

Length Frequencies and Condition of Released Red Grouper and Black Grouper from At-Sea Headboat Observer Surveys in the Gulf of Mexico and Atlantic Ocean, 2005 to 2007.

Prepared by:

Beverly Sauls

Florida Fish and Wildlife Conservation Commission

Fish and Wildlife Research Institute

Saint Petersburg, Florida

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From 2005 to 2007, headboats in Alabama and the Gulf and Atlantic coasts of Florida participated in an at-sea observer survey. This work was continued on the Atlantic coast of Florida (not including Monroe County) through 2008. The purpose of the Headboat At-Sea Survey was to collect detailed information on both harvested and discarded fish during recreational fishing trips on board working headboats. This report is a summary of information collected on the size, release condition, and final disposition of black and red grouper collected by trained observers during at-sea surveys on board headboats. While this information is specific to the recreational headboat fishery, it provides valuable information on the size of discarded fish from the recreational fishery, which historically has not been collected in other surveys of recreational fishing. This work was funded by Gulf of Mexico Fishery Information Network (Gulf FIN) and Atlantic Coast Cooperative Statistics Program (ACCSP). Field data collection was conducted by Alabama Marine Resources Division and Florida Fish and Wildlife Conservation Commission. Data were processed by Gulf States Marine Fisheries Commission.

Sample Methods

Vessels were randomly selected each month from six sample regions: Alabama, northwest Florida (Escambia to Dixie counties), the western Florida peninsula (Levy to Collier counties), Florida Keys (Monroe County), southeast Florida (Dade to Indian River counties), and northeast Florida (Broward to Duval counties). Operators from selected vessels were contacted by state biologists and a trip was arranged. Dependent upon the number of customers on board, one or two biologists accompanied passengers during the scheduled trip. The captain and mates cooperated by making sure fish caught by their anglers were observed by one of the biologists before they were stored in the fish hold or released overboard. Biologists would assist with de-hooking fish for data collection, but were not permitted to influence the decision to keep or release a fish. For each fish, biologists recorded the species, disposition, size (fork length in mm), and condition of the fish that were released.

Disposition was coded as:

- 1: thrown back alive, legal;
- 2: thrown back alive, not legal;
- 3: plan to eat;
- 4: used for bait or plan to use for bait;
- 5: sold or plan to sell;
- 6: thrown back dead or plan to throw away.

Release condition was coded as:

Good = 1: fish swam toward bottom immediately upon entry into the water;
 Fair = 2: fish was disoriented upon release and slowly swam towards the bottom;
 Poor = 3: fish was very disoriented upon release and remained at the surface;
 Dead = 4: fish was either dead or unresponsive upon entering the water;
 Eaten = 5: fish was eaten by a bird, another fish, or a marine mammal;
 Unobserved = 9: unable to observe fish, not applicable.

Trip level information for each trip included the area fished, duration of fishing (to the nearest half hour), number of anglers, and minimum and maximum depths (feet) of the fishing sites. Area fished was coded differently for Atlantic and Gulf coast regions.

Area fished for southeast and northeast Florida were coded as:

1: 3 miles or less from shore; or
 2: more than 3 miles from shore

Area fished for Keys, western peninsula, northwest Florida, and Alabama were coded as:

3: 10 miles or less from shore; or
 4: more than 10 miles from shore.

A brief interview with each angler observed during a trip was also conducted to collect information on primary and secondary target species, angler avidity, and state and county of residence.

Data Analysis

Black grouper are primarily encountered during headboat trips in the southern portion of Florida (Atlantic and Gulf of Mexico) and infrequently encountered in all other sample regions. For the years 2005-2007, catch data for black grouper were pooled for all regions (Alabama and Florida Gulf and Atlantic regions). In 2008, sampling was discontinued from Alabama through the Florida Keys; therefore, 2008 black grouper catch data were only available from southeast Florida and northeast Florida.

For red grouper, catch data from the south Atlantic regions (northeast and southeast Florida) and the Keys were pooled. In 2008, sampling was discontinued in the Keys; therefore, 2008 red grouper catch data were only available from southeast Florida and northeast Florida.

For annual length frequency graphs, fish lengths (in mm fork length) were converted to centimeters and lengths were placed in 1 cm length bin categories (100 cm bin = fish 99.51cm to 100.50cm). The sample size, mean, minimum, and maximum length for each coast and year are also reported. Also presented are the number and percent of released fish by release condition.

Results

Length frequency histograms for harvested and released (discarded) red grouper and black grouper for each sample year are presented in figures 1 and 2. Summary statistics are presented

in tables 1 and 2. Release conditions for observed released fish are presented in figure 3 and tables 3 and 4.

Figure 1: Atlantic coast length frequencies of released and harvested red grouper, 2005-2008. Note, sampling in Monroe County (Keys) was discontinued in 2008.

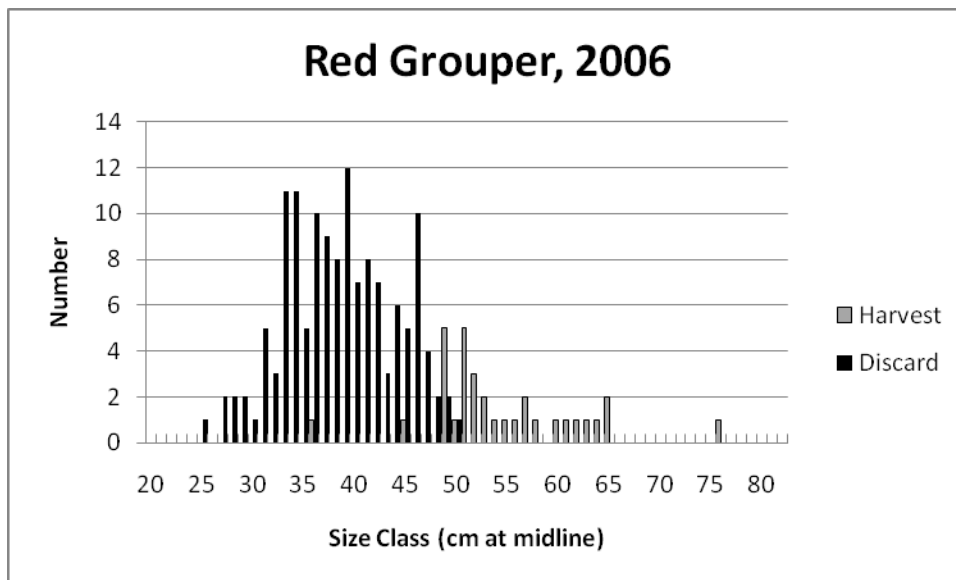
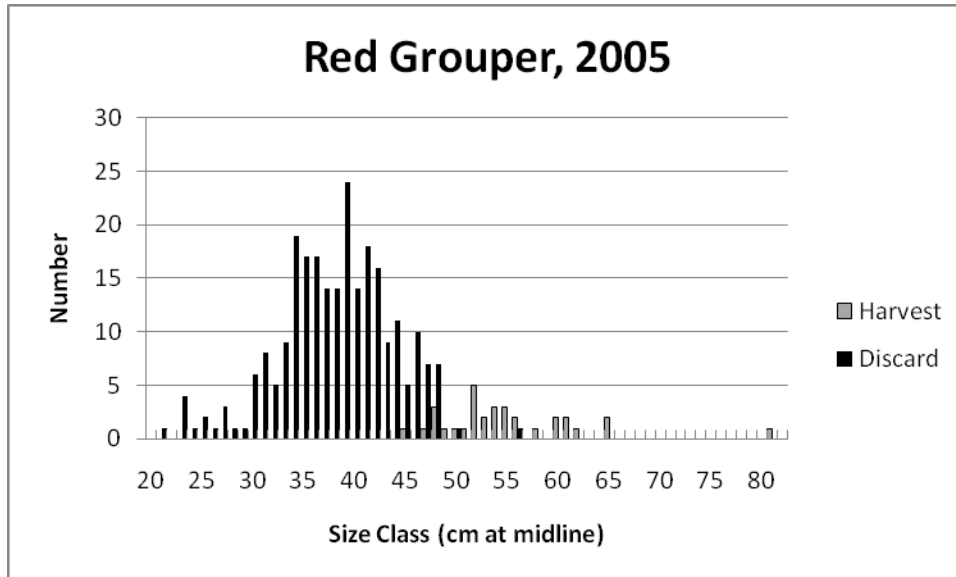


Figure 1, continued.

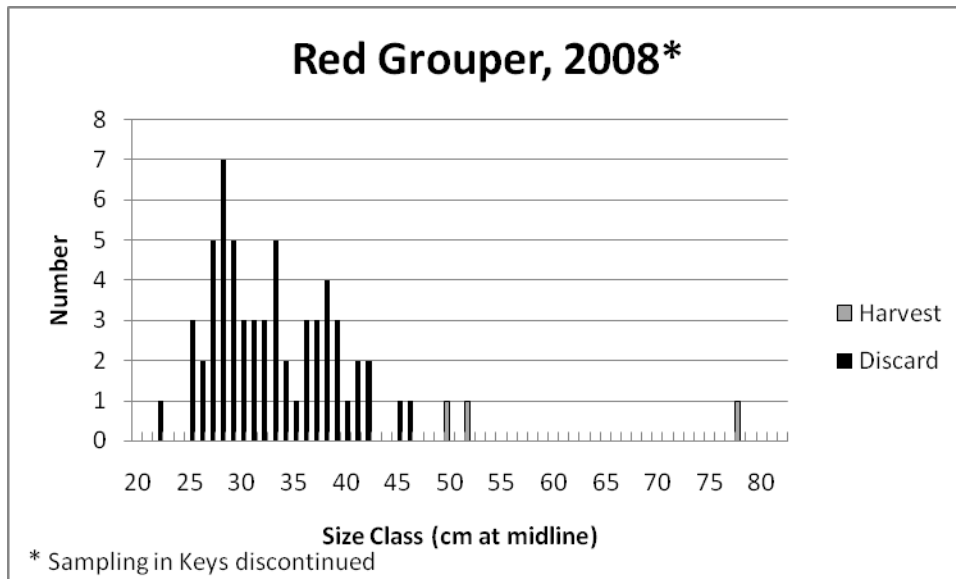
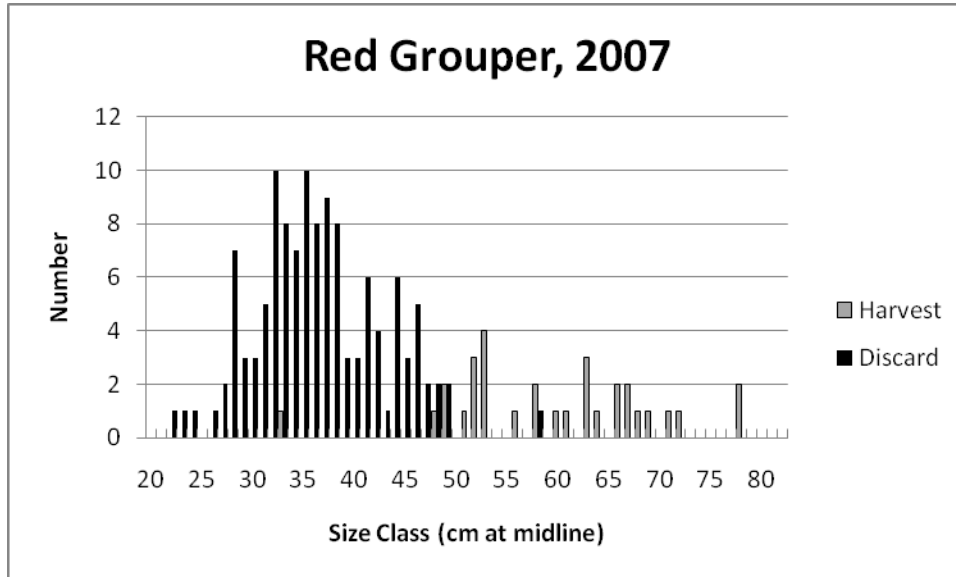


Figure 2: Atlantic and Gulf of Mexico length frequencies of released and harvested black grouper, 2005-2007. Note low sample sizes. In 2008, sampling in Monroe County (Keys) was discontinued and only 3 black grouper were observed in the remaining sample area.

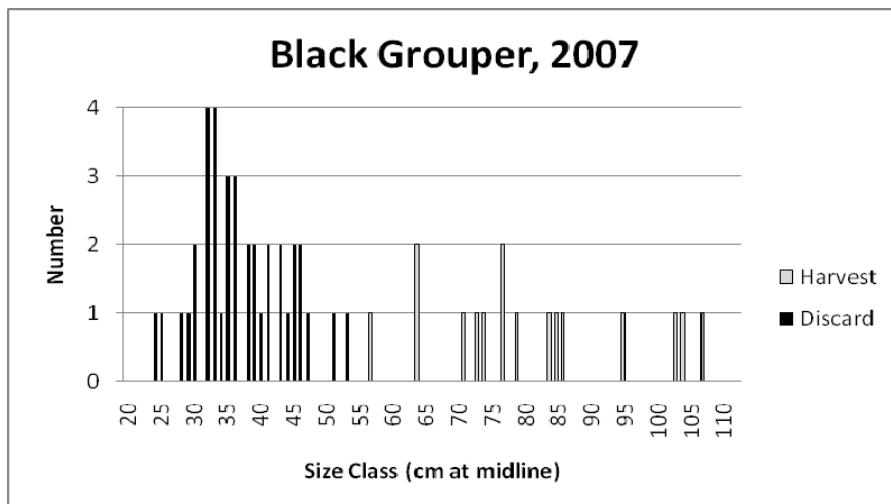
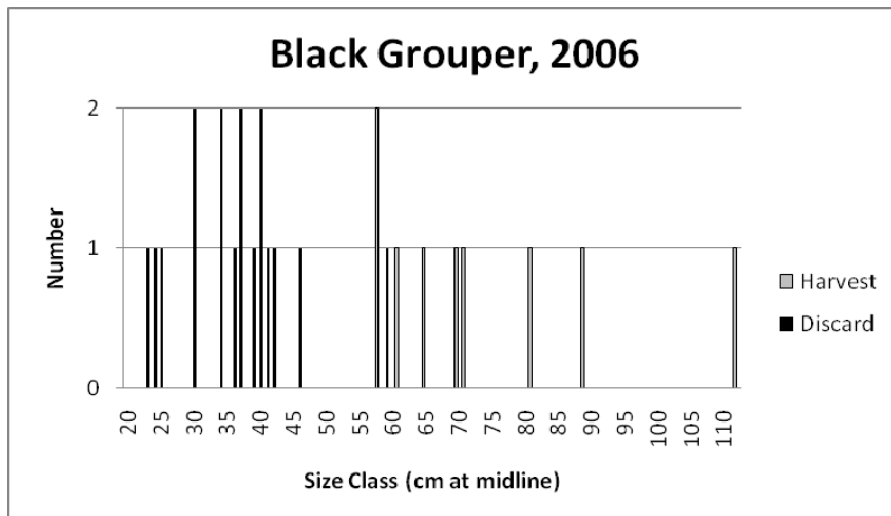
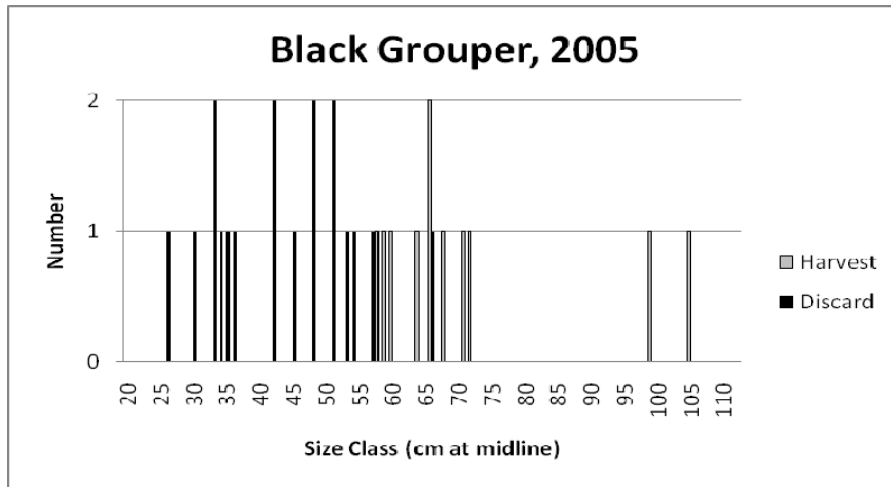


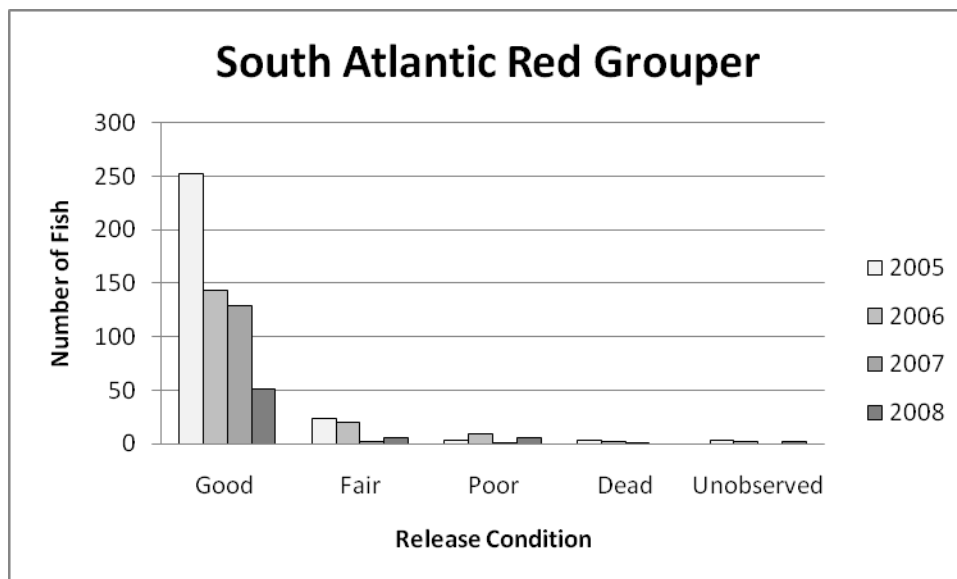
Table 1. Summary statistics for Atlantic coast red grouper lengths.

| Year | Disposition | Number measured | Minimum (mm FL) | Maximum (mm FL) | Mean (mm FL) |
|------|----------------|-----------------|-----------------|-----------------|--------------|
| 2005 | Harvested | 32 | 446 | 815 | 551.562 |
| 2006 | Harvested | 32 | 360 | 763 | 545.656 |
| 2007 | Harvested | 31 | 333 | 781 | 597.258 |
| 2008 | Harvested | 3 | 502 | 780 | 600.667 |
| 2005 | Released alive | 246 | 213 | 560 | 381.902 |
| 2006 | Released alive | 137 | 250 | 497 | 384.620 |
| 2007 | Released alive | 122 | 219 | 580 | 364.098 |
| 2008 | Released alive | 60 | 224 | 459 | 327.467 |

Table 2. Summary statistics for black grouper lengths.

| Year | Disposition | Number measured | Minimum (mm FL) | Maximum (mm FL) | Mean (mm FL) |
|------|----------------|-----------------|-----------------|-----------------|--------------|
| 2005 | Harvested | 11 | 585 | 1047 | 717.091 |
| 2006 | Harvested | 9 | 579 | 1121 | 740.444 |
| 2007 | Harvested | 16 | 573 | 1068 | 813.688 |
| 2008 | Harvested | 1 | 762 | 762 | 762.000 |
| 2005 | Released alive | 18 | 265 | 657 | 435.444 |
| 2006 | Released alive | 17 | 230 | 595 | 364.647 |
| 2007 | Released alive | 38 | 245 | 532 | 372.184 |
| 2008 | Released alive | 3 | 202 | 438 | 350.667 |

Figure 3. and Table 3. Atlantic coast red grouper release conditions.



| Year | Good | | Fair | | Poor | | Eaten | | Dead | |
|------|------|-------|------|-------|------|------|-------|---|------|------|
| | N | % | N | % | N | % | N | % | N | % |
| 2005 | 252 | 89.36 | 24 | 8.51 | 3 | 1.06 | 0 | 0 | 3 | 1.06 |
| 2006 | 144 | 82.29 | 20 | 11.43 | 9 | 5.14 | 0 | 0 | 2 | 1.14 |
| 2007 | 129 | 96.99 | 2 | 1.50 | 1 | 0.75 | 0 | 0 | 1 | 0.75 |
| 2008 | 51 | 80.95 | 6 | 9.52 | 6 | 9.52 | 0 | 0 | 0 | 0 |

Table 4. Black grouper release conditions.

| Year | Good | Fair | Poor | Eaten | Dead |
|------|------|------|------|-------|------|
| 2005 | 14 | 1 | 0 | 0 | 0 |
| 2006 | 13 | 0 | 0 | 0 | 0 |
| 2007 | 30 | 0 | 0 | 0 | 0 |
| 2008 | 3 | 0 | 1 | 0 | 0 |