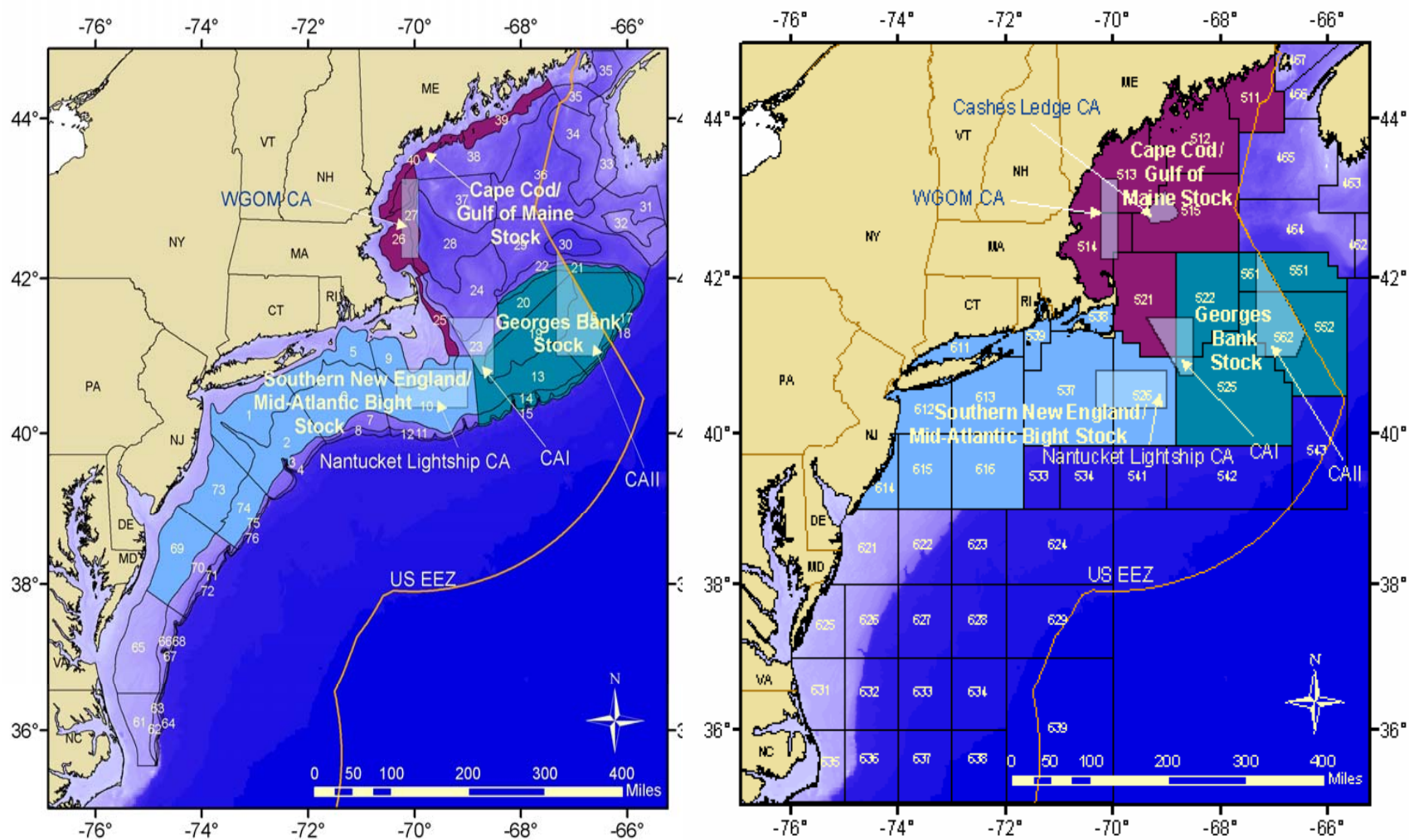
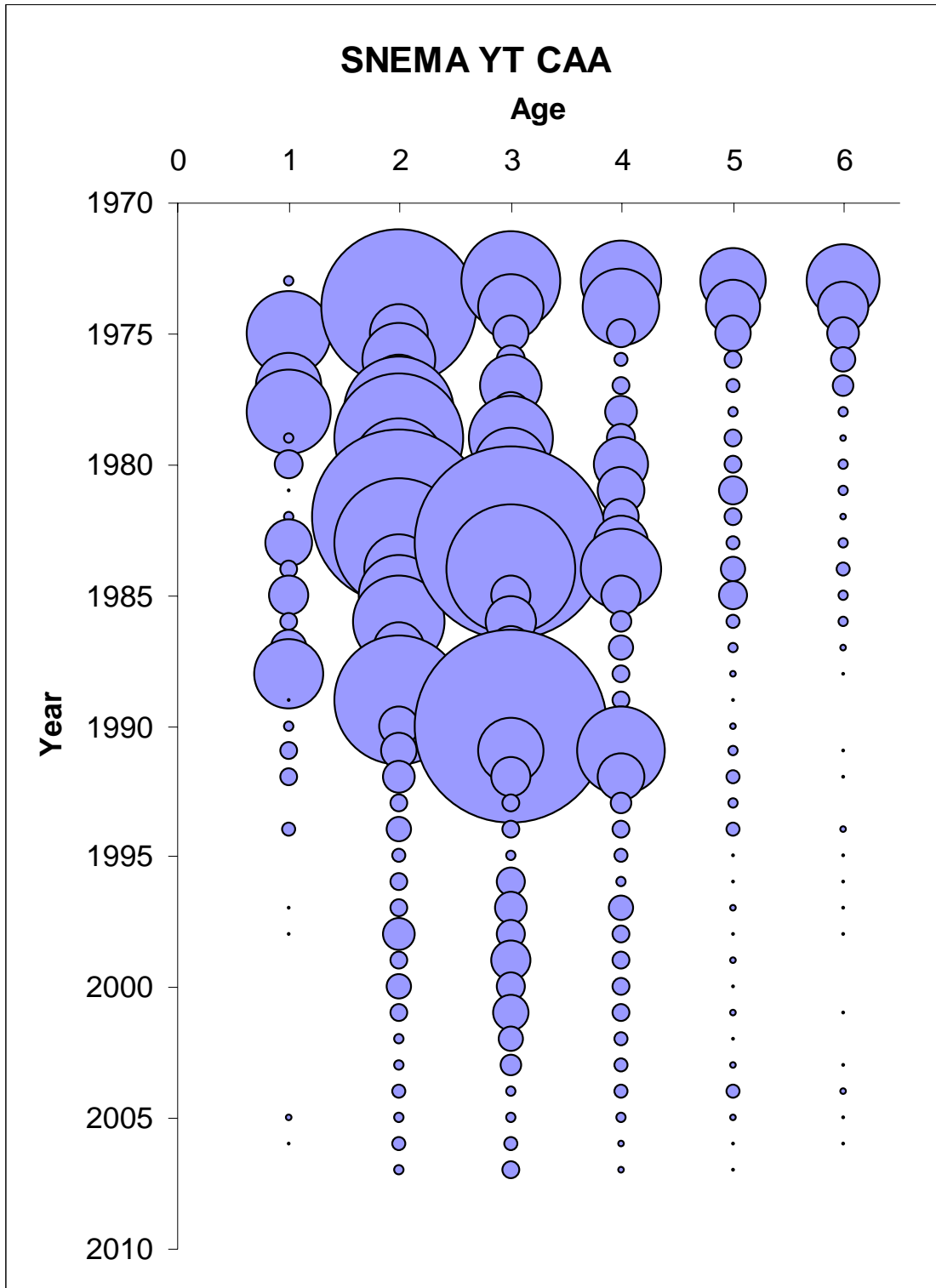


**Appendix D. Southern New England/ Mid-Atlantic yellowtail flounder**  
**Appendix Tables and Figures by Larry Alade, Chris Legault and Steven Cadrin**

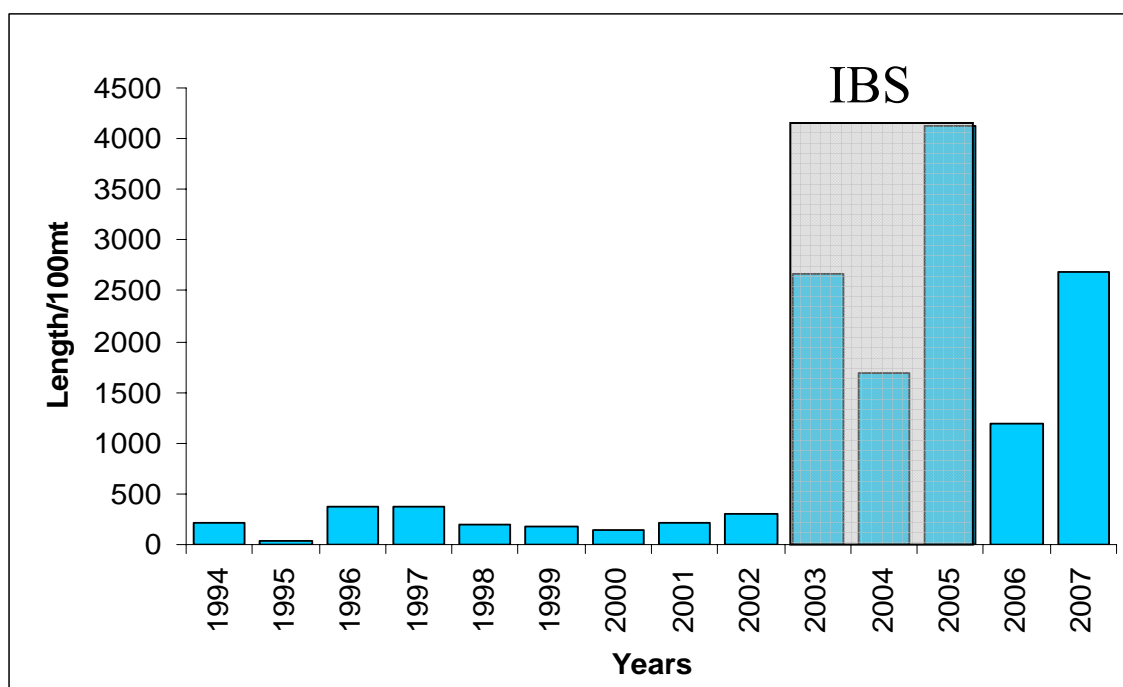


Appendix Figure D.1. Offshore Survey strata (1, 2, 5, 6, 9, 10, 69, 73, 74) used by NEFSC to estimate the autumn, spring and fall (Strata 69, 73 and 74 excluded from the fall series) survey indices [Left] and commercial statistical areas [Right] for all three yellowtail flounder stocks.

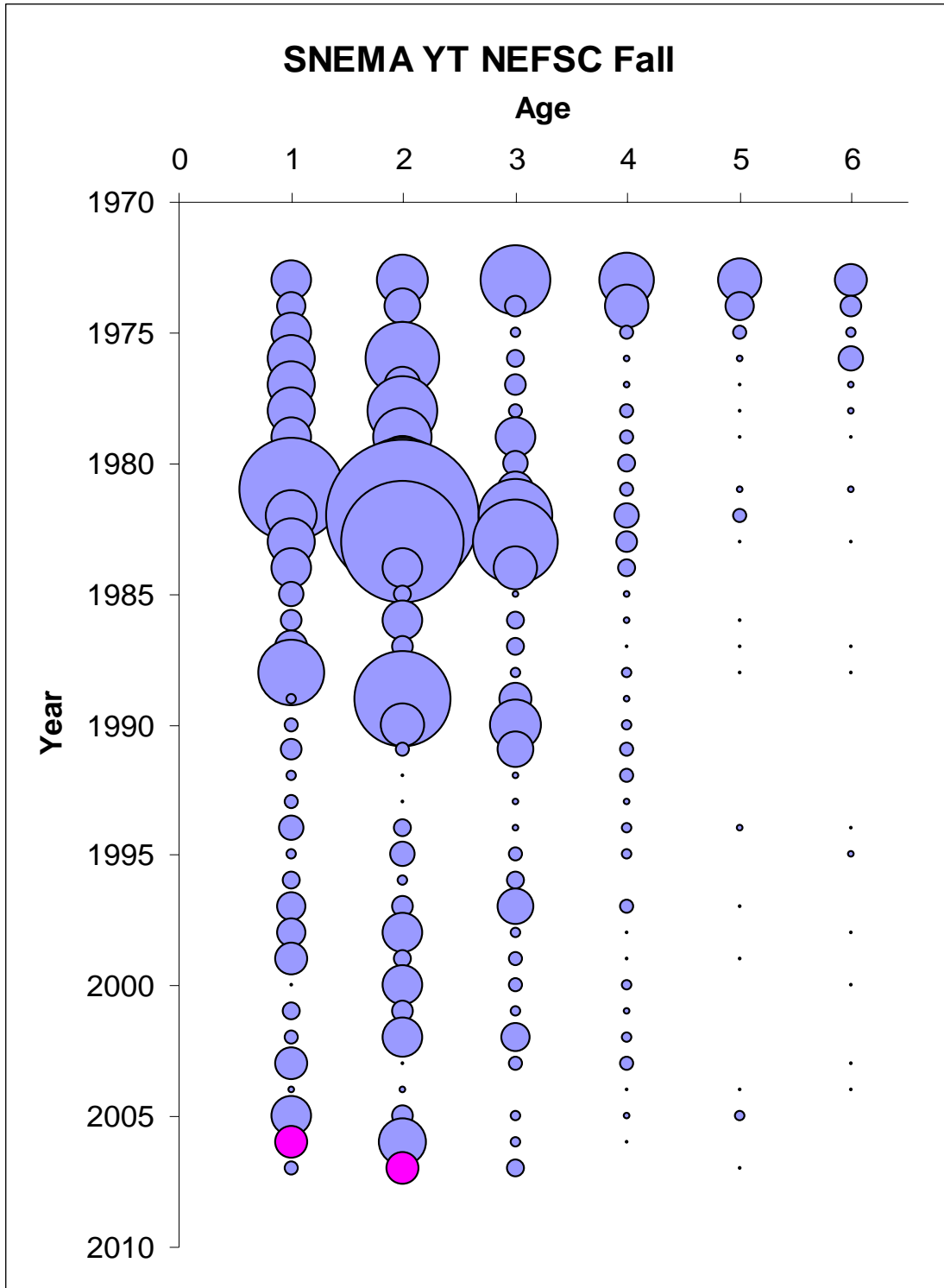


Appendix Figure D.2 Catch at age bubble plot for Southern New England-Mid Atlantic yellowtail flounder.

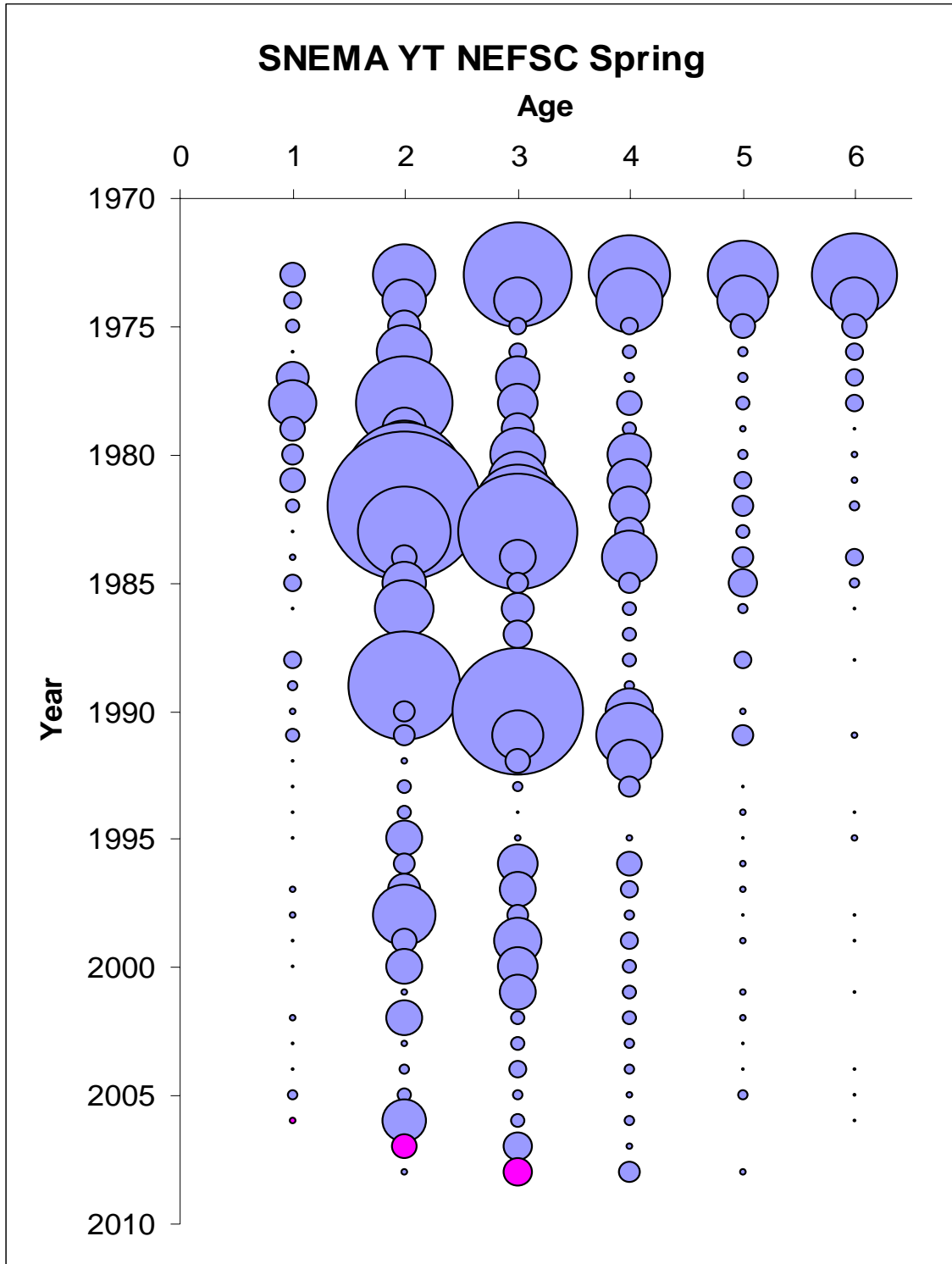
## Southern New England-Mid Atlantic Yellowtail flounder Biological Sampling



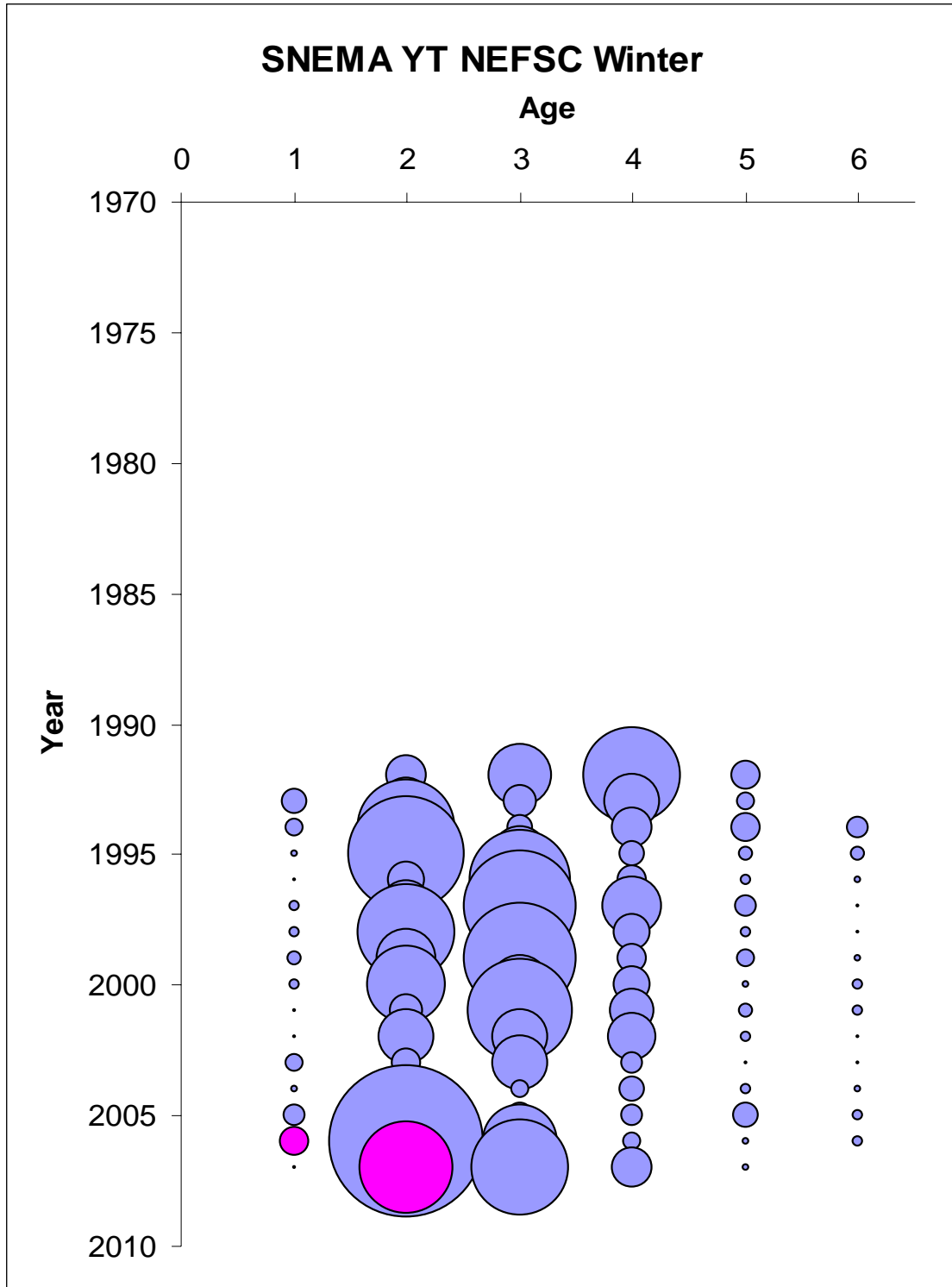
Appendix Figure D.3. Biological sampling for Southern New England-Mid Atlantic yellowtail flounder. Note: 2003 -2005 was heavily supplemented by the Industry based survey (IBS – shaded in Grey).



Appendix Figure D.4.a Survey bubble plot for SNEMA yellowtail NEFSC Fall survey. Note the 2005 year class is highlighted in pink.

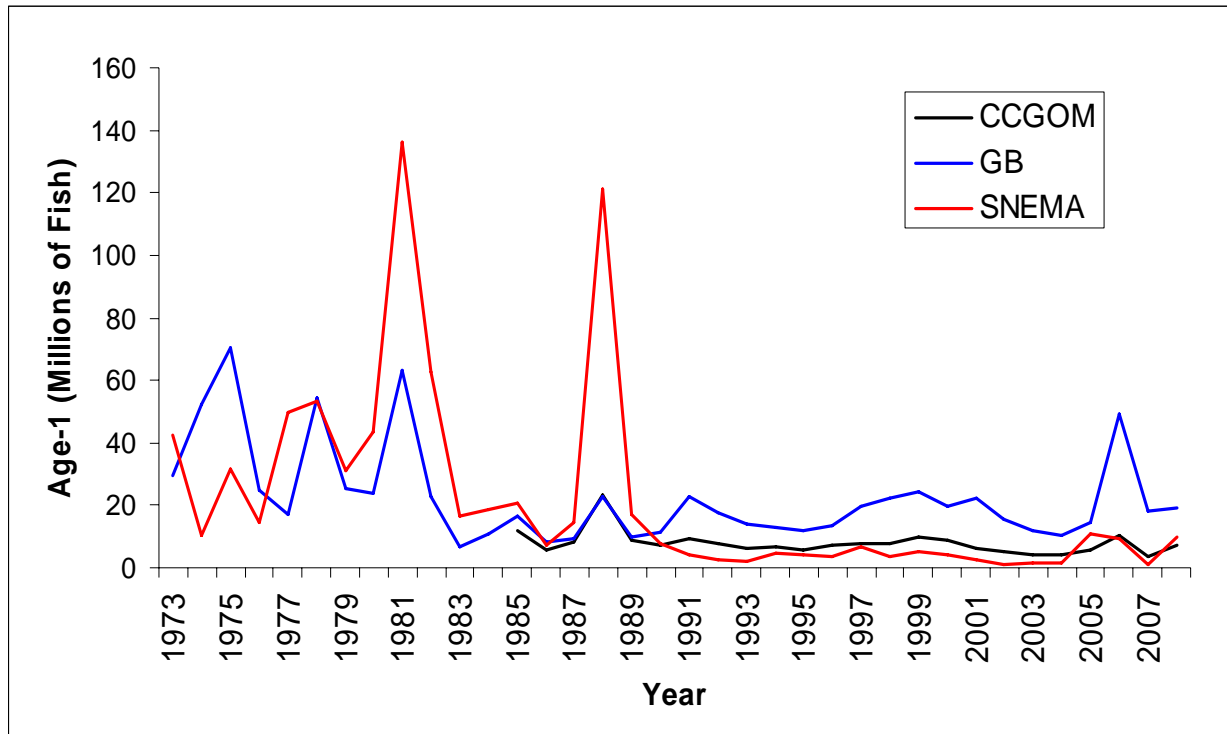


Appendix Figure D.4.b Survey bubble plot for SNEMA yellowtail NEFSC Spring survey. Note the 2005 year class is highlighted in pink.



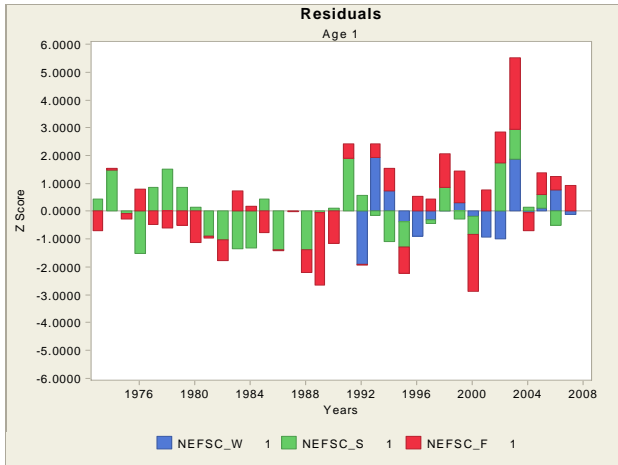
Appendix Figure D.4.c Survey bubble plot for SNEMA yellowtail NEFSC Winter survey. Note the 2005 year class is highlighted in pink.

## Age-1 Recruitment

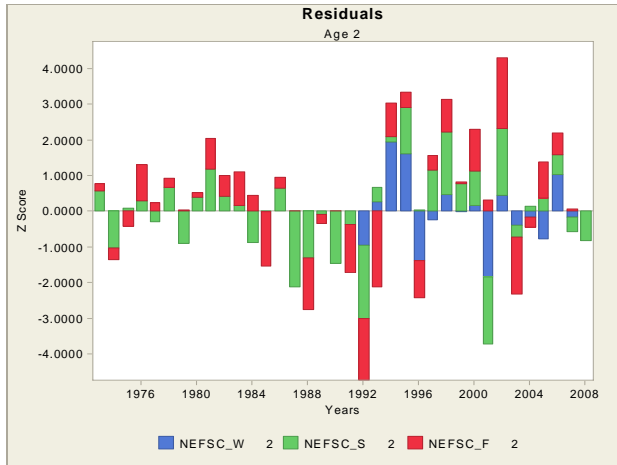


Appendix Figure D.5. Comparison of recruitment trends from the three yellowtail flounder stocks.

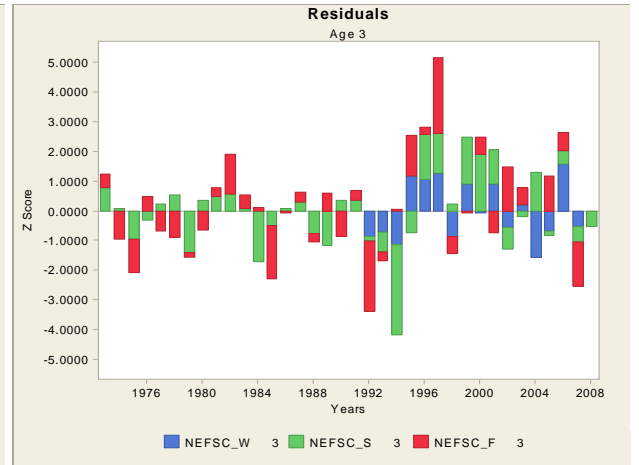
### Age 1



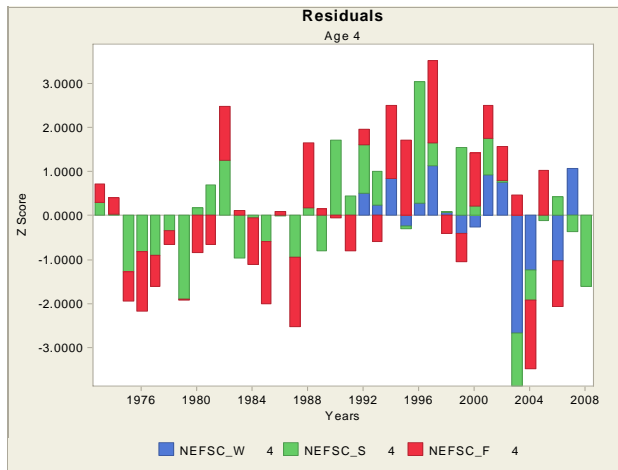
### Age 2



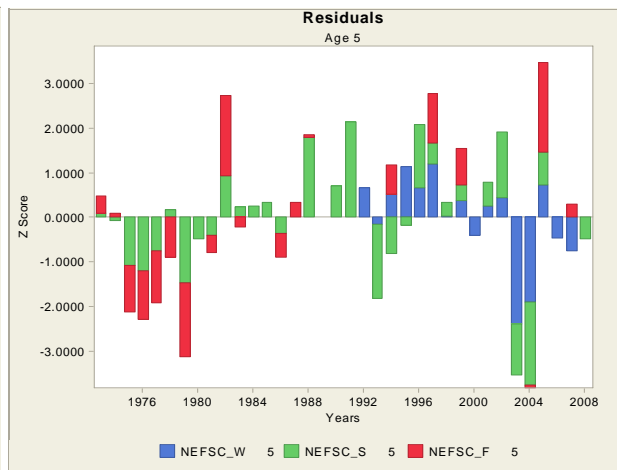
### Age 3



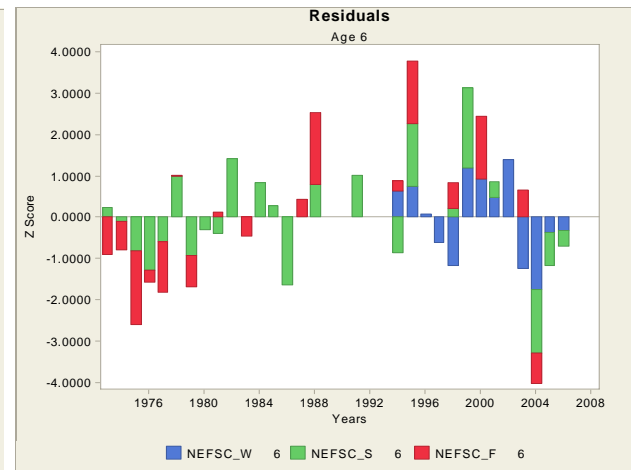
### Age 4



### Age 5



### Age 6+



Appendix Figure D.6. Standardized residuals for all indices by age.



# Appendix VPA Output Report

VPA Version 2.8.0

Model ID: snema 6 plus for GARM2008\_Retro

## Input File:

L:\YELLOWTAILFLOUNDER\ASSESSMENTS\SNEMA\VPA\SNEMA\_VPA\_6PLUS\_JULY\_2008\_RETRO.DAT

Date of Run: 17-JUL-2008

Time of Run: 14:24

Levenburg-Marquardt Algorithm Completed 15 Iterations  
Residual Sum of Squares = 337.729

Number of Residuals = 457  
Number of Parameters = 4  
Degrees of Freedom = 453  
Mean Squared Residual = 0.745539  
Standard Deviation = 0.863446

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

Number of Survey Indices Available = 18  
Number of Survey Indices Used in Estimate = 18

## VPA Classic Method - Auto Estimated Q's

### Stock Numbers Predicted in Terminal Year Plus One (2008)

Age	Stock Predicted	Std. Error	CV
2	952.892	0.486501E+03	0.510552E+00
3	6071.373	0.208250E+04	0.343003E+00
4	5190.411	0.160161E+04	0.308571E+00
5	236.964	0.900044E+02	0.379823E+00

### Catchability Values for Each Survey Used in Estimate

INDEX	Catchability	Std. Error	CV
1	0.453675E-01	0.125163E-01	0.275888E+00
2	0.142556E+01	0.258922E+00	0.181628E+00
3	0.229197E+01	0.418383E+00	0.182543E+00
4	0.254824E+01	0.320159E+00	0.125639E+00
5	0.189483E+01	0.439295E+00	0.231838E+00
6	0.234050E+01	0.826870E+00	0.353288E+00
7	0.141979E-01	0.237835E-02	0.167514E+00
8	0.182963E+00	0.273950E-01	0.149730E+00
9	0.283400E+00	0.369888E-01	0.130518E+00
10	0.419285E+00	0.435372E-01	0.103837E+00
11	0.550028E+00	0.953396E-01	0.173336E+00
12	0.568391E+00	0.113931E+00	0.200446E+00
13	0.100583E+00	0.159129E-01	0.158206E+00
14	0.175600E+00	0.286112E-01	0.162934E+00
15	0.199593E+00	0.246573E-01	0.123538E+00
16	0.217045E+00	0.281861E-01	0.129863E+00
17	0.221817E+00	0.420359E-01	0.189507E+00
18	0.449687E+00	0.132708E+00	0.295111E+00

-- 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 = 0.4129

F in Oldest True Age in Terminal Year = 0.4129

Full F Calculated Using Classic Method

Age	Input Partial Recruitment	Calc Partial Recruitment	Fishing Mortality	Used In Full F	Comments
1	0.010	0.014	0.0057	NO	Stock Estimate in T+1
2	0.120	0.087	0.0358	NO	Stock Estimate in T+1
3	0.580	0.226	0.0935	NO	Stock Estimate in T+1
4	1.000	1.000	0.4129	YES	Stock Estimate in T+1
5	1.000	1.000	0.4129		Input PR * Full F

Catch At Age - Input Data

AGE	1973	1974	1975	1976	1977
1	220.0	861.0	8910.0	214.0	5513.0
2	5632.0	28519.0	4129.0	6677.0	5027.0
3	11951.0	5556.0	1884.0	1181.0	4891.0
4	7978.0	7370.0	1130.0	327.0	507.0
5	5226.0	3687.0	1597.0	449.0	278.0
6	6286.0	3347.0	1452.0	896.0	649.0
AGE	1978	1979	1980	1981	1982
1	8698.0	205.0	1006.0	38.0	169.0
2	14191.0	19419.0	10215.0	7029.0	35696.0
3	2164.0	8667.0	6595.0	7578.0	14358.0
4	1470.0	1062.0	3829.0	2926.0	1858.0
5	247.0	438.0	512.0	1111.0	415.0
6	179.0	131.0	167.0	183.0	86.0
AGE	1983	1984	1985	1986	1987
1	2668.0	517.0	2239.0	463.0	1594.0
2	19288.0	6200.0	8074.0	9970.0	3437.0
3	42837.0	19990.0	2175.0	3326.0	2368.0
4	3601.0	8129.0	1968.0	635.0	926.0
5	385.0	878.0	1109.0	356.0	167.0
6	192.0	276.0	246.0	149.0	65.0
AGE	1988	1989	1990	1991	1992
1	5899.0	24.0	192.0	446.0	477.0
2	2109.0	19920.0	2056.0	1610.0	1453.0
3	536.0	3347.0	42644.0	5169.0	2097.0
4	506.0	462.0	2209.0	9703.0	2739.0
5	134.0	48.0	90.0	168.0	297.0
6	32.0	3.0	5.0	51.0	18.0
AGE	1993	1994	1995	1996	1997
1	13.0	362.0	1.0	3.0	22.0
2	457.0	851.0	373.0	519.0	485.0
3	447.0	399.0	198.0	1117.0	1512.0
4	711.0	404.0	288.0	232.0	789.0
5	145.0	297.0	51.0	32.0	110.0
6	4.0	86.0	36.0	30.0	42.0

Catch At Age - Input Data

AGE	1998	1999	2000	2001	2002
1	19.0	10.0	4.0	0.0	1.0
2	1463.0	475.0	905.0	405.0	250.0
3	1136.0	2217.0	1190.0	1683.0	966.0
4	396.0	407.0	514.0	477.0	388.0
5	52.0	125.0	55.0	126.0	25.0
6	31.0	8.0	13.0	39.0	1.0
AGE	2003	2004	2005	2006	2007
1	2.0	4.0	66.0	19.0	6.0
2	155.0	280.0	226.0	312.0	245.0
3	594.0	243.0	217.0	344.0	564.0
4	344.0	311.0	150.0	139.0	135.0
5	89.0	313.0	118.0	44.0	44.0
6	23.0	124.0	52.0	57.0	15.0

Weight At Age - Input Data

AGE	1973	1974	1975	1976	1977
1	0.2100	0.2030	0.2180	0.2280	0.2150
2	0.2960	0.3080	0.2890	0.3030	0.2830
3	0.3480	0.3520	0.3760	0.4080	0.3810
4	0.3750	0.3960	0.4320	0.4980	0.5040
5	0.3820	0.4390	0.4350	0.4990	0.5130
6	0.4280	0.4570	0.4810	0.5570	0.5420
AGE	1978	1979	1980	1981	1982
1	0.2340	0.1890	0.2060	0.1400	0.2260
2	0.2930	0.3010	0.2810	0.2620	0.2630
3	0.3830	0.3640	0.3840	0.3420	0.3530
4	0.5360	0.4750	0.5000	0.4740	0.4990
5	0.6620	0.5900	0.6820	0.5960	0.6600
6	0.6560	0.6620	0.9250	0.6500	0.8330
AGE	1983	1984	1985	1986	1987
1	0.1750	0.1820	0.1830	0.1860	0.2470
2	0.2610	0.2370	0.2600	0.2840	0.2680
3	0.3390	0.2950	0.3650	0.3310	0.3530
4	0.4960	0.3880	0.4080	0.4630	0.4040
5	0.6680	0.4870	0.5040	0.5870	0.5200
6	0.8190	0.6560	0.6080	0.6420	0.6310
AGE	1988	1989	1990	1991	1992
1	0.2700	0.3110	0.3010	0.2060	0.1670
2	0.2930	0.3380	0.3270	0.2620	0.3160
3	0.3960	0.3940	0.3780	0.3370	0.3680
4	0.4930	0.5530	0.4550	0.4140	0.4340
5	0.6110	0.7350	0.7630	0.6780	0.5990
6	0.8210	0.9570	0.8840	0.8000	0.9180

AGE	1993	1994	1995	1996	1997
1	0.1220	0.1230	0.0720	0.1050	0.1920
2	0.3540	0.1980	0.2270	0.3440	0.2540
3	0.4300	0.3530	0.3560	0.3810	0.4020
4	0.4510	0.4160	0.4460	0.4690	0.5120
5	0.6410	0.5040	0.5970	0.6130	0.6650
6	1.0400	0.6720	0.8490	0.7340	0.8410

Weight At Age - Input Data

AGE	1998	1999	2000	2001	2002
1	0.1680	0.2000	0.1440	0.1530	0.1650
2	0.2800	0.3610	0.3480	0.3780	0.3740
3	0.3840	0.4300	0.4790	0.4440	0.4730
4	0.5190	0.6090	0.6250	0.6140	0.6280
5	0.5870	0.7690	0.7480	0.7530	0.8380
6	0.6930	1.1140	0.8880	0.9170	0.7970
AGE	2003	2004	2005	2006	2007
1	0.1000	0.1580	0.0960	0.1180	0.1240
2	0.3470	0.3200	0.2980	0.2550	0.2730
3	0.4360	0.4030	0.4220	0.3910	0.3820
4	0.6200	0.4930	0.5280	0.5340	0.5010
5	0.6390	0.5760	0.6690	0.6750	0.7370
6	0.8460	0.7440	0.8410	0.8520	0.8690

JAN-1 Weights at Age - Input Data

AGE	1973	1974	1975	1976	1977
1	0.1734	0.1701	0.1849	0.2046	0.1842
2	0.2714	0.2543	0.2422	0.2570	0.2540
3	0.3262	0.3228	0.3403	0.3434	0.3398
4	0.3466	0.3712	0.3900	0.4327	0.4535
5	0.3785	0.4057	0.4150	0.4643	0.5054
6	0.4280	0.4570	0.4810	0.5570	0.5420
AGE	1978	1979	1980	1981	1982
1	0.2063	0.1550	0.1827	0.1021	0.2103
2	0.2510	0.2654	0.2305	0.2323	0.1919
3	0.3292	0.3266	0.3400	0.3100	0.3041
4	0.4519	0.4265	0.4266	0.4266	0.4131
5	0.5776	0.5624	0.5692	0.5459	0.5593
6	0.6560	0.6620	0.9250	0.6500	0.8330
AGE	1983	1984	1985	1986	1987
1	0.1504	0.1523	0.1469	0.1550	0.2268
2	0.2429	0.2037	0.2175	0.2280	0.2233
3	0.2986	0.2775	0.2941	0.2934	0.3166
4	0.4184	0.3627	0.3469	0.4111	0.3657
5	0.5773	0.4915	0.4422	0.4894	0.4907
6	0.8190	0.6560	0.6080	0.6420	0.6310

AGE	1988	1989	1990	1991	1992
1	0.2413	0.3033	0.3226	0.1663	0.1147
2	0.2690	0.3021	0.3189	0.2808	0.2551
3	0.3258	0.3398	0.3574	0.3320	0.3105
4	0.4172	0.4680	0.4234	0.3956	0.3824
5	0.4968	0.6020	0.6496	0.5554	0.4980
6	0.8210	0.9570	0.8840	0.8000	0.9180
AGE	1993	1994	1995	1996	1997
1	0.0958	0.0905	0.0329	0.0675	0.1590
2	0.2431	0.1554	0.1671	0.1574	0.1633
3	0.3686	0.3535	0.2655	0.2941	0.3719
4	0.4074	0.4229	0.3968	0.4086	0.4417
5	0.5274	0.4768	0.4983	0.5229	0.5585
6	1.0400	0.6720	0.8490	0.7340	0.8410

JAN-1 Weights at Age - Input Data

AGE	1998	1999	2000	2001	2002
1	0.1146	0.1516	0.0889	0.0979	0.1138
2	0.2319	0.2463	0.2638	0.2333	0.2392
3	0.3123	0.3470	0.4158	0.3931	0.4228
4	0.4568	0.4836	0.5184	0.5423	0.5280
5	0.5482	0.6318	0.6749	0.6860	0.7173
6	0.6930	1.1140	0.8880	0.9170	0.7970
AGE	2003	2004	2005	2006	2007
1	0.0559	0.1150	0.0589	0.0776	0.0857
2	0.2393	0.1789	0.2170	0.1565	0.1795
3	0.4038	0.3740	0.3675	0.3413	0.3121
4	0.5415	0.4636	0.4613	0.4747	0.4426
5	0.6335	0.5976	0.5743	0.5970	0.6273
6	0.8460	0.7440	0.8410	0.8520	0.8690
AGE	2008				
1	0.0740				
2	0.1843				
3	0.3403				
4	0.4595				
5	0.5995				
6	0.8540				

SSB Weight At Age - Input Data

AGE	1973	1974	1975	1976	1977
1	0.1240	0.2030	0.2180	0.2280	0.2150
2	0.2730	0.3080	0.2890	0.3030	0.2830
3	0.3820	0.3520	0.3760	0.4080	0.3810
4	0.5010	0.3960	0.4320	0.4980	0.5040
5	0.7370	0.4390	0.4350	0.4990	0.5130
6	0.8690	0.4570	0.4810	0.5570	0.5420
AGE	1978	1979	1980	1981	1982
1	0.2340	0.1890	0.2060	0.1400	0.2260
2	0.2930	0.3010	0.2810	0.2620	0.2630
3	0.3830	0.3640	0.3840	0.3420	0.3530
4	0.5360	0.4750	0.5000	0.4740	0.4990
5	0.6620	0.5900	0.6820	0.5960	0.6600
6	0.6560	0.6620	0.9250	0.6500	0.8330
AGE	1983	1984	1985	1986	1987
1	0.1750	0.1820	0.1830	0.1860	0.2470
2	0.2610	0.2370	0.2600	0.2840	0.2680
3	0.3390	0.2950	0.3650	0.3310	0.3530
4	0.4960	0.3880	0.4080	0.4630	0.4040
5	0.6680	0.4870	0.5040	0.5870	0.5200
6	0.8190	0.6560	0.6080	0.6420	0.6310
AGE	1988	1989	1990	1991	1992
1	0.2700	0.3110	0.3010	0.2060	0.1670
2	0.2930	0.3380	0.3270	0.2620	0.3160
3	0.3960	0.3940	0.3780	0.3370	0.3680
4	0.4930	0.5530	0.4550	0.4140	0.4340
5	0.6110	0.7350	0.7630	0.6780	0.5990
6	0.8210	0.9570	0.8840	0.8000	0.9180
AGE	1993	1994	1995	1996	1997
1	0.1220	0.1230	0.0720	0.1050	0.1920
2	0.3540	0.1980	0.2270	0.3440	0.2540
3	0.4300	0.3530	0.3560	0.3810	0.4020
4	0.4510	0.4160	0.4460	0.4690	0.5120
5	0.6410	0.5040	0.5970	0.6130	0.6650
6	1.0400	0.6720	0.8490	0.7340	0.8410

SSB Weight At Age - Input Data

AGE	1998	1999	2000	2001	2002
1	0.1680	0.2000	0.1440	0.1530	0.1650
2	0.2800	0.3610	0.3480	0.3780	0.3740
3	0.3840	0.4300	0.4790	0.4440	0.4730
4	0.5190	0.6090	0.6250	0.6140	0.6280
5	0.5870	0.7690	0.7480	0.7530	0.8380
6	0.6930	1.1140	0.8880	0.9170	0.7970
AGE	2003	2004	2005	2006	2007
1	0.1000	0.1580	0.0960	0.1180	0.1240
2	0.3470	0.3200	0.2980	0.2550	0.2730
3	0.4360	0.4030	0.4220	0.3910	0.3820
4	0.6200	0.4930	0.5280	0.5340	0.5010
5	0.6390	0.5760	0.6690	0.6750	0.7370
6	0.8460	0.7440	0.8410	0.8520	0.8690

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	0.4900	0.4900	0.4900	0.4900	0.4900
3	0.9740	0.9740	0.9740	0.9740	0.9740
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	0.4900	0.4900	0.4900	0.4900	0.4900
3	0.9740	0.9740	0.9740	0.9740	0.9740
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	0.4900	0.4900	0.4900	0.4900	0.4900
3	0.9740	0.9740	0.9740	0.9740	0.9740

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
1	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.4900	0.4900	0.4900	0.4900	0.4900
3	0.9740	0.9740	0.9740	0.9740	0.9740
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	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.4900	0.4900	0.4900	0.4900	0.4900
3	0.9740	0.9740	0.9740	0.9740	0.9740
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
1	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.4900	0.4900	0.4900	0.4900	0.4900
3	0.9740	0.9740	0.9740	0.9740	0.9740
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	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.4900	0.4900	0.4900	0.4900	0.4900
3	0.9740	0.9740	0.9740	0.9740	0.9740
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	0.0100
2	0.1200
3	0.5800
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	NEFSC_W	NEFSC_W	NEFSC_W	NEFSC_W	NEFSC_W
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	0.0000	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	13.7170	2098.7020	4591.9110	10616.2490	1235.3880
1993	852.0260	2749.1170	1510.7280	3553.2770	417.3690
1994	444.8030	10510.8000	901.3220	2009.1130	1173.5190
1995	128.3110	15261.3140	3854.9080	853.1690	361.3570
1996	58.1540	1835.7930	11767.1920	1216.5270	200.4680
1997	222.7580	3400.9610	13981.6320	4226.8390	755.4360
1998	168.8910	11203.2230	2280.3100	1654.6140	160.4600
1999	347.0690	4155.9680	14540.0280	1109.9350	444.5170
2000	155.1740	7025.3940	4294.7090	1658.0430	103.8780
2001	40.1510	1278.6820	12204.8500	2307.4580	362.2150
2002	17.2890	3907.7750	3683.5880	2924.8660	143.0280
2003	473.8080	996.4830	3710.4510	756.1500	60.8690
2004	72.1570	1373.8440	455.9480	841.5960	204.6120
2005	559.3970	1112.7920	880.3180	741.8610	837.8810
2006	993.9120	26771.0270	6512.5780	493.6690	127.3110
2007	46.1520	9756.6500	10771.2800	1909.3790	135.1700
2008	0.0000	0.0000	0.0000	0.0000	0.0000

SURVEY - INPUT DATA

INDEX	6	7	8	9	10
SURVEY TAG	NEFSC_W	NEFSC_S	NEFSC_S	NEFSC_S	NEFSC_S
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	912.6700	5523.6480	15096.9030	8491.1200
1974	0.0000	592.2910	2507.7110	2956.9430	5712.1650
1975	0.0000	414.4700	1512.9830	454.9140	588.2800
1976	0.0000	49.8030	4269.7100	580.0910	278.4300
1977	0.0000	1572.9810	1642.1700	2881.7360	263.2220
1978	0.0000	3105.5170	11899.1330	2109.7860	900.9710
1979	0.0000	986.7060	2921.8460	1548.4130	278.2630
1980	0.0000	708.6100	6520.0480	4418.4510	2786.1410
1981	0.0000	849.1620	18261.4150	4743.5090	2497.5160
1982	0.0000	340.0990	29950.6380	9722.8310	2437.8520
1983	0.0000	66.3490	10831.8730	17948.5570	1220.1800
1984	0.0000	78.3820	924.0340	1838.2080	4301.2960
1985	0.0000	446.0570	2695.8930	677.8590	802.8690
1986	0.0000	27.2410	4834.4250	1530.0290	395.2510
1987	0.0000	0.0000	144.3960	1170.7110	278.4300
1988	0.0000	476.4730	595.8010	208.0710	290.1290
1989	0.0000	229.7970	15925.5080	761.9230	160.6070
1990	0.0000	127.0150	689.5580	21804.6320	3115.7110
1991	0.0000	346.4500	844.4830	3564.6090	5903.6910
1992	0.0000	60.1650	84.7320	954.6180	2669.4880
1993	0.0000	27.2410	423.3280	187.1800	827.1020
1994	571.9710	22.3950	382.0480	23.2300	0.0000
1995	286.7710	26.4060	1952.8560	114.1460	154.0890
1996	136.7410	0.0000	664.3220	2178.1400	946.5960
1997	53.5820	87.9080	1479.2230	1911.5760	546.1650
1998	26.0050	113.4780	5040.4900	644.6010	269.2380
1999	112.8800	59.3290	1087.1480	3225.5130	583.2660
2000	142.4570	32.0880	1935.8090	2478.2970	355.1410
2001	202.4690	0.0000	115.6510	1934.6390	400.5990
2002	28.0060	81.5570	1990.2920	393.0780	333.9160
2003	37.0070	51.6420	125.6780	339.4310	179.4920
2004	62.1550	27.2410	227.1230	488.1720	169.4650
2005	148.0290	245.5070	343.2750	161.4430	112.4750
2006	205.0410	83.8970	2646.9260	374.3600	176.8180
2007	0.0000	0.0000	962.9740	1320.6220	145.9000
2008	0.0000	0.0000	83.0610	1144.8060	802.3670

SURVEY - INPUT DATA

INDEX	11	12	13	14	15
SURVEY TAG	NEFSC_S	NEFSC_S	NEFSC_F	NEFSC_F	NEFSC_F
AGE	5	6	1	2	3
TIME	JAN-1	JAN-1	MEAN	MEAN	MEAN
TYPE	NUMBERS	NUMBERS	NUMBERS	NUMBERS	NUMBERS
RETRO FLAG	1	1	0	0	0
1973	6586.5630	9407.4660	2006.1030	2935.3990	5725.9300
1974	3454.9750	3114.5420	949.6310	1735.0920	582.0020
1975	866.0420	1020.2980	1994.1550	553.2810	180.0230
1976	264.5590	499.8710	2752.2740	5892.5120	490.4390
1977	164.7850	457.9230	2726.5400	1714.0680	618.0760
1978	292.6360	483.1580	2477.5870	5684.2270	352.5790
1979	121.1660	61.0010	1778.2880	3910.8790	1880.5350
1980	274.4190	109.3000	1373.6670	3464.0950	901.6090
1981	554.3540	94.7600	11330.7720	11315.2630	1490.7340
1982	799.0250	273.5840	2858.5420	24940.2670	6155.2510
1983	389.2340	0.0000	2691.1560	15806.6500	7839.9090
1984	800.0270	456.0840	2023.7950	1786.5600	2142.9300
1985	1192.9380	258.5420	848.7620	365.7900	106.0380
1986	207.4020	26.4060	604.5190	1832.2840	511.1190
1987	0.0000	0.0000	1226.3860	518.8160	411.9740
1988	491.3480	48.1320	5019.8530	373.9470	153.2550
1989	0.0000	0.0000	134.9890	10303.7100	1337.3640
1990	112.4750	0.0000	240.7970	2089.2790	3043.2750
1991	765.4330	85.2340	574.0750	237.2350	1480.2790
1992	0.0000	0.0000	192.4310	27.4570	82.2570
1993	28.5780	0.0000	324.4320	27.2270	126.9470
1994	97.2670	27.2410	841.0650	514.4500	122.8110
1995	31.2520	115.3160	159.6890	741.0010	295.4810
1996	119.8290	0.0000	514.9100	184.7330	367.0540
1997	112.1410	0.0000	944.6910	596.2480	1676.5010
1998	60.6660	34.2610	1022.4670	1861.4640	141.8820
1999	124.3410	38.2720	1422.1480	450.0000	320.5260
2000	0.0000	0.0000	56.7530	1917.4130	348.0980
2001	137.3770	38.2720	448.5070	701.7110	181.9760
2002	111.8070	0.0000	291.2310	1977.9570	982.3720
2003	54.1490	0.0000	1344.1420	28.4910	289.5080
2004	58.4940	32.0880	80.6490	112.4710	0.0000
2005	254.5310	26.4060	2031.1480	532.8320	212.8800
2006	0.0000	52.8120	1369.9910	2472.0720	196.2220
2007	0.0000	0.0000	257.4550	1286.3550	409.3310
2008	82.3930	0.0000	0.0000	0.0000	0.0000

SURVEY - INPUT DATA

INDEX	16	17	18		
SURVEY TAG	NEFSC_F	NEFSC_F	NEFSC_F		
AGE	4	5	6	NUMBERS	NUMBERS
TIME	MEAN	MEAN	MEAN	NUMBERS	NUMBERS
TYPE	NUMBERS	NUMBERS	NUMBERS	NUMBERS	NUMBERS
RETRO FLAG	0	0	0		
1973	3248.4580	2191.6410	1302.4390		
1974	2273.7830	962.8420	698.9540		
1975	290.3120	289.8520	146.4770		
1976	64.7950	102.2470	714.3480		
1977	93.7450	33.4310	92.8260		
1978	280.7760	28.6060	88.6900		
1979	286.5210	31.2480	30.3290		
1980	372.4540	0.0000	0.0000		
1981	235.3970	108.3360	57.7870		
1982	749.6180	301.8000	0.0000		
1983	642.3160	53.6510	37.1080		
1984	468.1520	0.0000	0.0000		
1985	103.1660	0.0000	0.0000		
1986	114.7690	39.7500	0.0000		
1987	34.5800	27.4570	27.4570		
1988	161.7570	15.1650	56.7530		
1989	70.7690	0.0000	0.0000		
1990	189.2140	0.0000	0.0000		
1991	358.0930	0.0000	0.0000		
1992	326.8450	0.0000	0.0000		
1993	101.2130	0.0000	0.0000		
1994	163.7100	60.6590	28.6060		
1995	132.5760	0.0000	60.5440		
1996	0.0000	0.0000	0.0000		
1997	311.4500	27.2270	0.0000		
1998	55.8340	0.0000	26.3080		
1999	32.0530	32.0530	0.0000		
2000	196.5660	0.0000	26.3080		
2001	81.5680	0.0000	0.0000		
2002	191.7410	0.0000	0.0000		
2003	263.1990	0.0000	56.9820		
2004	26.4230	55.0290	28.4910		
2005	84.3250	164.7440	0.0000		
2006	22.0580	0.0000	0.0000		
2007	0.0000	30.3290	0.0000		
2008	0.0000	0.0000	0.0000		

Additional Output Files

Population File L:\YELLOWTAILFLOUNDER\ASSESSMENTS\SNEMA\VPA\SNEMA\_VPA\_6PLUS\_JULY  
 Auxilliary File L:\YELLOWTAILFLOUNDER\ASSESSMENTS\SNEMA\VPA\SNEMA\_VPA\_6PLUS\_JULY  
 Covariance File L:\YELLOWTAILFLOUNDER\ASSESSMENTS\SNEMA\VPA\SNEMA\_VPA\_6PLUS\_JULY  
 Residuals File L:\YELLOWTAILFLOUNDER\ASSESSMENTS\SNEMA\VPA\SNEMA\_VPA\_6PLUS\_JULY  
 Log File L:\YELLOWTAILFLOUNDER\ASSESSMENTS\SNEMA\VPA\SNEMA\_VPA\_6PLUS\_JULY

Estimation Results

JAN-1 Population Numbers

AGE	1973	1974	1975	1976	1977
1	42491.	10362.	31479.	14339.	49917.
2	18128.	34590.	7707.	17773.	11547.
3	29322.	9789.	3386.	2633.	8572.
4	16834.	13316.	3074.	1096.	1101.
5	11027.	6662.	4344.	1504.	604.
6	13264.	6047.	3950.	3002.	1409.
=====					
Total	131067.	80766.	53939.	40348.	73150.
=====					
AGE	1978	1979	1980	1981	1982
1	53116.	30998.	43355.	136011.	62906.
2	35899.	35657.	25194.	34588.	111322.
3	4961.	16692.	11907.	11488.	21995.
4	2670.	2127.	5943.	3880.	2697.
5	449.	877.	795.	1473.	602.
6	325.	262.	259.	243.	125.
=====					
Total	97420.	86614.	87453.	187683.	199647.
=====					
AGE	1983	1984	1985	1986	1987
1	16407.	18836.	20560.	7067.	14717.
2	51350.	11031.	14955.	14815.	5369.
3	59128.	24770.	3516.	5055.	3309.
4	5292.	10637.	2772.	949.	1194.
5	566.	1149.	1562.	532.	215.
6	282.	361.	346.	223.	84.
=====					
Total	133026.	66784.	43711.	28641.	24888.
=====					
AGE	1988	1989	1990	1991	1992
1	121166.	17049.	8019.	4092.	2476.
2	10612.	93879.	13937.	6392.	2948.
3	1349.	6791.	58946.	9559.	3787.
4	620.	625.	2575.	10656.	3224.
5	164.	65.	105.	184.	350.
6	39.	4.	6.	56.	21.
=====					
Total	133952.	118413.	83587.	30939.	12806.
=====					
AGE	1993	1994	1995	1996	1997
1	2223.	4434.	4288.	3465.	6904.
2	1598.	1809.	3304.	3510.	2834.
3	1118.	898.	721.	2369.	2406.
4	1234.	515.	379.	413.	942.
5	252.	379.	67.	57.	131.
6	7.	110.	47.	53.	50.
=====					
Total	6432.	8144.	8806.	9866.	13268.
=====					



JAN-1 Population Numbers

AGE	1998	1999	2000	2001	2002
1	3624.	5372.	4192.	2428.	1133.
2	5633.	2950.	4389.	3429.	1987.
3	1884.	3298.	1987.	2779.	2442.
4	629.	534.	739.	570.	781.
5	83.	164.	79.	151.	50.
6	49.	10.	19.	47.	2.
=====					
Total	11901.	12327.	11404.	9403.	6396.
AGE	2003	2004	2005	2006	2007
1	1326.	1666.	10877.	9408.	1170.
2	926.	1084.	1360.	8846.	7686.
3	1402.	619.	636.	910.	6961.
4	1135.	617.	289.	326.	437.
5	294.	621.	228.	103.	143.
6	76.	246.	100.	134.	49.
=====					
Total	5158.	4852.	13491.	19728.	16446.
AGE	2008				
1	9744.				
2	953.				
3	6071.				
4	5190.				
5	237.				
6	104.				
=====					
Total	22299.				

Fishing Mortality Calculated

AGE	1973	1974	1975	1976	1977
1	0.0057	0.0960	0.3716	0.0166	0.1296
2	0.4162	2.1240	0.8739	0.5291	0.6449
3	0.5894	0.9584	0.9282	0.6721	0.9667
4	0.7271	0.9201	0.5145	0.3962	0.6978
5	0.7271	0.9201	0.5145	0.3962	0.6978
6	0.7271	0.9201	0.5145	0.3962	0.6978
AGE	1978	1979	1980	1981	1982
1	0.1985	0.0073	0.0259	0.0003	0.0030
2	0.5658	0.8968	0.5853	0.2527	0.4327
3	0.6466	0.8327	0.9212	1.2492	1.2246
4	0.9127	0.7847	1.1947	1.6628	1.3615
5	0.9127	0.7847	1.1947	1.6628	1.3615
6	0.9127	0.7847	1.1947	1.6628	1.3615
AGE	1983	1984	1985	1986	1987
1	0.1970	0.0307	0.1277	0.0749	0.1270
2	0.5290	0.9433	0.8846	1.2989	1.1809
3	1.5154	1.9902	1.1095	1.2431	1.4745
4	1.3275	1.7185	1.4502	1.2835	1.7838
5	1.3275	1.7185	1.4502	1.2835	1.7838
6	1.3275	1.7185	1.4502	1.2835	1.7838
AGE	1988	1989	1990	1991	1992
1	0.0552	0.0016	0.0268	0.1278	0.2379
2	0.2464	0.2654	0.1771	0.3235	0.7699
3	0.5694	0.7699	1.5105	0.8869	0.9209
4	2.0563	1.5850	2.4359	3.2171	2.3499
5	2.0563	1.5850	2.4359	3.2171	2.3499
6	2.0563	1.5850	2.4359	3.2171	2.3499
AGE	1993	1994	1995	1996	1997
1	0.0065	0.0942	0.0003	0.0010	0.0035
2	0.3762	0.7196	0.1327	0.1775	0.2085
3	0.5747	0.6632	0.3584	0.7219	1.1415
4	0.9818	1.8382	1.6959	0.9443	2.2342
5	0.9818	1.8382	1.6959	0.9443	2.2342
6	0.9818	1.8382	1.6959	0.9443	2.2342

Fishing Mortality Calculated

AGE	1998	1999	2000	2001	2002
1	0.0058	0.0021	0.0011	0.0001	0.0010
2	0.3354	0.1949	0.2569	0.1393	0.1490
3	1.0613	1.2962	1.0485	1.0689	0.5663
4	1.1450	1.7099	1.3900	2.2271	0.7786
5	1.1450	1.7099	1.3900	2.2271	0.7786
6	1.1450	1.7099	1.3900	2.2271	0.7786

AGE	2003	2004	2005	2006	2007
1	0.0017	0.0027	0.0067	0.0022	0.0057
2	0.2033	0.3334	0.2017	0.0397	0.0358
3	0.6213	0.5607	0.4680	0.5331	0.0935
4	0.4037	0.7969	0.8310	0.6269	0.4129
5	0.4037	0.7969	0.8310	0.6269	0.4129
6	0.4037	0.7969	0.8310	0.6269	0.4129

Average Fishing Mortality For Ages 4- 5

Year	Average F	N Weighted	Biomass Wtd	Catch Wtd
1973	0.7271	0.7271	0.7271	0.7271
1974	0.9201	0.9201	0.9201	0.9201
1975	0.5145	0.5145	0.5145	0.5145
1976	0.3962	0.3962	0.3962	0.3962
1977	0.6978	0.6978	0.6978	0.6978
1978	0.9127	0.9127	0.9127	0.9127
1979	0.7847	0.7847	0.7847	0.7847
1980	1.1947	1.1947	1.1947	1.1947
1981	1.6628	1.6628	1.6628	1.6628
1982	1.3615	1.3615	1.3615	1.3615
1983	1.3275	1.3275	1.3275	1.3275
1984	1.7185	1.7185	1.7185	1.7185
1985	1.4502	1.4502	1.4502	1.4502
1986	1.2835	1.2835	1.2835	1.2835
1987	1.7838	1.7838	1.7838	1.7838
1988	2.0563	2.0563	2.0563	2.0563
1989	1.5850	1.5850	1.5850	1.5850
1990	2.4359	2.4359	2.4359	2.4359
1991	3.2171	3.2171	3.2171	3.2171
1992	2.3499	2.3499	2.3499	2.3499
1993	0.9818	0.9818	0.9818	0.9818
1994	1.8382	1.8382	1.8382	1.8382
1995	1.6959	1.6959	1.6959	1.6959
1996	0.9443	0.9443	0.9443	0.9443
1997	2.2342	2.2342	2.2342	2.2342
1998	1.1450	1.1450	1.1450	1.1450
1999	1.7099	1.7099	1.7099	1.7099
2000	1.3900	1.3900	1.3900	1.3900
2001	2.2271	2.2271	2.2271	2.2271
2002	0.7786	0.7786	0.7786	0.7786
2003	0.4037	0.4037	0.4037	0.4037
2004	0.7969	0.7969	0.7969	0.7969
2005	0.8310	0.8310	0.8310	0.8310
2006	0.6269	0.6269	0.6269	0.6269
2007	0.4129	0.4129	0.4129	0.4129

Back Calculated Partial Recruitment

AGE	1973	1974	1975	1976	1977
1	0.0079	0.0452	0.4004	0.0247	0.1341
2	0.5724	1.0000	0.9416	0.7872	0.6671
3	0.8107	0.4512	1.0000	1.0000	1.0000
4	1.0000	0.4332	0.5543	0.5894	0.7219
5	1.0000	0.4332	0.5543	0.5894	0.7219
6	1.0000	0.4332	0.5543	0.5894	0.7219
AGE	1978	1979	1980	1981	1982
1	0.2175	0.0082	0.0217	0.0002	0.0022
2	0.6199	1.0000	0.4899	0.1520	0.3178
3	0.7085	0.9285	0.7711	0.7513	0.8994
4	1.0000	0.8750	1.0000	1.0000	1.0000
5	1.0000	0.8750	1.0000	1.0000	1.0000
6	1.0000	0.8750	1.0000	1.0000	1.0000
AGE	1983	1984	1985	1986	1987
1	0.1300	0.0154	0.0881	0.0577	0.0712
2	0.3491	0.4740	0.6100	1.0000	0.6620
3	1.0000	1.0000	0.7651	0.9570	0.8266
4	0.8760	0.8635	1.0000	0.9882	1.0000
5	0.8760	0.8635	1.0000	0.9882	1.0000
6	0.8760	0.8635	1.0000	0.9882	1.0000
AGE	1988	1989	1990	1991	1992
1	0.0268	0.0010	0.0110	0.0397	0.1012
2	0.1198	0.1674	0.0727	0.1006	0.3277
3	0.2769	0.4857	0.6201	0.2757	0.3919
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	0.0066	0.0513	0.0002	0.0010	0.0016
2	0.3832	0.3915	0.0783	0.1880	0.0933
3	0.5853	0.3608	0.2113	0.7645	0.5109
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	0.0051	0.0012	0.0008	0.0000	0.0013
2	0.2929	0.1140	0.1848	0.0625	0.1914
3	0.9269	0.7581	0.7543	0.4800	0.7273
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	0.0027	0.0033	0.0081	0.0036	0.0137
2	0.3272	0.4184	0.2427	0.0633	0.0867
3	1.0000	0.7036	0.5632	0.8504	0.2265
4	0.6498	1.0000	1.0000	1.0000	1.0000
5	0.6498	1.0000	1.0000	1.0000	1.0000
6	0.6498	1.0000	1.0000	1.0000	1.0000

JAN-1 Biomass

AGE	1973	1974	1975	1976	1977
1	7368.	1763.	5820.	2934.	9195.
2	4920.	8796.	1867.	4568.	2933.
3	9565.	3160.	1152.	904.	2913.
4	5835.	4943.	1199.	474.	499.
5	4174.	2703.	1803.	699.	305.
6	5677.	2764.	1900.	1672.	764.
=====					
Total	37538.	24128.	13741.	11251.	16609.
AGE	1978	1979	1980	1981	1982
1	10958.	4805.	7921.	13887.	13229.
2	9011.	9463.	5807.	8035.	21363.
3	1633.	5452.	4048.	3561.	6689.
4	1206.	907.	2535.	1655.	1114.
5	259.	493.	452.	804.	337.
6	213.	174.	240.	158.	104.
=====					
Total	23280.	21294.	21004.	28100.	42835.
AGE	1983	1984	1985	1986	1987
1	2468.	2869.	3020.	1095.	3338.
2	12473.	2247.	3253.	3378.	1199.
3	17656.	6874.	1034.	1483.	1048.
4	2214.	3858.	961.	390.	437.
5	327.	565.	691.	260.	106.
6	231.	237.	211.	143.	53.
=====					
Total	35368.	16649.	9170.	6750.	6180.
AGE	1988	1989	1990	1991	1992
1	29237.	5171.	2587.	680.	284.

2	2855.	28361.	4444.	1795.	752.
3	440.	2308.	21067.	3173.	1176.
4	259.	293.	1090.	4215.	1233.
5	82.	39.	68.	102.	174.
6	32.	4.	5.	45.	19.

=====  
**Total**      32904.      36175.      29262.      10012.      3638.

**AGE**      1993      1994      1995      1996      1997

1	213.	401.	141.	234.	1098.
2	389.	281.	552.	552.	463.
3	412.	318.	191.	697.	895.
4	503.	218.	150.	169.	416.
5	133.	181.	33.	30.	73.
6	7.	74.	40.	39.	42.

=====  
**Total**      1656.      1472.      1109.      1720.      2987.

**JAN-1 Biomass**

**AGE**      1998      1999      2000      2001      2002

1	415.	814.	373.	238.	129.
2	1306.	726.	1158.	800.	475.
3	588.	1144.	826.	1093.	1033.
4	287.	258.	383.	309.	413.
5	45.	104.	53.	103.	36.
6	34.	12.	17.	43.	2.

=====  
**Total**      2677.      3058.      2810.      2585.      2087.

**AGE**      2003      2004      2005      2006      2007

1	74.	192.	641.	730.	100.
2	222.	194.	295.	1384.	1380.
3	566.	231.	234.	311.	2172.
4	615.	286.	133.	155.	194.
5	186.	371.	131.	62.	89.
6	64.	183.	84.	114.	42.

=====  
**Total**      1727.      1457.      1518.      2755.      3978.

**AGE**      2008

1	721.
2	176.
3	2066.
4	2385.
5	142.
6	88.

=====  
**Total**      5578.

Mean Biomass

AGE	1973	1974	1975	1976	1977
1	8065.	1821.	5227.	2940.	9143.
2	4006.	4135.	1365.	3823.	2206.
3	7056.	2041.	763.	717.	1928.
4	4115.	3172.	949.	411.	366.
5	2746.	1759.	1350.	566.	204.
6	3700.	1662.	1358.	1260.	504.
=====					
Total	29688.	14590.	11012.	9716.	14351.
=====					
AGE	1978	1979	1980	1981	1982
1	10251.	5291.	7994.	17256.	12867.
2	7349.	6518.	4904.	7288.	21695.
3	1282.	3789.	2749.	2075.	4139.
4	863.	643.	1602.	834.	681.
5	179.	329.	292.	398.	201.
6	129.	111.	129.	72.	53.
=====					
Total	20053.	16680.	17672.	27922.	39636.
=====					
AGE	1983	1984	1985	1986	1987
1	2370.	3061.	3208.	1149.	3101.
2	9516.	1558.	2373.	2180.	780.
3	9583.	2963.	716.	886.	567.
4	1345.	1835.	554.	229.	210.
5	194.	249.	385.	163.	49.
6	118.	105.	103.	75.	23.
=====					
Total	23126.	9772.	7339.	4681.	4729.
=====					
AGE	1988	1989	1990	1991	1992
1	28875.	4802.	2160.	719.	335.
2	2508.	25371.	3797.	1304.	596.
3	373.	1713.	10671.	1964.	838.
4	121.	161.	413.	1249.	506.
5	40.	22.	28.	35.	76.
6	13.	2.	2.	13.	7.
=====					
Total	31929.	32071.	17070.	5283.	2358.
=====					
AGE	1993	1994	1995	1996	1997
1	245.	472.	280.	330.	1199.
2	430.	234.	638.	1006.	591.
3	334.	212.	197.	590.	532.
4	327.	91.	76.	115.	181.
5	95.	81.	18.	21.	33.
6	4.	31.	18.	23.	16.
=====					
Total	1435.	1123.	1226.	2084.	2552.

Mean Biomass

AGE	1998	1999	2000	2001	2002
1	550.	973.	547.	337.	169.
2	1221.	880.	1226.	1099.	627.
3	411.	735.	544.	699.	807.
4	179.	145.	231.	132.	313.
5	27.	56.	30.	43.	27.
6	19.	5.	8.	16.	1.
=====					
Total	2407.	2794.	2585.	2325.	1944.
AGE	2003	2004	2005	2006	2007
1	120.	238.	943.	1005.	131.
2	265.	269.	334.	2006.	1869.
3	417.	175.	196.	252.	2304.
4	528.	192.	95.	118.	164.
5	141.	226.	95.	47.	79.
6	48.	116.	53.	77.	32.
=====					
Total	1519.	1216.	1716.	3506.	4579.

Spawning Stock Biomass

AGE	1973	1974	1975	1976	1977
1	0.	0.	0.	0.	0.
2	1876.	1982.	698.	1947.	1126.
3	7852.	2071.	775.	728.	1956.
4	5731.	3306.	986.	426.	382.
5	5523.	1834.	1403.	586.	213.
6	7833.	1733.	1411.	1304.	525.
=====					
Total	28815.	10926.	5272.	4991.	4203.
AGE	1978	1979	1980	1981	1982
1	0.	0.	0.	0.	0.
2	3746.	3330.	2501.	3677.	11021.
3	1300.	3848.	2791.	2092.	4177.
4	900.	670.	1662.	846.	702.
5	187.	343.	303.	404.	207.
6	134.	115.	134.	73.	54.
=====					
Total	6267.	8307.	7391.	7092.	16162.
AGE	1983	1984	1985	1986	1987
1	0.	0.	0.	0.	0.
2	4847.	796.	1212.	1104.	397.
3	9553.	2857.	724.	893.	566.
4	1389.	1856.	569.	237.	211.
5	200.	252.	396.	168.	49.
6	122.	107.	106.	77.	23.
=====					
Total	16111.	5866.	3007.	2480.	1246.



AGE	1988	1989	1990	1991	1992
1	0.	0.	0.	0.	0.
2	1265.	12807.	1908.	660.	305.
3	378.	1740.	10640.	1995.	851.
4	119.	164.	391.	1062.	484.
5	39.	23.	27.	30.	72.
6	13.	2.	2.	11.	7.
=====					
Total	1814.	14736.	12968.	3758.	1718.

AGE	1993	1994	1995	1996	1997
1	0.	0.	0.	0.	0.
2	218.	120.	320.	505.	298.
3	339.	216.	198.	599.	539.
4	340.	92.	77.	120.	175.
5	99.	82.	18.	22.	32.
6	4.	32.	18.	24.	15.
=====					
Total	1000.	540.	631.	1270.	1058.

Spawning Stock Biomass

AGE	1998	1999	2000	2001	2002
1	0.	0.	0.	0.	0.
2	618.	443.	619.	551.	315.
3	417.	740.	551.	708.	818.
4	186.	147.	238.	127.	326.
5	28.	57.	30.	41.	28.
6	19.	5.	9.	16.	1.
=====					
Total	1268.	1392.	1447.	1444.	1488.

AGE	2003	2004	2005	2006	2007
1	0.	0.	0.	0.	0.
2	133.	136.	168.	1000.	932.
3	423.	177.	198.	255.	2292.
4	547.	201.	99.	123.	170.
5	146.	236.	99.	49.	81.
6	50.	121.	55.	81.	33.
=====					
Total	1299.	870.	619.	1509.	3508.

Catch Biomass

AGE	1973	1974	1975	1976	1977
1	46.	175.	1942.	49.	1185.
2	1667.	8784.	1193.	2023.	1423.
3	4159.	1956.	708.	482.	1863.
4	2992.	2919.	488.	163.	256.
5	1996.	1619.	695.	224.	143.
6	2690.	1530.	698.	499.	352.
=====					
Total	13551.	16981.	5725.	3440.	5221.
=====					
AGE	1978	1979	1980	1981	1982
1	2035.	39.	207.	5.	38.
2	4158.	5845.	2870.	1842.	9388.
3	829.	3155.	2532.	2592.	5068.
4	788.	504.	1914.	1387.	927.
5	164.	258.	349.	662.	274.
6	117.	87.	154.	119.	72.
=====					
Total	8091.	9888.	8028.	6607.	15767.
=====					
AGE	1983	1984	1985	1986	1987
1	467.	94.	410.	86.	394.
2	5034.	1469.	2099.	2831.	921.
3	14522.	5897.	794.	1101.	836.
4	1786.	3154.	803.	294.	374.
5	257.	428.	559.	209.	87.
6	157.	181.	150.	96.	41.
=====					
Total	22223.	11223.	4814.	4617.	2653.
=====					
AGE	1988	1989	1990	1991	1992
1	1593.	7.	58.	92.	80.
2	618.	6733.	672.	422.	459.
3	212.	1319.	16119.	1742.	772.
4	249.	255.	1005.	4017.	1189.
5	82.	35.	69.	114.	178.
6	26.	3.	4.	41.	17.
=====					
Total	2781.	8353.	17928.	6427.	2694.
=====					
AGE	1993	1994	1995	1996	1997
1	2.	45.	0.	0.	4.
2	162.	168.	85.	179.	123.
3	192.	141.	70.	426.	608.
4	321.	168.	128.	109.	404.
5	93.	150.	30.	20.	73.
6	4.	58.	31.	22.	35.
=====					
Total	773.	729.	345.	755.	1248.

Catch Biomass

AGE	1998	1999	2000	2001	2002
1	3.	2.	1.	0.	0.
2	410.	171.	315.	153.	94.
3	436.	953.	570.	747.	457.
4	206.	248.	321.	293.	244.
5	31.	96.	41.	95.	21.
6	21.	9.	12.	36.	1.
=====					
Total	1107.	1480.	1259.	1324.	816.
AGE	2003	2004	2005	2006	2007
1	0.	1.	6.	2.	1.
2	54.	90.	67.	80.	67.
3	259.	98.	92.	135.	215.
4	213.	153.	79.	74.	68.
5	57.	180.	79.	30.	32.
6	19.	92.	44.	49.	13.
=====					
Total	603.	614.	367.	369.	396.

Catch Numbers

AGE	1973	1974	1975	1976	1977
1	220.0	861.0	8910.0	214.0	5513.0
2	5632.0	28519.0	4129.0	6677.0	5027.0
3	11951.0	5556.0	1884.0	1181.0	4891.0
4	7978.0	7370.0	1130.0	327.0	507.0
5	5226.0	3687.0	1597.0	449.0	278.0
6	6286.0	3347.0	1452.0	896.0	649.0
=====					
Total	37293.0	49340.0	19102.0	9744.0	16865.0
AGE	1978	1979	1980	1981	1982
1	8698.0	205.0	1006.0	38.0	169.0
2	14191.0	19419.0	10215.0	7029.0	35696.0
3	2164.0	8667.0	6595.0	7578.0	14358.0
4	1470.0	1062.0	3829.0	2926.0	1858.0
5	247.0	438.0	512.0	1111.0	415.0
6	179.0	131.0	167.0	183.0	86.0
=====					
Total	26949.0	29922.0	22324.0	18865.0	52582.0
AGE	1983	1984	1985	1986	1987
1	2668.0	517.0	2239.0	463.0	1594.0
2	19288.0	6200.0	8074.0	9970.0	3437.0
3	42837.0	19990.0	2175.0	3326.0	2368.0
4	3601.0	8129.0	1968.0	635.0	926.0
5	385.0	878.0	1109.0	356.0	167.0
6	192.0	276.0	246.0	149.0	65.0
=====					
Total	68971.0	35990.0	15811.0	14899.0	8557.0

AGE	1988	1989	1990	1991	1992
1	5899.0	24.0	192.0	446.0	477.0
2	2109.0	19920.0	2056.0	1610.0	1453.0
3	536.0	3347.0	42644.0	5169.0	2097.0
4	506.0	462.0	2209.0	9703.0	2739.0
5	134.0	48.0	90.0	168.0	297.0
6	32.0	3.0	5.0	51.0	18.0
=====					
Total	9216.0	23804.0	47196.0	17147.0	7081.0

AGE	1993	1994	1995	1996	1997
1	13.0	362.0	1.0	3.0	22.0
2	457.0	851.0	373.0	519.0	485.0
3	447.0	399.0	198.0	1117.0	1512.0
4	711.0	404.0	288.0	232.0	789.0
5	145.0	297.0	51.0	32.0	110.0
6	4.0	86.0	36.0	30.0	42.0
=====					
Total	1777.0	2399.0	947.0	1933.0	2960.0

Catch Numbers

AGE	1998	1999	2000	2001	2002
1	19.0	10.0	4.0	0.0	1.0
2	1463.0	475.0	905.0	405.0	250.0
3	1136.0	2217.0	1190.0	1683.0	966.0
4	396.0	407.0	514.0	477.0	388.0
5	52.0	125.0	55.0	126.0	25.0
6	31.0	8.0	13.0	39.0	1.0
=====					
Total	3097.0	3242.0	2681.0	2730.0	1631.0

AGE	2003	2004	2005	2006	2007
1	2.0	4.0	66.0	19.0	6.0
2	155.0	280.0	226.0	312.0	245.0
3	594.0	243.0	217.0	344.0	564.0
4	344.0	311.0	150.0	139.0	135.0
5	89.0	313.0	118.0	44.0	44.0
6	23.0	124.0	52.0	57.0	15.0
=====					
Total	1207.0	1275.0	829.0	915.0	1009.0

Surplus Production

Average Adjustment Factor (Delta) = 1.0000

Year	Biomass	Delta Biomass	Catch Biomass	Surplus Production
1973	37538.414	-13410.443	13550.710	140.267
1974	24127.971	-10387.375	16981.039	6593.664
1975	13740.596	-2489.861	5725.312	3235.451
1976	11250.735	5357.928	3439.740	8797.668
1977	16608.663	6671.761	5221.307	11893.068
1978	23280.425	-1986.343	8090.965	6104.622
1979	21294.082	-289.976	9888.244	9598.268
1980	21004.106	7096.031	8028.290	15124.321
1981	28100.138	14735.348	6606.624	21341.972
1982	42835.486	-7467.205	15767.296	8300.091
1983	35368.281	-18719.190	22223.335	3504.145
1984	16649.091	-7479.310	11223.238	3743.928
1985	9169.781	-2419.701	4814.300	2394.599
1986	6750.080	-570.480	4617.139	4046.659
1987	6179.600	26724.703	2652.697	29377.400
1988	32904.303	3270.575	2780.527	6051.102
1989	36174.879	-6912.690	8352.779	1440.089
1990	29262.189	-19250.658	17927.721	-1322.937
1991	10011.531	-6373.294	6427.395	54.101
1992	3638.237	-1981.873	2693.656	711.783
1993	1656.364	-184.511	773.340	588.829
1994	1471.854	-363.330	729.415	366.085
1995	1108.524	611.855	344.690	956.545
1996	1720.379	1266.733	754.872	2021.605
1997	2987.111	-310.526	1247.678	937.152
1998	2676.586	381.778	1106.587	1488.365
1999	3058.364	-248.852	1479.685	1230.833
2000	2809.512	-224.160	1259.460	1035.300
2001	2585.352	-498.293	1323.861	825.568
2002	2087.059	-360.390	815.994	455.604
2003	1726.669	-270.103	602.578	332.475
2004	1456.566	61.383	614.028	675.411
2005	1517.950	1237.421	367.132	1604.553
2006	2755.370	1222.253	368.796	1591.049
2007	3977.623	1600.631	396.175	1996.806
2008	5578.254			

Summary of Survey Indices Used in the Estimate

INDEX	Survey Tag	Age	Time	Type	Catchability	Std. Error	CV
1	NEFSC_W	1	JAN-1	NUMBER	0.4537E-01	0.1252E-01	0.2759E+00
2	NEFSC_W	2	JAN-1	NUMBER	0.1426E+01	0.2589E+00	0.1816E+00
3	NEFSC_W	3	JAN-1	NUMBER	0.2292E+01	0.4184E+00	0.1825E+00
4	NEFSC_W	4	JAN-1	NUMBER	0.2548E+01	0.3202E+00	0.1256E+00
5	NEFSC_W	5	JAN-1	NUMBER	0.1895E+01	0.4393E+00	0.2318E+00
6	NEFSC_W	6	JAN-1	NUMBER	0.2341E+01	0.8269E+00	0.3533E+00
7	NEFSC_S	1	JAN-1	NUMBER	0.1420E-01	0.2378E-02	0.1675E+00
8	NEFSC_S	2	JAN-1	NUMBER	0.1830E+00	0.2739E-01	0.1497E+00
9	NEFSC_S	3	JAN-1	NUMBER	0.2834E+00	0.3699E-01	0.1305E+00
10	NEFSC_S	4	JAN-1	NUMBER	0.4193E+00	0.4354E-01	0.1038E+00
11	NEFSC_S	5	JAN-1	NUMBER	0.5500E+00	0.9534E-01	0.1733E+00
12	NEFSC_S	6	JAN-1	NUMBER	0.5684E+00	0.1139E+00	0.2004E+00
13	NEFSC_F	1	MEAN	NUMBER	0.1006E+00	0.1591E-01	0.1582E+00
14	NEFSC_F	2	MEAN	NUMBER	0.1756E+00	0.2861E-01	0.1629E+00
15	NEFSC_F	3	MEAN	NUMBER	0.1996E+00	0.2466E-01	0.1235E+00
16	NEFSC_F	4	MEAN	NUMBER	0.2170E+00	0.2819E-01	0.1299E+00
17	NEFSC_F	5	MEAN	NUMBER	0.2218E+00	0.4204E-01	0.1895E+00
18	NEFSC_F	6	MEAN	NUMBER	0.4497E+00	0.1327E+00	0.2951E+00

Survey Index: 1 Tag: NEFSC\_W AGE = 1  
 Time = JAN-1 Type = NUMBER  
 Catchability = 0.453675E-01 % Variance Contribution = 5.4089  
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.192771E+04	N/A
1974	N/A	0.470100E+03	N/A
1975	N/A	0.142810E+04	N/A
1976	N/A	0.650540E+03	N/A
1977	N/A	0.226462E+04	N/A
1978	N/A	0.240976E+04	N/A
1979	N/A	0.140629E+04	N/A
1980	N/A	0.196693E+04	N/A
1981	N/A	0.617046E+04	N/A
1982	N/A	0.285388E+04	N/A
1983	N/A	0.744357E+03	N/A
1984	N/A	0.854531E+03	N/A
1985	N/A	0.932740E+03	N/A
1986	N/A	0.320631E+03	N/A
1987	N/A	0.667675E+03	N/A
1988	N/A	0.549700E+04	N/A
1989	N/A	0.773458E+03	N/A
1990	N/A	0.363809E+03	N/A
1991	N/A	0.185634E+03	N/A
1992	0.137170E+02	0.112338E+03	-0.210287E+01
1993	0.852026E+03	0.100864E+03	0.213385E+01
1994	0.444803E+03	0.201161E+03	0.793525E+00
1995	0.128311E+03	0.194525E+03	-0.416101E+00
1996	0.581540E+02	0.157190E+03	-0.994359E+00
1997	0.222758E+03	0.313234E+03	-0.340865E+00
1998	0.168891E+03	0.164389E+03	0.270156E-01
1999	0.347069E+03	0.243692E+03	0.353620E+00
2000	0.155174E+03	0.190190E+03	-0.203478E+00
2001	0.401510E+02	0.110133E+03	-0.100904E+01
2002	0.172890E+02	0.513845E+02	-0.108927E+01
2003	0.473808E+03	0.601433E+02	0.206407E+01
2004	0.721570E+02	0.755879E+02	-0.464525E-01
2005	0.559397E+03	0.493481E+03	0.125375E+00
2006	0.993912E+03	0.426833E+03	0.845255E+00
2007	0.461520E+02	0.531019E+02	-0.140272E+00
2008	N/A	0.000000E+00	N/A

Survey Index: 2 Tag: NEFSC\_W AGE = 2  
 Time = JAN-1 Type = NUMBER  
 Catchability = 0.142556E+01 % Variance Contribution = 2.3443  
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.258425E+05	N/A
1974	N/A	0.493104E+05	N/A
1975	N/A	0.109871E+05	N/A
1976	N/A	0.253369E+05	N/A
1977	N/A	0.164607E+05	N/A
1978	N/A	0.511770E+05	N/A
1979	N/A	0.508310E+05	N/A
1980	N/A	0.359151E+05	N/A
1981	N/A	0.493075E+05	N/A
1982	N/A	0.158696E+06	N/A
1983	N/A	0.732033E+05	N/A
1984	N/A	0.157253E+05	N/A
1985	N/A	0.213188E+05	N/A
1986	N/A	0.211191E+05	N/A
1987	N/A	0.765328E+04	N/A
1988	N/A	0.151287E+05	N/A
1989	N/A	0.133830E+06	N/A
1990	N/A	0.198676E+05	N/A
1991	N/A	0.911244E+04	N/A
1992	0.209870E+04	0.420261E+04	-0.694388E+00
1993	0.274912E+04	0.227824E+04	0.187877E+00
1994	0.105108E+05	0.257814E+04	0.140533E+01
1995	0.152613E+05	0.470977E+04	0.117568E+01
1996	0.183579E+04	0.500318E+04	-0.100260E+01
1997	0.340096E+04	0.404011E+04	-0.172213E+00
1998	0.112032E+05	0.803014E+04	0.333000E+00
1999	0.415597E+04	0.420473E+04	-0.116635E-01
2000	0.702539E+04	0.625649E+04	0.115911E+00
2001	0.127868E+04	0.488781E+04	-0.134091E+01
2002	0.390778E+04	0.283308E+04	0.321604E+00
2003	0.996483E+03	0.132066E+04	-0.281657E+00
2004	0.137384E+04	0.154471E+04	-0.117224E+00
2005	0.111279E+04	0.193947E+04	-0.555545E+00
2006	0.267710E+05	0.126106E+05	0.752779E+00
2007	0.975665E+04	0.109565E+05	-0.115986E+00
2008	N/A	0.135841E+04	N/A

Survey Index: 3 Tag: NEFSC\_W AGE = 3  
 Time = JAN-1 Type = NUMBER  
 Catchability = 0.229197E+01 % Variance Contribution = 2.3680  
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.672061E+05	N/A
1974	N/A	0.224367E+05	N/A
1975	N/A	0.775984E+04	N/A
1976	N/A	0.603540E+04	N/A
1977	N/A	0.196478E+05	N/A
1978	N/A	0.113698E+05	N/A
1979	N/A	0.382577E+05	N/A
1980	N/A	0.272906E+05	N/A
1981	N/A	0.263301E+05	N/A
1982	N/A	0.504128E+05	N/A
1983	N/A	0.135519E+06	N/A
1984	N/A	0.567731E+05	N/A
1985	N/A	0.805941E+04	N/A
1986	N/A	0.115863E+05	N/A
1987	N/A	0.758495E+04	N/A
1988	N/A	0.309295E+04	N/A
1989	N/A	0.155656E+05	N/A
1990	N/A	0.135103E+06	N/A
1991	N/A	0.219079E+05	N/A
1992	0.459191E+04	0.867943E+04	-0.636660E+00
1993	0.151073E+04	0.256152E+04	-0.528010E+00
1994	0.901322E+03	0.205861E+04	-0.825924E+00
1995	0.385491E+04	0.165250E+04	0.847059E+00
1996	0.117672E+05	0.542902E+04	0.773556E+00
1997	0.139816E+05	0.551443E+04	0.930376E+00
1998	0.228031E+04	0.431742E+04	-0.638346E+00
1999	0.145400E+05	0.755808E+04	0.654289E+00
2000	0.429471E+04	0.455452E+04	-0.587366E-01
2001	0.122049E+05	0.636984E+04	0.650259E+00
2002	0.368359E+04	0.559737E+04	-0.418409E+00
2003	0.371045E+04	0.321293E+04	0.143970E+00
2004	0.455948E+03	0.141859E+04	-0.113504E+01
2005	0.880318E+03	0.145683E+04	-0.503732E+00
2006	0.651258E+04	0.208663E+04	0.113818E+01
2007	0.107713E+05	0.159541E+05	-0.392836E+00
2008	N/A	0.139154E+05	N/A



Survey Index: 4 Tag: NEFSC\_W AGE = 4  
 Time = JAN-1 Type = NUMBER  
 Catchability = 0.254824E+01 % Variance Contribution = 1.1217  
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.428976E+05	N/A
1974	N/A	0.339324E+05	N/A
1975	N/A	0.783276E+04	N/A
1976	N/A	0.279211E+04	N/A
1977	N/A	0.280526E+04	N/A
1978	N/A	0.680259E+04	N/A
1979	N/A	0.542113E+04	N/A
1980	N/A	0.151450E+05	N/A
1981	N/A	0.988786E+04	N/A
1982	N/A	0.687201E+04	N/A
1983	N/A	0.134863E+05	N/A
1984	N/A	0.271054E+05	N/A
1985	N/A	0.706274E+04	N/A
1986	N/A	0.241902E+04	N/A
1987	N/A	0.304274E+04	N/A
1988	N/A	0.158034E+04	N/A
1989	N/A	0.159316E+04	N/A
1990	N/A	0.656137E+04	N/A
1991	N/A	0.271535E+05	N/A
1992	0.106162E+05	0.821519E+04	0.256401E+00
1993	0.355328E+04	0.314572E+04	0.121829E+00
1994	0.200911E+04	0.131246E+04	0.425792E+00
1995	0.853169E+03	0.965426E+03	-0.123612E+00
1996	0.121653E+04	0.105115E+04	0.146113E+00
1997	0.422684E+04	0.240103E+04	0.565555E+00
1998	0.165461E+04	0.160300E+04	0.316914E-01
1999	0.110993E+04	0.135983E+04	-0.203057E+00
2000	0.165804E+04	0.188205E+04	-0.126724E+00
2001	0.230746E+04	0.145295E+04	0.462552E+00
2002	0.292487E+04	0.199096E+04	0.384631E+00
2003	0.756150E+03	0.289221E+04	-0.134154E+01
2004	0.841596E+03	0.157126E+04	-0.624334E+00
2005	0.741861E+03	0.737102E+03	0.643498E-02
2006	0.493669E+03	0.830453E+03	-0.520106E+00
2007	0.190938E+04	0.111450E+04	0.538370E+00
2008	N/A	0.132264E+05	N/A

Survey Index: 5 Tag: NEFSC\_W AGE = 5  
 Time = JAN-1 Type = NUMBER  
 Catchability = 0.189483E+01 % Variance Contribution = 3.8196  
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.208949E+05	N/A
1974	N/A	0.126227E+05	N/A
1975	N/A	0.823138E+04	N/A
1976	N/A	0.285077E+04	N/A
1977	N/A	0.114378E+04	N/A
1978	N/A	0.849935E+03	N/A
1979	N/A	0.166254E+04	N/A
1980	N/A	0.150586E+04	N/A
1981	N/A	0.279173E+04	N/A
1982	N/A	0.114135E+04	N/A
1983	N/A	0.107217E+04	N/A
1984	N/A	0.217693E+04	N/A
1985	N/A	0.295945E+04	N/A
1986	N/A	0.100843E+04	N/A
1987	N/A	0.408039E+03	N/A
1988	N/A	0.311198E+03	N/A
1989	N/A	0.123081E+03	N/A
1990	N/A	0.198780E+03	N/A
1991	N/A	0.349591E+03	N/A
1992	0.123539E+04	0.662390E+03	0.623286E+00
1993	0.417369E+03	0.477034E+03	-0.133617E+00
1994	0.117352E+04	0.717450E+03	0.492058E+00
1995	0.361357E+03	0.127124E+03	0.104470E+01
1996	0.200468E+03	0.107810E+03	0.620284E+00
1997	0.755436E+03	0.248912E+03	0.111020E+01
1998	0.160460E+03	0.156521E+03	0.248534E-01
1999	0.444517E+03	0.310550E+03	0.358643E+00
2000	0.103878E+03	0.149748E+03	-0.365740E+00
2001	0.362215E+03	0.285387E+03	0.238392E+00
2002	0.143028E+03	0.953900E+02	0.405067E+00
2003	0.608690E+02	0.556407E+03	-0.221278E+01
2004	0.204612E+03	0.117588E+04	-0.174866E+01
2005	0.837881E+03	0.431172E+03	0.664370E+00
2006	0.127311E+03	0.195472E+03	-0.428785E+00
2007	0.135170E+03	0.270104E+03	-0.692275E+00
2008	N/A	0.449007E+03	N/A

Survey Index: 6 Tag: NEFSC\_W AGE = 6  
 Time = JAN-1 Type = NUMBER  
 Catchability = 0.234050E+01 % Variance Contribution = 5.7652  
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	N/A	0.310444E+05	N/A
1974	N/A	0.141538E+05	N/A
1975	N/A	0.924425E+04	N/A
1976	N/A	0.702686E+04	N/A
1977	N/A	0.329821E+04	N/A
1978	N/A	0.760815E+03	N/A
1979	N/A	0.614194E+03	N/A
1980	N/A	0.606693E+03	N/A
1981	N/A	0.568000E+03	N/A
1982	N/A	0.292150E+03	N/A
1983	N/A	0.660450E+03	N/A
1984	N/A	0.845273E+03	N/A
1985	N/A	0.810872E+03	N/A
1986	N/A	0.521340E+03	N/A
1987	N/A	0.196172E+03	N/A
1988	N/A	0.917952E+02	N/A
1989	N/A	0.950186E+01	N/A
1990	N/A	0.136407E+02	N/A
1991	N/A	0.131087E+03	N/A
1992	N/A	0.495869E+02	N/A
1993	N/A	0.162547E+02	N/A
1994	0.571971E+03	0.256609E+03	0.801536E+00
1995	0.286771E+03	0.110840E+03	0.950593E+00
1996	0.136741E+03	0.124844E+03	0.910233E-01
1997	0.535820E+02	0.117392E+03	-0.784308E+00
1998	0.260050E+02	0.115257E+03	-0.148888E+01
1999	0.112880E+03	0.245499E+02	0.152562E+01
2000	0.142457E+03	0.437200E+02	0.118123E+01
2001	0.202469E+03	0.109110E+03	0.618228E+00
2002	0.280060E+02	0.471303E+01	0.178209E+01
2003	0.370070E+02	0.177610E+03	-0.156848E+01
2004	0.621550E+02	0.575412E+03	-0.222546E+01
2005	0.148029E+03	0.234698E+03	-0.460891E+00
2006	0.205041E+03	0.312784E+03	-0.422302E+00
2007	N/A	0.113739E+03	N/A
2008	N/A	0.242387E+03	N/A

Survey Index: 7 Tag: NEFSC\_S AGE = 1  
 Time = JAN-1 Type = NUMBER  
 Catchability = 0.141979E-01 % Variance Contribution = 7.7271  
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.912670E+03	0.603285E+03	0.413984E+00
1974	0.592291E+03	0.147120E+03	0.139275E+01
1975	0.414470E+03	0.446930E+03	-0.754006E-01
1976	0.498030E+02	0.203589E+03	-0.140803E+01
1977	0.157298E+04	0.708721E+03	0.797266E+00
1978	0.31052E+04	0.754143E+03	0.141535E+01
1979	0.986706E+03	0.440102E+03	0.807365E+00
1980	0.708610E+03	0.615557E+03	0.140777E+00
1981	0.849162E+03	0.193107E+04	-0.821579E+00
1982	0.340099E+03	0.893134E+03	-0.965500E+00
1983	0.663490E+02	0.232949E+03	-0.125589E+01
1984	0.783820E+02	0.267429E+03	-0.122726E+01
1985	0.446057E+03	0.291904E+03	0.424020E+00
1986	0.272410E+02	0.100343E+03	-0.130387E+01
1987	N/A	0.208951E+03	N/A
1988	0.476473E+03	0.172031E+04	-0.128385E+01
1989	0.229797E+03	0.242057E+03	-0.519750E-01
1990	0.127015E+03	0.113855E+03	0.109376E+00
1991	0.346450E+03	0.580948E+02	0.178566E+01
1992	0.601650E+02	0.351565E+02	0.537280E+00
1993	0.272410E+02	0.315656E+02	-0.147346E+00
1994	0.223950E+02	0.629542E+02	-0.103357E+01
1995	0.264060E+02	0.608772E+02	-0.835267E+00
1996	N/A	0.491931E+02	N/A
1997	0.879080E+02	0.980278E+02	-0.108960E+00
1998	0.113478E+03	0.514463E+02	0.791071E+00
1999	0.593290E+02	0.762642E+02	-0.251106E+00
2000	0.320880E+02	0.595208E+02	-0.617843E+00
2001	N/A	0.344666E+02	N/A
2002	0.815570E+02	0.160810E+02	0.162367E+01
2003	0.516420E+02	0.188221E+02	0.100931E+01
2004	0.272410E+02	0.236555E+02	0.141126E+00
2005	0.245507E+03	0.154437E+03	0.463540E+00
2006	0.838970E+02	0.133579E+03	-0.465104E+00
2007	N/A	0.166184E+02	N/A
2008	N/A	0.000000E+00	N/A

Survey Index: 8 Tag: NEFSC\_S AGE = 2  
 Time = JAN-1 Type = NUMBER  
 Catchability = 0.182963E+00 % Variance Contribution = 8.3641  
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.552365E+04	0.331673E+04	0.510060E+00
1974	0.250771E+04	0.632870E+04	-0.925724E+00
1975	0.151298E+04	0.141013E+04	0.703988E-01
1976	0.426971E+04	0.325184E+04	0.272326E+00
1977	0.164217E+04	0.211264E+04	-0.251918E+00
1978	0.118991E+05	0.656826E+04	0.594216E+00
1979	0.292185E+04	0.652386E+04	-0.803251E+00
1980	0.652005E+04	0.460949E+04	0.346765E+00
1981	0.182614E+05	0.632833E+04	0.105975E+01
1982	0.299506E+05	0.203678E+05	0.385598E+00
1983	0.108319E+05	0.939522E+04	0.142292E+00
1984	0.924034E+03	0.201825E+04	-0.781239E+00
1985	0.269589E+04	0.273614E+04	-0.148198E-01
1986	0.483443E+04	0.271051E+04	0.578624E+00
1987	0.144396E+03	0.982254E+03	-0.191729E+01
1988	0.595801E+03	0.194168E+04	-0.118140E+01
1989	0.159255E+05	0.171763E+05	-0.756077E-01
1990	0.689558E+03	0.254989E+04	-0.130775E+01
1991	0.844483E+03	0.116953E+04	-0.325632E+00
1992	0.847320E+02	0.539381E+03	-0.185093E+01
1993	0.423328E+03	0.292399E+03	0.370029E+00
1994	0.382048E+03	0.330890E+03	0.143761E+00
1995	0.195286E+04	0.604471E+03	0.117269E+01
1996	0.664322E+03	0.642129E+03	0.339782E-01
1997	0.147922E+04	0.518524E+03	0.104829E+01
1998	0.504049E+04	0.103062E+04	0.158734E+01
1999	0.108715E+04	0.539652E+03	0.700389E+00
2000	0.193581E+04	0.802984E+03	0.879945E+00
2001	0.115651E+03	0.627322E+03	-0.169088E+01
2002	0.199029E+04	0.363609E+03	0.169996E+01
2003	0.125678E+03	0.169499E+03	-0.299126E+00
2004	0.227123E+03	0.198255E+03	0.135940E+00
2005	0.343275E+03	0.248920E+03	0.321399E+00
2006	0.264693E+04	0.161850E+04	0.491898E+00
2007	0.962974E+03	0.140621E+04	-0.378624E+00
2008	0.830610E+02	0.174344E+03	-0.741454E+00

Survey Index: 9 Tag: NEFSC\_S AGE = 3  
 Time = JAN-1 Type = NUMBER  
 Catchability = 0.283400E+00 % Variance Contribution = 6.3554  
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.150969E+05	0.830998E+04	0.597033E+00
1974	0.295694E+04	0.277427E+04	0.637668E-01
1975	0.454914E+03	0.959497E+03	-0.746301E+00
1976	0.580091E+03	0.746271E+03	-0.251904E+00
1977	0.288174E+04	0.242944E+04	0.170733E+00
1978	0.210979E+04	0.140586E+04	0.405935E+00
1979	0.154841E+04	0.473053E+04	-0.111681E+01
1980	0.441845E+04	0.337446E+04	0.269554E+00
1981	0.474351E+04	0.325569E+04	0.376372E+00
1982	0.972283E+04	0.623350E+04	0.444540E+00
1983	0.179486E+05	0.167568E+05	0.687083E-01
1984	0.183821E+04	0.701994E+04	-0.133996E+01
1985	0.677859E+03	0.996539E+03	-0.385349E+00
1986	0.153003E+04	0.143264E+04	0.657680E-01
1987	0.117071E+04	0.937872E+03	0.221753E+00
1988	0.208071E+03	0.382440E+03	-0.608693E+00
1989	0.761923E+03	0.192468E+04	-0.926667E+00
1990	0.218046E+05	0.167053E+05	0.266396E+00
1991	0.356461E+04	0.270890E+04	0.274513E+00
1992	0.954618E+03	0.107320E+04	-0.117092E+00
1993	0.187180E+03	0.316730E+03	-0.525978E+00
1994	0.232300E+02	0.254545E+03	-0.239403E+01
1995	0.114146E+03	0.204330E+03	-0.582258E+00
1996	0.217814E+04	0.671294E+03	0.117702E+01
1997	0.191158E+04	0.681854E+03	0.103087E+01
1998	0.644601E+03	0.533844E+03	0.188527E+00
1999	0.322551E+04	0.934549E+03	0.123878E+01
2000	0.247830E+04	0.563162E+03	0.148176E+01
2001	0.193464E+04	0.787624E+03	0.898655E+00
2002	0.393078E+03	0.692109E+03	-0.565736E+00
2003	0.339431E+03	0.397276E+03	-0.157360E+00
2004	0.488172E+03	0.175407E+03	0.102356E+01
2005	0.161443E+03	0.180135E+03	-0.109555E+00
2006	0.374360E+03	0.258010E+03	0.372219E+00
2007	0.132062E+04	0.197272E+04	-0.401308E+00
2008	0.114481E+04	0.172063E+04	-0.407453E+00

Survey Index: 10 Tag: NEFSC\_S AGE = 4  
 Time = JAN-1 Type = NUMBER  
 Catchability = 0.419285E+00 % Variance Contribution = 3.7991  
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.849112E+04	0.705835E+04	0.184810E+00
1974	0.571216E+04	0.558321E+04	0.228341E-01
1975	0.588280E+03	0.128880E+04	-0.784260E+00
1976	0.278430E+03	0.459411E+03	-0.500778E+00
1977	0.263222E+03	0.461575E+03	-0.561647E+00
1978	0.900971E+03	0.111929E+04	-0.216980E+00
1979	0.278263E+03	0.891989E+03	-0.116489E+01
1980	0.278614E+04	0.249194E+04	0.111595E+00
1981	0.249752E+04	0.162694E+04	0.428595E+00
1982	0.243785E+04	0.113071E+04	0.768268E+00
1983	0.122018E+04	0.221903E+04	-0.598070E+00
1984	0.430130E+04	0.445990E+04	-0.362110E-01
1985	0.802869E+03	0.116210E+04	-0.369791E+00
1986	0.395251E+03	0.398024E+03	-0.699105E-02
1987	0.278430E+03	0.500650E+03	-0.586741E+00
1988	0.290129E+03	0.260028E+03	0.109535E+00
1989	0.160607E+03	0.262138E+03	-0.489910E+00
1990	0.311571E+04	0.107960E+04	0.105986E+01
1991	0.590369E+04	0.446781E+04	0.278680E+00
1992	0.266949E+04	0.135172E+04	0.680508E+00
1993	0.827102E+03	0.517594E+03	0.468738E+00
1994	N/A	0.215951E+03	N/A
1995	0.154089E+03	0.158850E+03	-0.304329E-01
1996	0.946596E+03	0.172956E+03	0.169984E+01
1997	0.546165E+03	0.395064E+03	0.323873E+00
1998	0.269238E+03	0.263756E+03	0.205704E-01
1999	0.583266E+03	0.223745E+03	0.958135E+00
2000	0.355141E+03	0.309671E+03	0.137004E+00
2001	0.400599E+03	0.239067E+03	0.516217E+00
2002	0.333916E+03	0.327591E+03	0.191226E-01
2003	0.179492E+03	0.475881E+03	-0.975038E+00
2004	0.169465E+03	0.258534E+03	-0.422382E+00
2005	0.112475E+03	0.121282E+03	-0.753896E-01
2006	0.176818E+03	0.136642E+03	0.257756E+00
2007	0.145900E+03	0.183379E+03	-0.228635E+00
2008	0.802367E+03	0.217626E+04	-0.997797E+00

Survey Index: 11 Tag: NEFSC\_S AGE = 5  
 Time = JAN-1 Type = NUMBER  
 Catchability = 0.550028E+00 % Variance Contribution = 7.7397  
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.658656E+04	0.606533E+04	0.824430E-01
1974	0.345497E+04	0.366409E+04	-0.587638E-01
1975	0.866042E+03	0.238939E+04	-0.101486E+01
1976	0.264559E+03	0.827515E+03	-0.114036E+01
1977	0.164785E+03	0.332013E+03	-0.700533E+00
1978	0.292636E+03	0.246717E+03	0.170687E+00
1979	0.121166E+03	0.482598E+03	-0.138202E+01
1980	0.274419E+03	0.437118E+03	-0.465547E+00
1981	0.554354E+03	0.810378E+03	-0.379697E+00
1982	0.799025E+03	0.331308E+03	0.880345E+00
1983	0.389234E+03	0.311226E+03	0.223661E+00
1984	0.800027E+03	0.631915E+03	0.235890E+00
1985	0.119294E+04	0.859063E+03	0.328332E+00
1986	0.207402E+03	0.292726E+03	-0.344578E+00
1987	N/A	0.118445E+03	N/A
1988	0.491348E+03	0.903339E+02	0.169364E+01
1989	N/A	0.357277E+02	N/A
1990	0.112475E+03	0.577014E+02	0.667449E+00
1991	0.765433E+03	0.101478E+03	0.202060E+01
1992	N/A	0.192277E+03	N/A
1993	0.285780E+02	0.138472E+03	-0.157803E+01
1994	0.972670E+02	0.208260E+03	-0.761327E+00
1995	0.312520E+02	0.369013E+02	-0.166165E+00
1996	0.119829E+03	0.312949E+02	0.134261E+01
1997	0.112141E+03	0.722536E+02	0.439575E+00
1998	0.606660E+02	0.454346E+02	0.289109E+00
1999	0.124341E+03	0.901458E+02	0.321600E+00
2000	N/A	0.434687E+02	N/A
2001	0.137377E+03	0.828415E+02	0.505800E+00
2002	0.111807E+03	0.276896E+02	0.139572E+01
2003	0.541490E+02	0.161513E+03	-0.109284E+01
2004	0.584940E+02	0.341333E+03	-0.176393E+01
2005	0.254531E+03	0.125160E+03	0.709833E+00
2006	N/A	0.567412E+02	N/A
2007	N/A	0.784053E+02	N/A
2008	0.823930E+02	0.130337E+03	-0.458622E+00



Survey Index: 12 Tag: NEFSC\_S AGE = 6  
 Time = JAN-1 Type = NUMBER  
 Catchability = 0.568391E+00 % Variance Contribution = 6.0197  
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.940747E+04	0.753913E+04	0.221397E+00
1974	0.311454E+04	0.343724E+04	-0.985870E-01
1975	0.102030E+04	0.224497E+04	-0.788596E+00
1976	0.499871E+03	0.170647E+04	-0.122783E+01
1977	0.457923E+03	0.800971E+03	-0.559124E+00
1978	0.483158E+03	0.184764E+03	0.961264E+00
1979	0.610010E+02	0.149157E+03	-0.894110E+00
1980	0.109300E+03	0.147335E+03	-0.298615E+00
1981	0.947600E+02	0.137939E+03	-0.375463E+00
1982	0.273584E+03	0.709485E+02	0.134965E+01
1983	N/A	0.160390E+03	N/A
1984	0.456084E+03	0.205275E+03	0.798328E+00
1985	0.258542E+03	0.196920E+03	0.272259E+00
1986	0.264060E+02	0.126607E+03	-0.156750E+01
1987	N/A	0.476403E+02	N/A
1988	0.481320E+02	0.222925E+02	0.769699E+00
1989	N/A	0.230753E+01	N/A
1990	N/A	0.331265E+01	N/A
1991	0.852340E+02	0.318344E+02	0.984853E+00
1992	N/A	0.120422E+02	N/A
1993	N/A	0.394745E+01	N/A
1994	0.272410E+02	0.623174E+02	-0.827518E+00
1995	0.115316E+03	0.269176E+02	0.145490E+01
1996	N/A	0.303184E+02	N/A
1997	N/A	0.285087E+02	N/A
1998	0.342610E+02	0.279903E+02	0.202151E+00
1999	0.382720E+02	0.596193E+01	0.185932E+01
2000	N/A	0.106174E+02	N/A
2001	0.382720E+02	0.264974E+02	0.367671E+00
2002	N/A	0.114456E+01	N/A
2003	N/A	0.431326E+02	N/A
2004	0.320880E+02	0.139739E+03	-0.147129E+01
2005	0.264060E+02	0.569964E+02	-0.769396E+00
2006	0.528120E+02	0.759596E+02	-0.363463E+00
2007	N/A	0.276214E+02	N/A
2008	N/A	0.588636E+02	N/A

Survey Index: 13 Tag: NEFSC\_F AGE = 1  
 Time = MEAN Type = NUMBER  
 Catchability = 0.100583E+00 % Variance Contribution = 8.8191  
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.200610E+04	0.386292E+04	-0.655229E+00
1974	0.949631E+03	0.902156E+03	0.512864E-01
1975	0.199415E+04	0.241164E+04	-0.190086E+00
1976	0.275227E+04	0.129679E+04	0.752535E+00
1977	0.272654E+04	0.427720E+04	-0.450264E+00
1978	0.247759E+04	0.440637E+04	-0.575767E+00
1979	0.177829E+04	0.281587E+04	-0.459620E+00
1980	0.137367E+04	0.390332E+04	-0.104434E+01
1981	0.113308E+05	0.123973E+05	-0.899583E-01
1982	0.285854E+04	0.572649E+04	-0.694791E+00
1983	0.269116E+04	0.136207E+04	0.680967E+00
1984	0.202380E+04	0.169187E+04	0.179138E+00
1985	0.848762E+03	0.176327E+04	-0.731148E+00
1986	0.604519E+03	0.621517E+03	-0.277308E-01
1987	0.122639E+04	0.126263E+04	-0.291253E-01
1988	0.501985E+04	0.107566E+05	-0.762123E+00
1989	0.134989E+03	0.155305E+04	-0.244278E+01
1990	0.240797E+03	0.721679E+03	-0.109763E+01
1991	0.574075E+03	0.350906E+03	0.492241E+00
1992	0.192431E+03	0.201691E+03	-0.469991E-01
1993	0.324432E+03	0.202047E+03	0.473577E+00
1994	0.841065E+03	0.386364E+03	0.777888E+00
1995	0.159689E+03	0.390837E+03	-0.895062E+00
1996	0.514910E+03	0.315718E+03	0.489144E+00
1997	0.944691E+03	0.628355E+03	0.407753E+00
1998	0.102247E+04	0.329406E+03	0.113268E+01
1999	0.142215E+04	0.489197E+03	0.106716E+01
2000	0.567530E+02	0.381981E+03	-0.190666E+01
2001	0.448507E+03	0.221296E+03	0.706425E+00
2002	0.291231E+03	0.103205E+03	0.103740E+01
2003	0.134414E+04	0.120757E+03	0.240973E+01
2004	0.806490E+02	0.151695E+03	-0.631765E+00
2005	0.203115E+04	0.988409E+03	0.720260E+00
2006	0.136999E+04	0.856772E+03	0.469388E+00
2007	0.257455E+03	0.106413E+03	0.883516E+00
2008	N/A	0.000000E+00	N/A

Survey Index: 14 Tag: NEFSC\_F AGE = 2  
 Time = MEAN Type = NUMBER  
 Catchability = 0.175600E+00 % Variance Contribution = 9.3541  
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.293540E+04	0.237641E+04	0.211251E+00
1974	0.173509E+04	0.235777E+04	-0.306657E+00
1975	0.553281E+03	0.829651E+03	-0.405139E+00
1976	0.589251E+04	0.221584E+04	0.978049E+00
1977	0.171407E+04	0.136889E+04	0.224870E+00
1978	0.568423E+04	0.440438E+04	0.255097E+00
1979	0.391088E+04	0.380236E+04	0.281407E-01
1980	0.346409E+04	0.306474E+04	0.122487E+00
1981	0.113153E+05	0.488490E+04	0.840003E+00
1982	0.249403E+05	0.144854E+05	0.543342E+00
1983	0.158066E+05	0.640234E+04	0.903767E+00
1984	0.178656E+04	0.115419E+04	0.436890E+00
1985	0.365790E+03	0.160274E+04	-0.147741E+01
1986	0.183228E+04	0.134791E+04	0.307011E+00
1987	0.518816E+03	0.511104E+03	0.149766E-01
1988	0.373947E+03	0.150318E+04	-0.139122E+01
1989	0.103037E+05	0.131810E+05	-0.246271E+00
1990	0.208928E+04	0.203878E+04	0.244672E-01
1991	0.237235E+03	0.873854E+03	-0.130386E+01
1992	0.274570E+02	0.331382E+03	-0.249065E+01
1993	0.272270E+02	0.213307E+03	-0.205852E+01
1994	0.514450E+03	0.207658E+03	0.907206E+00
1995	0.741001E+03	0.493502E+03	0.406474E+00
1996	0.184733E+03	0.513307E+03	-0.102196E+01
1997	0.596248E+03	0.408555E+03	0.378030E+00
1998	0.186146E+04	0.765896E+03	0.888072E+00
1999	0.450000E+03	0.427894E+03	0.503720E-01
2000	0.191741E+04	0.618626E+03	0.113123E+01
2001	0.701711E+03	0.510573E+03	0.317989E+00
2002	0.197796E+04	0.294584E+03	0.190425E+01
2003	0.284910E+02	0.133873E+03	-0.154730E+01
2004	0.112471E+03	0.147466E+03	-0.270901E+00
2005	0.532832E+03	0.196747E+03	0.996287E+00
2006	0.247207E+04	0.138125E+04	0.582069E+00
2007	0.128636E+04	0.120231E+04	0.675663E-01
2008	N/A	0.000000E+00	N/A

Survey Index: 15 Tag: NEFSC\_F AGE = 3  
 Time = MEAN Type = NUMBER  
 Catchability = 0.199593E+00 % Variance Contribution = 5.0702  
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.572593E+04	0.404716E+04	0.346989E+00
1974	0.582002E+03	0.115710E+04	-0.687202E+00
1975	0.180023E+03	0.405140E+03	-0.811147E+00
1976	0.490439E+03	0.350702E+03	0.335365E+00
1977	0.618076E+03	0.100988E+04	-0.490979E+00
1978	0.352579E+03	0.667938E+03	-0.638921E+00
1979	0.188054E+04	0.207751E+04	-0.996133E-01
1980	0.901609E+03	0.142887E+04	-0.460461E+00
1981	0.149073E+04	0.121074E+04	0.208036E+00
1982	0.615525E+04	0.234023E+04	0.967056E+00
1983	0.783991E+04	0.564217E+04	0.328958E+00
1984	0.214293E+04	0.200473E+04	0.666625E-01
1985	0.106038E+03	0.391282E+03	-0.130563E+01
1986	0.511119E+03	0.534042E+03	-0.438729E-01
1987	0.411974E+03	0.320536E+03	0.250964E+00
1988	0.153255E+03	0.187887E+03	-0.203738E+00
1989	0.133736E+04	0.867743E+03	0.432561E+00
1990	0.304328E+04	0.563477E+04	-0.616023E+00
1991	0.148028E+04	0.116332E+04	0.240952E+00
1992	0.822570E+02	0.454494E+03	-0.170934E+01
1993	0.126947E+03	0.155245E+03	-0.201237E+00
1994	0.122811E+03	0.120079E+03	0.224940E-01
1995	0.295481E+03	0.110269E+03	0.985686E+00
1996	0.367054E+03	0.308853E+03	0.172645E+00
1997	0.167650E+04	0.264379E+03	0.184708E+01
1998	0.141882E+03	0.213644E+03	-0.409314E+00
1999	0.320526E+03	0.341369E+03	-0.629994E-01
2000	0.348098E+03	0.226525E+03	0.429627E+00
2001	0.181976E+03	0.314248E+03	-0.546309E+00
2002	0.982372E+03	0.340487E+03	0.105959E+01
2003	0.289508E+03	0.190824E+03	0.416830E+00
2004	N/A	0.865036E+02	N/A
2005	0.212880E+03	0.925396E+02	0.833092E+00
2006	0.196222E+03	0.128786E+03	0.421098E+00
2007	0.409331E+03	0.120403E+04	-0.107890E+01
2008	N/A	0.000000E+00	N/A

Survey Index: 16 Tag: NEFSC\_F AGE = 4  
 Time = MEAN Type = NUMBER  
 Catchability = 0.217045E+00 % Variance Contribution = 5.2731  
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.324846E+04	0.238165E+04	0.310386E+00
1974	0.227378E+04	0.173844E+04	0.268456E+00
1975	0.290312E+03	0.476738E+03	-0.496012E+00
1976	0.647950E+02	0.179140E+03	-0.101694E+01
1977	0.937450E+02	0.157693E+03	-0.520073E+00
1978	0.280776E+03	0.349578E+03	-0.219169E+00
1979	0.286521E+03	0.293756E+03	-0.249378E-01
1980	0.372454E+03	0.695605E+03	-0.624668E+00
1981	0.235397E+03	0.381923E+03	-0.483946E+00
1982	0.749618E+03	0.296194E+03	0.928550E+00
1983	0.642316E+03	0.588765E+03	0.870528E-01
1984	0.468152E+03	0.102671E+04	-0.785321E+00
1985	0.103166E+03	0.294549E+03	-0.104911E+01
1986	0.114769E+03	0.107382E+03	0.665265E-01
1987	0.345800E+02	0.112671E+03	-0.118119E+01
1988	0.161757E+03	0.534093E+02	0.110811E+01
1989	0.707690E+02	0.632645E+02	0.112097E+00
1990	0.189214E+03	0.196826E+03	-0.394405E-01
1991	0.358093E+03	0.654615E+03	-0.603255E+00
1992	0.326845E+03	0.252985E+03	0.256154E+00
1993	0.101213E+03	0.157176E+03	-0.440139E+00
1994	0.163710E+03	0.477016E+02	0.123313E+01
1995	0.132576E+03	0.368582E+02	0.128008E+01
1996	N/A	0.533261E+02	N/A
1997	0.311450E+03	0.766489E+02	0.140200E+01
1998	0.558340E+02	0.750642E+02	-0.295961E+00
1999	0.320530E+02	0.516626E+02	-0.477344E+00
2000	0.196566E+03	0.802597E+02	0.895731E+00
2001	0.815680E+02	0.464865E+02	0.562275E+00
2002	0.191741E+03	0.108160E+03	0.572538E+00
2003	0.263199E+03	0.184934E+03	0.352912E+00
2004	0.264230E+02	0.847089E+02	-0.116499E+01
2005	0.843250E+02	0.391759E+02	0.766616E+00
2006	0.220580E+02	0.481250E+02	-0.780126E+00
2007	N/A	0.709719E+02	N/A
2008	N/A	0.000000E+00	N/A

Survey Index: 17 Tag: NEFSC\_F AGE = 5  
 Time = MEAN Type = NUMBER  
 Catchability = 0.221817E+00 % Variance Contribution = 3.6367  
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.219164E+04	0.159441E+04	0.318149E+00
1974	0.962842E+03	0.888814E+03	0.800019E-01
1975	0.289852E+03	0.688576E+03	-0.865255E+00
1976	0.102247E+03	0.251384E+03	-0.899590E+00
1977	0.334310E+02	0.883680E+02	-0.972026E+00
1978	0.286060E+02	0.600300E+02	-0.741229E+00
1979	0.312480E+02	0.123817E+03	-0.137685E+01
1980	N/A	0.950588E+02	N/A
1981	0.108336E+03	0.148204E+03	-0.313355E+00
1982	0.301800E+03	0.676119E+02	0.149598E+01
1983	0.536510E+02	0.643317E+02	-0.181552E+00
1984	N/A	0.113331E+03	N/A
1985	N/A	0.169632E+03	N/A
1986	0.397500E+02	0.615253E+02	-0.436839E+00
1987	0.274570E+02	0.207664E+02	0.279284E+00
1988	0.151650E+02	0.144549E+02	0.479537E-01
1989	N/A	0.671745E+01	N/A
1990	N/A	0.819547E+01	N/A
1991	N/A	0.115834E+02	N/A
1992	N/A	0.280353E+02	N/A
1993	N/A	0.327589E+02	N/A
1994	0.606590E+02	0.358388E+02	0.526238E+00
1995	N/A	0.667048E+01	N/A
1996	N/A	0.751704E+01	N/A
1997	0.272270E+02	0.109211E+02	0.913512E+00
1998	N/A	0.100736E+02	N/A
1999	0.320530E+02	0.162158E+02	0.681407E+00
2000	N/A	0.877692E+01	N/A
2001	N/A	0.125494E+02	N/A
2002	N/A	0.712227E+01	N/A
2003	N/A	0.488982E+02	N/A
2004	0.550290E+02	0.871280E+02	-0.459518E+00
2005	0.164744E+03	0.314960E+02	0.165453E+01
2006	N/A	0.155687E+02	N/A
2007	0.303290E+02	0.236402E+02	0.249157E+00
2008	N/A	0.000000E+00	N/A

Survey Index: 18 Tag: NEFSC\_F AGE = 6  
 Time = MEAN Type = NUMBER  
 Catchability = 0.449687E+00 % Variance Contribution = 7.0141  
 Residual = LN(Observed) - LN(Predicted)

Year	Observed	Predicted	Residual
1973	0.130244E+04	0.388794E+04	-0.109364E+01
1974	0.698954E+03	0.163572E+04	-0.850253E+00
1975	0.146477E+03	0.126920E+04	-0.215927E+01
1976	0.714348E+03	0.101699E+04	-0.353228E+00
1977	0.928260E+02	0.418226E+03	-0.150529E+01
1978	0.886900E+02	0.881943E+02	0.560509E-02
1979	0.303290E+02	0.750748E+02	-0.906381E+00
1980	N/A	0.628571E+02	N/A
1981	0.577870E+02	0.494896E+02	0.155002E+00
1982	N/A	0.284047E+02	N/A
1983	0.371080E+02	0.650401E+02	-0.561171E+00
1984	N/A	0.722238E+02	N/A
1985	N/A	0.762831E+02	N/A
1986	N/A	0.522043E+02	N/A
1987	0.274570E+02	0.163860E+02	0.516191E+00
1988	0.567530E+02	0.699805E+01	0.209308E+01
1989	N/A	0.851138E+00	N/A
1990	N/A	0.923033E+00	N/A
1991	N/A	0.712871E+01	N/A
1992	N/A	0.344458E+01	N/A
1993	N/A	0.183205E+01	N/A
1994	0.286060E+02	0.210383E+02	0.307271E+00
1995	0.605440E+02	0.954564E+01	0.184729E+01
1996	N/A	0.142868E+02	N/A
1997	N/A	0.845354E+01	N/A
1998	0.263080E+02	0.121748E+02	0.770509E+00
1999	N/A	0.210394E+01	N/A
2000	0.263080E+02	0.420570E+01	0.183343E+01
2001	N/A	0.787470E+01	N/A
2002	N/A	0.577556E+00	N/A
2003	0.569820E+02	0.256181E+02	0.799437E+00
2004	0.284910E+02	0.699763E+02	-0.898568E+00
2005	N/A	0.281379E+02	N/A
2006	N/A	0.408876E+02	N/A
2007	N/A	0.163382E+02	N/A
2008	N/A	0.000000E+00	N/A

Retrospective Summary

Average Fishing Mortality  
Ages = 4 - 5

	1973	1974	1975	1976	1977
2000	0.7271	0.9201	0.5145	0.3962	0.6978
2001	0.7271	0.9201	0.5145	0.3962	0.6978
2002	0.7271	0.9201	0.5145	0.3962	0.6978
2003	0.7271	0.9201	0.5145	0.3962	0.6978
2004	0.7271	0.9201	0.5145	0.3962	0.6978
2005	0.7271	0.9201	0.5145	0.3962	0.6978
2006	0.7271	0.9201	0.5145	0.3962	0.6978
2007	0.7271	0.9201	0.5145	0.3962	0.6978
	1978	1979	1980	1981	1982
2000	0.9127	0.7847	1.1947	1.6628	1.3615
2001	0.9127	0.7847	1.1947	1.6628	1.3615
2002	0.9127	0.7847	1.1947	1.6628	1.3615
2003	0.9127	0.7847	1.1947	1.6628	1.3615
2004	0.9127	0.7847	1.1947	1.6628	1.3615
2005	0.9127	0.7847	1.1947	1.6628	1.3615
2006	0.9127	0.7847	1.1947	1.6628	1.3615
2007	0.9127	0.7847	1.1947	1.6628	1.3615
	1983	1984	1985	1986	1987
2000	1.3275	1.7185	1.4502	1.2835	1.7838
2001	1.3275	1.7185	1.4502	1.2835	1.7838
2002	1.3275	1.7185	1.4502	1.2835	1.7838
2003	1.3275	1.7185	1.4502	1.2835	1.7838
2004	1.3275	1.7185	1.4502	1.2835	1.7838
2005	1.3275	1.7185	1.4502	1.2835	1.7838
2006	1.3275	1.7185	1.4502	1.2835	1.7838
2007	1.3275	1.7185	1.4502	1.2835	1.7838
	1988	1989	1990	1991	1992
2000	2.0563	1.5850	2.4359	3.2171	2.3499
2001	2.0563	1.5850	2.4359	3.2171	2.3499
2002	2.0563	1.5850	2.4359	3.2171	2.3499
2003	2.0563	1.5850	2.4359	3.2171	2.3499
2004	2.0563	1.5850	2.4359	3.2171	2.3499
2005	2.0563	1.5850	2.4359	3.2171	2.3499
2006	2.0563	1.5850	2.4359	3.2171	2.3499
2007	2.0563	1.5850	2.4359	3.2171	2.3499
	1993	1994	1995	1996	1997
2000	0.9818	1.8380	1.6948	0.9421	2.2080
2001	0.9818	1.8382	1.6959	0.9442	2.2327
2002	0.9818	1.8382	1.6959	0.9443	2.2346
2003	0.9818	1.8382	1.6959	0.9443	2.2346
2004	0.9818	1.8382	1.6959	0.9443	2.2344
2005	0.9818	1.8382	1.6959	0.9443	2.2342
2006	0.9818	1.8382	1.6959	0.9443	2.2342
2007	0.9818	1.8382	1.6959	0.9443	2.2342



	1998	1999	2000	2001	2002
2000	1.0859	1.3978	0.7097		
2001	1.1416	1.6886	1.3175	1.6830	
2002	1.1459	1.7155	1.4102	2.4534	1.1794
2003	1.1460	1.7161	1.4126	2.4848	1.2591
2004	1.1454	1.7122	1.3983	2.3144	0.9056
2005	1.1451	1.7103	1.3916	2.2431	0.8000
2006	1.1451	1.7101	1.3909	2.2360	0.7904
2007	1.1450	1.7099	1.3900	2.2271	0.7786

	2003	2004	2005	2006	2007
2000					
2001					
2002					
2003	1.2274				
2004	0.5366	1.5025			
2005	0.4238	0.8730	1.0341		
2006	0.4147	0.8375	0.9324	0.8054	
2007	0.4037	0.7969	0.8310	0.6269	0.4129

Spawning Stock Biomass

	1973	1974	1975	1976	1977
2000	28815.	10926.	5272.	4991.	4203.
2001	28815.	10926.	5272.	4991.	4203.
2002	28815.	10926.	5272.	4991.	4203.
2003	28815.	10926.	5272.	4991.	4203.
2004	28815.	10926.	5272.	4991.	4203.
2005	28815.	10926.	5272.	4991.	4203.
2006	28815.	10926.	5272.	4991.	4203.
2007	28815.	10926.	5272.	4991.	4203.

	1978	1979	1980	1981	1982
2000	6267.	8307.	7391.	7092.	16162.
2001	6267.	8307.	7391.	7092.	16162.
2002	6267.	8307.	7391.	7092.	16162.
2003	6267.	8307.	7391.	7092.	16162.
2004	6267.	8307.	7391.	7092.	16162.
2005	6267.	8307.	7391.	7092.	16162.
2006	6267.	8307.	7391.	7092.	16162.
2007	6267.	8307.	7391.	7092.	16162.

	1983	1984	1985	1986	1987
2000	16111.	5866.	3007.	2480.	1246.
2001	16111.	5866.	3007.	2480.	1246.
2002	16111.	5866.	3007.	2480.	1246.
2003	16111.	5866.	3007.	2480.	1246.
2004	16111.	5866.	3007.	2480.	1246.
2005	16111.	5866.	3007.	2480.	1246.
2006	16111.	5866.	3007.	2480.	1246.
2007	16111.	5866.	3007.	2480.	1246.

	1988	1989	1990	1991	1992

2000	1814.	14736.	12968.	3758.	1718.
2001	1814.	14736.	12968.	3758.	1718.
2002	1814.	14736.	12968.	3758.	1718.
2003	1814.	14736.	12968.	3758.	1718.
2004	1814.	14736.	12968.	3758.	1718.
2005	1814.	14736.	12968.	3758.	1718.
2006	1814.	14736.	12968.	3758.	1718.
2007	1814.	14736.	12968.	3758.	1718.

1993 1994 1995 1996 1997

2000	1000.	540.	632.	1277.	1080.
2001	1000.	540.	631.	1271.	1059.
2002	1000.	540.	631.	1270.	1058.
2003	1000.	540.	631.	1270.	1058.
2004	1000.	540.	631.	1270.	1058.
2005	1000.	540.	631.	1270.	1058.
2006	1000.	540.	631.	1270.	1058.
2007	1000.	540.	631.	1270.	1058.

1998 1999 2000 2001 2002

2000	1376.	1847.	2815.		
2001	1274.	1421.	1643.	1554.	
2002	1267.	1384.	1391.	1128.	1183.
2003	1267.	1383.	1384.	1150.	1062.
2004	1268.	1389.	1423.	1335.	1266.
2005	1268.	1391.	1442.	1423.	1446.
2006	1268.	1391.	1444.	1432.	1464.
2007	1268.	1392.	1447.	1444.	1488.

2003 2004 2005 2006 2007

2000					
2001					
2002					
2003	890.				
2004	1015.	695.			
2005	1237.	860.	744.		
2006	1265.	822.	603.	1890.	
2007	1299.	870.	619.	1509.	3508.

Total Population Numbers

1973 1974 1975 1976 1977

2000	131067.	80766.	53939.	40348.	73150.
2001	131067.	80766.	53939.	40348.	73150.
2002	131067.	80766.	53939.	40348.	73150.
2003	131067.	80766.	53939.	40348.	73150.
2004	131067.	80766.	53939.	40348.	73150.
2005	131067.	80766.	53939.	40348.	73150.
2006	131067.	80766.	53939.	40348.	73150.
2007	131067.	80766.	53939.	40348.	73150.

1978 1979 1980 1981 1982

2000	97420.	86614.	87453.	187683.	199647.
2001	97420.	86614.	87453.	187683.	199647.
2002	97420.	86614.	87453.	187683.	199647.

2003	97420.	86614.	87453.	187683.	199647.
2004	97420.	86614.	87453.	187683.	199647.
2005	97420.	86614.	87453.	187683.	199647.
2006	97420.	86614.	87453.	187683.	199647.
2007	97420.	86614.	87453.	187683.	199647.

1983 1984 1985 1986 1987

2000	133026.	66784.	43711.	28641.	24888.
2001	133026.	66784.	43711.	28641.	24888.
2002	133026.	66784.	43711.	28641.	24888.
2003	133026.	66784.	43711.	28641.	24888.
2004	133026.	66784.	43711.	28641.	24888.
2005	133026.	66784.	43711.	28641.	24888.
2006	133026.	66784.	43711.	28641.	24888.
2007	133026.	66784.	43711.	28641.	24888.

1988 1989 1990 1991 1992

2000	133952.	118413.	83587.	30939.	12806.
2001	133952.	118413.	83587.	30939.	12806.
2002	133952.	118413.	83587.	30939.	12806.
2003	133952.	118413.	83587.	30939.	12806.
2004	133952.	118413.	83587.	30939.	12806.
2005	133952.	118413.	83587.	30939.	12806.
2006	133952.	118413.	83587.	30939.	12806.
2007	133952.	118413.	83587.	30939.	12806.

1993 1994 1995 1996 1997

2000	6433.	8151.	8847.	9992.	14051.
2001	6432.	8144.	8808.	9873.	13311.
2002	6432.	8144.	8805.	9864.	13257.
2003	6432.	8144.	8805.	9864.	13256.
2004	6432.	8144.	8806.	9865.	13264.
2005	6432.	8144.	8806.	9866.	13267.
2006	6432.	8144.	8806.	9866.	13268.
2007	6432.	8144.	8806.	9866.	13268.

1998 1999 2000 2001 2002

2000	14049.	18983.	14098.	22776.	
2001	12046.	13568.	10372.	10169.	18743.
2002	11864.	11970.	9724.	9777.	7106.
2003	11859.	11928.	9958.	8581.	5668.
2004	11886.	12178.	10862.	8618.	5702.
2005	11898.	12298.	11300.	9252.	6206.
2006	11899.	12311.	11347.	9319.	6290.
2007	11901.	12327.	11404.	9403.	6396.

2003 2004 2005 2006 2007

2000					
2001					
2002	16338.				
2003	7468.	16363.			
2004	5466.	4905.	13288.		
2005	5466.	5607.	22375.	28303.	
2006	4975.	5035.	17447.	23839.	29200.
2007	5158.	4852.	13491.	19728.	16446.

2008

2000  
 2001  
 2002  
 2003  
 2004  
 2005  
 2006  
 2007        22299.

Age 1 Population

	1973	1974	1975	1976	1977
2000	42491.	10362.	31479.	14339.	49917.
2001	42491.	10362.	31479.	14339.	49917.
2002	42491.	10362.	31479.	14339.	49917.
2003	42491.	10362.	31479.	14339.	49917.
2004	42491.	10362.	31479.	14339.	49917.
2005	42491.	10362.	31479.	14339.	49917.
2006	42491.	10362.	31479.	14339.	49917.
2007	42491.	10362.	31479.	14339.	49917.
	1978	1979	1980	1981	1982
2000	53116.	30998.	43355.	136011.	62906.
2001	53116.	30998.	43355.	136011.	62906.
2002	53116.	30998.	43355.	136011.	62906.
2003	53116.	30998.	43355.	136011.	62906.
2004	53116.	30998.	43355.	136011.	62906.
2005	53116.	30998.	43355.	136011.	62906.
2006	53116.	30998.	43355.	136011.	62906.
2007	53116.	30998.	43355.	136011.	62906.
	1983	1984	1985	1986	1987
2000	16407.	18836.	20560.	7067.	14717.
2001	16407.	18836.	20560.	7067.	14717.
2002	16407.	18836.	20560.	7067.	14717.
2003	16407.	18836.	20560.	7067.	14717.
2004	16407.	18836.	20560.	7067.	14717.
2005	16407.	18836.	20560.	7067.	14717.
2006	16407.	18836.	20560.	7067.	14717.
2007	16407.	18836.	20560.	7067.	14717.
	1988	1989	1990	1991	1992
2000	121166.	17049.	8019.	4092.	2476.
2001	121166.	17049.	8019.	4092.	2476.
2002	121166.	17049.	8019.	4092.	2476.
2003	121166.	17049.	8019.	4092.	2476.
2004	121166.	17049.	8019.	4092.	2476.
2005	121166.	17049.	8019.	4092.	2476.
2006	121166.	17049.	8019.	4092.	2476.
2007	121166.	17049.	8019.	4092.	2476.

	1993	1994	1995	1996	1997
2000	2224.	4440.	4323.	3557.	7584.
2001	2223.	4434.	4290.	3470.	6941.
2002	2223.	4434.	4287.	3464.	6895.
2003	2223.	4434.	4287.	3463.	6894.
2004	2223.	4434.	4288.	3464.	6900.
2005	2223.	4434.	4288.	3465.	6904.
2006	2223.	4434.	4288.	3465.	6904.
2007	2223.	4434.	4288.	3465.	6904.

	1998	1999	2000	2001	2002
2000	5130.	10273.	1451.	13637.	
2001	3733.	6494.	2144.	4038.	12849.
2002	3595.	5045.	2804.	4177.	1527.
2003	3592.	5007.	3073.	2790.	1067.
2004	3612.	5235.	3772.	2086.	1078.
2005	3621.	5345.	4112.	2362.	1065.
2006	3622.	5357.	4147.	2391.	1095.
2007	3624.	5372.	4192.	2428.	1133.

	2003	2004	2005	2006	2007
2000					
2001					
2002	11970.				
2003	4253.	11326.			
2004	2211.	1479.	10405.		
2005	1791.	2172.	19115.	10726.	
2006	1230.	2001.	14667.	10284.	10504.
2007	1326.	1666.	10877.	9408.	1170.

	2008
2000	
2001	
2002	
2003	
2004	
2005	
2006	
2007	9744.

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

13	NEFSC_F	1
14	NEFSC_F	2
15	NEFSC_F	3
16	NEFSC_F	4
17	NEFSC_F	5
18	NEFSC_F	6

Plus Group Diagnostic Report

Calculation Method Selected = Backward

Year	Population Backward	Population Forward	F Forward	F Backward	Ratio
1973	13264.	13264.	0.727051	0.727051	1.000000
1974	6047.	9613.	0.479862	0.920147	1.917523
1975	3950.	7044.	0.256792	0.514455	2.003390
1976	3002.	6587.	0.162134	0.396190	2.443590
1977	1409.	5415.	0.141485	0.697821	4.932119
1978	325.	4094.	0.049398	0.912689	18.476409
1979	262.	3338.	0.044233	0.784670	17.739643
1980	259.	2942.	0.064595	1.194737	18.495734
1981	243.	2455.	0.085683	1.662829	19.406822
1982	125.	2074.	0.046794	1.361505	29.095421
1983	282.	1747.	0.128989	1.327487	10.291440
1984	361.	1380.	0.248175	1.718460	6.924374
1985	346.	1050.	0.297308	1.450164	4.877644
1986	223.	939.	0.191885	1.283485	6.688813
1987	84.	755.	0.099635	1.783814	17.903536
1988	39.	589.	0.061735	2.056284	33.308392
1989	4.	471.	0.007057	1.585008	224.616151
1990	6.	394.	0.014114	2.435921	172.592017
1991	56.	325.	0.189328	3.217134	16.992423
1992	21.	226.	0.091669	2.349867	25.634148
1993	7.	196.	0.022717	0.981795	43.217715
1994	110.	234.	0.513086	1.837998	3.582242
1995	47.	164.	0.275427	1.694802	6.153360
1996	53.	112.	0.347251	0.942136	2.713131
1997	50.	83.	0.799587	2.207958	2.761375
1998	51.	42.	1.543348	1.085870	0.703581
1999	11.	31.	0.333578	1.397762	4.190211
2000	28.	54.	0.304279	0.709683	2.332340
2001	59.	80.	N/A	N/A	