

SNE/MA Winter Flounder Landings and Discards

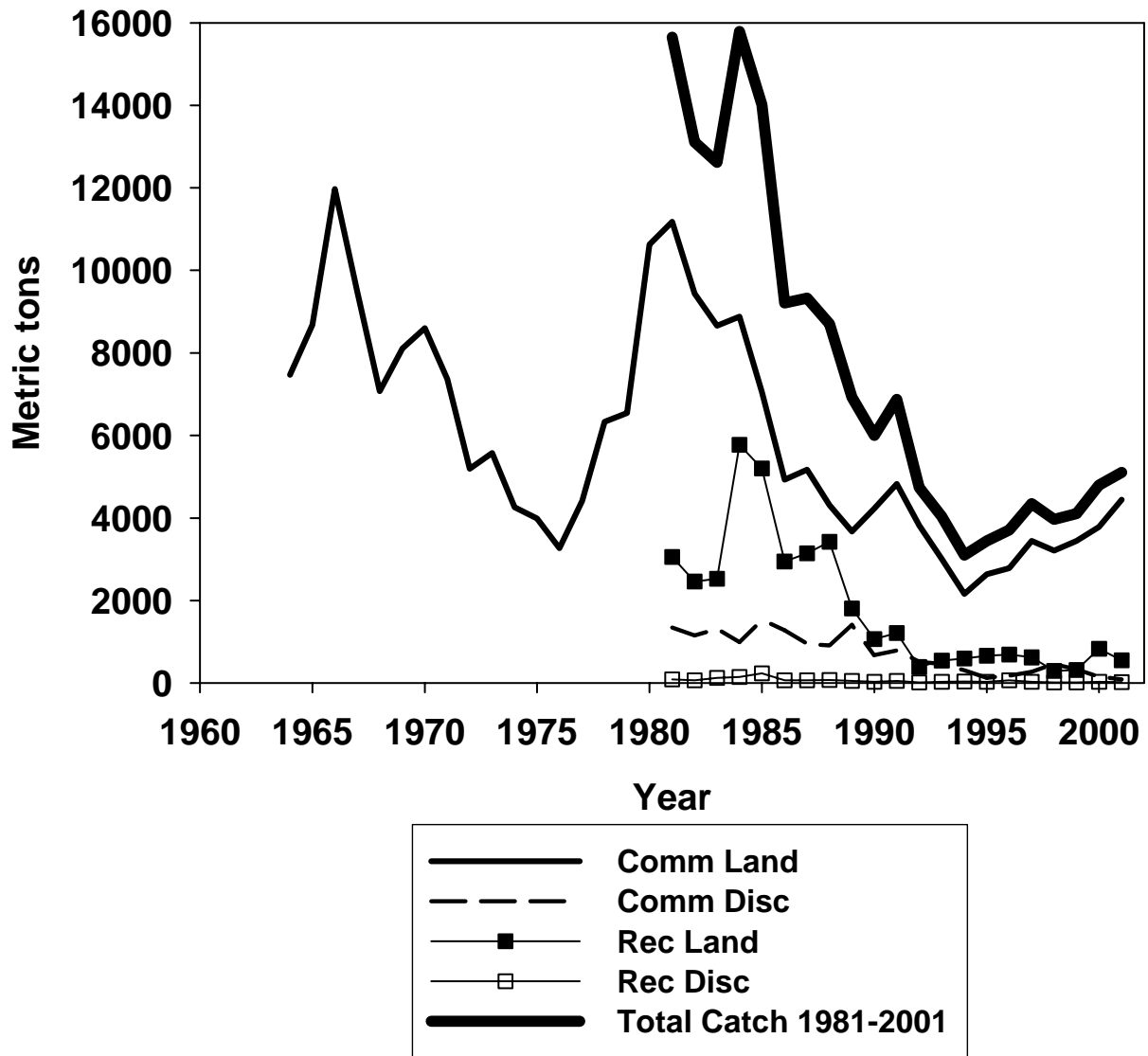


Figure B1.1. Commercial landings (1964-2001), commercial discards (1981-2001) recreational landings (1981-2001), recreational discards (1981-2001) and total fishery catch (1981-2001) for the SNE/MA winter flounder stock complex.

**SNE/MA winter flounder
Total Catch Age Composition**

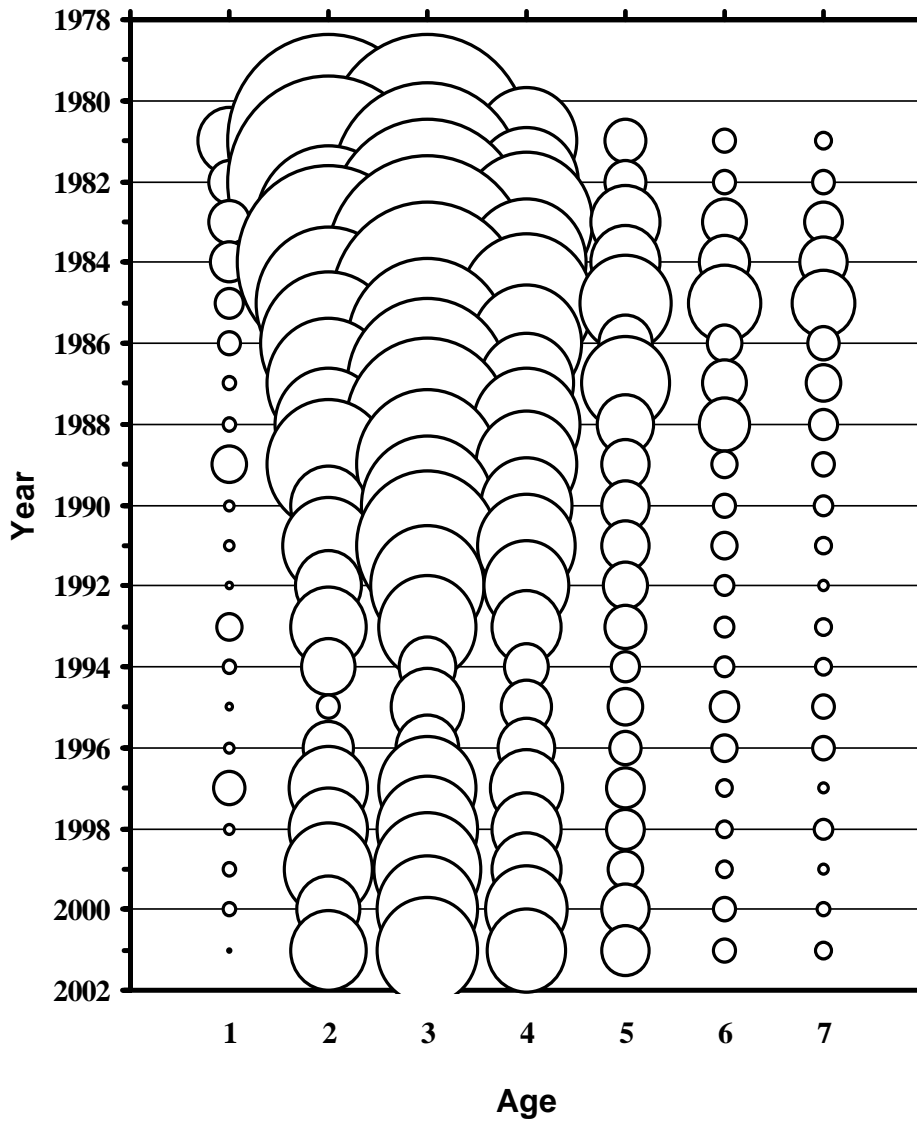


Figure B1.2. Total catch age composition: 1981-2001

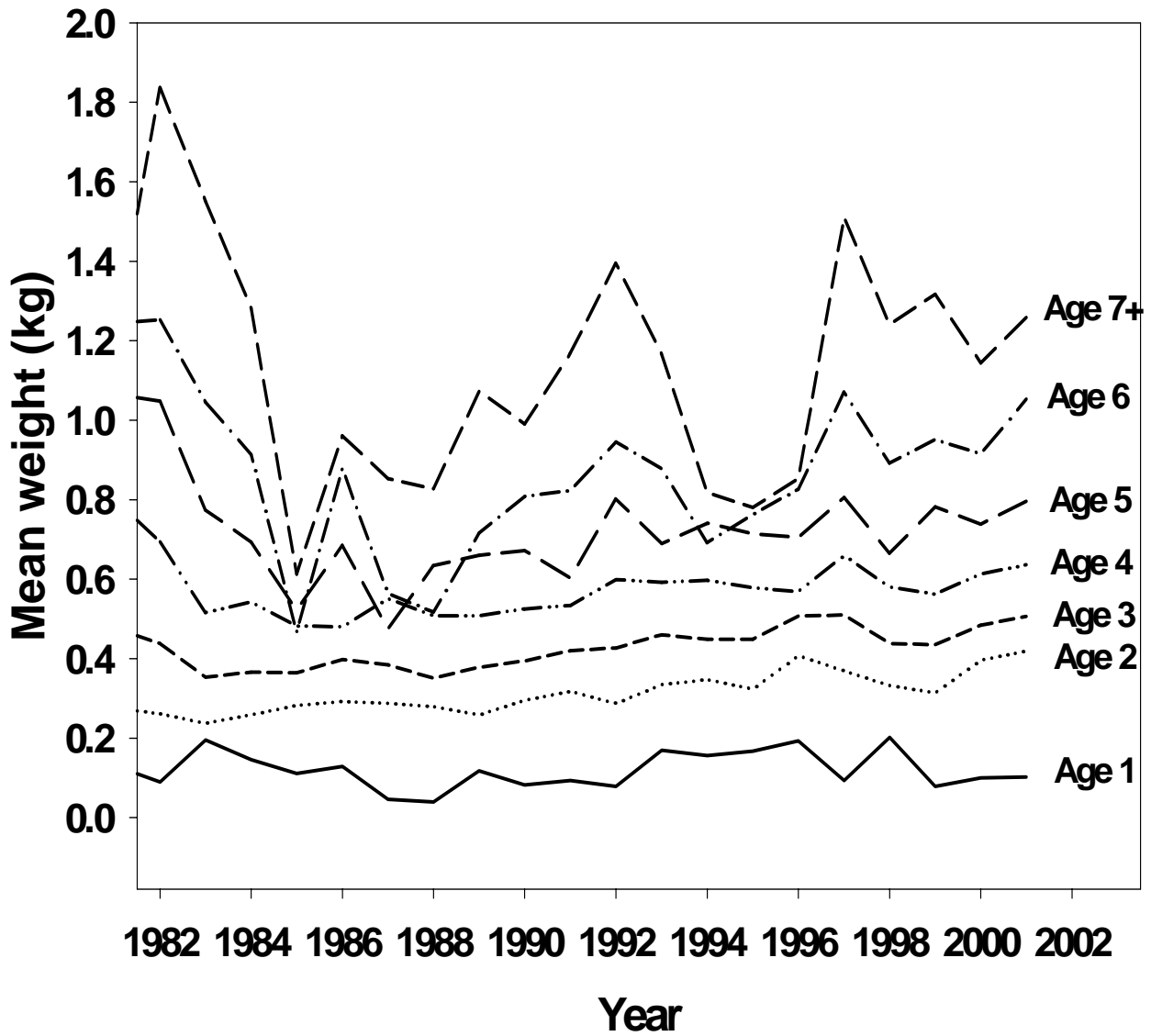


Figure B1.3. Trends in mean weight at age in the total catch of SNE/MA winter flounder.

SNE/MA Winter Flounder Survey Biomass Indices

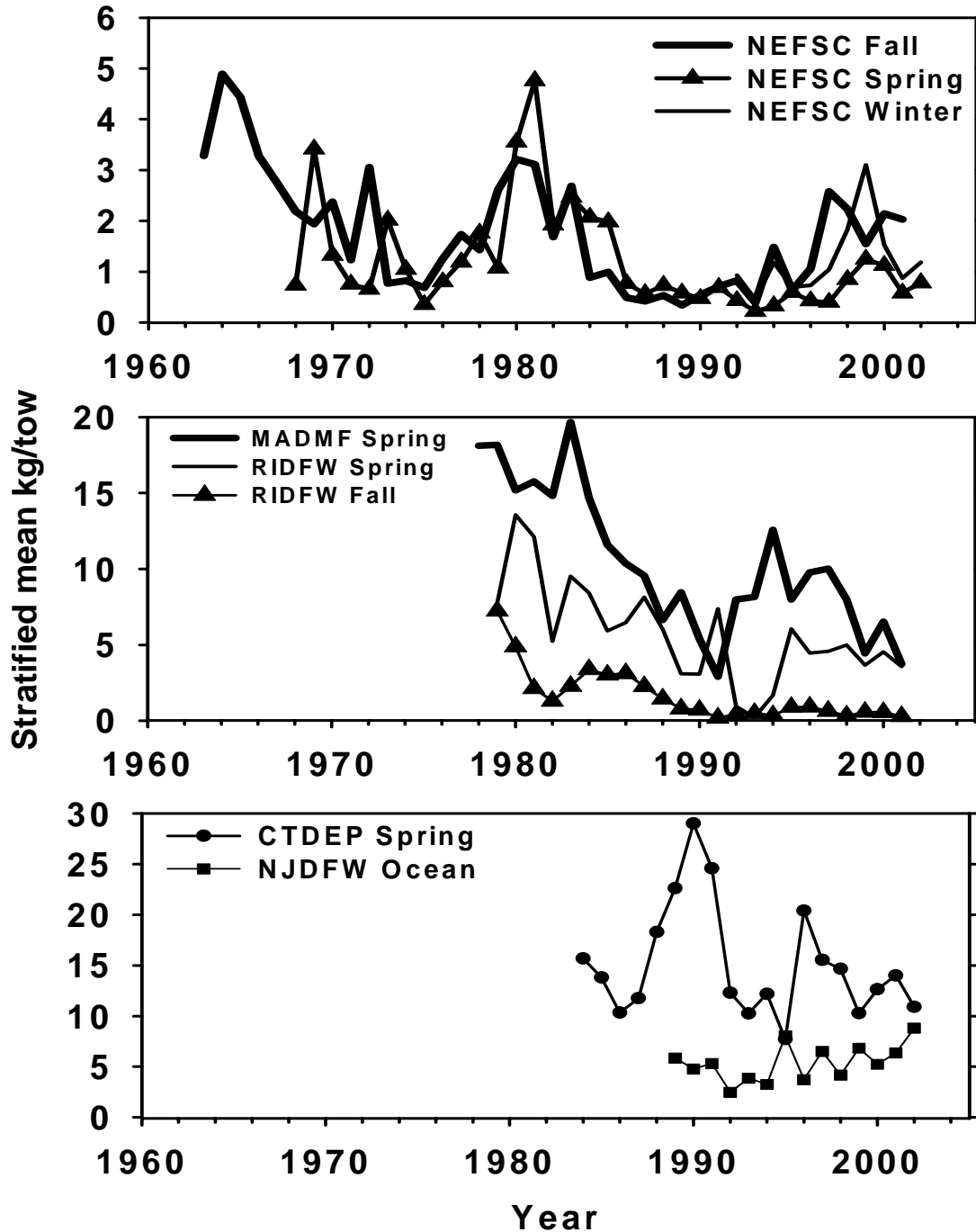


Figure B1.4. Trends in research survey biomass indices for SNE/MA winter flounder.

SNE/MA Winter Flounder Recruitment Indices

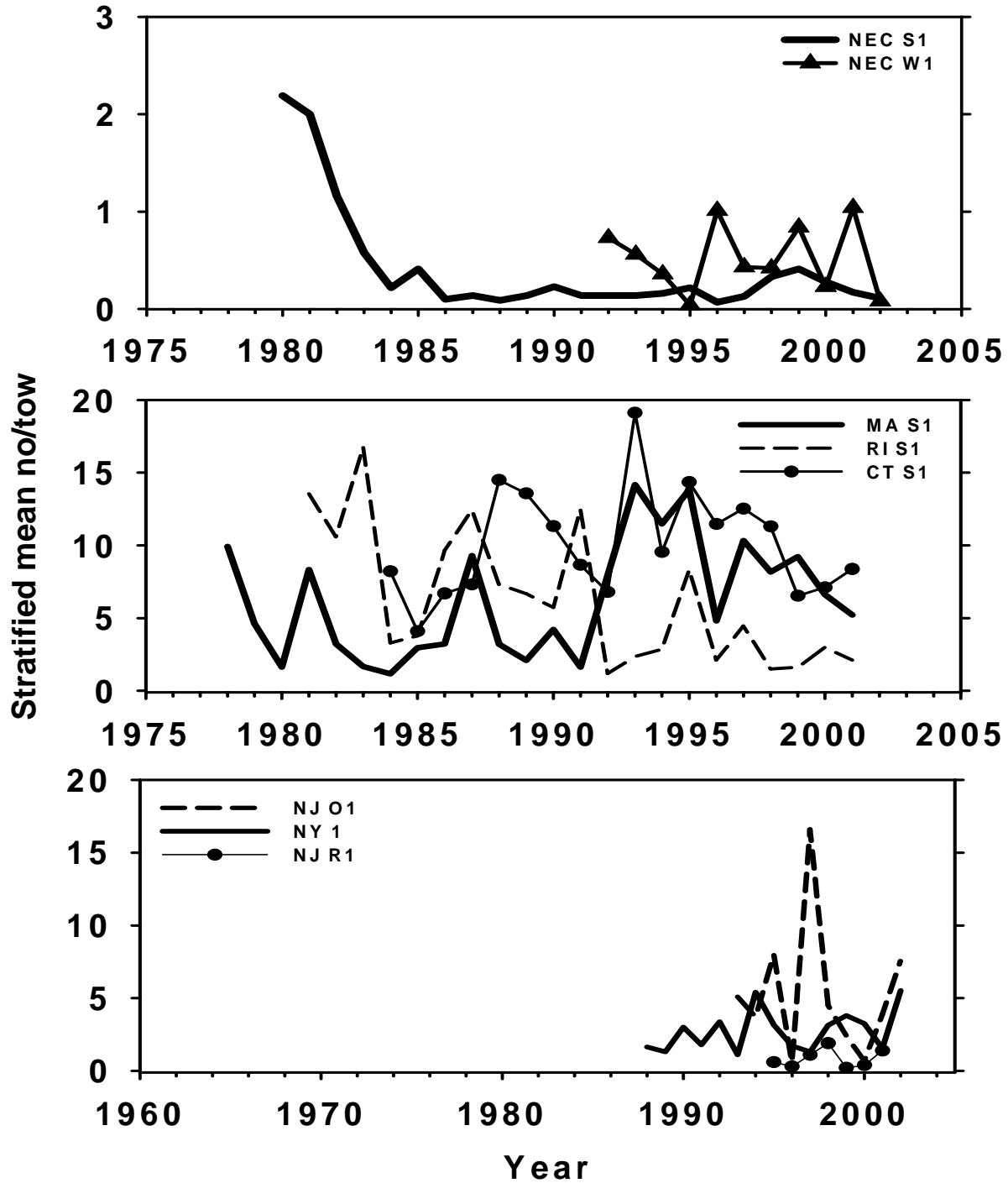


Figure B1.5. Trends in survey recruitment indices for SNE/MA winter flounder.
Includes spring survey age-1 indices and fall YOY indices advanced one year

SNE/MA Winter Flounder Recruitment Indices

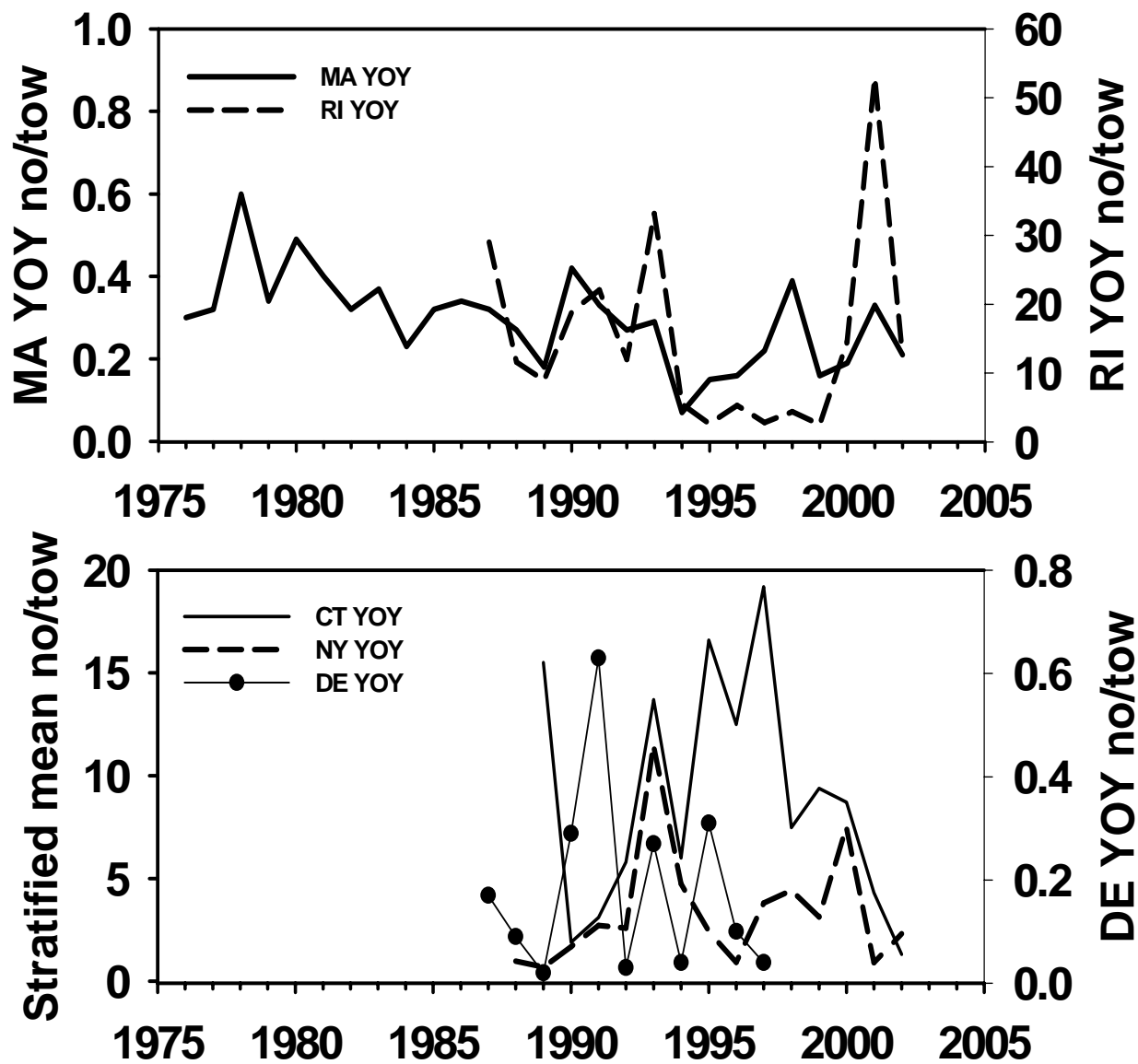


Figure B1.5 continued.

SNE/MA winter flounder VPA Sensitivity to Tuning Indices

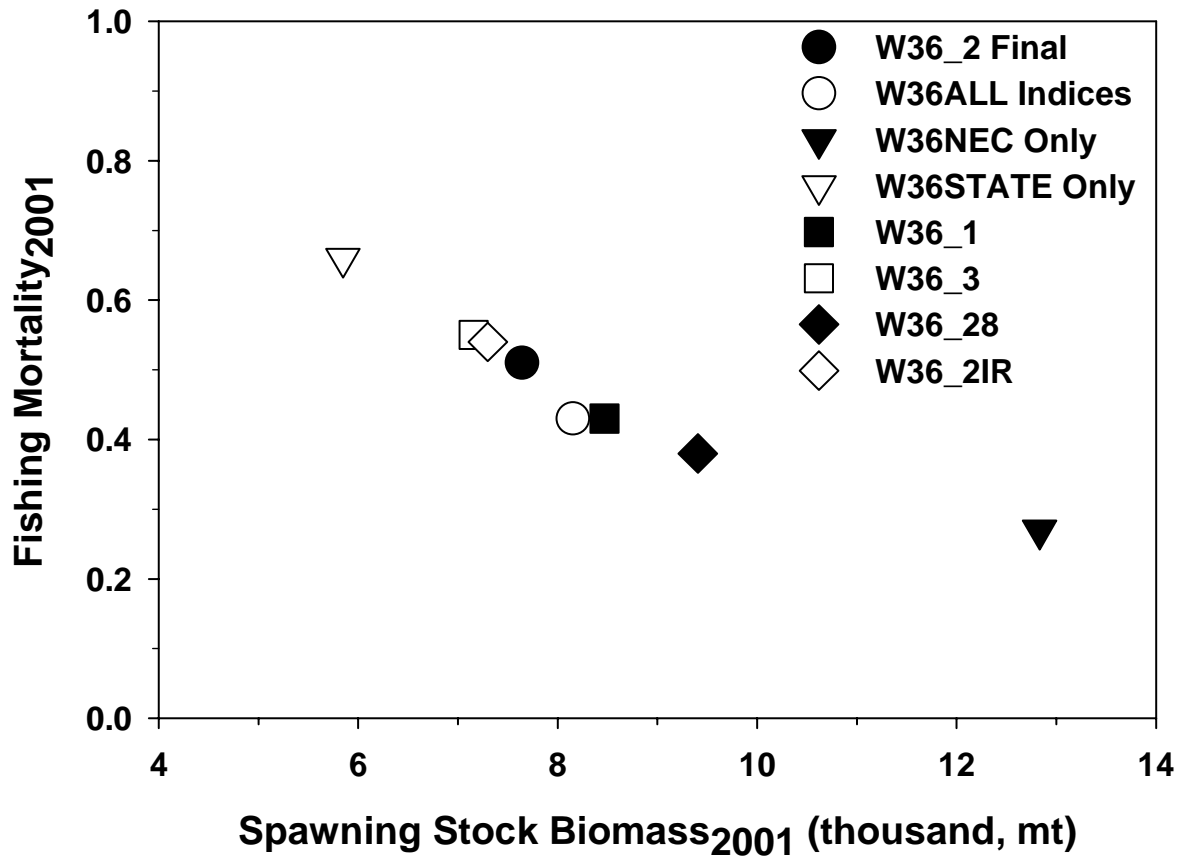


Figure B1.6. Sensitivity of the SARC 36 VPA for SNE/MA winter flounder to alternative combination of survey tuning indices. Run W36_2 was selected as the final run.

SNE/MA Winter Flounder Total Catch and Fishing Mortality

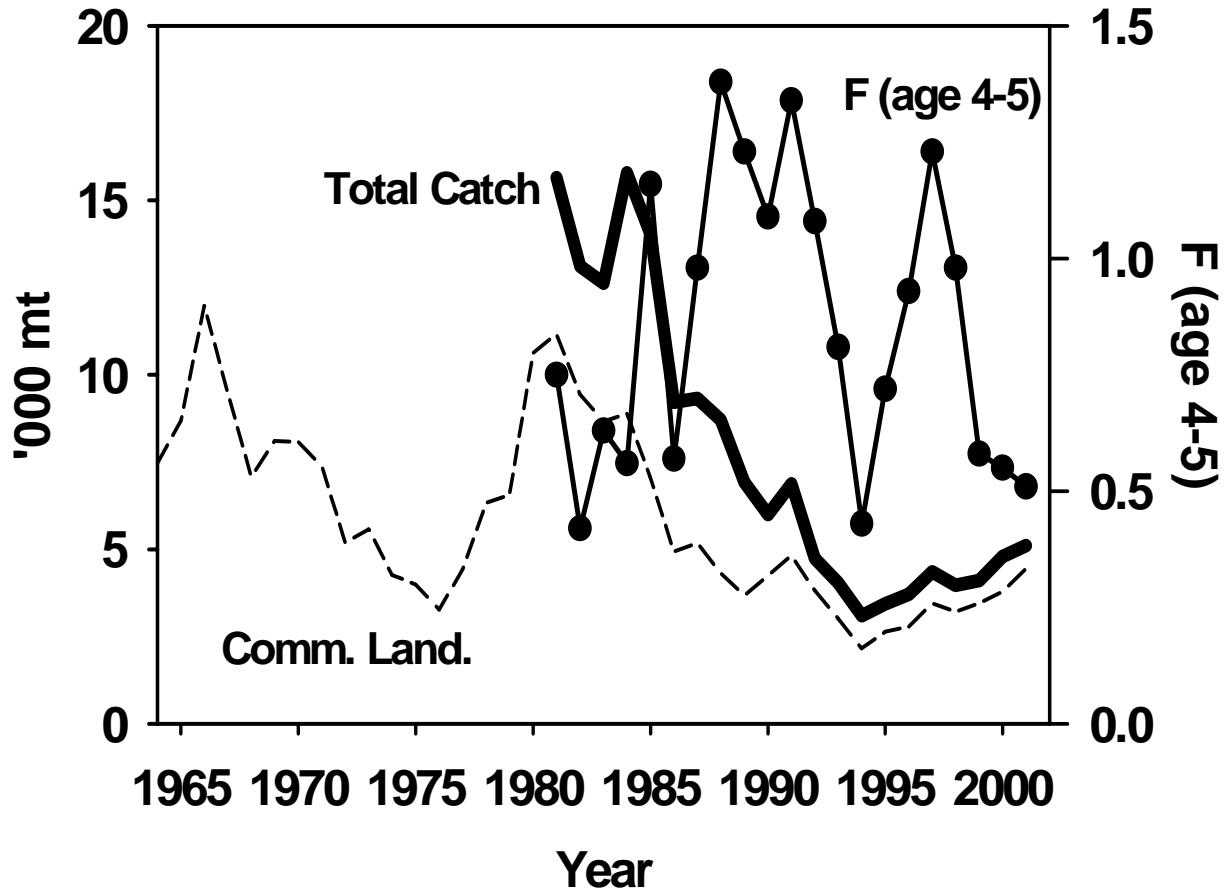


Figure B1.7. Total catch (landings and discards, '000 mt), commercial landings('000 mt), and fishing mortality rate (F, ages 4-5, unweighted) for SNE/MA winter flounder.

SNE/MA Winter Flounder Precision of 2001 Estimates for SSB and F

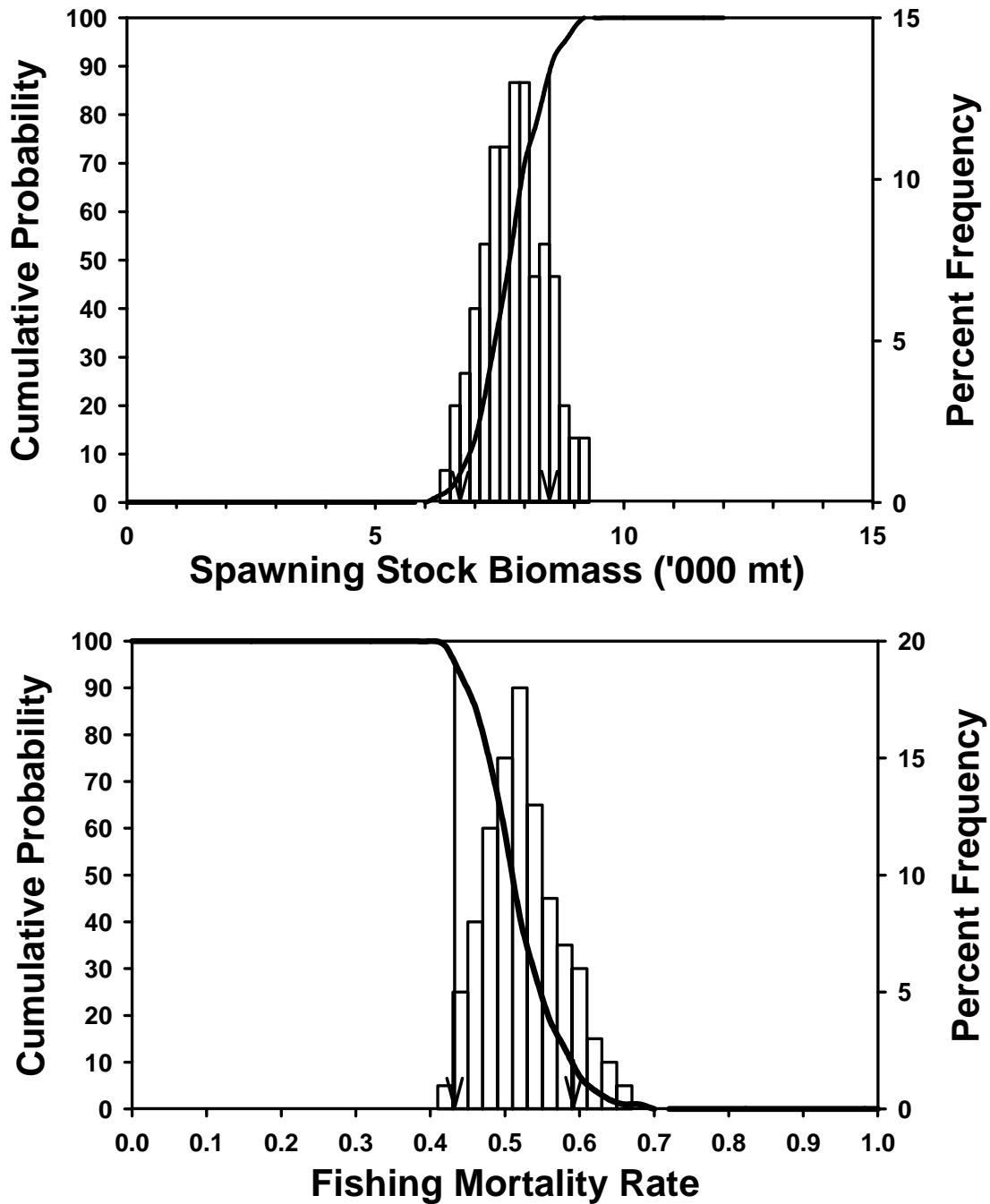


Figure B1.8. Precision of estimates of spawning stock biomass (ages 3-7+, '000 mt) and fishing mortality rate (F, ages 4-5, unweighted) in 2001 for SNE/MA winter flounder. Vertical bars display the range of the bootstrap estimates and the probability of individual values in the range. The solid curve gives the probability of SSB that is less or fishing mortality that is greater than any value along the X axis.

SNE/MA Winter Flounder SSB and Recruitment

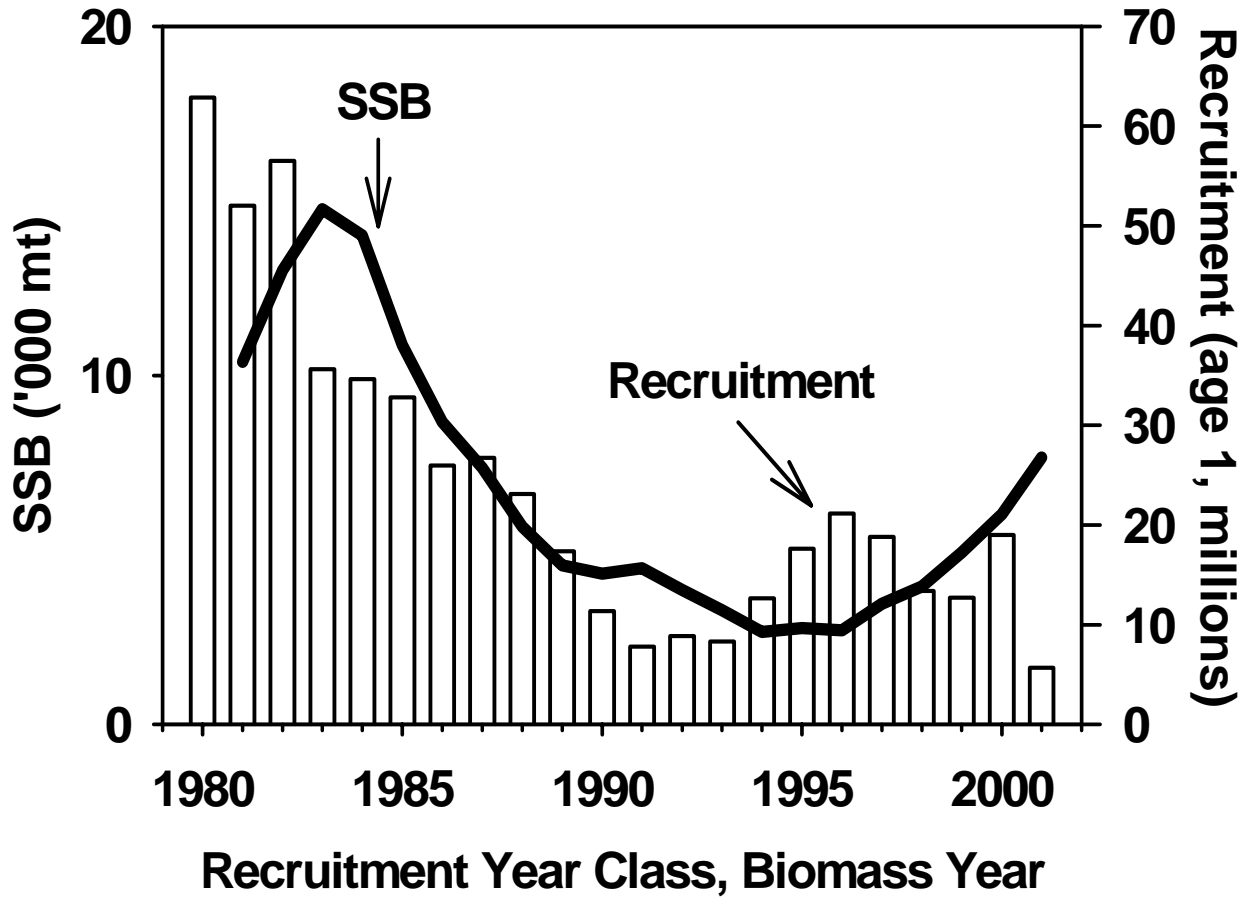


Figure B1.9. Spawning stock biomass (SSB, ages 3-7+, '000 mt) and recruitment (millions of fish at age-1) for SNE/MA winter flounder.

SNE/MA winter flounder retrospective VPAs

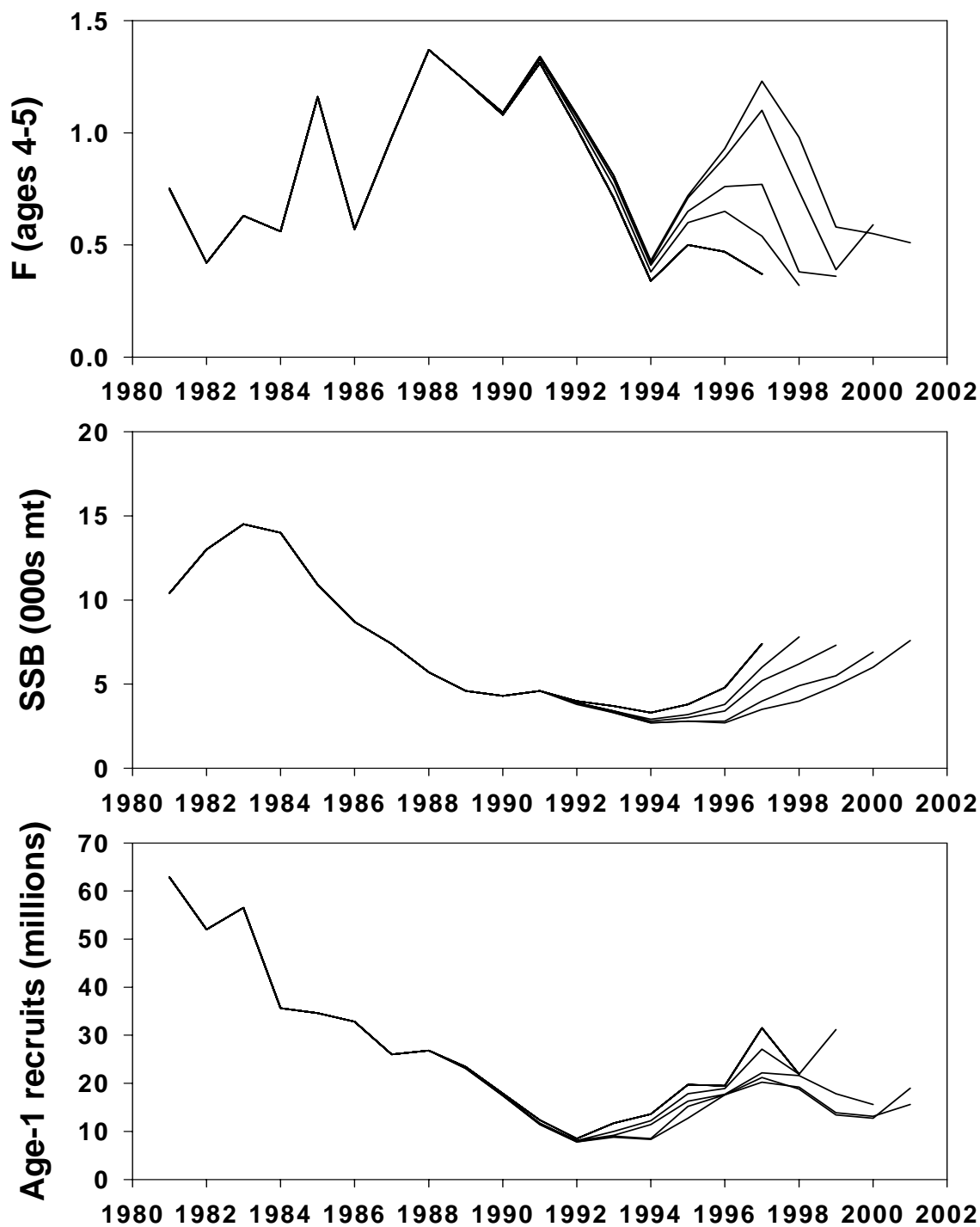


Figure B1.10. Retrospective VPAs for SNE/MA winter flounder.

SNE/MA Winter Flounder Yield and SSB per Recruit

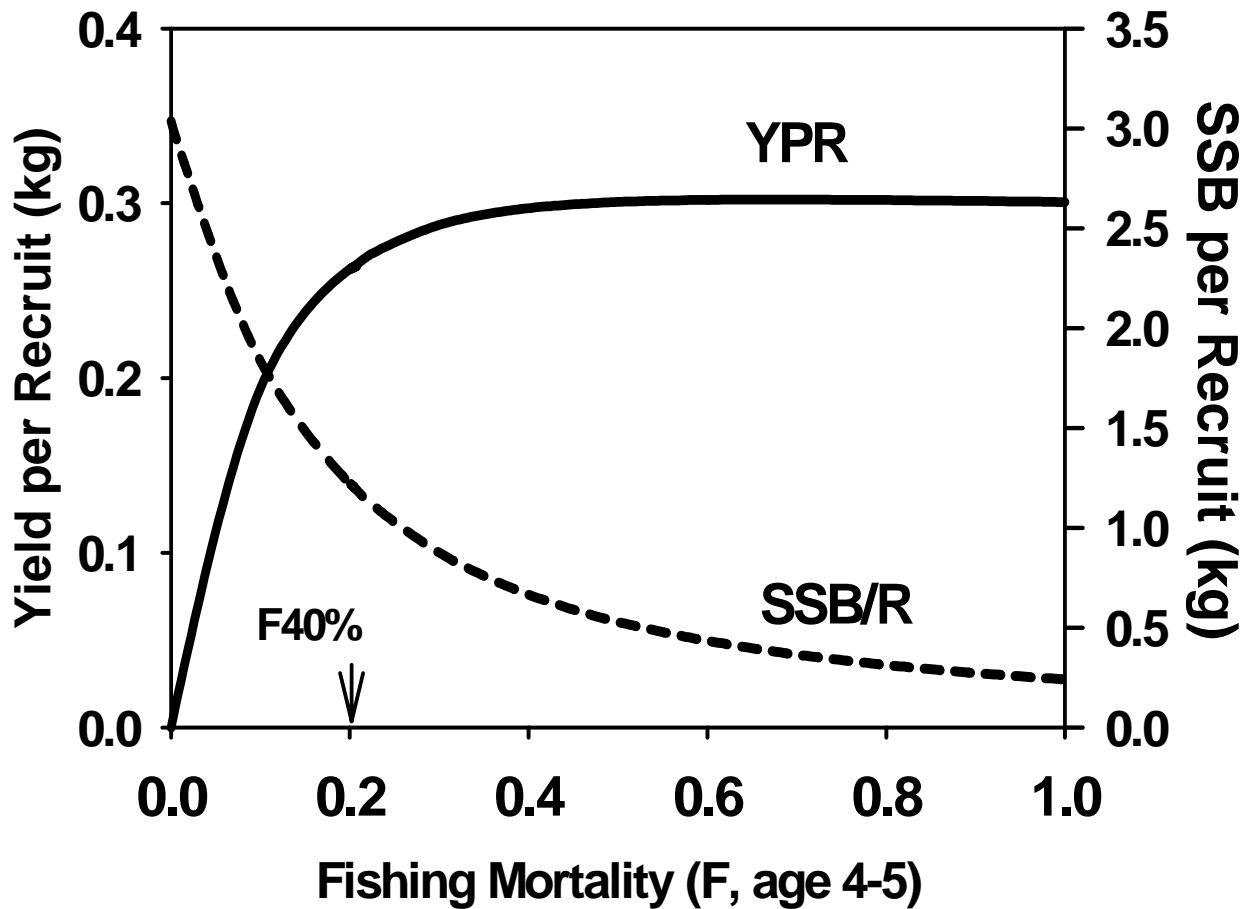


Figure B1.11. Yield per recruit (YPR) and spawning stock biomass per recruit (SSB/R) for SNE/MA winter flounder.

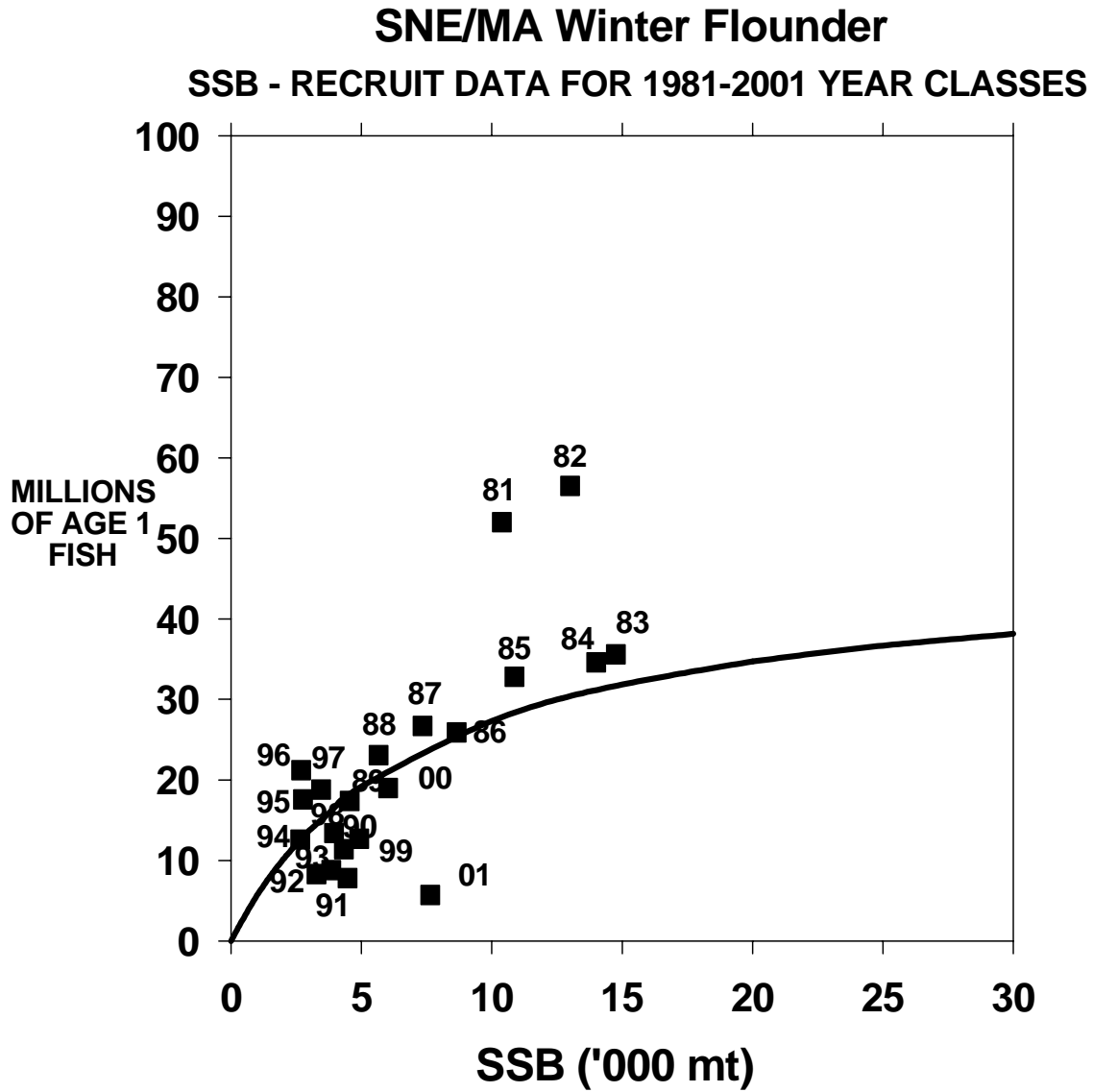


Figure B1.12. SNE/MA winter flounder SARC 36 VPA SSB and recruit data for the 1981-2001 year classes. Curved line is the S-R function estimated by NEFSC (2002).

SNE/MA Winter Flounder

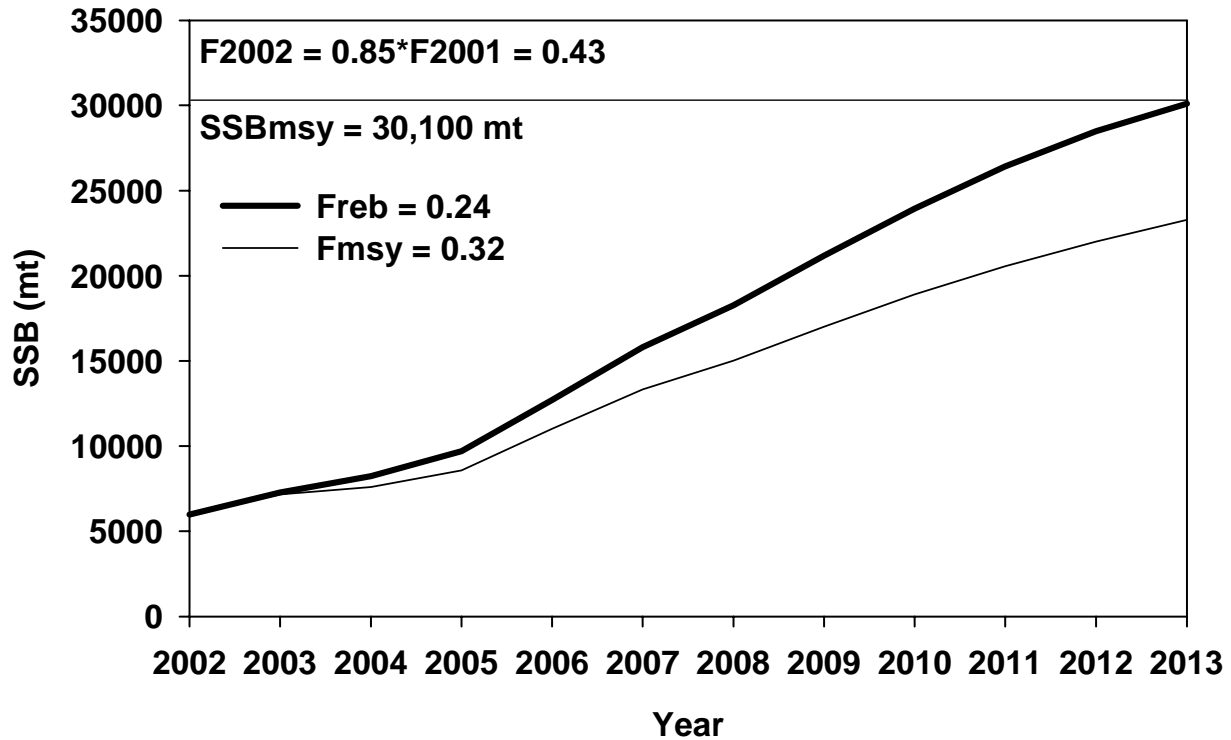


Figure B1.13. Median (50% probability) of forecast spawning stock biomass (SSB, mt) for SNE/MA winter flounder under F_{msy} and $F_{rebuild}$ fishing mortality rates during 2003-2013. Assumes $F_{2002} = 0.85 * F_{2001} = 0.43$.

SNE/MA winter flounder sensitivity to hypothetical NEFSC survey index adjustments, 2000-2002

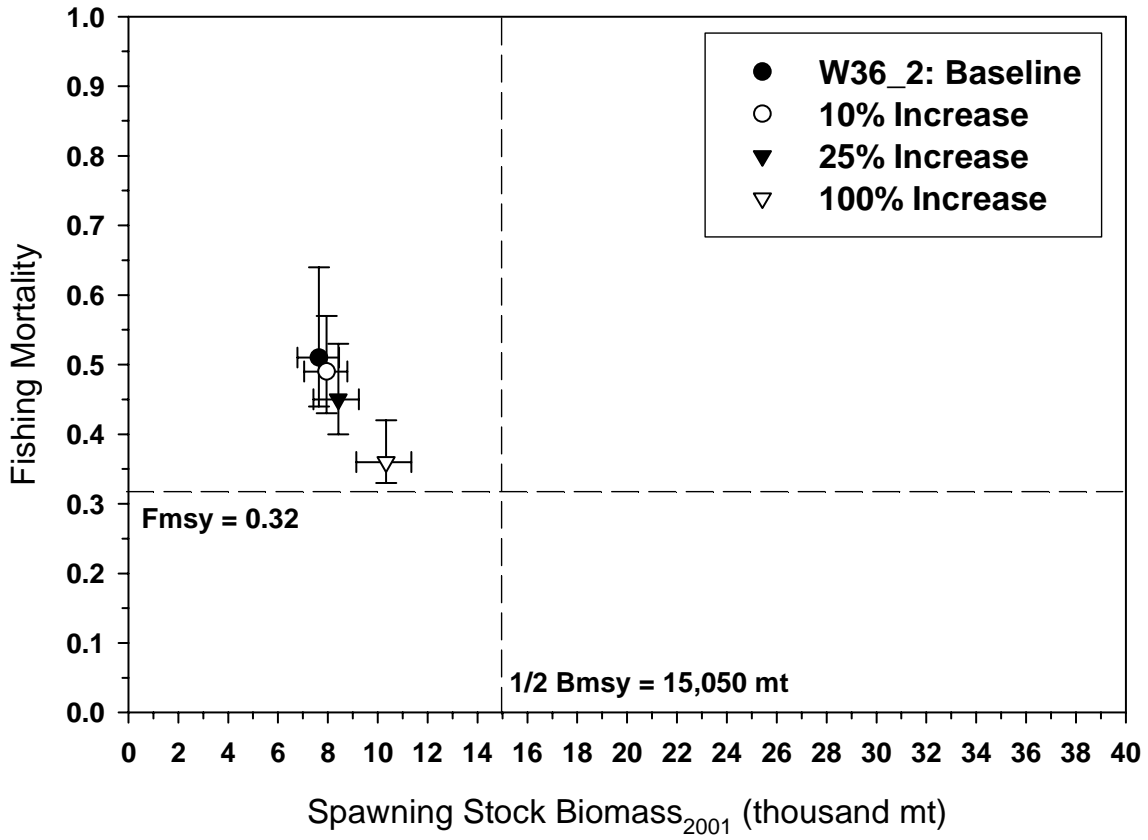


Figure B1.14. SNE/MA winter flounder VPA sensitivity to hypothetical NEFSC winter, spring, and fall survey index adjustments.

SNE/MA Winter Flounder

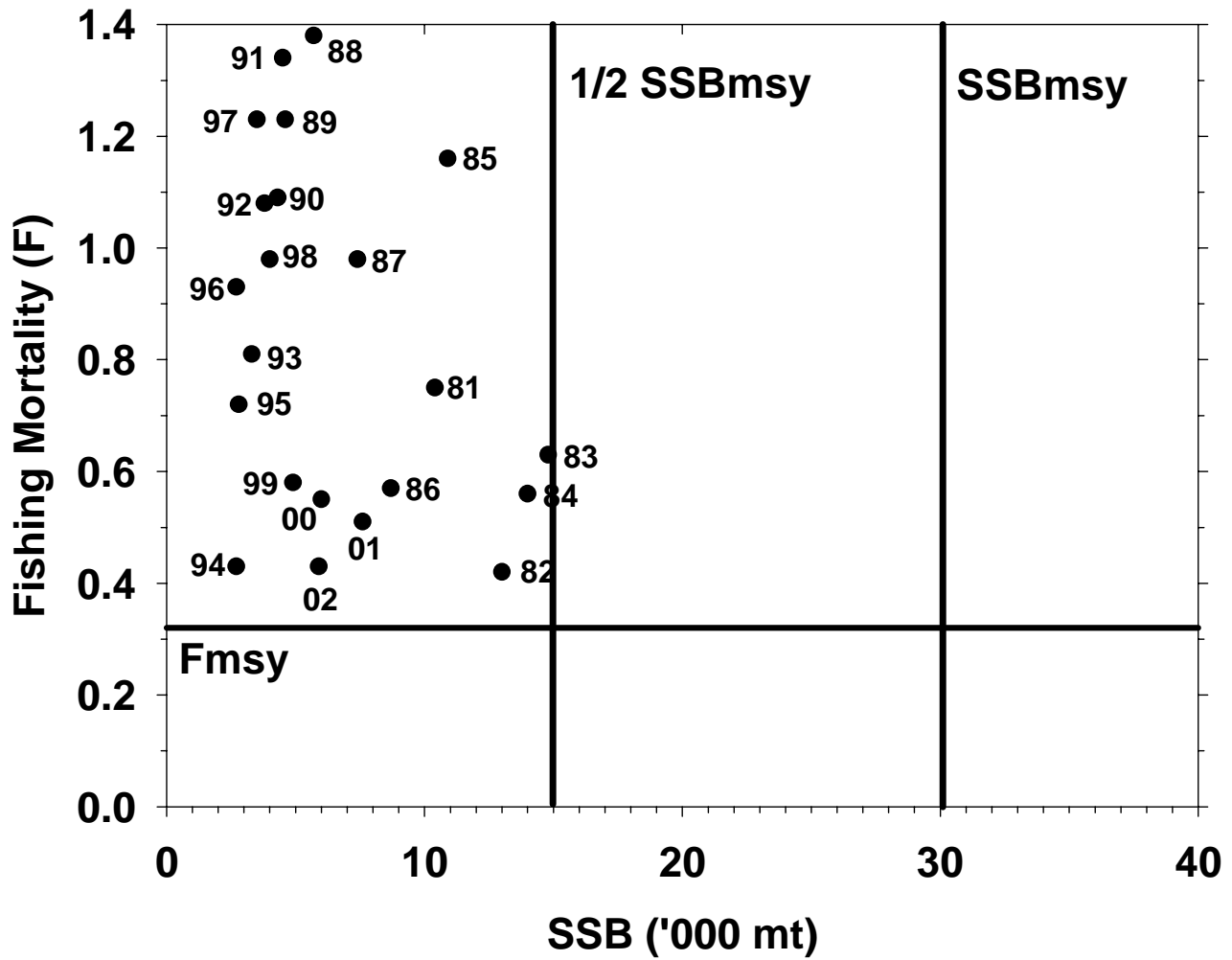


Figure B1.15. SSB and F for SNE/MA winter flounder. NEFSC (2002) biological reference points ($F_{msy} = 0.32$, $SSB_{msy} = 30,100$ mt) are also shown.