

SUMMER FLOUNDER FIGURES

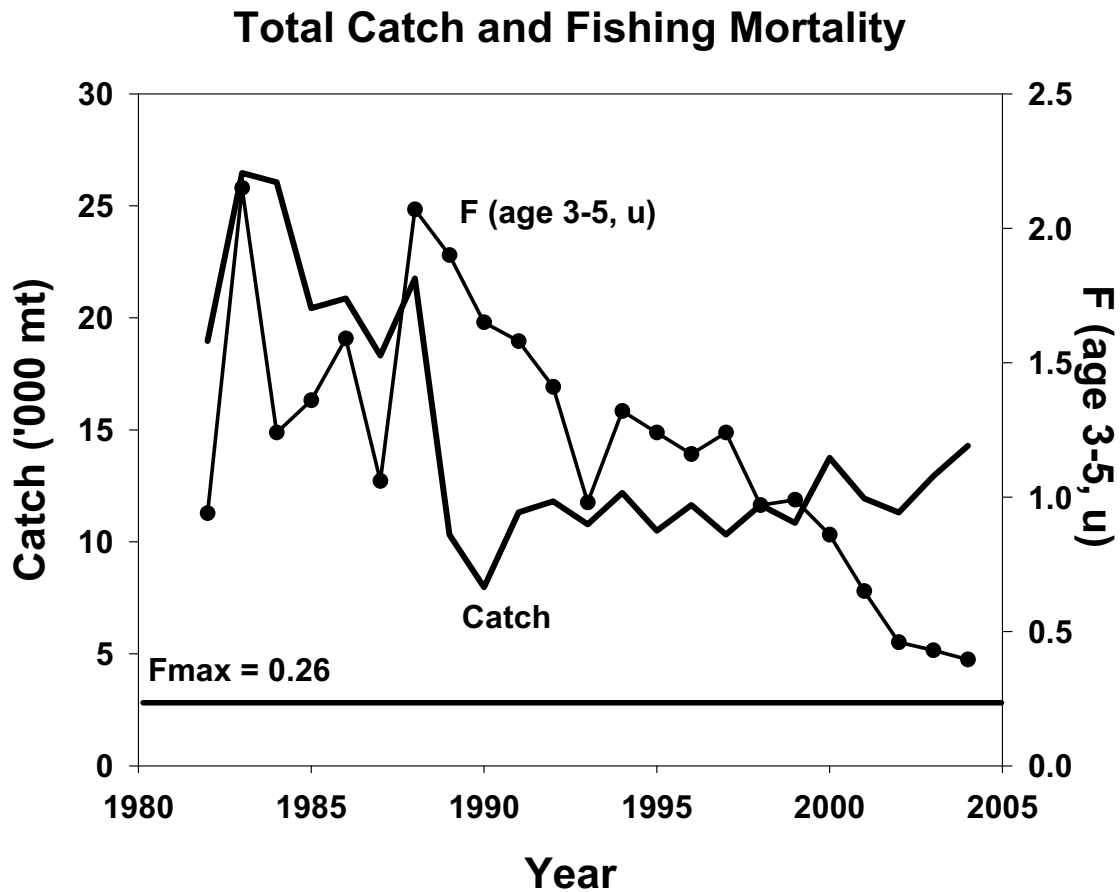


Figure 2-1. Total catch (landings and discards, thousands of metric tons) and fishing mortality rate (F, ages 3-5, unweighted) for summer flounder.

Total Biomass, SSB, and Recruitment (R)

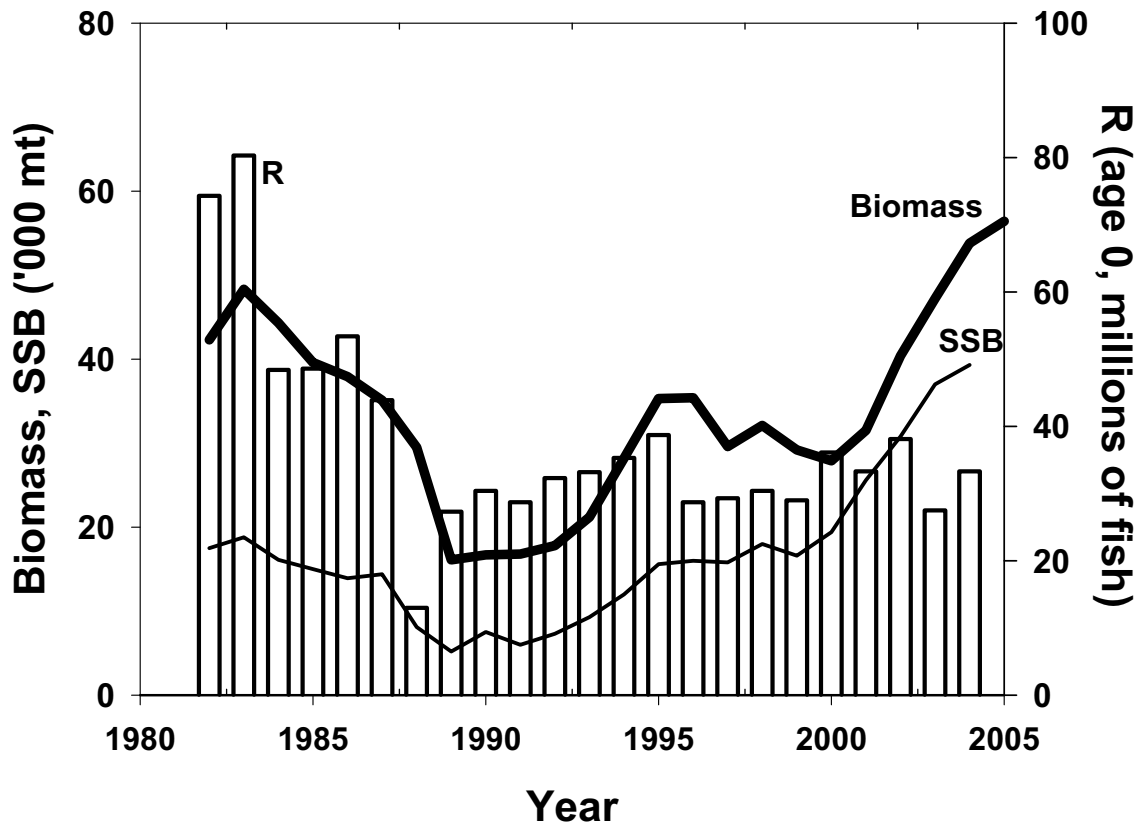


Figure 2-2. Total stock biomass ('000 mt; thick line), spawning stock biomass (SSB, '000 mt; thin line), and recruitment (millions of fish at age-0; bars) for summer flounder.

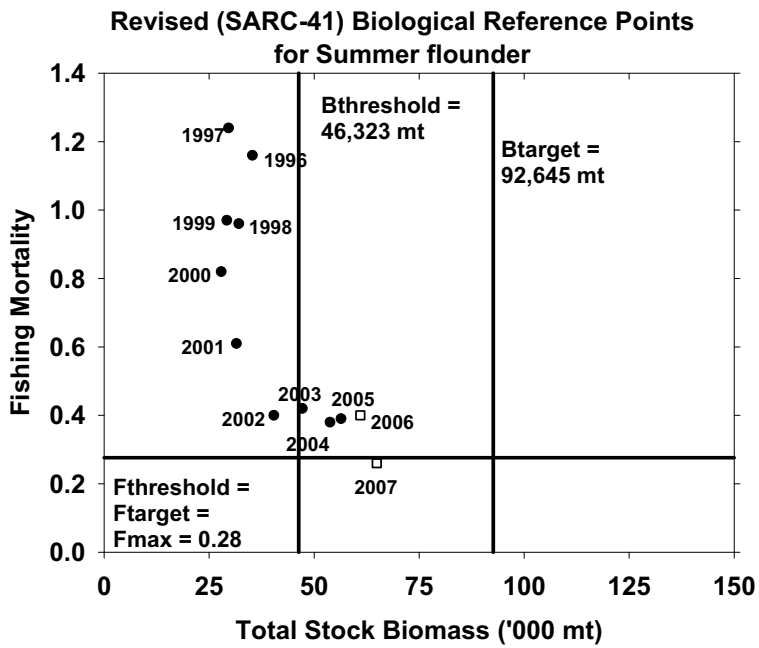
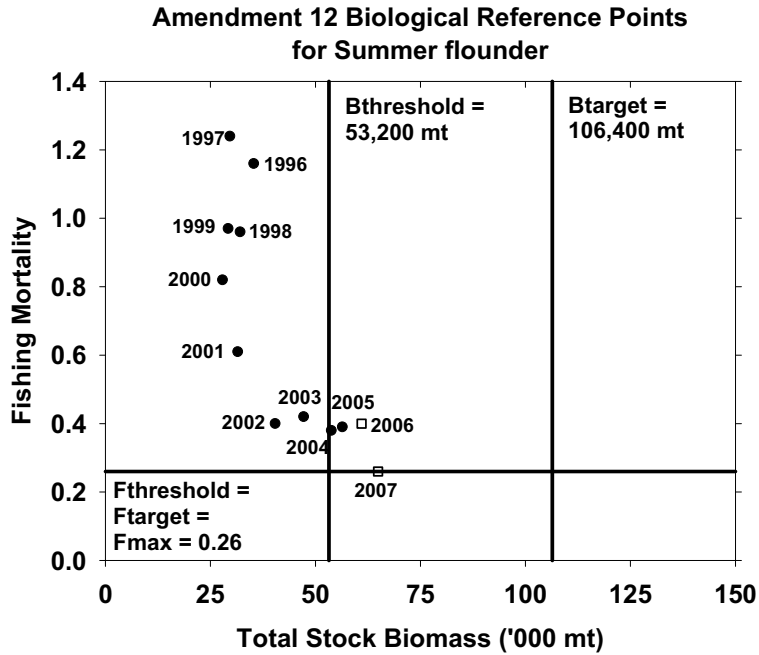


Figure 2-3. Estimates of Biological Reference Points, biomass and F.

Summer flounder Retrospective VPAs

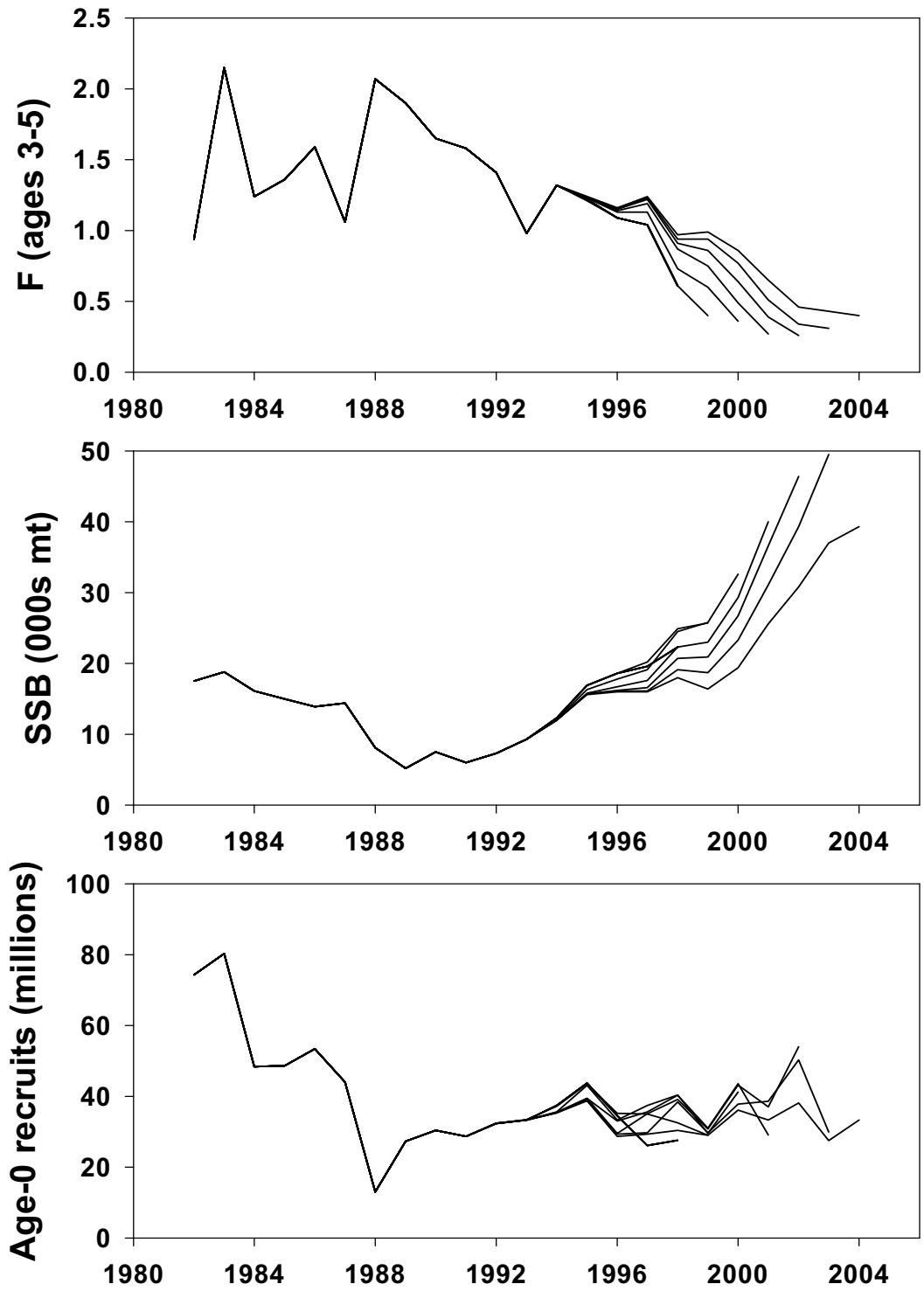


Figure 2-4. Retrospective VPAs for summer flounder.

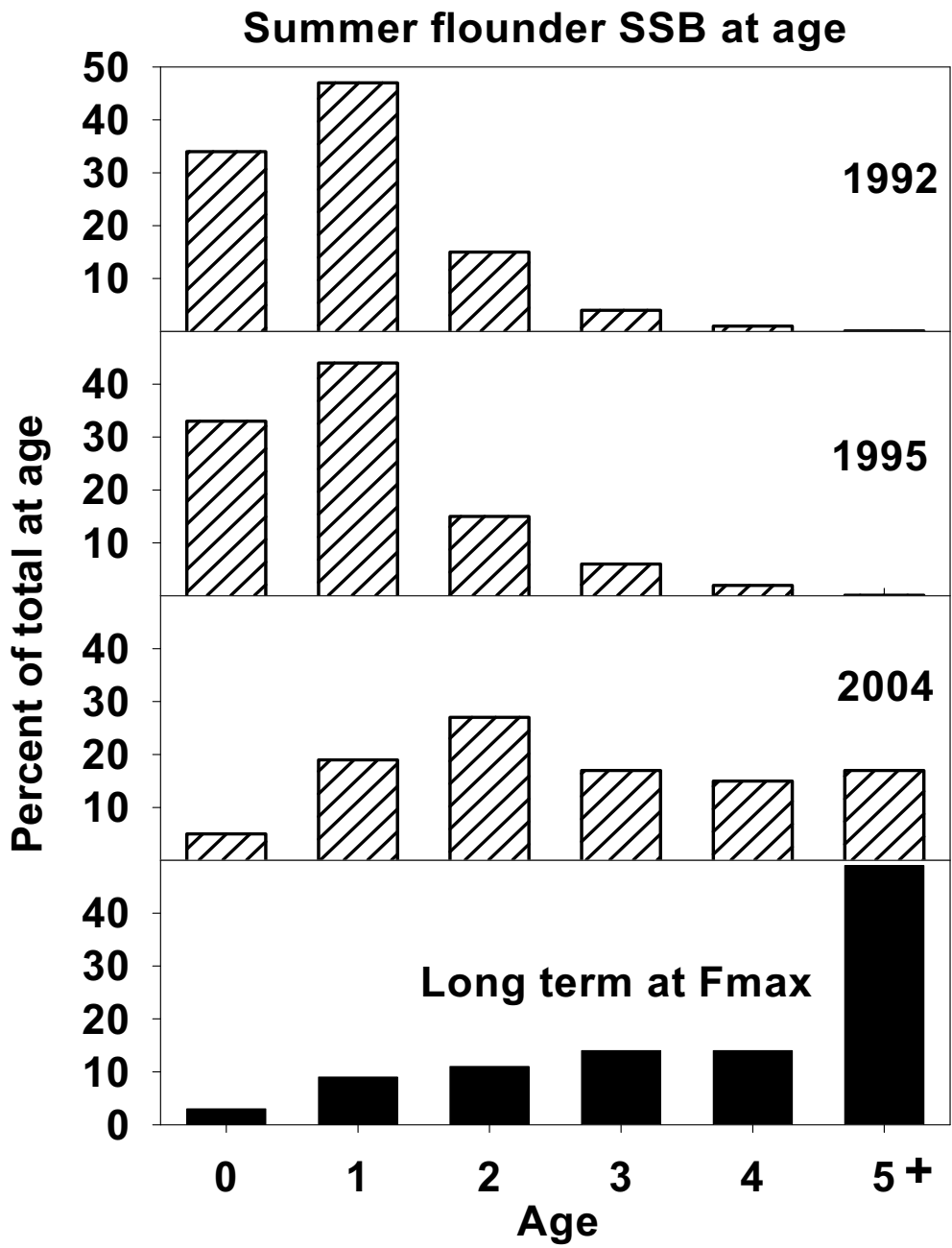


Figure 2-5. Percent of summer flounder spawning stock biomass (SSB) at age in 1992, 1995, 2004 and long-term at $F_{max} = 0.263$. Similar long-term results are derived using updated $F_{max} = 0.276$.

SSB - RECRUIT DATA FOR 1983-2004 YEAR CLASSES

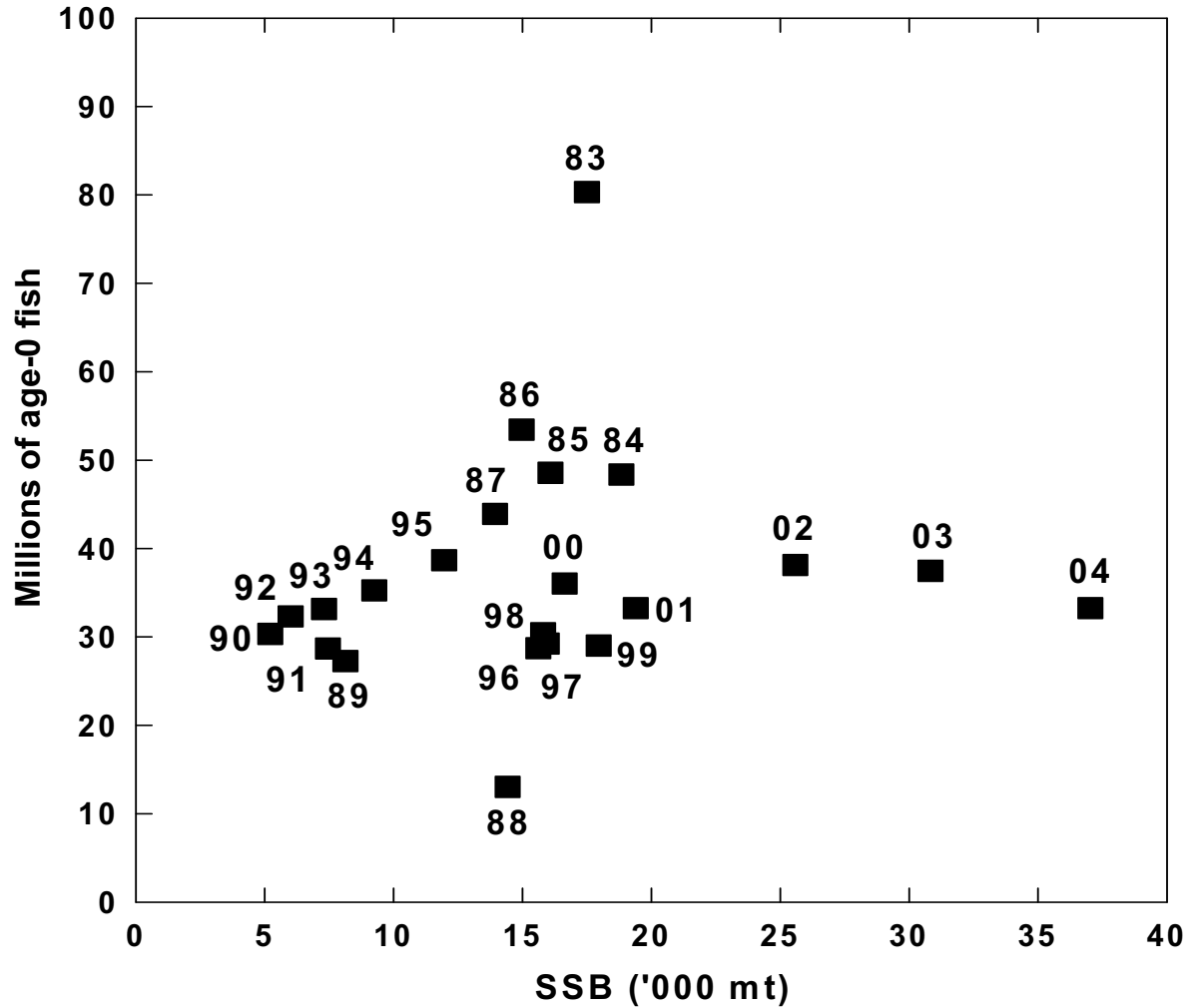


Figure 2-6. VPA spawning stock biomass and recruitment estimates for summer flounder.

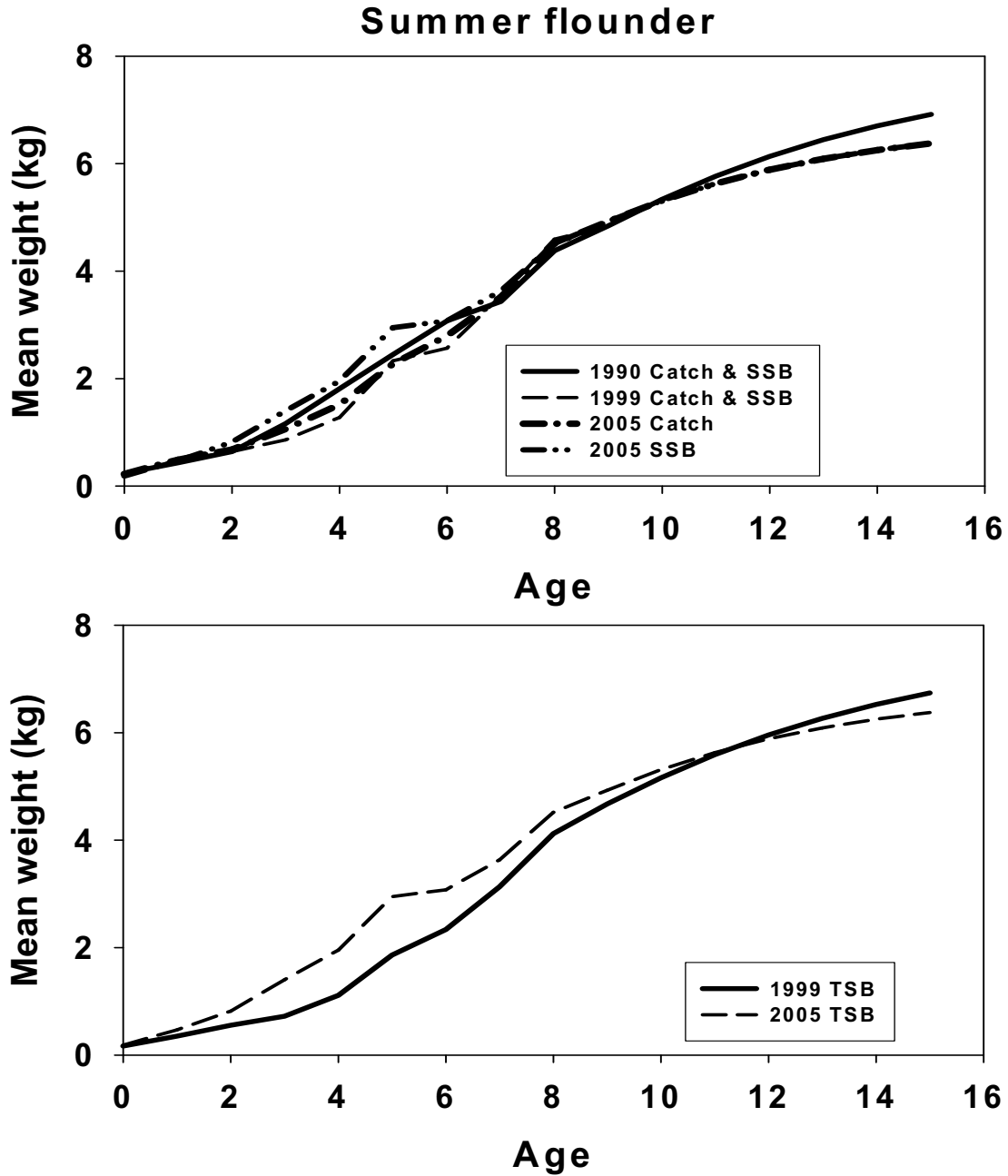


Figure 3-1. Mean weights at age for summer flounder yield and biomass per recruit analyses.

Summer flounder SSB mean weights at age

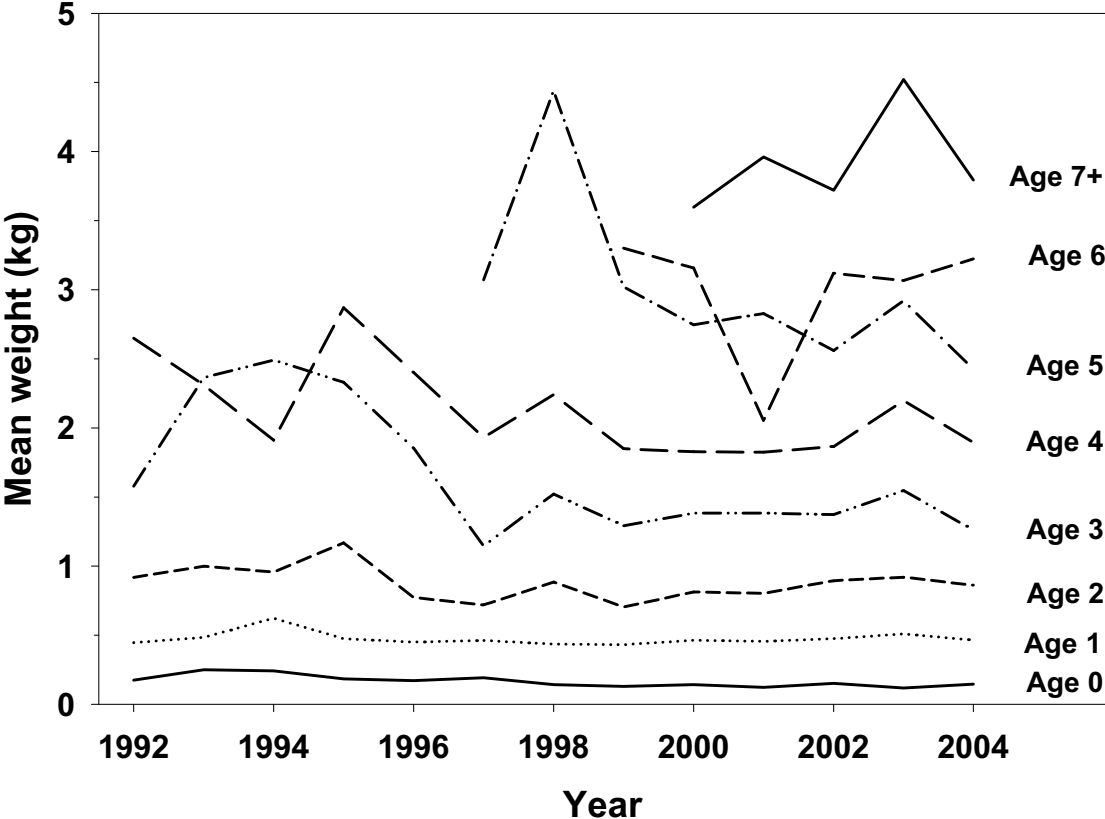


Figure 3-2. Trends in mean weight at age in the spawning stock of summer flounder: NEFSC Autumn survey 1992-2004.

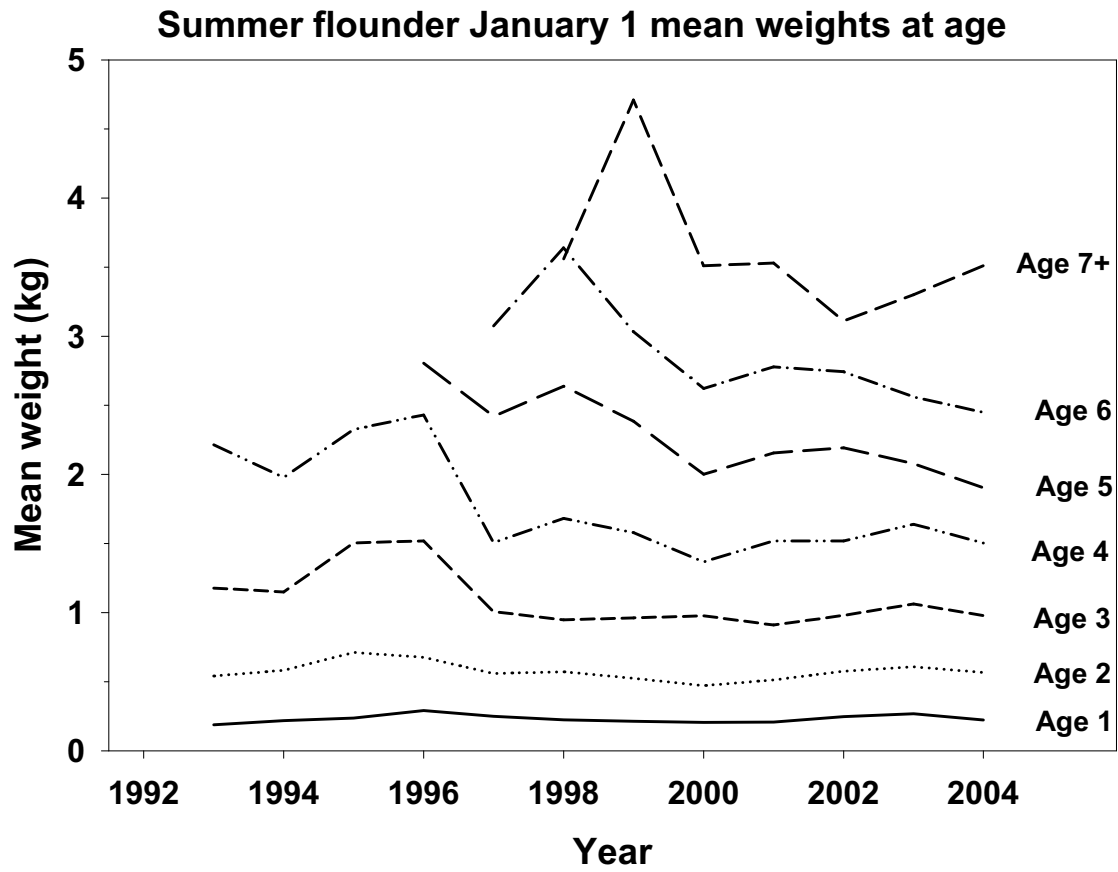


Figure 3-3. Trends in mean weight at age on January 1 for summer flounder: NEFSC Winter survey 1993-2004.

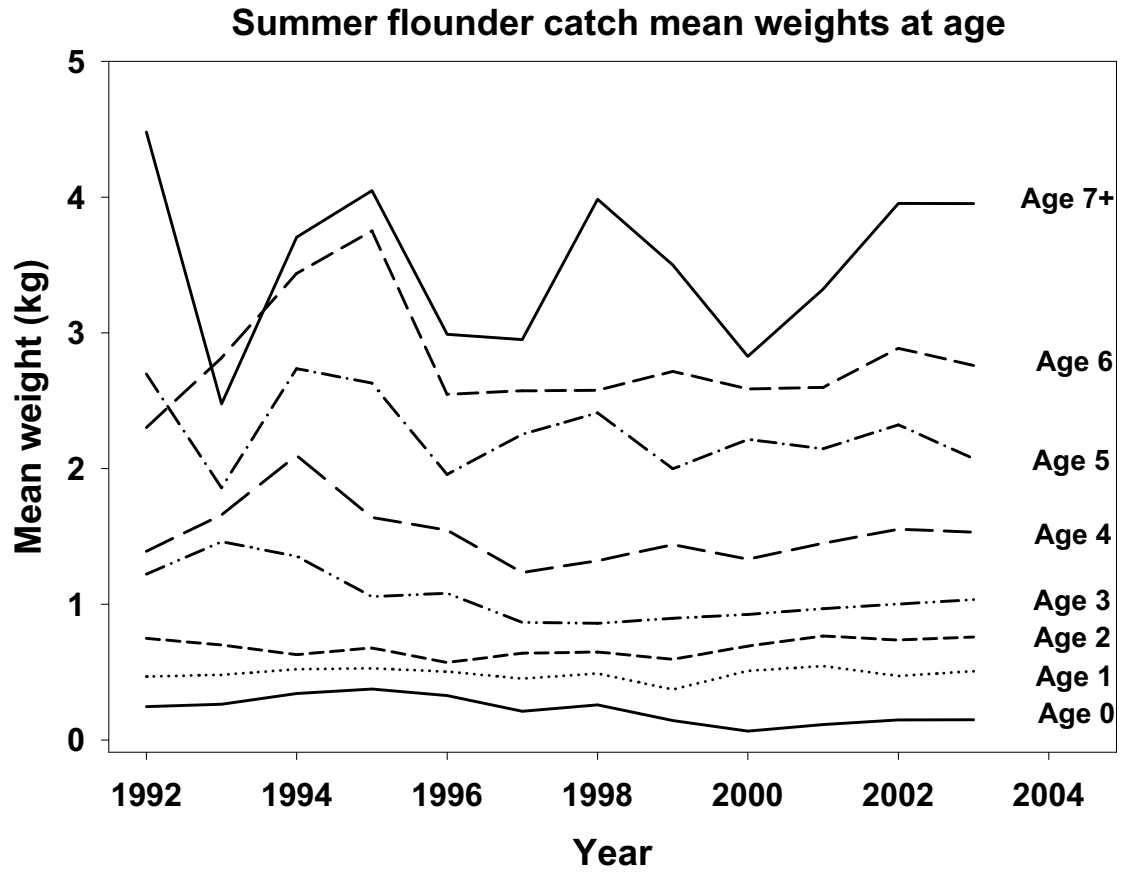


Figure 3-4. Trends in mean weight at age in the total catch of summer flounder.

SSB - RECRUIT DATA FOR 1983-2004 YEAR CLASSES

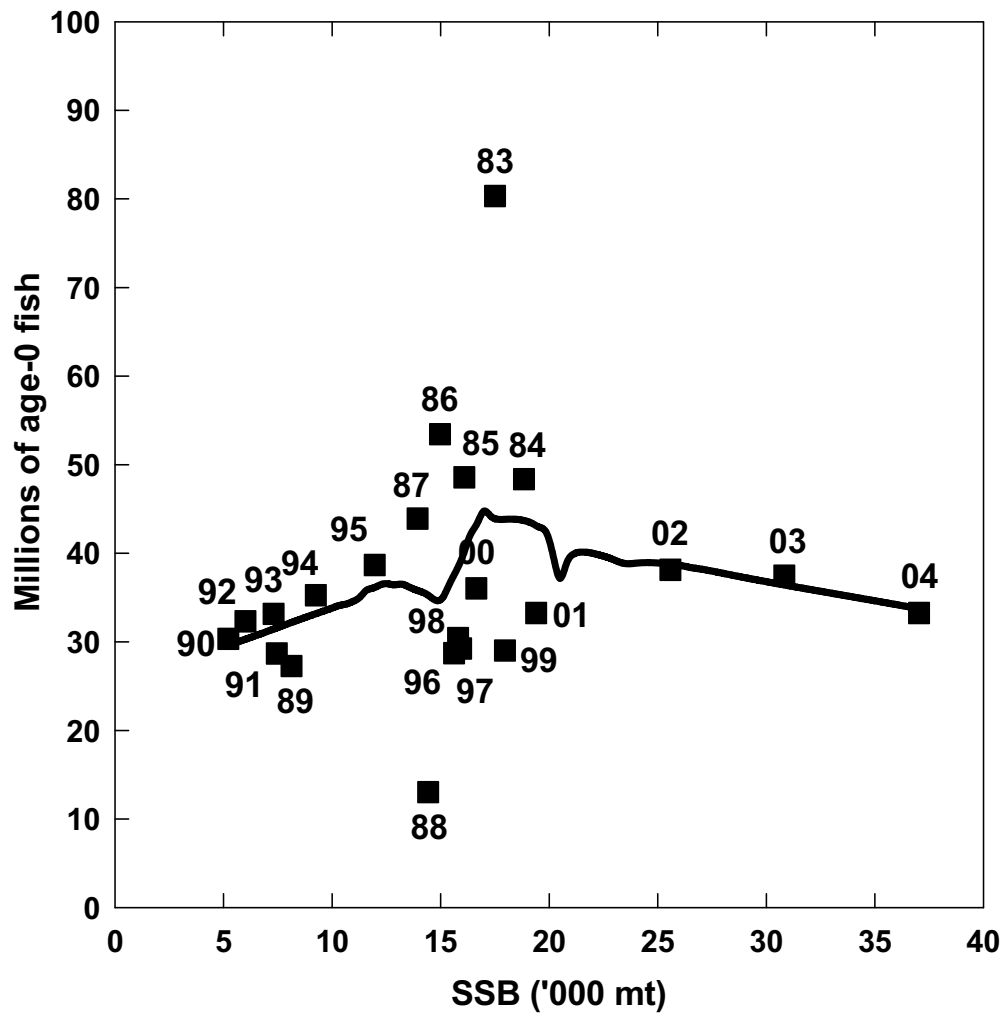


Figure 3-5. VPA spawning stock biomass and recruitment estimates for summer flounder. Smoother in the plot is loess with tension = 0.5.

Summer flounder BH models

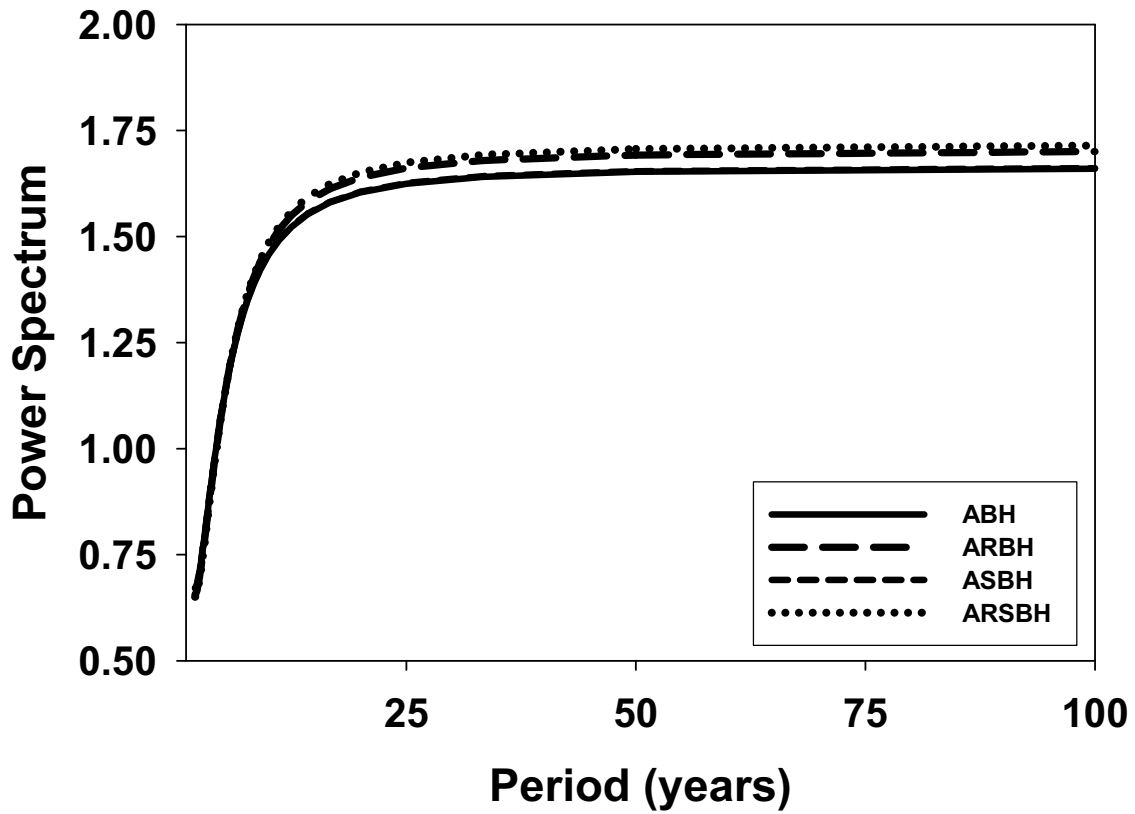


Figure 3-6. Summer flounder periodicity of environmental forcing for autoregressive BH stock-recruitment models.

Summer flounder BH model

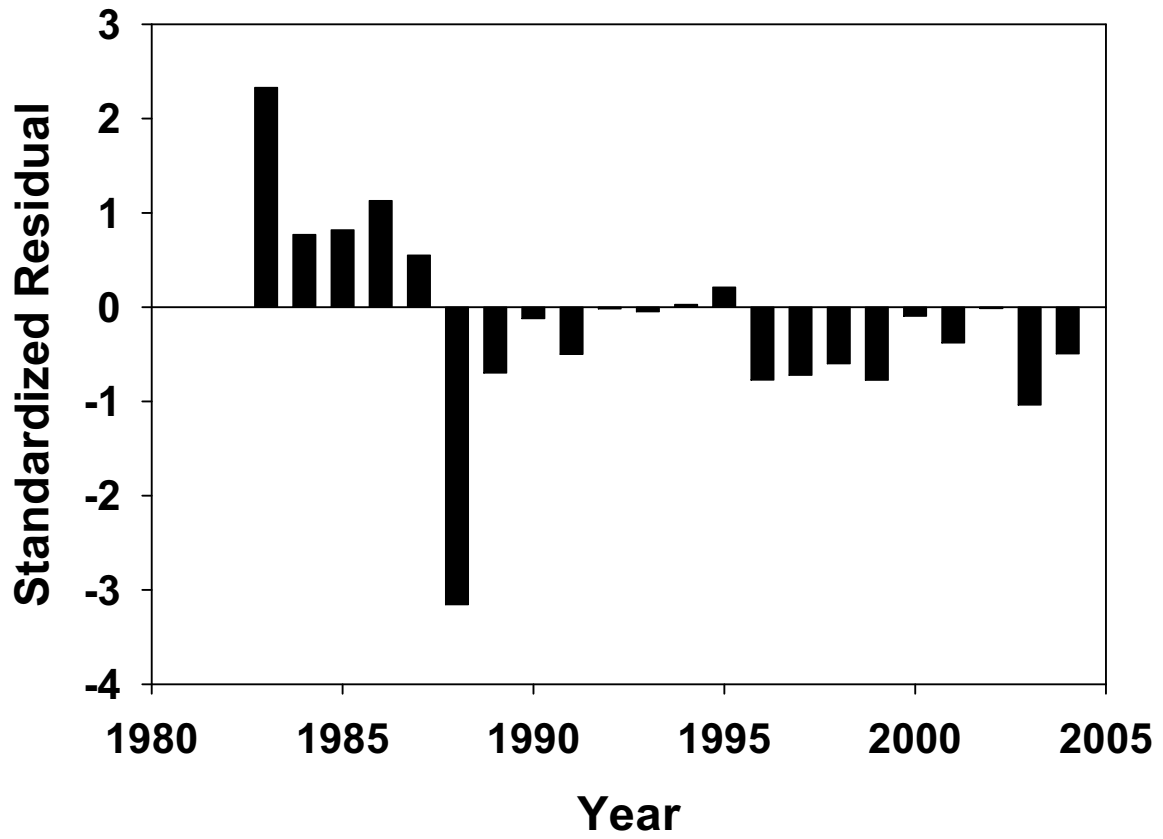


Figure 3-7. Summer flounder standardized residuals for the BH stock-recruitment model.

Summer flounder BH model

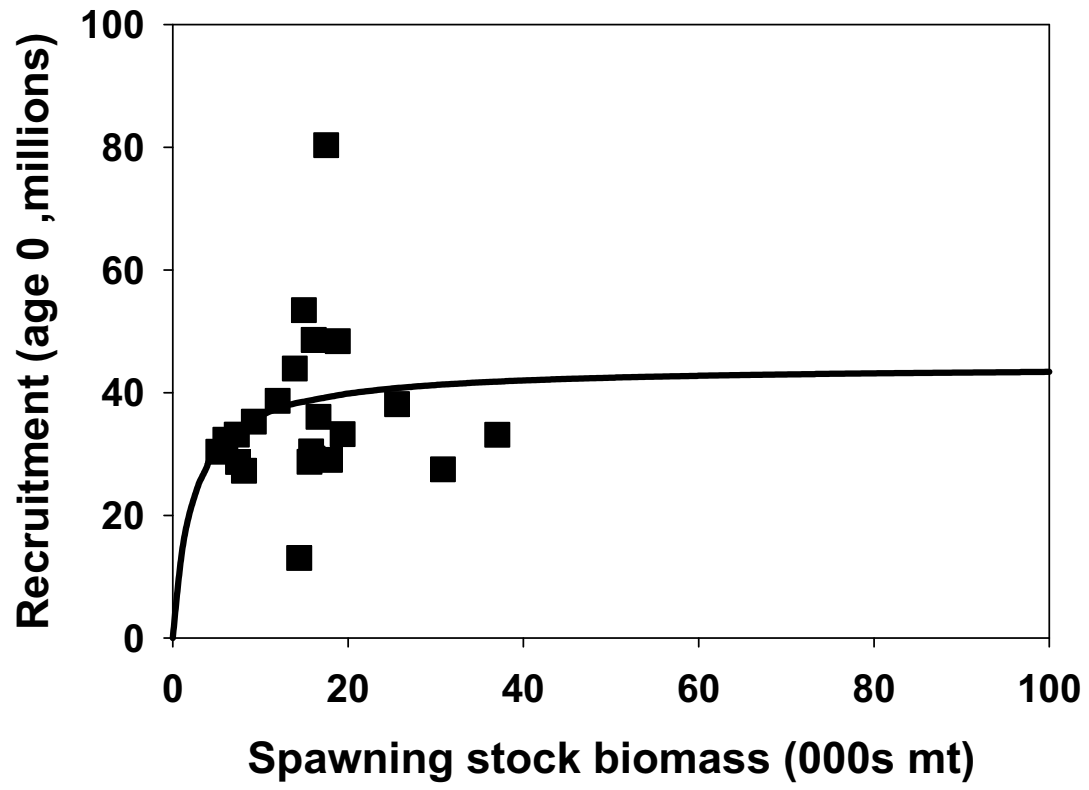


Figure 3-8. Summer flounder stock-recruitment relationship for the BH model.

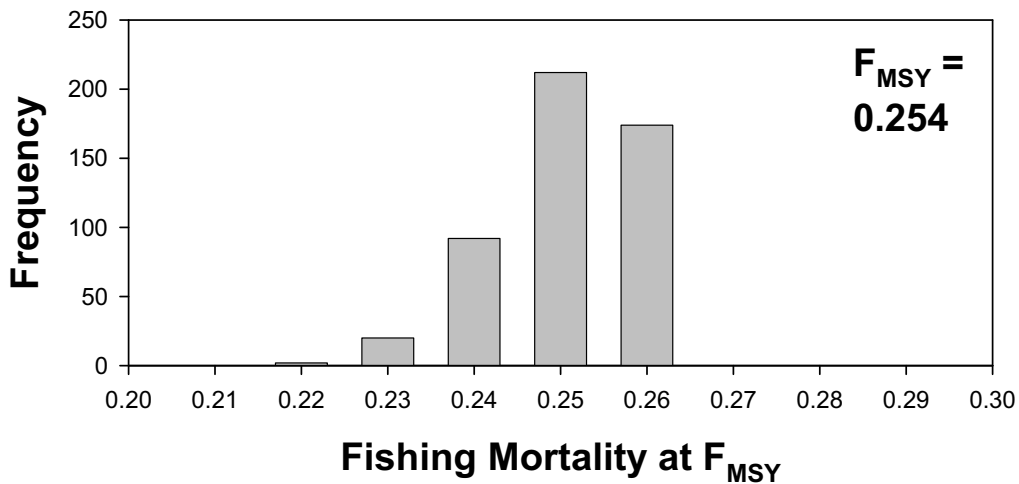
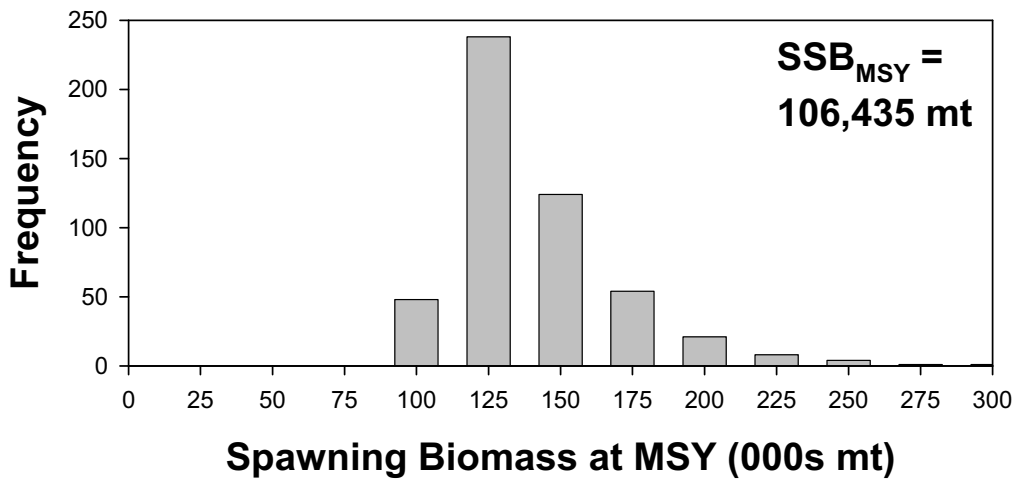
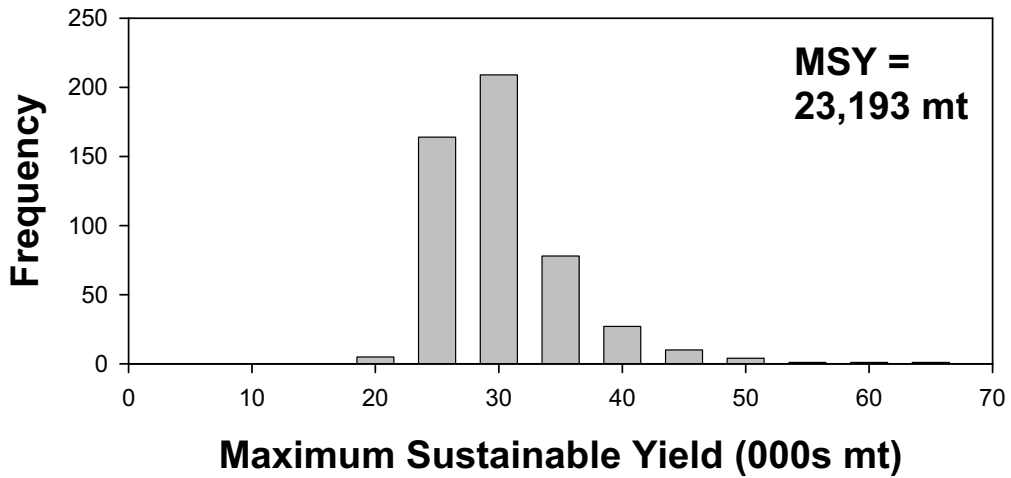


Figure 3-9. Summer flounder posterior distribution of MSY, SSB_{MSY}, and F_{MSY} for the most likley parametric BH stock-recruitment model fit.

Summer flounder BH model

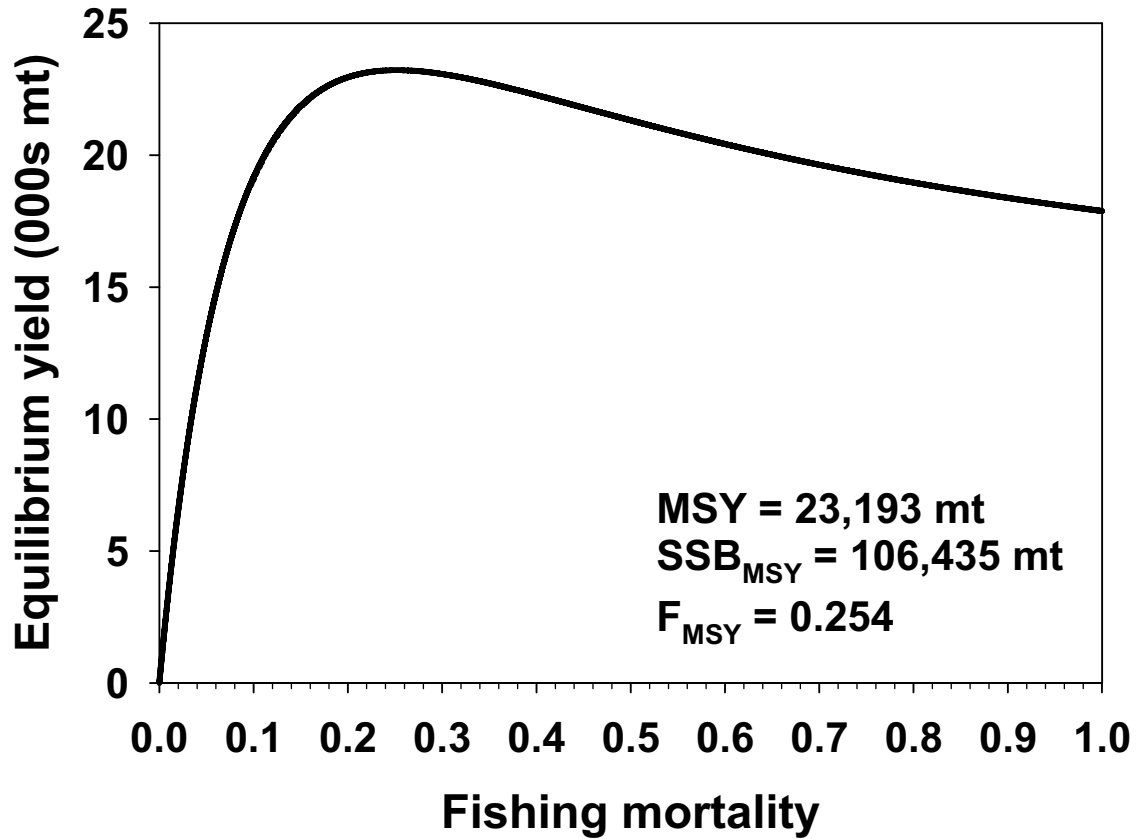


Figure 3-10. Summer flounder equilibrium yield versus F for the BH stock-recruitment model.