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## Fishery and Survey Data

Reported 2013 landings in the commercial fishery were $8,108 \mathrm{mt}=17.875$ million lbs , about $73 \%$ of the commercial quota including the RSA ( $11,106 \mathrm{mt}=24.484$ million lbs). Estimated 2013 landings in the recreational fishery were $2,424 \mathrm{mt}=5.344$ million lbs, about $71 \%$ of the recreational harvest limit $(3,425 \mathrm{mt}=$ 7.551 million lbs). Total commercial and recreational landings in 2013 were $10,532 \mathrm{mt}=23.219$ million lbs and total commercial and recreational discards were $1,703 \mathrm{mt}=3.754$ million lbs, for a total catch in 2013 of $12,235 \mathrm{mt}=26.974$ million lbs (Table 1, Figure 1).

State and Federal survey biomass index trends were variable, but most indices decreased from 2012 to 2013 (Figures 2-12). Indices of recruitment (age 0 fish) were generally lower over the last 3 years than in the previous decade (Figure 13).

Table 1. Total catch (metric tons) of scup from Maine through North Carolina. Landings include revised Massachusetts landings for 1986-1997. Commercial discards for 1981-1988 calculated as the geometric mean ratio of discards to landings numbers at age for 1989-1993. Commercial discard estimate for 1998 is the mean of 1997 and 1999 estimates. Recreational catch from MRIP (2004-2013) and MRFSS (1981-2003) adjusted by MRFSS to MRIP 2004-2011 ratio.

| Year | Commercial Landings | Commercial Discards | Recreational Landings | Recreational Discards | Total Catch |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1981 | 9,856 | 4,964 | 3,116 | 59 | 17,995 |
| 1982 | 8,704 | 4,383 | 2,791 | 53 | 15,931 |
| 1983 | 7,794 | 3,925 | 3,353 | 63 | 15,135 |
| 1984 | 7,769 | 2,158 | 1,296 | 33 | 11,256 |
| 1985 | 6,727 | 4,184 | 3,268 | 60 | 14,239 |
| 1986 | 7,176 | 2,005 | 6,223 | 97 | 15,501 |
| 1987 | 6,276 | 2,537 | 3,323 | 42 | 12,178 |
| 1988 | 5,943 | 1,657 | 2,289 | 35 | 9,923 |
| 1989 | 3,984 | 2,229 | 2,980 | 43 | 9,237 |
| 1990 | 4,571 | 3,909 | 2,220 | 42 | 10,742 |
| 1991 | 7,081 | 3,530 | 4,336 | 87 | 15,034 |
| 1992 | 6,259 | 5,668 | 2,366 | 52 | 14,345 |
| 1993 | 4,726 | 1,436 | 1,714 | 31 | 7,907 |
| 1994 | 4,392 | 807 | 1,409 | 41 | 6,649 |
| 1995 | 3,073 | 2,057 | 720 | 14 | 5,864 |
| 1996 | 2,945 | 1,522 | 1,156 | 22 | 5,645 |
| 1997 | 2,188 | 1,843 | 642 | 9 | 4,682 |
| 1998 | 1,896 | 3,331 | 469 | 16 | 5,712 |
| 1999 | 1,505 | 4,819 | 1,012 | 7 | 7,343 |
| 2000 | 1,207 | 2,352 | 2,919 | 61 | 6,539 |
| 2001 | 1,729 | 1,499 | 2,285 | 184 | 5,697 |
| 2002 | 3,173 | 5,636 | 1,944 | 152 | 10,905 |
| 2003 | 4,405 | 2,153 | 4,549 | 176 | 11,283 |
| 2004 | 4,231 | 893 | 3,278 | 182 | 8,584 |
| 2005 | 4,266 | 662 | 1,215 | 270 | 6,413 |
| 2006 | 4,062 | 1,387 | 1,681 | 426 | 7,556 |
| 2007 | 4,196 | 1,859 | 2,085 | 346 | 8,486 |
| 2008 | 2,351 | 2,879 | 1,713 | 287 | 7,229 |
| 2009 | 3,717 | 1,675 | 1,462 | 211 | 7,065 |
| 2010 | 4,855 | 2,108 | 2,715 | 318 | 9,996 |
| 2011 | 6,819 | 1,913 | 1,632 | 173 | 10,537 |
| 2012 | 6,751 | 2,152 | 1,842 | 231 | 10,976 |
| 2013 | 8,108 | 1,477 | 2,424 | 226 | 12,235 |



Figure 1. Scup fishery total catch.


Figure 2. NEFSC trawl survey biomass indices for scup.


Figure 3. NEFSC spring trawl survey biomass indices for scup. Whiskers around each annual index represent $+/$ - one standard deviation. Dashed lines represent $65 \%$ confidence intervals around the 2004-2011 mean, a period when the stock was estimated to be at or above SSBMSY and not experiencing overfishing.


Figure 4. NEFSC fall trawl survey biomass indices for scup. Whiskers around each annual index represent $+/$ one standard deviation. Dashed lines represent $65 \%$ confidence intervals around the 2004-2011 mean, a period when the stock was estimated to be at or above SSBMSY and not experiencing overfishing.


Figure 5. MADMF trawl survey indices for scup.


Figure 6. RIDFW trawl and trap survey indices for scup. The Cooperative trap survey ended in 2012.


Figure 7. URIGSO trawl survey indices for scup. 2013 indices not available.


Figure 8. CTDEP trawl survey indices for scup.


Figure 9. NYDEC trawl survey indices for scup.


Figure 10. NJDMF trawl survey indices for scup.


Figure 11. VIMS (ChesMMAP and NEAMAP) trawl survey indices for scup.


Figure 12. Measures of scup aggregate numeric abundance. Indices normalized to time series means.


Figure 13. Measures of scup age 0 abundance. Indices normalized to time series means.

