

## **Recreational Landings and Size Information**

### ***Management Size Limits and Other Observations:***

1. Observation that headboats stopped using electric reels about 1986, with a concomitant movement towards shallower water fishing effort. Headboat CPUE variable among major areas prior to 1986, and very similar afterwards.
2. Minimum size limit of 12" TL introduced in 1992 (Amendment 4).
3. Minimum size limit of 14" TL introduced in 1999 (Amendment 9).

### ***MRFSS Landings Data Base:***

4. Landings estimates available from 1979-2001, estimates for 1979-1980 were not estimated in same manner as 1981-2001. Recommended deleting 1979-1980 catch estimates from consideration.
5. Mode of landings from MRFSS include shore based, private boat and charter boat. Shore-based landings estimates are generally small (with a few exceptions) and believed to be in error. Recommended deleting shore-based landings estimates from consideration.
6. Charter boat estimates for 1981-1985 include headboats. Because headboats landings are better estimated from headboat program, it was desirable to remove that portion of the charter boat estimates from the MRFSS that include headboat landings. Recommended these be accomplished by checking individual trip interviews by stratum with both charter and headboat to identify stratum to be adjusted, otherwise removed all headboat strata. For the mixed strata (2), adjusted landings (all checked, only A's needed to be adjusted) based catch rates (number of fish per interview).
7. Updated estimate of release mortality (8%) was used to modify catch of released fish (Type B2).
8. Recommended that mean landings by private and charter boats for 1981-1990 be used for 1972-1980 to extend these landings back in time. These landings are relatively small compared to headboat landings during this period, and no trend was noted for the period 1981-1990.
9. Concern continues about large variability in year-to-year estimates of private and charter boat landings and generally large PSEs (ranging from about 20% up to almost 60%. A suggested alternate approach may be to apply an appropriate smoother (running average or lo(w)ess).

10. For estimating landings in weight, occasionally no fish were measured in weight for a given stratum (year, subregion, state, mode, area). These missing weights were filled in using mean weight of fish from neighboring strata based first on wave, then state, and worst case neighboring year.

***MRFSS Biostatistical Data Base:***

1. Length measurements (and some limited weight measurements) are available in limited numbers from 1979-2000. Weightings for combining lengths are based on estimated catch in numbers (A+B1) by mode, year, wave, state.

***Headboat Landings Data Base:***

1. Landings estimates for North Carolina (areas 1-3, 9, 10) and South Carolina (areas 4, 5) are available from 1972-2001. These represent the great majority of red porgy landings from the South Atlantic. Limited small landings were estimated for the Cape Hatteras area from 1973-1976 (on the order of 1000-3500 in area 1). Since the SAFMC designated the northern limit of the stock as below Cape Hatteras, recommended these landings be deleted.
2. Carolina landings for 1972-1975 were grouped porgies, rather than red porgy. Recommended applying area-specific ratio of red porgies to all porgies for 1976-1980 to porgy landings for 1972-1975.
3. Landings from GA and northeast FL (areas 6-8) are available from 1976-2001. Recommended that 0-intercept regressions between Carolinas landings (nos. and weight) and GA/NFL landings be applied to estimate landings for this region for 1972-1975. Similarly, recommended a 0-intercept regression between Carolinas landings and SEFL landings (available since 1981) be applied to estimate landings for this region for 1972-1980. These landing adjustments are relatively small, and any small biases are unlikely to effect assessment results.

***Headboat Biostatistical Data Base:***

1. Length and weight measurements available comparable to area landings data (with exception of additional SEFL length data from 1978-1980).
2. Recommended that lengths be combined across areas. The weightings used to combine lengths across areas are based on estimated catch in numbers by year, area, wave (months 1-5, 6-8, 9-12).

### ***Summary of Landings with Corresponding Length Distributions:***

1. MRFSS estimates are available for 1981-2001 by mode (charter and private boats separate). The mean value for 1981-1990 is substituted for 1972-1980. Discussed possibility of applying a smoother for 1981-2000 for each mode. Generally small sample sizes for lengths from 1979-2001.
2. Headboat for 1972-2001 for three areas (NC, SC, GA/FL). Zero-intercept regressions used to fill in landings for GA/FL in early years. Only length data gap is 1972-1975 for GA/FL.

### **Headboat CPUE Indices**

Headboat landings for red porgy are primarily in North and South Carolina. Landings available from the headboat program can be split between inshore and offshore areas (SC: areas 4 and 5; and NC: areas 2 (dropped after 1987), 3, 9, and 10). A GLM model was run on catch in numbers divided by anglers at the trip level (full day trips only) for 1976-1991 and 1992-1998. Class variables were year, month, area (area 2 merged with area 3). The split between 1991 and 1992 was based on the introduction of the 12-in TL minimum size limit with Amendment 4.