

**Description of the Databases that Contain Landings of Shark Species
from the Atlantic Ocean and Gulf of Mexico**

Heather Balchowsky
Sustainable Fisheries Division
Southeast Fisheries Science Center
75 Virginia Beach Drive
Miami, FL 33149

John Poffenberger
Sustainable Fisheries Division
Southeast Fisheries Science Center
75 Virginia Beach Drive
Miami, FL 33149

January 2007

The responsibility for collecting the quantities and value of marine resources (also referred to as 'landings statistics') landed at ports along the Atlantic Ocean and Gulf of Mexico is divided between the Southeast Fisheries Science Center (SEFSC) and the Northeast Regional Office (NERO). Consequently, the landings data for the various species of sharks that are unloaded at dealers located in the Gulf of Mexico or in states along the coast of the Southeastern Atlantic Ocean, referred to as the Southeast Region (i.e., the Atlantic coast south of Virginia), are primarily collected and managed by the SEFSC, Miami, Florida. The landings of sharks at dealers located in the Northeast Region (north of North Carolina) are primarily reported to and managed by the NERO in Gloucester, Massachusetts. The purpose of this report is to describe (1) the procedures that are used by both the SEFSC and the NERO to collect the data and (2) the databases that currently and historically house the landings statistics for sharks. The report presents details of the two programs that have been implemented by the SEFSC. The first system is the Pelagic Dealer Compliance program (PDC) and is formerly known as the Swordfish Dealer Compliance (SDC) program (from 1993 to 2000) and the Quota Monitoring System (QMS; from 1997 to 2002) (please note that 'QMS' now refers to a separate system used by the SEFSC to monitor quotas of groupers and tilefish). The second SEFSC system is the general canvass landings data (gcd) that are housed in the Accumulated Landings System (ALS). The report also contains a description of the online application, SAFIS (Standard Atlantic Fisheries Information System), which is used by those dealers required to report landings data to the NERO, as well as the northeast landings data housed in the Commercial Fisheries Database Service (CFDBS) accessed by the SEFSC to retrieve Highly Migratory Species (HMS) landings data.

Monthly summary reports of shark landings are compiled and sent to the HMS Division, National Marine Fisheries Service (NMFS) and used to monitor the respective fishery quotas for sharks. Shark quota monitoring updates primarily consist of data summarized by SEFSC personnel from the 'PDC' system and the NERO's 'CFDBS'. Data in the 'ALS' is compared to data in 'PDC' to identify non-reporting shark dealers and incorrectly reported shark landings. Any shark landing overages by dealer discovered in ALS are included in the summary of PDC and CFDBS data.

Pelagic Dealer Compliance (PDC) Data

The Pelagic Dealer Compliance (PDC) database contains data collected by the SEFSC from dealers that meet the following criteria: 1.) the dealer has a Federal dealer permit for Atlantic sharks, Atlantic swordfish and/or Atlantic BAYS tuna (Bigeye, Albacore, Yellowfin, and Skipjack); 2.) the dealer is selected by the SEFSC to report; and 3.) the dealer is located in the Southeast Region (North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas, Puerto Rico, or the U.S. Virgin Islands). A dealer must have a federal permit in order to purchase shark, swordfish, and/or tuna products from a federally permitted vessel.

When selected, the dealers are required to submit a report with the landings (purchases) of any species in the highly migratory species management unit that were

purchased from U.S. vessels fishing in the Gulf of Mexico and Atlantic Ocean. The dealers are required to submit a report twice a month and the report must be submitted within 10 days of each two-week reporting period. Currently all dealers with one or more of these highly migratory species permits are selected to report.

Dealers are required to provide dressed weight and price per pound on each HMS species purchased, and the dates and location of landing and identity of the vessels from whom the purchases are made. If no transactions of HMS products are conducted during a reporting period, the dealer is required to send a report indicating such. All reports are date-stamped upon receipt (since mid-2004), and then the reports are scanned or manually entered into the 'PDC' system. After the data passes either a computerized validation check or visual verification, the data are programmatically entered into a master Oracle table.

The 'PDC' system allows fisheries managers to monitor the status of the shark fisheries by imposing a fishing moratorium before the fishing quota for a shark species group (e.g., Large Coastal Sharks, Small Coastal Sharks, and Pelagic Sharks) is exceeded and to encourage protection of prohibited shark species. The 'PDC' database also provides managers with a method to compare and quality control the landings data for species in the HMS Fishery Management Plan.

As noted above, the 'PDC' only includes data from federally permitted dealers. It should be clarified that if a dealer decides to purchase shark (or other HMS products) from federally permitted vessels, the dealer must obtain a Federal permit for these species. However, if a dealer buys these products only from vessels without federal permits, the dealer does not need to acquire a federal permit for these purchasing activities. Therefore, records of these species will not be in the 'PDC', but will be represented in the general canvass landings data housed in 'ALS' (See 'General Canvass Landings Data' section for details and caveats associated with this dataset).

Additional caveats of the data in the 'PDC' include swordfish and tuna purchases that were not entered into the database between 1997 and 2001, and not all dealers provide price per pound or vessel information when reporting purchases for a given reporting period. Also, due to the summary nature of the HMS Dealer Reporting form, the precise locations of landed products cannot be determined. Therefore, all products purchased by a given dealer are assigned to the state where the facility is located, rather than the state the products were landed. State assignment for the state of Florida is separated into 'Florida, East coast', 'Florida, Inland', and 'Florida, West coast'. Landings purchased at dealer facilities located in the Florida Keys are assigned to 'Florida, West coast.' Lastly, because no enforcement methods are available to ensure proper reporting by dealers (e.g., withholding permit renewal for lack of reporting), the landings data in the 'PDC', particularly historical records, may be under-reported. This is despite the fact that all dealers with a highly migratory species permit (Atlantic sharks, swordfish, or BAYS tuna) are selected to report. The 'PDC' database currently includes a method with which non-reporting dealers can be more readily identified. HMS dealers who are not compliant with timely reporting may be contacted and their delinquent report requested if landings are approaching quota limits for a shark management group.

A benefit of the 'PDC' data, other than more rapid availability for shark quota monitoring purposes, is that greater detail in terms of species composition for sharks is available than that contained within the general canvass landings statistics.

The Pelagic Dealer Compliance program (PDC) was referred to as the Quota Monitoring System (QMS) from 1997 to 2002, and as the Swordfish Dealer Compliance (SDC) program from 1993 to 2000 (please note that 'QMS' now refers to a separate system used by the SEFSC to monitor the quotas of several reef species, including red groupers and tilefish). Data column names in the PDC are listed in Appendix A. The name and contact information for the data manager is listed in Appendix B.

General Canvass Data (gcd) in the Accumulated Landings System (ALS)

The general canvass landings statistics are stored in the Accumulated Landings System (ALS) and have been collected by the NOAA Fisheries Service and its predecessor since the early 1960's. These data consist of information on the quantity and value of seafood products caught by fishermen and sold to licensed seafood dealers or brokers. During the 1970's and early 1980's, the general canvass landings statistics were collected by field agents stationed at fishing ports throughout the Southeast region (i.e., south Atlantic and Gulf of Mexico). The agents visited all of the seafood dealers in their respective areas of coverage and recorded the quantity and value for each species purchased by the dealers. Consequently, the general canvass statistics are monthly summaries of the quantities of all species landed at (i.e., purchased by) each licensed seafood dealer. In order to provide information about the fishing activity, information on gear and fishing location were estimated by the local field agents and added to the general canvass data.

In the mid-1980's, the SEFSC negotiated cooperative agreements with the eight coastal states, Puerto Rico, and the U.S. Virgin Islands to exchange confidential fisheries data that are collected by either the National Marine Fisheries Service or the respective state partners. At that time, some of the states had initiated data collection programs and had begun to collect landings statistics. Under the cooperative agreements, the SEFSC did not need to continue to collect these data, but received them from the respective state and stored them in the 'ALS'; thus, the 'ALS' became a regional database for all landings statistics for the Southeast Region.

Landings statistics are collected by the respective state fishery agency in one of two methods. Some states have implemented regulations that require all licensed seafood dealers to report the data for each trip. Some states, on the other hand, continue to follow the general canvass procedures that require licensed seafood dealers to report the landings for an entire calendar month. The following is a chronology of when each state implemented or plans to implement a trip ticket program.

In 1985, Florida became the first state to implement a trip ticket program. In 1995, the state of North Carolina passed a license-to-sell law that required seafood

dealers to report all landings statistics by trip and identify the vessel or individual that sold the product. In 1997, Louisiana initiated their trip ticket program and in 1999 Georgia initiated a trip ticket program to begin in 2000. South Carolina and Alabama initiated trip ticket programs in 2001 and 2002, respectively. Mississippi has trip ticket requirements for most of their fisheries, and Texas recently implemented a trip ticket program that began October 2005.

In order to maintain the 30+ year time series for the general canvass statistics, the trip ticket data from each of the states are summarized by species, gear, fishing area, and dealer and stored in the 'ALS' database. Because the states require the dealers to provide information on fishing gear and location, it is no longer necessary for the field agents to estimate this information. Consequently, the gear and fishing area information are from estimates by the local field agents until the time that the respective state implemented their trip ticket program. At that time, all of the information are provided by the dealer on the trip ticket form.

Although the SEFSC does not collect the general canvass data, individuals within the SEFSC have been assigned the responsibility of coordinating the transfer of the data from the respective states fisheries data collection program and assuring that these data are consistent with the general canvass data already in the ALS. The following SEFSC staff members have these responsibilities for the associated states: David Gloeckner (North Carolina, South Carolina, and Georgia), Charlie Schaefer (Florida), and Josh Bennett (Alabama, Mississippi, Louisiana, Texas, Puerto Rico, and U.S. Virgin Islands). The data managers are located in different physical locations, but are all organizationally located in the Sustainable Fisheries Division, SEFSC. Their contact information is included in Appendix B.

There are three shortcomings associated with fishery statistics that are collected from seafood dealers by the state. First, dealers do not always record the specific species that are caught. For some species, notably sharks, the landings are recorded as the general category, "unclassified sharks", and are not reported by the individual species. The historical reason for this generic reporting of sharks is that many species of sharks were unidentifiable when they had been headed and gutted at sea and landed as a "tube" or a "log". Second, fish or shellfish are not always purchased at the same location where they are landed, but are instead unloaded and immediately shipped to another location. This practice can add additional uncertainty to the information on fishing area and gear. Third, although the general canvass data can provide a supplement to data in the 'PDC' for some purposes, it cannot be used to monitor fishery quotas because of the timeliness of data availability (typically accessible three months after the reports are submitted).

A benefit of general canvass landings data includes additional landings that would otherwise not be present in the 'PDC'. As mentioned earlier (see 'PDC' section), only selected federally permitted are required to report to the SEFSC. Since not all shark dealers have a federal permit, canvass data may be more comprehensive than the 'PDC'.

Data column names in the ALS are also listed in Appendix A.

Northeast Landings data (CFDBS)

Prior to May 2004, northeast landings data were collected directly from federally permitted dealers through federal field agents during dockside interviews, and non-federal data were obtained through a state's trip ticket program. Data were entered into a northeast database using a desktop entry program, CODES (COmmercial Data Entry System) and transmitted to the SOLE server maintained in Woods Hole, Massachusetts. The data were stored in the CFDETS table (Commercial Fishery Data Entry Trip System) of 'CFDBS' (Commercial Fisheries Database Service). The process of entering data via CODES, verifying/validating information, applying updates, and moving clean data to CFDETS on SOLE was time-intensive. For quota monitoring purposes, access to landings data of Atlantic sharks, Atlantic swordfish, and Atlantic tunas was needed more rapidly than what was available. Thus, when port agents obtained landings data of these HMS species, a copy of these landings would be sent to Gloucester where the data were immediately entered into a second system, the "Dealer Weigh-out" database. From this database, the SEFSC would receive monthly reports concerning NE landings of HMS species by month, state, and gear. Although the data were more promptly accessible, they were not maintained with corrected or additional information.

On May 1, 2004, the NMFS, NERO implemented regulations that mandated all dealers with a Federal permit issued by the NERO to submit their landings data for each trip and do so electronically. At this time, NERO also made available to all dealers the Standard Atlantic Fisheries Information System (SAFIS): an online application allowing seafood dealers in the Northeast Region to enter landings statistics which met both the respective state and NMFS reporting requirements. These reporting requirement changes affect more than the dealers located in the northeast (Virginia, Maryland, Delaware, Pennsylvania, New Jersey, New York, Connecticut, Rhode Island, Massachusetts, New Hampshire, or Maine), as any dealer that has been issued a permit by the NERO is now required to report their purchases electronically. This includes dealers in states that are located in the Southeast Region. An exception for electronic reporting by these dealers through SAFIS would include those dealers in northeast states that are required to electronically report to the ACCSP (Atlantic Coastal Cooperative Statistics Program). These data are instead supplied to the NERO by the ACCSP. Please note that some federally permitted dealers in northeast states are not required to report electronically to ACCSP or using SAFIS. In these situations, dealers are to report to their local port agents who enter the landings data using CODES.

Quality controlled data from SAFIS, ACCSP, and CODES are merged into a data table on the 'CFDBS' called CFDETS (Commercial Fishery Dealer Electronic Reporting System), which has replaced the historical CFDETS table. These data are transmitted into the 'CFDBS' on a weekly basis and maintained in Woods Hole, MA. Within this database, either summary or individual trip data can be accessed for seafood products purchased by permitted dealers or brokers from U.S. vessels since the 1960's. HMS landings data are extracted from this server by SEFSC staff and used for quota monitoring purposes. Data from 'CFDBS' are compared to 'PDC' data to ensure no duplicate reports provided by dealers located in the southeast region are used in the quota

monitoring summaries. If access to current data from the different sources is desired prior to the transmission to 'CFDBS', a more immediate view is available through the Data Query System (DQS). DQS, located on the CUDA1 server in Gloucester, Massachusetts, contains scripts and links to several databases which allows data integration [i.e., SOLE, SAFIS, VTR (the Vessel Trip Report; see below), etc.] and immediate access to data maintained in these datasets.

For each species purchased, dealers are to provide the following information: fisherman; vessel; trip data (start, end, etc.); gears used; and the unit of measure, quantity, market information, and price paid for the species. Since trip information is now collected for each product, whatever trip data that are not collected from the dealers can conceivably be retrieved by cross-referencing SAFIS data to the Northeast's vessel database, Vessel Trip Report (VTR), which contains data since 1994. A unique aspect of the SAFIS database is that state agencies in the northeast, who do not maintain a separate data collection program, now attain their data by downloading information submitted by dealers in their state from SAFIS.

Problems have been identified while working with shark purchases within the northeast landings data set. Although the state of North Carolina is considered to be part of the Southeast region, many of the dealers in North Carolina have permits issued by the NERO and handle species that are included in fishery management plans promulgated for the Northeast Region. Consequently, the fisheries for these species are under the jurisdiction of the NERO. As a result, some dealers in North Carolina have a dealer permit to handle highly migratory species and a northeast fishery permit. These dealers, therefore, are required to report all species purchased to NERO, as well as all HMS products to the SEFSC. Due to the duplicate nature of these reporting requirements, inconsistent shark reporting has been observed from North Carolina dealers (i.e., logbook submissions reporting different summaries to the separate NMFS offices). It is likely that all North Carolina dealers holding a Northeast permit which requires electronic reporting will be asked not to report to the SEFSC. The second inconsistency in the NERO shark dealer data is encountered when a northeast dealer purchases shark products that are landed in the Southeast Region. Although these landings are expected by the SEFSC to be in the NERO database, they have been occasionally omitted because they were considered to be a 'Southeast' landing, and were thus, expected by some NERO personnel to be collected by the SEFSC. Therefore, some landings (a small percentage, to the extent of our knowledge) by northeast dealers may not be accounted for in the databases from either region. A final consideration of the completeness of this dataset involves assessing the data from NE shark dealers that are not required to report electronically (i.e., do not maintain those NE dealer permits which require electronic reporting). It is the dealers' responsibility to report these landings to their local port agent and no known action is currently being undertaken to identify or ensure compliance by these facilities.

Data column names provided in the extracted report are listed in Appendix A. The name and contact information for the data manager is listed in Appendix B.

Appendix A - Data Set Names

Pelagic Dealer Compliance

BATCH_YEAR	NMFS_SPECIES_CODE
SCHEDULE	SIZE_CODE
SE_PERMIT_NUMBER	DRESSED_WEIGHT
NE_PERMIT_NUMBER	PRICE_PER_POUND
ALPHA_STATE	VALUE
NMFS_STATE_CODE	DATE_LANDED
BEGIN_DATE	VESSEL_NAME
END_DATE	VESSEL_ID
FISH_PURCHASED	PORT_LANDED
WEIGH_OUT	STATE_LANDED

General Canvass Data

MONTH	SHELL
YEAR	POUNDS
STATE	VALUE
CNTY	SECT
DEALER	PRICE
WATER	DIST
GEAR	CAUGH
SPECIES	NAME

SAFIS

(Data fields provided from an extracted report by SEFSC personnel)

NESPP4 (species code)	WEIGHT_TYPE
SPECIES	GEAR_CODE
SPECIES_ITIS	GEAR
YEAR	GRADE_CODE
MONTH	GRADE
STATEABB	MARKET_CODE
DEALER	MARKET
LAND (lbs, dressed weight)	

Appendix B - Contact Information

Name	Location	Phone Number	Email Address	Database
Heather Balchowsky	SEFSC, Miami, Florida	(305) 361-4239	Heather.balchowsky@noaa.gov	Data manager for SE quota monitoring data (PDC)
Mike Cahall	ACCSP, Washington, DC	(202).216-5690	mcahall@asmfc.org	Program designer and manager for SAFIS
Joan Palmer	NMFS, Woods Hole, Massachusetts	(508)495-2247	joan.palmer@noaa.gov	Data manager for NE archived dealer weigh out database and the Commercial Fisheries Database System
David Gloeckner	SEFSC, Beaufort Laboratory, Beaufort, North Carolina	(252) 728-7821	David.Gloeckner@noaa.gov	Data manager for the general canvass data (North Carolina, South Carolina, and Georgia)
Charlie Schaefer	NMFS, Tequesta Field Office, Tequesta, Florida	(561) 575-4461	Charles.Schaefer@noaa.gov	Data manager for the general canvass data (Florida)
Josh Bennett	SEFSC, Miami, Florida	(305) 361-4485	Joshua.Bennett@noaa.gov	Data manager for the general canvass data (Alabama, Mississippi, Louisiana, Texas, Puerto Rico, and U.S. Virgin Islands)