

King Mackerel Length Frequencies and Condition of Released Fish from Florida and Alabama At-Sea Headboat Observer Surveys in the Gulf of Mexico and Atlantic Ocean, 2005 to 2007.

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For:
SEDAR 16, Gulf of Mexico and South Atlantic King Mackerel Data Workshop, February, 2008.

From 2005 to 2007, headboats in Alabama and the Gulf and Atlantic coasts of Florida participated in an at-sea observer survey. 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. In the Gulf region, most headboat trips engage in bottom fishing, primarily for reef fish species; however, some king mackerel were encountered during sampled trips. In the Atlantic region, particularly in southeast Florida, some headboats drift fish to target pelagic species. These vessels are not anchored and drift broadside with the currents as anglers fish with free-lines on the downcurrent side of the vessel. King mackerel were frequently observed during these trips. This report is a summary of information collected on the size, release condition, and final disposition of king mackerel 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.

Sample Methods

Vessels were randomly selected each month from six sample regions: Alabama, northwest Florida (Escambia to Dixie counties), the western 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 dehooking 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 the condition of 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 conditions were 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

Catch data from Alabama, northwest Florida, and the western peninsula were pooled for the Gulf of Mexico. For the Atlantic Ocean, catch data from the Keys, southeast Florida, and northeast Florida were pooled. 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. Data from January, 2005, to October, 2007, were available at the time of this analysis. The last two months of 2007 should be available in time for the SEDAR Data Workshop.

Results

Length frequency histograms for harvested and released (discarded) king mackerel for each of the three sample years 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 tables 3 and 4.

Figure 1: Atlantic coast length frequencies of released and harvested king mackerel.

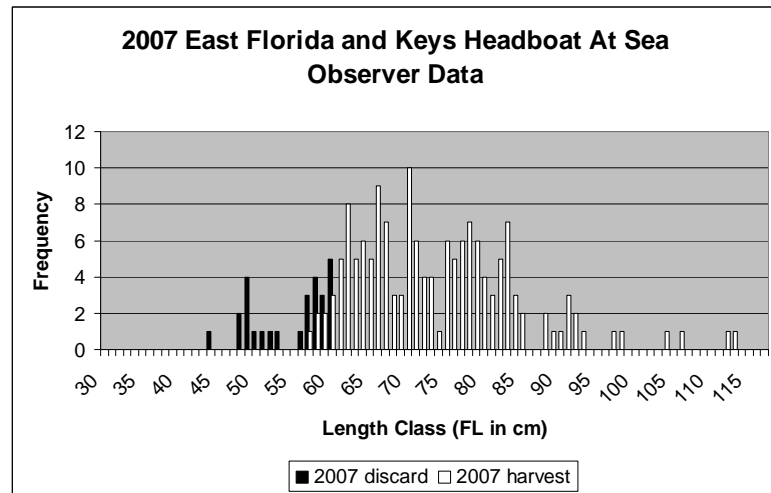
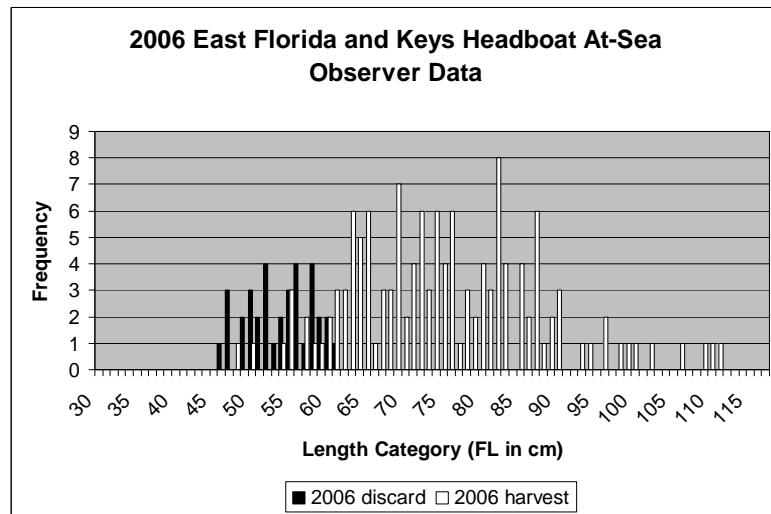
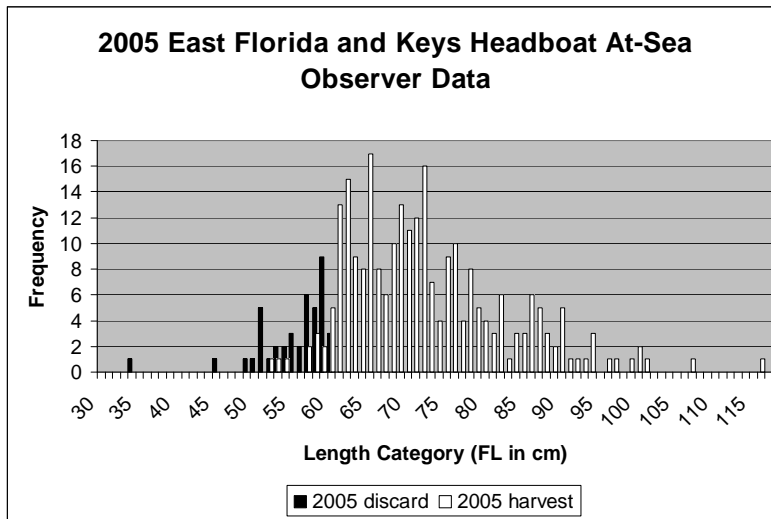


Figure 2: Gulf coast length frequencies of released and harvested king mackerel. Note low sample sizes.

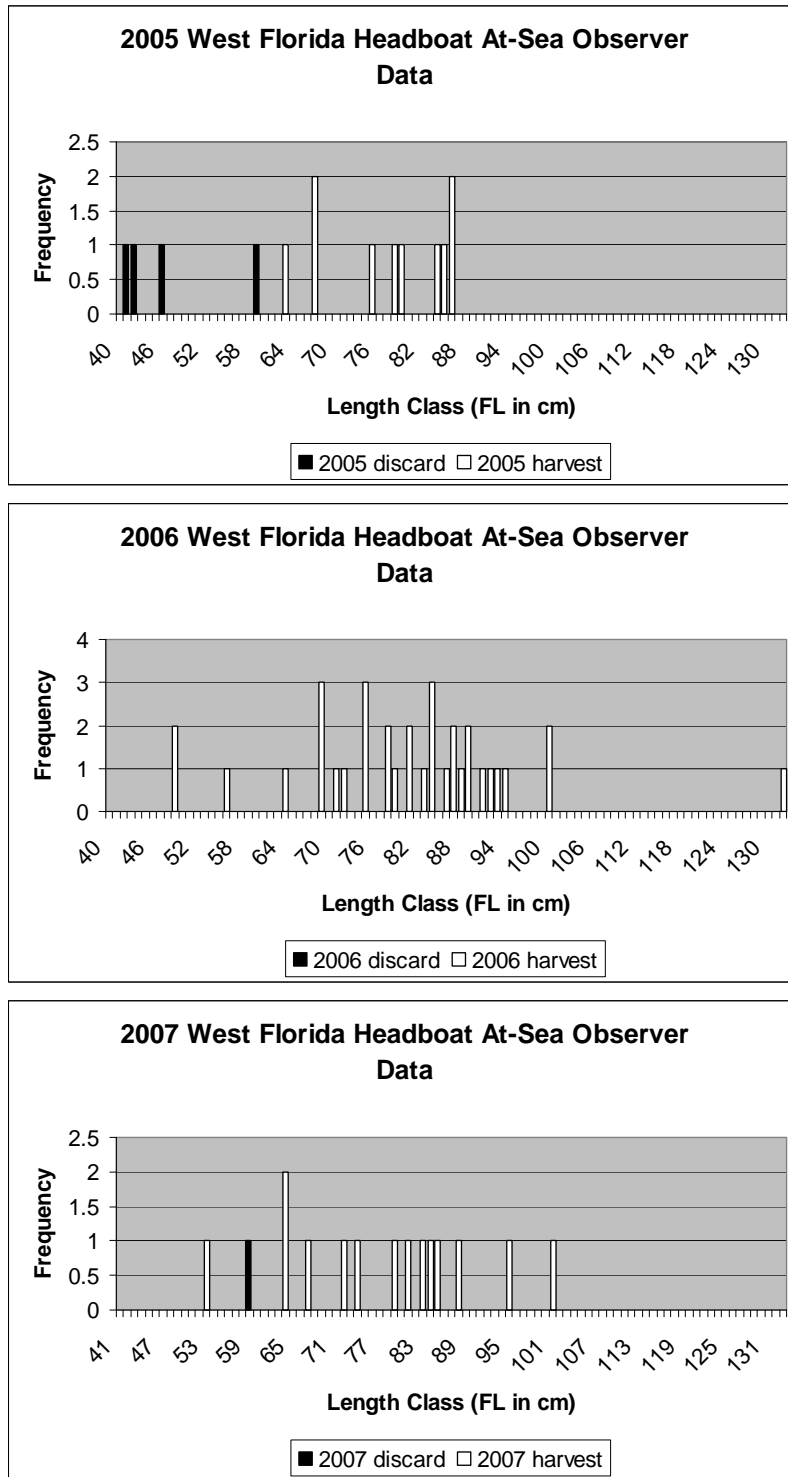


Table 1. Summary statistics for Atlantic coast king mackerel lengths.

Year	Disposition	Number measured	Minimum (mm FL)	Maximum (mm FL)	Mean (mm FL)
2005	Harvested	255	525	1160	725
2006	Harvested	135	478	1112	753
2007	Harvested	154	571	1126	739
2005	Released alive	42	343	600	553
2006	Released alive	35	463	612	539
2007	Released alive	27	441	600	548

Table 2. Summary statistics for Gulf coast king mackerel lengths.

Year	Disposition	Number measured	Minimum (mm FL)	Maximum (mm FL)	Mean (mm FL)
2005	Harvested	10	634	860	769
2006	Harvested	34	494	1317	811
2007	Harvested	14	520	999	770
2005	Released alive	27	441	600	548
2006	Released alive	4	408	586	469
2007	Released alive	1	580	580	

Table 3. Atlantic coast king mackerel release conditions.

Year	Good		Fair		Poor		Eaten		Dead	
	N	%	N	%	N	%	N	%	N	%
2005	41	67.21	12	19.67	2	3.28	0	0	6	9.84
2006	34	72.34	5	10.64	0	0	0	0	8	17.02
2007	18	60.00	3	10.00	1	3.33	0	0	8	26.67

Table 4. Gulf coast king mackerel release conditions.

	Good	Fair	Poor	Eaten	Dead
Year	N	N	N	N	N
2005	5	0	0	1	0
2006	0	0	0	0	0
2007	2	0	0	0	0