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Red Snapper Length Frequencies and Condition of Released Fish from At-Sea Headboat Observer Surveys, 2004 to 2009.

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From 2004 to 2009, headboats in South Carolina and North Carolina participated in an at-sea observer survey. From 2005 to 2009, headboats along the Atlantic coast of Florida and Georgia also 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. This report is a summary of information collected on the size, release condition, and final disposition of red snapper 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: northeast Florida (Broward to Duval counties), southeast Florida (Dade to Indian River counties), Florida Keys (Monroe County), Georgia, South Carolina, and North Carolina. Funding for the Florida Keys was discontinued after 2007. Numbers of sampled headboat trips by state, region and year are presented in table 1. 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 (Florida only). Release conditions were not recorded in South Carolina, Georgia, or North Carolina. Operators from selected vessels were contacted by contractors or state biologists and a trip was arranged.

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 North Carolina, South Carolina, Georgia, and 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.

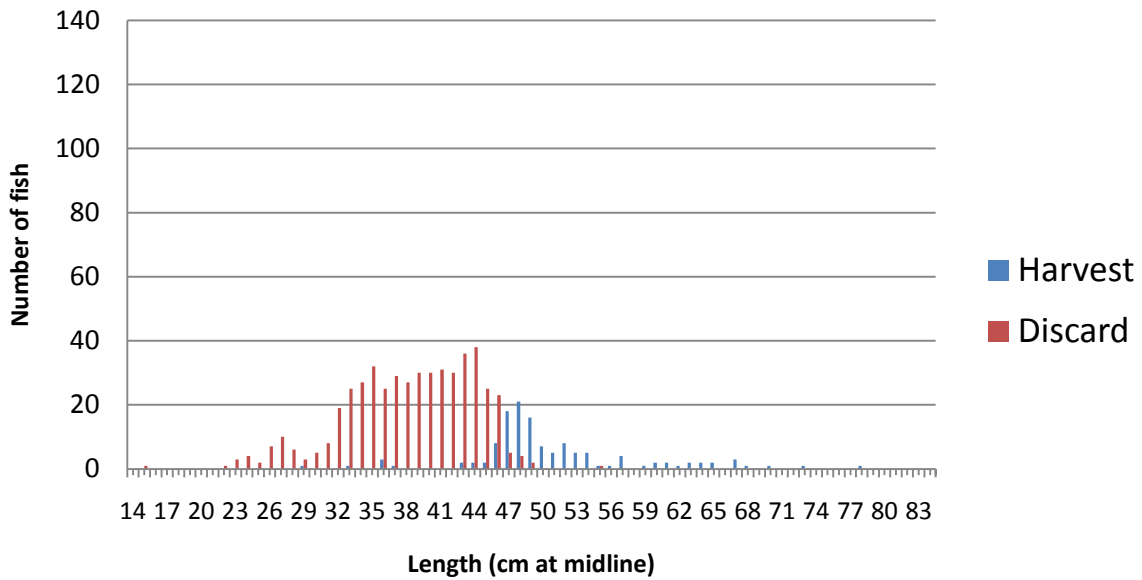
Data Analysis

Catch data from the Keys, southeast Florida, and northeast Florida were pooled while data from Georgia, South Carolina, and North Carolina were treated independently. 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.

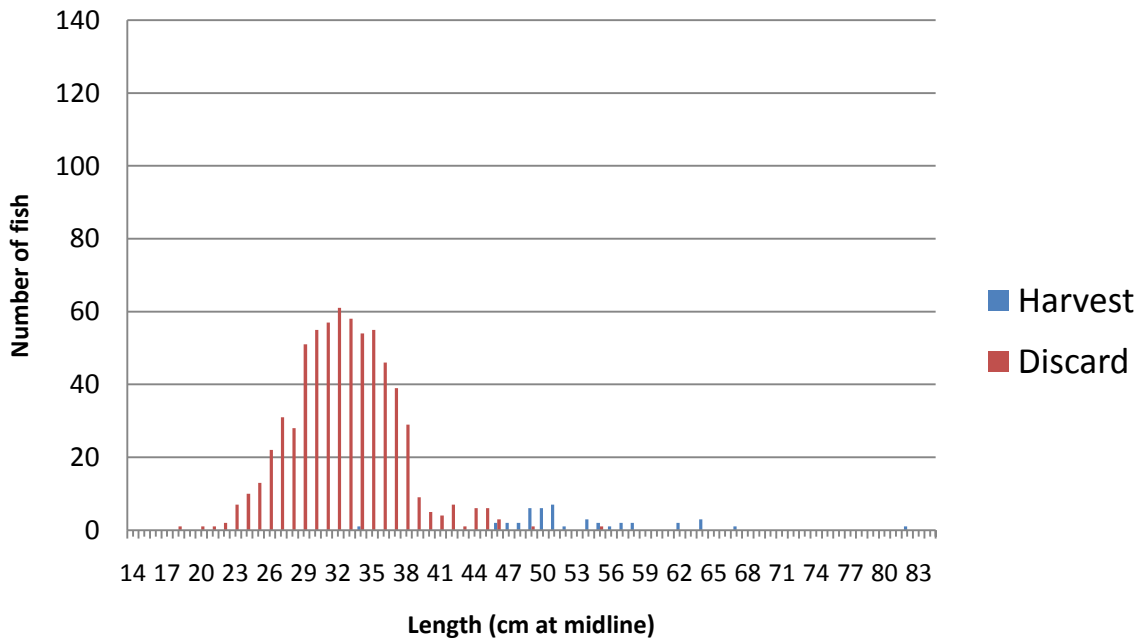
Results

Length frequency histograms for harvested and released (discarded) red snapper by year are presented in figures below. Summary statistics are presented in table 2 and release conditions for observed released fish are presented in table 3.

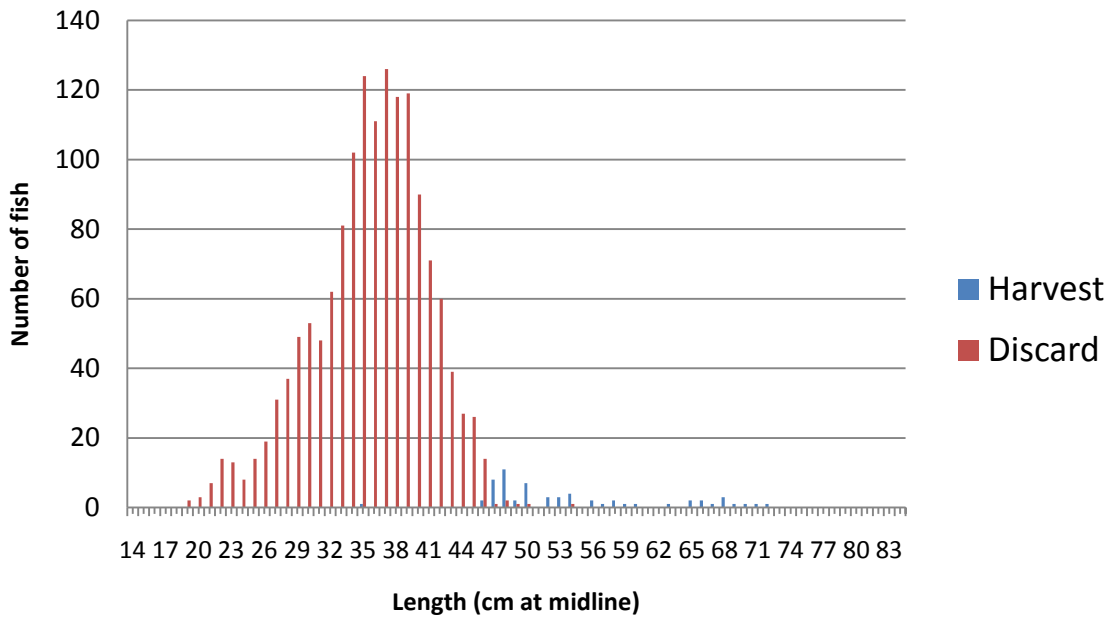
2005 East Florida Red Snapper Length Frequency, Headboats



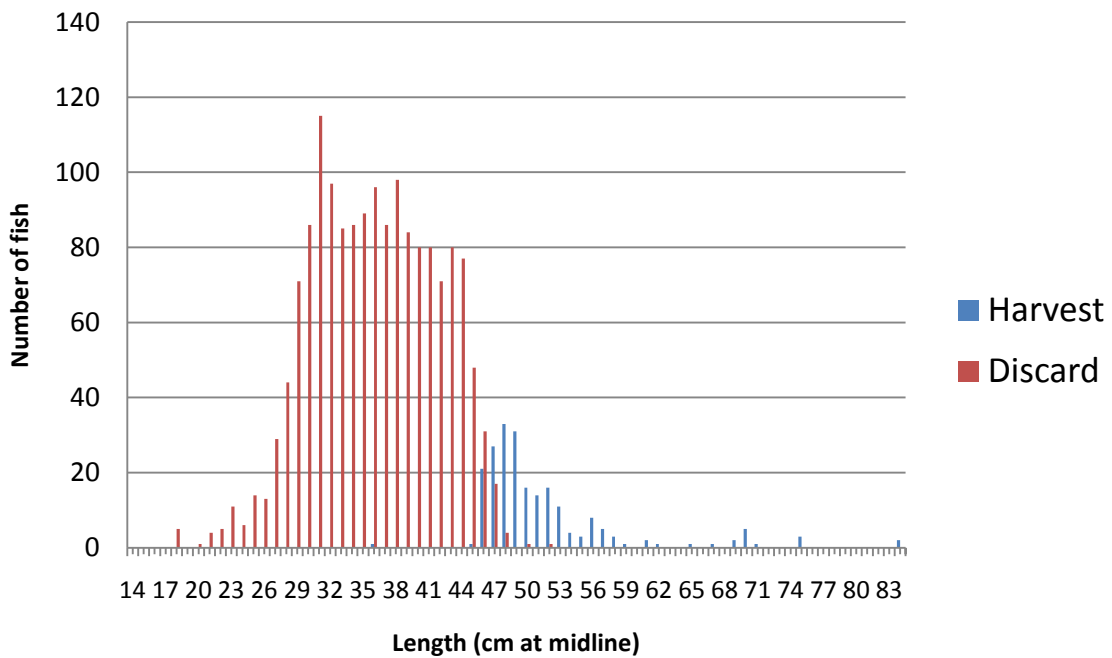
2006 East Florida Red Snapper Length Frequency, Headboats



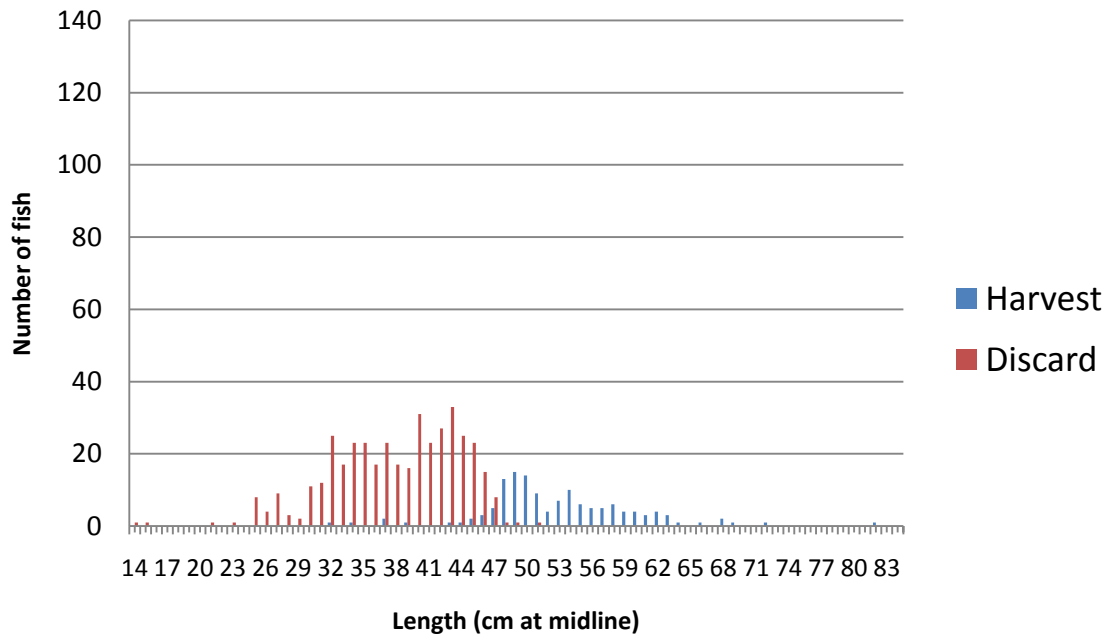
2007 East Florida Red Snapper Length Frequency, Headboats



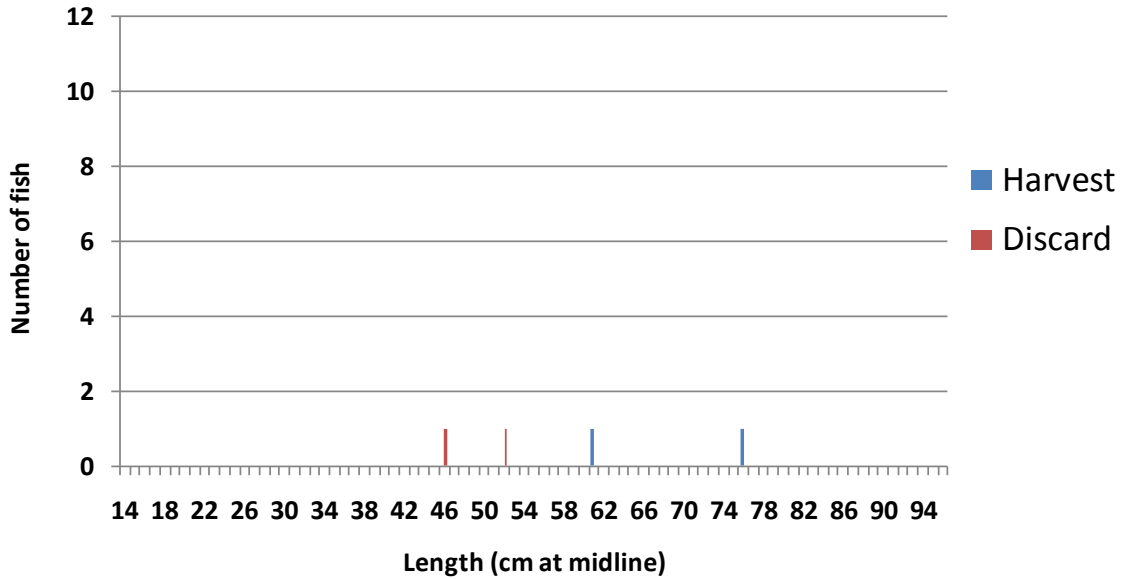
2008 East Florida Red Snapper Length Frequency, Headboats



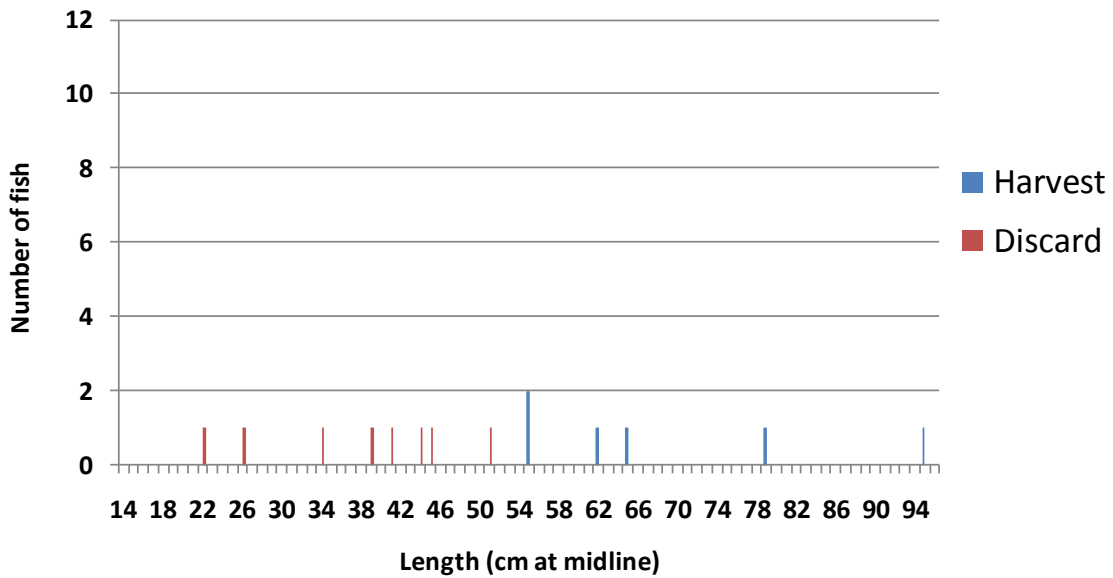
2009 East Florida Red Snapper Length Frequency, Headboats



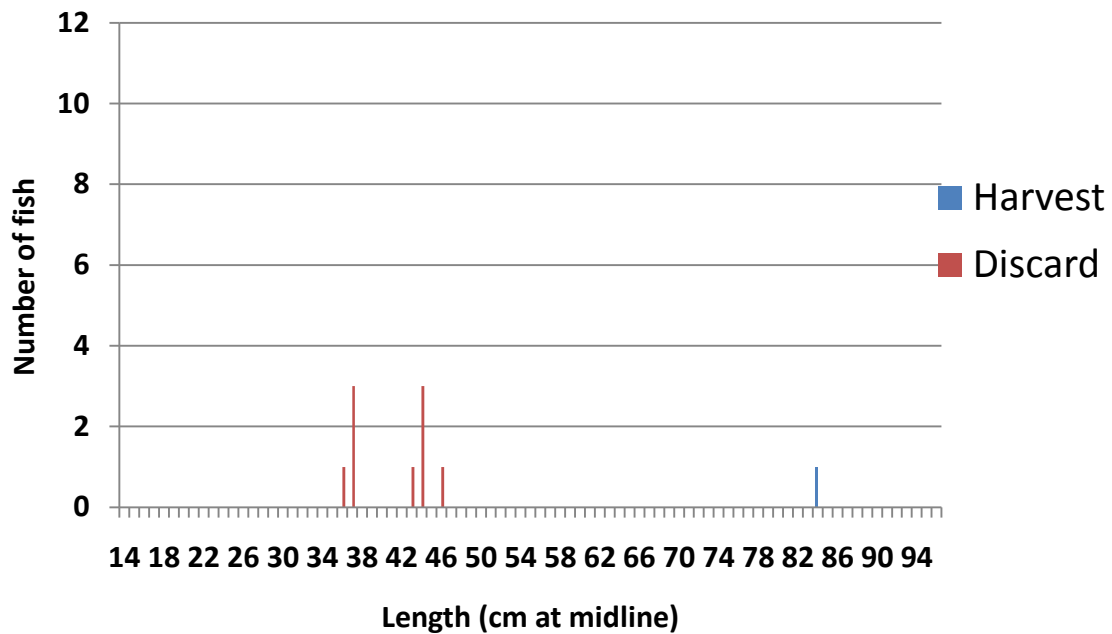
2005 Georgia Red Snapper Length Frequency, Headboats



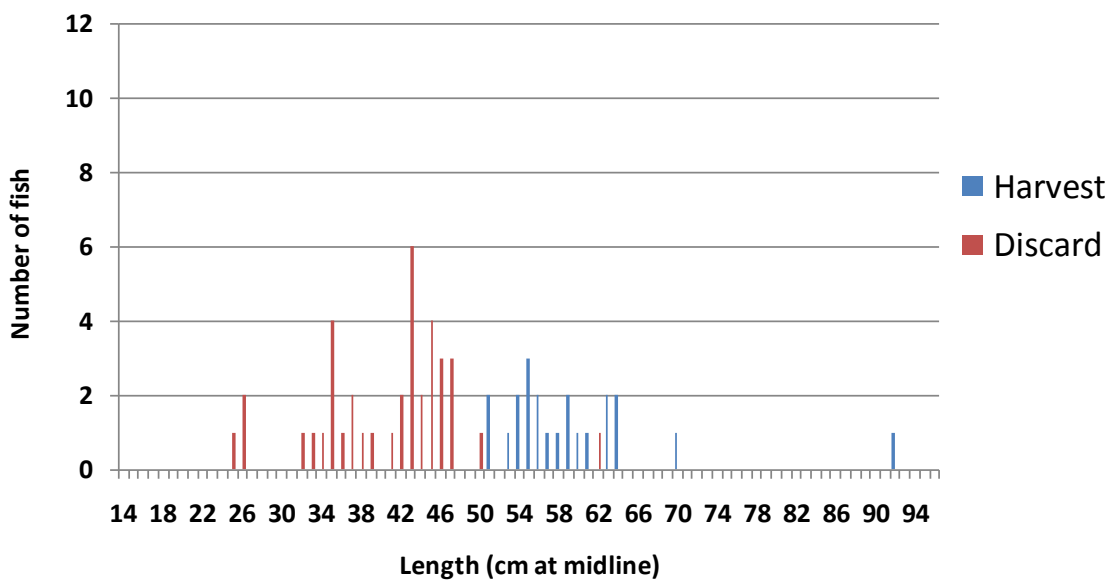
2006 Georgia Red Snapper Length Frequency, Headboats



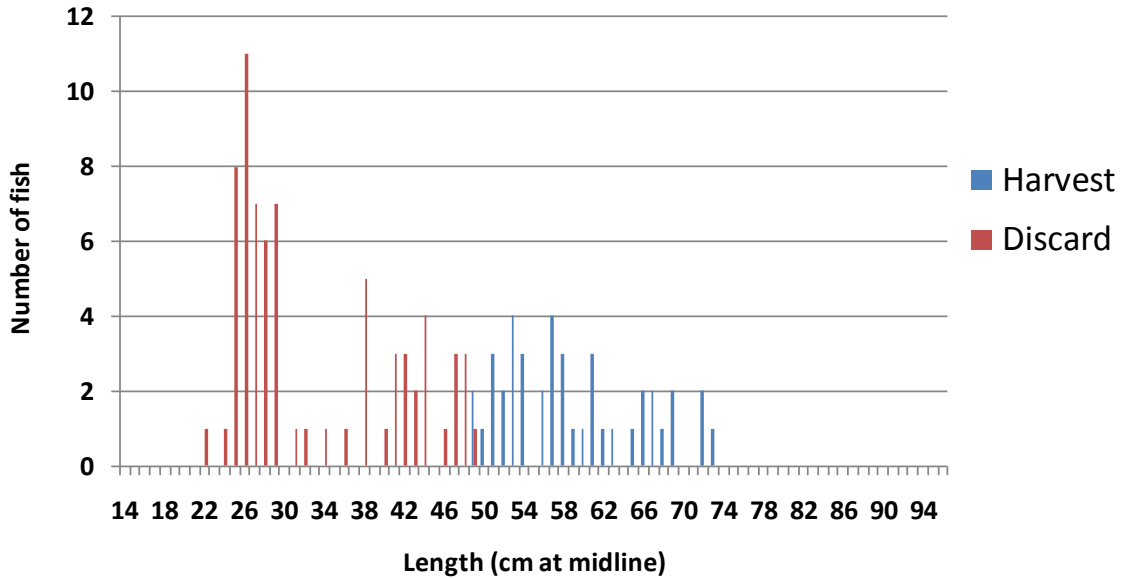
2007 Georgia Red Snapper Length Frequency, Headboats



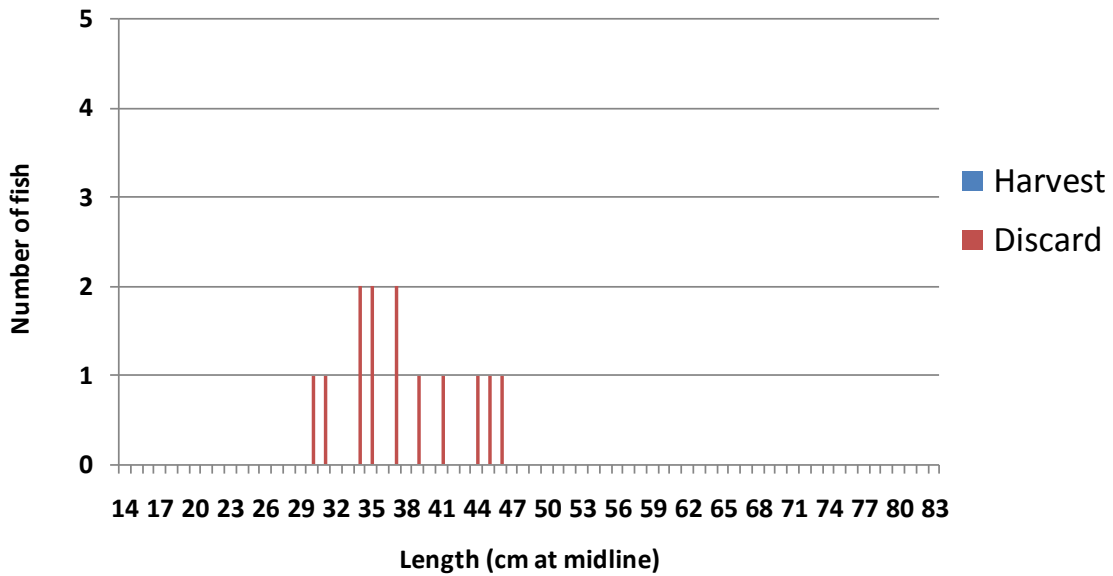
2008 Georgia Red Snapper Length Frequency, Headboats



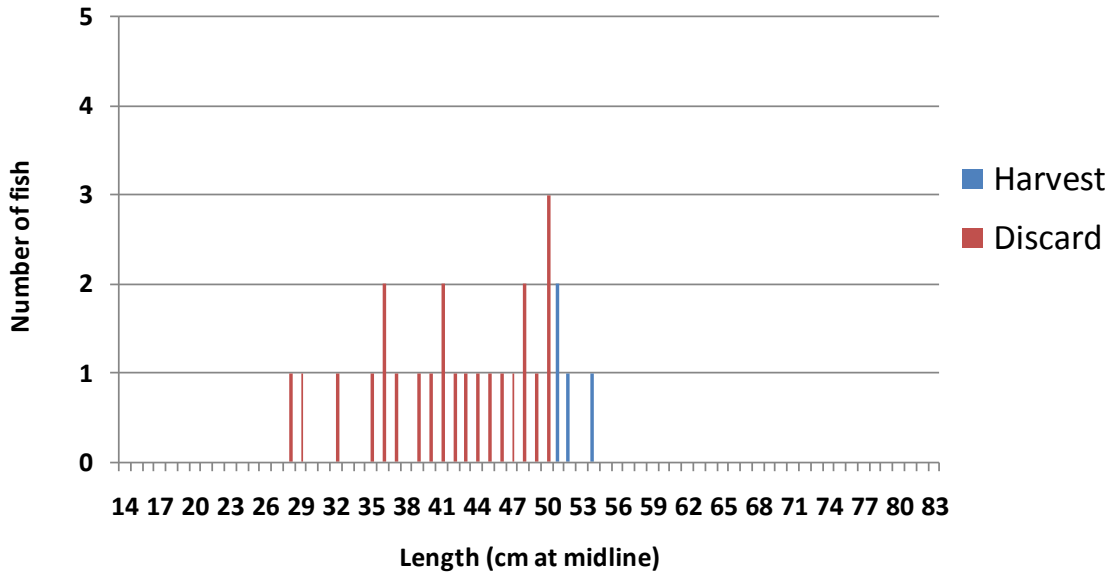
2009 Georgia Red Snapper Length Frequency, Headboats



2007 North Carolina Red Snapper Length Frequency, Headboats



2008 North Carolina Red Snapper Length Frequency, Headboats



2009 North Carolina Red Snapper Length Frequency, Headboats

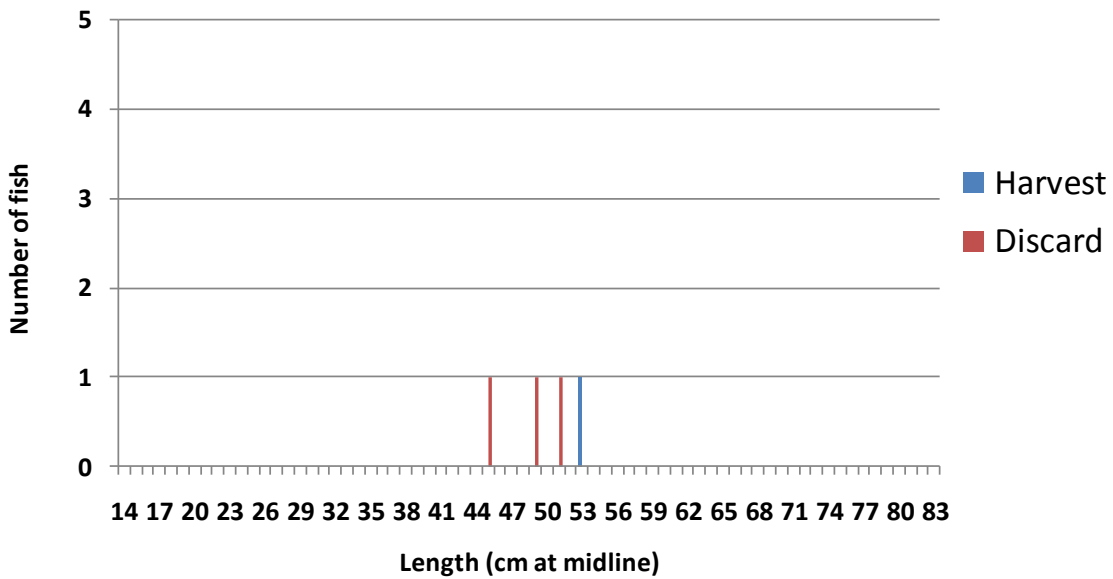


Table 1: Sampled headboat at-sea observer trips by year, state, and region.

Number of Sampled Headboat Trips						
	Keys	SE FL	NE FL	GA	SC	NC
2003	0	0	0	0	8	6
2004	0	0	0	3	29	55
2005	34	95	43	6	57	97
2006	52	71	38	7	44	82
2007	46	71	49	8	52	89
2008	0	72	56	3	39	77
2009	0	76	52	9	34	69
All	132	385	238	36	263	475

Table 2. Summary statistics for Atlantic coast red snapper lengths.

State	Year	Disposition	Number measured	Minimum (mm FL)	Maximum (mm FL)	Mean (mm FL)
Florida	2005	Harvested	130	286	782	508.946
	2006	Harvested	44	342	819	533.205
	2007	Harvested	61	348	720	540.377
	2008	Harvested	213	360	843	515.404
	2009	Harvested	136	324	816	529.971
	2005	Released alive	490	93	548	382.767
	2006	Released alive	664	182	550	325.571
	2007	Released alive	1,474	190	544	357.021
	2008	Released alive	1,615	180	522	360.958
	2009	Released alive	402	142	508	379.293
Georgia	2005	Harvested	2	575	725	650.000
	2006	Harvested	6	512	898	647.000
	2007	Harvested	1	794	794	794.000
	2008	Harvested	22	475	873	558.455
	2009	Harvested	42	458	696	554.429
	2005	Released alive	2	437	485	461.000
	2006	Released alive	8	209	482	354.875
	2007	Released alive	8	343	429	390.500
		Released dead	1	350	350	350.000
	2008	Released alive	38	237	581	382.579
2009	Released alive	71	204	461	311.732	
South Carolina	2004	Harvested	-	-	-	-
	2005	Harvested	4	651	711	691.000
	2006	Harvested	-	-	-	-

	2007	Harvested	2	518	710	614.000
	2008	Harvested	2	485	485	485.000
	2009	Harvested	-	-	-	-
	2004	Released alive	2	375	445	410.000
	2005	Released alive	-	-	-	-
	2006	Released alive	-	-	-	-
	2007	Released alive	1	455	455	455.000
	2008	Released alive	-	-	-	-
	2009	Released alive	-	-	-	-
North Carolina	2004	Harvested	1	584	584	584.000
	2005	Harvested	1	442	442	442.000
	2006	Harvested	1	515	515	515.000
	2007	Harvested	1	467	467	467.000
	2008	Harvested	5	475	504	487.800
	2009	Harvested	1	497	497	497.000
	2004	Released Alive	-	-	-	-
	2005	Released alive	-	-	-	-
	2006	Released alive	-	-	-	-
	2007	Released alive	13	280	435	350.154
	2008	Released alive	23	265	468	388.739
	2009	Released alive	3	420	480	454.333

Table 3. Florida Atlantic coast red snapper release conditions. Release condition not collected in NC, SC or GA.

Year	Good		Fair		Poor		Eaten		Dead	
	N	%	N	%	N	%	N	%	N	%
2005	477	89.7	33	6.2	14	2.6	7	1.3	1	0.2
2006	611	87.0	52	7.4	32	4.6	5	0.7	2	0.3
2007	1407	91.6	67	4.4	53	3.5	5	0.3	3	0.2
2008	1543	94.1	37	2.3	51	3.1	8	0.5	1	0.1
2009	387	94.2	15	3.7	4	1.0	5	1.2	0	