONS PER BOOTSTRAP REALIZATION: 100  
TOTAL NUMBER OF SIMULATIONS: 100000  
NUMBER OF FEASIBLE SIMULATIONS: 100000  
PROPORTION OF SIMULATIONS THAT ARE FEASIBLE: 1.00000000000000

F-BASED PROJECTIONS  
TIME-VARYING F

YEAR	F
2005	0.750
2006	0.260
2007	0.260
2008	0.260
2009	0.090

SPAWNING STOCK BIOMASS (THOUSAND MT)

YEAR	AVG SSB (000 MT)	STD
2005	1.363	0.329
2006	2.095	0.563
2007	3.624	0.557
2008	4.904	0.867
2009	6.251	1.159

PERCENTILES OF SPAWNING STOCK BIOMASS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	0.713	0.884	0.969	1.119	1.329	1.558	1.791	1.979	2.265
2006	1.184	1.349	1.485	1.712	1.996	2.401	2.812	3.087	3.624
2007	2.728	2.893	3.024	3.240	3.529	3.927	4.328	4.600	5.210
2008	3.306	3.658	3.895	4.339	4.849	5.327	5.863	6.387	7.905
2009	4.003	4.579	4.918	5.493	6.153	6.832	7.576	8.501	9.880

ANNUAL PROBABILITY THAT SSB EXCEEDS THRESHOLD: 12.600 THOUSAND MT

YEAR	Pr(SSB > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	0.000
2006	0.000
2007	0.000
2008	0.000
2009	0.000

Pr(SSB > Threshold Value) AT LEAST ONCE:= 0.000

MEAN BIOMASS (THOUSAND MT) FOR AGES: 1 TO 5

YEAR	AVG MEAN B (000 MT)	STD
2005	3.469	0.867
2006	5.046	0.692
2007	6.587	1.200
2008	7.813	1.457
2009	9.235	1.671

PERCENTILES OF MEAN STOCK BIOMASS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	2.047	2.316	2.511	2.875	3.316	3.962	4.566	5.002	5.801
2006	3.873	4.126	4.285	4.566	4.937	5.435	5.918	6.262	7.005
2007	4.371	4.851	5.184	5.800	6.527	7.176	7.866	8.564	10.878
2008	4.982	5.712	6.132	6.858	7.692	8.547	9.509	10.596	12.379
2009	5.967	6.818	7.291	8.122	9.083	10.111	11.319	12.445	14.176

ANNUAL PROBABILITY THAT MEAN BIOMASS EXCEEDS THRESHOLD: 17.800 THOUSAND MT

YEAR	Pr(MEAN B > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	0.000
2006	0.000
2007	0.000
2008	0.000
2009	0.000

Pr(MEAN B > Threshold Value) AT LEAST ONCE:= 0.000

F WEIGHTED BY MEAN BIOMASS FOR AGES:			1 TO	5
YEAR	AVG F_WT_B	STD		
2005	0.367	0.053		
2006	0.133	0.016		
2007	0.169	0.019		
2008	0.183	0.019		
2009	0.067	0.006		

PERCENTILES OF F WEIGHTED BY MEAN BIOMASS FOR AGES:											1 TO	5
YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%			
2005	0.249	0.281	0.299	0.330	0.364	0.403	0.437	0.457	0.487			
2006	0.100	0.108	0.113	0.122	0.132	0.143	0.154	0.160	0.171			
2007	0.122	0.141	0.148	0.157	0.168	0.181	0.195	0.203	0.215			
2008	0.134	0.152	0.160	0.171	0.182	0.196	0.208	0.215	0.226			
2009	0.050	0.057	0.060	0.063	0.067	0.071	0.075	0.077	0.080			

ANNUAL PROBABILITY THAT F WEIGHTED BY MEAN BIOMASS EXCEEDS THRESHOLD: 0.130

YEAR	Pr(F_WT_B > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	1.000
2006	0.558
2007	0.975
2008	0.994
2009	0.000

TOTAL STOCK BIOMASS (THOUSAND MT)

YEAR	AVG TOTAL B (000 MT)	STD
2005	4.561	1.090
2006	5.943	0.855
2007	7.876	1.387
2008	9.406	1.728
2009	10.523	1.897

PERCENTILES OF TOTAL STOCK BIOMASS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	2.710	3.088	3.334	3.792	4.405	5.200	5.948	6.479	7.401
2006	4.506	4.809	5.005	5.350	5.806	6.422	7.018	7.439	8.355
2007	5.309	5.874	6.255	6.970	7.798	8.560	9.385	10.192	12.763
2008	6.043	6.914	7.412	8.272	9.259	10.280	11.433	12.724	14.777
2009	6.808	7.775	8.317	9.260	10.348	11.517	12.892	14.169	16.104

ANNUAL PROBABILITY THAT TOTAL STOCK BIOMASS EXCEEDS THRESHOLD: 17.800 THOUSAND MT

YEAR	Pr(B > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	0.000
2006	0.000
2007	0.000
2008	0.001
2009	0.002

Pr(B > Threshold Value) AT LEAST ONCE:= 0.002

RECRUITMENT UNITS ARE: 1000.000000000000 FISH

YEAR	AVG RECRUITMENT	STD
2005	9370.193	4144.223
2006	9365.249	4136.176
2007	9332.014	4151.344
2008	9366.318	4143.363
2009	9365.400	4121.214

PERCENTILES OF RECRUITMENT UNITS ARE: 1000.0000000000 FISH									
YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	2290.135	3703.094	3974.706	6324.835	9632.694	11409.586	13110.973	14319.097	25963.965
2006	2292.231	3702.629	3982.664	6324.763	9631.978	11398.854	13111.977	14464.349	25834.164
2007	2295.313	3588.490	3965.700	6313.704	9630.795	11389.166	13102.832	14319.885	25902.718
2008	2271.297	3719.226	3978.480	6320.889	9632.618	11391.792	13101.719	14248.835	25971.704
2009	2322.105	3720.431	3981.629	6330.407	9632.775	11409.393	13111.415	14094.080	25919.435

LANDINGS FOR F-BASED PROJECTIONS

YEAR	AVG LANDINGS (000 MT)	STD
2005	1.255	0.286
2006	0.680	0.171
2007	1.101	0.151
2008	1.420	0.262
2009	0.617	0.115

PERCENTILES OF LANDINGS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	0.724	0.845	0.901	1.044	1.234	1.432	1.631	1.773	1.985
2006	0.408	0.456	0.497	0.564	0.650	0.775	0.896	0.976	1.159
2007	0.841	0.900	0.934	0.997	1.078	1.183	1.291	1.366	1.530
2008	0.936	1.041	1.113	1.249	1.406	1.549	1.702	1.856	2.349
2009	0.393	0.450	0.484	0.541	0.608	0.675	0.749	0.838	0.981

PERCENTILES OF INITIAL PERIOD NUMBERS AT AGE VECTOR (000s FISH)

AGE	1%	5%	10%	25%	50%	75%	90%	95%	99%
1	9699.738	9722.828	9736.899	9766.843	9799.005	9839.607	9884.852	9913.298	9963.787
2	1738.605	2378.140	2796.611	3725.284	5095.667	6835.555	8752.251	10267.222	13758.714
3	1292.440	1582.987	1762.181	2151.918	2662.882	3224.537	3913.124	4378.526	5131.055
4	217.799	339.627	415.256	578.986	758.578	990.326	1254.850	1424.451	1731.600
5+	167.944	263.200	322.500	451.146	592.518	775.185	983.882	1117.761	1360.311

PERCENTILES OF FINAL PERIOD NUMBERS AT AGE VECTOR (000s FISH)

AGE	1%	5%	10%	25%	50%	75%	90%	95%	99%
1	2271.297	3719.226	3978.480	6320.889	9632.618	11391.792	13101.719	14248.835	25971.704
2	1874.364	2930.378	3238.409	5155.801	7864.553	9300.448	10699.836	11693.687	21152.284
3	1451.106	2343.963	2521.240	4003.915	6097.560	7216.087	8300.586	9156.710	16354.413
4	915.222	1479.891	1588.437	2527.635	3849.576	4559.687	5239.623	5722.433	10376.147
5+	3102.162	3227.541	3341.698	3519.594	3761.552	4110.919	4447.277	4680.018	5231.796

ANNUAL PROBABILITY FULLY-RECRUITED F EXCEEDS THRESHOLD: 0.170

YEAR	Pr(F > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	1.000
2006	1.000
2007	1.000
2008	1.000
2009	0.000

AGEPRO VERSION 3.02

PROJECTION RUN:  
American Plaice GARM2 Projected A13 Catches 2005-2009

INPUT FILE:  
C:\Data\GARM2\AGEBASED\_STOCKS\AMPL\AMPL\_GARM2.in

OUTPUT FILE:  
C:\DATA\GARM2\AGEBASED\_STOCKS\AMPL\AMPL\_GARM2.OUT

RECRUITMENT MODEL: 14  
NUMBER OF BOOTSTRAP REALIZATIONS: 1000  
NUMBER OF SIMULATIONS PER BOOTSTRAP REALIZATION: 100  
TOTAL NUMBER OF SIMULATIONS: 100000  
NUMBER OF FEASIBLE SIMULATIONS: 100000  
PROPORTION OF SIMULATIONS THAT ARE FEASIBLE: 1.000000000000000

F-BASED PROJECTIONS  
TIME-VARYING F

YEAR	F
2005	0.150
2006	0.230
2007	0.230
2008	0.230
2009	0.137

SPAWNING STOCK BIOMASS (THOUSAND MT)

YEAR	AVG SSB (000 MT)	STD
2005	15.910	1.342
2006	17.649	1.441
2007	20.546	2.318
2008	26.849	7.197
2009	30.532	11.096

PERCENTILES OF SPAWNING STOCK BIOMASS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	13.024	13.765	14.170	14.980	15.836	16.773	17.642	18.239	19.421
2006	14.602	15.323	15.878	16.659	17.555	18.575	19.547	20.154	21.151
2007	16.195	17.308	17.853	18.839	20.304	21.923	23.720	24.741	27.281
2008	17.011	18.786	19.886	22.041	25.136	30.144	35.499	39.502	54.597
2009	17.106	19.133	20.544	23.168	27.845	34.666	43.542	49.585	75.719

ANNUAL PROBABILITY THAT SSB EXCEEDS THRESHOLD: 28.600 THOUSAND MT

YEAR	Pr(SSB > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	0.000
2006	0.000
2007	0.001
2008	0.307
2009	0.465

Pr(SSB > Threshold Value) AT LEAST ONCE:= 0.468

MEAN BIOMASS (THOUSAND MT) FOR AGES: 1 TO 9

YEAR	AVG MEAN B (000 MT)	STD
2005	18.912	1.752
2006	20.764	1.991
2007	25.629	4.504
2008	31.438	10.666
2009	32.400	11.083

PERCENTILES OF MEAN STOCK BIOMASS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	15.553	16.317	16.753	17.634	18.811	19.964	21.141	21.903	23.693
2006	16.921	17.910	18.395	19.298	20.635	21.925	23.391	24.266	26.112
2007	18.331	19.857	20.810	22.471	24.867	28.037	31.184	33.687	39.991
2008	18.438	20.344	21.751	24.335	28.858	35.614	43.807	49.953	73.630
2009	18.643	20.908	22.336	25.103	29.698	36.495	45.469	51.481	78.175

ANNUAL PROBABILITY THAT MEAN BIOMASS EXCEEDS THRESHOLD: 0.000 THOUSAND MT

YEAR	Pr(MEAN B > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	1.000
2006	1.000
2007	1.000
2008	1.000
2009	1.000

Pr(MEAN B > Threshold Value) AT LEAST ONCE:= 1.000

F WEIGHTED BY MEAN BIOMASS FOR AGES:			1 TO	9
YEAR	AVG F_WT_B	STD		
2005	0.107	0.006		
2006	0.165	0.010		
2007	0.149	0.017		
2008	0.160	0.020		
2009	0.112	0.005		

PERCENTILES OF F WEIGHTED BY MEAN BIOMASS FOR AGES:											1 TO	9
YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%			
2005	0.088	0.096	0.100	0.104	0.108	0.111	0.114	0.116	0.118			
2006	0.137	0.148	0.152	0.159	0.166	0.172	0.177	0.180	0.184			
2007	0.101	0.119	0.127	0.139	0.151	0.162	0.170	0.174	0.179			
2008	0.109	0.123	0.132	0.146	0.162	0.175	0.185	0.189	0.195			
2009	0.099	0.103	0.105	0.109	0.113	0.116	0.118	0.119	0.122			

ANNUAL PROBABILITY THAT F WEIGHTED BY MEAN BIOMASS EXCEEDS THRESHOLD: 0.000

YEAR	Pr(F_WT_B > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	1.000
2006	1.000
2007	1.000
2008	1.000
2009	1.000

TOTAL STOCK BIOMASS (THOUSAND MT)		
YEAR	AVG TOTAL B (000 MT)	STD
2005	21.968	2.009
2006	24.792	2.315
2007	30.350	5.102
2008	37.354	12.273
2009	37.734	12.954

PERCENTILES OF TOTAL STOCK BIOMASS (000 MT)										
YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%	
2005	18.111	18.954	19.476	20.507	21.862	23.165	24.507	25.412	27.386	
2006	20.288	21.449	22.018	23.083	24.637	26.173	27.853	28.881	30.955	
2007	21.968	23.764	24.829	26.767	29.530	33.089	36.671	39.553	46.382	
2008	22.209	24.479	26.141	29.167	34.397	42.232	51.633	58.742	85.787	
2009	21.704	24.316	25.983	29.198	34.570	42.519	53.011	60.044	91.311	

ANNUAL PROBABILITY THAT TOTAL STOCK BIOMASS EXCEEDS THRESHOLD: 0.000 THOUSAND MT

YEAR	Pr(B > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	1.000
2006	1.000
2007	1.000
2008	1.000
2009	1.000

Pr(B > Threshold Value) AT LEAST ONCE:= 1.000

RECRUITMENT UNITS ARE:			1000000.00000000	FISH
YEAR	AVG			
CLASS	RECRUITMENT	STD		
2005	31.382	12.659		
2006	31.358	12.652		
2007	31.248	12.689		
2008	31.357	12.642		
2009	31.387	12.634		

PERCENTILES OF RECRUITMENT UNITS ARE: 1000000.0000000 FISH									
YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	6.312	13.409	14.216	22.334	31.840	39.790	49.080	54.427	65.286
2006	6.325	13.409	14.231	22.333	31.761	39.759	49.111	54.446	65.132
2007	6.345	13.337	14.199	22.232	31.630	39.731	48.832	54.427	65.214
2008	6.188	13.419	14.223	22.298	31.831	39.739	48.798	54.417	65.296
2009	6.521	13.420	14.229	22.385	31.849	39.790	49.094	54.397	65.234

LANDINGS FOR F-BASED PROJECTIONS

YEAR	AVG LANDINGS (000 MT)	STD
2005	2.194	0.188
2006	3.684	0.302
2007	4.128	0.413
2008	5.368	1.220
2009	3.970	1.465

PERCENTILES OF LANDINGS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	1.781	1.899	1.949	2.066	2.182	2.314	2.442	2.513	2.659
2006	3.059	3.204	3.309	3.475	3.666	3.883	4.088	4.195	4.423
2007	3.320	3.525	3.641	3.818	4.104	4.376	4.683	4.878	5.232
2008	3.557	3.909	4.134	4.529	5.121	5.980	6.809	7.487	9.615
2009	2.203	2.460	2.647	2.997	3.614	4.530	5.681	6.486	9.824

PERCENTILES OF INITIAL PERIOD NUMBERS AT AGE VECTOR (000s FISH)

AGE	1%	5%	10%	25%	50%	75%	90%	95%	99%
1	10993.928	18069.491	24133.459	39461.440	70785.016	123537.227	198520.791	248664.234	443373.744
2	18614.768	23673.511	27423.943	35164.966	45968.229	58797.105	72981.946	84079.388	105345.241
3	8753.625	10572.113	11570.110	13308.067	15792.996	18681.910	21594.279	23169.021	27097.560
4	11756.711	13211.741	14037.249	15874.156	17871.115	20351.958	22591.401	24204.715	27430.682
5	3379.261	3792.063	3998.492	4477.789	4969.103	5518.184	6086.222	6462.000	7159.433
6	3539.054	4038.979	4276.514	4744.427	5287.208	5895.035	6509.611	6908.813	7484.263
7	4729.297	5299.675	5589.706	6202.368	6887.505	7675.327	8388.247	8702.913	9514.809
8	2027.008	2358.578	2565.680	2933.959	3354.356	3812.629	4264.789	4671.534	5278.618
9+	3165.802	3415.405	3550.157	3765.721	4034.462	4335.789	4619.818	4751.271	5069.184

PERCENTILES OF FINAL PERIOD NUMBERS AT AGE VECTOR (000s FISH)

AGE	1%	5%	10%	25%	50%	75%	90%	95%	99%
1	6188.300	13419.353	14223.029	22297.868	31831.181	39738.540	48798.329	54417.274	65295.661
2	5195.210	10919.054	11625.063	18201.979	25896.451	32528.902	39980.440	44560.847	53392.485
3	4237.039	8982.016	9532.700	14960.210	21275.094	26632.945	32897.184	36471.065	43629.377
4	3443.210	7315.214	7755.335	12184.121	17369.743	21707.219	26775.149	29691.882	35616.350
5	4555.718	7487.724	10000.541	16352.225	29332.242	51191.963	82264.020	103042.707	183727.390
6	6296.005	8007.005	9275.499	11893.717	15547.665	19886.729	24684.416	28437.863	35630.534
7	2357.774	2847.581	3116.389	3584.505	4253.816	5031.940	5816.382	6240.536	7298.681
8	2591.416	2912.133	3094.092	3498.983	3939.153	4485.981	4979.599	5335.206	6046.274
9+	3831.008	4154.714	4286.505	4528.032	4808.089	5109.290	5408.657	5552.504	5834.918

ANNUAL PROBABILITY FULLY-RECRUITED F EXCEEDS THRESHOLD: 0.166

YEAR	Pr(F > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	0.000
2006	1.000
2007	1.000
2008	1.000
2009	0.000

AGEPRO VERSION 3.02

PROJECTION RUN:  
WITCH GARM2 Projected A13 Catches 2005-2009

INPUT FILE:  
C:\Data\GARM2\AGEBASED\_STOCKS\WITCH\WITCH\_GARM2.in

OUTPUT FILE:  
C:\DATA\GARM2\AGEBASED\_STOCKS\WITCH\WITCH\_GARM2.OUT

RECRUITMENT MODEL: 14  
NUMBER OF BOOTSTRAP REALIZATIONS: 1000  
NUMBER OF SIMULATIONS PER BOOTSTRAP REALIZATION: 100  
TOTAL NUMBER OF SIMULATIONS: 100000  
NUMBER OF FEASIBLE SIMULATIONS: 100000  
PROPORTION OF SIMULATIONS THAT ARE FEASIBLE: 1.00000000000000

F-BASED PROJECTIONS  
TIME-VARYING F

YEAR	F
2005	0.200
2006	0.230
2007	0.230
2008	0.230
2009	0.230

SPAWNING STOCK BIOMASS (THOUSAND MT)

YEAR	AVG SSB (000 MT)	STD
2005	26.359	4.078
2006	26.180	4.032
2007	23.820	3.619
2008	20.705	3.123
2009	17.452	2.593

PERCENTILES OF SPAWNING STOCK BIOMASS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	18.236	19.860	21.361	23.542	26.135	28.852	31.806	33.542	36.741
2006	17.949	19.824	21.183	23.350	26.074	28.613	31.575	33.218	36.311
2007	16.417	18.153	19.328	21.264	23.721	26.020	28.748	30.213	33.471
2008	14.379	15.835	16.825	18.506	20.569	22.648	24.865	26.114	29.069
2009	12.159	13.442	14.211	15.632	17.329	19.059	20.872	21.901	24.465

ANNUAL PROBABILITY THAT SSB EXCEEDS THRESHOLD: 25.248 THOUSAND MT

YEAR	Pr(SSB > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	0.590
2006	0.566
2007	0.327
2008	0.086
2009	0.006

Pr(SSB > Threshold Value) AT LEAST ONCE:= 0.603

MEAN BIOMASS (THOUSAND MT) FOR AGES: 1 TO 9

YEAR	AVG MEAN B (000 MT)	STD
2005	29.993	4.555
2006	27.321	4.096
2007	24.032	3.502
2008	20.861	2.953
2009	17.909	2.447

PERCENTILES OF MEAN STOCK BIOMASS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	20.670	22.783	24.270	26.803	29.834	32.818	36.219	37.951	41.520
2006	19.052	20.898	22.236	24.383	27.170	29.868	32.831	34.499	38.258
2007	16.878	18.585	19.682	21.546	23.896	26.194	28.602	30.095	33.584
2008	14.854	16.281	17.156	18.793	20.726	22.703	24.745	25.945	28.757
2009	12.929	14.122	14.851	16.206	17.786	19.446	21.088	22.135	24.462

ANNUAL PROBABILITY THAT MEAN BIOMASS EXCEEDS THRESHOLD: 25.000 THOUSAND MT

YEAR	Pr(MEAN B > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	0.871
2006	0.704
2007	0.374
2008	0.087
2009	0.007

Pr(MEAN B > Threshold Value) AT LEAST ONCE:= 0.871

F WEIGHTED BY MEAN BIOMASS FOR AGES:			1 TO	9
YEAR	AVG F_WT_B	STD		
2005	0.144	0.008		
2006	0.189	0.007		
2007	0.199	0.006		
2008	0.200	0.007		
2009	0.193	0.008		

PERCENTILES OF F WEIGHTED BY MEAN BIOMASS FOR AGES:											1 TO	9
YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%			
2005	0.126	0.131	0.135	0.139	0.144	0.150	0.154	0.156	0.160			
2006	0.170	0.176	0.179	0.184	0.190	0.194	0.198	0.200	0.205			
2007	0.181	0.188	0.191	0.195	0.200	0.204	0.207	0.209	0.212			
2008	0.181	0.187	0.190	0.195	0.200	0.205	0.208	0.210	0.213			
2009	0.173	0.179	0.183	0.188	0.193	0.198	0.202	0.204	0.207			

ANNUAL PROBABILITY THAT F WEIGHTED BY MEAN BIOMASS EXCEEDS THRESHOLD: 0.090

YEAR	Pr(F_WT_B > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	1.000
2006	1.000
2007	1.000
2008	1.000
2009	1.000

TOTAL STOCK BIOMASS (THOUSAND MT)		
YEAR	AVG TOTAL B (000 MT)	STD
2005	34.629	5.254
2006	32.225	4.840
2007	28.486	4.166
2008	24.730	3.519
2009	21.163	2.911

PERCENTILES OF TOTAL STOCK BIOMASS (000 MT)										
YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%	
2005	23.891	26.323	28.024	30.938	34.402	37.850	41.697	43.764	47.787	
2006	22.472	24.640	26.252	28.744	32.045	35.206	38.747	40.737	45.111	
2007	19.977	21.993	23.308	25.526	28.317	31.046	33.941	35.675	39.819	
2008	17.579	19.267	20.310	22.260	24.568	26.922	29.366	30.799	34.151	
2009	15.247	16.659	17.524	19.138	21.021	22.988	24.948	26.192	28.984	

ANNUAL PROBABILITY THAT TOTAL STOCK BIOMASS EXCEEDS THRESHOLD: 19.900 THOUSAND MT

YEAR	Pr(B > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	0.999
2006	0.999
2007	0.991
2008	0.923
2009	0.656

Pr(B > Threshold Value) AT LEAST ONCE:= 0.999

RECRUITMENT UNITS ARE:			1000.00000000000	FISH
YEAR	AVG			
CLASS	RECRUITMENT	STD		
2005	6577.068	2803.636		
2006	6563.466	2804.099		
2007	6548.704	2800.312		
2008	6566.209	2794.427		
2009	6573.501	2800.979		

PERCENTILES OF RECRUITMENT UNITS ARE: 1000.0000000000 FISH									
YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	3918.746	3986.132	4067.591	4319.633	4779.533	8833.373	11265.999	12079.919	12728.573
2006	3918.846	3986.109	4070.800	4319.604	4736.864	8803.570	11268.340	12088.010	12721.343
2007	3918.993	3980.666	4063.960	4315.226	4729.432	8776.665	11247.016	12079.963	12725.162
2008	3917.848	3986.901	4069.113	4318.070	4774.875	8783.958	11244.421	12076.005	12729.004
2009	3920.271	3986.958	4070.383	4321.839	4784.498	8832.837	11267.029	12067.385	12726.093

LANDINGS FOR F-BASED PROJECTIONS

YEAR	AVG LANDINGS (000 MT)	STD
2005	4.695	0.742
2006	5.560	0.879
2007	5.098	0.791
2008	4.369	0.671
2009	3.581	0.540

PERCENTILES OF LANDINGS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2005	3.224	3.527	3.781	4.171	4.650	5.148	5.686	6.036	6.637
2006	3.783	4.147	4.467	4.934	5.511	6.080	6.727	7.112	7.743
2007	3.479	3.869	4.126	4.549	5.075	5.585	6.164	6.491	7.190
2008	3.016	3.331	3.533	3.897	4.331	4.782	5.272	5.512	6.166
2009	2.476	2.747	2.907	3.204	3.558	3.918	4.290	4.504	5.062

PERCENTILES OF INITIAL PERIOD NUMBERS AT AGE VECTOR (000s FISH)

AGE	1%	5%	10%	25%	50%	75%	90%	95%	99%
1	472.095	1002.224	1438.151	2365.035	4227.515	7074.469	10150.356	13124.449	19111.636
2	1157.576	1607.398	2117.958	2925.996	4091.113	5779.111	7386.639	8524.581	10498.429
3	3414.977	4458.373	5366.477	7094.676	9524.730	12367.719	15037.695	16719.549	24083.000
4	5794.975	7644.837	8833.889	11185.392	14516.548	18646.184	22562.810	25557.100	31753.540
5	8511.849	11424.454	12880.734	16169.009	20477.874	25262.582	30675.493	33737.623	40379.522
6	8343.217	10037.987	11556.422	14058.728	17462.667	21424.272	25348.734	27699.048	31554.338
7	4200.127	5708.963	6236.524	7345.176	8905.103	10641.270	12415.963	13488.936	15106.109
8	609.304	1108.935	1332.721	1742.960	2302.559	2919.917	3528.198	3843.146	4604.329
9+	1724.389	2083.293	2305.046	2640.333	3047.130	3506.162	3982.848	4283.278	4774.669

PERCENTILES OF FINAL PERIOD NUMBERS AT AGE VECTOR (000s FISH)

AGE	1%	5%	10%	25%	50%	75%	90%	95%	99%
1	3917.848	3986.901	4069.113	4318.070	4774.875	8783.958	11244.421	12076.005	12729.004
2	3362.265	3415.176	3486.638	3702.209	4057.574	7529.860	9649.276	10363.895	10917.437
3	2829.322	2877.885	2939.030	3118.661	3419.914	6355.988	8135.499	8727.283	9184.536
4	2324.074	2364.038	2412.349	2561.826	2834.578	5238.771	6681.478	7164.186	7548.881
5	225.218	478.122	686.086	1128.267	2016.785	3374.956	4842.343	6261.168	9117.424
6	484.043	672.137	885.629	1223.512	1710.708	2416.547	3088.739	3564.572	4389.940
7	1164.103	1519.778	1829.333	2418.445	3246.805	4215.928	5126.074	5699.387	8209.452
8	1649.135	2175.570	2513.950	3183.142	4131.123	5306.336	6420.930	7273.046	9036.430
9+	7943.540	9024.596	9679.303	10929.172	12345.674	13942.888	15564.128	16543.738	19125.642

ANNUAL PROBABILITY FULLY-RECRUITED F EXCEEDS THRESHOLD: 0.230

YEAR	Pr(F > Threshold Value) FOR FEASIBLE SIMULATIONS
2005	0.000
2006	1.000
2007	1.000
2008	1.000
2009	1.000

AGEPRO VERSION 3.02

PROJECTION RUN:  
REDFISH GARM2 Projected A13 Catches 2005-2009

INPUT FILE:  
C:\GARM2\AGEBASED\_STOCKS\REDFISH\RED\_GARM2.in

OUTPUT FILE:  
C:\GARM2\AGEBASED\_STOCKS\REDFISH\RED\_GARM2.OUT

RECRUITMENT MODEL: 14  
NUMBER OF BOOTSTRAP REALIZATIONS: 1000  
NUMBER OF SIMULATIONS PER BOOTSTRAP REALIZATION: 100  
TOTAL NUMBER OF SIMULATIONS: 100000  
NUMBER OF FEASIBLE SIMULATIONS: 100000  
PROPORTION OF SIMULATIONS THAT ARE FEASIBLE: 1.00000000000000

F-BASED PROJECTIONS  
TIME-VARYING F

YEAR F  
2004 0.002  
2005 0.002  
2006 0.010  
2007 0.010  
2008 0.010  
2009 0.010

SPAWNING STOCK BIOMASS (THOUSAND MT)

YEAR AVG SSB (000 MT) STD  
2004 175.903 4.225  
2005 192.889 5.246  
2006 203.124 6.086  
2007 212.270 6.565  
2008 220.357 7.032  
2009 225.112 7.690

PERCENTILES OF SPAWNING STOCK BIOMASS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2004	166.084	169.020	170.299	172.963	176.061	178.776	181.022	183.099	185.716
2005	180.317	184.219	186.148	189.243	193.019	196.274	199.318	201.585	205.015
2006	188.374	193.282	195.512	198.887	203.160	207.047	210.886	213.582	217.514
2007	196.605	201.528	203.973	207.753	212.197	216.531	220.750	223.615	228.025
2008	203.823	208.730	211.574	215.577	220.255	224.959	229.387	232.399	237.214
2009	207.622	212.637	215.524	219.913	224.968	230.052	235.207	238.297	243.532

ANNUAL PROBABILITY THAT SSB EXCEEDS THRESHOLD: 236.700 THOUSAND MT

YEAR Pr(SSB > Threshold Value) FOR FEASIBLE SIMULATIONS  
2004 0.000  
2005 0.000  
2006 0.000  
2007 0.000  
2008 0.014  
2009 0.073

Pr(SSB > Threshold Value) AT LEAST ONCE:= 0.073

MEAN BIOMASS (THOUSAND MT) FOR AGES: 1 TO 26

YEAR AVG MEAN B (000 MT) STD  
2004 195.284 5.334  
2005 206.489 5.873  
2006 213.226 6.455  
2007 221.468 7.245  
2008 229.863 8.595  
2009 235.192 10.493

PERCENTILES OF MEAN STOCK BIOMASS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2004	182.502	186.449	188.638	191.605	195.255	198.760	202.078	204.484	207.868
2005	192.749	196.928	199.127	202.452	206.452	210.303	213.984	216.628	220.589

2006	198.102	202.615	205.133	208.869	213.142	217.445	221.549	224.262	228.532
2007	205.290	209.961	212.421	216.592	221.261	226.031	230.943	234.038	239.232
2008	211.668	216.724	219.452	224.095	229.339	234.986	240.887	244.873	253.373
2009	214.222	219.904	222.993	228.178	234.228	240.935	248.417	253.945	266.809

ANNUAL PROBABILITY THAT MEAN BIOMASS EXCEEDS THRESHOLD: 0.000 THOUSAND MT

YEAR	Pr(MEAN B > Threshold Value) FOR FEASIBLE SIMULATIONS
2004	1.000
2005	1.000
2006	1.000
2007	1.000
2008	1.000
2009	1.000

Pr(MEAN B > Threshold Value) AT LEAST ONCE:= 1.000

F WEIGHTED BY MEAN BIOMASS FOR AGES: 1 TO 26

YEAR	AVG F_WT_B	STD
2004	0.002	0.000
2005	0.002	0.000
2006	0.009	0.000
2007	0.009	0.000
2008	0.009	0.000
2009	0.009	0.000

PERCENTILES OF F WEIGHTED BY MEAN BIOMASS FOR AGES: 1 TO 26

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2004	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
2005	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
2006	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
2007	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.010	0.010
2008	0.009	0.009	0.009	0.009	0.009	0.010	0.010	0.010	0.010
2009	0.009	0.009	0.009	0.009	0.009	0.010	0.010	0.010	0.010

ANNUAL PROBABILITY THAT F WEIGHTED BY MEAN BIOMASS EXCEEDS THRESHOLD: 0.000

YEAR	Pr(F_WT_B > Threshold Value) FOR FEASIBLE SIMULATIONS
2004	1.000
2005	1.000
2006	1.000
2007	1.000
2008	1.000
2009	1.000

TOTAL STOCK BIOMASS (THOUSAND MT)

YEAR	AVG TOTAL B (000 MT)	STD
2004	200.410	5.473
2005	211.917	6.026
2006	219.591	6.645
2007	228.107	7.458
2008	236.761	8.842
2009	242.246	10.788

PERCENTILES OF TOTAL STOCK BIOMASS (000 MT)

YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2004	187.294	191.347	193.593	196.634	200.377	203.976	207.385	209.850	213.320
2005	197.817	202.106	204.363	207.775	211.878	215.831	219.607	222.321	226.386
2006	204.019	208.669	211.261	215.108	219.505	223.934	228.160	230.951	235.351
2007	211.452	216.260	218.793	223.089	227.900	232.804	237.862	241.044	246.374
2008	218.023	223.237	226.046	230.824	236.227	242.035	248.106	252.196	260.919
2009	220.667	226.513	229.697	235.033	241.262	248.154	255.851	261.520	274.710

ANNUAL PROBABILITY THAT TOTAL STOCK BIOMASS EXCEEDS THRESHOLD: 0.000 THOUSAND MT

YEAR	Pr(B > Threshold Value) FOR FEASIBLE SIMULATIONS
2004	1.000
2005	1.000
2006	1.000
2007	1.000
2008	1.000
2009	1.000

Pr(B > Threshold Value) AT LEAST ONCE:= 1.000

RECRUITMENT UNITS ARE: 1000.0000000000 FISH		
YEAR	AVG	
CLASS	RECRUITMENT	STD
2004	40159.635	48561.706
2005	40113.714	48547.828
2006	40127.446	48285.538
2007	40323.380	48786.608
2008	39902.006	48199.404
2009	40315.001	49070.859

PERCENTILES OF RECRUITMENT UNITS ARE: 1000.0000000000 FISH									
YEAR									
CLASS	1%	5%	10%	25%	50%	75%	90%	95%	99%
2004	1632.182	2087.261	2553.466	6465.137	29257.099	61803.420	77888.967	90604.445	286146.713
2005	1636.083	2092.062	2549.788	6385.048	29237.721	62355.475	77954.298	90798.210	286352.703
2006	1636.638	2071.964	2546.128	6410.227	29354.171	62631.577	77922.025	89955.966	285108.243
2007	1633.261	2082.651	2554.406	6666.673	29302.250	62170.840	78002.869	90932.410	287428.790
2008	1634.344	2081.651	2553.358	6532.035	29220.693	61108.360	77768.427	90117.233	286224.725
2009	1637.535	2080.504	2545.599	6426.834	29289.940	61792.384	78024.136	91275.198	288415.164

LANDINGS FOR F-BASED PROJECTIONS		
YEAR	AVG LANDINGS (000 MT)	
CLASS	AVG	STD
2004	0.400	0.009
2005	0.437	0.011
2006	1.945	0.055
2007	2.074	0.064
2008	2.168	0.070
2009	2.211	0.074

PERCENTILES OF LANDINGS (000 MT)									
YEAR	1%	5%	10%	25%	50%	75%	90%	95%	99%
2004	0.379	0.385	0.388	0.394	0.400	0.406	0.411	0.415	0.420
2005	0.412	0.420	0.423	0.430	0.438	0.445	0.451	0.456	0.462
2006	1.813	1.853	1.874	1.906	1.946	1.981	2.014	2.037	2.074
2007	1.920	1.970	1.994	2.030	2.075	2.116	2.157	2.184	2.228
2008	2.003	2.052	2.080	2.120	2.167	2.213	2.258	2.287	2.336
2009	2.040	2.089	2.118	2.161	2.210	2.259	2.308	2.338	2.389

PERCENTILES OF INITIAL PERIOD NUMBERS AT AGE VECTOR (000s FISH)									
AGE	1%	5%	10%	25%	50%	75%	90%	95%	99%
1	12980.400	18663.200	21701.100	25681.500	29889.000	34597.000	38643.000	40879.900	46319.700
2	11012.500	14992.700	17067.000	20861.200	24659.400	28313.200	31703.500	33915.600	37991.900
3	11843.800	14379.000	16732.300	19660.000	22770.500	26374.300	29338.500	30861.600	34220.900
4	14631.700	18363.300	20158.200	23132.300	26538.700	29624.000	32703.800	34627.200	37915.700
5	39321.100	47758.800	51266.700	58450.000	66253.200	75027.300	82757.900	86914.700	94299.900
6	76711.200	88108.700	93763.800	107388.600	120506.900	132828.100	144316.000	149223.000	160158.600
7	41239.800	50885.200	54643.800	61621.700	70042.000	77584.000	84239.800	89573.400	97410.100
8	17696.100	20383.900	21852.000	24527.600	27082.000	29770.300	32105.400	33636.000	36595.000
9	12784.700	14244.000	15217.900	16648.000	18045.400	19370.000	20766.100	21689.700	22928.300
10	22797.000	24359.600	25183.700	27037.800	29178.000	31094.300	33082.500	34043.000	35878.200
11	29175.600	31160.800	32789.200	34906.200	37176.100	39709.700	41823.500	43349.700	46085.300
12	148937.500	151393.600	152967.800	155734.200	159297.300	162082.000	164823.300	166757.300	170414.400
13	19296.400	20361.900	20843.600	21972.200	22991.500	24176.500	25053.900	25562.100	26542.500
14	3630.200	3939.500	4095.900	4415.900	4740.600	5059.900	5336.600	5489.900	5780.600
15	23274.400	24173.100	24849.400	25794.300	26980.400	28125.900	29204.300	29907.300	31110.600
16	7200.000	7925.400	8276.400	8969.300	9751.400	10518.000	11137.900	11616.700	12312.100
17	1428.200	1537.600	1589.100	1683.700	1793.300	1908.800	2011.100	2067.000	2171.200
18	1688.200	1821.400	1883.000	1980.900	2083.300	2173.800	2267.200	2330.400	2442.000
19	4025.200	4218.200	4335.600	4562.600	4809.900	5036.400	5239.800	5352.600	5539.900
20	5503.500	5798.000	6012.800	6298.400	6600.100	6913.500	7173.300	7299.500	7622.900
21	2002.300	2159.200	2247.800	2418.300	2587.700	2760.300	2921.500	3024.900	3156.900
22	5127.700	5290.600	5384.300	5554.600	5759.200	5966.000	6142.300	6278.800	6478.800
23	2091.400	2237.800	2305.400	2403.900	2533.000	2629.300	2724.500	2773.400	2899.300
24	473.200	516.300	536.400	574.900	613.000	654.300	683.800	705.200	741.200
25	333.000	363.600	378.900	405.400	435.300	464.700	488.800	502.800	522.000
26+	15582.300	15855.100	15972.900	16175.200	16385.600	16574.200	16753.400	16854.000	17053.300

PERCENTILES OF FINAL PERIOD NUMBERS AT AGE VECTOR (000s FISH)

AGE	1%	5%	10%	25%	50%	75%	90%	95%	99%
1	1634.344	2081.651	2553.358	6532.035	29220.693	61108.360	77768.427	90117.233	286224.725
2	1553.606	1981.079	2429.826	6341.536	27873.162	59138.732	74198.625	86497.584	273410.722
3	1480.861	1874.753	2303.786	5800.097	26560.221	56670.261	70505.354	81393.896	257971.447
4	1408.006	1800.420	2194.337	5494.947	25161.868	53662.878	67087.164	78140.585	246434.017
5	1335.423	1707.760	2089.201	5289.661	23937.643	50566.469	63727.381	74130.961	234120.201
6	10080.025	14493.045	16852.149	19943.158	23210.523	26866.555	30008.506	31745.587	35969.904
7	8508.026	11583.044	13185.605	16116.924	19051.333	21874.182	24493.457	26202.479	29351.742
8	9094.221	11040.866	12847.839	15095.863	17484.250	20251.416	22527.466	23696.974	26276.401
9	11166.502	14014.354	15384.171	17653.920	20253.589	22608.203	24958.620	26426.505	28936.195
10	29832.271	35233.815	38895.201	44345.052	50265.211	56921.977	62787.055	65940.751	71543.781
11	57939.670	66548.158	70819.433	81110.191	91018.392	100324.546	109001.312	112707.550	120967.166
12	31061.360	38326.168	41157.104	46412.781	52754.857	58435.408	63448.483	67465.691	73368.207
13	13317.553	15340.310	16445.158	18458.734	20381.099	22404.232	24161.558	25313.442	27540.296
14	9616.392	10714.048	11446.596	12522.288	13573.384	14569.721	15619.839	16314.552	17246.202
15	17147.441	18322.797	18942.668	20337.285	21947.100	23388.502	24883.985	25606.454	26986.854
16	21945.295	23438.522	24663.371	26255.736	27963.108	29868.831	31458.788	32606.765	34664.428
17	112027.766	113875.195	115059.276	117140.106	119820.198	121914.793	123976.743	125431.458	128182.255
18	14514.361	15315.808	15678.133	16527.043	17293.740	18185.073	18845.035	19227.293	19964.730
19	2730.563	2963.212	3080.853	3321.550	3565.783	3805.954	4014.082	4129.391	4348.050
20	17506.532	18182.515	18691.215	19401.949	20294.110	21155.731	21966.882	22495.664	23400.762
21	5415.694	5961.325	6225.340	6746.526	7334.805	7911.426	8377.702	8737.846	9260.912
22	1074.263	1156.552	1195.289	1266.445	1348.884	1435.761	1512.709	1554.755	1633.133
23	1269.830	1370.020	1416.354	1489.993	1567.016	1635.088	1705.342	1752.880	1836.823
24	3027.674	3172.844	3261.150	3431.895	3617.909	3788.278	3941.271	4026.117	4167.000
25	4139.621	4361.138	4522.706	4737.529	4964.461	5200.194	5395.611	5490.536	5733.791
26+	20338.940	20670.500	20782.199	20995.292	21278.487	21562.962	21796.137	21941.834	22199.005

ANNUAL PROBABILITY FULLY-RECRUITED F EXCEEDS THRESHOLD: 0.040

YEAR	Pr(F > Threshold Value) FOR FEASIBLE SIMULATIONS
2004	0.000
2005	0.000
2006	0.000
2007	0.000
2008	0.000
2009	0.000

**Table 2. Projected index stock sizes under rebuilding strategies**

<b>Amendment 13 Projected Biomass Indices</b>						
<b>Year</b>	<b>GOM Haddock</b>	<b>Pollock</b>	<b>Ocean Pout</b>	<b>Northern Window-pane</b>	<b>Southern Window-pane</b>	<b>White Hake &gt;60cm</b>
2004	5.79	1.99	1.78	0.78	0.19	3.01
2005	5.67	1.99	1.28	0.78	0.18	2.45
2006	5.56	1.99	1.28	0.78	0.18	2.00
2007	5.45	1.99	1.28	0.78	0.17	1.63
2008	5.35	1.99	1.28	0.78	0.16	1.33
2009	5.47	2.18	1.42	0.76	0.20	1.87
Average	5.55	2.02	1.38	0.77	0.18	2.05

**Table 3. Estimates of projected catches**

<b>Amendment 13 Projected Catches</b>						
<b>Year</b>	<b>GOM Haddock</b>	<b>Pollock</b>	<b>Ocean Pout</b>	<b>Northern Window-pane</b>	<b>Southern Window-pane</b>	<b>White Hake &gt;60cm</b>
2004	1.332	12.005	0.005	0.389	0.188	3.093
2005	1.305	12.005	0.038	0.389	0.180	2.521
2006	1.279	12.005	0.038	0.389	0.173	2.056
2007	1.254	12.005	0.038	0.389	0.166	1.676
2008	1.229	12.005	0.038	0.389	0.159	1.367
2009	1.187	11.043	0.014	0.434	0.098	0.428
Average	1.264	11.844	0.029	0.397	0.160	1.857