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ECONOMICS OF THE GULF OF MEXICO REEF FISH FISHERY - 2015

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 2015. 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 con-**

tinuously 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 15 different SOIs. The results for any one SOI consist of four sections, corresponding to four 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.

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

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 2015, vessels were stratified into three strata based on their days at sea during the two years prior to the selection year (e.g., 2013 and 2014 in this

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

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, one additional vessel selection was conducted in 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 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.

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.

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.

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

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.

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 this 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 four 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 and final section, Annual, Vessel-Level Economics, provides estimated annual economic results for SOI vessels based on the annual sample survey. 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. Note that in 2015 compliance was not strictly enforced.
- **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 vessel, 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.

- **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. Note that in 2015 compliance was not strictly enforced.
- **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

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.

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.

Results

Disclaimer and Overview

All 2015 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 in nominal 2015 U.S. dollars, as reported on the surveys.

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

SOIs based on management-approach perspective:

4. GOM IFQ Fishery: All Gears

5. GOM Trips without IFQ Catch Fishery: All Gears

SOIs based on species or species group perspective:

6. GOM IFQ Red Snapper Fishery: All Gears

7. GOM IFQ Grouper-Tilefish Fishery: All Gears

8. GOM IFQ Red Grouper Fishery: All Gears

9. GOM IFQ Gag Grouper Fishery: All Gears

10. GOM IFQ OSWG Fishery: All Gears

11. GOM IFQ DWG Fishery: All Gears

12. GOM IFQ Tilefish Fishery: All Gears

13. GOM Vermilion Snapper Fishery: All Gears

14. GOM Yellowtail Snapper Fishery: All Gears

15. 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 four 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 and final section, Annual, Vessel-Level Economics, provides estimated annual economic results for SOI vessels based on the annual sample survey.

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.

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: 2015 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 2015 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	6,800
Vessels	522
Days at Sea	30,480
Crew Days	87,457

Landings (gutted lbs)

<u>Total</u>	16,125,290
SOI	15,396,849
Non-SOI	728,441
% SOI	95%

Percent by Gear

	Trips	SOI lbs
Vertical Line	82%	67%
Longline	11%	31%
Diver	6%	1%
Other	1%	0.6%

Price (mean)

<u>Total</u>	\$3.91
SOI	\$4.01
Non-SOI	\$1.71

Revenue

<u>Total</u>	\$62,994,097
SOI	\$61,746,430
Non-SOI	\$1,247,667
% SOI	98%

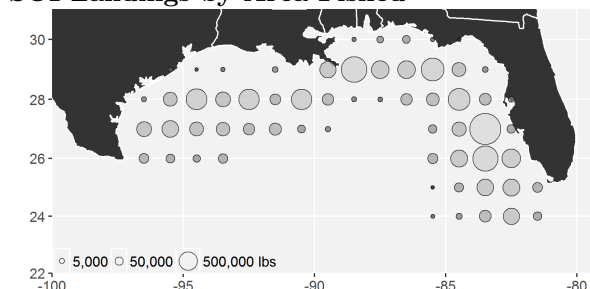
Percent of Revenue by Species Group

Shallow Water Groupers	34%
Shallow Water Snappers	4%
Mid-Shelf Snappers	49%
Deep Water Groupers/Tilefish	9%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	2%
Other Species	0.4%

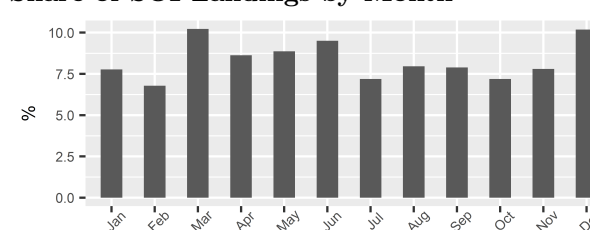
Revenue for Top 5 Species

Red Snapper	\$27,208,496
Red Grouper	\$17,881,611
Vermilion Snapper	\$3,764,955
Yellowedge Grouper	\$3,422,369
Gag Grouper	\$2,614,728

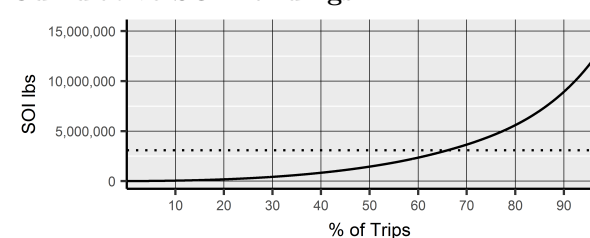
SOI Landings by Area Fished



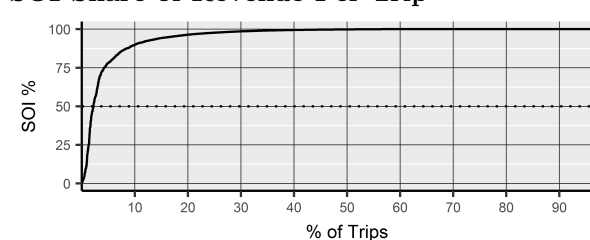
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=6,800)

	Mean	Min	Median	Max
Days at Sea	4.5	1	3	25
Crew Size	2.7	1	3	12
Landings	2,371	1	1,200	26,025
Revenue	\$9,264	\$3	\$4,053	\$128,800
SOI	\$9,080	\$2	\$3,832	\$128,568
% SOI	96%	0.2%	99.9%	100%

SOI: 2015 GOM Reef Fish FMP Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	6,800	-	-	-
Selected	2,111	31%	-	-
Responded	1,881	28%	89%	-
Used	1,787	26%	85%	95%

Economic Results (n=1,787)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	66%	4.1	59%	72%	-
Days at Sea	4.25	0.29	3.77	4.73	3
Crew Size	2.82	0.08	2.69	2.95	2
Fuel Used	193	14	169	217	125
Landings (gutted lbs)	2,429	207	2,086	2,773	1,292
Total Revenue	9,773	912	8,262	11,285	4,566
Cost					
Fuel	482	35	424	540	337
Bait	336	41	269	404	140
Ice	146	17	119	174	75
Groceries	233	25	191	275	120
Miscellaneous	238	33	182	293	50
Hired Crew	2,528	276	2,071	2,986	1,100
IFQ Purchase	2,591	405	1,920	3,262	238
OC Owner-Captain Time	611	82	476	747	173
Trip Net Cash Flow	3,218	465	2,447	3,989	1,480
Trip Net Revenue	5,198	623	4,165	6,231	1,654

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

Revenue 100%	Trip Net Cash Flow 33%	Trip Net Revenue 53%
	IFQ Purchase 27%	
	Labor - Hired 26%	Labor - Hired & Owner 32%
	Fuel & Supplies 15%	Fuel & Supplies 15%

Input Prices

Fuel Price (average): \$2.50 per gallon Hired Crew Wage (implicit): \$275 per crew-day

Productivity Measures

Landings/Fuel Use: 12.6 lbs/gallon Landings/Labor Use: 203 lbs/crew-day

SOI: 2015 GOM Reef Fish FMP Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	522
<u>Trips - Total</u>	<u>7,954</u>
SOI Trips	6,800
Non-SOI Trips	1,154
Days at Sea	32,570
Crew Days	92,007

Landings (guttled lbs)

<u>Total</u>	<u>17,162,505</u>
SOI	15,396,849
Non-SOI	1,765,656
% SOI	90%

Percent by Gear

	Trips	Total lbs
Vertical Line	80%	67%
Longline	10%	29%
Diver	6%	1%
Other	4%	3%

Price (mean)

<u>Total</u>	<u>\$3.82</u>
SOI	\$4.01
Non-SOI	\$2.13

Revenue

<u>Total</u>	<u>\$65,512,733</u>
SOI	\$61,746,430
Non-SOI	\$3,766,303
% SOI	94%

Percent of Revenue by Species Group

Shallow Water Groupers	33%
Shallow Water Snappers	5%
Mid-Shelf Snappers	48%
Deep Water Groupers/Tilefish	9%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	3%
Other Species	0.6%

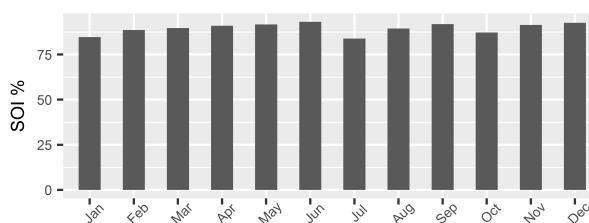
Revenue for Top 5 Species

Red Snapper	\$27,234,477
Red Grouper	\$17,927,435
Vermilion Snapper	\$3,771,001
Yellowedge Grouper	\$3,435,316
Gag Grouper	\$2,617,163

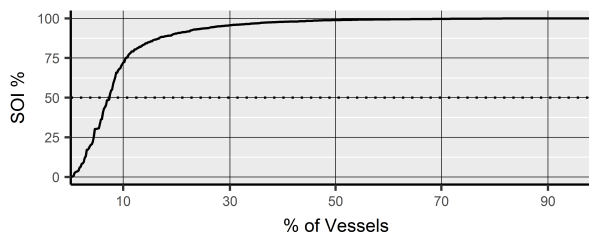
Annual, Vessel Descriptive Statistics (N=522)

	Mean	Min	Median	Max
Trips	15.2	1	12	108
Days at Sea	62.4	1	44	244
Crew Days	176.3	1	99	1,257
Landings	32,878	15	14,877	452,017
Revenue	\$125,503	\$77	\$52,666	\$2,121,109
SOI	\$118,288	\$22	\$46,431	\$2,119,340
% SOI	90.5%	0.2%	99%	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	0.8%
King Mackerel	41%
Spanish Mackerel	50%
Dolphin-Wahoo	36%
Other Commercial Fishing	19%
For-Hire Fishing	24%

Vessel Characteristics (N=522)

	Mean	Min	Median	Max
Length	38	20	37	69
Year Built	1987	1947	1985	2014
Horsepower	404	12	350	1,800
Fiberglass Hull	93%	-	-	-
Diesel Engine	80%	-	-	-
Ice Refrigeration	96%	-	-	-

SOI: 2015 GOM Reef Fish FMP Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	522	-	-	-
Selected	140	27%	-	-
Responded	120	23%	86%	-
Used	105	20%	75%	88%

Economic Results (n=105)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	70%	4.6	62%	77%	-
For-Hire Active	17%	3.7	10%	23%	-
Days - Commercial Fishing	75	4.3	67	82	65
Days - For-Hire Fishing	18	6.1	8	28	0
Days - Non-fishing	2	0.7	1	3	0
Vessel Value	99,021	15,601	73,125	124,916	75,000
Has Insurance	38%	4.8	30%	46%	-
Total Revenue	162,655	18,960	131,183	194,126	98,064
Commercial Fishing	149,830	19,018	118,261	181,398	72,431
For-Hire Fishing	12,825	3,413	7,159	18,491	0
Cost					
Fuel	9,909	719	8,715	11,103	7,544
Other Supplies	15,226	1,740	12,338	18,115	7,878
Hired Crew	41,188	4,547	33,641	48,735	19,467
Vessel Repair & Maintenance	11,176	1,190	9,201	13,150	6,056
Insurance	1,309	206	966	1,652	0
Overhead	8,906	1,514	6,393	11,419	3,608
Loan Payment	2,261	503	1,426	3,096	0
IFQ Purchase	39,302	13,046	17,646	60,958	5,942
OC Owner-Captain Time	8,943	1,183	6,978	10,907	2,703
Depreciation	4,951	780	3,656	6,246	3,750
Net Cash Flow	33,377	4,662	25,638	41,116	10,948
Net Revenue from Operations*	61,047	14,118	37,612	84,481	23,636

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

Revenue 100%	Net Cash Flow 21%	Net Revenue - Operations 38%
	IFQ Purchase 24%	
	Loan Payment 1%	Depreciation 3%
	Fixed Costs 13%	Fixed Costs 13%
	Labor - Hired 25%	Labor - Hired & Owner 31%
	Fuel & Supplies 15%	Fuel & Supplies 15%

Economic Return* (on Vessel Asset Value): 61.7%

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

SOI: 2015 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 2015 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	5,666
Vessels	443
Days at Sea	21,161
Crew Days	55,775

Landings (guttled lbs)

<u>Total</u>	10,946,373
SOI	10,323,059
Non-SOI	623,314
% SOI	94%

Percent by Gear

	Trips	SOI lbs
Vertical Line	99%	100%
Longline	0%	0%
Diver	0.7%	0%
Other	0.3%	0%

Price (mean)

<u>Total</u>	\$3.88
SOI	\$4.01
Non-SOI	\$1.73

Revenue

<u>Total</u>	\$42,470,868
SOI	\$41,392,948
Non-SOI	\$1,077,920
% SOI	97%

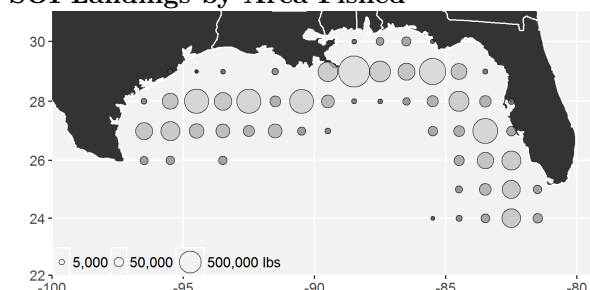
Percent of Revenue by Species Group

Shallow Water Groupers	20%
Shallow Water Snappers	4%
Mid-Shelf Snappers	70%
Deep Water Groupers/Tilefish	1%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	2%
Other Species	0.3%

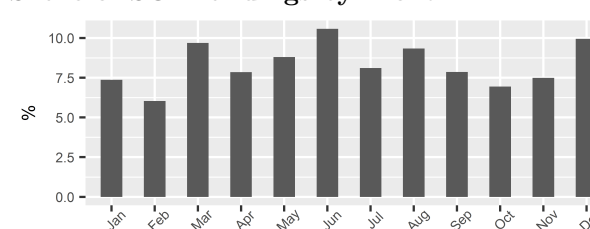
Revenue for Top 5 Species

Red Snapper	\$26,075,658
Red Grouper	\$6,915,242
Vermilion Snapper	\$3,754,355
Yellowtail Snapper	\$1,323,898
Gag Grouper	\$1,190,722

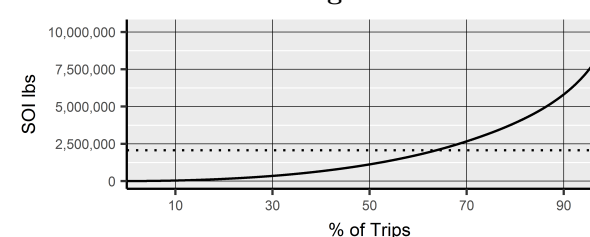
SOI Landings by Area Fished



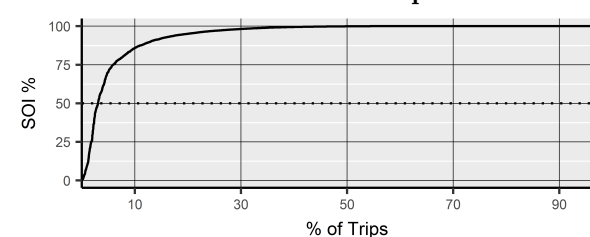
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=5,666)

	Mean	Min	Median	Max
Days at Sea	3.7	1	3	19
Crew Size	2.7	1	2	12
Landings	1,932	1	1,053	26,025
Revenue	\$7,496	\$3	\$3,530	\$128,800
SOI	\$7,305	\$3	\$3,356	\$128,568
% SOI	95%	0.2%	99.9%	100%

SOI: 2015 GOM Reef Fish FMP Fishery: Vertical Line

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	5,666	-	-	-
Selected	1,777	31%	-	-
Responded	1,582	28%	89%	-
Used	1,510	27%	85%	95%

Economic Results (n=1,510)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	69%	4.4	62%	76%	-
Days at Sea	3.67	0.25	3.26	4.08	3
Crew Size	2.72	0.08	2.58	2.86	2
Fuel Used	160	10	144	177	120
Landings (gutted lbs)	2,137	196	1,812	2,462	1,227
Total Revenue	8,655	900	7,161	10,150	4,232
Cost					
Fuel	402	24	362	442	315
Bait	247	27	203	292	134
Ice	122	13	100	143	68
Groceries	165	14	143	188	100
Miscellaneous	189	32	136	243	40
Hired Crew	2,040	239	1,644	2,437	1,000
IFQ Purchase	2,614	458	1,853	3,375	190
OC Owner-Captain Time	610	77	482	738	225
Trip Net Cash Flow	2,876	507	2,034	3,718	1,345
Trip Net Revenue	4,880	674	3,761	5,999	1,522

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

Revenue 100%	Trip Net Cash Flow 33%	Trip Net Revenue 56%
	IFQ Purchase 30%	
	Labor - Hired 24%	Labor - Hired & Owner 31%
	Fuel & Supplies 13%	Fuel & Supplies 13%

Input Prices

Fuel Price (average): \$2.51 per gallon Hired Crew Wage (implicit): \$274 per crew-day

Productivity Measures

Landings/Fuel Use: 13.3 lbs/gallon Landings/Labor Use: 214.1 lbs/crew-day

SOI: 2015 GOM Reef Fish FMP Fishery: Vertical Line

Annual, Vessel-Level Summary

Effort

Vessels	443
<u>Trips - Total</u>	<u>6,981</u>
SOI Trips	5,666
Non-SOI Trips	1,315
Days at Sea	24,008
Crew Days	62,593

Landings (guttled lbs)

<u>Total</u>	<u>12,407,589</u>
SOI	10,323,059
Non-SOI	2,084,530
% SOI	83%

Percent by Gear

	Trips	Total lbs
Vertical Line	91%	93%
Longline	1%	4%
Diver	3%	0.7%
Other	4%	3%

Price (mean)

<u>Total</u>	<u>\$3.76</u>
SOI	\$4.01
Non-SOI	\$2.52

Revenue

<u>Total</u>	<u>\$46,647,491</u>
SOI	\$41,392,948
Non-SOI	\$5,254,543
% SOI	89%

Percent of Revenue by Species Group

Shallow Water Groupers	21%
Shallow Water Snappers	6%
Mid-Shelf Snappers	65%
Deep Water Groupers/Tilefish	2%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	5%
Other Species	0.5%

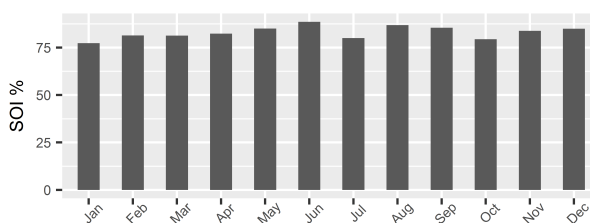
Revenue for Top 5 Species

Red Snapper	\$26,245,279
Red Grouper	\$7,766,041
Vermilion Snapper	\$3,761,093
Yellowtail Snapper	\$2,246,738
Gag Grouper	\$1,366,039

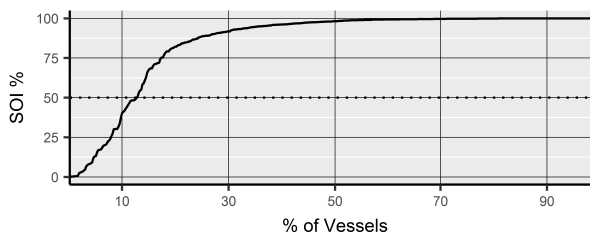
Annual, Vessel Descriptive Statistics (N=443)

	Mean	Min	Median	Max
Trips	15.8	1	12	108
Days at Sea	54.2	1	36	215
Crew Days	141.3	1	84	1,176
Landings	28,008	15	12,097	452,017
Revenue	\$105,299	\$77	\$42,148	\$2,121,109
SOI	\$93,438	\$12	\$32,704	\$2,119,340
% SOI	85.7%	0.2%	98.2%	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	47%
Spanish Mackerel	52%
Dolphin-Wahoo	34%
Other Commercial Fishing	16%
For-Hire Fishing	26%

Vessel Characteristics (N=443)

	Mean	Min	Median	Max
Length	38	20	36	69
Year Built	1987	1947	1986	2014
Horsepower	416	12	370	1,800
Fiberglass Hull	94%	-	-	-
Diesel Engine	80%	-	-	-
Ice Refrigeration	96%	-	-	-

SOI: 2015 GOM Reef Fish FMP Fishery: Vertical Line

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	443	-	-	-
Selected	121	27%	-	-
Responded	105	24%	87%	-
Used	92	21%	76%	88%

Economic Results (n=92)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	74%	4.9	66%	82%	-
For-Hire Active	20%	4.4	12%	27%	-
Days - Commercial Fishing	66	4.4	59	74	56
Days - For-Hire Fishing	22	7.6	9	34	0
Days - Non-fishing	3	0.7	1	4	0
Vessel Value	98,086	20,167	64,565	131,607	65,000
Has Insurance	40%	5.5	31%	49%	-
Total Revenue	147,983	20,299	114,243	181,724	87,605
Commercial Fishing	132,674	20,282	98,962	166,386	60,000
For-Hire Fishing	15,309	4,121	8,460	22,158	0
Cost					
Fuel	8,982	788	7,671	10,292	6,500
Other Supplies	13,161	1,655	10,411	15,912	7,000
Hired Crew	36,604	4,801	28,625	44,584	17,390
Vessel Repair & Maintenance	10,866	1,314	8,682	13,050	6,000
Insurance	1,369	233	981	1,757	0
Overhead	8,032	1,533	5,484	10,580	3,608
Loan Payment	2,579	564	1,643	3,516	0
IFQ Purchase	39,450	14,210	15,831	63,069	4,089
OC Owner-Captain Time	8,913	1,206	6,908	10,919	3,001
Depreciation	4,904	1,008	3,228	6,580	3,250
Net Cash Flow	26,939	4,451	19,541	34,337	8,830
Net Revenue from Operations*	55,151	15,249	29,805	80,498	16,278

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

Revenue 100%	Net Cash Flow 18%	Net Revenue - Operations 37%
	IFQ Purchase 27%	
	Loan Payment 2%	Depreciation 3%
	Fixed Costs 14%	Fixed Costs 14%
	Labor - Hired 25%	Labor - Hired & Owner 31%
	Fuel & Supplies 15%	Fuel & Supplies 15%

Economic Return* (on Vessel Asset Value): 56.2%

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

SOI: 2015 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 2015 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	736
Vessels	64
Days at Sea	8,556
Crew Days	29,555

Landings (guttled lbs)

<u>Total</u>	4,924,878
SOI	4,811,988
Non-SOI	112,890
% SOI	98%

Percent by Gear

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

Price (mean)

<u>Total</u>	\$3.98
SOI	\$4.03
Non-SOI	\$2.16

Revenue

<u>Total</u>	\$19,612,770
SOI	\$19,368,802
Non-SOI	\$243,968
% SOI	99%

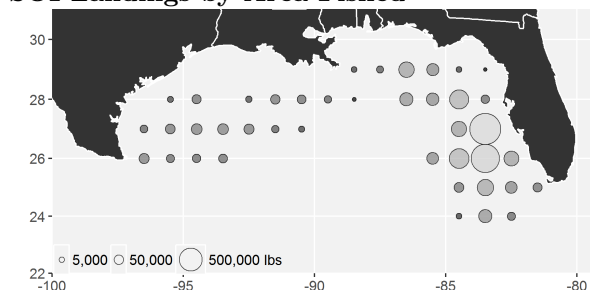
Percent of Revenue by Species Group

Shallow Water Groupers	63%
Shallow Water Snappers	2%
Mid-Shelf Snappers	6%
Deep Water Groupers/Tilefish	28%
Grunts/Porgies/Triggerfish	0.4%
Mackerels/Dolphinfish/Jacks	0.4%
Other Species	0.6%

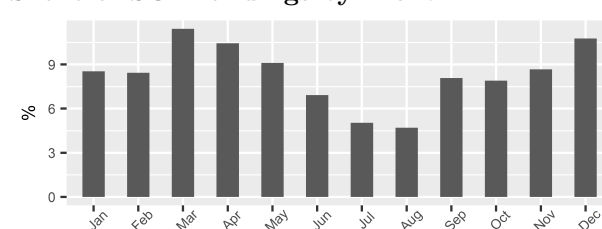
Revenue for Top 5 Species

Red Grouper	\$10,587,443
Yellowedge Grouper	\$3,306,091
Tilefish	\$1,443,536
Gag Grouper	\$1,218,852
Red Snapper	\$1,106,570

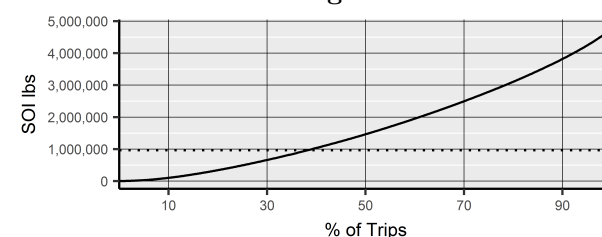
SOI Landings by Area Fished



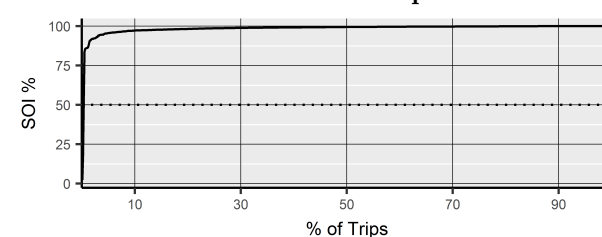
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=736)

	Mean	Min	Median	Max
Days at Sea	11.6	1	12	25
Crew Size	3.4	1	3	7
Landings	6,691	34	6,390	22,114
Revenue	\$26,648	\$81	\$25,006	\$96,580
SOI	\$26,316	\$70	\$24,781	\$96,572
% SOI	99%	2.2%	99.5%	100%

SOI: 2015 GOM Reef Fish FMP Fishery: Longline

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	736	-	-	-
Selected	177	24%	-	-
Responded	152	21%	86%	-
Used	140	19%	79%	92%

Economic Results (n=140)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	15%	9.8	-2%	33%	-
Days at Sea	11.32	0.73	10.01	12.63	12
Crew Size	3.25	0.19	2.91	3.58	3
Fuel Used	551	69	428	674	488
Landings (gutted lbs)	6,484	472	5,636	7,332	6,111
Total Revenue	25,959	1,896	22,554	29,364	25,221
Cost					
Fuel	1,328	166	1,029	1,626	1,177
Bait	1,430	140	1,180	1,681	1,400
Ice	456	89	296	616	360
Groceries	1,011	80	868	1,154	1,000
Miscellaneous	807	106	618	997	650
Hired Crew	8,508	812	7,049	9,966	8,187
IFQ Purchase	4,144	812	2,686	5,601	3,844
OC Owner-Captain Time	727	486	-146	1,599	0
Trip Net Cash Flow	8,275	812	6,817	9,734	7,448
Trip Net Revenue	11,693	1,472	9,048	14,337	11,755

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

Revenue 100%	Trip Net Cash Flow 32%	Trip Net Revenue 45%
	IFQ Purchase 16%	
	Labor - Hired 33%	Labor - Hired & Owner 36%
	Fuel & Supplies 19%	Fuel & Supplies 19%

Input Prices

Fuel Price (average): \$2.41 per gallon Hired Crew Wage (implicit): \$243 per crew-day

Productivity Measures

Landings/Fuel Use: 11.8 lbs/gallon Landings/Labor Use: 176.4 lbs/crew-day

SOI: 2015 GOM Reef Fish FMP Fishery: Longline

Annual, Vessel-Level Summary

Effort

Vessels	64
<u>Trips - Total</u>	<u>787</u>
SOI Trips	736
Non-SOI Trips	51
Days at Sea	8,773
Crew Days	30,118

Landings (guttled lbs)

<u>Total</u>	<u>5,062,485</u>
SOI	4,811,988
Non-SOI	250,497
% SOI	95%

Percent by Gear

	Trips	Total lbs
Vertical Line	4%	2%
Longline	95%	98%
Diver	0%	0%
Other	1%	0.1%

Price (mean)

<u>Total</u>	<u>\$3.99</u>
SOI	\$4.03
Non-SOI	\$3.27

Revenue

<u>Total</u>	<u>\$20,187,475</u>
SOI	\$19,368,802
Non-SOI	\$818,673
% SOI	96%

Percent of Revenue by Species Group

Shallow Water Groupers	62%
Shallow Water Snappers	2%
Mid-Shelf Snappers	8%
Deep Water Groupers/Tilefish	27%
Grunts/Porgies/Triggerfish	0.4%
Mackerels/Dolphinfish/Jacks	0.4%
Other Species	0.6%

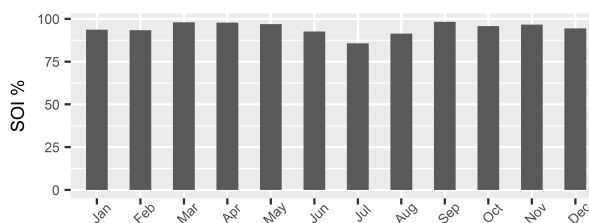
Revenue for Top 5 Species

Red Grouper	\$10,672,364
Yellowedge Grouper	\$3,308,871
Tilefish	\$1,516,984
Red Snapper	\$1,463,414
Gag Grouper	\$1,225,280

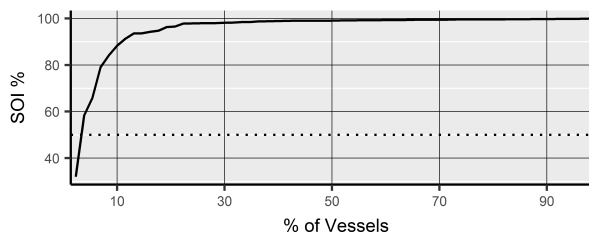
Annual, Vessel Descriptive Statistics (N=64)

	Mean	Min	Median	Max
Trips	12.3	1	13	21
Days at Sea	137.1	11	150	244
Crew Days	470.6	33	500	1,257
Landings	79,101	2,069	82,717	208,634
Revenue	\$315,429	\$7,851	\$327,875	\$888,967
SOI	\$302,638	\$7,851	\$324,944	\$885,058
% SOI	95.7%	32.1%	99.1%	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	2%
King Mackerel	11%
Spanish Mackerel	41%
Dolphin-Wahoo	52%
Other Commercial Fishing	42%
For-Hire Fishing	3%

Vessel Characteristics (N=64)

	Mean	Min	Median	Max
Length	47	32	47	69
Year Built	1981	1967	1980	2009
Horsepower	299	76	250	1,250
Fiberglass Hull	89%	-	-	-
Diesel Engine	100%	-	-	-
Ice Refrigeration	100%	-	-	-

SOI: 2015 GOM Reef Fish FMP Fishery: Longline

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	64	-	-	-
Selected	13	20%	-	-
Responded	11	17%	85%	-
Used	9	14%	69%	82%

Economic Results (n=9)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	11%	10.3	-8%	30%	-
For-Hire Active	0%	0	0%	0%	-
Days - Commercial Fishing	167	8.5	151	183	177
Days - For-Hire Fishing	0	0	0	0	0
Days - Non-fishing	0	0	0	0	0
Vessel Value	141,667	27,049	91,367	191,966	100,000
Has Insurance	22%	13.6	-3%	48%	-
Total Revenue	365,652	27,785	313,984	417,320	391,781
Commercial Fishing	365,652	27,785	313,984	417,320	391,781
For-Hire Fishing	0	0	0	0	0
Cost					
Fuel	19,693	2,415	15,202	24,184	18,238
Other Supplies	43,401	9,792	25,192	61,610	28,655
Hired Crew	98,812	12,062	76,382	121,241	96,464
Vessel Repair & Maintenance	19,437	4,109	11,797	27,078	13,283
Insurance	1,106	718	-229	2,441	0
Overhead	22,555	8,050	7,585	37,525	12,605
Loan Payment	0	0	0	0	0
IFQ Purchase	44,977	12,974	20,851	69,103	57,860
OC Owner-Captain Time	6,454	5,983	-4,672	17,579	0
Depreciation	7,083	1,352	4,568	9,598	5,000
Net Cash Flow	115,672	23,598	71,791	159,553	95,373
Net Revenue from Operations*	147,111	20,712	108,595	185,626	147,943

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

Revenue 100%	Net Cash Flow 32%	Net Revenue - Operations 40%
	IFQ Purchase 12%	Depreciation 2%
	Loan Payment 0%	Fixed Costs 12%
	Fixed Costs 12%	Labor - Hired & Owner 29%
	Labor - Hired 27%	Fuel & Supplies 17%
	Fuel & Supplies 17%	Fuel & Supplies 17%

Economic Return* (on Vessel Asset Value): 103.8%

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

SOI: 2015 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 2015 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	6,162
Vessels	479
Days at Sea	28,273
Crew Days	81,553

Landings (guttled lbs)

<u>Total</u>	15,383,498
SOI	12,866,630
Non-SOI	2,516,868
% SOI	84%

Percent by Gear

	Trips	SOI lbs
Vertical Line	82%	63%
Longline	12%	36%
Diver	6%	0.7%
Other	1%	0.7%

Price (mean)

<u>Total</u>	\$3.97
SOI	\$4.24
Non-SOI	\$2.55

Revenue

<u>Total</u>	\$61,041,374
SOI	\$54,617,570
Non-SOI	\$6,423,804
% SOI	89%

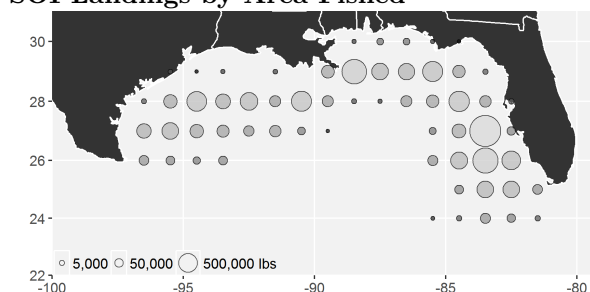
Percent of Revenue by Species Group

Shallow Water Groupers	35%
Shallow Water Snappers	2%
Mid-Shelf Snappers	51%
Deep Water Groupers/Tilefish	10%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	1%
Other Species	0.4%

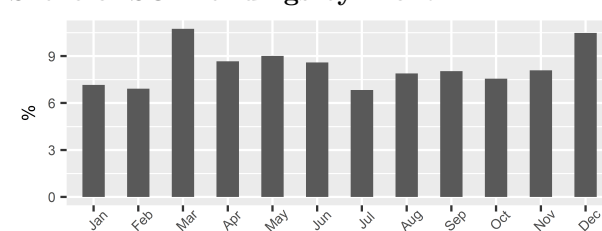
Revenue for Top 5 Species

Red Snapper	\$27,208,496
Red Grouper	\$17,881,611
Vermilion Snapper	\$3,535,119
Yellowedge Grouper	\$3,422,369
Gag Grouper	\$2,614,728

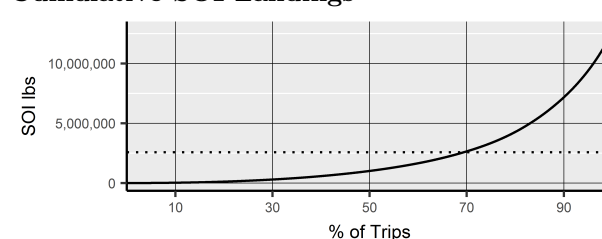
SOI Landings by Area Fished



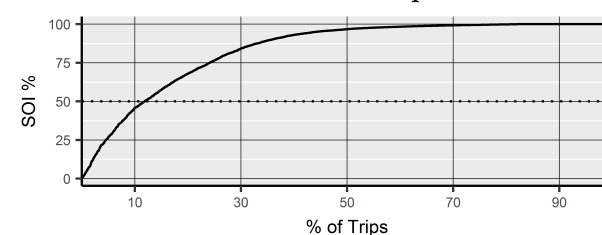
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=6,162)

	Mean	Min	Median	Max
Days at Sea	4.6	1	3	25
Crew Size	2.8	1	3	12
Landings	2,497	4	1,250	26,025
Revenue	\$9,906	\$21	\$4,472	\$128,800
SOI	\$8,864	\$4	\$3,394	\$127,462
% SOI	84%	0.3%	96.8%	100%

SOI: 2015 GOM IFQ Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	6,162	-	-	-
Selected	1,946	32%	-	-
Responded	1,745	28%	90%	-
Used	1,656	27%	85%	95%

Economic Results (n=1,656)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	64%	4.2	57%	71%	-
Days at Sea	4.29	0.31	3.78	4.8	3
Crew Size	2.86	0.08	2.72	2.99	3
Fuel Used	199	16	173	224	127
Landings (gutted lbs)	2,527	222	2,159	2,895	1,343
Total Revenue	10,299	971	8,689	11,909	4,801
Cost					
Fuel	496	37	434	557	345
Bait	325	41	256	394	150
Ice	152	18	122	181	77
Groceries	239	27	194	284	125
Miscellaneous	247	36	188	307	50
Hired Crew	2,651	295	2,162	3,140	1,192
IFQ Purchase	2,798	437	2,074	3,522	350
OC Owner-Captain Time	600	88	454	745	168
Trip Net Cash Flow	3,391	501	2,560	4,222	1,574
Trip Net Revenue	5,589	666	4,484	6,695	1,922

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

Revenue 100%	Trip Net Cash Flow 33%	Trip Net Revenue 54%
	IFQ Purchase 27%	
	Labor - Hired 26%	Labor - Hired & Owner 32%
	Fuel & Supplies 14%	Fuel & Supplies 14%

Input Prices

Fuel Price (average): \$2.49 per gallon Hired Crew Wage (implicit): \$279 per crew-day

Productivity Measures

Landings/Fuel Use: 12.7 lbs/gallon Landings/Labor Use: 206.2 lbs/crew-day

SOI: 2015 GOM IFQ Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	479
<u>Trips - Total</u>	<u>7,265</u>
SOI Trips	6,162
Non-SOI Trips	1,103
Days at Sea	30,453
Crew Days	86,957

Landings (guttled lbs)

<u>Total</u>	<u>16,530,857</u>
SOI	12,866,630
Non-SOI	3,664,227
% SOI	78%

Percent by Gear

	Trips	Total lbs
Vertical Line	79%	66%
Longline	11%	30%
Diver	5%	1%
Other	4%	3%

Price (mean)

<u>Total</u>	<u>\$3.85</u>
SOI	\$4.24
Non-SOI	\$2.47

Revenue

<u>Total</u>	<u>\$63,657,310</u>
SOI	\$54,617,570
Non-SOI	\$9,039,740
% SOI	86%

Percent of Revenue by Species Group

Shallow Water Groupers	34%
Shallow Water Snappers	3%
Mid-Shelf Snappers	49%
Deep Water Groupers/Tilefish	10%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	3%
Other Species	0.5%

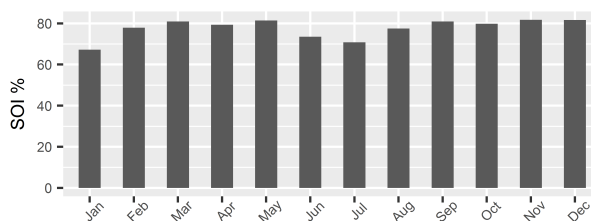
Revenue for Top 5 Species

Red Snapper	\$27,234,477
Red Grouper	\$17,925,424
Vermilion Snapper	\$3,592,862
Yellowedge Grouper	\$3,435,068
Gag Grouper	\$2,617,120

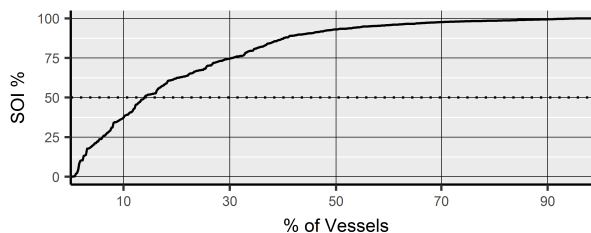
Annual, Vessel Descriptive Statistics (N=479)

	Mean	Min	Median	Max
Trips	15.2	1	12	108
Days at Sea	63.6	1	45	244
Crew Days	181.5	1	106	1,257
Landings	34,511	15	15,946	452,017
Revenue	\$132,896	\$77	\$60,265	\$2,121,109
SOI	\$114,024	\$58	\$38,534	\$2,114,928
% SOI	80.1%	0%	93%	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	0.6%
King Mackerel	39%
Spanish Mackerel	48%
Dolphin-Wahoo	34%
Other Commercial Fishing	19%
For-Hire Fishing	23%

Vessel Characteristics (N=479)

	Mean	Min	Median	Max
Length	38	21	37	69
Year Built	1987	1947	1985	2014
Horsepower	402	12	350	1,800
Fiberglass Hull	94%	-	-	-
Diesel Engine	80%	-	-	-
Ice Refrigeration	96%	-	-	-

SOI: 2015 GOM IFQ Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	479	-	-	-
Selected	129	27%	-	-
Responded	114	24%	88%	-
Used	101	21%	78%	89%

Economic Results (n=101)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	70%	4.5	62%	77%	-
For-Hire Active	15%	3.5	9%	21%	-
Days - Commercial Fishing	76	4.3	69	83	66
Days - For-Hire Fishing	17	5.8	8	27	0
Days - Non-fishing	2	0.7	1	4	0
Vessel Value	99,612	14,312	75,846	123,379	75,000
Has Insurance	39%	4.8	31%	47%	-
Total Revenue	168,217	19,599	135,672	200,762	100,517
Commercial Fishing	155,661	19,657	123,020	188,303	74,000
For-Hire Fishing	12,556	3,469	6,795	18,317	0
Cost					
Fuel	10,075	731	8,861	11,289	7,560
Other Supplies	15,537	1,800	12,548	18,527	7,878
Hired Crew	42,873	4,682	35,098	50,649	21,790
Vessel Repair & Maintenance	11,139	1,234	9,089	13,189	6,056
Insurance	1,362	208	1,018	1,707	0
Overhead	9,148	1,577	6,529	11,766	4,000
Loan Payment	2,367	521	1,501	3,232	0
IFQ Purchase	40,963	13,546	18,469	63,458	6,200
OC Owner-Captain Time	8,978	1,205	6,976	10,980	2,852
Depreciation	4,981	716	3,792	6,169	3,750
Net Cash Flow	34,753	4,798	26,786	42,720	13,958
Net Revenue from Operations*	64,124	14,617	39,852	88,397	24,786

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

Revenue 100%	Net Cash Flow 21%	Net Revenue - Operations 38%
	IFQ Purchase 24%	
	Loan Payment 1%	Depreciation 3%
	Fixed Costs 13%	Fixed Costs 13%
	Labor - Hired 25%	Labor - Hired & Owner 31%
	Fuel & Supplies 15%	Fuel & Supplies 15%

Economic Return* (on Vessel Asset Value): 64.4%

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

SOI: 2015 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 2015 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	638
Vessels	113
Days at Sea	2,207
Crew Days	5,904

Landings (guttled lbs)

<u>Total</u>	741,792
SOI	640,804
Non-SOI	100,988
% SOI	86%

Percent by Gear

Vertical Line	91%	99%
Longline	0.2%	0%
Diver	7%	0.9%
Other	2%	0%

Price (mean)

<u>Total</u>	\$2.63
SOI	\$2.77
Non-SOI	\$1.74

Revenue

<u>Total</u>	\$1,952,723
SOI	\$1,777,166
Non-SOI	\$175,557
% SOI	91%

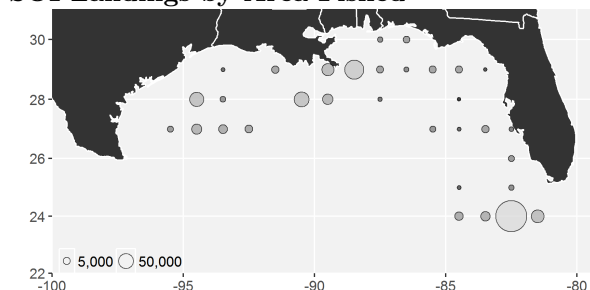
Percent of Revenue by Species Group

Shallow Water Groupers	0%
Shallow Water Snappers	64%
Mid-Shelf Snappers	12%
Deep Water Groupers/Tilefish	0%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	22%
Other Species	2%

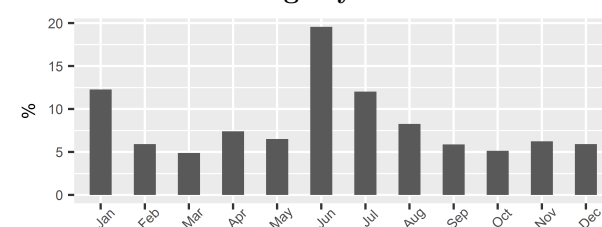
Revenue for Top 5 Species

Yellowtail Snapper	\$1,094,193
Greater Amberjack	\$288,362
Vermilion Snapper	\$229,836
King and Cero Mackerel	\$123,003
Lane Snapper	\$79,771

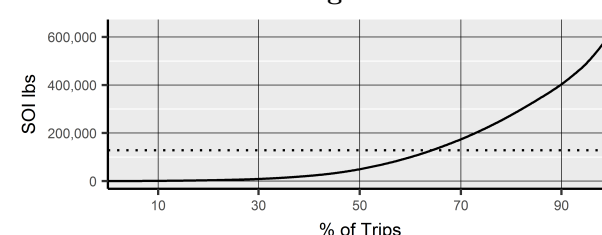
SOI Landings by Area Fished



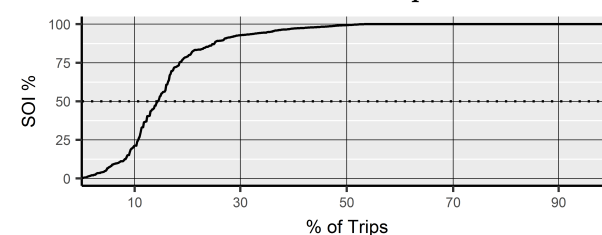
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=638)

	Mean	Min	Median	Max
Days at Sea	3.5	1	1	18
Crew Size	2.3	1	2	7
Landings	1,163	1	812	7,800
Revenue	\$3,061	\$3	\$1,758	\$24,291
SOI	\$2,786	\$2	\$1,423	\$24,291
% SOI	84%	0.2%	99.4%	100%

SOI: 2015 GOM Trips without IFQ Catch Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	638	-	-	-
Selected	165	26%	-	-
Responded	136	21%	82%	-
Used	131	21%	79%	96%

Economic Results (n=131)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	78%	8.4	64%	93%	-
Days at Sea	3.68	0.53	2.76	4.61	2
Crew Size	2.38	0.1	2.21	2.55	2
Fuel Used	123	14	99	146	110
Landings (gutted lbs)	1,255	190	928	1,582	856
Total Revenue	3,365	575	2,373	4,356	1,929
Cost					
Fuel	317	37	253	382	258
Bait	498	106	315	680	60
Ice	85	14	62	109	54
Groceries	164	26	119	210	50
Miscellaneous	115	33	58	172	39
Hired Crew	1,022	178	715	1,328	500
IFQ Purchase	0	0	0	0	0
OC Owner-Captain Time	774	159	499	1,048	307
Trip Net Cash Flow	1,163	256	721	1,606	373
Trip Net Revenue	390	135	157	622	33

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

Revenue 100%	Trip Net Cash Flow 35%	Trip Net Revenue 12%
	IFQ Purchase 0%	Labor - Hired & Owner 53%
	Labor - Hired 30%	
	Fuel & Supplies 35%	Fuel & Supplies 35%

Input Prices

Fuel Price (average): \$2.59 per gallon Hired Crew Wage (implicit): \$173 per crew-day

Productivity Measures

Landings/Fuel Use: 10.2 lbs/gallon Landings/Labor Use: 143.1 lbs/crew-day

SOI: 2015 GOM Trips without IFQ Catch Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	113
<u>Trips - Total</u>	<u>2,436</u>
SOI Trips	638
Non-SOI Trips	1,798
Days at Sea	6,434
Crew Days	17,185

Landings (gutted lbs)

<u>Total</u>	<u>2,795,092</u>
SOI	640,804
Non-SOI	2,154,288
% SOI	23%

Percent by Gear

	Trips	Total lbs
Vertical Line	83%	89%
Longline	3%	6%
Diver	9%	1%
Other	6%	4%

Price (mean)

<u>Total</u>	<u>\$3.11</u>
SOI	\$2.77
Non-SOI	\$3.20

Revenue

<u>Total</u>	<u>\$8,679,501</u>
SOI	\$1,777,166
Non-SOI	\$6,902,335
% SOI	20%

Percent of Revenue by Species Group

Shallow Water Groupers	9%
Shallow Water Snappers	28%
Mid-Shelf Snappers	44%
Deep Water Groupers/Tilefish	2%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	14%
Other Species	1%

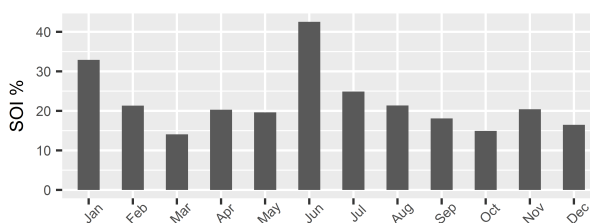
Revenue for Top 5 Species

Red Snapper	\$2,838,522
Yellowtail Snapper	\$2,148,562
Vermilion Snapper	\$944,765
King and Cero Mackerel	\$742,359
Red Grouper	\$611,102

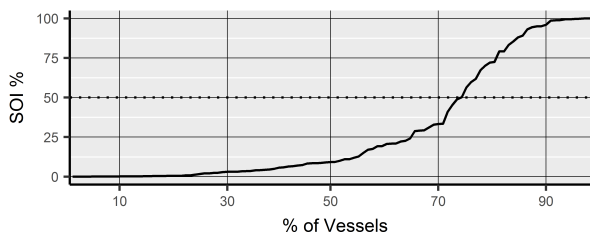
Annual, Vessel Descriptive Statistics (N=113)

	Mean	Min	Median	Max
Trips	21.6	1	17	99
Days at Sea	56.9	1	42	228
Crew Days	152.1	1	85	1,176
Landings	24,735	47	13,189	182,769
Revenue	\$76,810	\$97	\$38,908	\$754,799
SOI	\$15,727	\$2	\$2,274	\$160,936
% SOI	29.9%	0%	9.3%	100%

SOI Share of Monthly Landings



SOI Share of Revenue Per Vessel



Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	22%
SAT Snapper & Grouper - Limited	2%
King Mackerel	58%
Spanish Mackerel	63%
Dolphin-Wahoo	50%
Other Commercial Fishing	19%
For-Hire Fishing	25%

Vessel Characteristics (N=113)

	Mean	Min	Median	Max
Length	36	20	34	65
Year Built	1989	1965	1988	2013
Horsepower	426	18	400	1,320
Fiberglass Hull	93%	-	-	-
Diesel Engine	71%	-	-	-
Ice Refrigeration	96%	-	-	-

SOI: 2015 GOM Trips without IFQ Catch Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	113	-	-	-
Selected	25	22%	-	-
Responded	20	18%	80%	-
Used	16	14%	64%	80%

Economic Results (n=16)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	87%	8.3	72%	102%	-
For-Hire Active	18%	9.6	1%	35%	-
Days - Commercial Fishing	75	13.4	52	99	52
Days - For-Hire Fishing	11	7.1	-1	24	0
Days - Non-fishing	7	3	1	12	0
Vessel Value	68,030	10,603	49,355	86,705	60,000
Has Insurance	56%	12.3	35%	78%	-
Total Revenue	84,850	13,087	61,799	107,901	72,431
Commercial Fishing	72,045	11,908	51,071	93,020	64,500
For-Hire Fishing	12,805	8,528	-2,215	27,825	0
Cost					
Fuel	8,126	1,047	6,282	9,969	7,560
Other Supplies	11,044	1,845	7,794	14,294	9,350
Hired Crew	17,766	4,595	9,672	25,860	6,400
Vessel Repair & Maintenance	13,371	4,726	5,048	21,694	5,200
Insurance	1,405	408	687	2,124	750
Overhead	6,202	1,316	3,884	8,519	5,227
Loan Payment	2,605	1,311	296	4,914	0
IFQ Purchase	9,148	3,603	2,803	15,494	3,000
OC Owner-Captain Time	9,638	3,614	3,273	16,002	3,001
Depreciation	3,401	530	2,468	4,335	3,000
Net Cash Flow	15,183	7,516	1,945	28,421	-127
Net Revenue from Operations*	13,897	8,646	-1,330	29,125	479

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

Revenue 100%	Net Cash Flow 18%	Net Revenue - Operations 16%
	IFQ Purchase 11%	Depreciation 4%
	Loan Payment 3%	Fixed Costs 25%
	Fixed Costs 25%	Labor - Hired & Owner 32%
	Labor - Hired 21%	
	Fuel & Supplies 23%	Fuel & Supplies 23%

Economic Return* (on Vessel Asset Value): 20.4%

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

SOI: 2015 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 2015 using any gear type. Red snapper in the GOM is an IFQ fishery. Official 2015 red snapper landings and revenue, per the IFQ-tracking system, are 6,472,261 lbs (gutted weight) and \$29,767,325. 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	4,230
Vessels	406
Days at Sea	19,147
Crew Days	56,819

Landings (gutted lbs)

<u>Total</u>	12,061,468
SOI	6,149,237
Non-SOI	5,912,230
% SOI	51%

Percent by Gear

	Trips	SOI lbs
Vertical Line	87%	96%
Longline	10%	4%
Diver	2%	0.1%
Other	0.8%	0%

Price (mean)

<u>Total</u>	\$4.00
SOI	\$4.42
Non-SOI	\$3.56

Revenue

<u>Total</u>	\$48,246,745
SOI	\$27,208,496
Non-SOI	\$21,038,249
% SOI	56%

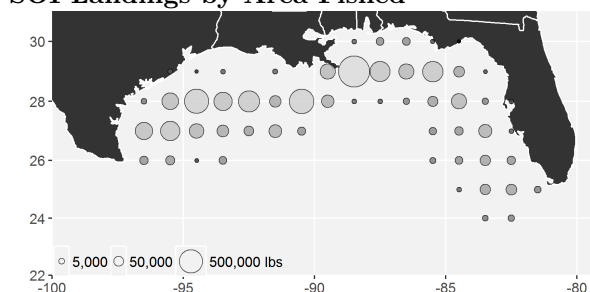
Percent of Revenue by Species Group

Shallow Water Groupers	28%
Shallow Water Snappers	1%
Mid-Shelf Snappers	63%
Deep Water Groupers/Tilefish	5%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	1%
Other Species	0.3%

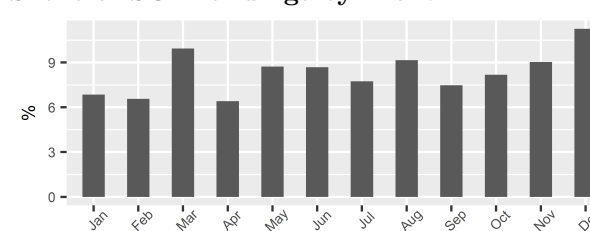
Revenue for Top 5 Species

Red Snapper	\$27,208,496
Red Grouper	\$10,633,377
Vermilion Snapper	\$3,249,993
Gag Grouper	\$1,908,339
Yellowedge Grouper	\$1,410,536

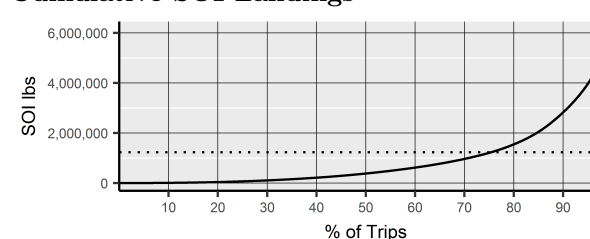
SOI Landings by Area Fished



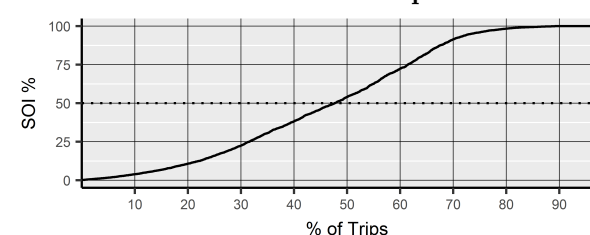
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=4,230)

	Mean	Min	Median	Max
Days at Sea	4.5	1	4	25
Crew Size	2.9	1	3	12
Landings	2,851	7	1,650	26,025
Revenue	\$11,406	\$30	\$5,850	\$128,800
SOI	\$6,432	\$4	\$1,803	\$126,116
% SOI	54%	0.1%	54.1%	100%

SOI: 2015 GOM IFQ Red Snapper Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	4,230	-	-	-
Selected	1,391	33%	-	-
Responded	1,251	30%	90%	-
Used	1,189	28%	85%	95%

Economic Results (n=1,189)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	60%	4.4	53%	68%	-
Days at Sea	3.99	0.32	3.45	4.53	3
Crew Size	2.95	0.09	2.81	3.1	3
Fuel Used	198	17	170	225	145
Landings (gutted lbs)	2,762	231	2,379	3,146	1,670
Total Revenue	11,432	1,005	9,762	13,102	5,930
Cost					
Fuel	485	38	422	547	375
Bait	306	44	233	379	150
Ice	153	18	124	183	90
Groceries	218	30	169	268	135
Miscellaneous	240	37	178	301	50
Hired Crew	2,736	299	2,239	3,233	1,300
IFQ Purchase	3,497	481	2,698	4,297	488
OC Owner-Captain Time	624	91	473	774	242
Trip Net Cash Flow	3,797	532	2,913	4,680	1,865
Trip Net Revenue	6,670	709	5,494	7,847	2,720

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

Revenue 100%	Trip Net Cash Flow 33%	Trip Net Revenue 58%
	IFQ Purchase 31%	
	Labor - Hired 24%	Labor - Hired & Owner 29%
	Fuel & Supplies 12%	Fuel & Supplies 12%

Input Prices

Fuel Price (average): \$2.45 per gallon Hired Crew Wage (implicit): \$292 per crew-day

Productivity Measures

Landings/Fuel Use: 14 lbs/gallon Landings/Labor Use: 234.5 lbs/crew-day

SOI: 2015 GOM IFQ Red Snapper Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	406
<u>Trips - Total</u>	<u>6,420</u>
SOI Trips	4,230
Non-SOI Trips	2,190
Days at Sea	28,218
Crew Days	81,374

Landings (guttled lbs)

<u>Total</u>	<u>15,883,024</u>
SOI	6,149,237
Non-SOI	9,733,787
% SOI	39%

Percent by Gear

	Trips	Total lbs
Vertical Line	80%	66%
Longline	12%	31%
Diver	4%	1%
Other	5%	3%

Price (mean)

<u>Total</u>	<u>\$3.87</u>
SOI	\$4.42
Non-SOI	\$3.51

Revenue

<u>Total</u>	<u>\$61,399,252</u>
SOI	\$27,208,496
Non-SOI	\$34,190,755
% SOI	44%

Percent of Revenue by Species Group

Shallow Water Groupers	34%
Shallow Water Snappers	2%
Mid-Shelf Snappers	50%
Deep Water Groupers/Tilefish	10%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	3%
Other Species	0.4%

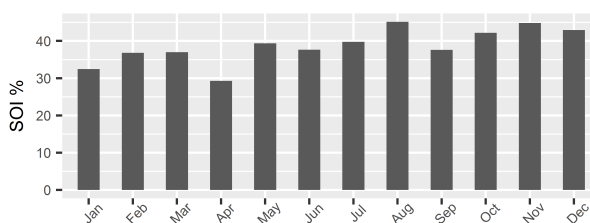
Revenue for Top 5 Species

Red Snapper	\$27,234,311
Red Grouper	\$17,134,588
Vermilion Snapper	\$3,584,787
Yellowedge Grouper	\$3,368,109
Gag Grouper	\$2,489,075

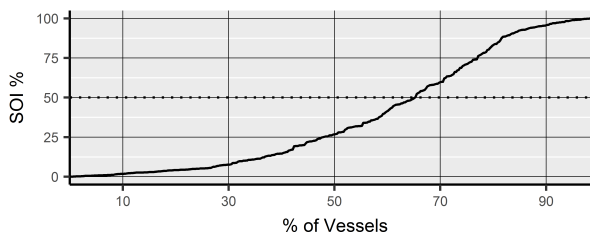
Annual, Vessel Descriptive Statistics (N=406)

	Mean	Min	Median	Max
Trips	15.8	1	13	108
Days at Sea	69.5	1	56	244
Crew Days	200.4	1	136	1,257
Landings	39,121	31	19,688	452,017
Revenue	\$151,230	\$140	\$73,319	\$2,121,109
SOI	\$67,016	\$9	\$12,050	\$2,113,280
% SOI	38.8%	0%	26.8%	100%

SOI Share of Monthly Landings



SOI Share of Revenue Per Vessel



Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	2%
SAT Snapper & Grouper - Limited	0.5%
King Mackerel	41%
Spanish Mackerel	47%
Dolphin-Wahoo	32%
Other Commercial Fishing	19%
For-Hire Fishing	23%

Vessel Characteristics (N=406)

	Mean	Min	Median	Max
Length	39	23	37.5	69
Year Built	1986	1947	1984	2014
Horsepower	403	12	350	1,800
Fiberglass Hull	93%	-	-	-
Diesel Engine	84%	-	-	-
Ice Refrigeration	97%	-	-	-

SOI: 2015 GOM IFQ Red Snapper Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	406	-	-	-
Selected	118	29%	-	-
Responded	104	26%	88%	-
Used	92	23%	78%	88%

Economic Results (n=92)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	66%	4.6	59%	74%	-
For-Hire Active	13%	3.3	8%	19%	-
Days - Commercial Fishing	81	4.5	73	88	68
Days - For-Hire Fishing	15	5.1	7	24	0
Days - Non-fishing	2	0.7	1	4	0
Vessel Value	99,317	11,889	79,555	119,078	75,000
Has Insurance	37%	4.7	29%	44%	-
Total Revenue	184,797	21,864	148,456	221,139	108,963
Commercial Fishing	172,223	21,916	135,795	208,651	90,000
For-Hire Fishing	12,575	3,740	6,358	18,792	0
Cost					
Fuel	10,616	792	9,300	11,932	8,115
Other Supplies	16,675	2,010	13,334	20,016	8,000
Hired Crew	47,543	5,201	38,898	56,189	24,969
Vessel Repair & Maintenance	12,210	1,401	9,882	14,538	6,858
Insurance	1,391	220	1,025	1,756	0
Overhead	9,999	1,776	7,048	12,951	4,000
Loan Payment	2,382	572	1,431	3,333	0
IFQ Purchase	45,844	15,197	20,585	71,103	9,567
OC Owner-Captain Time	9,169	1,269	7,059	11,278	3,213
Depreciation	4,966	594	3,978	5,954	3,750
Net Cash Flow	38,137	5,324	29,288	46,985	20,011
Net Revenue from Operations*	72,228	16,374	45,012	99,445	29,399

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

Revenue 100%	Net Cash Flow 21%	Net Revenue - Operations 39%
	IFQ Purchase 25%	
	Loan Payment 1%	Depreciation 3%
	Fixed Costs 13%	Fixed Costs 13%
	Labor - Hired 26%	Labor - Hired & Owner 31%
	Fuel & Supplies 15%	Fuel & Supplies 15%

Economic Return* (on Vessel Asset Value): 72.7%

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

SOI: 2015 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 2015. 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	4,943
Vessels	445
Days at Sea	25,804
Crew Days	72,871

Landings (guttled lbs)

<u>Total</u>	12,455,510
SOI	6,717,393
Non-SOI	5,738,117
% SOI	54%

Percent by Gear

	Trips	SOI lbs
Vertical Line	77%	33%
Longline	15%	65%
Diver	7%	1%
Other	1%	1%

Price (mean)

<u>Total</u>	\$3.90
SOI	\$4.08
Non-SOI	\$3.69

Revenue

<u>Total</u>	\$48,594,119
SOI	\$27,409,073
Non-SOI	\$21,185,046
% SOI	56%

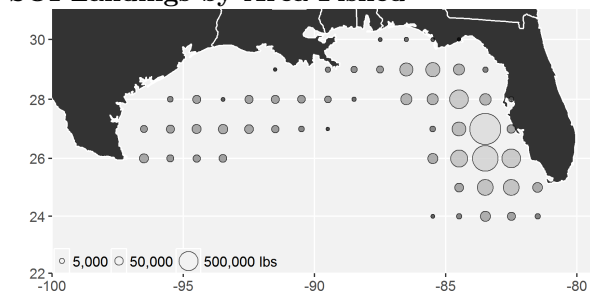
Percent of Revenue by Species Group

Shallow Water Groupers	44%
Shallow Water Snappers	2%
Mid-Shelf Snappers	39%
Deep Water Groupers/Tilefish	12%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	1%
Other Species	0.4%

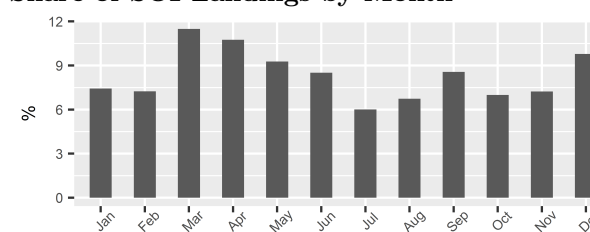
Revenue for Top 5 Species

Red Grouper	\$17,881,611
Red Snapper	\$15,545,781
Yellowedge Grouper	\$3,422,369
Vermilion Snapper	\$3,074,034
Gag Grouper	\$2,614,728

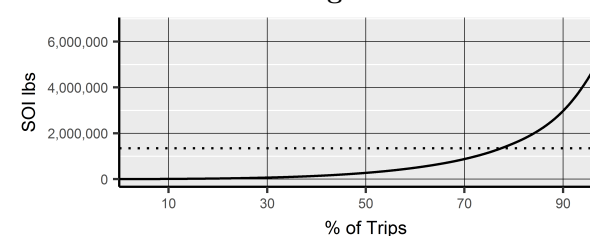
SOI Landings by Area Fished



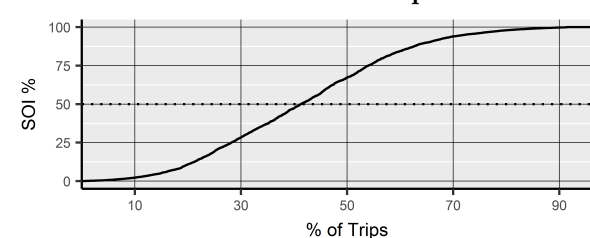
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=4,943)

	Mean	Min	Median	Max
Days at Sea	5.2	1	4	25
Crew Size	2.7	1	3	8
Landings	2,520	4	1,357	26,025
Revenue	\$9,831	\$21	\$4,869	\$128,800
SOI	\$5,545	\$3	\$1,449	\$96,572
% SOI	58%	0%	67.3%	100%

SOI: 2015 GOM IFQ Grouper-Tilefish Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	4,943	-	-	-
Selected	1,536	31%	-	-
Responded	1,363	28%	89%	-
Used	1,299	26%	85%	95%

Economic Results (n=1,299)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	63%	4.6	55%	70%	-
Days at Sea	5.01	0.31	4.49	5.53	4
Crew Size	2.67	0.07	2.55	2.8	2
Fuel Used	214	16	186	241	143
Landings (gutted lbs)	2,522	234	2,133	2,910	1,408
Total Revenue	9,978	1,031	8,266	11,690	5,084
Cost					
Fuel	536	39	471	601	375
Bait	366	43	295	438	164
Ice	158	19	127	190	88
Groceries	276	28	230	323	150
Miscellaneous	284	37	222	346	65
Hired Crew	2,906	303	2,403	3,409	1,347
IFQ Purchase	2,047	456	1,290	2,804	502
OC Owner-Captain Time	582	86	439	725	88
Trip Net Cash Flow	3,404	556	2,481	4,327	1,559
Trip Net Revenue	4,869	717	3,678	6,060	1,914

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

Revenue 100%	Trip Net Cash Flow 34%	Trip Net Revenue 49%
	IFQ Purchase 21%	
	Labor - Hired 29%	Labor - Hired & Owner 35%
	Fuel & Supplies 16%	Fuel & Supplies 16%

Input Prices

Fuel Price (average): \$2.51 per gallon Hired Crew Wage (implicit): \$283 per crew-day

Productivity Measures

Landings/Fuel Use: 11.8 lbs/gallon Landings/Labor Use: 188.2 lbs/crew-day

SOI: 2015 GOM IFQ Grouper-Tilefish Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	445
<u>Trips - Total</u>	<u>6,798</u>
SOI Trips	4,943
Non-SOI Trips	1,855
Days at Sea	29,560
Crew Days	83,648

Landings (guttled lbs)

<u>Total</u>	<u>15,895,399</u>
SOI	6,717,393
Non-SOI	9,178,006
% SOI	42%

Percent by Gear

	Trips	Total lbs
Vertical Line	79%	65%
Longline	11%	31%
Diver	6%	1%
Other	4%	3%

Price (mean)

<u>Total</u>	<u>\$3.87</u>
SOI	\$4.08
Non-SOI	\$3.72

Revenue

<u>Total</u>	<u>\$61,559,982</u>
SOI	\$27,409,073
Non-SOI	\$34,150,909
% SOI	45%

Percent of Revenue by Species Group

Shallow Water Groupers	35%
Shallow Water Snappers	3%
Mid-Shelf Snappers	48%
Deep Water Groupers/Tilefish	10%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	3%
Other Species	0.5%

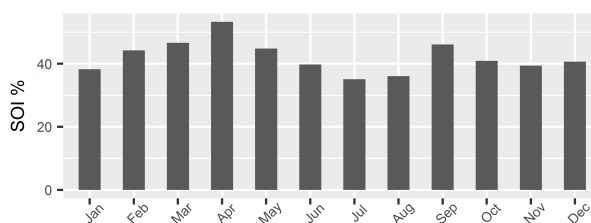
Revenue for Top 5 Species

Red Snapper	\$25,953,033
Red Grouper	\$17,925,424
Yellowedge Grouper	\$3,435,068
Vermilion Snapper	\$3,351,982
Gag Grouper	\$2,617,120

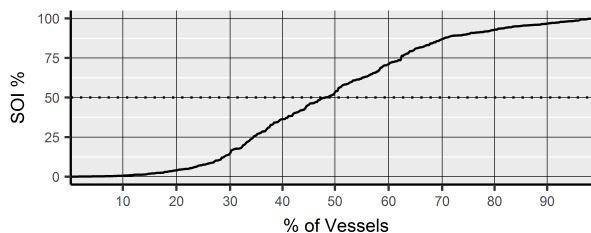
Annual, Vessel Descriptive Statistics (N=445)

	Mean	Min	Median	Max
Trips	15.3	1	13	108
Days at Sea	66.4	1	51	244
Crew Days	188	1	127	1,257
Landings	35,720	15	16,813	452,017
Revenue	\$138,337	\$77	\$62,539	\$2,121,109
SOI	\$61,593	\$4	\$10,171	\$863,738
% SOI	50.8%	0%	54.1%	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	0.7%
King Mackerel	38%
Spanish Mackerel	49%
Dolphin-Wahoo	35%
Other Commercial Fishing	19%
For-Hire Fishing	22%

Vessel Characteristics (N=445)

	Mean	Min	Median	Max
Length	39	21	37	69
Year Built	1987	1947	1984	2014
Horsepower	389	12	350	1,250
Fiberglass Hull	93%	-	-	-
Diesel Engine	82%	-	-	-
Ice Refrigeration	96%	-	-	-

SOI: 2015 GOM IFQ Grouper-Tilefish Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	445	-	-	-
Selected	120	27%	-	-
Responded	106	24%	88%	-
Used	95	21%	79%	90%

Economic Results (n=95)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	68%	4.9	59%	76%	-
For-Hire Active	17%	3.9	11%	24%	-
Days - Commercial Fishing	80	4.5	73	88	68
Days - For-Hire Fishing	20	6.6	9	31	0
Days - Non-fishing	3	0.7	1	4	0
Vessel Value	106,163	16,180	79,279	133,047	83,160
Has Insurance	39%	5.1	31%	47%	-
Total Revenue	176,384	20,509	142,307	210,461	103,005
Commercial Fishing	162,131	20,565	127,961	196,301	78,603
For-Hire Fishing	14,253	3,932	7,719	20,787	0
Cost					
Fuel	10,802	766	9,529	12,075	8,115
Other Supplies	16,396	1,879	13,274	19,517	8,000
Hired Crew	45,173	4,915	37,007	53,339	22,117
Vessel Repair & Maintenance	11,763	1,349	9,522	14,005	6,500
Insurance	1,402	224	1,030	1,775	0
Overhead	9,636	1,665	6,869	12,403	4,000
Loan Payment	2,438	554	1,518	3,358	0
IFQ Purchase	43,229	14,165	19,692	66,766	7,875
OC Owner-Captain Time	9,034	1,237	6,979	11,089	2,852
Depreciation	5,308	809	3,964	6,652	4,158
Net Cash Flow	35,544	5,016	27,210	43,879	15,823
Net Revenue from Operations*	66,869	15,293	41,458	92,280	27,774

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

Revenue 100%	Net Cash Flow 20%	Net Revenue - Operations 38%
	IFQ Purchase 25%	
	Loan Payment 1%	Depreciation 3%
	Fixed Costs 13%	Fixed Costs 13%
	Labor - Hired 26%	Labor - Hired & Owner 31%
	Fuel & Supplies 15%	Fuel & Supplies 15%

Economic Return* (on Vessel Asset Value): 63%

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

SOI: 2015 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 2015 using any gear type. Red grouper in the GOM is an IFQ fishery. Official 2015 red grouper landings and revenue, per the IFQ-tracking system, are 4,797,159 lbs (gutted weight) and \$18,900,806. Hence the logbook-based red grouper SOI accounts for about 95% of the fishery (near-census). For important **disclaimer**, see page 14.

Trip-Level Summary

Effort

Trips	3,923
Vessels	372
Days at Sea	20,538
Crew Days	54,060

Landings (gutted lbs)

<u>Total</u>	8,245,374
SOI	4,534,115
Non-SOI	3,711,258
% SOI	55%

Percent by Gear

	Trips	SOI lbs
Vertical Line	77%	39%
Longline	15%	59%
Diver	7%	0.4%
Other	1%	2%

Price (mean)

<u>Total</u>	\$3.82
SOI	\$3.94
Non-SOI	\$3.68

Revenue

<u>Total</u>	\$31,527,483
SOI	\$17,881,611
Non-SOI	\$13,645,873
% SOI	57%

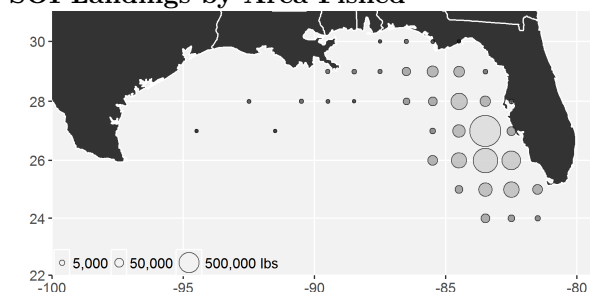
Percent of Revenue by Species Group

Shallow Water Groupers	67%
Shallow Water Snappers	3%
Mid-Shelf Snappers	23%
Deep Water Groupers/Tilefish	4%
Grunts/Porgies/Triggerfish	2%
Mackerels/Dolphinfish/Jacks	1%
Other Species	0.4%

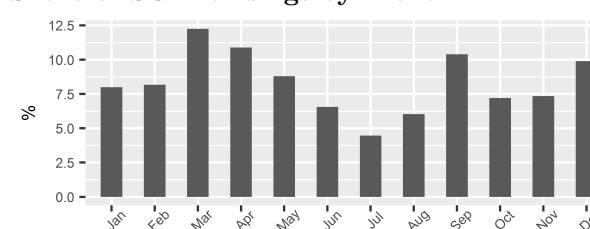
Revenue for Top 5 Species

Red Grouper	\$17,881,611
Red Snapper	\$5,899,949
Gag Grouper	\$2,422,683
Vermilion Snapper	\$1,368,214
Scamp	\$665,770

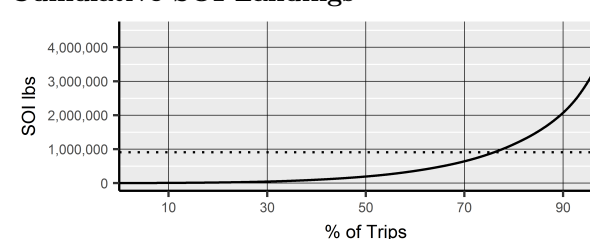
SOI Landings by Area Fished



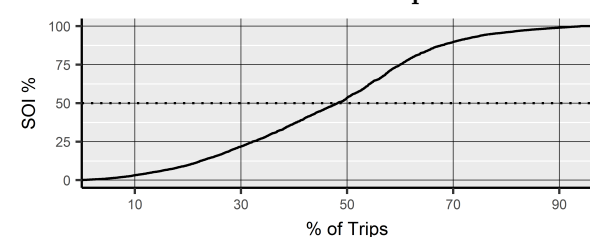
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=3,923)

	Mean	Min	Median	Max
Days at Sea	5.2	1	4	21
Crew Size	2.6	1	2	7
Landings	2,102	7	1,210	15,627
Revenue	\$8,037	\$27	\$4,389	\$61,157
SOI	\$4,558	\$8	\$1,225	\$51,519
% SOI	54%	0%	53.5%	100%

SOI: 2015 GOM IFQ Red Grouper Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	3,923	-	-	-
Selected	1,261	32%	-	-
Responded	1,117	28%	89%	-
Used	1,066	27%	85%	95%

Economic Results (n=1,066)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	62%	4.8	54%	70%	-
Days at Sea	5.02	0.33	4.48	5.57	4
Crew Size	2.54	0.07	2.43	2.65	2
Fuel Used	195	14	171	219	132
Landings (gutted lbs)	2,042	205	1,700	2,383	1,270
Total Revenue	7,946	805	6,609	9,284	4,642
Cost					
Fuel	501	35	443	558	365
Bait	316	41	247	384	150
Ice	124	14	101	147	75
Groceries	255	29	206	303	150
Miscellaneous	236	39	172	300	60
Hired Crew	2,461	306	1,952	2,970	1,260
IFQ Purchase	1,733	235	1,343	2,123	593
OC Owner-Captain Time	544	82	408	681	100
Trip Net Cash Flow	2,322	296	1,829	2,814	1,359
Trip Net Revenue	3,510	424	2,805	4,215	1,566

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

Revenue 100%	Trip Net Cash Flow 29%	Trip Net Revenue 44%
	IFQ Purchase 22%	
	Labor - Hired 31%	Labor - Hired & Owner 38%
	Fuel & Supplies 18%	Fuel & Supplies 18%

Input Prices

Fuel Price (average): \$2.57 per gallon Hired Crew Wage (implicit): \$255 per crew-day

Productivity Measures

Landings/Fuel Use: 10.5 lbs/gallon Landings/Labor Use: 160.1 lbs/crew-day

SOI: 2015 GOM IFQ Red Grouper Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	372
<u>Trips - Total</u>	<u>5,384</u>
SOI Trips	3,923
Non-SOI Trips	1,461
Days at Sea	25,531
Crew Days	69,488

Landings (guttled lbs)

<u>Total</u>	<u>11,663,736</u>
SOI	4,534,115
Non-SOI	7,129,621
% SOI	39%

Percent by Gear

	Trips	Total lbs
Vertical Line	77%	59%
Longline	13%	37%
Diver	6%	2%
Other	4%	3%

Price (mean)

<u>Total</u>	<u>\$3.77</u>
SOI	\$3.94
Non-SOI	\$3.66

Revenue

<u>Total</u>	<u>\$43,956,234</u>
SOI	\$17,881,611
Non-SOI	\$26,074,623
% SOI	41%

Percent of Revenue by Species Group

Shallow Water Groupers	49%
Shallow Water Snappers	4%
Mid-Shelf Snappers	34%
Deep Water Groupers/Tilefish	8%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	3%
Other Species	0.4%

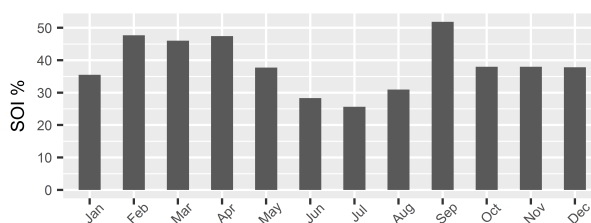
Revenue for Top 5 Species

Red Grouper	\$17,925,424
Red Snapper	\$12,391,379
Vermilion Snapper	\$2,619,204
Gag Grouper	\$2,584,981
Yellowedge Grouper	\$1,972,069

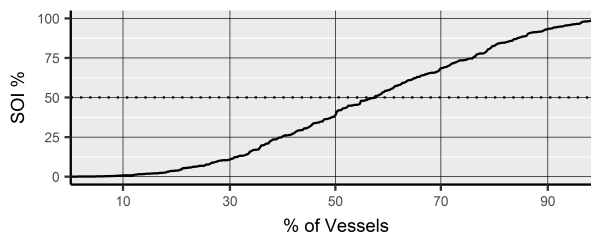
Annual, Vessel Descriptive Statistics (N=372)

	Mean	Min	Median	Max
Trips	14.5	1	13	82
Days at Sea	68.6	1	54	234
Crew Days	186.8	1	126	1,037
Landings	31,354	43	15,562	345,300
Revenue	\$118,162	\$163	\$55,936	\$1,635,028
SOI	\$48,069	\$12	\$7,937	\$411,835
% SOI	42.9%	0%	40.1%	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	0.5%
King Mackerel	36%
Spanish Mackerel	49%
Dolphin-Wahoo	35%
Other Commercial Fishing	18%
For-Hire Fishing	22%

Vessel Characteristics (N=372)

	Mean	Min	Median	Max
Length	38	21	37	69
Year Built	1987	1947	1984	2013
Horsepower	382	12	350	1,250
Fiberglass Hull	96%	-	-	-
Diesel Engine	82%	-	-	-
Ice Refrigeration	96%	-	-	-

SOI: 2015 GOM IFQ Red Grouper Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	372	-	-	-
Selected	104	28%	-	-
Responded	91	24%	88%	-
Used	81	22%	78%	89%

Economic Results (n=81)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	66%	5.1	58%	75%	-
For-Hire Active	19%	4.2	12%	26%	-
Days - Commercial Fishing	81	4.9	73	89	68
Days - For-Hire Fishing	21	6.8	10	33	0
Days - Non-fishing	3	0.9	2	4	0
Vessel Value	98,174	15,647	72,128	124,220	75,000
Has Insurance	39%	5.3	31%	48%	-
Total Revenue	132,747	11,670	113,321	152,173	92,395
Commercial Fishing	117,177	11,574	97,912	136,443	62,625
For-Hire Fishing	15,570	4,120	8,711	22,428	0
Cost					
Fuel	10,075	762	8,806	11,344	7,800
Other Supplies	14,718	1,840	11,656	17,781	7,940
Hired Crew	39,024	5,205	30,361	47,688	21,000
Vessel Repair & Maintenance	11,465	1,471	9,016	13,915	5,735
Insurance	1,426	226	1,050	1,802	0
Overhead	8,327	1,199	6,331	10,324	4,000
Loan Payment	2,436	618	1,407	3,464	0
IFQ Purchase	20,445	3,198	15,122	25,769	9,567
OC Owner-Captain Time	7,424	1,201	5,425	9,423	2,702
Depreciation	4,909	782	3,606	6,211	3,750
Net Cash Flow	24,830	4,323	17,633	32,027	8,830
Net Revenue from Operations*	35,378	5,157	26,794	43,963	17,937

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

Revenue 100%	Net Cash Flow 19%	Net Revenue - Operations 27%
	IFQ Purchase 15%	Depreciation 4%
	Loan Payment 2%	Fixed Costs 16%
	Fixed Costs 16%	Labor - Hired & Owner 35%
	Labor - Hired 29%	
	Fuel & Supplies 19%	Fuel & Supplies 19%

Economic Return* (on Vessel Asset Value): 36%

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

SOI: 2015 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 2015 using any gear type. Gag grouper in the GOM is an IFQ fishery. Official 2015 gag grouper landings and revenue, per the IFQ-tracking system, are 542,774 lbs (gutted weight) and \$2,789,858. Hence the logbook-based gag grouper SOI accounts for about 94% of the fishery (near-census). For important disclaimer, see page 14.

Trip-Level Summary

Effort

Trips	2,843
Vessels	362
Days at Sea	16,422
Crew Days	46,891

Landings (gutted lbs)

<u>Total</u>	7,901,366
SOI	512,547
Non-SOI	7,388,819
% SOI	6%

Percent by Gear

	Trips	SOI lbs
Vertical Line	69%	44%
Longline	20%	47%
Diver	10%	9%
Other	0.3%	0.1%

Price (mean)

<u>Total</u>	\$3.87
SOI	\$5.10
Non-SOI	\$3.78

Revenue

<u>Total</u>	\$30,551,496
SOI	\$2,614,728
Non-SOI	\$27,936,768
% SOI	9%

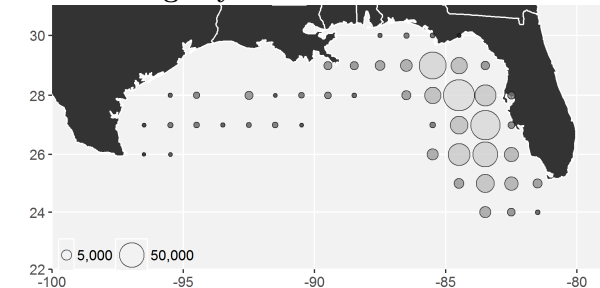
Percent of Revenue by Species Group

Shallow Water Groupers	57%
Shallow Water Snappers	2%
Mid-Shelf Snappers	30%
Deep Water Groupers/Tilefish	8%
Grunts/Porgies/Triggerfish	2%
Mackerels/Dolphinfish/Jacks	1%
Other Species	0.4%

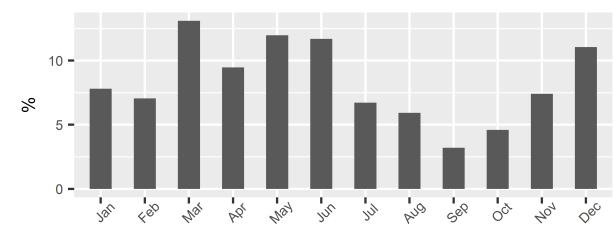
Revenue for Top 5 Species

Red Grouper	\$13,810,197
Red Snapper	\$7,407,818
Gag Grouper	\$2,614,728
Vermilion Snapper	\$1,612,451
Yellowedge Grouper	\$1,516,609

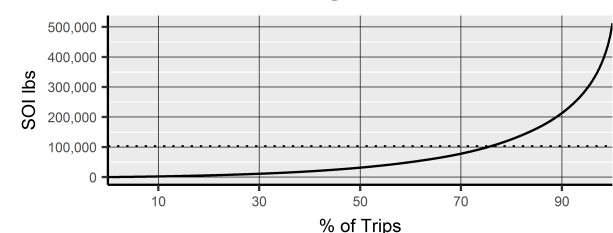
SOI Landings by Area Fished



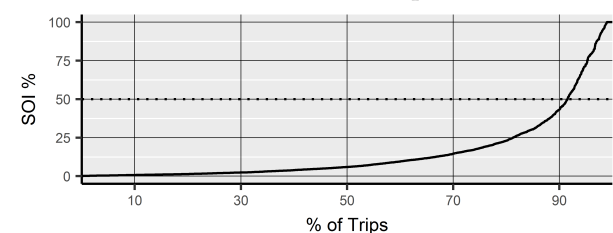
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=2,843)

	Mean	Min	Median	Max
Days at Sea	5.8	1	5	25
Crew Size	2.7	1	3	8
Landings	2,779	4	1,765	26,025
Revenue	\$10,746	\$21	\$6,247	\$128,800
SOI	\$920	\$5	\$266	\$21,433
% SOI	15%	0%	6%	100%

SOI: 2015 GOM IFQ Gag Grouper Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	2,843	-	-	-
Selected	918	32%	-	-
Responded	806	28%	88%	-
Used	771	27%	84%	96%

Economic Results (n=771)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	58%	4.8	50%	66%	-
Days at Sea	5.51	0.36	4.91	6.11	4
Crew Size	2.67	0.07	2.55	2.79	2
Fuel Used	230	18	200	260	150
Landings (gutted lbs)	2,587	229	2,207	2,967	1,551
Total Revenue	10,089	915	8,567	11,611	5,537
Cost					
Fuel	585	44	512	657	408
Bait	394	49	312	476	166
Ice	161	25	120	202	91
Groceries	306	34	250	361	150
Miscellaneous	312	43	239	384	97
Hired Crew	3,231	355	2,641	3,821	1,543
IFQ Purchase	2,002	246	1,593	2,410	587
OC Owner-Captain Time	622	89	473	770	89
Trip Net Cash Flow	3,100	353	2,512	3,687	1,712
Trip Net Revenue	4,479	458	3,718	5,241	2,068

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

Revenue 100%	Trip Net Cash Flow 31%	Trip Net Revenue 44%
	IFQ Purchase 20%	
	Labor - Hired 32%	Labor - Hired & Owner 38%
	Fuel & Supplies 17%	Fuel & Supplies 17%

Input Prices

Fuel Price (average): \$2.54 per gallon Hired Crew Wage (implicit): \$280 per crew-day

Productivity Measures

Landings/Fuel Use: 11.2 lbs/gallon Landings/Labor Use: 175.7 lbs/crew-day

SOI: 2015 GOM IFQ Gag Grouper Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	362
<u>Trips - Total</u>	<u>5,593</u>
SOI Trips	2,843
Non-SOI Trips	2,750
Days at Sea	26,099
Crew Days	73,416

Landings (guttled lbs)

<u>Total</u>	<u>13,096,102</u>
SOI	512,547
Non-SOI	12,583,556
% SOI	4%

Percent by Gear

	Trips	Total lbs
Vertical Line	76%	58%
Longline	13%	38%
Diver	7%	1%
Other	4%	3%

Price (mean)

<u>Total</u>	<u>\$3.82</u>
SOI	\$5.10
Non-SOI	\$3.77

Revenue

<u>Total</u>	<u>\$50,073,664</u>
SOI	\$2,614,728
Non-SOI	\$47,458,936
% SOI	5%

Percent of Revenue by Species Group

Shallow Water Groupers	43%
Shallow Water Snappers	2%
Mid-Shelf Snappers	39%
Deep Water Groupers/Tilefish	11%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	3%
Other Species	0.5%

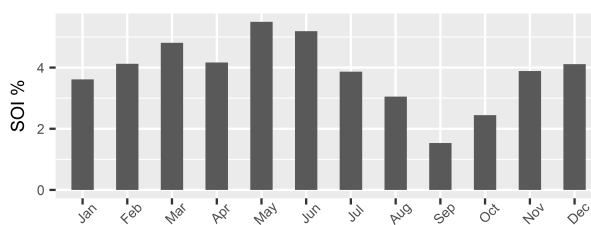
Revenue for Top 5 Species

Red Grouper	\$17,760,566
Red Snapper	\$16,735,554
Yellowedge Grouper	\$3,363,327
Vermilion Snapper	\$2,902,613
Gag Grouper	\$2,617,100

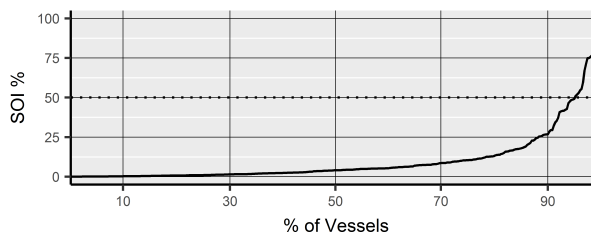
Annual, Vessel Descriptive Statistics (N=362)

	Mean	Min	Median	Max
Trips	15.5	1	13	82
Days at Sea	72.1	1	59	244
Crew Days	202.8	1	146	1,257
Landings	36,177	15	18,444	345,300
Revenue	\$138,325	\$77	\$68,383	\$1,635,028
SOI	\$7,223	\$18	\$1,435	\$150,729
% SOI	10.4%	0%	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	3%
SAT Snapper & Grouper - Limited	0.6%
King Mackerel	35%
Spanish Mackerel	47%
Dolphin-Wahoo	33%
Other Commercial Fishing	19%
For-Hire Fishing	22%

Vessel Characteristics (N=362)

	Mean	Min	Median	Max
Length	38	21	37	69
Year Built	1987	1961	1985	2013
Horsepower	383	12	330	1,250
Fiberglass Hull	94%	-	-	-
Diesel Engine	81%	-	-	-
Ice Refrigeration	96%	-	-	-

SOI: 2015 GOM IFQ Gag Grouper Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	362	-	-	-
Selected	102	28%	-	-
Responded	90	25%	88%	-
Used	81	22%	79%	90%

Economic Results (n=81)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	63%	5.1	54%	71%	-
For-Hire Active	19%	4.2	12%	26%	-
Days - Commercial Fishing	81	5.1	73	90	70
Days - For-Hire Fishing	21	6.7	10	32	0
Days - Non-fishing	2	0.8	1	4	0
Vessel Value	103,212	15,347	77,666	128,758	80,000
Has Insurance	41%	5.2	32%	50%	-
Total Revenue	151,557	12,606	130,573	172,540	103,005
Commercial Fishing	136,023	12,746	114,806	157,240	78,603
For-Hire Fishing	15,534	4,072	8,755	22,312	0
Cost					
Fuel	10,701	817	9,341	12,061	7,560
Other Supplies	16,412	2,155	12,825	19,999	8,254
Hired Crew	45,265	5,665	35,834	54,695	23,536
Vessel Repair & Maintenance	12,116	1,479	9,654	14,577	6,853
Insurance	1,451	227	1,072	1,829	0
Overhead	8,686	1,215	6,663	10,709	4,500
Loan Payment	2,416	618	1,387	3,444	0
IFQ Purchase	21,716	3,329	16,174	27,258	9,602
OC Owner-Captain Time	7,553	1,268	5,443	9,663	2,035
Depreciation	5,161	767	3,883	6,438	4,000
Net Cash Flow	32,794	5,029	24,423	41,166	19,427
Net Revenue from Operations*	44,212	5,537	34,995	53,430	27,774

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

Revenue 100%	Net Cash Flow 22%	Net Revenue - Operations 29%
	IFQ Purchase 14%	Depreciation 3%
	Loan Payment 2%	Fixed Costs 15%
	Fixed Costs 15%	Labor - Hired & Owner 35%
	Labor - Hired 30%	Fuel & Supplies 18%
	Fuel & Supplies 18%	Fuel & Supplies 18%

Economic Return* (on Vessel Asset Value): 42.8%

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

SOI: 2015 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 2015 using any gear type. Official 2015 landings and revenue, per the IFQ-tracking system, are 238,427 lbs (gutted weight) and \$1,124,632. Hence the logbook-based OSWG SOI accounts for about 94% of the fishery (near-census). For important **disclaimer**, see page 14.

Trip-Level Summary

Effort

Trips	2,331
Vessels	340
Days at Sea	15,758
Crew Days	47,311

Landings (gutted lbs)

<u>Total</u>	8,419,082
SOI	225,190
Non-SOI	8,193,892
% SOI	3%

Percent by Gear

	Trips	SOI lbs
Vertical Line	72%	44%
Longline	23%	51%
Diver	4%	5%
Other	0.5%	0.1%

Price (mean)

<u>Total</u>	\$3.89
SOI	\$4.71
Non-SOI	\$3.87

Revenue

<u>Total</u>	\$32,782,624
SOI	\$1,061,126
Non-SOI	\$31,721,499
% SOI	3%

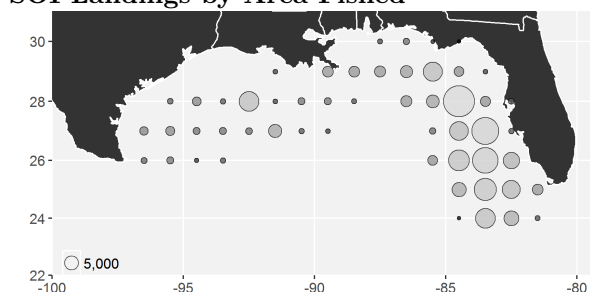
Percent of Revenue by Species Group

Shallow Water Groupers	45%
Shallow Water Snappers	2%
Mid-Shelf Snappers	41%
Deep Water Groupers/Tilefish	9%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	1%
Other Species	0.4%

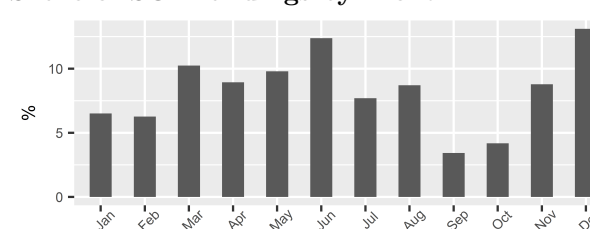
Revenue for Top 5 Species

Red Grouper	\$11,450,653
Red Snapper	\$10,920,762
Vermilion Snapper	\$2,447,911
Gag Grouper	\$2,165,529
Yellowedge Grouper	\$1,623,148

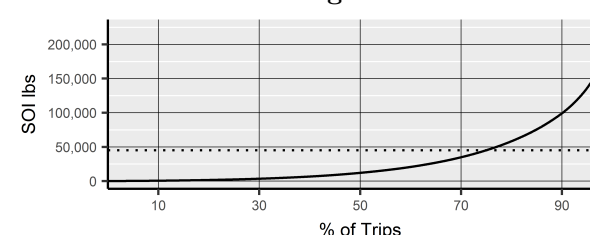
SOI Landings by Area Fished



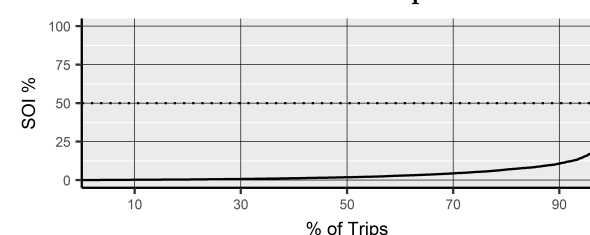
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=2,331)

	Mean	Min	Median	Max
Days at Sea	6.8	1	6	25
Crew Size	2.9	1	3	8
Landings	3,612	47	2,463	26,025
Revenue	\$14,064	\$182	\$8,786	\$128,800
SOI	\$455	\$3	\$136	\$8,572
% SOI	4%	0%	1.8%	100%

SOI: 2015 GOM IFQ OSWG Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	2,331	-	-	-
Selected	743	32%	-	-
Responded	664	28%	89%	-
Used	631	27%	85%	95%

Economic Results (n=631)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	54%	4.9	46%	62%	-
Days at Sea	6.25	0.37	5.64	6.87	5
Crew Size	2.87	0.08	2.74	3	3
Fuel Used	273	17	244	301	200
Landings (gutted lbs)	3,550	264	3,111	3,989	2,261
Total Revenue	14,067	1,156	12,144	15,989	8,000
Cost					
Fuel	680	41	611	749	522
Bait	498	48	418	577	275
Ice	213	19	182	244	140
Groceries	376	33	322	430	228
Miscellaneous	427	46	351	504	140
Hired Crew	4,241	362	3,638	4,843	2,000
IFQ Purchase	2,683	364	2,077	3,288	733
OC Owner-Captain Time	778	104	606	951	0
Trip Net Cash Flow	4,949	701	3,784	6,115	2,673
Trip Net Revenue	6,853	782	5,553	8,153	3,747

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

Revenue 100%	Trip Net Cash Flow 35%	Trip Net Revenue 49%
	IFQ Purchase 19%	
	Labor - Hired 30%	Labor - Hired & Owner 36%
	Fuel & Supplies 16%	Fuel & Supplies 16%

Input Prices

Fuel Price (average): \$2.49 per gallon Hired Crew Wage (implicit): \$292 per crew-day

Productivity Measures

Landings/Fuel Use: 13 lbs/gallon Landings/Labor Use: 198 lbs/crew-day

SOI: 2015 GOM IFQ OSWG Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	340
<u>Trips - Total</u>	<u>5,698</u>
SOI Trips	2,331
Non-SOI Trips	3,367
Days at Sea	27,069
Crew Days	77,253

Landings (guttled lbs)

<u>Total</u>	<u>14,457,513</u>
SOI	225,190
Non-SOI	14,232,323
% SOI	2%

Percent by Gear

	Trips	Total lbs
Vertical Line	78%	63%
Longline	13%	33%
Diver	5%	1%
Other	4%	2%

Price (mean)

<u>Total</u>	<u>\$3.86</u>
SOI	\$4.71
Non-SOI	\$3.85

Revenue

<u>Total</u>	<u>\$55,849,142</u>
SOI	\$1,061,126
Non-SOI	\$54,788,016
% SOI	2%

Percent of Revenue by Species Group

Shallow Water Groupers	38%
Shallow Water Snappers	2%
Mid-Shelf Snappers	46%
Deep Water Groupers/Tilefish	10%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	3%
Other Species	0.5%

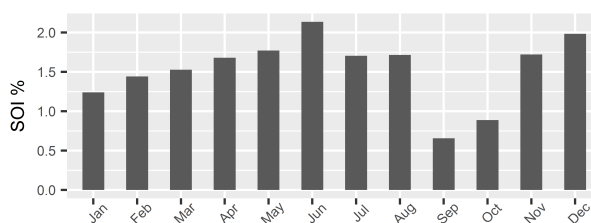
Revenue for Top 5 Species

Red Snapper	\$22,219,950
Red Grouper	\$17,383,603
Vermilion Snapper	\$3,251,234
Yellowedge Grouper	\$3,075,754
Gag Grouper	\$2,511,194

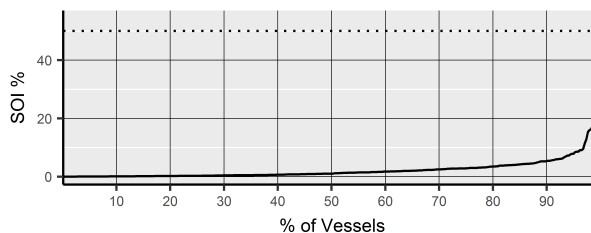
Annual, Vessel Descriptive Statistics (N=340)

	Mean	Min	Median	Max
Trips	16.8	1	14	108
Days at Sea	79.6	1	72	244
Crew Days	227.2	1	178	1,257
Landings	42,522	51	25,544	345,300
Revenue	\$164,262	\$200	\$87,409	\$1,635,028
SOI	\$3,121	\$5	\$660	\$53,614
% SOI	2.4%	0%	1%	54.3%

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	40%
Spanish Mackerel	49%
Dolphin-Wahoo	35%
Other Commercial Fishing	20%
For-Hire Fishing	20%

Vessel Characteristics (N=340)

	Mean	Min	Median	Max
Length	40	23	38	69
Year Built	1986	1947	1983	2014
Horsepower	386	12	330	1,250
Fiberglass Hull	92%	-	-	-
Diesel Engine	86%	-	-	-
Ice Refrigeration	96%	-	-	-

SOI: 2015 GOM IFQ OSWG Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	340	-	-	-
Selected	100	29%	-	-
Responded	89	26%	89%	-
Used	82	24%	82%	92%

Economic Results (n=82)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	62%	4.9	53%	70%	-
For-Hire Active	13%	3.4	7%	18%	-
Days - Commercial Fishing	89	4.7	81	96	75
Days - For-Hire Fishing	15	5.5	6	24	0
Days - Non-fishing	2	0.6	1	3	0
Vessel Value	101,999	12,760	80,761	123,237	75,000
Has Insurance	36%	4.9	28%	44%	-
Total Revenue	180,514	16,033	153,829	207,199	122,369
Commercial Fishing	168,527	16,183	141,593	195,461	102,958
For-Hire Fishing	11,987	3,490	6,178	17,796	0
Cost					
Fuel	11,067	741	9,834	12,300	9,000
Other Supplies	18,244	2,316	14,388	22,099	9,470
Hired Crew	51,336	5,779	41,717	60,955	32,498
Vessel Repair & Maintenance	12,486	1,426	10,114	14,859	7,179
Insurance	1,461	249	1,047	1,875	0
Overhead	11,044	2,055	7,623	14,465	4,604
Loan Payment	2,301	620	1,268	3,333	0
IFQ Purchase	34,630	8,242	20,913	48,347	10,000
OC Owner-Captain Time	10,127	1,503	7,626	12,628	2,702
Depreciation	5,100	638	4,038	6,162	3,750
Net Cash Flow	37,946	5,740	28,392	47,500	20,755
Net Revenue from Operations*	59,650	9,216	44,310	74,989	33,342

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

Revenue 100%	Net Cash Flow 21%	Net Revenue - Operations 33%
	IFQ Purchase 19%	
	Loan Payment 1%	Depreciation 3%
	Fixed Costs 14%	Fixed Costs 14%
	Labor - Hired 28%	Labor - Hired & Owner 34%
	Fuel & Supplies 16%	Fuel & Supplies 16%

Economic Return* (on Vessel Asset Value): 58.5%

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

SOI: 2015 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, snowy, warsaw, or yellowedge) was landed using any gear type. Official 2015 landings and revenue, per IFQ-tracking system, are 955,250 lbs (gutted) and \$4,389,790. Hence the logbook-based DWG SOI accounts for about 94% of the fishery (near-census). Caution, the economic sample is not representative. For important **disclaimer**, see page 14.

Trip-Level Summary

Effort

Trips	911
Vessels	198
Days at Sea	8,050
Crew Days	27,497

Landings (gutted lbs)

<u>Total</u>	5,073,178
SOI	926,960
Non-SOI	4,146,219
% SOI	18%

Percent by Gear

	Trips	SOI lbs
Vertical Line	57%	9%
Longline	43%	91%
Diver	0.4%	0%
Other	0.1%	0%

Price (mean)

<u>Total</u>	\$4.01
SOI	\$4.62
Non-SOI	\$3.88

Revenue

<u>Total</u>	\$20,364,923
SOI	\$4,286,228
Non-SOI	\$16,078,695
% SOI	21%

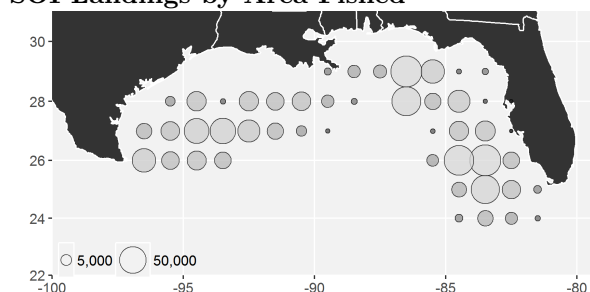
Percent of Revenue by Species Group

Shallow Water Groupers	25%
Shallow Water Snappers	1%
Mid-Shelf Snappers	42%
Deep Water Groupers/Tilefish	28%
Grunts/Porgies/Triggerfish	0.8%
Mackerels/Dolphinfish/Jacks	1%
Other Species	0.6%

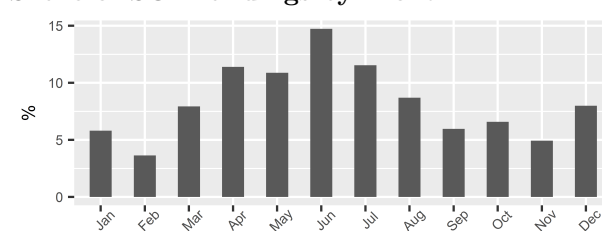
Revenue for Top 5 Species

Red Snapper	\$7,059,274
Yellowedge Grouper	\$3,422,369
Red Grouper	\$3,325,177
Vermilion Snapper	\$1,436,564
Tilefish	\$1,376,208

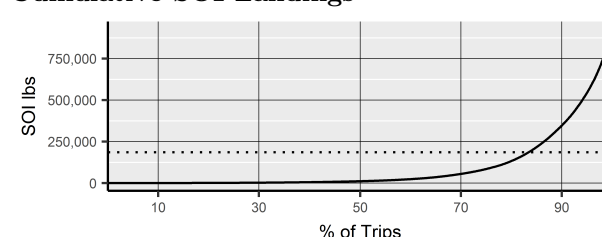
SOI Landings by Area Fished



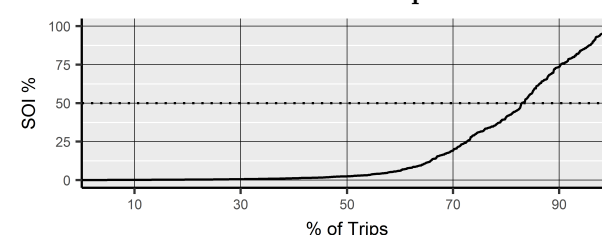
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=911)

	Mean	Min	Median	Max
Days at Sea	8.8	1	8	25
Crew Size	3.3	1	3	8
Landings	5,569	23	4,953	26,025
Revenue	\$22,354	\$102	\$19,728	\$128,800
SOI	\$4,705	\$3	\$343	\$76,038
% SOI	19%	0%	2.4%	100%

SOI: 2015 GOM IFQ DWG Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	911	-	-	-
Selected	267	29%	-	-
Responded	245	27%	92%	-
Used	231	25%	87%	94%

Economic Results (n=231)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	47%	6.8	35%	58%	-
Days at Sea	7.82	0.63	6.77	8.87	7
Crew Size	3.25	0.13	3.03	3.46	3
Fuel Used	420	36	360	480	380
Landings (gutted lbs)	5,734	442	4,990	6,478	5,446
Total Revenue	23,202	2,027	19,791	26,612	22,161
Cost					
Fuel	979	83	839	1,119	888
Bait	874	90	723	1,026	700
Ice	400	40	332	467	330
Groceries	609	59	511	708	440
Miscellaneous	677	78	547	808	400
Hired Crew	6,566	620	5,523	7,608	5,139
IFQ Purchase	4,474	1,076	2,664	6,283	842
OC Owner-Captain Time	620	152	364	876	0
Trip Net Cash Flow	8,622	1,196	6,611	10,634	6,326
Trip Net Revenue	12,476	1,511	9,934	15,018	9,965

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

Revenue 100%	Trip Net Cash Flow 37%	Trip Net Revenue 54%
	IFQ Purchase 19%	
	Labor - Hired 28%	Labor - Hired & Owner 31%
	Fuel & Supplies 15%	Fuel & Supplies 15%

Input Prices

Fuel Price (average): \$2.33 per gallon Hired Crew Wage (implicit): \$302 per crew-day

Productivity Measures

Landings/Fuel Use: 13.7 lbs/gallon Landings/Labor Use: 225.8 lbs/crew-day

SOI: 2015 GOM IFQ DWG Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	198
<u>Trips - Total</u>	<u>3,657</u>
SOI Trips	911
Non-SOI Trips	2,746
Days at Sea	20,022
Crew Days	61,178

Landings (guttled lbs)

<u>Total</u>	<u>12,572,907</u>
SOI	926,960
Non-SOI	11,645,948
% SOI	7%

Percent by Gear

	Trips	Total lbs
Vertical Line	75%	61%
Longline	20%	37%
Diver	2%	0.8%
Other	4%	1%

Price (mean)

<u>Total</u>	<u>\$3.95</u>
SOI	\$4.62
Non-SOI	\$3.90

Revenue

<u>Total</u>	<u>\$49,664,176</u>
SOI	\$4,286,228
Non-SOI	\$45,377,948
% SOI	9%

Percent of Revenue by Species Group

Shallow Water Groupers	32%
Shallow Water Snappers	1%
Mid-Shelf Snappers	51%
Deep Water Groupers/Tilefish	12%
Grunts/Porgies/Triggerfish	0.9%
Mackerels/Dolphinfish/Jacks	2%
Other Species	0.4%

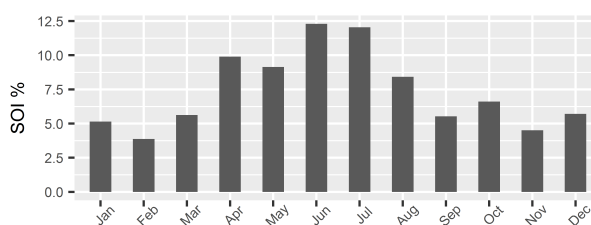
Revenue for Top 5 Species

Red Snapper	\$22,172,572
Red Grouper	\$13,029,578
Yellowedge Grouper	\$3,435,068
Vermilion Snapper	\$2,816,856
Gag Grouper	\$2,081,699

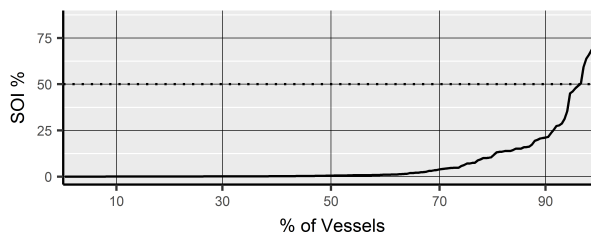
Annual, Vessel Descriptive Statistics (N=198)

	Mean	Min	Median	Max
Trips	18.5	1	16	108
Days at Sea	101.1	5	100	244
Crew Days	309	10	260	1,257
Landings	63,500	537	50,644	452,017
Revenue	\$250,829	\$2,266	\$176,805	\$2,121,109
SOI	\$21,648	\$3	\$845	\$611,042
% SOI	7.4%	0%	0.6%	85.6%

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	0.5%
King Mackerel	43%
Spanish Mackerel	50%
Dolphin-Wahoo	37%
Other Commercial Fishing	25%
For-Hire Fishing	13%

Vessel Characteristics (N=198)

	Mean	Min	Median	Max
Length	43	23	42	69
Year Built	1983	1947	1981	2012
Horsepower	356	18	300	1,250
Fiberglass Hull	89%	-	-	-
Diesel Engine	92%	-	-	-
Ice Refrigeration	97%	-	-	-

SOI: 2015 GOM IFQ DWG Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	198	-	-	-
Selected	49	25%	-	-
Responded	43	22%	88%	-
Used	39	20%	80%	91%

Economic Results (n=39)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	51%	7.3	39%	64%	-
For-Hire Active	3%	2.3	-1%	6%	-
Days - Commercial Fishing	121	8.6	107	136	120
Days - For-Hire Fishing	5	4.8	-3	13	0
Days - Non-fishing	3	1.1	1	4	0
Vessel Value	117,094	10,625	99,180	135,008	100,000
Has Insurance	36%	7	24%	48%	-
Total Revenue	340,716	52,517	252,175	429,258	260,000
Commercial Fishing	338,796	52,747	249,867	427,725	260,000
For-Hire Fishing	1,920	1,721	-981	4,822	0
Cost					
Fuel	14,397	1,107	12,530	16,264	14,827
Other Supplies	30,752	4,845	22,584	38,921	20,989
Hired Crew	86,750	11,926	66,644	106,856	62,679
Vessel Repair & Maintenance	15,988	2,098	12,452	19,524	9,658
Insurance	1,540	382	895	2,185	0
Overhead	17,712	4,373	10,339	25,084	6,662
Loan Payment	1,332	592	333	2,331	0
IFQ Purchase	99,511	40,245	31,661	167,362	13,518
OC Owner-Captain Time	13,204	2,755	8,559	17,849	1,476
Depreciation	5,855	531	4,959	6,750	5,000
Net Cash Flow	72,733	11,551	53,259	92,208	51,990
Net Revenue from Operations*	154,518	41,985	83,733	225,303	62,098

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

Revenue 100%	Net Cash Flow 21%	Net Revenue - Operations 45%
	IFQ Purchase 29%	
	Loan Payment 0%	
	Fixed Costs 10%	
	Labor - Hired 25%	
	Fuel & Supplies 13%	
	Depreciation 2%	
	Fixed Costs 10%	
	Labor - Hired & Owner 29%	
	Fuel & Supplies 13%	

Economic Return* (on Vessel Asset Value): 132%

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

SOI: 2015 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 2015 using any gear type. Tilefishes in the GOM are an IFQ fishery. Official 2015 landings and revenue, per the IFQ-tracking system, are 537,512 lbs (gutted weight) and \$1,555,537. Hence the logbook-based tilefish SOI accounts for about 96% of the fishery (near-census). Caution, the economic sample is not representative. For important **disclaimer**, see page 14.

Trip-Level Summary

Effort

Trips	415
Vessels	121
Days at Sea	3,823
Crew Days	13,454

Landings (gutted lbs)

<u>Total</u>	2,219,948
SOI	518,582
Non-SOI	1,701,367
% SOI	23%

Percent by Gear

	Trips	SOI lbs
Vertical Line	44%	4%
Longline	55%	96%
Diver	0.2%	0%
Other	0%	0%

Price (mean)

<u>Total</u>	\$3.92
SOI	\$3.02
Non-SOI	\$4.20

Revenue

<u>Total</u>	\$8,705,852
SOI	\$1,565,381
Non-SOI	\$7,140,472
% SOI	18%

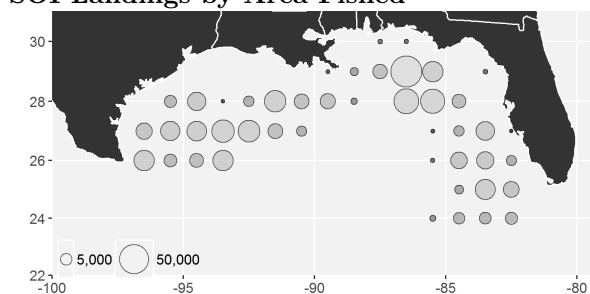
Percent of Revenue by Species Group

Shallow Water Groupers	14%
Shallow Water Snappers	1%
Mid-Shelf Snappers	22%
Deep Water Groupers/Tilefish	60%
Grunts/Porgies/Triggerfish	0.6%
Mackerels/Dolphinfish/Jacks	1%
Other Species	1%

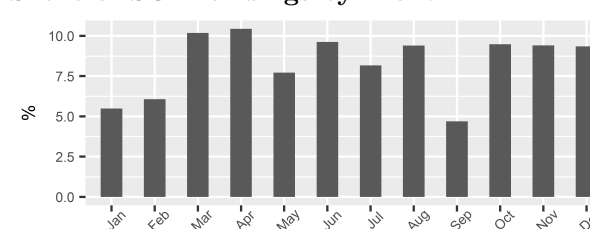
Revenue for Top 5 Species

Yellowedge Grouper	\$3,058,809
Red Snapper	\$1,500,955
Tilefish	\$1,472,692
Red Grouper	\$725,257
Snowy Grouper	\$368,306

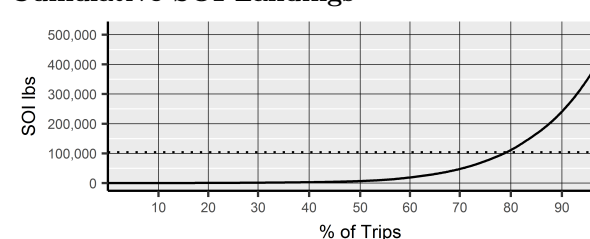
SOI Landings by Area Fished



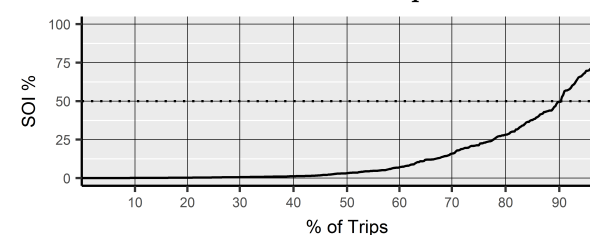
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=415)

	Mean	Min	Median	Max
Days at Sea	9.2	1	9	25
Crew Size	3.3	1	3	7
Landings	5,349	74	4,554	22,114
Revenue	\$20,978	\$238	\$18,212	\$96,580
SOI	\$3,772	\$1	\$380	\$38,046
% SOI	15%	0%	3.2%	100%

SOI: 2015 GOM IFQ Tilefish Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	415	-	-	-
Selected	104	25%	-	-
Responded	89	21%	86%	-
Used	84	20%	81%	94%

Economic Results (n=84)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	41%	8.3	27%	55%	-
Days at Sea	8.7	0.78	7.37	10.04	8
Crew Size	3.1	0.14	2.86	3.34	3
Fuel Used	524	47	445	604	422
Landings (gutted lbs)	4,926	432	4,189	5,662	4,820
Total Revenue	19,172	1,788	16,126	22,217	18,858
Cost					
Fuel	1,260	110	1,072	1,448	1,050
Bait	1,128	124	917	1,339	1,038
Ice	451	53	361	540	360
Groceries	764	74	638	890	600
Miscellaneous	620	93	461	779	475
Hired Crew	5,336	614	4,291	6,381	4,276
IFQ Purchase	3,496	747	2,223	4,768	1,929
OC Owner-Captain Time	544	184	231	857	0
Trip Net Cash Flow	6,117	687	4,947	7,288	6,147
Trip Net Revenue	9,069	1,060	7,264	10,875	8,417

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

Revenue 100%	Trip Net Cash Flow 32%	Trip Net Revenue 47%
	IFQ Purchase 18%	
	Labor - Hired 28%	Labor - Hired & Owner 31%
	Fuel & Supplies 22%	Fuel & Supplies 22%

Input Prices

Fuel Price (average): \$2.40 per gallon Hired Crew Wage (implicit): \$228 per crew-day

Productivity Measures

Landings/Fuel Use: 9.4 lbs/gallon Landings/Labor Use: 182.7 lbs/crew-day

SOI: 2015 GOM IFQ Tilefish Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	121
<u>Trips - Total</u>	<u>2,030</u>
SOI Trips	415
Non-SOI Trips	1,615
Days at Sea	12,531
Crew Days	40,360

Landings (guttled lbs)

<u>Total</u>	<u>8,031,727</u>
SOI	518,582
Non-SOI	7,513,146
% SOI	6%

Percent by Gear

	Trips	Total lbs
Vertical Line	69%	52%
Longline	28%	47%
Diver	1%	0.5%
Other	2%	0.5%

Price (mean)

<u>Total</u>	<u>\$3.95</u>
SOI	\$3.02
Non-SOI	\$4.01

Revenue

<u>Total</u>	<u>\$31,726,988</u>
SOI	\$1,565,381
Non-SOI	\$30,161,607
% SOI	5%

Percent of Revenue by Species Group

Shallow Water Groupers	32%
Shallow Water Snappers	1%
Mid-Shelf Snappers	45%
Deep Water Groupers/Tilefish	18%
Grunts/Porgies/Triggerfish	0.8%
Mackerels/Dolphinfish/Jacks	2%
Other Species	0.5%

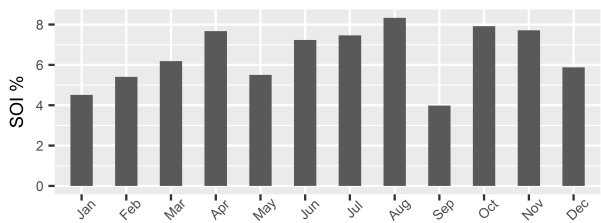
Revenue for Top 5 Species

Red Snapper	\$12,540,360
Red Grouper	\$8,151,137
Yellowedge Grouper	\$3,359,195
Tilefish	\$1,585,473
Vermilion Snapper	\$1,560,854

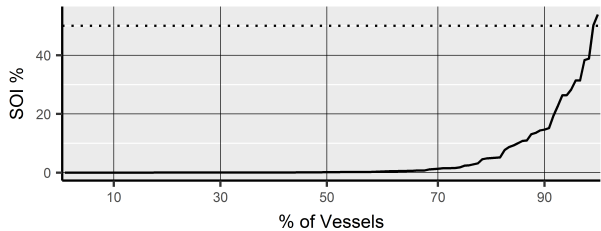
Annual, Vessel Descriptive Statistics (N=121)

	Mean	Min	Median	Max
Trips	16.8	1	15	64
Days at Sea	103.6	3	103	244
Crew Days	333.6	14	277	1,257
Landings	66,378	939	56,983	345,300
Revenue	\$262,207	\$3,863	\$197,645	\$1,635,028
SOI	\$12,937	\$2	\$166	\$251,662
% SOI	4.6%	0%	0.2%	53.9%

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	2%
King Mackerel	44%
Spanish Mackerel	50%
Dolphin-Wahoo	48%
Other Commercial Fishing	28%
For-Hire Fishing	14%

Vessel Characteristics (N=121)

	Mean	Min	Median	Max
Length	44	25	42	69
Year Built	1982	1947	1980	2011
Horsepower	370	12	300	1,250
Fiberglass Hull	88%	-	-	-
Diesel Engine	94%	-	-	-
Ice Refrigeration	98%	-	-	-

SOI: 2015 GOM IFQ Tilefish Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	121	-	-	-
Selected	32	26%	-	-
Responded	31	26%	97%	-
Used	30	25%	94%	97%

Economic Results (n=30)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	50%	8.1	36%	64%	-
For-Hire Active	7%	4	0%	13%	-
Days - Commercial Fishing	112	9	97	127	84
Days - For-Hire Fishing	14	9.1	-2	29	0
Days - Non-fishing	3	1.3	0	5	0
Vessel Value	134,917	20,024	100,893	168,941	100,000
Has Insurance	43%	8	30%	57%	-
Total Revenue	282,271	33,988	224,520	340,021	195,000
Commercial Fishing	270,718	35,382	210,600	330,836	175,907
For-Hire Fishing	11,553	7,028	-389	23,494	0
Cost					
Fuel	14,619	1,118	12,719	16,520	13,000
Other Supplies	29,529	4,879	21,239	37,819	19,645
Hired Crew	74,875	12,107	54,303	95,447	56,000
Vessel Repair & Maintenance	18,631	2,694	14,054	23,208	12,490
Insurance	1,810	466	1,019	2,601	0
Overhead	18,730	5,374	9,600	27,860	6,870
Loan Payment	2,711	948	1,099	4,322	0
IFQ Purchase	66,853	21,904	29,636	104,071	24,625
OC Owner-Captain Time	11,282	2,835	6,466	16,099	900
Depreciation	6,746	1,001	5,045	8,447	5,000
Net Cash Flow	54,514	10,149	37,269	71,758	36,500
Net Revenue from Operations*	106,049	22,182	68,360	143,739	62,014

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

Revenue 100%	Net Cash Flow 19%	Net Revenue - Operations 38%
	IFQ Purchase 24%	
	Loan Payment 1%	Depreciation 2%
	Fixed Costs 14%	Fixed Costs 14%
	Labor - Hired 27%	Labor - Hired & Owner 31%
	Fuel & Supplies 16%	Fuel & Supplies 16%

Economic Return* (on Vessel Asset Value): 78.6%

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

SOI: 2015 GOM Vermilion Snapper Fishery: All Gears

Description: This SOI consists of all logbook trips by permitted vessels where at least one pound of vermilion snapper was landed in 2015 using any gear type. While vermilion snapper is the largest non-IFQ fishery managed by the GOM Reef Fish FMP, most of the vermilion 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	2,681
Vessels	361
Days at Sea	13,286
Crew Days	39,837

Landings (gutted lbs)

<u>Total</u>	8,374,177
SOI	1,199,302
Non-SOI	7,174,875
% SOI	14%

Percent by Gear

	Trips	SOI lbs
Vertical Line	92%	100%
Longline	7%	0.3%
Diver	0.9%	0%
Other	0.2%	0%

Price (mean)

<u>Total</u>	\$3.93
SOI	\$3.14
Non-SOI	\$4.06

Revenue

<u>Total</u>	\$32,922,100
SOI	\$3,764,955
Non-SOI	\$29,157,145
% SOI	11%

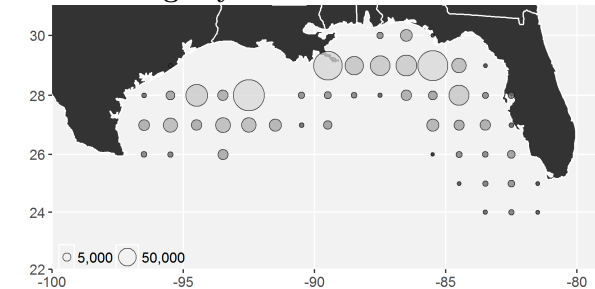
Percent of Revenue by Species Group

Shallow Water Groupers	22%
Shallow Water Snappers	1%
Mid-Shelf Snappers	71%
Deep Water Groupers/Tilefish	2%
Grunts/Porgies/Triggerfish	2%
Mackerels/Dolphinfish/Jacks	2%
Other Species	0.3%

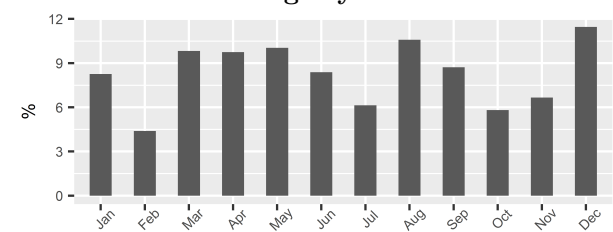
Revenue for Top 5 Species

Red Snapper	\$19,560,754
Red Grouper	\$5,446,233
Vermilion Snapper	\$3,764,955
Gag Grouper	\$1,269,762
Scamp	\$535,545

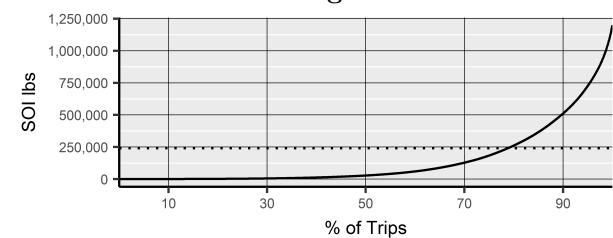
SOI Landings by Area Fished



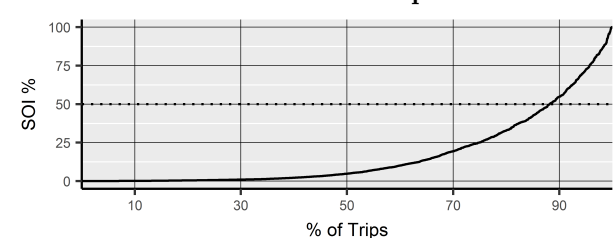
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=2,681)

	Mean	Min	Median	Max
Days at Sea	5	1	4	19
Crew Size	2.9	1	3	8
Landings	3,124	1	1,945	26,025
Revenue	\$12,280	\$3	\$6,764	\$128,800
SOI	\$1,404	\$2	\$249	\$28,292
% SOI	17%	0%	4.8%	100%

SOI: 2015 GOM Vermilion Snapper Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	2,681	-	-	-
Selected	925	35%	-	-
Responded	829	31%	90%	-
Used	802	30%	87%	97%

Economic Results (n=802)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	56%	5.4	47%	65%	-
Days at Sea	4.6	0.34	4.02	5.17	4
Crew Size	2.8	0.09	2.65	2.96	3
Fuel Used	209	15	184	234	150
Landings (gutted lbs)	3,176	255	2,753	3,600	1,883
Total Revenue	12,795	1,133	10,911	14,679	6,497
Cost					
Fuel	508	36	448	568	377
Bait	353	41	285	422	200
Ice	186	17	157	214	100
Groceries	250	32	197	303	169
Miscellaneous	308	42	238	378	78
Hired Crew	3,181	342	2,613	3,749	1,543
IFQ Purchase	3,449	518	2,588	4,310	638
OC Owner-Captain Time	724	109	544	905	100
Trip Net Cash Flow	4,559	600	3,561	5,557	1,921
Trip Net Revenue	7,284	790	5,970	8,598	3,201

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

Revenue 100%	Trip Net Cash Flow 36%	Trip Net Revenue 57%
	IFQ Purchase 27%	
	Labor - Hired 25%	Labor - Hired & Owner 31%
	Fuel & Supplies 13%	Fuel & Supplies 13%

Input Prices

Fuel Price (average): \$2.43 per gallon Hired Crew Wage (implicit): \$308 per crew-day

Productivity Measures

Landings/Fuel Use: 15.2 lbs/gallon Landings/Labor Use: 246.5 lbs/crew-day

SOI: 2015 GOM Vermilion Snapper Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	361
<u>Trips - Total</u>	<u>5,698</u>
SOI Trips	2,681
Non-SOI Trips	3,017
Days at Sea	25,562
Crew Days	74,505

Landings (guttled lbs)

<u>Total</u>	<u>14,598,428</u>
SOI	1,199,302
Non-SOI	13,399,126
% SOI	8%

Percent by Gear

	Trips	Total lbs
Vertical Line	82%	68%
Longline	12%	29%
Diver	4%	1%
Other	2%	1%

Price (mean)

<u>Total</u>	<u>\$3.87</u>
SOI	\$3.14
Non-SOI	\$3.94

Revenue

<u>Total</u>	<u>\$56,500,646</u>
SOI	\$3,764,955
Non-SOI	\$52,735,691
% SOI	7%

Percent of Revenue by Species Group

Shallow Water Groupers	33%
Shallow Water Snappers	2%
Mid-Shelf Snappers	53%
Deep Water Groupers/Tilefish	8%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	3%
Other Species	0.4%

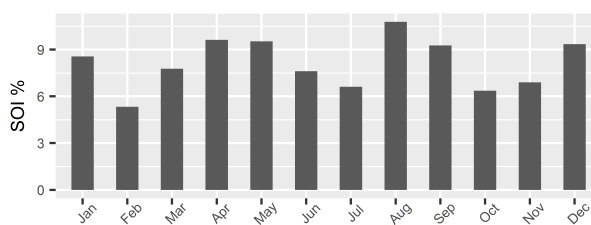
Revenue for Top 5 Species

Red Snapper	\$26,101,431
Red Grouper	\$15,143,768
Vermilion Snapper	\$3,769,983
Yellowedge Grouper	\$2,641,233
Gag Grouper	\$2,255,752

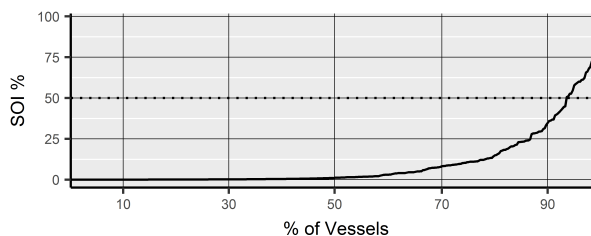
Annual, Vessel Descriptive Statistics (N=361)

	Mean	Min	Median	Max
Trips	15.8	1	13	108
Days at Sea	70.8	1	56	244
Crew Days	206.4	1	148	1,257
Landings	40,439	47	21,781	452,017
Revenue	\$156,511	\$97	\$76,039	\$2,121,109
SOI	\$10,429	\$3	\$537	\$223,980
% SOI	10%	0%	1.2%	96.9%

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	43%
Spanish Mackerel	48%
Dolphin-Wahoo	33%
Other Commercial Fishing	20%
For-Hire Fishing	24%

Vessel Characteristics (N=361)

	Mean	Min	Median	Max
Length	40	20	38	69
Year Built	1986	1961	1983	2014
Horsepower	396	12	350	1,320
Fiberglass Hull	93%	-	-	-
Diesel Engine	86%	-	-	-
Ice Refrigeration	97%	-	-	-

SOI: 2015 GOM Vermilion Snapper Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	361	-	-	-
Selected	104	29%	-	-
Responded	92	25%	88%	-
Used	83	23%	80%	90%

Economic Results (n=83)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	67%	4.8	59%	75%	-
For-Hire Active	16%	3.8	10%	22%	-
Days - Commercial Fishing	78	4.6	71	86	68
Days - For-Hire Fishing	15	4.4	8	23	0
Days - Non-fishing	3	0.8	1	4	0
Vessel Value	99,717	11,842	80,013	119,421	75,000
Has Insurance	39%	5	30%	47%	-
Total Revenue	190,049	23,499	150,949	229,149	103,005
Commercial Fishing	176,532	23,514	137,407	215,656	98,064
For-Hire Fishing	13,517	4,172	6,576	20,459	0
Cost					
Fuel	10,019	679	8,890	11,149	8,557
Other Supplies	17,198	2,157	13,610	20,787	9,180
Hired Crew	48,448	5,566	39,186	57,710	22,117
Vessel Repair & Maintenance	11,534	1,620	8,839	14,228	6,000
Insurance	1,421	231	1,036	1,806	0
Overhead	9,753	1,855	6,666	12,840	3,608
Loan Payment	2,563	643	1,492	3,633	0
IFQ Purchase	49,132	16,428	21,798	76,466	7,250
OC Owner-Captain Time	9,662	1,372	7,378	11,945	3,400
Depreciation	4,986	592	4,001	5,971	3,750
Net Cash Flow	39,981	5,641	30,595	49,367	22,000
Net Revenue from Operations*	77,028	17,695	47,586	106,470	40,796

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

Revenue 100%	Net Cash Flow 21%	Net Revenue - Operations 41%
	IFQ Purchase 26%	
	Loan Payment 1%	Depreciation 3%
	Fixed Costs 12%	Fixed Costs 12%
	Labor - Hired 25%	Labor - Hired & Owner 31%
	Fuel & Supplies 14%	Fuel & Supplies 14%

Economic Return* (on Vessel Asset Value): 77.2%

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

SOI: 2015 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 2015 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	619
Vessels	148
Days at Sea	3,734
Crew Days	9,817

Landings (guttled lbs)

<u>Total</u>	1,329,908
SOI	389,762
Non-SOI	940,146
% SOI	29%

Percent by Gear

	Trips	SOI lbs
Vertical Line	86%	100%
Longline	11%	0.1%
Diver	2%	0.1%
Other	0.2%	0%

Price (mean)

<u>Total</u>	\$3.63
SOI	\$3.39
Non-SOI	\$3.73

Revenue

<u>Total</u>	\$4,828,167
SOI	\$1,321,041
Non-SOI	\$3,507,126
% SOI	27%

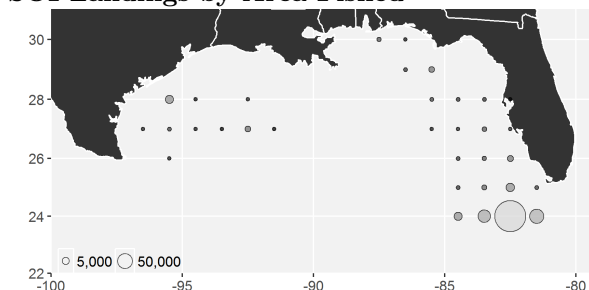
Percent of Revenue by Species Group

Shallow Water Groupers	49%
Shallow Water Snappers	31%
Mid-Shelf Snappers	12%
Deep Water Groupers/Tilefish	5%
Grunts/Porgies/Triggerfish	0.8%
Mackerels/Dolphinfish/Jacks	2%
Other Species	0.8%

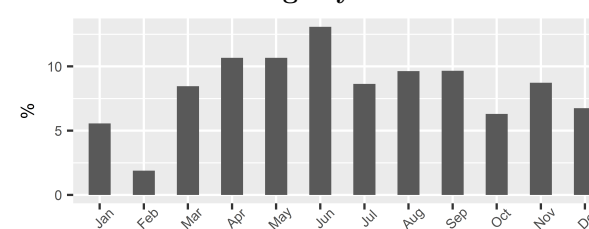
Revenue for Top 5 Species

Red Grouper	\$2,091,228
Yellowtail Snapper	\$1,321,041
Red Snapper	\$496,094
Gag Grouper	\$152,669
Yellowedge Grouper	\$131,431

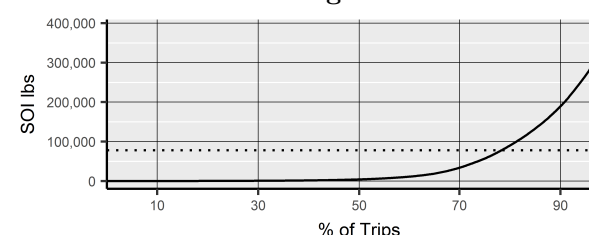
SOI Landings by Area Fished



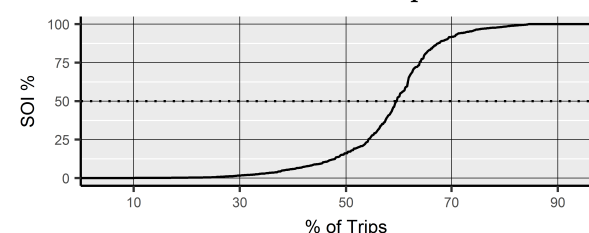
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=619)

	Mean	Min	Median	Max
Days at Sea	6	1	5	19
Crew Size	2.5	1	2	6
Landings	2,148	12	1,216	19,143
Revenue	\$7,800	\$48	\$4,110	\$83,884
SOI	\$2,134	\$3	\$235	\$30,327
% SOI	42%	0%	16.2%	100%

SOI: 2015 GOM Yellowtail Snapper Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	619	-	-	-
Selected	170	27%	-	-
Responded	151	24%	89%	-
Used	143	23%	84%	95%

Economic Results (n=143)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	61%	8.1	48%	75%	-
Days at Sea	6.78	0.62	5.73	7.83	6
Crew Size	2.54	0.12	2.33	2.75	2
Fuel Used	242	33	186	298	181
Landings (gutted lbs)	2,763	505	1,907	3,619	1,629
Total Revenue	9,944	2,173	6,259	13,628	5,111
Cost					
Fuel	608	76	479	737	450
Bait	735	86	589	880	348
Ice	195	34	138	252	120
Groceries	360	52	271	449	280
Miscellaneous	321	78	189	453	75
Hired Crew	3,016	688	1,850	4,182	1,531
IFQ Purchase	1,513	790	174	2,853	0
OC Owner-Captain Time	986	297	483	1,490	489
Trip Net Cash Flow	3,196	991	1,516	4,877	1,676
Trip Net Revenue	3,723	1,332	1,465	5,981	1,034

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

Revenue 100%	Trip Net Cash Flow 32%	Trip Net Revenue 37%
	IFQ Purchase 15%	Labor - Hired & Owner 40%
	Labor - Hired 30%	
	Fuel & Supplies 22%	Fuel & Supplies 22%

Input Prices

Fuel Price (average): \$2.51 per gallon Hired Crew Wage (implicit): \$231 per crew-day

Productivity Measures

Landings/Fuel Use: 11.4 lbs/gallon Landings/Labor Use: 160.3 lbs/crew-day

SOI: 2015 GOM Yellowtail Snapper Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	148
<u>Trips - Total</u>	<u>2,748</u>
SOI Trips	619
Non-SOI Trips	2,129
Days at Sea	13,447
Crew Days	37,202

Landings (guttled lbs)

<u>Total</u>	<u>6,233,348</u>
SOI	389,762
Non-SOI	5,843,586
% SOI	6%

Percent by Gear

	Trips	Total lbs
Vertical Line	76%	56%
Longline	14%	40%
Diver	6%	1%
Other	3%	3%

Price (mean)

<u>Total</u>	<u>\$3.81</u>
SOI	\$3.39
Non-SOI	\$3.84

Revenue

<u>Total</u>	<u>\$23,766,697</u>
SOI	\$1,321,041
Non-SOI	\$22,445,656
% SOI	6%

Percent of Revenue by Species Group

Shallow Water Groupers	47%
Shallow Water Snappers	11%
Mid-Shelf Snappers	30%
Deep Water Groupers/Tilefish	7%
Grunts/Porgies/Triggerfish	0.8%
Mackerels/Dolphinfish/Jacks	3%
Other Species	0.7%

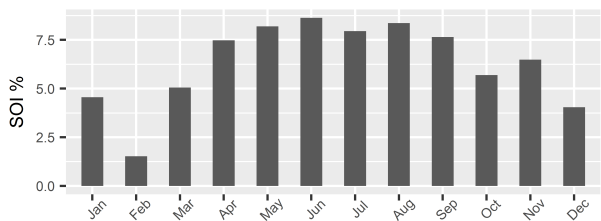
Revenue for Top 5 Species

Red Grouper	\$9,375,515
Red Snapper	\$6,277,874
Yellowtail Snapper	\$2,207,946
Gag Grouper	\$1,208,875
Yellowedge Grouper	\$999,820

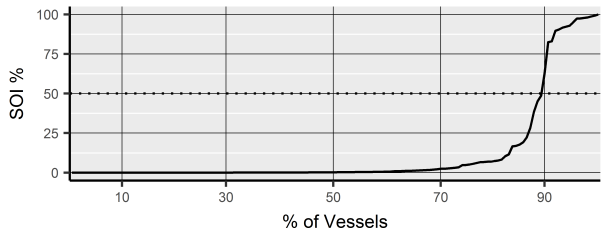
Annual, Vessel Descriptive Statistics (N=148)

	Mean	Min	Median	Max
Trips	18.6	1	15	99
Days at Sea	90.9	2	84	228
Crew Days	251.4	4	214	987
Landings	42,117	73	26,973	195,401
Revenue	\$160,586	\$249	\$98,250	\$923,469
SOI	\$8,926	\$3	\$110	\$173,484
% SOI	12.6%	0%	0.2%	100%

SOI Share of Monthly Landings



SOI Share of Revenue Per Vessel



Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	18%
SAT Snapper & Grouper - Limited	0.7%
King Mackerel	38%
Spanish Mackerel	55%
Dolphin-Wahoo	52%
Other Commercial Fishing	19%
For-Hire Fishing	18%

Vessel Characteristics (N=148)

	Mean	Min	Median	Max
Length	39	23	39	65
Year Built	1986	1961	1984	2013
Horsepower	402	80	350	950
Fiberglass Hull	95%	-	-	-
Diesel Engine	82%	-	-	-
Ice Refrigeration	97%	-	-	-

SOI: 2015 GOM Yellowtail Snapper Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	148	-	-	-
Selected	39	26%	-	-
Responded	30	20%	77%	-
Used	25	17%	64%	83%

Economic Results (n=25)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	68%	10.1	51%	86%	-
For-Hire Active	11%	6.8	-1%	23%	-
Days - Commercial Fishing	113	7.1	100	125	120
Days - For-Hire Fishing	8	5.4	-1	17	0
Days - Non-fishing	4	2	0	7	0
Vessel Value	91,281	9,234	75,455	107,107	80,000
Has Insurance	44%	10.7	26%	62%	-
Total Revenue	203,573	31,218	150,070	257,076	125,000
Commercial Fishing	195,631	31,391	141,830	249,431	118,000
For-Hire Fishing	7,943	5,280	-1,107	16,992	0
Cost					
Fuel	11,996	1,290	9,784	14,208	10,000
Other Supplies	22,820	4,040	15,896	29,744	18,290
Hired Crew	49,506	8,023	35,756	63,257	32,498
Vessel Repair & Maintenance	12,612	2,103	9,008	16,216	7,179
Insurance	1,145	279	667	1,624	0
Overhead	11,693	2,455	7,485	15,900	5,510
Loan Payment	4,046	1,671	1,183	6,909	0
IFQ Purchase	48,185	20,827	12,490	83,879	7,250
OC Owner-Captain Time	10,083	2,770	5,336	14,831	3,001
Depreciation	4,564	462	3,773	5,355	4,000
Net Cash Flow	41,570	11,272	22,252	60,888	22,400
Net Revenue from Operations*	79,153	22,257	41,007	117,300	40,796

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

Revenue 100%	Net Cash Flow 20%	Net Revenue - Operations 39%
	IFQ Purchase 24%	
	Loan Payment 2%	Depreciation 2%
	Fixed Costs 13%	Fixed Costs 13%
	Labor - Hired 24%	Labor - Hired & Owner 29%
	Fuel & Supplies 17%	Fuel & Supplies 17%

Economic Return* (on Vessel Asset Value): 86.7%

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

SOI: 2015 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 2015 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	1,506
Vessels	284
Days at Sea	7,609
Crew Days	24,490

Landings (guttled lbs)

<u>Total</u>	4,823,881
SOI	489,179
Non-SOI	4,334,702
% SOI	10%

Percent by Gear

	Trips	SOI lbs
Vertical Line	84%	86%
Longline	11%	7%
Diver	4%	7%
Other	0.6%	0%

Price (mean)

<u>Total</u>	\$3.65
SOI	\$1.49
Non-SOI	\$3.89

Revenue

<u>Total</u>	\$17,605,766
SOI	\$730,125
Non-SOI	\$16,875,641
% SOI	4%

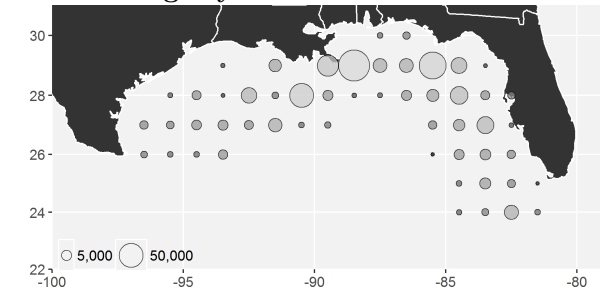
Percent of Revenue by Species Group

Shallow Water Groupers	21%
Shallow Water Snappers	2%
Mid-Shelf Snappers	57%
Deep Water Groupers/Tilefish	12%
Grunts/Porgies/Triggerfish	2%
Mackerels/Dolphinfish/Jacks	5%
Other Species	0.6%

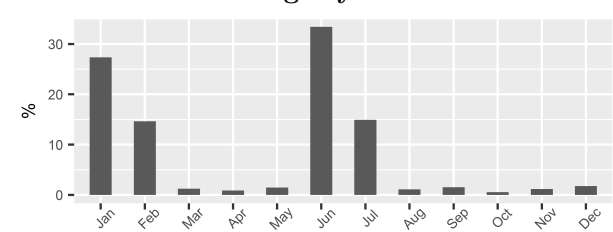
Revenue for Top 5 Species

Red Snapper	\$7,813,008
Red Grouper	\$2,395,807
Vermilion Snapper	\$2,221,539
Yellowedge Grouper	\$1,251,904
Gag Grouper	\$958,739

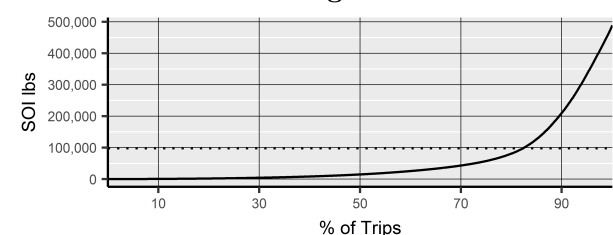
SOI Landings by Area Fished



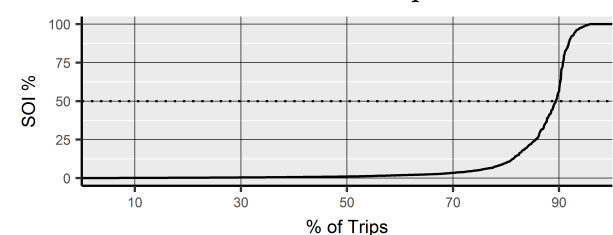
Share of SOI Landings by Month



Cumulative SOI Landings



SOI Share of Revenue Per Trip



Trip Descriptive Statistics (N=1,506)

	Mean	Min	Median	Max
Days at Sea	5.1	1	4	21
Crew Size	3	1	3	8
Landings	3,203	39	2,072	26,025
Revenue	\$11,690	\$114	\$6,448	\$128,800
SOI	\$485	\$1	\$74	\$5,565
% SOI	13%	0%	1%	100%

SOI: 2015 GOM FMP Jacks Fishery: All Gears

Trip-Level Economics

Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	1,506	-	-	-
Selected	500	33%	-	-
Responded	425	28%	85%	-
Used	405	27%	81%	95%

Economic Results (n=405)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Trip					
Owner-Operated	57%	5.6	48%	66%	-
Days at Sea	4.6	0.38	3.96	5.23	4
Crew Size	2.95	0.11	2.76	3.14	3
Fuel Used	230	24	190	270	150
Landings (gutted lbs)	3,067	315	2,542	3,593	1,893
Total Revenue	11,110	1,383	8,803	13,417	5,985
Cost					
Fuel	569	57	474	664	377
Bait	393	62	290	496	195
Ice	183	24	143	224	105
Groceries	245	38	183	308	125
Miscellaneous	281	54	191	371	75
Hired Crew	2,973	397	2,310	3,635	1,500
IFQ Purchase	2,702	625	1,660	3,744	502
OC Owner-Captain Time	631	94	474	787	267
Trip Net Cash Flow	3,764	735	2,538	4,990	2,003
Trip Net Revenue	5,835	954	4,243	7,426	2,450

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

Revenue 100%	Trip Net Cash Flow 34%	Trip Net Revenue 53%
	IFQ Purchase 24%	
	Labor - Hired 27%	Labor - Hired & Owner 32%
	Fuel & Supplies 15%	Fuel & Supplies 15%

Input Prices

Fuel Price (average): \$2.48 per gallon Hired Crew Wage (implicit): \$272 per crew-day

Productivity Measures

Landings/Fuel Use: 13.3 lbs/gallon Landings/Labor Use: 226.2 lbs/crew-day

SOI: 2015 GOM FMP Jacks Fishery: All Gears

Annual, Vessel-Level Summary

Effort

Vessels	284
<u>Trips - Total</u>	<u>5,015</u>
SOI Trips	1,506
Non-SOI Trips	3,509
Days at Sea	22,216
Crew Days	67,702

Landings (guttled lbs)

<u>Total</u>	<u>13,202,283</u>
SOI	489,179
Non-SOI	12,713,104
% SOI	4%

Percent by Gear

	Trips	Total lbs
Vertical Line	79%	66%
Longline	14%	32%
Diver	4%	1%
Other	3%	1%

Price (mean)

<u>Total</u>	<u>\$3.81</u>
SOI	\$1.49
Non-SOI	\$3.90

Revenue

<u>Total</u>	<u>\$50,359,122</u>
SOI	\$730,125
Non-SOI	\$49,628,997
% SOI	1%

Percent of Revenue by Species Group

Shallow Water Groupers	28%
Shallow Water Snappers	3%
Mid-Shelf Snappers	52%
Deep Water Groupers/Tilefish	12%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	3%
Other Species	0.6%

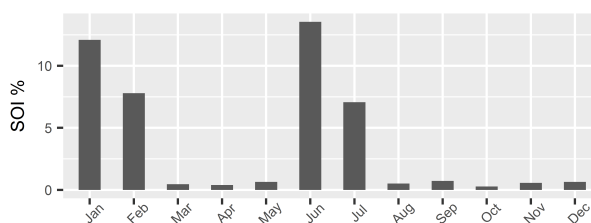
Revenue for Top 5 Species

Red Snapper	\$22,540,984
Red Grouper	\$11,055,851
Vermilion Snapper	\$3,601,007
Yellowedge Grouper	\$3,343,012
Gag Grouper	\$1,944,446

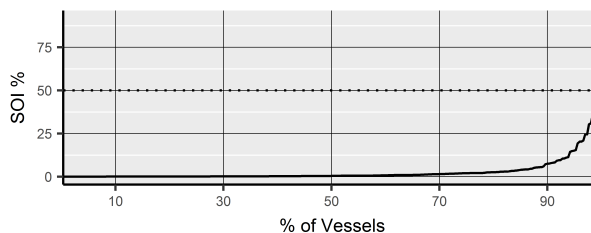
Annual, Vessel Descriptive Statistics (N=284)

	Mean	Min	Median	Max
Trips	17.7	1	15	108
Days at Sea	78.2	1	66	244
Crew Days	238.4	2	172	1,257
Landings	46,487	219	27,773	452,017
Revenue	\$177,321	\$547	\$96,069	\$2,121,109
SOI	\$2,571	\$1	\$315	\$56,629
% SOI	3.2%	0%	0.4%	91.7%

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	47%
Spanish Mackerel	51%
Dolphin-Wahoo	38%
Other Commercial Fishing	19%
For-Hire Fishing	25%

Vessel Characteristics (N=284)

	Mean	Min	Median	Max
Length	40	24	39	69
Year Built	1986	1961	1983	2014
Horsepower	404	12	350	1,320
Fiberglass Hull	93%	-	-	-
Diesel Engine	85%	-	-	-
Ice Refrigeration	96%	-	-	-

SOI: 2015 GOM FMP Jacks Fishery: All Gears

Annual, Vessel-Level Economics

Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	284	-	-	-
Selected	82	29%	-	-
Responded	71	25%	87%	-
Used	62	22%	76%	87%

Economic Results (n=62)

	Mean	SE	90% L.B.	90% U.B.	Median
SOI Vessel					
Owner-Operated	64%	5.6	55%	73%	-
For-Hire Active	18%	4.4	10%	25%	-
Days - Commercial Fishing	88	6	78	98	74
Days - For-Hire Fishing	17	5.6	8	26	0
Days - Non-fishing	2	0.7	1	3	0
Vessel Value	111,957	13,512	89,384	134,530	85,000
Has Insurance	43%	5.8	33%	52%	-
Total Revenue	236,769	32,113	183,119	290,418	147,554
Commercial Fishing	222,856	32,408	168,714	276,998	133,221
For-Hire Fishing	13,913	4,850	5,811	22,015	0
Cost					
Fuel	12,283	892	10,792	13,773	11,000
Other Supplies	21,326	2,971	16,362	26,289	10,500
Hired Crew	60,392	7,480	47,895	72,889	33,616
Vessel Repair & Maintenance	14,011	1,954	10,747	17,274	7,700
Insurance	1,536	264	1,094	1,978	0
Overhead	11,516	2,553	7,251	15,780	5,000
Loan Payment	2,552	671	1,430	3,674	0
IFQ Purchase	64,990	23,322	26,027	103,952	10,750
OC Owner-Captain Time	10,367	1,715	7,501	13,232	2,035
Depreciation	5,598	676	4,469	6,727	4,250
Net Cash Flow	48,165	7,404	35,796	60,533	27,144
Net Revenue from Operations*	99,742	24,733	58,421	141,063	51,090

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

Revenue 100%	Net Cash Flow 20%	Net Revenue - Operations 42%
	IFQ Purchase 27%	
	Loan Payment 1%	Depreciation 2%
	Fixed Costs 11%	Fixed Costs 11%
	Labor - Hired 26%	Labor - Hired & Owner 30%
	Fuel & Supplies 14%	Fuel & Supplies 14%

Economic Return* (on Vessel Asset Value): 89.1%

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

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.
- **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.