

STOCK ASSESSMENT OF SUMMER FLOUNDER FOR 2012

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EXECUTIVE SUMMARY

This assessment of the summer flounder (*Paralichthys dentatus*) stock along the U.S. Atlantic coast (Maine to North Carolina) is an update through 2011 of commercial and recreational fishery catch data, research survey indices of abundance, and the analyses of those data. The summer flounder stock was not overfished and overfishing was not occurring in 2011 relative to the biological reference points established in the 2008 SAW 47 assessment. The fishing mortality rate (F) was estimated to be 0.241 in 2011, below the fishing mortality threshold reference point = FMSY = F35% = 0.310. Spawning Stock Biomass (SSB) was estimated to be 57,020 metric tons (mt) = 125.708 million lbs in 2011, 5% below the biomass target reference point = SSBMSY = SSB35% = 60,074 mt = 132.440 million lbs. The NMFS determined in November 2011 that the summer flounder stock reached the biomass target (i.e., was rebuilt) in 2010, based on the 2011 assessment update.

Reported 2011 landings in the commercial fishery were 7,511 mt = 16.559 million lbs, about 94% of the commercial quota. Estimated 2011 landings in the recreational rod-and-reel fishery (as estimated by the MRIP) were 2,645 mt = 5.831 million lbs, about 50% of the recreational harvest limit. Total commercial and recreational landings in 2011 were 10,156 mt = 22.390 million lbs and total commercial and recreational discards were 1,222 mt = 2.694 million lbs, for a total catch in 2011 of 11,378 mt = 25.084 million lbs. Commercial landings have accounted for 56% of the total catch since 1982, with recreational landings accounting for 36%, recreational discards about 5%, and commercial discards about 3%. Commercial discard losses in the otter trawl and scallop dredge fisheries have accounted for about 5% of the total commercial catch, assuming a discard mortality rate of 80%. Recreational discard losses have accounted for about 12% of the total recreational catch, assuming a discard mortality rate of 10%.

Fishing mortality (F) calculated from the average of the currently fully recruited ages (3-7+) ranged between about 1.0 and 2.0 during 1982-1996. The fishing mortality rate declined to below 1.0 after 1996 and was estimated to be 0.241 in 2011, with a 50% probability that the fishing mortality rate in 2011 was between 0.228 and 0.254. SSB decreased from about 25,000 mt = 55.116 million lbs in the early 1980s to about 7,000 mt = 15.432 million lbs in 1989, and then increased to above 40,000 mt = 88.185 million lbs by 2002. SSB was estimated to be 57,020 mt = 125.708 million lbs in 2011, with a 50% probability that SSB in 2011 was between 54,440 and 59,822 mt (120.020 and 131.885 million lbs). The arithmetic average recruitment from 1982 to 2011 is 42 million fish at age 0. The 1982 and 1983 year classes are the largest in the assessment time series, at 72 and 81 million fish; the 1988 year class is the smallest at 13 million fish. The 2009 year class is estimated to be about 47 million fish, about 10% above average. The current estimate of the size of the 2009 year class is about 50% smaller than the initial estimate from the 2010 assessment of 80 million fish. Both the 2010 and 2011 year classes are estimated to be smaller than average.

The summer flounder stock assessment has historically exhibited a consistent retrospective pattern of underestimation of F and overestimation of SSB; the causes of this pattern have not been determined. For the last six terminal years, however, fishing mortality has been overestimated and SSB underestimated. A recent pattern of retrospective overestimation in recruitment (R) is also evident. The estimates of SSB, R and F over the last five assessments are consistent with the most recent internal retrospective pattern of the assessment model.

If the landings of summer flounder in 2012 equal the specified Total Allowable Landings (TAL) = 10,238 mt = 22.571 million lbs, the 2012 median (50% probability) discards are projected to be 1,455 mt = 3.208 million lbs, and the median total catch is projected to be 11,693 mt = 25.779 million lbs. The median F in 2012 is projected to be 0.247, below the fishing mortality threshold = FMSY = F35% = 0.310. The median SSB on November 1, 2012 is projected to be 55,300 mt = 121.916 million lbs, below the biomass target of SSBMSY = SSB35% = 60,074 mt = 132.440 million lbs.

If the stock is fished at the fishing mortality threshold = FMSY = F35% = 0.310 in 2013, median landings are projected to be 11,892 mt = 26.217 million lbs, with median discards of 1,637 mt = 3.609 million lbs, and median total catch = 13,523 mt = 29.813 million lbs. This projected median total catch is equivalent to the Overfishing Limit (OFL) for 2013, and is less than the MSY = 14,632 mt (32.258 million lbs) of total catch (13,122 mt = 28.929 million lbs of landings plus 1,510 mt = 3.329 million lbs of discards). The median SSB on November 1, 2013 is projected to be 52,843 mt = 116.499 million lbs, 88% of the biomass target of SSBMSY = SSB35% = 60,074 mt = 132.440 million lbs. The projected catch estimates in the following table are medians of the catch distributions for fixed F in 2013.

Total Catch (OFL), Landings, Discards, Fishing Mortality (F)
and Spawning Stock Biomass (SSB) in 2013
Catches and SSB in metric tons

Total Catch	Landings	Discards	F	SSB
13,523	11,892	1,637	0.310	52,843