Commercial Landings of Gray or Mangrove Snapper (*Lutjanus griseus*) from the Gulf of Mexico

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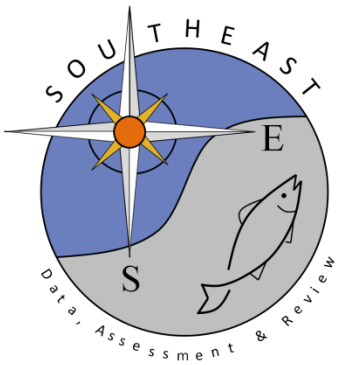
SEDAR51-RW-01

5 March 2018



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Commercial landings for Gray Snapper were compiled from recorded in the NOAA Southeastern Fisheries Science Center's (SEFSC) Accumulated Landings System (ALS). The ALS includes landings beginning in 1962. The terminal year for this baseline assessment SEDAR51 is 2015. The terminal year for this baseline assessment SEDAR51 is 2015.

Stock boundaries

Commercial landings of Gray Snapper were provided for the entire Gulf of Mexico and all of Monroe County, FL. Monroe County south of US-1 falls under the jurisdiction of the South Atlantic Fisheries Management Council. There was no clear evidence of a stock separation and dividing recreational data from Monroe County was problematic; therefore, the stock boundary was set as the Monroe – Miami Dade County line.

Monroe Country by Waterbody

It was determined that the SEFSC Fisheries Statistics Division would use waterbody codes to define commercial landings and biological sample data which fall inside or outside Monroe County waters for SEDAR 51. When waterbody codes were not available, landing county was used to assign whether the information came from Monroe waters or otherwise. These definitions are consistent with past assignments of commercial landings to waters south and north of a line offshore of the border between Monroe and Miami-Dade counties. Historic statistical grid areas or "Shrimp Grid" 1-21 used prior to 2013 for the Gulf of Mexico (See Figure 1). The border uses a line extending due east from the Dade/Monroe line at the northern end of Key Largo. Beginning in 2013 a higher resolution grid was implemented transitioning to a one degree system as shown in Figure 2. State and Federal designation for the inclusive waterbodies are: all of 748 (7480, 7481, and 7489) are assigned to Monroe waters. State codes for Florida are shown in Figure 3 the marine fisheries trip ticket fishing area code map for Florida. Additionally some parts of 744 (7441, 7446, 7447 - Florida Bay, Card Sound and Barnes Sound respectively) are assigned to Monroe waters. This coding is included in a table in the appendix.

All Monroe waters listed above and statistical areas 1-21 will be considered Gulf of Mexico for the SEDAR 51 gray snapper data workshop in 2017. Excluded are: the rest of area 744 (7440, 7442-7445, 7448, 7449) will be considered Miami-Dade waters and will NOT be included with gray snapper information prepared for the assessment for the data workshop. Water bodies 7442-7445 and 7448 are for parts of Biscayne Bay and thus are completely in waters off Miami-Dad, also 7440 and 7449 overlap the line running east from the Monroe/Dade border, but they are primarily in waters off Miami-Dade and so are assigned to Miami-Dade waters.

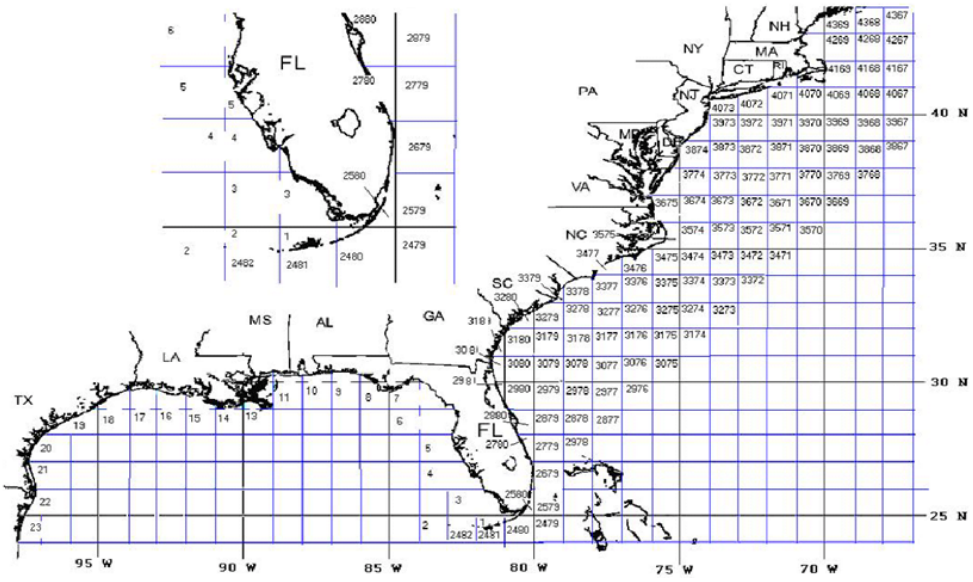


Figure --1. Historic statistical grid areas or “Shrimp Grid” 1-21 used prior to 2013 for the Gulf of Mexico.

Database Background Information:

Commercial landings of Gray Snapper were compiled from 1962−2015 for the entire Gulf of Mexico and Monroe County coasts. Sources for landings include the Florida Fish and Wildlife Conservation Commission trip ticket program (FWC), Gulf of Mexico Fisheries Information Network (GulfFIN), the Accumulated Landings System (ALS), and NMFS General Canvass data.

Commercial landings (lbs. whole weight; 1962 to present) for all species on the Gulf of Mexico (GoM) coast are maintained in the Accumulated Landings System (ALS) at the Southeast Fisheries Science Center (SEFSC). Data collected prior to the advent of the trip ticket programs in each state were generally referred to as the NMFS General Canvass data. The General Canvass data were collected by port agents stationed in each county. The port agents would collect total landings from dealers and use local knowledge to proportion the landings into the proper fishing areas and gears. The ALS uses trip-level data after the advent of trip ticket programs in each state. Data from state trip ticket programs begin in various years, depending on the state. In the GoM, trip ticket data are available directly from the state trip ticket program or through the GoM Fisheries Information Network (GulfFIN) housed at the Gulf States Marine Fisheries Commission (GSMFC). Where data were available from state trip ticket programs, those data were used in lieu of data from ALS.

Prior to 1986, Florida commercial landings data were collected through the NMFS General Canvass via monthly dealer reports. In 1984, the state of Florida instituted a mandatory trip level reporting program to report harvest of commercial marine fisheries products in Florida via a marine fisheries trip ticket. The program requires seafood dealers to report all transactions of marine fisheries products purchased from commercial fishers, and to interview fishers for pertinent effort data. Trip tickets are required to be received monthly, or weekly for federally managed species. The program encompasses commercial fishery activity in waters of the GoM and South Atlantic from the Alabama-Florida border to the Florida-

Georgia border. The first full year of available data from Florida trip tickets is 1986. Alabama trip ticket data have been collected since 2000. Those data were recorded in the FIN format and copied to the GulfFIN database every few months. GulfFIN provided a portion of the landings data. ALS data were used for 1962-1999. Mississippi finfish landings are currently collected by a NMFS port agent and housed in the ALS. Louisiana trip ticket data have been collected since 1993; however, gear and fishing area were not required. In 1998, Louisiana began to require information on gear and area of capture. Texas trip ticket data have been collected since 2009. Prior to the beginning of the Texas trip ticket program, NMFS port agents have collected Texas landings data.

Recent Change in Logbook Reporting:

Ending in 2012 and beginning in 2013 the reporting of fishing areas in the coastal logbook for the Gulf of Mexico has been changed from the previous statistical area system of grid 1 through grid 21 or also called the "Statistical Shrimp Grid", see Figure. Beginning in 2013 a higher resolution grid was implemented transitioning to a one degree system as shown in Figure 2.

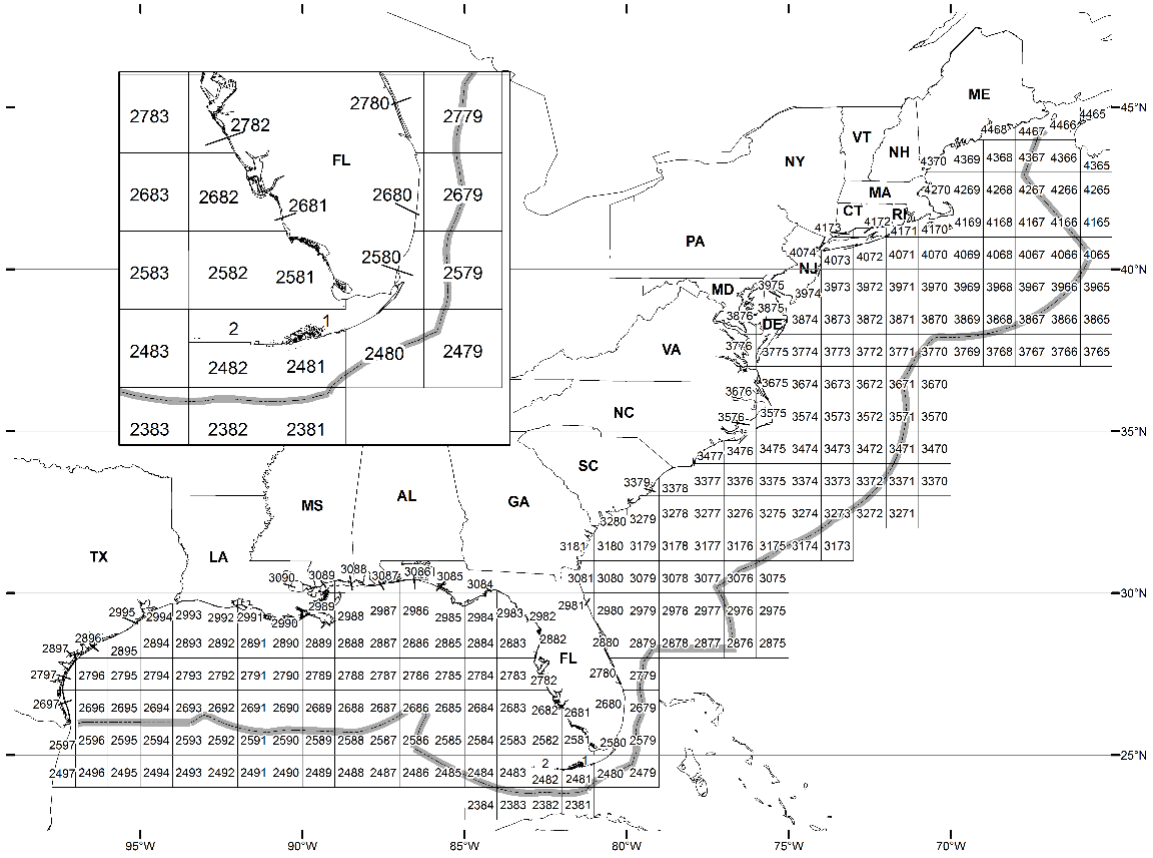


Figure --2. Map showing Coastal Fisheries Logbook (CFLP) statistical grid denoting “Area_Fished” modified from latitude and Longitude used beginning 2013 for the Gulf of Mexico.

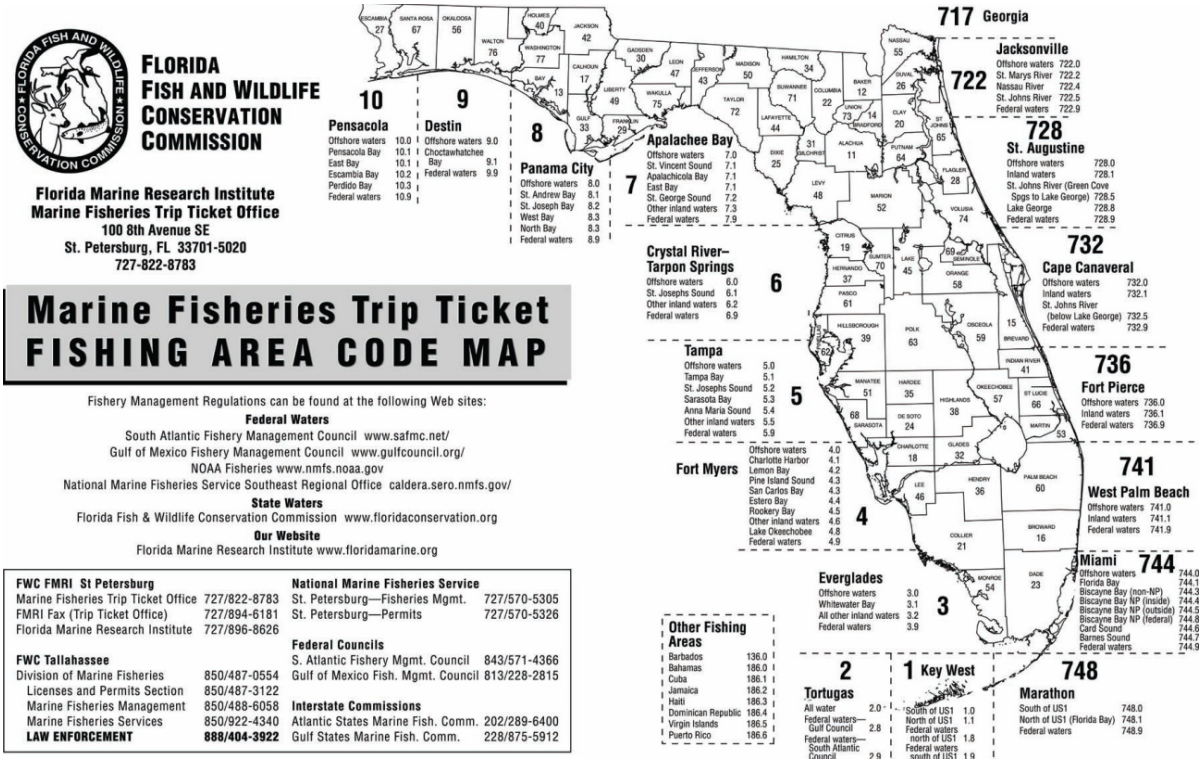


Figure – 3. Map showing marine fisheries trip ticket fishing area code map for Florida.

Description of Aggregation of Commercial Landings

Commercial landing of gray snapper for the Gulf of Mexico are derived from the Accumulated Landing System (ALS), a continuous Fisheries database that began in the 1960's. Dealers report the Fisheries landings data to the fisheries agencies in each state. The National Marine Fisheries Service (NMFS) in the Southeast Region has established cooperative agreements with all of the states in the Southeast and relies on the states to collect and process these data.

The general canvass data is set maintained by the NMFS, Southeast Fisheries Science Center (SEFSC). There are four tables used to aggregate the landings:

- ALS Landings table, this is main monthly landings table that begin 1977
- ALS6071, the annual landings table covering landings from 1962-1971
- ALS7278, the annual landings table covering landings from 1972-1976
- Florida General Canvass, the annual landings table covering Florida (West and East) landings from 1976 to 1996

Commercial Fisheries landings were assigned to their respective Fisheries Management regions by area of catch where water body information was available and in case water body information on catch area landed was not available then by recorded county of landing was used to assign region.

Prior to adoption of the logbook in the 1990's area of landing and gear information was not well reported in the main monthly ALS landing table and therefore for Florida (West and East) landings between 1976-1996 the Florida General Canvas annual landings table was used, which has area of catch and gear information that the ALS monthly table does not. The magnitude of the landings in both tables are identical.

During the SEDAR 51 Data workshop, it was agreed that the Gulf of Mexico Council boundary was the Monroe – Dade County line. Resulting in an inclusion of both the regular Gulf of Mexico landings where north of US 1 and the South Atlantic portion of Monroe county landings south of US1 are included in the SEDAR51 commercial landings.

In terms of gear groupings, the SEDAR 51 panel decided that decided for three gears groupings based on different size selectivity's of different gear types (see Table 1):

1. Vertical Hand lines and Diving or Spear were grouped in **HANDLINE+** Hand lines were said to catch a variety of sizes and diving would also catch similar variety of sizes and not just larger fish, because expert opinion fishermen said that most of the landing were in Monroe county and there were not too many large fish left in Monroe.
2. Nets_and_Traps were grouped into **NETS_TRAPS** together because it was felt they caught similar sized fish.
3. Longline and other gears were grouped into **LONGLINE+**

Table 1: Gear groupings of commercial landings of gray snapper in the Gulf of Mexico.

NMFS_GEAR_C	GEAR_DESC	NMFS_GEAR_NAME	GEAR_Category	Handline	Nets_and_Traps	Longline_and_Other	Group
0	NOT CODED 000	Other			Other	Other	O
15					Other		O
20	HAUL SEINES, BEACH	Seine H			Net		N
30	HAUL SEINES, LONG	Seine L			Net		N
100	ENCIRCLINLING NETS (PURSE)				Net		N
145	SEINE, PURSE	PURSE SEINES, OTHER	SEINE		Net		N
187	TRAWL, SKIMMER				Net		N
192	BEAM TRAWLS, SHRIMP	Net, Butterfly			Nets		N
200	TRAWL, UNCLASSIFIED	TRAWLS, UNSPECIFIED	TRAWL		Net		N
210	TRAWL, OTTER Fish	OTTER TRAWL BOTTOM, FISH	TRAWL		Net		N
215	OTTER TRAWL BOTTOM, SHRIMP	Otter Trawl S			Net		N
300	POTS AND TRAPS, CMB	Trap			Trap		N
330	POTS AND TRAPS, CRAB, BLUE	Trap/Pot			Trap		N
333	POTS, CRAB	POTS AND TRAPS, CRAB, OTHER	POTS AND TRAPS		Trap		N
345	TRAPS, FISH	POTS AND TRAPS, FISH	POTS AND TRAPS		Trap		N
355	TRAPS, SPINY LOBSTER	POTS AND TRAPS, SPINY LOBSTER	POTS AND TRAPS		Trap		N
379	TRAPS, OTHER	POTS AND TRAPS, OTHER	POTS AND TRAPS		Trap		N
400	ENTANGLING NETS (GILL) UNSPC	Nets Unknown			Nets		N
420	GILL NETS, SEA BASS				Net		N
425	GILL NETS, OTHER	GILL NETS, OTHER	GILLNET		Net		N
470	GILL NETS, DRIFT	GILL NETS, DRIFT, OTHER	GILLNET		Net		N
475	GILL NETS, STRIKE	GILL NETS, DRIFT, RUNAROUND	GILLNET		Net		N
530	TRAMMEL NETS				Net		N
600	TROLL & HAND LINES CMB			H			H
610	HOOK AND LINE, HAND	LINES HAND, OTHER	VERTICAL	H			H
611	HOOK AND LINE, ROD AND REEL	ROD AND REEL	VERTICAL	H			H
612	REEL, MANUAL			H			H
613	HOOK AND LINE, ELECTRIC/HYDRAUL	REEL, ELECTRIC OR HYDRAULIC	VERTICAL	H			H
614	HOOK AND LINE, BUOY	BUOY GEAR, VERTICAL	VERTICAL	H			H
616	HOOK AND LINE, BANDIT	ROD AND REEL, ELECTRIC (HAND)	VERTICAL	H			H
660	TROLLING, OTHER	LINES TROLL, OTHER	TROLLING	H			H
661	LINES POWER TROLL OTHER			H			H
675	LONGLINE, PELAGIC	LINES LONG SET WITH HOOKS	LONGLINE			L	O
676	LONGLINE, REEFFISH	LINES LONG, REEF FISH	LONGLINE			L	O
677	LONGLINE, SHARK	LINES LONG, SHARK	LONGLINE			L	O
678	Longline, DRIFT WITH HOOKS					L	O
680	LINES TROT WITH BAITS					L	O
690	LINES ELECTRICAL DEVICES				H		H
705	DIP NETS, DROP	Dip Net			Net		N
735	CAST NETS	CAST NETS	CAST NET		Net		N
760	SPEAR/GIG (NON-DIVING)	SPEARS	SPEAR	H			H
841	TONGS PATENT, OYSTER					Other	O
942	DIVING OUTFITS, SPONGE			H			H
943	DIVING, POWER DEVICE	DIVING OUTFITS, OTHER	DIVING	H			H
945				H			H
955	DIVING, NON-POWER DEVICE (NET, SP	BY HAND, OTHER	DIVING	H			H
989	UNSPECIFIED GEAR			H			H
999	COMBINED GEARS			H			H

Based on the gear groupings shown in Table 1 and prior area description for the aggregation by region, commercial landings of gray snapper for the Gulf of Mexico from 1962-2015 are shown in Table 2.

Table 2: Gulf of Mexico Commercial Gray Snapper (or Mangrove Snapper) Landings.

YEAR	HANDLINE+	LONGLINE+	NETS_TRAPS	GRAND TOTAL
1962	321,700	1,300	15,000	338,000
1963	277,900	500	8,900	287,300
1964	297,200	-	13,800	311,000
1965	327,000	-	47,400	374,400

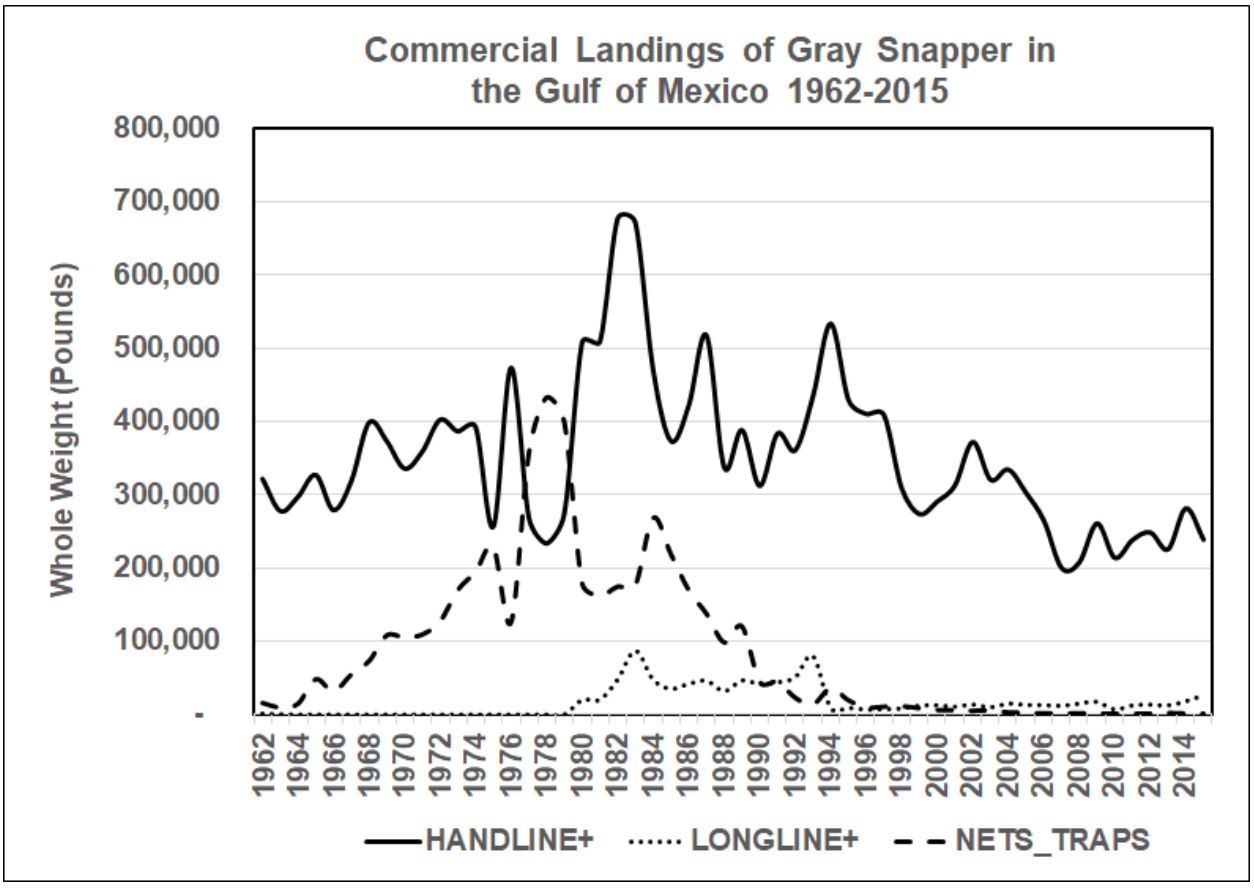
Table 2 (continued):

YEAR	HANDLINE+	LONGLINE+	NETS_TRAPS	GRAND TOTAL
1966	279,100	-	30,900	310,000
1967	318,600	-	54,100	372,700
1968	398,500	-	72,200	470,700
1969	373,100	-	107,300	480,400
1970	335,800	-	104,400	440,200
1971	358,900	-	108,500	467,400
1972	402,400	-	126,500	528,900
1973	386,300	-	169,300	555,600
1974	392,700	-	194,300	587,000
1975	256,500	-	228,000	484,500
1976	473,000	-	125,300	598,300
1977	268,700	-	356,600	625,300
1978	233,500	-	432,800	666,300
1979	274,500	-	398,800	673,300
1980	508,121	19,744	178,153	706,018
1981	508,326	20,194	161,502	690,022
1982	676,569	47,193	174,049	897,811
1983*				933,159
1984*				785,309
1985	373,337	34,739	218,295	626,371
1986	421,429	41,312	169,205	631,946
1987*				699,901
1988	337,569	31,489	97,781	466,839
1989	388,168	46,158	119,517	553,843
1990*				396,704
1991*				470,804
1992*				433,194
1993	434,040	78,857	13,088	525,985
1994	533,137	8,767	35,284	577,188
1995*				456,861
1996	410,168	6,772	8,874	425,814
1997	408,743	7,468	9,921	426,132
1998	308,466	8,193	10,561	327,220
1999	273,755	12,131	7,707	293,593
2000	290,797	12,546	5,636	308,979
2001	312,995	10,733	4,905	328,633
2002	371,800	13,646	4,236	389,682
2003	320,380	9,854	5,007	335,241
2004	334,389	14,835	2,111	351,335
2005	302,566	12,919	1,608	317,093
2006	265,110	12,802	809	278,721
2007	200,227	11,889	431	212,547

Table 2 (continued):

YEAR	HANDLINE+	LONGLINE+	NETS_TRAPS	GRAND TOTAL
2008	207,845	14,877	1,017	223,739
2009	260,938	17,272	893	279,103
2010	214,005	6,810	98	220,913
2011	238,537	12,572	234	251,343
2012	248,627	13,376	407	262,410
2013	225,589	12,416	1,361	239,366
2014	281,546	18,042	583	300,171
2015	238,714	26,072	264	265,050

*Indicates a portion of the data are confidential



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Appendix:

Table of code showing an excerpt from s_51_wtrbdy.monore.sas that creates table s51.Waterbody. This portion of the SAS Proc SQL code for Monroe County Water body extraction specifies the high-resolution data parsing in Monroe County.

```
DATA ALS_Annual_6271_M_w;
                  /* 790 rows -> 665*/;
      SET ALS_Annual_1962_71                                    ;
            SEDAR_51 = "GraySn  "                               ;
                  /* 722 = Jacksonville, 741 = West Palm Beach */;

           IF WTRBDY = "7441" THEN SEDAR_51 = "MONROE  ";
           IF WTRBDY = "7446" THEN SEDAR_51 = "MONROE  ";
           IF WTRBDY = "7447" THEN SEDAR_51 = "MONROE  ";

           IF WTRBDY = "7480" THEN SEDAR_51 = "MONROE  ";
           IF WTRBDY = "7481" THEN SEDAR_51 = "MONROE  ";
           IF WTRBDY = "7489" THEN SEDAR_51 = "MONROE  ";

           IF WTRBDY = "7440" THEN Delete;
           IF WTRBDY = "7442" THEN Delete;
           IF WTRBDY = "7443" THEN Delete;
           IF WTRBDY = "7444" THEN Delete;
           IF WTRBDY = "7445" THEN Delete;
           IF WTRBDY = "7448" THEN Delete;
           IF WTRBDY = "7449" THEN Delete;

           IF WTRBDY = "7994" THEN Delete;
           IF WTRBDY = "7993" THEN Delete;
           IF WTRBDY = "7994" THEN Delete;
      /* Placeholder - else if WTRBDY = 7994 then delete;
      NOTE: water =7994 Atlantic Ocean - SE US, SAT UNK per waterbody*/;
run;
```