Description of the Vessel Operating Units Database

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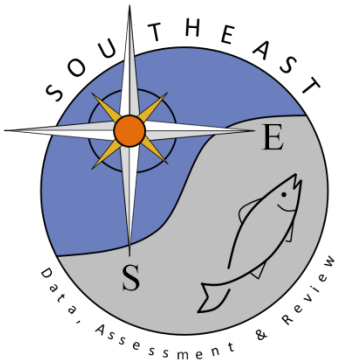

Description of the Vessel Operating Units Database

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VESSEL OPERATING UNITS

Prior to 1970 the Bureau of Fisheries and the U.S. Fish Commission, which were the predecessor agencies of the National Marine Fisheries Service (NMFS), collected little information on vessels actively participating in commercial fisheries. In 1979 NMFS initiated a system that provided data on vessels that actively participate in commercial fishing during each calendar year. The object of this system is to provide an inventory of vessels that answer two fundamental questions:

•How many vessels are fishing commercially?
•What are the characteristics of these vessels?

This inventory only includes vessels that:

•are greater than five net tons
•have a current US Coast Guard documentation number.

This system is referred to as the NMFS vessel operating units. There are data for the years from 1979 to present.

Because the vessel operating units data only included larger documented vessels, a count of the smaller, undocumented boats was conducted once a year by NMFS and state port agents from 1979 to 1995. Unlike the vessel operating units data, characteristics of the individual boats are not recorded. These annual counts of boats are referred to as boat and shore data.

OVERVIEW:

The VOU consists of two Oracle Tables,

VOU.VOU_VESOP,	the Vessel Table, and
VOU.VOU_BOATSHORE,	the Boat and Shore Table

A description of the current variables available in these tables are presented in tables 1 and 2.

The Operating Units Survey is an "annual" survey of the active participants in the fisheries.

The overall objective of these two tables is to provide a comprehensive estimate of the amount of participation in the commercial fisheries in the southeast region during the calendar year.

The data in the vessel operating units provide more comprehensive information because individual vessels are identified by their US

Coast Guard documentation number.

In contrast, the shore and boat is a summarization by county of the remaining participants in the fisheries that are not associated with documented vessels. The procedures for the shore and boat program require only an estimate of the number of boats (i.e., the state registration numbers for these boats are not recorded).

It is the responsibility of the individual port agents to assure that the same boat is not double counted if it was used with different types of gear during the year.

It should be noted that actual participation, as opposed to simply being licensed or permitted, is the operative criteria for both parts of the operating units survey. SEFSC.VOU_VESOP

Two types of information are provided for the vessels. First, information on the physical characteristics of the vessels is included. These characteristics include the type of hull construction, the gross tonnage, the overall length of the hull (in feet), the horsepower of the engine, and the year in which the vessel was built.

The second type of information provided is the operating or fishing characteristics of the vessel. Included in this information are:
number of full time crew, type of gear, number and quantity of gear, and the state and county in which the vessel operated during the year.

DATA COLLECTION and VESSEL DATA ENTRY

VOU.VOU_VESOP

From the beginning of data collection through the introduction of trip ticket programs in each state, the data were collected by SEFSC port agents located in major fishing ports throughout the southeast. The port agents kept a record of the vessels that operated in their areas during the year.

In order to facilitate these procedures for each agent, the operating units data for the previous year was used as the starting point for the upcoming year's inventory. Agents would locate vessels by id, number or name, to add records for new vessels, and to delete records for retired vessels as well as to correct vessel records that are already in the file.

At the end of the year, the port agents send their data to the area supervisor, who would consolidate the data from the area under their supervision.

VOU.VOU_BOATSHORE

For the collection of data used to populate the BOAT and SHORE table, port agents attempted to report by county the number of operating units by gear for participation in fisheries that was not conducted by or on documented vessels. The most important elements therefore are the total number of fishermen, by type (regular or casual), the number of boats by type (motor or other), and number and quantity of gear that operated in each county. The same boat or the same fishermen may have used several types of gear and therefore would be in several different fisheries throughout the year.

The agents were tasked with accounting for the multiple uses of the same boats, and the same fishermen, and to prevent double counting. There are fields labeled 'duplicate' for both the crew and boat sections of the record. The data in these fields are critical because they provide the number of crew and the number of boats that used other gear types.

CURRENT DATA COLLECTION PROCEDURE

Gulf of Mexico

Annually, port agents will be provided with a single file that attempts to list all vessels participating in commercial fishing in their area during the year. While the process of creation of these initial lists varies somewhat depending upon the data source, in general a list of distinct vessel ID/Gear/State/County units along with certain gear characteristics is pulled from State Landings data (e.g. trip tickets) and merged with information from the United States Coast Guard regarding vessel physical characteristics. Included in the operating characteristics information are: number of full time crew, type of gear, number and quantity of gear, and the state and county in which the vessel operated during the year. The USCG physical characteristics include the type of hull construction, the gross tonnage, the overall length of the hull (in feet), the horsepower of the engine, and the year in which the vessel was built.

Port agents receive a file and a due date. The file type will again vary depending on the data source, but is generally either an Excel spreadsheet or a FoxPro dbf file. The column names may also vary but in general will consist of the following columns:

Column Name	**Column Description**
VESSELNAME	The name of the vessel.
STATE_REG_NUMBER	State Registration Number
VESSELNUM	USCG Official number

GROSSTONS	The registered gross tonnage of the vessel.
VESSELLEN	The length of the vessel in feet.
FTCREW	The number of crew members.
TYPEOFCONS	Type of construction of the hull
GEAR	The NMFS gear code for the gear that was fished by this vessel in this state and county.
GEAR DESCRIPTION	Description of the gear that was fished by this vessel in this state and county.
GEARNUM	The greatest number of units of gear in use at one time. For example, 4 gillnets.
GEARQTY	The greatest quantity of gear used at any one time. For example, 4,000 square yards gill nets or 10,000 hooks.
YEAR	The year in which the vessel fished with these operating characteristics.
STATE	The NMFS state code for the state in which the vessel fished with these operating characteristics.
COUNTY	NMFS County where the vessel operated.

With the exception of the columns for CREW, GEARNUM and GEARQTY, most values will already be filled in.

File Completion Protocol

1) Remove Duplicate Vessels

The port agent sorts the list by vessel ID number and looks for duplicate vessels. It is normal for distinct vessels to appear more than once in the file if they fished with different gears, or landed in different counties in your area during the year. These duplications are not removed. However, it is possible that duplicate vessels where there is no difference between the records may be inadvertently included in the file. In this case, the duplicate is deleted. If a USCG number and a State registration number is listed, the state number is not removed from the file, as this variable was added to the SEFSC.VOU_VESOP table in 2006.

2) Insert Missing Vessels

While the State Landings data used to generate the initial list is in theory comprehensive, it is possible that vessels that fished in an area during the year in question are not represented. If so, they must be added. Port agents may:
a. Use their own local knowledge of vessels operating in their area,
b. Review their TIP data to make sure all vessel IDs that appear in the vessel interviews for that year also appear in the VOU file,
c. If in the Gulf, reviewing GSS data to make sure all vessel

IDs that appear in the vessel interviews or landings data for that year also appear in the VOU file.
d. Request a list of vessels from the Pelagic and Coastal Logbook programs

If missing vessels are found, they are inserted into the file and the port agent fills in as much of the information as possible that is available from these other sources. This will likely be the vessel number, name, gear type, State, and County. This leaves the physical characteristics and the gear characteristics to be filled in. In many cases, the physical characteristics of the vessel are determined by visiting http://cgmix.uscg.mil/PSIX/PSIXSearch.aspx and entering the vessel number. Any missing physical characteristics are left blank.

3) Update Incorrect Information

Any incorrect information provided on the file is corrected. Most commonly this will be an incorrect gear type or incorrect county, but could also be vessel physical characteristics. Again, this will be based on port agents knowledge of the area in which vessels operated. It is understood that there will likely be vessels on the list that the port agent is not familiar with, and cannot make any judgment as to the provided data's accuracy. Port agents are instructed to only update information for vessels with which they are familiar.

4) Input Gear Number and Quantity

For vessels that port agents are familiar with, either through dockside interviews or some other source, values for Gear Number and Gear Quantity are added. The below information is used to report number and quantity based on gear type:

Gear Type	**Gear Number**	**Gear Quantity**
Purse, Haul, Stop Seine, Lampara nets	Number of nets used	Aggregate length of all nets in yards
Gill and Trammel Nets	Number of nets used	Aggregate area of all nets in square yards
Otter and Beam Trawls	Number of nets used	Aggregate length of lead/chain lines in yards
Dredges and Scrapes	Number of dredges used	Aggregate width of toothed or notched bottom of dredge in yards
Lines of all types (long, set, troll, hand, etc.)	Total number of lines used	Maximum number of hooks used at any one time
Harpoons	One per vessel	One per vessel
Traps/Pots (lobster, stone/blue crab, fish)	Maximum number of traps used at any one time	Leave blank

For vessels with which the port agent is unfamiliar, the

estimates of the gear number and quantity are given in Appendix 1 for different gear types.

5) Update Crew Number

For vessels that port agents are familiar with, either through dockside interviews or some other source, the port agent adds the maximum number of crew, even if it was for only a single trip out of multiple trips with smaller crews.

For vessels that the port agent is unfamiliar with, the number of crew must be estimated. There are several methods used to estimate number of crew:

a. Assumption based on known gear, location, and physical characteristics. This method can be used if there are a substantial number of vessels in the file for which crew size is known. The number of crew known for these vessels is used to fill in unknown values for vessels with the same county, length, and gear type.
b. Assumption based on known landings and gear type. This method can be used where landings of individual vessels are known and a substantial number of vessels have existing crew size. The number of crew known for these vessels is used to fill in unknown values for vessels with similar per-trip landings and gear type.
c. Assumption based on provided tables. In some areas tables have been developed based on empirical data. This method is similar to a and b above but rather than being derived from narrow temporal and spatial strata, they are derived over many years and for larger regions. See appendix 1 for an example from the Gulf of Mexico.

Port agents are instructed to apply consistent methods to estimate missing values.

South Atlantic

In the South Atlantic, NC-GA, personnel from the state marine resources agencies provide data for the VOU-VESOP file. This data comes from permit and trip ticket data available in each respective state. These data are sent to the VOU database manager, who adds any available vessel characteristics available from the USCG data. The data are then checked for duplication and loaded to VOU.VESOP table.

Table 1. Description of variables in the VOU.VOU_VESOP table.

COLUMN_NAME	DATA_TYPE	NULLABLE	COLUMN_ID	COMMENTS
VESSELNAME	VARCHAR2(20 BYTE)	Yes	1	The name of the vessel.
PTCREW	NUMBER(2,0)	Yes	2	The number of part time crew members. They derive less than 50 percent of their gross income from fishing. The same crew members may be counted for different gears.
DUPPTCREW	NUMBER(2,0)	Yes	3	When a part time crew member fishes more than one gear, they are listed as a duplicate part time crew member for all gears except for one.
TYPEOFCONS	VARCHAR2(1 BYTE)	Yes	4	Type of contruction of the hull 1 = Wood, 2 = Steel, 3 = Composite, 4 = Iron, 5 = Bronze, 6 = Concrete, 7 = Aluminum, 8 = Filberglass, 9 = Plastic
VESSELNUM	NUMBER(10,0)	Yes	5	The vessel number, the official identifier for a vessel.
RIG	VARCHAR2(1 BYTE)	Yes	6	Propulsion system 1 = Steam, 2 = Gas, 3 = Oil screw 4 = Sail
GROSSTONS	NUMBER(4,0)	Yes	7	The registered gross tonnage of the vessel.
VESSELLEN	NUMBER(3,0)	Yes	8	The length of the vessel in feet.
YRBUILT	NUMBER(4,0)	Yes	9	The last three digits of the year the vessel was built as shown by the builder!s certificate.
HORSEPOWER	NUMBER(4,0)	Yes	10	The horsepower of the vessel!s engine(s). For multiple engine craft, the horsepower listed is the sum of the horsepower for each engine.
FTCREW	NUMBER(2,0)	Yes	11	The number of full time crew members. They derive 50 percent or more of their gross income from fishing. The same crew members may be counted for different gears.
GEAR	VARCHAR2(3 BYTE)	Yes	12	The NMFS gear code for the gear that was fished by this vessel in thys state and county.

GEARNUM	NUMBER(5,0)	Yes	13	The greatest number of units of gear in use at one time. For example, 4 gillnets.
GEARQTY	NUMBER(7,0)	Yes	14	The greatest quantity of gear used at any one time. For example, 4,000 square yards gill nets or 10,000 hooks.
YEAR	NUMBER(4,0)	Yes	15	The year in which the vessel fished with these operating characteristics.
STATE	VARCHAR2(2 BYTE)	Yes	16	The NMFS state code for the state in which the vessel fished with these operating characteristics.
COUNTY	VARCHAR2(3 BYTE)	Yes	17	NMFS County where the vessel operated.
REGION	VARCHAR2(1 BYTE)	Yes	18	A region code, 4 = South Atlantic States, 5 = Gulf States
MOTORS	NUMBER(1,0)	Yes	19	The number of motorized accessory boats. Usually only for the Menhaden Fleet
OTHER	NUMBER(1,0)	Yes	20	The number of non-motorized accessory boats.
TRANSFLD	VARCHAR2(2 BYTE)	Yes	21	This field is not used. There is only one non-null value out of about 250,000 records.
RESERVED	VARCHAR2(2 BYTE)	Yes	22	The first two character positions of the reserved field for change transactions indicate the field being changed.
DUPFTCREW	NUMBER(2,0)	Yes	23	When a full time crew member fishes more than one gear, they are listed as a duplicate full time crew member for all gears except for one.
TRANSCODE	VARCHAR2(1 BYTE)	Yes	24	A transaction code (A)dd, (C)hange, (D)elete
STATE_REG_NUMBER	VARCHAR2(10 BYTE)	Yes	25	State Registration Number

Table 2. Description of variables in the VOU.VOU_BOATSHORE table.

COLUMN_NAME	DATA_TYPE	NULLABLE	COLUMN_ID	COMMENTS
TRANSCODE	VARCHAR2(1 BYTE)	Yes	1	A transaction code. Valid options are A(dd), C(hange), and D(elete).
VESSELNAME	VARCHAR2(30 BYTE)	Yes	2	This field is always blank in the Boat and Shore Table since boats are not individually tracked.
FTCREW	NUMBER(4,0)	Yes	3	Total number of full time crew members for all boats fishing with this gear for this state and county. Full time crew members derive at least 50 percent of their gross income from fishing. The same crew members may be counted for different gears.
DUPFTCREW	NUMBER(4,0)	Yes	4	The total number of duplicate full time crew members for all boats fishing with this gear for this state and county. When a full time crew member fishes more than one gear, thay are listed as duplicate full time crew members for all gears except one.
PTCREW	NUMBER(4,0)	Yes	5	Total number of part time crew members for all boats fishing with this gear for this state and county. Part time crew members derive less than 50 percent of their gross income from fishing. The same crew members may be counted for different gears.
DUPPTCREW	NUMBER(4,0)	Yes	6	The total number of duplicate part time crew members for all boats fishing with this gear for this state and county. When a part time crew member fishes more than one gear, they are listed as a duplicate part time crew member for all gears except one.
MOTORS	NUMBER(4,0)	Yes	7	Total number of motorized accessory boats used with this gear for this state and county.
DUPMOTORS	NUMBER(4,0)	Yes	8	The total number of duplicate motorized accessory boats used with this gear for this state and county. When a motorized accessory boat fishes more than one gear, they are listed as a duplicate motorized accessory boat for all gears except one.
OTHER	NUMBER(4,0)	Yes	9	Total number of non-motorized acessory boats used with this gear for this state and county.
DUPOTHER	NUMBER(4,0)	Yes	10	The total number of duplicate non-motorized accessory boats used with this gear for this state and county. When a non-motorized accessory boat fishes more than one gear, they are listed as a duplicate non-motorized accessory boat for all gears except one.

GEAR	VARCHAR2(3 BYTE)	Yes	11	NMFS Gear Code for the gear that was fished by this vessel in this state and county.
GEARNUM	NUMBER(7,0)	Yes	12	Sum of the greatest number of units of gear in use at one time for each boat fishing with this gear for this state and county.
GEARQTY	NUMBER(7,0)	Yes	13	Sum of the greatest quantity gear in use at one time for each boat fishing with this gear for this state and county.
YEAR	NUMBER(4,0)	Yes	14	The year in which the boat fished with the operating characteristics.
STATE	VARCHAR2(2 BYTE)	Yes	15	NMFS state code ofr the state in which the boats fished with these operating characteristics.
COUNTY	VARCHAR2(2 BYTE)	Yes	16	County of the boats owner. (Two character NMFS codes)
REGION	VARCHAR2(1 BYTE)	Yes	17	Region Code.

Appendix 1. Sample Boat and Shore average values.

BOATS AND SHORE - OPERATING UNITS
Generalized Average Conversion Formulas for Assistance

020	Seine, fish	Avg 2 per boat, 300 L yds each
030	Seine, long	Avg 1 at 100 L yds each
145	Seine, purse other	Avg 1 at 400 L yds (1 gear per license)
189	Butterfly net	Avg 2 per boat, 11' across each (3.67 yds) (1 gear per license)
215	Trawl, shrimp	1-2 per boat. 1 40' avg div by 3=13.33 yds (1 gear per licensee)
310	Hoop net	Avg 4 per boat
330	Crab traps	Avg 150 traps (range 100-350)
340	Pots/traps, eel	Avg 25
345	Pots/traps, fish (Slat traps)	Avg 40-50
379	Pots/traps, other (Minnows)	Avg 12
387	Pots eael. (Cane)	Avg 40-50
423	Gill net, other	4-5, 50' long X 3' high div by 9 sq ft=17 sq yds
475	Gill net, runaround	1200' X 6 div by 9=800 sq yds X # gear div 100
530	Trammel net	350' long X 4.5' high div by 9 sq ft=175 sq yds X # gear
610	Hand line	17 hooks each X # gear
660	Troll line	1 hook each X # gear (range 2-8)
675	Longline set top	Avg 12-15 lines, 17 hooks each
676	Longline set bottom	Avg 12-15 lines, 17 hooks each
677	Longline, sharks	Avg 12-15 lines, 17 hooks each
735	Cast net	1 per person
760	Spears (Gigs)	1 per person
815	Dredge, oyster	Avg 1 per boat (range 1-2) (1 gear per license)
840	Tongs, oyster	1 per person (1 gear per license)
895	Frog grabs (Gig)	1 per person

VESSEL ADDITIONS
GEAR CODE 215 or 189

Vessel greater than 50'	at least 3 crew, 2 trawls at 50' each 100 div 3 = 33 yds or 50 div 3 = 17 yds
Vessel 31' - 50'	1 or 2 crew, 1 or 2 40' trawls 40 div 3 x 13 yds or 80 div 3 = 27 yds
Vessel under 30'	1 crew, 1 40' - 45' trawl 40 div 3 = 13 yds or 45 div 3 = 15 yds Avg would be 1 40' trawl (13 yds)

GLOSSARY

Vessel - A commercial fishing craft having a capacity of 5 net tons or more. These craft are either enrolled or documented by the U.S. Coast Guard and have an official number assigned by that agency.

Boat - A commercial fishing craft powered by a motor, having a capacity of less than five net tons, or other powered craft that is not registered by the U. S. Coast Guard as a documented vessel.

Boat, other - A commercial fishing craft not powered by a motor, having a capacity of less than five net tons, or not documented by the U. S. Coast Guard, e.g., rowboat or sailboat.

Commercial Fisherman - An individual who derives some income from catching and selling living resources from inland or marine waters.

Commercial Fishermen, Regular - An individual who derives 50 percent or more of his or her annual income from commercial fishing.

Commercial Fishermen, Casual - An individual who derives less than 50 percent of his or her annual income from commercial fishing.

Exclusive of Duplication - The counting of fishermen, boats, or vessels, etc., that may have been reported in two or more instances, via an indexed system so that each individual is counted only once.

Fishing Characteristics - The variable characteristics related to the fishing activities of a vessel, e.g., number of crew, number and quantity of fishing gear, or the type of fishing gear.

Gross Tonnage - The gross registered tonnage of a vessel is the internal cubic capacity of all space in and on the vessel that is permanently enclosed, with the exception of certain permissible exemptions. Gross tonnage is expressed in tons of 100 cubic feet.

Number of Gear - The highest number of a particular gear that a vessel or fisherman uses at any one time.

Number of Crew - The highest number of fishermen including the captain, that are on board a vessel for any trip while the vessel used the particular gear being reported on.

Official Number - The six or seven digit documentation number of a documented vessel. This number is permanent while other fishing or operating characteristics may change over time.

Operating Unit - A single boat, vessel or fisherman.

Operating Characteristics - The generally stable characteristics of a vessel related to its construction, e.g., tonnage, horsepower, or the type of hull construction.

Quantity of Gear - The highest aggregated quantity of a particular gear that is in use at one time. Quantity is measured as follows:

Seines, common, long haul, or purse - length in linear yards including "dropback".

Pound Nets or weirs - the number of pounds or weirs.

Traps or pots - the number in use at one time, quantity is not reported.

Nets, gill, runaround, drift, set, trammel, or other - square yards of all nets in use at one time.

Dredges - length of bar or toothed bar in whole linear yards.

Lines, troll, long, or trot - the aggregate number of hooks or

baits.

All other gear - no quantity is shown or zero is used for quantity.

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*** Please note: Beginning with 1990 data, the quantities of gear for Gear 470 and Gear 475 were divided by 100. This was due to a technical requirement due to field size.
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Rig - The type of power a vessel uses.