4. Recreational Fishery Statistics

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4.1 Overview (Group Membership, Leader, Issues)

Members of the Recreational Fishery Working Group included Nancie Cummings, NMFS Southeast Fisheries Science Center, who also participating in the Carribbean SEDAR for mutton snapper; Douglas Gregory, County Extension Director for Florida Sea Grant in Monroe County; Dennis O'Hern, recreational fisher and Executive Director of the Fishing Rights Alliance; and the working group leader, Beverly Sauls, who supervises statewide recreational fishing surveys in Florida for FWC's Fish and Wildlife Research Institute. Also present for some of the discussions was Mike Burton, NMFS Beaufort Lab, who provided data from the Headboat Logbook Program; Kelly Sullivan, FWC, Marine Recreational Fisheries Statistics Survey (MRFSS) coordinator for the Florida Keys region; and Alecia Adamson, FWC, MRFSS sampler and coordinator of a pilot at-sea survey for headboats in the Keys. Ken Brennan, also of the NMFS Beaufort Lab, provided timely updates of the 2006 Headboat Survey data and answered numerous questions regarding the Headboat Survey sampling protocols and interpretation of the data. The group reviewed recreational fisheries landings from private anglers and for-hire sectors and concluded that the recreational fishery for mutton snapper primarily occurs on the Atlantic coast of southeast Florida and the Florida Keys, including the vicinity of the Dry Tortugas (Atlantic Ocean and Gulf of Mexico). Mutton snapper are recreationally harvested in the eastern Gulf of Mexico, as well as Georgia and South Carolina; however, the quantity of these landings is small and of little significance to the regional recreational fishery. Similarly, when we contacted Dr. Mark Fisher, Texas Parks and Wildlife, regarding recreational mutton snapper landings in Texas, he said that there were only three records of mutton snapper landings in their creel survey. Mutton snapper appear in recreational landings from shore-based fishing, private boats, charter and guide boats, and headboats. Recreational data sources for these fishing modes are described in this section.

4.2 Recreational Landings

4.2.1 Headboat Survey

The Headboat Survey, conducted by the NMFS Beaufort Lab, provides a time series of catch per unit effort, total effort, and estimated landings in number and weight (kg) from large-capacity headboats in the southeastern United States, including vessels operating in the Atlantic Ocean and Gulf of Mexico. For the east coast of Florida and Atlantic coast of the Florida Keys, the headboat logbook survey began in 1978 and effort and harvest estimates are available from 1981 to 2006. For the west coast of Florida and Gulf coast of the Florida Keys, the survey began in 1986 and estimates of effort and harvest are available from 1986 to 2006. Data on discarded

catch was not requested on the logbook data sheet until 2005, when fields were added for number released alive and number released dead.

The Headboat Survey incorporates two components for estimating catch and effort:

1) Information about mean size of fishes landed are collected by port samplers during dockside sampling, where fish are measured to the nearest mm and weighed to the nearest 0.01 kg. These data are used to generate mean weights for all species by area and month. Port samplers also collect otoliths for ageing studies during dockside sampling events.
2) Information about total catch and effort are collected via the logbook, a form filled out by vessel personnel and containing total catch and effort data for individual trips.

Reporting is mandatory in this survey; however, compliance has been poorly enforced throughout the survey period and many vessels, particularly in southeast Florida, have lapsed into noncompliance (Table 4.1). Estimates of total effort and landings for non-reporting vessels are derived using data from comparable (geographically proximal, similar fishing characteristics) reporting vessels to estimate catch composition, and port agent summaries of total vessel activity information to estimate total effort by vessel by month. Correction factors derived from the ratio of total estimated effort/reported effort, on a by-month by-vessel basis, are applied to the reported landings to generate a total estimated landings, by species by vessel by month. The estimated total landings in number are multiplied by the mean weight from the dockside sampling component by species, Headboat Survey area, and month to estimate total landings in weight (kg). The Headboat Survey has operated continuously throughout 1981-2006 time frame for this assessment, and has collected fisheries data (including mutton snapper) in areas important to the recreational fishery (Southeast Florida, the Florida Keys, and the Dry Tortugas; Table 4.2, Fig. 1).

For the purposes of the assessment, and because of the distribution of landings of mutton snapper by area (Table 4.2), the numbers and weight of fish landed in the Headboat Survey areas were coalesced into five regions (Figure 2; Table 4.3). The estimated total effort (angler-days) on headboats was also summarized by these same five regions (Table 4.4). However, the amount of fishing effort directed towards fishing for mutton snapper was not calculated and probably cannot be estimated directly and was not attempted. Even with the grouping of headboat landings into the five regions, some regions had low numbers of mutton snapper landed (Table 4.3) and sometimes fewer than 30 measurements of landed fish (Table 4.5). Because mutton snapper were more likely to be landed in the Florida Keys, Southeast Atlantic, and Southwest Gulf regions (Table 4.3) across recreational and commercial fisheries (see Section 3, Commerial Fishery Statistics), landings were grouped of fish into an ‘Atlantic’, ‘Florida Keys’, and ‘Gulf of Mexico’ regions which sometimes improved the number of samples from which to calculate weight estimates. An attempt was made to re-sample the measured fish by the three region arrangement and time period (pre- and post- implementation of size limits) by bootstrapping methods to examine whether the bootstrapped samples and regressions of weight based upon lengths offered any significant changes to the calculated weights from the Headboat Survey (Table 4.6). However, the differences in most years when bootstrapped samples were drawn (see Table 4.6) tended to be small and therefore the original biomass estimates made by the Headboat

Survey were recommended for assessment purposes. Table 4.7 contains the size-frequency data for mutton snapper measured by region grouped into 25 mm size classes for the 1981-2006 period. The number of otoliths collected from mutton snapper landed by headboat anglers has varied through the years (Table 4.8), but form an important component of the data used for the assessment. A majority of the otoliths were sampled from mutton snapper caught in the 'Southeast Atlantic' region used in this assessment which is where the majority of mutton snapper were usually landed and measured (Tables 4.3 and 4.5)

4.2.2 Marine Recreational Fishery Statistics Survey (MRFSS)

The Marine Recreational Fisheries Statistics Survey (MRFSS) provides a time series of estimated catch per unit effort, total effort, landings, and discards for six two-month periods (waves) each year. The survey provides estimates for three recreational fishing modes: shore-based fishing (SH), private and rental boat fishing (PR), and for-hire charter and guide fishing (also called party charter mode, PC). When the survey first began in 1979, headboats were included in the for-hire mode, but were excluded after 1986 to avoid overlap with the Headboat Survey.

The MRFSS surveys coastal saltwater recreational anglers from Maine to Louisiana. The state of Florida is sampled as two sub-regions. The east Florida sub-region includes counties adjacent to the Atlantic coast from Nassau County south through Dade County, and the west Florida sub-region includes Monroe County (Florida Keys) and counties adjacent to the Gulf of Mexico. Separate estimates are generated for each Florida subregion, and those estimates may be post-stratified into smaller regions based on proportional effort.

The MRFSS survey design incorporates two complementary survey methods for estimating catch and effort. Catch data are collected through angler interviews during dockside intercept surveys. Effort data are collected in a random digit dialing telephone survey of coastal households. Catch rates from dockside intercept surveys are combined with estimates of effort from telephone interviews to estimate total landings and discards by wave, mode, and area fished (inland, state, and federal waters). Catch estimates from early years of the survey are highly variable with high percent standard errors (PSE's; e.g., Table 4.9), and sample size in the dockside intercept portion have been increased over time to improve precision of catch estimates. Full survey documentation and ongoing efforts to review and improve survey methods are available on the MRFSS website at: http://www.st.nmfs.gov/st1/recreational.

Survey methods for the for-hire fishing mode have seen the most improvement over time. Catch data were improved through increased sample quotas (2x base quota in east Florida and 6x base quota in west Florida beginning in 1998). It was also recognized that the random household telephone survey was intercepting very few anglers in the for-hire fishing mode and the For-Hire Telephone Survey (FHS) was developed to estimate effort in the for-hire mode. The new method draws a random sample of known for-hire charter and guide vessels each week and vessel operators are called and asked directly to report their fishing activity. A pilot study for the FHS method was initiated in 1998 and adopted as the official survey method in 2000 in west Florida and the Keys. A similar pilot study for the FHS in east Florida began in 2000 and was officially

adopted in 2003. A further improvement in the FHS method was the pre-stratification of Florida into five sub-regions for estimating effort, rather than the original two sub-regions. The five FHS subregions include northwestern Florida from Escambia through Dixie Counties (sub-region 1), the western peninsula from Levy through Collier Counties (sub-region 2), Monroe County (sub-region 3), southeast Florida from Dade through Indian River Counties (sub-region 4), and northeast Florida from Martin through Nassau Counties (sub-region 5). The coastal household telephone survey method for the for-hire fishing mode continued to run concurrently with new FHS method through 2006, and the two data sets have been used to calibrate for-hire effort estimates from earlier years in the Gulf of Mexico (Diaz and Phares, 2004).

The incidence of mutton snapper in MRFSS angler intercepts indicate that the species is primarily encountered by the recreational fishery in southeast Florida and Monroe County (Table 4.10). . The Recreational Working Group discussed the need to separate Monroe County from the Gulf of Mexico (west Florida) landings, since the overwhelming majority of estimated Gulf recreational landings are from Monroe County. Post-stratified estimates for Monroe County were not much different than estimates for all of west Florida, and mutton snapper intercepts from outside Monroe County had little impact on overall west Florida landings in most years and modes (Table 4.11). Since west Florida landings and Monroe County landings are virtually the same, there was no need to consider Monroe County separately from west Florida unless it was important to the design of the assessment**.**

Annual estimates of harvest (A+B1) and percent standard errors (PSE) for east Florida and west Florida for for-hire, private boat, and shore modes from the MRFSS are provided in Table 4.9. The workgroup discussed the validity of shore landings for mutton snapper in the MRFSS. Springer and McErlean (1962) reported the presence of sub-adult mutton snapper from seine samples in shallow seagrass habitat in southeast Florida. Prior to July, 1985, there was no size limit for mutton snapper in state waters. Mutton snapper were reported to the workgroup to be caught from bridges in the Florida Keys and extreme southeast Florida around Miami (Ed Little, NMFS port sampler; Scott Zimmerman, FL Keys Comm. Fish. Assoc.; and Gerry Carr, FWC MRFSS sampler, all personal communication). Shore intercepts in the MRFSS are far fewer than in other modes (Table 4.10), and small numbers of shore intercepts within waves and years results in highly variable estimates and large PSE's. The workgroup decided to include the shore landings estimates as part of the recreational harvest, acknowledging that shore estimates are highly variable.

Post-stratified estimates from the MRFSS for the regions (Figure 2) used in this assessment show that the bulk of the recreational landings occur in the Southeast and Florida Keys regions (Table 4.12) and are similar to that shown by the Headboat Survey (Table 4.3). The number of released fish (MRFSS Type B2) is also highest in those two regions (Table 4.13).

The number of mutton snapper measured by the MRFSS has varied through the years and shows increases starting in 1999 (Table 4.5) coincident with an increase in sampling effort supported by the NMFS MRFSS, the Gulf States Marine Fisheries Commission Fisheries Information Network, and the Florida Fish and Wildlife Conservation Commission. However, even with these increases in sampling, the number of mutton snapper sampled through the MRFSS program remains relatively small and few were measured from the southwest and northwest regions of the Gulf of Mexico (Table 4.5). Because of the relatively small number of

length measurements for this species, a re-sampling of measured fish by region and period (pre- and post- size limits) by bootstrapping and regression of body weight on size class was used to estimate the weight of recreationally caught mutton snapper to compare with the MRFSS when the number of mutton snapper measured was fewer than 30 individuals (Table 4.14). In several of the years particularly in the "Gulf (Northwest and Southwest regions)", the MRFSS estimate probably suffered from too few measurements of mutton snapper (Table 4.5) to adequately represent the weight of mutton snapper landed, and in other years the MRFSS estimate and the bootstrapped and regression-derived weight estimate were similar (Table 4.14; bootstrapped estimates are in blue). The bootstrapped and regression-derived weight estimates were recommended for use in the assessment over the MRFSS post-stratified estimates for these reasons.

Table 4.15 contains the size-frequency data for mutton snapper measured by region grouped into 25mm size classes for the 1981-2006 period. The number of otoliths collected from mutton snapper landed by recreational anglers intercepted by the MRFSS has been small, and MRFSS sampling protocols rarely permits otoliths to be taken from anglers' fish intercepted except during special collecting surveys. The GSMFC's FIN Biological Sampling program, beginning in 2002, has funded state partners to collect otoliths and other tissues from recreationally caught fish which have been very useful to the current assessment and hopefully to future ones. The number of otoliths available from this sector of the fishery is small, primarily from 2002 (Table 4.8), and the majority of the otoliths were sampled from mutton snapper caught in the 'Southeast Atlantic' region used in this assessment which is where the majority of mutton snapper were usually landed and measured (Tables 4.9 and 4.5)

4.2.3. Headboat At-Sea Survey

In 2005, an observer survey was launched in Florida to collect better information on recreational headboat catch, particularly discarded fish. The same survey was launched a year earlier in Alabama in 2004. Headboat vessels are randomly selected throughout the year in each of five sample regions (Table 4.16, sample regions same as the FHS described in the previous section). Biologists board selected vessels with permission from the captain and observe anglers as they fish on the recreational trip. Data collected include number and species of fish landed and discarded, size of landed and discarded fish, and the release condition of discarded fish. Data are also collected on the trip, including the length of the trip, area fished (inland, state, and federal waters), and minimum and maximum depth fished. In two sample regions, the Florida Keys (region 3) and western peninsula (region 2), some vessels that run multiple day trips are also sampled to collect information on trips that fish farther offshore and for longer durations, primarily in the vicinities of the Dry Tortugas and Florida Middle Grounds. While this data set is a short time series, it is the only available quantitative information on the size distribution and release condition of fish discarded in the recreational fishery.

4.3 Recreational Discards

Length statistics (in maximum total length, TL) for mutton snapper discards and harvested fish observed in the Headboat At-Sea Survey are presented in Table 4.17.

4.4 Biological Sampling

The number of measured fish for the NMFS Headboat Survey and the Marine Recreational Fishery Statistics Survey were discussed separately in the preceding sections. These data can be found in Tables 4.5, 4.7, and 4.15. The number of otoliths sampled from head boat anglers and other recreational anglers is presented in Table 4.8.

4.5 Comments on the Adequacy of data for assessment analyses

Due to low sample sizes, particularly in early years, MRFSS estimated landings in kilograms or pounds are not reliable. For private/rental boat mode in west Florida and for shore mode in both east and west Florida, low sample sizes occur in all years. B. Sauls reviewed mutton snapper landings by weight for missing cells and found east Florida shore mode landings in particular were lacking enough complete cells to adequately fill in the missing values**.**

The Recreational Working Group encourages the use of numbers of fish for estimated recreational landings for mutton snapper in place of weight wherever practicable. The decreased participation by headboat operators in the Headboat Survey over time is also cause for concern, and the Working Group recommends improved enforcement for reporting in this mandatory logbook program.

The Working Group also has requested data from NMFS in order to evaluate the necessity for calibrating MRFSS For-Hire estimates for the new For-Hire Survey method. When red snapper landings in the Gulf of Mexico were adjusted for the new method, the result was decreased landings in the For-Hire mode for many waves and areas (Diaz and Phares, 2004). A similar analysis for the east coast could not be completed in time for this assessment, but is expected to be available for the King Mackerel SEDAR Data Workshop in February, 2008.

A recommendation for consideration during the MRFSS redesign, which is currently being formulated, is the regional nature of many south Florida species, such as mutton snapper, and the need for finer resolution in regional sampling within the state. Regional fisheries, such as mutton snapper, can be poorly represented in time and space when sampled on a larger coastwide (e.g. west Florida or east Florida) scale.

4.6 Research Recommendations

Biological sampling of recreational landings in Florida has been funded on the West Coast of Florida, including Monroe County, since 2000, but continues to remain unfunded on the East Coast of Florida. Improved biological data collections are essential for making use of the best stock assessment models currently available, and the Recreational Data Working Group recommends funding and implementation of biological data collections in the shore, private boat, and for-hire modes on the east coast of Florida. The Recreational Data Working Group recommends continued funding for discard data collection and improved data collections on depth and area fished in the Headboat At-Sea Survey in Florida. Data on discarded catch is particularly important for size and bag regulate species, such as mutton snapper. The Working

Group also recommends better data collection for area and depth fished in the MRFSS. Depth and area fished are particularly important for calculating depth and area-dependent discard mortality rates for reef fish species, such as mutton snapper, that are found in progressively deeper habitats throughout their life history.

4.7 Itemized list of tasks for completion following workshop

Obtain For-Hire effort estimates from NMFS Silver Spring for years where old and new estimation methods were in place in east Florida and updated years for west Florida.
Beverly Sauls; expected completion early May, 2007.

Obtain 2006 Headboat Survey Data (catch records, bioprofile data, and annual estimates) from NMFS Beaufort Laboratory.
Joe O'Hop requested and received 2006 Headboat data from Ken Brennan.

Generate calibration factors for For-Hire estimates for mutton snapper landings from east Florida and west Florida.
Beverly Sauls, expected completion May, 2007.

Generate post-stratified MRFSS landings estimates for Monroe County.
Beverly Sauls and Bob Muller, expected completion May, 2007.

Summarize headboat landings estimates for mutton snapper from logbook data and combine with MRFSS estimates for total recreational harvest.
Atlantic estimates provided by Mike Burton at the data workshop.
Gulf estimates need to be summarized. Beverly Sauls will ask Nicole Trapp to assist.

Summarize MRFSS landings and catch.
Doug Gregory.

Summarize MRFSS sampling intensity (number of mutton snapper interviews, number of lengths/weights) for west Florida and east Florida.
Nicole Trapp, expected completion 1st week of May.

Summarize headboat logbook sampling intensity (percent of vessels reporting, percent of estimated versus reported) for southeast Florida and Monroe County vessels.
Beverly Sauls will request from Ken Brennan, NMFS Beaufort.

Use MRFSS and pilot headboat survey discard data to summarize percent discards by mode.
MRFSS, Doug Gregory
Headboat, Beverly Sauls

Work with Bob Muller to summarize methods for generating CPUE's from MRFSS and Headboat logbook. Provide to Indices workgroup.
Beverly Sauls and Bob Muller

Provide supplementary data on release condition of red snapper in headboat pilot survey to Life History workgroup for comparing with discard mortality studies for this species in absence of studies for mutton snapper.

Beverly Sauls provided mutton snapper release condition data to Craig Faunce on 4/26/07.

4.8 Literature Cited

Diaz, G. and P. Phares. 2004. Estimated conversion factors for calibrating MRFSS charterboat landings and effort estimates for the Gulf of Mexico in 1981-1997 with For Hire Survey estimates with application to red snapper landings. NMFS, SE Fisheries Science Center, Sustainable Fisheries Division Contribution No SFD-2004-036.

Springer, V.G., and A.J. McErlean. 1962. Seasonality of fishes on a south Florida shore. Bull. Mar. Sci. 12(1):39-60.

4.9 Tables

Table 4.1. Compliance, calculated as a percent of total estimated trips that were reported in the Headboat Survey from 2004-2006 in southeast Florida and the Florida Keys. Note: Region in this survey is assigned as the area that vessels reported fishing in.

	2004 Trips			2005 Trips			2006 Trips		
Region	Reported	Estimated	Compliance	Reported	Estimated	Compliance	Reported	Estimated	Compliance
Keys/Dry Tortugas	1,320	3,156	42%	1,431	3,374	42%	1,476	3,047	48%
Southeast Florida	557	6,970	8%	602	6,921	9%	468	7038	7%

Table 4.2. Numbers of mutton snapper landed by headboat anglers by Headboat Survey area (source: NMFS Headboat Survey).

	Northeast Region							Southeast Region	Florida Keys			Southwest Region	Northwest Region					
	NC	NC	NC	SC	GA	NE FL 1	NE FL 2	SE FL	Keys	Tortugas (vessels from Key West)	Tortugas (vessels from SW FL)	SW FL	FL Middle Grounds	NW FL and AL	LA	NE TX	Port Aransas, TX	SE TX
Area	10	3	4	5	6	7	8	11	12	17	18	21	22	23	24	25	26	27
Year																		
1981-2006	24	71	90	145	1	825	7,351	248,271	115,001	105,700	1,607	1,863	1,247	44	166	629	1,442	33
1981	0	0	0	0	0	26	70	23,997	10,110	11,687								
1982	0	0	0	9	0	26	24	17,707	6,977	6,393								
1983	1	0	0	85	0	6	19	10,667	9,715	8,291								
1984	0	0	85	0	0	19	38	6,456	6,198	4,714								
1985	0	0	0	0	0	0	44	10,151	5,842	5,455								
1986	0	0	0	0	0	5	163	8,482	4,311	7,769	44	29	7	0	0	255	0	0
1987	0	0	0	1	0	248	145	9,830	4,369	5,571	0	224	0	4	0	90	100	0
1988	0	0	0	1	0	12	583	16,648	3,426	3,024	0	128	0	1	0	86	1,073	2
1989	0	0	0	0	0	24	298	18,419	3,569	3,638	53	91	0	9	0	19	13	1
1990	0	0	2	4	0	23	346	23,913	4,837	9,916	251	164	36	5	3	75	10	0
1991	0	0	0	0	0	30	462	12,883	3,546	2,203	119	188	26	2	115	3	0	0
1992	0	0	1	1	0	30	663	10,376	6,190	3,259	118	49	11	2	22	4	0	0
1993	3	0	1	1	0	28	410	15,476	5,796	3,033	281	258	145	10	17	2	0	2
1994	4	0	0	4	1	27	808	12,417	6,299	4,230	336	175	25	0	5	8	0	0
1995	0	0	0	1	0	32	508	8,598	4,239	2,143	336	38	11	6	1	1	13	0
1996	0	0	0	4	0	9	209	3,591	3,143	1,797	0	36	0	1	3	5	3	0
1997	8	60	0	0	0	14	398	4,366	2,892	1,936	0	1	5	0	0	3	4	0
1998	2	1	0	12	0	19	337	2,638	2,643	1,466	0	24	0	0	0	0	43	0
1999	0	6	1	0	0	7	432	4,027	1,544	1,072	0	128	173	0	0	0	103	0
2000	1	0	0	0	0	18	294	2,900	1,885	2,926	0	136	61	1	0	0	6	0
2001	0	0	0	1	0	19	196	4,336	4,618	881	69	40	85	1	0	5	41	0
2002	2	0	0	5	0	76	582	3,215	2,066	1,959	0	7	7	1	0	0	19	0
2003	3	0	0	2	0	15	150	2,383	3,175	954	0	6	588	0	0	0	4	0
2004	0	0	0	1	0	12	45	3,450	2,565	1,195	0	131	22	0	0	2	10	1
2005	0	4	0	11	0	43	89	9,581	3,169	3,507	0	6	45	1	0	43	0	1
2006	0	0	0	2	0	57	38	1,764	1,877	6,681	0	4	0	0	0	28	0	26

no data

Table 4.3. Numbers and kilograms of mutton snapper landed by head boat anglers by region (source: NMFS Headboat Survey).

	Number of mutton snapper kept					Kilograms of mutton snapper kept				
Year	Northeast	Southeast	Florida Keys	Southwest	Northwest	Northeast	Southeast	Florida Keys	Southwest	Northwest
1981	96	23,997	21,797			166	31,825	20,840		
1982	59	17,707	13,370			89	23,175	39,344		
1983	111	10,667	18,006	No data		176	16,615	49,434	No data	
1984	142	6,456	10,912			259	11,076	26,934		
1985	44	10,151	11,297			65	15,075	31,355		
1986	168	8,482	12,124	29	262	291	14,673	40,019	313	2,159
1987	394	9,830	9,940	224	194	564	14,124	29,298	802	695
1988	596	16,648	6,450	128	1,162	1,059	23,544	18,424	100	631
1989	322	18,419	7,260	91	42	501	28,081	20,430	268	94
1990	375	23,913	15,004	164	129	673	24,888	45,096	212	503
1991	492	12,883	5,868	188	146	711	17,545	18,380	172	130
1992	695	10,376	9,567	49	39	947	10,187	27,662	132	70
1993	443	15,476	9,110	258	176	1,024	22,695	22,609	760	506
1994	844	12,417	10,865	175	38	1,470	21,541	34,599	725	115
1995	541	8,598	6,718	38	32	1,100	11,624	18,358	112	99
1996	222	3,591	4,940	36	12	444	4,918	14,142	142	48
1997	480	4,366	4,828	1	12	1,660	5,977	14,191	3	39
1998	371	2,638	4,109	24	43	985	4,515	14,169	98	187
1999	446	4,027	2,616	128	276	877	6,196	8,065	484	1,039
2000	313	2,900	4,811	136	68	411	3,483	15,548	519	260
2001	216	4,336	5,568	40	132	312	6,233	14,742	170	574
2002	665	3,215	4,025	7	27	1,391	4,723	10,116	20	79
2003	170	2,383	4,129	6	592	423	4,030	10,284	22	2,070
2004	58	3,450	3,760	131	35	111	5,135	9,408	404	105
2005	147	9,581	6,676	6	90	203	12,466	15,230	18	249
2006	97	1,764	8,558	4	54	140	2,112	29,512	15	206

Table 4.4. Number of head boat angler days by region (source: NMFS Headboat Survey).

Year	Northeast	Southeast	Florida Keys	Southwest	Northwest	Total
1981	150,831	154,747	71,709			377,287
1982	161,439	154,558	71,614			387,611
1983	173,062	129,643	64,721	No data		367,426
1984	191,413	122,446	71,314			385,173
1985	191,834	119,169	67,227			378,230
1986	211,515	128,513	76,218	107,478	194,284	718,008
1987	228,211	136,723	82,174	127,125	159,649	733,882
1988	228,045	115,978	76,641	116,008	158,027	694,699
1989	204,306	132,944	81,586	135,135	138,860	692,831
1990	198,628	147,006	81,182	139,930	135,485	702,231
1991	194,029	127,765	68,468	99,442	139,890	629,594
1992	193,776	107,043	68,002	104,799	164,740	638,360
1993	181,737	91,020	74,698	109,284	187,535	644,274
1994	165,667	113,326	64,656	117,573	199,472	660,694
1995	161,140	94,293	57,613	104,661	177,765	595,472
1996	137,310	93,797	58,821	90,577	167,176	547,681
1997	150,103	64,450	56,059	79,624	161,033	511,269
1998	150,531	53,946	49,605	107,261	163,574	524,917
1999	144,105	65,261	41,781	105,707	136,671	493,525
2000	131,413	76,250	46,228	94,670	128,008	476,569
2001	136,841	62,271	45,888	91,195	127,064	463,259
2002	118,979	54,731	47,904	76,578	138,426	436,618
2003	112,349	49,672	42,544	73,742	151,537	429,844
2004	129,959	74,838	48,319	89,137	134,283	476,536
2005	115,148	72,515	50,785	70,482	119,608	428,538
2006	130,718	73,936	52,678	49,222	150,621	457,175

Table 4.5. Number of mutton snapper measured by the NMFS Headboat Survey and the NMFS Marine Recreational Fishery Statistics Survey (MRFSS) by region and year. Data marked in blue represent cells with fewer than 30 lengths measured annually.

	Head Boat Survey			NMFS MRFSS		
Year	Atlantic (Northeast & Southeast)	Florida Keys	Gulf (Northwest & Southwest)	Atlantic (Northeast & Southeast)	Florida Keys	Gulf (Northwest & Southwest)
1981	641	360		**15**	**17**	**0**
1982	316	463		45	**18**	**5**
1983	462	448	No data	**9**	**4**	**0**
1984	344	576		**24**	**4**	**10**
1985	530	492		**6**	**6**	**0**
1986	389	606	**2**	33	**20**	**0**
1987	287	491	**0**	**20**	33	**0**
1988	230	418	**0**	**17**	**14**	**3**
1989	440	575	**7**	**29**	**5**	**0**
1990	138	251	**0**	**9**	**6**	**0**
1991	114	108	**1**	**9**	**26**	**0**
1992	88	120	**9**	35	45	**2**
1993	160	130	**0**	58	44	**0**
1994	88	93	**0**	**25**	33	**0**
1995	128	77	**0**	**26**	44	**0**
1996	**12**	79	**2**	**15**	**19**	**0**
1997	305	110	**0**	**21**	45	**4**
1998	406	119	**0**	46	50	**4**
1999	240	92	**3**	61	75	**0**
2000	236	79	**0**	92	85	**0**
2001	367	109	**0**	134	54	**0**
2002	398	69	**0**	152	82	**1**
2003	404	82	**3**	182	94	**3**
2004	352	62	**1**	178	55	**3**
2005	398	69	**0**	275	**16**	**0**
2006	428	84	**1**	101	**25**	**2**

Table 4.6. Kilograms of mutton snapper landed by headboat anglers estimated by the Headboat Survey ("actual"), and estimated from the length measurements taken by the Headboat Survey binned in 25 mm size classes and regressions of length and weight (see Life History Section II, Table 2.12) with bootstrapped samples (**noted in blue**) if the numbers of fish measured in a region and year were below 30 individuals. The Headboat Survey estimates (green shaded portion of the table) were used in the assessment models.

Head Boat Survey, kg (actual)			
Year	Atlantic (Northeast &Southeast)	Florida Keys	Gulf (Northwest &Southwest)
1981	31,991	62,445	No data*
1982	23,264	39,344	
1983	16,791	49,434	
1984	11,334	26,934	
1985	15,140	31,354	
1986	14,964	40,019	2,472
1987	14,689	29,298	1,497
1988	24,602	18,424	730
1989	28,582	20,430	363
1990	25,561	45,096	716
1991	18,256	18,380	301
1992	11,134	27,662	202
1993	23,719	22,608	1,266
1994	23,011	34,599	839
1995	12,725	18,357	212
1996	5,362	14,143	189
1997	7,637	14,191	42
1998	5,499	14,169	285
1999	7,073	8,066	1,523
2000	3,893	15,548	779
2001	6,545	14,742	745
2002	6,115	10,116	99
2003	4,452	10,284	2,092
2004	5,246	9,408	508
2005	12,669	15,230	266
2006	2,252	29,512	222

Bootstrapped, regression			
Year	Atlantic (Northeast &Southeast)	Florida Keys	Gulf (Northwest &Southwest)
1981	30,890	62,176	No data
1982	22,942	36,896	
1983	17,265	46,590	
1984	11,285	26,579	
1985	14,480	30,715	
1986	13,966	36,008	**1,008**
1987	13,251	28,509	**1,451**
1988	22,690	17,753	**3,992**
1989	21,897	18,230	**410**
1990	25,999	43,287	**993**
1991	17,340	17,575	**1,449**
1992	11,803	27,673	**344**
1993	24,155	22,527	**1,269**
1994	24,376	34,313	**951**
1995	12,532	17,955	**243**
1996	**4,910**	14,095	**201**
1997	6,539	14,389	**51**
1998	4,571	13,561	**292**
1999	6,485	8,236	**1,572**
2000	3,855	16,667	**811**
2001	6,369	14,772	**683**
2002	5,852	10,193	**103**
2003	4,298	10,384	**1,949**
2004	5,334	9,340	**528**
2005	13,562	15,780	**285**
2006	2,324	29,629	**228**

*No data: Headboat Survey expanded to the Gulf of Mexico beginning in 1986.

Table 4.7. NMFS Headboat Survey – Dockside measurements [Total Length (max.)] by region, year, and 25 mm size class.

Northwest Region

TL(max) class mid-points (mm)	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total
487.5	No data				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
562.5					0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
637.5					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
687.5					0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
737.5					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
837.5					0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
862.5					0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
887.5					0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total					0	2	0	0	4	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	10

Southwest Region

TL(max) class mid-points (mm)	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total
337.5	No data					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
362.5						0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
387.5						0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
412.5						0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
437.5						0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
537.5						0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
562.5						0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	3
587.5						0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
637.5						0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
662.5						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
712.5						0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
787.5						0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
812.5						0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
837.5						0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total						0	0	0	3	0	1	9	0	0	0	2	0	0	2	0	0	0	0	1	0	1	19

Table 4.7 Continued. NMFS Headboat Survey – Dockside measurements [Total Length (max.)] by region, year, and 25 mm size class.

Florida Keys Region

TL(max) class mid-points (mm)	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total
212.5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
262.5	1	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
287.5	0	0	2	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
312.5	4	5	6	4	0	2	5	7	4	4	3	3	0	0	0	0	0	1	0	0	0	0	0	0	0	0	48
337.5	4	4	10	7	4	4	5	2	8	14	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	66
362.5	12	11	9	15	18	6	8	6	20	7	5	3	2	1	0	1	1	1	0	0	0	1	0	0	0	0	127
387.5	42	24	16	39	23	20	15	11	15	15	4	6	8	4	4	4	2	4	0	0	0	0	4	1	0	2	263
412.5	28	29	28	28	18	28	19	23	37	19	4	7	10	13	7	8	18	10	8	5	6	4	4	7	8	13	389
437.5	16	43	26	17	24	26	26	18	27	10	3	9	7	7	9	6	12	10	4	6	13	6	6	8	14	13	366
462.5	12	34	36	43	34	37	34	30	32	34	5	4	9	6	10	12	5	2	4	3	13	15	12	4	7	6	443
487.5	21	29	44	65	40	42	46	40	67	19	8	6	10	5	1	7	3	4	4	7	11	7	3	5	6	6	506
512.5	25	29	41	64	55	68	56	46	76	38	19	12	14	11	7	5	6	6	9	6	7	4	7	2	7	3	623
537.5	24	29	52	76	54	58	51	33	55	18	13	9	12	1	1	5	1	5	5	1	1	4	7	3	10	6	534
562.5	25	23	35	41	29	57	31	26	38	8	5	8	8	3	2	6	9	2	12	5	5	6	7	6	4	5	406
587.5	21	28	28	34	21	36	34	17	24	14	1	0	7	3	4	2	5	5	5	5	1	2	5	6	4	3	315
612.5	21	27	14	23	39	45	33	20	19	4	1	2	2	4	9	4	5	7	3	3	4	2	1	7	1	6	306
637.5	19	20	12	27	31	24	18	18	28	6	7	9	10	6	2	3	7	16	11	5	8	2	6	2	0	1	298
662.5	22	37	29	24	27	44	31	29	30	10	2	10	6	2	4	3	10	11	2	9	18	10	8	3	1	1	383
687.5	20	31	17	20	17	24	17	17	18	6	3	2	6	3	4	3	4	7	6	7	7	3	3	2	2	3	252
712.5	8	26	11	21	25	25	19	18	22	9	4	7	7	12	4	3	6	6	6	8	4	1	5	1	2	1	261
737.5	14	18	14	13	17	25	11	21	13	5	3	9	4	5	5	1	5	10	3	4	6	0	1	1	2	2	212
762.5	9	10	10	4	10	23	14	19	20	6	5	1	4	5	3	5	3	6	5	2	0	2	2	2	2	3	175
787.5	9	5	4	7	4	11	13	9	13	2	8	4	1	1	1	0	6	5	3	0	4	0	0	2	0	4	116
812.5	2	0	1	1	1	1	4	7	7	2	2	5	1	0	0	1	1	1	1	2	1	0	1	0	0	3	45
837.5	0	1	0	1	0	0	1	0	1	1	2	0	1	0	0	0	1	0	0	0	0	0	0	0	0	3	12
862.5	1	0	1	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	6
887.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Total	360	463	448	576	492	606	491	418	575	251	108	120	130	93	77	79	110	119	92	79	109	69	82	62	70	84	6163

Table 4.7 Continued. NMFS Headboat Survey – Dockside measurements [Total Length (max.)] by region, year, and 25 mm size class.

Southeast Region

TL(max) class mid-points (mm)	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total
212.5	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
237.5	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	5
262.5	0	0	0	0	0	0	2	1	0	1	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	10
287.5	1	0	1	0	0	0	0	2	2	2	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	10
312.5	1	0	2	2	0	9	2	1	3	4	3	0	1	0	0	0	0	2	1	1	0	0	0	1	0	0	33
337.5	5	0	1	2	11	7	23	13	12	4	1	5	7	1	0	0	0	2	1	1	0	0	0	0	0	0	96
362.5	41	9	7	9	22	18	42	21	51	19	8	15	12	1	0	0	4	11	14	4	0	0	1	4	2	3	318
387.5	95	29	16	21	64	37	57	28	78	22	9	16	18	2	7	1	27	32	19	43	26	25	14	23	40	33	782
412.5	122	54	47	36	87	46	36	42	72	20	19	9	23	12	29	1	70	63	39	68	68	66	58	52	102	100	1341
437.5	109	84	59	40	81	46	17	27	82	18	19	5	27	6	17	1	67	74	37	37	77	80	74	59	81	115	1339
462.5	83	51	78	44	84	67	16	20	55	7	17	6	12	16	19	2	28	63	37	21	78	30	79	55	56	71	1095
487.5	60	35	79	38	56	37	22	19	27	9	9	7	9	11	10	3	31	36	19	26	39	40	42	59	43	41	807
512.5	26	17	66	44	33	38	16	12	14	2	6	2	6	6	7	1	22	29	10	9	26	27	50	30	19	23	541
537.5	20	10	42	35	23	17	13	6	18	2	0	3	6	4	4	0	14	13	16	5	13	21	18	24	15	13	355
562.5	14	3	18	22	21	15	12	5	3	5	1	1	4	3	2	0	11	14	6	10	13	24	16	16	12	7	258
587.5	16	4	18	16	13	8	7	2	3	3	1	0	2	0	1	0	5	9	8	3	6	8	7	9	5	5	159
612.5	10	3	10	15	15	6	7	3	2	0	1	0	4	1	2	0	3	11	4	3	7	8	3	3	6	2	129
637.5	6	6	6	5	5	10	2	4	2	0	1	0	2	0	2	0	2	5	3	0	2	1	7	7	5	2	85
662.5	5	3	5	9	3	4	2	5	1	1	1	1	3	3	0	0	3	6	2	1	3	6	4	3	3	1	78
687.5	5	1	2	2	6	6	3	4	5	0	1	0	4	2	0	0	1	7	4	0	1	1	9	5	2	2	73
712.5	2	0	4	1	3	4	0	2	0	1	0	0	1	1	2	0	0	1	0	0	1	3	1	0	3	0	30
737.5	1	0	1	1	1	1	2	1	2	0	1	1	1	0	0	0	0	3	1	0	0	0	2	0	0	0	19
762.5	1	0	0	1	2	2	3	0	1	0	0	0	0	1	0	0	0	4	0	1	0	0	2	0	3	0	21
787.5	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	1	3	0	1	1	10
812.5	0	0	0	0	1	2	1	0	0	0	1	0	1	1	0	0	0	0	0	0	0	1	0	2	0	0	10
837.5	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	1	0	0	0	1	0	1	0	6
862.5	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	5
887.5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3
937.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
987.5	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	624	309	462	344	531	384	287	219	435	120	100	72	146	72	102	9	295	388	222	233	362	342	394	352	399	419	7622

Table 4.7 Continued. NMFS Headboat Survey – Dockside measurements [Total Length (max.)] by region, year, and 25 mm size class.

Northeast Region

TL(max) class mid-points (mm)	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total
287.5	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
312.5	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
337.5	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	3
362.5	0	0	0	0	0	0	0	1	0	0	0	2	0	2	0	0	0	1	0	0	1	0	0	0	0	0	7
387.5	3	0	0	0	1	1	1	2	1	2	1	5	4	0	0	0	1	1	1	0	0	2	0	0	0	0	26
412.5	3	0	0	0	0	1	0	3	2	1	0	0	1	1	2	0	1	2	2	1	2	3	1	0	0	0	26
437.5	4	2	0	0	1	1	1	1	0	0	1	0	0	2	3	0	1	0	0	0	1	7	0	0	0	0	25
462.5	1	0	0	2	0	0	1	2	1	1	2	0	0	3	4	0	0	0	1	0	0	8	0	0	0	2	28
487.5	0	2	0	0	0	0	0	1	0	3	3	0	1	1	3	0	0	1	3	2	0	6	0	0	0	0	26
512.5	1	0	2	0	0	0	0	0	0	0	1	1	2	1	3	1	0	1	3	1	1	11	0	0	0	0	29
537.5	0	1	1	1	2	3	0	0	0	3	0	2	0	1	2	0	1	0	0	0	1	3	2	0	0	0	23
562.5	0	0	0	0	0	0	0	2	0	1	3	2	0	0	0	0	1	0	0	0	1	8	2	0	0	0	20
587.5	0	0	1	2	0	2	0	2	0	4	1	0	1	1	1	1	1	0	5	0	0	4	1	0	0	0	27
612.5	2	1	1	0	2	0	0	0	0	1	1	1	0	0	2	0	0	3	1	1	0	4	4	0	0	1	25
637.5	0	0	0	0	0	0	1	0	0	0	1	1	0	1	2	0	3	2	0	0	0	1	1	0	0	1	14
662.5	1	0	0	0	0	0	1	0	0	0	0	1	1	0	2	0	0	1	2	0	0	1	1	0	0	0	11
687.5	0	0	0	0	0	0	0	1	0	1	0	1	1	2	0	0	0	1	0	0	0	2	0	1	0	0	10
712.5	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	8
737.5	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	1	0	0	6
762.5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
787.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
812.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2
837.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
Total	17	7	5	5	6	9	5	15	5	18	14	16	14	16	26	3	10	18	18	5	7	62	12	3	0	6	322

Table 4.8. Total number of mutton snapper otoliths collected by recreational fishing mode.

Year	Headboat	For-Hire	Private/Rental Boat	Mode Unknown
1979	1			
1980	17			
1981	150			
1982	169			
1983	4			
1984	20			
1985	76			
1986	33			
1987	14			
1988	33			
1989	2			
1990	6			
1991	11			
1992	10			
1993	52			
1994	51			
1995	122			
1996	24			
1997	19			
1998	0			
1999	0			
2000	3	0	0	1
2001	13	3	0	33
2002	2	109	3	6
2003	146	209	27	1
2004	135	124	5	2
2005	242	261	3	0
2006	204	65	3	0

Table 4.9. Recreational harvest (A + B1) and released catch (B2) estimates, percent standard errors (PSE), and percent of total catch that was released (% B2). Source: Marine Recreational Fisheries Statistics Survey (MRFSS).

		For-Hire (includes head boats 1981-85)					Private Boat					Shore				
Year	Subregion	A + B1	PSE	B2	PSE	% B2	A + B1	PSE	B2	PSE	% B2	A + B1	PSE	B2	PSE	% B2
1981**	East FL	8,614	67.0	0	0.0	0.0%	24,131	38.4	0	0.0	0.0%	31,374	55.6	0	0.0	0.0%
1982	East FL	31,731	38.6	0	0.0	0.0%	38,568	30.2	0	0.0	0.0%	67,461	49.5	987	100.0	1.4%
1983	East FL	7,512	31.7	0	0.0	0.0%	42,807	26.7	20,019	71.8	31.9%	38,503	57.7	0	0.0	0.0%
1984	East FL	4,944	33.1	1,287	100.0	20.7%	87,306	31.7	2,218	100.0	2.5%	0	0.0	2,121	100.0	100.0%
1985	East FL	1,753	52.1	0	0.0	0.0%	15,634	55.2	20,273	67.2	56.5%	0	0.0	11,411	100.0	100.0%
1986	East FL	553	99.9	0	0.0	0.0%	40,905	22.5	11,893	49.2	22.5%	0	0.0	7,893	72.8	100.0%
1987	East FL						74,537	27.4	126,386	84.0	62.9%	8,253	100.0	0	0.0	0.0%
1988	East FL	1,299	74.9	0	0.0	0.0%	59,423	18.5	9,778	46.7	14.1%	3,821	100.0	1,851	100.0	32.6%
1989	East FL	2,433	85.1	0	0.0	0.0%	60,926	30.4	15,520	40.8	20.3%	10,050	74.5	0	0.0	0.0%
1990	East FL	861	81.0	0	0.0	0.0%	51,128	21.9	2,650	70.7	4.9%					
1991	East FL	316	100.1	0	0.0	0.0%	59,328	21.7	17,481	31.9	22.8%	7,745	57.8	0	0.0	0.0%
1992	East FL	4,234	39.6	525	74.9	11.0%	61,236	13.5	73,295	35.9	54.5%	24,620	44.9	3,803	100.0	13.4%
1993	East FL	525	100.0	0	0.0	0.0%	94,767	13.3	75,398	25.9	44.3%	19,632	25.3	4,870	51.2	19.9%
1994	East FL	4,914	38.0	0	0.0	0.0%	57,721	15.0	58,056	23.4	50.1%	8,172	38.5	9,479	36.7	53.7%
1995	East FL	2,337	60.9	1,066	70.7	31.3%	44,300	23.8	21,263	32.3	32.4%	1,270	70.7	16,332	36.7	92.8%
1996	East FL	1,402	70.0	8,476	58.0	85.8%	28,133	21.3	27,673	25.9	49.6%	2,541	70.7	2,614	100.0	50.7%
1997	East FL	1,814	51.0	0	0.0	0.0%	33,117	23.5	63,647	20.0	65.8%	1,269	100.0	1,138	100.0	47.3%
1998	East FL	8,077	59.8	1,619	53.2	16.7%	40,485	18.4	82,399	18.5	67.1%	4,465	62.2	8,491	48.2	65.5%
1999	East FL	1,659	36.9	1,382	66.4	45.4%	29,742	18.9	38,965	17.9	56.7%	7,149	42.7	7,243	89.9	50.3%
2000	East FL	13,730	27.3	16,353	22.8	54.4%	51,648	15.3	62,310	20.0	54.7%	1,934	99.4	7,892	80.9	80.3%
2001	East FL	17,563	15.5	8,007	23.4	31.3%	39,741	16.8	41,279	20.7	50.9%	3,486	58.4	7,105	53.6	67.1%
2002	East FL	18,337	11.8	4,927	23.9	21.2%	71,669	11.9	70,291	19.3	49.5%	4,330	43.9	22,731	53.4	84.0%
2003	East FL	15,085	14.0	5,329	25.4	26.1%	58,263	15.9	41,338	16.8	41.5%	5,026	42.0	16,407	27.9	76.6%
2004	East FL	13,183	12.3	2,394	31.2	15.4%	60,696	14.9	59,676	15.2	49.6%	6,625	38.1	15,155	53.1	69.6%
2005	East FL	25,775	11.6	11,600	24.8	31.0%	99,291	11.8	131,037	14.2	56.9%	7,551	38.6	18,835	49.4	71.4%
2006*	East FL	9,186	12.9	8,940	17.7	49.3%	92,357	11.5	129,259	11.1	58.3%	6,851	44.6	16,137	37.9	70.2%

Table 4.9. Continued. Recreational harvest (A + B1) and released catch (B2) estimates, percent standard errors (PSE), and percent of total catch that was released (% B2). Source: Marine Recreational Fisheries Statistics Survey (MRFSS).

		For-Hire (includes head boats 1981-85)					Private Boat					Shore				
Year	Subregion	A + B1	PSE	B2	PSE	% B2	A + B1	PSE	B2	PSE	% B2	A + B1	PSE	B2	PSE	% B2
1981**	West	270	99.9	1,924	79.2	12.3%	259,585	50.1	0	0.0	0.0%	3,305	57.3	0	0.0	0.0%
1982	West	26,155	45.9	0	0.0	100.0%	58,510	35.1	0	0.0	0.0%	1,176	100.0	1,184	100.0	50.2%
1983	West	9,737	32.7	0	0.0	100.0%	13,454	43.0	0	0.0	0.0%	96,762	100.0	0	0.0	0.0%
1984	West	69,678	33.9	0	0.0	100.0%	135,005	53.2	90,413	58.7	40.1%	12,172	71.5	0	0.0	0.0%
1985	West	7,818	31.9	0	0.0	100.0%						2,299	51.7	1,199	100.0	34.3%
1986	West	10,793	30.5	5,141	62.8	32.3%	32,640	33.8	1,777	100.0	5.2%	12,693	100.0	0	0.0	0.0%
1987	West	11,797	31.4	0	0.0	0.0%	68,982	38.1	19,148	67.0	21.7%	20,211	94.5	0	0.0	0.0%
1988	West	4,726	48.6	87	99.6	1.8%	78,276	54.2	32,055	60.5	29.1%	3,417	100.0	26,183	72.9	88.5%
1989	West	3,002	50.4	0	0.0	0.0%	41,892	41.9	1,976	100.0	4.5%	4,154	100.0	0	0.0	0.0%
1990	West	18,900	34.5	0	0.0	0.0%	23,687	43.3	10,989	64.2	31.7%					
1991	West	5,780	43.9	0	0.0	0.0%	46,528	24.3	106,054	33.4	69.5%	16,303	100.0	7,795	71.3	32.3%
1992	West	17,221	21.1	5,648	54.2	24.7%	57,194	29.8	44,570	38.3	43.8%	3,583	100.0	3,583	100.0	50.0%
1993	West	15,970	25.6	3,631	51.4	18.5%	41,245	24.5	89,464	28.3	68.4%	18,518	33.7	10,180	68.7	35.5%
1994	West	7,678	36.4	3,827	38.4	33.3%	16,961	18.1	39,816	29.9	70.1%	11,271	29.6	7,486	48.5	39.9%
1995	West	14,915	34.5	0	0.0	0.0%	24,659	30.5	38,487	41.3	60.9%	5,964	42.1	659	99.9	10.0%
1996	West	7,152	31.1	2,280	59.9	24.2%	19,773	38.7	40,777	21.8	67.3%	1,691	73.3	1,154	100.0	40.6%
1997	West	11,457	24.1	13,002	43.4	53.2%	4,599	40.8	84,203	29.1	94.8%	2,910	70.8	0	0.0	0.0%
1998	West	8,173	19.3	3,148	34.0	27.8%	8,950	34.2	80,405	24.9	90.0%	1,002	100.1	9,096	66.0	90.1%
1999	West	7,826	16.7	1,724	38.8	18.1%	14,762	41.6	10,203	52.1	40.9%	3,934	82.4	5,437	56.2	58.0%
2000	West	2,765	12.9	291	36.7	9.5%	3,147	77.4	6,568	71.0	67.6%	0	0.0	1,383	100.0	100.0%
2001	West	2,575	11.8	221	44.0	7.9%	600	99.8	3,980	72.5	86.9%	1,604	100.0	0	0.0	0.0%
2002	West	6,215	11.8	4,755	45.5	43.3%	10,463	36.4	1,226	70.7	10.5%	980	100.0	0	0.0	0.0%
2003	West	6,923	11.4	2,261	35.2	24.6%	15,892	31.4	14,084	35.9	47.0%	8,840	55.8	5,230	72.6	37.2%
2004	West	9,104	18.6	3,843	40.3	29.7%	4,983	47.7	8,707	38.0	63.6%	1,041	99.8	7,287	52.0	87.5%
2005	West	2,322	11.6	872	31.6	27.3%	1,288	70.5	20,365	53.3	94.1%	2,369	99.8	11,845	72.8	83.3%
2006*	West	5,908	15.1	2,322	30.2	28.2%	22,544	44.5	14,303	35.2	38.8%					

* 2006 data were preliminary at the time of the data workshop

** No Wave 1 sampling

Table 4.10. Prevalence of mutton snapper interviews (interviews where anglers caught and/or targeted mutton snapper) calculated as a percent of total interviews in the MRFSS from 1982 to 2005. Regions are defined as the five sample regions used in the For-Hire Telephone Survey.

	For-Hire Mode			Private/Rental Boat Mode			Shore Mode		
Sub-Region	**Total Intercepts**	**Mutton Intercepts**	**Prevalence**	**Total Intercepts**	**Mutton Intercepts**	**Prevalence**	**Total Intercepts**	**Mutton Intercepts**	**Prevalence**
NW Florida	36,860	78	0.21	28,084	68	0.24	23,062	7	0.03
West Peninsula	18,216	107	0.59	140,617	347	0.25	64,430	16	0.02
Keys	**32,704**	**8,896**	**27.20**	**12,955**	**1,890**	**14.59**	**7,482**	**612**	**8.18**
SE Florida	**23,050**	**5,192**	**22.52**	**75,096**	**18,050**	**24.04**	**45,367**	**2,993**	**6.60**
NE Florida	4,963	208	4.19	75,465	1,502	1.99	49,520	97	0.20

Table 4.11. MRFSS estimated mutton snapper harvest (A+B1) and total catch (A+B1+B2) in numbers of fish.

	For-Hire Mode				Private/Rental Boat Mode				Shore Mode			
	West Florida (including Monroe Co.)		Monroe County Only		West Florida (including Monroe Co.)		Monroe County Only		West Florida (including Monroe Co.)		Monroe County Only	
YEAR	A+B1	A+B1+B2	A+B1	A+B1+B2	A+B1	A+B1+B2	A+B1	A+B1+B2	A+B1	A+B1+B2	A+B1	A+B1+B2
1981	270	2,193	275	2,199	259,585	259,585	160,352	160,352	3,305	3,305	2,866	2,866
1982	26,155	26,155	26,841	26,841	58,510	58,510	53,099	53,099	1,176	2,361	1,143	2,327
1983	9,737	9,737	8,748	8,748	13,454	13,454	13,647	13,647	96,762	96,762	96,762	96,762
1984	69,678	69,678	68,197	68,197	135,005	225,417	133,958	224,371	24,868	24,868	12,369	12,369
1985	7,818	7,818	7,763	7,763					2,299	3,498	1,159	3,017
1986	10,793	15,934	6,802	8,384	32,640	34,417	32,188	33,965	12,693	12,693	13,077	13,077
1987	11,797	11,797			68,982	88,130			20,211	20,211		
1988	4,726	4,812			78,276	110,331	1,726	18,899	3,417	29,599		
1989	3,002	3,002	3,437	3,437	41,892	43,868	42,558	44,534	4,154	4,154	4,154	4,154
1990	18,900	18,900	3,046	3,046	37,801	52,187	22,663	33,652				
1991	5,780	7,318	6,013	6,013	46,528	152,582	47,331	153,385	16,303	24,098	16,303	24,098
1992	17,221	22,869	16,009	21,657	57,194	101,764	30,334	74,904	3,583	7,167	3,583	7,167
1993	15,970	19,601	16,827	20,457	41,245	130,709	41,307	130,772	18,518	28,698	18,541	28,721
1994	7,678	11,504	8,132	11,958	16,961	56,777	16,905	49,987	11,271	18,757	11,274	18,761
1995	14,915	14,915	16,268	16,268	24,659	63,146	24,193	62,679	5,964	6,623	5,957	6,615
1996	7,152	9,432	7,479	9,759	19,773	61,423	16,597	44,233	1,691	2,845	1,723	2,877
1997	11,457	24,459	12,404	20,620	4,599	89,576	3,689	87,892	2,910	2,910	2,910	2,910
1998	8,173	11,321	8,721	11,790	8,950	90,194	7,748	81,950	1,002	10,099	1,002	10,099
1999	7,826	9,550	8,085	9,809	14,762	24,966	14,208	24,411	3,934	9,371	3,889	9,326
2000	2,765	3,055	2,381	2,631	3,147	9,715	3,169	3,169	0	1,383	0	1,383
2001	2,575	2,796	2,575	2,796	600	4,580	601	3,785	1,604	1,604	1,617	1,617
2002	6,215	10,971	6,215	10,971	10,463	11,690	9,423	10,649	980	980	951	951
2003	6,923	9,184	6,766	9,012	15,892	29,975	15,241	29,324	8,840	14,070	8,840	14,070
2004	9,104	12,948	9,071	12,777	4,983	13,690	3,159	7,269				
2005	2,322	3,194	2,724	4,271	1,288	21,653	1,260	20,621	1,041	8,328	1,049	8,335

Table 4.12. Numbers of mutton snapper (Type A+B1; numbers of fish) landed by recreational anglers (source: NMFS Marine Recreational Fishery Statistics Survey, post-stratified). [Note: Regions defined in Figure 2.]

MRFSS post-stratified landings (Type A + B1; numbers of fish)

Year	Northeast	Southeast	Florida Keys	Southwest	Northwest	Total
1981	8,730	42,385	203,651	3,477	8,670	266,913
1982	6,150	103,215	55,137	0	830	165,332
1983	7,173	74,448	110,413	0	0	192,034
1984	0	88,549	146,271	0	12,696	247,516
1985	0	15,634	2,259	0	0	17,893
1986	6,845	34,586	53,577	0	4,436	99,444
1987	50,544	31,981	100,383	0	0	182,908
1988	0	64,634	82,642	2,582	0	149,858
1989	25,209	48,565	50,009	0	0	123,783
1990	0	51,971	25,958	0	27,403	105,332
1991	1,167	66,103	69,758	0	0	137,028
1992	2,769	87,336	76,872	0	1,402	168,379
1993	14,599	100,337	76,457	0	0	191,393
1994	2,589	68,011	36,345	0	0	106,945
1995	12,038	35,817	46,485	0	0	94,340
1996	4,804	28,841	28,985	0	0	62,630
1997	16,036	25,926	19,960	0	970	62,892
1998	21,437	31,404	18,278	716	0	71,835
1999	14,161	23,671	26,505	0	0	64,337
2000	6,425	60,666	9,289	0	0	76,380
2001	4,444	56,842	8,254	0	0	69,540
2002	6,120	91,000	20,406	0	0	117,526
2003	3,229	77,103	34,206	47	35	114,620
2004	6,715	77,801	11,672	0	451	96,639
2005	5,462	135,889	6,884	0	129	148,364
2006	5,027	108,296	32,990	0	91	146,404

Table 4.13. Number of mutton snapper (Type B2; numbers of fish) released alive by recreational anglers (source: NMFS Marine Recreational Fishery Statistics Survey, post-stratified). [Note: Regions defined in Figure 2.]

MRFSS post-stratified released alive fish (Type B2; numbers of fish)

Year	Northeast	Southeast	Florida Keys	Southwest	Northwest	Total
1981	0	0	0	0	0	0
1982	0	1,020	1,184	0	0	2,204
1983	0	20,019	0	0	0	20,019
1984	0	4,339	90,413	0	0	94,752
1985	11,411	20,273	1,076	0	0	32,760
1986	0	19,786	3,359	0	3,559	26,704
1987	105,726	20,659	19,148	0	0	145,533
1988	0	11,629	50,293	8,032	0	69,954
1989	1,806	13,715	1,976	0	0	17,497
1990	0	2,650	10,989	0	3,397	17,036
1991	157	17,481	113,849	0	1,538	133,025
1992	1,308	76,315	53,801	0	0	131,424
1993	8,359	71,909	103,275	0	0	183,543
1994	25,302	42,233	51,129	0	0	118,664
1995	15,719	22,941	39,145	0	0	77,805
1996	9,118	29,644	44,210	0	873	83,845
1997	25,833	38,952	92,419	0	5,560	162,764
1998	38,654	53,855	86,447	6,203	839	185,998
1999	24,051	23,539	17,365	0	0	64,955
2000	19,371	67,184	2,111	6,568	0	95,234
2001	8,431	47,960	4,441	0	0	60,832
2002	21,237	77,326	3,334	0	0	101,897
2003	11,656	51,704	22,287	0	0	85,647
2004	5,003	72,441	5,801	0	4,615	87,860
2005	16,809	148,593	30,356	0	0	195,758
2006	37,519	123,508	27,141	0	3,183	191,351

Table 4.14. Kilograms of mutton snapper landed by recreational anglers estimated by the NMFS Marine Recreational Fishery Statistics Survey [MRFSS; post-stratified]("actual"), and estimated from the length measurements taken by the MRFSS binned in 25 mm size classes and regressions of length and weight (see Life History Section II, Table 2.12) with bootstrapped samples (**noted in blue**) if the numbers of fish measured in a region and year were below 30 individuals. The regression estimates of biomass from lengths and bootstrapped length estimates (green shaded portion of the table) were used in the assessment models.

Post-stratified MRFSS kg ("actual"), Type A+B1 Landings			
Year	Atlantic (Northeast +Southeast)	Florida Keys	Gulf (Northwest +Southwest)
1981	64,807	236,405	4,055
1982	74,567	172,287	1,889
1983	113,722	164,335	0
1984	109,258	262,025	0
1985	22,167	5,877	0
1986	57,816	134,091	2,069
1987	139,307	182,035	0
1988	124,901	171,727	1,087
1989	125,839	98,578	0
1990	77,068	47,167	7,541
1991	85,304	174,208	0
1992	107,743	255,219	934
1993	113,677	139,613	0
1994	83,583	57,513	0
1995	95,905	99,918	0
1996	45,030	80,419	0
1997	121,543	45,908	871
1998	84,495	51,277	608
1999	60,181	93,266	0
2000	110,012	29,741	0
2001	91,318	31,037	0
2002	167,945	59,118	0
2003	130,353	104,362	116
2004	122,597	36,770	339
2005	172,278	17,907	127
2006	167,221	86,799	0

Post-stratified MRFSS kg (bootstrapped), Type A+B1 Landings			
Year	Atlantic (Northeast +Southeast)	Florida Keys	Gulf (Northwest +Southwest)
1981	**65,857**	**241,412**	**15,247.2**
1982	75,436	**179,830**	**9,605.4**
1983	**116,967**	**169,235**	**0.0**
1984	**111,091**	**270,305**	**0.0**
1985	**22,639**	**6,115**	**0.0**
1986	58,820	**139,204**	**8,459.5**
1987	**143,580**	187,029	**0.0**
1988	**128,475**	**178,022**	**4,665.9**
1989	**128,756**	**102,074**	**0.0**
1990	**78,562**	**48,722**	**29,614.1**
1991	**86,876**	**181,046**	**0.0**
1992	109,844	266,308	**3,287.0**
1993	114,932	143,858	**0.0**
1994	**84,781**	59,040	**0.0**
1995	**98,943**	102,985	**0.0**
1996	**45,872**	**83,417**	**0.0**
1997	**128,296**	47,391	**2,564.9**
1998	86,553	53,167	**1,975.6**
1999	61,611	97,280	**0.0**
2000	112,367	30,907	**0.0**
2001	92,909	32,383	**0.0**
2002	171,785	61,314	**0.0**
2003	133,114	108,428	**261.7**
2004	124,675	38,207	**1,689.0**
2005	174,147	**18,492**	**423.8**
2006	170,180	**89,669**	**0.0**

Table 4.15. NMFS Marine Recreational Fishery Statistics Survey – Dockside measurements [Total Length (max.)] by year and 25 mm size class.

Gulf of Mexico Region

TL(max) class mid-points (mm)	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total
237.5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
262.5	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
287.5	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	4
312.5	0	1	0	2	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	2	0	0	8
337.5	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	4
362.5	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	4
387.5	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
412.5	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	3
437.5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
462.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2
487.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
587.5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
787.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Total	0	5	0	10	0	0	0	3	0	0	0	2	0	0	0	0	4	4	0	0	0	1	3	3	0	2	37

Table 4.15. Continued. NMFS Marine Recreational Fishery Statistics Survey – Ddockside measurements [Total Length (max.)] by year and 25 mm size class.

Florida Keys region.

TL(max) class mid-points (mm)	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total
137.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
162.5	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
187.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
212.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
237.5	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
262.5	4	0	0	0	1	0	2	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	9
287.5	1	1	0	1	0	0	0	1	0	0	1	0	2	2	2	0	0	0	2	0	1	0	0	0	0	0	14
312.5	1	2	1	0	3	2	2	1	0	0	3	1	3	1	1	1	0	1	2	0	0	0	1	0	0	0	26
337.5	1	0	0	0	1	2	0	1	0	0	2	2	4	2	1	0	0	0	1	0	0	0	0	0	0	0	17
362.5	1	1	0	0	0	1	3	3	0	0	2	2	5	4	2	0	1	0	0	1	1	0	1	0	0	0	28
387.5	2	1	1	0	0	1	0	1	0	0	3	1	2	3	2	0	2	0	0	0	0	0	5	0	0	1	25
412.5	2	0	0	1	0	1	3	1	1	0	0	2	7	4	2	0	7	2	1	1	2	5	2	5	0	0	49
437.5	2	0	0	0	1	2	4	0	1	1	0	6	2	5	3	0	2	5	1	4	0	7	5	5	2	2	60
462.5	1	0	0	0	0	0	4	0	1	1	0	4	2	2	0	3	5	5	2	6	1	9	6	2	1	1	56
487.5	0	1	0	0	0	0	3	0	0	1	1	1	1	0	8	2	6	5	6	3	2	5	5	3	1	1	55
512.5	1	0	0	1	0	0	3	0	0	2	2	1	1	1	3	3	2	4	3	9	3	6	8	4	4	0	61
537.5	0	0	0	0	0	3	0	2	1	0	1	0	2	2	2	1	4	4	3	6	3	6	8	1	0	6	55
562.5	0	0	0	0	0	0	2	0	0	0	0	1	2	0	7	2	0	2	7	5	3	4	4	3	0	3	45
587.5	0	0	0	1	0	1	0	0	0	0	0	1	1	0	1	0	1	3	4	9	1	4	4	3	0	2	36
612.5	0	0	0	0	0	0	1	1	0	0	2	0	0	0	1	2	4	0	5	6	4	8	7	3	3	1	48
637.5	0	0	0	0	0	2	1	0	0	0	0	1	2	1	2	0	2	4	4	2	6	2	4	1	1	3	38
662.5	0	2	0	0	0	0	1	0	1	0	2	2	4	2	3	1	4	3	5	10	6	4	8	7	0	1	66
687.5	0	0	1	0	0	1	2	1	0	0	0	1	1	0	0	2	2	2	5	5	2	3	4	6	2	1	41
712.5	0	2	0	0	0	1	0	1	0	0	1	3	0	1	1	0	0	3	4	3	4	6	5	2	1	1	39
737.5	0	3	0	0	0	0	1	1	0	0	0	5	0	0	0	0	1	1	3	4	4	3	5	3	1	2	37
762.5	0	1	0	0	0	0	0	0	0	0	3	4	1	1	1	0	0	1	3	4	4	5	4	2	0	0	34
787.5	0	2	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	3	4	2	0	0	1	2	0	0	19
812.5	0	1	0	0	0	3	1	0	0	0	2	2	1	1	1	0	1	0	5	2	4	4	5	3	0	0	36
837.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	2	3	1	2	1	1	0	0	0	13
862.5	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	3
887.5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3
912.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	3
937.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
962.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
987.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	17	18	4	4	6	20	33	14	5	6	26	45	44	33	44	19	45	50	75	85	54	82	94	55	16	25	919

Table 4.15. Continued. NMFS Marine Recreational Fishery Statistics Survey – Ddockside measurements [Total Length (max.)] by year and 25 mm size class.

Atlantic (Northeast and Southeast) Region.

TL(max) class mid-points (mm)	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total
137.5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
162.5	0	3	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	6
187.5	0	6	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7
212.5	0	4	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	6
237.5	0	3	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	1	9
262.5	0	3	1	0	0	4	0	0	0	0	0	0	2	0	0	0	0	4	5	0	0	0	0	2	0	1	22
287.5	3	5	2	0	0	3	1	0	0	0	1	0	1	2	0	0	0	0	2	1	2	0	0	0	0	1	24
312.5	1	5	1	4	0	0	1	0	0	0	1	6	7	2	2	2	2	3	1	1	0	5	1	1	1	1	48
337.5	2	3	1	5	0	1	4	0	0	0	0	4	8	1	0	0	1	1	2	4	0	0	3	0	5	2	47
362.5	3	2	0	4	0	0	0	2	1	0	0	8	3	4	1	2	2	1	2	0	2	1	1	0	2	2	43
387.5	0	0	0	1	0	0	2	3	9	1	2	6	7	1	0	2	2	1	6	2	0	5	5	13	16	4	88
412.5	3	0	0	0	0	2	0	0	2	0	1	3	4	5	6	0	1	11	7	15	30	22	35	30	81	18	276
437.5	0	0	0	0	0	1	0	0	0	0	0	0	5	4	0	1	0	5	4	15	32	33	33	28	68	16	245
462.5	0	1	0	2	0	5	3	3	3	3	2	2	3	1	4	1	0	2	6	14	19	14	25	31	42	14	200
487.5	0	1	0	1	0	5	2	0	0	1	0	0	2	0	4	0	2	4	3	12	12	17	25	24	18	9	142
512.5	1	4	0	2	0	4	0	1	3	1	0	0	3	1	2	0	0	3	4	8	9	8	12	25	22	15	128
537.5	1	2	1	1	0	1	0	3	3	0	0	0	2	0	0	1	1	2	5	1	8	6	11	5	4	1	59
562.5	1	0	0	0	5	5	1	3	1	0	0	1	1	1	0	1	0	1	2	2	5	16	8	7	6	3	70
587.5	0	0	0	1	0	0	0	0	0	1	0	1	1	0	0	1	0	0	0	5	4	8	6	3	2	5	38
612.5	0	0	0	0	0	0	2	0	3	0	0	1	2	0	0	1	3	1	2	3	5	5	4	0	4	1	37
637.5	0	0	0	2	0	2	0	0	2	0	1	0	2	1	0	2	4	1	2	2	3	0	2	4	1	4	35
662.5	0	1	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	1	1	1	0	0	4	1	0	0	12
687.5	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0	1	1	1	3	3	0	2	1	1	0	1	18
712.5	0	1	1	0	0	0	0	2	1	0	0	0	0	0	1	0	0	1	1	1	1	2	1	1	1	1	16
737.5	0	0	0	0	1	0	1	0	0	0	0	1	0	0	2	0	0	3	2	1	1	6	1	1	0	1	21
762.5	0	0	0	0	0	0	2	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	2	0	0	0	8
787.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	1	1	0	0	0	0	0	5
812.5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
837.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
862.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
887.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
912.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
937.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
962.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
987.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Total	15	45	9	24	6	33	20	17	29	9	9	35	58	25	26	15	21	46	61	92	134	152	182	178	275	101	1617

Table 4.16. Number of trips sampled in Headboat At-Sea Observer Surveys in Florida. Region for this survey refers to the area the vessel is located. Some vessels sampled from the western peninsula region do multi-day fishing trips to the Keys.

Region	2005 Day Trips	2006 Day Trips	2005 Multi-Day Trips	2006 Multi-Day Trips
Western Peninsula (2)	61	80	19	23
Keys (3)	34	52	1	4
Southeast Florida (4)	95	71	n/a	n/a
Northeast Florida (5)	43	38	n/a	n/a

Table 4.17. Length statistics (in maximum total length, TL) for mutton snapper discards and harvested fish observed in at-sea surveys.

		Discarded Fish						Harvested Fish					
Region	Year	n	Mean	S.D.	Max	Median	Min	n	Mean	S.D.	Max	Median	Min
East FL	2005	53	366.56	36.81	522.12	371.0	270.90	145	453.14	61.89	658.06	438.38	368.78
East FL	2006	23	366.32	23.52	397.05	377.5	324.19	41	439.76	31.87	525.38	435.12	381.83
West FL	2005	19	346.68	35.57	399.23	353.6	292.65	44	575.95	116.04	833.15	540.61	415.54
West FL	2006	39	348.37	40.95	437.29	351.4	269.81	126	596.75	128.64	876.66	577.04	301.35

4.10 Figures

Fig. 1. Location of Dry Tortugas, Pulley Ridge, and Florida Middle Grounds in relation to land features of the Florida Peninsula and depth contours.

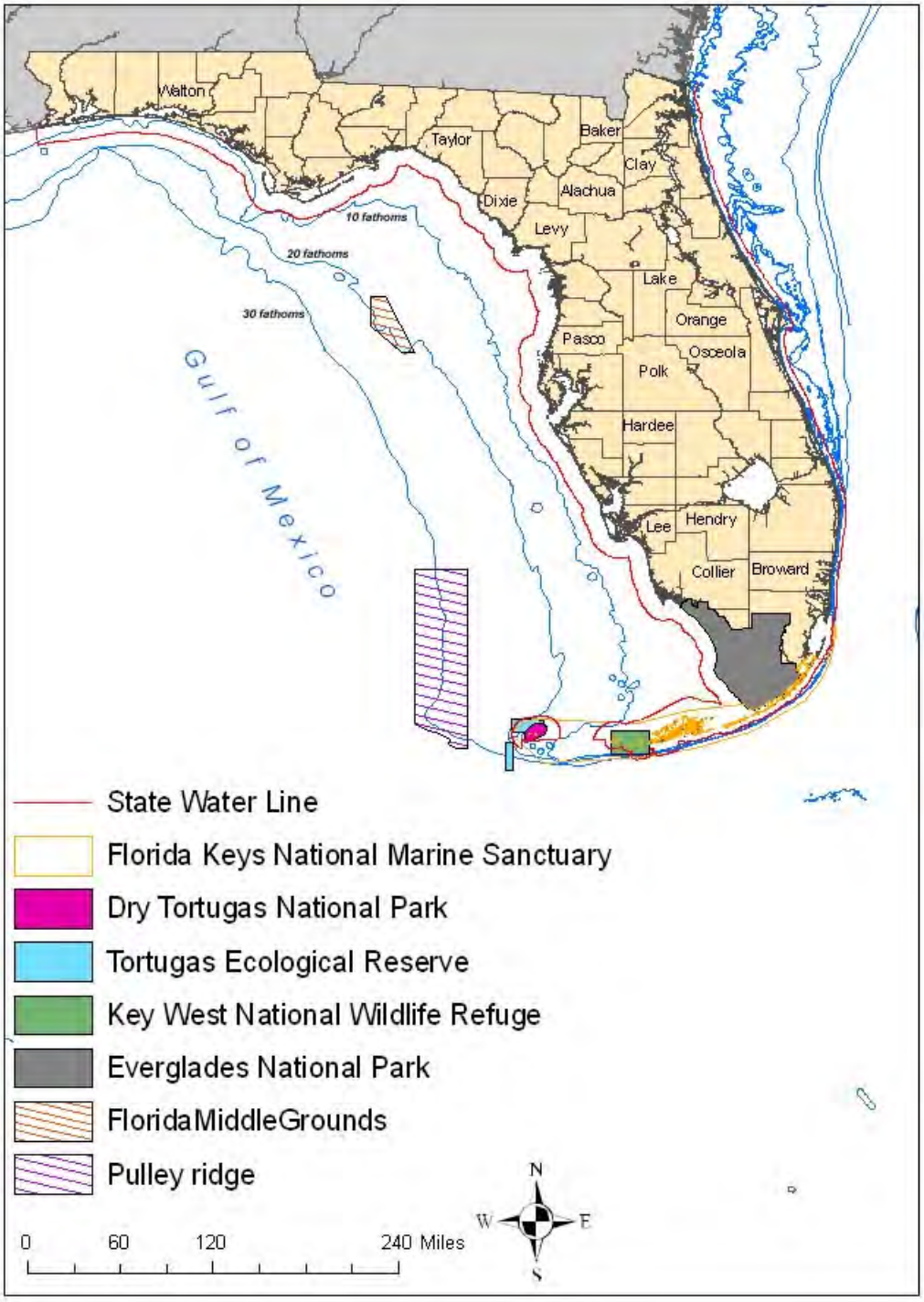

Fig. 2. Map of Southeastern United States, South Atlantic Ocean, and Gulf of Mexico showing regional divisions used for SEDAR 15A.