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SEDAR
Southeast Data, Assessment, and Review

SEDAR 24-DW09
Pre-Data Workshop Development of
Commercial Landings for the Red Snapper Fishery

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3. Commercial Fishery

3.1 Overview

This report provides a framework for discussions by the Commercial Workgroup during the SEDAR 24 Data Workshop. For this preliminary report, red snapper landings from ALS were used in the tables and figures for 1962-2009. We will replace out with data directly from ACCSP, modified as necessary by the states. This report will not be updated following Data Workshop, but instead will be used in preparing the final SEDAR 24 Commercial Section for the Data Workshop Report.

A series of issues will be discussed by the Commercial Workgroup concerning stock boundaries, both the southern boundary with the Gulf of Mexico and the northern boundary (north of North Carolina). No adjustments were deemed necessary for inclusion of unclassified snappers that would have been analogous to SEDAR assessments for other snapper-grouper species. Commercial landings for the U.S. South Atlantic red snapper stock were developed by gear in whole weight and numbers for the period 1962 through 2009 based on federal and state databases. Landings estimates from historical reports were also consulted for 1902-1961. Discards, developed from the snapper-grouper logbook, were estimated for recent years (1992-2009) subsequent to the last change in minimum size limit for red snapper along the U.S. South Atlantic coast. Summaries of sampling intensity for lengths and age are presented, and length and age compositions are developed by gear and year for which sample size was deemed adequate. Several research recommendations are also given.

3.2 Commercial Landings

In preparation for the SEDAR 24 Data Workshop, the commercial working group settled on the following numerical gear codes (ALS) for dividing red snapper commercial landings into six categories for consideration by the Workgroup. These gears included:

Handline (600-616, 660, 665),
Longline (675-677),
Diving (760, 941-943),
Trawl (200-220),
Traps (325-390), and
Other (remaining gear codes including unknown).

Although reported separately here, the small quantities of longline, trawl and trap landings will likely be pooled with “other” gear type, which in turn will be pooled with handlines, the dominant gear (see **Decision 6**).

3.2.1 Stock Boundaries

Initial discussion and decisions concerned setting the geographic boundaries for the south Atlantic red snapper stock. Landings were obtained from the states north of North Carolina. Prior to 1987, reported red snapper landings were infrequent, occurring only in 1950 (300 lbs whole weight), 1970 (300 lbs), and 1983 (100 lbs). Landings became more frequent beginning in 1987, with positive landings for 1987-1988, 1992-1999, 2001-2002, 2004, and 2007. If we assume landings were truly 0 in those years none were reported for 1950-2008, then the average annual reported landings of red snapper from north of North Carolina was 46 pounds (whole weight). If we just compute the average landings beginning in 1987, we obtain 92 pounds.

Decision 1. Because very few red snapper landings were reported north of North Carolina, the Workgroup recommends using the VA/NC line as the northern boundary for the South Atlantic red snapper stock.

The Commercial Workgroup considered several approaches for splitting the Atlantic and Gulf of Mexico stocks. Monroe County, Florida, has been the focal point for the stock boundary between the U.S. South Atlantic and Gulf of Mexico waters. During SEDAR 15, the Workgroup chose an approach that paralleled that of the last Gulf of Mexico red snapper assessment (SEDAR 7). All Florida landings with water body codes 0010, 0019, and 7xxx and higher were considered South Atlantic catch. Also included were the small amount of landings from state 12 which represent Florida interior counties landed on Florida east coast. If water bode code was unknown (0 or 9999) it was retained for state 10, but deleted for state 11. See maps showing shrimp statistical areas for the Gulf of Mexico and U.S. Atlantic coasts (Figure 3.1) and Florida statistical areas (Figure 3.2). For detailed description of the Accumulated Landing System (ALS), see addendum to this section. A comparison was made for three approaches to splitting Florida landings into Atlantic and Gulf of Mexico (Figure 3.3). The first approach simply split landings based on state code. If state = 10, it was from the Atlantic. State 11 (Gulf of Mexico) and State 12 (Inland Waters) were deleted. This essentially uses the Monroe/Dade county line. This second method (FL Raw ALS), applies the approach described above based on water body codes to just states 10 and 11 (state 12 was retained). The third approach (FL) more widely applied the water body code rule above, such that for example if Georgia landings had a Gulf of Mexico water body, it was deleted; or if a Alabama had an Atlantic water body code, it was retained (e.g., as used in SEDAR 19). The comparison plot suggests that the simplest approach works equally as well as the more complicated approaches. The Commercial Workgroup will discuss these alternative approaches.

For the years 1992-2009 water body and jurisdiction allocations are based on water body ratios as reported in the Fishery Logbook data and applied to the total landings reported in the Florida Trip Ticket data (was ALS in SEDAR 15) for Monroe County. The group consensus was data reported directly by fishermen in the logbook program versus data reported third person by dealers and associated staff submitted to the states/ALS would be more precise in assigning area of capture to catch.

Decision 2. The Workgroup decided to apply the same approach for dividing red snapper into South Atlantic and Gulf of Mexico stocks as for the previous red

snapper assessment (SEDAR 15). This approach was modified to use Florida Trip Ticket landings for 1986-2009 in place of ALS landings for these years.

3.2.2 Mis-identification and Unclassified Snappers

The next topics of discussion included whether mis-identification of red snapper with other snapper species was a concern and whether red snapper landings may be incorporated in significant quantities in the unclassified snapper category. Neither of these issues was considered significant by the SEDAR 15 Commercial Workgroup. [Fill in any further discussions]

Decision 3. The Workgroup concurs with prior SEDAR 15 decision that concerns about mis-identification and unclassified snappers are not significant, and no adjustments are needed.

3.2.3 Historical Commercial Landings

Next, historical landings of red snapper for 1902-1989 were obtained from Fisheries Statistics Division (1990). These landings, without any attempt at interpolation, are provided for 1927-1961 (Table 3.1) to provide insight into historical red snapper landings prior to the beginning of the ALS. Commercial landings by state are summarized in Figure 3.4 for the full time series provided in this document (1902-1989).

Decision 4. Because available red snapper landings prior to the start of the NMFS ALS program in 1962 were significant, but with missing years of data, the Workgroup concluded that it was still useful to report these earlier red snapper landings for better understanding the potential magnitude during this earlier period. Historical commercial landings data prior to 1927 are too sparse and difficult to interpret.

3.2.4 Development of Commercial Landings by Gear and State

Historical commercial landings (1950 to present) for the Atlantic coast are maintained in the Atlantic Coastal Cooperative Statistics Program (ACCSP) Data Warehouse. The Data Warehouse is on-line database of fisheries dependent data provided by the ACCSP partners. Data sources and collection methods are illustrated by state in Figure 3.5. The Data Warehouse was queried in May 2010 for all red snapper landings (annual summaries by state and gear category) from 1950 to present for Florida (east coast), Georgia, South Carolina, North Carolina, Virginia, Maryland, New Jersey, New York, Connecticut, Rhode Island, New Hampshire and Maine. (ACCSP, 2010). Data are presented using the gear categories as determined at the workshop. The specific ACCSP gears in each category are listed in Table 3.2. Commercial landings in pounds (whole

weight) were developed based on classified red snapper by the Working Group from each state as available by gear for 1950-2009.

Historically, conversions between whole and gutted weight have been based on state specific values. The standard conversion of snappers for Georgia and Florida from gutted weight to whole weight is by multiplying gutted weight by 1.11. South Carolina uses a conversion close to 1.11 (i.e., 1.111…..), obtained by dividing gutted weight by 0.9. North Carolina uses a conversion multiplier of 1.08. During SEDAR 15, conversions from gutted back to whole weight were based on data from the South Carolina MARMAP program. Although the sample size was small (N=13) the R^2 value was high (0.9996) with no value having high leverage. The no-intercept regression estimate for slope is 1.069 (the ratio of means for whole weight to gutted weight) (see Table 2.2 in Section 2).

Florida – 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. Data reported on trip tickets include participant identifiers, dates of activity, effort and location data, gear used, and composition and disposition of catch. The program encompasses commercial fishery activity in waters of the Gulf of Mexico and South Atlantic from the Alabama-Florida line to the Florida-Georgia line. The first full year of available data from Florida trip tickets is 1986.

A data set was provided to the commercial workgroup of summarized red snapper landings by year, area fished, county landed, and gear with whole pounds and number of trips from Florida South Atlantic waters. The data set also includes associated species groups from all snapper trips. Gear categories include hook & line, long line, diving, trap, trawl and other/unknown. NMFS logbook data will be used to further define Florida landings from South Atlantic waters. Comparisons will be made between Florida trip ticket data and NMFS ALS to determine which data set will be used for Florida commercial landings.

Georgia –GA DNR provided landings by gear back to 1989 (state reported landings were almost identical to ALS landings), and the ALS data base was used to extend landings back to 1962.

South Carolina –The landings data for South Carolina comes from two different sources the first; 1980-2003 is from the old NMFS Canvass data system. This system involved wholesale seafood dealers reporting total monthly landings by species to the state. The second; 2004-present is the ACCSP Trip Ticket System. This requires wholesale seafood dealers to fill out an individual Trip Ticket for each trip that each

commercial Snapper Grouper boat makes. The landings are broken down by species, gear type, and area fished. The ALS data base was used to extend landings back to 1962.

North Carolina – The National Marine Fisheries Service prior to 1978 collected commercial landings data for North Carolina. Port agents would conduct monthly surveys of the state's major commercial seafood dealers to determine the commercial landings for the state. Starting in 1978, the North Carolina Division of Marine Fisheries entered into a cooperative program with the National Marine Fisheries Service to maintain the monthly surveys of North Carolina's major commercial seafood dealers and to obtain data from more dealers.

The North Carolina Division of Marine Fisheries Trip Ticket Program (NCTTP) began on 1 January 1994. The NCTTP was initiated due to a decrease in cooperation in reporting under the voluntary NMFS/North Carolina Cooperative Statistics Program in place prior to 1994, as well as an increase in demand for complete and accurate trip-level commercial harvest statistics by fisheries managers. The detailed data obtained through the NCTTP allows for the calculation of effort (i.e. trips, licenses, participants, vessels) in a given fishery that was not available prior to 1994 and provides a much more detailed record of North Carolina's seafood harvest.

Three datasets were provided to the commercial group for the SEDAR 24 data workshop. North Carolina commercial landings of red snapper were provided for 1950-2009 by year and gear type. Gears were grouped into the following categories: Handlines, Longlines, Pots, Trawls, Spears, and Others[1]. Commercial landings for red snapper from the NC trip ticket program were also provided by month and market grade for only handlines and spears from 1994-2009.

Recent landings by state break out as follows: 68% from Florida, 10% from Georgia, 15% from South Carolina, and 7% from North Carolina. Landings are presented in Table 3.3 and Figure 3.6. Note that GA-NC are combined for confidential reasons in Table 3.3. *Do we want to include landings north of NC as separate column?*

Decision 5. The Workgroup made the following decisions for reporting of commercial landings:

- Landings should be reported as whole weight (rather than gutted?)

[1] SAS code used to group trip ticket gears into these categories:

```
If Gear1 in (210,215) Then Delete;
If Gear1=480 and Gear2=610 and Gear3=. Then Gear1=610;
If Gear1=676 and Gear2=660 and Gear3=. Then Gear1=610;
If Gear1=677 and Gear2=610 and Gear3=. Then Gear1=610;
Length Geartype $ 15;
If (200 LE GEAR1 LE 220) Then Geartype='Trawls';
Else if (320 LE GEAR1 LE 390) Then Geartype='Pots';
Else if (600 LE GEAR1 LE 616) Or Gear1 in (660,665) Then Geartype='Handlines';
Else if Gear in (675,676,677) then Geartype='Longlines';
Else if Gear1 in (760,943) Then Geartype='Spears';
Else Geartype='Others';
```

- Landings by state should be separated into Florida (south Atlantic) and Georgia-North Carolina to maintain confidentiality for Georgia landings.

In recent years (since 2000), handlines represent about 87.1% compared with almost 7.3 % for diving (Table 3.4 and Figure 3.7). Trivial amount of landings are associated with longline (0.5%), traps (0.5%), trawls (0.6%), and other (4.0%).

Decision 6. The Workgroup recommends that landings by fishing gear be reduced to two categories, the dominant handline gear and diving/spear gear. The small percentage from miscellaneous other gears (e.g., longline, trawls and traps) should be pooled with handlines.

3.2.5 Converting Landings in Weight to Landings in Numbers

Commercial landings in weight were converted to commercial landings in numbers based on average weight (in pounds whole weight) from the TIP data for each state, gear, and year. These data was generally available from 1984 to 2009 for handlines (19,251 lengths). Data for the remaining gear types were sparse, with much more limited data from diving (502), longlines (165), traps (284), and trawls (289), and other (2) gear types available (annual sample sizes by gear, state and year are summarized in Table 3.5). Annual estimates of mean weight by gear, state and year are applied to the corresponding landings in weight when sample size greater than or equal to 30 are available (Table 3.6). When sample size do not meet this criterion, then averages across years or even across state and years (e.g., for trap and trawl) are used. Because of a change in minimum size limits in 1992, mean weights from handlines are calculated before 1992 for any historical application, and for 1992 and later for any application for 1992 and later. Red snapper landings in numbers are summarized by gear in Table 3.8 and in Figure 3.7.

3.3 Commercial Discards

[Include summary of Kevin McCarthy's report on discards (S24DW01) with Tables 3.8 and 3.9]

Decision 7. The Workgroup accepts the **e**stimates of red snapper discards for 1992-2009 as developed in S24DW01.

3.4 Biological Sampling

Length frequency data were extracted from the TIP Online database. Data from the VA/NC line through Monroe County in FL were included in the extraction. Those data from Monroe County that were attributable to the Gulf were deleted from the data. All lengths were converted to TL in mm using conversions derived from the Life History Group. We had no conversions for standard length, so these were deleted. Lengths greater

than 2000 mm (2 m) were deleted, as the group felt that these extreme lengths may be errors and did not represent those lengths observed in the commercial fishery. Lengths were converted to cm and assigned to 1 cm length bins with a floor of 0.6 cm and a ceiling of 0.5 cm. Weights were converted to whole weight in grams using the length/weight relationship supplied by the Life History Group and then converted to whole weight in pounds. Mean weight were then calculated across year, state and gear. Landings data in gutted weight were converted to whole weight using the conversions supplied by the Life History Group.

3.4.1 Sampling Intensity for Lengths

Annual sample sizes are summarized in Table 3.5 by gear, state and year for length data available for red snapper in the U.S. South Atlantic from the TIP data base for 1984-2009.

3.4.2 Length/Age Distribution

Annual length compositions are created for each commercial gear using the following approach for weighting lengths across individual trips and by state:

- Trips: expand lengths by trip catch in numbers,
- State: expand lengths by landings in numbers.

Annual length compositions for commercial handlines are shown weighted by the product of the landings in numbers and trip catch in numbers (for 1984-2009 in Figure 3.9). Annual length compositions for commercial diving (for 1999-2001 and 2003 in Figure 3.10), are also summarized using weighting by landings in numbers and by trip catch in numbers.

Sample size of red snapper ages are summarized by gear from commercial landings in the U.S. South Atlantic for 19??-2009 (Table 3.10). Age compositions were developed for handline (1988-2006, Figure 3.11) and diving (2000-2009, Figure 3.12) gear types. Weighting is by length compositions shown in Figures 3.9 and 3.10, respectively. This corrects for a potential sampling bias of age samples relative to length samples (see Section 3 in SEDAR10 for South Atlantic gag).

3.4.3 Adequacy for characterizing lengths

In addition to general discussion of sampling adequacy, discuss usefulness of stratifying by market category.

Generally sample sizes for length composition may be adequate for the handline component of the commercial fishery (Table 3.5). Overall 19,251 fish lengths were

collected from handlines between 1984-2009. However, no lengths were collected from Florida in 1984 and 1987. Less than 10 fish were collected from Florida in 1988, 2005-2006, and 2008. Useful length compositions are generally available for handlines for 1985-1986, 1989-2004, 2007, and 2009.

Much more limited length compositions are available for diving (502 lengths),longlines (167), traps (284), and trawls (289 lengths) for the period 1984-2009. Potentially useful length compositions would be available from diving for 1999-2003 (except 2002), from longlines for possibly 1987 (NC only), from traps for possibly 1991 (almost all from SC), and from trawls for possibly 1984, 1986-1988 (principally from SC). With such limited length compositions from longlines, traps and trawls, the small amount of landings from these gears should be pooled with others and then incorporated with Handlines per **Decision 6**.

Annual length compositions were developed for handline and diving gear types. Handline length compositions should be applied to 'other' gear types to represent length compositions.

The issue arose as to whether market category should be used to post stratify length samples. Unfortunately both landings and TIP samples for which market category is available is extremely limited.

The Commercial Workgroup reviewed the following issues:

- Adequacy of length and age composition data based on sample sizes and geographic coverage were discussed on compositions for adequate data are presented.
- Market categories for post stratifying TIP length data were limited in their availability.
- Will need descriptions of sampling programs including sampling rates, etc.

Decision 8. The Workgroup concluded that biological sampling regime (TIP) adequate for a selection of length compositions and age compositions from the handline and diving gears. They also concluded that there was insufficient information from market category to post stratify length samples in developing the length compositions.

3.5 Relative selectivity for commercial gears

The Commercial Workgroup discussed the issue of selectivity of commercial handline and diving gears. First, is diving gear likely to have flat-topped or dome-shaped selectivity (dome-shaped in S15)? The following bullets related to considering handline gear(flat-topped in S15):

- Compare handline landings and effort as reported in the logbook data base relative to latitude for the south Atlantic.
- Compare handline and longline landings and effort as reported in the logbook data base relative to depth between south Atlantic and Gulf of Mexico.
- Compare relationship of red snapper caught with other common longline species between south Atlantic and Gulf of Mexico in logbook.
- Compare length frequency data to the extent possible between handline and longline for a better understanding of relative selectivity between these gears (TIP). Longline gear primarily limited to 83 NC TIP samples from 1987 with corresponding 196 TIP samples from NC from same year.

What conclusions can we draw about likelihood of flat-topped versus dome-shaped selectivity for handline gear?

Decision 9. Workgroup conclusions on selectivity of commercial gears.

3.6 Research Recommendations for red snapper

Decision 10. The Workgroup reviewed recommendations from SEDAR 15 and offers additional recommendations.

The following research recommendations were developed by the SEDAR 15 Commercial Workgroup:

- Still need observer coverage for the snapper-grouper fishery
  - 5-10% allocated by strata within states
  - possible to use exemption to bring in everything with no sale
  - get maximum information from fish
- Expand TIP sampling to better cover all statistical strata
  - Predominantly from Florida and by handline gear
  - In that sense, we have decent coverage for lengths
- Trade off with lengths versus ages, need for more ages (i.e., hard parts)
- Workshop to resolve historical commercial landings for a suite of snapper-grouper species (specifically the Monroe County split issue).

3.7 References

Atlantic Coastal Cooperative Statistics Program. 2010. (1950-2009) Annual landings by state and custom gear category; generated by Julie Defilippi; using ACCSP Data Warehouse, Washington, D.C: accessed May, 2010.

Fisheries Statistics Division. 1990. Historical Catch Statistics, Atlantic and Gulf Coast States, 1879-1989. Current Fishery Statistics No. 9010, Historical Series Nos. 5-9 Revised. (NTIS No. PB-93-174274)

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Addendum to Commercial Landings (Section 3.2):

NMFS SEFIN Accumulated Landings (ALS)

Information on the quantity and value of seafood products caught by fishermen in the U.S. has been collected as early as the late1890s. Fairly serious collection activity began in the 1920s. The data set maintained by the Southeast Fisheries Science Center (SEFSC) in the SEFIN database management system is a continuous data set that begins in 1962.

In addition to the quantity and value, information on the gear used to catch the fish, the area where the fishing occurred and the distance from shore are also recorded. Because the quantity and value data are collected from seafood dealers, the information on gear and fishing location are estimated and added to the data by data collection specialists. In some states, this ancillary data are not available.

Commercial landings statistics have been collected and processed by various organizations during the 1962-to-present period that the SEFIN data set covers. During the 16 years from 1962 through 1978, these data were collected by port agents employed by the Federal government and stationed at major fishing ports in the southeast. The program was run from the Headquarters Office of the Bureau of Commercial Fisheries in Washington DC. Data collection procedures were established by Headquarters and the data were submitted to Washington for processing and computer storage. In 1978, the responsibility for collection and processing were transferred to the SEFSC.

In the early 1980s, the NMFS and the state fishery agencies within the Southeast began to develop a cooperative program for the collection and processing of commercial fisheries statistics. With the exception of two counties, one in Mississippi and one in Alabama, all of the general canvass statistics are collected by the fishery agency in the respective state and provided to the SEFSC under a comprehensive Cooperative Statistics Program (CSP).

The purpose of this documentation is to describe the current collection and processing procedures that are employed for the commercial fisheries statistics maintained in the SEFIN database.

1960 - Late 1980s

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Although the data processing and database management responsibility were transferred from the Headquarters in Washington DC to the SEFSC during this period, the data collection procedures remained essentially the same. Trained data collection personnel, referred to as fishery reporting specialists or port agents, were stationed at major fishing ports throughout the Southeast Region. The data collection procedures for commercial landings included two parts.

The primary task for the port agents was to visit all seafood dealers or fish houses within their assigned areas at least once a month to record the pounds and value for each species or product type that were purchased or handled by the dealer or fish house. The agents summed the landings and value data and submitted these data in monthly reports to their area supervisors. All of the monthly data were submitted in essentially the same form.

The second task was to estimate the quantity of fish that were caught by specific types of gear and the location of the fishing activity. Port agents provided this gear/area information for all of the landings data that they collected. The objective was to have gear and area information assigned to all monthly commercial landings data.

There are two problems with the commercial fishery statistics that were collected from seafood dealers. First, dealers do not always record the specific species that are caught and second, fish or shellfish are not always purchased at the same location where they are unloaded, i.e., landed.

Dealers have always recorded fishery products in ways that meet their needs, which sometimes make it ambiguous for scientific uses. Although the port agents can readily identify individual species, they usually were not at the fish house when fish were being unloaded and thus, could not observe and identify the fish.

The second problem is to identify where the fish were landed from the information recorded by the dealers on their sales receipts. The NMFS standard for fisheries statistics is to associate commercial statistics with the location where the product was first unloaded, i.e., landed, at a shore-based facility. Because some products are unloaded at a dock or fish house and purchased and transported to another dealer, the actual 'landing' location may not be apparent from the dealers' sales receipts. Historically, communications between individual port agents and the area supervisors were the primary source of information that was available to identify the actual unloading location.

Cooperative Statistics Program
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In the early 1980s, it became apparent that the collection of commercial fisheries statistics was an activity that was conducted by both the Federal government and individual state fishery agencies. Plans and negotiations were initiated to develop a program that would provide the fisheries statistics that are needed

for management by both Federal and state agencies. By the mid- 1980s, formal cooperative agreements had been signed between the NMFS/SEFSC and each of the eight coastal states in the southeast, Puerto Rico and the US Virgin Islands.

Initially, the data collection procedures that were used by the states under the cooperative agreements were essentially the same as the historical NMFS procedures. As the states developed their data collection programs, many of them promulgated legislation that authorized their fishery agencies to collect fishery statistics. Many of the state statutes include mandatory data submission by seafood dealers.

Because the data collection procedures (regulations) are different for each state, the type and detail of data varies throughout the Region. The commercial landings database maintained in SEFIN contains a standard set of data that is consistent for all states in the Region.

A description of the data collection procedures and associated data submission requirements for each state follows.

Florida
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Prior to 1986, commercial landings statistics were collected by a combination of monthly mail submissions and port agent visits. These procedures provided quantity and value, but did not provide information on gear, area or distance from shore. Because of the large number of dealers, port agents were not able to provide the gear, area and distance information for monthly data. This information, however, is provided for annual summaries of the quantity and value and known as the Florida Annual Canvas data (see below).

Beginning in 1986, mandatory reporting by all seafood dealers was implemented by the State of Florida. The State requires that a report (ticket) be completed and submitted to the State for every trip. Dealers have to report the type of gear as well as the quantity (pounds) purchased for each species. Information on the area of catch can also be provided on the tickets for individual trips. As of 1986 the ALS system relies solely on the Florida trip ticket data to create the ALS landings data for all species other than shrimp.

Georgia
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Prior to 1977, the National Marine Fisheries Service collected commercial landings data Georgia. From 1977 to 2001 state port agents visited dealers and docks to collect the information on a regular basis.

Compliance was mandatory for the fishing industry. To collect more timely and accurate data, Georgia initiated a trip ticket program in 1999, but the program was not fully implemented to allow complete coverage until 2001. All sales of seafood products landed in Georgia must be recorded on a trip ticket at the time of the sale. Both the seafood dealer and the seafood harvester are responsible for insuring the ticket is completed in full.

South Carolina
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Prior to 1972, commercial landings data were collected by various federal fisheries agents based in South Carolina, either U.S. Fish or Wildlife or National Marine Fisheries Service personnel. In 1972, South Carolina began collecting landings data from coastal dealers in cooperation with federal agents. Mandatory monthly landings reports on forms supplied by the Department are required from all licensed wholesale dealers in South Carolina. Until fall of 2003, those reports were summaries collecting species, pounds landed, disposition (gutted or whole) and market category, gear type and area fished; since September 2003, landings have been reported by a mandatory trip ticket system collecting landings by species, disposition and market category, pounds landed, ex-vessel prices with associated effort data to include gear type and amount, time fished, area fished, vessel and fisherman information.

South Carolina began collecting TIP length frequencies in 1983 as part of the Cooperative Statistics Program. Target species and length quotas were supplied by NMFS and sampling targets of 10% of monthly commercial trips by gear were set to collect those species and length frequencies. In 2005, South Carolina began collecting age structures (otoliths) in addition to length frequencies, using ACCSP funding to supplement CSP funding.

North Carolina

The National Marine Fisheries Service prior to 1978 collected commercial landings data for North Carolina. Port agents would conduct monthly surveys of the state's major commercial seafood dealers to determine the commercial landings for the state. Starting in 1978, the North Carolina Division of Marine Fisheries entered into a cooperative program with the National Marine Fisheries Service to maintain the monthly surveys of North Carolina's major commercial seafood dealers and to obtain data from more dealers.

The North Carolina Division of Marine Fisheries Trip Ticket Program (NCTTP) began on 1 January 1994. The NCTTP was initiated due to a decrease in cooperation in reporting under the voluntary NMFS/North Carolina Cooperative Statistics Program in place prior to 1994, as well as an increase in demand for complete and accurate trip-level commercial harvest statistics by fisheries managers. The detailed data obtained through the NCTTP allows for the calculation of effort (i.e. trips, licenses, participants, vessels) in a given fishery that was not available prior to 1994 and provides a much more detailed record of North Carolina's seafood harvest.

NMFS SEFIN Annual Canvas Data for Florida

The Florida Annual Data files from 1976 – 1996 represent annual landings by county (from dealer reports) which are broken out on a percentage estimate by species, gear, area of capture, and distance from shore. These estimates are submitted by Port agents, which were assigned responsibility for the particular county, from interviews and discussions from dealers and fishermen collected through out the year. The estimates are processed against the annual landings totals by county on a percentage basis to create the estimated proportions of catch by the gear, area and distance from shore. (The sum of percentages for a given Year, State, County, Species combination will equal 100.)

Area of capture considerations: ALS is considered to be a commercial landings data base which reports where the marine resource was landed. With the advent of some State trip ticket programs as the data source the definition is more loosely applied. As such one cannot assume reports from the ALS by State or county will accurately inform you of Gulf vs South Atlantic vs Foreign catch. To make that determination you must consider the area of capture.

Table 3.1. Historical red snapper landings (1000 pounds whole weight) by state from 1927-1961.

Year	NC	SC	GA	FL(E)	Total
1927		1		64	59	124
1928		2		22	47	71
1929		15		33	19	67
1930		5		30	34	69
1931		2			112	114
1932					49	49
1933						
1934					152	152
1935						
1936					140	140
1937					210	210
1938		1			117	118
1939		2			96	98
1940					14	14
1941						
1942						
1943						
1944						
1945		4			246	250
1946						
1947						
1948						
1949						
1950			5		358	363
1951		8			510	518
1952		5			384	389
1953				2	402	404
1954				3	596	599
1955					498	498
1956		130	12	0	342	484
1957		225	1	0	643	869
1958		28	0		589	617
1959		15	18		629	662
1960		0	2	8	667	677
1961		6	113	3	678	800

609 **Table 3.2.** Specific ACCSP gears in each gear category for red snapper commercial
610 landings.
611

ACCSP_GEAR_CODE	ACCSP_GEAR_NAME	ACCSP_TYPE_NAME	SEDAR24_CATEGORY
000	NOT CODED	NOT CODED	OTHER GEARS
010	HAUL SEINES	HAUL SEINES	OTHER GEARS
020	OTHER SEINES	HAUL SEINES	OTHER GEARS
050	POUND NETS	FIXED NETS	OTHER GEARS
073	FLOATING TRAPS (SHALLOW)	FIXED NETS	POTS AND TRAPS
091	OTTER TRAWL BOTTOM, CRAB	TRAWLS	TRAWLS
092	OTTER TRAWL BOTTOM, FISH	TRAWLS	TRAWLS
093	OTTER TRAWL BOTTOM, LOBSTER	TRAWLS	TRAWLS
095	OTTER TRAWL BOTTOM, SHRIMP	TRAWLS	TRAWLS
110	OTHER TRAWLS	TRAWLS	TRAWLS
118	BUTTERFLY NETS	TRAWLS	OTHER GEARS
130	POTS AND TRAPS	POTS AND TRAPS	POTS AND TRAPS
132	POTS AND TRAPS, BLUE CRAB	POTS AND TRAPS	POTS AND TRAPS
139	POTS AND TRAPS, FISH	POTS AND TRAPS	POTS AND TRAPS
140	POTS AND TRAPS, SPINY LOBSTER	POTS AND TRAPS	POTS AND TRAPS
200	GILL NETS	GILL NETS	OTHER GEARS
201	GILL NETS, FLOATING DRIFT	GILL NETS	OTHER GEARS
204	GILL NETS, SINK ANCHOR	GILL NETS	OTHER GEARS
205	GILL NETS, RUNAROUND	GILL NETS	OTHER GEARS
300	HOOK AND LINE	HOOK AND LINE	HAND LINE
301	HOOK AND LINE, MANUAL	HOOK AND LINE	HAND LINE
302	HOOK AND LINE, ELECTRIC	HOOK AND LINE	HAND LINE
303	ELECTRIC/HYDRAULIC, BANDIT REELS	HOOK AND LINE	HAND LINE
320	TROLL LINES	HOOK AND LINE	HAND LINE
400	LONG LINES	LONG LINES	LONG LINES
401	LONG LINES, VERTICAL	LONG LINES	LONG LINES
402	LONG LINES, SURFACE	LONG LINES	LONG LINES
403	LONG LINES, BOTTOM	LONG LINES	LONG LINES
404	LONG LINES, SURFACE, MIDWATER	LONG LINES	LONG LINES
550	DIP NETS	DIP NETS AND CAST NETS	OTHER GEARS
551	CAST NETS	DIP NETS AND CAST NETS	OTHER GEARS
600	TONGS	RAKES, HOES, AND TONGS	OTHER GEARS
660	SPEARS	SPEARS AND GIGS	DIVING
661	SPEARS, DIVING	SPEARS AND GIGS	DIVING
700	HAND LINE	HAND LINE	HAND LINE
701	TROLL AND HAND LINES CMB	HAND LINE	HAND LINE
750	BY HAND, DIVING GEAR	BY HAND	DIVING
760	BY HAND, NO DIVING GEAR	BY HAND	OTHER GEARS
800	OTHER GEARS	OTHER GEARS	OTHER GEARS
801	UNSPECIFIED GEAR	OTHER GEARS	OTHER GEARS
802	COMBINED GEARS	OTHER GEARS	OTHER GEARS
804	CHEMICAL, OTHER	OTHER GEARS	OTHER GEARS

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614 **Table 3.3.** Red snapper landings (pounds whole weight) by region from the U.S.
615 South Atlantic, 1962-2009.
616

Year	Florida	GA-NC	Total
1962	652500	10100	662600
1963	500700	4200	504900
1964	550400	9100	559500
1965	640500	16300	656800
1966	729200	10900	740100
1967	903500	61900	965400
1968	973200	96800	1070000
1969	670900	30000	700900
1970	613600	28300	641900
1971	482900	62200	545100
1972	402400	67667	470067
1973	350800	37176	387976
1974	578200	55602	633802
1975	710000	36252	746252
1976	526100	94437	620537
1977	504906	146507	651413
1978	374454	213074	587528
1979	247289	161553	408842
1980	231071	148215	379287
1981	198893	171257	370150
1982	160617	144056	304673
1983	168216	140480	308696
1984	141946	106101	248047
1985	152896	89671	242567
1986	134200	81502	215703
1987	125358	61091	186449
1988	100566	62446	163012
1989	116793	139500	256294
1990	106372	108777	215149
1991	74082	64866	138948
1992	58375	40123	98498
1993	56903	133973	190876
1994	79161	110947	190108
1995	108349	71515	179864
1996	91477	47650	139127
1997	83984	27268	111252
1998	63324	25563	88887
1999	51580	41822	93402
2000	70357	32773	103130
2001	115469	68539	184008
2002	93037	79362	172399

2003	71281	60099	131380
2004	98733	70363	169096
2005	71209	54831	126040
2006	58106	28076	86182
2007	86328	26796	113123
2008	187410	60578	247988
2009	290438	56877	347314

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Table 3.4. Red snapper landings (pounds whole weight) by gear from the U.S. South Atlantic, 1962-2009.

Year	Handline	Diving	Longline	Traps	Trawl	Other	Total
1962	661900	0	0	0	700	0	662600
1963	503400	0	1500	0	0	0	504900
1964	559400	0	0	0	100	0	559500
1965	656800	0	0	0	0	0	656800
1966	739000	0	0	0	1100	0	740100
1967	964500	0	0	700	200	0	965400
1968	1069700	0	0	300	0	0	1070000
1969	686400	0	1900	12200	400	0	700900
1970	637300	0	0	4100	500	0	641900
1971	545100	0	0	0	0	0	545100
1972	446577	0	0	23490	0	0	470067
1973	382013	0	0	5531	432	0	387976
1974	631801	0	0	2001	0	0	633802
1975	745896	0	0	0	356	0	746252
1976	601694	0	0	0	18843	0	620537
1977	627831	0	0	0	23582	0	651413
1978	555030	0	124	28116	4258	0	587528
1979	395287	0	0	5496	8058	0	408842
1980	347824	0	1162	3466	26836	0	379287
1981	333964	0	76	9229	26881	0	370150
1982	286958	0	573	320	16328	495	304673
1983	298207	0	2021	158	8309	0	308696
1984	236459	1318	2798	1117	6355	0	248047
1985	233006	2547	157	2740	4117	0	242567
1986	210120	607	559	2289	2128	0	215703
1987	182823	420	1761	626	803	17	186449
1988	159409	296	1518	186	1566	37	163012
1989	254593	1108	305	288	0	0	256294
1990	204976	1859	4662	3424	0	228	215149
1991	125192	5898	1985	5409	4	461	138948
1992	87054	9739	442	0	573	690	98498
1993	184194	6047	511	21	101	2	190876
1994	175981	13118	676	296	0	37	190108
1995	169294	10039	104	392	26	9	179864
1996	130455	6242	1471	933	18	8	139127
1997	98329	7558	4996	188	2	179	111252
1998	77595	8063	2831	275	57	66	88887
1999	82118	9974	1109	201	0	0	93402
2000	91483	10367	1280	0	0	0	103130
2001	160590	18125	1555	1356	2074	307	184008
2002	141923	21570	1685	2767	3898	556	172399

2003	103664	16763	2116	3588	3555	1694	131380
2004	148640	19621	699	128	7	1	169096
2005	112796	9324	208	0	90	3622	126040
2006	78275	4143	521	27	0	3216	86182
2007	96990	7406	230	77	0	8420	113123
2008	214833	6557	58	202	136	26201	247988
2009	314334	8315	148	583	0	23934	347314

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Table 3.5. Sample size of red snapper collected for lengths by gear and state from the U.S. South Atlantic TIP data base, 1984-2009. Traps (284), trawls (289) and other (2) not shown here. Small number of longline samples (167) shown because of interest in comparing with handlines.

	Handlines					Longlines				Diving				Table
Year	FL	GA	NC	SC	Total	FL	NC	SC	Total	FL	GA	SC	Total	Total
1984		206	108	954	1268									1268
1985	630	146	475	1276	2527									2527
1986	23	110	506	202	841		1		1					842
1987		354	196	368	918		81		81			2	2	1001
1988	5	233	157	131	526		12	1	13					539
1989	37	191	463	330	1021		8		8					1029
1990	138		407	121	666	17	5	1	23					689
1991	68	199	156	150	573		2		2					575
1992	86	110	55	90	341	3			3			2	2	346
1993	185	128	187	271	771	4			4	1			1	776
1994	86	77	448	209	820	2			2		1		1	823
1995	357	36	118	131	642	8			8	4			4	654
1996	13	40	54	232	339	8			8			7	7	354
1997	17	7	1	190	215	10			10					225
1998	154		16	143	313	2			2					315
1999	216		180	491	887					81			81	968
2000	234	24	59	427	744					87			87	831
2001	373	257	279	450	1359					53			53	1412
2002	87	68	193	447	795					9			9	804
2003	303	43	164	620	1130					197			197	1327
2004	31	132	71	444	678							15	15	693
2005	7	94	96	362	559							7	7	566
2006	8	13	62	114	197							15	15	212
2007	41		96	141	278									278
2008	7		170	222	399									399
2009	64		163	359	586							21	21	607
Year Total	3170	2468	4880	8875	19393	54	109	2	165	432	1	69	502	20060

628 **Table 3.6.** Mean whole weight (pounds) of red snapper by gear from the U.S. South Atlantic TIP data base, 1984-2009. Traps (284),
629 trawls (289) and other (2) not shown here. Small number of longline samples (167) shown because of interest in comparing with
630 handlines.
631

	Diving				Handlines				Longlines			
Year	FL	GA	NC	SC	FL	GA	NC	SC	FL	GA	NC	SC
1984	6.346	6.346	6.346	6.346	4.957	3.355	6.075	3.777	14.567	14.567	14.567	14.567
1985	6.346	6.346	6.346	6.346	4.204	5.456	4.916	5.361	14.567	14.567	14.567	14.567
1986	6.346	6.346	6.346	6.346	8.965	7.571	4.618	5.479	14.567	14.567	14.567	14.567
1987	6.346	6.346	6.346	6.346	4.957	6.025	3.398	6.435	14.567	14.567	14.544	14.567
1988	6.346	6.346	6.346	6.346	4.957	6.333	3.076	5.646	14.567	14.567	14.567	14.567
1989	6.346	6.346	6.346	6.346	12.275	5.048	5.078	6.089	14.567	14.567	14.567	14.567
1990	6.346	6.346	6.346	6.346	4.981	4.957	4.930	2.851	14.567	14.567	14.567	14.567
1991	6.346	6.346	6.346	6.346	9.854	6.234	5.477	4.811	14.567	14.567	14.567	14.567
1992	8.275	8.275	8.275	8.275	12.205	8.770	8.176	7.832	10.613	10.613	10.613	10.613
1993	8.275	8.275	8.275	8.275	13.009	6.844	5.852	5.984	10.613	10.613	10.613	10.613
1994	8.275	8.275	8.275	8.275	11.130	6.619	6.732	6.298	10.613	10.613	10.613	10.613
1995	8.275	8.275	8.275	8.275	9.269	7.360	11.734	8.098	10.613	10.613	10.613	10.613
1996	8.275	8.275	8.275	8.275	8.089	7.165	7.499	9.471	10.613	10.613	10.613	10.613
1997	8.275	8.275	8.275	8.275	8.089	8.089	8.089	10.873	10.613	10.613	10.613	10.613
1998	8.275	8.275	8.275	8.275	7.183	8.089	8.089	10.353	10.613	10.613	10.613	10.613
1999	9.761	8.275	8.275	8.275	6.834	8.089	4.059	8.602	10.613	10.613	10.613	10.613
2000	6.097	8.275	8.275	8.275	7.719	6.543	8.654	10.511	10.613	10.613	10.613	10.613
2001	8.146	8.275	8.275	8.275	6.789	3.553	6.208	7.783	10.613	10.613	10.613	10.613
2002	8.275	8.275	8.275	8.275	8.469	5.614	6.676	7.383	10.613	10.613	10.613	10.613
2003	8.408	8.275	8.275	8.275	9.441	7.883	9.685	7.994	10.613	10.613	10.613	10.613
2004	8.275	8.275	8.275	8.275	9.931	9.328	12.226	9.068	10.613	10.613	10.613	10.613
2005	8.275	8.275	8.275	8.275	8.089	10.093	11.777	10.359	10.613	10.613	10.613	10.613
2006	8.275	8.275	8.275	8.275	8.089	8.089	12.467	12.130	10.613	10.613	10.613	10.613
2007	8.275	8.275	8.275	8.275	7.766	8.089	5.358	10.459	10.613	10.613	10.613	10.613
2008	8.275	8.275	8.275	8.275	8.089	8.089	6.046	7.453	10.613	10.613	10.613	10.613
2009	8.275	8.275	8.275	7.456	10.227	8.089	5.262	9.389	10.613	10.613	10.613	10.613

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634 **Table 3.7.** Red snapper landings (in numbers) by gear from the U.S. South Atlantic,
635 1950-2009.
636

Year	Handlines	Diving	Other
1962	133531	0	204
1963	101556	0	103
1964	112853	0	29
1965	132502	0	0
1966	149085	0	320
1967	194578	0	272
1968	215801	0	92
1969	138474	0	3977
1970	128568	0	1399
1971	109968	0	0
1972	90092	0	7182
1973	77067	0	1817
1974	127459	0	612
1975	150477	0	104
1976	121385	0	5482
1977	126658	0	6860
1978	111971	0	9844
1979	79745	0	4025
1980	70170	0	8946
1981	67374	0	10647
1982	57891	0	4953
1983	60160	0	2605
1984	52502	208	3506
1985	51190	401	2046
1986	28863	96	1103
1987	36025	66	567
1988	31893	47	517
1989	34107	175	109
1990	49941	293	1397
1991	18043	929	1800
1992	8768	1177	263
1993	26072	731	66
1994	22885	1585	124
1995	18917	1213	84
1996	16043	754	307
1997	11718	913	542
1998	10079	974	337
1999	11967	1022	140
2000	11328	1700	121
2001	27071	2225	724
2002	19329	2607	1278

2003	11724	1994	1657
2004	15267	2371	90
2005	12426	1127	794
2006	8725	501	731
2007	12400	895	1809
2008	27112	792	5578
2009	32489	1009	5158

To be incorporated in SEDAR 24 Commercial Section with material from S24DW01 (Kevin McCarthy):

Table 3.8. Calculated yearly total discards of red snapper by handline vessels for each region (regions: 1=2400 latitude to <3000 latitude; Region 2 = 3000 latitude to <3100 latitude; Region 3 = 3100 latitude to <3300 latitude; Region 4= 3300 latitude to <3700 latitude). Discards reported as number.

Table 3.9. Calculated yearly south Atlantic handline vessel red snapper discards. Discards are reported in number of fish.

To be incorporated in SEDAR 24 Commercial Section with material from provided by Life History Group:

Table 3.10. Sample size by gear and state of red snapper ages from commercial landings in the U.S. South Atlantic, 19??-2009 [from Life History Workgroup].

Figure 3.1. Map of U.S. Atlantic and Gulf coast with shrimp area designations.

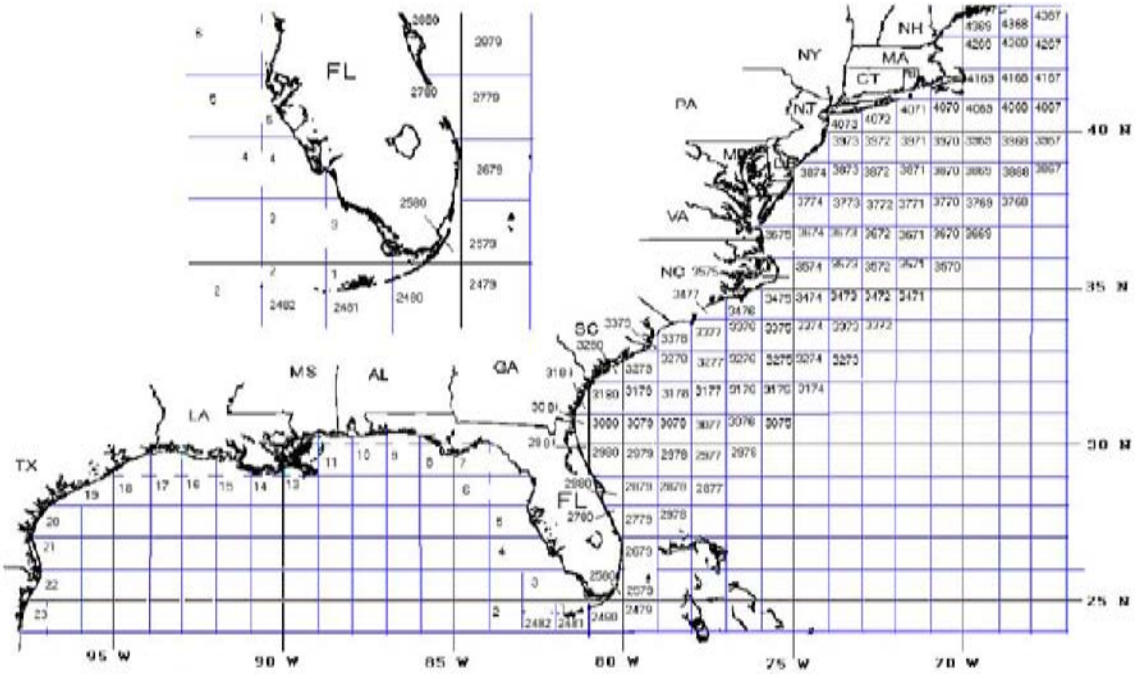


Figure 3.2. Map showing marine fisheries trip ticket fishing area code map for Florida.

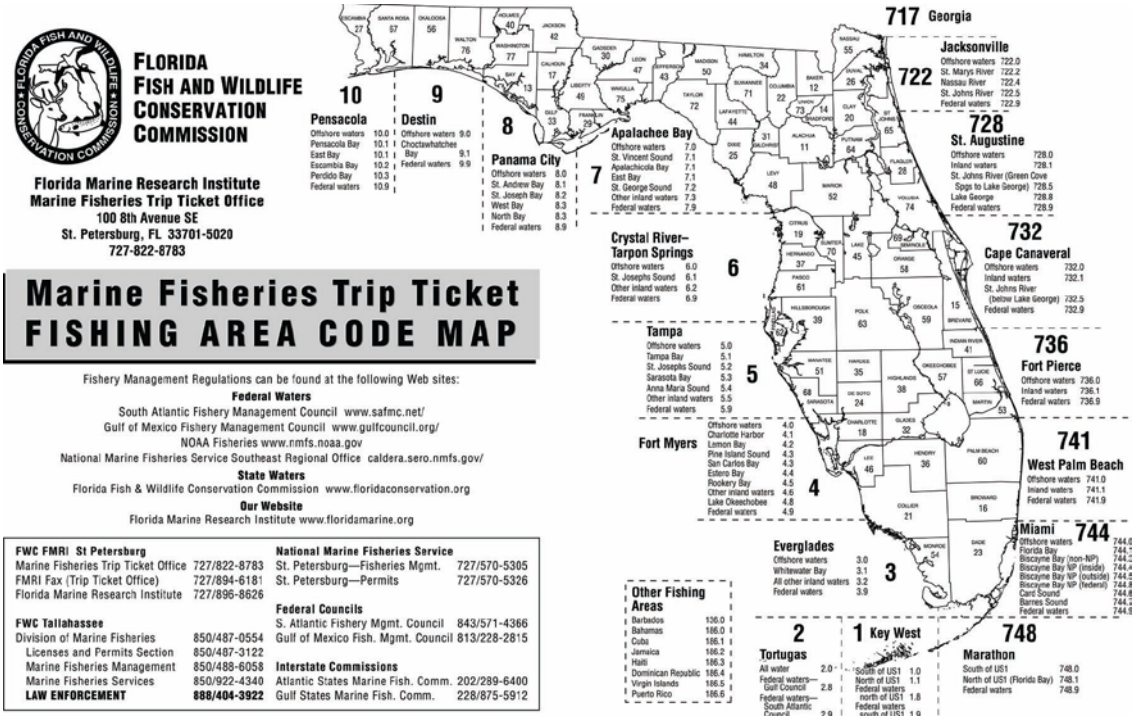


Figure 3.3. Comparison red snapper landings from the east coast of Florida based on three approaches applied to ALS database: 1) State = 10 (split at Dade/Monroe county line, 2) FL Raw ALS (used waterbody code per S15 for just FL), 3) FL (used waterbody code for all of SA and GoM).

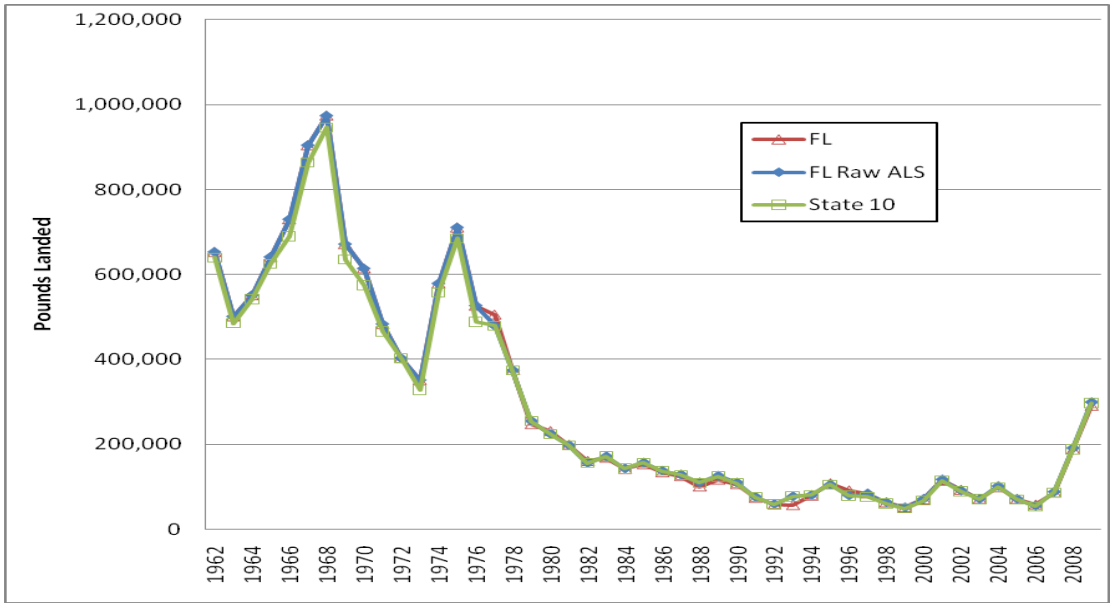


Figure 3.4. Historical red snapper landings by gear from the U.S. South Atlantic, 1902-1989. (Source: Fisheries Statistics Division. 1990. *Historical Catch Statistics, Atlantic and Gulf Coast States, 1879-1989*, US DOC/NOAA/NMFS, Current Fishery Statistics No. 9010, Historical Series Nos. 5-9).

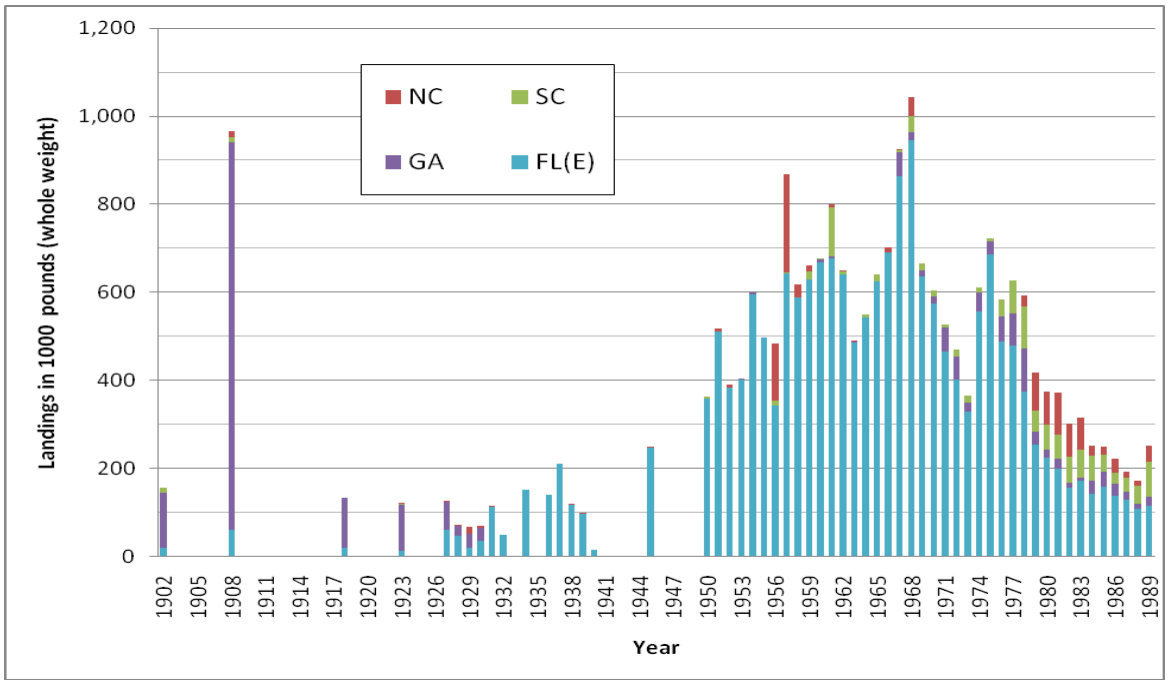


Figure 3.5. Atlantic Coastal Cooperative Statistics Program (ACCSP) Data Warehouse - data sources and collection methods by state.

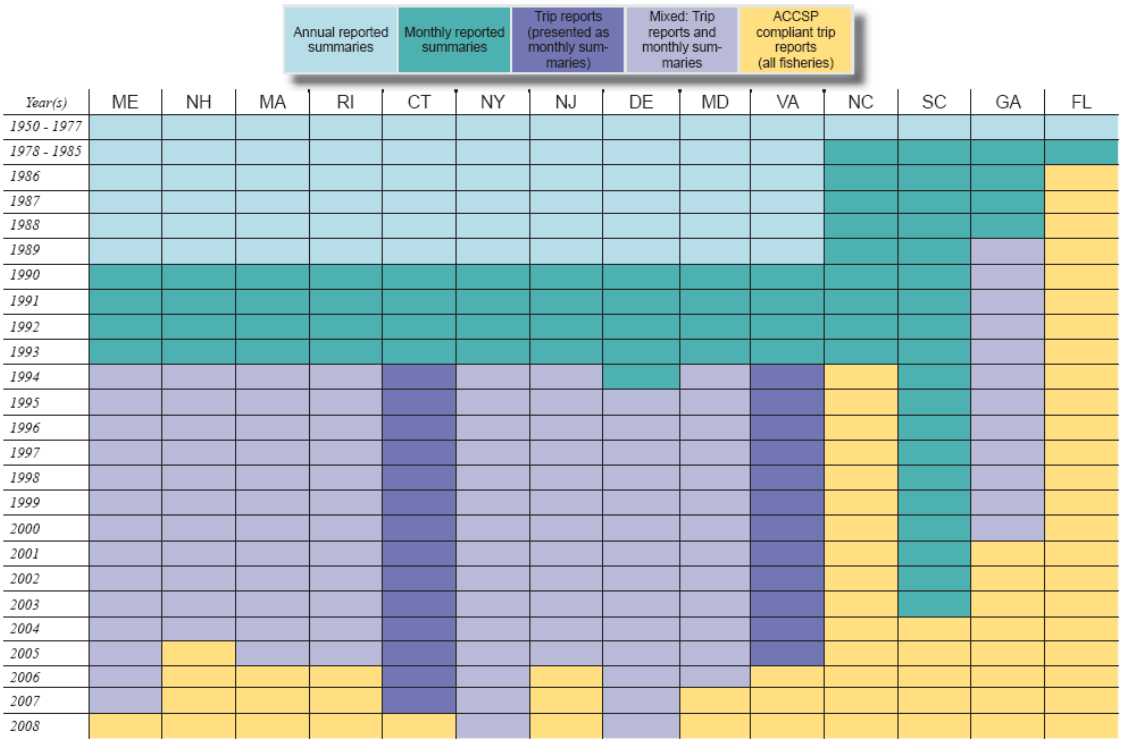


Figure 3.6. Red snapper landings in pounds (whole weight) by state from the U.S. South Atlantic, 1962-2010.

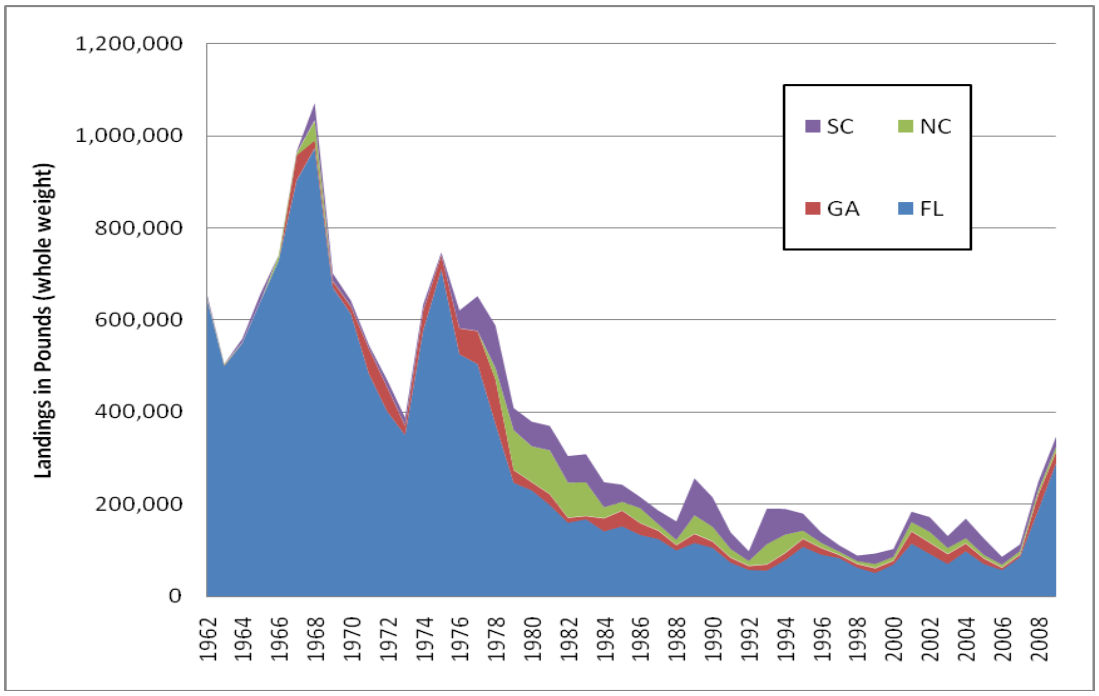


Figure 3.7. Red snapper landings in pounds (whole weight) by gear from the U.S. South Atlantic, 1962-2010.

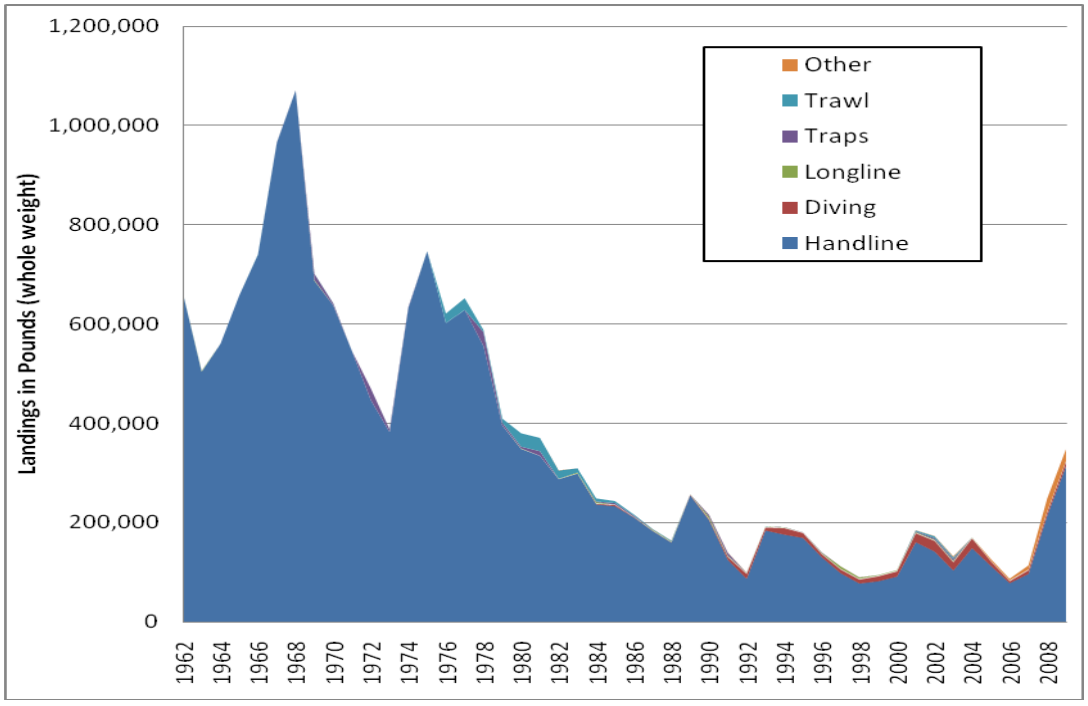
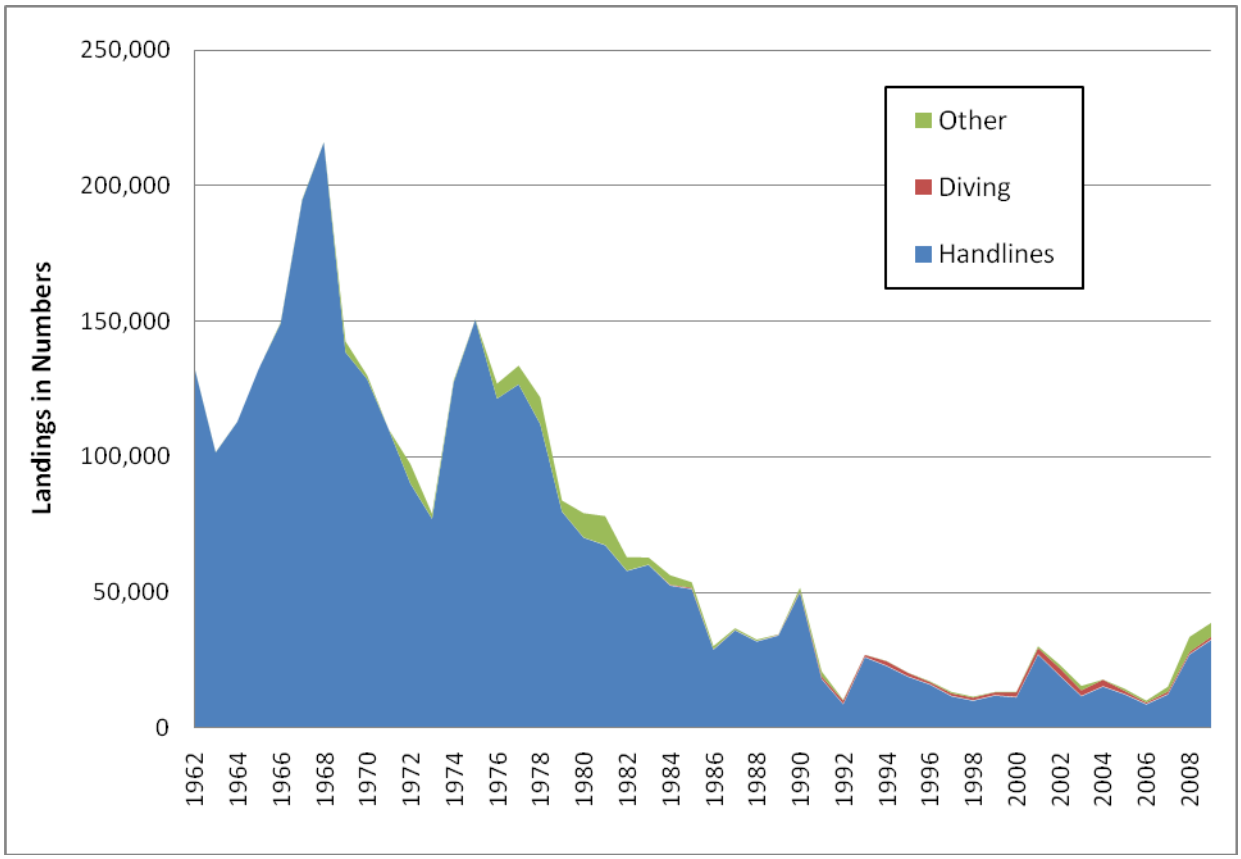


Figure 3.8. Red snapper landings in numbers by gear from the U.S. South Atlantic, 1962-2010.



Length and age composition plots to be incorporated in the SEDAR 24 Commercial Section following the Data Workshop:

Figure 3.9. Annual length composition of red snapper for commercial handline from TIP, 1984-2009, and sample size. Weighting based on landings and trip catch in numbers. Sample size and year are shown on each subplot.

Figure 3.10. Annual length composition of red snapper for commercial diving from TIP, 1999-2009. Weighting based on landings in numbers and trip catch in numbers. Sample size and year are shown on each subplot.

Figure 3.11. Age composition of red snapper for commercial handline from TIP, 1988-200X. Weighting based on corresponding length composition available for 1988-200X. Sample size and year are shown on each subplot.

Figure 3.12. Age composition of red snapper for commercial diving from TIP, 2000-200X. Weighting based on corresponding length composition available for 2000. Sample size and year are shown on plot.