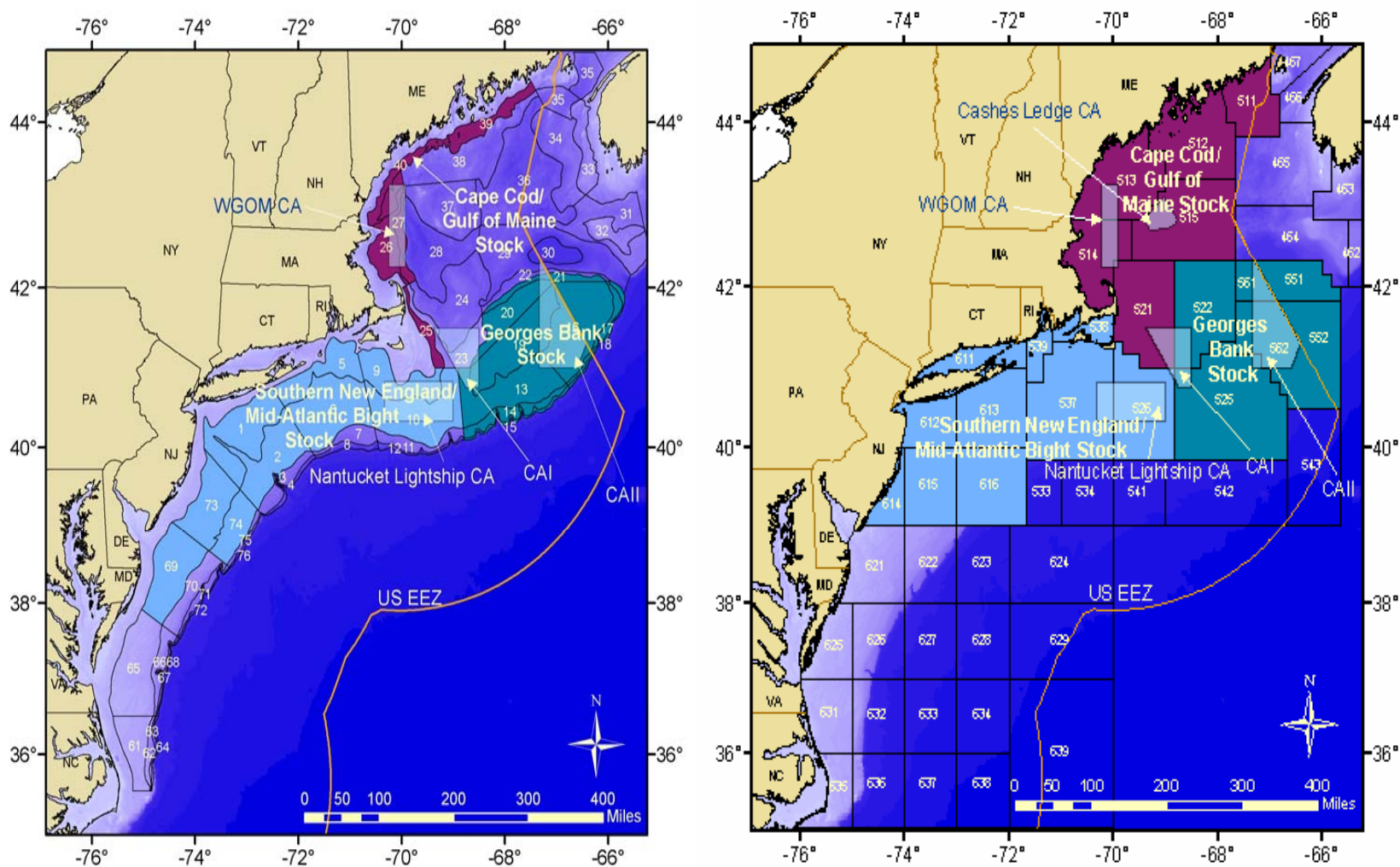
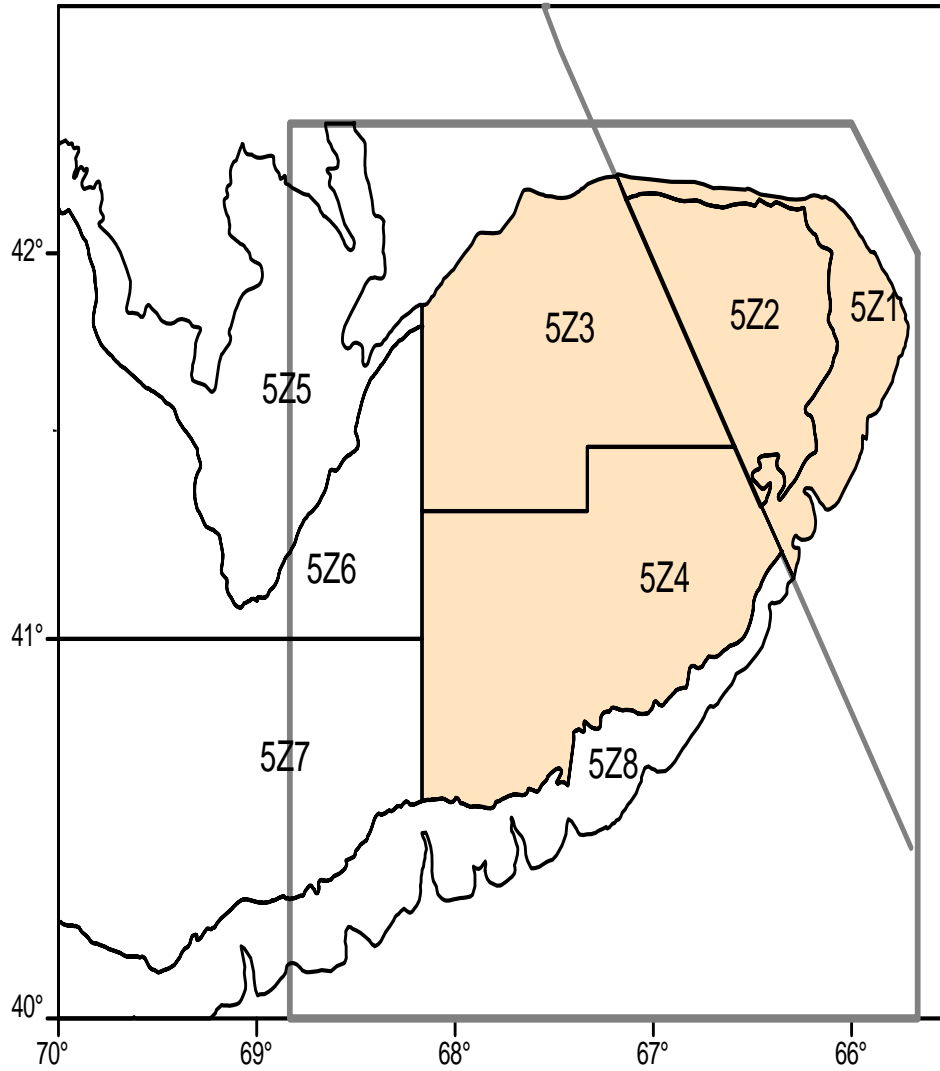


Appendix C. Georges Bank yellowtail flounder

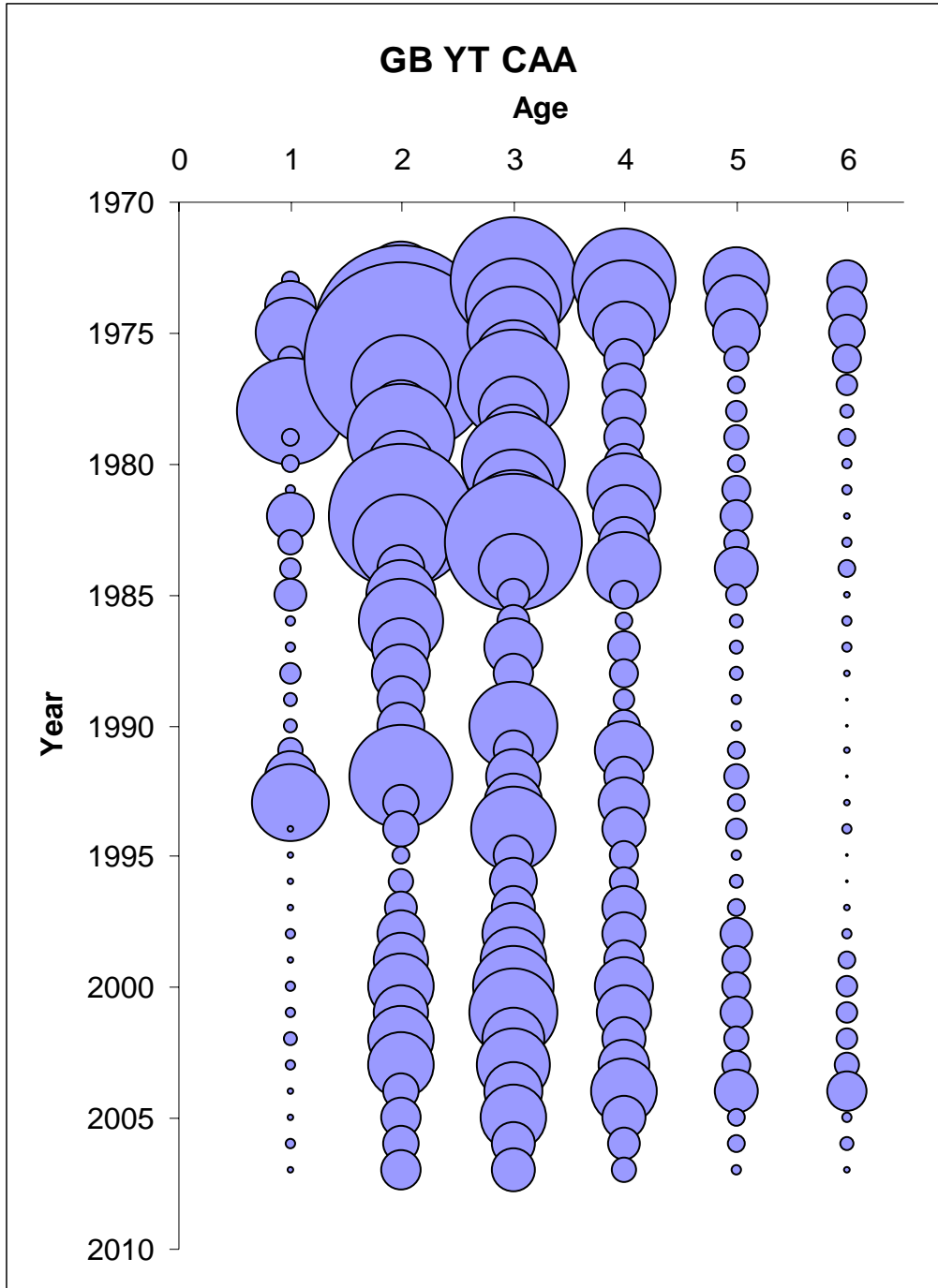
by Chris Legault, Larry Alade, Heath Stone, Stratis Gavaris, and Christa Waters



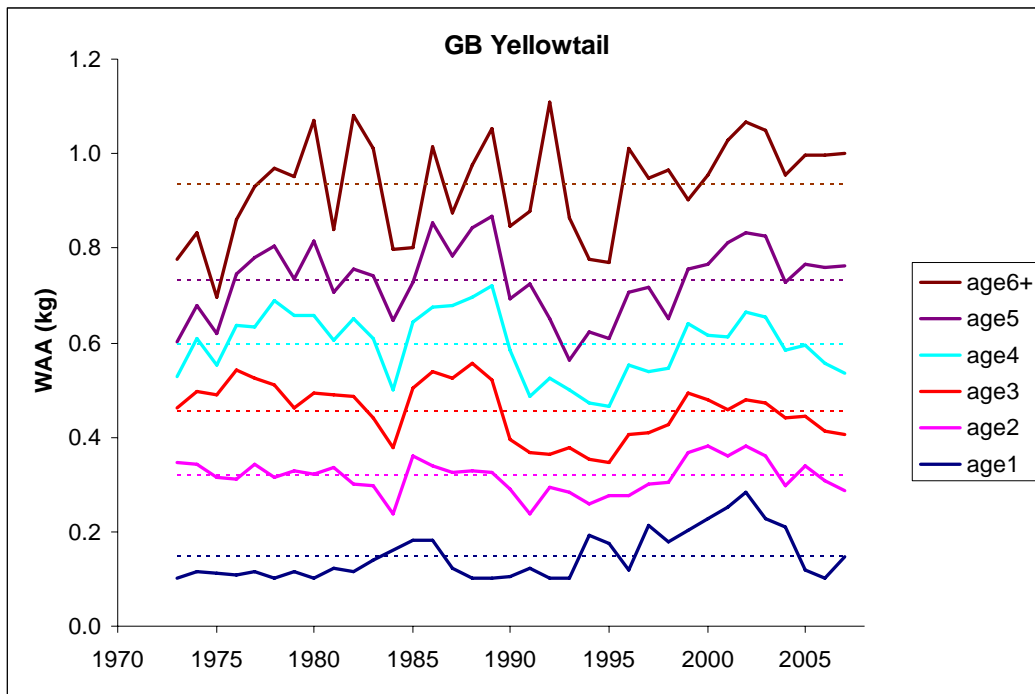
Appendix Figure C.1. Offshore Survey strata (13-21) used by NEFSC to estimate spring and fall survey indices [Left] for Georges Bank yellowtail flounder and commercial statistical areas [Right] for all three yellowtail flounder stocks.



Appendix Figure C.2 Canadian Department of Fisheries and Oceans (DFO) winter survey strata , 5Z1-5Z4 for Georges Bank yellowtail flounder.

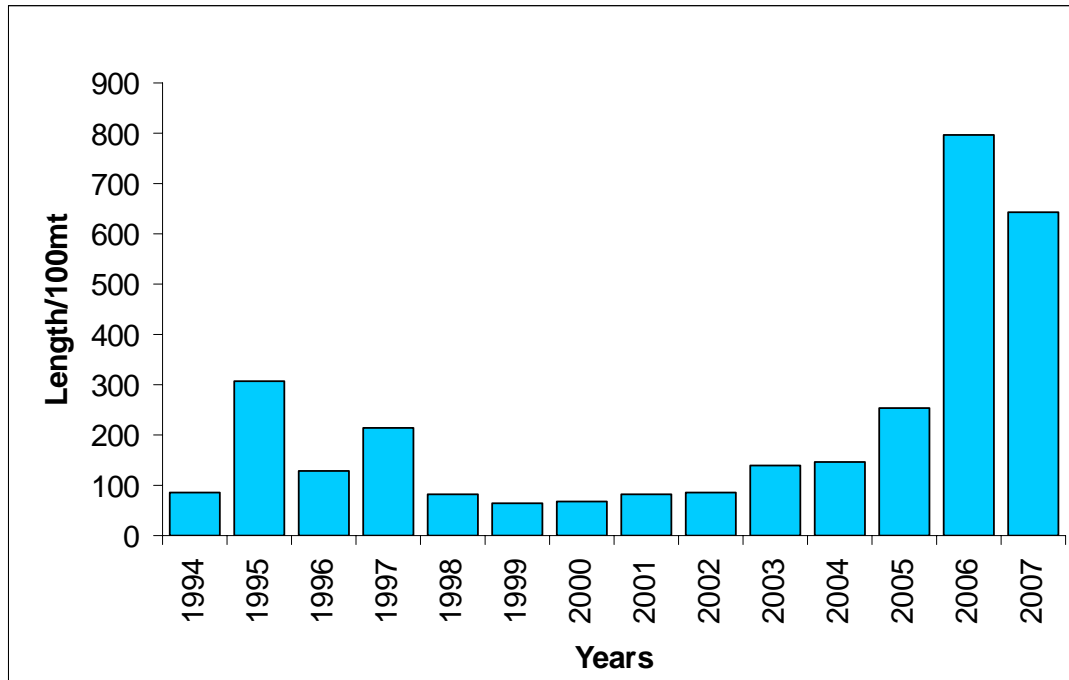


Appendix Figure C.3 Catch at age bubble plot for Georges Bank yellowtail flounder.

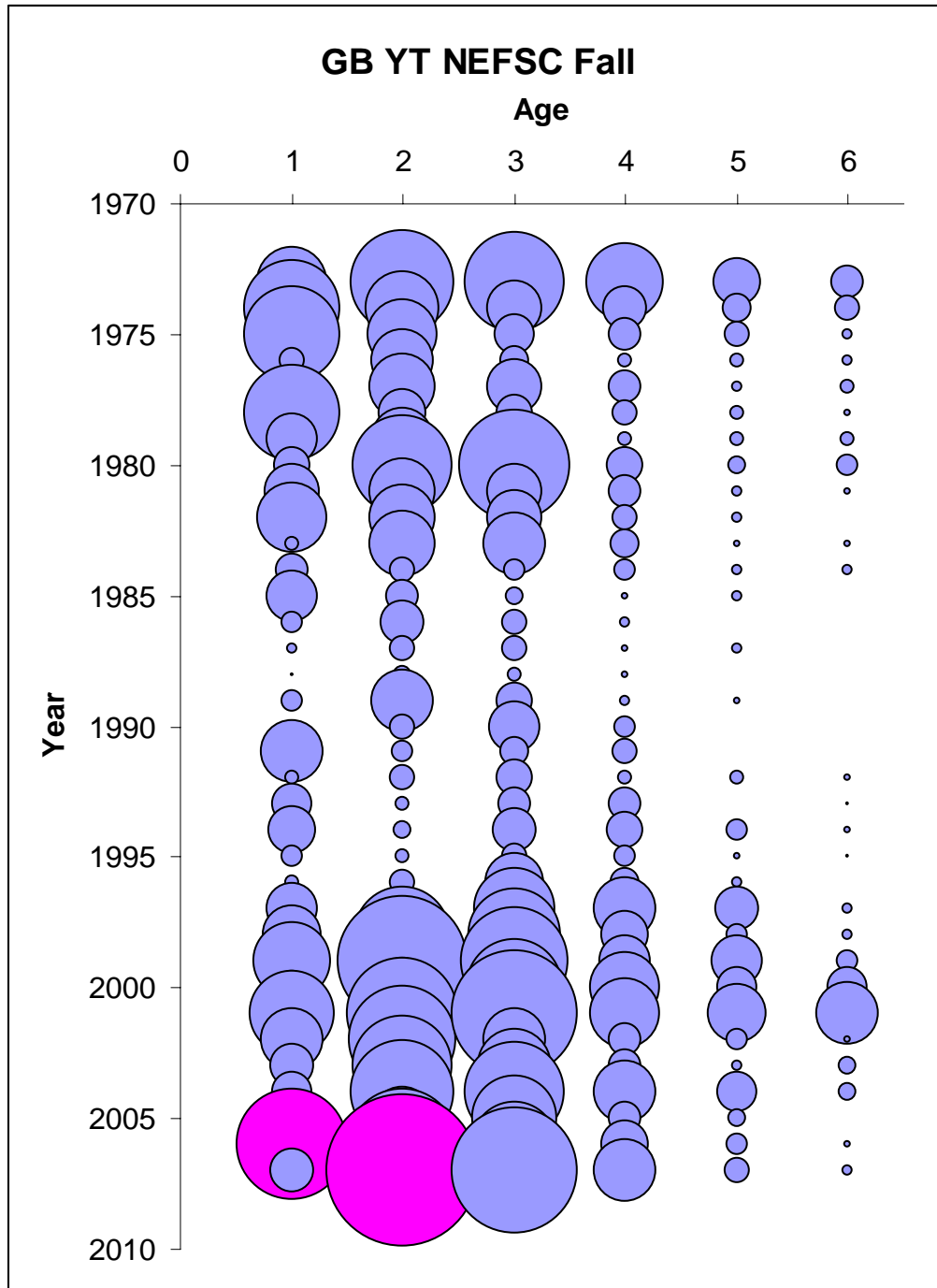


Appendix Figure C.4 Catch weight at age (kg) for Georges Bank yellowtail flounder.

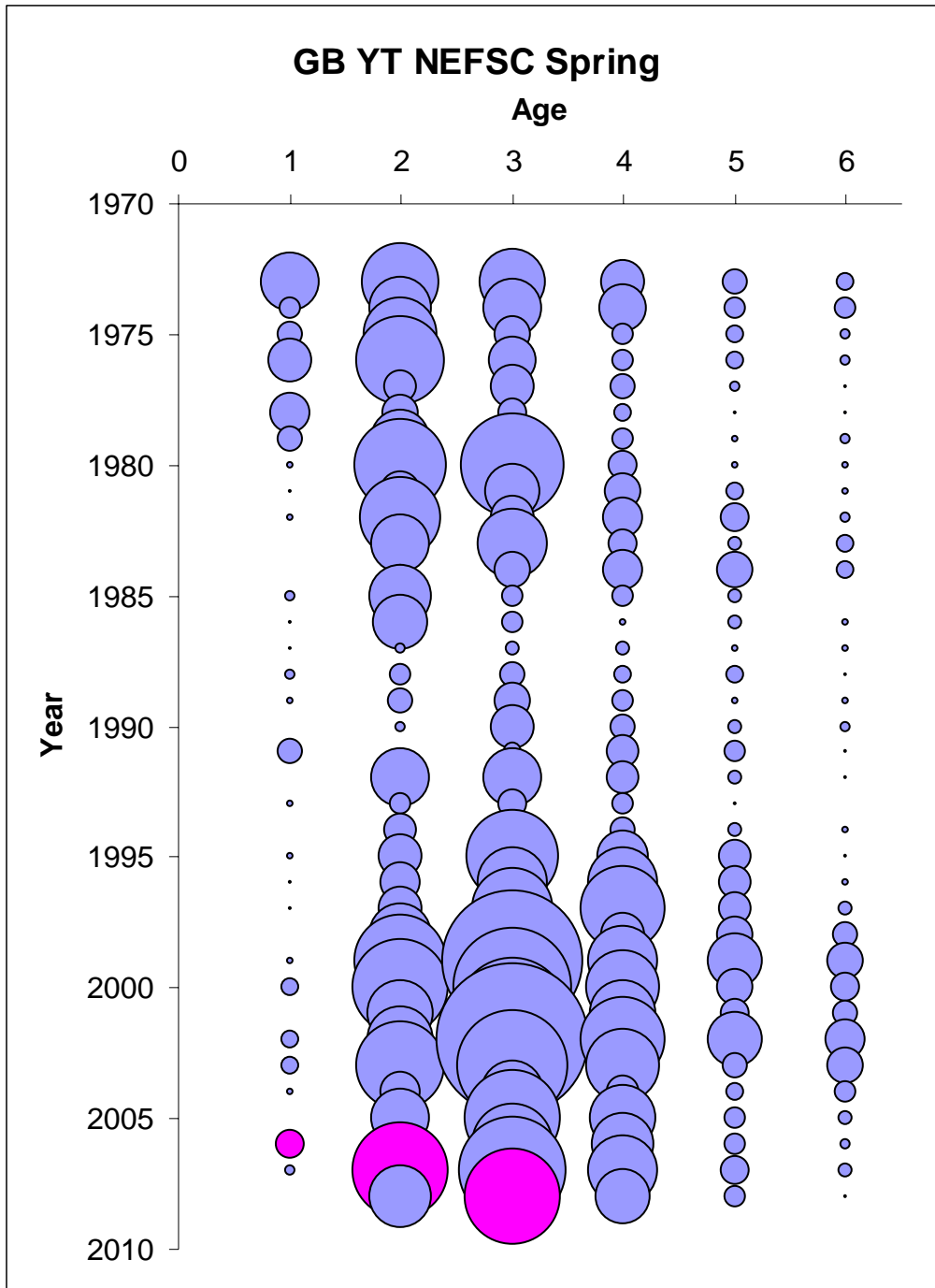
Georges Bank yellowtail flounder Biological Sampling



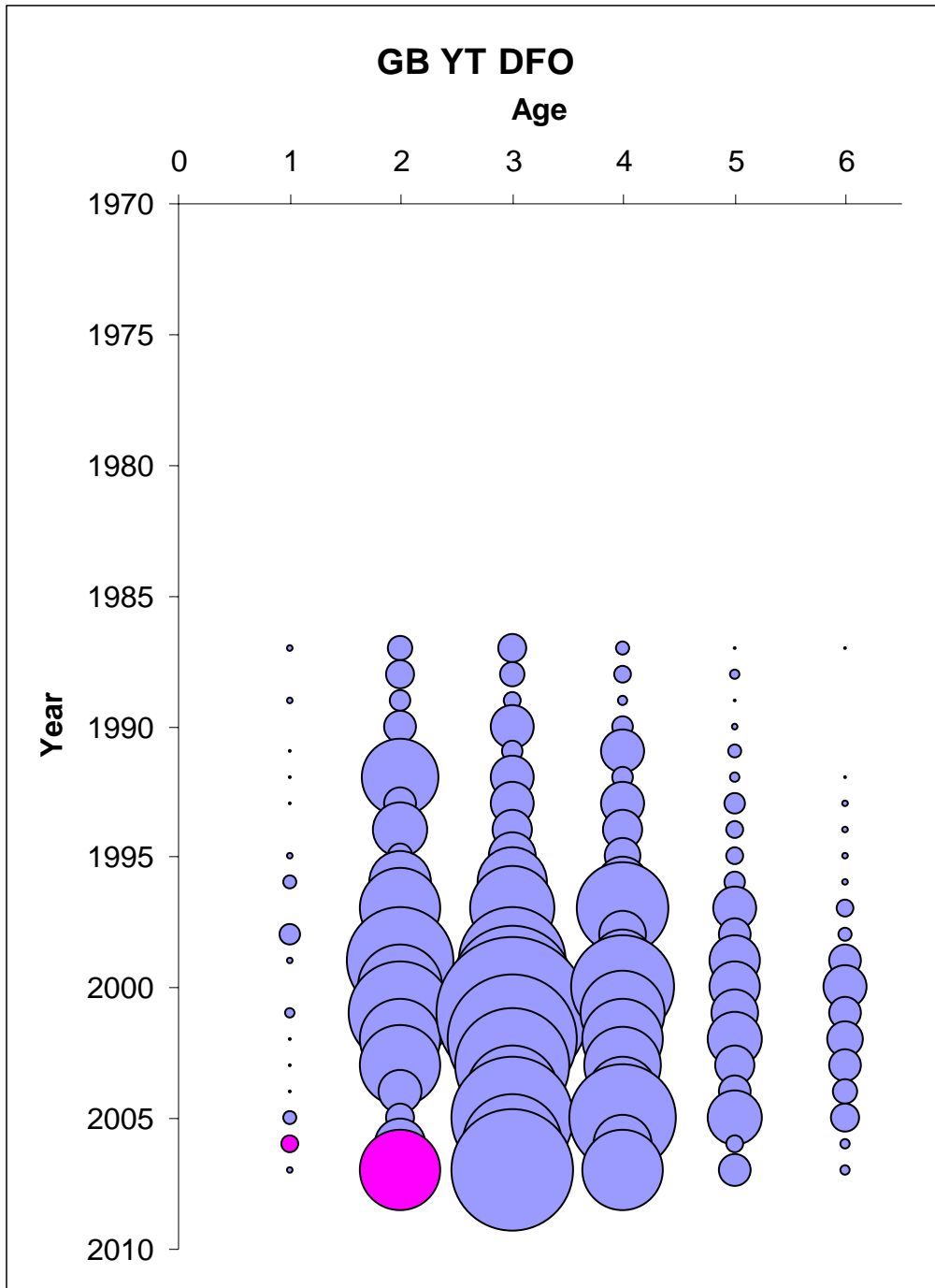
Appendix Figure C.5. Biological sampling for Georges Bank yellowtail flounder.



Appendix Figure C.6.a Survey bubble plot for GB yellowtail NEFSC Fall survey. Note the 2005 year class is highlighted in pink.

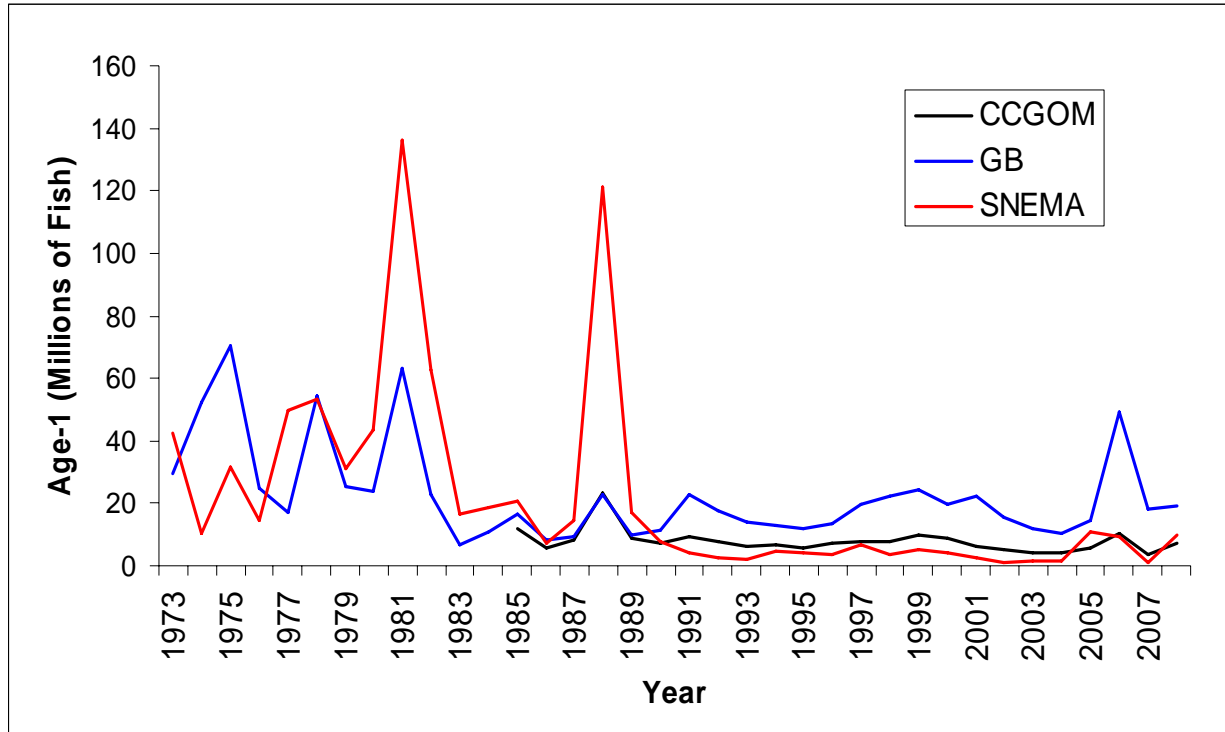


Appendix Figure C.6.b Survey bubble plot for GB yellowtail NEFSC Spring survey. Note the 2005 year class is highlighted in pink.

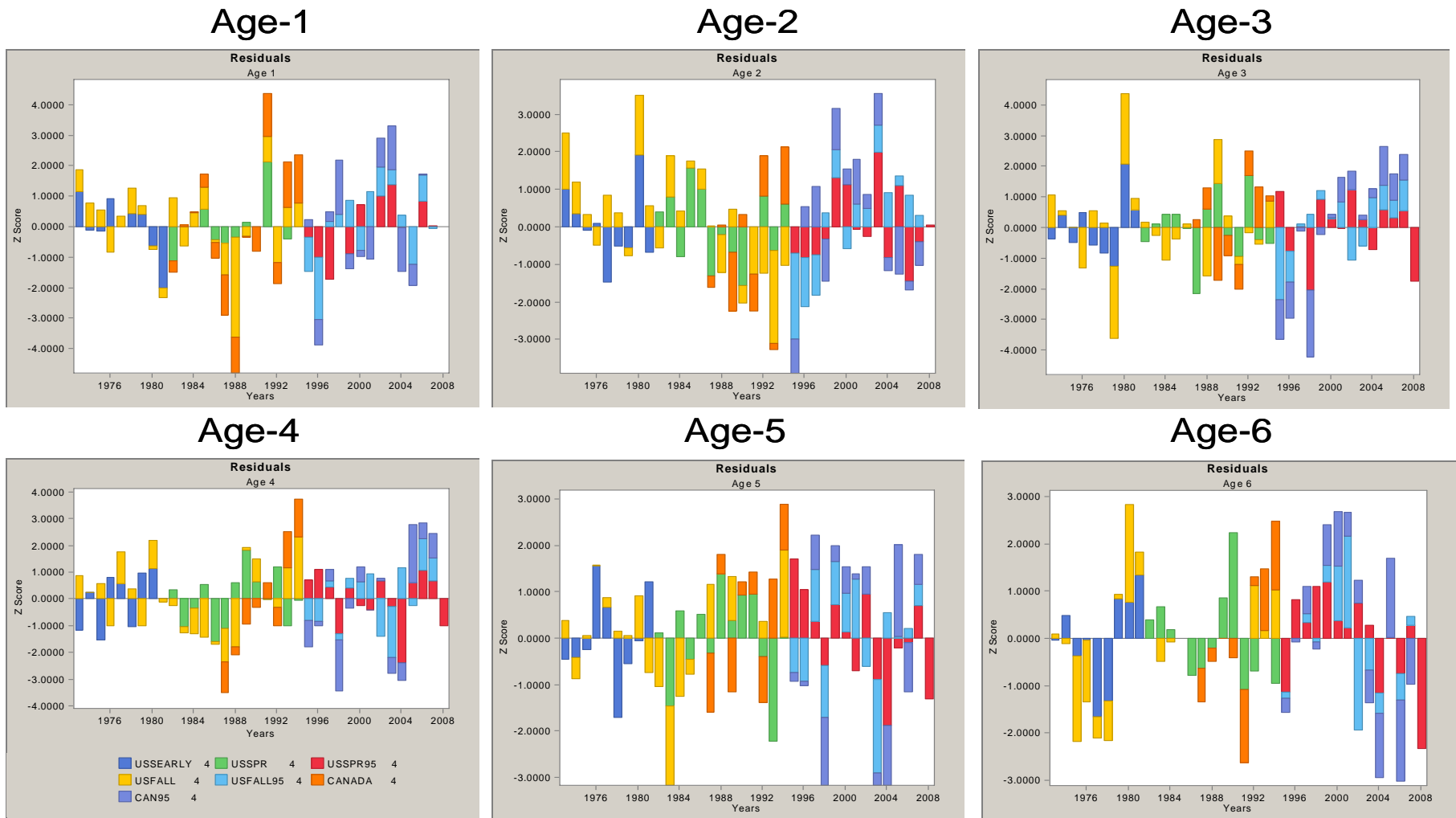


Appendix Figure C.6.c Survey bubble plot for GB yellowtail DFO survey. Note the 2005 year class is highlighted in pink.

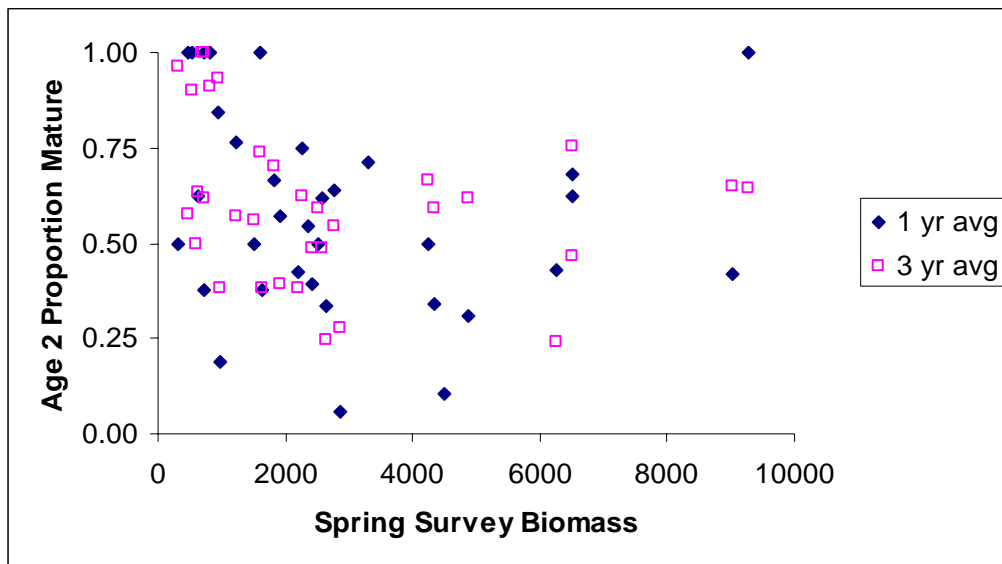
Age-1 Recruitment



Appendix Figure C.7. Comparison of recruitment trends from the three yellowtail flounder stocks.



Appendix Figure C.8. Standardized residuals for all indices by age



Appendix Figure C.9. Comparison of age-2 maturity to total spring biomass index showing an independence between abundance and maturity. The solid diamonds are annual estimates of age-2 maturity while the open squares are three year averages of age-2 maturity.

Appendix VPA Output Report

VPA Version 2.8.0

Model ID: Georges Bank yellowtail flounder Major Change model DFO 2008 survey not include

Input File:

C:\WORKING\ASSESSMENTS\GARM3THEFINALE\YTASSESSMENTS\GB\VPA\MAJORCHANGE_NO2008DFO

Date of Run: 10-JUL-2008

Time of Run: 01:27

Levenburg-Marquardt Algorithm Completed 24 Iterations
Residual Sum of Squares = 304.527

Number of Residuals = 527
Number of Parameters = 4
Degrees of Freedom = 523
Mean Squared Residual = 0.582269
Standard Deviation = 0.763066

Number of Years = 35
Number of Ages = 6
First Year = 1973
Youngest Age = 1
Oldest True Age = 5

Number of Survey Indices Available = 44
Number of Survey Indices Used in Estimate = 42

VPA Classic Method - Auto Estimated Q's

Stock Numbers Predicted in Terminal Year Plus One (2008)

Age	Stock Predicted	Std. Error	CV
2	14994.456	0.692698E+04	0.461969E+00
3	31703.890	0.989341E+04	0.312057E+00
4	5338.999	0.184456E+04	0.345489E+00
5	1875.118	0.475791E+03	0.253739E+00

Catchability Values for Each Survey Used in Estimate

INDEX	Catchability	Std. Error	CV
1	0.746089E-02	0.488991E-02	0.655406E+00
2	0.755206E-01	0.140767E-01	0.186396E+00
3	0.956073E-01	0.168706E-01	0.176457E+00
4	0.926548E-01	0.115114E-01	0.124240E+00
5	0.760134E-01	0.154063E-01	0.202679E+00
6	0.720239E-01	0.226512E-01	0.314496E+00
7	0.423531E-02	0.103998E-02	0.245551E+00
8	0.455643E-01	0.144064E-01	0.316177E+00
9	0.954470E-01	0.152217E-01	0.159478E+00
10	0.152428E+00	0.200966E-01	0.131843E+00
11	0.228532E+00	0.460786E-01	0.201629E+00
12	0.422932E+00	0.931600E-01	0.220272E+00
13	0.458156E-02	0.135354E-02	0.295431E+00
14	0.143683E+00	0.165030E-01	0.114857E+00
15	0.499530E+00	0.884174E-01	0.177001E+00
16	0.593361E+00	0.988542E-01	0.166600E+00
17	0.480729E+00	0.108514E+00	0.225728E+00
18	0.391240E+00	0.921357E-01	0.235497E+00
19	0.396438E-01	0.100565E-01	0.253671E+00

20	0.875114E-01	0.142533E-01	0.162874E+00
21	0.150362E+00	0.158113E-01	0.105155E+00
22	0.156082E+00	0.215926E-01	0.138341E+00
23	0.204982E+00	0.410944E-01	0.200478E+00
24	0.306257E+00	0.653913E-01	0.213518E+00
25	0.654075E-01	0.150808E-01	0.230567E+00
26	0.212258E+00	0.737061E-01	0.347248E+00
27	0.556137E+00	0.108427E+00	0.194965E+00
28	0.471055E+00	0.826395E-01	0.175435E+00
29	0.490130E+00	0.127709E+00	0.260561E+00
30	0.361645E+00	0.131052E+00	0.362377E+00
32	0.229939E-03	0.738135E-04	0.321013E+00
33	0.369401E-03	0.535163E-04	0.144873E+00
34	0.619069E-03	0.114554E-03	0.185042E+00
35	0.693342E-03	0.154791E-03	0.223253E+00
36	0.402918E-03	0.101179E-03	0.251116E+00
38	0.496646E-03	0.106388E-03	0.214214E+00
39	0.206205E-02	0.317553E-03	0.153999E+00
40	0.263975E-02	0.360480E-03	0.136558E+00
41	0.240473E-02	0.440468E-03	0.183167E+00
42	0.186002E-02	0.338706E-03	0.182098E+00
43	0.233364E-04	0.687469E-05	0.294590E+00
44	0.539497E-04	0.469360E-05	0.869995E-01

-- Non-Linear Least Squares Fit --

Default Tolerances Used

Scaled Gradient Tolerance	=	6.055454E-06
Scaled Step Tolerance	=	3.666853E-11
Relative Function Tolerance	=	3.666853E-11
Absolute Function Tolerance	=	4.930381E-32

VPA Method Options

- Catchability Values Estimated as an Analytic Function of N
- Catch Equation Used in Cohort Solution
- Plus Group Backward Calculation Method Used
- Rivard Weights Used for JAN-1 Biomass
- Rivard Weights Calculation Used 3 Years for Terminal Year Plus One

- Heincke Rule Used in F-Oldest Calculation
- F-Oldest Calculation in Years Prior to Terminal Year
Uses Stock Sizes in Ages 4 to 5
- Calculation of Population of Age 1 In Year 2008
= Geometric Mean of First Age Populations
Year Range Applied = 1973 to 2007

Stock Estimates

Age	2
Age	3
Age	4
Age	5

Full F in Terminal Year = 0.2892

F in Oldest True Age in Terminal Year = 0.2892

Full F Calculated Using Classic Method

Age	Input Partial Recruitment	Calc Partial Recruitment	Fishing Mortality	Used In Full F	Comments
1	0.000	0.011	0.0032	NO	Stock Estimate in T+1

2	0.030	0.141	0.0408	NO	Stock Estimate in T+1
3	0.630	0.900	0.2603	NO	Stock Estimate in T+1
4	1.000	1.000	0.2892	YES	Stock Estimate in T+1
5	1.000	1.000	0.2892		Input PR * Full F

Catch At Age - Input Data

AGE	1973	1974	1975	1976	1977
1	359.3	2367.5	4636.2	635.1	377.9
2	5175.0	9500.0	26393.9	31938.1	9094.2
3	13565.3	8294.2	7375.1	5501.9	10567.1
4	9473.0	7657.9	3540.2	1425.7	1846.2
5	3814.6	3642.6	2175.2	574.2	418.6
6	1649.7	1519.6	1207.2	918.1	495.0
AGE	1978	1979	1980	1981	1982
1	9962.0	320.6	317.8	107.4	2163.5
2	3542.1	10516.6	3994.4	1097.1	18091.3
3	4579.7	3789.4	9685.3	5963.4	7480.3
4	1913.8	1432.1	1538.4	4920.2	3400.5
5	539.5	623.0	351.9	854.4	1095.2
6	210.8	324.6	112.6	145.3	95.8
AGE	1983	1984	1985	1986	1987
1	702.8	514.3	970.3	178.8	156.4
2	7998.1	2017.7	4373.6	6402.1	3284.2
3	16660.9	4534.6	1057.6	1127.5	3136.7
4	2475.9	5043.0	818.4	388.8	983.3
5	679.6	1796.3	516.6	203.6	192.3
6	154.6	379.5	80.7	113.4	137.3
AGE	1988	1989	1990	1991	1992
1	499.0	189.8	230.6	663.3	2413.9
2	3002.6	2175.4	2114.4	147.3	9167.4
3	1544.1	1120.6	6995.7	1491.2	2971.5
4	846.1	428.2	978.3	3011.1	1473.0
5	227.0	110.1	140.2	383.2	603.1
6	53.3	30.4	26.1	71.2	42.0
AGE	1993	1994	1995	1996	1997
1	5233.5	71.2	46.9	100.6	81.8
2	1385.8	1336.3	312.7	680.9	1132.3
3	3326.9	6302.4	1435.3	2064.3	1832.4
4	2325.5	1819.3	878.6	885.0	1856.8
5	411.0	476.7	170.1	201.2	378.2
6	90.5	143.9	36.9	27.6	89.6

Catch At Age - Input Data

AGE	1998	1999	2000	2001	2002
1	168.5	60.1	131.8	175.9	211.9
2	1991.4	2752.9	3863.5	2883.5	4168.9
3	3387.8	4195.0	5713.9	6956.4	3446.3
4	1884.9	1547.6	3173.0	2893.2	1915.8
5	1121.3	793.5	826.3	1003.9	683.0
6	146.2	301.4	528.5	525.1	485.3
AGE	2003	2004	2005	2006	2007
1	159.7	63.9	59.9	153.9	53.0
2	3919.1	1201.3	1528.8	1300.2	1463.5
3	4710.0	3170.8	4086.2	1697.7	1764.9
4	2319.9	3803.8	1712.5	1003.0	699.5
5	782.4	1970.1	411.3	373.2	142.2
6	693.5	1450.7	178.1	214.0	57.6

Weight At Age - Input Data

AGE	1973	1974	1975	1976	1977
1	0.1010	0.1150	0.1130	0.1080	0.1160
2	0.3480	0.3440	0.3160	0.3120	0.3420
3	0.4620	0.4960	0.4890	0.5440	0.5240
4	0.5270	0.6070	0.5540	0.6350	0.6330
5	0.6030	0.6780	0.6190	0.7440	0.7800
6	0.7780	0.8320	0.6950	0.8610	0.9310
AGE	1978	1979	1980	1981	1982
1	0.1020	0.1140	0.1010	0.1220	0.1150
2	0.3140	0.3290	0.3220	0.3350	0.3010
3	0.5100	0.4620	0.4930	0.4890	0.4850
4	0.6900	0.6560	0.6560	0.6040	0.6500
5	0.8030	0.7360	0.8160	0.7070	0.7540
6	0.9700	0.9500	1.0720	0.8400	1.0820
AGE	1983	1984	1985	1986	1987
1	0.1400	0.1620	0.1810	0.1810	0.1210
2	0.2960	0.2390	0.3610	0.3410	0.3240
3	0.4410	0.3790	0.5050	0.5400	0.5240
4	0.6070	0.5000	0.6420	0.6740	0.6800
5	0.7400	0.6470	0.7290	0.8540	0.7840
6	1.0100	0.7970	0.8000	1.0150	0.8750
AGE	1988	1989	1990	1991	1992
1	0.1030	0.1000	0.1050	0.1210	0.1010
2	0.3280	0.3270	0.2900	0.2370	0.2930
3	0.5570	0.5200	0.3950	0.3690	0.3650
4	0.6960	0.7200	0.5850	0.4860	0.5260
5	0.8440	0.8660	0.6930	0.7230	0.6510
6	0.9750	1.0530	0.8450	0.8770	1.1100

AGE	1993	1994	1995	1996	1997
1	0.1000	0.1930	0.1740	0.1190	0.2140
2	0.2850	0.2600	0.2750	0.2760	0.3020
3	0.3790	0.3530	0.3470	0.4070	0.4080
4	0.5010	0.4720	0.4650	0.5520	0.5380
5	0.5640	0.6210	0.6070	0.7070	0.7180
6	0.8630	0.7750	0.7680	1.0120	0.9470

Weight At Age - Input Data

AGE	1998	1999	2000	2001	2002
1	0.1780	0.2020	0.2290	0.2510	0.2820
2	0.3050	0.3680	0.3830	0.3620	0.3810
3	0.4280	0.4950	0.4800	0.4600	0.4800
4	0.5460	0.6400	0.6150	0.6120	0.6650
5	0.6490	0.7550	0.7660	0.8120	0.8330
6	0.9660	0.9010	0.9540	1.0270	1.0680

AGE	2003	2004	2005	2006	2007
1	0.2280	0.2110	0.1190	0.1000	0.1480
2	0.3590	0.2960	0.3410	0.3090	0.2880
3	0.4740	0.4400	0.4450	0.4110	0.4060
4	0.6530	0.5860	0.5940	0.5550	0.5360
5	0.8240	0.7280	0.7670	0.7600	0.7640
6	1.0480	0.9560	0.9970	0.9980	1.0020

JAN-1 Weights at Age - Input Data

AGE	1973	1974	1975	1976	1977
1	0.0547	0.0694	0.0680	0.0607	0.0705
2	0.2915	0.1864	0.1906	0.1878	0.1922
3	0.4031	0.4155	0.4101	0.4146	0.4043
4	0.4646	0.5296	0.5242	0.5572	0.5868
5	0.5637	0.5978	0.6130	0.6420	0.7038
6	0.7780	0.8320	0.6950	0.8610	0.9310

AGE	1978	1979	1980	1981	1982
1	0.0568	0.0678	0.0555	0.0777	0.0717
2	0.1909	0.1832	0.1916	0.1839	0.1916
3	0.4176	0.3809	0.4027	0.3968	0.4031
4	0.6013	0.5784	0.5505	0.5457	0.5638
5	0.7130	0.7126	0.7316	0.6810	0.6748
6	0.9700	0.9500	1.0720	0.8400	1.0820

AGE	1983	1984	1985	1986	1987
1	0.1072	0.1085	0.1319	0.1353	0.0735
2	0.1845	0.1829	0.2418	0.2484	0.2422
3	0.3643	0.3349	0.3474	0.4415	0.4227
4	0.5426	0.4696	0.4933	0.5834	0.6060
5	0.6935	0.6267	0.6037	0.7405	0.7269
6	1.0100	0.7970	0.8000	1.0150	0.8750

AGE	1988	1989	1990	1991	1992
1	0.0578	0.0587	0.0699	0.0778	0.0601
2	0.1992	0.1835	0.1703	0.1577	0.1883
3	0.4248	0.4130	0.3594	0.3271	0.2941
4	0.6039	0.6333	0.5515	0.4381	0.4406
5	0.7576	0.7764	0.7064	0.6503	0.5625
6	0.9750	1.0530	0.8450	0.8770	1.1100
AGE	1993	1994	1995	1996	1997
1	0.0620	0.1617	0.1382	0.0747	0.1793
2	0.1697	0.1612	0.2304	0.2191	0.1896
3	0.3332	0.3172	0.3004	0.3346	0.3356
4	0.4276	0.4230	0.4051	0.4377	0.4679
5	0.5447	0.5578	0.5353	0.5734	0.6296
6	0.8630	0.7750	0.7680	1.0120	0.9470

JAN-1 Weights at Age - Input Data

AGE	1998	1999	2000	2001	2002
1	0.1238	0.1467	0.1821	0.2037	0.2499
2	0.2555	0.2559	0.2781	0.2879	0.3092
3	0.3595	0.3886	0.4203	0.4197	0.4168
4	0.4720	0.5234	0.5517	0.5420	0.5531
5	0.5909	0.6421	0.7002	0.7067	0.7140
6	0.9660	0.9010	0.9540	1.0270	1.0680
AGE	2003	2004	2005	2006	2007
1	0.2001	0.1660	0.0738	0.0589	0.1291
2	0.3182	0.2598	0.2682	0.1918	0.1697
3	0.4250	0.3974	0.3629	0.3744	0.3542
4	0.5599	0.5270	0.5112	0.4970	0.4694
5	0.7402	0.6895	0.6704	0.6719	0.6512
6	1.0480	0.9560	0.9970	0.9980	1.0020
AGE	2008				
1	0.0873				
2	0.2099				
3	0.3638				
4	0.4925				
5	0.6645				
6	0.9990				

SSB Weight At Age - Input Data

AGE	1973	1974	1975	1976	1977
1	0.1010	0.1150	0.1130	0.1080	0.1160
2	0.3480	0.3440	0.3160	0.3120	0.3420
3	0.4620	0.4960	0.4890	0.5440	0.5240
4	0.5270	0.6070	0.5540	0.6350	0.6330
5	0.6030	0.6780	0.6190	0.7440	0.7800
6	0.7780	0.8320	0.6950	0.8610	0.9310
AGE	1978	1979	1980	1981	1982
1	0.1020	0.1140	0.1010	0.1220	0.1150
2	0.3140	0.3290	0.3220	0.3350	0.3010
3	0.5100	0.4620	0.4930	0.4890	0.4850
4	0.6900	0.6560	0.6560	0.6040	0.6500
5	0.8030	0.7360	0.8160	0.7070	0.7540
6	0.9700	0.9500	1.0720	0.8400	1.0820
AGE	1983	1984	1985	1986	1987
1	0.1400	0.1620	0.1810	0.1810	0.1210
2	0.2960	0.2390	0.3610	0.3410	0.3240
3	0.4410	0.3790	0.5050	0.5400	0.5240
4	0.6070	0.5000	0.6420	0.6740	0.6800
5	0.7400	0.6470	0.7290	0.8540	0.7840
6	1.0100	0.7970	0.8000	1.0150	0.8750
AGE	1988	1989	1990	1991	1992
1	0.1030	0.1000	0.1050	0.1210	0.1010
2	0.3280	0.3270	0.2900	0.2370	0.2930
3	0.5570	0.5200	0.3950	0.3690	0.3650
4	0.6960	0.7200	0.5850	0.4860	0.5260
5	0.8440	0.8660	0.6930	0.7230	0.6510
6	0.9750	1.0530	0.8450	0.8770	1.1100
AGE	1993	1994	1995	1996	1997
1	0.1000	0.1930	0.1740	0.1190	0.2140
2	0.2850	0.2600	0.2750	0.2760	0.3020
3	0.3790	0.3530	0.3470	0.4070	0.4080
4	0.5010	0.4720	0.4650	0.5520	0.5380
5	0.5640	0.6210	0.6070	0.7070	0.7180
6	0.8630	0.7750	0.7680	1.0120	0.9470

SSB Weight At Age - Input Data

AGE	1998	1999	2000	2001	2002
1	0.1780	0.2020	0.2290	0.2510	0.2820
2	0.3050	0.3680	0.3830	0.3620	0.3810
3	0.4280	0.4950	0.4800	0.4600	0.4800
4	0.5460	0.6400	0.6150	0.6120	0.6650
5	0.6490	0.7550	0.7660	0.8120	0.8330
6	0.9660	0.9010	0.9540	1.0270	1.0680
AGE	2003	2004	2005	2006	2007
1	0.2280	0.2110	0.1190	0.1000	0.1480
2	0.3590	0.2960	0.3410	0.3090	0.2880
3	0.4740	0.4400	0.4450	0.4110	0.4060
4	0.6530	0.5860	0.5940	0.5550	0.5360
5	0.8240	0.7280	0.7670	0.7600	0.7640
6	1.0480	0.9560	0.9970	0.9980	1.0020

Natural Mortality - Input Data

AGE	1973	1974	1975	1976	1977
1	0.2000	0.2000	0.2000	0.2000	0.2000
2	0.2000	0.2000	0.2000	0.2000	0.2000
3	0.2000	0.2000	0.2000	0.2000	0.2000
4	0.2000	0.2000	0.2000	0.2000	0.2000
5	0.2000	0.2000	0.2000	0.2000	0.2000
6	0.2000	0.2000	0.2000	0.2000	0.2000
AGE	1978	1979	1980	1981	1982
1	0.2000	0.2000	0.2000	0.2000	0.2000
2	0.2000	0.2000	0.2000	0.2000	0.2000
3	0.2000	0.2000	0.2000	0.2000	0.2000
4	0.2000	0.2000	0.2000	0.2000	0.2000
5	0.2000	0.2000	0.2000	0.2000	0.2000
6	0.2000	0.2000	0.2000	0.2000	0.2000
AGE	1983	1984	1985	1986	1987
1	0.2000	0.2000	0.2000	0.2000	0.2000
2	0.2000	0.2000	0.2000	0.2000	0.2000
3	0.2000	0.2000	0.2000	0.2000	0.2000
4	0.2000	0.2000	0.2000	0.2000	0.2000
5	0.2000	0.2000	0.2000	0.2000	0.2000
6	0.2000	0.2000	0.2000	0.2000	0.2000
AGE	1988	1989	1990	1991	1992
1	0.2000	0.2000	0.2000	0.2000	0.2000
2	0.2000	0.2000	0.2000	0.2000	0.2000
3	0.2000	0.2000	0.2000	0.2000	0.2000
4	0.2000	0.2000	0.2000	0.2000	0.2000
5	0.2000	0.2000	0.2000	0.2000	0.2000
6	0.2000	0.2000	0.2000	0.2000	0.2000

AGE	1993	1994	1995	1996	1997
1	0.2000	0.2000	0.2000	0.2000	0.2000
2	0.2000	0.2000	0.2000	0.2000	0.2000
3	0.2000	0.2000	0.2000	0.2000	0.2000
4	0.2000	0.2000	0.2000	0.2000	0.2000
5	0.2000	0.2000	0.2000	0.2000	0.2000
6	0.2000	0.2000	0.2000	0.2000	0.2000

Natural Mortality - Input Data

AGE	1998	1999	2000	2001	2002
1	0.2000	0.2000	0.2000	0.2000	0.2000
2	0.2000	0.2000	0.2000	0.2000	0.2000
3	0.2000	0.2000	0.2000	0.2000	0.2000
4	0.2000	0.2000	0.2000	0.2000	0.2000
5	0.2000	0.2000	0.2000	0.2000	0.2000
6	0.2000	0.2000	0.2000	0.2000	0.2000

AGE	2003	2004	2005	2006	2007
1	0.2000	0.2000	0.2000	0.2000	0.2000
2	0.2000	0.2000	0.2000	0.2000	0.2000
3	0.2000	0.2000	0.2000	0.2000	0.2000
4	0.2000	0.2000	0.2000	0.2000	0.2000
5	0.2000	0.2000	0.2000	0.2000	0.2000
6	0.2000	0.2000	0.2000	0.2000	0.2000

Proportion of Natural Mortality Before Spawning = 0.4167
 Proportion of Fishing Mortality Before Spawning = 0.4167

Maturity - Input Data

AGE	1973	1974	1975	1976	1977
1	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.4620	0.4620	0.4620	0.4620	0.4620
3	0.9670	0.9670	0.9670	0.9670	0.9670
4	1.0000	1.0000	1.0000	1.0000	1.0000
5	1.0000	1.0000	1.0000	1.0000	1.0000
6	1.0000	1.0000	1.0000	1.0000	1.0000

AGE	1978	1979	1980	1981	1982
1	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.4620	0.4620	0.4620	0.4620	0.4620
3	0.9670	0.9670	0.9670	0.9670	0.9670
4	1.0000	1.0000	1.0000	1.0000	1.0000
5	1.0000	1.0000	1.0000	1.0000	1.0000
6	1.0000	1.0000	1.0000	1.0000	1.0000

AGE	1983	1984	1985	1986	1987
1	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.4620	0.4620	0.4620	0.4620	0.4620
3	0.9670	0.9670	0.9670	0.9670	0.9670

4	1.0000	1.0000	1.0000	1.0000	1.0000
5	1.0000	1.0000	1.0000	1.0000	1.0000
6	1.0000	1.0000	1.0000	1.0000	1.0000
AGE	1988	1989	1990	1991	1992
<hr/>					
1	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.4620	0.4620	0.4620	0.4620	0.4620
3	0.9670	0.9670	0.9670	0.9670	0.9670
4	1.0000	1.0000	1.0000	1.0000	1.0000
5	1.0000	1.0000	1.0000	1.0000	1.0000
6	1.0000	1.0000	1.0000	1.0000	1.0000
AGE	1993	1994	1995	1996	1997
<hr/>					
1	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.4620	0.4620	0.4620	0.4620	0.4620
3	0.9670	0.9670	0.9670	0.9670	0.9670
4	1.0000	1.0000	1.0000	1.0000	1.0000
5	1.0000	1.0000	1.0000	1.0000	1.0000
6	1.0000	1.0000	1.0000	1.0000	1.0000

Maturity - Input Data

AGE	1998	1999	2000	2001	2002
<hr/>					
1	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.4620	0.4620	0.4620	0.4620	0.4620
3	0.9670	0.9670	0.9670	0.9670	0.9670
4	1.0000	1.0000	1.0000	1.0000	1.0000
5	1.0000	1.0000	1.0000	1.0000	1.0000
6	1.0000	1.0000	1.0000	1.0000	1.0000
AGE	2003	2004	2005	2006	2007
<hr/>					
1	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.4620	0.4620	0.4620	0.4620	0.4620
3	0.9670	0.9670	0.9670	0.9670	0.9670
4	1.0000	1.0000	1.0000	1.0000	1.0000
5	1.0000	1.0000	1.0000	1.0000	1.0000
6	1.0000	1.0000	1.0000	1.0000	1.0000

Input Partial Recruitment

AGE

1	0.0000
2	0.0300
3	0.6300
4	1.0000
5	1.0000

Input F-Plus Ratio

YEAR

1973	1.0000
1974	1.0000
1975	1.0000
1976	1.0000
1977	1.0000
1978	1.0000
1979	1.0000
1980	1.0000
1981	1.0000
1982	1.0000
1983	1.0000
1984	1.0000
1985	1.0000
1986	1.0000
1987	1.0000
1988	1.0000
1989	1.0000
1990	1.0000
1991	1.0000
1992	1.0000
1993	1.0000
1994	1.0000
1995	1.0000
1996	1.0000
1997	1.0000
1998	1.0000
1999	1.0000
2000	1.0000
2001	1.0000
2002	1.0000
2003	1.0000
2004	1.0000
2005	1.0000
2006	1.0000
2007	1.0000

SURVEY - INPUT DATA

INDEX	1	2	3	4	5
SURVEY TAG	USsearly	USsearly	USsearly	USsearly	USsearly
AGE	1	2	3	4	5
TIME	JAN-1	JAN-1	JAN-1	JAN-1	JAN-1
TYPE	NUMBERS	NUMBERS	NUMBERS	NUMBERS	NUMBERS
RETRO FLAG	0	0	0	0	0
1973	1882.9150	3184.3290	2309.4080	1036.7250	399.4120
1974	308.1730	2168.4730	1795.4620	1225.0260	336.9040
1975	409.2160	2917.9900	809.1130	262.5540	201.5020
1976	1008.3820	4259.0050	1215.9990	302.4470	191.2130
1977	0.0000	654.0070	1097.6800	363.6930	81.9210
1978	912.1930	778.4410	494.4360	213.9260	25.7220
1979	393.9770	1956.7800	395.2390	328.2650	58.7230
1980	55.3260	4528.6450	5617.2010	460.5620	55.0340
1981	11.3560	995.8610	1724.2180	698.8500	206.9370
1982	0.0000	0.0000	0.0000	0.0000	0.0000
1983	0.0000	0.0000	0.0000	0.0000	0.0000
1984	0.0000	0.0000	0.0000	0.0000	0.0000
1985	0.0000	0.0000	0.0000	0.0000	0.0000
1986	0.0000	0.0000	0.0000	0.0000	0.0000
1987	0.0000	0.0000	0.0000	0.0000	0.0000
1988	0.0000	0.0000	0.0000	0.0000	0.0000
1989	0.0000	0.0000	0.0000	0.0000	0.0000
1990	0.0000	0.0000	0.0000	0.0000	0.0000
1991	0.0000	0.0000	0.0000	0.0000	0.0000
1992	0.0000	0.0000	0.0000	0.0000	0.0000
1993	0.0000	0.0000	0.0000	0.0000	0.0000
1994	0.0000	0.0000	0.0000	0.0000	0.0000
1995	0.0000	0.0000	0.0000	0.0000	0.0000
1996	0.0000	0.0000	0.0000	0.0000	0.0000
1997	0.0000	0.0000	0.0000	0.0000	0.0000
1998	0.0000	0.0000	0.0000	0.0000	0.0000
1999	0.0000	0.0000	0.0000	0.0000	0.0000
2000	0.0000	0.0000	0.0000	0.0000	0.0000
2001	0.0000	0.0000	0.0000	0.0000	0.0000
2002	0.0000	0.0000	0.0000	0.0000	0.0000
2003	0.0000	0.0000	0.0000	0.0000	0.0000
2004	0.0000	0.0000	0.0000	0.0000	0.0000
2005	0.0000	0.0000	0.0000	0.0000	0.0000
2006	0.0000	0.0000	0.0000	0.0000	0.0000
2007	0.0000	0.0000	0.0000	0.0000	0.0000
2008	0.0000	0.0000	0.0000	0.0000	0.0000

SURVEY - INPUT DATA

INDEX	6	7	8	9	10
SURVEY TAG	USsearly	USspr	USspr	USspr	USspr
AGE	6	1	2	3	4
TIME	JAN-1	JAN-1	JAN-1	JAN-1	JAN-1
TYPE	NUMBERS	NUMBERS	NUMBERS	NUMBERS	NUMBERS
RETRO FLAG	0	1	1	1	1
1973	210.2370	0.0000	0.0000	0.0000	0.0000
1974	273.8130	0.0000	0.0000	0.0000	0.0000
1975	86.2890	0.0000	0.0000	0.0000	0.0000
1976	108.4190	0.0000	0.0000	0.0000	0.0000
1977	12.8120	0.0000	0.0000	0.0000	0.0000
1978	7.6680	0.0000	0.0000	0.0000	0.0000
1979	88.7150	0.0000	0.0000	0.0000	0.0000
1980	35.3310	0.0000	0.0000	0.0000	0.0000
1981	56.8790	0.0000	0.0000	0.0000	0.0000
1982	0.0000	44.0660	3656.5390	1096.5150	992.4640
1983	0.0000	0.0000	1810.0220	2647.7680	514.4310
1984	0.0000	0.0000	90.2680	806.0070	837.9410
1985	0.0000	106.3810	2134.2100	254.4010	273.4250
1986	0.0000	26.5950	1753.0460	282.6460	54.6460
1987	0.0000	26.5950	73.2820	132.9760	129.2870
1988	0.0000	75.5150	266.9220	355.2490	234.6970
1989	0.0000	45.2310	391.2590	737.6750	280.9960
1990	0.0000	0.0000	63.6730	1074.6760	358.3550
1991	0.0000	422.5130	0.0000	246.9270	665.0720
1992	0.0000	0.0000	1987.7430	1840.6930	621.7820
1993	0.0000	44.7460	281.0930	485.7980	307.8820
1994	0.0000	0.0000	602.2730	614.6970	343.6010
1995	0.0000	0.0000	0.0000	0.0000	0.0000
1996	0.0000	0.0000	0.0000	0.0000	0.0000
1997	0.0000	0.0000	0.0000	0.0000	0.0000
1998	0.0000	0.0000	0.0000	0.0000	0.0000
1999	0.0000	0.0000	0.0000	0.0000	0.0000
2000	0.0000	0.0000	0.0000	0.0000	0.0000
2001	0.0000	0.0000	0.0000	0.0000	0.0000
2002	0.0000	0.0000	0.0000	0.0000	0.0000
2003	0.0000	0.0000	0.0000	0.0000	0.0000
2004	0.0000	0.0000	0.0000	0.0000	0.0000
2005	0.0000	0.0000	0.0000	0.0000	0.0000
2006	0.0000	0.0000	0.0000	0.0000	0.0000
2007	0.0000	0.0000	0.0000	0.0000	0.0000
2008	0.0000	0.0000	0.0000	0.0000	0.0000

SURVEY - INPUT DATA

INDEX	11	12	13	14	15
SURVEY TAG	USspr	USspr	USspr95	USspr95	USspr95
AGE	5	6	1	2	3
TIME	JAN-1	JAN-1	JAN-1	JAN-1	JAN-1
TYPE	NUMBERS	NUMBERS	NUMBERS	NUMBERS	NUMBERS
RETRO FLAG	1	1	1	1	1
1973	0.0000	0.0000	0.0000	0.0000	0.0000
1974	0.0000	0.0000	0.0000	0.0000	0.0000
1975	0.0000	0.0000	0.0000	0.0000	0.0000
1976	0.0000	0.0000	0.0000	0.0000	0.0000
1977	0.0000	0.0000	0.0000	0.0000	0.0000
1978	0.0000	0.0000	0.0000	0.0000	0.0000
1979	0.0000	0.0000	0.0000	0.0000	0.0000
1980	0.0000	0.0000	0.0000	0.0000	0.0000
1981	0.0000	0.0000	0.0000	0.0000	0.0000
1982	444.5460	88.3270	0.0000	0.0000	0.0000
1983	119.5810	237.3180	0.0000	0.0000	0.0000
1984	810.3750	236.5410	0.0000	0.0000	0.0000
1985	143.3610	0.0000	0.0000	0.0000	0.0000
1986	132.8790	53.1900	0.0000	0.0000	0.0000
1987	50.9580	53.1900	0.0000	0.0000	0.0000
1988	193.1540	26.5950	0.0000	0.0000	0.0000
1989	59.3050	43.4840	0.0000	0.0000	0.0000
1990	112.2040	100.7510	0.0000	0.0000	0.0000
1991	255.4690	19.9950	0.0000	0.0000	0.0000
1992	159.9590	16.6950	0.0000	0.0000	0.0000
1993	26.0130	0.0000	0.0000	0.0000	0.0000
1994	140.4490	38.7280	0.0000	0.0000	0.0000
1995	0.0000	0.0000	39.0190	1144.5610	4670.3560
1996	0.0000	0.0000	24.3630	958.1040	2548.5700
1997	0.0000	0.0000	18.1510	1134.4670	3623.0520
1998	0.0000	0.0000	0.0000	2020.0650	1022.1650
1999	0.0000	0.0000	48.7250	4606.2950	10501.6770
2000	0.0000	0.0000	177.3330	4677.6360	7440.5200
2001	0.0000	0.0000	0.0000	2246.7060	6370.5030
2002	0.0000	0.0000	182.3800	2341.5360	11971.1060
2003	0.0000	0.0000	196.0660	4241.4370	6564.9190
2004	0.0000	0.0000	47.0750	957.3270	2114.4100
2005	0.0000	0.0000	0.0000	1953.4800	4930.9690
2006	0.0000	0.0000	493.4660	907.8260	3419.2210
2007	0.0000	0.0000	87.0650	4899.7150	6079.1210
2008	0.0000	0.0000	0.0000	2206.7110	4921.4560

SURVEY - INPUT DATA

INDEX	16	17	18	19	20
SURVEY TAG	USspr95	USspr95	USspr95	USfall	USfall
AGE	4	5	6	1	2
TIME	JAN-1	JAN-1	JAN-1	MEAN	MEAN
TYPE	NUMBERS	NUMBERS	NUMBERS	NUMBERS	NUMBERS
RETRO FLAG	1	1	1	0	0
1973	0.0000	0.0000	0.0000	2420.4480	5336.0110
1974	0.0000	0.0000	0.0000	4486.7140	2779.4820
1975	0.0000	0.0000	0.0000	4548.6400	2437.3360
1976	0.0000	0.0000	0.0000	333.5070	1863.8910
1977	0.0000	0.0000	0.0000	906.6610	2147.1200
1978	0.0000	0.0000	0.0000	4620.5630	1243.2740
1979	0.0000	0.0000	0.0000	1282.0020	2008.5140
1980	0.0000	0.0000	0.0000	743.5960	4969.9880
1981	0.0000	0.0000	0.0000	1548.2440	2279.4160
1982	0.0000	0.0000	0.0000	2353.2800	2120.3300
1983	0.0000	0.0000	0.0000	105.7010	2216.4220
1984	0.0000	0.0000	0.0000	641.5830	388.0560
1985	0.0000	0.0000	0.0000	1310.2470	527.5350
1986	0.0000	0.0000	0.0000	273.4250	1075.0640
1987	0.0000	0.0000	0.0000	98.7130	388.8320
1988	0.0000	0.0000	0.0000	18.1510	206.7430
1989	0.0000	0.0000	0.0000	241.0060	1934.0670
1990	0.0000	0.0000	0.0000	0.0000	359.2280
1991	0.0000	0.0000	0.0000	2038.7980	267.0190
1992	0.0000	0.0000	0.0000	146.7590	383.8820
1993	0.0000	0.0000	0.0000	814.6460	135.2080
1994	0.0000	0.0000	0.0000	1159.8000	214.6050
1995	1441.6690	621.4910	9.5120	0.0000	0.0000
1996	2621.7550	591.5960	56.1990	0.0000	0.0000
1997	3960.7320	682.3490	129.6760	0.0000	0.0000
1998	1123.4010	737.0930	339.6220	0.0000	0.0000
1999	2640.4880	1575.2270	756.3110	0.0000	0.0000
2000	2828.4980	789.2150	508.4130	0.0000	0.0000
2001	2339.9830	469.2000	439.6930	0.0000	0.0000
2002	3958.4030	1690.3430	845.4140	0.0000	0.0000
2003	2791.9060	428.6280	836.8730	0.0000	0.0000
2004	659.9280	247.7040	263.8160	0.0000	0.0000
2005	2332.7030	261.7780	111.4280	0.0000	0.0000
2006	2112.6620	307.6880	79.7850	0.0000	0.0000
2007	2762.3020	539.9590	125.2110	0.0000	0.0000
2008	1681.1040	300.3020	26.6070	0.0000	0.0000

SURVEY - INPUT DATA

INDEX	21	22	23	24	25
SURVEY TAG	Usfall	Usfall	Usfall	Usfall	Usfall195
AGE	3	4	5	6	1
TIME	MEAN	MEAN	MEAN	MEAN	MEAN
TYPE	NUMBERS	NUMBERS	NUMBERS	NUMBERS	NUMBERS
RETRO FLAG	0	0	0	0	0
1973	4954.4580	2857.4230	1181.1540	599.9430	0.0000
1974	1471.5650	1029.0570	444.2550	368.0610	0.0000
1975	851.7230	555.1980	324.3830	61.1490	0.0000
1976	460.2700	113.5630	118.5130	97.2570	0.0000
1977	1572.8010	615.3760	102.3040	105.7010	0.0000
1978	757.1850	399.2180	131.6170	34.9430	0.0000
1979	253.7210	116.6690	134.3350	108.6130	0.0000
1980	5911.9800	661.9660	212.2760	250.9070	0.0000
1981	1592.7960	570.5330	76.3880	52.8020	0.0000
1982	1543.3910	410.3800	86.5800	0.0000	0.0000
1983	1858.4560	495.6980	29.8950	47.6580	0.0000
1984	296.7200	235.9590	72.7000	60.6640	0.0000
1985	165.8800	49.1140	78.3290	0.0000	0.0000
1986	338.6510	71.9230	0.0000	0.0000	0.0000
1987	384.5620	51.4430	77.0680	0.0000	0.0000
1988	103.9540	26.5950	0.0000	0.0000	0.0000
1989	750.3900	76.5820	53.9670	0.0000	0.0000
1990	1429.9250	285.8490	0.0000	0.0000	0.0000
1991	426.2010	347.1930	0.0000	0.0000	0.0000
1992	690.9880	157.1440	139.3820	26.5950	0.0000
1993	568.7860	520.3520	0.0000	21.3540	0.0000
1994	954.1240	692.1530	254.8860	54.8400	0.0000
1995	0.0000	0.0000	0.0000	0.0000	267.6980
1996	0.0000	0.0000	0.0000	0.0000	144.3320
1997	0.0000	0.0000	0.0000	0.0000	1351.7890
1998	0.0000	0.0000	0.0000	0.0000	1844.3820
1999	0.0000	0.0000	0.0000	0.0000	2998.7460
2000	0.0000	0.0000	0.0000	0.0000	610.8140
2001	0.0000	0.0000	0.0000	0.0000	3414.1730
2002	0.0000	0.0000	0.0000	0.0000	2031.4210
2003	0.0000	0.0000	0.0000	0.0000	1045.2660
2004	0.0000	0.0000	0.0000	0.0000	850.2680
2005	0.0000	0.0000	0.0000	0.0000	304.0000
2006	0.0000	0.0000	0.0000	0.0000	6012.0510
2007	0.0000	0.0000	0.0000	0.0000	1026.5330
2008	0.0000	0.0000	0.0000	0.0000	0.0000

SURVEY - INPUT DATA

INDEX	26	27	28	29	30
SURVEY TAG	Usfall195	Usfall195	Usfall195	Usfall195	Usfall195
AGE	2	3	4	5	6
TIME	MEAN	MEAN	MEAN	MEAN	MEAN
TYPE	NUMBERS	NUMBERS	NUMBERS	NUMBERS	NUMBERS
RETRO FLAG	0	0	0	0	0
1973	0.0000	0.0000	0.0000	0.0000	0.0000
1974	0.0000	0.0000	0.0000	0.0000	0.0000
1975	0.0000	0.0000	0.0000	0.0000	0.0000
1976	0.0000	0.0000	0.0000	0.0000	0.0000
1977	0.0000	0.0000	0.0000	0.0000	0.0000
1978	0.0000	0.0000	0.0000	0.0000	0.0000
1979	0.0000	0.0000	0.0000	0.0000	0.0000
1980	0.0000	0.0000	0.0000	0.0000	0.0000
1981	0.0000	0.0000	0.0000	0.0000	0.0000
1982	0.0000	0.0000	0.0000	0.0000	0.0000
1983	0.0000	0.0000	0.0000	0.0000	0.0000
1984	0.0000	0.0000	0.0000	0.0000	0.0000
1985	0.0000	0.0000	0.0000	0.0000	0.0000
1986	0.0000	0.0000	0.0000	0.0000	0.0000
1987	0.0000	0.0000	0.0000	0.0000	0.0000
1988	0.0000	0.0000	0.0000	0.0000	0.0000
1989	0.0000	0.0000	0.0000	0.0000	0.0000
1990	0.0000	0.0000	0.0000	0.0000	0.0000
1991	0.0000	0.0000	0.0000	0.0000	0.0000
1992	0.0000	0.0000	0.0000	0.0000	0.0000
1993	0.0000	0.0000	0.0000	0.0000	0.0000
1994	0.0000	0.0000	0.0000	0.0000	0.0000
1995	115.4070	335.1570	267.2130	44.6490	12.1330
1996	341.2720	1813.8070	433.4810	72.7000	0.0000
1997	517.7310	3340.9880	2028.5090	1039.8310	79.7850
1998	4675.3070	4078.8570	1154.5580	289.5370	71.7290
1999	8175.8660	5558.8660	1390.3230	1394.2060	252.7510
2000	1647.5390	4672.4920	2350.2710	919.6670	802.6100
2001	6083.5860	7853.7150	2524.7900	1667.8250	1988.2280
2002	5581.7730	2064.5190	576.0660	295.5550	26.5950
2003	4882.8260	2725.9030	548.0150	96.9650	185.6810
2004	5346.1050	4862.4430	2044.4270	897.0520	170.7330
2005	2033.5560	3652.0740	595.8670	179.2740	0.0000
2006	6067.1830	3556.6610	1132.9140	247.7040	44.3580
2007	11110.9390	7634.7420	1939.6000	371.2640	90.8510
2008	0.0000	0.0000	0.0000	0.0000	0.0000

SURVEY - INPUT DATA

INDEX	31	32	33	34	35
SURVEY TAG	Canada	Canada	Canada	Canada	Canada
AGE	1	2	3	4	5
TIME	JAN-1	JAN-1	JAN-1	JAN-1	JAN-1
TYPE	NUMBERS	NUMBERS	NUMBERS	NUMBERS	NUMBERS
RETRO FLAG	1	1	1	1	1
1973	0.0000	0.0000	0.0000	0.0000	0.0000
1974	0.0000	0.0000	0.0000	0.0000	0.0000
1975	0.0000	0.0000	0.0000	0.0000	0.0000
1976	0.0000	0.0000	0.0000	0.0000	0.0000
1977	0.0000	0.0000	0.0000	0.0000	0.0000
1978	0.0000	0.0000	0.0000	0.0000	0.0000
1979	0.0000	0.0000	0.0000	0.0000	0.0000
1980	0.0000	0.0000	0.0000	0.0000	0.0000
1981	0.0000	0.0000	0.0000	0.0000	0.0000
1982	0.0000	0.0000	0.0000	0.0000	0.0000
1983	0.0000	0.0000	0.0000	0.0000	0.0000
1984	0.0000	0.0000	0.0000	0.0000	0.0000
1985	0.0000	0.0000	0.0000	0.0000	0.0000
1986	0.0000	0.0000	0.0000	0.0000	0.0000
1987	0.1200	1.1940	1.9700	0.4920	0.0870
1988	0.0000	1.7760	1.2750	0.6100	0.2780
1989	0.1140	1.0270	0.6090	0.2940	0.0660
1990	0.0000	2.3870	3.6280	0.9140	0.2090
1991	0.0240	0.8580	1.1860	3.7590	0.5250
1992	0.0550	11.0390	3.6770	0.9900	0.3500
1993	0.0790	2.4310	4.0850	4.0760	0.8870
1994	0.0000	6.0560	3.4640	3.0060	0.7810
1995	0.0000	0.0000	0.0000	0.0000	0.0000
1996	0.0000	0.0000	0.0000	0.0000	0.0000
1997	0.0000	0.0000	0.0000	0.0000	0.0000
1998	0.0000	0.0000	0.0000	0.0000	0.0000
1999	0.0000	0.0000	0.0000	0.0000	0.0000
2000	0.0000	0.0000	0.0000	0.0000	0.0000
2001	0.0000	0.0000	0.0000	0.0000	0.0000
2002	0.0000	0.0000	0.0000	0.0000	0.0000
2003	0.0000	0.0000	0.0000	0.0000	0.0000
2004	0.0000	0.0000	0.0000	0.0000	0.0000
2005	0.0000	0.0000	0.0000	0.0000	0.0000
2006	0.0000	0.0000	0.0000	0.0000	0.0000
2007	0.0000	0.0000	0.0000	0.0000	0.0000
2008	0.0000	0.0000	0.0000	0.0000	0.0000

SURVEY - INPUT DATA

INDEX	36	37	38	39	40
SURVEY TAG	Canada	Can95	Can95	Can95	Can95
AGE	6	1	2	3	4
TIME	JAN-1	JAN-1	JAN-1	JAN-1	JAN-1
TYPE	NUMBERS	NUMBERS	NUMBERS	NUMBERS	NUMBERS
RETRO FLAG	1	1	1	1	1
1973	0.0000	0.0000	0.0000	0.0000	0.0000
1974	0.0000	0.0000	0.0000	0.0000	0.0000
1975	0.0000	0.0000	0.0000	0.0000	0.0000
1976	0.0000	0.0000	0.0000	0.0000	0.0000
1977	0.0000	0.0000	0.0000	0.0000	0.0000
1978	0.0000	0.0000	0.0000	0.0000	0.0000
1979	0.0000	0.0000	0.0000	0.0000	0.0000
1980	0.0000	0.0000	0.0000	0.0000	0.0000
1981	0.0000	0.0000	0.0000	0.0000	0.0000
1982	0.0000	0.0000	0.0000	0.0000	0.0000
1983	0.0000	0.0000	0.0000	0.0000	0.0000
1984	0.0000	0.0000	0.0000	0.0000	0.0000
1985	0.0000	0.0000	0.0000	0.0000	0.0000
1986	0.0000	0.0000	0.0000	0.0000	0.0000
1987	0.0490	0.0000	0.0000	0.0000	0.0000
1988	0.0240	0.0000	0.0000	0.0000	0.0000
1989	0.0220	0.0000	0.0000	0.0000	0.0000
1990	0.0140	0.0000	0.0000	0.0000	0.0000
1991	0.0140	0.0000	0.0000	0.0000	0.0000
1992	0.0300	0.0000	0.0000	0.0000	0.0000
1993	0.1300	0.0000	0.0000	0.0000	0.0000
1994	0.2070	0.0000	0.0000	0.0000	0.0000
1995	0.0000	0.2100	1.2510	4.3530	2.5460
1996	0.0000	0.4460	7.1420	9.1740	5.4060
1997	0.0000	0.0220	12.4820	13.9020	16.3690
1998	0.0000	0.8930	3.3300	4.9070	4.3340
1999	0.0000	0.1590	20.8610	20.8340	7.6690
2000	0.0000	0.0110	13.7650	27.4420	19.2430
2001	0.0000	0.2910	19.8960	42.1240	13.3070
2002	0.0000	0.0880	11.9620	31.0150	12.2340
2003	0.0000	0.0890	11.8890	24.6180	11.0860
2004	0.0000	0.0330	3.5990	16.2600	9.2050
2005	0.0000	0.6000	1.6020	27.9590	20.5640
2006	0.0000	0.6230	4.8930	18.6000	6.5720
2007	0.0000	0.1730	12.1590	27.7080	12.7990
2008	0.0000	0.0000	0.0000	0.0000	0.0000

SURVEY - INPUT DATA

INDEX	41	42	43	44	
SURVEY TAG	Can95	Can95	Scall	Scall95	
AGE	5	6	1	1	NUMBERS
TIME	JAN-1	JAN-1	MEAN	MEAN	NUMBERS
TYPE	NUMBERS	NUMBERS	NUMBERS	NUMBERS	NUMBERS
RETRO FLAG	1	1	0	0	

1973	0.0000	0.0000	0.0000	0.0000
1974	0.0000	0.0000	0.0000	0.0000
1975	0.0000	0.0000	0.0000	0.0000
1976	0.0000	0.0000	0.0000	0.0000
1977	0.0000	0.0000	0.0000	0.0000
1978	0.0000	0.0000	0.0000	0.0000
1979	0.0000	0.0000	0.0000	0.0000
1980	0.0000	0.0000	0.0000	0.0000
1981	0.0000	0.0000	0.0000	0.0000
1982	0.0000	0.0000	0.3130	0.0000
1983	0.0000	0.0000	0.1400	0.0000
1984	0.0000	0.0000	0.2330	0.0000
1985	0.0000	0.0000	0.5490	0.0000
1986	0.0000	0.0000	0.1030	0.0000
1987	0.0000	0.0000	0.0470	0.0000
1988	0.0000	0.0000	0.1160	0.0000
1989	0.0000	0.0000	0.1950	0.0000
1990	0.0000	0.0000	0.1000	0.0000
1991	0.0000	0.0000	2.1170	0.0000
1992	0.0000	0.0000	0.1670	0.0000
1993	0.0000	0.0000	1.1290	0.0000
1994	0.0000	0.0000	1.5030	0.0000
1995	0.6470	0.1010	0.0000	0.6090
1996	1.1550	0.1230	0.0000	0.5080
1997	4.0440	0.6700	0.0000	1.0620
1998	1.9880	0.5580	0.0000	1.8720
1999	5.3500	2.2000	0.0000	1.0380
2000	5.0690	3.6890	0.0000	0.9120
2001	4.5810	2.3970	0.0000	0.7890
2002	5.5530	2.8330	0.0000	1.0050
2003	3.4210	1.9880	0.0000	0.8800
2004	2.2730	1.4160	0.0000	0.3300
2005	5.6960	1.5650	0.0000	0.5730
2006	0.8200	0.2380	0.0000	2.4220
2007	2.2880	0.2480	0.0000	0.0000
2008	0.0000	0.0000	0.0000	0.0000

Additional Output Files

Population File C:\WORKING\ASSESSMENTS\GARM3THEFINALE\YTASSESSMENTS\GB\VPA\MAJOR
 Auxilliary File C:\WORKING\ASSESSMENTS\GARM3THEFINALE\YTASSESSMENTS\GB\VPA\MAJOR
 Covariance File C:\WORKING\ASSESSMENTS\GARM3THEFINALE\YTASSESSMENTS\GB\VPA\MAJOR
 Residuals File C:\WORKING\ASSESSMENTS\GARM3THEFINALE\YTASSESSMENTS\GB\VPA\MAJOR
 Log File C:\WORKING\ASSESSMENTS\GARM3THEFINALE\YTASSESSMENTS\GB\VPA\MAJOR

Estimation Results

JAN-1 Population Numbers

AGE	1973	1974	1975	1976	1977
1	29384.	52184.	70632.	24731.	17283.
2	24172.	23733.	40588.	53646.	19674.
3	29516.	15136.	10930.	9852.	15554.
4	17300.	12051.	5010.	2425.	3171.
5	6966.	5732.	3079.	977.	719.
6	3013.	2391.	1709.	1562.	850.
=====					
Total	110351.	111229.	131948.	93193.	57252.
AGE	1978	1979	1980	1981	1982
1	54437.	25508.	24034.	62997.	22846.
2	13809.	35604.	20595.	19390.	51480.
3	7987.	8124.	19711.	13268.	14885.
4	3390.	2468.	3268.	7499.	5535.
5	956.	1073.	747.	1302.	1783.
6	373.	559.	239.	221.	156.
=====					
Total	80953.	73336.	68594.	104677.	96685.
AGE	1983	1984	1985	1986	1987
1	6581.	10843.	16749.	8473.	9193.
2	16754.	4755.	8414.	12837.	6776.
3	25937.	6579.	2089.	2991.	4801.
4	5517.	6472.	1379.	767.	1440.
5	1514.	2305.	870.	402.	282.
6	345.	487.	136.	224.	201.
=====					
Total	56648.	31441.	29636.	25695.	22692.
AGE	1988	1989	1990	1991	1992
1	22841.	9661.	11217.	22557.	17518.
2	7386.	18250.	7738.	8975.	17869.
3	2617.	3361.	12981.	4437.	7215.
4	1153.	771.	1747.	4399.	2296.
5	309.	198.	250.	560.	940.
6	73.	55.	47.	104.	65.
=====					
Total	34379.	32296.	33980.	41032.	45904.
AGE	1993	1994	1995	1996	1997
1	13938.	13180.	11672.	13470.	19801.
2	12168.	6725.	10726.	9514.	10938.
3	6459.	8713.	4304.	8500.	7175.
4	3250.	2323.	1576.	2237.	5104.
5	574.	609.	305.	509.	1040.
6	126.	184.	66.	70.	246.
=====					
Total	36516.	31734.	28650.	34299.	44303.

JAN-1 Population Numbers

AGE	1998	1999	2000	2001	2002
1	22402.	24564.	19880.	22331.	15547.
2	16138.	18189.	20057.	16157.	18124.
3	7934.	11418.	12412.	12945.	10633.
4	4228.	3467.	5591.	5060.	4404.
5	2515.	1778.	1456.	1756.	1570.
6	328.	675.	931.	918.	1116.
=====					
Total	53545.	60091.	60327.	59167.	51394.
AGE	2003	2004	2005	2006	2007
1	11770.	10472.	14435.	49437.	18373.
2	12537.	9492.	8516.	11764.	40337.
3	11091.	6749.	6689.	5596.	8460.
4	5615.	4870.	2695.	1850.	3058.
5	1894.	2522.	647.	688.	622.
6	1678.	1857.	280.	395.	252.
=====					
Total	44585.	35962.	33263.	69731.	71101.
AGE	2008				
1	19120.				
2	14994.				
3	31704.				
4	5339.				
5	1875.				
6	536.				
=====					
Total	73568.				

Fishing Mortality Calculated

AGE	1973	1974	1975	1976	1977
1	0.0136	0.0513	0.0751	0.0287	0.0244
2	0.2681	0.5753	1.2158	1.0381	0.7015
3	0.6958	0.9056	1.3055	0.9335	1.3234
4	0.9046	1.1647	1.4350	1.0158	0.9995
5	0.9046	1.1647	1.4350	1.0158	0.9995
6	0.9046	1.1647	1.4350	1.0158	0.9995
AGE	1978	1979	1980	1981	1982
1	0.2246	0.0140	0.0147	0.0019	0.1101
2	0.3305	0.3913	0.2397	0.0644	0.4855
3	0.9746	0.7107	0.7665	0.6742	0.7925
4	0.9500	0.9943	0.7201	1.2366	1.0961
5	0.9500	0.9943	0.7201	1.2366	1.0961
6	0.9500	0.9943	0.7201	1.2366	1.0961
AGE	1983	1984	1985	1986	1987
1	0.1251	0.0537	0.0660	0.0235	0.0189
2	0.7348	0.6226	0.8341	0.7835	0.7512
3	1.1882	1.3628	0.8015	0.5314	1.2266
4	0.6727	1.8064	1.0330	0.8025	1.3378
5	0.6727	1.8064	1.0330	0.8025	1.3378
6	0.6727	1.8064	1.0330	0.8025	1.3378
AGE	1988	1989	1990	1991	1992
1	0.0244	0.0219	0.0229	0.0330	0.1644
2	0.5874	0.1407	0.3562	0.0183	0.8176
3	1.0221	0.4544	0.8820	0.4589	0.5977
4	1.5603	0.9250	0.9378	1.3434	1.1856
5	1.5603	0.9250	0.9378	1.3434	1.1856
6	1.5603	0.9250	0.9378	1.3434	1.1856
AGE	1993	1994	1995	1996	1997
1	0.5288	0.0060	0.0044	0.0083	0.0046
2	0.1340	0.2463	0.0327	0.0821	0.1210
3	0.8225	1.5100	0.4544	0.3100	0.3288
4	1.4749	1.8301	0.9310	0.5664	0.5076
5	1.4749	1.8301	0.9310	0.5664	0.5076
6	1.4749	1.8301	0.9310	0.5664	0.5076

Fishing Mortality Calculated

AGE	1998	1999	2000	2001	2002
1	0.0083	0.0027	0.0073	0.0087	0.0151
2	0.1460	0.1821	0.2379	0.2184	0.2911
3	0.6278	0.5141	0.6974	0.8781	0.4385
4	0.6665	0.6677	0.9583	0.9701	0.6441
5	0.6665	0.6677	0.9583	0.9701	0.6441
6	0.6665	0.6677	0.9583	0.9701	0.6441
AGE	2003	2004	2005	2006	2007
1	0.0151	0.0068	0.0046	0.0034	0.0032
2	0.4193	0.1500	0.2198	0.1297	0.0408
3	0.6232	0.7180	1.0853	0.4042	0.2603
4	0.6003	1.8180	1.1648	0.8904	0.2892
5	0.6003	1.8180	1.1648	0.8904	0.2892
6	0.6003	1.8180	1.1648	0.8904	0.2892

Average Fishing Mortality For Ages 4- 5

Year	Average F	N Weighted	Biomass Wtd	Catch Wtd
1973	0.9046	0.9046	0.9046	0.9046
1974	1.1647	1.1647	1.1647	1.1647
1975	1.4350	1.4350	1.4350	1.4350
1976	1.0158	1.0158	1.0158	1.0158
1977	0.9995	0.9995	0.9995	0.9995
1978	0.9500	0.9500	0.9500	0.9500
1979	0.9943	0.9943	0.9943	0.9943
1980	0.7201	0.7201	0.7201	0.7201
1981	1.2366	1.2366	1.2366	1.2366
1982	1.0961	1.0961	1.0961	1.0961
1983	0.6727	0.6727	0.6727	0.6727
1984	1.8064	1.8064	1.8064	1.8064
1985	1.0330	1.0330	1.0330	1.0330
1986	0.8025	0.8025	0.8025	0.8025
1987	1.3378	1.3378	1.3378	1.3378
1988	1.5603	1.5603	1.5603	1.5603
1989	0.9250	0.9250	0.9250	0.9250
1990	0.9378	0.9378	0.9378	0.9378
1991	1.3434	1.3434	1.3434	1.3434
1992	1.1856	1.1856	1.1856	1.1856
1993	1.4749	1.4749	1.4749	1.4749
1994	1.8301	1.8301	1.8301	1.8301
1995	0.9310	0.9310	0.9310	0.9310
1996	0.5664	0.5664	0.5664	0.5664
1997	0.5076	0.5076	0.5076	0.5076
1998	0.6665	0.6665	0.6665	0.6665
1999	0.6677	0.6677	0.6677	0.6677
2000	0.9583	0.9583	0.9583	0.9583
2001	0.9701	0.9701	0.9701	0.9701
2002	0.6441	0.6441	0.6441	0.6441
2003	0.6003	0.6003	0.6003	0.6003
2004	1.8180	1.8180	1.8180	1.8180
2005	1.1648	1.1648	1.1648	1.1648
2006	0.8904	0.8904	0.8904	0.8904
2007	0.2892	0.2892	0.2892	0.2892

Back Calculated Partial Recruitment

AGE	1973	1974	1975	1976	1977
1	0.0150	0.0441	0.0523	0.0277	0.0184
2	0.2964	0.4940	0.8473	1.0000	0.5300
3	0.7692	0.7775	0.9098	0.8993	1.0000
4	1.0000	1.0000	1.0000	0.9786	0.7552
5	1.0000	1.0000	1.0000	0.9786	0.7552
6	1.0000	1.0000	1.0000	0.9786	0.7552
AGE	1978	1979	1980	1981	1982
1	0.2305	0.0140	0.0192	0.0015	0.1005
2	0.3392	0.3935	0.3127	0.0521	0.4429
3	1.0000	0.7147	1.0000	0.5452	0.7230
4	0.9748	1.0000	0.9395	1.0000	1.0000
5	0.9748	1.0000	0.9395	1.0000	1.0000
6	0.9748	1.0000	0.9395	1.0000	1.0000
AGE	1983	1984	1985	1986	1987
1	0.1053	0.0297	0.0639	0.0293	0.0142
2	0.6184	0.3446	0.8075	0.9763	0.5615
3	1.0000	0.7544	0.7759	0.6622	0.9169
4	0.5661	1.0000	1.0000	1.0000	1.0000
5	0.5661	1.0000	1.0000	1.0000	1.0000
6	0.5661	1.0000	1.0000	1.0000	1.0000
AGE	1988	1989	1990	1991	1992
1	0.0156	0.0237	0.0245	0.0245	0.1387
2	0.3765	0.1521	0.3799	0.0136	0.6896
3	0.6550	0.4912	0.9405	0.3416	0.5041
4	1.0000	1.0000	1.0000	1.0000	1.0000
5	1.0000	1.0000	1.0000	1.0000	1.0000
6	1.0000	1.0000	1.0000	1.0000	1.0000
AGE	1993	1994	1995	1996	1997
1	0.3585	0.0033	0.0048	0.0146	0.0090
2	0.0908	0.1346	0.0351	0.1450	0.2384
3	0.5577	0.8251	0.4881	0.5474	0.6479
4	1.0000	1.0000	1.0000	1.0000	1.0000
5	1.0000	1.0000	1.0000	1.0000	1.0000
6	1.0000	1.0000	1.0000	1.0000	1.0000

Back Calculated Partial Recruitment

AGE	1998	1999	2000	2001	2002
1	0.0125	0.0040	0.0077	0.0090	0.0235
2	0.2190	0.2727	0.2482	0.2251	0.4520
3	0.9421	0.7699	0.7277	0.9052	0.6809
4	1.0000	1.0000	1.0000	1.0000	1.0000
5	1.0000	1.0000	1.0000	1.0000	1.0000
6	1.0000	1.0000	1.0000	1.0000	1.0000

AGE	2003	2004	2005	2006	2007
1	0.0242	0.0037	0.0039	0.0039	0.0110
2	0.6729	0.0825	0.1887	0.1457	0.1412
3	1.0000	0.3949	0.9317	0.4539	0.9001
4	0.9634	1.0000	1.0000	1.0000	1.0000
5	0.9634	1.0000	1.0000	1.0000	1.0000
6	0.9634	1.0000	1.0000	1.0000	1.0000

JAN-1 Biomass

AGE	1973	1974	1975	1976	1977
1	1607.	3622.	4803.	1501.	1218.
2	7046.	4424.	7736.	10075.	3781.
3	11898.	6289.	4483.	4085.	6289.
4	8038.	6382.	2626.	1351.	1861.
5	3927.	3427.	1887.	627.	506.
6	2344.	1990.	1187.	1345.	792.

=====
Total 34860. 26134. 22723. 18984. 14447.

AGE	1978	1979	1980	1981	1982
1	3092.	1729.	1334.	4895.	1638.
2	2636.	6523.	3946.	3566.	9864.
3	3335.	3094.	7938.	5265.	6000.
4	2039.	1427.	1799.	4092.	3121.
5	681.	765.	547.	887.	1203.
6	362.	531.	256.	186.	169.

=====
Total 12146. 14070. 15820. 18890. 21994.

AGE	1983	1984	1985	1986	1987
1	705.	1177.	2209.	1146.	676.
2	3091.	870.	2034.	3189.	1641.
3	9449.	2203.	726.	1321.	2029.
4	2994.	3039.	680.	448.	872.
5	1050.	1445.	525.	298.	205.
6	348.	388.	109.	227.	176.

=====
Total 17637. 9121. 6283. 6628. 5599.

AGE	1988	1989	1990	1991	1992
1	1320.	567.	784.	1755.	1053.
2	1471.	3349.	1318.	1415.	3365.
3	1112.	1388.	4665.	1451.	2122.
4	696.	488.	963.	1927.	1012.
5	234.	154.	177.	364.	529.
6	71.	58.	39.	91.	73.

=====
Total 4905. 6004. 7947. 7004. 8153.

AGE	1993	1994	1995	1996	1997
1	864.	2131.	1613.	1006.	3550.
2	2065.	1084.	2471.	2085.	2074.

3	2152.	2764.	1293.	2844.	2408.
4	1390.	983.	638.	979.	2388.
5	313.	340.	163.	292.	655.
6	109.	142.	51.	71.	233.
=====					
Total	6893.	7444.	6230.	7276.	11308.

JAN-1 Biomass

AGE	1998	1999	2000	2001	2002
1	2773.	3604.	3620.	4549.	3885.
2	4123.	4655.	5578.	4652.	5604.
3	2852.	4437.	5217.	5433.	4432.
4	1996.	1815.	3085.	2742.	2436.
5	1486.	1141.	1019.	1241.	1121.
6	317.	608.	888.	943.	1192.
=====					
Total	13548.	16260.	19407.	19560.	18670.

AGE	2003	2004	2005	2006	2007
1	2355.	1738.	1065.	2912.	2372.
2	3989.	2466.	2284.	2256.	6845.
3	4714.	2682.	2428.	2095.	2997.
4	3144.	2566.	1378.	919.	1436.
5	1402.	1739.	434.	463.	405.
6	1759.	1775.	279.	394.	252.
=====					
Total	17363.	12967.	7868.	9039.	14306.

AGE	2008
1	1669.
2	3147.
3	11534.
4	2629.
5	1246.
6	535.
=====	
Total	20761.

Mean Biomass

AGE	1973	1974	1975	1976	1977
1	2672.	5306.	6978.	2387.	1796.
2	6717.	5680.	6860.	9599.	4434.
3	9008.	4543.	2762.	3206.	4184.
4	5519.	3991.	1367.	891.	1169.
5	2543.	2120.	938.	421.	327.
6	1419.	1086.	585.	778.	461.
=====					
Total	27878.	22727.	19490.	17283.	12371.

AGE	1978	1979	1980	1981	1982
1	4524.	2618.	2185.	6959.	2259.

2	3365.	8843.	5366.	5708.	11215.
3	2397.	2464.	6230.	4325.	4578.
4	1390.	945.	1401.	2403.	2016.
5	456.	461.	399.	488.	753.
6	215.	310.	168.	99.	95.

=====
Total 12347. 15641. 15748. 19983. 20917.

AGE 1983 1984 1985 1986 1987

1	787.	1552.	2662.	1374.	999.
2	3222.	775.	1893.	2786.	1416.
3	6183.	1261.	666.	1146.	1340.
4	2234.	1396.	509.	327.	500.
5	748.	643.	365.	217.	113.
6	232.	167.	62.	143.	90.

=====
Total 13406. 5794. 6157. 5993. 4458.

AGE 1988 1989 1990 1991 1992

1	2107.	866.	1056.	2435.	1483.
2	1677.	5058.	1721.	1911.	3285.
3	841.	1283.	3133.	1199.	1815.
4	377.	333.	610.	1089.	653.
5	123.	103.	104.	206.	331.
6	33.	35.	24.	46.	39.

=====
Total 5159. 7677. 6647. 6887. 7607.

AGE 1993 1994 1995 1996 1997

1	990.	2299.	1837.	1447.	3832.
2	2948.	1410.	2632.	2288.	2825.
3	1533.	1473.	1096.	2710.	2274.
4	790.	469.	439.	863.	1968.
5	157.	162.	111.	251.	535.
6	53.	61.	30.	49.	167.

=====
Total 6471. 5875. 6145. 7608. 11601.

Mean Biomass

AGE 1998 1999 2000 2001 2002

1	3600.	4491.	4111.	5059.	3945.
2	4161.	5563.	6221.	4779.	5456.
3	2309.	4040.	3933.	3644.	3772.
4	1544.	1483.	2036.	1825.	1978.
5	1092.	897.	661.	840.	883.
6	212.	407.	526.	556.	805.

=====
Total 12918. 16881. 17488. 16704. 16839.

AGE 2003 2004 2005 2006 2007

1	2415.	1996.	1553.	4473.	2461.
2	3355.	2371.	2371.	3097.	10324.
3	3583.	1943.	1675.	1726.	2753.
4	2523.	1226.	873.	625.	1296.

5	1074.	789.	271.	319.	376.
6	1211.	763.	152.	240.	200.
=====					
Total	14160.	9088.	6897.	10480.	17409.

Spawning Stock Biomass

AGE	1973	1974	1975	1976	1977
1	0.	0.	0.	0.	0.
2	3198.	2730.	3285.	4616.	2135.
3	9079.	4580.	2760.	3232.	4177.
4	5754.	4142.	1404.	928.	1218.
5	2651.	2201.	964.	438.	340.
6	1479.	1127.	601.	810.	480.
=====					
Total	22161.	14780.	9014.	10024.	8351.

AGE	1978	1979	1980	1981	1982
1	0.	0.	0.	0.	0.
2	1606.	4230.	2551.	2688.	5380.
3	2415.	2483.	6282.	4358.	4616.
4	1449.	984.	1461.	2489.	2096.
5	475.	480.	416.	506.	783.
6	224.	323.	175.	102.	98.
=====					
Total	6169.	8501.	10884.	10144.	12975.

AGE	1983	1984	1985	1986	1987
1	0.	0.	0.	0.	0.
2	1552.	373.	912.	1342.	682.
3	6202.	1257.	672.	1152.	1342.
4	2328.	1402.	529.	341.	516.
5	779.	646.	380.	226.	116.
6	242.	168.	65.	150.	93.
=====					
Total	11103.	3847.	2558.	3210.	2750.

AGE	1988	1989	1990	1991	1992
1	0.	0.	0.	0.	0.
2	806.	2392.	822.	897.	1583.
3	847.	1287.	3159.	1203.	1827.
4	385.	347.	636.	1124.	678.
5	125.	107.	108.	213.	344.
6	34.	36.	25.	48.	41.
=====					
Total	2198.	4170.	4750.	3485.	4472.

AGE	1993	1994	1995	1996	1997
1	0.	0.	0.	0.	0.
2	1394.	671.	1237.	1079.	1335.
3	1546.	1459.	1100.	2705.	2271.
4	810.	471.	457.	897.	2045.
5	161.	162.	116.	261.	556.
6	54.	61.	32.	51.	174.
=====					
Total	3966.	2823.	2941.	4993.	6380.

Spawning Stock Biomass

AGE	1998	1999	2000	2001	2002
1	0.	0.	0.	0.	0.
2	1969.	2637.	2957.	2270.	2600.
3	2326.	4059.	3964.	3674.	3782.
4	1609.	1546.	2122.	1902.	2060.
5	1138.	935.	688.	875.	920.
6	221.	424.	548.	579.	838.
Total	7262.	9600.	10280.	9300.	10201.
AGE	2003	2004	2005	2006	2007
1	0.	0.	0.	0.	0.
2	1606.	1122.	1126.	1464.	4855.
3	3608.	1959.	1685.	1729.	2742.
4	2627.	1231.	906.	652.	1337.
5	1118.	792.	281.	332.	387.
6	1260.	766.	158.	250.	206.
Total	10219.	5869.	4157.	4427.	9526.

Catch Biomass

AGE	1973	1974	1975	1976	1977
1	36.	272.	524.	69.	44.
2	1801.	3268.	8340.	9965.	3110.
3	6267.	4114.	3606.	2993.	5537.
4	4992.	4648.	1961.	905.	1169.
5	2300.	2470.	1346.	427.	327.
6	1283.	1264.	839.	790.	461.
Total	16680.	16037.	16618.	15149.	10647.
AGE	1978	1979	1980	1981	1982
1	1016.	37.	32.	13.	249.
2	1112.	3460.	1286.	368.	5445.
3	2336.	1751.	4775.	2916.	3628.
4	1321.	939.	1009.	2972.	2210.
5	433.	459.	287.	604.	826.
6	204.	308.	121.	122.	104.
Total	6422.	6954.	7510.	6995.	12462.
AGE	1983	1984	1985	1986	1987
1	98.	83.	176.	32.	19.
2	2367.	482.	1579.	2183.	1064.
3	7347.	1719.	534.	609.	1644.
4	1503.	2522.	525.	262.	669.
5	503.	1162.	377.	174.	151.
6	156.	302.	65.	115.	120.
Total	11975.	6270.	3255.	3375.	3666.
AGE	1988	1989	1990	1991	1992

1	51.	19.	24.	80.	244.
2	985.	711.	613.	35.	2686.
3	860.	583.	2763.	550.	1085.
4	589.	308.	572.	1463.	775.
5	192.	95.	97.	277.	393.
6	52.	32.	22.	62.	47.
=====					
Total	2729.	1749.	4092.	2468.	5228.

AGE	1993	1994	1995	1996	1997
-----	------	------	------	------	------

1	523.	14.	8.	12.	18.
2	395.	347.	86.	188.	342.
3	1261.	2225.	498.	840.	748.
4	1165.	859.	409.	489.	999.
5	232.	296.	103.	142.	272.
6	78.	112.	28.	28.	85.
=====					
Total	3654.	3852.	1132.	1699.	2462.

Catch Biomass

AGE	1998	1999	2000	2001	2002
-----	------	------	------	------	------

1	30.	12.	30.	44.	60.
2	607.	1013.	1480.	1044.	1588.
3	1450.	2077.	2743.	3200.	1654.
4	1029.	990.	1951.	1771.	1274.
5	728.	599.	633.	815.	569.
6	141.	272.	504.	539.	518.
=====					
Total	3985.	4963.	7341.	7413.	5664.

AGE	2003	2004	2005	2006	2007
-----	------	------	------	------	------

1	36.	13.	7.	15.	8.
2	1407.	356.	521.	402.	421.
3	2233.	1395.	1818.	698.	717.
4	1515.	2229.	1017.	557.	375.
5	645.	1434.	315.	284.	109.
6	727.	1387.	178.	214.	58.
=====					
Total	6562.	6814.	3857.	2169.	1687.

Catch Numbers

AGE	1973	1974	1975	1976	1977
1	359.3	2367.5	4636.2	635.1	377.9
2	5175.0	9500.0	26393.9	31938.1	9094.2
3	13565.3	8294.2	7375.1	5501.9	10567.1
4	9473.0	7657.9	3540.2	1425.7	1846.2
5	3814.6	3642.6	2175.2	574.2	418.6
6	1649.7	1519.6	1207.2	918.1	495.0
Total	34036.9	32981.8	45327.8	40993.1	22799.0
AGE	1978	1979	1980	1981	1982
1	9962.0	320.6	317.8	107.4	2163.5
2	3542.1	10516.6	3994.4	1097.1	18091.3
3	4579.7	3789.4	9685.3	5963.4	7480.3
4	1913.8	1432.1	1538.4	4920.2	3400.5
5	539.5	623.0	351.9	854.4	1095.2
6	210.8	324.6	112.6	145.3	95.8
Total	20747.9	17006.3	16000.4	13087.8	32326.6
AGE	1983	1984	1985	1986	1987
1	702.8	514.3	970.3	178.8	156.4
2	7998.1	2017.7	4373.6	6402.1	3284.2
3	16660.9	4534.6	1057.6	1127.5	3136.7
4	2475.9	5043.0	818.4	388.8	983.3
5	679.6	1796.3	516.6	203.6	192.3
6	154.6	379.5	80.7	113.4	137.3
Total	28671.9	14285.4	7817.2	8414.2	7890.2
AGE	1988	1989	1990	1991	1992
1	499.0	189.8	230.6	663.3	2413.9
2	3002.6	2175.4	2114.4	147.3	9167.4
3	1544.1	1120.6	6995.7	1491.2	2971.5
4	846.1	428.2	978.3	3011.1	1473.0
5	227.0	110.1	140.2	383.2	603.1
6	53.3	30.4	26.1	71.2	42.0
Total	6172.1	4054.5	10485.3	5767.3	16670.9
AGE	1993	1994	1995	1996	1997
1	5233.5	71.2	46.9	100.6	81.8
2	1385.8	1336.3	312.7	680.9	1132.3
3	3326.9	6302.4	1435.3	2064.3	1832.4
4	2325.5	1819.3	878.6	885.0	1856.8
5	411.0	476.7	170.1	201.2	378.2
6	90.5	143.9	36.9	27.6	89.6
Total	12773.2	10149.8	2880.5	3959.6	5371.1

Catch Numbers

AGE	1998	1999	2000	2001	2002
1	168.5	60.1	131.8	175.9	211.9
2	1991.4	2752.9	3863.5	2883.5	4168.9
3	3387.8	4195.0	5713.9	6956.4	3446.3
4	1884.9	1547.6	3173.0	2893.2	1915.8
5	1121.3	793.5	826.3	1003.9	683.0
6	146.2	301.4	528.5	525.1	485.3
Total	8700.1	9650.5	14237.0	14438.0	10911.2
AGE	2003	2004	2005	2006	2007
1	159.7	63.9	59.9	153.9	53.0
2	3919.1	1201.3	1528.8	1300.2	1463.5
3	4710.0	3170.8	4086.2	1697.7	1764.9
4	2319.9	3803.8	1712.5	1003.0	699.5
5	782.4	1970.1	411.3	373.2	142.2
6	693.5	1450.7	178.1	214.0	57.6
Total	12584.6	11660.6	7976.8	4742.0	4180.7

Surplus Production

Average Adjustment Factor (Delta) = 1.0000

Year	Biomass	Delta Biomass	Catch Biomass	Surplus Production
1973	34859.870	-8726.293	16680.299	7954.006
1974	26133.577	-3410.933	16036.521	12625.588
1975	22722.644	-3738.801	16617.511	12878.709
1976	18983.843	-4536.768	15149.320	10612.552
1977	14447.075	-2301.286	10647.211	8345.925
1978	12145.789	1924.223	6422.207	8346.430
1979	14070.012	1749.816	6953.568	8703.384
1980	15819.828	3070.339	7510.196	10580.534
1981	18890.167	3104.265	6994.648	10098.913
1982	21994.432	-4357.319	12461.991	8104.672
1983	17637.113	-8515.924	11975.208	3459.283
1984	9121.189	-2837.769	6270.328	3432.559
1985	6283.420	344.755	3255.156	3599.912
1986	6628.176	-1029.041	3375.356	2346.315
1987	5599.135	-694.543	3666.181	2971.637
1988	4904.592	1099.276	2728.755	3828.030
1989	6003.867	1943.108	1748.710	3691.818
1990	7946.975	-942.640	4092.209	3149.569
1991	7004.335	1148.206	2468.313	3616.519
1992	8152.541	-1259.826	5228.486	3968.660
1993	6892.715	551.072	3654.179	4205.251
1994	7443.787	-1213.834	3852.190	2638.355
1995	6229.953	1046.155	1132.341	2178.496
1996	7276.108	4031.751	1698.769	5730.520
1997	11307.859	2239.872	2462.436	4702.308
1998	13547.731	2711.938	3985.457	6697.395
1999	16259.669	3147.577	4962.850	8110.428
2000	19407.246	152.524	7341.104	7493.629
2001	19559.771	-890.153	7413.005	6522.852
2002	18669.618	-1306.869	5663.577	4356.708
2003	17362.749	-4395.720	6562.289	2166.569
2004	12967.029	-5099.305	6814.349	1715.043
2005	7867.723	1171.626	3857.066	5028.692
2006	9039.350	5267.047	2168.776	7435.822
2007	14306.396	6454.480	1687.169	8141.650
2008	20760.877			

Summary of Survey Indices Used in the Estimate

INDEX	Survey Tag	Age	Time	Type	Catchability	Std. Error	CV
1	USsearly	1	JAN-1	NUMBER	0.7461E-02	0.4890E-02	0.6554E+00
2	USsearly	2	JAN-1	NUMBER	0.7552E-01	0.1408E-01	0.1864E+00
3	USsearly	3	JAN-1	NUMBER	0.9561E-01	0.1687E-01	0.1765E+00
4	USsearly	4	JAN-1	NUMBER	0.9265E-01	0.1151E-01	0.1242E+00
5	USsearly	5	JAN-1	NUMBER	0.7601E-01	0.1541E-01	0.2027E+00
6	USsearly	6	JAN-1	NUMBER	0.7202E-01	0.2265E-01	0.3145E+00
7	USspr	1	JAN-1	NUMBER	0.4235E-02	0.1040E-02	0.2456E+00
8	USspr	2	JAN-1	NUMBER	0.4556E-01	0.1441E-01	0.3162E+00
9	USspr	3	JAN-1	NUMBER	0.9545E-01	0.1522E-01	0.1595E+00
10	USspr	4	JAN-1	NUMBER	0.1524E+00	0.2010E-01	0.1318E+00
11	USspr	5	JAN-1	NUMBER	0.2285E+00	0.4608E-01	0.2016E+00
12	USspr	6	JAN-1	NUMBER	0.4229E+00	0.9316E-01	0.2203E+00
13	USspr95	1	JAN-1	NUMBER	0.4582E-02	0.1354E-02	0.2954E+00
14	USspr95	2	JAN-1	NUMBER	0.1437E+00	0.1650E-01	0.1149E+00
15	USspr95	3	JAN-1	NUMBER	0.4995E+00	0.8842E-01	0.1770E+00
16	USspr95	4	JAN-1	NUMBER	0.5934E+00	0.9885E-01	0.1666E+00
17	USspr95	5	JAN-1	NUMBER	0.4807E+00	0.1085E+00	0.2257E+00
18	USspr95	6	JAN-1	NUMBER	0.3912E+00	0.9214E-01	0.2355E+00
19	USfall	1	MEAN	NUMBER	0.3964E-01	0.1006E-01	0.2537E+00
20	USfall	2	MEAN	NUMBER	0.8751E-01	0.1425E-01	0.1629E+00
21	USfall	3	MEAN	NUMBER	0.1504E+00	0.1581E-01	0.1052E+00
22	USfall	4	MEAN	NUMBER	0.1561E+00	0.2159E-01	0.1383E+00
23	USfall	5	MEAN	NUMBER	0.2050E+00	0.4109E-01	0.2005E+00
24	USfall	6	MEAN	NUMBER	0.3063E+00	0.6539E-01	0.2135E+00
25	USfall95	1	MEAN	NUMBER	0.6541E-01	0.1508E-01	0.2306E+00
26	USfall95	2	MEAN	NUMBER	0.2123E+00	0.7371E-01	0.3472E+00
27	USfall95	3	MEAN	NUMBER	0.5561E+00	0.1084E+00	0.1950E+00
28	USfall95	4	MEAN	NUMBER	0.4711E+00	0.8264E-01	0.1754E+00
29	USfall95	5	MEAN	NUMBER	0.4901E+00	0.1277E+00	0.2606E+00
30	USfall95	6	MEAN	NUMBER	0.3616E+00	0.1311E+00	0.3624E+00
32	Canada	2	JAN-1	NUMBER	0.2299E-03	0.7381E-04	0.3210E+00
33	Canada	3	JAN-1	NUMBER	0.3694E-03	0.5352E-04	0.1449E+00
34	Canada	4	JAN-1	NUMBER	0.6191E-03	0.1146E-03	0.1850E+00
35	Canada	5	JAN-1	NUMBER	0.6933E-03	0.1548E-03	0.2233E+00
36	Canada	6	JAN-1	NUMBER	0.4029E-03	0.1012E-03	0.2511E+00
38	Can95	2	JAN-1	NUMBER	0.4966E-03	0.1064E-03	0.2142E+00
39	Can95	3	JAN-1	NUMBER	0.2062E-02	0.3176E-03	0.1540E+00
40	Can95	4	JAN-1	NUMBER	0.2640E-02	0.3605E-03	0.1366E+00
41	Can95	5	JAN-1	NUMBER	0.2405E-02	0.4405E-03	0.1832E+00
42	Can95	6	JAN-1	NUMBER	0.1860E-02	0.3387E-03	0.1821E+00
43	Scall	1	MEAN	NUMBER	0.2334E-04	0.6875E-05	0.2946E+00
44	Scall95	1	MEAN	NUMBER	0.5395E-04	0.4694E-05	0.8700E-01

Survey Index: 1 Tag: USsearly AGE = 1
 Time = JAN-1 Type = NUMBER
 Catchability = 0.746089E-02 % Variance Contribution = 7.8992
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.188291E+04	0.219229E+03	0.215046E+01
1974	0.308173E+03	0.389338E+03	-0.233787E+00
1975	0.409216E+03	0.526977E+03	-0.252913E+00
1976	0.100838E+04	0.184512E+03	0.169839E+01
1977	N/A	0.128948E+03	N/A
1978	0.912193E+03	0.406148E+03	0.809134E+00
1979	0.393977E+03	0.190315E+03	0.727612E+00
1980	0.553260E+02	0.179312E+03	-0.117588E+01
1981	0.113560E+02	0.470010E+03	-0.372301E+01
1982	N/A	0.170450E+03	N/A
1983	N/A	0.491009E+02	N/A
1984	N/A	0.809021E+02	N/A
1985	N/A	0.124961E+03	N/A
1986	N/A	0.632187E+02	N/A
1987	N/A	0.685904E+02	N/A
1988	N/A	0.170414E+03	N/A
1989	N/A	0.720800E+02	N/A
1990	N/A	0.836881E+02	N/A
1991	N/A	0.168293E+03	N/A
1992	N/A	0.130699E+03	N/A
1993	N/A	0.103993E+03	N/A
1994	N/A	0.983325E+02	N/A
1995	N/A	0.870844E+02	N/A
1996	N/A	0.100499E+03	N/A
1997	N/A	0.147734E+03	N/A
1998	N/A	0.167137E+03	N/A
1999	N/A	0.183270E+03	N/A
2000	N/A	0.148319E+03	N/A
2001	N/A	0.166610E+03	N/A
2002	N/A	0.115993E+03	N/A
2003	N/A	0.878157E+02	N/A
2004	N/A	0.781275E+02	N/A
2005	N/A	0.107699E+03	N/A
2006	N/A	0.368846E+03	N/A
2007	N/A	0.137077E+03	N/A
2008	N/A	0.000000E+00	N/A

Survey Index: 2 Tag: USsearly AGE = 2
 Time = JAN-1 Type = NUMBER
 Catchability = 0.755206E-01 % Variance Contribution = 0.8214
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.318433E+04	0.182549E+04	0.556392E+00
1974	0.216847E+04	0.179232E+04	0.190510E+00
1975	0.291799E+04	0.306521E+04	-0.492211E-01
1976	0.425901E+04	0.405136E+04	0.499838E-01
1977	0.654007E+03	0.148581E+04	-0.820601E+00
1978	0.778441E+03	0.104287E+04	-0.292435E+00
1979	0.195678E+04	0.268882E+04	-0.317801E+00
1980	0.452865E+04	0.155534E+04	0.106873E+01
1981	0.995861E+03	0.146434E+04	-0.385555E+00
1982	N/A	0.388781E+04	N/A
1983	N/A	0.126526E+04	N/A
1984	N/A	0.359072E+03	N/A
1985	N/A	0.635410E+03	N/A
1986	N/A	0.969476E+03	N/A
1987	N/A	0.511723E+03	N/A
1988	N/A	0.557767E+03	N/A
1989	N/A	0.137825E+04	N/A
1990	N/A	0.584409E+03	N/A
1991	N/A	0.677828E+03	N/A
1992	N/A	0.134948E+04	N/A
1993	N/A	0.918920E+03	N/A
1994	N/A	0.507906E+03	N/A
1995	N/A	0.810059E+03	N/A
1996	N/A	0.718501E+03	N/A
1997	N/A	0.826012E+03	N/A
1998	N/A	0.121874E+04	N/A
1999	N/A	0.137363E+04	N/A
2000	N/A	0.151472E+04	N/A
2001	N/A	0.122018E+04	N/A
2002	N/A	0.136876E+04	N/A
2003	N/A	0.946821E+03	N/A
2004	N/A	0.716868E+03	N/A
2005	N/A	0.643112E+03	N/A
2006	N/A	0.888458E+03	N/A
2007	N/A	0.304626E+04	N/A
2008	N/A	0.113239E+04	N/A

Survey Index: 3 Tag: USsearly AGE = 3
 Time = JAN-1 Type = NUMBER
 Catchability = 0.956073E-01 % Variance Contribution = 0.7362
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.230941E+04	0.282197E+04	-0.200443E+00
1974	0.179546E+04	0.144716E+04	0.215660E+00
1975	0.809113E+03	0.104502E+04	-0.255857E+00
1976	0.121600E+04	0.941922E+03	0.255399E+00
1977	0.109768E+04	0.148710E+04	-0.303628E+00
1978	0.494436E+03	0.763635E+03	-0.434673E+00
1979	0.395239E+03	0.776685E+03	-0.675544E+00
1980	0.561720E+04	0.188455E+04	0.109215E+01
1981	0.172422E+04	0.126850E+04	0.306940E+00
1982	N/A	0.142313E+04	N/A
1983	N/A	0.247975E+04	N/A
1984	N/A	0.628975E+03	N/A
1985	N/A	0.199697E+03	N/A
1986	N/A	0.286004E+03	N/A
1987	N/A	0.459008E+03	N/A
1988	N/A	0.250239E+03	N/A
1989	N/A	0.321305E+03	N/A
1990	N/A	0.124111E+04	N/A
1991	N/A	0.424202E+03	N/A
1992	N/A	0.689847E+03	N/A
1993	N/A	0.617535E+03	N/A
1994	N/A	0.833036E+03	N/A
1995	N/A	0.411503E+03	N/A
1996	N/A	0.812630E+03	N/A
1997	N/A	0.685996E+03	N/A
1998	N/A	0.758562E+03	N/A
1999	N/A	0.109165E+04	N/A
2000	N/A	0.118672E+04	N/A
2001	N/A	0.123765E+04	N/A
2002	N/A	0.101658E+04	N/A
2003	N/A	0.106040E+04	N/A
2004	N/A	0.645245E+03	N/A
2005	N/A	0.639538E+03	N/A
2006	N/A	0.535028E+03	N/A
2007	N/A	0.808832E+03	N/A
2008	N/A	0.303112E+04	N/A

Survey Index: 4 Tag: USsearly AGE = 4
 Time = JAN-1 Type = NUMBER
 Catchability = 0.926548E-01 % Variance Contribution = 0.3649
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.103672E+04	0.160292E+04	-0.435763E+00
1974	0.122503E+04	0.111663E+04	0.926513E-01
1975	0.262554E+03	0.464244E+03	-0.569954E+00
1976	0.302447E+03	0.224730E+03	0.297008E+00
1977	0.363693E+03	0.293840E+03	0.213276E+00
1978	0.213926E+03	0.314119E+03	-0.384143E+00
1979	0.328265E+03	0.228641E+03	0.361669E+00
1980	0.460562E+03	0.302781E+03	0.419437E+00
1981	0.698850E+03	0.694795E+03	0.581989E-02
1982	N/A	0.512874E+03	N/A
1983	N/A	0.511190E+03	N/A
1984	N/A	0.599622E+03	N/A
1985	N/A	0.127736E+03	N/A
1986	N/A	0.710874E+02	N/A
1987	N/A	0.133385E+03	N/A
1988	N/A	0.106814E+03	N/A
1989	N/A	0.714474E+02	N/A
1990	N/A	0.161850E+03	N/A
1991	N/A	0.407623E+03	N/A
1992	N/A	0.212716E+03	N/A
1993	N/A	0.301090E+03	N/A
1994	N/A	0.215258E+03	N/A
1995	N/A	0.146018E+03	N/A
1996	N/A	0.207275E+03	N/A
1997	N/A	0.472888E+03	N/A
1998	N/A	0.391768E+03	N/A
1999	N/A	0.321248E+03	N/A
2000	N/A	0.518025E+03	N/A
2001	N/A	0.468817E+03	N/A
2002	N/A	0.408081E+03	N/A
2003	N/A	0.520241E+03	N/A
2004	N/A	0.451183E+03	N/A
2005	N/A	0.249695E+03	N/A
2006	N/A	0.171412E+03	N/A
2007	N/A	0.283371E+03	N/A
2008	N/A	0.494684E+03	N/A

Survey Index: 5 Tag: USsearly AGE = 5
 Time = JAN-1 Type = NUMBER
 Catchability = 0.760134E-01 % Variance Contribution = 0.9712
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.399412E+03	0.529538E+03	-0.282011E+00
1974	0.336904E+03	0.435744E+03	-0.257257E+00
1975	0.201502E+03	0.234013E+03	-0.149578E+00
1976	0.191213E+03	0.742537E+02	0.945901E+00
1977	0.819210E+02	0.546579E+02	0.404661E+00
1978	0.257220E+02	0.726461E+02	-0.103825E+01
1979	0.587230E+02	0.816001E+02	-0.328999E+00
1980	0.550340E+02	0.568200E+02	-0.319373E-01
1981	0.206937E+03	0.989822E+02	0.737474E+00
1982	N/A	0.135514E+03	N/A
1983	N/A	0.115113E+03	N/A
1984	N/A	0.175223E+03	N/A
1985	N/A	0.661493E+02	N/A
1986	N/A	0.305398E+02	N/A
1987	N/A	0.214004E+02	N/A
1988	N/A	0.235102E+02	N/A
1989	N/A	0.150713E+02	N/A
1990	N/A	0.190288E+02	N/A
1991	N/A	0.425580E+02	N/A
1992	N/A	0.714511E+02	N/A
1993	N/A	0.436560E+02	N/A
1994	N/A	0.462725E+02	N/A
1995	N/A	0.231922E+02	N/A
1996	N/A	0.386593E+02	N/A
1997	N/A	0.790200E+02	N/A
1998	N/A	0.191199E+03	N/A
1999	N/A	0.135130E+03	N/A
2000	N/A	0.110673E+03	N/A
2001	N/A	0.133456E+03	N/A
2002	N/A	0.119355E+03	N/A
2003	N/A	0.143942E+03	N/A
2004	N/A	0.191710E+03	N/A
2005	N/A	0.491995E+02	N/A
2006	N/A	0.523244E+02	N/A
2007	N/A	0.472596E+02	N/A
2008	N/A	0.142534E+03	N/A

Survey Index: 6 Tag: USsearly AGE = 6
 Time = JAN-1 Type = NUMBER
 Catchability = 0.720239E-01 % Variance Contribution = 2.3385
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.210237E+03	0.216990E+03	-0.316145E-01
1974	0.273813E+03	0.172241E+03	0.463553E+00
1975	0.862890E+02	0.123057E+03	-0.354946E+00
1976	0.108419E+03	0.112494E+03	-0.369004E-01
1977	0.128120E+02	0.612415E+02	-0.156444E+01
1978	0.766800E+01	0.268954E+02	-0.125490E+01
1979	0.887150E+02	0.402845E+02	0.789463E+00
1980	0.353310E+02	0.172269E+02	0.718290E+00
1981	0.568790E+02	0.159495E+02	0.127150E+01
1982	N/A	0.112316E+02	N/A
1983	N/A	0.248123E+02	N/A
1984	N/A	0.350759E+02	N/A
1985	N/A	0.979108E+01	N/A
1986	N/A	0.161171E+02	N/A
1987	N/A	0.144777E+02	N/A
1988	N/A	0.523051E+01	N/A
1989	N/A	0.394296E+01	N/A
1990	N/A	0.335652E+01	N/A
1991	N/A	0.749242E+01	N/A
1992	N/A	0.471472E+01	N/A
1993	N/A	0.910829E+01	N/A
1994	N/A	0.132350E+02	N/A
1995	N/A	0.476705E+01	N/A
1996	N/A	0.502483E+01	N/A
1997	N/A	0.177382E+02	N/A
1998	N/A	0.236209E+02	N/A
1999	N/A	0.486333E+02	N/A
2000	N/A	0.670709E+02	N/A
2001	N/A	0.661418E+02	N/A
2002	N/A	0.803555E+02	N/A
2003	N/A	0.120890E+03	N/A
2004	N/A	0.133758E+03	N/A
2005	N/A	0.201861E+02	N/A
2006	N/A	0.284291E+02	N/A
2007	N/A	0.181384E+02	N/A
2008	N/A	0.385756E+02	N/A

Survey Index: 7 Tag: USspr AGE = 1
 Time = JAN-1 Type = NUMBER
 Catchability = 0.423531E-02 % Variance Contribution = 1.1088
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.124450E+03	N/A
1974	N/A	0.221015E+03	N/A
1975	N/A	0.299148E+03	N/A
1976	N/A	0.104742E+03	N/A
1977	N/A	0.731996E+02	N/A
1978	N/A	0.230557E+03	N/A
1979	N/A	0.108036E+03	N/A
1980	N/A	0.101790E+03	N/A
1981	N/A	0.266810E+03	N/A
1982	0.440660E+02	0.967593E+02	-0.786538E+00
1983	N/A	0.278731E+02	N/A
1984	N/A	0.459256E+02	N/A
1985	0.106381E+03	0.709365E+02	0.405242E+00
1986	0.265950E+02	0.358873E+02	-0.299660E+00
1987	0.265950E+02	0.389366E+02	-0.381212E+00
1988	0.755150E+02	0.967385E+02	-0.247680E+00
1989	0.452310E+02	0.409175E+02	0.100224E+00
1990	N/A	0.475071E+02	N/A
1991	0.422513E+03	0.955348E+02	0.148673E+01
1992	N/A	0.741935E+02	N/A
1993	0.447460E+02	0.590336E+02	-0.277106E+00
1994	N/A	0.558203E+02	N/A
1995	N/A	0.494351E+02	N/A
1996	N/A	0.570503E+02	N/A
1997	N/A	0.838638E+02	N/A
1998	N/A	0.948782E+02	N/A
1999	N/A	0.104037E+03	N/A
2000	N/A	0.841959E+02	N/A
2001	N/A	0.945791E+02	N/A
2002	N/A	0.658454E+02	N/A
2003	N/A	0.498502E+02	N/A
2004	N/A	0.443506E+02	N/A
2005	N/A	0.611376E+02	N/A
2006	N/A	0.209383E+03	N/A
2007	N/A	0.778143E+02	N/A
2008	N/A	0.000000E+00	N/A

Survey Index: 8 Tag: USspr AGE = 2
 Time = JAN-1 Type = NUMBER
 Catchability = 0.455643E-01 % Variance Contribution = 4.3332
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.110138E+04	N/A
1974	N/A	0.108137E+04	N/A
1975	N/A	0.184935E+04	N/A
1976	N/A	0.244433E+04	N/A
1977	N/A	0.896445E+03	N/A
1978	N/A	0.629198E+03	N/A
1979	N/A	0.162226E+04	N/A
1980	N/A	0.938393E+03	N/A
1981	N/A	0.883491E+03	N/A
1982	0.365654E+04	0.234566E+04	0.443952E+00
1983	0.181002E+04	0.763376E+03	0.863344E+00
1984	0.902680E+02	0.216641E+03	-0.875457E+00
1985	0.213421E+04	0.383365E+03	0.171686E+01
1986	0.175305E+04	0.584919E+03	0.109764E+01
1987	0.732820E+02	0.308741E+03	-0.143819E+01
1988	0.266922E+03	0.336521E+03	-0.231703E+00
1989	0.391259E+03	0.831547E+03	-0.753919E+00
1990	0.636730E+02	0.352595E+03	-0.171156E+01
1991	N/A	0.408957E+03	N/A
1992	0.198774E+04	0.814190E+03	0.892562E+00
1993	0.281093E+03	0.554417E+03	-0.679231E+00
1994	0.602273E+03	0.306438E+03	0.675696E+00
1995	N/A	0.488738E+03	N/A
1996	N/A	0.433497E+03	N/A
1997	N/A	0.498362E+03	N/A
1998	N/A	0.735311E+03	N/A
1999	N/A	0.828757E+03	N/A
2000	N/A	0.913885E+03	N/A
2001	N/A	0.736178E+03	N/A
2002	N/A	0.825819E+03	N/A
2003	N/A	0.571251E+03	N/A
2004	N/A	0.432512E+03	N/A
2005	N/A	0.388012E+03	N/A
2006	N/A	0.536038E+03	N/A
2007	N/A	0.183792E+04	N/A
2008	N/A	0.683211E+03	N/A

Survey Index: 9 Tag: USspr AGE = 3
 Time = JAN-1 Type = NUMBER
 Catchability = 0.954470E-01 % Variance Contribution = 1.3029
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.281723E+04	N/A
1974	N/A	0.144473E+04	N/A
1975	N/A	0.104327E+04	N/A
1976	N/A	0.940343E+03	N/A
1977	N/A	0.148461E+04	N/A
1978	N/A	0.762355E+03	N/A
1979	N/A	0.775383E+03	N/A
1980	N/A	0.188139E+04	N/A
1981	N/A	0.126637E+04	N/A
1982	0.109652E+04	0.142075E+04	-0.259047E+00
1983	0.264777E+04	0.247559E+04	0.672392E-01
1984	0.806007E+03	0.627920E+03	0.249679E+00
1985	0.254401E+03	0.199363E+03	0.243786E+00
1986	0.282646E+03	0.285524E+03	-0.101319E-01
1987	0.132976E+03	0.458238E+03	-0.123722E+01
1988	0.355249E+03	0.249819E+03	0.352081E+00
1989	0.737675E+03	0.320767E+03	0.832789E+00
1990	0.107468E+04	0.123903E+04	-0.142308E+00
1991	0.246927E+03	0.423491E+03	-0.539439E+00
1992	0.184069E+04	0.688690E+03	0.983106E+00
1993	0.485798E+03	0.616500E+03	-0.238265E+00
1994	0.614697E+03	0.831640E+03	-0.302270E+00
1995	N/A	0.410814E+03	N/A
1996	N/A	0.811268E+03	N/A
1997	N/A	0.684846E+03	N/A
1998	N/A	0.757290E+03	N/A
1999	N/A	0.108982E+04	N/A
2000	N/A	0.118473E+04	N/A
2001	N/A	0.123557E+04	N/A
2002	N/A	0.101487E+04	N/A
2003	N/A	0.105862E+04	N/A
2004	N/A	0.644163E+03	N/A
2005	N/A	0.638466E+03	N/A
2006	N/A	0.534131E+03	N/A
2007	N/A	0.807476E+03	N/A
2008	N/A	0.302604E+04	N/A

Survey Index: 10 Tag: USspr AGE = 4
 Time = JAN-1 Type = NUMBER
 Catchability = 0.152428E+00 % Variance Contribution = 0.8905
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.263699E+04	N/A
1974	N/A	0.183697E+04	N/A
1975	N/A	0.763734E+03	N/A
1976	N/A	0.369706E+03	N/A
1977	N/A	0.483399E+03	N/A
1978	N/A	0.516762E+03	N/A
1979	N/A	0.376140E+03	N/A
1980	N/A	0.498109E+03	N/A
1981	N/A	0.114302E+04	N/A
1982	0.992464E+03	0.843737E+03	0.162350E+00
1983	0.514431E+03	0.840965E+03	-0.491489E+00
1984	0.837941E+03	0.986447E+03	-0.163161E+00
1985	0.273425E+03	0.210140E+03	0.263251E+00
1986	0.546460E+02	0.116947E+03	-0.760843E+00
1987	0.129287E+03	0.219433E+03	-0.529013E+00
1988	0.234697E+03	0.175722E+03	0.289393E+00
1989	0.280996E+03	0.117539E+03	0.871569E+00
1990	0.358355E+03	0.266261E+03	0.297046E+00
1991	0.665072E+03	0.670586E+03	-0.825684E-02
1992	0.621782E+03	0.349942E+03	0.574822E+00
1993	0.307882E+03	0.495327E+03	-0.475501E+00
1994	0.343601E+03	0.354124E+03	-0.301674E-01
1995	N/A	0.240216E+03	N/A
1996	N/A	0.340991E+03	N/A
1997	N/A	0.777954E+03	N/A
1998	N/A	0.644502E+03	N/A
1999	N/A	0.528489E+03	N/A
2000	N/A	0.852210E+03	N/A
2001	N/A	0.771257E+03	N/A
2002	N/A	0.671340E+03	N/A
2003	N/A	0.855855E+03	N/A
2004	N/A	0.742247E+03	N/A
2005	N/A	0.410777E+03	N/A
2006	N/A	0.281992E+03	N/A
2007	N/A	0.466178E+03	N/A
2008	N/A	0.813811E+03	N/A

Survey Index: 11 Tag: USspr AGE = 5
 Time = JAN-1 Type = NUMBER
 Catchability = 0.228532E+00 % Variance Contribution = 2.0826
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.159204E+04	N/A
1974	N/A	0.131005E+04	N/A
1975	N/A	0.703553E+03	N/A
1976	N/A	0.223241E+03	N/A
1977	N/A	0.164327E+03	N/A
1978	N/A	0.218408E+03	N/A
1979	N/A	0.245328E+03	N/A
1980	N/A	0.170828E+03	N/A
1981	N/A	0.297587E+03	N/A
1982	0.444546E+03	0.407418E+03	0.872126E-01
1983	0.119581E+03	0.346084E+03	-0.106269E+01
1984	0.810375E+03	0.526801E+03	0.430674E+00
1985	0.143361E+03	0.198876E+03	-0.327314E+00
1986	0.132879E+03	0.918170E+02	0.369642E+00
1987	0.509580E+02	0.643396E+02	-0.233174E+00
1988	0.193154E+03	0.706827E+02	0.100529E+01
1989	0.593050E+02	0.453113E+02	0.269138E+00
1990	0.112204E+03	0.572094E+02	0.673600E+00
1991	0.255469E+03	0.127949E+03	0.691466E+00
1992	0.159959E+03	0.214816E+03	-0.294863E+00
1993	0.260130E+02	0.131250E+03	-0.161851E+01
1994	0.140449E+03	0.139117E+03	0.952951E-02
1995	N/A	0.697265E+02	N/A
1996	N/A	0.116228E+03	N/A
1997	N/A	0.237571E+03	N/A
1998	N/A	0.574832E+03	N/A
1999	N/A	0.406263E+03	N/A
2000	N/A	0.332734E+03	N/A
2001	N/A	0.401231E+03	N/A
2002	N/A	0.358836E+03	N/A
2003	N/A	0.432756E+03	N/A
2004	N/A	0.576371E+03	N/A
2005	N/A	0.147917E+03	N/A
2006	N/A	0.157312E+03	N/A
2007	N/A	0.142085E+03	N/A
2008	N/A	0.428524E+03	N/A

Survey Index: 12 Tag: USspr AGE = 6
 Time = JAN-1 Type = NUMBER
 Catchability = 0.422932E+00 % Variance Contribution = 1.7526
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.127419E+04	N/A
1974	N/A	0.101142E+04	N/A
1975	N/A	0.722605E+03	N/A
1976	N/A	0.660580E+03	N/A
1977	N/A	0.359617E+03	N/A
1978	N/A	0.157933E+03	N/A
1979	N/A	0.236555E+03	N/A
1980	N/A	0.101158E+03	N/A
1981	N/A	0.936574E+02	N/A
1982	0.883270E+02	0.659533E+02	0.292099E+00
1983	0.237318E+03	0.145701E+03	0.487846E+00
1984	0.236541E+03	0.205970E+03	0.138392E+00
1985	N/A	0.574943E+02	N/A
1986	0.531900E+02	0.946416E+02	-0.576227E+00
1987	0.531900E+02	0.850147E+02	-0.468953E+00
1988	0.265950E+02	0.307142E+02	-0.144000E+00
1989	0.434840E+02	0.231535E+02	0.630248E+00
1990	0.100751E+03	0.197099E+02	0.163153E+01
1991	0.199950E+02	0.439963E+02	-0.788624E+00
1992	0.166950E+02	0.276853E+02	-0.505793E+00
1993	N/A	0.534849E+02	N/A
1994	0.387280E+02	0.777176E+02	-0.696519E+00
1995	N/A	0.279926E+02	N/A
1996	N/A	0.295064E+02	N/A
1997	N/A	0.104161E+03	N/A
1998	N/A	0.138705E+03	N/A
1999	N/A	0.285580E+03	N/A
2000	N/A	0.393848E+03	N/A
2001	N/A	0.388392E+03	N/A
2002	N/A	0.471856E+03	N/A
2003	N/A	0.709879E+03	N/A
2004	N/A	0.785444E+03	N/A
2005	N/A	0.118535E+03	N/A
2006	N/A	0.166939E+03	N/A
2007	N/A	0.106511E+03	N/A
2008	N/A	0.226520E+03	N/A

Survey Index: 13 Tag: USspr95 AGE = 1
 Time = JAN-1 Type = NUMBER
 Catchability = 0.458156E-02 % Variance Contribution = 2.5795
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.134624E+03	N/A
1974	N/A	0.239084E+03	N/A
1975	N/A	0.323604E+03	N/A
1976	N/A	0.113305E+03	N/A
1977	N/A	0.791839E+02	N/A
1978	N/A	0.249406E+03	N/A
1979	N/A	0.116868E+03	N/A
1980	N/A	0.110111E+03	N/A
1981	N/A	0.288623E+03	N/A
1982	N/A	0.104670E+03	N/A
1983	N/A	0.301518E+02	N/A
1984	N/A	0.496801E+02	N/A
1985	N/A	0.767358E+02	N/A
1986	N/A	0.388212E+02	N/A
1987	N/A	0.421198E+02	N/A
1988	N/A	0.104647E+03	N/A
1989	N/A	0.442627E+02	N/A
1990	N/A	0.513910E+02	N/A
1991	N/A	0.103345E+03	N/A
1992	N/A	0.802591E+02	N/A
1993	N/A	0.638598E+02	N/A
1994	N/A	0.603837E+02	N/A
1995	0.390190E+02	0.534766E+02	-0.315195E+00
1996	0.243630E+02	0.617144E+02	-0.929451E+00
1997	0.181510E+02	0.907200E+02	-0.160905E+01
1998	N/A	0.102635E+03	N/A
1999	0.487250E+02	0.112542E+03	-0.837133E+00
2000	0.177333E+03	0.910792E+02	0.666300E+00
2001	N/A	0.102311E+03	N/A
2002	0.182380E+03	0.712285E+02	0.940199E+00
2003	0.196066E+03	0.539257E+02	0.129084E+01
2004	0.470750E+02	0.479764E+02	-0.189662E-01
2005	N/A	0.661358E+02	N/A
2006	0.493466E+03	0.226500E+03	0.778708E+00
2007	0.870650E+02	0.841759E+02	0.337463E-01
2008	N/A	0.000000E+00	N/A

Survey Index: 14 Tag: USspr95 AGE = 2
 Time = JAN-1 Type = NUMBER
 Catchability = 0.143683E+00 % Variance Contribution = 0.7884
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.347311E+04	N/A
1974	N/A	0.341001E+04	N/A
1975	N/A	0.583176E+04	N/A
1976	N/A	0.770796E+04	N/A
1977	N/A	0.282686E+04	N/A
1978	N/A	0.198412E+04	N/A
1979	N/A	0.511564E+04	N/A
1980	N/A	0.295914E+04	N/A
1981	N/A	0.278601E+04	N/A
1982	N/A	0.739681E+04	N/A
1983	N/A	0.240723E+04	N/A
1984	N/A	0.683156E+03	N/A
1985	N/A	0.120891E+04	N/A
1986	N/A	0.184449E+04	N/A
1987	N/A	0.973585E+03	N/A
1988	N/A	0.106119E+04	N/A
1989	N/A	0.262221E+04	N/A
1990	N/A	0.111187E+04	N/A
1991	N/A	0.128961E+04	N/A
1992	N/A	0.256747E+04	N/A
1993	N/A	0.174830E+04	N/A
1994	N/A	0.966323E+03	N/A
1995	0.114456E+04	0.154119E+04	-0.297533E+00
1996	0.958104E+03	0.136699E+04	-0.355412E+00
1997	0.113447E+04	0.157154E+04	-0.325893E+00
1998	0.202007E+04	0.231873E+04	-0.137892E+00
1999	0.460630E+04	0.261341E+04	0.566768E+00
2000	0.467764E+04	0.288185E+04	0.484359E+00
2001	0.224671E+04	0.232147E+04	-0.327356E-01
2002	0.234154E+04	0.260414E+04	-0.106297E+00
2003	0.424144E+04	0.180139E+04	0.856345E+00
2004	0.957327E+03	0.136389E+04	-0.353949E+00
2005	0.195348E+04	0.122356E+04	0.467847E+00
2006	0.907826E+03	0.169035E+04	-0.621637E+00
2007	0.489972E+04	0.579571E+04	-0.167941E+00
2008	0.220671E+04	0.215444E+04	0.239702E-01

Survey Index: 15 Tag: USspr95 AGE = 3
 Time = JAN-1 Type = NUMBER
 Catchability = 0.499530E+00 % Variance Contribution = 1.8724
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.147442E+05	N/A
1974	N/A	0.756112E+04	N/A
1975	N/A	0.546005E+04	N/A
1976	N/A	0.492136E+04	N/A
1977	N/A	0.776980E+04	N/A
1978	N/A	0.398984E+04	N/A
1979	N/A	0.405803E+04	N/A
1980	N/A	0.984639E+04	N/A
1981	N/A	0.662765E+04	N/A
1982	N/A	0.743560E+04	N/A
1983	N/A	0.129562E+05	N/A
1984	N/A	0.328627E+04	N/A
1985	N/A	0.104338E+04	N/A
1986	N/A	0.149431E+04	N/A
1987	N/A	0.239822E+04	N/A
1988	N/A	0.130745E+04	N/A
1989	N/A	0.167876E+04	N/A
1990	N/A	0.648455E+04	N/A
1991	N/A	0.221637E+04	N/A
1992	N/A	0.360431E+04	N/A
1993	N/A	0.322650E+04	N/A
1994	N/A	0.435245E+04	N/A
1995	0.467036E+04	0.215002E+04	0.775756E+00
1996	0.254857E+04	0.424583E+04	-0.510405E+00
1997	0.362305E+04	0.358419E+04	0.107832E-01
1998	0.102216E+04	0.396334E+04	-0.135516E+01
1999	0.105017E+05	0.570365E+04	0.610428E+00
2000	0.744052E+04	0.620038E+04	0.182330E+00
2001	0.637050E+04	0.646645E+04	-0.149494E-01
2002	0.119711E+05	0.531142E+04	0.812636E+00
2003	0.656492E+04	0.554036E+04	0.169680E+00
2004	0.211441E+04	0.337128E+04	-0.466516E+00
2005	0.493097E+04	0.334146E+04	0.389128E+00
2006	0.341922E+04	0.279542E+04	0.201431E+00
2007	0.607912E+04	0.422599E+04	0.363607E+00
2008	0.492146E+04	0.158370E+05	-0.116875E+01

Survey Index: 16 Tag: USspr95 AGE = 4
 Time = JAN-1 Type = NUMBER
 Catchability = 0.593361E+00 % Variance Contribution = 1.6588
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.102651E+05	N/A
1974	N/A	0.715087E+04	N/A
1975	N/A	0.297302E+04	N/A
1976	N/A	0.143917E+04	N/A
1977	N/A	0.188175E+04	N/A
1978	N/A	0.201162E+04	N/A
1979	N/A	0.146422E+04	N/A
1980	N/A	0.193901E+04	N/A
1981	N/A	0.444947E+04	N/A
1982	N/A	0.328445E+04	N/A
1983	N/A	0.327366E+04	N/A
1984	N/A	0.383998E+04	N/A
1985	N/A	0.818023E+03	N/A
1986	N/A	0.455244E+03	N/A
1987	N/A	0.854197E+03	N/A
1988	N/A	0.684040E+03	N/A
1989	N/A	0.457549E+03	N/A
1990	N/A	0.103649E+04	N/A
1991	N/A	0.261042E+04	N/A
1992	N/A	0.136223E+04	N/A
1993	N/A	0.192818E+04	N/A
1994	N/A	0.137852E+04	N/A
1995	0.144167E+04	0.935099E+03	0.432905E+00
1996	0.262176E+04	0.132739E+04	0.680630E+00
1997	0.396073E+04	0.302838E+04	0.268403E+00
1998	0.112340E+04	0.250888E+04	-0.803476E+00
1999	0.264049E+04	0.205727E+04	0.249583E+00
2000	0.282850E+04	0.331743E+04	-0.159446E+00
2001	0.233998E+04	0.300231E+04	-0.249237E+00
2002	0.395840E+04	0.261335E+04	0.415206E+00
2003	0.279191E+04	0.333162E+04	-0.176735E+00
2004	0.659928E+03	0.288937E+04	-0.147666E+01
2005	0.233270E+04	0.159905E+04	0.377619E+00
2006	0.211266E+04	0.109772E+04	0.654710E+00
2007	0.276230E+04	0.181471E+04	0.420138E+00
2008	0.168110E+04	0.316796E+04	-0.633636E+00

Survey Index: 17 Tag: USspr95 AGE = 5
 Time = JAN-1 Type = NUMBER
 Catchability = 0.480729E+00 % Variance Contribution = 3.0452
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.334894E+04	N/A
1974	N/A	0.275576E+04	N/A
1975	N/A	0.147996E+04	N/A
1976	N/A	0.469600E+03	N/A
1977	N/A	0.345672E+03	N/A
1978	N/A	0.459433E+03	N/A
1979	N/A	0.516061E+03	N/A
1980	N/A	0.359345E+03	N/A
1981	N/A	0.625990E+03	N/A
1982	N/A	0.857027E+03	N/A
1983	N/A	0.728007E+03	N/A
1984	N/A	0.110815E+04	N/A
1985	N/A	0.418346E+03	N/A
1986	N/A	0.193142E+03	N/A
1987	N/A	0.135342E+03	N/A
1988	N/A	0.148685E+03	N/A
1989	N/A	0.953147E+02	N/A
1990	N/A	0.120343E+03	N/A
1991	N/A	0.269148E+03	N/A
1992	N/A	0.451876E+03	N/A
1993	N/A	0.276092E+03	N/A
1994	N/A	0.292640E+03	N/A
1995	0.621491E+03	0.146674E+03	0.144391E+01
1996	0.591596E+03	0.244492E+03	0.883642E+00
1997	0.682349E+03	0.499744E+03	0.311446E+00
1998	0.737093E+03	0.120919E+04	-0.494993E+00
1999	0.157523E+04	0.854597E+03	0.611525E+00
2000	0.789215E+03	0.699924E+03	0.120066E+00
2001	0.469200E+03	0.844011E+03	-0.587137E+00
2002	0.169034E+04	0.754831E+03	0.806192E+00
2003	0.428628E+03	0.910325E+03	-0.753212E+00
2004	0.247704E+03	0.121243E+04	-0.158815E+01
2005	0.261778E+03	0.311151E+03	-0.172781E+00
2006	0.307688E+03	0.330914E+03	-0.727716E-01
2007	0.539959E+03	0.298882E+03	0.591443E+00
2008	0.300302E+03	0.901424E+03	-0.109919E+01

Survey Index: 18 Tag: USspr95 AGE = 6
 Time = JAN-1 Type = NUMBER
 Catchability = 0.391240E+00 % Variance Contribution = 3.3145
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.117871E+04	N/A
1974	N/A	0.935626E+03	N/A
1975	N/A	0.668457E+03	N/A
1976	N/A	0.611079E+03	N/A
1977	N/A	0.332669E+03	N/A
1978	N/A	0.146098E+03	N/A
1979	N/A	0.218829E+03	N/A
1980	N/A	0.935779E+02	N/A
1981	N/A	0.866392E+02	N/A
1982	N/A	0.610111E+02	N/A
1983	N/A	0.134783E+03	N/A
1984	N/A	0.190535E+03	N/A
1985	N/A	0.531860E+02	N/A
1986	N/A	0.875497E+02	N/A
1987	N/A	0.786441E+02	N/A
1988	N/A	0.284126E+02	N/A
1989	N/A	0.214185E+02	N/A
1990	N/A	0.182329E+02	N/A
1991	N/A	0.406995E+02	N/A
1992	N/A	0.256107E+02	N/A
1993	N/A	0.494770E+02	N/A
1994	N/A	0.718939E+02	N/A
1995	0.951200E+01	0.258950E+02	-0.100150E+01
1996	0.561990E+02	0.272953E+02	0.722184E+00
1997	0.129676E+03	0.963555E+02	0.296995E+00
1998	0.339622E+03	0.128311E+03	0.973378E+00
1999	0.756311E+03	0.264180E+03	0.105182E+01
2000	0.508413E+03	0.364335E+03	0.333220E+00
2001	0.439693E+03	0.359288E+03	0.201953E+00
2002	0.845414E+03	0.436498E+03	0.661043E+00
2003	0.836873E+03	0.656684E+03	0.242469E+00
2004	0.263816E+03	0.726587E+03	-0.101311E+01
2005	0.111428E+03	0.109653E+03	0.160620E-01
2006	0.797850E+02	0.154429E+03	-0.660400E+00
2007	0.125211E+03	0.985294E+02	0.239645E+00
2008	0.266070E+02	0.209546E+03	-0.206377E+01

Survey Index: 19 Tag: USfall AGE = 1
 Time = MEAN Type = NUMBER
 Catchability = 0.396438E-01 % Variance Contribution = 8.8749
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.242045E+04	0.104889E+04	0.836221E+00
1974	0.448671E+04	0.182929E+04	0.897192E+00
1975	0.454864E+04	0.244800E+04	0.619557E+00
1976	0.333507E+03	0.876372E+03	-0.966127E+00
1977	0.906661E+03	0.613733E+03	0.390209E+00
1978	0.462056E+04	0.175844E+04	0.966091E+00
1979	0.128200E+04	0.910384E+03	0.342312E+00
1980	0.743596E+03	0.857446E+03	-0.142460E+00
1981	0.154824E+04	0.226147E+04	-0.378893E+00
1982	0.235328E+04	0.778708E+03	0.110593E+01
1983	0.105701E+03	0.222737E+03	-0.745379E+00
1984	0.641583E+03	0.379680E+03	0.524609E+00
1985	0.131025E+04	0.583018E+03	0.809752E+00
1986	0.273425E+03	0.301017E+03	-0.961395E-01
1987	0.987130E+02	0.327320E+03	-0.119872E+01
1988	0.181510E+02	0.811099E+03	-0.379966E+01
1989	0.241006E+03	0.343481E+03	-0.354311E+00
1990	N/A	0.398600E+03	N/A
1991	0.203880E+04	0.797711E+03	0.938370E+00
1992	0.146759E+03	0.581998E+03	-0.137768E+01
1993	0.814646E+03	0.392382E+03	0.730517E+00
1994	0.115980E+04	0.472195E+03	0.898611E+00
1995	N/A	0.418492E+03	N/A
1996	N/A	0.482066E+03	N/A
1997	N/A	0.709904E+03	N/A
1998	N/A	0.801682E+03	N/A
1999	N/A	0.881459E+03	N/A
2000	N/A	0.711762E+03	N/A
2001	N/A	0.799003E+03	N/A
2002	N/A	0.554541E+03	N/A
2003	N/A	0.419846E+03	N/A
2004	N/A	0.375030E+03	N/A
2005	N/A	0.517523E+03	N/A
2006	N/A	0.177338E+04	N/A
2007	N/A	0.659135E+03	N/A
2008	N/A	0.000000E+00	N/A

Survey Index: 20 Tag: USfall AGE = 2
 Time = MEAN Type = NUMBER
 Catchability = 0.875114E-01 % Variance Contribution = 4.0246
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.533601E+04	0.168924E+04	0.115020E+01
1974	0.277948E+04	0.144504E+04	0.654125E+00
1975	0.243734E+04	0.189980E+04	0.249156E+00
1976	0.186389E+04	0.269245E+04	-0.367785E+00
1977	0.214712E+04	0.113454E+04	0.637903E+00
1978	0.124327E+04	0.937787E+03	0.281980E+00
1979	0.200851E+04	0.235222E+04	-0.157964E+00
1980	0.496999E+04	0.145827E+04	0.122617E+01
1981	0.227942E+04	0.149106E+04	0.424433E+00
1982	0.212033E+04	0.326072E+04	-0.430376E+00
1983	0.221642E+04	0.952557E+03	0.844499E+00
1984	0.388056E+03	0.283621E+03	0.313511E+00
1985	0.527535E+03	0.458860E+03	0.139469E+00
1986	0.107506E+04	0.715039E+03	0.407798E+00
1987	0.388832E+03	0.382589E+03	0.161869E-01
1988	0.206743E+03	0.447335E+03	-0.771832E+00
1989	0.193407E+04	0.135348E+04	0.356943E+00
1990	0.359228E+03	0.519416E+03	-0.368747E+00
1991	0.267019E+03	0.705641E+03	-0.971786E+00
1992	0.383882E+03	0.981248E+03	-0.938490E+00
1993	0.135208E+03	0.905260E+03	-0.190141E+01
1994	0.214605E+03	0.474748E+03	-0.793985E+00
1995	N/A	0.837472E+03	N/A
1996	N/A	0.725437E+03	N/A
1997	N/A	0.818725E+03	N/A
1998	N/A	0.119384E+04	N/A
1999	N/A	0.132292E+04	N/A
2000	N/A	0.142139E+04	N/A
2001	N/A	0.115540E+04	N/A
2002	N/A	0.125325E+04	N/A
2003	N/A	0.817901E+03	N/A
2004	N/A	0.700895E+03	N/A
2005	N/A	0.608559E+03	N/A
2006	N/A	0.876999E+03	N/A
2007	N/A	0.313704E+04	N/A
2008	N/A	0.000000E+00	N/A

Survey Index: 21 Tag: USfall AGE = 3
 Time = MEAN Type = NUMBER
 Catchability = 0.150362E+00 % Variance Contribution = 1.6776
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.495446E+04	0.293164E+04	0.524725E+00
1974	0.147157E+04	0.137717E+04	0.662987E-01
1975	0.851723E+03	0.849413E+03	0.271566E-02
1976	0.460270E+03	0.886190E+03	-0.655118E+00
1977	0.157280E+04	0.120057E+04	0.270058E+00
1978	0.757185E+03	0.706581E+03	0.691704E-01
1979	0.253721E+03	0.801768E+03	-0.115058E+01
1980	0.591198E+04	0.190004E+04	0.113511E+01
1981	0.159280E+04	0.132999E+04	0.180316E+00
1982	0.154339E+04	0.141923E+04	0.838664E-01
1983	0.185846E+04	0.210829E+04	-0.126132E+00
1984	0.296720E+03	0.500332E+03	-0.522483E+00
1985	0.165880E+03	0.198400E+03	-0.179021E+00
1986	0.338651E+03	0.319032E+03	0.596788E-01
1987	0.384562E+03	0.384508E+03	0.139552E-03
1988	0.103954E+03	0.227157E+03	-0.781691E+00
1989	0.750390E+03	0.370846E+03	0.704806E+00
1990	0.142992E+04	0.119255E+04	0.181530E+00
1991	0.426201E+03	0.488621E+03	-0.136675E+00
1992	0.690988E+03	0.747543E+03	-0.786689E-01
1993	0.568786E+03	0.608172E+03	-0.669538E-01
1994	0.954124E+03	0.627584E+03	0.418915E+00
1995	N/A	0.474941E+03	N/A
1996	N/A	0.100111E+04	N/A
1997	N/A	0.837880E+03	N/A
1998	N/A	0.811343E+03	N/A
1999	N/A	0.122705E+04	N/A
2000	N/A	0.123199E+04	N/A
2001	N/A	0.119114E+04	N/A
2002	N/A	0.118164E+04	N/A
2003	N/A	0.113648E+04	N/A
2004	N/A	0.664002E+03	N/A
2005	N/A	0.566115E+03	N/A
2006	N/A	0.631553E+03	N/A
2007	N/A	0.101948E+04	N/A
2008	N/A	0.000000E+00	N/A

Survey Index: 22 Tag: USfall AGE = 4
 Time = MEAN Type = NUMBER
 Catchability = 0.156082E+00 % Variance Contribution = 2.9035
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.285742E+04	0.163457E+04	0.558540E+00
1974	0.102906E+04	0.102622E+04	0.275752E-02
1975	0.555198E+03	0.385073E+03	0.365892E+00
1976	0.113563E+03	0.219058E+03	-0.656978E+00
1977	0.615376E+03	0.288313E+03	0.758186E+00
1978	0.399218E+03	0.314441E+03	0.238712E+00
1979	0.116669E+03	0.224808E+03	-0.655906E+00
1980	0.661966E+03	0.333449E+03	0.685723E+00
1981	0.570533E+03	0.621036E+03	-0.848179E-01
1982	0.410380E+03	0.484203E+03	-0.165421E+00
1983	0.495698E+03	0.574455E+03	-0.147454E+00
1984	0.235959E+03	0.435737E+03	-0.613380E+00
1985	0.491140E+02	0.123661E+03	-0.923400E+00
1986	0.719230E+02	0.756168E+02	-0.500827E-01
1987	0.514430E+02	0.114719E+03	-0.802016E+00
1988	0.265950E+02	0.846364E+02	-0.115764E+01
1989	0.765820E+02	0.722503E+02	0.582258E-01
1990	0.285849E+03	0.162817E+03	0.562834E+00
1991	0.347193E+03	0.349853E+03	-0.763365E-02
1992	0.157144E+03	0.193910E+03	-0.210232E+00
1993	0.520352E+03	0.246099E+03	0.748772E+00
1994	0.692153E+03	0.155165E+03	0.149532E+01
1995	N/A	0.147302E+03	N/A
1996	N/A	0.243889E+03	N/A
1997	N/A	0.570976E+03	N/A
1998	N/A	0.441433E+03	N/A
1999	N/A	0.361787E+03	N/A
2000	N/A	0.516809E+03	N/A
2001	N/A	0.465475E+03	N/A
2002	N/A	0.464256E+03	N/A
2003	N/A	0.603154E+03	N/A
2004	N/A	0.326567E+03	N/A
2005	N/A	0.229472E+03	N/A
2006	N/A	0.175812E+03	N/A
2007	N/A	0.377514E+03	N/A
2008	N/A	0.000000E+00	N/A

Survey Index: 23 Tag: USfall AGE = 5
 Time = MEAN Type = NUMBER
 Catchability = 0.204982E+00 % Variance Contribution = 3.5899
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.118115E+04	0.864424E+03	0.312184E+00
1974	0.444255E+03	0.641070E+03	-0.366740E+00
1975	0.324383E+03	0.310725E+03	0.430163E-01
1976	0.118513E+03	0.115866E+03	0.225893E-01
1977	0.102304E+03	0.858513E+02	0.175332E+00
1978	0.131617E+03	0.116411E+03	0.122766E+00
1979	0.134335E+03	0.128436E+03	0.449021E-01
1980	0.212276E+03	0.100171E+03	0.751009E+00
1981	0.763880E+02	0.141631E+03	-0.617397E+00
1982	0.865800E+02	0.204805E+03	-0.860989E+00
1983	0.298950E+02	0.207080E+03	-0.193541E+01
1984	0.727000E+02	0.203834E+03	-0.103096E+01
1985	0.783290E+02	0.102514E+03	-0.269082E+00
1986	N/A	0.520034E+02	N/A
1987	0.770680E+02	0.294640E+02	0.961518E+00
1988	N/A	0.298211E+02	N/A
1989	0.539670E+02	0.243973E+02	0.793899E+00
1990	N/A	0.306435E+02	N/A
1991	N/A	0.584721E+02	N/A
1992	0.139382E+03	0.104267E+03	0.290259E+00
1993	N/A	0.571212E+02	N/A
1994	0.254886E+03	0.533944E+02	0.156311E+01
1995	N/A	0.374527E+02	N/A
1996	N/A	0.728180E+02	N/A
1997	N/A	0.152734E+03	N/A
1998	N/A	0.344874E+03	N/A
1999	N/A	0.243615E+03	N/A
2000	N/A	0.176750E+03	N/A
2001	N/A	0.212114E+03	N/A
2002	N/A	0.217365E+03	N/A
2003	N/A	0.267147E+03	N/A
2004	N/A	0.222129E+03	N/A
2005	N/A	0.723802E+02	N/A
2006	N/A	0.859112E+02	N/A
2007	N/A	0.100788E+03	N/A
2008	N/A	0.000000E+00	N/A

Survey Index: 24 Tag: USfall AGE = 6
 Time = MEAN Type = NUMBER
 Catchability = 0.306257E+00 % Variance Contribution = 2.7247
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.599943E+03	0.558540E+03	0.715090E-01
1974	0.368061E+03	0.399572E+03	-0.821441E-01
1975	0.611490E+02	0.257648E+03	-0.143828E+01
1976	0.972570E+02	0.276792E+03	-0.104591E+01
1977	0.105701E+03	0.151678E+03	-0.361149E+00
1978	0.349430E+02	0.679588E+02	-0.665184E+00
1979	0.108613E+03	0.999816E+02	0.828049E-01
1980	0.250907E+03	0.478886E+02	0.165621E+01
1981	0.528020E+02	0.359859E+02	0.383421E+00
1982	N/A	0.267660E+02	N/A
1983	0.476580E+02	0.703826E+02	-0.389896E+00
1984	0.606640E+02	0.643399E+02	-0.588291E-01
1985	N/A	0.239262E+02	N/A
1986	N/A	0.432751E+02	N/A
1987	N/A	0.314308E+02	N/A
1988	N/A	0.104615E+02	N/A
1989	N/A	0.100647E+02	N/A
1990	N/A	0.852319E+01	N/A
1991	N/A	0.162321E+02	N/A
1992	0.265950E+02	0.108488E+02	0.896673E+00
1993	0.213540E+02	0.187921E+02	0.127803E+00
1994	0.548400E+02	0.240815E+02	0.822977E+00
1995	N/A	0.121388E+02	N/A
1996	N/A	0.149242E+02	N/A
1997	N/A	0.540622E+02	N/A
1998	N/A	0.671827E+02	N/A
1999	N/A	0.138252E+03	N/A
2000	N/A	0.168903E+03	N/A
2001	N/A	0.165765E+03	N/A
2002	N/A	0.230755E+03	N/A
2003	N/A	0.353784E+03	N/A
2004	N/A	0.244380E+03	N/A
2005	N/A	0.468270E+02	N/A
2006	N/A	0.736026E+02	N/A
2007	N/A	0.609960E+02	N/A
2008	N/A	0.000000E+00	N/A

Survey Index: 25 Tag: USfall95 AGE = 1
 Time = MEAN Type = NUMBER
 Catchability = 0.654075E-01 % Variance Contribution = 2.7233
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.173054E+04	N/A
1974	N/A	0.301811E+04	N/A
1975	N/A	0.403890E+04	N/A
1976	N/A	0.144591E+04	N/A
1977	N/A	0.101258E+04	N/A
1978	N/A	0.290121E+04	N/A
1979	N/A	0.150202E+04	N/A
1980	N/A	0.141468E+04	N/A
1981	N/A	0.373115E+04	N/A
1982	N/A	0.128477E+04	N/A
1983	N/A	0.367490E+03	N/A
1984	N/A	0.626426E+03	N/A
1985	N/A	0.961910E+03	N/A
1986	N/A	0.496642E+03	N/A
1987	N/A	0.540038E+03	N/A
1988	N/A	0.133822E+04	N/A
1989	N/A	0.566703E+03	N/A
1990	N/A	0.657642E+03	N/A
1991	N/A	0.131613E+04	N/A
1992	N/A	0.960227E+03	N/A
1993	N/A	0.647383E+03	N/A
1994	N/A	0.779065E+03	N/A
1995	0.267698E+03	0.690461E+03	-0.947500E+00
1996	0.144332E+03	0.795351E+03	-0.170667E+01
1997	0.135179E+04	0.117126E+04	0.143352E+00
1998	0.184438E+04	0.132268E+04	0.332485E+00
1999	0.299875E+04	0.145430E+04	0.723669E+00
2000	0.610814E+03	0.117432E+04	-0.653653E+00
2001	0.341417E+04	0.131826E+04	0.951624E+00
2002	0.203142E+04	0.914926E+03	0.797648E+00
2003	0.104527E+04	0.692695E+03	0.411438E+00
2004	0.850268E+03	0.618754E+03	0.317844E+00
2005	0.304000E+03	0.853850E+03	-0.103273E+01
2006	0.601205E+04	0.292587E+04	0.720176E+00
2007	0.102653E+04	0.108749E+04	-0.576878E-01
2008	N/A	0.000000E+00	N/A

Survey Index: 26 Tag: USfall95 AGE = 2
 Time = MEAN Type = NUMBER
 Catchability = 0.212258E+00 % Variance Contribution = 6.1770
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.409724E+04	N/A
1974	N/A	0.350494E+04	N/A
1975	N/A	0.460796E+04	N/A
1976	N/A	0.653051E+04	N/A
1977	N/A	0.275181E+04	N/A
1978	N/A	0.227460E+04	N/A
1979	N/A	0.570529E+04	N/A
1980	N/A	0.353702E+04	N/A
1981	N/A	0.361655E+04	N/A
1982	N/A	0.790885E+04	N/A
1983	N/A	0.231042E+04	N/A
1984	N/A	0.687921E+03	N/A
1985	N/A	0.111296E+04	N/A
1986	N/A	0.173432E+04	N/A
1987	N/A	0.927966E+03	N/A
1988	N/A	0.108501E+04	N/A
1989	N/A	0.328286E+04	N/A
1990	N/A	0.125984E+04	N/A
1991	N/A	0.171153E+04	N/A
1992	N/A	0.238001E+04	N/A
1993	N/A	0.219570E+04	N/A
1994	N/A	0.115150E+04	N/A
1995	0.115407E+03	0.203128E+04	-0.286796E+01
1996	0.341272E+03	0.175954E+04	-0.164013E+01
1997	0.517731E+03	0.198581E+04	-0.134433E+01
1998	0.467531E+04	0.289566E+04	0.479082E+00
1999	0.817587E+04	0.320873E+04	0.935311E+00
2000	0.164754E+04	0.344758E+04	-0.738390E+00
2001	0.608359E+04	0.280241E+04	0.775114E+00
2002	0.558177E+04	0.303976E+04	0.607729E+00
2003	0.488283E+04	0.198381E+04	0.900703E+00
2004	0.534610E+04	0.170002E+04	0.114573E+01
2005	0.203356E+04	0.147606E+04	0.320412E+00
2006	0.606718E+04	0.212716E+04	0.104811E+01
2007	0.111109E+05	0.760888E+04	0.378614E+00
2008	N/A	0.000000E+00	N/A

Survey Index: 27 Tag: USfall95 AGE = 3
 Time = MEAN Type = NUMBER
 Catchability = 0.556137E+00 % Variance Contribution = 1.9472
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.108431E+05	N/A
1974	N/A	0.509367E+04	N/A
1975	N/A	0.314169E+04	N/A
1976	N/A	0.327771E+04	N/A
1977	N/A	0.444051E+04	N/A
1978	N/A	0.261340E+04	N/A
1979	N/A	0.296547E+04	N/A
1980	N/A	0.702759E+04	N/A
1981	N/A	0.491920E+04	N/A
1982	N/A	0.524925E+04	N/A
1983	N/A	0.779785E+04	N/A
1984	N/A	0.185056E+04	N/A
1985	N/A	0.733814E+03	N/A
1986	N/A	0.117999E+04	N/A
1987	N/A	0.142217E+04	N/A
1988	N/A	0.840175E+03	N/A
1989	N/A	0.137163E+04	N/A
1990	N/A	0.441083E+04	N/A
1991	N/A	0.180724E+04	N/A
1992	N/A	0.276491E+04	N/A
1993	N/A	0.224942E+04	N/A
1994	N/A	0.232122E+04	N/A
1995	0.335157E+03	0.175664E+04	-0.165656E+01
1996	0.181381E+04	0.370275E+04	-0.713649E+00
1997	0.334099E+04	0.309903E+04	0.751767E-01
1998	0.407886E+04	0.300088E+04	0.306910E+00
1999	0.555887E+04	0.453844E+04	0.202811E+00
2000	0.467249E+04	0.455673E+04	0.250876E-01
2001	0.785372E+04	0.440562E+04	0.578106E+00
2002	0.206452E+04	0.437047E+04	-0.749972E+00
2003	0.272590E+04	0.420344E+04	-0.433104E+00
2004	0.486244E+04	0.245592E+04	0.683040E+00
2005	0.365207E+04	0.209387E+04	0.556283E+00
2006	0.355666E+04	0.233590E+04	0.420425E+00
2007	0.763474E+04	0.377070E+04	0.705448E+00
2008	N/A	0.000000E+00	N/A

Survey Index: 28 Tag: USfall95 AGE = 4
 Time = MEAN Type = NUMBER
 Catchability = 0.471055E+00 % Variance Contribution = 1.5766
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.493313E+04	N/A
1974	N/A	0.309714E+04	N/A
1975	N/A	0.116215E+04	N/A
1976	N/A	0.661116E+03	N/A
1977	N/A	0.870128E+03	N/A
1978	N/A	0.948981E+03	N/A
1979	N/A	0.678470E+03	N/A
1980	N/A	0.100635E+04	N/A
1981	N/A	0.187428E+04	N/A
1982	N/A	0.146132E+04	N/A
1983	N/A	0.173370E+04	N/A
1984	N/A	0.131505E+04	N/A
1985	N/A	0.373208E+03	N/A
1986	N/A	0.228211E+03	N/A
1987	N/A	0.346223E+03	N/A
1988	N/A	0.255432E+03	N/A
1989	N/A	0.218051E+03	N/A
1990	N/A	0.491382E+03	N/A
1991	N/A	0.105586E+04	N/A
1992	N/A	0.585220E+03	N/A
1993	N/A	0.742726E+03	N/A
1994	N/A	0.468287E+03	N/A
1995	0.267213E+03	0.444556E+03	-0.509031E+00
1996	0.433481E+03	0.736056E+03	-0.529459E+00
1997	0.202851E+04	0.172320E+04	0.163117E+00
1998	0.115456E+04	0.133224E+04	-0.143147E+00
1999	0.139032E+04	0.109187E+04	0.241642E+00
2000	0.235027E+04	0.155973E+04	0.410020E+00
2001	0.252479E+04	0.140480E+04	0.586263E+00
2002	0.576066E+03	0.140112E+04	-0.888807E+00
2003	0.548015E+03	0.182032E+04	-0.120046E+01
2004	0.204443E+04	0.985578E+03	0.729644E+00
2005	0.595867E+03	0.692546E+03	-0.150357E+00
2006	0.113291E+04	0.530599E+03	0.758543E+00
2007	0.193960E+04	0.113934E+04	0.532036E+00
2008	N/A	0.000000E+00	N/A

Survey Index: 29 Tag: USfall195 AGE = 5
 Time = MEAN Type = NUMBER
 Catchability = 0.490130E+00 % Variance Contribution = 3.4779
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.206692E+04	N/A
1974	N/A	0.153286E+04	N/A
1975	N/A	0.742972E+03	N/A
1976	N/A	0.277046E+03	N/A
1977	N/A	0.205278E+03	N/A
1978	N/A	0.278350E+03	N/A
1979	N/A	0.307104E+03	N/A
1980	N/A	0.239518E+03	N/A
1981	N/A	0.338652E+03	N/A
1982	N/A	0.489707E+03	N/A
1983	N/A	0.495147E+03	N/A
1984	N/A	0.487385E+03	N/A
1985	N/A	0.245121E+03	N/A
1986	N/A	0.124345E+03	N/A
1987	N/A	0.704512E+02	N/A
1988	N/A	0.713049E+02	N/A
1989	N/A	0.583362E+02	N/A
1990	N/A	0.732715E+02	N/A
1991	N/A	0.139812E+03	N/A
1992	N/A	0.249313E+03	N/A
1993	N/A	0.136582E+03	N/A
1994	N/A	0.127671E+03	N/A
1995	0.446490E+02	0.895528E+02	-0.695997E+00
1996	0.727000E+02	0.174115E+03	-0.873373E+00
1997	0.103983E+04	0.365201E+03	0.104636E+01
1998	0.289537E+03	0.824626E+03	-0.104665E+01
1999	0.139421E+04	0.582505E+03	0.872742E+00
2000	0.919667E+03	0.422626E+03	0.777525E+00
2001	0.166783E+04	0.507185E+03	0.119040E+01
2002	0.295555E+03	0.519740E+03	-0.564474E+00
2003	0.969650E+02	0.638772E+03	-0.188520E+01
2004	0.897052E+03	0.531130E+03	0.524106E+00
2005	0.179274E+03	0.173068E+03	0.352326E-01
2006	0.247704E+03	0.205422E+03	0.187170E+00
2007	0.371264E+03	0.240992E+03	0.432148E+00
2008	N/A	0.000000E+00	N/A

Survey Index: 30 Tag: USfall95 AGE = 6
 Time = MEAN Type = NUMBER
 Catchability = 0.361645E+00 % Variance Contribution = 4.7434
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.659554E+03	N/A
1974	N/A	0.471835E+03	N/A
1975	N/A	0.304245E+03	N/A
1976	N/A	0.326851E+03	N/A
1977	N/A	0.179110E+03	N/A
1978	N/A	0.802494E+02	N/A
1979	N/A	0.118064E+03	N/A
1980	N/A	0.565494E+02	N/A
1981	N/A	0.424941E+02	N/A
1982	N/A	0.316067E+02	N/A
1983	N/A	0.831115E+02	N/A
1984	N/A	0.759760E+02	N/A
1985	N/A	0.282533E+02	N/A
1986	N/A	0.511016E+02	N/A
1987	N/A	0.371151E+02	N/A
1988	N/A	0.123536E+02	N/A
1989	N/A	0.118849E+02	N/A
1990	N/A	0.100646E+02	N/A
1991	N/A	0.191677E+02	N/A
1992	N/A	0.128108E+02	N/A
1993	N/A	0.221907E+02	N/A
1994	N/A	0.284367E+02	N/A
1995	0.121330E+02	0.143342E+02	-0.166717E+00
1996	N/A	0.176233E+02	N/A
1997	0.797850E+02	0.638395E+02	0.222963E+00
1998	0.717290E+02	0.793329E+02	-0.100758E+00
1999	0.252751E+03	0.163255E+03	0.437090E+00
2000	0.802610E+03	0.199450E+03	0.139231E+01
2001	0.198823E+04	0.195744E+03	0.231819E+01
2002	0.265950E+02	0.272488E+03	-0.232687E+01
2003	0.185681E+03	0.417768E+03	-0.810895E+00
2004	0.170733E+03	0.288577E+03	-0.524860E+00
2005	N/A	0.552958E+02	N/A
2006	0.443580E+02	0.869139E+02	-0.672625E+00
2007	0.908510E+02	0.720273E+02	0.232175E+00
2008	N/A	0.000000E+00	N/A

Survey Index: 32 Tag: Canada AGE = 2
 Time = JAN-1 Type = NUMBER
 Catchability = 0.229939E-03 % Variance Contribution = 1.8950
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.555811E+01	N/A
1974	N/A	0.545712E+01	N/A
1975	N/A	0.933271E+01	N/A
1976	N/A	0.123352E+02	N/A
1977	N/A	0.452389E+01	N/A
1978	N/A	0.317524E+01	N/A
1979	N/A	0.818669E+01	N/A
1980	N/A	0.473558E+01	N/A
1981	N/A	0.445852E+01	N/A
1982	N/A	0.118373E+02	N/A
1983	N/A	0.385236E+01	N/A
1984	N/A	0.109327E+01	N/A
1985	N/A	0.193465E+01	N/A
1986	N/A	0.295178E+01	N/A
1987	0.119400E+01	0.155805E+01	-0.266128E+00
1988	0.177600E+01	0.169824E+01	0.447687E-01
1989	0.102700E+01	0.419639E+01	-0.140758E+01
1990	0.238700E+01	0.177936E+01	0.293783E+00
1991	0.858000E+00	0.206379E+01	-0.877698E+00
1992	0.110390E+02	0.410879E+01	0.988306E+00
1993	0.243100E+01	0.279785E+01	-0.140549E+00
1994	0.605600E+01	0.154643E+01	0.136510E+01
1995	N/A	0.246640E+01	N/A
1996	N/A	0.218763E+01	N/A
1997	N/A	0.251497E+01	N/A
1998	N/A	0.371073E+01	N/A
1999	N/A	0.418231E+01	N/A
2000	N/A	0.461190E+01	N/A
2001	N/A	0.371511E+01	N/A
2002	N/A	0.416748E+01	N/A
2003	N/A	0.288280E+01	N/A
2004	N/A	0.218266E+01	N/A
2005	N/A	0.195810E+01	N/A
2006	N/A	0.270511E+01	N/A
2007	N/A	0.927502E+01	N/A
2008	N/A	0.344781E+01	N/A

Survey Index: 33 Tag: Canada AGE = 3
 Time = JAN-1 Type = NUMBER
 Catchability = 0.369401E-03 % Variance Contribution = 0.3860
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.109033E+02	N/A
1974	N/A	0.559143E+01	N/A
1975	N/A	0.403769E+01	N/A
1976	N/A	0.363933E+01	N/A
1977	N/A	0.574575E+01	N/A
1978	N/A	0.295048E+01	N/A
1979	N/A	0.300090E+01	N/A
1980	N/A	0.728139E+01	N/A
1981	N/A	0.490114E+01	N/A
1982	N/A	0.549861E+01	N/A
1983	N/A	0.958107E+01	N/A
1984	N/A	0.243019E+01	N/A
1985	N/A	0.771577E+00	N/A
1986	N/A	0.110504E+01	N/A
1987	0.197000E+01	0.177348E+01	0.105088E+00
1988	0.127500E+01	0.966856E+00	0.276652E+00
1989	0.609000E+00	0.124144E+01	-0.712207E+00
1990	0.362800E+01	0.479531E+01	-0.278957E+00
1991	0.118600E+01	0.163900E+01	-0.323502E+00
1992	0.367700E+01	0.266538E+01	0.321750E+00
1993	0.408500E+01	0.238599E+01	0.537708E+00
1994	0.346400E+01	0.321863E+01	0.734685E-01
1995	N/A	0.158994E+01	N/A
1996	N/A	0.313978E+01	N/A
1997	N/A	0.265050E+01	N/A
1998	N/A	0.293088E+01	N/A
1999	N/A	0.421784E+01	N/A
2000	N/A	0.458517E+01	N/A
2001	N/A	0.478193E+01	N/A
2002	N/A	0.392779E+01	N/A
2003	N/A	0.409709E+01	N/A
2004	N/A	0.249305E+01	N/A
2005	N/A	0.247100E+01	N/A
2006	N/A	0.206721E+01	N/A
2007	N/A	0.312511E+01	N/A
2008	N/A	0.117115E+02	N/A

Survey Index: 34 Tag: Canada AGE = 4
 Time = JAN-1 Type = NUMBER
 Catchability = 0.619069E-03 % Variance Contribution = 0.6297
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.107099E+02	N/A
1974	N/A	0.746068E+01	N/A
1975	N/A	0.310183E+01	N/A
1976	N/A	0.150152E+01	N/A
1977	N/A	0.196328E+01	N/A
1978	N/A	0.209878E+01	N/A
1979	N/A	0.152765E+01	N/A
1980	N/A	0.202302E+01	N/A
1981	N/A	0.464224E+01	N/A
1982	N/A	0.342675E+01	N/A
1983	N/A	0.341549E+01	N/A
1984	N/A	0.400635E+01	N/A
1985	N/A	0.853464E+00	N/A
1986	N/A	0.474967E+00	N/A
1987	0.492000E+00	0.891205E+00	-0.594095E+00
1988	0.610000E+00	0.713676E+00	-0.156970E+00
1989	0.294000E+00	0.477373E+00	-0.484718E+00
1990	0.914000E+00	0.108139E+01	-0.168175E+00
1991	0.375900E+01	0.272352E+01	0.322229E+00
1992	0.990000E+00	0.142125E+01	-0.361589E+00
1993	0.407600E+01	0.201172E+01	0.706127E+00
1994	0.300600E+01	0.143824E+01	0.737190E+00
1995	N/A	0.975612E+00	N/A
1996	N/A	0.138490E+01	N/A
1997	N/A	0.315958E+01	N/A
1998	N/A	0.261758E+01	N/A
1999	N/A	0.214640E+01	N/A
2000	N/A	0.346116E+01	N/A
2001	N/A	0.313238E+01	N/A
2002	N/A	0.272658E+01	N/A
2003	N/A	0.347596E+01	N/A
2004	N/A	0.301456E+01	N/A
2005	N/A	0.166833E+01	N/A
2006	N/A	0.114528E+01	N/A
2007	N/A	0.189333E+01	N/A
2008	N/A	0.330521E+01	N/A

Survey Index: 35 Tag: Canada AGE = 5
 Time = JAN-1 Type = NUMBER
 Catchability = 0.693342E-03 % Variance Contribution = 0.9166
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.483008E+01	N/A
1974	N/A	0.397456E+01	N/A
1975	N/A	0.213451E+01	N/A
1976	N/A	0.677291E+00	N/A
1977	N/A	0.498552E+00	N/A
1978	N/A	0.662628E+00	N/A
1979	N/A	0.744300E+00	N/A
1980	N/A	0.518273E+00	N/A
1981	N/A	0.902848E+00	N/A
1982	N/A	0.123607E+01	N/A
1983	N/A	0.104998E+01	N/A
1984	N/A	0.159826E+01	N/A
1985	N/A	0.603368E+00	N/A
1986	N/A	0.278563E+00	N/A
1987	0.870000E-01	0.195200E+00	-0.808116E+00
1988	0.278000E+00	0.214444E+00	0.259572E+00
1989	0.660000E-01	0.137470E+00	-0.733749E+00
1990	0.209000E+00	0.173567E+00	0.185768E+00
1991	0.525000E+00	0.388185E+00	0.301916E+00
1992	0.350000E+00	0.651728E+00	-0.621695E+00
1993	0.887000E+00	0.398200E+00	0.800890E+00
1994	0.781000E+00	0.422066E+00	0.615412E+00
1995	N/A	0.211543E+00	N/A
1996	N/A	0.352624E+00	N/A
1997	N/A	0.720766E+00	N/A
1998	N/A	0.174398E+01	N/A
1999	N/A	0.123256E+01	N/A
2000	N/A	0.100948E+01	N/A
2001	N/A	0.121729E+01	N/A
2002	N/A	0.108867E+01	N/A
2003	N/A	0.131294E+01	N/A
2004	N/A	0.174865E+01	N/A
2005	N/A	0.448764E+00	N/A
2006	N/A	0.477268E+00	N/A
2007	N/A	0.431070E+00	N/A
2008	N/A	0.130010E+01	N/A

Survey Index: 36 Tag: Canada AGE = 6
 Time = JAN-1 Type = NUMBER
 Catchability = 0.402918E-03 % Variance Contribution = 1.1596
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.121389E+01	N/A
1974	N/A	0.963555E+00	N/A
1975	N/A	0.688410E+00	N/A
1976	N/A	0.629320E+00	N/A
1977	N/A	0.342599E+00	N/A
1978	N/A	0.150459E+00	N/A
1979	N/A	0.225361E+00	N/A
1980	N/A	0.963712E-01	N/A
1981	N/A	0.892254E-01	N/A
1982	N/A	0.628323E-01	N/A
1983	N/A	0.138806E+00	N/A
1984	N/A	0.196223E+00	N/A
1985	N/A	0.547736E-01	N/A
1986	N/A	0.901630E-01	N/A
1987	0.490000E-01	0.809917E-01	-0.502526E+00
1988	0.240000E-01	0.292607E-01	-0.198192E+00
1989	0.220000E-01	0.220578E-01	-0.262525E-02
1990	0.140000E-01	0.187772E-01	-0.293585E+00
1991	0.140000E-01	0.419144E-01	-0.109657E+01
1992	0.300000E-01	0.263752E-01	0.128772E+00
1993	0.130000E+00	0.509539E-01	0.936613E+00
1994	0.207000E+00	0.740399E-01	0.102811E+01
1995	N/A	0.266680E-01	N/A
1996	N/A	0.281101E-01	N/A
1997	N/A	0.992317E-01	N/A
1998	N/A	0.132141E+00	N/A
1999	N/A	0.272066E+00	N/A
2000	N/A	0.375211E+00	N/A
2001	N/A	0.370013E+00	N/A
2002	N/A	0.449527E+00	N/A
2003	N/A	0.676287E+00	N/A
2004	N/A	0.748276E+00	N/A
2005	N/A	0.112926E+00	N/A
2006	N/A	0.159039E+00	N/A
2007	N/A	0.101471E+00	N/A
2008	N/A	0.215801E+00	N/A

Survey Index: 38 Tag: Can95 AGE = 2
 Time = JAN-1 Type = NUMBER
 Catchability = 0.496646E-03 % Variance Contribution = 2.3507
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.120050E+02	N/A
1974	N/A	0.117869E+02	N/A
1975	N/A	0.201577E+02	N/A
1976	N/A	0.266429E+02	N/A
1977	N/A	0.977116E+01	N/A
1978	N/A	0.685820E+01	N/A
1979	N/A	0.176825E+02	N/A
1980	N/A	0.102284E+02	N/A
1981	N/A	0.962996E+01	N/A
1982	N/A	0.255674E+02	N/A
1983	N/A	0.832072E+01	N/A
1984	N/A	0.236136E+01	N/A
1985	N/A	0.417864E+01	N/A
1986	N/A	0.637556E+01	N/A
1987	N/A	0.336524E+01	N/A
1988	N/A	0.366804E+01	N/A
1989	N/A	0.906378E+01	N/A
1990	N/A	0.384324E+01	N/A
1991	N/A	0.445759E+01	N/A
1992	N/A	0.887458E+01	N/A
1993	N/A	0.604309E+01	N/A
1994	N/A	0.334014E+01	N/A
1995	0.125100E+01	0.532719E+01	-0.144888E+01
1996	0.714200E+01	0.472507E+01	0.413110E+00
1997	0.124820E+02	0.543210E+01	0.831962E+00
1998	0.333000E+01	0.801481E+01	-0.878319E+00
1999	0.208610E+02	0.903337E+01	0.836956E+00
2000	0.137650E+02	0.996126E+01	0.323426E+00
2001	0.198960E+02	0.802427E+01	0.908048E+00
2002	0.119620E+02	0.900134E+01	0.284361E+00
2003	0.118890E+02	0.622657E+01	0.646787E+00
2004	0.359900E+01	0.471434E+01	-0.269952E+00
2005	0.160200E+01	0.422929E+01	-0.970782E+00
2006	0.489300E+01	0.584276E+01	-0.177398E+00
2007	0.121590E+02	0.200331E+02	-0.499318E+00
2008	N/A	0.744694E+01	N/A

Survey Index: 39 Tag: Can95 AGE = 3
 Time = JAN-1 Type = NUMBER
 Catchability = 0.206205E-02 % Variance Contribution = 1.2149
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.608639E+02	N/A
1974	N/A	0.312122E+02	N/A
1975	N/A	0.225390E+02	N/A
1976	N/A	0.203153E+02	N/A
1977	N/A	0.320736E+02	N/A
1978	N/A	0.164700E+02	N/A
1979	N/A	0.167515E+02	N/A
1980	N/A	0.406457E+02	N/A
1981	N/A	0.273588E+02	N/A
1982	N/A	0.306940E+02	N/A
1983	N/A	0.534829E+02	N/A
1984	N/A	0.135657E+02	N/A
1985	N/A	0.430706E+01	N/A
1986	N/A	0.616850E+01	N/A
1987	N/A	0.989983E+01	N/A
1988	N/A	0.539713E+01	N/A
1989	N/A	0.692988E+01	N/A
1990	N/A	0.267681E+02	N/A
1991	N/A	0.914915E+01	N/A
1992	N/A	0.148785E+02	N/A
1993	N/A	0.133189E+02	N/A
1994	N/A	0.179668E+02	N/A
1995	0.435300E+01	0.887527E+01	-0.712403E+00
1996	0.917400E+01	0.175267E+02	-0.647353E+00
1997	0.139020E+02	0.147955E+02	-0.622898E-01
1998	0.490700E+01	0.163606E+02	-0.120421E+01
1999	0.208340E+02	0.235446E+02	-0.122309E+00
2000	0.274420E+02	0.255951E+02	0.696753E-01
2001	0.421240E+02	0.266934E+02	0.456201E+00
2002	0.310150E+02	0.219255E+02	0.346822E+00
2003	0.246180E+02	0.228705E+02	0.736289E-01
2004	0.162600E+02	0.139166E+02	0.155627E+00
2005	0.279590E+02	0.137935E+02	0.706543E+00
2006	0.186000E+02	0.115394E+02	0.477391E+00
2007	0.277080E+02	0.174448E+02	0.462680E+00
2008	N/A	0.653750E+02	N/A

Survey Index: 40 Tag: Can95 AGE = 4
 Time = JAN-1 Type = NUMBER
 Catchability = 0.263975E-02 % Variance Contribution = 0.9553
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.456676E+02	N/A
1974	N/A	0.318129E+02	N/A
1975	N/A	0.132264E+02	N/A
1976	N/A	0.640259E+01	N/A
1977	N/A	0.837155E+01	N/A
1978	N/A	0.894932E+01	N/A
1979	N/A	0.651402E+01	N/A
1980	N/A	0.862629E+01	N/A
1981	N/A	0.197948E+02	N/A
1982	N/A	0.146119E+02	N/A
1983	N/A	0.145639E+02	N/A
1984	N/A	0.170834E+02	N/A
1985	N/A	0.363923E+01	N/A
1986	N/A	0.202529E+01	N/A
1987	N/A	0.380016E+01	N/A
1988	N/A	0.304317E+01	N/A
1989	N/A	0.203555E+01	N/A
1990	N/A	0.461113E+01	N/A
1991	N/A	0.116133E+02	N/A
1992	N/A	0.606032E+01	N/A
1993	N/A	0.857811E+01	N/A
1994	N/A	0.613275E+01	N/A
1995	0.254600E+01	0.416008E+01	-0.491010E+00
1996	0.540600E+01	0.590530E+01	-0.883415E-01
1997	0.163690E+02	0.134727E+02	0.194726E+00
1998	0.433400E+01	0.111615E+02	-0.945983E+00
1999	0.766900E+01	0.915242E+01	-0.176832E+00
2000	0.192430E+02	0.147586E+02	0.265319E+00
2001	0.133070E+02	0.133567E+02	-0.372748E-02
2002	0.122340E+02	0.116263E+02	0.509478E-01
2003	0.110860E+02	0.148218E+02	-0.290413E+00
2004	0.920500E+01	0.128543E+02	-0.333930E+00
2005	0.205640E+02	0.711386E+01	0.106150E+01
2006	0.657200E+01	0.488356E+01	0.296943E+00
2007	0.127990E+02	0.807330E+01	0.460804E+00
2008	N/A	0.140936E+02	N/A

Survey Index: 41 Tag: Can95 AGE = 5
 Time = JAN-1 Type = NUMBER
 Catchability = 0.240473E-02 % Variance Contribution = 1.7187
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.167523E+02	N/A
1974	N/A	0.137850E+02	N/A
1975	N/A	0.740316E+01	N/A
1976	N/A	0.234906E+01	N/A
1977	N/A	0.172914E+01	N/A
1978	N/A	0.229821E+01	N/A
1979	N/A	0.258147E+01	N/A
1980	N/A	0.179754E+01	N/A
1981	N/A	0.313137E+01	N/A
1982	N/A	0.428707E+01	N/A
1983	N/A	0.364168E+01	N/A
1984	N/A	0.554328E+01	N/A
1985	N/A	0.209268E+01	N/A
1986	N/A	0.966147E+00	N/A
1987	N/A	0.677016E+00	N/A
1988	N/A	0.743761E+00	N/A
1989	N/A	0.476789E+00	N/A
1990	N/A	0.601987E+00	N/A
1991	N/A	0.134635E+01	N/A
1992	N/A	0.226040E+01	N/A
1993	N/A	0.138109E+01	N/A
1994	N/A	0.146386E+01	N/A
1995	0.647000E+00	0.733699E+00	-0.125753E+00
1996	0.115500E+01	0.122301E+01	-0.572161E-01
1997	0.404400E+01	0.249985E+01	0.481004E+00
1998	0.198800E+01	0.604869E+01	-0.111271E+01
1999	0.535000E+01	0.427492E+01	0.224332E+00
2000	0.506900E+01	0.350121E+01	0.370036E+00
2001	0.458100E+01	0.422197E+01	0.816166E-01
2002	0.555300E+01	0.377586E+01	0.385709E+00
2003	0.342100E+01	0.455368E+01	-0.286003E+00
2004	0.227300E+01	0.606488E+01	-0.981414E+00
2005	0.569600E+01	0.155646E+01	0.129735E+01
2006	0.820000E+00	0.165532E+01	-0.702444E+00
2007	0.228800E+01	0.149509E+01	0.425493E+00
2008	N/A	0.450916E+01	N/A

Survey Index: 42 Tag: Can95 AGE = 6
 Time = JAN-1 Type = NUMBER
 Catchability = 0.186002E-02 % Variance Contribution = 1.6987
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.560378E+01	N/A
1974	N/A	0.444813E+01	N/A
1975	N/A	0.317796E+01	N/A
1976	N/A	0.290518E+01	N/A
1977	N/A	0.158157E+01	N/A
1978	N/A	0.694575E+00	N/A
1979	N/A	0.104035E+01	N/A
1980	N/A	0.444886E+00	N/A
1981	N/A	0.411898E+00	N/A
1982	N/A	0.290058E+00	N/A
1983	N/A	0.640780E+00	N/A
1984	N/A	0.905839E+00	N/A
1985	N/A	0.252855E+00	N/A
1986	N/A	0.416226E+00	N/A
1987	N/A	0.373888E+00	N/A
1988	N/A	0.135078E+00	N/A
1989	N/A	0.101827E+00	N/A
1990	N/A	0.866825E-01	N/A
1991	N/A	0.193492E+00	N/A
1992	N/A	0.121758E+00	N/A
1993	N/A	0.235222E+00	N/A
1994	N/A	0.341796E+00	N/A
1995	0.101000E+00	0.123109E+00	-0.197953E+00
1996	0.123000E+00	0.129767E+00	-0.535533E-01
1997	0.670000E+00	0.458091E+00	0.380211E+00
1998	0.558000E+00	0.610012E+00	-0.891191E-01
1999	0.220000E+01	0.125596E+01	0.560558E+00
2000	0.368900E+01	0.173211E+01	0.756014E+00
2001	0.239700E+01	0.170812E+01	0.338827E+00
2002	0.283300E+01	0.207519E+01	0.311285E+00
2003	0.198800E+01	0.312199E+01	-0.451342E+00
2004	0.141600E+01	0.345432E+01	-0.891790E+00
2005	0.156500E+01	0.521307E+00	0.109930E+01
2006	0.238000E+00	0.734184E+00	-0.112649E+01
2007	0.248000E+00	0.468426E+00	-0.635949E+00
2008	N/A	0.996218E+00	N/A

Survey Index: 43 Tag: Scall AGE = 1
 Time = MEAN Type = NUMBER
 Catchability = 0.233364E-04 % Variance Contribution = 4.4457
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.617432E+00	N/A
1974	N/A	0.107682E+01	N/A
1975	N/A	0.144102E+01	N/A
1976	N/A	0.515879E+00	N/A
1977	N/A	0.361276E+00	N/A
1978	N/A	0.103511E+01	N/A
1979	N/A	0.535901E+00	N/A
1980	N/A	0.504738E+00	N/A
1981	N/A	0.133122E+01	N/A
1982	0.313000E+00	0.458389E+00	-0.381516E+00
1983	0.140000E+00	0.131115E+00	0.655667E-01
1984	0.233000E+00	0.223500E+00	0.416271E-01
1985	0.549000E+00	0.343196E+00	0.469798E+00
1986	0.103000E+00	0.177195E+00	-0.542520E+00
1987	0.470000E-01	0.192678E+00	-0.141087E+01
1988	0.116000E+00	0.477456E+00	-0.141488E+01
1989	0.195000E+00	0.202191E+00	-0.362157E-01
1990	0.100000E+00	0.234637E+00	-0.852871E+00
1991	0.211700E+01	0.469575E+00	0.150593E+01
1992	0.167000E+00	0.342595E+00	-0.718556E+00
1993	0.112900E+01	0.230977E+00	0.158677E+01
1994	0.150300E+01	0.277959E+00	0.168774E+01
1995	N/A	0.246347E+00	N/A
1996	N/A	0.283770E+00	N/A
1997	N/A	0.417888E+00	N/A
1998	N/A	0.471913E+00	N/A
1999	N/A	0.518874E+00	N/A
2000	N/A	0.418981E+00	N/A
2001	N/A	0.470336E+00	N/A
2002	N/A	0.326432E+00	N/A
2003	N/A	0.247143E+00	N/A
2004	N/A	0.220762E+00	N/A
2005	N/A	0.304641E+00	N/A
2006	N/A	0.104391E+01	N/A
2007	N/A	0.388002E+00	N/A
2008	N/A	0.000000E+00	N/A

Survey Index: 44 Tag: Scall95 AGE = 1
 Time = MEAN Type = NUMBER
 Catchability = 0.539497E-04 % Variance Contribution = 0.3281
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.142739E+01	N/A
1974	N/A	0.248941E+01	N/A
1975	N/A	0.333139E+01	N/A
1976	N/A	0.119262E+01	N/A
1977	N/A	0.835206E+00	N/A
1978	N/A	0.239299E+01	N/A
1979	N/A	0.123891E+01	N/A
1980	N/A	0.116687E+01	N/A
1981	N/A	0.307755E+01	N/A
1982	N/A	0.105972E+01	N/A
1983	N/A	0.303115E+00	N/A
1984	N/A	0.516693E+00	N/A
1985	N/A	0.793408E+00	N/A
1986	N/A	0.409643E+00	N/A
1987	N/A	0.445437E+00	N/A
1988	N/A	0.110379E+01	N/A
1989	N/A	0.467431E+00	N/A
1990	N/A	0.542440E+00	N/A
1991	N/A	0.108557E+01	N/A
1992	N/A	0.792020E+00	N/A
1993	N/A	0.533978E+00	N/A
1994	N/A	0.642592E+00	N/A
1995	0.609000E+00	0.569510E+00	0.670423E-01
1996	0.508000E+00	0.656025E+00	-0.255718E+00
1997	0.106200E+01	0.966082E+00	0.946601E-01
1998	0.187200E+01	0.109098E+01	0.539932E+00
1999	0.103800E+01	0.119954E+01	-0.144646E+00
2000	0.912000E+00	0.968610E+00	-0.602223E-01
2001	0.789000E+00	0.108733E+01	-0.320717E+00
2002	0.100500E+01	0.754654E+00	0.286483E+00
2003	0.880000E+00	0.571352E+00	0.431916E+00
2004	0.330000E+00	0.510364E+00	-0.436031E+00
2005	0.573000E+00	0.704277E+00	-0.206286E+00
2006	0.242200E+01	0.241333E+01	0.358668E-02
2007	N/A	0.896992E+00	N/A
2008	N/A	0.000000E+00	N/A

Retrospective Summary

Average Fishing Mortality
Ages = 4 - 5

	1973	1974	1975	1976	1977
2000	0.9046	1.1647	1.4350	1.0158	0.9995
2001	0.9046	1.1647	1.4350	1.0158	0.9995
2002	0.9046	1.1647	1.4350	1.0158	0.9995
2003	0.9046	1.1647	1.4350	1.0158	0.9995
2004	0.9046	1.1647	1.4350	1.0158	0.9995
2005	0.9046	1.1647	1.4350	1.0158	0.9995
2006	0.9046	1.1647	1.4350	1.0158	0.9995
2007	0.9046	1.1647	1.4350	1.0158	0.9995
	1978	1979	1980	1981	1982
2000	0.9500	0.9943	0.7201	1.2366	1.0961
2001	0.9500	0.9943	0.7201	1.2366	1.0961
2002	0.9500	0.9943	0.7201	1.2366	1.0961
2003	0.9500	0.9943	0.7201	1.2366	1.0961
2004	0.9500	0.9943	0.7201	1.2366	1.0961
2005	0.9500	0.9943	0.7201	1.2366	1.0961
2006	0.9500	0.9943	0.7201	1.2366	1.0961
2007	0.9500	0.9943	0.7201	1.2366	1.0961
	1983	1984	1985	1986	1987
2000	0.6727	1.8064	1.0330	0.8025	1.3378
2001	0.6727	1.8064	1.0330	0.8025	1.3378
2002	0.6727	1.8064	1.0330	0.8025	1.3378
2003	0.6727	1.8064	1.0330	0.8025	1.3378
2004	0.6727	1.8064	1.0330	0.8025	1.3378
2005	0.6727	1.8064	1.0330	0.8025	1.3378
2006	0.6727	1.8064	1.0330	0.8025	1.3378
2007	0.6727	1.8064	1.0330	0.8025	1.3378
	1988	1989	1990	1991	1992
2000	1.5603	0.9250	0.9378	1.3432	1.1853
2001	1.5603	0.9250	0.9378	1.3432	1.1853
2002	1.5603	0.9250	0.9378	1.3434	1.1857
2003	1.5603	0.9250	0.9378	1.3434	1.1857
2004	1.5603	0.9250	0.9378	1.3434	1.1856
2005	1.5603	0.9250	0.9378	1.3434	1.1856
2006	1.5603	0.9250	0.9378	1.3434	1.1856
2007	1.5603	0.9250	0.9378	1.3434	1.1856
	1993	1994	1995	1996	1997
2000	1.4731	1.8188	0.9109	0.5418	0.4712
2001	1.4733	1.8201	0.9132	0.5445	0.4751
2002	1.4749	1.8304	0.9317	0.5673	0.5089
2003	1.4750	1.8311	0.9328	0.5687	0.5111
2004	1.4749	1.8301	0.9310	0.5664	0.5076
2005	1.4749	1.8301	0.9310	0.5664	0.5076
2006	1.4749	1.8301	0.9310	0.5664	0.5076
2007	1.4749	1.8301	0.9310	0.5664	0.5076

	1998	1999	2000	2001	2002
2000	0.5854	0.5269	0.6011		
2001	0.5938	0.5401	0.6280	0.4138	
2002	0.6696	0.6738	0.9785	1.0250	0.7292
2003	0.6748	0.6840	1.0130	1.1286	0.9286
2004	0.6666	0.6680	0.9592	0.9727	0.6477
2005	0.6665	0.6678	0.9586	0.9710	0.6453
2006	0.6664	0.6676	0.9581	0.9698	0.6436
2007	0.6665	0.6677	0.9583	0.9701	0.6441

	2003	2004	2005	2006	2007
2000					
2001					
2002					
2003	1.4185				
2004	0.6067	1.8883			
2005	0.6025	1.8412	1.2270		
2006	0.5994	1.8085	1.1407	0.8425	
2007	0.6003	1.8180	1.1648	0.8904	0.2892

Spawning Stock Biomass

	1973	1974	1975	1976	1977
2000	22161.	14780.	9014.	10024.	8351.
2001	22161.	14780.	9014.	10024.	8351.
2002	22161.	14780.	9014.	10024.	8351.
2003	22161.	14780.	9014.	10024.	8351.
2004	22161.	14780.	9014.	10024.	8351.
2005	22161.	14780.	9014.	10024.	8351.
2006	22161.	14780.	9014.	10024.	8351.
2007	22161.	14780.	9014.	10024.	8351.

	1978	1979	1980	1981	1982
2000	6169.	8501.	10884.	10144.	12975.
2001	6169.	8501.	10884.	10144.	12975.
2002	6169.	8501.	10884.	10144.	12975.
2003	6169.	8501.	10884.	10144.	12975.
2004	6169.	8501.	10884.	10144.	12975.
2005	6169.	8501.	10884.	10144.	12975.
2006	6169.	8501.	10884.	10144.	12975.
2007	6169.	8501.	10884.	10144.	12975.

	1983	1984	1985	1986	1987
2000	11103.	3847.	2558.	3210.	2750.
2001	11103.	3847.	2558.	3210.	2750.
2002	11103.	3847.	2558.	3210.	2750.
2003	11103.	3847.	2558.	3210.	2750.
2004	11103.	3847.	2558.	3210.	2750.
2005	11103.	3847.	2558.	3210.	2750.
2006	11103.	3847.	2558.	3210.	2750.
2007	11103.	3847.	2558.	3210.	2750.

	1988	1989	1990	1991	1992

2000	2198.	4170.	4750.	3486.	4474.
2001	2198.	4170.	4750.	3486.	4474.
2002	2198.	4170.	4750.	3485.	4472.
2003	2198.	4170.	4750.	3485.	4471.
2004	2198.	4170.	4750.	3485.	4472.
2005	2198.	4170.	4750.	3485.	4472.
2006	2198.	4170.	4750.	3485.	4472.
2007	2198.	4170.	4750.	3485.	4472.

1993	1994	1995	1996	1997
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2000	3973.	2852.	3038.	5258.	6909.
2001	3972.	2849.	3026.	5227.	6847.
2002	3965.	2822.	2938.	4984.	6362.
2003	3965.	2821.	2933.	4970.	6333.
2004	3966.	2823.	2941.	4993.	6379.
2005	3966.	2823.	2941.	4993.	6380.
2006	3966.	2823.	2941.	4993.	6380.
2007	3966.	2823.	2941.	4993.	6380.

1998	1999	2000	2001	2002
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2000	8398.	13633.	19462.		
2001	8266.	12307.	15883.	19972.	
2002	7223.	9496.	10026.	9529.	12523.
2003	7161.	9328.	9618.	7742.	7425.
2004	7260.	9595.	10267.	9272.	10140.
2005	7261.	9599.	10275.	9291.	10180.
2006	7262.	9601.	10281.	9305.	10210.
2007	7262.	9600.	10280.	9300.	10201.

2003	2004	2005	2006	2007
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2000					
2001					
2002					
2003	7709.				
2004	11316.	9201.			
2005	10171.	6307.	5645.		
2006	10239.	5915.	4452.	5001.	
2007	10219.	5869.	4157.	4427.	9526.

Total Population Numbers

1973	1974	1975	1976	1977
------	------	------	------	------

2000	110351.	111229.	131948.	93193.	57252.
2001	110351.	111229.	131948.	93193.	57252.
2002	110351.	111229.	131948.	93193.	57252.
2003	110351.	111229.	131948.	93193.	57252.
2004	110351.	111229.	131948.	93193.	57252.
2005	110351.	111229.	131948.	93193.	57252.
2006	110351.	111229.	131948.	93193.	57252.
2007	110351.	111229.	131948.	93193.	57252.

1978	1979	1980	1981	1982
------	------	------	------	------

2000	80953.	73336.	68594.	104677.	96685.
2001	80953.	73336.	68594.	104677.	96685.
2002	80953.	73336.	68594.	104677.	96685.

2003	80953.	73336.	68594.	104677.	96685.
2004	80953.	73336.	68594.	104677.	96685.
2005	80953.	73336.	68594.	104677.	96685.
2006	80953.	73336.	68594.	104677.	96685.
2007	80953.	73336.	68594.	104677.	96685.

1983	1984	1985	1986	1987
------	------	------	------	------

2000	56648.	31441.	29636.	25695.	22692.
2001	56648.	31441.	29636.	25695.	22692.
2002	56648.	31441.	29636.	25695.	22692.
2003	56648.	31441.	29636.	25695.	22692.
2004	56648.	31441.	29636.	25695.	22692.
2005	56648.	31441.	29636.	25695.	22692.
2006	56648.	31441.	29636.	25695.	22692.
2007	56648.	31441.	29636.	25695.	22692.

1988	1989	1990	1991	1992
------	------	------	------	------

2000	34379.	32297.	33985.	41046.	45955.
2001	34379.	32297.	33984.	41044.	45949.
2002	34379.	32296.	33980.	41032.	45902.
2003	34379.	32296.	33980.	41031.	45899.
2004	34379.	32296.	33980.	41032.	45903.
2005	34379.	32296.	33980.	41032.	45903.
2006	34379.	32296.	33980.	41032.	45904.
2007	34379.	32296.	33980.	41032.	45904.

1993	1994	1995	1996	1997
------	------	------	------	------

2000	36699.	32442.	29994.	36618.	50007.
2001	36677.	32360.	29838.	36348.	49343.
2002	36509.	31710.	28604.	34220.	44110.
2003	36499.	31671.	28531.	34094.	43799.
2004	36515.	31733.	28648.	34295.	44294.
2005	36516.	31734.	28649.	34298.	44300.
2006	36516.	31734.	28650.	34300.	44305.
2007	36516.	31734.	28650.	34299.	44303.

1998	1999	2000	2001	2002
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2000	74662.	94898.	106568.	95461.	
2001	65513.	81056.	100947.	107644.	96358.
2002	53087.	59035.	64338.	72549.	84526.
2003	52350.	57340.	53839.	51205.	54271.
2004	53523.	60040.	60206.	58943.	60591.
2005	53538.	60074.	60286.	59091.	51195.
2006	53548.	60098.	60344.	59199.	51478.
2007	53545.	60091.	60327.	59167.	51394.

2003	2004	2005	2006	2007
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2000					
2001					
2002	79767.				
2003	50873.	49695.			
2004	61118.	49021.	49140.		
2005	49419.	41036.	31650.	37349.	
2006	44779.	38032.	35214.	82324.	82517.
2007	44585.	35962.	33263.	69731.	71101.

2008

2000
 2001
 2002
 2003
 2004
 2005
 2006
 2007

73568.

Age 1 Population

	1973	1974	1975	1976	1977
2000	29384.	52184.	70632.	24731.	17283.
2001	29384.	52184.	70632.	24731.	17283.
2002	29384.	52184.	70632.	24731.	17283.
2003	29384.	52184.	70632.	24731.	17283.
2004	29384.	52184.	70632.	24731.	17283.
2005	29384.	52184.	70632.	24731.	17283.
2006	29384.	52184.	70632.	24731.	17283.
2007	29384.	52184.	70632.	24731.	17283.
	1978	1979	1980	1981	1982
2000	54437.	25508.	24034.	62997.	22846.
2001	54437.	25508.	24034.	62997.	22846.
2002	54437.	25508.	24034.	62997.	22846.
2003	54437.	25508.	24034.	62997.	22846.
2004	54437.	25508.	24034.	62997.	22846.
2005	54437.	25508.	24034.	62997.	22846.
2006	54437.	25508.	24034.	62997.	22846.
2007	54437.	25508.	24034.	62997.	22846.
	1983	1984	1985	1986	1987
2000	6581.	10843.	16749.	8473.	9193.
2001	6581.	10843.	16749.	8473.	9193.
2002	6581.	10843.	16749.	8473.	9193.
2003	6581.	10843.	16749.	8473.	9193.
2004	6581.	10843.	16749.	8473.	9193.
2005	6581.	10843.	16749.	8473.	9193.
2006	6581.	10843.	16749.	8473.	9193.
2007	6581.	10843.	16749.	8473.	9193.
	1988	1989	1990	1991	1992
2000	22841.	9662.	11220.	22567.	17559.
2001	22841.	9662.	11220.	22566.	17554.
2002	22841.	9661.	11217.	22556.	17516.
2003	22841.	9661.	11217.	22556.	17514.
2004	22841.	9661.	11217.	22557.	17518.
2005	22841.	9661.	11217.	22557.	17518.
2006	22841.	9661.	11217.	22557.	17518.
2007	22841.	9661.	11217.	22557.	17518.
	1993	1994	1995	1996	1997
2000	14079.	13739.	12438.	14691.	23608.

2001	14063.	13674.	12349.	14549.	23165.
2002	13934.	13161.	11646.	13429.	19672.
2003	13926.	13130.	11604.	13362.	19464.
2004	13938.	13179.	11671.	13468.	19795.
2005	13938.	13179.	11672.	13469.	19799.
2006	13938.	13180.	11672.	13470.	19802.
2007	13938.	13180.	11672.	13470.	19801.

	1998	1999	2000	2001	2002
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2000	38882.	42191.	37675.	20997.	
2001	30272.	35826.	43381.	37456.	21188.
2002	22100.	23880.	24753.	32432.	37740.
2003	21617.	22782.	15639.	19687.	24978.
2004	22387.	24531.	19800.	22206.	24928.
2005	22397.	24553.	19853.	22289.	15410.
2006	22404.	24569.	19891.	22349.	15604.
2007	22402.	24564.	19880.	22331.	15547.

	2003	2004	2005	2006	2007
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2000					
2001					
2002	20357.				
2003	15892.	19265.			
2004	20776.	10009.	19332.		
2005	16768.	11590.	8658.	18561.	
2006	11895.	12383.	14697.	60429.	19370.
2007	11770.	10472.	14435.	49437.	18373.

	2008				
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2000	
2001	
2002	
2003	
2004	
2005	
2006	
2007	19120.

In the Retrospective Analysis
 The Following Survey Indices Have Predicted
 Index Value Set to Zero in Terminal Year + 1

1	USsearly	1
2	USsearly	2
3	USsearly	3
4	USsearly	4
5	USsearly	5
6	USsearly	6
19	USfall	1
20	USfall	2
21	USfall	3
22	USfall	4
23	USfall	5
24	USfall	6
25	USfall95	1
26	USfall95	2
27	USfall95	3
28	USfall95	4
29	USfall95	5
30	USfall95	6
43	Scall	1
44	Scall95	1

Plus Group Diagnostic Report

Calculation Method Selected = Backward

Year	Population Backward	Population Forward	F Forward	F Backward	Ratio
1973	3013.	3013.	0.904553	0.904559	1.000007
1974	2391.	3307.	0.695689	1.164718	1.674194
1975	1709.	2815.	0.631724	1.434953	2.271487
1976	1562.	1825.	0.793523	1.015833	1.280156
1977	850.	965.	0.816769	0.999464	1.223680
1978	373.	566.	0.523246	0.949972	1.815536
1979	559.	577.	0.944090	0.994293	1.053177
1980	239.	509.	0.278307	0.720099	2.587425
1981	221.	613.	0.301185	1.236571	4.105689
1982	156.	681.	0.168110	1.096145	6.520394
1983	345.	959.	0.195123	0.672714	3.447641
1984	487.	1279.	0.393483	1.806415	4.590832
1985	136.	1016.	0.091534	1.032965	11.284990
1986	224.	1013.	0.131529	0.802529	6.101535
1987	201.	875.	0.189551	1.337831	7.057877
1988	73.	653.	0.094237	1.560327	16.557517
1989	55.	540.	0.064098	0.925028	14.431503
1990	47.	479.	0.061967	0.937802	15.133953
1991	104.	449.	0.191804	1.343232	7.003139
1992	65.	423.	0.115829	1.185267	10.232886
1993	127.	544.	0.202189	1.473117	7.285851
1994	184.	471.	0.407228	1.818787	4.466256
1995	67.	338.	0.128092	0.910906	7.111332
1996	72.	345.	0.092195	0.541761	5.876269
1997	261.	508.	0.215425	0.471187	2.187239
1998	361.	899.	0.197115	0.585412	2.969895
1999	805.	1865.	0.195705	0.526857	2.692103
2000	1278.	2280.	0.293725	0.601070	2.046370
2001	1470.	2288.	N/A	N/A	