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ECONOMICS OF THE GULF OF MEXICO REEF FISH FISHERY - 2016

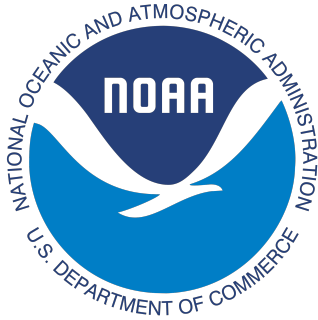
BY

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Introduction

This technical memorandum provides summary information and estimated economic information for the commercial sector of the federally-managed reef fish (RF) fishery in the Gulf of Mexico (GOM) in calendar year 2016, including a comparison to earlier years. The GOM RF fishery includes multiple species of snapper, grouper, tilefish, and jacks as well as triggerfish and hogfish. For a complete list of federally-managed reef fish species, please refer to Appendix 1. The fishery is managed by the GOM Fishery Management Council (in coordination with the States) through the GOM RF Fishery Management Plan (FMP). For detailed information about the RF FMP, please consult the GOM Council’s website at: <http://gulfcouncil.org/>.

Fourteen of the RF FMP species are managed using transferable individual fishing quotas (IFQ), a type of catch share management. The red snapper and the grouper-tilefish components of the RF fishery are managed under two programs, the red snapper IFQ (RS-IFQ) program and the grouper-tilefish IFQ (GT-IFQ) program. The latter is broken down into 5 categories [red grouper, gag, other shallow water groupers (OSWG), deep water groupers (DWG), and tilefish]. The IFQ programs apply only to the commercial sector. For a list of the IFQ species by category, please refer to Appendix 1. The IFQ programs are administered by the NMFS’s Southeast Regional Office (SERO). SERO publishes an annual report for each IFQ program with a wealth of information about these fisheries. For detailed information about the RF FMP’s IFQ programs, please consult the Regional Offices website at: <https://portal.southeast.fisheries.noaa.gov/cs/main.html>

This report’s unique focus is on the economics of the commercial harvesting sector in the GOM RF fishery. The report combines trip logbook data (effort and catch at the trip-level) with two supplemental economic sample surveys—one on the logbook itself (and hence at the trip-level); the other is an annual mail survey at the vessel-level. The economic surveys elicit revenue, variable and/or fixed costs by category, and some auxiliary economic variables, such as a vessel’s market value. After extensive cleaning and processing, and linking back to the logbook data, the report summarizes the logbook data by meaningful subsets of the overall data (domains in statistical context). We call these subsets Segments of Interest (SOI). In most cases, they are at the species or species group and/or at the gear-level, such as red snapper or longline trips. Based on the sample data, estimates of the SOI population means for the economic variables are provided, including net revenues and margins.

Note that the net revenues and returns (“profits”) are shared between owners of vessel capital AND owners of IFQ shares in the GOM RF fishery. In this report, by purposefully ignoring the distribution of IFQ shares, the focus is on the real productive capacity of the commercial fishery. All IFQ transactions are zero-sum in that they transfer wealth. The catch share management structure of the fishery allows for the realization of resource rents that will, in all likelihood, accrue to IFQ shareholders (who might or might not be operating a vessel).

A major disclaimer applies to all the results reported in this technical memorandum. **The processing of data and the presentation of results are guided by the objective of presenting meaningful economic results. These numbers will differ from similar numbers generated for stock assessments and other management**

or research purposes. Further, the underlying databases are dynamic and continuously changing. So while the numbers reported here should generally be of similar magnitude as reported elsewhere, we do not expect them to be identical.

The Methods section describes the sources of the data in more detail, the cleaning processes and assumptions, the statistical estimation approach, and the standardized results. The presentation of results is standardized across different SOIs to streamline the results sections. The definitions and caveats for each result variable or graph are only reported in the methods section in order to keep repetition to a minimum.

The Results section reports on 16 different SOIs. The results for any one SOI consist of six sections, corresponding to six pages. The first section, Trip-Level Summary, summarizes aggregated logbook data at the trip-level for the particular SOI. The second section, Trip-Level Economics, provides estimated SOI trip economic results based on the trip-level sample survey. The third section, Annual, Vessel-Level Summary, provides information on the vessels within the SOI at the annual, vessel-level by aggregating across all the logbook trip data for each vessel. This section also presents vessel characteristics and permit status gleaned from each vessel’s permit application. The fourth section, Annual, Vessel-Level Economics, provides estimated annual economic results for SOI vessels based on the annual sample survey. The fifth section, Trip-Level Time Series, provides selected trip-level summary and economic results for previous years, side-by-side to the current year results and a three year average. The sixth section, Annual, Vessel-Level Time Series, provides the same temporal perspective for selected annual, vessel-level summary and economic results. In both time series sections, the economic results are expressed as a percent of revenue to better facilitate comparison across time. All dollar values are inflation adjusted to nominal 2016 dollars.

Methods

Data

Beginning in 1993, NMFS’s Southeast Fisheries Science Center (SEFSC) required all fishing vessels to report on their commercial fishing activity for federally managed Gulf of Mexico Reef Fish, South Atlantic Snapper-Grouper, Coastal Migratory Pelagic (mostly mackerels), Shark, and Atlantic Dolphin/Wahoo fisheries. To maintain compliance, fishers are responsible for submitting a trip report form (aka “logbook”) for every commercial fishing trip that harvests or targets these species. Per logbook instructions, “a commercial trip is defined as a trip for profit with no paying customers onboard. Any commercial trip that targets a federally managed species listed under the aforementioned permits must be reported, even if there were no landings.” This results in near-census data of all commercial trips taken by federally-permitted vessels in the fisheries for Reef Fish, Snapper and Grouper, as well as Mackerel, in the Gulf of Mexico and South Atlantic. How close the logbook’s aggregate landings align with dealer reported landings—the official estimates of landings—varies by species. In general, logbook landings account for more than 90% of dealer reported landings for the GOM RF FMP’s species.¹

¹The official estimates of landings are reported annually in the Fisheries of the U.S. (available at: <https://www.st.nmfs.noaa.gov/commercial-fisheries/fus/fus15/index>). These estimates are based on the total pounds and

Since 2006, NMFS's SEFSC has conducted two economic surveys to collect data at both the trip-level and vessel-level in the GOM RF FMP fishery. Each year, a subset of federally permitted vessels is randomly selected to provide additional economic data on the logbook. Selection eligibility is based on whether a vessel has a valid federal permit of interest during late November of the previous year. In 2016, vessels were stratified into three strata based on their days at sea during the two years prior to the selection year (e.g., 2014 and 2015 in this case). The three strata are: 1. Inactive, 2. Active - Low (less than 21 days at sea per year in both years), and 3. Active - High (more than 20 days at sea in at least one year).² A vessel was considered inactive if it did not report any trips to the logbook system during the two years. Approximately 30% of active vessels were selected, while 10% of inactive vessels were selected. Beyond the initial selection, two further vessel selections were conducted throughout the first half of the year to capture vessels new to the fishery and permit renewals (vessels with invalid permits during initial selection).

For each trip, selected vessels must complete the trip expense section located at the bottom of the trip report form. Data collected in this section are for variable costs including expenses for bait, ice, groceries, and IFQ allocation; the amount of fuel used and the cost per gallon of fuel; whether or not the vessel owner was present on the trip, and whether or not payment for the catch had been determined. If payment was determined, then gross trip revenue and payment to hired crew and hired captain are collected. Instructions and a copy of the logbook trip report form with the trip expense section can be found at this NOAA SEFSC website: https://www.sefsc.noaa.gov/fisheries/reporting_archive.htm.

Early in the following year, selected vessels are mailed an annual expense survey. This survey asks questions pertaining to cumulative trip-level expenses such as fuel, supplies, IFQ allocation, and hired captain and hired crew payments. In addition, the survey asks for annual, vessel-level economic costs-fixed costs-which are not documented on the trip expense section of the logbook. These expenses include the costs for maintaining and repairing the vessel and gear, insurance, loan payments, and overhead (such as mooring, utilities, office staff, professional services, etc.). The annual survey also collects an estimate of the vessel's market value as well as days at sea and revenue from commercial and for-hire fishing.³

Besides logbook and economic survey data, this technical memorandum uses vessel permit and characteristics information from NMFS's Southeast Regional Office (SERO). These data are provided by vessel owners on the application for Federal fishing permits in the Southeast. Finally, dealer landings data obtained from the states, as summarized in the ALS (Accumulated Landings System), are used to estimate the ex-vessel seafood prices. An algorithm, using trip information including the dealer, the dealer's location (state), and the month and year landed, is used to estimate a price per pound for each species at the highest resolution possible. This price per pound is used to estimate trip revenue because the logbook forms do not collect price data.

Note that for IFQ fisheries, such as red snapper, the IFQ-tracking system is considered the definite register of landings, and revenue, and participating vessel counts, providing the official numbers for the IFQ fisheries. These numbers are NOT used in this technical

value by species and time period reported to NMFS by seafood dealers (those buying from harvesters).

²The active vessels were separated into low and high strata to ensure a sufficient response from the highly active vessels ("high liners") each year. The particular cutoff point roughly splits the active vessels into similar sized groups.

³A substantial fraction of commercially permitted vessels also are permitted for taking for-hire trips, and many vessels engage in both activities in a single year.

memorandum. Instead, we rely on the logbook data augmented by the dealer price data. This approach has the advantages of a) covering all species caught on a trip, including non-IFQ species; b) providing detailed effort data (gear, days at sea, crew number, etc.); and c) applying a single consistent methodology across this fishery. The IFQ system often registers more landings and revenue than the logbook data.

Cleaning

As with utilizing any survey data, cleaning is necessary to ensure the data are complete, accurate, and suitable for analysis. The largest challenge in cleaning both the trip-level and annual, vessel-level economic data is dealing with variable non-response. Depending on the variable, non-response is dealt with in different ways. If a value is missing for certain variables, the entire trip observation is dropped. This occurs when a variable is difficult to estimate accurately, such as fuel used on a trip. We replace missing values with zeros for variables where it is more than likely that the value is actually zero and the respondent left it blank. Finally, estimates of trip revenue and payments to hired crew and hired captain are imputed if payment had not been determined by the time the trip form was submitted. Missing trip revenue is replaced with the estimated trip revenue value. Gross mismatches between actual reported revenue (for observations with these data) and estimated revenue lead to these observations being dropped if no data entry error is found. An estimate for missing payments to hired crew is based on a set of regression models (equations). The variables used in the regression models include: trip revenue, crew days (number of hired crew multiplied by days at sea), and total expenses (total spent on bait, fuel, groceries, ice, IFQ allocation, and miscellaneous expenses).

Definiton: Segment of Interest (SOI)

Due to large trip and vessel heterogeneity within the logbook data, it is necessary to subset the commercial vessel “population” into more meaningful and tractable sub-populations, or “domains” in a statistical context. These domains could be based on any variables that are available for all trips (or vessels) within the logbook system. Examples of these variables include: Species landed, gear used, area fished, duration of trip, month landed, dealer state, and valid permit status.

This technical memorandum reports trip- and vessel-level economic estimates for a select number of domains we call Segments of Interest (SOI). A SOI is defined as all trips where at least one pound of fish, which matches the specifications of the domain, was landed. For instance, the SOI “GOM Reef Fish FMP Fishery: Longline” would include all trips that caught one or more pounds of reef fish using longline gear in the Gulf of Mexico. The following items are primarily used to create the SOIs: Area fished, species landed, and gear used.⁴ It is important to note that not all landings on a SOI trip will match the SOI definition and not all trips by SOI vessels will be in the SOI. The naming convention of the SOIs is: Year of data, waterbody of area fished, species, and gear.

⁴Additional segmenting can be carried out on the SOI in order to include trips which meet specific thresholds on SOI’s share of trip revenue as well as a minimum for SOI trip revenue per day. We do not report these here.

Estimation

For the economic variables, we estimated SOI-specific population means (averages) using the economic sample data available for that particular SOI. Post-stratification of a SOI domain and its economic sample data allows the statistical estimation to take into account the realized distribution of the usable economic responses across the sampling strata. The weights used in the estimation are based on the total number of vessels in the SOI for each stratum divided by the number of vessels whose expense data are used in the estimation (as the original selection is at the vessel level before any trips are realized). In the process, we correct for trip-level and vessel-level non-response in the simplest manner. Technically, each economic observation receives a weight specific to: a) the original sampling strata and b) the particular SOI domain under consideration. The trip-level and annual, vessel-level weights are calculated separately and differ due to the particular response “profile” for each survey.

Standardized Results and Definitions

The presentation of results is standardized across different SOIs in order to streamline the results sections. The standardized results for each SOI begin with a text description of the SOI, focusing on its most pertinent aspects. The text also contains important or critical caveats that apply to particular SOIs. The definitions and caveats for each result variable or graph are only reported in this section in order to keep repetition to a minimum.

The results for any one SOI consist of six sections. The first section, Trip-Level Summary, summarizes the SOI at the trip-level-presenting the aggregate, cleaned logbook data for the particular SOI. The second section, Trip-Level Economics, provides SOI trip economic estimates based on the trip-level sample survey. The third section, Annual, Vessel-Level Summary, provides information on the vessels within the SOI at the annual-level by aggregating across all the logbook trip data (SOI and non-SOI trips). This section also presents vessel characteristics and permit status gleaned from each vessel’s permit application. The fourth section, Annual, Vessel-Level Economics, provides estimated annual economic results for SOI vessels based on the annual sample survey. The fifth section, Trip-Level Time Series, provides selected trip-level summary and economic results for previous years, side-by-side to the current year results and a three year average. The sixth section, Annual, Vessel-Level Time Series, provides the same temporal perspective for selected annual, vessel-level summary and economic results. In both time series sections, the economic results are expressed as a percent of revenue to better facilitate comparison across time. All dollar values are inflation adjusted to nominal 2016 dollars. A description of all tables and graphs that are found in these sections is provided below. Percentages may not always sum to 100% in the tables and graphs due to rounding.

Section: Trip-Level Summary

- **Effort:** Number of SOI trips, number of vessels in SOI, and total number of days at sea and crew-days by all SOI trips in the logbook data. The days at sea variable is known to contain some imprecision.

- **Landings (gutted lbs):** Total gutted weight of landings in pounds by SOI trips; broken down into SOI landings and non-SOI landings. "%SOI" shows the percentage share of total landings that qualify as SOI landings. The non-SOI landings occur on SOI trips. In a species-defined SOI, non-SOI landings would be non-SOI species catch. In a gear-defined SOI, non-SOI landings would be landings caught with non-SOI gear on a multi-gear SOI trip. The %SOI indicates the level of SOI criteria specialization (in terms of landings) of SOI trips. A high value indicates that the SOI trips are mostly explained by the SOI criteria. A low value indicates that the SOI landings (i.e., the landings associated with the SOI criteria) are a minor part of the trip and might just be "bycatch".
- **Percent by Gear:** Trips - Percent of trips in the SOI using a particular gear. Multi-gear trips are assigned a "top gear" based on the gear which generated the most revenue. Vertical line gear includes hand lines, rod and reels, electrical reels and bandit gear. SOI lbs - Percent of SOI landings landed using a particular gear.
- **Price (mean):** Average ex-vessel price per pound of all landings (gutted weight pounds), as well as the average price per pound of SOI landings and of non-SOI landings across SOI trips.
- **Revenue:** Total estimated revenue by all SOI trips; broken down into SOI revenue and non-SOI revenue. %SOI shows the percentage share of total revenue that qualifies as SOI revenue. Revenue is estimated by multiplying catch pounds from the logbook data by the ex-vessel price estimate derived from ALS (dealer) landings data. The %SOI indicates the level of SOI criteria specialization (in terms of revenue) of SOI trips. A high value indicates that the SOI trips are mostly explained by the SOI criteria. A low value indicates that the SOI revenue (i.e., the revenue associated with the SOI criteria) are a minor part of the trip and might just be "bycatch".
- **Revenue Percent by Species Group:** Distribution of estimated revenue on all SOI trips across selected species groups, in percent. Note, these species groups are independent and unrelated to the species-based SOI definitions. See Appendix 2 for the specific species included in each reported group. The first 5 groups contain the RF FMP species and some other bottom fished species.
- **Revenue for Top 5 Species:** Total estimated species-level revenue for the top 5 species with greatest overall revenue on all SOI trips.
- **SOI Landings by Area Fished:** A bubble map showing where SOI landings are caught in the Gulf of Mexico. Fishing areas are defined based on a 1x1 degree latitude-longitude grid.
- **Share of SOI Landings by Month:** A chart showing the seasonality of total SOI landings.
- **Cumulative SOI Landings:** A graph showing cumulative SOI landings across SOI trips ordered from lowest SOI catch to highest SOI catch. A straight line would indicate very homogeneous trips; a convex shape indicates heterogeneity (in SOI catch). The dashed horizontal line represents 20% of the total SOI landings. Where the line intersects the curve indicates the maximum number of trips which can generate (only) 20% of the SOI landings. One minus the intersects' number of trips (in percent) indicates the

(smallest) percent of trips that harvest 80% of SOI landings.

- **SOI Share of Revenue Per Trip:** A graph illustrating the level of specialization (on SOI catch) by SOI trips. The graph maps the SOI share of estimated revenue for each trip in the SOI, with trips ordered from smallest to largest SOI share. Where the dashed horizontal line intersects the curve indicates the percent of trips where the percent of SOI share was 50% or less. The graph illustrates the share of SOI trips where SOI revenue is minor/bycatch (from left, line hugging the x-axis), where the trip is specialized on SOI revenue (moving toward right, line asymptotes toward 100% y-value), and those in between.
- **Trip Descriptive Statistics:** SOI trip summary statistics (mean, minimum, median, maximum) derived from the logbook data: Days at sea, number of crew, (gutted weight) pounds landed, estimated revenue, SOI estimated revenue, and the percent of total estimated revenue attributed to the SOI. This table allows for an evaluation of the scale of variation and extremes among SOI trips.

Section: Trip-Level Economics

- **Response Rate for SOI Trips:** While the economic survey samples at the vessel level (by design), the rates reported here are at the trip-level. Based on the SOI definition, the total number of trips and the number of trips selected for economic reporting are provided. Further, "Responded" refers to the number of trips that provided at least some economic survey data, while "Used" refers to the number of clean and complete trip observations used in the analysis.
- **Economic Results:** This table reports estimates of the population means for SOI trips based on the sample data; n equals the number of observations in the sample. The population means for the economic variables are generated using a post-stratified, weighted estimation to account for the stratification of the sample and non-response. Also reported are the standard error, the 90% confidence interval for the mean [lower bound (L.B.) and upper bound (U.B.)], and the weighted median. The variables included are:

Owner-Operated: Percentage of SOI trips where the vessel owner was part of the crew, usually the captain. If an owner is not on board, a captain has to be hired (presumably raising the crew expenses).

Days at Sea: The length of trip in days, as reported on the logbook. This variable is known to contain a substantial amount of imprecision (plus or minus one day as fishermen treat partial calendar days and 24 hour periods differently).

Crew Size: Total number of crew members on trip, including the captain.

Fuel Used: The amount of fuel used on a trip in gallons.

Landings (gutted lbs): Total trip landings in gutted weight pounds.

Note, revenue, costs and net-measures are in nominal U.S. dollars, as reported on the survey (survey year dollars).

Total Revenue: Reported trip revenue when available; augmented with estimated

trip revenue when missing. Serious mismatches between reported and estimated trip revenue (when available) were the most frequent reason trips were dropped during data cleaning.

Cost - Fuel: Cost of fuel used on trip; calculated as the price paid per gallon multiplied by the gallons used. In contrast to the other trip costs below, fuel costs are counted regardless of when (or if) the expense for this fuel was incurred, as fuel is easily stored between trips (i.e., fuel purchased prior to but not used on a trip would not be included).

Cost - Bait: Cash expense for bait purchased for trip. The cost of self-caught bait is not included because, presumably, fuel and labor time reflect the production of self-caught bait.

Cost - Ice: Cash expense for ice purchased for trip. The cost of ice generated by own ice machine(s) is not included because, presumably, fixed costs for gear and electricity reflect the own-production of ice.

Cost - Groceries: Cash expense for groceries purchased for this trip.

Cost - Miscellaneous: Cash expense for other trip-related expenses not accounted for elsewhere, including gloves, supplies for freezing product, etc.

Cost - Hired Crew: Payment to hired crew ("mates") and hired captain (if applicable). Reported expenses for hired crew are the most error-prone data. Substantial cleaning is necessary to make these data usable. Obvious errors and inconsistencies were blanked out, and then hired crew costs were estimated based on a complex algorithm that was developed to distinguish between small, one day trips often taking "voluntary" crew with no or in-kind payment (family, friends, etc.) and longer, professional crew positions where compensation is necessary. The resulting number is a rough estimate and should be treated as such.

IFQ Purchase: Cash expense for IFQ allocation purchased from third parties specifically for the trip. Note that many respondents have IFQ shares or long-term/annual arrangements for IFQ allocation. The use ("consumption") of annual allocation on a trip is not accounted for at a trip level in this analysis. Also, the revenue from selling annual allocation is not accounted for as it cannot, in general, be associated with a vessel and hence a trip.

OC Owner-Captain Time: Estimated opportunity cost (OC) of an owner's labor used on the trip. The survey does not collect this information. Instead, a value is imputed based on hired crew remuneration and the profitability of the trip because most labor is compensated based on a share system. The resulting number is a rough estimate and should be treated as such.

Trip Net Cash Flow: Revenue minus the costs for fuel, bait, ice, groceries, miscellaneous, hired crew, and IFQ purchase. The focus is on actual cash transactions/money flows. In-kind contribution to the production process are ignored, including the opportunity cost of owner-captain time, as well as vessel services (fixed costs and overhead) and IFQ allocation use (if not purchased from third parties specifically for the trip). Trip Net Cash Flow represents an estimate of the money (cash) generated by the typical SOI trip over and above the cash cost of taking the

trip (marginal or variable costs of trip). This implies a short term perspective.

Trip Net Revenue: Revenue minus the costs for fuel, bait, ice, groceries, miscellaneous, hired crew, and the opportunity cost of owner's time as captain. By including opportunity cost of owner's time (an in-kind, variable factor to production) and excluding IFQ purchase payments, trip net revenue is a measure of the inherent short-term productivity (i.e., economic performance) of the commercial fishing process. For example, if a trip were not taken, with the owner avoiding to pay trip-related costs, then Trip Net Revenue represents the lost income to the owner. Because of the trip perspective, vessel services (fixed costs and overhead) and IFQ allocation use, purchase, or selling is not included. This implies a short term perspective.

- **Trip Net Cash Flow and Trip Net Revenue as Proportion of Trip Revenue**

(Margins): A chart showing Trip Net Cash Flow and Trip Net Revenue as a share of trip revenue, i.e., the gross margin of the productive activity before fixed costs are accounted for. The major cost categories that are subtracted from revenue are also displayed in percentage terms. Fuel and Supplies include the cost of fuel, bait, ice, groceries, and miscellaneous. Labor includes just Hired Crew costs for Trip Net Cash Flow and Hired Crew costs and the opportunity cost of Owner's Time for Trip Net Revenue.

- **Input Prices:** The average fuel price per gallon across all gallons used by the SOI trips is reported. This is distinct from the average fuel price across trips (not reported). The Hired Crew Wage (implicit) calculates the average amount paid (as Hired Crew costs) per hired crew-day by the SOI trips. This measure excludes an owner's crew-days in the calculation.
- **Productivity Measures:** Reports the landings (in gutted weight pounds) per gallon of fuel used as well as per crew-day of labor used. The latter measure includes an owner's crew-days in the calculation.

Section: Annual, Vessel-Level Summary

For all SOI vessels, this section summarizes all logbook data. It is important to note that, during a year, some vessels will also engage in commercial fishing trips that do not require federal logbooks, such as lobster, crabs, or other state-managed species. These trips are not accounted for in this section. They ARE accounted for (implicitly) in Section Four: Annual, Vessel-Level Economics and Section Six: Annual, Vessel-Level Time Series.

- **Effort:** Number of SOI vessels, number of total trips by SOI vessels, number of SOI trips, number of non-SOI trips and total number of days at sea and crew-days on all trips by SOI vessels in the logbook data. Non-SOI trips are trips by SOI vessels that did NOT land one pound of fish that matched the SOI definition (species, gear, etc.). The days at sea variable is known to contain some imprecision.
- **Landings (gutted lbs):** Total gutted weight of landings in pounds of all trips by SOI vessels; broken down into SOI landings and non-SOI landings. "%SOI" shows the

percentage share of total landings that qualify as SOI landings. The non-SOI landings occur on all trips by SOI vessels. In a species-defined SOI, non-SOI landings would be non-SOI species catch. In a gear-defined SOI, non-SOI landings would be landings caught with non-SOI gear on a multi-gear SOI trip. The %SOI indicates the level of SOI criteria specialization (in terms of landings) of all trips by SOI vessels. A high value indicates that all trips by SOI vessels are mostly explained by the SOI criteria. A low value indicates that the SOI landings (i.e., the landings associated with the SOI criteria) are a minor part of the vessels' landings and might just be "bycatch".

- **Percent by Gear:** Trips - Percent of all trips by SOI vessels using a particular gear. Multi-gear trips are assigned a "top gear" based on which gear generated the most revenue. Vertical line gear includes hand lines, rod and reels, electrical reels and bandit gear. Total lbs - Percent of total landings by SOI vessels using particular gear.
- **Price (mean):** Average price of all landings (gutted weight pounds), as well as the average price of SOI landings and of non-SOI landings across all trips by SOI vessels.
- **Revenue:** Total estimated revenue by all trips of SOI vessels; broken down into SOI revenue and non-SOI revenue. %SOI shows the percentage share of total revenue that qualifies as SOI revenue. Revenue is estimated by multiplying catch pounds from the logbook data by the ex-vessel price estimate derived from ALS (dealer) landings data. The %SOI indicates the level of SOI criteria specialization (in terms of revenue) of all trips by SOI vessels. A high value indicates that all trips by SOI vessels are mostly explained by the SOI criteria. A low value indicates that the SOI revenue (i.e., the revenue associated with the SOI criteria) are a minor part of the vessels' landings and might just be "bycatch".
- **Revenue Percent by Species Group:** Distribution of estimated revenue on all trips by SOI vessels across selected species groups, in percent. Note, these species groups are independent and unrelated to the species-based SOI definitions. See Appendix 2 for the specific species included in each reported group. The first 5 groups contain the RF FMP species and some other bottom fished species.
- **Revenue for Top 5 Species:** Total estimated species-level revenue for the top 5 species with greatest overall revenue on all trips by SOI vessels.
- **Annual, Vessel Descriptive Statistics:** Summary statistics (mean, minimum, median, maximum) for all trips by SOI vessels derived from the logbook data: Number of trips, days at sea, number of crew, (gutted weight) pounds landed, estimated revenue, SOI estimated revenue, and the percent of total estimated revenue attributed to the SOI. This table allows for an evaluation of the scale of variation and extremes among SOI vessels.
- **SOI Share of Monthly Landings:** A chart showing the seasonality of SOI landing relative to all landings.
- **SOI Share of Revenue Per Vessel:** A graph illustrating the level of specialization (on SOI catch) by SOI vessels. The graph maps the SOI share of estimated revenue for each vessel in the SOI, with vessels ordered from smallest to largest SOI share. Where the dashed horizontal line intersects the curve indicates the percent of vessels where the SOI share was 50% or less. The graph illustrates the share of SOI vessels where

SOI revenue is minor/bycatch (from left, line hugging the x-axis), where the vessel is specialized on SOI revenue (moving toward right, line asymptotes toward 100% y-value), and those in between.

- **Percent with Federal Permit:** Lists the percent of SOI vessels that had a valid Federal permit for at least one day during the calendar year under consideration by permit or permit category. From the permit database at SERO. Permits or permit categories listed are: GOM Reef Fish, South Atlantic (SAT) Snapper & Grouper (Unlimited and Limited versions), GOM and SAT King Mackerel and Spanish Mackerel permits, Atlantic Dolphin-Wahoo (applies to SAT, not GOM), Other Commercial Fishing (including permits for sharks, swordfish, lobster, and shrimp), and For-Hire Fishing (any GOM or SAT Federal for-hire permit). The permit status is an indicator for what other fisheries (beyond RF) the SOI vessels have the option to participate in (and might be active in).
- **Vessel Characteristics:** Summary statistics (mean, minimum, median, maximum) for SOI vessels derived from the permit database at SERO: Vessel length (in feet), year vessel was built, horsepower of all engines, as well as the percent of vessels with fiberglass hull material, diesel engines, and lack of on-board freezing capability. This table allows for an evaluation of the scale of variation and extremes among SOI vessels.

Section: Annual, Vessel-Level Economics

- **Response Rate for SOI Vessels:** Response rates for the annual economic survey among SOI vessels. Reported are the total number of vessels in the SOI and the number of vessels selected for additional economic reporting. Further, "Responded" refers to the number of vessels that provided (some) annual economic data, while "Used" refers to the number of clean and complete annual, vessel-level observations used in the analysis.
- **Economic Results:** This table reports estimates of the population means for SOI vessels based on the annual economic survey sample data; n equals the number of observations in the sample. The population means for the economic variables are generated using a post-stratified, weighted estimation to account for the stratification of the sample and non-response. Also reported are the standard error, the 90% confidence interval for the mean [lower bound (L.B.) and upper bound (U.B.)], and the weighted median. The variables included are:

Owner-Operated: Percent of SOI vessels where, on the majority of trips, an owner was part of the crew, usually the captain.

For-Hire Active: Percent of SOI vessels that engaged in for-hire fishing during the calendar year.

Days - Commercial Fishing: Number of days at sea a vessel engaged in commercial fishing during a calendar year.

Days - For-Hire Fishing: Number of days at sea a vessel engaged in for-hire fishing during a calendar year.

Days - Non-fishing: Number of days at sea a vessel engaged in non-fishing activities during a calendar year; this could include work in the oil sector, non-fishing

for-hire trips, or trips for research purposes. While not the intent of the question, some individuals might be including days the vessel was used for recreational purposes.

Vessel Value: The estimated current market value of the vessel by respondents. Missing values are imputed. In nominal U.S. dollars, as reported on the survey.

Has Insurance: Percent of SOI vessels that have vessel insurance, either hull insurance, P&I insurance ("liability") or both.

Revenue, costs and net-measures are in nominal U.S. dollars, as reported on the survey (survey year dollars).

Total Revenue: Total revenue is sum of commercial and for-hire fishing revenues as reported on annual survey, i.e., total receipts from seafood sales and for-hire fees, respectively.

Commercial Fishing Revenue: Annual gross revenue from commercial fishing, i.e., total ex-vessel receipts from seafood sales. This can include amounts generated from fisheries outside the logbook reporting system, e.g., lobster or blue crab.

For-Hire Fishing Revenue: Annual gross revenue from for-hire fishing.

Cost - Fuel: Annual expenditures for fuel used by vessel.

Cost - Other Supplies: Annual expenditures for non-labor variable inputs other than fuel, including bait, ice, groceries, and miscellaneous.

Cost - Hired Crew: Annual expenditures for hired crew ("mates") and hired captain (if applicable), including fringe, bonuses, and other employment costs (if applicable).

Cost - Vessel Repair & Maintenance: Annual expenditures for vessel and associated gear repair and maintenance.

Cost - Insurance: Annual expenditures for vessel hull and P&I insurance.

Cost - Overhead: Annual expenditures for overhead, such as expenses for dockage, licenses, rent, utilities, vehicles, and professional services (or share thereof if the overhead is spread over multiple vessels).

Cost - Loan Payment: Annual payment for vessel loans, including both principal and interest.

Cost - IFQ Purchase: Cash expense for IFQ allocation purchased specifically for the vessel from a different IFQ shareholder ("arm's length" transactions, in principle). Note that many respondents own IFQ shares. The use ("consumption") of these rights is not accounted for in this analysis. Note also that the sale of IFQ allocation (or the buying or selling of IFQ shares) is not accounted for (as it cannot, in general, be associated with a vessel).

Cost - OC Owner-Captain Time: Estimated opportunity cost of an owner's labor as captain over the year. The survey does not collect this information, instead a value is imputed based on hired crew remuneration and the profitability of the trip (since most labor is compensated on a share system) at the logbook trip level; and then summed to the annual, vessel level. Time spent by an owner as a captain

of for-hire trips or commercial fishing trips not reported to the logbook system is not accounted for (though it would be quite minor). The resulting number is a rough estimate and should be treated as such.

Cost - Depreciation: The estimated contribution in dollar terms of the vessel asset to the production process. The survey does not collect this information; instead a value is calculated as 5% of the vessel's current market value.⁵ The resulting number is a rough estimate and should be treated as such.

Net Cash Flow: Revenue minus the costs for fuel, other supplies, hired crew, vessel repair and maintenance, insurance, overhead, loan payments, and IFQ purchase. The focus is on actual cash transactions/money flows. In-kind contributions to the production process, i.e., the opportunity cost of owner-captain time and depreciation are ignored. The sale of IFQ allocation or shares is also not accounted for, as these transactions cannot be associated with a vessel.

Net Revenue from Operations: Revenue minus the costs for fuel, other supplies, hired crew, vessel repair and maintenance, insurance, overhead, and the opportunity cost of an owner's time as captain as well as the vessel's depreciation. By including in-kind contributions to the production process (opportunity cost of an owner's time and depreciation) and excluding transfer payments (loan payments and IFQ purchase), net revenue from operations is a measure of the inherent productivity, i.e., economic performance, of the commercial fishery. Note that IFQ share ownership is ignored here. See 'Economic Return' below for more discussion of the relationship between IFQ shareholders/transactions and the economics of the commercial fishery.

- **Net Cash Flow and Net Revenue from Operations as Proportion of Vessel Revenue (Margins):** A chart showing Net Cash Flow and Net Revenue from Operations as a share of trip revenue, i.e., the margins of the productive activity after fixed costs are accounted for. The major cost categories that are subtracted from revenue are also displayed in percentage terms. Fuel and Supplies include the cost of Fuel and Other Supplies. Labor includes just Hired Crew costs only for Net Cash Flow and Hired Crew costs and the opportunity cost of an owner's time for Net Revenue from Operations. Fixed costs consist of Vessel Repair & Maintenance, Insurance and Overhead.
- **Economic Return (on Asset Value):** The economic return is calculated by dividing the mean Net Revenue from Operations by the mean Vessel Value. It is critical to note that, practically, this return is shared between owners of vessel capital AND IFQ shares. By purposefully ignoring the IFQ shareholder distribution, the focus is on the real productive capacity of the commercial fishery. All IFQ transactions are zero-sum in that they transfer wealth. The catch share management structure of the fishery allows for the realization of resource rents that will, in all likelihood, accrue to the IFQ shareholders.

Section: Trip-Level Time Series

This section provides selected trip-level summary and trip-level economic results for the years 2014, 2015, and 2016 (current) and a simple three year average. The definitions and caveats

⁵Five percent is a rough estimate. It is based on an author's experience with the Gulf shrimp fishery and the fact that the IRS requires non-fishing vessels to be depreciated over 23 years.

for each result variable are equivalent to and hence reported in the respective trip-level sections. All 2014 and 2015 dollar values are inflation adjusted to nominal 2016 U.S. dollars using the U.S. Bureau of Economic Analysis's Implicit Price Deflator for GDP. Most economic results are expressed as a percent of trip revenue to better facilitate comparison across time. It should be noted that the economic estimates are derived from a sample survey and exhibit significant uncertainty (large confidence intervals). As a result, fluctuating numbers from one year to the next are not necessarily statistically significant and do not necessarily imply that the fishery has changed. For instance, the large 2015 spike in the cost for IFQ allocation purchases (and its effect on trip net cash flow) is partly explained by one very large observation that happened to be randomly sampled in 2015.

Section: Annual, Vessel-Level Time Series

This section provides selected annual, vessel-level summary and annual, vessel-level economic results for the years 2014, 2015, and 2016 (current) and a simple three year average. The definitions and caveats for each result variable are equivalent to and hence reported in the respective annual, vessel-level sections. All 2014 and 2015 dollar values are inflation adjusted to nominal 2016 U.S. dollars using the U.S. Bureau of Economic Analysis's Implicit Price Deflator for GDP. Most economic results are expressed as a percent of annual vessel revenue to better facilitate comparison across time. It should be noted that the economic estimates are derived from a sample survey and exhibit significant uncertainty (large confidence intervals). As a result, fluctuating numbers from one year to the next are not necessarily statistically significant and do not necessarily imply that the fishery has changed. For instance, the reported vessel value decreases substantially from 2014 to 2015 to 2016, while the average vessel characteristics (length, year built) stay nearly constant.

Results

Disclaimer and Overview

All vessel and logbook trip data utilized in this report were pulled from the various databases on May 4, 2018. **The processing of data and the presentation of results are guided by the objective of presenting meaningful economic results. These numbers will differ from similar numbers generated for stock assessments and other management or research purposes. Further, the underlying databases are dynamic and continuously changing.** All dollar values are inflation adjusted to nominal 2016 U.S. dollars using the U.S. Bureau of Economic Analysis' Implicit Price Deflator for GDP.

This technical memorandum reports trip and vessel economic estimates for a select number of domains or Segments of Interest (SOI). A SOI is defined as all trips where at least one pound of fish, which matches the specifications of the domain, was landed. The SOIs reported are either specified on species or species group landed or gear-used. The SOIs featured in this report include:

The Reef Fish fishery (this SOI is inclusive of all the following SOIs, as all the rest are nested within/subsets of the Reef Fish SOI):

1. GOM Reef Fish FMP Fishery: All Gears

SOIs based on gear perspective:

2. GOM Reef Fish FMP Fishery: Vertical Line
3. GOM Reef Fish FMP Fishery: Longline
4. GOM Reef Fish FMP Fishery: Diver

SOIs based on management-approach perspective:

5. GOM IFQ Fishery: All Gears
6. GOM Trips without IFQ Catch Fishery: All Gears

SOIs based on species or species group perspective:

7. GOM IFQ Red Snapper Fishery: All Gears
8. GOM IFQ Grouper-Tilefish Fishery: All Gears
9. GOM IFQ Red Grouper Fishery: All Gears
10. GOM IFQ Gag Grouper Fishery: All Gears
11. GOM IFQ OSWG Fishery: All Gears
12. GOM IFQ DWG Fishery: All Gears
13. GOM IFQ Tilefish Fishery: All Gears
14. GOM Vermilion Snapper Fishery: All Gears
15. GOM Yellowtail Snapper Fishery: All Gears
16. GOM FMP Jacks Fishery: All Gears

The presentation of results is standardized across different SOIs to streamline the results sections. The definitions and caveats for each result variable or graph are only reported in the Methods section in order to keep repetition to a minimum. The results for any one SOI consists of six sections. The first section, Trip-Level Summary, summarizes the SOI at

the trip-level- presenting the aggregate, cleaned logbook data for the particular SOI. The second section, Trip-Level Economics, provides estimated SOI trip economic results based on the trip-level sample survey. The third section, Annual, Vessel-Level Summary, provides information on the vessels within the SOI at the annual-level by aggregating across all the logbook trip data. The section also presents vessel characteristics and permit status gleaned from each vessel's permit application. The fourth section, Annual, Vessel-Level Economics, provides estimated annual economic results for SOI vessels based on the annual sample survey. The fifth section, Trip-Level Time Series, provides selected trip-level summary and economic results for previous years, side-by-side to the current year results and a three year average. The sixth section, Annual, Vessel-Level Time Series, provides the same temporal perspective for selected annual, vessel-level summary and economic results. In both time series sections, the economic results are expressed as a percent of revenue to better facilitate comparison across time. All dollar values are inflation adjusted to nominal 2016 dollars.

A description of all tables and charts that are found in any of these sections is provided in the Methods Section - Standardized Results and Definitions. Note that percentages may not always sum to 100% in the tables and graphs due to rounding.

The reported SOIs were selected among the many possible ones after an extensive evaluation⁶ of the validity and applicability of the economic results, including:

1. The raw data problems specific to the SOI (outliers, frequency of missing values; zeros; etc.);
2. The impact of our standardized cleaning routines (dropping records and imputing missing values);
3. The representativeness (or bias) of the SOI's economic-sample trips or vessels of the SOI population (the logbook and permit application data are a census, so there are many variables available for comparison);
4. The impact of the statistical estimation routines;
5. The economic reasonableness of the aggregate results;
6. The size of the confidence intervals; and
7. A general consistency between the trip-level and vessel-level economic results (as they are based on two different raw data streams). For the trip-level economics, an additional "separate data stream" validation is conducted that compares the economic results for selected vessels (the focus of this entire report) with the trip economics from "volunteer" vessels that fill out the economic section on the logbook report in spite of not being required to.

⁶The evaluation is facilitated by the use of a standardized 6-page "diagnostic results" product that we can quickly generate for any SOI.

SOI: 2016 GOM Reef Fish FMP Fishery: All Gears

Description: This SOI consists of all logbook trips by permitted vessels where at least one pound of fish managed by the GOM Reef Fish FMP was landed in 2016 using any gear type. Species managed include multiple species of snapper, grouper, tilefish, and jacks as well as triggerfish and hogfish. For a complete list of the species, please refer to Appendix 1. For important **disclaimer**, see page 14.

Trip-Level Summary

Effort

Trips	6,918
Vessels	512
Days at Sea	30,550
Crew Days	89,035

Landings (gutted lbs)

<u>Total</u>	15,645,434
SOI	14,950,969
Non-SOI	694,465
% SOI	96%

Percent by Gear

	Trips	SOI lbs
Vertical Line	82%	65%
Longline	12%	34%
Diver	5%	1%
Other	1%	0.7%

Price (mean)

<u>Total</u>	\$3.96
SOI	\$4.07
Non-SOI	\$1.69

Revenue

<u>Total</u>	\$62,020,750
SOI	\$60,844,287
Non-SOI	\$1,176,463
% SOI	98%

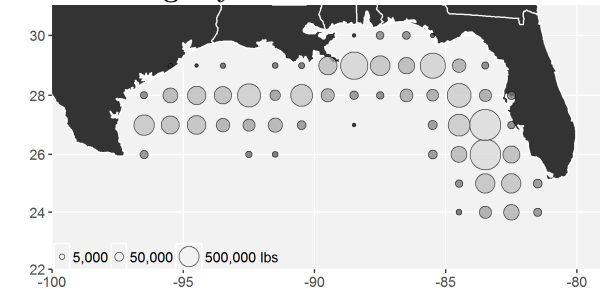
Percent of Revenue by Species Group

Shallow Water Groupers	37%
Shallow Water Snappers	3%
Mid-Shelf Snappers	48%
Deep Water Groupers/Tilefish	8%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	2%
Other Species	0.4%

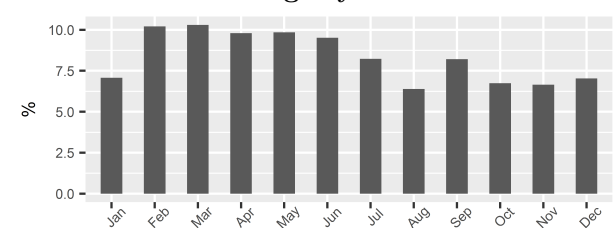
Revenue for Top 5 Species

Red Snapper	\$25,617,136
Red Grouper	\$16,727,197
Gag Grouper	\$4,485,711
Vermilion Snapper	\$4,107,852
Yellowedge Grouper	\$3,270,940

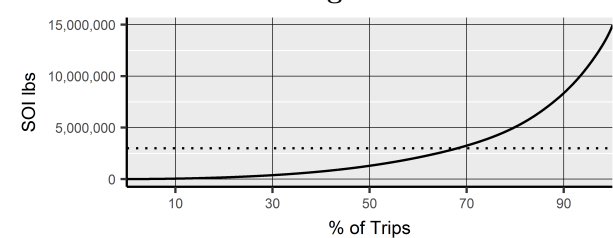
SOI Landings by Area Fished



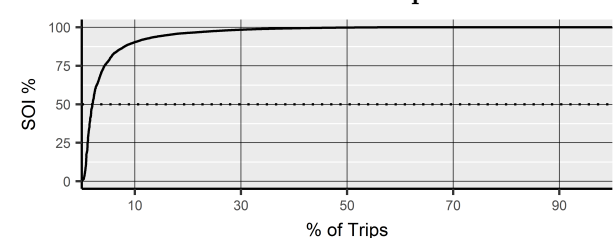
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=6,918)

	Mean	Min	Median	Max
Days at Sea	4.4	1	3	23
Crew Size	2.8	1	3	10
Landings	2,262	2	1,070	23,770
Revenue	\$8,965	\$6	\$3,630	\$97,814
SOI	\$8,795	\$3	\$3,436	\$95,972
% SOI	96%	0.1%	99.8%	100%

SOI: 2016 GOM Reef Fish FMP Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	6,918	-	-	-
Selected	2,065	30%	-	-
Responded	2,048	30%	99%	-
Used	1,948	28%	94%	95%

Economic Results (n=1,948)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	68%	3.5	63%	74%	-
Days at Sea	4.4	0.2	4.1	4.8	3
Crew Size	2.7	0.1	2.6	2.8	3
Fuel Used	179	11	160	198	125
Landings (gutted lbs)	2,043	169	1,763	2,322	943
Total Revenue	8,406	757	7,153	9,660	3,180
Cost					
Fuel	365	21	330	401	258
Bait	303	31	252	353	110
Ice	143	14	120	165	84
Groceries	262	21	227	297	120
Miscellaneous	250	34	193	306	50
Hired Crew	2,277	247	1,868	2,686	750
IFQ Purchase	1,550	236	1,160	1,940	96
OC Owner-Captain Time	630	101	462	798	100
Trip Net Cash Flow	3,257	402	2,592	3,922	970
Trip Net Revenue	4,177	442	3,446	4,909	955

Trip Net Cash Flow and Trip Net Revenue as Proportion of Trip Revenue (Margins)

Revenue 100%	Trip Net Cash Flow 39%	Trip Net Revenue 50%
	IFQ Purchase 18%	
	Labor - Hired 27%	Labor - Hired & Owner 35%
	Fuel & Supplies 16%	Fuel & Supplies 16%

Input Prices

Fuel Price (average): \$2.04 per gallon Hired Crew Wage (implicit): \$251 per crew-day

Productivity Measures

Landings/Fuel Use: 11.4 lbs/gallon Landings/Labor Use: 169 lbs/crew-day

SOI: 2016 GOM Reef Fish FMP Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	512
<u>Trips - Total</u>	<u>8,369</u>
SOI Trips	6,918
Non-SOI Trips	1,451
Days at Sea	32,947
Crew Days	93,956

Landings (gutted lbs)

<u>Total</u>	<u>16,957,132</u>
SOI	14,950,969
Non-SOI	2,006,163
% SOI	88%

Percent by Gear

	Trips	Total lbs
Vertical Line	79%	64%
Longline	10%	31%
Diver	6%	1%
Other	5%	4%

Price (mean)

<u>Total</u>	<u>\$3.84</u>
SOI	\$4.07
Non-SOI	\$2.14

Revenue

<u>Total</u>	<u>\$65,138,736</u>
SOI	\$60,844,287
Non-SOI	\$4,294,449
% SOI	93%

Percent of Revenue by Species Group

Shallow Water Groupers	35%
Shallow Water Snappers	4%
Mid-Shelf Snappers	46%
Deep Water Groupers/Tilefish	8%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	4%
Other Species	0.6%

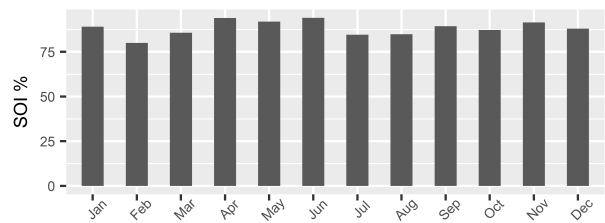
Revenue for Top 5 Species

Red Snapper	\$25,641,191
Red Grouper	\$16,767,027
Gag Grouper	\$4,509,635
Vermilion Snapper	\$4,129,328
Yellowedge Grouper	\$3,279,727

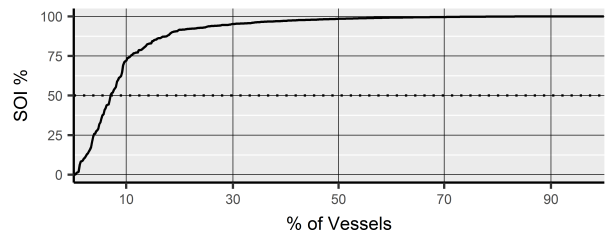
Annual, Vessel Descriptive Statistics (N=512)

	Mean	Min	Median	Max
Trips	16.3	1	13	117
Days at Sea	64.3	1	48	245
Crew Days	183.5	1	112	1,470
Landings	33,119	15	14,519	448,815
Revenue	\$127,224	\$64	\$55,152	\$2,182,950
SOI	\$118,836	\$25	\$39,598	\$2,152,496
% SOI	90.3%	0%	98.5%	100%

SOI Share of Monthly Landings



SOI Share of Revenue Per Vessel



Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	7%
SAT Snapper & Grouper - Limited	0.6%
King Mackerel	42%
Spanish Mackerel	46%
Dolphin-Wahoo	36%
Other Commercial Fishing	18%
For-Hire Fishing	23%

Vessel Characteristics (N=512)

	Mean	Min	Median	Max
Length	38	14	37	69
Year Built	1987	1961	1985	2016
Horsepower	422	12	350	2,000
Fiberglass Hull	93%	-	-	-
Diesel Engine	79%	-	-	-
Ice Refrigeration	97%	-	-	-

SOI: 2016 GOM Reef Fish FMP Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	512	-	-	-
Selected	147	29%	-	-
Responded	130	25%	88%	-
Used	121	24%	82%	93%

Economic Results (n=121)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	78%	3.4	73%	84%	-
For-Hire Active	16%	3.1	11%	21%	-
Days - Commercial Fishing	74	3.8	68	81	55
Days - For-Hire Fishing	10	3	5	15	0
Days - Non-fishing	2	0.4	1	3	0
Vessel Value	85,688	6,327	75,199	96,177	70,000
Has Insurance	38%	4	31%	44%	-
Total Revenue	132,167	16,043	105,572	158,762	76,255
Commercial Fishing	120,155	15,483	94,488	145,822	62,551
For-Hire Fishing	12,012	3,625	6,003	18,021	0
Cost					
Fuel	8,907	832	7,528	10,287	5,968
Other Supplies	14,263	1,152	12,354	16,172	7,410
Hired Crew	32,336	3,942	25,801	38,871	11,000
Vessel Repair & Maintenance	11,271	1,066	9,504	13,039	7,500
Insurance	1,347	200	1,015	1,679	0
Overhead	6,800	749	5,558	8,042	3,600
Loan Payment	1,689	495	869	2,509	0
IFQ Purchase	18,432	2,943	13,553	23,311	1,679
OC Owner-Captain Time	8,825	1,100	7,002	10,648	3,028
Depreciation	4,284	316	3,760	4,809	3,500
Net Cash Flow	37,121	11,023	18,849	55,394	12,292
Net Revenue from Operations*	44,133	11,340	25,333	62,932	9,197

Net Cash Flow and Net Revenue from Operations* as Proportion of Vessel Revenue (Margins)

Revenue 100%	Net Cash Flow 28%	Net Revenue - Operations 33%
	IFQ Purchase 14%	Depreciation 3%
	Loan Payment 1%	Fixed Costs 15%
	Fixed Costs 15%	Labor - Hired & Owner 31%
	Labor - Hired 24%	
	Fuel & Supplies 18%	Fuel & Supplies 18%

Economic Return* (on Vessel Asset Value): 51.5%

* Accruing to vessel owner AND IFQ shareholder. See Definitions.

SOI: 2016 GOM Reef Fish FMP Fishery: All Gears

Trip-Level Time Series

Trip-Level Summary

	2014	2015	2016	Average
Effort				
Trips	6,536	6,800	6,918	6,751
Vessels	532	522	512	522
Days at Sea	30,530	30,480	30,550	30,520
Landings (gutted lbs)				
<u>Total</u>	16,063,839	16,125,290	15,645,434	15,944,854
SOI	15,182,555	15,396,849	14,950,969	15,176,791
Non-SOI	881,284	728,441	694,465	768,063
% SOI	95%	95%	96%	95%
Price (mean)				
<u>Total</u>	\$3.84	\$3.96	\$3.96	\$3.92
SOI	\$3.96	\$4.06	\$4.07	\$4.03
Non-SOI	\$1.64	\$1.73	\$1.69	\$1.69
Revenue				
<u>Total</u>	\$61,643,467	\$63,819,320	\$62,020,750	\$62,494,512
SOI	\$60,197,872	\$62,555,309	\$60,844,287	\$61,199,156
Non-SOI	\$1,445,596	\$1,264,012	\$1,176,463	\$1,295,357
% SOI	98%	98%	98%	98%

Trip-Level Economics

	2014	2015	2016	Average
Number of Observations	1,237	1,787	1,948	
Response Rate (%)	78%	85%	94%	
SOI Trip				
Owner-Operated	73%	66%	68%	69%
Fuel Used per Day at Sea (gallons/day)	46	45	40	44
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	6.8%	4.9%	4.3%	5.3%
Bait	3.1%	3.4%	3.6%	3.4%
Ice	1.4%	1.5%	1.7%	1.5%
Groceries	2.4%	2.4%	3.1%	2.6%
Miscellaneous	2.5%	2.4%	3%	2.6%
Hired Crew	28.2%	25.9%	27.1%	27.1%
IFQ Purchase	14.7%	26.5%	18.4%	19.9%
OC Owner-Captain Time	6.5%	6.3%	7.5%	6.8%
Trip Net Cash Flow	41%	33%	39%	38%
Trip Net Revenue	49%	53%	50%	51%
Labor - Hired & Owner	35%	32%	35%	34%
Fuel & Supplies	16%	15%	16%	16%
Input Prices				
Fuel Price (per gallon)	\$3.53	\$2.53	\$2.04	\$2.70
Hire Crew Wage (per crew-day)	\$330	\$279	\$251	\$287
Productivity Measures				
Landings/Fuel Use (lbs/gallon)	13.3	12.6	11.4	12
Landings/Labor Use (lbs/crew-day)	221	203	169	198

SOI: 2016 GOM Reef Fish FMP Fishery: All Gears
Annual, Vessel-Level Time Series

Annual, Vessel-Level Summary

	2014	2015	2016	Average
Effort				
Vessels	532	522	512	522
Trips - Total	8,015	7,954	8,369	8,113
SOI Trips	6,536	6,800	6,918	6,751
Non-SOI Trips	1,479	1,154	1,451	1,361
Days at Sea	32,899	32,570	32,947	32,805
Landings (gutted lbs)				
Total	17,206,189	17,162,505	16,957,132	17,108,609
SOI	15,182,555	15,396,849	14,950,969	15,176,791
Non-SOI	2,023,634	1,765,656	2,006,163	1,931,818
% SOI	88%	90%	88%	89%
Revenue				
Total	\$64,566,340	\$66,370,950	\$65,138,736	\$65,358,675
SOI	\$60,197,872	\$62,555,309	\$60,844,287	\$61,199,156
Non-SOI	\$4,368,468	\$3,815,641	\$4,294,449	\$4,159,519
% SOI	93%	94%	93%	93%
Vessel Characteristics				
Length	39	38	38	38
Year Built	1987	1987	1987	1987
For-Hire Fishing Permit	24%	24%	23%	24%

Annual, Vessel-Level Economics

	2014	2015	2016	Average
Number of Observations	84	105	121	
Response Rate (%)	62%	75%	82%	
SOI Vessel				
Owner-Operated	78%	70%	78%	75%
For-Hire Active	9%	17%	16%	14%
Vessel Value	\$120,445	\$100,318	\$85,688	\$102,150
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	8.4%	6.1%	6.7%	7.1%
Other Supplies	9.7%	9.4%	10.8%	10%
Hired Crew	26.9%	25.3%	24.5%	25.6%
Vessel Repair & Maintenance	7.8%	6.9%	8.5%	7.7%
Insurance	1.1%	0.8%	1%	1%
Overhead	5.6%	5.5%	5.1%	5.4%
Loan Payment	1%	1.4%	1.3%	1.2%
IFQ Purchase	11.2%	24.2%	13.9%	16.4%
OC Owner-Captain Time	5.6%	5.5%	6.7%	5.9%
Net Cash Flow	29%	21%	28%	26%
Net Revenue for Operations*	31%	38%	33%	34%
Depreciation	3.7%	3%	3.2%	3.3%
Fixed Costs	14%	13%	15%	14%
Labor - Hired & Owner	32%	31%	31%	31%
Fuel & Supplies	18%	15%	18%	17%
Economic Return* (on asset value)	42.5%	61.7%	51.5%	51.9%

SOI: 2016 GOM Reef Fish FMP Fishery: Vertical Line

Description: This SOI consists of all logbook trips by permitted vessels where at least one pound of fish managed by the GOM Reef Fish FMP was landed in 2016 using vertical line gears, including hand line, rod and reel, and electric and bandit gear. Species managed include multiple species of snapper, grouper, tilefish, and jacks as well as triggerfish and hogfish. For a complete list of the species, please refer to Appendix 1. For important **disclaimer**, see page 14.

Trip-Level Summary

Effort

Trips	5,677
Vessels	428
Days at Sea	20,425
Crew Days	54,681

Landings (guttled lbs)

<u>Total</u>	10,203,918
SOI	9,644,332
Non-SOI	559,587
% SOI	95%

Percent by Gear

	Trips	SOI lbs
Vertical Line	100%	100%
Longline	0%	0%
Diver	0.3%	0%
Other	0.1%	0%

Price (mean)

<u>Total</u>	\$3.92
SOI	\$4.04
Non-SOI	\$1.69

Revenue

<u>Total</u>	\$39,952,301
SOI	\$39,006,507
Non-SOI	\$945,794
% SOI	98%

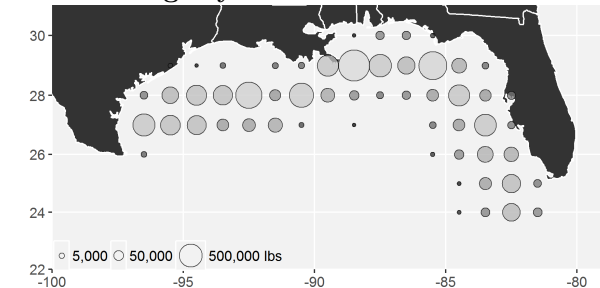
Percent of Revenue by Species Group

Shallow Water Groupers	19%
Shallow Water Snappers	4%
Mid-Shelf Snappers	72%
Deep Water Groupers/Tilefish	0.9%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	3%
Other Species	0.4%

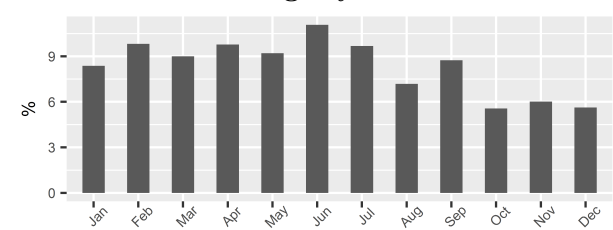
Revenue for Top 5 Species

Red Snapper	\$24,597,045
Red Grouper	\$4,478,250
Vermilion Snapper	\$4,088,219
Gag Grouper	\$2,338,504
Yellowtail Snapper	\$995,875

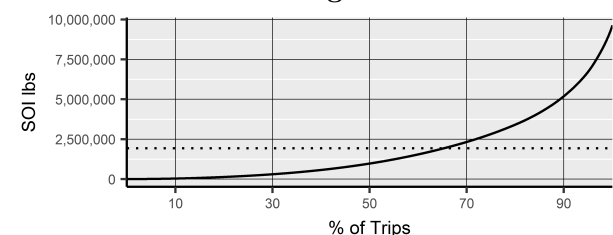
SOI Landings by Area Fished



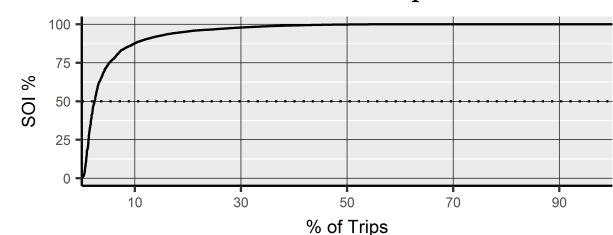
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=5,677)

	Mean	Min	Median	Max
Days at Sea	3.6	1	3	17
Crew Size	2.7	1	2	10
Landings	1,797	2	943	19,578
Revenue	\$7,038	\$6	\$3,110	\$95,226
SOI	\$6,871	\$3	\$2,945	\$95,158
% SOI	95%	0.1%	99.8%	100%

SOI: 2016 GOM Reef Fish FMP Fishery: Vertical Line

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	5,677	-	-	-
Selected	1,655	29%	-	-
Responded	1,652	29%	100%	-
Used	1,562	28%	94%	95%

Economic Results (n=1,562)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	72%	3.6	66%	78%	-
Days at Sea	3.8	0.2	3.5	4.2	3
Crew Size	2.6	0.1	2.5	2.8	2
Fuel Used	147	10	131	163	120
Landings (gutted lbs)	1,651	159	1,387	1,914	883
Total Revenue	6,761	736	5,542	7,981	3,000
Cost					
Fuel	302	19	271	333	244
Bait	198	18	169	227	108
Ice	118	14	95	141	84
Groceries	188	14	165	211	120
Miscellaneous	178	29	129	227	40
Hired Crew	1,686	228	1,307	2,064	700
IFQ Purchase	1,364	273	911	1,816	68
OC Owner-Captain Time	603	102	434	772	128
Trip Net Cash Flow	2,728	436	2,005	3,450	885
Trip Net Revenue	3,489	470	2,709	4,268	843

Trip Net Cash Flow and Trip Net Revenue as Proportion of Trip Revenue (Margins)

Revenue 100%	Trip Net Cash Flow 40%	Trip Net Revenue 52%
	IFQ Purchase 20%	Labor - Hired & Owner 34%
	Labor - Hired 25%	
	Fuel & Supplies 15%	Fuel & Supplies 15%

Input Prices

Fuel Price (average): \$2.05 per gallon Hired Crew Wage (implicit): \$231 per crew-day

Productivity Measures

Landings/Fuel Use: 11.2 lbs/gallon Landings/Labor Use: 164 lbs/crew-day

SOI: 2016 GOM Reef Fish FMP Fishery: Vertical Line

Annual, Vessel-Level Summary

Effort

Vessels	428
<u>Trips - Total</u>	<u>7,232</u>
SOI Trips	5,677
Non-SOI Trips	1,555
Days at Sea	23,440
Crew Days	61,822

Landings (gutted lbs)

<u>Total</u>	<u>11,895,439</u>
SOI	9,644,332
Non-SOI	2,251,107
% SOI	81%

Percent by Gear

Vertical Line	90%	91%
Longline	1%	3%
Diver	3%	0.9%
Other	5%	5%

Price (mean)

<u>Total</u>	<u>\$3.75</u>
SOI	\$4.04
Non-SOI	\$2.48

Revenue

<u>Total</u>	<u>\$44,594,785</u>
SOI	\$39,006,507
Non-SOI	\$5,588,278
% SOI	87%

Percent of Revenue by Species Group

Shallow Water Groupers	19%
Shallow Water Snappers	5%
Mid-Shelf Snappers	65%
Deep Water Groupers/Tilefish	2%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	6%
Other Species	0.6%

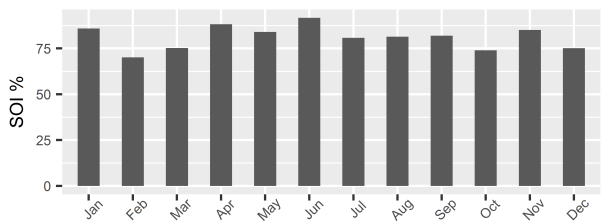
Revenue for Top 5 Species

Red Snapper	\$24,866,740
Red Grouper	\$5,092,744
Vermilion Snapper	\$4,116,586
Gag Grouper	\$2,511,181
King and Cero Mackerel	\$1,853,310

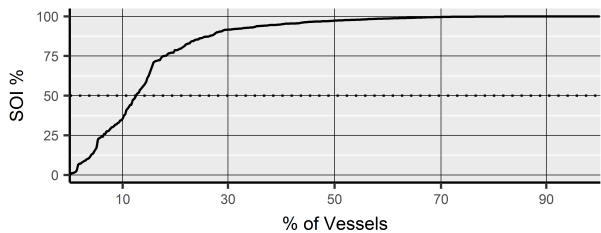
Annual, Vessel Descriptive Statistics (N=428)

	Mean	Min	Median	Max
Trips	16.9	1	12	117
Days at Sea	54.8	1	41	245
Crew Days	144.4	1	92	1,470
Landings	27,793	15	12,170	448,815
Revenue	\$104,193	\$64	\$39,648	\$2,182,950
SOI	\$91,137	\$64	\$29,134	\$2,152,496
% SOI	85.3%	0.2%	97.3%	100%

SOI Share of Monthly Landings



SOI Share of Revenue Per Vessel



Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	7%
SAT Snapper & Grouper - Limited	0.7%
King Mackerel	48%
Spanish Mackerel	49%
Dolphin-Wahoo	35%
Other Commercial Fishing	14%
For-Hire Fishing	27%

Vessel Characteristics (N=428)

	Mean	Min	Median	Max
Length	37	14	36	69
Year Built	1988	1961	1986	2016
Horsepower	438	12	375	2,000
Fiberglass Hull	94%	-	-	-
Diesel Engine	78%	-	-	-
Ice Refrigeration	96%	-	-	-

SOI: 2016 GOM Reef Fish FMP Fishery: Vertical Line

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	428	-	-	-
Selected	121	28%	-	-
Responded	107	25%	88%	-
Used	98	23%	81%	92%

Economic Results (n=98)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	83%	3.5	77%	89%	-
For-Hire Active	19%	3.6	13%	25%	-
Days - Commercial Fishing	68	4.2	61	75	46
Days - For-Hire Fishing	13	3.5	7	18	0
Days - Non-fishing	2	0.5	1	3	0
Vessel Value	86,607	7,412	74,297	98,917	70,000
Has Insurance	40%	4.5	32%	47%	-
Total Revenue	114,963	18,869	83,623	146,302	67,922
Commercial Fishing	100,570	18,168	70,396	130,745	41,100
For-Hire Fishing	14,392	4,298	7,255	21,530	0
Cost					
Fuel	8,824	970	7,212	10,435	5,795
Other Supplies	11,896	1,086	10,092	13,699	6,962
Hired Crew	24,543	4,210	17,550	31,536	7,500
Vessel Repair & Maintenance	10,136	1,165	8,201	12,070	7,000
Insurance	1,332	214	977	1,687	0
Overhead	6,569	818	5,211	7,927	3,504
Loan Payment	2,075	607	1,067	3,084	0
IFQ Purchase	14,787	3,343	9,234	20,339	1,073
OC Owner-Captain Time	8,437	1,099	6,612	10,262	3,624
Depreciation	4,330	371	3,715	4,946	3,500
Net Cash Flow	34,802	13,571	12,261	57,342	10,293
Net Revenue from Operations*	38,896	13,864	15,871	61,922	5,068

Net Cash Flow and Net Revenue from Operations* as Proportion of Vessel Revenue (Margins)

Revenue 100%	Net Cash Flow 30%	Net Revenue - Operations 34%
	IFQ Purchase 13%	Depreciation 4%
	Loan Payment 2%	Fixed Costs 16%
	Fixed Costs 16%	Labor - Hired & Owner 29%
	Labor - Hired 21%	
	Fuel & Supplies 18%	Fuel & Supplies 18%

Economic Return* (on Vessel Asset Value): 44.9%

* Accruing to vessel owner AND IFQ shareholder. See Definitions.

SOI: 2016 GOM Reef Fish FMP Fishery: Vertical Line

Trip-Level Time Series

Trip-Level Summary

	2014	2015	2016	Average
Effort				
Trips	5,440	5,666	5,677	5,594
Vessels	456	443	428	442
Days at Sea	21,804	21,161	20,425	21,130
Landings (gutted lbs)				
<u>Total</u>	<u>10,343,528</u>	<u>10,946,373</u>	<u>10,203,918</u>	<u>10,497,940</u>
SOI	9,542,823	10,323,059	9,644,332	9,836,738
Non-SOI	800,705	623,314	559,587	661,202
% SOI	92%	94%	95%	94%
Price (mean)				
<u>Total</u>	<u>\$3.81</u>	<u>\$3.93</u>	<u>\$3.92</u>	<u>\$3.89</u>
SOI	\$3.98	\$4.06	\$4.04	\$4.03
Non-SOI	\$1.70	\$1.75	\$1.69	\$1.71
Revenue				
<u>Total</u>	<u>\$39,414,348</u>	<u>\$43,027,237</u>	<u>\$39,952,301</u>	<u>\$40,797,962</u>
SOI	\$38,050,277	\$41,935,196	\$39,006,507	\$39,663,993
Non-SOI	\$1,364,071	\$1,092,041	\$945,794	\$1,133,969
% SOI	97%	97%	98%	97%

Trip-Level Economics

	2014	2015	2016	Average
Number of Observations	1,033	1,510	1,562	
Response Rate (%)	80%	85%	94%	
SOI Trip				
Owner-Operated	79%	69%	72%	73.3%
Fuel Used per Day at Sea (gallons/day)	41	44	39	41
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	6.8%	4.6%	4.5%	5.3%
Bait	2.5%	2.9%	2.9%	2.8%
Ice	1.4%	1.4%	1.7%	1.5%
Groceries	1.9%	1.9%	2.8%	2.2%
Miscellaneous	2.6%	2.2%	2.6%	2.5%
Hired Crew	25%	23.6%	24.9%	24.5%
IFQ Purchase	17.5%	30.2%	20.2%	22.6%
OC Owner-Captain Time	8.7%	7%	8.9%	8.2%
Trip Net Cash Flow	42%	33%	40%	38%
Trip Net Revenue	51%	56%	52%	53%
Labor - Hired & Owner	34%	31%	34%	33%
Fuel & Supplies	15%	13%	15%	14%
Input Prices				
Fuel Price (per gallon)	\$3.56	\$2.54	\$2.05	\$2.72
Hire Crew Wage (per crew-day)	\$297	\$277	\$231	\$268
Productivity Measures				
Landings/Fuel Use (lbs/gallon)	13.2	13.3	11.2	13
Landings/Labor Use (lbs/crew-day)	210	214	164	196

SOI: 2016 GOM Reef Fish FMP Fishery: Vertical Line
Annual, Vessel-Level Time Series

Annual, Vessel-Level Summary

	2014	2015	2016	Average
Effort				
Vessels	456	443	428	442
Trips - Total	6,981	6,981	7,232	7,065
SOI Trips	5,440	5,666	5,677	5,594
Non-SOI Trips	1,541	1,315	1,555	1,470
Days at Sea	25,207	24,008	23,440	24,218
Landings (gutted lbs)				
Total	12,072,716	12,407,589	11,895,439	12,125,248
SOI	9,542,823	10,323,059	9,644,332	9,836,738
Non-SOI	2,529,893	2,084,530	2,251,107	2,288,510
% SOI	79%	83%	81%	81%
Revenue				
Total	\$44,641,224	\$47,258,573	\$44,594,785	\$45,498,194
SOI	\$38,050,277	\$41,935,196	\$39,006,507	\$39,663,993
Non-SOI	\$6,590,947	\$5,323,378	\$5,588,278	\$5,834,201
% SOI	85%	89%	87%	87%
Vessel Characteristics				
Length	38	38	37	38
Year Built	1987	1987	1988	1987
For-Hire Fishing Permit	27%	26%	27%	27%

Annual, Vessel-Level Economics

	2014	2015	2016	Average
Number of Observations	69	92	98	
Response Rate (%)	62%	76%	81%	
SOI Vessel				
Owner-Operated	81%	74%	83%	79%
For-Hire Active	9%	20%	19%	16%
Vessel Value	\$94,868	\$99,371	\$86,607	\$93,615
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	8.8%	6.1%	7.7%	7.5%
Other Supplies	9.1%	8.9%	10.3%	9.4%
Hired Crew	21.8%	24.7%	21.3%	22.6%
Vessel Repair & Maintenance	8.7%	7.3%	8.8%	8.3%
Insurance	1.2%	0.9%	1.2%	1.1%
Overhead	6.1%	5.4%	5.7%	5.7%
Loan Payment	1.2%	1.7%	1.8%	1.6%
IFQ Purchase	11.9%	26.7%	12.9%	17.2%
OC Owner-Captain Time	7.1%	6%	7.3%	6.8%
Net Cash Flow	31%	18%	30%	26%
Net Revenue for Operations*	34%	37%	34%	35%
Depreciation	3.6%	3.3%	3.8%	3.6%
Fixed Costs	16%	14%	16%	15%
Labor - Hired & Owner	29%	31%	29%	30%
Fuel & Supplies	18%	15%	18%	17%
Economic Return* (on asset value)	46.1%	56.2%	44.9%	49.1%

SOI: 2016 GOM Reef Fish FMP Fishery: Longline

Description: This SOI consists of all logbook trips by permitted vessels where at least one pound of fish managed by the GOM Reef Fish FMP was landed in 2016 using longline gear. Species managed include multiple species of snapper, grouper, tilefish, and jacks as well as triggerfish and hogfish. For a complete list of the species, please refer to Appendix 1. Caution, economic results are based on very small samples. For important **disclaimer**, see page 14.

Trip-Level Summary

Effort

Trips	813
Vessels	71
Days at Sea	9,223
Crew Days	31,884

Landings (guttled lbs)

<u>Total</u>	5,181,947
SOI	5,057,384
Non-SOI	124,563
% SOI	98%

Percent by Gear

	Trips	SOI lbs
Vertical Line	0%	0%
Longline	100%	100%
Diver	0%	0%
Other	0%	0%

Price (mean)

<u>Total</u>	\$4.07
SOI	\$4.12
Non-SOI	\$1.82

Revenue

<u>Total</u>	\$21,066,580
SOI	\$20,840,428
Non-SOI	\$226,152
% SOI	99%

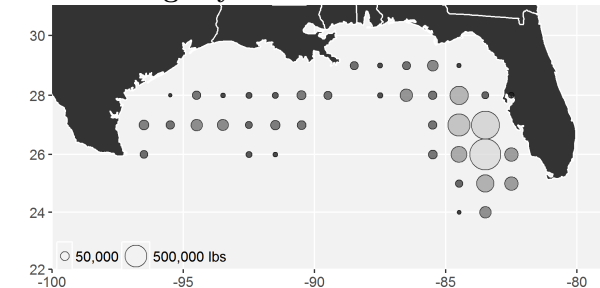
Percent of Revenue by Species Group

Shallow Water Groupers	69%
Shallow Water Snappers	1%
Mid-Shelf Snappers	5%
Deep Water Groupers/Tilefish	23%
Grunts/Porgies/Triggerfish	0.4%
Mackerels/Dolphinfish/Jacks	0.3%
Other Species	0.5%

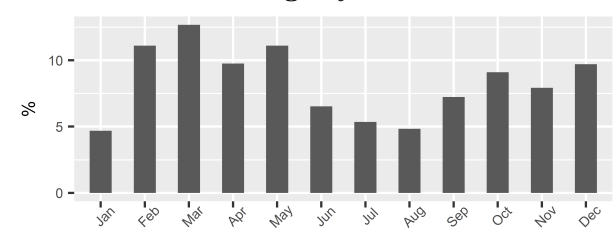
Revenue for Top 5 Species

Red Grouper	\$11,812,123
Yellowedge Grouper	\$3,203,475
Gag Grouper	\$1,949,552
Tilefish	\$1,136,921
Red Snapper	\$960,860

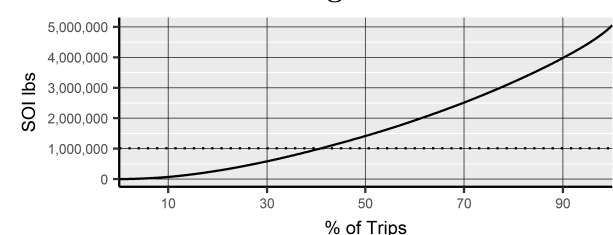
SOI Landings by Area Fished



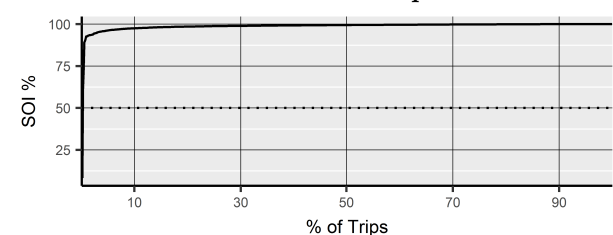
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=813)

	Mean	Min	Median	Max
Days at Sea	11.3	1	12	23
Crew Size	3.4	1	3	6
Landings	6,374	10	5,980	23,770
Revenue	\$25,912	\$33	\$24,152	\$97,814
SOI	\$25,634	\$33	\$23,847	\$95,972
% SOI	99%	8.2%	99.5%	100%

SOI: 2016 GOM Reef Fish FMP Fishery: Longline

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	813	-	-	-
Selected	245	30%	-	-
Responded	231	28%	94%	-
Used	223	27%	91%	97%

Economic Results (n=223)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	32%	9.1	17%	48%	-
Days at Sea	10.7	0.3	10.2	11.2	11
Crew Size	3.1	0.1	3	3.3	3
Fuel Used	472	29	421	522	450
Landings (gutted lbs)	5,963	376	5,313	6,613	5,774
Total Revenue	24,692	1,760	21,648	27,736	23,964
Cost					
Fuel	918	55	823	1,013	850
Bait	1,272	78	1,137	1,407	1,360
Ice	404	35	344	465	360
Groceries	948	59	847	1,049	900
Miscellaneous	903	156	633	1,173	600
Hired Crew	7,736	668	6,581	8,890	7,088
IFQ Purchase	3,881	535	2,956	4,806	3,370
OC Owner-Captain Time	1,013	423	282	1,744	0
Trip Net Cash Flow	8,631	1,059	6,800	10,461	7,425
Trip Net Revenue	11,498	1,044	9,693	13,304	10,881

Trip Net Cash Flow and Trip Net Revenue as Proportion of Trip Revenue (Margins)

Revenue 100%	Trip Net Cash Flow 35%	Trip Net Revenue 47%
	IFQ Purchase 16%	
	Labor - Hired 31%	Labor - Hired & Owner 35%
	Fuel & Supplies 18%	Fuel & Supplies 18%

Input Prices

Fuel Price (average): \$1.95 per gallon

Hired Crew Wage (implicit): \$256 per crew-day

Productivity Measures

Landings/Fuel Use: 12.6 lbs/gallon

Landings/Labor Use: 177 lbs/crew-day

SOI: 2016 GOM Reef Fish FMP Fishery: Longline

Annual, Vessel-Level Summary

Effort

Vessels	71
<u>Trips - Total</u>	<u>911</u>
SOI Trips	813
Non-SOI Trips	98
Days at Sea	9,714
Crew Days	33,117

Landings (gutted lbs)

<u>Total</u>	<u>5,518,826</u>
SOI	5,057,384
Non-SOI	461,442
% SOI	92%

Percent by Gear

	Trips	Total lbs
Vertical Line	10%	6%
Longline	89%	94%
Diver	0%	0%
Other	0.5%	0.3%

Price (mean)

<u>Total</u>	<u>\$4.08</u>
SOI	\$4.12
Non-SOI	\$3.61

Revenue

<u>Total</u>	<u>\$22,506,765</u>
SOI	\$20,840,428
Non-SOI	\$1,666,337
% SOI	93%

Percent of Revenue by Species Group

Shallow Water Groupers	66%
Shallow Water Snappers	1%
Mid-Shelf Snappers	9%
Deep Water Groupers/Tilefish	22%
Grunts/Porgies/Triggerfish	0.4%
Mackerels/Dolphinfish/Jacks	0.5%
Other Species	0.5%

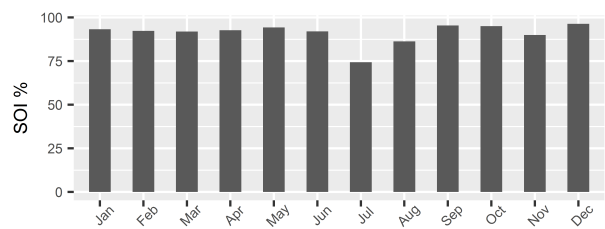
Revenue for Top 5 Species

Red Grouper	\$11,960,575
Yellowedge Grouper	\$3,220,487
Gag Grouper	\$1,958,948
Red Snapper	\$1,930,794
Tilefish	\$1,195,909

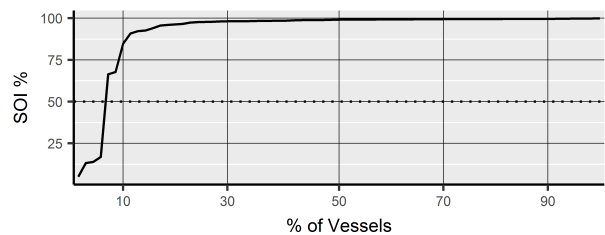
Annual, Vessel Descriptive Statistics (N=71)

	Mean	Min	Median	Max
Trips	12.8	1	13	43
Days at Sea	136.8	16	140	225
Crew Days	466.4	64	456	1,123
Landings	77,730	6,699	79,429	179,002
Revenue	\$316,997	\$25,831	\$319,769	\$801,516
SOI	\$293,527	\$14,528	\$308,888	\$729,118
% SOI	92.5%	5%	99.1%	99.9%

SOI Share of Monthly Landings



SOI Share of Revenue Per Vessel



Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	7%
SAT Snapper & Grouper - Limited	0%
King Mackerel	17%
Spanish Mackerel	34%
Dolphin-Wahoo	51%
Other Commercial Fishing	42%
For-Hire Fishing	3%

Vessel Characteristics (N=71)

	Mean	Min	Median	Max
Length	47	32	47	69
Year Built	1981	1967	1980	2009
Horsepower	318	50	285	1,250
Fiberglass Hull	90%	-	-	-
Diesel Engine	100%	-	-	-
Ice Refrigeration	100%	-	-	-

SOI: 2016 GOM Reef Fish FMP Fishery: Longline

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	71	-	-	-
Selected	22	31%	-	-
Responded	18	25%	82%	-
Used	18	25%	82%	100%

Economic Results (n=18)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	39%	10.2	21%	57%	-
For-Hire Active	0%	0	0%	0%	-
Days - Commercial Fishing	143	10.5	125	161	147
Days - For-Hire Fishing	0	0	0	0	0
Days - Non-fishing	0	0	0	0	0
Vessel Value	89,865	9,771	72,868	106,862	80,000
Has Insurance	22%	8.7	7%	37%	-
Total Revenue	283,584	30,246	230,968	336,199	269,156
Commercial Fishing	283,584	30,246	230,968	336,199	269,156
For-Hire Fishing	0	0	0	0	0
Cost					
Fuel	11,587	963	9,913	13,262	11,964
Other Supplies	35,112	4,564	27,172	43,051	27,860
Hired Crew	91,167	11,271	71,561	110,774	73,210
Vessel Repair & Maintenance	21,295	2,715	16,572	26,017	17,760
Insurance	1,824	744	529	3,119	0
Overhead	10,550	2,279	6,586	14,514	6,500
Loan Payment	0	0	0	0	0
IFQ Purchase	50,548	7,735	37,093	64,003	29,637
OC Owner-Captain Time	13,346	5,079	4,510	22,181	0
Depreciation	4,493	489	3,643	5,343	4,000
Net Cash Flow	61,501	12,179	40,313	82,688	55,854
Net Revenue from Operations*	94,210	15,221	67,732	120,688	81,054

Net Cash Flow and Net Revenue from Operations* as Proportion of Vessel Revenue (Margins)

Revenue 100%	Net Cash Flow 22%	Net Revenue - Operations 33%
	IFQ Purchase 18%	
	Loan Payment 0%	Depreciation 2%
	Fixed Costs 12%	Fixed Costs 12%
	Labor - Hired 32%	Labor - Hired & Owner 37%
	Fuel & Supplies 16%	

Economic Return* (on Vessel Asset Value): 104.8%

* Accruing to vessel owner AND IFQ shareholder. See Definitions.

SOI: 2016 GOM Reef Fish FMP Fishery: Longline

Trip-Level Time Series

Trip-Level Summary

	2014	2015	2016	Average
Effort				
Trips	726	736	813	758
Vessels	66	64	71	67
Days at Sea	7,883	8,556	9,223	8,554
Landings (guttled lbs)				
<u>Total</u>	5,415,610	4,924,878	5,181,947	5,174,145
SOI	5,308,281	4,811,988	5,057,384	5,059,218
Non-SOI	107,329	112,890	124,563	114,927
% SOI	98%	98%	98%	98%
Price (mean)				
<u>Total</u>	\$3.89	\$4.03	\$4.07	\$4
SOI	\$3.93	\$4.08	\$4.12	\$4.04
Non-SOI	\$1.94	\$2.19	\$1.82	\$1.98
Revenue				
<u>Total</u>	\$21,098,007	\$19,869,697	\$21,066,580	\$20,678,095
SOI	\$20,889,837	\$19,622,533	\$20,840,428	\$20,450,933
Non-SOI	\$208,170	\$247,164	\$226,152	\$227,162
% SOI	99%	99%	99%	99%

Trip-Level Economics

	2014	2015	2016	Average
Number of Observations	151	140	223	
Response Rate (%)	68%	79%	91%	
SOI Trip				
Owner-Operated	22%	15%	32%	23%
Fuel Used per Day at Sea (gallons/day)	55	49	44	49
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	6.3%	5.1%	3.7%	5%
Bait	4.1%	5.5%	5.2%	4.9%
Ice	1.6%	1.8%	1.6%	1.7%
Groceries	3.3%	3.9%	3.8%	3.7%
Miscellaneous	2.2%	3.1%	3.7%	3%
Hired Crew	33%	32.8%	31.3%	32.4%
IFQ Purchase	9.8%	16%	15.7%	13.8%
OC Owner-Captain Time	2.3%	2.8%	4.1%	3.1%
Trip Net Cash Flow	40%	32%	35%	36%
Trip Net Revenue	47%	45%	47%	46%
Labor - Hired & Owner	35%	36%	35%	35.3%
Fuel & Supplies	18%	19%	18%	18%
Input Prices				
Fuel Price (per gallon)	\$3.41	\$2.44	\$1.95	\$2.60
Hire Crew Wage (per crew-day)	\$283	\$246	\$256	\$262
Productivity Measures				
Landings/Fuel Use (lbs/gallon)	14	11.8	12.6	13
Landings/Labor Use (lbs/crew-day)	210	176	177	188

SOI: 2016 GOM Reef Fish FMP Fishery: Longline
Annual, Vessel-Level Time Series

Annual, Vessel-Level Summary

	2014	2015	2016	Average
Effort				
Vessels	66	64	71	67
Trips - Total	822	787	911	840
SOI Trips	726	736	813	758
Non-SOI Trips	96	51	98	82
Days at Sea	8,497	8,773	9,714	8,995
Landings (gutted lbs)				
Total	5,673,382	5,062,485	5,518,826	5,418,231
SOI	5,308,281	4,811,988	5,057,384	5,059,218
Non-SOI	365,101	250,497	461,442	359,013
% SOI	94%	95%	92%	94%
Revenue				
Total	\$22,051,584	\$20,451,931	\$22,506,765	\$21,670,093
SOI	\$20,889,837	\$19,622,533	\$20,840,428	\$20,450,933
Non-SOI	\$1,161,747	\$829,398	\$1,666,337	\$1,219,161
% SOI	95%	96%	93%	95%
Vessel Characteristics				
Length	48	47	47	47
Year Built	1981	1981	1981	1981
For-Hire Fishing Permit	3%	3%	3%	3%

Annual, Vessel-Level Economics

	2014	2015	2016	Average
Number of Observations	12	9	18	
Response Rate (%)	60%	69%	82%	
SOI Vessel				
Owner-Operated	33%	11%	39%	28%
For-Hire Active	0%	0%	0%	0%
Vessel Value	\$305,920	\$143,522	\$89,865	\$179,769
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	6.3%	5.4%	4.1%	5.3%
Other Supplies	12.9%	11.9%	12.4%	12.4%
Hired Crew	36.9%	27%	32.1%	32%
Vessel Repair & Maintenance	6.3%	5.3%	7.5%	6.4%
Insurance	0.7%	0.3%	0.6%	0.5%
Overhead	3%	6.2%	3.7%	4.3%
Loan Payment	0.1%	0%	0%	0%
IFQ Purchase	12.5%	12.3%	17.8%	14.2%
OC Owner-Captain Time	1.8%	1.8%	4.7%	2.8%
Net Cash Flow	21%	32%	22%	25%
Net Revenue for Operations*	28%	40%	33%	34%
Depreciation	3.9%	1.9%	1.6%	2.5%
Fixed Costs	10%	12%	12%	11%
Labor - Hired & Owner	39%	29%	37%	35%
Fuel & Supplies	19%	17%	16%	17%
Economic Return* (on asset value)	36.3%	103.8%	104.8%	81.6%

SOI: 2016 GOM Reef Fish FMP Fishery: Diver

Description: This SOI consists of all logbook trips by permitted vessels where at least one pound of fish managed by the GOM Reef Fish FMP was landed in 2016 using diving gear. Species managed include multiple species of snapper, grouper, tilefish, and jacks as well as triggerfish and hogfish. For a complete list of the species, please refer to Appendix 1. Caution, economic results are based on very small samples. For important **disclaimer**, see page 14.

Trip-Level Summary

Effort

Trips	438
Vessels	50
Days at Sea	666
Crew Days	1,909

Landings (guttled lbs)

<u>Total</u>	187,998
SOI	147,943
Non-SOI	40,054
% SOI	79%

Percent by Gear

	Trips	SOI lbs
Vertical Line	14%	0%
Longline	0%	0%
Diver	86%	100%
Other	0%	0%

Price (mean)

<u>Total</u>	\$3.94
SOI	\$4.00
Non-SOI	\$3.70

Revenue

<u>Total</u>	\$740,198
SOI	\$592,009
Non-SOI	\$148,189
% SOI	80%

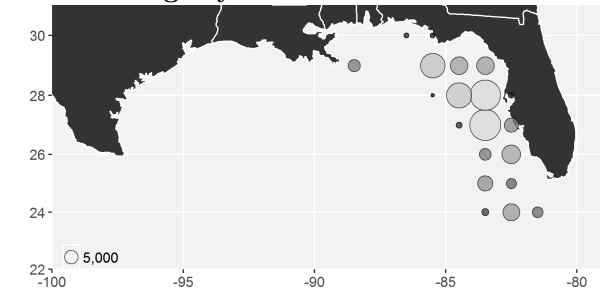
Percent of Revenue by Species Group

Shallow Water Groupers	47%
Shallow Water Snappers	10%
Mid-Shelf Snappers	17%
Deep Water Groupers/Tilefish	1%
Grunts/Porgies/Triggerfish	16%
Mackerels/Dolphinfish/Jacks	6%
Other Species	3%

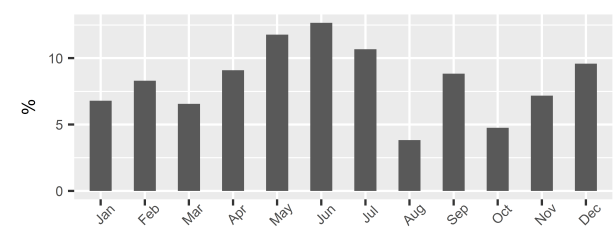
Revenue for Top 5 Species

Gag Grouper	\$250,023
Red Snapper	\$119,556
Hogfish	\$111,196
Gray Snapper	\$65,443
Red Grouper	\$62,840

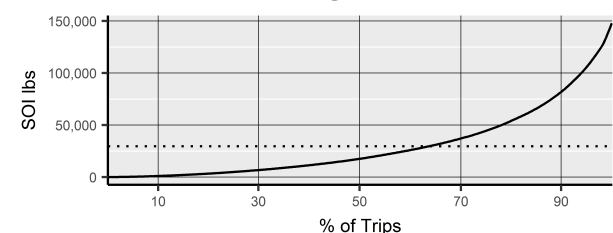
SOI Landings by Area Fished



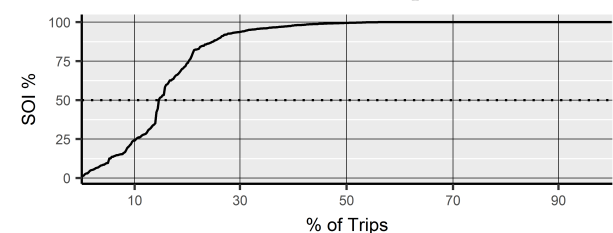
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=438)

	Mean	Min	Median	Max
Days at Sea	1.5	1	1	10
Crew Size	2.9	1	3	8
Landings	429	7	228	3,214
Revenue	\$1,690	\$36	\$937	\$12,943
SOI	\$1,352	\$26	\$702	\$12,891
% SOI	84%	1.2%	99.5%	100%

SOI: 2016 GOM Reef Fish FMP Fishery: Diver

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	438	-	-	-
Selected	170	39%	-	-
Responded	170	39%	100%	-
Used	169	39%	99%	99%

Economic Results (n=169)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	99%	2.3	95%	103%	-
Days at Sea	1.6	0.3	1.2	2.1	1
Crew Size	3.1	0.2	2.8	3.4	3
Fuel Used	88	14	62	113	65
Landings (gutted lbs)	551	139	307	796	264
Total Revenue	2,470	592	1,431	3,508	1,253
Cost					
Fuel	229	46	149	310	166
Bait	5	5	-5	14	0
Ice	20	6	9	30	0
Groceries	43	10	26	60	30
Miscellaneous	57	16	28	86	30
Hired Crew	786	221	397	1,174	378
IFQ Purchase	141	97	-28	311	21
OC Owner-Captain Time	381	82	237	525	217
Trip Net Cash Flow	1,190	332	607	1,772	434
Trip Net Revenue	950	258	497	1,403	335

Trip Net Cash Flow and Trip Net Revenue as Proportion of Trip Revenue (Margins)

Revenue 100%	Trip Net Cash Flow 48%	Trip Net Revenue 38%
	IFQ Purchase 6%	Labor - Hired & Owner 47%
	Labor - Hired 32%	
	Fuel & Supplies 14%	Fuel & Supplies 14%

Input Prices

Fuel Price (average): \$2.62 per gallon Hired Crew Wage (implicit): \$228 per crew-day

Productivity Measures

Landings/Fuel Use: 6.3 lbs/gallon Landings/Labor Use: 109 lbs/crew-day

SOI: 2016 GOM Reef Fish FMP Fishery: Diver

Annual, Vessel-Level Summary

Effort

Vessels	50
<u>Trips - Total</u>	<u>908</u>
SOI Trips	438
Non-SOI Trips	470
Days at Sea	1,584
Crew Days	4,062

Landings (gutted lbs)

<u>Total</u>	<u>431,437</u>
SOI	147,943
Non-SOI	283,494
% SOI	34%

Percent by Gear

	Trips	Total lbs
Vertical Line	48%	61%
Longline	0%	0%
Diver	52%	39%
Other	0.2%	0%

Price (mean)

<u>Total</u>	<u>\$3.73</u>
SOI	\$4.00
Non-SOI	\$3.58

Revenue

<u>Total</u>	<u>\$1,608,074</u>
SOI	\$592,009
Non-SOI	\$1,016,065
% SOI	37%

Percent of Revenue by Species Group

Shallow Water Groupers	46%
Shallow Water Snappers	9%
Mid-Shelf Snappers	19%
Deep Water Groupers/Tilefish	4%
Grunts/Porgies/Triggerfish	9%
Mackerels/Dolphinfish/Jacks	9%
Other Species	3%

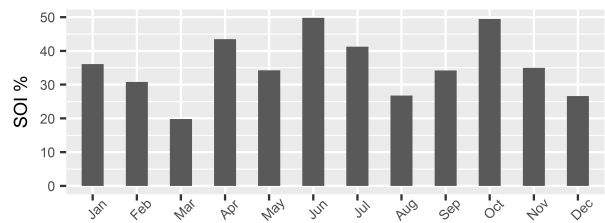
Revenue for Top 5 Species

Gag Grouper	\$444,527
Red Snapper	\$285,573
Red Grouper	\$220,874
Hogfish	\$118,736
Greater Amberjack	\$94,732

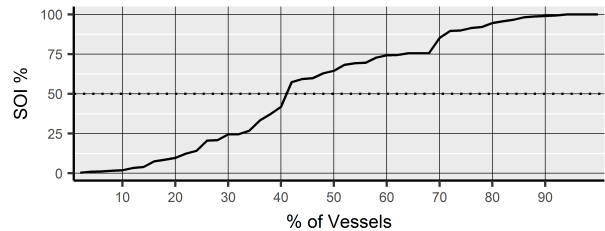
Annual, Vessel Descriptive Statistics (N=50)

	Mean	Min	Median	Max
Trips	18.2	1	12	71
Days at Sea	31.7	1	20	148
Crew Days	81.2	2	58	369
Landings	8,629	54	3,971	103,405
Revenue	\$32,161	\$170	\$18,039	\$263,732
SOI	\$11,840	\$96	\$2,820	\$125,439
% SOI	55.7%	0.4%	66.4%	100%

SOI Share of Monthly Landings



SOI Share of Revenue Per Vessel



Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	6%
SAT Snapper & Grouper - Limited	0%
King Mackerel	10%
Spanish Mackerel	30%
Dolphin-Wahoo	26%
Other Commercial Fishing	16%
For-Hire Fishing	34%

Vessel Characteristics (N=50)

	Mean	Min	Median	Max
Length	32	19	31.5	44
Year Built	1994	1961	1999	2013
Horsepower	457	115	450	900
Fiberglass Hull	96%	-	-	-
Diesel Engine	38%	-	-	-
Ice Refrigeration	94%	-	-	-

SOI: 2016 GOM Reef Fish FMP Fishery: Diver

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	50	-	-	-
Selected	17	34%	-	-
Responded	17	34%	100%	-
Used	16	32%	94%	94%

Economic Results (n=16)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	100%	0	100%	100%	-
For-Hire Active	30%	10.3	12%	48%	-
Days - Commercial Fishing	38	5.3	29	48	26
Days - For-Hire Fishing	16	7.6	2	29	0
Days - Non-fishing	2	1.3	0	5	0
Vessel Value	71,301	8,239	56,790	85,812	70,000
Has Insurance	48%	11.2	28%	68%	-
Total Revenue	52,544	6,534	41,035	64,053	40,194
Commercial Fishing	39,397	6,866	27,304	51,489	20,746
For-Hire Fishing	13,147	6,586	1,548	24,747	0
Cost					
Fuel	7,941	1,569	5,177	10,704	4,330
Other Supplies	6,190	1,357	3,799	8,580	4,439
Hired Crew	9,946	2,855	4,917	14,975	4,000
Vessel Repair & Maintenance	8,909	2,354	4,764	13,055	6,811
Insurance	943	280	451	1,436	0
Overhead	5,509	1,437	2,978	8,041	3,500
Loan Payment	2,444	1,080	543	4,346	0
IFQ Purchase	3,045	949	1,374	4,716	2,118
OC Owner-Captain Time	5,189	1,014	3,404	6,974	3,028
Depreciation	3,565	412	2,840	4,291	3,500
Net Cash Flow	7,616	3,713	1,077	14,156	-494
Net Revenue from Operations*	4,352	2,513	-75	8,778	-2,299

Net Cash Flow and Net Revenue from Operations* as Proportion of Vessel Revenue (Margins)

Revenue 100%	Net Cash Flow 14%	Net Revenue - Operations 8%
	IFQ Purchase 6%	Depreciation 7%
	Loan Payment 5%	Fixed Costs 29%
	Fixed Costs 29%	
	Labor - Hired 19%	Labor - Hired & Owner 29%
	Fuel & Supplies 27%	Fuel & Supplies 27%

Economic Return* (on Vessel Asset Value): 6.1%

* Accruing to vessel owner AND IFQ shareholder. See Definitions.

SOI: 2016 GOM Reef Fish FMP Fishery: Diver

Trip-Level Time Series

Trip-Level Summary

	2014	2015	2016	Average
Effort				
Trips	412	455	438	435
Vessels	51	48	50	50
Days at Sea	677	692	666	678
Landings (gutted lbs)				
<u>Total</u>	240,525	222,087	187,998	216,870
SOI	210,666	175,979	147,943	178,196
Non-SOI	29,859	46,108	40,054	38,674
% SOI	88%	79%	79%	82%
Price (mean)				
<u>Total</u>	\$3.70	\$3.66	\$3.94	\$3.77
SOI	\$3.76	\$3.72	\$4.00	\$3.83
Non-SOI	\$3.27	\$3.40	\$3.70	\$3.46
Revenue				
<u>Total</u>	\$890,007	\$811,179	\$740,198	\$813,795
SOI	\$792,594	\$654,164	\$592,009	\$679,589
Non-SOI	\$97,413	\$157,015	\$148,189	\$134,206
% SOI	89%	81%	80%	83%

Trip-Level Economics

	2014	2015	2016	Average
Number of Observations	65	140	169	
Response Rate (%)	81%	86%	99%	
SOI Trip				
Owner-Operated	90%	100%	99%	96.3%
Fuel Used per Day at Sea (gallons/day)	66	60	53	60
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	15.3%	11%	9.3%	11.9%
Bait	0.8%	0.5%	0.2%	0.5%
Ice	1.3%	1.3%	0.8%	1.1%
Groceries	2%	2.6%	1.7%	2.1%
Miscellaneous	3.3%	3.3%	2.3%	3%
Hired Crew	36.5%	35.6%	31.8%	34.6%
IFQ Purchase	12.6%	6.4%	5.7%	8.2%
OC Owner-Captain Time	12.9%	15.1%	15.4%	14.5%
Trip Net Cash Flow	28%	39%	48%	38%
Trip Net Revenue	28%	31%	38%	32%
Labor - Hired & Owner	49%	51%	47%	49%
Fuel & Supplies	23%	19%	14%	19%
Input Prices				
Fuel Price (per gallon)	\$4.30	\$3.00	\$2.62	\$3.31
Hire Crew Wage (per crew-day)	\$268	\$248	\$228	\$248
Productivity Measures				
Landings/Fuel Use (lbs/gallon)	7.2	7.4	6.3	7
Landings/Labor Use (lbs/crew-day)	139	133	109	127

SOI: 2016 GOM Reef Fish FMP Fishery: Diver
Annual, Vessel-Level Time Series

Annual, Vessel-Level Summary

	2014	2015	2016	Average
Effort				
Vessels	51	48	50	50
Trips - Total	745	831	908	828
SOI Trips	412	455	438	435
Non-SOI Trips	333	376	470	393
Days at Sea	1,253	1,282	1,584	1,373
Landings (gutted lbs)				
Total	364,730	385,824	431,437	393,997
SOI	210,666	175,979	147,943	178,196
Non-SOI	154,064	209,845	283,494	215,801
% SOI	58%	46%	34%	46%
Revenue				
Total	\$1,411,430	\$1,433,064	\$1,608,074	\$1,484,189
SOI	\$792,594	\$654,164	\$592,009	\$679,589
Non-SOI	\$618,836	\$778,900	\$1,016,065	\$804,600
% SOI	56%	46%	37%	46%
Vessel Characteristics				
Length	32	31	32	32
Year Built	1993	1994	1994	1994
For-Hire Fishing Permit	35%	23%	34%	31%

Annual, Vessel-Level Economics

	2014	2015	2016	Average
Number of Observations	8	13	16	
Response Rate (%)	62%	81%	94%	
SOI Vessel				
Owner-Operated	91%	100%	100%	97%
For-Hire Active	0%	10%	30%	13%
Vessel Value	\$70,802	\$82,879	\$71,301	\$74,994
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	14.3%	16.2%	15.1%	15.2%
Other Supplies	4.3%	8.6%	11.8%	8.2%
Hired Crew	38%	22.4%	18.9%	26.4%
Vessel Repair & Maintenance	7.5%	11.6%	17%	12%
Insurance	0.5%	2.4%	1.8%	1.6%
Overhead	2.6%	7.9%	10.5%	7%
Loan Payment	0%	5.7%	4.7%	3.5%
IFQ Purchase	5.1%	9.7%	5.8%	6.9%
OC Owner-Captain Time	9.8%	14.1%	9.9%	11.3%
Net Cash Flow	28%	16%	14%	19%
Net Revenue for Operations*	14%	9%	8%	10%
Depreciation	8.7%	7.6%	6.8%	7.7%
Fixed Costs	11%	22%	29%	21%
Labor - Hired & Owner	48%	37%	29%	38%
Fuel & Supplies	19%	25%	27%	24%
Economic Return* (on asset value)	8.3%	6%	6.1%	6.8%

SOI: 2016 GOM IFQ Fishery: All Gears

Description: This SOI consists of all logbook trips by permitted vessels where at least one pound of fish managed by any of the GOM IFQ programs was landed in 2016 using any gear type. The 14 IFQ species include: Red snapper, red grouper, gag grouper, and four (other) shallow water grouper, four deep water grouper, and three tilefish species. For a complete list of the species, please refer to Appendix 1. For important **disclaimer**, see page 14.

Trip-Level Summary

Effort

Trips	6,209
Vessels	480
Days at Sea	28,580
Crew Days	83,695

Landings (guttled lbs)

<u>Total</u>	14,989,824
SOI	12,418,751
Non-SOI	2,571,073
% SOI	83%

Percent by Gear

	Trips	SOI lbs
Vertical Line	80%	59%
Longline	13%	40%
Diver	6%	0.6%
Other	1%	0.8%

Price (mean)

<u>Total</u>	\$4.02
SOI	\$4.32
Non-SOI	\$2.57

Revenue

<u>Total</u>	\$60,235,278
SOI	\$53,621,776
Non-SOI	\$6,613,501
% SOI	89%

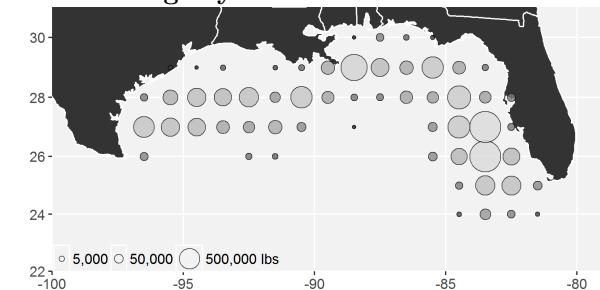
Percent of Revenue by Species Group

Shallow Water Groupers	38%
Shallow Water Snappers	1%
Mid-Shelf Snappers	49%
Deep Water Groupers/Tilefish	9%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	1%
Other Species	0.4%

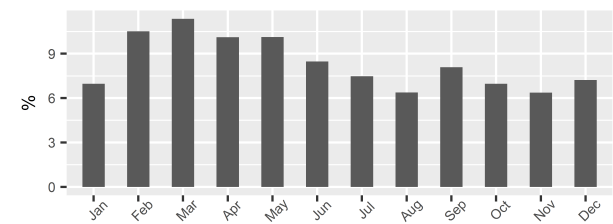
Revenue for Top 5 Species

Red Snapper	\$25,617,136
Red Grouper	\$16,727,014
Gag Grouper	\$4,485,711
Vermilion Snapper	\$3,933,653
Yellowedge Grouper	\$3,270,940

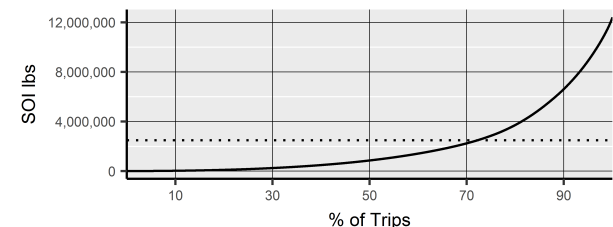
SOI Landings by Area Fished



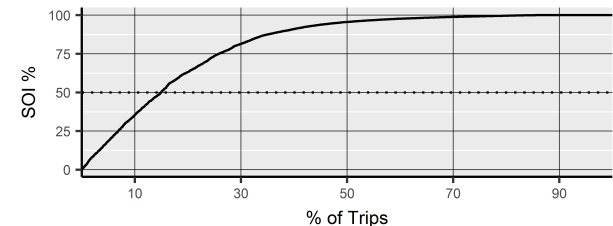
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=6,209)

	Mean	Min	Median	Max
Days at Sea	4.6	1	3	23
Crew Size	2.9	1	3	10
Landings	2,414	5	1,152	23,770
Revenue	\$9,701	\$20	\$4,173	\$97,814
SOI	\$8,636	\$4	\$2,944	\$95,963
% SOI	82%	0.4%	95.6%	100%

SOI: 2016 GOM IFQ Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	6,209	-	-	-
Selected	1,881	30%	-	-
Responded	1,866	30%	99%	-
Used	1,775	29%	94%	95%

Economic Results (n=1,775)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	67%	3.5	62%	73%	-
Days at Sea	4.6	0.2	4.3	5	3
Crew Size	2.8	0.1	2.7	2.9	3
Fuel Used	186	11	167	205	130
Landings (gutted lbs)	2,199	181	1,898	2,499	1,010
Total Revenue	9,183	811	7,840	10,525	3,605
Cost					
Fuel	377	22	341	413	266
Bait	315	33	261	370	125
Ice	152	15	128	177	90
Groceries	284	23	247	322	145
Miscellaneous	273	37	211	334	50
Hired Crew	2,476	261	2,043	2,909	803
IFQ Purchase	1,744	255	1,323	2,166	184
OC Owner-Captain Time	646	107	469	823	97
Trip Net Cash Flow	3,560	436	2,838	4,282	1,067
Trip Net Revenue	4,659	476	3,870	5,448	1,245

Trip Net Cash Flow and Trip Net Revenue as Proportion of Trip Revenue (Margins)

Revenue 100%	Trip Net Cash Flow 39%	Trip Net Revenue 51%
	IFQ Purchase 19%	
	Labor - Hired 27%	Labor - Hired & Owner 34%
	Fuel & Supplies 15%	Fuel & Supplies 15%

Input Prices

Fuel Price (average): \$2.03 per gallon Hired Crew Wage (implicit): \$252 per crew-day

Productivity Measures

Landings/Fuel Use: 11.8 lbs/gallon Landings/Labor Use: 170 lbs/crew-day

SOI: 2016 GOM IFQ Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	480
<u>Trips - Total</u>	<u>7,600</u>
SOI Trips	6,209
Non-SOI Trips	1,391
Days at Sea	30,943
Crew Days	89,671

Landings (guttled lbs)

<u>Total</u>	<u>16,360,402</u>
SOI	12,418,751
Non-SOI	3,941,651
% SOI	76%

Percent by Gear

	Trips	Total lbs
Vertical Line	78%	63%
Longline	11%	32%
Diver	6%	1%
Other	5%	4%

Price (mean)

<u>Total</u>	<u>\$3.88</u>
SOI	\$4.32
Non-SOI	\$2.48

Revenue

<u>Total</u>	<u>\$63,403,131</u>
SOI	\$53,621,776
Non-SOI	\$9,781,354
% SOI	85%

Percent of Revenue by Species Group

Shallow Water Groupers	36%
Shallow Water Snappers	2%
Mid-Shelf Snappers	47%
Deep Water Groupers/Tilefish	8%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	4%
Other Species	0.6%

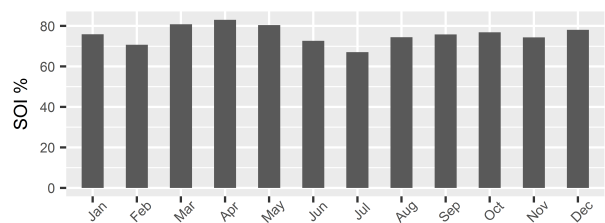
Revenue for Top 5 Species

Red Snapper	\$25,638,840
Red Grouper	\$16,762,685
Gag Grouper	\$4,508,880
Vermilion Snapper	\$4,051,222
Yellowedge Grouper	\$3,279,208

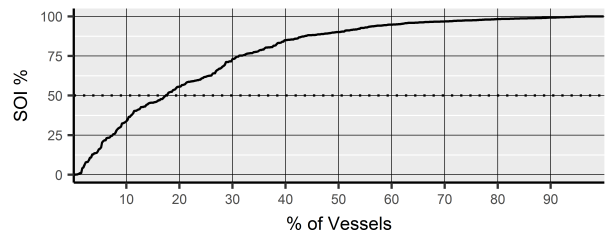
Annual, Vessel Descriptive Statistics (N=480)

	Mean	Min	Median	Max
Trips	15.8	1	13	117
Days at Sea	64.5	1	48	245
Crew Days	186.8	1	115	1,470
Landings	34,084	15	14,519	448,815
Revenue	\$132,090	\$64	\$56,790	\$2,182,950
SOI	\$111,712	\$20	\$33,191	\$2,094,860
% SOI	77.8%	0%	90.1%	100%

SOI Share of Monthly Landings



SOI Share of Revenue Per Vessel



Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	5%
SAT Snapper & Grouper - Limited	0.4%
King Mackerel	40%
Spanish Mackerel	44%
Dolphin-Wahoo	34%
Other Commercial Fishing	16%
For-Hire Fishing	24%

Vessel Characteristics (N=480)

	Mean	Min	Median	Max
Length	39	19	37	69
Year Built	1987	1961	1985	2016
Horsepower	423	12	350	2,000
Fiberglass Hull	94%	-	-	-
Diesel Engine	79%	-	-	-
Ice Refrigeration	97%	-	-	-

SOI: 2016 GOM IFQ Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	480	-	-	-
Selected	139	29%	-	-
Responded	125	26%	90%	-
Used	117	24%	84%	94%

Economic Results (n=117)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	79%	3.4	73%	85%	-
For-Hire Active	16%	3.1	11%	21%	-
Days - Commercial Fishing	74	3.8	67	80	55
Days - For-Hire Fishing	11	3	6	16	0
Days - Non-fishing	2	0.5	1	3	0
Vessel Value	85,591	6,405	74,971	96,212	70,000
Has Insurance	38%	4.1	32%	45%	-
Total Revenue	134,757	16,575	107,272	162,242	76,255
Commercial Fishing	122,586	16,023	96,016	149,155	58,500
For-Hire Fishing	12,171	3,648	6,122	18,220	0
Cost					
Fuel	8,830	835	7,445	10,215	5,958
Other Supplies	14,353	1,185	12,388	16,318	7,410
Hired Crew	32,767	4,074	26,012	39,523	10,325
Vessel Repair & Maintenance	11,442	1,077	9,657	13,228	7,835
Insurance	1,385	205	1,045	1,725	0
Overhead	6,628	737	5,406	7,849	3,600
Loan Payment	1,752	511	905	2,600	0
IFQ Purchase	19,203	3,036	14,169	24,237	2,118
OC Owner-Captain Time	8,937	1,130	7,064	10,810	3,059
Depreciation	4,280	320	3,749	4,811	3,500
Net Cash Flow	38,396	11,421	19,459	57,334	12,292
Net Revenue from Operations*	46,135	11,733	26,680	65,590	10,940

Net Cash Flow and Net Revenue from Operations* as Proportion of Vessel Revenue (Margins)

Revenue 100%	Net Cash Flow 28%	Net Revenue - Operations 34%
	IFQ Purchase 14%	Depreciation 3%
	Loan Payment 1%	Fixed Costs 14%
	Fixed Costs 14%	Labor - Hired & Owner 31%
	Labor - Hired 24%	
	Fuel & Supplies 17%	Fuel & Supplies 17%

Economic Return* (on Vessel Asset Value): 53.9%

* Accruing to vessel owner AND IFQ shareholder. See Definitions.

SOI: 2016 GOM IFQ Fishery: All Gears

Trip-Level Time Series

Trip-Level Summary

	2014	2015	2016	Average
Effort				
Trips	5,803	6,162	6,209	6,058
Vessels	482	479	480	480
Days at Sea	27,659	28,273	28,580	28,171
Landings (gutted lbs)				
<u>Total</u>	15,144,031	15,383,498	14,989,824	15,172,451
SOI	12,237,116	12,866,630	12,418,751	12,507,499
Non-SOI	2,906,915	2,516,868	2,571,073	2,664,952
% SOI	81%	84%	83%	83%
Price (mean)				
<u>Total</u>	\$3.90	\$4.02	\$4.02	\$3.98
SOI	\$4.23	\$4.30	\$4.32	\$4.28
Non-SOI	\$2.53	\$2.58	\$2.57	\$2.56
Revenue				
<u>Total</u>	\$59,108,428	\$61,841,016	\$60,235,278	\$60,394,907
SOI	\$51,755,716	\$55,333,060	\$53,621,776	\$53,570,184
Non-SOI	\$7,352,713	\$6,507,956	\$6,613,501	\$6,824,723
% SOI	88%	89%	89%	89%

Trip-Level Economics

	2014	2015	2016	Average
Number of Observations	1,154	1,656	1,775	
Response Rate (%)	80%	85%	94%	
SOI Trip				
Owner-Operated	71%	64%	67%	67.3%
Fuel Used per Day at Sea (gallons/day)	46	46	40	44
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	6.6%	4.8%	4.1%	5.2%
Bait	3%	3.2%	3.4%	3.2%
Ice	1.4%	1.5%	1.7%	1.5%
Groceries	2.4%	2.3%	3.1%	2.6%
Miscellaneous	2.5%	2.4%	3%	2.6%
Hired Crew	28.1%	25.7%	27%	26.9%
IFQ Purchase	14.8%	27.2%	19%	20.3%
OC Owner-Captain Time	6.2%	5.8%	7%	6.3%
Trip Net Cash Flow	41%	33%	39%	38%
Trip Net Revenue	50%	54%	51%	52%
Labor - Hired & Owner	34%	32%	34%	33.3%
Fuel & Supplies	16%	14%	15%	15%
Input Prices				
Fuel Price (per gallon)	\$3.53	\$2.53	\$2.03	\$2.70
Hire Crew Wage (per crew-day)	\$329	\$283	\$252	\$288
Productivity Measures				
Landings/Fuel Use (lbs/gallon)	13.5	12.7	11.8	13
Landings/Labor Use (lbs/crew-day)	222	206	170	199

SOI: 2016 GOM IFQ Fishery: All Gears
Annual, Vessel-Level Time Series

Annual, Vessel-Level Summary

	2014	2015	2016	Average
Effort				
Vessels	482	479	480	480
Trips - Total	7,082	7,265	7,600	7,316
SOI Trips	5,803	6,162	6,209	6,058
Non-SOI Trips	1,279	1,103	1,391	1,258
Days at Sea	30,274	30,453	30,943	30,557
Landings (gutted lbs)				
Total	16,330,349	16,530,857	16,360,402	16,407,203
SOI	12,237,116	12,866,630	12,418,751	12,507,499
Non-SOI	4,093,233	3,664,227	3,941,651	3,899,704
% SOI	75%	78%	76%	76%
Revenue				
Total	\$62,255,628	\$64,491,220	\$63,403,131	\$63,383,326
SOI	\$51,755,716	\$55,333,060	\$53,621,776	\$53,570,184
Non-SOI	\$10,499,912	\$9,158,160	\$9,781,354	\$9,813,142
% SOI	83%	86%	85%	85%
Vessel Characteristics				
Length	39	38	39	39
Year Built	1987	1987	1987	1987
For-Hire Fishing Permit	24%	23%	24%	24%

Annual, Vessel-Level Economics

	2014	2015	2016	Average
Number of Observations	81	101	117	
Response Rate (%)	63%	78%	84%	
SOI Vessel				
Owner-Operated	76%	70%	79%	75%
For-Hire Active	6%	15%	16%	12%
Vessel Value	\$121,625	\$100,917	\$85,591	\$102,711
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	8%	6%	6.6%	6.9%
Other Supplies	9.7%	9.2%	10.7%	9.9%
Hired Crew	27.1%	25.5%	24.3%	25.6%
Vessel Repair & Maintenance	7.6%	6.6%	8.5%	7.6%
Insurance	1%	0.8%	1%	0.9%
Overhead	5%	5.4%	4.9%	5.1%
Loan Payment	0.8%	1.4%	1.3%	1.2%
IFQ Purchase	11.5%	24.4%	14.3%	16.7%
OC Owner-Captain Time	5.6%	5.3%	6.6%	5.8%
Net Cash Flow	29%	21%	28%	26%
Net Revenue for Operations*	32%	38%	34%	35%
Depreciation	3.7%	3%	3.2%	3.3%
Fixed Costs	14%	13%	14%	14%
Labor - Hired & Owner	33%	31%	31%	32%
Fuel & Supplies	18%	15%	17%	17%
Economic Return* (on asset value)	43.8%	64.4%	53.9%	54%

SOI: 2016 GOM Trips without IFQ Catch Fishery: All Gears

Description: This SOI is not like the others. It consists of all logbook trips by permitted vessels where 1. at least one pound of fish managed by the GOM Reef Fish FMP, AND 2. NO pound of fish managed by any of the GOM IFQ programs was landed in 2016 using any gear type. For a complete list of the species, please refer to Appendix 1. The economic results are of questionable quality and should not be used. For important **disclaimer**, see page 14.

Trip-Level Summary

Effort

Trips	709
Vessels	113
Days at Sea	1,970
Crew Days	5,340

Landings (guttled lbs)

<u>Total</u>	655,610
SOI	549,454
Non-SOI	106,156
% SOI	84%

Percent by Gear

	Trips	SOI lbs
Vertical Line	94%	99%
Longline	0.1%	0.1%
Diver	4%	0.5%
Other	2%	0.1%

Price (mean)

<u>Total</u>	\$2.72
SOI	\$2.88
Non-SOI	\$1.92

Revenue

<u>Total</u>	\$1,785,472
SOI	\$1,581,966
Non-SOI	\$203,506
% SOI	89%

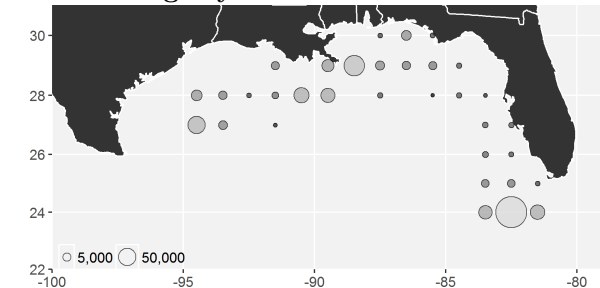
Percent of Revenue by Species Group

Shallow Water Groupers	0.2%
Shallow Water Snappers	61%
Mid-Shelf Snappers	11%
Deep Water Groupers/Tilefish	0%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	26%
Other Species	2%

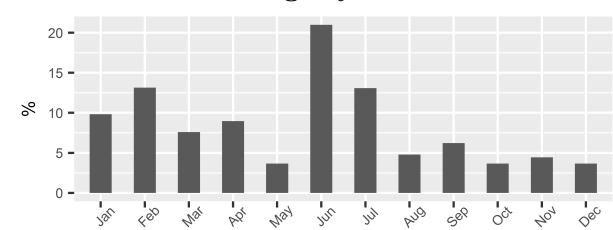
Revenue for Top 5 Species

Yellowtail Snapper	\$857,744
Greater Amberjack	\$301,181
Vermilion Snapper	\$174,199
Lane Snapper	\$155,308
King and Cero Mackerel	\$148,496

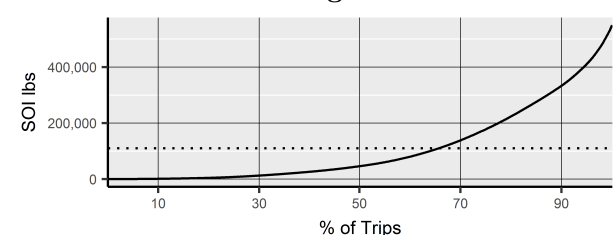
SOI Landings by Area Fished



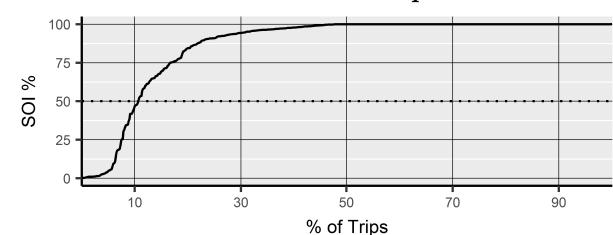
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=709)

	Mean	Min	Median	Max
Days at Sea	2.8	1	1	17
Crew Size	2.3	1	2	6
Landings	925	2	542	6,685
Revenue	\$2,518	\$6	\$1,325	\$22,248
SOI	\$2,231	\$3	\$1,043	\$22,178
% SOI	87%	0.1%	100%	100%

SOI: 2016 GOM Trips without IFQ Catch Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	709	-	-	-
Selected	184	26%	-	-
Responded	182	26%	99%	-
Used	173	24%	94%	95%

Economic Results (n=173)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	90%	5.2	81%	99%	-
Days at Sea	2.7	0.4	2	3.4	1
Crew Size	2.2	0.2	1.9	2.4	2
Fuel Used	118	25	75	161	100
Landings (gutted lbs)	750	98	583	917	804
Total Revenue	2,003	410	1,301	2,704	1,708
Cost					
Fuel	261	49	178	345	240
Bait	191	47	111	271	20
Ice	62	12	43	82	20
Groceries	81	16	54	108	48
Miscellaneous	67	15	40	93	0
Hired Crew	630	165	348	913	300
IFQ Purchase	0	0	0	0	0
OC Owner-Captain Time	424	81	286	563	205
Trip Net Cash Flow	710	218	338	1,082	578
Trip Net Revenue	286	178	-18	590	177

Trip Net Cash Flow and Trip Net Revenue as Proportion of Trip Revenue (Margins)

Revenue 100%	Trip Net Cash Flow 35%	Trip Net Revenue 14%
	IFQ Purchase 0%	Labor - Hired & Owner 53%
	Labor - Hired 31%	
	Fuel & Supplies 33%	Fuel & Supplies 33%

Input Prices

Fuel Price (average): \$2.21 per gallon Hired Crew Wage (implicit): \$185 per crew-day

Productivity Measures

Landings/Fuel Use: 6.3 lbs/gallon Landings/Labor Use: 128 lbs/crew-day

SOI: 2016 GOM Trips without IFQ Catch Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	113
<u>Trips - Total</u>	<u>2,871</u>
SOI Trips	709
Non-SOI Trips	2,162
Days at Sea	6,664
Crew Days	17,158

Landings (gutted lbs)

<u>Total</u>	<u>2,881,670</u>
SOI	549,454
Non-SOI	2,332,216
% SOI	19%

Percent by Gear

	Trips	Total lbs
Vertical Line	85%	88%
Longline	2%	3%
Diver	7%	2%
Other	6%	7%

Price (mean)

<u>Total</u>	<u>\$3.12</u>
SOI	\$2.88
Non-SOI	\$3.18

Revenue

<u>Total</u>	<u>\$8,995,310</u>
SOI	\$1,581,966
Non-SOI	\$7,413,344
% SOI	18%

Percent of Revenue by Species Group

Shallow Water Groupers	12%
Shallow Water Snappers	24%
Mid-Shelf Snappers	40%
Deep Water Groupers/Tilefish	3%
Grunts/Porgies/Triggerfish	2%
Mackerels/Dolphinfish/Jacks	18%
Other Species	2%

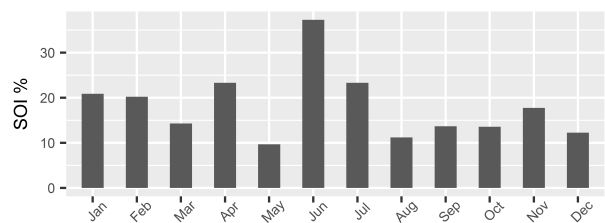
Revenue for Top 5 Species

Red Snapper	\$2,667,902
Yellowtail Snapper	\$1,751,638
King and Cero Mackerel	\$1,049,478
Vermilion Snapper	\$869,151
Greater Amberjack	\$545,014

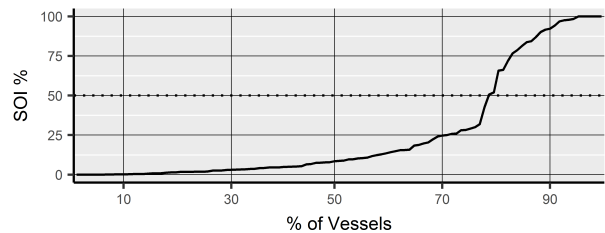
Annual, Vessel Descriptive Statistics (N=113)

	Mean	Min	Median	Max
Trips	25.4	1	18	117
Days at Sea	59	1	47	245
Crew Days	151.8	2	98	1,470
Landings	25,502	54	16,163	130,353
Revenue	\$79,605	\$170	\$47,909	\$541,483
SOI	\$14,000	\$3	\$1,804	\$180,986
% SOI	25.8%	0%	8.7%	100%

SOI Share of Monthly Landings



SOI Share of Revenue Per Vessel



Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	21%
SAT Snapper & Grouper - Limited	0.9%
King Mackerel	57%
Spanish Mackerel	64%
Dolphin-Wahoo	56%
Other Commercial Fishing	22%
For-Hire Fishing	25%

Vessel Characteristics (N=113)

	Mean	Min	Median	Max
Length	35	14	34	65
Year Built	1989	1965	1986.5	2016
Horsepower	438	25	400	2,000
Fiberglass Hull	93%	-	-	-
Diesel Engine	69%	-	-	-
Ice Refrigeration	95%	-	-	-

SOI: 2016 GOM Trips without IFQ Catch Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	113	-	-	-
Selected	29	26%	-	-
Responded	25	22%	86%	-
Used	24	21%	83%	96%

Economic Results (n=24)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	87%	6.3	76%	98%	-
For-Hire Active	16%	7	4%	28%	-
Days - Commercial Fishing	88	11.1	69	107	63
Days - For-Hire Fishing	9	4	2	16	0
Days - Non-fishing	2	1.1	1	4	0
Vessel Value	77,286	6,671	65,832	88,741	75,000
Has Insurance	41%	9.3	25%	57%	-
Total Revenue	87,855	12,084	67,105	108,606	80,898
Commercial Fishing	78,748	10,918	60,000	97,495	67,200
For-Hire Fishing	9,108	3,762	2,648	15,568	0
Cost					
Fuel	9,551	1,275	7,361	11,740	9,006
Other Supplies	12,833	1,595	10,094	15,572	12,876
Hired Crew	18,607	4,158	11,468	25,746	12,559
Vessel Repair & Maintenance	8,046	1,781	4,987	11,105	6,500
Insurance	708	164	427	990	0
Overhead	5,458	1,566	2,768	8,148	2,000
Loan Payment	2,383	1,139	427	4,339	0
IFQ Purchase	12,287	5,077	3,569	21,006	2,118
OC Owner-Captain Time	11,166	2,772	6,407	15,925	5,343
Depreciation	3,864	334	3,292	4,437	3,750
Net Cash Flow	17,982	5,521	8,502	27,462	15,780
Net Revenue from Operations*	17,622	7,637	4,508	30,736	5,068

Net Cash Flow and Net Revenue from Operations* as Proportion of Vessel Revenue (Margins)

Revenue 100%	Net Cash Flow 20%	Net Revenue - Operations 20%
	IFQ Purchase 14%	Depreciation 4%
	Loan Payment 3%	Fixed Costs 16%
	Fixed Costs 16%	Labor - Hired & Owner 34%
	Labor - Hired 21%	
	Fuel & Supplies 25%	Fuel & Supplies 25%

Economic Return* (on Vessel Asset Value): 22.8%

* Accruing to vessel owner AND IFQ shareholder. See Definitions.

SOI: 2016 GOM Trips without IFQ Catch Fishery: All Gears

Trip-Level Time Series

Trip-Level Summary

	2014	2015	2016	Average
Effort				
Trips	733	638	709	693
Vessels	127	113	113	118
Days at Sea	2,871	2,207	1,970	2,349
Landings (gutted lbs)				
<u>Total</u>	919,808	741,792	655,610	772,403
SOI	761,195	640,804	549,454	650,484
Non-SOI	158,612	100,988	106,156	121,919
% SOI	83%	86%	84%	84%
Price (mean)				
<u>Total</u>	\$2.75	\$2.66	\$2.72	\$2.71
SOI	\$2.94	\$2.81	\$2.88	\$2.88
Non-SOI	\$1.89	\$1.76	\$1.92	\$1.86
Revenue				
<u>Total</u>	\$2,535,039	\$1,978,304	\$1,785,472	\$2,099,605
SOI	\$2,234,795	\$1,800,447	\$1,581,966	\$1,872,403
Non-SOI	\$300,243	\$177,857	\$203,506	\$227,202
% SOI	88%	91%	89%	89%

Trip-Level Economics

	2014	2015	2016	Average
Number of Observations	83	131	173	
Response Rate (%)	58%	79%	94%	
SOI Trip				
Owner-Operated	85%	78%	90%	84.3%
Fuel Used per Day at Sea (gallons/day)	40	33	44	39
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	16.7%	9.4%	13%	13%
Bait	4.9%	14.8%	9.5%	9.7%
Ice	2.9%	2.5%	3.1%	2.8%
Groceries	4%	4.9%	4%	4.3%
Miscellaneous	1.6%	3.4%	3.3%	2.8%
Hired Crew	38.7%	30.4%	31.5%	33.5%
IFQ Purchase	0%	0%	0%	0%
OC Owner-Captain Time	28.4%	23%	21.2%	24.2%
Trip Net Cash Flow	31%	35%	35%	34%
Trip Net Revenue	3%	12%	14%	10%
Labor - Hired & Owner	67%	53%	53%	57.7%
Fuel & Supplies	30%	35%	33%	33%
Input Prices				
Fuel Price (per gallon)	\$3.51	\$2.62	\$2.21	\$2.78
Hire Crew Wage (per crew-day)	\$224	\$176	\$185	\$195
Productivity Measures				
Landings/Fuel Use (lbs/gallon)	9.1	10.2	6.3	9
Landings/Labor Use (lbs/crew-day)	159	143	128	143

SOI: 2016 GOM Trips without IFQ Catch Fishery: All Gears
Annual, Vessel-Level Time Series

Annual, Vessel-Level Summary

	2014	2015	2016	Average
Effort				
Vessels	127	113	113	118
Trips - Total	2,820	2,436	2,871	2,709
SOI Trips	733	638	709	693
Non-SOI Trips	2,087	1,798	2,162	2,016
Days at Sea	7,313	6,434	6,664	6,804
Landings (gutted lbs)				
Total	2,856,946	2,795,092	2,881,670	2,844,569
SOI	761,195	640,804	549,454	650,484
Non-SOI	2,095,751	2,154,288	2,332,216	2,194,085
% SOI	27%	23%	19%	23%
Revenue				
Total	\$8,442,775	\$8,793,203	\$8,995,310	\$8,743,763
SOI	\$2,234,795	\$1,800,447	\$1,581,966	\$1,872,403
Non-SOI	\$6,207,980	\$6,992,756	\$7,413,344	\$6,871,360
% SOI	26%	20%	18%	21%
Vessel Characteristics				
Length	36	36	35	36
Year Built	1989	1989	1989	1989
For-Hire Fishing Permit	33%	25%	25%	28%

Annual, Vessel-Level Economics

	2014	2015	2016	Average
Number of Observations	12	16	24	
Response Rate (%)	43%	64%	83%	
SOI Vessel				
Owner-Operated	100%	87%	87%	91%
For-Hire Active	43%	18%	16%	26%
Vessel Value	\$96,534	\$68,921	\$77,286	\$80,914
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	13.1%	9.6%	10.9%	11.2%
Other Supplies	8.9%	13%	14.6%	12.2%
Hired Crew	18.5%	20.9%	21.2%	20.2%
Vessel Repair & Maintenance	10.6%	15.8%	9.2%	11.9%
Insurance	1.5%	1.7%	0.8%	1.3%
Overhead	12%	7.3%	6.2%	8.5%
Loan Payment	2.2%	3.1%	2.7%	2.7%
IFQ Purchase	22.3%	10.8%	14%	15.7%
OC Owner-Captain Time	5.3%	11.4%	12.7%	9.8%
Net Cash Flow	11%	18%	20%	16%
Net Revenue for Operations*	27%	16%	20%	21%
Depreciation	3.4%	4%	4.4%	3.9%
Fixed Costs	24%	25%	16%	22%
Labor - Hired & Owner	24%	32%	34%	30%
Fuel & Supplies	22%	23%	25%	23%
Economic Return* (on asset value)	39.2%	20.4%	22.8%	27.5%

SOI: 2016 GOM IFQ Red Snapper Fishery: All Gears

Description: This SOI consists of all logbook trips by permitted vessels where at least one pound of red snapper was landed in 2016 using any gear type. Red snapper in the GOM is an IFQ fishery. Official 2016 red snapper landings and revenue, per the IFQ-tracking system, are 6,057,498 lbs (gutted weight) and \$27,980,687. Hence the logbook-based red snapper SOI accounts for about 95% of the fishery (near-census). For important **disclaimer**, see page 14.

Trip-Level Summary

Effort

Trips	4,513
Vessels	421
Days at Sea	19,891
Crew Days	58,852

Landings (gutted lbs)

<u>Total</u>	11,849,935
SOI	5,745,323
Non-SOI	6,104,612
% SOI	48%

Percent by Gear

	Trips	SOI lbs
Vertical Line	87%	96%
Longline	10%	4%
Diver	3%	0.2%
Other	0.7%	0%

Price (mean)

<u>Total</u>	\$4.04
SOI	\$4.46
Non-SOI	\$3.65

Revenue

<u>Total</u>	\$47,911,592
SOI	\$25,616,821
Non-SOI	\$22,294,771
% SOI	53%

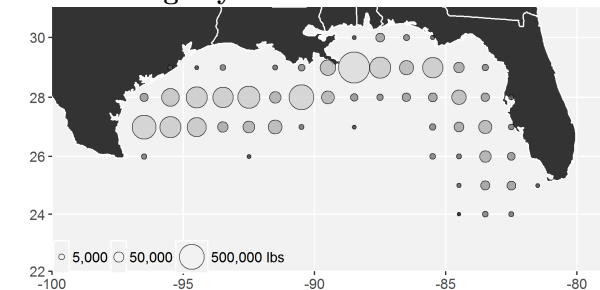
Percent of Revenue by Species Group

Shallow Water Groupers	31%
Shallow Water Snappers	0.9%
Mid-Shelf Snappers	61%
Deep Water Groupers/Tilefish	4%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	1%
Other Species	0.3%

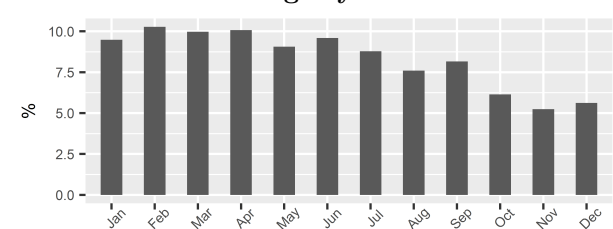
Revenue for Top 5 Species

Red Snapper	\$25,616,821
Red Grouper	\$10,499,318
Vermilion Snapper	\$3,503,159
Gag Grouper	\$3,439,401
Yellowedge Grouper	\$1,097,029

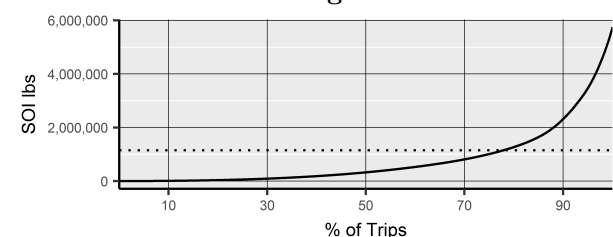
SOI Landings by Area Fished



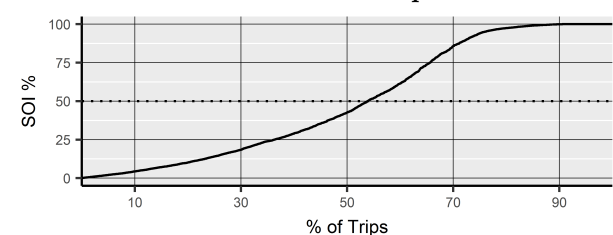
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=4,513)

	Mean	Min	Median	Max
Days at Sea	4.4	1	3	22
Crew Size	3	1	3	10
Landings	2,626	5	1,369	23,770
Revenue	\$10,616	\$20	\$4,978	\$97,814
SOI	\$5,676	\$4	\$1,514	\$94,085
% SOI	50%	0%	42.7%	100%

SOI: 2016 GOM IFQ Red Snapper Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	4,513	-	-	-
Selected	1,286	28%	-	-
Responded	1,279	28%	99%	-
Used	1,231	27%	96%	96%

Economic Results (n=1,231)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	66%	4	60%	73%	-
Days at Sea	4.6	0.3	4.2	5.1	4
Crew Size	2.9	0.1	2.7	3	3
Fuel Used	184	11	165	203	150
Landings (gutted lbs)	2,494	205	2,153	2,835	1,303
Total Revenue	10,554	917	9,034	12,075	4,737
Cost					
Fuel	374	22	338	410	292
Bait	307	31	257	358	150
Ice	159	15	134	185	100
Groceries	286	25	245	327	157
Miscellaneous	287	40	221	354	50
Hired Crew	2,766	307	2,258	3,274	1,083
IFQ Purchase	2,071	285	1,599	2,544	353
OC Owner-Captain Time	728	121	527	930	145
Trip Net Cash Flow	4,303	502	3,471	5,135	1,496
Trip Net Revenue	5,647	541	4,750	6,543	2,085

Trip Net Cash Flow and Trip Net Revenue as Proportion of Trip Revenue (Margins)

Revenue 100%	Trip Net Cash Flow 41%	Trip Net Revenue 54%
	IFQ Purchase 20%	
	Labor - Hired 26%	Labor - Hired & Owner 33%
	Fuel & Supplies 13%	Fuel & Supplies 13%

Input Prices

Fuel Price (average): \$2.03 per gallon Hired Crew Wage (implicit): \$272 per crew-day

Productivity Measures

Landings/Fuel Use: 13.5 lbs/gallon Landings/Labor Use: 188 lbs/crew-day

SOI: 2016 GOM IFQ Red Snapper Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	421
<u>Trips - Total</u>	<u>6,690</u>
SOI Trips	4,513
Non-SOI Trips	2,177
Days at Sea	28,508
Crew Days	83,463

Landings (gutted lbs)

<u>Total</u>	<u>15,505,728</u>
SOI	5,745,323
Non-SOI	9,760,405
% SOI	37%

Percent by Gear

	Trips	Total lbs
Vertical Line	79%	64%
Longline	11%	32%
Diver	4%	0.9%
Other	6%	4%

Price (mean)

<u>Total</u>	<u>\$3.90</u>
SOI	\$4.46
Non-SOI	\$3.57

Revenue

<u>Total</u>	<u>\$60,494,446</u>
SOI	\$25,616,821
Non-SOI	\$34,877,625
% SOI	42%

Percent of Revenue by Species Group

Shallow Water Groupers	36%
Shallow Water Snappers	2%
Mid-Shelf Snappers	49%
Deep Water Groupers/Tilefish	8%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	4%
Other Species	0.6%

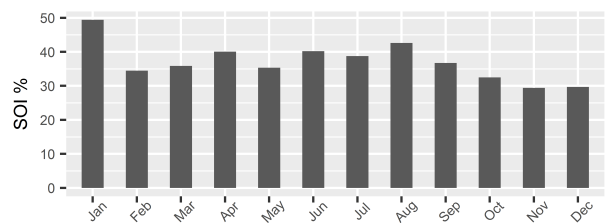
Revenue for Top 5 Species

Red Snapper	\$25,638,840
Red Grouper	\$15,687,152
Gag Grouper	\$4,459,077
Vermilion Snapper	\$4,013,633
Yellowedge Grouper	\$2,868,866

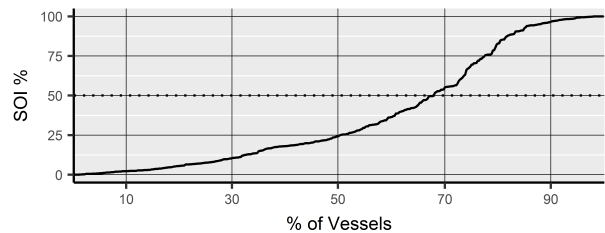
Annual, Vessel Descriptive Statistics (N=421)

	Mean	Min	Median	Max
Trips	15.9	1	13	98
Days at Sea	67.7	1	52	245
Crew Days	198.2	1	128	1,470
Landings	36,831	49	16,765	448,815
Revenue	\$143,692	\$163	\$65,522	\$2,182,950
SOI	\$60,848	\$22	\$9,544	\$2,091,324
% SOI	38.1%	0%	24.7%	100%

SOI Share of Monthly Landings



SOI Share of Revenue Per Vessel



Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	3%
SAT Snapper & Grouper - Limited	0.5%
King Mackerel	42%
Spanish Mackerel	43%
Dolphin-Wahoo	31%
Other Commercial Fishing	16%
For-Hire Fishing	24%

Vessel Characteristics (N=421)

	Mean	Min	Median	Max
Length	39	19	38	69
Year Built	1987	1961	1985	2016
Horsepower	424	12	350	2,000
Fiberglass Hull	93%	-	-	-
Diesel Engine	81%	-	-	-
Ice Refrigeration	96%	-	-	-

SOI: 2016 GOM IFQ Red Snapper Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	421	-	-	-
Selected	118	28%	-	-
Responded	108	26%	92%	-
Used	103	24%	87%	95%

Economic Results (n=103)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	77%	3.7	71%	84%	-
For-Hire Active	18%	3.4	12%	23%	-
Days - Commercial Fishing	75	4.1	68	82	56
Days - For-Hire Fishing	12	3.5	6	18	0
Days - Non-fishing	2	0.5	1	3	0
Vessel Value	87,935	7,219	75,951	99,919	75,000
Has Insurance	38%	4.4	31%	45%	-
Total Revenue	146,037	18,905	114,653	177,421	78,744
Commercial Fishing	132,184	18,298	101,808	162,559	67,200
For-Hire Fishing	13,853	4,198	6,884	20,823	0
Cost					
Fuel	9,108	958	7,517	10,699	5,878
Other Supplies	14,956	1,296	12,806	17,107	9,013
Hired Crew	35,572	4,647	27,857	43,287	11,000
Vessel Repair & Maintenance	12,108	1,235	10,058	14,159	7,950
Insurance	1,445	230	1,064	1,826	0
Overhead	7,154	842	5,755	8,552	4,500
Loan Payment	1,915	580	953	2,877	0
IFQ Purchase	20,676	3,441	14,964	26,388	3,039
OC Owner-Captain Time	9,583	1,268	7,479	11,688	4,323
Depreciation	4,397	361	3,798	4,996	3,750
Net Cash Flow	43,103	13,069	21,407	64,799	15,971
Net Revenue from Operations*	51,714	13,420	29,435	73,993	12,865

Net Cash Flow and Net Revenue from Operations* as Proportion of Vessel Revenue (Margins)

Revenue 100%	Net Cash Flow 30%	Net Revenue - Operations 35%
	IFQ Purchase 14%	Depreciation 3%
	Loan Payment 1%	Fixed Costs 14%
	Fixed Costs 14%	Labor - Hired & Owner 31%
	Labor - Hired 24%	
	Fuel & Supplies 16%	Fuel & Supplies 16%

Economic Return* (on Vessel Asset Value): 58.8%

* Accruing to vessel owner AND IFQ shareholder. See Definitions.

SOI: 2016 GOM IFQ Red Snapper Fishery: All Gears

Trip-Level Time Series

Trip-Level Summary

	2014	2015	2016	Average
Effort				
Trips	3,786	4,230	4,513	4,176
Vessels	401	406	421	409
Days at Sea	17,140	19,147	19,891	18,726
Landings (gutted lbs)				
<u>Total</u>	10,648,727	12,061,468	11,849,935	11,520,043
SOI	4,719,836	6,149,237	5,745,323	5,538,132
Non-SOI	5,928,891	5,912,230	6,104,612	5,981,911
% SOI	44%	51%	48%	48%
Price (mean)				
<u>Total</u>	\$3.96	\$4.05	\$4.04	\$4.02
SOI	\$4.60	\$4.48	\$4.46	\$4.51
Non-SOI	\$3.46	\$3.61	\$3.65	\$3.57
Revenue				
<u>Total</u>	\$42,226,363	\$48,878,778	\$47,911,592	\$46,338,911
SOI	\$21,692,689	\$27,564,928	\$25,616,821	\$24,958,146
Non-SOI	\$20,533,675	\$21,313,850	\$22,294,771	\$21,380,765
% SOI	51%	56%	53%	53%

Trip-Level Economics

	2014	2015	2016	Average
Number of Observations	750	1,189	1,231	
Response Rate (%)	83%	85%	96%	
SOI Trip				
Owner-Operated	70%	60%	66%	65.3%
Fuel Used per Day at Sea (gallons/day)	47	50	40	46
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	6.1%	4.2%	3.5%	4.6%
Bait	2.5%	2.7%	2.9%	2.7%
Ice	1.3%	1.3%	1.5%	1.4%
Groceries	2%	1.9%	2.7%	2.2%
Miscellaneous	2.4%	2.1%	2.7%	2.4%
Hired Crew	26.3%	23.9%	26.2%	25.5%
IFQ Purchase	15.8%	30.6%	19.6%	22%
OC Owner-Captain Time	6.6%	5.5%	6.9%	6.3%
Trip Net Cash Flow	44%	33%	41%	39%
Trip Net Revenue	53%	58%	54%	55%
Labor - Hired & Owner	33%	29%	33%	31.7%
Fuel & Supplies	14%	12%	13%	13%
Input Prices				
Fuel Price (per gallon)	\$3.54	\$2.48	\$2.03	\$2.68
Hire Crew Wage (per crew-day)	\$341	\$296	\$272	\$303
Productivity Measures				
Landings/Fuel Use (lbs/gallon)	14.4	14	13.5	14
Landings/Labor Use (lbs/crew-day)	241	234	188	221

SOI: 2016 GOM IFQ Red Snapper Fishery: All Gears
Annual, Vessel-Level Time Series

Annual, Vessel-Level Summary

	2014	2015	2016	Average
Effort				
Vessels	401	406	421	409
Trips - Total	5,886	6,420	6,690	6,332
SOI Trips	3,786	4,230	4,513	4,176
Non-SOI Trips	2,100	2,190	2,177	2,156
Days at Sea	27,086	28,218	28,508	27,937
Landings (gutted lbs)				
Total	15,150,195	15,883,024	15,505,728	15,512,982
SOI	4,719,836	6,149,237	5,745,323	5,538,132
Non-SOI	10,430,359	9,733,787	9,760,405	9,974,850
% SOI	31%	39%	37%	36%
Revenue				
Total	\$58,413,679	\$62,203,582	\$60,494,446	\$60,370,569
SOI	\$21,692,689	\$27,564,928	\$25,616,821	\$24,958,146
Non-SOI	\$36,720,991	\$34,638,654	\$34,877,625	\$35,412,423
% SOI	37%	44%	42%	41%
Vessel Characteristics				
Length	39	39	39	39
Year Built	1986	1986	1987	1986
For-Hire Fishing Permit	24%	23%	24%	24%

Annual, Vessel-Level Economics

	2014	2015	2016	Average
Number of Observations	72	92	103	
Response Rate (%)	67%	78%	87%	
SOI Vessel				
Owner-Operated	73%	66%	77%	72%
For-Hire Active	7%	13%	18%	13%
Vessel Value	\$126,022	\$100,618	\$87,935	\$104,858
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	7.9%	5.7%	6.2%	6.6%
Other Supplies	9.7%	9%	10.2%	9.6%
Hired Crew	26.9%	25.7%	24.4%	25.7%
Vessel Repair & Maintenance	7.4%	6.6%	8.3%	7.4%
Insurance	1%	0.8%	1%	0.9%
Overhead	5%	5.4%	4.9%	5.1%
Loan Payment	0.9%	1.3%	1.3%	1.2%
IFQ Purchase	11.5%	24.8%	14.2%	16.8%
OC Owner-Captain Time	5.4%	5%	6.6%	5.7%
Net Cash Flow	30%	21%	30%	27%
Net Revenue for Operations*	33%	39%	35%	36%
Depreciation	3.4%	2.7%	3%	3%
Fixed Costs	13%	13%	14%	13%
Labor - Hired & Owner	32%	31%	31%	31%
Fuel & Supplies	18%	15%	16%	16%
Economic Return* (on asset value)	48.2%	72.7%	58.8%	59.9%

SOI: 2016 GOM IFQ Grouper-Tilefish Fishery: All Gears

Description: The GOM IFQ Grouper-Tilefish SOI consists of all logbook trips by permitted vessels where at least one pound of fish managed by the GOM Grouper-Tilefish IFQ program was landed in 2016. Species managed include red and gag grouper, other shallow and deep water grouper as well as tilefish. For a complete list of the species included, please refer to Appendix 1. For important **disclaimer**, see page 14.

Trip-Level Summary

Effort

Trips	4,984
Vessels	434
Days at Sea	26,207
Crew Days	75,494

Landings (gutted lbs)

<u>Total</u>	12,407,057
SOI	6,673,427
Non-SOI	5,733,629
% SOI	54%

Percent by Gear

	Trips	SOI lbs
Vertical Line	76%	27%
Longline	16%	70%
Diver	7%	1%
Other	1%	1%

Price (mean)

<u>Total</u>	\$3.95
SOI	\$4.20
Non-SOI	\$3.67

Revenue

<u>Total</u>	\$49,020,237
SOI	\$28,004,955
Non-SOI	\$21,015,281
% SOI	57%

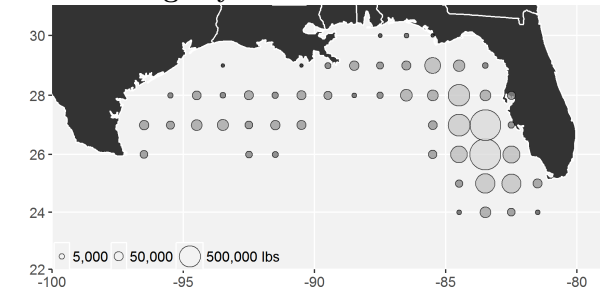
Percent of Revenue by Species Group

Shallow Water Groupers	47%
Shallow Water Snappers	2%
Mid-Shelf Snappers	38%
Deep Water Groupers/Tilefish	11%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	1%
Other Species	0.4%

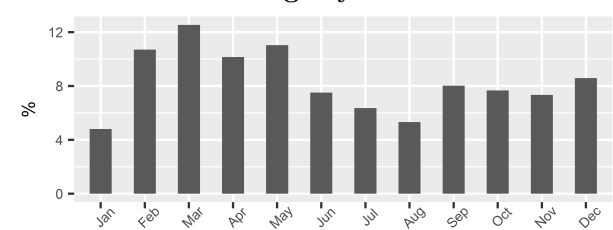
Revenue for Top 5 Species

Red Grouper	\$16,727,014
Red Snapper	\$15,002,321
Gag Grouper	\$4,485,711
Vermilion Snapper	\$3,559,977
Yellowedge Grouper	\$3,270,940

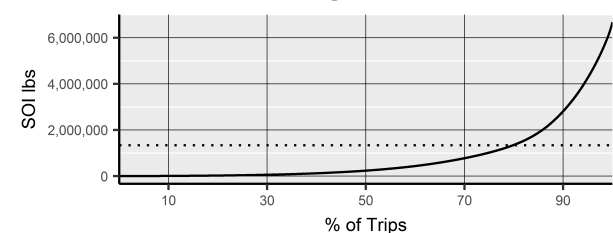
SOI Landings by Area Fished



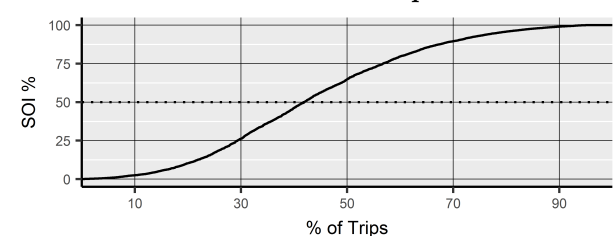
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=4,984)

	Mean	Min	Median	Max
Days at Sea	5.3	1	4	23
Crew Size	2.8	1	3	8
Landings	2,489	6	1,267	23,770
Revenue	\$9,836	\$22	\$4,565	\$97,814
SOI	\$5,619	\$3	\$1,287	\$82,674
% SOI	56%	0%	64.9%	100%

SOI: 2016 GOM IFQ Grouper-Tilefish Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	4,984	-	-	-
Selected	1,642	33%	-	-
Responded	1,627	33%	99%	-
Used	1,545	31%	94%	95%

Economic Results (n=1,545)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	65%	3.6	59%	71%	-
Days at Sea	5	0.2	4.6	5.4	4
Crew Size	2.7	0.1	2.6	2.8	3
Fuel Used	196	12	176	215	142
Landings (gutted lbs)	2,139	191	1,823	2,455	1,075
Total Revenue	8,719	851	7,309	10,129	3,831
Cost					
Fuel	396	23	358	433	285
Bait	337	34	280	394	145
Ice	157	15	132	183	96
Groceries	312	24	273	351	175
Miscellaneous	290	40	224	356	50
Hired Crew	2,473	272	2,023	2,924	850
IFQ Purchase	1,561	277	1,103	2,020	250
OC Owner-Captain Time	591	106	416	766	35
Trip Net Cash Flow	3,193	449	2,448	3,937	1,049
Trip Net Revenue	4,163	501	3,333	4,993	1,245

Trip Net Cash Flow and Trip Net Revenue as Proportion of Trip Revenue (Margins)

Revenue 100%	Trip Net Cash Flow 37%	Trip Net Revenue 48%
	IFQ Purchase 18%	
	Labor - Hired 28%	Labor - Hired & Owner 35%
	Fuel & Supplies 17%	Fuel & Supplies 17%

Input Prices

Fuel Price (average): \$2.02 per gallon Hired Crew Wage (implicit): \$242 per crew-day

Productivity Measures

Landings/Fuel Use: 10.9 lbs/gallon Landings/Labor Use: 159 lbs/crew-day

SOI: 2016 GOM IFQ Grouper-Tilefish Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	434
<u>Trips - Total</u>	<u>6,947</u>
SOI Trips	4,984
Non-SOI Trips	1,963
Days at Sea	29,806
Crew Days	85,518

Landings (gutted lbs)

<u>Total</u>	<u>15,610,380</u>
SOI	6,673,427
Non-SOI	8,936,952
% SOI	43%

Percent by Gear

	Trips	Total lbs
Vertical Line	77%	62%
Longline	12%	33%
Diver	6%	1%
Other	5%	4%

Price (mean)

<u>Total</u>	<u>\$3.89</u>
SOI	\$4.20
Non-SOI	\$3.66

Revenue

<u>Total</u>	<u>\$60,722,192</u>
SOI	\$28,004,955
Non-SOI	\$32,717,237
% SOI	46%

Percent of Revenue by Species Group

Shallow Water Groupers	38%
Shallow Water Snappers	2%
Mid-Shelf Snappers	46%
Deep Water Groupers/Tilefish	9%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	4%
Other Species	0.5%

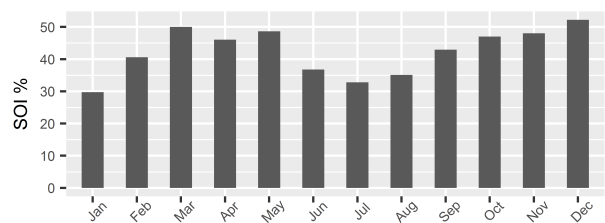
Revenue for Top 5 Species

Red Snapper	\$23,612,798
Red Grouper	\$16,762,685
Gag Grouper	\$4,508,417
Vermilion Snapper	\$3,935,745
Yellowedge Grouper	\$3,279,208

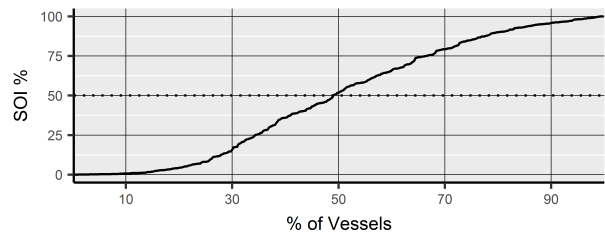
Annual, Vessel Descriptive Statistics (N=434)

	Mean	Min	Median	Max
Trips	16	1	13	117
Days at Sea	68.7	1	54	225
Crew Days	197	1	132	1,123
Landings	35,969	15	15,758	448,815
Revenue	\$139,913	\$64	\$60,482	\$2,182,950
SOI	\$64,528	\$14	\$12,037	\$719,519
% SOI	49%	0%	52%	100%

SOI Share of Monthly Landings



SOI Share of Revenue Per Vessel



Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	6%
SAT Snapper & Grouper - Limited	0.5%
King Mackerel	40%
Spanish Mackerel	44%
Dolphin-Wahoo	36%
Other Commercial Fishing	17%
For-Hire Fishing	22%

Vessel Characteristics (N=434)

	Mean	Min	Median	Max
Length	39	19	38	69
Year Built	1987	1961	1985	2016
Horsepower	418	12	350	2,000
Fiberglass Hull	94%	-	-	-
Diesel Engine	82%	-	-	-
Ice Refrigeration	96%	-	-	-

SOI: 2016 GOM IFQ Grouper-Tilefish Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	434	-	-	-
Selected	131	30%	-	-
Responded	117	27%	89%	-
Used	110	25%	84%	94%

Economic Results (n=110)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	77%	3.6	71%	83%	-
For-Hire Active	15%	3	10%	20%	-
Days - Commercial Fishing	78	4.1	71	85	60
Days - For-Hire Fishing	10	3	5	15	0
Days - Non-fishing	2	0.4	1	2	0
Vessel Value	86,537	6,541	75,684	97,390	75,000
Has Insurance	36%	4.1	30%	43%	-
Total Revenue	142,662	18,174	112,510	172,815	78,744
Commercial Fishing	130,690	17,638	101,427	159,953	67,922
For-Hire Fishing	11,972	3,650	5,917	18,027	0
Cost					
Fuel	8,975	832	7,594	10,356	5,958
Other Supplies	15,386	1,279	13,265	17,507	8,736
Hired Crew	35,133	4,420	27,799	42,466	11,977
Vessel Repair & Maintenance	11,898	1,106	10,063	13,734	8,000
Insurance	1,358	215	1,001	1,715	0
Overhead	6,681	741	5,452	7,911	3,600
Loan Payment	1,835	560	906	2,764	0
IFQ Purchase	20,646	3,336	15,111	26,181	3,000
OC Owner-Captain Time	8,510	1,163	6,580	10,440	2,876
Depreciation	4,327	327	3,784	4,869	3,750
Net Cash Flow	40,750	12,612	19,826	61,675	12,292
Net Revenue from Operations*	50,394	12,952	28,905	71,883	14,472

Net Cash Flow and Net Revenue from Operations* as Proportion of Vessel Revenue (Margins)

Revenue 100%	Net Cash Flow 29%	Net Revenue - Operations 35%
	IFQ Purchase 14%	Depreciation 3%
	Loan Payment 1%	Fixed Costs 14%
	Fixed Costs 14%	Labor - Hired & Owner 31%
	Labor - Hired 25%	Fuel & Supplies 17%
	Fuel & Supplies 17%	

Economic Return* (on Vessel Asset Value): 58.2%

* Accruing to vessel owner AND IFQ shareholder. See Definitions.

SOI: 2016 GOM IFQ Grouper-Tilefish Fishery: All Gears

Trip-Level Time Series

Trip-Level Summary

	2014	2015	2016	Average
Effort				
Trips	4,934	4,943	4,984	4,954
Vessels	443	445	434	441
Days at Sea	26,115	25,804	26,207	26,042
Landings (gutted lbs)				
<u>Total</u>	13,425,152	12,455,510	12,407,057	12,762,573
SOI	7,517,281	6,717,393	6,673,427	6,969,367
Non-SOI	5,907,872	5,738,117	5,733,629	5,793,206
% SOI	56%	54%	54%	55%
Price (mean)				
<u>Total</u>	\$3.85	\$3.95	\$3.95	\$3.92
SOI	\$4.00	\$4.13	\$4.20	\$4.11
Non-SOI	\$3.65	\$3.74	\$3.67	\$3.69
Revenue				
<u>Total</u>	\$51,621,896	\$49,230,702	\$49,020,237	\$49,957,612
SOI	\$30,063,027	\$27,768,132	\$28,004,955	\$28,612,038
Non-SOI	\$21,558,869	\$21,462,570	\$21,015,281	\$21,345,573
% SOI	58%	56%	57%	57%

Trip-Level Economics

	2014	2015	2016	Average
Number of Observations	1,043	1,299	1,545	
Response Rate (%)	79%	85%	94%	
SOI Trip				
Owner-Operated	69%	63%	65%	65.7%
Fuel Used per Day at Sea (gallons/day)	45	43	39	42
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	7%	5.4%	4.5%	5.6%
Bait	3.3%	3.7%	3.9%	3.6%
Ice	1.5%	1.6%	1.8%	1.6%
Groceries	2.6%	2.8%	3.6%	3%
Miscellaneous	2.5%	2.8%	3.3%	2.9%
Hired Crew	29%	29.1%	28.4%	28.8%
IFQ Purchase	14.6%	20.5%	17.9%	17.7%
OC Owner-Captain Time	6.2%	5.8%	6.8%	6.3%
Trip Net Cash Flow	39%	34%	37%	37%
Trip Net Revenue	48%	49%	48%	48%
Labor - Hired & Owner	35%	35%	35%	35%
Fuel & Supplies	17%	16%	17%	17%
Input Prices				
Fuel Price (per gallon)	\$3.54	\$2.54	\$2.02	\$2.70
Hire Crew Wage (per crew-day)	\$312	\$287	\$242	\$280
Productivity Measures				
Landings/Fuel Use (lbs/gallon)	13	11.8	10.9	12
Landings/Labor Use (lbs/crew-day)	209	188	159	185

SOI: 2016 GOM IFQ Grouper-Tilefish Fishery: All Gears
Annual, Vessel-Level Time Series

Annual, Vessel-Level Summary

	2014	2015	2016	Average
Effort				
Vessels	443	445	434	441
Trips - Total	6,740	6,798	6,947	6,828
SOI Trips	4,934	4,943	4,984	4,954
Non-SOI Trips	1,806	1,855	1,963	1,875
Days at Sea	29,799	29,560	29,806	29,722
Landings (gutted lbs)				
Total	15,996,977	15,895,399	15,610,380	15,834,252
SOI	7,517,281	6,717,393	6,673,427	6,969,367
Non-SOI	8,479,696	9,178,006	8,936,952	8,864,885
% SOI	47%	42%	43%	44%
Revenue				
Total	\$60,912,491	\$62,366,418	\$60,722,192	\$61,333,700
SOI	\$30,063,027	\$27,768,132	\$28,004,955	\$28,612,038
Non-SOI	\$30,849,464	\$34,598,286	\$32,717,237	\$32,721,662
% SOI	49%	45%	46%	47%
Vessel Characteristics				
Length	39	39	39	39
Year Built	1986	1987	1987	1987
For-Hire Fishing Permit	23%	22%	22%	22%

Annual, Vessel-Level Economics

	2014	2015	2016	Average
Number of Observations	74	95	110	
Response Rate (%)	62%	79%	84%	
SOI Vessel				
Owner-Operated	74%	68%	77%	73%
For-Hire Active	6%	17%	15%	13%
Vessel Value	\$128,243	\$107,554	\$86,537	\$107,445
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	7.9%	6.1%	6.3%	6.8%
Other Supplies	9.5%	9.3%	10.8%	9.9%
Hired Crew	27.1%	25.6%	24.6%	25.8%
Vessel Repair & Maintenance	7.5%	6.7%	8.3%	7.5%
Insurance	1%	0.8%	1%	0.9%
Overhead	5%	5.5%	4.7%	5.1%
Loan Payment	0.8%	1.4%	1.3%	1.2%
IFQ Purchase	11.5%	24.5%	14.5%	16.8%
OC Owner-Captain Time	5.6%	5.1%	6%	5.6%
Net Cash Flow	30%	20%	29%	26%
Net Revenue for Operations*	33%	38%	35%	35%
Depreciation	3.6%	3%	3%	3.2%
Fixed Costs	13%	13%	14%	13%
Labor - Hired & Owner	33%	31%	31%	32%
Fuel & Supplies	17%	15%	17%	16%
Economic Return* (on asset value)	45.7%	63%	58.2%	55.6%

SOI: 2016 GOM IFQ Red Grouper Fishery: All Gears

Description: This SOI consists of all logbook trips by permitted vessels where at least one pound of red grouper was landed in 2016 using any gear type. Red grouper in the GOM is an IFQ fishery. Official 2016 red grouper landings and revenue, per the IFQ-tracking system, are 4,497,582 lbs (gutted weight) and \$17,900,376. Hence the logbook-based red grouper SOI accounts for about 93% of the fishery (near-census). For important **disclaimer**, see page 14.

Trip-Level Summary

Effort

Trips	3,825
Vessels	371
Days at Sea	20,411
Crew Days	54,837

Landings (gutted lbs)

<u>Total</u>	8,110,721
SOI	4,201,056
Non-SOI	3,909,665
% SOI	52%

Percent by Gear

	Trips	SOI lbs
Vertical Line	75%	27%
Longline	17%	71%
Diver	7%	0.4%
Other	1%	2%

Price (mean)

<u>Total</u>	\$3.90
SOI	\$3.98
Non-SOI	\$3.82

Revenue

<u>Total</u>	\$31,642,704
SOI	\$16,725,276
Non-SOI	\$14,917,428
% SOI	53%

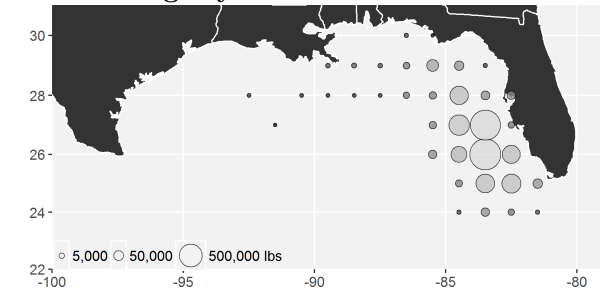
Percent of Revenue by Species Group

Shallow Water Groupers	70%
Shallow Water Snappers	2%
Mid-Shelf Snappers	22%
Deep Water Groupers/Tilefish	3%
Grunts/Porgies/Triggerfish	2%
Mackerels/Dolphinfish/Jacks	0.9%
Other Species	0.3%

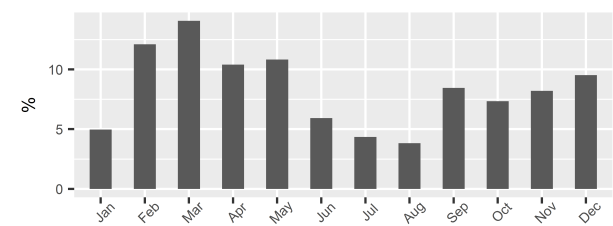
Revenue for Top 5 Species

Red Grouper	\$16,727,014
Red Snapper	\$5,190,415
Gag Grouper	\$4,157,390
Vermilion Snapper	\$1,630,114
Scamp	\$1,088,241

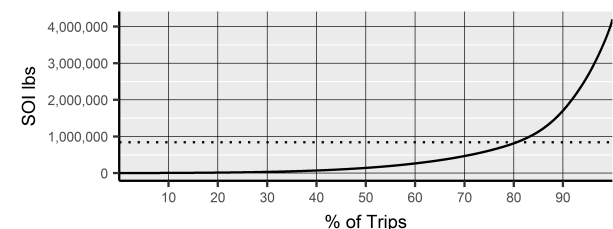
SOI Landings by Area Fished



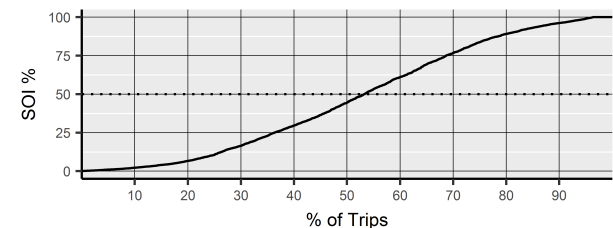
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=3,825)

	Mean	Min	Median	Max
Days at Sea	5.3	1	4	22
Crew Size	2.6	1	2	8
Landings	2,120	7	1,108	20,869
Revenue	\$8,273	\$22	\$4,182	\$83,969
SOI	\$4,373	\$4	\$955	\$67,073
% SOI	47%	0%	44.7%	100%

SOI: 2016 GOM IFQ Red Grouper Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	3,825	-	-	-
Selected	1,309	34%	-	-
Responded	1,295	34%	99%	-
Used	1,228	32%	94%	95%

Economic Results (n=1,228)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	64%	3.9	57%	71%	-
Days at Sea	5.1	0.2	4.7	5.5	4
Crew Size	2.6	0.1	2.5	2.7	2
Fuel Used	188	12	169	208	140
Landings (gutted lbs)	1,829	183	1,526	2,132	862
Total Revenue	7,479	793	6,164	8,795	3,204
Cost					
Fuel	383	23	345	421	278
Bait	308	32	254	362	125
Ice	130	15	105	156	80
Groceries	304	24	264	344	150
Miscellaneous	260	36	200	320	60
Hired Crew	2,245	288	1,767	2,722	800
IFQ Purchase	1,327	135	1,104	1,551	224
OC Owner-Captain Time	604	112	418	791	67
Trip Net Cash Flow	2,522	377	1,896	3,148	835
Trip Net Revenue	3,245	394	2,592	3,899	814

Trip Net Cash Flow and Trip Net Revenue as Proportion of Trip Revenue (Margins)

Revenue 100%	Trip Net Cash Flow 34%	Trip Net Revenue 43%
	IFQ Purchase 18%	
	Labor - Hired 30%	Labor - Hired & Owner 38%
	Fuel & Supplies 19%	Fuel & Supplies 19%

Input Prices

Fuel Price (average): \$2.03 per gallon Hired Crew Wage (implicit): \$228 per crew-day

Productivity Measures

Landings/Fuel Use: 9.7 lbs/gallon Landings/Labor Use: 140 lbs/crew-day

SOI: 2016 GOM IFQ Red Grouper Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	371
<u>Trips - Total</u>	<u>5,880</u>
SOI Trips	3,825
Non-SOI Trips	2,055
Days at Sea	26,295
Crew Days	72,869

Landings (gutted lbs)

<u>Total</u>	<u>11,897,227</u>
SOI	4,201,056
Non-SOI	7,696,171
% SOI	35%

Percent by Gear

	Trips	Total lbs
Vertical Line	75%	56%
Longline	13%	38%
Diver	7%	1%
Other	5%	5%

Price (mean)

<u>Total</u>	<u>\$3.76</u>
SOI	\$3.98
Non-SOI	\$3.64

Revenue

<u>Total</u>	<u>\$44,731,121</u>
SOI	\$16,725,276
Non-SOI	\$28,005,845
% SOI	37%

Percent of Revenue by Species Group

Shallow Water Groupers	51%
Shallow Water Snappers	2%
Mid-Shelf Snappers	34%
Deep Water Groupers/Tilefish	6%
Grunts/Porgies/Triggerfish	2%
Mackerels/Dolphinfish/Jacks	4%
Other Species	0.5%

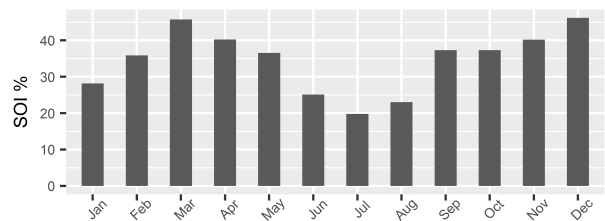
Revenue for Top 5 Species

Red Grouper	\$16,762,187
Red Snapper	\$11,396,324
Gag Grouper	\$4,486,189
Vermilion Snapper	\$3,499,358
Yellowedge Grouper	\$1,704,698

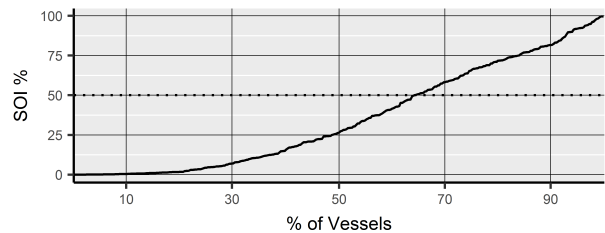
Annual, Vessel Descriptive Statistics (N=371)

	Mean	Min	Median	Max
Trips	15.8	1	13	117
Days at Sea	70.9	1	56	216
Crew Days	196.4	1	129	1,099
Landings	32,068	15	15,071	313,174
Revenue	\$120,569	\$64	\$58,045	\$1,457,081
SOI	\$45,082	\$8	\$7,122	\$453,917
% SOI	35.6%	0%	26.5%	99.6%

SOI Share of Monthly Landings



SOI Share of Revenue Per Vessel



Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	6%
SAT Snapper & Grouper - Limited	0.5%
King Mackerel	36%
Spanish Mackerel	44%
Dolphin-Wahoo	35%
Other Commercial Fishing	16%
For-Hire Fishing	21%

Vessel Characteristics (N=371)

	Mean	Min	Median	Max
Length	38	19	37	69
Year Built	1987	1961	1984	2016
Horsepower	406	12	350	2,000
Fiberglass Hull	94%	-	-	-
Diesel Engine	82%	-	-	-
Ice Refrigeration	96%	-	-	-

SOI: 2016 GOM IFQ Red Grouper Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	371	-	-	-
Selected	116	31%	-	-
Responded	104	28%	90%	-
Used	97	26%	84%	93%

Economic Results (n=97)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	79%	3.8	73%	86%	-
For-Hire Active	11%	3	7%	16%	-
Days - Commercial Fishing	79	4.3	72	87	60
Days - For-Hire Fishing	6	2.6	2	10	0
Days - Non-fishing	1	0.4	1	2	0
Vessel Value	75,804	4,306	68,652	82,957	70,000
Has Insurance	30%	4.3	23%	38%	-
Total Revenue	114,241	10,228	97,252	131,231	72,531
Commercial Fishing	108,637	9,992	92,041	125,234	58,500
For-Hire Fishing	5,604	2,605	1,277	9,932	0
Cost					
Fuel	7,736	735	6,516	8,956	5,219
Other Supplies	15,074	1,351	12,829	17,319	7,000
Hired Crew	30,326	3,486	24,536	36,117	9,159
Vessel Repair & Maintenance	10,420	846	9,015	11,824	7,835
Insurance	1,022	179	725	1,319	0
Overhead	6,672	883	5,205	8,139	3,500
Loan Payment	1,451	421	752	2,150	0
IFQ Purchase	16,967	2,153	13,391	20,543	3,184
OC Owner-Captain Time	8,136	1,174	6,185	10,086	2,427
Depreciation	3,790	215	3,433	4,148	3,500
Net Cash Flow	24,572	4,365	17,322	31,822	7,213
Net Revenue from Operations*	31,065	4,983	22,787	39,342	9,197

Net Cash Flow and Net Revenue from Operations* as Proportion of Vessel Revenue (Margins)

Revenue 100%	Net Cash Flow 22%	Net Revenue - Operations 27%
	IFQ Purchase 15%	Depreciation 3%
	Loan Payment 1%	Fixed Costs 16%
	Fixed Costs 16%	Labor - Hired & Owner 34%
	Labor - Hired 27%	
	Fuel & Supplies 20%	Fuel & Supplies 20%

Economic Return* (on Vessel Asset Value): 41%

* Accruing to vessel owner AND IFQ shareholder. See Definitions.

SOI: 2016 GOM IFQ Red Grouper Fishery: All Gears

Trip-Level Time Series

Trip-Level Summary

	2014	2015	2016	Average
Effort				
Trips	4,010	3,923	3,825	3,919
Vessels	389	372	371	377
Days at Sea	21,208	20,538	20,411	20,719
Landings (gutted lbs)				
<u>Total</u>	9,403,264	8,245,374	8,110,721	8,586,453
SOI	5,298,112	4,534,115	4,201,056	4,677,761
Non-SOI	4,105,152	3,711,258	3,909,665	3,908,692
% SOI	56%	55%	52%	54%
Price (mean)				
<u>Total</u>	\$3.76	\$3.87	\$3.90	\$3.84
SOI	\$3.87	\$3.99	\$3.98	\$3.95
Non-SOI	\$3.62	\$3.73	\$3.82	\$3.72
Revenue				
<u>Total</u>	\$35,366,706	\$31,940,493	\$31,642,704	\$32,983,301
SOI	\$20,495,893	\$18,115,860	\$16,725,276	\$18,445,676
Non-SOI	\$14,870,813	\$13,824,634	\$14,917,428	\$14,537,625
% SOI	58%	57%	53%	56%

Trip-Level Economics

	2014	2015	2016	Average
Number of Observations	829	1,066	1,228	
Response Rate (%)	78%	85%	94%	
SOI Trip				
Owner-Operated	68%	62%	64%	64.7%
Fuel Used per Day at Sea (gallons/day)	41	39	37	39
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	8%	6.3%	5.1%	6.5%
Bait	3.7%	4%	4.1%	3.9%
Ice	1.5%	1.6%	1.7%	1.6%
Groceries	3%	3.2%	4.1%	3.4%
Miscellaneous	2.2%	3%	3.5%	2.9%
Hired Crew	30%	31%	30%	30.3%
IFQ Purchase	15.4%	21.8%	17.7%	18.3%
OC Owner-Captain Time	7.5%	6.9%	8.1%	7.5%
Trip Net Cash Flow	36%	29%	34%	33%
Trip Net Revenue	44%	44%	43%	44%
Labor - Hired & Owner	37%	38%	38%	37.7%
Fuel & Supplies	18%	18%	19%	18%
Input Prices				
Fuel Price (per gallon)	\$3.61	\$2.60	\$2.03	\$2.75
Hire Crew Wage (per crew-day)	\$278	\$259	\$228	\$255
Productivity Measures				
Landings/Fuel Use (lbs/gallon)	11.9	10.5	9.7	11
Landings/Labor Use (lbs/crew-day)	183	160	140	161

SOI: 2016 GOM IFQ Red Grouper Fishery: All Gears
Annual, Vessel-Level Time Series

Annual, Vessel-Level Summary

	2014	2015	2016	Average
Effort				
Vessels	389	372	371	377
Trips - Total	5,842	5,384	5,880	5,702
SOI Trips	4,010	3,923	3,825	3,919
Non-SOI Trips	1,832	1,461	2,055	1,783
Days at Sea	26,974	25,531	26,295	26,267
Landings (gutted lbs)				
Total	12,943,889	11,663,736	11,897,227	12,168,284
SOI	5,298,112	4,534,115	4,201,056	4,677,761
Non-SOI	7,645,778	7,129,621	7,696,171	7,490,523
% SOI	41%	39%	35%	38%
Revenue				
Total	\$48,158,961	\$44,532,060	\$44,731,121	\$45,807,381
SOI	\$20,495,893	\$18,115,860	\$16,725,276	\$18,445,676
Non-SOI	\$27,663,068	\$26,416,201	\$28,005,845	\$27,361,705
% SOI	43%	41%	37%	40%
Vessel Characteristics				
Length	38	38	38	38
Year Built	1987	1987	1987	1987
For-Hire Fishing Permit	23%	22%	21%	22%

Annual, Vessel-Level Economics

	2014	2015	2016	Average
Number of Observations	66	81	97	
Response Rate (%)	65%	78%	84%	
SOI Vessel				
Owner-Operated	75%	66%	79%	73%
For-Hire Active	6%	19%	11%	12%
Vessel Value	\$127,689	\$99,460	\$75,804	\$100,984
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	8.2%	7.6%	6.8%	7.5%
Other Supplies	10.6%	11.1%	13.2%	11.6%
Hired Crew	26.5%	29.4%	26.5%	27.5%
Vessel Repair & Maintenance	7.2%	8.6%	9.1%	8.3%
Insurance	0.5%	1.1%	0.9%	0.8%
Overhead	4.2%	6.3%	5.8%	5.4%
Loan Payment	0.9%	1.8%	1.3%	1.3%
IFQ Purchase	11.4%	15.4%	14.9%	13.9%
OC Owner-Captain Time	5.6%	5.6%	7.1%	6.1%
Net Cash Flow	30%	19%	22%	24%
Net Revenue for Operations*	33%	27%	27%	29%
Depreciation	3.8%	3.7%	3.3%	3.6%
Fixed Costs	12%	16%	16%	15%
Labor - Hired & Owner	32%	35%	34%	34%
Fuel & Supplies	19%	19%	20%	19%
Economic Return* (on asset value)	44.2%	36%	41%	40.4%

SOI: 2016 GOM IFQ Gag Grouper Fishery: All Gears

Description: This SOI consists of all logbook trips by permitted vessels where at least one pound of gag grouper was landed in 2016 using any gear type. Gag grouper in the GOM is an IFQ fishery. Official 2016 gag grouper landings and revenue, per the IFQ-tracking system, are 910,996 lbs (gutted weight) and \$4,664,300. Hence the logbook-based gag grouper SOI accounts for about 96% of the fishery (near-census). For important **disclaimer**, see page 14.

Trip-Level Summary

Effort

Trips	3,247
Vessels	373
Days at Sea	18,639
Crew Days	52,764

Landings (gutted lbs)

<u>Total</u>	8,461,657
SOI	876,616
Non-SOI	7,585,040
% SOI	10%

Percent by Gear

	Trips	SOI lbs
Vertical Line	71%	51%
Longline	20%	44%
Diver	9%	5%
Other	0.4%	0%

Price (mean)

<u>Total</u>	\$3.90
SOI	\$5.12
Non-SOI	\$3.76

Revenue

<u>Total</u>	\$33,036,641
SOI	\$4,485,597
Non-SOI	\$28,551,044
% SOI	14%

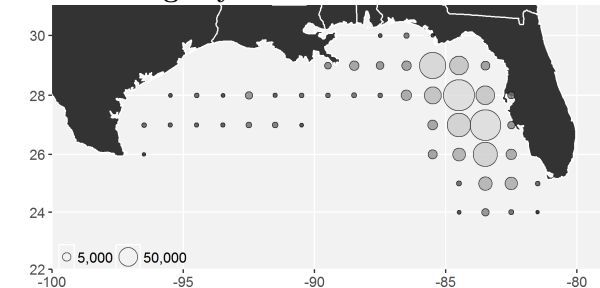
Percent of Revenue by Species Group

Shallow Water Groupers	62%
Shallow Water Snappers	2%
Mid-Shelf Snappers	27%
Deep Water Groupers/Tilefish	6%
Grunts/Porgies/Triggerfish	2%
Mackerels/Dolphinfish/Jacks	1%
Other Species	0.4%

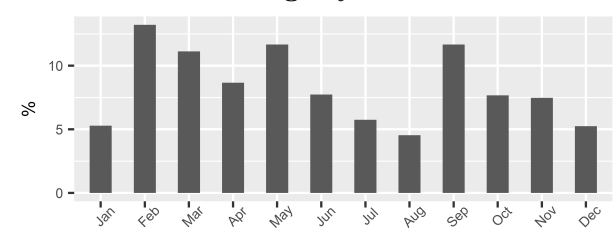
Revenue for Top 5 Species

Red Grouper	\$14,649,909
Red Snapper	\$6,536,682
Gag Grouper	\$4,485,597
Vermilion Snapper	\$2,156,033
Yellowedge Grouper	\$1,309,111

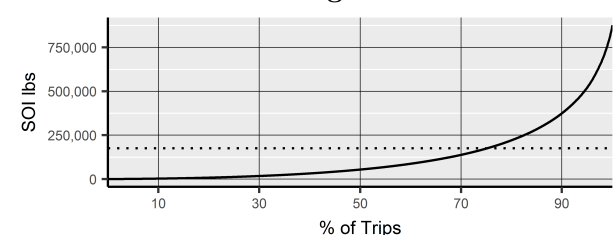
SOI Landings by Area Fished



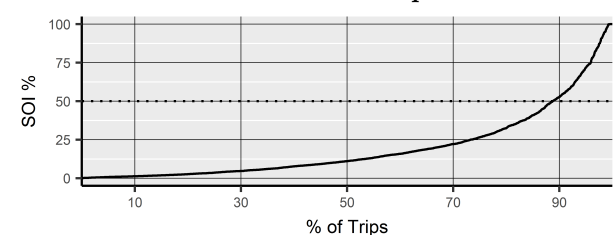
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=3,247)

	Mean	Min	Median	Max
Days at Sea	5.7	1	5	23
Crew Size	2.7	1	3	8
Landings	2,606	6	1,442	20,869
Revenue	\$10,175	\$31	\$5,354	\$83,969
SOI	\$1,381	\$5	\$417	\$29,229
% SOI	20%	0.1%	11.1%	100%

SOI: 2016 GOM IFQ Gag Grouper Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	3,247	-	-	-
Selected	1,031	32%	-	-
Responded	1,020	31%	99%	-
Used	990	30%	96%	97%

Economic Results (n=990)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	61%	4	54%	67%	-
Days at Sea	5.6	0.3	5.1	6	5
Crew Size	2.6	0.1	2.5	2.7	3
Fuel Used	206	12	185	227	150
Landings (gutted lbs)	2,312	219	1,949	2,675	1,288
Total Revenue	9,451	976	7,832	11,071	4,872
Cost					
Fuel	416	24	376	457	320
Bait	364	33	309	419	180
Ice	158	16	131	184	100
Groceries	349	27	304	394	200
Miscellaneous	331	42	262	401	100
Hired Crew	2,848	309	2,335	3,360	1,265
IFQ Purchase	1,615	308	1,103	2,126	510
OC Owner-Captain Time	649	107	471	827	0
Trip Net Cash Flow	3,371	506	2,531	4,210	1,400
Trip Net Revenue	4,336	580	3,374	5,298	1,729

Trip Net Cash Flow and Trip Net Revenue as Proportion of Trip Revenue (Margins)

Revenue 100%	Trip Net Cash Flow 36%	Trip Net Revenue 46%
	IFQ Purchase 17%	
	Labor - Hired 30%	Labor - Hired & Owner 37%
	Fuel & Supplies 17%	Fuel & Supplies 17%

Input Prices

Fuel Price (average): \$2.02 per gallon Hired Crew Wage (implicit): \$255 per crew-day

Productivity Measures

Landings/Fuel Use: 11.2 lbs/gallon Landings/Labor Use: 159 lbs/crew-day

SOI: 2016 GOM IFQ Gag Grouper Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	373
<u>Trips - Total</u>	<u>6,046</u>
SOI Trips	3,247
Non-SOI Trips	2,799
Days at Sea	27,482
Crew Days	78,984

Landings (gutted lbs)

<u>Total</u>	<u>13,789,883</u>
SOI	876,616
Non-SOI	12,913,267
% SOI	6%

Percent by Gear

	Trips	Total lbs
Vertical Line	75%	58%
Longline	13%	36%
Diver	6%	1%
Other	6%	4%

Price (mean)

<u>Total</u>	<u>\$3.84</u>
SOI	\$5.12
Non-SOI	\$3.76

Revenue

<u>Total</u>	<u>\$53,007,678</u>
SOI	\$4,485,597
Non-SOI	\$48,522,082
% SOI	8%

Percent of Revenue by Species Group

Shallow Water Groupers	43%
Shallow Water Snappers	2%
Mid-Shelf Snappers	42%
Deep Water Groupers/Tilefish	8%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	4%
Other Species	0.5%

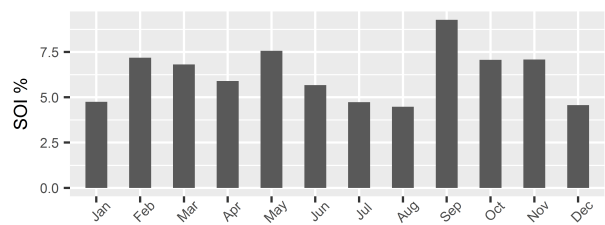
Revenue for Top 5 Species

Red Snapper	\$18,054,322
Red Grouper	\$16,648,614
Gag Grouper	\$4,508,386
Vermilion Snapper	\$3,783,543
Yellowedge Grouper	\$2,772,125

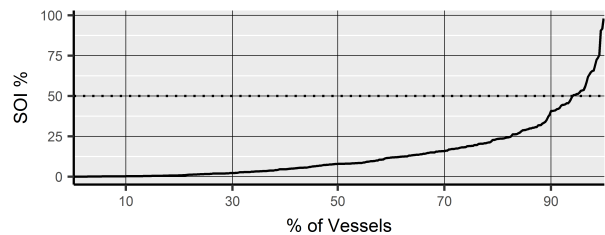
Annual, Vessel Descriptive Statistics (N=373)

	Mean	Min	Median	Max
Trips	16.2	1	13	98
Days at Sea	73.7	1	61	225
Crew Days	211.8	2	144	1,123
Landings	36,970	35	18,237	448,815
Revenue	\$142,112	\$163	\$68,118	\$2,182,950
SOI	\$12,026	\$20	\$2,443	\$209,259
% SOI	14%	0%	7.9%	98.1%

SOI Share of Monthly Landings



SOI Share of Revenue Per Vessel



Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	3%
SAT Snapper & Grouper - Limited	0.5%
King Mackerel	38%
Spanish Mackerel	42%
Dolphin-Wahoo	33%
Other Commercial Fishing	16%
For-Hire Fishing	21%

Vessel Characteristics (N=373)

	Mean	Min	Median	Max
Length	39	19	38	69
Year Built	1987	1961	1985	2016
Horsepower	405	12	350	2,000
Fiberglass Hull	94%	-	-	-
Diesel Engine	83%	-	-	-
Ice Refrigeration	96%	-	-	-

SOI: 2016 GOM IFQ Gag Grouper Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	373	-	-	-
Selected	113	30%	-	-
Responded	101	27%	89%	-
Used	96	26%	85%	95%

Economic Results (n=96)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	74%	3.9	67%	81%	-
For-Hire Active	13%	3	8%	18%	-
Days - Commercial Fishing	82	4.5	74	89	61
Days - For-Hire Fishing	10	3.2	5	15	0
Days - Non-fishing	2	0.4	1	2	0
Vessel Value	90,225	7,086	78,453	101,997	75,000
Has Insurance	33%	4.2	26%	41%	-
Total Revenue	151,798	20,996	116,919	186,676	78,744
Commercial Fishing	139,261	20,412	105,352	173,169	68,190
For-Hire Fishing	12,537	4,004	5,885	19,189	0
Cost					
Fuel	9,277	897	7,786	10,767	5,958
Other Supplies	16,514	1,461	14,087	18,941	9,097
Hired Crew	37,739	5,095	29,276	46,202	11,000
Vessel Repair & Maintenance	11,976	1,197	9,987	13,965	8,000
Insurance	1,292	222	923	1,660	0
Overhead	6,909	836	5,521	8,297	3,600
Loan Payment	2,065	652	981	3,148	0
IFQ Purchase	20,651	3,378	15,040	26,262	3,478
OC Owner-Captain Time	8,476	1,321	6,282	10,670	2,239
Depreciation	4,511	354	3,923	5,100	3,750
Net Cash Flow	45,377	14,790	20,807	69,946	12,292
Net Revenue from Operations*	55,105	15,061	30,086	80,124	15,696

Net Cash Flow and Net Revenue from Operations* as Proportion of Vessel Revenue (Margins)

Revenue 100%	Net Cash Flow 30%	Net Revenue - Operations 36%
	IFQ Purchase 14%	Depreciation 3%
	Loan Payment 1%	Fixed Costs 13%
	Fixed Costs 13%	Labor - Hired & Owner 30%
	Labor - Hired 25%	Fuel & Supplies 17%
	Fuel & Supplies 17%	

Economic Return* (on Vessel Asset Value): 61.1%

* Accruing to vessel owner AND IFQ shareholder. See Definitions.

SOI: 2016 GOM IFQ Gag Grouper Fishery: All Gears

Trip-Level Time Series

Trip-Level Summary

	2014	2015	2016	Average
Effort				
Trips	3,222	2,843	3,247	3,104
Vessels	371	362	373	369
Days at Sea	18,200	16,422	18,639	17,754
Landings (gutted lbs)				
<u>Total</u>	9,101,186	7,901,366	8,461,657	8,488,070
SOI	544,626	512,547	876,616	644,596
Non-SOI	8,556,559	7,388,819	7,585,040	7,843,473
% SOI	6%	6%	10%	7%
Price (mean)				
<u>Total</u>	\$3.80	\$3.92	\$3.90	\$3.87
SOI	\$5.07	\$5.17	\$5.12	\$5.12
Non-SOI	\$3.72	\$3.83	\$3.76	\$3.77
Revenue				
<u>Total</u>	\$34,551,380	\$30,951,721	\$33,036,641	\$32,846,581
SOI	\$2,757,874	\$2,648,981	\$4,485,597	\$3,297,484
Non-SOI	\$31,793,506	\$28,302,740	\$28,551,044	\$29,549,097
% SOI	8%	9%	14%	10%

Trip-Level Economics

	2014	2015	2016	Average
Number of Observations	667	771	990	
Response Rate (%)	80%	84%	96%	
SOI Trip				
Owner-Operated	66%	58%	61%	61.7%
Fuel Used per Day at Sea (gallons/day)	44	42	37	41
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	7.3%	5.8%	4.4%	5.8%
Bait	3.5%	3.9%	3.9%	3.8%
Ice	1.5%	1.6%	1.7%	1.6%
Groceries	2.9%	3%	3.7%	3.2%
Miscellaneous	2.3%	3.1%	3.5%	3%
Hired Crew	29.9%	32%	30.1%	30.7%
IFQ Purchase	14.1%	19.8%	17.1%	17%
OC Owner-Captain Time	6.8%	6.2%	6.9%	6.6%
Trip Net Cash Flow	39%	31%	36%	35%
Trip Net Revenue	46%	44%	46%	45%
Labor - Hired & Owner	37%	38%	37%	37.3%
Fuel & Supplies	17%	17%	17%	17%
Input Prices				
Fuel Price (per gallon)	\$3.58	\$2.57	\$2.02	\$2.72
Hire Crew Wage (per crew-day)	\$297	\$283	\$255	\$278
Productivity Measures				
Landings/Fuel Use (lbs/gallon)	12.7	11.2	11.2	12
Landings/Labor Use (lbs/crew-day)	198	176	159	178

SOI: 2016 GOM IFQ Gag Grouper Fishery: All Gears
Annual, Vessel-Level Time Series

Annual, Vessel-Level Summary

	2014	2015	2016	Average
Effort				
Vessels	371	362	373	369
Trips - Total	5,756	5,593	6,046	5,798
SOI Trips	3,222	2,843	3,247	3,104
Non-SOI Trips	2,534	2,750	2,799	2,694
Days at Sea	26,476	26,099	27,482	26,686
Landings (gutted lbs)				
Total	14,274,008	13,096,102	13,789,883	13,719,998
SOI	544,626	512,547	876,616	644,596
Non-SOI	13,729,381	12,583,556	12,913,267	13,075,401
% SOI	4%	4%	6%	5%
Revenue				
Total	\$54,336,314	\$50,729,629	\$53,007,678	\$52,691,207
SOI	\$2,757,874	\$2,648,981	\$4,485,597	\$3,297,484
Non-SOI	\$51,578,439	\$48,080,648	\$48,522,082	\$49,393,723
% SOI	5%	5%	8%	6%
Vessel Characteristics				
Length	39	38	39	39
Year Built	1987	1987	1987	1987
For-Hire Fishing Permit	22%	22%	21%	22%

Annual, Vessel-Level Economics

	2014	2015	2016	Average
Number of Observations	64	81	96	
Response Rate (%)	65%	79%	85%	
SOI Vessel				
Owner-Operated	73%	63%	74%	70%
For-Hire Active	5%	19%	13%	12%
Vessel Value	\$129,373	\$104,564	\$90,225	\$108,054
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	7.6%	7.1%	6.1%	6.9%
Other Supplies	10.4%	10.8%	10.9%	10.7%
Hired Crew	28.3%	29.9%	24.9%	27.7%
Vessel Repair & Maintenance	7%	8%	7.9%	7.6%
Insurance	0.6%	1%	0.9%	0.8%
Overhead	3.9%	5.7%	4.6%	4.7%
Loan Payment	0.4%	1.6%	1.4%	1.1%
IFQ Purchase	11.9%	14.3%	13.6%	13.3%
OC Owner-Captain Time	5.4%	5%	5.6%	5.3%
Net Cash Flow	30%	22%	30%	27%
Net Revenue for Operations*	33%	29%	36%	33%
Depreciation	3.6%	3.4%	3%	3.3%
Fixed Costs	12%	15%	13%	13%
Labor - Hired & Owner	34%	35%	30%	33%
Fuel & Supplies	18%	18%	17%	18%
Economic Return* (on asset value)	45.9%	42.8%	61.1%	49.9%

SOI: 2016 GOM IFQ OSWG Fishery: All Gears

Description: This SOI consists of all logbook trips by permitted vessels where at least one pound of other shallow water grouper (OSWG) (scamp, black, yellowmouth, or yellowfin) was landed in 2016 using any gear type. Official 2016 landings and revenue, per the IFQ-tracking system, are 335,238 lbs (gutted weight) and \$1,566,345. Hence the logbook-based OSWG SOI accounts for about 101% of the fishery (near-census); due to OSWG being caught with DWG allocation. For important **disclaimer**, see page 14.

Trip-Level Summary

Effort

Trips	2,618
Vessels	338
Days at Sea	17,658
Crew Days	52,744

Landings (gutted lbs)

<u>Total</u>	9,444,126
SOI	339,357
Non-SOI	9,104,769
% SOI	4%

Percent by Gear

	Trips	SOI lbs
Vertical Line	74%	44%
Longline	23%	53%
Diver	3%	2%
Other	0.4%	0.9%

Price (mean)

<u>Total</u>	\$3.96
SOI	\$4.67
Non-SOI	\$3.93

Revenue

<u>Total</u>	\$37,395,023
SOI	\$1,584,379
Non-SOI	\$35,810,643
% SOI	4%

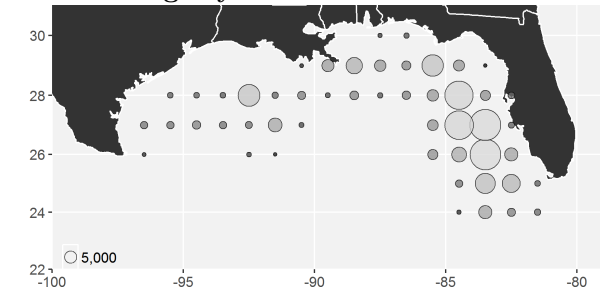
Percent of Revenue by Species Group

Shallow Water Groupers	49%
Shallow Water Snappers	1%
Mid-Shelf Snappers	40%
Deep Water Groupers/Tilefish	7%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	1%
Other Species	0.4%

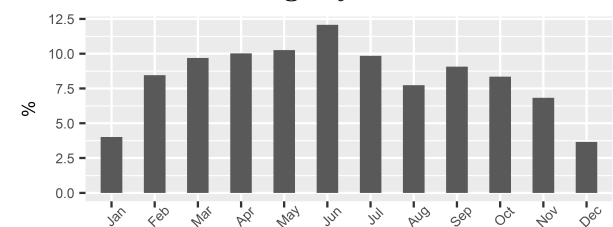
Revenue for Top 5 Species

Red Grouper	\$12,844,079
Red Snapper	\$11,762,272
Gag Grouper	\$3,757,586
Vermilion Snapper	\$2,967,847
Yellowedge Grouper	\$1,659,538

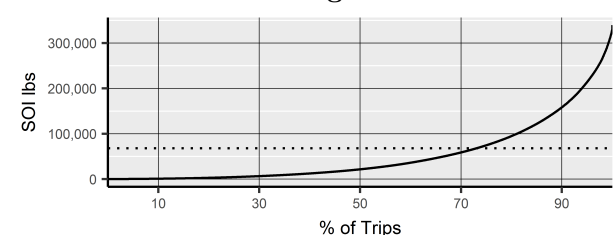
SOI Landings by Area Fished



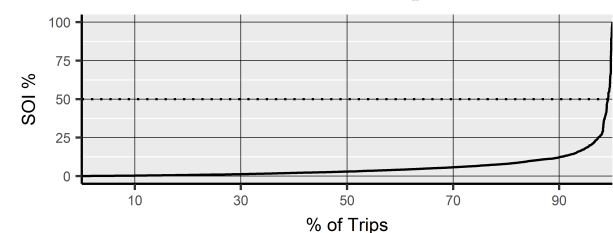
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=2,618)

	Mean	Min	Median	Max
Days at Sea	6.7	1	6	23
Crew Size	2.9	1	3	8
Landings	3,607	14	2,268	23,770
Revenue	\$14,284	\$63	\$8,071	\$97,814
SOI	\$605	\$4	\$205	\$44,245
% SOI	6%	0%	2.9%	100%

SOI: 2016 GOM IFQ OSWG Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	2,618	-	-	-
Selected	890	34%	-	-
Responded	878	34%	99%	-
Used	856	33%	96%	97%

Economic Results (n=856)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	59%	4.3	52%	66%	-
Days at Sea	6.3	0.3	5.8	6.7	6
Crew Size	2.8	0.1	2.7	2.9	3
Fuel Used	243	13	221	265	196
Landings (gutted lbs)	3,056	230	2,674	3,437	1,854
Total Revenue	12,478	1,027	10,772	14,183	6,632
Cost					
Fuel	488	26	445	530	381
Bait	438	35	379	496	264
Ice	209	17	180	238	135
Groceries	415	28	368	462	300
Miscellaneous	412	45	336	487	106
Hired Crew	3,601	325	3,062	4,140	1,806
IFQ Purchase	2,237	337	1,677	2,797	850
OC Owner-Captain Time	735	131	517	953	0
Trip Net Cash Flow	4,679	559	3,750	5,607	2,006
Trip Net Revenue	6,180	613	5,162	7,199	3,013

Trip Net Cash Flow and Trip Net Revenue as Proportion of Trip Revenue (Margins)

Revenue 100%	Trip Net Cash Flow 37%	Trip Net Revenue 50%
	IFQ Purchase 18%	
	Labor - Hired 29%	Labor - Hired & Owner 35%
	Fuel & Supplies 16%	Fuel & Supplies 16%

Input Prices

Fuel Price (average): \$2.01 per gallon

Hired Crew Wage (implicit): \$261 per crew-day

Productivity Measures

Landings/Fuel Use: 12.6 lbs/gallon

Landings/Labor Use: 174 lbs/crew-day

SOI: 2016 GOM IFQ OSWG Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	338
<u>Trips - Total</u>	<u>5,925</u>
SOI Trips	2,618
Non-SOI Trips	3,307
Days at Sea	27,547
Crew Days	79,880

Landings (guttled lbs)

<u>Total</u>	<u>14,832,373</u>
SOI	339,357
Non-SOI	14,493,016
% SOI	2%

Percent by Gear

	Trips	Total lbs
Vertical Line	76%	61%
Longline	13%	34%
Diver	6%	0.9%
Other	5%	4%

Price (mean)

<u>Total</u>	<u>\$3.92</u>
SOI	\$4.67
Non-SOI	\$3.90

Revenue

<u>Total</u>	<u>\$58,104,848</u>
SOI	\$1,584,379
Non-SOI	\$56,520,469
% SOI	3%

Percent of Revenue by Species Group

Shallow Water Groupers	39%
Shallow Water Snappers	2%
Mid-Shelf Snappers	47%
Deep Water Groupers/Tilefish	8%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	3%
Other Species	0.5%

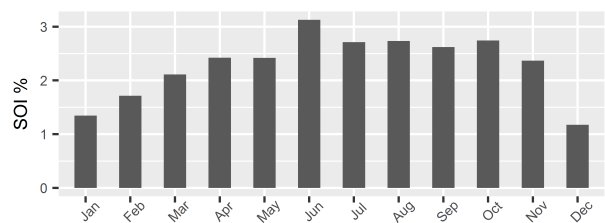
Revenue for Top 5 Species

Red Snapper	\$23,033,088
Red Grouper	\$16,467,855
Gag Grouper	\$4,352,008
Vermilion Snapper	\$3,895,429
Yellowedge Grouper	\$2,708,625

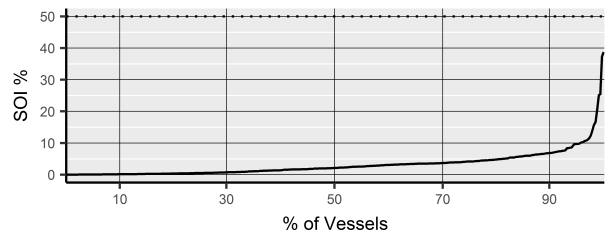
Annual, Vessel Descriptive Statistics (N=338)

	Mean	Min	Median	Max
Trips	17.5	1	14	117
Days at Sea	81.5	1	72	225
Crew Days	236.3	1	187	1,123
Landings	43,883	15	23,816	448,815
Revenue	\$171,908	\$64	\$90,475	\$2,182,950
SOI	\$4,688	\$5	\$1,277	\$56,871
% SOI	3.2%	0%	2.1%	38.8%

SOI Share of Monthly Landings



SOI Share of Revenue Per Vessel



Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	5%
SAT Snapper & Grouper - Limited	0.6%
King Mackerel	41%
Spanish Mackerel	42%
Dolphin-Wahoo	34%
Other Commercial Fishing	18%
For-Hire Fishing	21%

Vessel Characteristics (N=338)

	Mean	Min	Median	Max
Length	40	19	39	69
Year Built	1986	1961	1983	2016
Horsepower	415	12	350	2,000
Fiberglass Hull	93%	-	-	-
Diesel Engine	87%	-	-	-
Ice Refrigeration	96%	-	-	-

SOI: 2016 GOM IFQ OSWG Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	338	-	-	-
Selected	105	31%	-	-
Responded	93	28%	89%	-
Used	87	26%	83%	94%

Economic Results (n=87)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	73%	4.3	66%	80%	-
For-Hire Active	12%	3.2	7%	17%	-
Days - Commercial Fishing	90	4.8	82	98	73
Days - For-Hire Fishing	11	4	4	17	0
Days - Non-fishing	2	0.5	1	2	0
Vessel Value	86,445	7,938	73,245	99,645	75,000
Has Insurance	35%	4.6	27%	43%	-
Total Revenue	171,503	22,670	133,804	209,203	95,040
Commercial Fishing	157,587	21,976	121,042	194,132	88,700
For-Hire Fishing	13,917	5,050	5,519	22,314	0
Cost					
Fuel	10,176	1,087	8,368	11,984	7,080
Other Supplies	18,530	1,564	15,929	21,131	12,876
Hired Crew	42,616	5,550	33,387	51,844	17,574
Vessel Repair & Maintenance	13,225	1,462	10,794	15,656	8,418
Insurance	1,460	260	1,027	1,892	0
Overhead	7,252	960	5,656	8,848	3,600
Loan Payment	1,884	670	769	2,999	0
IFQ Purchase	25,067	4,134	18,193	31,941	4,302
OC Owner-Captain Time	9,590	1,436	7,203	11,978	3,624
Depreciation	4,322	397	3,662	4,982	3,750
Net Cash Flow	51,294	15,849	24,938	77,650	19,628
Net Revenue from Operations*	64,332	16,219	37,361	91,304	22,519

Net Cash Flow and Net Revenue from Operations* as Proportion of Vessel Revenue (Margins)

Revenue 100%	Net Cash Flow 30%	Net Revenue - Operations 38%
	IFQ Purchase 15%	Depreciation 3%
	Loan Payment 1%	Fixed Costs 13%
	Fixed Costs 13%	Labor - Hired & Owner 30%
	Labor - Hired 25%	Fuel & Supplies 17%
	Fuel & Supplies 17%	

Economic Return* (on Vessel Asset Value): 74.4%

* Accruing to vessel owner AND IFQ shareholder. See Definitions.

SOI: 2016 GOM IFQ OSWG Fishery: All Gears

Trip-Level Time Series

Trip-Level Summary

	2014	2015	2016	Average
Effort				
Trips	2,437	2,331	2,618	2,462
Vessels	357	340	338	345
Days at Sea	16,251	15,758	17,658	16,556
Landings (guttled lbs)				
<u>Total</u>	8,937,837	8,419,082	9,444,126	8,933,682
SOI	218,567	225,190	339,357	261,038
Non-SOI	8,719,270	8,193,892	9,104,769	8,672,644
% SOI	2%	3%	4%	3%
Price (mean)				
<u>Total</u>	\$3.80	\$3.94	\$3.96	\$3.9
SOI	\$4.71	\$4.77	\$4.67	\$4.72
Non-SOI	\$3.78	\$3.92	\$3.93	\$3.88
Revenue				
<u>Total</u>	\$33,951,805	\$33,212,077	\$37,395,023	\$34,852,968
SOI	\$1,030,214	\$1,075,026	\$1,584,379	\$1,229,873
Non-SOI	\$32,921,592	\$32,137,051	\$35,810,643	\$33,623,095
% SOI	3%	3%	4%	3%

Trip-Level Economics

	2014	2015	2016	Average
Number of Observations	577	631	856	
Response Rate (%)	82%	85%	96%	
SOI Trip				
Owner-Operated	64%	54%	59%	59%
Fuel Used per Day at Sea (gallons/day)	46	44	39	43
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	7.1%	4.8%	3.9%	5.3%
Bait	3.4%	3.5%	3.5%	3.5%
Ice	1.5%	1.5%	1.7%	1.6%
Groceries	2.8%	2.7%	3.3%	2.9%
Miscellaneous	2.6%	3%	3.3%	3%
Hired Crew	29.7%	30.1%	28.9%	29.6%
IFQ Purchase	14.3%	19.1%	17.9%	17.1%
OC Owner-Captain Time	6.4%	5.5%	5.9%	5.9%
Trip Net Cash Flow	39%	35%	37%	37%
Trip Net Revenue	46%	49%	50%	48%
Labor - Hired & Owner	36%	36%	35%	35.7%
Fuel & Supplies	18%	16%	16%	17%
Input Prices				
Fuel Price (per gallon)	\$3.54	\$2.53	\$2.01	\$2.69
Hire Crew Wage (per crew-day)	\$291	\$295	\$261	\$282
Productivity Measures				
Landings/Fuel Use (lbs/gallon)	13	13	12.6	13
Landings/Labor Use (lbs/crew-day)	201	198	174	191

SOI: 2016 GOM IFQ OSWG Fishery: All Gears
Annual, Vessel-Level Time Series

Annual, Vessel-Level Summary

	2014	2015	2016	Average
Effort				
Vessels	357	340	338	345
Trips - Total	5,783	5,698	5,925	5,802
SOI Trips	2,437	2,331	2,618	2,462
Non-SOI Trips	3,346	3,367	3,307	3,340
Days at Sea	28,053	27,069	27,547	27,556
Landings (gutted lbs)				
Total	15,351,264	14,457,513	14,832,373	14,880,383
SOI	218,567	225,190	339,357	261,038
Non-SOI	15,132,697	14,232,323	14,493,016	14,619,345
% SOI	1%	2%	2%	2%
Revenue				
Total	\$58,659,281	\$56,580,765	\$58,104,848	\$57,781,631
SOI	\$1,030,214	\$1,075,026	\$1,584,379	\$1,229,873
Non-SOI	\$57,629,068	\$55,505,739	\$56,520,469	\$56,551,759
% SOI	2%	2%	3%	2%
Vessel Characteristics				
Length	40	40	40	40
Year Built	1985	1986	1986	1986
For-Hire Fishing Permit	21%	20%	21%	21%

Annual, Vessel-Level Economics

	2014	2015	2016	Average
Number of Observations	60	82	87	
Response Rate (%)	62%	82%	83%	
SOI Vessel				
Owner-Operated	70%	62%	73%	68%
For-Hire Active	9%	13%	12%	11%
Vessel Value	\$144,394	\$103,335	\$86,445	\$111,391
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	7.9%	6.1%	5.9%	6.6%
Other Supplies	9.5%	10.1%	10.8%	10.1%
Hired Crew	26.7%	28.4%	24.8%	26.6%
Vessel Repair & Maintenance	7.2%	6.9%	7.7%	7.3%
Insurance	1.1%	0.8%	0.9%	0.9%
Overhead	5.1%	6.1%	4.2%	5.1%
Loan Payment	0.9%	1.3%	1.1%	1.1%
IFQ Purchase	11.3%	19.2%	14.6%	15%
OC Owner-Captain Time	5.1%	5.6%	5.6%	5.4%
Net Cash Flow	30%	21%	30%	27%
Net Revenue for Operations*	34%	33%	38%	35%
Depreciation	3.4%	2.8%	2.5%	2.9%
Fixed Costs	13%	14%	13%	13%
Labor - Hired & Owner	32%	34%	30%	32%
Fuel & Supplies	17%	16%	17%	17%
Economic Return* (on asset value)	50.6%	58.5%	74.4%	61.2%

SOI: 2016 GOM IFQ DWG Fishery: All Gears

Description: This SOI consists of all logbook trips by permitted vessels where at least one pound of deep water grouper (DWG) (speckled hind, and snowy, warsaw, yellowedge grouper) was landed in 2016 using any gear type. Official 2016 landings and revenue, per IFQ-tracking system, are 889,965 lbs (gutted) and \$4,099,292. The logbook-based DWG SOI accounts for 96% of the fishery. For important **disclaimer**, see page 14.

Trip-Level Summary

Effort

Trips	982
Vessels	194
Days at Sea	8,549
Crew Days	29,129

Landings (gutted lbs)

<u>Total</u>	5,372,792
SOI	851,147
Non-SOI	4,521,645
% SOI	16%

Percent by Gear

	Trips	SOI lbs
Vertical Line	56%	8%
Longline	44%	92%
Diver	0.2%	0%
Other	0%	0%

Price (mean)

<u>Total</u>	\$4.05
SOI	\$4.65
Non-SOI	\$3.93

Revenue

<u>Total</u>	\$21,732,964
SOI	\$3,956,262
Non-SOI	\$17,776,702
% SOI	18%

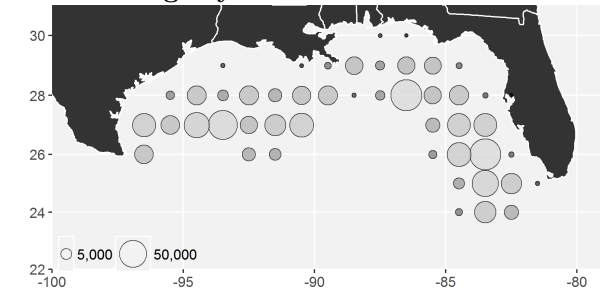
Percent of Revenue by Species Group

Shallow Water Groupers	33%
Shallow Water Snappers	0.7%
Mid-Shelf Snappers	40%
Deep Water Groupers/Tilefish	24%
Grunts/Porgies/Triggerfish	0.7%
Mackerels/Dolphinfish/Jacks	1%
Other Species	0.6%

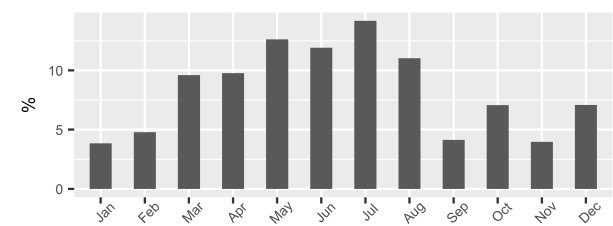
Revenue for Top 5 Species

Red Snapper	\$6,840,072
Red Grouper	\$4,685,971
Yellowedge Grouper	\$3,270,925
Gag Grouper	\$1,723,421
Vermilion Snapper	\$1,646,578

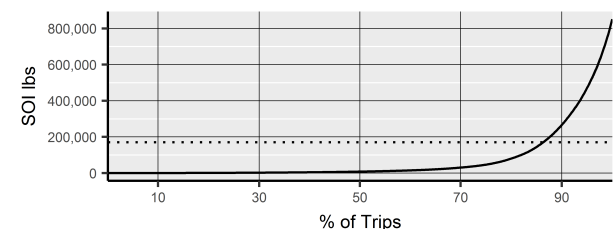
SOI Landings by Area Fished



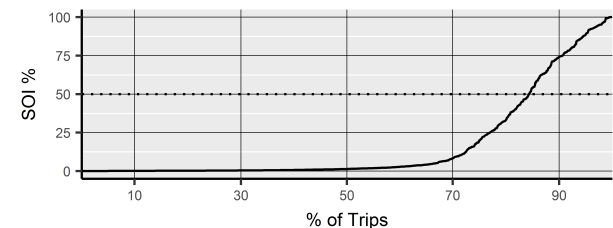
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=982)

	Mean	Min	Median	Max
Days at Sea	8.7	1	8	23
Crew Size	3.3	1	3	7
Landings	5,471	31	4,646	23,770
Revenue	\$22,131	\$99	\$18,276	\$97,814
SOI	\$4,029	\$3	\$201	\$63,877
% SOI	17%	0%	1.4%	100%

SOI: 2016 GOM IFQ DWG Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	982	-	-	-
Selected	304	31%	-	-
Responded	299	30%	98%	-
Used	288	29%	95%	96%

Economic Results (n=288)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	50%	6.1	40%	60%	-
Days at Sea	7.8	0.3	7.3	8.3	7
Crew Size	3.1	0.1	2.9	3.2	3
Fuel Used	346	18	316	377	274
Landings (gutted lbs)	4,701	276	4,240	5,161	3,159
Total Revenue	19,327	1,268	17,209	21,444	13,055
Cost					
Fuel	687	38	624	751	550
Bait	789	53	700	879	479
Ice	359	24	319	400	275
Groceries	613	37	551	675	500
Miscellaneous	788	76	661	915	250
Hired Crew	5,520	411	4,833	6,207	3,300
IFQ Purchase	3,465	481	2,661	4,270	1,000
OC Owner-Captain Time	721	150	471	971	0
Trip Net Cash Flow	7,104	685	5,960	8,248	4,280
Trip Net Revenue	9,849	805	8,505	11,193	6,446

Trip Net Cash Flow and Trip Net Revenue as Proportion of Trip Revenue (Margins)

Revenue 100%	Trip Net Cash Flow 37%	Trip Net Revenue 51%
	IFQ Purchase 18%	
	Labor - Hired 29%	Labor - Hired & Owner 32%
	Fuel & Supplies 17%	Fuel & Supplies 17%

Input Prices

Fuel Price (average): \$1.99 per gallon

Hired Crew Wage (implicit): \$276 per crew-day

Productivity Measures

Landings/Fuel Use: 13.6 lbs/gallon

Landings/Labor Use: 197 lbs/crew-day

SOI: 2016 GOM IFQ DWG Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	194
<u>Trips - Total</u>	<u>3,552</u>
SOI Trips	982
Non-SOI Trips	2,570
Days at Sea	20,219
Crew Days	63,432

Landings (gutted lbs)

<u>Total</u>	<u>12,626,373</u>
SOI	851,147
Non-SOI	11,775,226
% SOI	7%

Percent by Gear

	Trips	Total lbs
Vertical Line	70%	58%
Longline	22%	40%
Diver	2%	0.5%
Other	5%	2%

Price (mean)

<u>Total</u>	<u>\$3.98</u>
SOI	\$4.65
Non-SOI	\$3.93

Revenue

<u>Total</u>	<u>\$50,218,664</u>
SOI	\$3,956,262
Non-SOI	\$46,262,402
% SOI	8%

Percent of Revenue by Species Group

Shallow Water Groupers	36%
Shallow Water Snappers	1%
Mid-Shelf Snappers	49%
Deep Water Groupers/Tilefish	11%
Grunts/Porgies/Triggerfish	0.8%
Mackerels/Dolphinfish/Jacks	3%
Other Species	0.5%

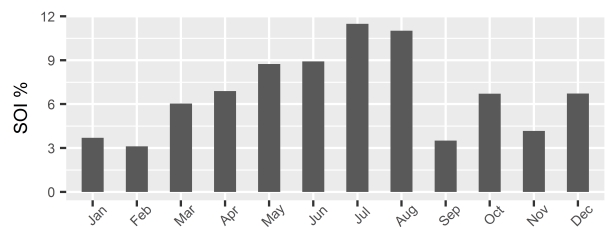
Revenue for Top 5 Species

Red Snapper	\$20,852,369
Red Grouper	\$13,224,682
Gag Grouper	\$3,403,668
Vermilion Snapper	\$3,321,716
Yellowedge Grouper	\$3,279,085

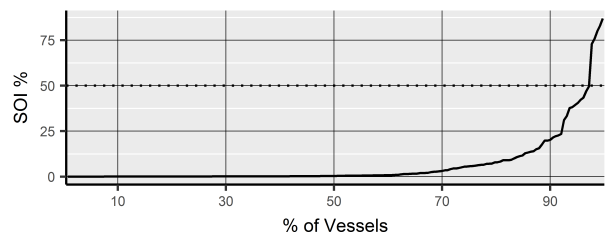
Annual, Vessel Descriptive Statistics (N=194)

	Mean	Min	Median	Max
Trips	18.3	1	15	92
Days at Sea	104.2	2	104	225
Crew Days	327	5	268	1,123
Landings	65,084	1,003	51,292	448,815
Revenue	\$258,859	\$3,444	\$176,514	\$2,182,950
SOI	\$20,393	\$4	\$733	\$533,800
% SOI	6.8%	0%	0.4%	86.9%

SOI Share of Monthly Landings



SOI Share of Revenue Per Vessel



Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	6%
SAT Snapper & Grouper - Limited	0.5%
King Mackerel	44%
Spanish Mackerel	42%
Dolphin-Wahoo	41%
Other Commercial Fishing	27%
For-Hire Fishing	8%

Vessel Characteristics (N=194)

	Mean	Min	Median	Max
Length	43	24	42	69
Year Built	1983	1961	1981	2016
Horsepower	358	12	300	1,800
Fiberglass Hull	89%	-	-	-
Diesel Engine	96%	-	-	-
Ice Refrigeration	98%	-	-	-

SOI: 2016 GOM IFQ DWG Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	194	-	-	-
Selected	65	34%	-	-
Responded	59	30%	91%	-
Used	56	29%	86%	95%

Economic Results (n=56)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	67%	6	57%	77%	-
For-Hire Active	2%	1.6	-1%	4%	-
Days - Commercial Fishing	110	6.1	99	120	115
Days - For-Hire Fishing	1	0.9	0	3	0
Days - Non-fishing	1	0.3	0	1	0
Vessel Value	83,863	7,943	70,570	97,156	75,000
Has Insurance	30%	5.8	20%	39%	-
Total Revenue	223,078	33,212	167,496	278,660	130,284
Commercial Fishing	219,125	32,747	164,320	273,930	130,284
For-Hire Fishing	3,953	3,284	-1,542	9,448	0
Cost					
Fuel	8,877	706	7,695	10,059	6,050
Other Supplies	22,156	2,107	18,631	25,682	14,246
Hired Crew	58,895	8,004	45,500	72,291	35,896
Vessel Repair & Maintenance	15,126	1,375	12,824	17,428	10,000
Insurance	1,532	355	937	2,127	0
Overhead	7,970	1,028	6,250	9,690	5,496
Loan Payment	2,307	947	722	3,892	0
IFQ Purchase	35,633	6,163	25,320	45,947	12,654
OC Owner-Captain Time	11,559	2,040	8,146	14,973	4,770
Depreciation	4,193	397	3,529	4,858	3,750
Net Cash Flow	70,581	24,161	30,147	111,016	27,998
Net Revenue from Operations*	92,770	24,633	51,545	133,994	42,383

Net Cash Flow and Net Revenue from Operations* as Proportion of Vessel Revenue (Margins)

Revenue 100%	Net Cash Flow 32%	Net Revenue - Operations 42%
	IFQ Purchase 16%	Depreciation 2%
	Loan Payment 1%	Fixed Costs 11%
	Fixed Costs 11%	Labor - Hired & Owner 32%
	Labor - Hired 26%	Fuel & Supplies 14%
	Fuel & Supplies 14%	

Economic Return* (on Vessel Asset Value): 110.6%

* Accruing to vessel owner AND IFQ shareholder. See Definitions.

SOI: 2016 GOM IFQ DWG Fishery: All Gears

Trip-Level Time Series

Trip-Level Summary

	2014	2015	2016	Average
Effort				
Trips	1,022	911	982	972
Vessels	204	198	194	199
Days at Sea	8,075	8,050	8,549	8,225
Landings (guttled lbs)				
<u>Total</u>	<u>5,754,672</u>	<u>5,073,178</u>	<u>5,372,792</u>	<u>5,400,214</u>
SOI	990,356	926,960	851,147	922,821
Non-SOI	4,764,317	4,146,219	4,521,645	4,477,394
% SOI	17%	18%	16%	17%
Price (mean)				
<u>Total</u>	<u>\$3.99</u>	<u>\$4.06</u>	<u>\$4.05</u>	<u>\$4.03</u>
SOI	\$4.54	\$4.68	\$4.65	\$4.62
Non-SOI	\$3.88	\$3.93	\$3.93	\$3.91
Revenue				
<u>Total</u>	<u>\$22,969,129</u>	<u>\$20,631,704</u>	<u>\$21,732,964</u>	<u>\$21,777,932</u>
SOI	\$4,489,832	\$4,342,378	\$3,956,262	\$4,262,824
Non-SOI	\$18,479,296	\$16,289,326	\$17,776,702	\$17,515,108
% SOI	20%	21%	18%	20%

Trip-Level Economics

	2014	2015	2016	Average
Number of Observations	254	231	288	
Response Rate (%)	83%	87%	95%	
SOI Trip				
Owner-Operated	54%	47%	50%	50.3%
Fuel Used per Day at Sea (gallons/day)	54	54	44	51
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	6%	4.2%	3.6%	4.6%
Bait	3.1%	3.8%	4.1%	3.7%
Ice	1.5%	1.7%	1.9%	1.7%
Groceries	2.4%	2.6%	3.2%	2.7%
Miscellaneous	2.9%	2.9%	4.1%	3.3%
Hired Crew	28.7%	28.3%	28.6%	28.5%
IFQ Purchase	12%	19.3%	17.9%	16.4%
OC Owner-Captain Time	3.9%	2.7%	3.7%	3.4%
Trip Net Cash Flow	43%	37%	37%	39%
Trip Net Revenue	51%	54%	51%	52%
Labor - Hired & Owner	33%	31%	32%	32%
Fuel & Supplies	16%	15%	17%	16%
Input Prices				
Fuel Price (per gallon)	\$3.43	\$2.36	\$1.99	\$2.59
Hire Crew Wage (per crew-day)	\$323	\$306	\$276	\$302
Productivity Measures				
Landings/Fuel Use (lbs/gallon)	14.4	13.7	13.6	14
Landings/Labor Use (lbs/crew-day)	238	226	197	220

SOI: 2016 GOM IFQ DWG Fishery: All Gears
Annual, Vessel-Level Time Series

Annual, Vessel-Level Summary

	2014	2015	2016	Average
Effort				
Vessels	204	198	194	199
Trips - Total	3,513	3,657	3,552	3,574
SOI Trips	1,022	911	982	972
Non-SOI Trips	2,491	2,746	2,570	2,602
Days at Sea	19,908	20,022	20,219	20,050
Landings (gutted lbs)				
Total	12,596,881	12,572,907	12,626,373	12,598,720
SOI	990,356	926,960	851,147	922,821
Non-SOI	11,606,525	11,645,948	11,775,226	11,675,900
% SOI	8%	7%	7%	7%
Revenue				
Total	\$49,082,424	\$50,314,777	\$50,218,664	\$49,871,955
SOI	\$4,489,832	\$4,342,378	\$3,956,262	\$4,262,824
Non-SOI	\$44,592,591	\$45,972,399	\$46,262,402	\$45,609,131
% SOI	9%	9%	8%	9%
Vessel Characteristics				
Length	43	43	43	43
Year Built	1984	1983	1983	1983
For-Hire Fishing Permit	14%	13%	8%	12%

Annual, Vessel-Level Economics

	2014	2015	2016	Average
Number of Observations	37	39	56	
Response Rate (%)	64%	80%	86%	
SOI Vessel				
Owner-Operated	55%	51%	67%	58%
For-Hire Active	10%	3%	2%	5%
Vessel Value	\$188,080	\$118,628	\$83,863	\$130,190
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	7.3%	4.2%	4%	5.2%
Other Supplies	9.1%	9%	9.9%	9.3%
Hired Crew	27.8%	25.5%	26.4%	26.6%
Vessel Repair & Maintenance	6.8%	4.7%	6.8%	6.1%
Insurance	1.2%	0.5%	0.7%	0.8%
Overhead	4.8%	5.2%	3.6%	4.5%
Loan Payment	1%	0.4%	1%	0.8%
IFQ Purchase	10.6%	29.2%	16%	18.6%
OC Owner-Captain Time	4.2%	3.9%	5.2%	4.4%
Net Cash Flow	31%	21%	32%	28%
Net Revenue for Operations*	36%	45%	42%	41%
Depreciation	3%	1.7%	1.9%	2.2%
Fixed Costs	13%	10%	11%	11%
Labor - Hired & Owner	32%	29%	32%	31%
Fuel & Supplies	16%	13%	14%	14%
Economic Return* (on asset value)	59.7%	132%	110.6%	100.8%

SOI: 2016 GOM IFQ Tilefish Fishery: All Gears

Description: This SOI consists of all logbook trips by permitted vessels where at least one pound of tilefishes (blueline, golden, or goldface) was landed in 2016 using any gear type. Tilefishes in the GOM are an IFQ fishery. Official 2016 landings and revenue, per the IFQ-tracking system, are 428,235 lbs (gutted weight) and \$1,260,271. Hence the logbook-based tilefish SOI accounts for about 95% of the fishery (near-census). Caution, the economic sample is not representative. For important **disclaimer**, see page 14.

Trip-Level Summary

Effort

Trips	344
Vessels	125
Days at Sea	3,276
Crew Days	11,783

Landings (gutted lbs)

<u>Total</u>	1,780,641
SOI	405,251
Non-SOI	1,375,390
% SOI	23%

Percent by Gear

	Trips	SOI lbs
Vertical Line	42%	6%
Longline	57%	94%
Diver	1%	0%
Other	0%	0%

Price (mean)

<u>Total</u>	\$4.04
SOI	\$3.09
Non-SOI	\$4.32

Revenue

<u>Total</u>	\$7,194,696
SOI	\$1,253,441
Non-SOI	\$5,941,255
% SOI	17%

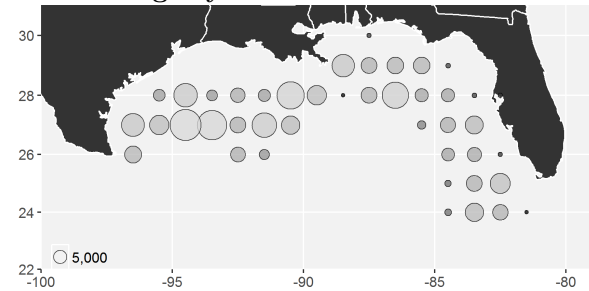
Percent of Revenue by Species Group

Shallow Water Groupers	12%
Shallow Water Snappers	0.4%
Mid-Shelf Snappers	21%
Deep Water Groupers/Tilefish	64%
Grunts/Porgies/Triggerfish	0.5%
Mackerels/Dolphinfish/Jacks	0.9%
Other Species	0.9%

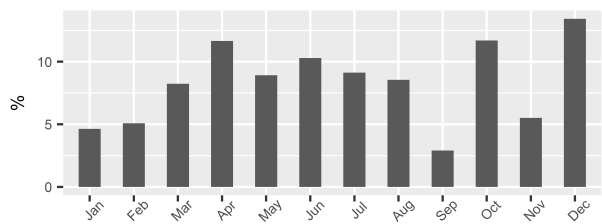
Revenue for Top 5 Species

Yellowedge Grouper	\$2,896,067
Red Snapper	\$1,250,207
Tilefish	\$1,181,540
Red Grouper	\$407,535
Snowy Grouper	\$321,043

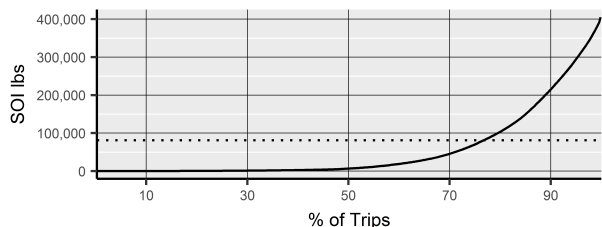
SOI Landings by Area Fished



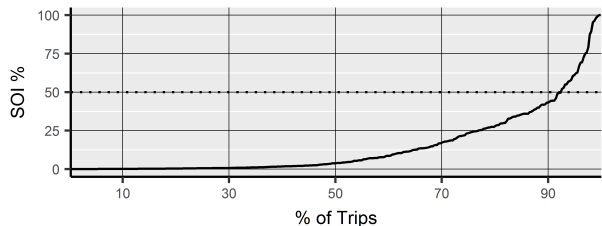
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=344)

	Mean	Min	Median	Max
Days at Sea	9.5	1	9	23
Crew Size	3.3	1	3	7
Landings	5,176	10	4,172	23,770
Revenue	\$20,915	\$33	\$16,350	\$97,814
SOI	\$3,644	\$2	\$544	\$45,212
% SOI	15%	0%	3.9%	100%

SOI: 2016 GOM IFQ Tilefish Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	344	-	-	-
Selected	89	26%	-	-
Responded	88	26%	99%	-
Used	83	24%	93%	94%

Economic Results (n=83)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	55%	8.1	41%	69%	-
Days at Sea	8.1	0.5	7.2	9.1	9
Crew Size	2.9	0.1	2.7	3.1	3
Fuel Used	406	35	346	465	368
Landings (gutted lbs)	3,781	357	3,176	4,386	3,226
Total Revenue	15,632	1,650	12,834	18,431	13,281
Cost					
Fuel	793	69	677	910	725
Bait	959	101	789	1,130	1,005
Ice	382	34	325	440	400
Groceries	622	67	508	736	530
Miscellaneous	651	123	442	859	300
Hired Crew	4,263	452	3,497	5,029	3,424
IFQ Purchase	3,916	854	2,468	5,364	1,412
OC Owner-Captain Time	1,113	229	725	1,501	0
Trip Net Cash Flow	4,046	525	3,156	4,936	3,276
Trip Net Revenue	6,849	911	5,305	8,393	5,662

Trip Net Cash Flow and Trip Net Revenue as Proportion of Trip Revenue (Margins)

Revenue 100%	Trip Net Cash Flow 26%	Trip Net Revenue 44%
	IFQ Purchase 25%	
	Labor - Hired 27%	Labor - Hired & Owner 34%
	Fuel & Supplies 22%	Fuel & Supplies 22%

Input Prices

Fuel Price (average): \$1.96 per gallon Hired Crew Wage (implicit): \$221 per crew-day

Productivity Measures

Landings/Fuel Use: 9.3 lbs/gallon Landings/Labor Use: 159 lbs/crew-day

SOI: 2016 GOM IFQ Tilefish Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	125
<u>Trips - Total</u>	<u>2,325</u>
SOI Trips	344
Non-SOI Trips	1,981
Days at Sea	13,352
Crew Days	41,135

Landings (gutted lbs)

<u>Total</u>	<u>7,405,511</u>
SOI	405,251
Non-SOI	7,000,260
% SOI	5%

Percent by Gear

	Trips	Total lbs
Vertical Line	71%	50%
Longline	23%	48%
Diver	3%	0.9%
Other	3%	1%

Price (mean)

<u>Total</u>	<u>\$3.90</u>
SOI	\$3.09
Non-SOI	\$3.95

Revenue

<u>Total</u>	<u>\$28,902,640</u>
SOI	\$1,253,441
Non-SOI	\$27,649,199
% SOI	4%

Percent of Revenue by Species Group

Shallow Water Groupers	38%
Shallow Water Snappers	1%
Mid-Shelf Snappers	38%
Deep Water Groupers/Tilefish	17%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	3%
Other Species	0.6%

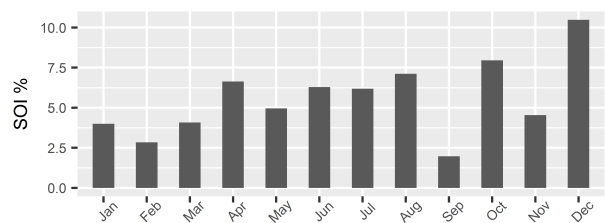
Revenue for Top 5 Species

Red Snapper	\$9,031,782
Red Grouper	\$7,935,796
Yellowedge Grouper	\$3,106,641
Gag Grouper	\$2,193,834
Vermilion Snapper	\$1,822,213

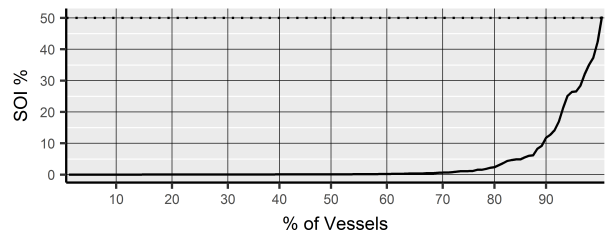
Annual, Vessel Descriptive Statistics (N=125)

	Mean	Min	Median	Max
Trips	18.6	3	16	92
Days at Sea	106.8	5	104	225
Crew Days	329.1	10	277	1,123
Landings	59,244	830	45,611	313,174
Revenue	\$231,221	\$3,213	\$157,896	\$1,457,081
SOI	\$10,028	\$2	\$121	\$183,687
% SOI	3.7%	0%	0.1%	50.5%

SOI Share of Monthly Landings



SOI Share of Revenue Per Vessel



Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	6%
SAT Snapper & Grouper - Limited	0%
King Mackerel	43%
Spanish Mackerel	46%
Dolphin-Wahoo	43%
Other Commercial Fishing	25%
For-Hire Fishing	14%

Vessel Characteristics (N=125)

	Mean	Min	Median	Max
Length	43	24	42	69
Year Built	1984	1961	1981	2016
Horsepower	381	76	300	1,520
Fiberglass Hull	90%	-	-	-
Diesel Engine	93%	-	-	-
Ice Refrigeration	97%	-	-	-

SOI: 2016 GOM IFQ Tilefish Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	125	-	-	-
Selected	35	28%	-	-
Responded	33	26%	94%	-
Used	29	23%	83%	88%

Economic Results (n=29)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	55%	8.2	41%	69%	-
For-Hire Active	7%	4.2	0%	14%	-
Days - Commercial Fishing	126	9.2	111	142	134
Days - For-Hire Fishing	3	2	-1	6	0
Days - Non-fishing	0	0.3	0	1	0
Vessel Value	93,813	14,718	68,776	118,849	75,000
Has Insurance	34%	7.9	21%	48%	-
Total Revenue	215,068	27,854	167,685	262,452	147,558
Commercial Fishing	206,717	24,818	164,499	248,936	147,558
For-Hire Fishing	8,351	7,179	-3,861	20,563	0
Cost					
Fuel	10,374	1,053	8,584	12,165	8,475
Other Supplies	27,857	3,550	21,818	33,897	22,000
Hired Crew	64,231	8,841	49,191	79,271	44,970
Vessel Repair & Maintenance	15,834	2,198	12,095	19,572	10,000
Insurance	1,945	590	941	2,949	0
Overhead	7,533	1,345	5,246	9,821	5,806
Loan Payment	2,451	1,817	-639	5,541	0
IFQ Purchase	47,842	10,398	30,155	65,530	29,250
OC Owner-Captain Time	13,393	3,561	7,335	19,451	4,770
Depreciation	4,691	736	3,439	5,942	3,750
Net Cash Flow	37,001	6,827	25,388	48,614	28,582
Net Revenue from Operations*	69,210	13,742	45,833	92,588	42,383

Net Cash Flow and Net Revenue from Operations* as Proportion of Vessel Revenue (Margins)

Revenue 100%	Net Cash Flow 17%	Net Revenue - Operations 32%
	IFQ Purchase 22%	
	Loan Payment 1%	Depreciation 2%
	Fixed Costs 12%	Fixed Costs 12%
	Labor - Hired 30%	Labor - Hired & Owner 36%
	Fuel & Supplies 18%	

Economic Return* (on Vessel Asset Value): 73.8%

* Accruing to vessel owner AND IFQ shareholder. See Definitions.

SOI: 2016 GOM IFQ Tilefish Fishery: All Gears

Trip-Level Time Series

Trip-Level Summary

	2014	2015	2016	Average
Effort				
Trips	392	415	344	384
Vessels	120	121	125	122
Days at Sea	3,490	3,823	3,276	3,530
Landings (gutted lbs)				
<u>Total</u>	<u>2,265,242</u>	<u>2,219,948</u>	<u>1,780,641</u>	<u>2,088,610</u>
SOI	465,619	518,582	405,251	463,151
Non-SOI	1,799,623	1,701,367	1,375,390	1,625,460
% SOI	21%	23%	23%	22%
Price (mean)				
<u>Total</u>	<u>\$3.87</u>	<u>\$3.97</u>	<u>\$4.04</u>	<u>\$3.96</u>
SOI	\$2.76	\$3.06	\$3.09	\$2.97
Non-SOI	\$4.15	\$4.26	\$4.32	\$4.24
Revenue				
<u>Total</u>	<u>\$8,761,606</u>	<u>\$8,819,899</u>	<u>\$7,194,696</u>	<u>\$8,258,734</u>
SOI	\$1,289,214	\$1,585,887	\$1,253,441	\$1,376,181
Non-SOI	\$7,472,392	\$7,234,012	\$5,941,255	\$6,882,553
% SOI	15%	18%	17%	17%

Trip-Level Economics

	2014	2015	2016	Average
Number of Observations	96	84	83	
Response Rate (%)	75%	81%	93%	
SOI Trip				
Owner-Operated	53%	41%	55%	49.7%
Fuel Used per Day at Sea (gallons/day)	56	60	50	55
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	6.7%	6.6%	5.1%	6.1%
Bait	4%	5.9%	6.1%	5.3%
Ice	1.8%	2.4%	2.4%	2.2%
Groceries	3.1%	4%	4%	3.7%
Miscellaneous	2.5%	3.2%	4.2%	3.3%
Hired Crew	29.6%	27.8%	27.3%	28.2%
IFQ Purchase	11.2%	18.2%	25.1%	18.2%
OC Owner-Captain Time	3.6%	2.8%	7.1%	4.5%
Trip Net Cash Flow	41%	32%	26%	33%
Trip Net Revenue	49%	47%	44%	47%
Labor - Hired & Owner	33%	31%	34%	32.7%
Fuel & Supplies	18%	22%	22%	21%
Input Prices				
Fuel Price (per gallon)	\$3.36	\$2.43	\$1.96	\$2.58
Hire Crew Wage (per crew-day)	\$293	\$231	\$221	\$248
Productivity Measures				
Landings/Fuel Use (lbs/gallon)	13.1	9.4	9.3	11
Landings/Labor Use (lbs/crew-day)	218	183	159	187

SOI: 2016 GOM IFQ Tilefish Fishery: All Gears
Annual, Vessel-Level Time Series

Annual, Vessel-Level Summary

	2014	2015	2016	Average
Effort				
Vessels	120	121	125	122
Trips - Total	2,006	2,030	2,325	2,120
SOI Trips	392	415	344	384
Non-SOI Trips	1,614	1,615	1,981	1,737
Days at Sea	12,643	12,531	13,352	12,842
Landings (gutted lbs)				
Total	8,737,032	8,031,727	7,405,511	8,058,090
SOI	465,619	518,582	405,251	463,151
Non-SOI	8,271,412	7,513,146	7,000,260	7,594,939
% SOI	5%	6%	5%	5%
Revenue				
Total	\$34,023,595	\$32,142,611	\$28,902,640	\$31,689,615
SOI	\$1,289,214	\$1,585,887	\$1,253,441	\$1,376,181
Non-SOI	\$32,734,380	\$30,556,724	\$27,649,199	\$30,313,434
% SOI	4%	5%	4%	4%
Vessel Characteristics				
Length	45	44	43	44
Year Built	1982	1982	1984	1983
For-Hire Fishing Permit	12%	14%	14%	13%

Annual, Vessel-Level Economics

	2014	2015	2016	Average
Number of Observations	25	30	29	
Response Rate (%)	69%	94%	83%	
SOI Vessel				
Owner-Operated	56%	50%	55%	54%
For-Hire Active	12%	7%	7%	9%
Vessel Value	\$218,838	\$136,684	\$93,813	\$149,778
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	6.8%	5.2%	4.8%	5.6%
Other Supplies	9.6%	10.5%	13%	11%
Hired Crew	28.8%	26.5%	29.9%	28.4%
Vessel Repair & Maintenance	6%	6.6%	7.4%	6.7%
Insurance	1.1%	0.6%	0.9%	0.9%
Overhead	4.4%	6.6%	3.5%	4.8%
Loan Payment	0.3%	1%	1.1%	0.8%
IFQ Purchase	10.5%	23.7%	22.2%	18.8%
OC Owner-Captain Time	3.2%	4%	6.2%	4.5%
Net Cash Flow	33%	19%	17%	23%
Net Revenue for Operations*	37%	38%	32%	36%
Depreciation	3%	2.4%	2.2%	2.5%
Fixed Costs	11%	14%	12%	12%
Labor - Hired & Owner	32%	31%	36%	33%
Fuel & Supplies	16%	16%	18%	17%
Economic Return* (on asset value)	61.4%	78.6%	73.8%	71.3%

SOI: 2016 GOM Vermilion Snapper Fishery: All Gears

Description: This SOI consists of all logbook trips by permitted vessels where at least one pound of vermillion snapper was landed in 2016 using any gear type. While vermillion snapper is the largest non-IFQ fishery managed by the GOM Reef Fish FMP, most of the vermillion snapper is co-caught on trips catching red snapper and grouper-tilefish IFQ species. For important **disclaimer**, see page 14.

Trip-Level Summary

Effort

Trips	2,884
Vessels	364
Days at Sea	14,752
Crew Days	43,899

Landings (guttled lbs)

<u>Total</u>	8,818,403
SOI	1,335,165
Non-SOI	7,483,238
% SOI	15%

Percent by Gear

	Trips	SOI lbs
Vertical Line	91%	100%
Longline	8%	0.4%
Diver	0.7%	0.1%
Other	0.3%	0%

Price (mean)

<u>Total</u>	\$3.96
SOI	\$3.08
Non-SOI	\$4.12

Revenue

<u>Total</u>	\$34,954,708
SOI	\$4,107,852
Non-SOI	\$30,846,857
% SOI	12%

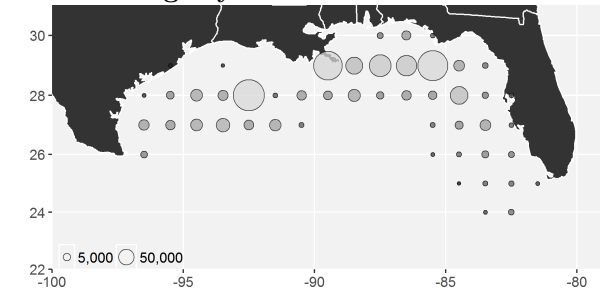
Percent of Revenue by Species Group

Shallow Water Groupers	28%
Shallow Water Snappers	1%
Mid-Shelf Snappers	66%
Deep Water Groupers/Tilefish	2%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	1%
Other Species	0.3%

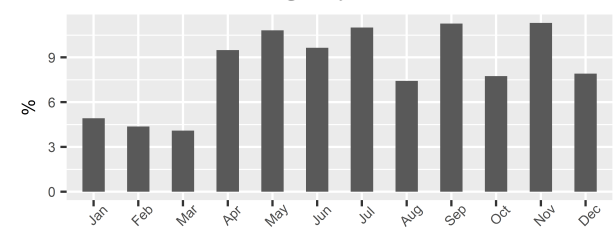
Revenue for Top 5 Species

Red Snapper	\$18,890,011
Red Grouper	\$6,435,146
Vermilion Snapper	\$4,107,852
Gag Grouper	\$2,197,985
Scamp	\$866,726

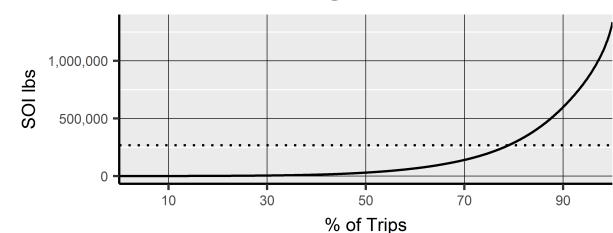
SOI Landings by Area Fished



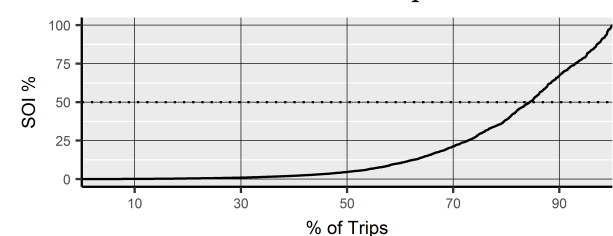
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=2,884)

	Mean	Min	Median	Max
Days at Sea	5.1	1	4	23
Crew Size	2.9	1	3	8
Landings	3,058	18	1,804	23,770
Revenue	\$12,120	\$25	\$6,210	\$95,226
SOI	\$1,424	\$2	\$274	\$29,867
% SOI	19%	0%	4.7%	100%

SOI: 2016 GOM Vermilion Snapper Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	2,884	-	-	-
Selected	829	29%	-	-
Responded	827	29%	100%	-
Used	807	28%	97%	98%

Economic Results (n=807)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	62%	4.3	55%	69%	-
Days at Sea	5.2	0.3	4.7	5.6	5
Crew Size	2.9	0.1	2.7	3	3
Fuel Used	205	15	180	230	157
Landings (gutted lbs)	2,917	237	2,524	3,310	1,602
Total Revenue	12,091	1,048	10,350	13,832	5,700
Cost					
Fuel	408	29	361	456	321
Bait	343	33	288	398	211
Ice	193	16	166	220	120
Groceries	329	28	283	375	220
Miscellaneous	353	46	277	428	70
Hired Crew	3,157	351	2,575	3,739	1,300
IFQ Purchase	2,288	327	1,744	2,832	549
OC Owner-Captain Time	688	132	468	907	0
Trip Net Cash Flow	5,020	538	4,126	5,914	1,684
Trip Net Revenue	6,620	630	5,575	7,665	2,690

Trip Net Cash Flow and Trip Net Revenue as Proportion of Trip Revenue (Margins)

Revenue 100%	Trip Net Cash Flow 42%	Trip Net Revenue 55%
	IFQ Purchase 19%	
	Labor - Hired 26%	Labor - Hired & Owner 32%
	Fuel & Supplies 13%	Fuel & Supplies 13%

Input Prices

Fuel Price (average): \$1.99 per gallon

Hired Crew Wage (implicit): \$272 per crew-day

Productivity Measures

Landings/Fuel Use: 14.2 lbs/gallon

Landings/Labor Use: 197 lbs/crew-day

SOI: 2016 GOM Vermilion Snapper Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	364
<u>Trips - Total</u>	<u>5,896</u>
SOI Trips	2,884
Non-SOI Trips	3,012
Days at Sea	26,077
Crew Days	75,640

Landings (gutted lbs)

<u>Total</u>	<u>14,284,736</u>
SOI	1,335,165
Non-SOI	12,949,571
% SOI	9%

Percent by Gear

	Trips	Total lbs
Vertical Line	82%	67%
Longline	12%	30%
Diver	4%	0.8%
Other	2%	2%

Price (mean)

<u>Total</u>	<u>\$3.92</u>
SOI	\$3.08
Non-SOI	\$4.01

Revenue

<u>Total</u>	<u>\$55,997,436</u>
SOI	\$4,107,852
Non-SOI	\$51,889,585
% SOI	7%

Percent of Revenue by Species Group

Shallow Water Groupers	35%
Shallow Water Snappers	1%
Mid-Shelf Snappers	52%
Deep Water Groupers/Tilefish	7%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	3%
Other Species	0.5%

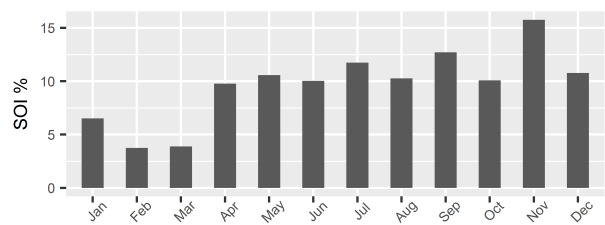
Revenue for Top 5 Species

Red Snapper	\$25,018,774
Red Grouper	\$13,957,108
Vermilion Snapper	\$4,127,119
Gag Grouper	\$3,977,265
Yellowedge Grouper	\$2,036,694

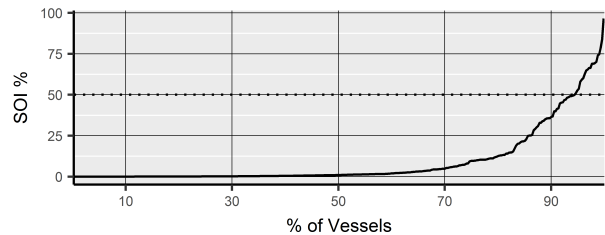
Annual, Vessel Descriptive Statistics (N=364)

	Mean	Min	Median	Max
Trips	16.2	1	14	92
Days at Sea	71.6	1	58	225
Crew Days	207.8	2	142	1,123
Landings	39,244	179	18,964	448,815
Revenue	\$153,839	\$675	\$71,073	\$2,182,950
SOI	\$11,285	\$3	\$479	\$210,287
% SOI	9.5%	0%	1%	96.6%

SOI Share of Monthly Landings



SOI Share of Revenue Per Vessel



Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	3%
SAT Snapper & Grouper - Limited	0.8%
King Mackerel	44%
Spanish Mackerel	43%
Dolphin-Wahoo	33%
Other Commercial Fishing	18%
For-Hire Fishing	24%

Vessel Characteristics (N=364)

	Mean	Min	Median	Max
Length	40	23	38	69
Year Built	1986	1961	1984	2016
Horsepower	409	12	350	1,520
Fiberglass Hull	92%	-	-	-
Diesel Engine	85%	-	-	-
Ice Refrigeration	96%	-	-	-

SOI: 2016 GOM Vermilion Snapper Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	364	-	-	-
Selected	103	28%	-	-
Responded	92	25%	89%	-
Used	89	24%	86%	97%

Economic Results (n=89)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	74%	4.3	67%	81%	-
For-Hire Active	17%	3.7	11%	23%	-
Days - Commercial Fishing	80	4.6	72	87	61
Days - For-Hire Fishing	11	3.6	5	17	0
Days - Non-fishing	2	0.5	1	3	0
Vessel Value	93,081	8,491	78,964	107,199	75,000
Has Insurance	40%	4.8	32%	48%	-
Total Revenue	156,796	21,554	120,962	192,631	83,002
Commercial Fishing	144,700	20,973	109,832	179,568	76,255
For-Hire Fishing	12,096	4,439	4,716	19,477	0
Cost					
Fuel	9,076	917	7,552	10,600	6,000
Other Supplies	15,781	1,413	13,432	18,131	10,000
Hired Crew	40,148	5,313	31,315	48,980	15,000
Vessel Repair & Maintenance	12,436	1,430	10,059	14,813	8,418
Insurance	1,631	260	1,199	2,063	0
Overhead	7,391	788	6,081	8,701	4,857
Loan Payment	1,861	624	823	2,898	0
IFQ Purchase	23,306	3,956	16,728	29,883	3,302
OC Owner-Captain Time	9,258	1,382	6,961	11,556	4,323
Depreciation	4,654	425	3,948	5,360	3,750
Net Cash Flow	45,168	15,018	20,200	70,135	16,714
Net Revenue from Operations*	56,422	15,452	30,733	82,111	15,454

Net Cash Flow and Net Revenue from Operations* as Proportion of Vessel Revenue (Margins)

Revenue 100%	Net Cash Flow 29%	Net Revenue - Operations 36%
	IFQ Purchase 15%	Depreciation 3%
	Loan Payment 1%	Fixed Costs 14%
	Fixed Costs 14%	Labor - Hired & Owner 32%
	Labor - Hired 26%	
	Fuel & Supplies 16%	Fuel & Supplies 16%

Economic Return* (on Vessel Asset Value): 60.6%

* Accruing to vessel owner AND IFQ shareholder. See Definitions.

SOI: 2016 GOM Vermilion Snapper Fishery: All Gears

Trip-Level Time Series

Trip-Level Summary

	2014	2015	2016	Average
Effort				
Trips	2,681	2,681	2,884	2,749
Vessels	345	361	364	357
Days at Sea	13,482	13,286	14,752	13,840
Landings (gutted lbs)				
<u>Total</u>	7,846,340	8,374,177	8,818,403	8,346,307
SOI	1,408,059	1,199,302	1,335,165	1,314,175
Non-SOI	6,438,281	7,174,875	7,483,238	7,032,131
% SOI	18%	14%	15%	16%
Price (mean)				
<u>Total</u>	\$3.82	\$3.98	\$3.96	\$3.92
SOI	\$3.12	\$3.18	\$3.08	\$3.13
Non-SOI	\$3.97	\$4.11	\$4.12	\$4.07
Revenue				
<u>Total</u>	\$29,951,267	\$33,353,379	\$34,954,708	\$32,753,118
SOI	\$4,394,679	\$3,814,276	\$4,107,852	\$4,105,602
Non-SOI	\$25,556,587	\$29,539,104	\$30,846,857	\$28,647,516
% SOI	15%	11%	12%	13%

Trip-Level Economics

	2014	2015	2016	Average
Number of Observations	568	802	807	
Response Rate (%)	82%	87%	97%	
SOI Trip				
Owner-Operated	67%	56%	62%	61.7%
Fuel Used per Day at Sea (gallons/day)	45	45	40	43
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	6%	4%	3.4%	4.5%
Bait	2.8%	2.8%	2.8%	2.8%
Ice	1.4%	1.5%	1.6%	1.5%
Groceries	2.1%	2%	2.7%	2.3%
Miscellaneous	2.8%	2.4%	2.9%	2.7%
Hired Crew	27.3%	24.9%	26.1%	26.1%
IFQ Purchase	14.2%	27%	18.9%	20%
OC Owner-Captain Time	6.1%	5.7%	5.7%	5.8%
Trip Net Cash Flow	43%	36%	42%	40%
Trip Net Revenue	51%	57%	55%	54%
Labor - Hired & Owner	33%	31%	32%	32%
Fuel & Supplies	15%	13%	13%	14%
Input Prices				
Fuel Price (per gallon)	\$3.50	\$2.46	\$1.99	\$2.65
Hire Crew Wage (per crew-day)	\$321	\$313	\$272	\$302
Productivity Measures				
Landings/Fuel Use (lbs/gallon)	14.9	15.2	14.2	15
Landings/Labor Use (lbs/crew-day)	231	246	197	225

SOI: 2016 GOM Vermilion Snapper Fishery: All Gears
Annual, Vessel-Level Time Series

Annual, Vessel-Level Summary

	2014	2015	2016	Average
Effort				
Vessels	345	361	364	357
Trips - Total	5,368	5,698	5,896	5,654
SOI Trips	2,681	2,681	2,884	2,749
Non-SOI Trips	2,687	3,017	3,012	2,905
Days at Sea	24,488	25,562	26,077	25,376
Landings (gutted lbs)				
Total	13,746,386	14,598,428	14,284,736	14,209,850
SOI	1,408,059	1,199,302	1,335,165	1,314,175
Non-SOI	12,338,327	13,399,126	12,949,571	12,895,675
% SOI	10%	8%	9%	9%
Revenue				
Total	\$52,406,258	\$57,240,804	\$55,997,436	\$55,214,833
SOI	\$4,394,679	\$3,814,276	\$4,107,852	\$4,105,602
Non-SOI	\$48,011,579	\$53,426,528	\$51,889,585	\$51,109,231
% SOI	8%	7%	7%	7%
Vessel Characteristics				
Length	40	40	40	40
Year Built	1986	1986	1986	1986
For-Hire Fishing Permit	23%	24%	24%	24%

Annual, Vessel-Level Economics

	2014	2015	2016	Average
Number of Observations	58	83	89	
Response Rate (%)	64%	80%	86%	
SOI Vessel				
Owner-Operated	73%	67%	74%	71%
For-Hire Active	9%	16%	17%	14%
Vessel Value	\$130,261	\$101,024	\$93,081	\$108,122
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	8.1%	5.3%	5.8%	6.4%
Other Supplies	10.5%	9%	10.1%	9.9%
Hired Crew	27.7%	25.5%	25.6%	26.3%
Vessel Repair & Maintenance	7.9%	6.1%	7.9%	7.3%
Insurance	0.6%	0.7%	1%	0.8%
Overhead	4.5%	5.1%	4.7%	4.8%
Loan Payment	1%	1.3%	1.2%	1.2%
IFQ Purchase	12%	25.9%	14.9%	17.6%
OC Owner-Captain Time	5.3%	5.1%	5.9%	5.4%
Net Cash Flow	28%	21%	29%	26%
Net Revenue for Operations*	32%	41%	36%	36%
Depreciation	3.4%	2.6%	3%	3%
Fixed Costs	13%	12%	14%	13%
Labor - Hired & Owner	33%	31%	32%	32%
Fuel & Supplies	19%	14%	16%	16%
Economic Return* (on asset value)	47.3%	77.2%	60.6%	61.7%

SOI: 2016 GOM Yellowtail Snapper Fishery: All Gears

Description: This SOI consists of all logbook trips by permitted vessels where at least one pound of yellowtail snapper (YTS) was landed in 2016 using any gear type. This SOI has two distinct fisheries. One where YTS is co-caught in smaller quantities on trips catching IFQ species and another more directed YTS fishery off of South Florida. Caution, there is much uncertainty about the economic results. For important **disclaimer**, see page 14.

Trip-Level Summary

Effort

Trips	693
Vessels	165
Days at Sea	3,575
Crew Days	9,563

Landings (guttled lbs)

<u>Total</u>	1,433,595
SOI	294,082
Non-SOI	1,139,513
% SOI	21%

Percent by Gear

	Trips	SOI lbs
Vertical Line	86%	100%
Longline	12%	0.4%
Diver	2%	0.1%
Other	0.6%	0%

Price (mean)

<u>Total</u>	\$3.76
SOI	\$3.37
Non-SOI	\$3.86

Revenue

<u>Total</u>	\$5,388,898
SOI	\$989,964
Non-SOI	\$4,398,934
% SOI	18%

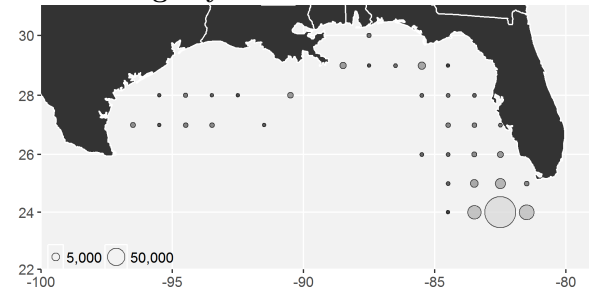
Percent of Revenue by Species Group

Shallow Water Groupers	57%
Shallow Water Snappers	21%
Mid-Shelf Snappers	14%
Deep Water Groupers/Tilefish	4%
Grunts/Porgies/Triggerfish	0.9%
Mackerels/Dolphinfish/Jacks	2%
Other Species	0.5%

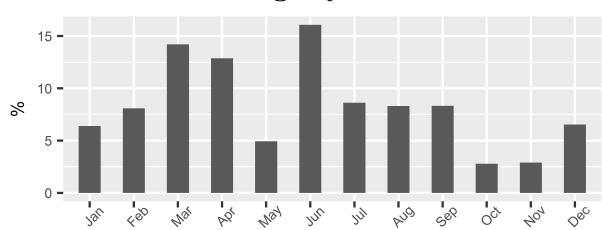
Revenue for Top 5 Species

Red Grouper	\$2,511,356
Yellowtail Snapper	\$991,629
Red Snapper	\$617,268
Gag Grouper	\$342,471
Scamp	\$136,525

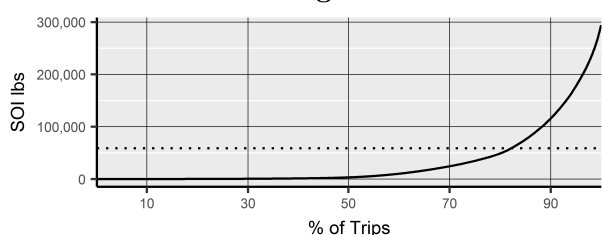
SOI Landings by Area Fished



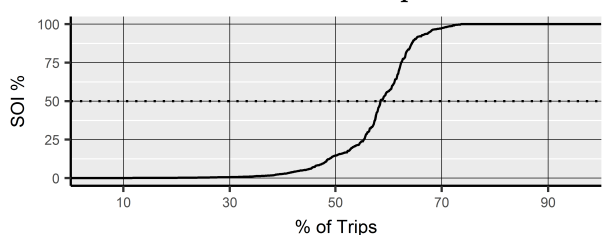
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=693)

	Mean	Min	Median	Max
Days at Sea	5.2	1	4	19
Crew Size	2.3	1	2	7
Landings	2,069	19	902	17,018
Revenue	\$7,776	\$52	\$3,105	\$73,681
SOI	\$1,429	\$3	\$169	\$18,970
% SOI	42%	0%	14.7%	100%

SOI: 2016 GOM Yellowtail Snapper Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	693	-	-	-
Selected	180	26%	-	-
Responded	178	26%	99%	-
Used	170	25%	94%	96%

Economic Results (n=170)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	66%	6	56%	76%	-
Days at Sea	5.4	0.3	5	5.9	5
Crew Size	2.3	0.1	2.1	2.5	2
Fuel Used	184	16	157	211	164
Landings (gutted lbs)	1,796	325	1,250	2,341	1,107
Total Revenue	7,172	1,428	4,775	9,569	3,000
Cost					
Fuel	380	32	326	434	352
Bait	404	47	324	483	200
Ice	126	16	99	152	100
Groceries	277	34	219	334	200
Miscellaneous	211	44	137	284	25
Hired Crew	2,267	504	1,421	3,114	1,000
IFQ Purchase	1,521	580	548	2,494	0
OC Owner-Captain Time	795	165	517	1,072	233
Trip Net Cash Flow	1,987	554	1,056	2,918	638
Trip Net Revenue	2,713	794	1,380	4,046	200

Trip Net Cash Flow and Trip Net Revenue as Proportion of Trip Revenue (Margins)

Revenue 100%	Trip Net Cash Flow 28%	Trip Net Revenue 38%
	IFQ Purchase 21%	
	Labor - Hired 32%	Labor - Hired & Owner 43%
	Fuel & Supplies 19%	

Input Prices

Fuel Price (average): \$2.06 per gallon Hired Crew Wage (implicit): \$254 per crew-day

Productivity Measures

Landings/Fuel Use: 9.8 lbs/gallon Landings/Labor Use: 143 lbs/crew-day

SOI: 2016 GOM Yellowtail Snapper Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	165
<u>Trips - Total</u>	<u>3,223</u>
SOI Trips	693
Non-SOI Trips	2,530
Days at Sea	14,645
Crew Days	41,194

Landings (gutted lbs)

<u>Total</u>	<u>7,158,706</u>
SOI	294,082
Non-SOI	6,864,624
% SOI	4%

Percent by Gear

	Trips	Total lbs
Vertical Line	77%	51%
Longline	14%	43%
Diver	5%	0.7%
Other	4%	5%

Price (mean)

<u>Total</u>	<u>\$3.83</u>
SOI	\$3.37
Non-SOI	\$3.85

Revenue

<u>Total</u>	<u>\$27,448,697</u>
SOI	\$989,964
Non-SOI	\$26,458,733
% SOI	4%

Percent of Revenue by Species Group

Shallow Water Groupers	46%
Shallow Water Snappers	8%
Mid-Shelf Snappers	29%
Deep Water Groupers/Tilefish	10%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	5%
Other Species	0.4%

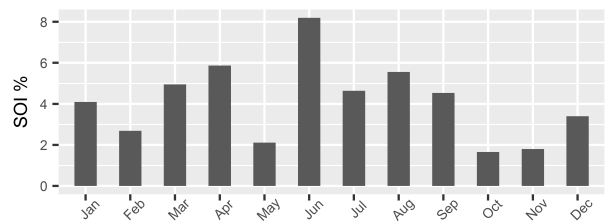
Revenue for Top 5 Species

Red Grouper	\$9,461,330
Red Snapper	\$6,879,793
Gag Grouper	\$2,319,349
Yellowtail Snapper	\$1,807,524
Yellowedged Grouper	\$1,775,204

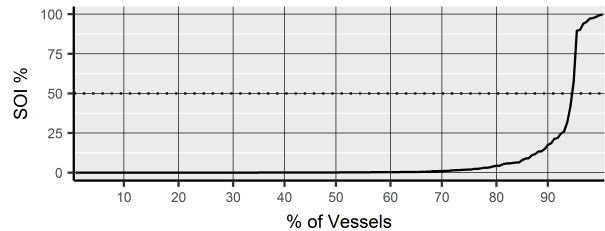
Annual, Vessel Descriptive Statistics (N=165)

	Mean	Min	Median	Max
Trips	19.5	1	15	117
Days at Sea	88.8	1	82	225
Crew Days	249.7	3	189	1,123
Landings	43,386	58	21,627	313,174
Revenue	\$166,356	\$190	\$79,843	\$1,457,081
SOI	\$6,000	\$3	\$56	\$213,118
% SOI	7.9%	0%	0.1%	99.9%

SOI Share of Monthly Landings



SOI Share of Revenue Per Vessel



Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	16%
SAT Snapper & Grouper - Limited	0.6%
King Mackerel	40%
Spanish Mackerel	52%
Dolphin-Wahoo	49%
Other Commercial Fishing	19%
For-Hire Fishing	19%

Vessel Characteristics (N=165)

	Mean	Min	Median	Max
Length	39	23	39	69
Year Built	1987	1961	1984	2016
Horsepower	424	76	360	1,400
Fiberglass Hull	93%	-	-	-
Diesel Engine	82%	-	-	-
Ice Refrigeration	98%	-	-	-

SOI: 2016 GOM Yellowtail Snapper Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	165	-	-	-
Selected	49	30%	-	-
Responded	43	26%	88%	-
Used	39	24%	80%	91%

Economic Results (n=39)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	77%	6.4	66%	87%	-
For-Hire Active	12%	4.9	4%	21%	-
Days - Commercial Fishing	102	7.9	89	116	94
Days - For-Hire Fishing	8	4	1	15	0
Days - Non-fishing	1	0.5	0	2	0
Vessel Value	91,564	10,978	73,043	110,085	75,000
Has Insurance	36%	7.2	24%	49%	-
Total Revenue	166,850	21,152	131,165	202,535	95,000
Commercial Fishing	156,077	19,533	123,122	189,031	94,259
For-Hire Fishing	10,773	5,547	1,415	20,132	0
Cost					
Fuel	10,133	1,059	8,346	11,920	7,904
Other Supplies	18,141	2,118	14,568	21,713	13,713
Hired Crew	44,063	6,352	33,347	54,779	24,825
Vessel Repair & Maintenance	13,264	1,701	10,394	16,134	8,418
Insurance	1,698	438	958	2,437	0
Overhead	9,406	1,563	6,769	12,042	3,600
Loan Payment	3,555	1,414	1,170	5,941	0
IFQ Purchase	37,044	8,591	22,551	51,538	3,039
OC Owner-Captain Time	10,714	2,519	6,464	14,965	3,028
Depreciation	4,578	549	3,652	5,504	3,750
Net Cash Flow	29,546	4,814	21,423	37,668	15,971
Net Revenue from Operations*	54,853	10,661	36,867	72,839	23,152

Net Cash Flow and Net Revenue from Operations* as Proportion of Vessel Revenue (Margins)

Revenue 100%	Net Cash Flow 18%	Net Revenue - Operations 33%
	IFQ Purchase 22%	
	Loan Payment 2%	Depreciation 3%
	Fixed Costs 15%	Fixed Costs 15%
	Labor - Hired 26%	Labor - Hired & Owner 33%
	Fuel & Supplies 17%	
		Fuel & Supplies 17%

Economic Return* (on Vessel Asset Value): 59.9%

* Accruing to vessel owner AND IFQ shareholder. See Definitions.

SOI: 2016 GOM Yellowtail Snapper Fishery: All Gears

Trip-Level Time Series

Trip-Level Summary

	2014	2015	2016	Average
Effort				
Trips	592	619	693	635
Vessels	132	148	165	148
Days at Sea	3,509	3,734	3,575	3,606
Landings (gutted lbs)				
<u>Total</u>	<u>1,242,855</u>	<u>1,329,908</u>	<u>1,433,595</u>	<u>1,335,453</u>
SOI	565,317	389,762	294,082	416,387
Non-SOI	677,538	940,146	1,139,513	919,066
% SOI	45%	29%	21%	32%
Price (mean)				
<u>Total</u>	<u>\$3.54</u>	<u>\$3.68</u>	<u>\$3.76</u>	<u>\$3.66</u>
SOI	\$3.36	\$3.43	\$3.37	\$3.39
Non-SOI	\$3.71	\$3.78	\$3.86	\$3.78
Revenue				
<u>Total</u>	<u>\$4,408,489</u>	<u>\$4,891,416</u>	<u>\$5,388,898</u>	<u>\$4,896,268</u>
SOI	\$1,898,973	\$1,338,346	\$989,964	\$1,409,094
Non-SOI	\$2,509,515	\$3,553,069	\$4,398,934	\$3,487,173
% SOI	43%	27%	18%	29%

Trip-Level Economics

	2014	2015	2016	Average
Number of Observations	83	143	170	
Response Rate (%)	66%	84%	94%	
SOI Trip				
Owner-Operated	51%	61%	66%	59.3%
Fuel Used per Day at Sea (gallons/day)	34	36	34	35
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	7.2%	6.1%	5.3%	6.2%
Bait	4.1%	7.4%	5.6%	5.7%
Ice	1.5%	2%	1.8%	1.8%
Groceries	2.9%	3.6%	3.9%	3.5%
Miscellaneous	2.7%	3.2%	2.9%	2.9%
Hired Crew	29.4%	30.3%	31.6%	30.4%
IFQ Purchase	14.6%	15.2%	21.2%	17%
OC Owner-Captain Time	9.5%	9.9%	11.1%	10.2%
Trip Net Cash Flow	38%	32%	28%	33%
Trip Net Revenue	43%	37%	38%	39%
Labor - Hired & Owner	39%	40%	43%	40.7%
Fuel & Supplies	18%	22%	19%	20%
Input Prices				
Fuel Price (per gallon)	\$3.62	\$2.54	\$2.06	\$2.74
Hire Crew Wage (per crew-day)	\$244	\$234	\$254	\$244
Productivity Measures				
Landings/Fuel Use (lbs/gallon)	13.5	11.4	9.8	12
Landings/Labor Use (lbs/crew-day)	179	160	143	161

SOI: 2016 GOM Yellowtail Snapper Fishery: All Gears
Annual, Vessel-Level Time Series

Annual, Vessel-Level Summary

	2014	2015	2016	Average
Effort				
Vessels	132	148	165	148
Trips - Total	2,707	2,748	3,223	2,893
SOI Trips	592	619	693	635
Non-SOI Trips	2,115	2,129	2,530	2,258
Days at Sea	12,781	13,447	14,645	13,624
Landings (gutted lbs)				
Total	6,452,393	6,233,348	7,158,706	6,614,816
SOI	565,317	389,762	294,082	416,387
Non-SOI	5,887,076	5,843,586	6,864,624	6,198,429
% SOI	9%	6%	4%	6%
Revenue				
Total	\$23,937,389	\$24,078,041	\$27,448,697	\$25,154,709
SOI	\$1,898,973	\$1,338,346	\$989,964	\$1,409,094
Non-SOI	\$22,038,416	\$22,739,694	\$26,458,733	\$23,745,614
% SOI	8%	6%	4%	6%
Vessel Characteristics				
Length	38	39	39	39
Year Built	1987	1986	1987	1987
For-Hire Fishing Permit	17%	18%	19%	18%

Annual, Vessel-Level Economics

	2014	2015	2016	Average
Number of Observations	17	25	39	
Response Rate (%)	50%	64%	80%	
SOI Vessel				
Owner-Operated	47%	68%	77%	64%
For-Hire Active	0%	11%	12%	8%
Vessel Value	\$153,395	\$92,476	\$91,564	\$112,478
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	6.2%	5.9%	6.1%	6.1%
Other Supplies	10.5%	11.2%	10.9%	10.9%
Hired Crew	26.3%	24.3%	26.4%	25.7%
Vessel Repair & Maintenance	4%	6.2%	7.9%	6%
Insurance	0.3%	0.6%	1%	0.6%
Overhead	3.5%	5.7%	5.6%	4.9%
Loan Payment	0.6%	2%	2.1%	1.6%
IFQ Purchase	13.7%	23.7%	22.2%	19.9%
OC Owner-Captain Time	3.3%	5%	6.4%	4.9%
Net Cash Flow	35%	20%	18%	24%
Net Revenue for Operations*	43%	39%	33%	38%
Depreciation	2.6%	2.2%	2.7%	2.5%
Fixed Costs	8%	13%	15%	12%
Labor - Hired & Owner	30%	29%	33%	31%
Fuel & Supplies	17%	17%	17%	17%
Economic Return* (on asset value)	84.2%	86.7%	59.9%	76.9%

SOI: 2016 GOM FMP Jacks Fishery: All Gears

Description: This SOI consists of all logbook trips by permitted vessels where at least one pound of jack species managed by the GOM Reef Fish FMP was landed in 2016 using any gear type. Jack species managed include greater amberjack, lesser amberjack, banded rudderfish, and almaco jack. Greater amberjack is by far the most important species in this SOI, accounting for the majority of SOI landings. For important disclaimer, see page 14.

Trip-Level Summary

Effort

Trips	1,766
Vessels	281
Days at Sea	8,491
Crew Days	27,438

Landings (gutted lbs)

<u>Total</u>	<u>5,361,913</u>
SOI	488,547
Non-SOI	4,873,366
% SOI	9%

Percent by Gear

	Trips	SOI lbs
Vertical Line	87%	89%
Longline	9%	7%
Diver	4%	4%
Other	0.3%	0.1%

Price (mean)

<u>Total</u>	<u>\$3.74</u>
SOI	\$1.66
Non-SOI	\$3.95

Revenue

<u>Total</u>	<u>\$20,049,809</u>
SOI	\$810,155
Non-SOI	\$19,239,654
% SOI	4%

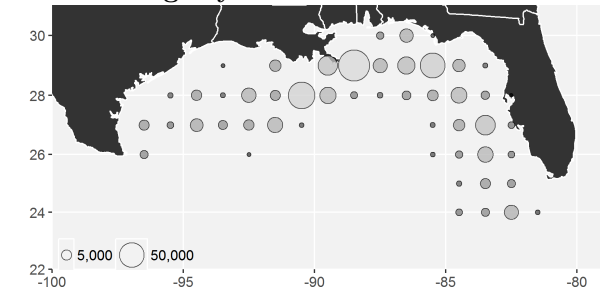
Percent of Revenue by Species Group

Shallow Water Groupers	23%
Shallow Water Snappers	2%
Mid-Shelf Snappers	58%
Deep Water Groupers/Tilefish	11%
Grunts/Porgies/Triggerfish	2%
Mackerels/Dolphinfish/Jacks	5%
Other Species	0.6%

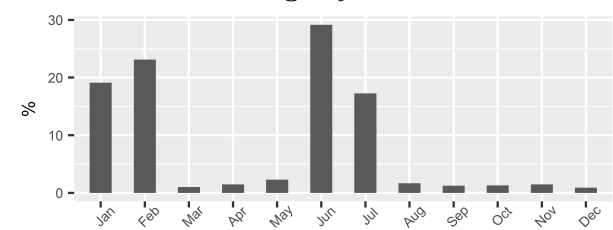
Revenue for Top 5 Species

Red Snapper	\$8,719,907
Vermilion Snapper	\$2,692,158
Red Grouper	\$2,345,879
Gag Grouper	\$1,628,905
Yellowedge Grouper	\$1,396,536

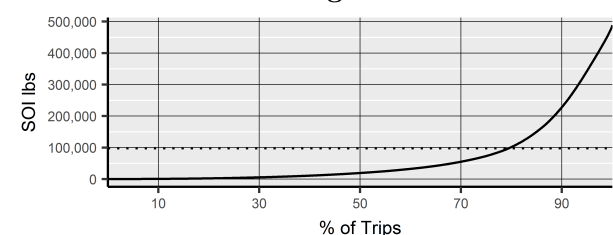
SOI Landings by Area Fished



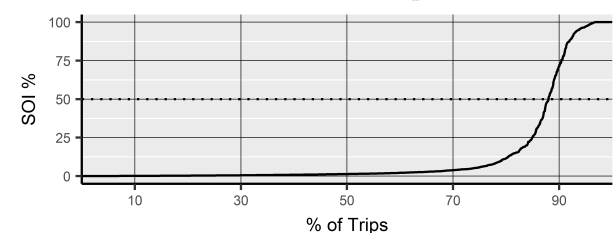
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=1,766)

	Mean	Min	Median	Max
Days at Sea	4.8	1	4	23
Crew Size	3	1	3	8
Landings	3,036	32	1,902	23,770
Revenue	\$11,353	\$77	\$6,049	\$95,226
SOI	\$459	\$1	\$84	\$6,482
% SOI	14%	0%	1.3%	100%

SOI: 2016 GOM FMP Jacks Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	1,766	-	-	-
Selected	484	27%	-	-
Responded	483	27%	100%	-
Used	473	27%	98%	98%

Economic Results (n=473)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	63%	5	54%	71%	-
Days at Sea	4.4	0.3	3.9	4.9	4
Crew Size	2.8	0.1	2.7	3	3
Fuel Used	196	18	166	227	150
Landings (gutted lbs)	2,661	264	2,221	3,100	1,567
Total Revenue	10,268	1,179	8,304	12,231	4,857
Cost					
Fuel	399	34	342	456	300
Bait	330	51	245	416	175
Ice	171	21	136	206	110
Groceries	311	34	254	367	200
Miscellaneous	338	63	234	443	50
Hired Crew	2,752	351	2,167	3,336	1,000
IFQ Purchase	2,059	414	1,369	2,749	354
OC Owner-Captain Time	586	126	375	796	67
Trip Net Cash Flow	3,908	629	2,860	4,955	1,594
Trip Net Revenue	5,380	724	4,174	6,587	2,253

Trip Net Cash Flow and Trip Net Revenue as Proportion of Trip Revenue (Margins)

Revenue 100%	Trip Net Cash Flow 38%	Trip Net Revenue 52%
	IFQ Purchase 20%	
	Labor - Hired 27%	Labor - Hired & Owner 33%
	Fuel & Supplies 15%	Fuel & Supplies 15%

Input Prices

Fuel Price (average): \$2.03 per gallon Hired Crew Wage (implicit): \$285 per crew-day

Productivity Measures

Landings/Fuel Use: 13.5 lbs/gallon Landings/Labor Use: 214 lbs/crew-day

SOI: 2016 GOM FMP Jacks Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	281
<u>Trips - Total</u>	<u>5,240</u>
SOI Trips	1,766
Non-SOI Trips	3,474
Days at Sea	21,847
Crew Days	67,160

Landings (guttled lbs)

<u>Total</u>	<u>12,866,621</u>
SOI	488,547
Non-SOI	12,378,074
% SOI	4%

Percent by Gear

	Trips	Total lbs
Vertical Line	79%	65%
Longline	13%	32%
Diver	5%	1%
Other	3%	1%

Price (mean)

<u>Total</u>	<u>\$3.86</u>
SOI	\$1.66
Non-SOI	\$3.95

Revenue

<u>Total</u>	<u>\$49,671,310</u>
SOI	\$810,155
Non-SOI	\$48,861,156
% SOI	2%

Percent of Revenue by Species Group

Shallow Water Groupers	30%
Shallow Water Snappers	2%
Mid-Shelf Snappers	52%
Deep Water Groupers/Tilefish	10%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	4%
Other Species	0.7%

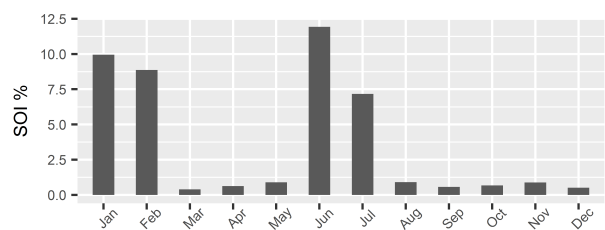
Revenue for Top 5 Species

Red Snapper	\$21,611,984
Red Grouper	\$10,275,868
Vermilion Snapper	\$4,007,558
Gag Grouper	\$3,380,185
Yellowedge Grouper	\$3,045,146

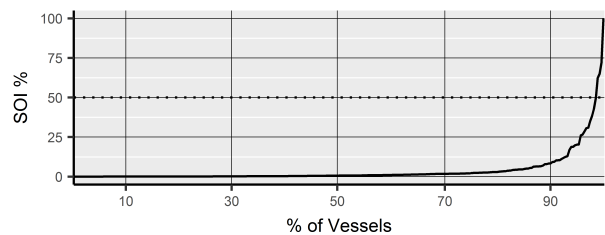
Annual, Vessel Descriptive Statistics (N=281)

	Mean	Min	Median	Max
Trips	18.6	1	15	92
Days at Sea	77.7	1	67	245
Crew Days	239	2	174	1,470
Landings	45,789	127	26,003	448,815
Revenue	\$176,766	\$222	\$91,174	\$2,182,950
SOI	\$2,883	\$1	\$482	\$55,642
% SOI	4%	0%	0.7%	100%

SOI Share of Monthly Landings



SOI Share of Revenue Per Vessel



Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	6%
SAT Snapper & Grouper - Limited	1%
King Mackerel	49%
Spanish Mackerel	46%
Dolphin-Wahoo	38%
Other Commercial Fishing	20%
For-Hire Fishing	25%

Vessel Characteristics (N=281)

	Mean	Min	Median	Max
Length	40	23	39	69
Year Built	1987	1961	1984	2016
Horsepower	419	12	350	2,000
Fiberglass Hull	92%	-	-	-
Diesel Engine	82%	-	-	-
Ice Refrigeration	96%	-	-	-

SOI: 2016 GOM FMP Jacks Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	281	-	-	-
Selected	79	28%	-	-
Responded	71	25%	90%	-
Used	68	24%	86%	96%

Economic Results (n=68)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	68%	5.3	59%	76%	-
For-Hire Active	17%	4.2	10%	24%	-
Days - Commercial Fishing	93	5.6	84	102	90
Days - For-Hire Fishing	12	4.7	4	20	0
Days - Non-fishing	2	0.7	1	4	0
Vessel Value	100,479	10,892	82,308	118,651	75,000
Has Insurance	42%	5.6	33%	52%	-
Total Revenue	194,433	27,986	147,744	241,121	100,000
Commercial Fishing	178,998	27,084	133,814	224,182	97,980
For-Hire Fishing	15,434	5,994	5,435	25,434	0
Cost					
Fuel	11,130	1,272	9,008	13,252	8,454
Other Supplies	19,697	1,742	16,790	22,603	14,662
Hired Crew	48,463	6,776	37,160	59,767	20,000
Vessel Repair & Maintenance	12,991	1,817	9,960	16,021	7,950
Insurance	1,733	310	1,215	2,250	0
Overhead	7,257	907	5,744	8,770	5,230
Loan Payment	2,225	787	913	3,537	0
IFQ Purchase	30,239	5,098	21,735	38,743	4,302
OC Owner-Captain Time	10,479	1,809	7,460	13,497	2,427
Depreciation	5,024	545	4,115	5,933	3,750
Net Cash Flow	60,699	19,890	27,516	93,881	26,000
Net Revenue from Operations*	77,660	20,245	43,886	111,433	30,244

Net Cash Flow and Net Revenue from Operations* as Proportion of Vessel Revenue (Margins)

Revenue 100%	Net Cash Flow 31%	Net Revenue - Operations 40%
	IFQ Purchase 16%	Depreciation 3%
	Loan Payment 1%	Fixed Costs 11%
	Fixed Costs 11%	Labor - Hired & Owner 30%
	Labor - Hired 25%	
	Fuel & Supplies 16%	Fuel & Supplies 16%

Economic Return* (on Vessel Asset Value): 77.3%

* Accruing to vessel owner AND IFQ shareholder. See Definitions.

SOI: 2016 GOM FMP Jacks Fishery: All Gears

Trip-Level Time Series

Trip-Level Summary

	2014	2015	2016	Average
Effort				
Trips	1,623	1,506	1,766	1,632
Vessels	302	284	281	289
Days at Sea	8,368	7,609	8,491	8,156
Landings (gutted lbs)				
<u>Total</u>	<u>5,177,740</u>	<u>4,823,881</u>	<u>5,361,913</u>	<u>5,121,178</u>
SOI	511,929	489,179	488,547	496,552
Non-SOI	4,665,811	4,334,702	4,873,366	4,624,626
% SOI	10%	10%	9%	10%
Price (mean)				
<u>Total</u>	<u>\$3.54</u>	<u>\$3.70</u>	<u>\$3.74</u>	<u>\$3.66</u>
SOI	\$1.50	\$1.51	\$1.66	\$1.56
Non-SOI	\$3.77	\$3.94	\$3.95	\$3.89
Revenue				
<u>Total</u>	<u>\$18,324,615</u>	<u>\$17,836,402</u>	<u>\$20,049,809</u>	<u>\$18,736,942</u>
SOI	\$765,357	\$739,690	\$810,155	\$771,734
Non-SOI	\$17,559,258	\$17,096,712	\$19,239,654	\$17,965,208
% SOI	4%	4%	4%	4%

Trip-Level Economics

	2014	2015	2016	Average
Number of Observations	343	405	473	
Response Rate (%)	79%	81%	98%	
SOI Trip				
Owner-Operated	67%	57%	63%	62.3%
Fuel Used per Day at Sea (gallons/day)	52	50	45	49
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	7.5%	5.1%	3.9%	5.5%
Bait	3.2%	3.5%	3.2%	3.3%
Ice	1.6%	1.7%	1.7%	1.7%
Groceries	2.6%	2.2%	3%	2.6%
Miscellaneous	2.7%	2.5%	3.3%	2.8%
Hired Crew	26.7%	26.8%	26.8%	26.8%
IFQ Purchase	14.2%	24.3%	20%	19.5%
OC Owner-Captain Time	7.3%	5.7%	5.7%	6.2%
Trip Net Cash Flow	42%	34%	38%	38%
Trip Net Revenue	48%	53%	52%	51%
Labor - Hired & Owner	34%	32%	33%	33%
Fuel & Supplies	18%	15%	15%	16%
Input Prices				
Fuel Price (per gallon)	\$3.50	\$2.51	\$2.03	\$2.68
Hire Crew Wage (per crew-day)	\$278	\$275	\$285	\$279
Productivity Measures				
Landings/Fuel Use (lbs/gallon)	12.6	13.3	13.5	13
Landings/Labor Use (lbs/crew-day)	219	226	214	220

SOI: 2016 GOM FMP Jacks Fishery: All Gears
Annual, Vessel-Level Time Series

Annual, Vessel-Level Summary

	2014	2015	2016	Average
Effort				
Vessels	302	284	281	289
Trips - Total	5,339	5,015	5,240	5,198
SOI Trips	1,623	1,506	1,766	1,632
Non-SOI Trips	3,716	3,509	3,474	3,566
Days at Sea	23,708	22,216	21,847	22,590
Landings (gutted lbs)				
Total	13,571,445	13,202,283	12,866,621	13,213,450
SOI	511,929	489,179	488,547	496,552
Non-SOI	13,059,516	12,713,104	12,378,074	12,716,898
% SOI	4%	4%	4%	4%
Revenue				
Total	\$50,584,297	\$51,018,827	\$49,671,310	\$50,424,811
SOI	\$765,357	\$739,690	\$810,155	\$771,734
Non-SOI	\$49,818,940	\$50,279,137	\$48,861,156	\$49,653,078
% SOI	2%	1%	2%	2%
Vessel Characteristics				
Length	41	40	40	40
Year Built	1985	1986	1987	1986
For-Hire Fishing Permit	25%	25%	25%	25%

Annual, Vessel-Level Economics

	2014	2015	2016	Average
Number of Observations	51	62	68	
Response Rate (%)	64%	76%	86%	
SOI Vessel				
Owner-Operated	71%	64%	68%	68%
For-Hire Active	15%	18%	17%	17%
Vessel Value	\$153,105	\$113,424	\$100,479	\$122,336
Total Revenue	100%	100%	100%	100%
Costs (% of Revenue)				
Fuel	8.5%	5.2%	5.7%	6.5%
Other Supplies	9.8%	9%	10.1%	9.6%
Hired Crew	26.8%	25.5%	24.9%	25.7%
Vessel Repair & Maintenance	7%	5.9%	6.7%	6.5%
Insurance	1.3%	0.6%	0.9%	0.9%
Overhead	5.8%	4.9%	3.7%	4.8%
Loan Payment	1.2%	1.1%	1.1%	1.1%
IFQ Purchase	11.3%	27.4%	15.6%	18.1%
OC Owner-Captain Time	4.4%	4.4%	5.4%	4.7%
Net Cash Flow	28%	20%	31%	26%
Net Revenue for Operations*	33%	42%	40%	38%
Depreciation	3.3%	2.4%	2.6%	2.8%
Fixed Costs	14%	11%	11%	12%
Labor - Hired & Owner	31%	30%	30%	30%
Fuel & Supplies	18%	14%	16%	16%
Economic Return* (on asset value)	50.2%	89.1%	77.3%	72.2%

Appendices

Appendix 1 - List of Species in GOM Reef Fish FMP and Species SOIs

Species			Species SOI Definitions			
	IFQ*	Non-IFQ	IFQ OSWG	IFQ DWG	IFQ Tilefish	FMP Jacks
Almaco Jack		X				X
Banded Rudderfish		X				X
Black Grouper	X		X			
Blackfin Snapper		X				
Blueline Tilefish	X				X	
Cubera Snapper		X				
Gag Grouper	X					
Goldface Tilefish	X				X	
Goliath Grouper		X				
Gray Snapper		X				
Gray Triggerfish		X				
Greater Amberjack		X				X
Golden Tilefish	X				X	
Hogfish		X				
Lane Snapper		X				
Lesser Amberjack		X				X
Mutton Snapper		X				
Queen Snapper		X				
Red Grouper	X					
Red Snapper	X					
Scamp	X		X			
Silk Snapper		X				
Snowy Grouper	X			X		
Speckled Hind	X			X		
Vermilion Snapper		X				
Warsaw Grouper	X			X		
Wenchman		X				
Yellowedge Grouper	X			X		
Yellowfin Grouper	X		X			
Yellowmouth Grouper	X		X			
Yellowtail Snapper		X				

*Note: The GOM RF fishery has two IFQ programs. A single species IFQ exists for Red Snapper, and the Grouper-Tilefish IFQ has 13 grouper and tilefish species.

Appendix 2 - Species Groups for the Tables: "Percent of Revenue by Species Group"

NOTE: These groups are used in the "Percent of Revenue by Species Group" table in both the Trip-Level Summary and the Annual, Vessel-Level Summary sections.

Shallow Water Groupers

Black Grouper
Broomtail Grouper
Coney
Creole-Fish
Gag Grouper
Goliath Grouper
Graysby
Marbled Grouper
Nassau Grouper
Red Grouper
Red Hind
Rock Hind
Scamp
Tiger Grouper
Yellowfin Grouper
Yellowmouth Grouper

Shallow Water Snappers

Cubera Snapper
Dog Snapper
Gray Snapper
Lane Snapper
Mahogany Snapper
Mutton Snapper
Schoolmaster
Wenchman
Yellowtail Snapper

Mid-Shelf Snappers

Black Snapper
Blackfin Snapper
Queen Snapper
Red Snapper
Silk Snapper
Vermilion Snapper

Deep Water Groupers/Tilefish

Anchor Tilefish
Blackline Tilefish
Blueline Tilefish
Goldface Tilefish
Misty Grouper
Snowy Grouper
Speckled Hind
Warsaw Grouper
Yellowedge Grouper

Grunts/Porgies/Triggerfish

Black Margate
Bluestriped Grunt
Cottonwick Grunt
French Grunt
Grass Porgy
Gray Triggerfish
Hogfish
Jolthead Porgy
Knobbed Porgy
Littlehead Porgy
Longspine Porgy
Margate
Ocean Triggerfish
Porkfish
Puddingwife
Queen Triggerfish
Red Porgy
Sailors Choice Grunt
Saucereye Porgy
Scup
Sheepshead
Smallmouth Grunt
Spadefish
Spanish Grunt
Tomtate Grunt
White Grunt
Whitebone Porgy

Mackerels/Dolphinfish/Jacks

Almaco Jack
Banded Rudderfish
Bar Jack
Black Jack
Blue Runner
Cero Mackerel
Crevalle Jack
Dolphinfish
Greater Amberjack
Horse-Eye Jack
King Mackerel
Lesser Amberjack
Spanish Mackerel
Yellow Jack

Other Species

All other species not listed above

Appendix 3 - Glossary/Abbreviations

- **Deep Water Groupers/Tilefish** - See Appendix 2 for particular species included.
- **Diver** - A gear type which includes spear guns.
- **Economic Return (on Asset Value)** - The economic return is calculated by dividing the mean Net Revenue from Operations by the mean Vessel Value. It is critical to note that, practically, this return is shared between owners of vessel capital AND IFQ shares. By purposefully ignoring the IFQ shareholder distribution, the focus is on the real productive capacity of the commercial fishery. All IFQ transactions are zero-sum in that they transfer wealth. The catch share management structure of the fishery allows for the realization of resource rents that will, in all likelihood, accrue to the IFQ shareholders.
- **FMP** - Fishery Management Plan
- **FMP Jacks** - GOM FMP Jacks - A species SOI presented in this report, consisting of these non-IFQ jack species: Almaco jack, banded rudderfish, greater amberjack, lesser amberjack
- **GOM** - Gulf of Mexico
- **Grunts/Porgies/Triggerfish** - See Appendix 2 for particular species included.
- **IFQ** - Individual fishing quota
- **IFQ DWG** (Deep Water Grouper) - A species SOI presented in this report consisting of these IFQ grouper species: snowy grouper, speckled hind, warsaw grouper, yellowedge grouper.
- **IFQ OSWG** (Other Shallow Water Grouper) - A species SOI presented in this report consisting of these IFQ grouper species: black grouper, scamp, yellowmouth grouper, yellowfin grouper.
- **IFQ Tilefish** - A species SOI presented in this report consisting of these IFQ tilefish species: blueline tilefish, goldface tilefish, golden tilefish.
- **Mackerels/Dolphinfish/Jacks** - See Appendix 2 for particular species included.
- **Mid-Shelf Snappers** - See Appendix 2 for particular species included.
- **Net Cash Flow** - Revenue minus the costs for fuel, other supplies, hired crew, vessel repair and maintenance, insurance, overhead, loan payments, and IFQ purchase. The focus is on actual cash transactions, i.e. money flows. In-kind contributions to the production process, i.e., the opportunity cost of owner-captain time and depreciation, are ignored. The sale of IFQ allocation or shares is also not accounted for, as these transactions cannot be associated with a vessel.
- **Net Revenue from Operations** - Revenue minus the costs for fuel, other supplies, hired crew, vessel repair and maintenance, insurance, overhead, and the opportunity cost of an owner's time as captain as well as the vessel's depreciation. By including in-kind contributions to the production process (opportunity cost of an owner's time and depreciation) and excluding transfer payments (loan payments and IFQ purchase), net revenue from operations is a measure of the inherent productivity, i.e., economic performance, of the commercial fishery. Note that IFQ share ownership is ignored here.
- **NMFS** - National Marine Fisheries Service
- **Non-IFQ** - Fish species which are part of the GOM Reef Fish FMP but are not included in either of the IFQ programs for Red Snapper or Grouper-Tilefish. Multiple species of snapper, jacks, as well as other fish species are included. Refer to Appendix 1 for complete list.
- **OC** - Opportunity Cost - An economic term referring to the value of a good or service in its next best productive use.
- **OC Owner-Captain Time** - Estimated opportunity cost (OC) of an owner's labor used on the trip.
- **RF** - Reef Fish
- **SAT** - South Atlantic
- **SEFSC** - Southeast Fisheries Science Center
- **SERO** - Southeast Regional Office
- **Shallow Water Groupers** - See Appendix 2 for particular species included.
- **Shallow Water Snappers** - See Appendix 2 for particular species included.
- **SOI** - Segment of Interest - A subset of commercial fishing trips we provide results for. A particular SOI consists of all trips where at least one pound of fish, which matches the criteria of the SOI, was landed.
- **Vertical Line** - A gear type which includes hand lines, rod and reels, electrical reels and bandit gear.