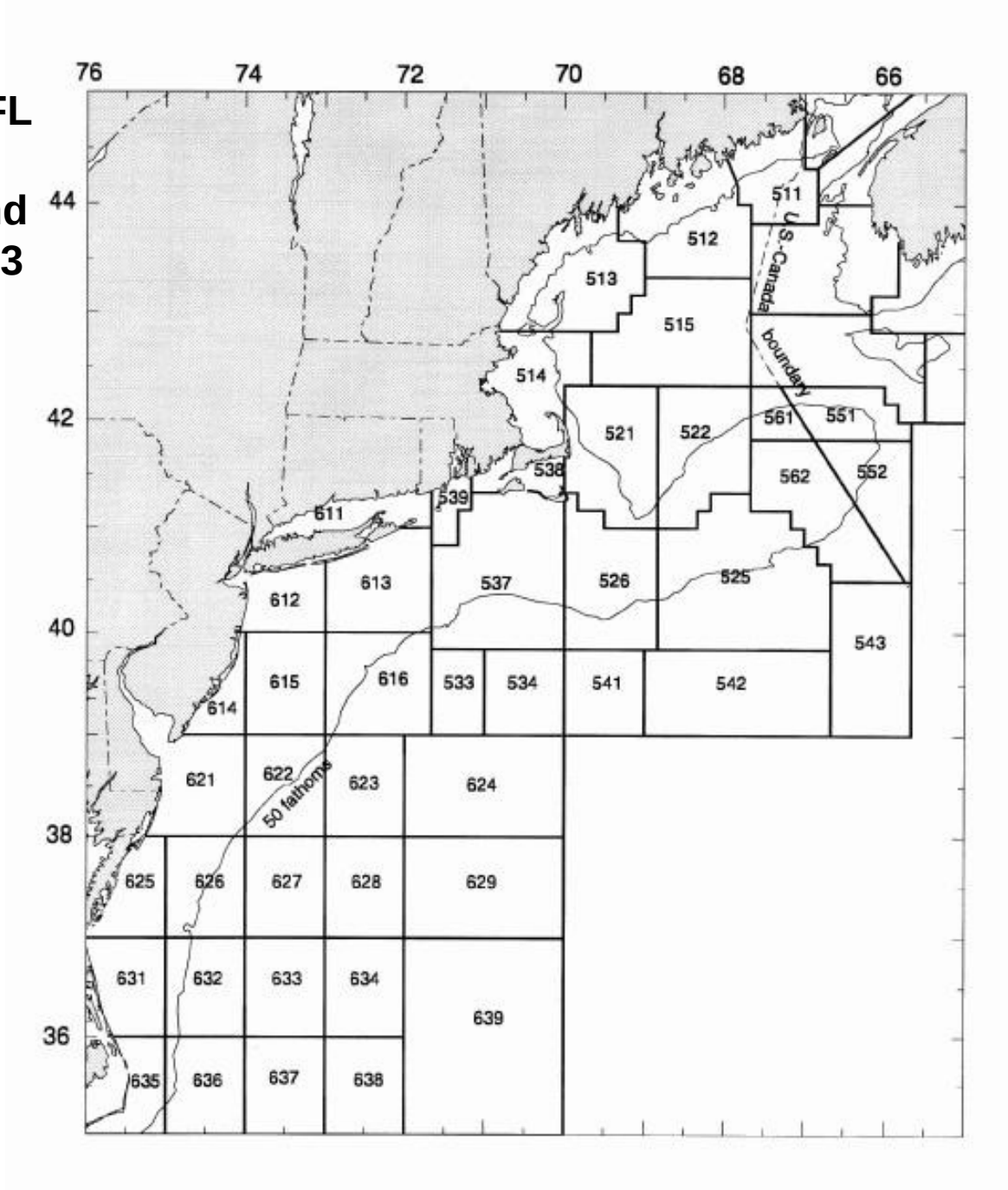
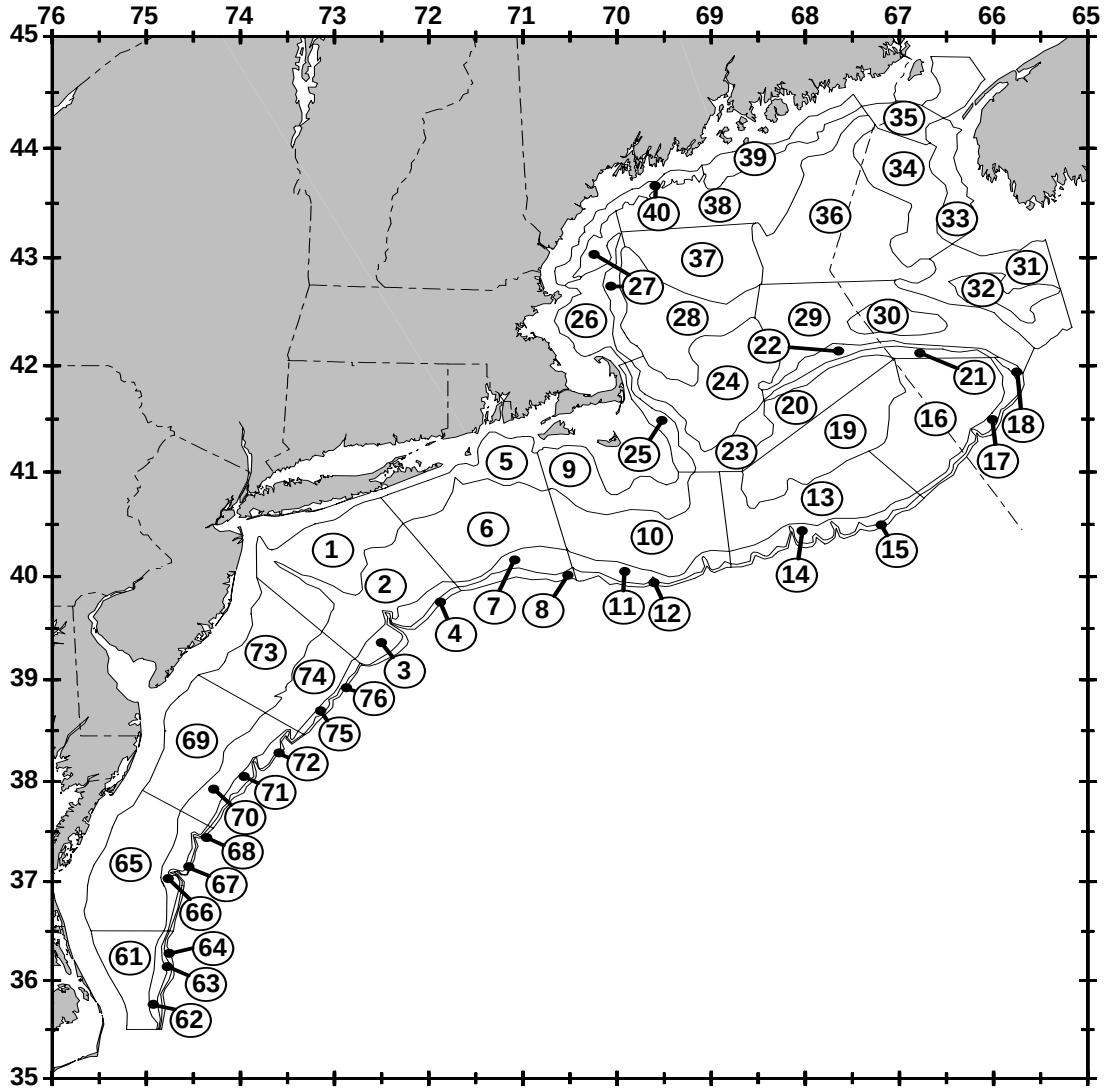
J: SNE/MA WFL

- Use 2005 GARM2 ADAPT VPA; maybe forward SCAA?
- Update catch and indices through 2006/2007
- Update status through 2007, F and biomass

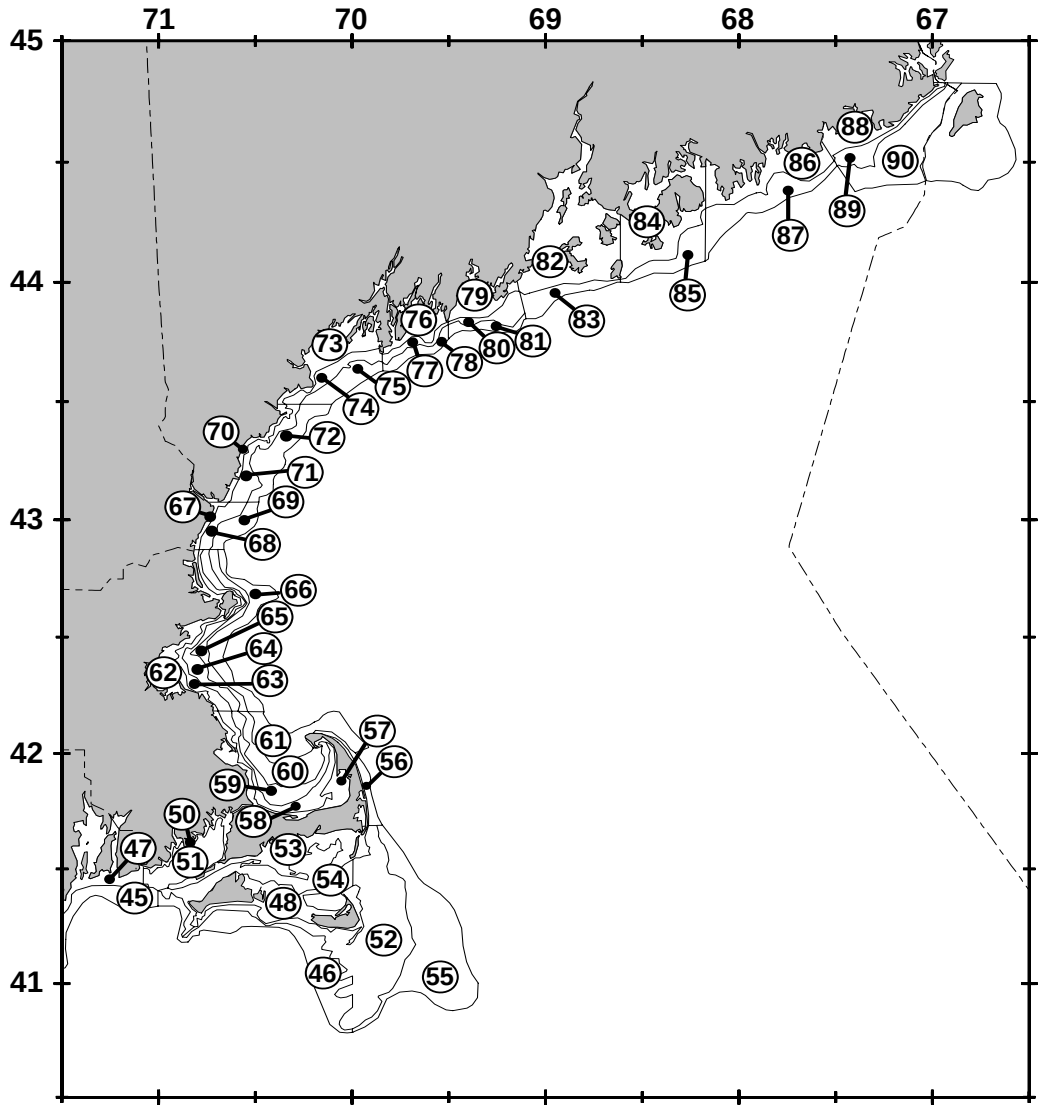
SNE/MA WFL

521, 526, and 53, 61, 62, 63

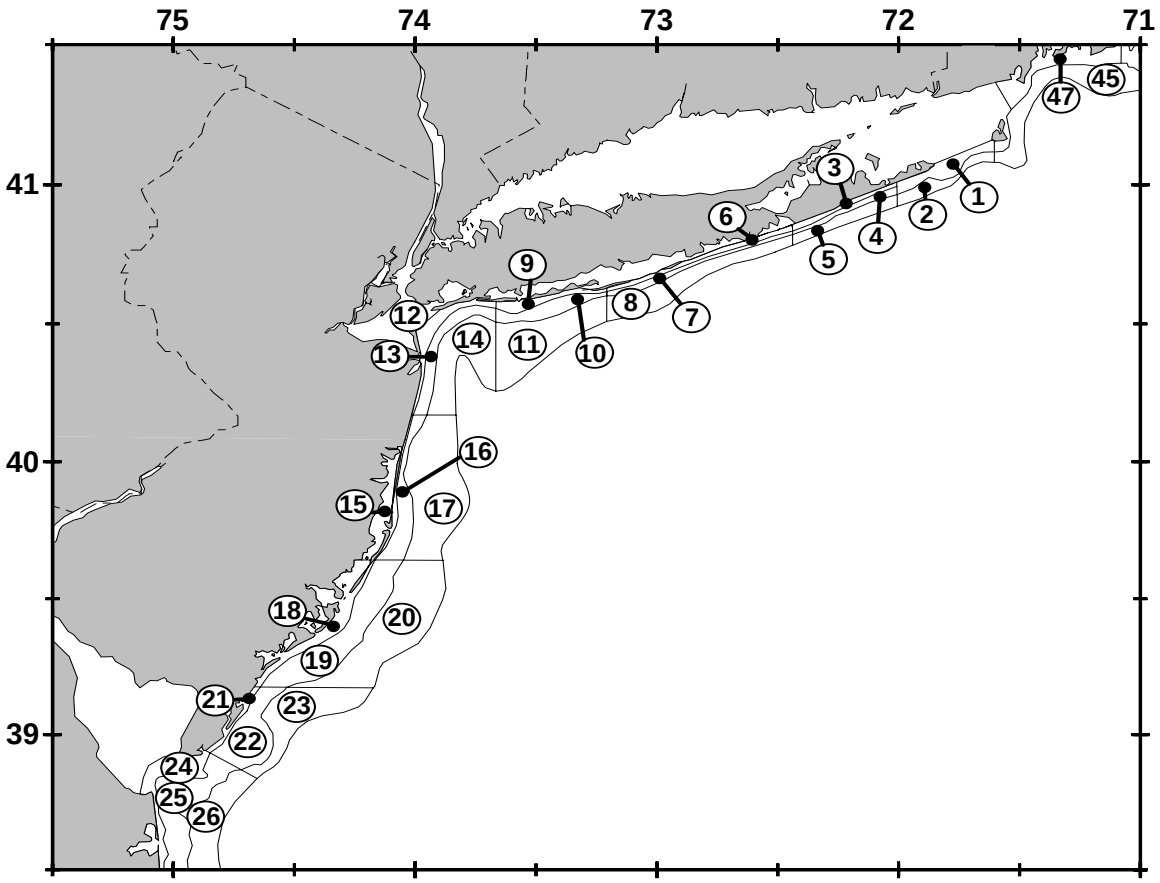




Strata sampled on NEFSC offshore bottom trawl surveys.
Depths range from 27 to > 200 meters.



Strata sampled on NEFSC inshore bottom trawl surveys from Eastport, ME to Buzzards Bay, MA. Depths range from 0-54 meters.



Strata sampled on NEFSC inshore bottom trawl surveys from Buzzards Bay, MA to Delaware Bay, DE. Depths range from 0-27 meters.

SNE/MA Winter flounder: GARM 3

Fishery dependent

- Commercial Landings
- Commercial Discards
- Recreational Landings
- Recreational Discards

Fishery Independent

- NEFSC winter, spring, and fall
- MADMF spring
- RIDMF spring
- CTDEP spring
- NJDFW ocean and river
- Recruits: MA, RI, CT, NY, DE

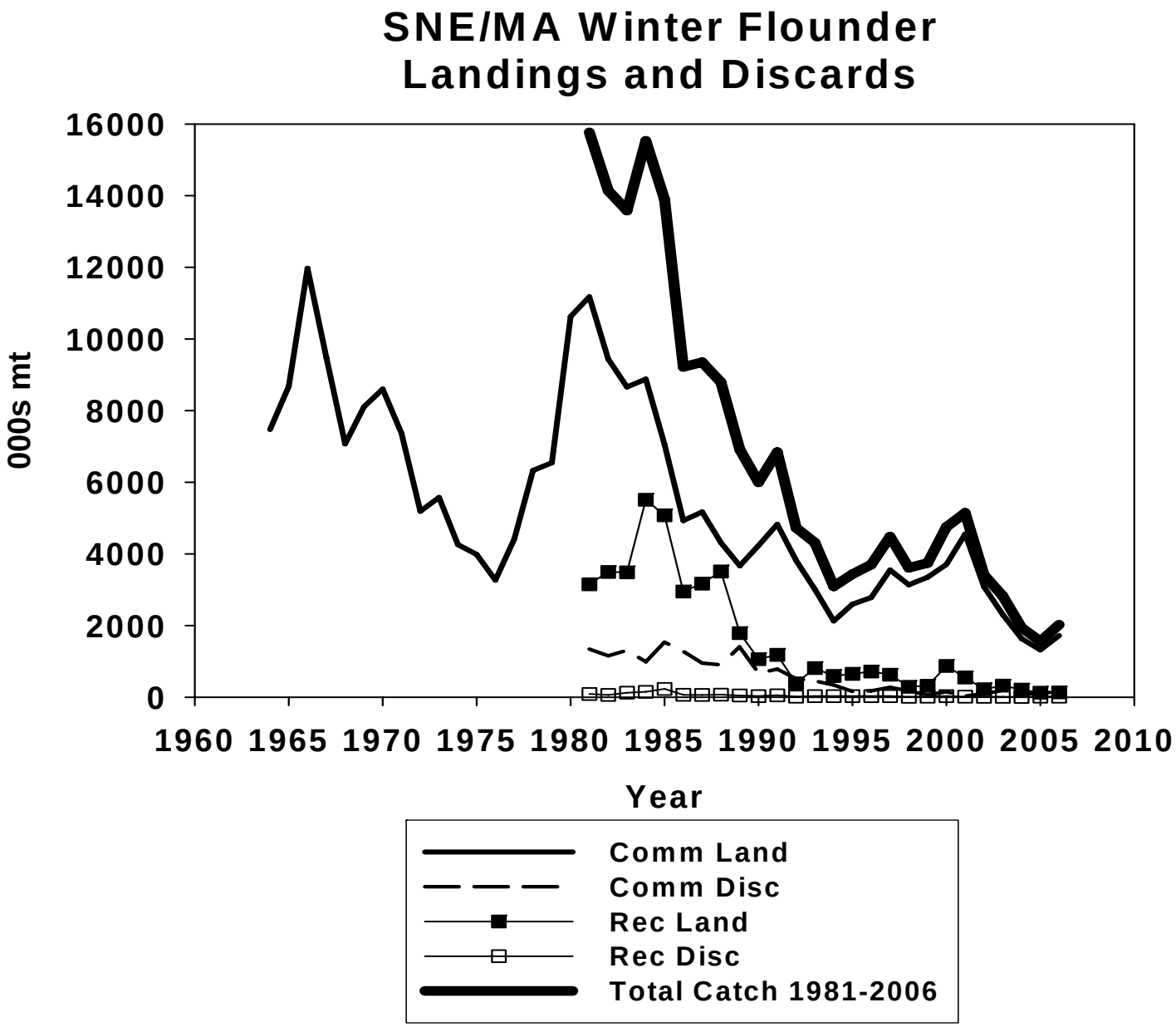


Figure J1. Commercial landings (1964-2006), commercial discards (1981-2006) recreational landings (1981-2006), recreational discards (1981-2006) and total fishery catch (1981-2006) for the SNE/MA winter flounder stock complex.

Research Surveys

- NEFSC: Spring 1968-2007, Fall 1963-2007, Winter 1992-2007 (end)
- MADMF: Spring 1978-2007
- RIDFW: Spring 1979-2006, Fall 1979-2006
- CTDEP: Spring 1984-2007
- NJDFW: Ocean 1989-2007, Rivers 1995-2005
- NYDEC Peconic Bay: 1985-2004 (end)
- DEDFW YOY: 1986-2004
- MADMF YOY: 1975-2005

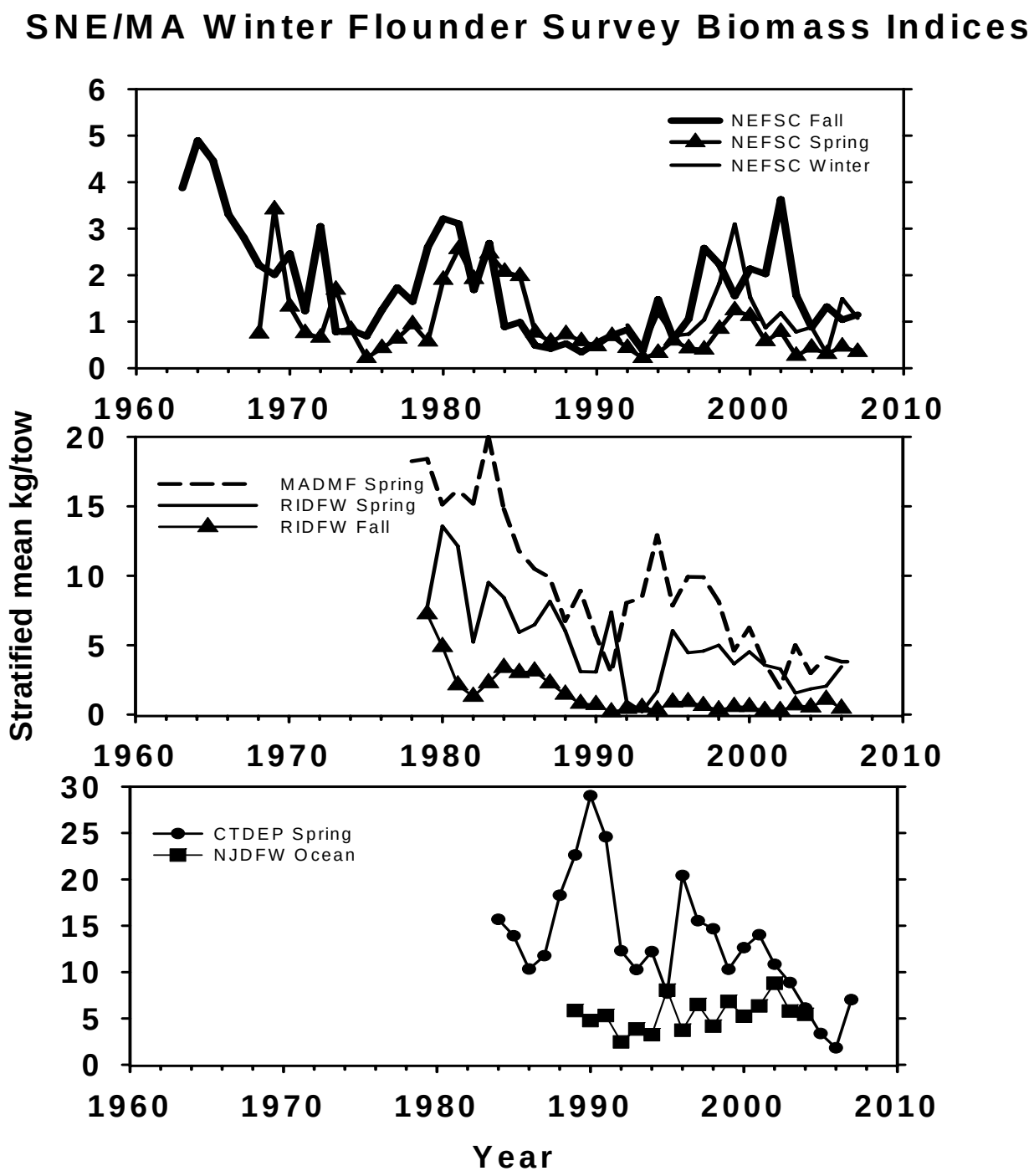


Figure J2. Trends in research survey biomass indices for SNE/MA winter flounder.

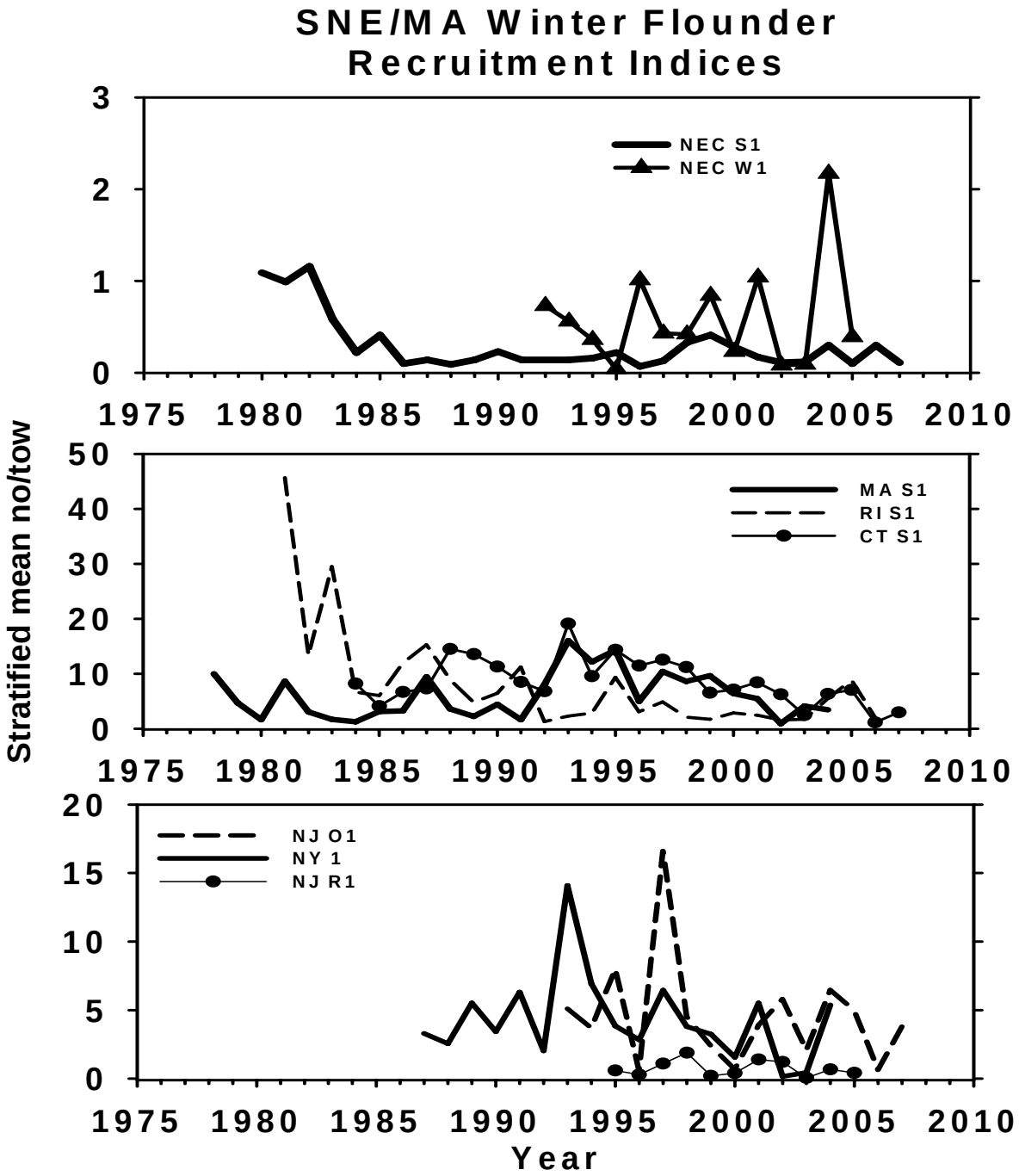


Figure J3. Trends in research survey recruitment indices for SNE/MA winter flounder. Includes spring survey age-1 indices and fall YOY indices advanced one year

2005 GARM2 VPA: ADAPT in NFT VPA v2.31

- Comm. And Rec. Catch 1981-2004, 1-7+
- M = 0.2 (assume max age ~ 15 years)
- Same as SAW 36 suite of indices: based on inter-correlation, post-hoc correlation with VPA N, partial variance, and residuals
- All Indices equal weight
- Simple Update of SAW 36 final run

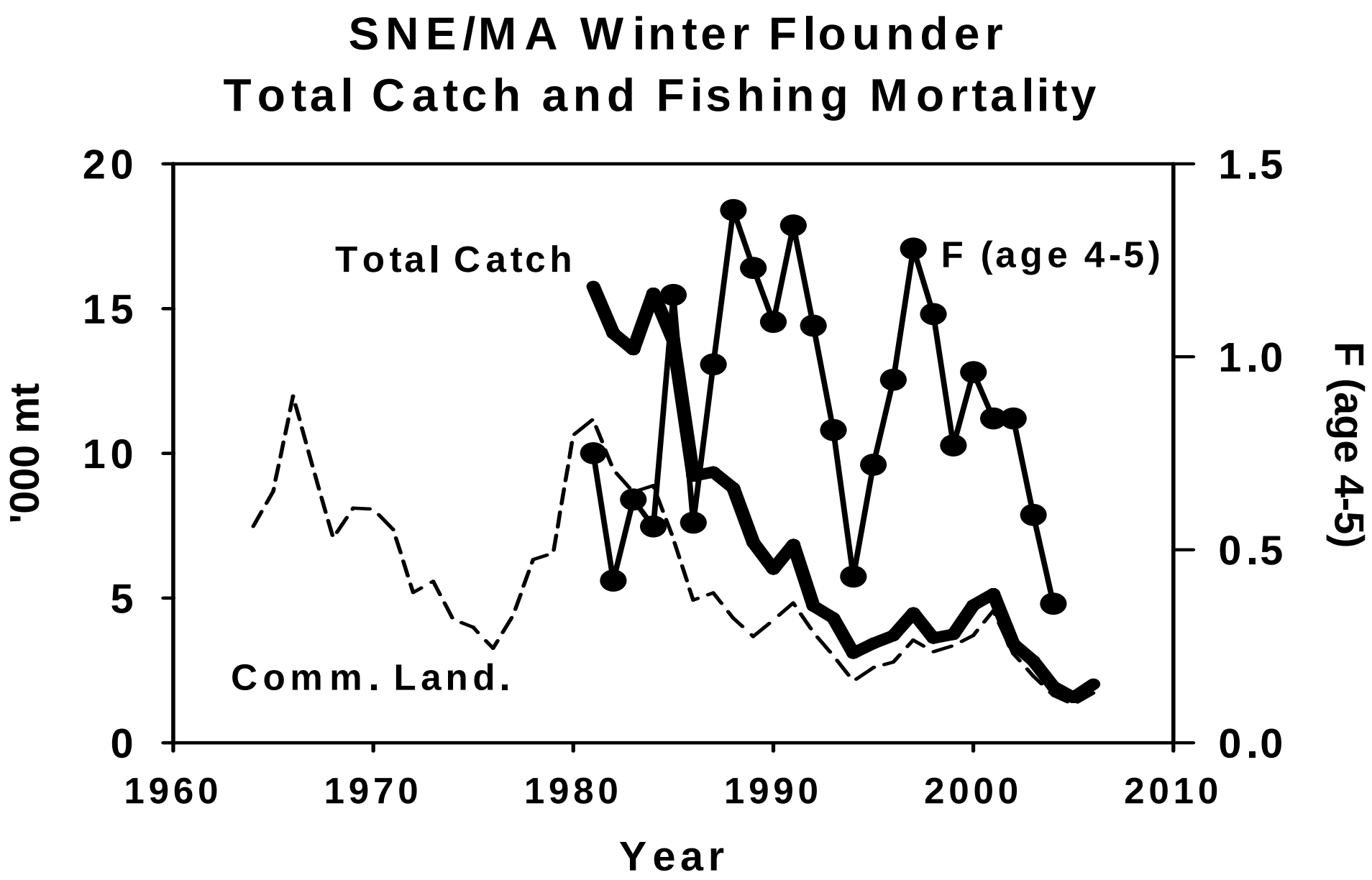
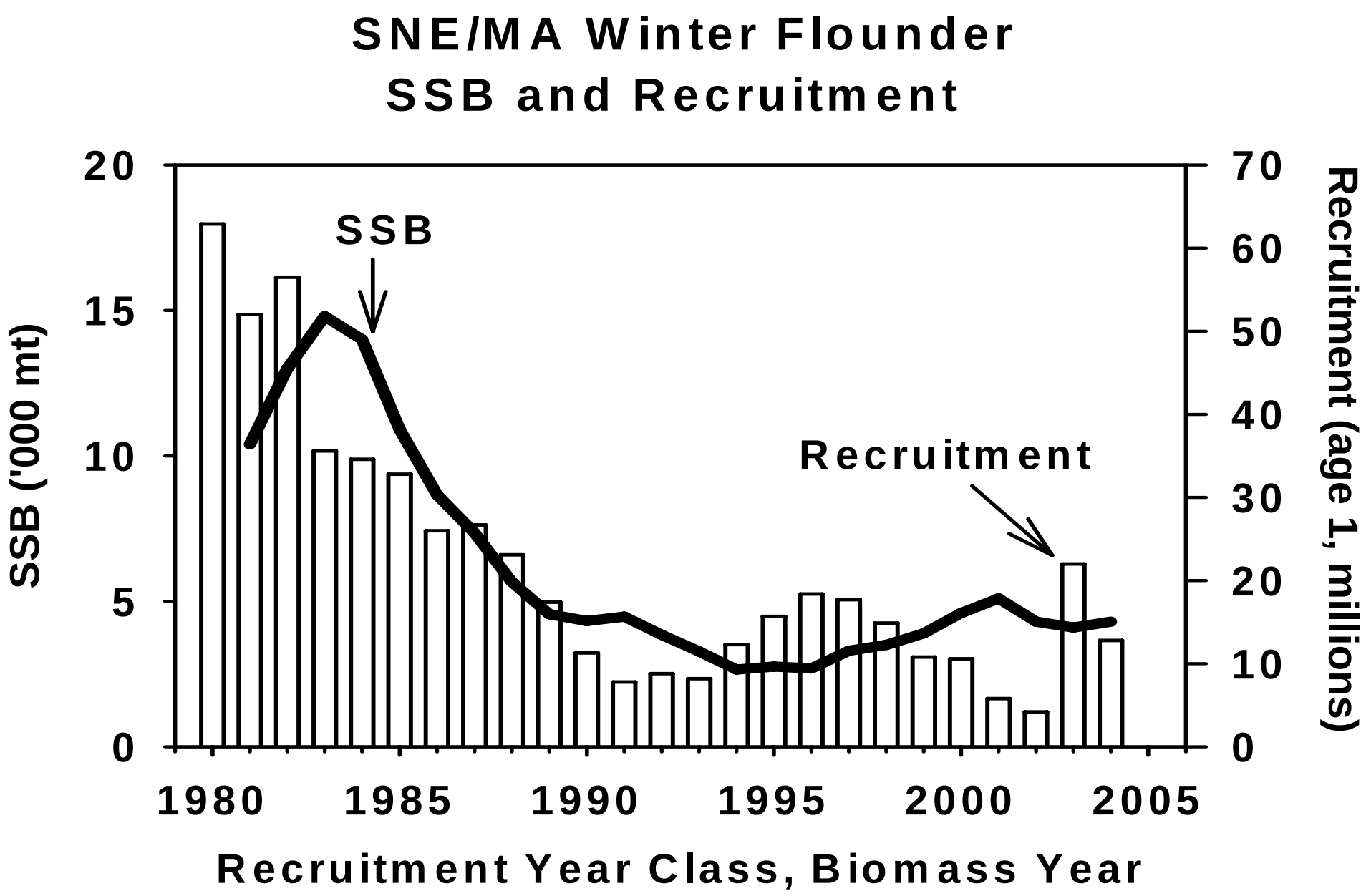


Figure J4. Total catch (landings and discards, '000 mt), commercial landings ('000 mt), and fishing mortality rate (2005 GARM2 VPA F, ages 4-5, unweighted) for SNE/MA winter flounder.



Spawning stock biomass (SSB, ages 3-7+, '000 mt) and recruitment (millions of fish at age-1) for SNE/MA winter flounder.

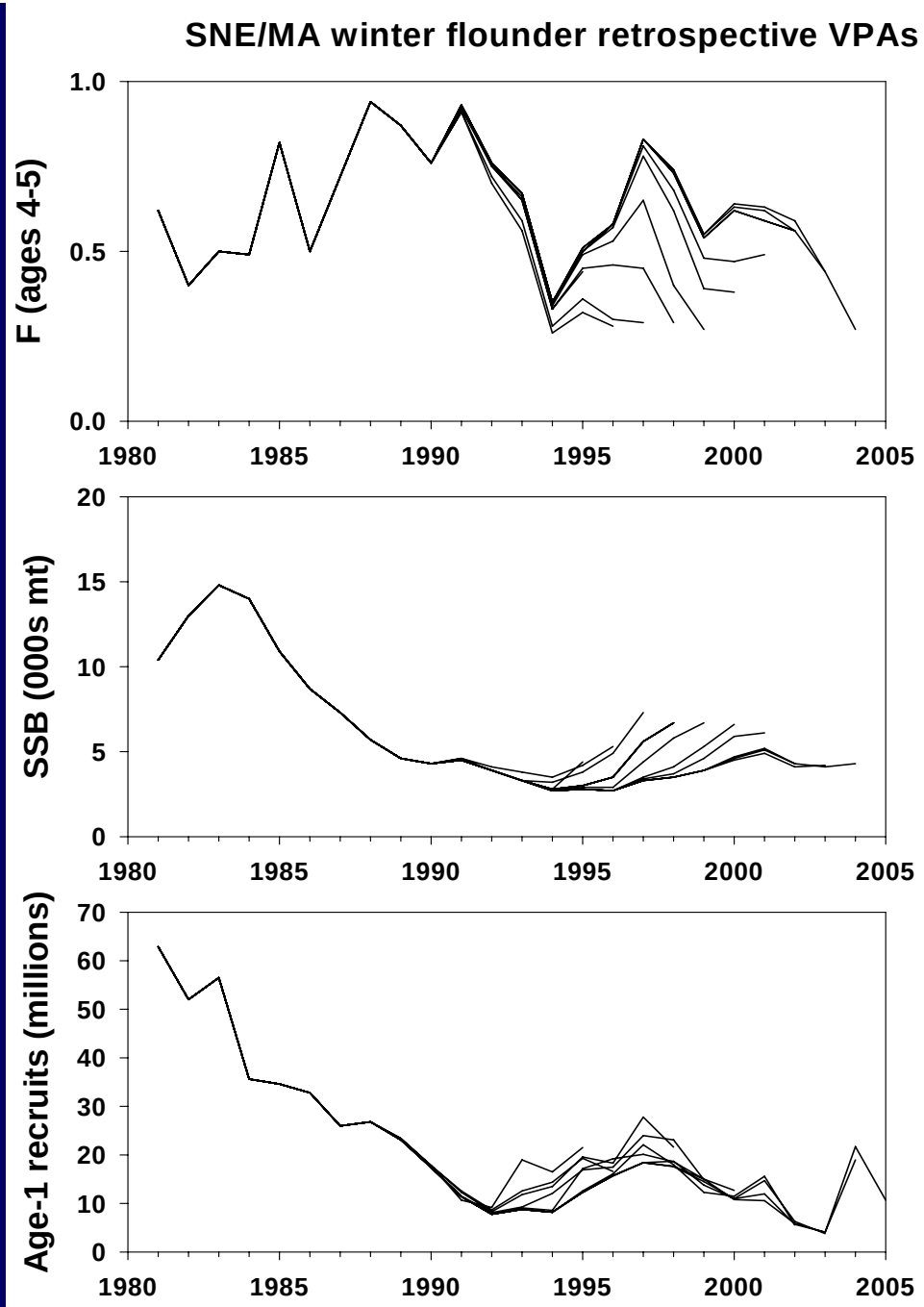


Figure J6. Retrospective VPAs for SNE/MA winter flounder.

Assessment Results: 2005

- Stock is overfished and overfishing is occurring
- F2004 = 0.38, ~19% above FMSY = 0.32
- SSB2004 = 3,938 mt, ~13% of BMSY = 30,100 mt

- Recent recruitment very poor
- Exception: 2003 year class is best since 1989

- Severe retrospective underestimation of F during 1995-2001
- Retrospective pattern in F reduced for 2002-2003

Biological Reference Points

- NEFSC BRPWG 2002: YPR and S-R models
  - Based on SARC 28 assessment results
- B-H S-R model w/recruitment prior
- MSY = 10, 600 mt
- FMSY = 0.32
- BMSY = 30,100 mt
- Retained by SAW 36, GARM1, GARM2

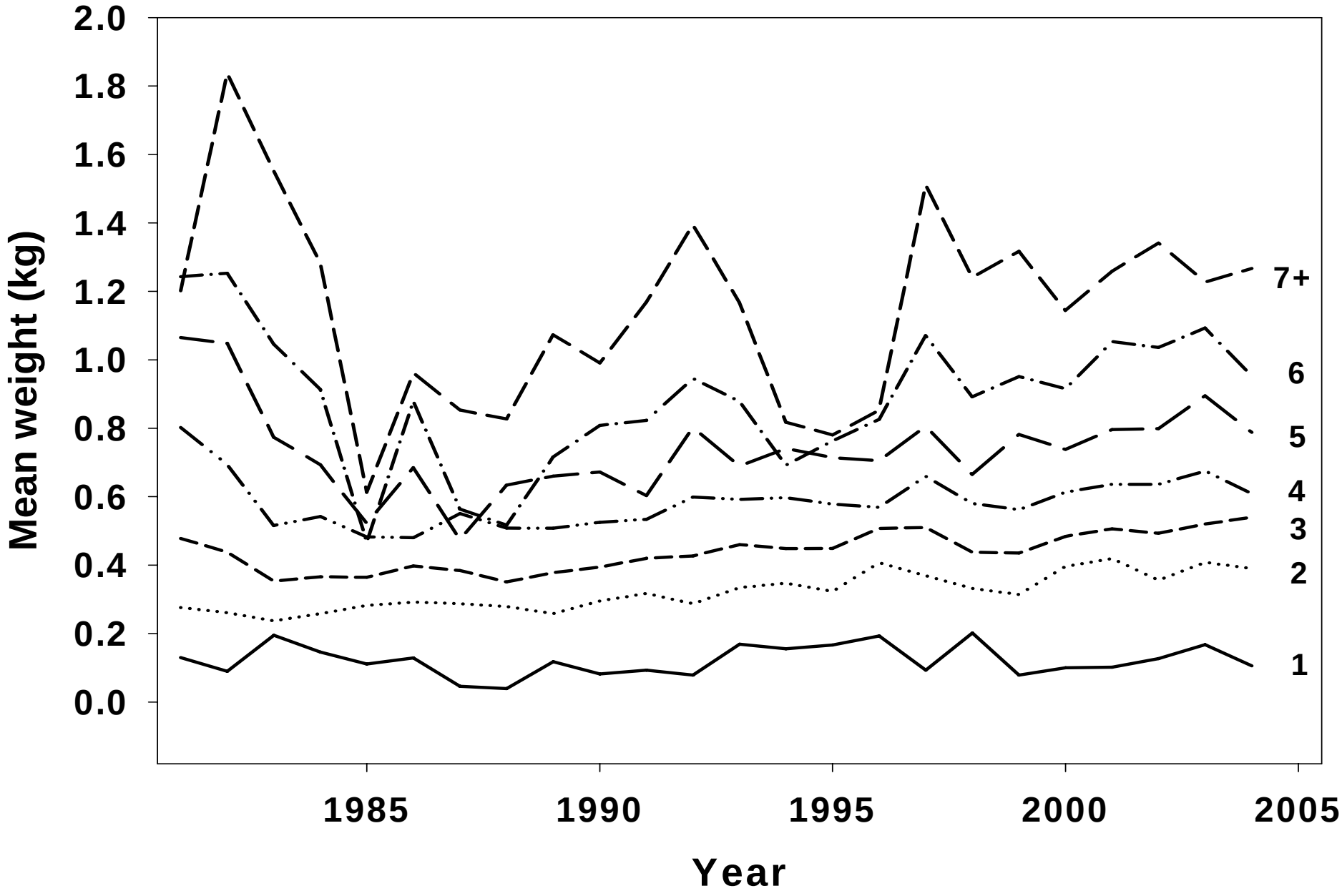


Figure 3. Trends in mean weight at age in the total catch of SNE/MA winter flounder.

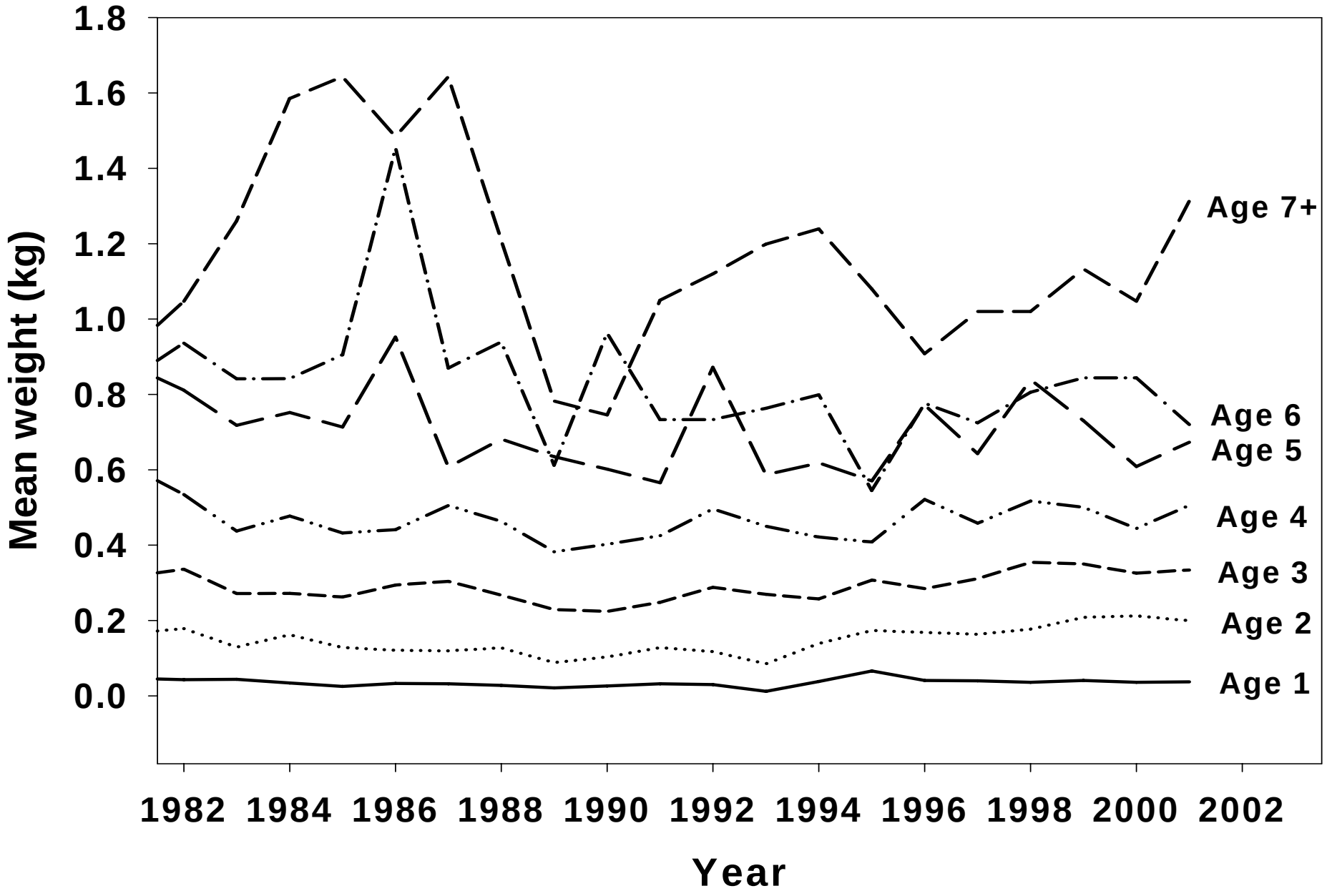


Figure . Trends in mean weight at age in the NEFSC Spring survey catch of SNE/MA winter flounder.

2008 GARM3 VPA: ADAPT in NFT VPA v2.77

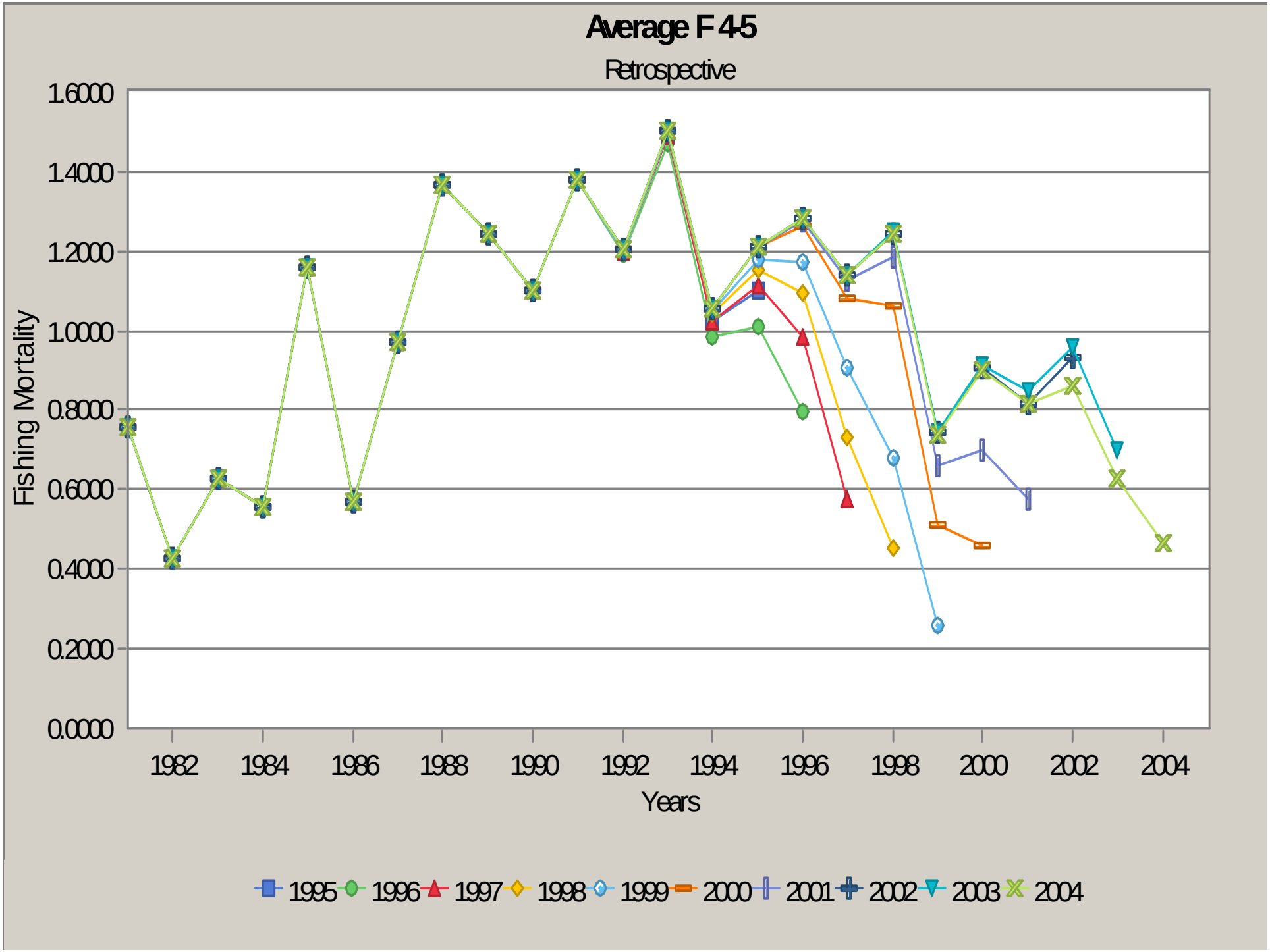
- Comm. And Rec. Catch 1981-2004, 1-7+ (2005 and 2006 by April)

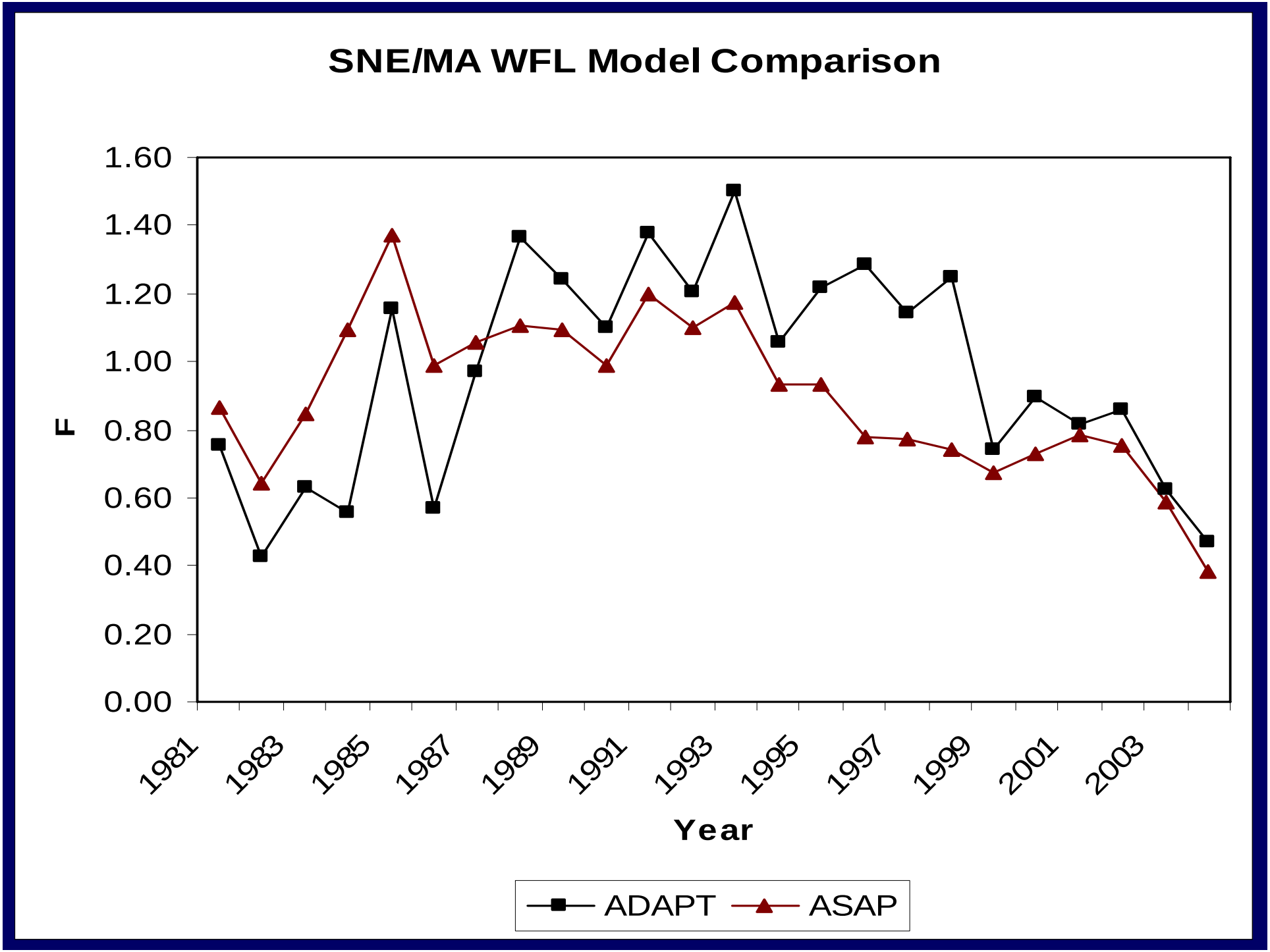
- M = 0.2 (assume max age ~ 15-20 years)

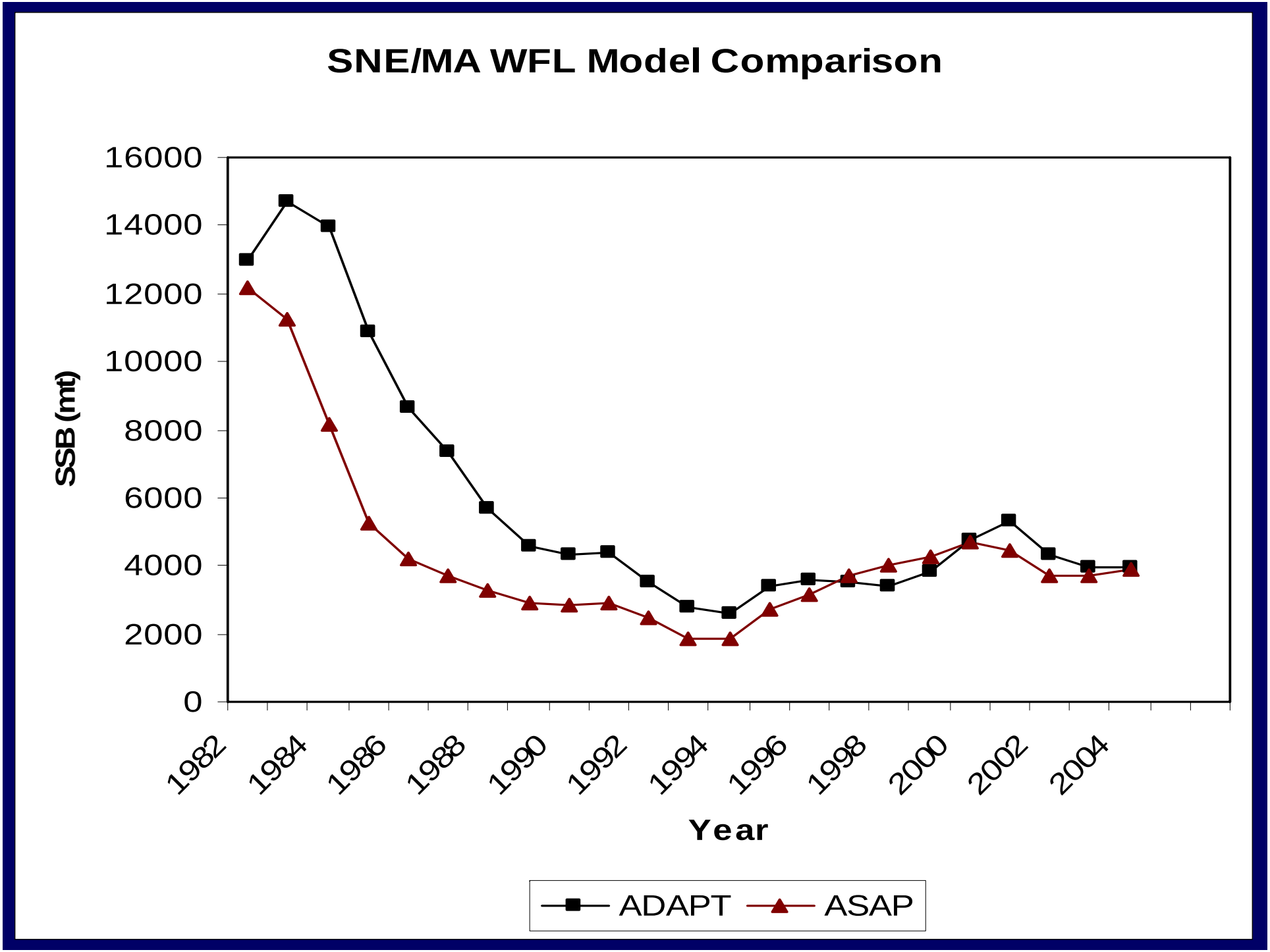
- Revised commercial landings: Area-Allocated Data
- Revised recreational catch: October 2005 revisions
- Revised commercial discards: NBR D2 method
- Revised MADMF indices: new stratum areas

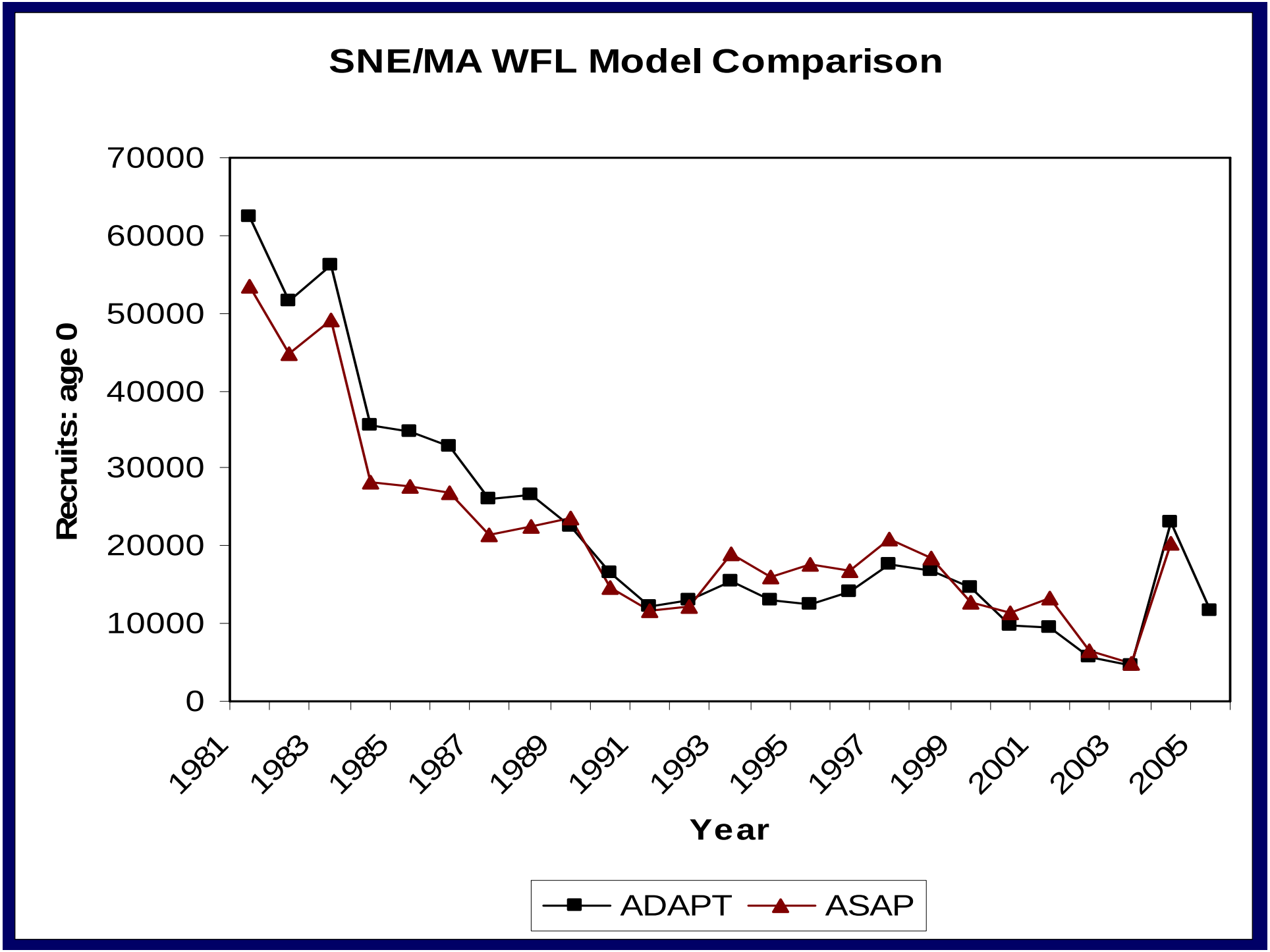
- Same as SAW 36/GARM2 suite of indices: based on inter-correlation, post-hoc correlation with VPA N, partial variance, and residuals; all equal weight

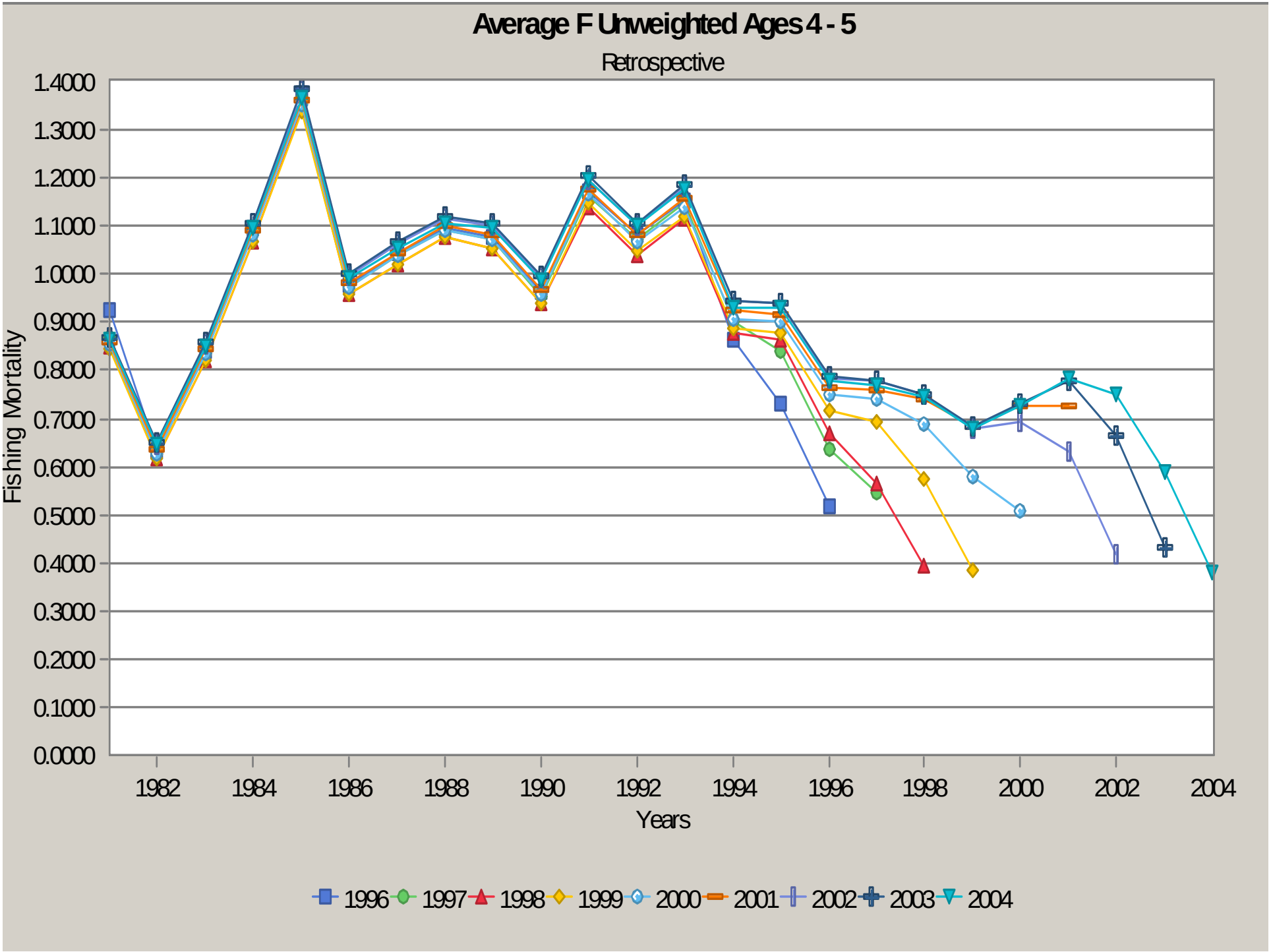
- Import to ASAP with same fishery and survey input data

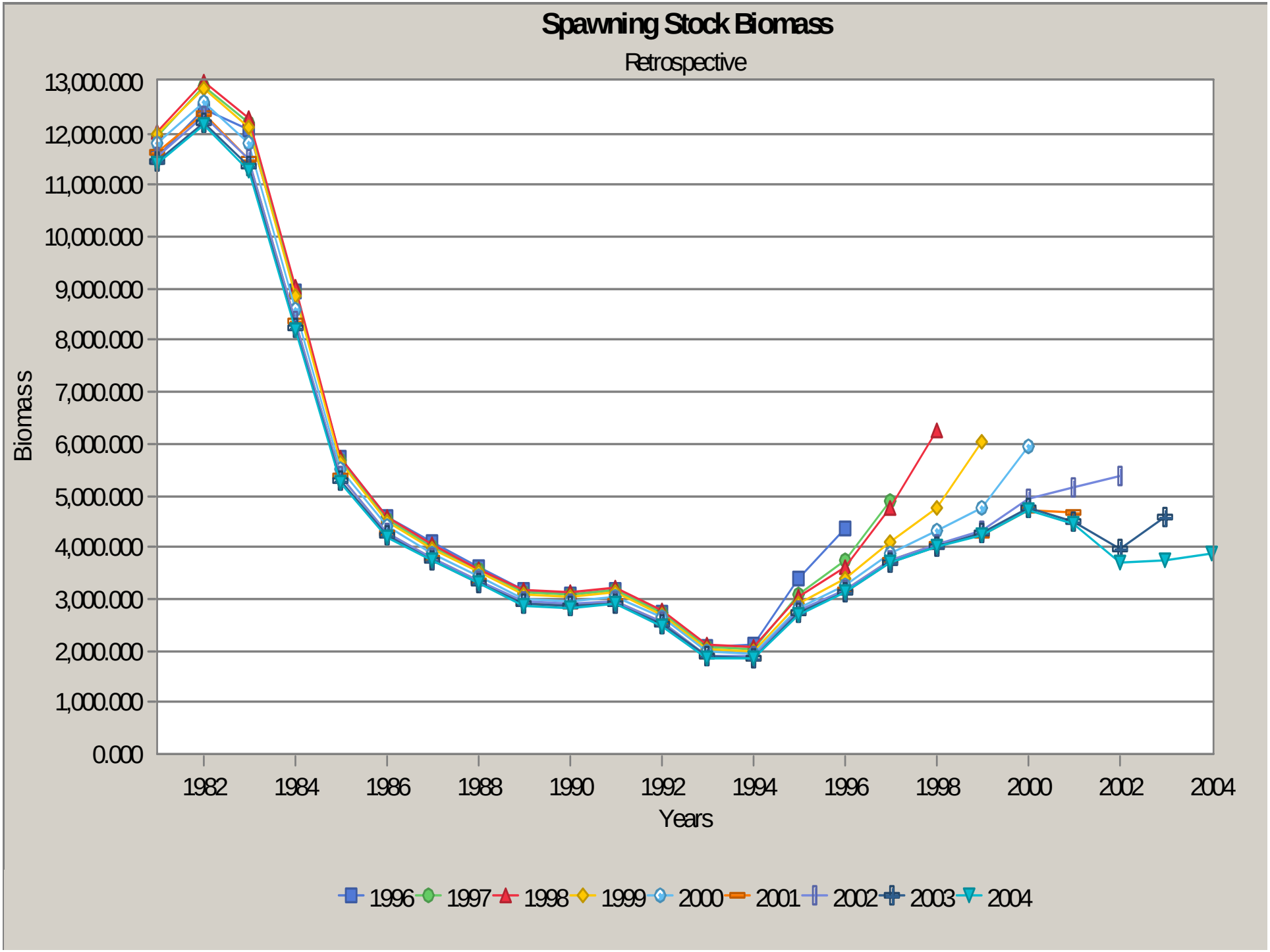

Average F 4-5
Retrospective
Fishing Mortality
1.6000
1.4000
1.2000
1.0000
0.8000
0.6000
0.4000
0.2000
0.0000
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
Years
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004


SNE/MA WFL Model Comparison
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
F
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
Year
ADAPT
ASAP


SNE/MA WFL Model Comparison
16000
14000
12000
10000
8000
6000
4000
2000
0
SSB (mt)
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
Year
ADAPT
ASAP


SNE/MA WFL Model Comparison
Recruits: age 0
70000
60000
50000
40000
30000
20000
10000
0
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
Year
ADAPT
ASAP


Average F Unweighted Ages 4 - 5
Retrospective
Fishing Mortality
1.4000
1.3000
1.2000
1.1000
1.0000
0.9000
0.8000
0.7000
0.6000
0.5000
0.4000
0.3000
0.2000
0.1000
0.0000
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
Years
1996
1997
1998
1999
2000
2001
2002
2003
2004


Spawning Stock Biomass
Retrospective
13,000.000
12,000.000
11,000.000
10,000.000
9,000.000
8,000.000
7,000.000
6,000.000
5,000.000
4,000.000
3,000.000
2,000.000
1,000.000
0.000
Biomass
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
Years
1996
1997
1998
1999
2000
2001
2002
2003
2004