



NOAA TECHNICAL MEMORANDUM NMFS-SEFSC-772

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## ECONOMICS OF THE GULF OF MEXICO REEF FISH FISHERY - 2018

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 2018, including a comparison to earlier years. The GOM RF fishery includes multiple species of snapper, grouper, tilefish, and jacks as well as triggerfish and hogfish from Florida through Texas. 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 (GFMC) in coordination with the States through the GOM RF Fishery Management Plan (FMP). For detailed information about the RF FMP, please consult the GFMC’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. The Regional Office 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 Office’s website at: <https://secatchshares.fisheries.noaa.gov/home>

This report’s unique focus is on the **economics** of the commercial harvesting sector in the GOM RF fishery. It is intended as a public reference manual for the economics of the fishery as the underlying data are confidential. 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 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 a statistical context). We call these subsets Segments of Interest (SOI). In most cases, they are at a species or species group level, such as vermilion snapper 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 in the GOM RF fishery the net revenues and returns (“profits”) are shared between owners of vessel capital **AND** owners of IFQ shares. 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 within the fishery context. These**

**context numbers will differ from similar numbers generated for stock assessments and other management or research purposes. For instance, there are known reasons why logbook totals ("near census") will deviate from official Annual Catch Limits or quota numbers. Further, the underlying databases are dynamic and continuously changing.** So while the numbers reported here should generally be of similar magnitude as reported elsewhere, we do not expect them to be identical.<sup>1</sup>

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

The Results section reports on 16 different SOIs. The results for any one SOI consist of six sections, corresponding to eight 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 by aggregating across all SOI and non-SOI logbook trip data. This section also presents vessel characteristics and permit status gleaned from each vessel's permit application. The fourth section, Annual, Vessel-Level Economics, provides estimated annual economic results for SOI vessels based on the annual sample survey. The fifth section, Trip-Level Time Series, provides selected trip-level summary and economic results for previous years, side-by-side to the current year results and a five year average. The sixth section, Annual, Vessel-Level Time Series, provides the same temporal perspective for selected annual, vessel-level summary and economic results. In both time series sections, the economic results are expressed as a percent of revenue to better facilitate comparison across time. All dollar values are inflation adjusted to nominal 2018 dollars.

## Methods

### Data

Beginning in 1993, NMFS's Southeast Fisheries Science Center 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 U.S. South Atlantic. How close the logbook's aggregate

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<sup>1</sup>NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.



landings and estimated revenue align with dealer or IFQ-program reported landings and revenue varies by species. In general, logbook landings and revenue deviate less than 10% from dealer or IFQ-program reported landings for the GOM RF FMP's species (with the exception of yellowtail snapper)<sup>2</sup>; leading us to refer to the data collection as a "near census". In 2018, the logbook landings for GOM red snapper and all GT-IFQ species together were 95.8% and 94.5%, respectively, of the landings reported through the IFQ program.

Since 2006, NMFS's SE Fisheries Science Center 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 2018, vessels were stratified into three strata based on their days at sea during the two years prior to the selection year (e.g., 2016 and 2017 in this case). The three strata are: 1. Inactive, 2. Active - Low (less than 21 days at sea per year in both years), and 3. Active - High (more than 20 days at sea in at least one year).<sup>3</sup> A vessel was considered inactive if it did not report any trips to the logbook system during the previous two years. Approximately 30% of active vessels were selected, while 10% of inactive vessels were selected. Beyond the initial selection, two further vessel selections were conducted throughout the first half of the year to capture vessels new to the fishery and permit renewals (vessels with invalid permits during initial selection).

For each trip, selected vessels must complete the trip expense section located at the bottom of the trip report form. Data collected in this section are for variable costs including expenses for bait, ice, groceries, and IFQ allocation; the amount of fuel used and the cost per gallon of fuel; whether or not the vessel owner was present on the trip, and whether or not payment for the catch had been determined. If payment was determined, then gross trip revenue and payment to hired crew and hired captain are collected. Instructions and a copy of the logbook trip report form with the trip expense section can be found at this NOAA SE Fisheries Science Center website: [https://www.sefsc.noaa.gov/fisheries/reporting\\_archive.htm](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.<sup>4</sup> A central distinction between the trip-level and annual, vessel-level survey is that the annual survey is holistic at the vessel level, designed to encompass all fishing and non-fishing activities of the vessel. This includes fisheries not covered by the logbook, including state level fisheries. Note also that the annual survey reflects an independent data stream as it is sent by mail at

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<sup>2</sup>In both data collections, classifications and transformations can explain some discrepancies. Our analysis, based on logbook data, underestimates yellowtail snapper catch. Yellowtail snapper is primarily harvested around the Florida Keys, making the assignment of fish to the Gulf of Mexico vs. the U.S. S. Atlantic a known issue.

<sup>3</sup>The 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.

<sup>4</sup>A 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.

a different time.

Besides logbook and economic survey data, this technical memorandum uses vessel permit and characteristics information from NMFS’s Southeast Regional Office. 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 species-level trip revenue because the logbook forms do not collect species price or revenue data.

Note that for IFQ fisheries, such as red snapper, the IFQ-tracking system is considered the definite register of landings, 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 somewhat more landings and revenue than the logbook data.

## **Cleaning**

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

## **Definiton: Segment of Interest (SOI)**

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

This technical memorandum reports trip- and vessel-level economic estimates for a select number of domains we call Segments of Interest (SOI). A SOI is defined as all trips where at least one pound of fish, which matches the specifications of the domain, was landed. For instance, the SOI “GOM Reef Fish FMP Fishery: Longline” would include all trips that caught one or more pounds of reef fish using longline gear in the Gulf of Mexico. The following items are primarily used to create the SOIs: Area fished, species landed, and gear used.<sup>5</sup> 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. It should also be noted that the different SOIs in this report are not at all mutually exclusive. In fact, as the majority of trips harvest a large number of different species, most trips will be part of many different SOIs.

## **Estimation**

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

## **Standardized Results and Definitions**

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

The results for any one SOI consist of six sections. The first section, Trip-Level Summary, summarizes the SOI at the trip-level—presenting the aggregate, cleaned logbook data for the particular SOI. The second section, Trip-Level Economics, provides SOI trip economic estimates based on the trip-level sample survey. The third section, Annual, Vessel-Level Summary, provides information on the vessels within the SOI by aggregating across all SOI and non-SOI trips logbook trip data. This section also presents vessel characteristics and permit status gleaned from each vessel’s permit application. The fourth section, Annual, Vessel-Level Economics, provides estimated annual economic results for SOI vessels based on the annual sample survey. The fifth section, Trip-Level Time Series, provides selected trip-level summary and economic results for previous years, side-by-side to the current year results and a five year average. The sixth section, Annual, Vessel-Level Time Series, provides

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<sup>5</sup>Additional 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.

the same temporal perspective for selected annual, vessel-level summary and economic results. In both time series sections, the economic results are expressed as a percent of revenue to better facilitate comparison across time. All dollar values are inflation adjusted to nominal 2018 dollars. A description of all tables and graphs that are found in these sections is provided below. Percentages may not always sum to 100% in the tables and graphs due to rounding.

### Section: Trip-Level Summary

- **Effort:** Number of SOI trips, number of vessels in SOI, and total number of days at sea and crew-days by all SOI trips in the logbook data. The days at sea variable is known to contain some imprecision.
- **Landings (gutted lbs):** Total gutted weight of landings in pounds by SOI trips; broken down into SOI landings and non-SOI landings. "%SOI" shows the percentage share of total landings that qualify as SOI landings. The non-SOI landings occur on SOI trips. In a species-defined SOI, non-SOI landings would be non-SOI species catch. In a gear-defined SOI, non-SOI landings would be landings caught with non-SOI gear on a multi-gear SOI trip. The %SOI indicates the level of SOI criteria specialization (in terms of landings) of SOI trips. A high value indicates that the SOI trips are mostly explained by the SOI criteria. A low value indicates that the SOI landings (i.e., the landings associated with the SOI criteria) are a minor part of the trip and might just be "bycatch".
- **Percent by Gear:** Trips - Percent of trips in the SOI using a particular gear. Multi-gear trips are assigned a "top gear" based on the gear which generated the most revenue. Vertical line gear includes hand lines, rod and reels, electrical reels and bandit gear. SOI lbs - Percent of SOI landings landed using a particular gear.
- **Price (mean):** Average ex-vessel price per pound of all landings (gutted weight pounds), as well as the average price per pound of SOI landings and of non-SOI landings across SOI trips.
- **Revenue:** Total estimated revenue by all SOI trips; broken down into SOI revenue and non-SOI revenue. %SOI shows the percentage share of total revenue that qualifies as SOI revenue. Revenue is estimated by multiplying catch pounds from the logbook data by the ex-vessel price estimate derived from ALS (dealer) landings data. The %SOI indicates the level of SOI criteria specialization (in terms of revenue) of SOI trips. A high value indicates that the SOI trips are mostly explained by the SOI criteria. A low value indicates that the SOI revenue (i.e., the revenue associated with the SOI criteria) are a minor part of the trip and might just be "bycatch".
- **Revenue Percent by Species Group:** Distribution of estimated revenue on all SOI trips across selected species groups, in percent. Note, these species groups are independent and unrelated to the species-based SOI definitions. See Appendix 2 for the specific species included in each reported group. The first 5 groups contain the RF FMP species and some other bottom fished species.
- **Revenue for Top 5 Species:** Total estimated species-level revenue for the top 5 species with greatest overall revenue on all SOI trips. Note that these numbers are by species alone, not conditioned by other factors that determine a species SOI. As a

result, for a specific species—especially at the annual, vessel-level—this revenue number can exceed the SOI revenue number. For example, the SOI species might be harvested in U.S. South Atlantic waters, thereby not counting toward SOI landings, which are conditioned on harvest in GOM waters.

- **SOI Landings by Area Fished:** A bubble map showing where SOI landings are caught in the Gulf of Mexico. Fishing areas are defined based on a 1x1 degree latitude-longitude grid.
- **Share of SOI Landings by Month:** A chart showing the seasonality of total SOI landings.
- **Cumulative SOI Landings:** A graph showing cumulative SOI landings across SOI trips ordered from lowest SOI catch to highest SOI catch. A straight line would indicate very homogeneous trips; a convex shape indicates heterogeneity (in SOI catch). The dashed horizontal line represents 20% of the total SOI landings. Where the line intersects the curve indicates the maximum number of trips which can generate (only) 20% of the SOI landings. One minus the intersects' number of trips (in percent) indicates the (smallest) percent of trips that harvest 80% of SOI landings.
- **SOI Share of Revenue Per Trip:** A graph illustrating the level of specialization (on SOI catch) by SOI trips. The graph maps the SOI share of estimated revenue for each trip in the SOI, with trips ordered from smallest to largest SOI share. Where the dashed horizontal line intersects the curve indicates the percent of trips where the percent of SOI share was 50% or less. The graph illustrates the share of SOI trips where SOI revenue is minor/bycatch (from left, line hugging the x-axis), where the trip is specialized on SOI revenue (moving toward right, line asymptotes toward 100% y-value), and those in between.
- **Trip Descriptive Statistics:** SOI trip summary statistics (mean, minimum, median, maximum) derived from the logbook data: Days at sea, number of crew, (gutted weight) pounds landed, estimated revenue, SOI estimated revenue, and the percent of total estimated revenue attributed to the SOI. This table allows for an evaluation of the scale of variation and extremes among SOI trips.

## Section: Trip-Level Economics

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

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

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

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

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

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

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

**Total Revenue:** Reported trip revenue when available; augmented with estimated trip revenue when missing. Serious mismatches between reported and estimated trip revenue (when available) were the most frequent reason trips were dropped during data cleaning.

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

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

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

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

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

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

**IFQ Purchase:** Cash expense for IFQ allocation purchased from third parties specifically for the trip. This primarily applies to Gulf of Mexico fisheries, where two Individual Fishing Quota (IFQ) programs exist for red snapper, groupers and tilefish. Note that many respondents have IFQ shares or long-term/annual arrangements

for IFQ allocation. The use ("consumption") of annual allocation on a trip is not accounted for at a trip level in this analysis. Also, the revenue from selling annual allocation is not accounted for as it cannot, in general, be associated with a vessel and hence a trip.

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

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

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

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

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

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

## Section: Annual, Vessel-Level Summary

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

- **Effort:** Number of SOI vessels, number of total trips by SOI vessels, number of SOI trips, number of non-SOI trips and total number of days at sea and crew-days on all trips by SOI vessels in the logbook data. Non-SOI trips are trips by SOI vessels that did NOT land one pound of fish that matched the SOI definition (species, gear, etc.). The days at sea variable is known to contain some imprecision.
- **Landings (gutted lbs):** Total gutted weight of landings in pounds of all trips by SOI vessels; broken down into SOI landings and non-SOI landings. "%SOI" shows the percentage share of total landings that qualify as SOI landings. The non-SOI landings occur on all trips by SOI vessels. In a species-defined SOI, non-SOI landings would be non-SOI species catch. In a gear-defined SOI, non-SOI landings would be landings caught with non-SOI gear on a multi-gear SOI trip. The %SOI indicates the level of SOI criteria specialization (in terms of landings) of all trips by SOI vessels. A high value indicates that all trips by SOI vessels are mostly explained by the SOI criteria. A low value indicates that the SOI landings (i.e., the landings associated with the SOI criteria) are a minor part of the vessels' landings and might just be "bycatch".
- **Percent by Gear:** Trips - Percent of all trips by SOI vessels using a particular gear. Multi-gear trips are assigned a "top gear" based on which gear generated the most revenue. Vertical line gear includes hand lines, rod and reels, electrical reels and bandit gear. Total lbs - Percent of total landings by SOI vessels using particular gear.
- **Price (mean):** Average price of all landings (gutted weight pounds), as well as the average price of SOI landings and of non-SOI landings across all trips by SOI vessels.
- **Revenue:** Total estimated revenue by all trips of SOI vessels; broken down into SOI revenue and non-SOI revenue. %SOI shows the percentage share of total revenue that qualifies as SOI revenue. Revenue is estimated by multiplying catch pounds from the logbook data by the ex-vessel price estimate derived from ALS (dealer) landings data. The %SOI indicates the level of SOI criteria specialization (in terms of revenue) of all trips by SOI vessels. A high value indicates that all trips by SOI vessels are mostly explained by the SOI criteria. A low value indicates that the SOI revenue (i.e., the revenue associated with the SOI criteria) are a minor part of the vessels' landings and might just be "bycatch".
- **Revenue Percent by Species Group:** Distribution of estimated revenue on all trips by SOI vessels across selected species groups, in percent. Note, these species groups are independent and unrelated to the species-based SOI definitions. See Appendix 2 for the specific species included in each reported group. The first 5 groups contain the RF FMP species and some other bottom fished species.
- **Revenue for Top 5 Species:** Total estimated species-level revenue for the top 5



species with greatest overall revenue on all trips by SOI vessels. Note that these numbers are by species alone, not conditioned by other factors that determine a species SOI. As a result, for a specific species—especially at the annual, vessel-level—this revenue number can exceed the SOI revenue number. For example, the SOI species might be harvested in U.S. South Atlantic waters, thereby not counting toward SOI landings, which are conditioned on harvest in GOM waters.

- **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 NMFS SE Regional Office. 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 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 NMFS SE Regional Office: Vessel length (in feet), year vessel was built, horsepower of all engines, as well as the percent of vessels with fiberglass hull material, diesel engines, and lack of on-board freezing capability. This table allows for an evaluation of the scale of variation and extremes among SOI vessels.

### Section: Annual, Vessel-Level Economics

- **Response Rate for SOI Vessels:** Response rates for the annual economic survey among SOI vessels. Reported are the total number of vessels in the SOI and the number of vessels selected for additional economic reporting. Further, "Responded" refers to the number of vessels that provided (some) annual economic data, while "Used" refers to

the number of clean and complete annual, vessel-level observations used in the analysis.

- **Economic Results:** This table reports estimates of the population means for SOI vessels based on the annual economic survey sample data;  $n$  equals the number of observations in the sample. The population means for the economic variables are generated using a post-stratified, weighted estimation to account for the stratification of the sample and non-response. Also reported are the standard error, the 90% confidence interval for the mean [lower bound (L.B.) and upper bound (U.B.)], and the weighted median. The variables included are:

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

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

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

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

**Days - Non-fishing:** Number of days at sea a vessel engaged in non-fishing activities during a calendar year; this could include work in the oil sector, non-fishing for-hire trips, or trips for research purposes. While not the intent of the question, some individuals might be including days the vessel was used for recreational purposes.

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

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

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

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

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

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

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

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

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

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

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

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

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

**Cost - IFQ Purchase:** Cash expense for IFQ allocation purchased specifically for the vessel from a different IFQ shareholder ("arm's length" transactions, in principle). This primarily applies to Gulf of Mexico fisheries, where two Individual Fishing Quota (IFQ) programs exist for red snapper and groupers and tilefish. Respondents can 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.<sup>6</sup> The resulting number is a rough estimate and should be treated as such.

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

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

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<sup>6</sup>Five 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.

ignored here. See 'Economic Return' below for more discussion of the relationship between IFQ shareholders/transactions and the economics of the commercial fishery (primarily applicable to Gulf of Mexico fisheries).

- **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 variable and 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. Vessel Repair & Maintenance, Insurance and Overhead represent typical fixed costs.
- **Economic Return (on Asset Value)**: The economic return is calculated by dividing the mean Net Revenue from Operations by the mean Vessel Value. For Gulf of Mexico fisheries, it is critical to note that, practically, this return is shared between owners of vessel capital AND IFQ shares. By purposefully ignoring the IFQ shareholder distribution, the focus is on the real productive capacity of the commercial fishery. All IFQ transactions are zero-sum in that they transfer wealth. The catch share management structure of the fishery allows for the realization of resource rents that will, in all likelihood, accrue to the IFQ shareholders.

### **Section: Trip-Level Time Series**

This section provides selected trip-level summary and trip-level economic results for the years 2014, 2015, 2016, 2017, and 2018 (current) and a simple five year average. The definitions and caveats for each result variable are equivalent to and hence reported in the respective trip-level sections. All dollar values are inflation adjusted to nominal 2018 U.S. dollars using the U.S. Bureau of Economic Analysis's Implicit Price Deflator for GDP. Most economic results are expressed as a percent of trip revenue to better facilitate comparison across time. It should be noted that the economic estimates are derived from a sample survey and exhibit significant uncertainty (large confidence intervals). As a result, fluctuating numbers from one year to the next are not necessarily statistically significant and do not necessarily imply that the fishery has changed.

### **Section: Annual, Vessel-Level Time Series**

This section provides selected annual, vessel-level summary and annual, vessel-level economic results for the years 2014, 2015, 2016, 2017, and 2018 (current) and a simple five year average. The definitions and caveats for each result variable are equivalent to and hence reported in the respective annual, vessel-level sections. All dollar values are inflation adjusted to nominal 2018 U.S. dollars using the U.S. Bureau of Economic Analysis's Implicit Price Deflator for GDP. Most economic results are expressed as a percent of annual vessel revenue to better facilitate comparison across time. It should be noted that the economic estimates are derived from a sample survey and exhibit significant uncertainty (large confidence intervals). As a result, fluctuating numbers from one year to the next are not necessarily statistically significant and do not necessarily imply that the fishery has changed.

# Results

## Disclaimer and Overview

All vessel and logbook trip data utilized in this report were pulled from the various databases on December 4, 2020. **The processing of data and the presentation of results are guided by the objective of presenting meaningful economic results within the fishery context. These context numbers will differ from similar numbers generated for stock assessments and other management or research purposes. For instance, there are known reasons why logbook totals ("near census") will deviate from official Annual Catch Limits or quota numbers.<sup>7</sup> Further, the underlying databases are dynamic and continuously changing.** All dollar values are inflation adjusted to nominal 2018 U.S. dollars using the U.S. Bureau of Economic Analysis' Implicit Price Deflator for GDP.

This technical memorandum reports trip and vessel economic estimates for a select number of domains or Segments of Interest (SOI). A SOI is defined as all trips where at least one pound of fish, which matches the specifications of the domain, was landed. The SOIs reported are either specified on species or species group landed or gear-used. Note that the different SOIs in this tech memo are not at all mutually exclusive. In fact, as the majority of trips harvest a large number of different species, most trips will be part of many different SOIs. The SOIs featured in this report include:

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

1. GOM Reef Fish FMP Fishery: All Gears

SOIs based on gear perspective:

2. GOM Reef Fish FMP Fishery: Vertical Line

3. GOM Reef Fish FMP Fishery: Longline

4. GOM Reef Fish FMP Fishery: Diver

SOIs based on management-approach perspective:

5. GOM IFQ Fishery: All Gears

6. GOM Trips without IFQ Catch Fishery: All Gears

SOIs based on species or species group perspective:

7. GOM IFQ Red Snapper Fishery: All Gears

8. GOM IFQ Grouper-Tilefish Fishery: All Gears

9. GOM IFQ Red Grouper Fishery: All Gears

10. GOM IFQ Gag Grouper Fishery: All Gears

11. GOM IFQ OSWG Fishery: All Gears

12. GOM IFQ DWG Fishery: All Gears

13. GOM IFQ Tilefish Fishery: All Gears

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<sup>7</sup>NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

14. GOM Vermilion Snapper Fishery: All Gears
15. GOM Yellowtail Snapper Fishery: All Gears
16. GOM FMP Jacks Fishery: All Gears

The presentation of results is standardized across different SOIs to streamline the results sections. The definitions and caveats for each result variable or graph are only reported in the Methods section in order to keep repetition to a minimum. The results for any one SOI consists of six sections. The first section, Trip-Level Summary, summarizes the SOI at the trip-level- presenting the aggregate, cleaned logbook data for the particular SOI. The second section, Trip-Level Economics, provides estimated SOI trip economic results based on the trip-level sample survey. The third section, Annual, Vessel-Level Summary, provides information on the vessels within the SOI by aggregating across all SOI and non-SOI logbook trip data. The section also presents vessel characteristics and permit status gleaned from each vessel's permit application. The fourth section, Annual, Vessel-Level Economics, provides estimated annual economic results for SOI vessels based on the annual sample survey. The fifth section, Trip-Level Time Series, provides selected trip-level summary and economic results for previous years, side-by-side to the current year results and a five year average. The sixth section, Annual, Vessel-Level Time Series, provides the same temporal perspective for selected annual, vessel-level summary and economic results. In both time series sections, the economic results are expressed as a percent of revenue to better facilitate comparison across time. All dollar values are inflation adjusted to nominal 2018 dollars.

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

The reported SOIs were selected among the many possible ones after an extensive evaluation<sup>8</sup> 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.

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<sup>8</sup>The evaluation is facilitated by the use of a standardized, detailed, 6-page, single year "diagnostic results" product that we generate for any potential SOI.



## SOI: 2018 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 2018 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 15.

### Trip-Level Summary

#### Effort

Trips	5,863
Vessels	525
Days at Sea	25,563
Crew Days	72,586

#### Landings (guttled lbs)

<u>Total</u>	12,823,963
SOI	12,387,938
Non-SOI	436,025
% SOI	97%

#### Percent by Gear

	Trips	SOI lbs
Vertical Line	82%	71%
Longline	12%	28%
Diver	5%	1%
Other	0.5%	0.3%

#### Price (mean)

<u>Total</u>	\$4.30
SOI	\$4.39
Non-SOI	\$1.77

#### Revenue

<u>Total</u>	\$55,175,756
SOI	\$54,404,287
Non-SOI	\$771,469
% SOI	99%

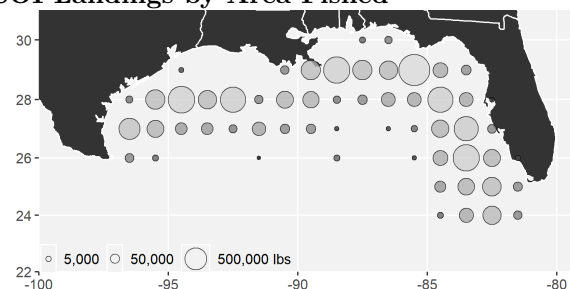
#### Percent of Revenue by Species Group

Shallow Water Groupers	26%
Shallow Water Snappers	4%
Mid-Shelf Snappers	58%
Deep Water Groupers/Tilefish	9%
Grunts/Porgies/Triggerfish	0.9%
Mackerels/Dolphinfish/Jacks	2%
Other Species	0.4%

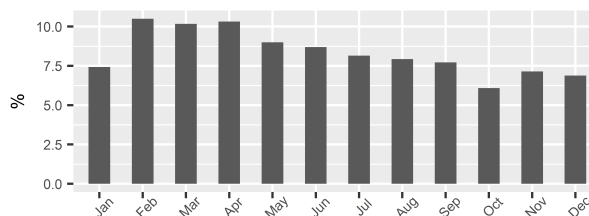
#### Revenue for Top 5 Species

Red Snapper	\$28,130,993
Red Grouper	\$10,542,120
Vermilion Snapper	\$3,729,613
Yellowedge Grouper	\$3,295,016
Gag Grouper	\$2,650,875

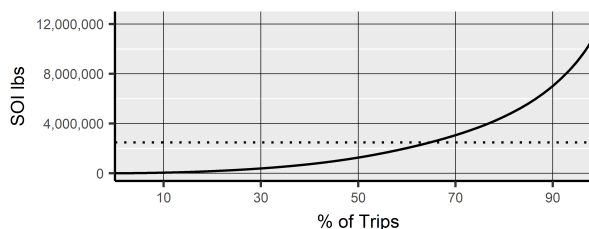
#### SOI Landings by Area Fished



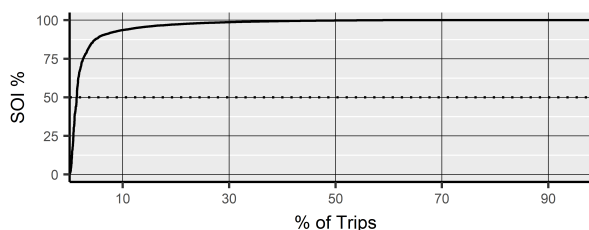
#### Share of SOI Landings by Month



#### Cumulative SOI Landings



#### SOI Share of Revenue Per Trip



#### Trip Descriptive Statistics (N=5,863)

	Mean	Min	Median	Max
Days at Sea	4.4	1	3	23
Crew Size	2.8	1	3	10
Landings	2,187	4	1,149	33,752
Revenue	\$9,411	\$25	\$4,318	\$167,058
SOI	\$9,279	\$1	\$4,151	\$167,041
% SOI	97%	0.2%	99.8%	100%



## SOI: 2018 GOM Reef Fish FMP Fishery: All Gears

### Trip-Level Economics

#### Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	5,863	-	-	-
Selected	1,538	26%	-	-
Responded	1,482	25%	96%	-
Used	1,448	25%	94%	98%

#### Economic Results (n=1,448)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Trip</b>					
Owner-Operated	70%	3.6	64%	75%	-
Days at Sea	4.7	0.3	4.2	5.2	4
Crew Size	2.8	0.1	2.7	2.9	3
Fuel Used	219	17	191	247	150
Landings (gutted lbs)	2,308	193	1,988	2,627	1,233
<b>Total Revenue</b>	10,063	929	8,524	11,601	4,482
<b>Cost</b>					
Fuel	587	44	515	660	407
Bait	390	45	316	465	140
Ice	166	17	138	194	100
Groceries	276	28	229	323	150
Miscellaneous	252	39	188	316	50
Hired Crew	2,400	258	1,972	2,828	896
IFQ Purchase	2,019	307	1,511	2,528	119
OC Owner-Captain Time	714	108	536	893	196
<b>Trip Net Cash Flow*</b>	3,972	543	3,072	4,872	1,608
<b>Trip Net Revenue*</b>	5,277	623	4,245	6,309	1,772

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

Revenue 100%	Trip Net Cash Flow* 39%	Trip Net Revenue* 52%
	IFQ Purchase 20%	Labor - Hired & Owner 31%
	Labor - Hired 24%	
	Fuel & Supplies 17%	Fuel & Supplies 17%

#### Input Prices

Fuel Price (average): \$2.68 per gallon

Hired Crew Wage (implicit): \$244 per crew-day

#### Productivity Measures

Landings/Fuel Use: 10.5 lbs/gallon

Landings/Labor Use: 176 lbs/crew-day

\* See Definitions in Methods Section or Glossary.

# SOI: 2018 GOM Reef Fish FMP Fishery: All Gears

## Annual, Vessel-Level Summary

### Effort

Vessels	525
<u>Trips - Total</u>	<u>6,866</u>
SOI Trips	5,863
Non-SOI Trips	1,003
Days at Sea	27,108
Crew Days	75,839

### Landings (guttled lbs)

<u>Total</u>	<u>13,569,931</u>
SOI	12,387,938
Non-SOI	1,181,994
% SOI	91%

### Percent by Gear

	Trips	Total lbs
Vertical Line	80%	70%
Longline	10%	26%
Diver	6%	1%
Other	3%	2%

### Price (mean)

<u>Total</u>	<u>\$4.22</u>
SOI	\$4.39
Non-SOI	\$2.44

### Revenue

<u>Total</u>	<u>\$57,292,456</u>
SOI	\$54,404,287
Non-SOI	\$2,888,169
% SOI	95%

### Percent of Revenue by Species Group

Shallow Water Groupers	25%
Shallow Water Snappers	5%
Mid-Shelf Snappers	56%
Deep Water Groupers/Tilefish	9%
Grunts/Porgies/Triggerfish	0.9%
Mackerels/Dolphinfish/Jacks	3%
Other Species	0.5%

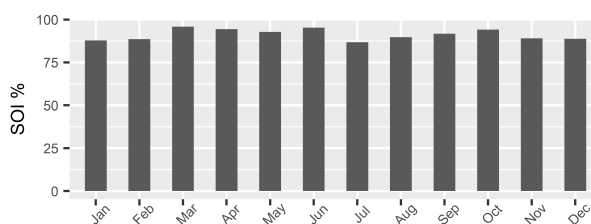
### Revenue for Top 5 Species

Red Snapper	\$28,148,747
Red Grouper	\$10,627,976
Vermilion Snapper	\$3,731,759
Yellowedge Grouper	\$3,327,272
Gag Grouper	\$2,655,726

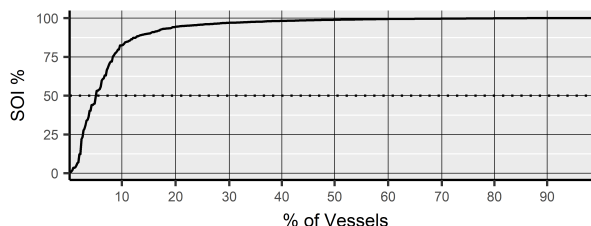
### Annual, Vessel Descriptive Statistics (N=525)

	Mean	Min	Median	Max
Trips	13.1	1	10	163
Days at Sea	51.6	1	32	225
Crew Days	144.5	1	76	927
Landings	25,847	39	9,883	403,969
Revenue	\$109,128	\$198	\$40,679	\$2,066,649
SOI	\$103,627	\$99	\$37,023	\$2,061,600
% SOI	92.7%	0.6%	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	5%
SAT Snapper & Grouper - Limited	0.6%
King Mackerel	37%
Spanish Mackerel	46%
Dolphin-Wahoo	38%
Other Commercial Fishing	17%
For-Hire Fishing	26%

### Vessel Characteristics (N=525)

	Mean	Min	Median	Max
Length	39	14	37	69
Year Built	1989	1961	1986	2018
Horsepower	451	12	400	1,800
Fiberglass Hull	93%	-	-	-
Diesel Engine	76%	-	-	-
Ice Refrigeration	94%	-	-	-

## SOI: 2018 GOM Reef Fish FMP Fishery: All Gears

### Annual, Vessel-Level Economics

#### Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	525	-	-	-
Selected	139	26%	-	-
Responded	114	22%	82%	-
Used	110	21%	79%	96%

#### Economic Results (n=110)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Vessel</b>					
Owner-Operated	70%	4	63%	76%	-
For-Hire Active	15%	3.1	10%	21%	-
Days - Commercial Fishing	61	3.8	54	67	41
Days - For-Hire Fishing	12	3.1	7	17	0
Days - Non-fishing	1	0.3	0	2	0
Vessel Value	107,356	9,578	91,465	123,246	80,000
Has Insurance	34%	4.1	28%	41%	-
<b>Total Revenue</b>	122,959	13,857	99,970	145,949	78,000
Commercial Fishing	111,961	13,560	89,465	134,458	50,064
For-Hire Fishing	10,998	2,943	6,115	15,880	0
<b>Cost</b>					
Fuel	9,942	850	8,531	11,353	7,834
Other Supplies	14,465	1,762	11,543	17,388	6,911
Hired Crew	28,740	4,128	21,891	35,590	6,800
Vessel Repair & Maintenance	13,083	1,589	10,446	15,720	7,057
Insurance	1,367	230	985	1,749	0
Overhead	5,941	842	4,545	7,337	3,000
Loan Payment	1,686	365	1,080	2,292	0
IFQ Purchase	18,495	3,584	12,549	24,442	1,500
OC Owner-Captain Time	8,086	1,057	6,333	9,839	1,764
Depreciation	5,368	479	4,573	6,162	4,000
<b>Net Cash Flow</b>	29,240	8,516	15,111	43,368	5,260
<b>Net Revenue from Operations**</b>	35,967	9,120	20,836	51,098	5,416

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

Revenue 100%	Net Cash Flow 24%	Net Revenue - Operations 29%
	IFQ Purchase 15%	Depreciation 4%
	Loan Payment 1%	Vessel R&M, Insur, Overh 17%
	Vessel R&M, Insur, Overh 17%	Labor - Hired & Owner 30%
	Labor - Hired 23%	Fuel & Supplies 20%
	Fuel & Supplies 20%	

**Economic Return\*\* (on Vessel Asset Value): 33.5%**

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

**SOI: 2018 GOM Reef Fish FMP Fishery: All Gears**  
**Trip-Level Time Series**

Trip-Level Summary		2014	2015	2016	2017	2018***	Average
<b>Effort</b>							
Trips		6,536	6,810	6,974	6,707	5,863	6,578
Vessels		532	522	514	536	525	526
Days at Sea		30,530	30,504	30,947	29,030	25,563	29,315
<b>Landings (gutted lbs)</b>							
Total		16,063,839	16,133,612	15,733,093	14,383,178	12,823,963	15,027,537
SOI		15,182,704	15,404,754	15,037,739	13,771,258	12,387,938	14,356,879
Non-SOI		881,134	728,859	695,354	611,920	436,025	670,658
% SOI		95%	95%	96%	96%	97%	96%
<b>Price (mean)</b>							
Total		\$3.99	\$4.12	\$4.13	\$4.12	\$4.30	\$4.13
SOI		\$4.12	\$4.23	\$4.25	\$4.23	\$4.39	\$4.24
Non-SOI		\$1.69	\$1.78	\$1.75	\$1.78	\$1.77	\$1.75
<b>Revenue</b>							
Total		\$64,074,770	\$66,444,948	\$65,039,530	\$59,265,898	\$55,175,756	\$62,000,180
SOI		\$62,584,568	\$65,147,663	\$63,818,461	\$58,176,892	\$54,404,287	\$60,826,374
Non-SOI		\$1,490,203	\$1,297,284	\$1,221,069	\$1,089,006	\$771,469	\$1,173,806
% SOI		98%	98%	98%	98%	99%	98%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data, provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM Reef Fish FMP Fishery: All Gears**  
**Trip-Level Time Series**

<b>Trip-Level Economics</b>		<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Average</b>
Number of Observations		1,237	1,787	1,955	1,943	1,448	
Response Rate (%)		78%	85%	94%	95%	94%	
<b>SOI Trip</b>							
Owner-Operated		73%	65%	68%	61%	70%	67.4%
Fuel Used per Day at Sea (gallons/day)		46	46	40	49	46	45
<b>Total Revenue</b>		100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>							
Fuel		6.8%	4.9%	4.3%	5.1%	5.8%	5.4%
Bait		3.1%	3.4%	3.6%	4.1%	3.9%	3.6%
Ice		1.4%	1.5%	1.7%	1.6%	1.6%	1.6%
Groceries		2.4%	2.4%	3.1%	3.2%	2.7%	2.8%
Miscellaneous		2.5%	2.4%	3%	2.5%	2.5%	2.6%
Hired Crew		28.2%	25.9%	27%	27.6%	23.8%	26.5%
IFQ Purchase		14.6%	26.5%	18.5%	19.1%	20.1%	19.8%
OC Owner-Captain Time		6.5%	6.2%	7.4%	6.4%	7.1%	6.7%
<b>Trip Net Cash Flow*</b>		41%	33%	38.8%	36.8%	39%	37.7%
<b>Trip Net Revenue*</b>		49.2%	53.2%	49.8%	49.5%	52%	50.7%
Labor - Hired & Owner		34.7%	32.1%	34.4%	33.9%	31%	33.2%
Fuel & Supplies		16.1%	14.7%	15.7%	16.6%	17%	16%
<b>Input Prices</b>							
Fuel Price (per gallon)		\$3.67	\$2.64	\$2.13	\$2.34	\$2.68	\$2.69
Hire Crew Wage (per crew-day)		\$343	\$291	\$261	\$297	\$244	\$287
<b>Productivity Measures</b>							
Landings/Fuel Use (lbs/gallon)		13.3	12.6	11.4	10.7	10.5	12
Landings/Labor Use (lbs/crew-day)		221	204	169	196	176	193

\* See Definitions in Methods Section or Glossary.

**SOI: 2018 GOM Reef Fish FMP Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

**Annual, Vessel-Level Summary**

	2014	2015	2016	2017	2018***	Average
<b>Effort</b>						
Vessels	532	522	514	536	525	526
Trips - Total	8,015	7,964	8,411	7,971	6,866	7,845
SOI Trips	6,536	6,810	6,974	6,707	5,863	6,578
Non-SOI Trips	1,479	1,154	1,437	1,264	1,003	1,267
Days at Sea	32,899	32,594	33,268	31,020	27,108	31,378
<b>Landings (gutted lbs)</b>						
Total	17,206,189	17,165,828	17,050,925	15,651,307	13,569,931	16,128,836
SOI	15,182,704	15,404,754	15,037,739	13,771,258	12,387,938	14,356,879
Non-SOI	2,023,485	1,761,074	2,013,186	1,880,049	1,181,994	1,771,958
% SOI	88%	90%	88%	88%	91%	89%
<b>Revenue</b>						
Total	\$67,111,246	\$69,094,747	\$68,295,379	\$62,565,636	\$57,292,456	\$64,871,893
SOI	\$62,584,568	\$65,147,663	\$63,818,461	\$58,176,892	\$54,404,287	\$60,826,374
Non-SOI	\$4,526,679	\$3,947,083	\$4,476,918	\$4,388,744	\$2,888,169	\$4,045,519
% SOI	93%	94%	93%	93%	95%	94%
<b>Vessel Characteristics</b>						
Length	39	38	38	39	39	39
Year Built	1987	1987	1987	1987	1989	1987
For-Hire Fishing Permit	24%	24%	23%	24%	26%	24%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM Reef Fish FMP Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

Annual, Vessel-Level Economics		2014	2015	2016	2017	2018	Average
Number of Observations		84	105	121	132	110	
Response Rate (%)		62%	75%	82%	78%	79%	
<b>SOI Vessel</b>							
Owner-Operated		78%	69%	78%	65%	70%	72%
For-Hire Active		9%	17%	16%	22%	15%	16%
Vessel Value		\$125,554	\$106,703	\$89,381	\$113,690	\$107,356	\$108,537
<b>Total Revenue</b>		100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>							
Fuel		8.4%	6.1%	6.7%	6.8%	8.1%	7.2%
Other Supplies		9.6%	9.4%	10.8%	11%	11.8%	10.5%
Hired Crew		26.9%	25.3%	24.5%	25.3%	23.4%	25.1%
Vessel Repair & Maintenance		7.7%	6.9%	8.5%	11.2%	10.6%	9%
Insurance		1.1%	0.8%	1%	1.2%	1.1%	1%
Overhead		5.6%	5.5%	5.1%	6.5%	4.8%	5.5%
Loan Payment		1%	1.4%	1.3%	1.3%	1.4%	1.3%
IFQ Purchase		11.1%	24.1%	14%	10.6%	15%	15%
OC Owner-Captain Time		5.6%	5.4%	6.6%	5.5%	6.6%	5.9%
<b>Net Cash Flow</b>		28.6%	20.6%	28.1%	26%	24%	25.5%
<b>Net Revenue for Operations**</b>							
Depreciation		31.4%	37.6%	33.5%	28.4%	29%	32%
Vessel R&M, Insur, Overh		3.7%	3.1%	3.2%	4%	4.4%	3.7%
Labor - Hired & Owner		14.3%	13.2%	14.7%	18.9%	17%	15.6%
Fuel & Supplies		32.6%	30.7%	31.1%	30.9%	30%	31.1%
<b>Economic Return** (on asset value)</b>		42.1%	60.2%	51.8%	35.8%	33.5%	44.7%

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

## SOI: 2018 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 2018 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 15.

### Trip-Level Summary

#### Effort

Trips	4,850
Vessels	443
Days at Sea	16,703
Crew Days	43,972

#### Landings (guttled lbs)

<u>Total</u>	9,106,478
SOI	8,747,906
Non-SOI	358,572
% SOI	96%

#### Percent by Gear

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

#### Price (mean)

<u>Total</u>	\$4.23
SOI	\$4.33
Non-SOI	\$1.93

#### Revenue

<u>Total</u>	\$38,560,611
SOI	\$37,868,613
Non-SOI	\$691,998
% SOI	98%

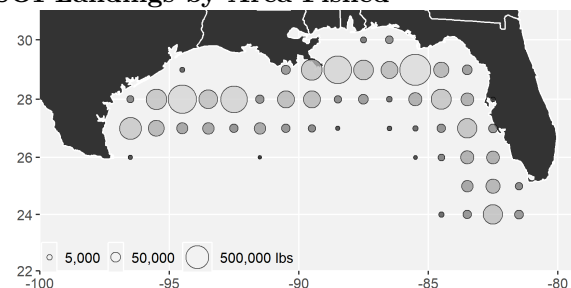
#### Percent of Revenue by Species Group

Shallow Water Groupers	13%
Shallow Water Snappers	4%
Mid-Shelf Snappers	79%
Deep Water Groupers/Tilefish	0.8%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	2%
Other Species	0.3%

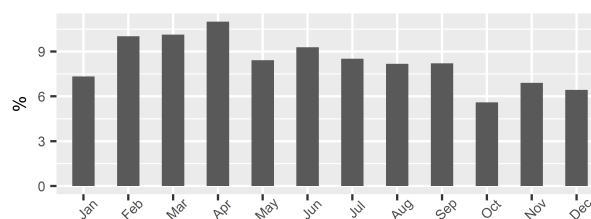
#### Revenue for Top 5 Species

Red Snapper	\$26,595,548
Vermilion Snapper	\$3,715,571
Red Grouper	\$2,936,566
Gag Grouper	\$1,511,244
Yellowtail Snapper	\$1,335,914

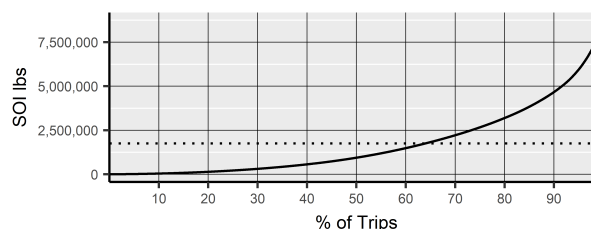
#### SOI Landings by Area Fished



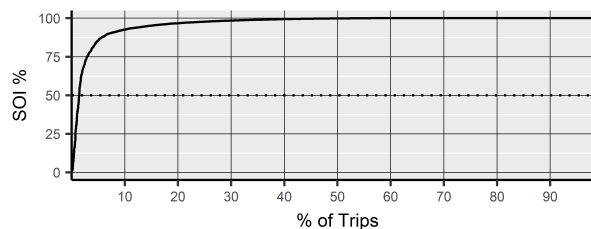
#### Share of SOI Landings by Month



#### Cumulative SOI Landings



#### SOI Share of Revenue Per Trip



#### Trip Descriptive Statistics (N=4,850)

	Mean	Min	Median	Max
Days at Sea	3.4	1	3	19
Crew Size	2.7	1	2	10
Landings	1,878	4	1,002	33,752
Revenue	\$7,951	\$25	\$3,651	\$167,058
SOI	\$7,808	\$1	\$3,575	\$167,041
% SOI	97%	0.1%	99.8%	100%



## SOI: 2018 GOM Reef Fish FMP Fishery: Vertical Line

### Trip-Level Economics

#### Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	4,850	-	-	-
Selected	1,199	25%	-	-
Responded	1,161	24%	97%	-
Used	1,134	23%	95%	98%

#### Economic Results (n=1,134)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Trip</b>					
Owner-Operated	74%	3.7	68%	80%	-
Days at Sea	3.9	0.2	3.4	4.3	3
Crew Size	2.7	0.1	2.6	2.8	2
Fuel Used	165	12	146	184	140
Landings (gutted lbs)	2,011	195	1,688	2,335	1,122
<b>Total Revenue</b>	<b>8,586</b>	<b>940</b>	<b>7,028</b>	<b>10,145</b>	<b>4,131</b>
<b>Cost</b>					
Fuel	437	28	391	483	371
Bait	248	24	208	287	130
Ice	123	13	102	144	96
Groceries	177	16	151	203	125
Miscellaneous	156	26	113	199	40
Hired Crew	1,876	221	1,509	2,242	800
IFQ Purchase	1,976	356	1,385	2,567	31
OC Owner-Captain Time	670	117	477	864	200
<b>Trip Net Cash Flow*</b>	<b>3,594</b>	<b>634</b>	<b>2,541</b>	<b>4,646</b>	<b>1,393</b>
<b>Trip Net Revenue*</b>	<b>4,899</b>	<b>713</b>	<b>3,716</b>	<b>6,082</b>	<b>1,572</b>

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

Revenue 100%	Trip Net Cash Flow* 42%	Trip Net Revenue* 57%
	IFQ Purchase 23%	
	Labor - Hired 22%	Labor - Hired & Owner 30%
	Fuel & Supplies 13%	Fuel & Supplies 13%

#### Input Prices

Fuel Price (average): \$2.65 per gallon

Hired Crew Wage (implicit): \$248 per crew-day

#### Productivity Measures

Landings/Fuel Use: 12.2 lbs/gallon

Landings/Labor Use: 193 lbs/crew-day

\* See Definitions in Methods Section or Glossary.

# SOI: 2018 GOM Reef Fish FMP Fishery: Vertical Line

## Annual, Vessel-Level Summary

### Effort

Vessels	443
<u>Trips - Total</u>	<u>5,937</u>
SOI Trips	4,850
Non-SOI Trips	1,087
Days at Sea	18,900
Crew Days	49,383

### Landings (guttled lbs)

<u>Total</u>	<u>10,121,095</u>
SOI	8,747,906
Non-SOI	1,373,189
% SOI	86%

### Percent by Gear

	Trips	Total lbs
Vertical Line	93%	94%
Longline	0.9%	2%
Diver	2%	1%
Other	4%	3%

### Price (mean)

<u>Total</u>	<u>\$4.13</u>
SOI	\$4.33
Non-SOI	\$2.87

### Revenue

<u>Total</u>	<u>\$41,806,278</u>
SOI	\$37,868,613
Non-SOI	\$3,937,665
% SOI	91%

### Percent of Revenue by Species Group

Shallow Water Groupers	13%
Shallow Water Snappers	6%
Mid-Shelf Snappers	74%
Deep Water Groupers/Tilefish	1%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	4%
Other Species	0.4%

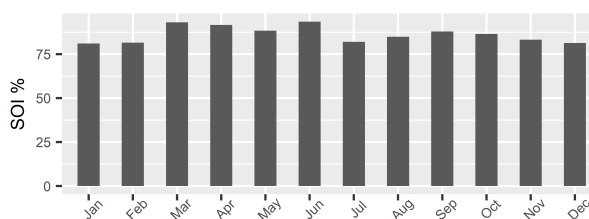
### Revenue for Top 5 Species

Red Snapper	\$26,850,757
Vermilion Snapper	\$3,719,612
Red Grouper	\$3,382,920
Yellowtail Snapper	\$1,875,850
Gag Grouper	\$1,754,051

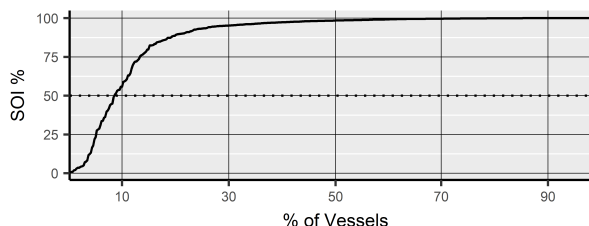
### Annual, Vessel Descriptive Statistics (N=443)

	Mean	Min	Median	Max
Trips	13.4	1	10	163
Days at Sea	42.7	1	27	218
Crew Days	111.5	1	62	601
Landings	22,847	39	7,991	403,969
Revenue	\$94,371	\$198	\$32,985	\$2,066,649
SOI	\$85,482	\$99	\$26,679	\$2,039,701
% SOI	88.9%	0.6%	98.5%	100%

### SOI Share of Monthly Landings



### SOI Share of Revenue Per Vessel



### Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	5%
SAT Snapper & Grouper - Limited	0.7%
King Mackerel	44%
Spanish Mackerel	49%
Dolphin-Wahoo	37%
Other Commercial Fishing	13%
For-Hire Fishing	30%

### Vessel Characteristics (N=443)

	Mean	Min	Median	Max
Length	38	14	36	69
Year Built	1989	1961	1987	2018
Horsepower	470	12	420	1,800
Fiberglass Hull	94%	-	-	-
Diesel Engine	74%	-	-	-
Ice Refrigeration	93%	-	-	-

## SOI: 2018 GOM Reef Fish FMP Fishery: Vertical Line

### Annual, Vessel-Level Economics

#### Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	443	-	-	-
Selected	115	26%	-	-
Responded	94	21%	82%	-
Used	92	21%	80%	98%

#### Economic Results (n=92)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Vessel</b>					
Owner-Operated	72%	4.3	65%	79%	-
For-Hire Active	19%	3.8	13%	26%	-
Days - Commercial Fishing	51	3.5	45	57	29
Days - For-Hire Fishing	15	3.8	9	22	0
Days - Non-fishing	1	0.4	0	2	0
Vessel Value	102,115	9,895	85,669	118,560	80,000
Has Insurance	39%	4.7	31%	47%	-
<b>Total Revenue</b>	109,498	15,030	84,518	134,477	61,000
Commercial Fishing	95,573	14,494	71,484	119,662	35,237
For-Hire Fishing	13,925	3,686	7,798	20,052	0
<b>Cost</b>					
Fuel	9,219	949	7,643	10,796	6,440
Other Supplies	11,163	1,687	8,358	13,968	5,500
Hired Crew	24,508	4,424	17,155	31,861	6,220
Vessel Repair & Maintenance	12,633	1,826	9,598	15,668	6,900
Insurance	1,545	269	1,098	1,993	0
Overhead	6,317	1,054	4,566	8,068	3,000
Loan Payment	1,842	425	1,136	2,549	0
IFQ Purchase	17,022	3,979	10,409	23,635	600
OC Owner-Captain Time	7,751	1,043	6,017	9,485	1,750
Depreciation	5,106	495	4,283	5,928	4,000
<b>Net Cash Flow</b>	25,248	9,644	9,219	41,277	2,732
<b>Net Revenue from Operations**</b>	31,256	10,306	14,128	48,384	2,005

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

Revenue 100%	Net Cash Flow 23%	Net Revenue - Operations 29%
	IFQ Purchase 16%	Depreciation 5%
	Loan Payment 2%	Vessel R&M, Insur, Overh 19%
	Vessel R&M, Insur, Overh 19%	Labor - Hired & Owner 29%
	Labor - Hired 22%	Fuel & Supplies 19%
	Fuel & Supplies 19%	Fuel & Supplies 19%

**Economic Return\*\* (on Vessel Asset Value): 30.6%**

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

**SOI: 2018 GOM Reef Fish FMP Fishery: Vertical Line  
Trip-Level Time Series**

Trip-Level Summary		2014	2015	2016	2017	2018***	Average
<b>Effort</b>							
Trips		5,440	5,676	5,724	5,562	4,850	5,450
Vessels		456	443	430	450	443	444
Days at Sea		21,804	21,185	20,712	19,160	16,703	19,913
<b>Landings (guttled lbs)</b>							
Total		10,343,528	10,954,696	10,248,413	10,044,172	9,106,478	10,139,457
SOI		9,542,972	10,330,952	9,689,003	9,554,044	8,747,906	9,572,975
Non-SOI		800,556	623,743	559,409	490,128	358,572	566,482
% SOI		92%	94%	95%	95%	96%	94%
<b>Price (mean)</b>							
Total		\$3.96	\$4.09	\$4.08	\$4.08	\$4.23	\$4.09
SOI		\$4.14	\$4.23	\$4.21	\$4.19	\$4.33	\$4.22
Non-SOI		\$1.78	\$1.81	\$1.75	\$1.86	\$1.93	\$1.83
<b>Revenue</b>							
Total		\$40,975,513	\$44,803,077	\$41,843,014	\$40,893,491	\$38,560,611	\$41,415,141
SOI		\$39,555,628	\$43,669,863	\$40,861,779	\$39,981,008	\$37,868,613	\$40,387,378
Non-SOI		\$1,419,886	\$1,133,214	\$981,235	\$912,483	\$691,998	\$1,027,763
% SOI		97%	97%	98%	98%	98%	98%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM Reef Fish FMP Fishery: Vertical Line  
Trip-Level Time Series**

<b>Trip-Level Economics</b>		<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Average</b>
Number of Observations		1,033	1,510	1,568	1,555	1,134	
Response Rate (%)		80%	85%	94%	96%	95%	
<b>SOI Trip</b>							
Owner-Operated		79%	69%	72%	67%	74%	72.2%
Fuel Used per Day at Sea (gallons/day)		41	44	38	49	43	43
<b>Total Revenue</b>		100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>							
Fuel		6.8%	4.6%	4.5%	4.7%	5.1%	5.1%
Bait		2.5%	2.9%	2.9%	3.2%	2.9%	2.9%
Ice		1.4%	1.4%	1.7%	1.4%	1.4%	1.5%
Groceries		1.9%	1.9%	2.8%	2.2%	2.1%	2.2%
Miscellaneous		2.6%	2.2%	2.6%	2.2%	1.8%	2.3%
Hired Crew		25%	23.6%	24.9%	25.9%	21.8%	24.2%
IFQ Purchase		17.4%	30.2%	20.2%	23.9%	23%	22.9%
OC Owner-Captain Time		8.7%	7%	8.9%	8.1%	7.8%	8.1%
<b>Trip Net Cash Flow*</b>		42.3%	33.3%	40.4%	36.4%	42%	38.9%
<b>Trip Net Revenue*</b>							
Labor - Hired & Owner		51.1%	56.4%	51.7%	52.2%	57%	53.7%
Fuel & Supplies		33.7%	30.6%	33.8%	34.1%	30%	32.4%
		15.2%	13%	14.6%	13.8%	13%	13.9%
<b>Input Prices</b>							
Fuel Price (per gallon)		\$3.70	\$2.64	\$2.14	\$2.38	\$2.65	\$2.70
Hire Crew Wage (per crew-day)		\$309	\$289	\$240	\$334	\$248	\$284
<b>Productivity Measures</b>							
Landings/Fuel Use (lbs/gallon)		13.3	13.3	11.2	11.8	12.2	12
Landings/Labor Use (lbs/crew-day)		210	214	164	224	193	201

\* See Definitions in Methods Section or Glossary.

**SOI: 2018 GOM Reef Fish FMP Fishery: Vertical Line  
Annual, Vessel-Level Time Series**

Annual, Vessel-Level Summary						
	2014	2015	2016	2017	2018***	Average
<b>Effort</b>						
Vessels	456	443	430	450	443	444
Trips - Total	6,981	6,991	7,265	6,970	5,937	6,829
SOI Trips	5,440	5,676	5,724	5,562	4,850	5,450
Non-SOI Trips	1,541	1,315	1,541	1,408	1,087	1,378
Days at Sea	25,207	24,032	23,639	22,066	18,900	22,769
<b>Landings (gutted lbs)</b>						
Total	12,072,716	12,410,911	11,944,304	11,646,143	10,121,095	11,639,034
SOI	9,542,972	10,330,952	9,689,003	9,554,044	8,747,906	9,572,975
Non-SOI	2,529,744	2,079,959	2,255,301	2,092,100	1,373,189	2,066,059
% SOI	79%	83%	81%	82%	86%	82%
<b>Revenue</b>						
Total	\$46,409,507	\$49,203,267	\$46,679,517	\$45,624,393	\$41,806,278	\$45,944,592
SOI	\$39,555,628	\$43,669,863	\$40,861,779	\$39,981,008	\$37,868,613	\$40,387,378
Non-SOI	\$6,853,880	\$5,533,404	\$5,817,739	\$5,643,385	\$3,937,665	\$5,557,215
% SOI	85%	89%	88%	88%	91%	88%
<b>Vessel Characteristics</b>						
Length	38	38	37	38	38	38
Year Built	1987	1987	1988	1988	1989	1988
For-Hire Fishing Permit	27%	26%	27%	27%	30%	27%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM Reef Fish FMP Fishery: Vertical Line  
Annual, Vessel-Level Time Series**

Annual, Vessel-Level Economics						
	2014	2015	2016	2017	2018	Average
Number of Observations	69	92	98	109	92	
Response Rate (%)	62%	76%	81%	80%	80%	
<b>SOI Vessel</b>						
Owner-Operated	81%	74%	83%	73%	72%	77%
For-Hire Active	9%	20%	19%	24%	19%	18%
Vessel Value	\$98,913	\$102,845	\$90,339	\$105,475	\$102,115	\$99,937
<b>Total Revenue</b>	100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>						
Fuel	8.8%	6.1%	7.7%	7.4%	8.4%	7.7%
Other Supplies	9.1%	8.9%	10.3%	9.1%	10.2%	9.5%
Hired Crew	21.8%	24.7%	21.4%	24%	22.4%	22.9%
Vessel Repair & Maintenance	8.7%	7.3%	8.8%	11.5%	11.5%	9.6%
Insurance	1.2%	0.9%	1.2%	1.6%	1.4%	1.3%
Overhead	6.1%	5.4%	5.7%	8.2%	5.8%	6.2%
Loan Payment	1.2%	1.7%	1.8%	1.8%	1.7%	1.6%
IFQ Purchase	11.9%	26.7%	12.9%	11.4%	15.5%	15.7%
OC Owner-Captain Time	7.1%	6%	7.3%	7.1%	7.1%	6.9%
<b>Net Cash Flow</b>	31.3%	18.2%	30.3%	25.1%	23%	25.6%
<b>Net Revenue for Operations**</b>	33.6%	37.3%	33.9%	26.8%	29%	32.1%
Depreciation	3.6%	3.3%	3.8%	4.4%	4.7%	4%
Vessel R&M, Insur, Overh	16%	13.7%	15.7%	21.3%	19%	17.1%
Labor - Hired & Owner	28.9%	30.7%	28.6%	31.1%	29%	29.7%
Fuel & Supplies	17.8%	14.9%	18%	16.4%	19%	17.2%
<b>Economic Return** (on asset value)</b>	46.1%	56.7%	45.1%	30.6%	30.6%	41.8%

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

## SOI: 2018 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 2018 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; leading to spurious year to year fluctuations. For important **disclaimer**, see page 15.

### Trip-Level Summary

#### Effort

Trips	702
Vessels	70
Days at Sea	8,346
Crew Days	27,327

#### Landings (guttled lbs)

<u>Total</u>	3,544,152
SOI	3,435,917
Non-SOI	108,235
% SOI	97%

#### Percent by Gear

	Trips	SOI lbs
Vertical Line	0.4%	0%
Longline	100%	100%
Diver	0%	0%
Other	0%	0%

#### Price (mean)

<u>Total</u>	\$4.53
SOI	\$4.58
Non-SOI	\$2.82

#### Revenue

<u>Total</u>	\$16,052,616
SOI	\$15,747,912
Non-SOI	\$304,704
% SOI	98%

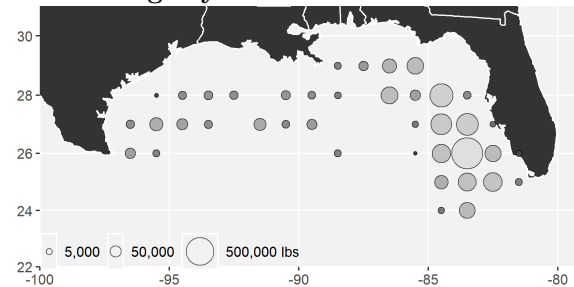
#### Percent of Revenue by Species Group

Shallow Water Groupers	55%
Shallow Water Snappers	2%
Mid-Shelf Snappers	11%
Deep Water Groupers/Tilefish	31%
Grunts/Porgies/Triggerfish	0.4%
Mackerels/Dolphinfish/Jacks	0.3%
Other Species	0.3%

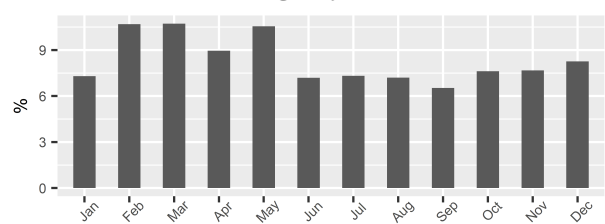
#### Revenue for Top 5 Species

Red Grouper	\$7,459,345
Yellowedge Grouper	\$3,243,645
Red Snapper	\$1,651,290
Gag Grouper	\$907,583
Tilefish	\$882,108

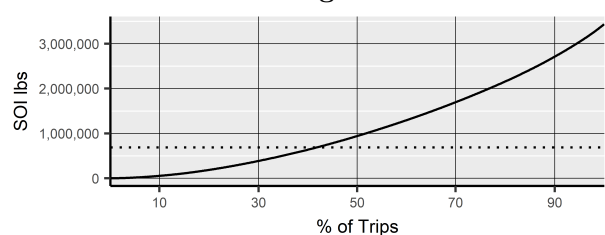
#### SOI Landings by Area Fished



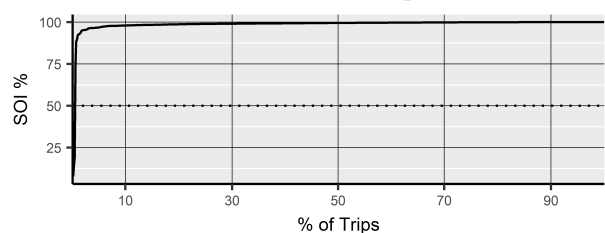
#### Share of SOI Landings by Month



#### Cumulative SOI Landings



#### SOI Share of Revenue Per Trip



#### Trip Descriptive Statistics (N=702)

	Mean	Min	Median	Max
Days at Sea	11.9	1	12	23
Crew Size	3.2	1	3	6
Landings	5,049	21	4,852	19,238
Revenue	\$22,867	\$95	\$21,878	\$99,507
SOI	\$22,433	\$95	\$21,625	\$75,830
% SOI	99%	7.9%	99.5%	100%



## SOI: 2018 GOM Reef Fish FMP Fishery: Longline

### Trip-Level Economics

#### Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	702	-	-	-
Selected	210	30%	-	-
Responded	197	28%	94%	-
Used	192	27%	91%	97%

#### Economic Results (n=192)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Trip</b>					
Owner-Operated	27%	8.6	12%	42%	-
Days at Sea	11.9	0.5	10.9	12.8	11
Crew Size	3.2	0.1	3	3.5	3
Fuel Used	620	41	548	692	612
Landings (gutted lbs)	5,054	437	4,299	5,810	4,879
<b>Total Revenue</b>	<b>23,575</b>	<b>2,059</b>	<b>20,014</b>	<b>27,135</b>	<b>21,952</b>
<b>Cost</b>					
Fuel	1,668	110	1,477	1,859	1,647
Bait	1,530	120	1,322	1,738	1,539
Ice	515	42	442	587	528
Groceries	1,029	58	928	1,130	1,000
Miscellaneous	951	170	657	1,244	500
Hired Crew	6,606	831	5,169	8,044	5,318
IFQ Purchase	3,523	534	2,599	4,447	2,473
OC Owner-Captain Time	1,178	344	583	1,773	0
<b>Trip Net Cash Flow*</b>	<b>7,754</b>	<b>818</b>	<b>6,338</b>	<b>9,169</b>	<b>7,281</b>
<b>Trip Net Revenue*</b>	<b>10,098</b>	<b>1,034</b>	<b>8,311</b>	<b>11,885</b>	<b>9,300</b>

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

Revenue 100%	Trip Net Cash Flow* 33%	Trip Net Revenue* 43%
	IFQ Purchase 15%	
	Labor - Hired 28%	Labor - Hired & Owner 33%
	Fuel & Supplies 24%	Fuel & Supplies 24%

#### Input Prices

Fuel Price (average): \$2.69 per gallon

Hired Crew Wage (implicit): \$188 per crew-day

#### Productivity Measures

Landings/Fuel Use: 8.1 lbs/gallon

Landings/Labor Use: 132 lbs/crew-day

\* See Definitions in Methods Section or Glossary.

# SOI: 2018 GOM Reef Fish FMP Fishery: Longline

## Annual, Vessel-Level Summary

### Effort

Vessels	70
<u>Trips - Total</u>	<u>755</u>
SOI Trips	702
Non-SOI Trips	53
Days at Sea	8,775
Crew Days	28,644

### Landings (guttled lbs)

<u>Total</u>	<u>3,992,711</u>
SOI	3,435,917
Non-SOI	556,794
% SOI	86%

### Percent by Gear

	Trips	Total lbs
Vertical Line	5%	11%
Longline	94%	89%
Diver	0%	0%
Other	0.4%	0.1%

### Price (mean)

<u>Total</u>	<u>\$4.58</u>
SOI	\$4.58
Non-SOI	\$4.55

### Revenue

<u>Total</u>	<u>\$18,279,565</u>
SOI	\$15,747,912
Non-SOI	\$2,531,653
% SOI	86%

### Percent of Revenue by Species Group

Shallow Water Groupers	49%
Shallow Water Snappers	2%
Mid-Shelf Snappers	20%
Deep Water Groupers/Tilefish	27%
Grunts/Porgies/Triggerfish	0.3%
Mackerels/Dolphinfish/Jacks	0.3%
Other Species	0.4%

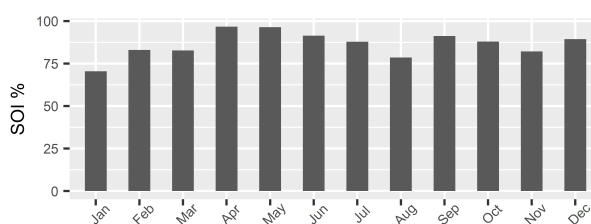
### Revenue for Top 5 Species

Red Grouper	\$7,620,546
Red Snapper	\$3,563,256
Yellowedge Grouper	\$3,267,216
Gag Grouper	\$921,111
Tilefish	\$895,214

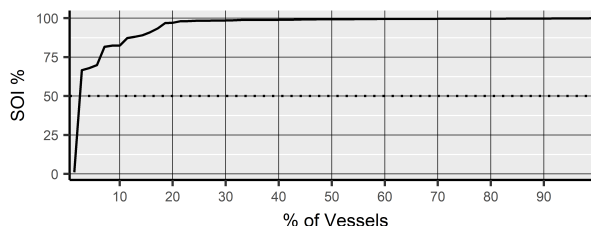
### Annual, Vessel Descriptive Statistics (N=70)

	Mean	Min	Median	Max
Trips	10.8	1	11	21
Days at Sea	125.4	10	132	225
Crew Days	409.2	40	400	927
Landings	57,039	2,605	46,700	403,969
Revenue	\$261,137	\$12,848	\$216,272	\$2,066,649
SOI	\$224,970	\$12,833	\$212,711	\$668,352
% SOI	95.1%	1.1%	99.3%	100%

### SOI Share of Monthly Landings



### SOI Share of Revenue Per Vessel



### Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	1%
SAT Snapper & Grouper - Limited	0%
King Mackerel	7%
Spanish Mackerel	33%
Dolphin-Wahoo	46%
Other Commercial Fishing	43%
For-Hire Fishing	3%

### Vessel Characteristics (N=70)

	Mean	Min	Median	Max
Length	47	32	47	69
Year Built	1981	1967	1980	2012
Horsepower	335	76	287.5	1,250
Fiberglass Hull	89%	-	-	-
Diesel Engine	100%	-	-	-
Ice Refrigeration	100%	-	-	-

## SOI: 2018 GOM Reef Fish FMP Fishery: Longline

### Annual, Vessel-Level Economics

#### Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	70	-	-	-
Selected	21	30%	-	-
Responded	17	24%	81%	-
Used	15	21%	71%	88%

#### Economic Results (n=15)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Vessel</b>					
Owner-Operated	40%	11.6	20%	60%	-
For-Hire Active	0%	0	0%	0%	-
Days - Commercial Fishing	141	10.8	122	160	148
Days - For-Hire Fishing	0	0	0	0	0
Days - Non-fishing	0	0	0	0	0
Vessel Value	158,333	40,534	86,940	229,727	90,000
Has Insurance	7%	5.9	-4%	17%	-
<b>Total Revenue</b>	233,237	30,016	180,369	286,105	187,826
Commercial Fishing	233,237	30,016	180,369	286,105	187,826
For-Hire Fishing	0	0	0	0	0
<b>Cost</b>					
Fuel	18,218	2,491	13,830	22,605	17,297
Other Supplies	39,243	5,690	29,221	49,264	29,175
Hired Crew	60,480	10,749	41,548	79,412	50,586
Vessel Repair & Maintenance	17,868	3,707	11,339	24,396	12,262
Insurance	380	337	-213	973	0
Overhead	5,111	968	3,407	6,815	5,800
Loan Payment	295	262	-166	756	0
IFQ Purchase	31,122	7,590	17,753	44,491	20,655
OC Owner-Captain Time	11,272	4,653	3,077	19,467	0
Depreciation	7,917	2,027	4,347	11,486	4,500
<b>Net Cash Flow</b>	60,521	13,159	37,344	83,698	50,900
<b>Net Revenue from Operations**</b>	72,750	16,112	44,371	101,128	54,020

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

Revenue 100%	Net Cash Flow 26%	Net Revenue - Operations 31%
	IFQ Purchase 13%	Depreciation 3%
	Loan Payment 0%	Vessel R&M, Insur, Overh 10%
	Vessel R&M, Insur, Overh 10%	Labor - Hired & Owner 31%
	Labor - Hired 26%	Fuel & Supplies 25%
	Fuel & Supplies 25%	

**Economic Return\*\* (on Vessel Asset Value): 45.9%**

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

**SOI: 2018 GOM Reef Fish FMP Fishery: Longline**  
**Trip-Level Time Series**

Trip-Level Summary		2014	2015	2016	2017	2018***	Average
<b>Effort</b>							
Trips		726	736	822	779	702	753
Vessels		66	64	72	74	70	69
Days at Sea		7,883	8,556	9,333	9,282	8,346	8,680
<b>Landings (guttled lbs)</b>							
Total		5,415,610	4,924,878	5,225,111	4,154,046	3,544,152	4,652,759
SOI		5,308,281	4,811,999	5,099,482	4,025,359	3,435,917	4,536,208
Non-SOI		107,329	112,879	125,629	128,686	108,235	116,552
% SOI		98%	98%	98%	97%	97%	98%
<b>Price (mean)</b>							
Total		\$4.04	\$4.20	\$4.24	\$4.26	\$4.53	\$4.25
SOI		\$4.09	\$4.25	\$4.30	\$4.34	\$4.58	\$4.31
Non-SOI		\$1.90	\$2.17	\$1.88	\$1.82	\$2.82	\$2.12
<b>Revenue</b>							
Total		\$21,917,706	\$20,667,913	\$22,151,280	\$17,706,091	\$16,052,616	\$19,699,121
SOI		\$21,713,461	\$20,422,282	\$21,915,863	\$17,471,836	\$15,747,912	\$19,454,271
Non-SOI		\$204,245	\$245,631	\$235,417	\$234,255	\$304,704	\$244,850
% SOI		99%	99%	99%	99%	98%	99%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data, provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM Reef Fish FMP Fishery: Longline**  
**Trip-Level Time Series**

<b>Trip-Level Economics</b>		<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Average</b>
Number of Observations		151	140	223	273	192	
Response Rate (%)		68%	79%	88%	88%	91%	
<b>SOI Trip</b>							
Owner-Operated		22%	15%	32%	17%	27%	22.6%
Fuel Used per Day at Sea (gallons/day)		55	49	44	48	52	50
<b>Total Revenue</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Costs (% of Revenue)</b>							
Fuel		6.3%	5.1%	3.7%	5.7%	7.1%	5.6%
Bait		4.1%	5.5%	5.1%	5.8%	6.5%	5.4%
Ice		1.6%	1.8%	1.6%	2%	2.2%	1.8%
Groceries		3.3%	3.9%	3.8%	5%	4.4%	4.1%
Miscellaneous		2.2%	3.1%	3.6%	3.1%	4%	3.2%
Hired Crew		33%	32.8%	31.1%	30.7%	28%	31.1%
IFQ Purchase		9.8%	16%	15.9%	9.6%	14.9%	13.2%
OC Owner-Captain Time		2.3%	2.8%	4%	2.5%	5%	3.3%
<b>Trip Net Cash Flow*</b>		<b>39.6%</b>	<b>31.9%</b>	<b>35%</b>	<b>38.1%</b>	<b>33%</b>	<b>35.5%</b>
<b>Trip Net Revenue*</b>							
Labor - Hired & Owner		47.1%	45%	46.9%	45.2%	43%	45.4%
Fuel & Supplies		35.3%	35.6%	35.1%	33.2%	33%	34.4%
		17.5%	19.4%	17.9%	21.6%	24%	20.1%
<b>Input Prices</b>							
Fuel Price (per gallon)		\$3.54	\$2.54	\$2.03	\$2.26	\$2.69	\$2.61
Hire Crew Wage (per crew-day)		\$294	\$256	\$265	\$197	\$188	\$240
<b>Productivity Measures</b>							
Landings/Fuel Use (lbs/gallon)		14	11.8	12.6	9.4	8.1	11
Landings/Labor Use (lbs/crew-day)		210	176	177	145	132	168

\* See Definitions in Methods Section or Glossary.

**SOI: 2018 GOM Reef Fish FMP Fishery: Longline  
Annual, Vessel-Level Time Series**

Annual, Vessel-Level Summary						
	2014	2015	2016	2017	2018***	Average
<b>Effort</b>						
Vessels	66	64	72	74	70	69
Trips - Total	<u>822</u>	<u>787</u>	<u>923</u>	<u>838</u>	<u>755</u>	<u>825</u>
SOI Trips	726	736	822	779	702	753
Non-SOI Trips	96	51	101	59	53	72
Days at Sea	8,497	8,773	9,844	9,615	8,775	9,101
<b>Landings (gutted lbs)</b>						
Total	5,673,382	5,062,485	5,577,350	4,532,175	3,992,711	4,967,621
SOI	5,308,281	4,811,999	5,099,482	4,025,359	3,435,917	4,536,208
Non-SOI	365,101	250,486	477,867	506,816	556,794	431,413
% SOI	94%	95%	91%	89%	86%	91%
<b>Revenue</b>						
Total	\$22,908,548	\$21,273,983	\$23,698,943	\$19,553,956	\$18,279,565	\$21,142,999
SOI	\$21,713,461	\$20,422,282	\$21,915,863	\$17,471,836	\$15,747,912	\$19,454,271
Non-SOI	\$1,195,088	\$851,700	\$1,783,080	\$2,082,120	\$2,531,653	\$1,688,728
% SOI	95%	96%	92%	89%	86%	92%
<b>Vessel Characteristics</b>						
Length	48	47	47	47	47	47
Year Built	1981	1981	1981	1981	1981	1981
For-Hire Fishing Permit	3%	3%	3%	3%	3%	3%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM Reef Fish FMP Fishery: Longline**  
**Annual, Vessel-Level Time Series**

<b>Annual, Vessel-Level Economics</b>		<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Average</b>
Number of Observations		12	9	18	21	15	
Response Rate (%)		60%	69%	82%	72%	71%	
<b>SOI Vessel</b>							
Owner-Operated		33%	11%	39%	19%	40%	28%
For-Hire Active		0%	0%	0%	0%	0%	0%
Vessel Value		\$317,930	\$149,345	\$93,756	\$180,322	\$158,333	\$179,937
<b>Total Revenue</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Costs (% of Revenue)</b>							
Fuel		6.3%	5.4%	4.1%	4.9%	7.8%	5.7%
Other Supplies		12.9%	11.9%	12.4%	14.8%	16.8%	13.8%
Hired Crew		36.9%	27%	32.1%	28.3%	25.9%	30%
Vessel Repair & Maintenance		6.3%	5.3%	7.5%	9.7%	7.7%	7.3%
Insurance		0.7%	0.3%	0.6%	0.2%	0.2%	0.4%
Overhead		3%	6.2%	3.7%	1.9%	2.2%	3.4%
Loan Payment		0.1%	0%	0%	0%	0.1%	0%
IFQ Purchase		12.5%	12.3%	17.8%	8.1%	13.3%	12.8%
OC Owner-Captain Time		1.8%	1.8%	4.7%	1.6%	4.8%	2.9%
<b>Net Cash Flow</b>		<b>21.4%</b>	<b>31.6%</b>	<b>21.7%</b>	<b>32.1%</b>	<b>26%</b>	<b>26.6%</b>
<b>Net Revenue for Operations**</b>		<b>28.2%</b>	<b>40.2%</b>	<b>33.2%</b>	<b>35.8%</b>	<b>31%</b>	<b>33.7%</b>
Depreciation		3.9%	1.9%	1.6%	2.8%	3.4%	2.7%
Vessel R&M, Insur, Overh		10%	11.8%	11.9%	11.8%	10%	11.1%
Labor - Hired & Owner		38.7%	28.8%	36.9%	29.9%	31%	33.1%
Fuel & Supplies		19.2%	17.3%	16.5%	19.7%	25%	19.5%
<b>Economic Return** (on asset value)</b>		<b>36.3%</b>	<b>103.8%</b>	<b>104.8%</b>	<b>65%</b>	<b>45.9%</b>	<b>71.2%</b>

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

## SOI: 2018 GOM Reef Fish FMP Fishery: Diver

**Description:** This SOI consists of all logbook trips by permitted vessels where at least one pound of fish managed by the GOM Reef Fish FMP was landed in 2018 using diving gear. Species managed include multiple species of snapper, grouper, tilefish, and jacks as well as triggerfish and hogfish. For a complete list of the species, please refer to Appendix 1. Caution, economic results are based on very small samples; leading to spurious year to year fluctuations. For important **disclaimer**, see page 15.

### Trip-Level Summary

#### Effort

Trips	343
Vessels	44
Days at Sea	467
Crew Days	1,334

#### Landings (guttled lbs)

<u>Total</u>	199,491
SOI	168,563
Non-SOI	30,928
% SOI	84%

#### Percent by Gear

	Trips	SOI lbs
Vertical Line	12%	0%
Longline	0%	0%
Diver	88%	100%
Other	0%	0%

#### Price (mean)

<u>Total</u>	\$3.69
SOI	\$3.67
Non-SOI	\$3.76

#### Revenue

<u>Total</u>	\$735,585
SOI	\$619,166
Non-SOI	\$116,419
% SOI	84%

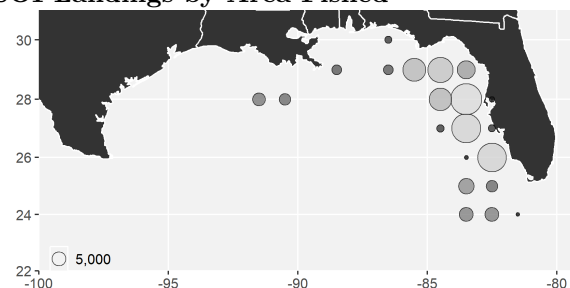
#### Percent of Revenue by Species Group

Shallow Water Groupers	44%
Shallow Water Snappers	15%
Mid-Shelf Snappers	17%
Deep Water Groupers/Tilefish	0.5%
Grunts/Porgies/Triggerfish	6%
Mackerels/Dolphinfish/Jacks	15%
Other Species	2%

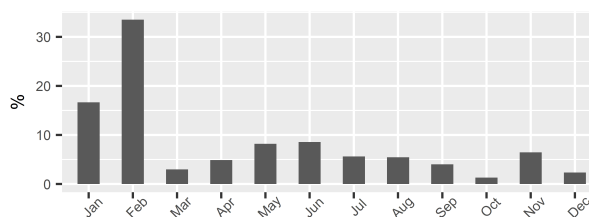
#### Revenue for Top 5 Species

Gag Grouper	\$245,790
Red Snapper	\$119,813
Greater Amberjack	\$101,094
Gray Snapper	\$94,174
Hogfish	\$38,359

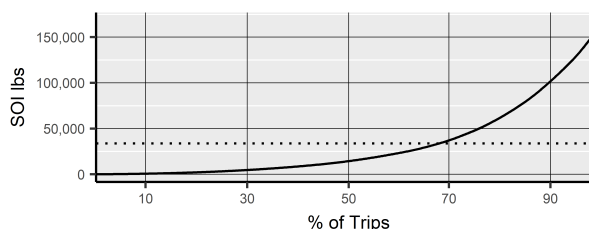
#### SOI Landings by Area Fished



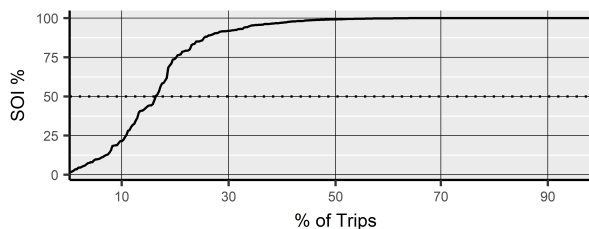
#### Share of SOI Landings by Month



#### Cumulative SOI Landings



#### SOI Share of Revenue Per Trip



#### Trip Descriptive Statistics (N=343)

	Mean	Min	Median	Max
Days at Sea	1.4	1	1	6
Crew Size	2.8	1	3	7
Landings	582	8	341	3,472
Revenue	\$2,145	\$32	\$1,453	\$12,965
SOI	\$1,805	\$14	\$994	\$10,919
% SOI	84%	1.6%	99.3%	100%



## SOI: 2018 GOM Reef Fish FMP Fishery: Diver

### Trip-Level Economics

#### Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	343	-	-	-
Selected	130	38%	-	-
Responded	125	36%	96%	-
Used	123	36%	95%	98%

#### Economic Results (n=123)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Trip</b>					
Owner-Operated	100%	0	100%	100%	-
Days at Sea	1.8	0.2	1.4	2.2	1
Crew Size	3.1	0.1	2.9	3.3	3
Fuel Used	131	20	96	166	90
Landings (gutted lbs)	987	224	585	1,389	565
<b>Total Revenue</b>	<b>3,532</b>	<b>768</b>	<b>2,153</b>	<b>4,912</b>	<b>2,427</b>
<b>Cost</b>					
Fuel	405	66	287	523	270
Bait	13	9	-4	30	0
Ice	37	14	11	63	0
Groceries	45	12	24	67	30
Miscellaneous	96	31	41	151	55
Hired Crew	1,134	258	670	1,597	655
IFQ Purchase	203	111	3	403	0
OC Owner-Captain Time	507	115	300	714	400
<b>Trip Net Cash Flow*</b>	<b>1,599</b>	<b>396</b>	<b>888</b>	<b>2,311</b>	<b>989</b>
<b>Trip Net Revenue*</b>	<b>1,295</b>	<b>366</b>	<b>638</b>	<b>1,952</b>	<b>652</b>

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

Revenue 100%	Trip Net Cash Flow* 45%	Trip Net Revenue* 37%
	IFQ Purchase 6%	Labor - Hired & Owner 46%
	Labor - Hired 32%	
	Fuel & Supplies 17%	Fuel & Supplies 17%

#### Input Prices

Fuel Price (average): \$3.09 per gallon

Hired Crew Wage (implicit): \$305 per crew-day

#### Productivity Measures

Landings/Fuel Use: 7.5 lbs/gallon

Landings/Labor Use: 180 lbs/crew-day

\* See Definitions in Methods Section or Glossary.

# SOI: 2018 GOM Reef Fish FMP Fishery: Diver

## Annual, Vessel-Level Summary

### Effort

Vessels	44
<u>Trips - Total</u>	<u>698</u>
SOI Trips	343
Non-SOI Trips	355
Days at Sea	1,078
Crew Days	2,704

### Landings (guttled lbs)

<u>Total</u>	<u>396,874</u>
SOI	168,563
Non-SOI	228,311
% SOI	42%

### Percent by Gear

	Trips	Total lbs
Vertical Line	42%	52%
Longline	0%	0%
Diver	57%	47%
Other	2%	2%

### Price (mean)

<u>Total</u>	<u>\$3.90</u>
SOI	\$3.67
Non-SOI	\$4.07

### Revenue

<u>Total</u>	<u>\$1,548,525</u>
SOI	\$619,166
Non-SOI	\$929,359
% SOI	40%

### Percent of Revenue by Species Group

Shallow Water Groupers	39%
Shallow Water Snappers	12%
Mid-Shelf Snappers	24%
Deep Water Groupers/Tilefish	4%
Grunts/Porgies/Triggerfish	4%
Mackerels/Dolphinfish/Jacks	13%
Other Species	4%

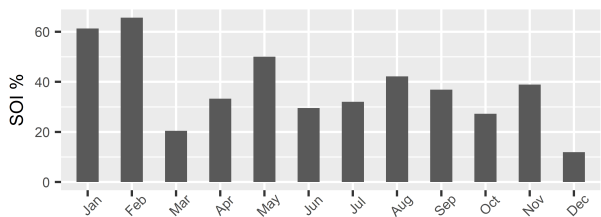
### Revenue for Top 5 Species

Red Snapper	\$354,249
Gag Grouper	\$340,456
Red Grouper	\$209,132
Gray Snapper	\$134,743
Greater Amberjack	\$128,677

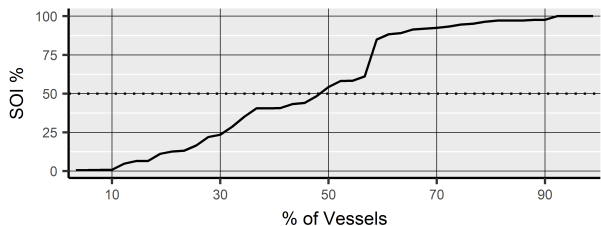
### Annual, Vessel Descriptive Statistics (N=44)

	Mean	Min	Median	Max
Trips	15.9	1	9	75
Days at Sea	24.5	1	16	87
Crew Days	61.5	3	44	230
Landings	9,020	122	3,750	68,814
Revenue	\$35,194	\$437	\$18,636	\$212,966
SOI	\$14,072	\$138	\$5,427	\$134,479
% SOI	56.3%	0.5%	56.2%	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%
King Mackerel	11%
Spanish Mackerel	39%
Dolphin-Wahoo	32%
Other Commercial Fishing	23%
For-Hire Fishing	39%

### Vessel Characteristics (N=44)

	Mean	Min	Median	Max
Length	33	19	32	47
Year Built	1996	1961	1997.5	2016
Horsepower	490	200	450	1,050
Fiberglass Hull	93%	-	-	-
Diesel Engine	45%	-	-	-
Ice Refrigeration	93%	-	-	-

## SOI: 2018 GOM Reef Fish FMP Fishery: Diver

### Annual, Vessel-Level Economics

#### Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	44	-	-	-
Selected	15	34%	-	-
Responded	14	32%	93%	-
Used	13	30%	87%	93%

#### Economic Results (n=13)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Vessel</b>					
Owner-Operated	93%	6.5	81%	105%	-
For-Hire Active	0%	0	0%	0%	-
Days - Commercial Fishing	44	10.8	24	63	21
Days - For-Hire Fishing	0	0	0	0	0
Days - Non-fishing	1	1	-1	3	0
Vessel Value	91,864	11,272	71,620	112,107	89,000
Has Insurance	39%	12.6	16%	61%	-
<b>Total Revenue</b>	58,948	15,131	31,775	86,122	27,314
Commercial Fishing	58,948	15,131	31,775	86,122	27,314
For-Hire Fishing	0	0	0	0	0
<b>Cost</b>					
Fuel	6,468	833	4,971	7,964	5,070
Other Supplies	6,285	2,218	2,301	10,269	2,585
Hired Crew	13,425	5,024	4,403	22,447	1,200
Vessel Repair & Maintenance	15,449	4,726	6,962	23,936	7,057
Insurance	1,852	798	419	3,286	0
Overhead	3,109	801	1,670	4,547	1,500
Loan Payment	1,879	763	510	3,249	0
IFQ Purchase	2,591	1,161	506	4,677	400
OC Owner-Captain Time	7,196	2,527	2,658	11,735	2,865
Depreciation	4,593	564	3,581	5,605	4,450
<b>Net Cash Flow</b>	7,890	9,406	-9,003	24,782	1,770
<b>Net Revenue from Operations**</b>	571	9,819	-17,063	18,205	-3,969

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

Revenue 100%	Net Cash Flow 13%	Net Revenue - Operations 1%
	IFQ Purchase 4%	Depreciation 8%
	Loan Payment 3%	Vessel R&M, Insur, Overh 35%
	Vessel R&M, Insur, Overh 35%	Labor - Hired & Owner 35%
	Labor - Hired 23%	Fuel & Supplies 22%
	Fuel & Supplies 22%	Fuel & Supplies 22%

**Economic Return\*\* (on Vessel Asset Value): 0.6%**

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

**SOI: 2018 GOM Reef Fish FMP Fishery: Diver**  
**Trip-Level Time Series**

Trip-Level Summary		2014	2015	2016	2017	2018**	Average
<b>Effort</b>							
Trips		412	455	438	427	343	415
Vessels		51	48	50	51	44	49
Days at Sea		677	692	666	581	467	617
<b>Landings (guttled lbs)</b>							
Total		240,525	222,087	187,998	195,888	199,491	209,198
SOI		210,666	175,979	147,943	156,518	168,563	171,934
Non-SOI		29,859	46,108	40,054	39,370	30,928	37,264
% SOI		88%	79%	79%	80%	84%	82%
<b>Price (mean)</b>							
Total		\$3.88	\$3.88	\$4.11	\$3.65	\$3.69	\$3.84
SOI		\$3.95	\$3.96	\$4.17	\$3.67	\$3.67	\$3.88
Non-SOI		\$3.39	\$3.54	\$3.86	\$3.57	\$3.76	\$3.62
<b>Revenue</b>							
Total		\$933,406	\$861,888	\$772,669	\$714,037	\$735,585	\$803,517
SOI		\$832,062	\$698,403	\$618,007	\$573,166	\$619,166	\$668,161
Non-SOI		\$101,344	\$163,486	\$154,662	\$140,871	\$116,419	\$135,356
% SOI		89%	81%	80%	80%	84%	83%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data, provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM Reef Fish FMP Fishery: Diver  
Trip-Level Time Series**

<b>Trip-Level Economics</b>		<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Average</b>
Number of Observations		65	140	169	109	123	
Response Rate (%)		81%	86%	99%	99%	95%	
<b>SOI Trip</b>							
Owner-Operated		90%	100%	99%	83%	100%	94.4%
Fuel Used per Day at Sea (gallons/day)		66	60	53	46	74	60
<b>Total Revenue</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Costs (% of Revenue)</b>							
Fuel		15.3%	11%	9.3%	16.5%	11.5%	12.7%
Bait		0.8%	0.5%	0.2%	2.1%	0.4%	0.8%
Ice		1.3%	1.3%	0.8%	3.2%	1%	1.5%
Groceries		2%	2.6%	1.7%	3.7%	1.3%	2.3%
Miscellaneous		3.3%	3.3%	2.3%	3.9%	2.7%	3.1%
Hired Crew		36.5%	35.6%	31.8%	28.4%	32.1%	32.9%
IFQ Purchase		12.6%	6.4%	5.7%	19.3%	5.7%	9.9%
OC Owner-Captain Time		12.9%	15.1%	15.4%	19.4%	14.4%	15.4%
<b>Trip Net Cash Flow*</b>		<b>28.2%</b>	<b>39.4%</b>	<b>48.2%</b>	<b>23%</b>	<b>45%</b>	<b>36.8%</b>
<b>Trip Net Revenue*</b>							
Labor - Hired & Owner		28%	30.7%	38.5%	22.9%	37%	31.4%
Fuel & Supplies		49.4%	50.7%	47.2%	47.7%	46%	48.2%
<b>Input Prices</b>							
Fuel Price (per gallon)		\$4.47	\$3.12	\$2.74	\$2.90	\$3.09	\$3.26
Hire Crew Wage (per crew-day)		\$279	\$258	\$238	\$142	\$305	\$244
<b>Productivity Measures</b>							
Landings/Fuel Use (lbs/gallon)		7.2	7.4	6.3	4.8	7.5	7
Landings/Labor Use (lbs/crew-day)		139	133	109	89	180	130

\* See Definitions in Methods Section or Glossary.

**SOI: 2018 GOM Reef Fish FMP Fishery: Diver  
Annual, Vessel-Level Time Series**

Annual, Vessel-Level Summary						
	2014	2015	2016	2017	2018***	Average
<b>Effort</b>						
Vessels	51	48	50	51	44	49
Trips - Total	<u>745</u>	<u>836</u>	<u>916</u>	<u>804</u>	<u>698</u>	<u>800</u>
SOI Trips	412	455	438	427	343	415
Non-SOI Trips	333	381	478	377	355	385
Days at Sea	1,253	1,287	1,592	1,178	1,078	1,278
<b>Landings (gutted lbs)</b>						
Total	364,730	389,893	438,426	389,047	396,874	395,794
SOI	210,666	175,979	147,943	156,518	168,563	171,934
Non-SOI	154,064	213,914	290,483	232,529	228,311	223,860
% SOI	58%	45%	34%	40%	42%	44%
<b>Revenue</b>						
Total	<u>\$1,476,319</u>	<u>\$1,531,198</u>	<u>\$1,714,725</u>	<u>\$1,401,383</u>	<u>\$1,548,525</u>	<u>\$1,534,430</u>
SOI	\$832,062	\$698,403	\$618,007	\$573,166	\$619,166	\$668,161
Non-SOI	\$644,258	\$832,795	\$1,096,718	\$828,217	\$929,359	\$866,269
% SOI	56%	46%	36%	41%	40%	44%
<b>Vessel Characteristics</b>						
Length	32	31	32	32	33	32
Year Built	1993	1994	1994	1995	1996	1994
For-Hire Fishing Permit	35%	23%	34%	27%	39%	32%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM Reef Fish FMP Fishery: Diver  
Annual, Vessel-Level Time Series**

Annual, Vessel-Level Economics						
	2014	2015	2016	2017	2018	Average
Number of Observations	8	13	16	13	13	
Response Rate (%)	62%	81%	94%	87%	87%	
<b>SOI Vessel</b>						
Owner-Operated	91%	100%	100%	86%	93%	94%
For-Hire Active	0%	10%	30%	24%	0%	13%
Vessel Value	\$73,581	\$86,241	\$74,389	\$64,123	\$91,864	\$78,040
<b>Total Revenue</b>	100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>						
Fuel	14.3%	16.2%	15.1%	13.5%	11%	14%
Other Supplies	4.3%	8.6%	11.8%	10.7%	10.7%	9.2%
Hired Crew	38%	22.4%	18.9%	13.6%	22.8%	23.1%
Vessel Repair & Maintenance	7.5%	11.6%	17%	31.3%	26.2%	18.7%
Insurance	0.5%	2.4%	1.8%	1.7%	3.1%	1.9%
Overhead	2.6%	7.9%	10.5%	9.8%	5.3%	7.2%
Loan Payment	0%	5.7%	4.7%	5.3%	3.2%	3.8%
IFQ Purchase	5.1%	9.7%	5.8%	10.7%	4.4%	7.1%
OC Owner-Captain Time	9.8%	14.1%	9.9%	10.4%	12.2%	11.3%
<b>Net Cash Flow</b>	27.7%	15.6%	14.5%	3.4%	13%	14.8%
<b>Net Revenue for Operations**</b>						
Depreciation	14.4%	9.2%	8.3%	1.5%	1%	6.9%
Vessel R&M, Insur, Overh	8.7%	7.6%	6.8%	7.5%	7.8%	7.7%
Labor - Hired & Owner	10.6%	21.9%	29.2%	42.9%	35%	27.9%
Fuel & Supplies	47.8%	36.6%	28.8%	24%	35%	34.4%
<b>Economic Return** (on asset value)</b>	18.6%	24.7%	26.9%	24.2%	22%	23.3%
	8.3%	6%	6.1%	1%	0.6%	4.4%

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

## SOI: 2018 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 2018 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 15.

### Trip-Level Summary

#### Effort

Trips	5,380
Vessels	496
Days at Sea	24,052
Crew Days	68,721

#### Landings (gutted lbs)

<u>Total</u>	12,233,280
SOI	10,068,000
Non-SOI	2,165,280
% SOI	82%

#### Percent by Gear

	Trips	SOI lbs
Vertical Line	82%	66%
Longline	13%	33%
Diver	5%	0.7%
Other	0.3%	0.3%

#### Price (mean)

<u>Total</u>	\$4.36
SOI	\$4.71
Non-SOI	\$2.71

#### Revenue

<u>Total</u>	\$53,279,373
SOI	\$47,408,472
Non-SOI	\$5,870,902
% SOI	89%

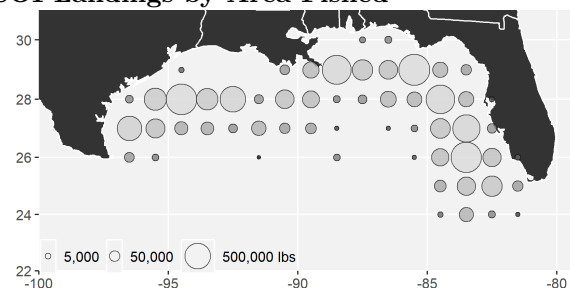
#### Percent of Revenue by Species Group

Shallow Water Groupers	26%
Shallow Water Snappers	2%
Mid-Shelf Snappers	60%
Deep Water Groupers/Tilefish	10%
Grunts/Porgies/Triggerfish	0.9%
Mackerels/Dolphinfish/Jacks	1%
Other Species	0.3%

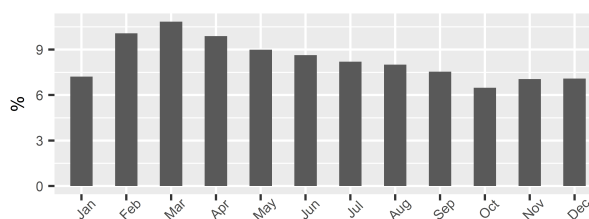
#### Revenue for Top 5 Species

Red Snapper	\$28,130,993
Red Grouper	\$10,541,964
Vermilion Snapper	\$3,542,965
Yellowedge Grouper	\$3,295,016
Gag Grouper	\$2,650,875

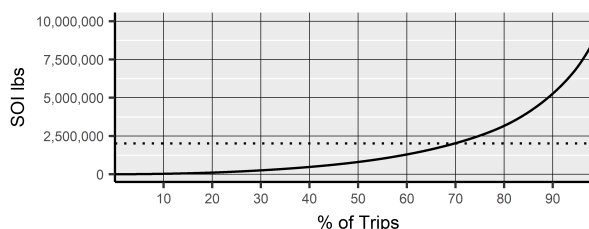
#### SOI Landings by Area Fished



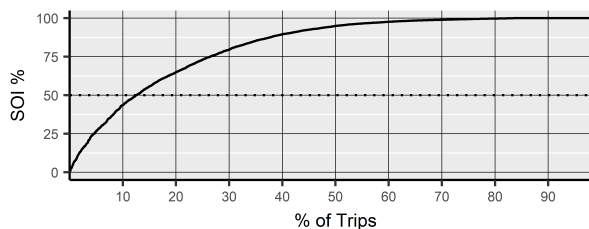
#### Share of SOI Landings by Month



#### Cumulative SOI Landings



#### SOI Share of Revenue Per Trip



#### Trip Descriptive Statistics (N=5,380)

	Mean	Min	Median	Max
Days at Sea	4.5	1	3	23
Crew Size	2.8	1	3	10
Landings	2,274	4	1,186	33,752
Revenue	\$9,903	\$25	\$4,630	\$167,058
SOI	\$8,812	\$9	\$3,254	\$167,019
% SOI	82%	0%	95%	100%



## SOI: 2018 GOM IFQ Fishery: All Gears

### Trip-Level Economics

#### Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	5,380	-	-	-
Selected	1,439	27%	-	-
Responded	1,385	26%	96%	-
Used	1,354	25%	94%	98%

#### Economic Results (n=1,354)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Trip</b>					
Owner-Operated	68%	3.7	62%	74%	-
Days at Sea	4.8	0.3	4.3	5.3	4
Crew Size	2.8	0.1	2.7	2.9	3
Fuel Used	220	17	191	249	150
Landings (gutted lbs)	2,369	200	2,038	2,701	1,233
<b>Total Revenue</b>	10,439	961	8,846	12,032	4,524
<b>Cost</b>					
Fuel	588	45	513	663	401
Bait	383	46	306	460	132
Ice	171	17	142	199	100
Groceries	274	29	226	322	142
Miscellaneous	268	40	201	334	50
Hired Crew	2,469	268	2,025	2,913	899
IFQ Purchase	2,167	319	1,639	2,695	293
OC Owner-Captain Time	703	113	516	891	171
<b>Trip Net Cash Flow*</b>	4,120	565	3,184	5,055	1,629
<b>Trip Net Revenue*</b>	5,583	644	4,516	6,651	1,901

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

Revenue 100%	Trip Net Cash Flow* 39%	Trip Net Revenue* 53%
	IFQ Purchase 21%	
	Labor - Hired 24%	Labor - Hired & Owner 30%
	Fuel & Supplies 16%	Fuel & Supplies 16%

#### Input Prices

Fuel Price (average): \$2.67 per gallon

Hired Crew Wage (implicit): \$246 per crew-day

#### Productivity Measures

Landings/Fuel Use: 10.8 lbs/gallon

Landings/Labor Use: 179 lbs/crew-day

\* See Definitions in Methods Section or Glossary.

# SOI: 2018 GOM IFQ Fishery: All Gears

## Annual, Vessel-Level Summary

### Effort

Vessels	496
<u>Trips - Total</u>	<u>6,395</u>
SOI Trips	5,380
Non-SOI Trips	1,015
Days at Sea	25,877
Crew Days	72,688

### Landings (guttled lbs)

<u>Total</u>	<u>13,154,864</u>
SOI	10,068,000
Non-SOI	3,086,865
% SOI	77%

### Percent by Gear

	Trips	Total lbs
Vertical Line	79%	69%
Longline	11%	27%
Diver	6%	1%
Other	4%	2%

### Price (mean)

<u>Total</u>	<u>\$4.25</u>
SOI	\$4.71
Non-SOI	\$2.74

### Revenue

<u>Total</u>	<u>\$55,863,165</u>
SOI	\$47,408,472
Non-SOI	\$8,454,694
% SOI	85%

### Percent of Revenue by Species Group

Shallow Water Groupers	25%
Shallow Water Snappers	3%
Mid-Shelf Snappers	57%
Deep Water Groupers/Tilefish	9%
Grunts/Porgies/Triggerfish	0.9%
Mackerels/Dolphinfish/Jacks	3%
Other Species	0.5%

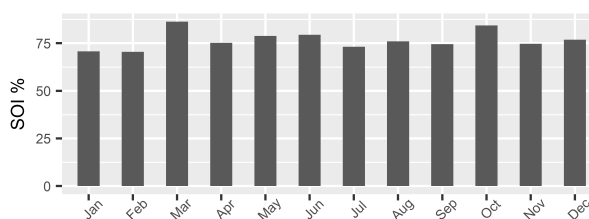
### Revenue for Top 5 Species

Red Snapper	\$28,148,747
Red Grouper	\$10,626,892
Vermilion Snapper	\$3,567,172
Yellowedge Grouper	\$3,327,245
Gag Grouper	\$2,655,660

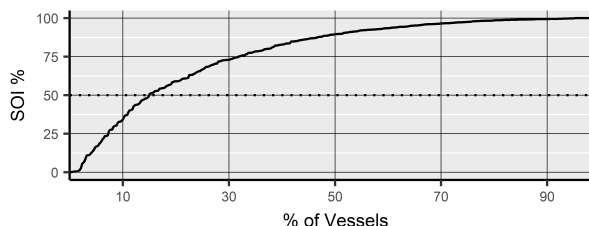
### Annual, Vessel Descriptive Statistics (N=496)

	Mean	Min	Median	Max
Trips	12.9	1	10	84
Days at Sea	52.2	1	32	225
Crew Days	146.5	1	81	927
Landings	26,522	39	10,676	403,969
Revenue	\$112,627	\$198	\$43,989	\$2,066,649
SOI	\$95,582	\$30	\$29,249	\$2,047,991
% SOI	78%	0%	89.6%	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	36%
Spanish Mackerel	44%
Dolphin-Wahoo	36%
Other Commercial Fishing	17%
For-Hire Fishing	27%

### Vessel Characteristics (N=496)

	Mean	Min	Median	Max
Length	39	19	37	69
Year Built	1989	1961	1986	2018
Horsepower	451	12	400	1,800
Fiberglass Hull	93%	-	-	-
Diesel Engine	76%	-	-	-
Ice Refrigeration	94%	-	-	-

## SOI: 2018 GOM IFQ Fishery: All Gears

### Annual, Vessel-Level Economics

#### Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	496	-	-	-
Selected	132	27%	-	-
Responded	108	22%	82%	-
Used	104	21%	79%	96%

#### Economic Results (n=104)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Vessel</b>					
Owner-Operated	70%	4.1	63%	77%	-
For-Hire Active	14%	3.1	9%	19%	-
Days - Commercial Fishing	59	3.8	53	66	41
Days - For-Hire Fishing	12	3.2	6	17	0
Days - Non-fishing	1	0.4	0	2	0
Vessel Value	108,073	10,107	91,296	124,851	80,000
Has Insurance	34%	4.2	27%	41%	-
<b>Total Revenue</b>	125,208	14,575	101,015	149,402	78,000
Commercial Fishing	114,333	14,264	90,656	138,011	50,064
For-Hire Fishing	10,875	3,083	5,758	15,992	0
<b>Cost</b>					
Fuel	9,785	886	8,315	11,255	7,657
Other Supplies	14,367	1,843	11,308	17,427	6,911
Hired Crew	29,364	4,337	22,165	36,562	6,604
Vessel Repair & Maintenance	12,929	1,576	10,313	15,545	7,985
Insurance	1,365	242	964	1,766	0
Overhead	5,888	872	4,440	7,336	3,000
Loan Payment	1,666	375	1,044	2,288	0
IFQ Purchase	19,601	3,776	13,333	25,870	1,970
OC Owner-Captain Time	8,020	1,091	6,209	9,832	1,750
Depreciation	5,404	505	4,565	6,243	4,000
<b>Net Cash Flow</b>	30,243	8,978	15,341	45,145	5,767
<b>Net Revenue from Operations**</b>	38,086	9,577	22,189	53,983	5,696

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

Revenue 100%	Net Cash Flow 24%	Net Revenue - Operations 30%
	IFQ Purchase 16%	Depreciation 4%
	Loan Payment 1%	Vessel R&M, Insur, Overh 16%
	Vessel R&M, Insur, Overh 16%	Labor - Hired & Owner 30%
	Labor - Hired 23%	Fuel & Supplies 19%
	Fuel & Supplies 19%	

**Economic Return\*\* (on Vessel Asset Value): 35.2%**

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

**SOI: 2018 GOM IFQ Fishery: All Gears**  
**Trip-Level Time Series**

Trip-Level Summary		2014	2015	2016	2017	2018***	Average
<b>Effort</b>							
Trips	5,803	6,172	6,240	6,017	5,380	5,922	
Vessels	482	479	481	503	496	488	
Days at Sea	27,659	28,297	28,787	27,466	24,052	27,252	
<b>Landings (guttled lbs)</b>							
Total	15,144,031	15,391,820	15,049,336	13,603,126	12,233,280	14,284,319	
SOI	12,237,116	12,873,899	12,470,677	11,107,883	10,068,000	11,751,515	
Non-SOI	2,906,915	2,517,921	2,578,659	2,495,243	2,165,280	2,532,804	
% SOI	81%	84%	83%	82%	82%	82%	
<b>Price (mean)</b>							
Total	\$4.05	\$4.19	\$4.19	\$4.20	\$4.36	\$4.2	
SOI	\$4.40	\$4.47	\$4.51	\$4.56	\$4.71	\$4.53	
Non-SOI	\$2.62	\$2.69	\$2.68	\$2.59	\$2.71	\$2.66	
<b>Revenue</b>							
Total	\$61,449,319	\$64,379,846	\$63,090,434	\$57,132,587	\$53,279,373	\$59,866,312	
SOI	\$53,833,912	\$57,603,724	\$56,164,218	\$50,666,731	\$47,408,472	\$53,135,411	
Non-SOI	\$7,615,407	\$6,776,122	\$6,926,215	\$6,465,856	\$5,870,902	\$6,730,900	
% SOI	88%	89%	89%	89%	89%	89%	

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data, provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM IFQ Fishery: All Gears**  
**Trip-Level Time Series**

<b>Trip-Level Economics</b>		<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Average</b>
Number of Observations		1,154	1,656	1,779	1,708	1,354	
Response Rate (%)		80%	85%	94%	95%	94%	
<b>SOI Trip</b>							
Owner-Operated		71%	64%	67%	58%	68%	65.6%
Fuel Used per Day at Sea (gallons/day)		46	46	40	48	46	45
<b>Total Revenue</b>		100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>							
Fuel		6.6%	4.8%	4.1%	5%	5.6%	5.2%
Bait		3%	3.1%	3.4%	3.9%	3.7%	3.4%
Ice		1.4%	1.5%	1.7%	1.6%	1.6%	1.6%
Groceries		2.4%	2.3%	3.1%	3.2%	2.6%	2.7%
Miscellaneous		2.5%	2.4%	3%	2.6%	2.6%	2.6%
Hired Crew		28.1%	25.7%	26.9%	27.2%	23.7%	26.3%
IFQ Purchase		14.8%	27.1%	19.1%	19.7%	20.8%	20.3%
OC Owner-Captain Time		6.2%	5.8%	7%	5.8%	6.7%	6.3%
<b>Trip Net Cash Flow*</b>		41.2%	33%	38.8%	36.8%	39%	37.8%
<b>Trip Net Revenue*</b>							
Labor - Hired & Owner		49.8%	54.3%	50.9%	50.7%	53%	51.7%
Fuel & Supplies		34.2%	31.5%	33.8%	33.1%	30%	32.5%
<b>Input Prices</b>		15.9%	14.2%	15.3%	16.3%	16%	15.5%
Fuel Price (per gallon)		\$3.67	\$2.63	\$2.12	\$2.32	\$2.67	\$2.68
Hire Crew Wage (per crew-day)		\$342	\$295	\$262	\$287	\$246	\$286
<b>Productivity Measures</b>							
Landings/Fuel Use (lbs/gallon)		13.5	12.7	11.8	10.7	10.8	12
Landings/Labor Use (lbs/crew-day)		221	207	170	192	179	194

\* See Definitions in Methods Section or Glossary.

**SOI: 2018 GOM IFQ Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

Annual, Vessel-Level Summary		2014	2015	2016	2017	2018***	Average
<b>Effort</b>							
Vessels		482	479	481	503	496	488
Trips - Total		7,082	7,275	7,630	7,448	6,395	7,166
SOI Trips		5,803	6,172	6,240	6,017	5,380	5,922
Non-SOI Trips		1,279	1,103	1,390	1,431	1,015	1,244
Days at Sea		30,274	30,477	31,132	29,739	25,877	29,500
<b>Landings (gutted lbs)</b>							
Total		16,330,349	16,539,180	16,437,900	15,070,329	13,154,864	15,506,524
SOI		12,237,116	12,873,899	12,470,677	11,107,883	10,068,000	11,751,515
Non-SOI		4,093,233	3,665,281	3,967,223	3,962,446	3,086,865	3,755,010
% SOI		75%	78%	76%	74%	77%	76%
<b>Revenue</b>							
Total		\$64,707,623	\$67,151,232	\$66,422,798	\$60,845,390	\$55,863,165	\$62,998,042
SOI		\$53,833,912	\$57,603,724	\$56,164,218	\$50,666,731	\$47,408,472	\$53,135,411
Non-SOI		\$10,873,711	\$9,547,507	\$10,258,580	\$10,178,660	\$8,454,694	\$9,862,630
% SOI		83%	86%	85%	83%	85%	84%
<b>Vessel Characteristics</b>							
Length		39	38	39	39	39	39
Year Built		1987	1987	1987	1988	1989	1988
For-Hire Fishing Permit		24%	23%	23%	24%	27%	24%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM IFQ Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

Annual, Vessel-Level Economics		2014	2015	2016	2017	2018	Average
Number of Observations		81	101	117	127	104	
Response Rate (%)		63%	78%	84%	80%	79%	
<b>SOI Vessel</b>							
Owner-Operated		77%	69%	79%	67%	70%	72%
For-Hire Active		6%	16%	16%	19%	14%	14%
Vessel Value		\$126,641	\$107,214	\$89,283	\$112,242	\$108,073	\$108,691
<b>Total Revenue</b>		100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>							
Fuel		8.1%	6%	6.5%	6.6%	7.8%	7%
Other Supplies		9.6%	9.2%	10.7%	11.2%	11.5%	10.4%
Hired Crew		27.1%	25.4%	24.3%	25.3%	23.5%	25.1%
Vessel Repair & Maintenance		7.6%	6.6%	8.5%	11.1%	10.3%	8.8%
Insurance		1%	0.8%	1%	1.2%	1.1%	1%
Overhead		5%	5.4%	4.9%	6.4%	4.7%	5.3%
Loan Payment		0.8%	1.4%	1.3%	1.3%	1.3%	1.2%
IFQ Purchase		11.4%	24.3%	14.3%	11.1%	15.7%	15.4%
OC Owner-Captain Time		5.7%	5.2%	6.6%	5.5%	6.4%	5.9%
<b>Net Cash Flow</b>		29.4%	20.7%	28.5%	25.7%	24%	25.7%
<b>Net Revenue for Operations**</b>							
Depreciation		32.2%	38.1%	34.3%	28.7%	30%	32.7%
Vessel R&M, Insur, Overh		3.7%	3%	3.2%	3.9%	4.3%	3.6%
Labor - Hired & Owner		13.6%	12.9%	14.4%	18.7%	16%	15.1%
Fuel & Supplies		32.8%	30.7%	30.9%	30.9%	30%	31.1%
<b>Economic Return** (on asset value)</b>		43.4%	62.7%	54.2%	36.6%	35.2%	46.4%

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

## SOI: 2018 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 2018 using any gear type. For a complete list of the non-IFQ species, please refer to Appendix 1. The economic results are of questionable quality and should not be used quantitatively. For important **disclaimer**, see page 15.

### Trip-Level Summary

#### Effort

Trips	483
Vessels	94
Days at Sea	1,511
Crew Days	3,865

#### Landings (guttled lbs)

<u>Total</u>	590,683
SOI	536,698
Non-SOI	53,985
% SOI	91%

#### Percent by Gear

	Trips	SOI lbs
Vertical Line	88%	95%
Longline	0%	0%
Diver	9%	5%
Other	2%	0.4%

#### Price (mean)

<u>Total</u>	\$3.21
SOI	\$3.32
Non-SOI	\$2.09

#### Revenue

<u>Total</u>	\$1,896,383
SOI	\$1,783,295
Non-SOI	\$113,088
% SOI	94%

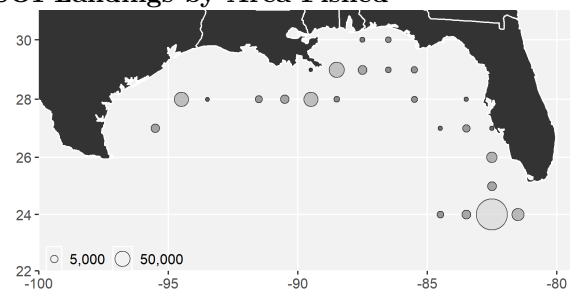
#### Percent of Revenue by Species Group

Shallow Water Groupers	0%
Shallow Water Snappers	67%
Mid-Shelf Snappers	13%
Deep Water Groupers/Tilefish	0%
Grunts/Porgies/Triggerfish	0.9%
Mackerels/Dolphinfish/Jacks	18%
Other Species	1%

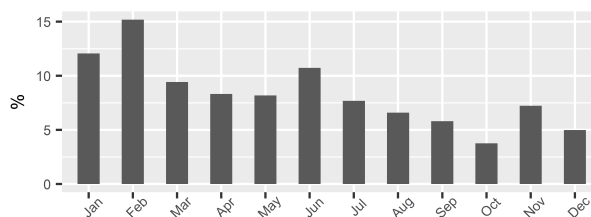
#### Revenue for Top 5 Species

Yellowtail Snapper	\$1,150,125
Greater Amberjack	\$253,433
Vermilion Snapper	\$186,648
Gray Snapper	\$112,905
King and Cero Mackerel	\$82,923

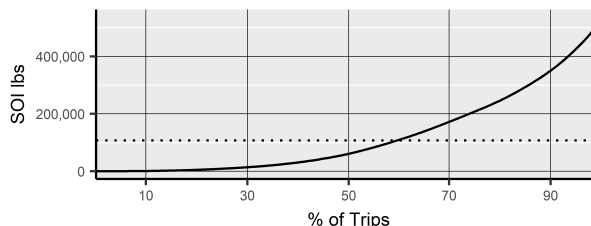
#### SOI Landings by Area Fished



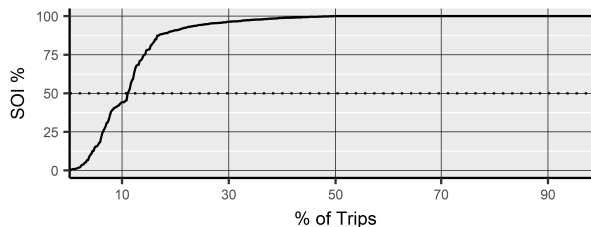
#### Share of SOI Landings by Month



#### Cumulative SOI Landings



#### SOI Share of Revenue Per Trip



#### Trip Descriptive Statistics (N=483)

	Mean	Min	Median	Max
Days at Sea	3.1	1	2	18
Crew Size	2.3	1	2	8
Landings	1,223	8	982	11,145
Revenue	\$3,926	\$26	\$2,435	\$46,921
SOI	\$3,692	\$1	\$2,166	\$46,842
% SOI	89%	0.2%	100%	100%



## SOI: 2018 GOM Trips without IFQ Catch Fishery: All Gears

### Trip-Level Economics

#### Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	483	-	-	-
Selected	99	20%	-	-
Responded	97	20%	98%	-
Used	94	19%	95%	97%

#### Economic Results (n=94)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Trip</b>					
Owner-Operated	90%	9.4	73%	106%	-
Days at Sea	4.1	0.7	2.8	5.4	3
Crew Size	2.6	0.3	2.1	3.2	2
Fuel Used	213	33	153	272	181
Landings (gutted lbs)	1,485	241	1,055	1,915	1,105
<b>Total Revenue</b>	<b>4,953</b>	<b>770</b>	<b>3,580</b>	<b>6,325</b>	<b>2,902</b>
<b>Cost</b>					
Fuel	587	86	434	740	520
Bait	495	90	334	656	157
Ice	104	27	57	152	100
Groceries	305	73	174	436	200
Miscellaneous	41	31	-14	96	0
Hired Crew	1,479	342	869	2,089	763
IFQ Purchase	0	0	0	0	0
OC Owner-Captain Time	876	136	634	1,117	667
<b>Trip Net Cash Flow*</b>	<b>1,941</b>	<b>343</b>	<b>1,330</b>	<b>2,552</b>	<b>1,185</b>
<b>Trip Net Revenue*</b>	<b>1,065</b>	<b>226</b>	<b>662</b>	<b>1,468</b>	<b>621</b>

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

Revenue 100%	Trip Net Cash Flow* 39%	Trip Net Revenue* 22%
	IFQ Purchase 0%	Labor - Hired & Owner 48%
	Labor - Hired 30%	
	Fuel & Supplies 31%	Fuel & Supplies 31%

#### Input Prices

Fuel Price (average): \$2.76 per gallon      Hired Crew Wage (implicit): \$208 per crew-day

#### Productivity Measures

Landings/Fuel Use: 7 lbs/gallon      Landings/Labor Use: 138 lbs/crew-day

\* See Definitions in Methods Section or Glossary.

# SOI: 2018 GOM Trips without IFQ Catch Fishery: All Gears

## Annual, Vessel-Level Summary

### Effort

Vessels	94
<u>Trips - Total</u>	<u>1,886</u>
SOI Trips	483
Non-SOI Trips	1,403
Days at Sea	4,269
Crew Days	10,614

### Landings (guttled lbs)

<u>Total</u>	<u>2,008,635</u>
SOI	536,698
Non-SOI	1,471,937
% SOI	27%

### Percent by Gear

	Trips	Total lbs
Vertical Line	85%	91%
Longline	0%	0%
Diver	11%	3%
Other	4%	6%

### Price (mean)

<u>Total</u>	<u>\$3.74</u>
SOI	\$3.32
Non-SOI	\$3.89

### Revenue

<u>Total</u>	<u>\$7,506,428</u>
SOI	\$1,783,295
Non-SOI	\$5,723,134
% SOI	24%

### Percent of Revenue by Species Group

Shallow Water Groupers	4%
Shallow Water Snappers	28%
Mid-Shelf Snappers	52%
Deep Water Groupers/Tilefish	1%
Grunts/Porgies/Triggerfish	0.8%
Mackerels/Dolphinfish/Jacks	11%
Other Species	2%

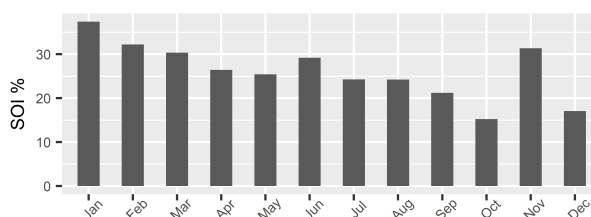
### Revenue for Top 5 Species

Red Snapper	\$3,362,485
Yellowtail Snapper	\$1,840,885
King and Cero Mackerel	\$481,708
Vermilion Snapper	\$479,265
Greater Amberjack	\$359,615

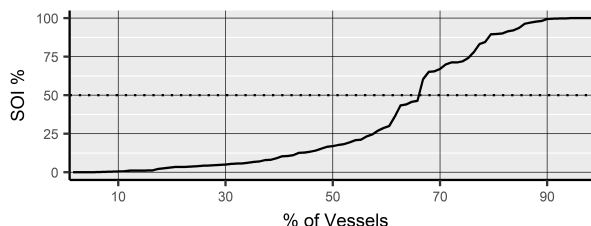
### Annual, Vessel Descriptive Statistics (N=94)

	Mean	Min	Median	Max
Trips	20.1	1	14	163
Days at Sea	45.4	1	33	218
Crew Days	112.9	1	71	480
Landings	21,368	106	9,631	249,137
Revenue	\$79,856	\$417	\$38,193	\$1,242,079
SOI	\$18,971	\$1	\$4,345	\$246,691
% SOI	37.2%	0%	17.4%	100%

### SOI Share of Monthly Landings



### SOI Share of Revenue Per Vessel



### Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	22%
SAT Snapper & Grouper - Limited	1%
King Mackerel	62%
Spanish Mackerel	65%
Dolphin-Wahoo	57%
Other Commercial Fishing	23%
For-Hire Fishing	29%

### Vessel Characteristics (N=94)

	Mean	Min	Median	Max
Length	36	14	35	65
Year Built	1989	1967	1986	2017
Horsepower	494	25	427.5	1,320
Fiberglass Hull	95%	-	-	-
Diesel Engine	63%	-	-	-
Ice Refrigeration	93%	-	-	-

## SOI: 2018 GOM Trips without IFQ Catch Fishery: All Gears

### Annual, Vessel-Level Economics

#### Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	94	-	-	-
Selected	16	17%	-	-
Responded	12	13%	75%	-
Used	12	13%	75%	100%

#### Economic Results (n=12)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Vessel</b>					
Owner-Operated	67%	15.3	39%	94%	-
For-Hire Active	19%	12.8	-4%	43%	-
Days - Commercial Fishing	70	13.5	46	95	45
Days - For-Hire Fishing	12	9.7	-6	29	0
Days - Non-fishing	2	2.1	-2	6	0
Vessel Value	77,299	14,560	50,910	103,688	50,000
Has Insurance	39%	15.8	10%	67%	-
<b>Total Revenue</b>					
Commercial Fishing	72,373	16,673	42,154	102,591	56,937
For-Hire Fishing	64,874	13,836	39,796	89,952	56,937
	7,499	6,126	-3,605	18,602	0
<b>Cost</b>					
Fuel	9,483	1,963	5,925	13,040	7,834
Other Supplies	12,077	3,228	6,226	17,928	6,181
Hired Crew	13,821	5,218	4,364	23,278	9,603
Vessel Repair & Maintenance	12,602	5,132	3,302	21,903	4,000
Insurance	1,493	710	207	2,780	0
Overhead	4,962	2,543	353	9,570	2,200
Loan Payment	2,523	1,461	-125	5,172	0
IFQ Purchase	956	721	-352	2,263	0
OC Owner-Captain Time	9,788	3,307	3,794	15,782	2,865
Depreciation	3,865	728	2,545	5,184	2,500
<b>Net Cash Flow</b>	14,456	8,505	-959	29,871	2,265
<b>Net Revenue from Operations**</b>	4,282	9,318	-12,606	21,171	-1,150

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

Revenue 100%	Net Cash Flow 20%	Net Revenue - Operations 6%
	IFQ Purchase 1%	Depreciation 5%
	Loan Payment 3%	Vessel R&M, Insur, Overh 26%
	Vessel R&M, Insur, Overh 26%	Labor - Hired & Owner 33%
	Labor - Hired 19%	
	Fuel & Supplies 30%	Fuel & Supplies 30%

**Economic Return\*\* (on Vessel Asset Value): 5.5%**

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

**SOI: 2018 GOM Trips without IFQ Catch Fishery: All Gears**  
**Trip-Level Time Series**

Trip-Level Summary		2014	2015	2016	2017	2018***	Average
<b>Effort</b>							
Trips		733	638	734	690	483	656
Vessels		127	113	115	121	94	114
Days at Sea		2,871	2,207	2,160	1,564	1,511	2,063
<b>Landings (guttled lbs)</b>							
Total		919,808	741,792	683,757	780,052	590,683	743,218
SOI		761,195	640,804	577,537	698,869	536,698	643,021
Non-SOI		158,612	100,988	106,220	81,183	53,985	100,198
% SOI		83%	86%	84%	90%	91%	87%
<b>Price (mean)</b>							
Total		\$2.85	\$2.78	\$2.85	\$2.73	\$3.21	\$2.88
SOI		\$3.04	\$2.93	\$3.00	\$2.83	\$3.32	\$3.02
Non-SOI		\$1.97	\$1.83	\$1.98	\$1.99	\$2.09	\$1.97
<b>Revenue</b>							
Total		\$2,625,451	\$2,065,101	\$1,949,096	\$2,133,311	\$1,896,383	\$2,133,868
SOI		\$2,312,956	\$1,880,089	\$1,737,995	\$1,972,017	\$1,783,295	\$1,937,270
Non-SOI		\$312,495	\$185,012	\$211,101	\$161,294	\$113,088	\$196,598
% SOI		88%	91%	89%	92%	94%	91%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data, provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM Trips without IFQ Catch Fishery: All Gears**  
**Trip-Level Time Series**

<b>Trip-Level Economics</b>		<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Average</b>
Number of Observations		83	131	176	235	94	
Response Rate (%)		58%	79%	95%	93%	95%	
<b>SOI Trip</b>							
Owner-Operated		85%	78%	90%	82%	90%	85%
Fuel Used per Day at Sea (gallons/day)		40	33	43	53	52	44
<b>Total Revenue</b>		100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>							
Fuel		16.6%	9.4%	12.9%	8.9%	11.9%	11.9%
Bait		4.9%	14.8%	9.6%	9.2%	10%	9.7%
Ice		2.9%	2.5%	3.1%	2.3%	2.1%	2.6%
Groceries		4%	4.9%	4.1%	2.9%	6.2%	4.4%
Miscellaneous		1.6%	3.4%	3.3%	1.9%	0.8%	2.2%
Hired Crew		38.8%	30.3%	31.5%	34.8%	29.9%	33.1%
IFQ Purchase		0%	0%	0%	0%	0%	0%
OC Owner-Captain Time		28.5%	23%	21.3%	22%	17.7%	22.5%
<b>Trip Net Cash Flow*</b>		31.3%	34.7%	35.5%	40%	39%	36.1%
<b>Trip Net Revenue*</b>							
Labor - Hired & Owner		2.8%	11.8%	14.2%	18%	22%	13.8%
Fuel & Supplies		67.3%	53.3%	52.8%	56.8%	48%	55.6%
		29.9%	35%	33%	25.2%	31%	30.8%
<b>Input Prices</b>							
Fuel Price (per gallon)		\$3.64	\$2.73	\$2.30	\$2.67	\$2.76	\$2.82
Hire Crew Wage (per crew-day)		\$234	\$183	\$193	\$395	\$208	\$243
<b>Productivity Measures</b>							
Landings/Fuel Use (lbs/gallon)		9.2	10.3	6.4	10.5	7	9
Landings/Labor Use (lbs/crew-day)		160	143	128	251	138	164

\* See Definitions in Methods Section or Glossary.

**SOI: 2018 GOM Trips without IFQ Catch Fishery: All Gears  
Annual, Vessel-Level Time Series**

Annual, Vessel-Level Summary						
	2014	2015	2016	2017	2018***	Average
<b>Effort</b>						
Vessels	127	113	115	121	94	114
Trips - Total	2,820	2,436	2,890	2,639	1,886	2,534
SOI Trips	<u>733</u>	<u>638</u>	<u>734</u>	<u>690</u>	<u>483</u>	<u>656</u>
Non-SOI Trips	2,087	1,798	2,156	1,949	1,403	1,879
Days at Sea	7,313	6,434	6,820	6,207	4,269	6,209
<b>Landings (gutted lbs)</b>						
Total	2,856,946	2,790,092	2,920,175	3,043,971	2,008,635	2,723,964
SOI	<u>761,195</u>	<u>640,804</u>	<u>577,537</u>	<u>698,869</u>	<u>536,698</u>	<u>643,021</u>
Non-SOI	2,095,751	2,149,288	2,342,638	2,345,103	1,471,937	2,080,943
% SOI	27%	23%	20%	23%	27%	24%
<b>Revenue</b>						
Total	\$8,791,847	\$9,141,905	\$9,490,098	\$9,901,975	\$7,506,428	\$8,966,451
SOI	<u>\$2,312,956</u>	<u>\$1,880,089</u>	<u>\$1,737,995</u>	<u>\$1,972,017</u>	<u>\$1,783,295</u>	<u>\$1,937,270</u>
Non-SOI	\$6,478,891	\$7,261,816	\$7,752,103	\$7,929,958	\$5,723,134	\$7,029,180
% SOI	26%	21%	18%	20%	24%	22%
<b>Vessel Characteristics</b>						
Length	36	36	36	37	36	36
Year Built	1989	1989	1988	1989	1989	1989
For-Hire Fishing Permit	33%	25%	24%	29%	29%	28%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM Trips without IFQ Catch Fishery: All Gears  
Annual, Vessel-Level Time Series**

Annual, Vessel-Level Economics						
	2014	2015	2016	2017	2018	Average
Number of Observations	12	16	24	26	12	
Response Rate (%)	43%	64%	83%	72%	75%	
<b>SOI Vessel</b>						
Owner-Operated	100%	87%	87%	79%	67%	84%
For-Hire Active	43%	18%	16%	49%	19%	29%
Vessel Value	\$100,557	\$71,811	\$80,562	\$113,680	\$77,299	\$88,782
<b>Total Revenue</b>	100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>						
Fuel	13.1%	9.5%	10.8%	9.3%	13.1%	11.2%
Other Supplies	8.8%	13%	14.6%	10.8%	16.7%	12.8%
Hired Crew	18.6%	21%	21.2%	23.1%	19.1%	20.6%
Vessel Repair & Maintenance	10.5%	15.7%	9.1%	13.9%	17.4%	13.3%
Insurance	1.5%	1.7%	0.8%	2%	2.1%	1.6%
Overhead	12%	7.3%	6.2%	5.3%	6.9%	7.5%
Loan Payment	2.2%	3.1%	2.7%	3%	3.5%	2.9%
IFQ Purchase	22.4%	10.8%	14.1%	4.1%	1.3%	10.5%
OC Owner-Captain Time	5.3%	11.4%	12.8%	4.9%	13.5%	9.6%
<b>Net Cash Flow</b>	10.9%	17.9%	20.4%	28.5%	20%	19.5%
<b>Net Revenue for Operations**</b>	26.9%	16.5%	20%	26.3%	6%	19.1%
Depreciation	3.4%	4%	4.4%	4.5%	5.3%	4.3%
Vessel R&M, Insur, Overh	24%	24.7%	16.1%	21.2%	26%	22.4%
Labor - Hired & Owner	23.8%	32.3%	34.1%	28%	33%	30.2%
Fuel & Supplies	21.9%	22.5%	25.4%	20.1%	30%	24%
<b>Economic Return** (on asset value)</b>	39.6%	20.7%	22.8%	29.3%	5.5%	23.6%

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

## SOI: 2018 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 2018 using any gear type. Red snapper in the GOM is an IFQ fishery. Official 2018 red snapper landings and revenue, per the IFQ-tracking system, are 6,285,704 lbs (gutted weight) and \$29,929,938. Hence the logbook-based red snapper SOI accounts for about 95% of the fishery (near-census). For important **disclaimer**, see page 15.

### Trip-Level Summary

#### Effort

Trips	4,347
Vessels	440
Days at Sea	18,344
Crew Days	51,822

#### Landings (gutted lbs)

<u>Total</u>	10,423,495
SOI	6,019,879
Non-SOI	4,403,616
% SOI	58%

#### Percent by Gear

	Trips	SOI lbs
Vertical Line	88%	94%
Longline	10%	5%
Diver	2%	0.2%
Other	0.3%	0.1%

#### Price (mean)

<u>Total</u>	\$4.35
SOI	\$4.67
Non-SOI	\$3.91

#### Revenue

<u>Total</u>	\$45,355,831
SOI	\$28,130,993
Non-SOI	\$17,224,838
% SOI	62%

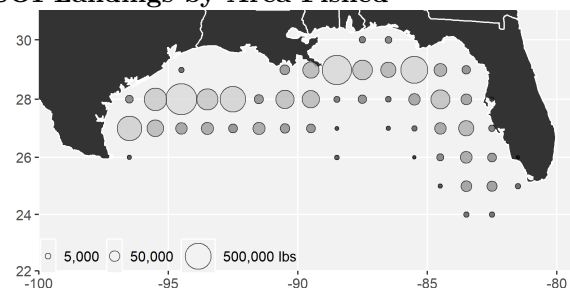
#### Percent of Revenue by Species Group

Shallow Water Groupers	23%
Shallow Water Snappers	1%
Mid-Shelf Snappers	70%
Deep Water Groupers/Tilefish	4%
Grunts/Porgies/Triggerfish	0.9%
Mackerels/Dolphinfish/Jacks	0.9%
Other Species	0.3%

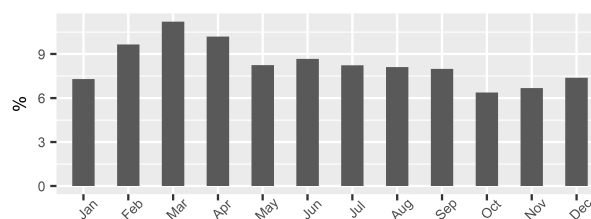
#### Revenue for Top 5 Species

Red Snapper	\$28,130,993
Red Grouper	\$7,464,110
Vermilion Snapper	\$3,410,182
Gag Grouper	\$2,261,273
Yellowedge Grouper	\$1,113,951

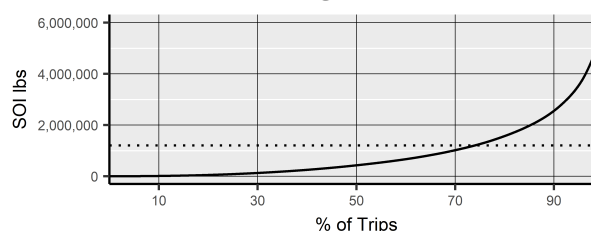
#### SOI Landings by Area Fished



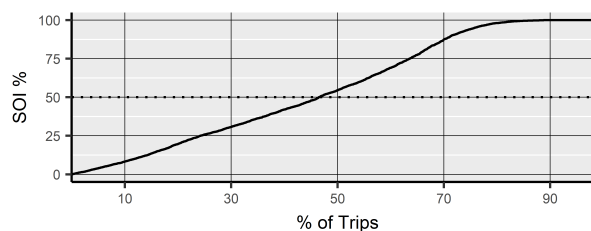
#### Share of SOI Landings by Month



#### Cumulative SOI Landings



#### SOI Share of Revenue Per Trip



#### Trip Descriptive Statistics (N=4,347)

	Mean	Min	Median	Max
Days at Sea	4.2	1	3	21
Crew Size	2.9	1	3	10
Landings	2,398	9	1,340	33,752
Revenue	\$10,434	\$33	\$5,224	\$167,058
SOI	\$6,471	\$4	\$2,062	\$167,019
% SOI	56%	0%	54.6%	100%



## SOI: 2018 GOM IFQ Red Snapper Fishery: All Gears

### Trip-Level Economics

#### Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	4,347	-	-	-
Selected	1,187	27%	-	-
Responded	1,146	26%	97%	-
Used	1,123	26%	95%	98%

#### Economic Results (n=1,123)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Trip</b>					
Owner-Operated	67%	3.9	60%	73%	-
Days at Sea	4.5	0.3	4	5	4
Crew Size	2.8	0.1	2.7	2.9	3
Fuel Used	205	18	176	234	151
Landings (gutted lbs)	2,449	222	2,080	2,818	1,375
<b>Total Revenue</b>	10,794	1,070	9,019	12,570	5,000
<b>Cost</b>					
Fuel	546	46	469	623	419
Bait	356	52	271	442	150
Ice	160	19	129	192	100
Groceries	254	32	202	307	150
Miscellaneous	254	50	171	337	50
Hired Crew	2,456	296	1,965	2,948	929
IFQ Purchase	2,433	353	1,847	3,019	591
OC Owner-Captain Time	766	127	556	976	200
<b>Trip Net Cash Flow*</b>	4,334	627	3,294	5,374	1,825
<b>Trip Net Revenue*</b>	6,001	716	4,813	7,189	2,319

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

Revenue 100%	Trip Net Cash Flow* 40%	Trip Net Revenue* 56%
	IFQ Purchase 23%	
	Labor - Hired 23%	Labor - Hired & Owner 30%
	Fuel & Supplies 15%	Fuel & Supplies 15%

#### Input Prices

Fuel Price (average): \$2.66 per gallon      Hired Crew Wage (implicit): \$254 per crew-day

#### Productivity Measures

Landings/Fuel Use: 12 lbs/gallon      Landings/Labor Use: 193 lbs/crew-day

\* See Definitions in Methods Section or Glossary.

# SOI: 2018 GOM IFQ Red Snapper Fishery: All Gears

## Annual, Vessel-Level Summary

### Effort

Vessels	440
<u>Trips - Total</u>	<u>5,719</u>
SOI Trips	4,347
Non-SOI Trips	1,372
Days at Sea	23,982
Crew Days	67,776

### Landings (guttled lbs)

<u>Total</u>	<u>12,589,172</u>
SOI	6,019,879
Non-SOI	6,569,294
% SOI	48%

### Percent by Gear

	Trips	Total lbs
Vertical Line	80%	69%
Longline	12%	27%
Diver	4%	1%
Other	4%	3%

### Price (mean)

<u>Total</u>	<u>\$4.27</u>
SOI	\$4.67
Non-SOI	\$3.90

### Revenue

<u>Total</u>	<u>\$53,747,966</u>
SOI	\$28,130,993
Non-SOI	\$25,616,973
% SOI	52%

### Percent of Revenue by Species Group

Shallow Water Groupers	25%
Shallow Water Snappers	1%
Mid-Shelf Snappers	59%
Deep Water Groupers/Tilefish	10%
Grunts/Porgies/Triggerfish	0.9%
Mackerels/Dolphinfish/Jacks	3%
Other Species	0.4%

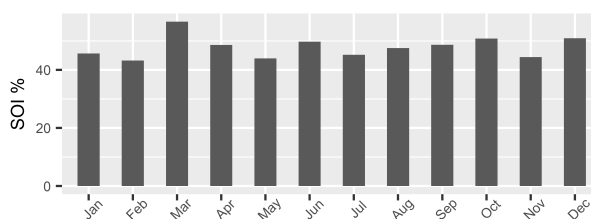
### Revenue for Top 5 Species

Red Snapper	\$28,146,889
Red Grouper	\$9,984,545
Vermilion Snapper	\$3,550,587
Yellowedge Grouper	\$3,234,342
Gag Grouper	\$2,591,611

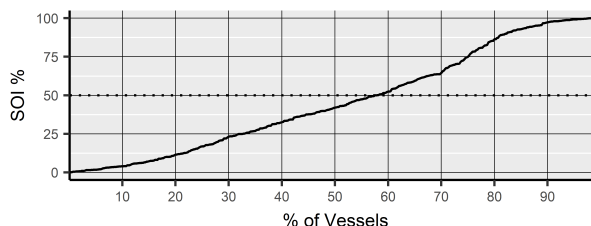
### Annual, Vessel Descriptive Statistics (N=440)

	Mean	Min	Median	Max
Trips	13	1	11	84
Days at Sea	54.5	1	35	225
Crew Days	154	1	88	927
Landings	28,612	57	12,764	403,969
Revenue	\$122,154	\$267	\$52,427	\$2,066,649
SOI	\$63,934	\$13	\$12,387	\$2,021,065
% SOI	46.6%	0.1%	42.1%	100%

### SOI Share of Monthly Landings



### SOI Share of Revenue Per Vessel



### Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	2%
SAT Snapper & Grouper - Limited	0.5%
King Mackerel	37%
Spanish Mackerel	43%
Dolphin-Wahoo	34%
Other Commercial Fishing	16%
For-Hire Fishing	27%

### Vessel Characteristics (N=440)

	Mean	Min	Median	Max
Length	39	22	37	69
Year Built	1989	1961	1986	2018
Horsepower	457	12	400	1,800
Fiberglass Hull	92%	-	-	-
Diesel Engine	77%	-	-	-
Ice Refrigeration	94%	-	-	-

## SOI: 2018 GOM IFQ Red Snapper Fishery: All Gears

### Annual, Vessel-Level Economics

#### Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	440	-	-	-
Selected	119	27%	-	-
Responded	98	22%	82%	-
Used	95	22%	80%	97%

#### Economic Results (n=95)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Vessel</b>					
Owner-Operated	68%	4.3	61%	75%	-
For-Hire Active	16%	3.4	10%	22%	-
Days - Commercial Fishing	61	4	54	68	41
Days - For-Hire Fishing	13	3.5	7	19	0
Days - Non-fishing	1	0.3	0	1	0
Vessel Value	113,617	10,981	95,374	131,861	85,000
Has Insurance	34%	4.4	27%	42%	-
<b>Total Revenue</b>					
Commercial Fishing	132,616	15,496	106,870	158,361	89,898
For-Hire Fishing	120,354	15,095	95,275	145,434	61,368
	12,261	3,397	6,618	17,905	0
<b>Cost</b>					
Fuel	10,328	964	8,727	11,929	8,020
Other Supplies	15,005	1,953	11,761	18,250	7,100
Hired Crew	31,236	4,643	23,521	38,950	11,000
Vessel Repair & Maintenance	13,598	1,709	10,759	16,437	8,500
Insurance	1,457	263	1,020	1,895	0
Overhead	6,271	962	4,672	7,870	3,723
Loan Payment	1,841	411	1,158	2,524	0
IFQ Purchase	21,341	4,068	14,582	28,100	3,615
OC Owner-Captain Time	8,514	1,179	6,556	10,472	1,750
Depreciation	5,681	549	4,769	6,593	4,250
<b>Net Cash Flow</b>					
	31,538	9,685	15,448	47,629	7,561
<b>Net Revenue from Operations**</b>					
	40,525	10,327	23,367	57,682	8,102

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

Revenue 100%	Net Cash Flow 24%	Net Revenue - Operations 31%
	IFQ Purchase 16%	Depreciation 4%
	Loan Payment 1%	Vessel R&M, Insur, Overh 16%
	Vessel R&M, Insur, Overh 16%	Labor - Hired & Owner 30%
	Labor - Hired 24%	Fuel & Supplies 19%
	Fuel & Supplies 19%	

**Economic Return\*\* (on Vessel Asset Value): 35.7%**

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

**SOI: 2018 GOM IFQ Red Snapper Fishery: All Gears**  
**Trip-Level Time Series**

Trip-Level Summary		2014	2015	2016	2017	2018***	Average
<b>Effort</b>							
Trips		3,786	4,236	4,524	4,614	4,347	4,301
Vessels		401	406	421	438	440	421
Days at Sea		17,140	19,167	19,937	20,197	18,344	18,957
<b>Landings (gutted lbs)</b>							
Total		10,648,727	12,066,896	11,867,636	11,158,855	10,423,495	11,233,122
SOI		4,719,836	6,151,429	5,746,141	5,982,333	6,019,879	5,723,924
Non-SOI		5,928,891	5,915,467	6,121,495	5,176,521	4,403,616	5,509,198
% SOI		44%	51%	48%	54%	58%	51%
<b>Price (mean)</b>							
Total		\$4.13	\$4.22	\$4.21	\$4.22	\$4.35	\$4.23
SOI		\$4.79	\$4.66	\$4.65	\$4.66	\$4.67	\$4.69
Non-SOI		\$3.60	\$3.75	\$3.81	\$3.71	\$3.91	\$3.76
<b>Revenue</b>							
Total		\$43,919,892	\$50,876,255	\$50,062,713	\$47,026,175	\$45,355,831	\$47,448,173
SOI		\$22,590,647	\$28,690,031	\$26,730,369	\$27,852,677	\$28,130,993	\$26,798,943
Non-SOI		\$21,329,246	\$22,186,223	\$23,332,344	\$19,173,499	\$17,224,838	\$20,649,230
% SOI		51%	56%	53%	59%	62%	56%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data, provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM IFQ Red Snapper Fishery: All Gears**  
**Trip-Level Time Series**

<b>Trip-Level Economics</b>		<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Average</b>
Number of Observations		750	1,189	1,233	1,302	1,123	
Response Rate (%)		83%	85%	96%	95%	95%	
<b>SOI Trip</b>							
Owner-Operated		70%	60%	66%	58%	67%	64.2%
Fuel Used per Day at Sea (gallons/day)		47	50	40	50	45	46
<b>Total Revenue</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Costs (% of Revenue)</b>							
Fuel		6.1%	4.2%	3.5%	4.5%	5.1%	4.7%
Bait		2.5%	2.7%	2.9%	3.3%	3.3%	2.9%
Ice		1.3%	1.3%	1.5%	1.5%	1.5%	1.4%
Groceries		2%	1.9%	2.7%	2.8%	2.4%	2.4%
Miscellaneous		2.4%	2.1%	2.7%	2.4%	2.4%	2.4%
Hired Crew		26.3%	23.9%	26.2%	26.8%	22.8%	25.2%
IFQ Purchase		15.8%	30.6%	19.7%	22%	22.5%	22.1%
OC Owner-Captain Time		6.6%	5.4%	6.8%	6.2%	7.1%	6.4%
<b>Trip Net Cash Flow*</b>		<b>43.7%</b>	<b>33.2%</b>	<b>40.8%</b>	<b>36.9%</b>	<b>40%</b>	<b>38.9%</b>
<b>Trip Net Revenue*</b>							
Labor - Hired & Owner		52.9%	58.3%	53.6%	52.7%	56%	54.7%
Fuel & Supplies		32.9%	29.4%	33%	33%	30%	31.7%
		14.2%	12.3%	13.4%	14.3%	15%	13.8%
<b>Input Prices</b>							
Fuel Price (per gallon)		\$3.68	\$2.58	\$2.12	\$2.31	\$2.66	\$2.67
Hire Crew Wage (per crew-day)		\$354	\$308	\$283	\$318	\$254	\$303
<b>Productivity Measures</b>							
Landings/Fuel Use (lbs/gallon)		14.4	14	13.5	11.8	12	13
Landings/Labor Use (lbs/crew-day)		241	235	188	214	193	214

\* See Definitions in Methods Section or Glossary.

**SOI: 2018 GOM IFQ Red Snapper Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

**Annual, Vessel-Level Summary**

	2014	2015	2016	2017	2018***	Average
<b>Effort</b>						
Vessels	401	406	421	438	440	421
Trips - Total	5,886	6,430	6,707	6,581	5,719	6,265
SOI Trips	3,786	4,236	4,524	4,614	4,347	4,301
Non-SOI Trips	2,100	2,194	2,183	1,967	1,372	1,963
Days at Sea	27,086	28,242	28,595	27,529	23,982	27,087
<b>Landings (gutted lbs)</b>						
Total	15,150,195	15,891,347	15,548,003	14,196,764	12,589,172	14,675,096
SOI	4,719,836	6,151,429	5,746,141	5,982,333	6,019,879	5,723,924
Non-SOI	10,430,359	9,739,918	9,801,862	8,214,430	6,569,294	8,951,173
% SOI	31%	39%	37%	42%	48%	39%
<b>Revenue</b>						
Total	\$60,730,135	\$64,765,864	\$63,259,782	\$57,840,476	\$53,747,966	\$60,068,845
SOI	\$22,590,647	\$28,690,031	\$26,730,369	\$27,852,677	\$28,130,993	\$26,798,943
Non-SOI	\$38,139,489	\$36,075,833	\$36,529,413	\$29,987,800	\$25,616,973	\$33,269,902
% SOI	37%	44%	42%	48%	52%	45%
<b>Vessel Characteristics</b>						
Length	39	39	39	39	39	39
Year Built	1986	1986	1987	1988	1989	1987
For-Hire Fishing Permit	24%	23%	24%	25%	27%	25%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM IFQ Red Snapper Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

Annual, Vessel-Level Economics		2014	2015	2016	2017	2018	Average
Number of Observations		72	92	103	112	95	
Response Rate (%)		67%	78%	87%	82%	80%	
<b>SOI Vessel</b>							
Owner-Operated		74%	66%	77%	67%	68%	70%
For-Hire Active		7%	14%	18%	19%	16%	15%
Vessel Value		\$130,495	\$106,558	\$91,704	\$110,979	\$113,617	\$110,671
<b>Total Revenue</b>		100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>							
Fuel		7.9%	5.7%	6.2%	6.3%	7.8%	6.8%
Other Supplies		9.7%	9%	10.2%	11.2%	11.3%	10.3%
Hired Crew		27%	25.7%	24.4%	24.5%	23.6%	25%
Vessel Repair & Maintenance		7.4%	6.6%	8.3%	10.4%	10.3%	8.6%
Insurance		1%	0.8%	1%	1.1%	1.1%	1%
Overhead		5%	5.4%	4.9%	6.6%	4.7%	5.3%
Loan Payment		0.9%	1.3%	1.3%	1.4%	1.4%	1.3%
IFQ Purchase		11.5%	24.8%	14.2%	11.8%	16.1%	15.7%
OC Owner-Captain Time		5.5%	4.9%	6.5%	5.6%	6.4%	5.8%
<b>Net Cash Flow</b>		29.7%	20.7%	29.5%	26.7%	24%	26.1%
<b>Net Revenue for Operations**</b>							
Depreciation		33.2%	39%	35.5%	30.5%	31%	33.8%
Vessel R&M, Insur, Overh		3.5%	2.8%	3%	3.7%	4.3%	3.5%
Labor - Hired & Owner		13.4%	12.8%	14.2%	18.2%	16%	14.9%
Fuel & Supplies		32.4%	30.6%	30.9%	30.2%	30%	30.8%
<b>Economic Return** (on asset value)</b>		47.8%	71%	59%	41.5%	35.7%	51%

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

## SOI: 2018 GOM IFQ Grouper-Tilefish 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 Grouper-Tilefish IFQ program was landed in 2018. Species managed include red, gag, other shallow water, and deep water grouper and tilefish. Official 2018 GT-IFQ landings and revenue, per the IFQ-tracking system, are 4,283,965 lbs (gutted weight) and \$20,365,972. The logbook-based GT-IFQ SOI accounts for about 95% of the fishery (near-census). For important **disclaimer**, see page 15.

### Trip-Level Summary

#### Effort

Trips	4,139
Vessels	452
Days at Sea	21,524
Crew Days	60,549

#### Landings (gutted lbs)

<u>Total</u>	9,289,866
SOI	4,048,121
Non-SOI	5,241,744
% SOI	44%

#### Percent by Gear

	Trips	SOI lbs
Vertical Line	77%	25%
Longline	17%	73%
Diver	6%	1%
Other	0.4%	0.6%

#### Price (mean)

<u>Total</u>	\$4.29
SOI	\$4.76
Non-SOI	\$3.92

#### Revenue

<u>Total</u>	\$39,831,395
SOI	\$19,277,479
Non-SOI	\$20,553,916
% SOI	48%

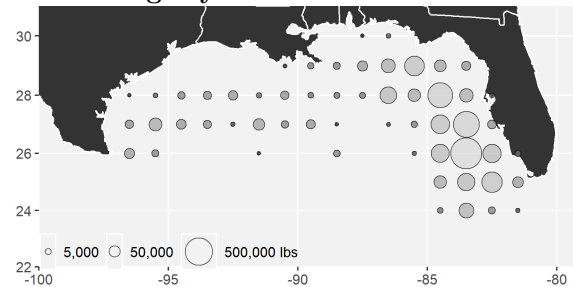
#### Percent of Revenue by Species Group

Shallow Water Groupers	35%
Shallow Water Snappers	2%
Mid-Shelf Snappers	47%
Deep Water Groupers/Tilefish	13%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	1%
Other Species	0.4%

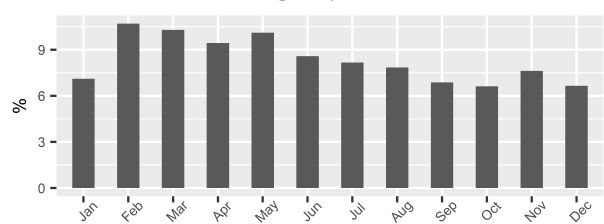
#### Revenue for Top 5 Species

Red Snapper	\$15,328,616
Red Grouper	\$10,541,964
Yellowedge Grouper	\$3,295,016
Vermilion Snapper	\$3,073,959
Gag Grouper	\$2,650,875

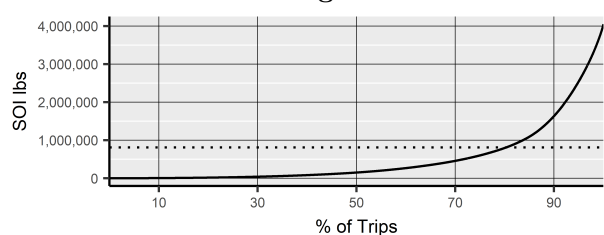
#### SOI Landings by Area Fished



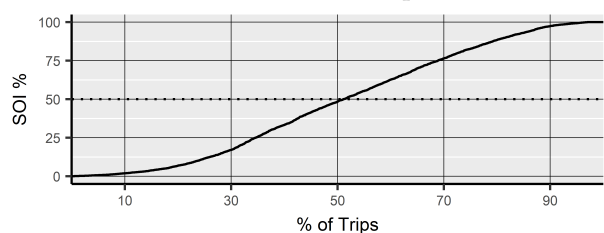
#### Share of SOI Landings by Month



#### Cumulative SOI Landings



#### SOI Share of Revenue Per Trip



#### Trip Descriptive Statistics (N=4,139)

	Mean	Min	Median	Max
Days at Sea	5.2	1	4	23
Crew Size	2.7	1	3	8
Landings	2,244	4	1,259	29,871
Revenue	\$9,623	\$25	\$4,989	\$149,980
SOI	\$4,658	\$2	\$1,051	\$75,830
% SOI	48%	0%	48.5%	100%



## SOI: 2018 GOM IFQ Grouper-Tilefish Fishery: All Gears

### Trip-Level Economics

#### Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	4,139	-	-	-
Selected	1,077	26%	-	-
Responded	1,037	25%	96%	-
Used	1,014	24%	94%	98%

#### Economic Results (n=1,014)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Trip</b>					
Owner-Operated	66%	3.9	60%	73%	-
Days at Sea	5.7	0.3	5.2	6.2	5
Crew Size	2.7	0.1	2.6	2.8	3
Fuel Used	251	18	222	281	165
Landings (gutted lbs)	2,403	210	2,055	2,752	1,304
<b>Total Revenue</b>	10,428	1,008	8,757	12,099	5,045
<b>Cost</b>					
Fuel	677	47	600	755	450
Bait	461	48	381	541	180
Ice	197	18	166	227	110
Groceries	339	30	289	389	195
Miscellaneous	312	42	242	383	80
Hired Crew	2,677	281	2,211	3,143	1,000
IFQ Purchase	1,882	365	1,277	2,487	567
OC Owner-Captain Time	732	97	571	892	193
<b>Trip Net Cash Flow*</b>	3,884	572	2,936	4,832	1,608
<b>Trip Net Revenue*</b>	5,034	682	3,903	6,166	1,901

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

Revenue 100%	Trip Net Cash Flow* 37%	Trip Net Revenue* 48%
	IFQ Purchase 18%	
	Labor - Hired 26%	Labor - Hired & Owner 33%
	Fuel & Supplies 19%	Fuel & Supplies 19%

#### Input Prices

Fuel Price (average): \$2.69 per gallon

Hired Crew Wage (implicit): \$230 per crew-day

#### Productivity Measures

Landings/Fuel Use: 9.6 lbs/gallon

Landings/Labor Use: 156 lbs/crew-day

\* See Definitions in Methods Section or Glossary.

# SOI: 2018 GOM IFQ Grouper-Tilefish Fishery: All Gears

## Annual, Vessel-Level Summary

### Effort

Vessels	452
<u>Trips - Total</u>	<u>5,779</u>
SOI Trips	4,139
Non-SOI Trips	1,640
Days at Sea	25,028
Crew Days	70,022

### Landings (guttled lbs)

<u>Total</u>	<u>12,398,965</u>
SOI	4,048,121
Non-SOI	8,350,844
% SOI	33%

### Percent by Gear

	Trips	Total lbs
Vertical Line	78%	68%
Longline	12%	29%
Diver	7%	1%
Other	3%	2%

### Price (mean)

<u>Total</u>	<u>\$4.28</u>
SOI	\$4.76
Non-SOI	\$4.04

### Revenue

<u>Total</u>	<u>\$53,015,455</u>
SOI	\$19,277,479
Non-SOI	\$33,737,977
% SOI	36%

### Percent of Revenue by Species Group

Shallow Water Groupers	27%
Shallow Water Snappers	3%
Mid-Shelf Snappers	56%
Deep Water Groupers/Tilefish	10%
Grunts/Porgies/Triggerfish	0.9%
Mackerels/Dolphinfish/Jacks	3%
Other Species	0.5%

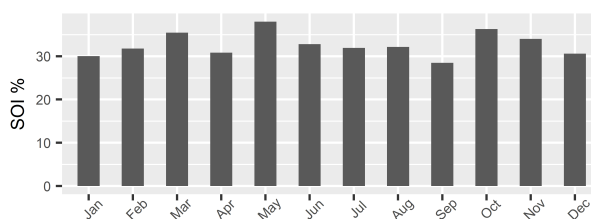
### Revenue for Top 5 Species

Red Snapper	\$25,890,021
Red Grouper	\$10,626,892
Vermilion Snapper	\$3,504,218
Yellowedge Grouper	\$3,327,245
Gag Grouper	\$2,655,660

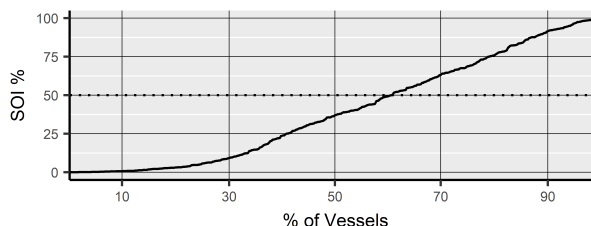
### Annual, Vessel Descriptive Statistics (N=452)

	Mean	Min	Median	Max
Trips	12.8	1	11	84
Days at Sea	55.4	1	36	225
Crew Days	154.9	1	88	927
Landings	27,431	39	11,528	403,969
Revenue	\$117,291	\$198	\$48,946	\$2,066,649
SOI	\$42,649	\$6	\$5,996	\$559,877
% SOI	40.3%	0%	37.1%	100%

### SOI Share of Monthly Landings



### SOI Share of Revenue Per Vessel



### Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	4%
SAT Snapper & Grouper - Limited	0.7%
King Mackerel	35%
Spanish Mackerel	45%
Dolphin-Wahoo	36%
Other Commercial Fishing	17%
For-Hire Fishing	26%

### Vessel Characteristics (N=452)

	Mean	Min	Median	Max
Length	39	19	37	69
Year Built	1988	1961	1986	2018
Horsepower	433	12	375	1,600
Fiberglass Hull	93%	-	-	-
Diesel Engine	78%	-	-	-
Ice Refrigeration	94%	-	-	-

## SOI: 2018 GOM IFQ Grouper-Tilefish Fishery: All Gears

### Annual, Vessel-Level Economics

#### Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	452	-	-	-
Selected	120	27%	-	-
Responded	97	21%	81%	-
Used	93	21%	78%	96%

#### Economic Results (n=93)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Vessel</b>					
Owner-Operated	70%	4.4	63%	77%	-
For-Hire Active	11%	3	6%	17%	-
Days - Commercial Fishing	63	4.2	56	70	43
Days - For-Hire Fishing	10	3.4	4	15	0
Days - Non-fishing	1	0.4	0	2	0
Vessel Value	104,518	11,179	85,941	123,096	80,000
Has Insurance	31%	4.4	23%	38%	-
<b>Total Revenue</b>	130,764	15,965	104,234	157,295	78,000
Commercial Fishing	121,805	15,611	95,862	147,747	56,937
For-Hire Fishing	8,960	3,044	3,902	14,018	0
<b>Cost</b>					
Fuel	9,323	921	7,792	10,854	7,090
Other Supplies	15,098	2,029	11,727	18,469	7,232
Hired Crew	29,579	4,573	21,980	37,178	6,800
Vessel Repair & Maintenance	12,076	1,672	9,297	14,855	6,900
Insurance	1,107	222	737	1,476	0
Overhead	4,321	419	3,624	5,018	2,780
Loan Payment	1,392	345	819	1,964	0
IFQ Purchase	21,612	4,127	14,754	28,469	3,707
OC Owner-Captain Time	7,547	1,095	5,727	9,367	1,263
Depreciation	5,226	559	4,297	6,155	4,000
<b>Net Cash Flow</b>	36,257	9,750	20,056	52,459	7,561
<b>Net Revenue from Operations**</b>	46,488	10,402	29,202	63,774	8,102

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

Revenue 100%	Net Cash Flow 28%	Net Revenue - Operations 36%
	IFQ Purchase 17%	Depreciation 4%
	Loan Payment 1%	Vessel R&M, Insur, Overh 13%
	Vessel R&M, Insur, Overh 13%	Labor - Hired & Owner 28%
	Labor - Hired 23%	Fuel & Supplies 19%
	Fuel & Supplies 19%	Fuel & Supplies 19%

**Economic Return\*\* (on Vessel Asset Value): 44.5%**

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

**SOI: 2018 GOM IFQ Grouper-Tilefish Fishery: All Gears**  
**Trip-Level Time Series**

Trip-Level Summary		2014	2015	2016	2017	2018***	Average
<b>Effort</b>							
Trips		4,934	4,951	5,015	4,617	4,139	4,731
Vessels		443	445	435	452	452	445
Days at Sea		26,115	25,826	26,414	24,676	21,524	24,911
<b>Landings (guttled lbs)</b>							
Total		13,425,152	12,462,518	12,466,569	10,592,047	9,289,866	11,647,230
SOI		7,517,281	6,722,470	6,724,535	5,125,550	4,048,121	6,027,591
Non-SOI		5,907,872	5,740,048	5,742,033	5,466,496	5,241,744	5,619,639
% SOI		56%	54%	54%	48%	44%	51%
<b>Price (mean)</b>							
Total		\$3.99	\$4.11	\$4.12	\$4.11	\$4.29	\$4.12
SOI		\$4.16	\$4.30	\$4.38	\$4.45	\$4.76	\$4.41
Non-SOI		\$3.79	\$3.89	\$3.83	\$3.79	\$3.92	\$3.84
<b>Revenue</b>							
Total		\$53,621,442	\$51,256,372	\$51,390,081	\$43,513,048	\$39,831,395	\$47,922,468
SOI		\$31,243,266	\$28,913,693	\$29,433,848	\$22,814,054	\$19,277,479	\$26,336,468
Non-SOI		\$22,378,176	\$22,342,678	\$21,956,232	\$20,698,994	\$20,553,916	\$21,585,999
% SOI		58%	56%	57%	52%	48%	54%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data, provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM IFQ Grouper-Tilefish Fishery: All Gears**  
**Trip-Level Time Series**

<b>Trip-Level Economics</b>		<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Average</b>
Number of Observations		1,043	1,299	1,549	1,383	1,014	
Response Rate (%)		79%	85%	94%	95%	94%	
<b>SOI Trip</b>							
Owner-Operated		69%	62%	65%	57%	66%	63.8%
Fuel Used per Day at Sea (gallons/day)		45	43	39	47	44	44
<b>Total Revenue</b>		100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>							
Fuel		7%	5.4%	4.5%	5.6%	6.5%	5.8%
Bait		3.3%	3.7%	3.9%	4.4%	4.4%	3.9%
Ice		1.5%	1.6%	1.8%	1.8%	1.9%	1.7%
Groceries		2.6%	2.8%	3.6%	3.7%	3.2%	3.2%
Miscellaneous		2.5%	2.9%	3.3%	2.7%	3%	2.9%
Hired Crew		29%	29.1%	28.3%	28.6%	25.7%	28.1%
IFQ Purchase		14.6%	20.5%	18%	16.8%	18%	17.6%
OC Owner-Captain Time		6.2%	5.8%	6.7%	5.3%	7%	6.2%
<b>Trip Net Cash Flow*</b>		39.4%	34.1%	36.7%	36.4%	37%	36.7%
<b>Trip Net Revenue*</b>		47.8%	48.8%	48%	47.9%	48%	48.1%
Labor - Hired & Owner		35.2%	34.9%	35%	33.8%	33%	34.4%
Fuel & Supplies		17%	16.2%	17.1%	18.2%	19%	17.5%
<b>Input Prices</b>							
Fuel Price (per gallon)		\$3.68	\$2.64	\$2.11	\$2.32	\$2.69	\$2.69
Hire Crew Wage (per crew-day)		\$324	\$299	\$252	\$257	\$230	\$272
<b>Productivity Measures</b>							
Landings/Fuel Use (lbs/gallon)		13	11.8	10.9	9.9	9.6	11
Landings/Labor Use (lbs/crew-day)		208	189	159	170	156	176

\* See Definitions in Methods Section or Glossary.

**SOI: 2018 GOM IFQ Grouper-Tilefish Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

<b>Annual, Vessel-Level Summary</b>		<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018***</b>	<b>Average</b>
<b>Effort</b>							
Vessels		443	445	435	452	452	445
Trips - Total		6,740	6,808	6,974	6,776	5,779	6,615
SOI Trips		4,934	4,951	5,015	4,617	4,139	4,731
Non-SOI Trips		1,806	1,857	1,959	2,159	1,640	1,884
Days at Sea		29,799	29,584	29,981	28,793	25,028	28,637
<b>Landings (gutted lbs)</b>							
Total		15,996,977	15,903,721	15,679,551	14,489,754	12,398,965	14,893,794
SOI		7,517,281	6,722,470	6,724,535	5,125,550	4,048,121	6,027,591
Non-SOI		8,479,696	9,181,251	8,955,016	9,364,204	8,350,844	8,866,202
% SOI		47%	42%	43%	35%	33%	40%
<b>Revenue</b>							
Total		\$63,302,972	\$64,927,396	\$63,622,414	\$58,588,944	\$53,015,455	\$60,691,436
SOI		\$31,243,266	\$28,913,693	\$29,433,848	\$22,814,054	\$19,277,479	\$26,336,468
Non-SOI		\$32,059,706	\$36,013,703	\$34,188,566	\$35,774,890	\$33,737,977	\$34,354,968
% SOI		49%	45%	46%	39%	36%	43%
<b>Vessel Characteristics</b>							
Length		39	39	39	39	39	39
Year Built		1986	1987	1987	1987	1988	1987
For-Hire Fishing Permit		23%	22%	22%	23%	26%	23%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM IFQ Grouper-Tilefish Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

Annual, Vessel-Level Economics		2014	2015	2016	2017	2018	Average
Number of Observations		74	95	110	120	93	
Response Rate (%)		62%	79%	84%	79%	78%	
<b>SOI Vessel</b>							
Owner-Operated		75%	67%	77%	66%	70%	71%
For-Hire Active		6%	18%	15%	18%	11%	14%
Vessel Value		\$133,701	\$116,176	\$90,257	\$113,212	\$104,518	\$111,573
<b>Total Revenue</b>		100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>							
Fuel		8%	6.1%	6.3%	6.4%	7.1%	6.8%
Other Supplies		9.5%	9.3%	10.8%	11.2%	11.5%	10.5%
Hired Crew		27.2%	25.6%	24.6%	25.8%	22.6%	25.2%
Vessel Repair & Maintenance		7.4%	6.7%	8.3%	11%	9.2%	8.5%
Insurance		1%	0.8%	0.9%	1.1%	0.8%	0.9%
Overhead		5%	5.5%	4.7%	6.1%	3.3%	4.9%
Loan Payment		0.8%	1.4%	1.3%	1.2%	1.1%	1.2%
IFQ Purchase		11.4%	24.4%	14.5%	10.8%	16.5%	15.5%
OC Owner-Captain Time		5.6%	5%	5.9%	5.5%	5.8%	5.6%
<b>Net Cash Flow</b>		29.8%	20.2%	28.6%	26.4%	28%	26.6%
<b>Net Revenue for Operations**</b>							
Depreciation		32.8%	37.9%	35.4%	29.1%	36%	34.2%
Vessel R&M, Insur, Overh		3.6%	3.1%	3%	3.8%	4%	3.5%
Labor - Hired & Owner		13.4%	13%	13.9%	18.2%	13%	14.3%
Fuel & Supplies		32.8%	30.6%	30.6%	31.2%	28%	30.6%
<b>Economic Return** (on asset value)</b>		17.4%	15.4%	17.1%	17.6%	19%	17.3%
		45.3%	60.5%	58.6%	38.5%	44.5%	49.5%

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

## SOI: 2018 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 2018 using any gear type. Red grouper in the GOM is an IFQ fishery. Official 2018 red grouper landings and revenue, per the IFQ-tracking system, are 2,404,300 lbs (gutted weight) and \$11,405,696. Hence the logbook-based red grouper SOI accounts for about 93% of the fishery (near-census). For important **disclaimer**, see page 15.

### Trip-Level Summary

#### Effort

Trips	3,138
Vessels	369
Days at Sea	16,386
Crew Days	43,593

#### Landings (gutted lbs)

<u>Total</u>	5,729,371
SOI	2,225,054
Non-SOI	3,504,317
% SOI	39%

#### Percent by Gear

	Trips	SOI lbs
Vertical Line	77%	28%
Longline	17%	71%
Diver	5%	0.3%
Other	0.4%	1%

#### Price (mean)

<u>Total</u>	\$4.31
SOI	\$4.74
Non-SOI	\$4.05

#### Revenue

<u>Total</u>	\$24,721,706
SOI	\$10,541,964
Non-SOI	\$14,179,742
% SOI	43%

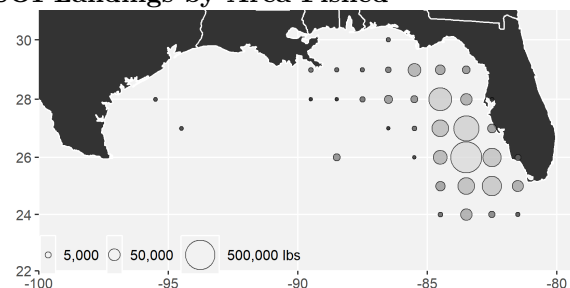
#### Percent of Revenue by Species Group

Shallow Water Groupers	56%
Shallow Water Snappers	3%
Mid-Shelf Snappers	33%
Deep Water Groupers/Tilefish	5%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	1%
Other Species	0.2%

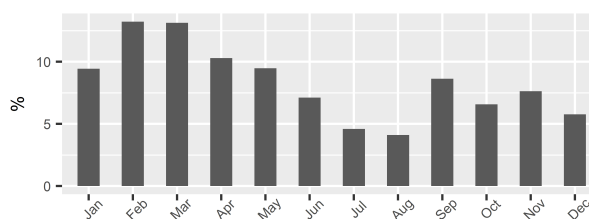
#### Revenue for Top 5 Species

Red Grouper	\$10,541,964
Red Snapper	\$6,441,408
Gag Grouper	\$2,446,439
Vermilion Snapper	\$1,670,115
Yellowedge Grouper	\$804,365

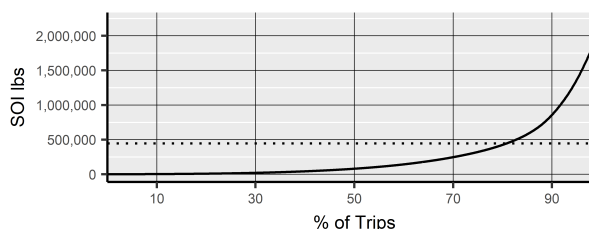
#### SOI Landings by Area Fished



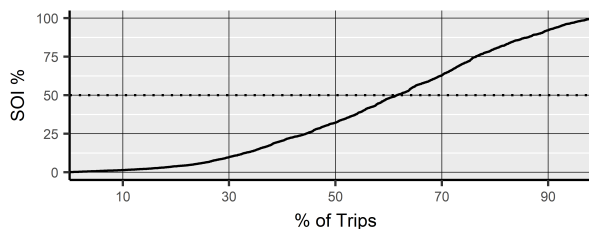
#### Share of SOI Landings by Month



#### Cumulative SOI Landings



#### SOI Share of Revenue Per Trip



#### Trip Descriptive Statistics (N=3,138)

	Mean	Min	Median	Max
Days at Sea	5.2	1	4	20
Crew Size	2.6	1	2	8
Landings	1,826	5	1,081	14,715
Revenue	\$7,878	\$25	\$4,636	\$62,395
SOI	\$3,359	\$9	\$740	\$42,925
% SOI	40%	0%	32.3%	100%



## SOI: 2018 GOM IFQ Red Grouper Fishery: All Gears

### Trip-Level Economics

#### Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	3,138	-	-	-
Selected	791	25%	-	-
Responded	759	24%	96%	-
Used	743	24%	94%	98%

#### Economic Results (n=743)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Trip</b>					
Owner-Operated	66%	4.4	58%	73%	-
Days at Sea	6.2	0.3	5.6	6.7	5
Crew Size	2.5	0.1	2.4	2.6	2
Fuel Used	251	19	218	283	160
Landings (gutted lbs)	2,057	193	1,736	2,377	1,238
<b>Total Revenue</b>	8,953	880	7,490	10,416	4,837
<b>Cost</b>					
Fuel	687	52	601	774	448
Bait	470	55	378	562	165
Ice	183	18	153	213	110
Groceries	346	32	292	400	192
Miscellaneous	336	49	254	417	95
Hired Crew	2,409	316	1,885	2,933	1,000
IFQ Purchase	1,508	223	1,137	1,878	647
OC Owner-Captain Time	828	114	639	1,016	252
<b>Trip Net Cash Flow*</b>	3,014	349	2,435	3,593	1,523
<b>Trip Net Revenue*</b>	3,694	433	2,975	4,413	1,747

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

Revenue 100%	Trip Net Cash Flow* 34%	Trip Net Revenue* 41%
	IFQ Purchase 17%	Labor - Hired & Owner 36%
	Labor - Hired 27%	
	Fuel & Supplies 23%	Fuel & Supplies 23%

#### Input Prices

Fuel Price (average): \$2.74 per gallon      Hired Crew Wage (implicit): \$209 per crew-day

#### Productivity Measures

Landings/Fuel Use: 8.2 lbs/gallon      Landings/Labor Use: 132 lbs/crew-day

\* See Definitions in Methods Section or Glossary.

# SOI: 2018 GOM IFQ Red Grouper Fishery: All Gears

## Annual, Vessel-Level Summary

### Effort

Vessels	369
<u>Trips - Total</u>	<u>4,781</u>
SOI Trips	3,138
Non-SOI Trips	1,643
Days at Sea	20,969
Crew Days	56,010

### Landings (guttled lbs)

<u>Total</u>	<u>8,417,495</u>
SOI	2,225,054
Non-SOI	6,192,441
% SOI	26%

### Percent by Gear

	Trips	Total lbs
Vertical Line	76%	60%
Longline	13%	35%
Diver	8%	2%
Other	3%	2%

### Price (mean)

<u>Total</u>	<u>\$4.17</u>
SOI	\$4.74
Non-SOI	\$3.96

### Revenue

<u>Total</u>	<u>\$35,094,223</u>
SOI	\$10,541,964
Non-SOI	\$24,552,259
% SOI	30%

### Percent of Revenue by Species Group

Shallow Water Groupers	40%
Shallow Water Snappers	4%
Mid-Shelf Snappers	42%
Deep Water Groupers/Tilefish	9%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	4%
Other Species	0.4%

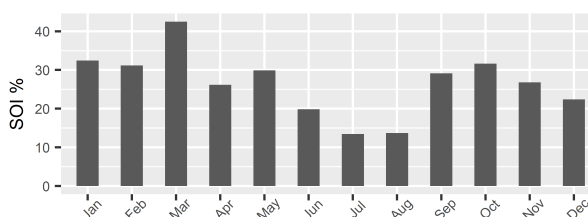
### Revenue for Top 5 Species

Red Snapper	\$11,569,036
Red Grouper	\$10,626,892
Vermilion Snapper	\$2,817,736
Gag Grouper	\$2,632,740
Yellowedge Grouper	\$1,878,207

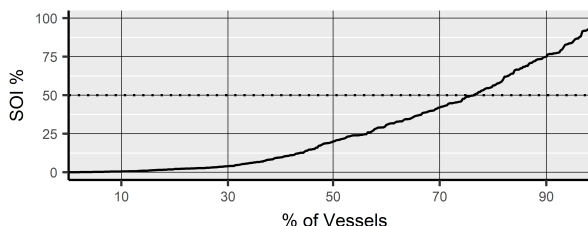
### Annual, Vessel Descriptive Statistics (N=369)

	Mean	Min	Median	Max
Trips	13	1	11	80
Days at Sea	56.8	1	37	217
Crew Days	151.8	1	88	764
Landings	22,812	39	10,065	245,542
Revenue	\$95,106	\$198	\$42,789	\$1,240,846
SOI	\$28,569	\$13	\$3,279	\$308,702
% SOI	28.9%	0%	20.2%	100%

### SOI Share of Monthly Landings



### SOI Share of Revenue Per Vessel



### Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	4%
SAT Snapper & Grouper - Limited	0.5%
King Mackerel	33%
Spanish Mackerel	45%
Dolphin-Wahoo	35%
Other Commercial Fishing	17%
For-Hire Fishing	25%

### Vessel Characteristics (N=369)

	Mean	Min	Median	Max
Length	38	19	36	69
Year Built	1988	1961	1986	2018
Horsepower	423	12	370	1,320
Fiberglass Hull	95%	-	-	-
Diesel Engine	78%	-	-	-
Ice Refrigeration	93%	-	-	-

## SOI: 2018 GOM IFQ Red Grouper Fishery: All Gears

### Annual, Vessel-Level Economics

#### Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	369	-	-	-
Selected	98	27%	-	-
Responded	79	21%	81%	-
Used	77	21%	79%	97%

#### Economic Results (n=77)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Vessel</b>					
Owner-Operated	68%	4.9	60%	77%	-
For-Hire Active	9%	3	4%	14%	-
Days - Commercial Fishing	65	4.6	57	73	43
Days - For-Hire Fishing	9	3.9	2	15	0
Days - Non-fishing	1	0.5	0	2	0
Vessel Value	104,231	13,117	82,386	126,076	76,000
Has Insurance	28%	4.7	20%	36%	-
<b>Total Revenue</b>					
Commercial Fishing	112,161	15,988	85,535	138,787	73,526
For-Hire Fishing	105,041	15,896	78,568	131,515	42,197
	7,120	2,976	2,164	12,075	0
<b>Cost</b>					
Fuel	8,934	957	7,341	10,527	6,440
Other Supplies	15,485	2,345	11,579	19,390	7,100
Hired Crew	28,502	5,152	19,922	37,081	6,548
Vessel Repair & Maintenance	11,097	1,682	8,295	13,899	6,000
Insurance	952	225	578	1,326	0
Overhead	4,105	432	3,386	4,825	2,780
Loan Payment	1,639	413	952	2,326	0
IFQ Purchase	16,411	2,913	11,560	21,262	3,750
OC Owner-Captain Time	7,638	1,259	5,542	9,735	1,309
Depreciation	5,212	656	4,119	6,304	3,800
<b>Net Cash Flow</b>					
	25,037	9,389	9,400	40,673	7,429
<b>Net Revenue from Operations**</b>					
	30,237	9,863	13,811	46,662	4,647

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

Revenue 100%	Net Cash Flow 22%	Net Revenue - Operations 27%
	IFQ Purchase 15%	Depreciation 5%
	Loan Payment 1%	Vessel R&M, Insur, Overh 14%
	Vessel R&M, Insur, Overh 14%	Labor - Hired & Owner 32%
	Labor - Hired 25%	Fuel & Supplies 22%
	Fuel & Supplies 22%	

**Economic Return\*\* (on Vessel Asset Value): 29%**

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

**SOI: 2018 GOM IFQ Red Grouper Fishery: All Gears**  
**Trip-Level Time Series**

Trip-Level Summary		2014	2015	2016	2017	2018***	Average
<b>Effort</b>							
Trips		4,010	3,931	3,856	3,488	3,138	3,685
Vessels		389	372	373	370	369	375
Days at Sea		21,208	20,560	20,618	19,161	16,386	19,587
<b>Landings (gutted lbs)</b>							
Total		9,403,264	8,252,381	8,170,233	6,661,617	5,729,371	7,643,373
SOI		5,298,112	4,535,269	4,243,793	3,189,186	2,225,054	3,898,283
Non-SOI		4,105,153	3,717,112	3,926,440	3,472,431	3,504,317	3,745,091
% SOI		56%	55%	52%	48%	39%	50%
<b>Price (mean)</b>							
Total		\$3.91	\$4.04	\$4.07	\$4.09	\$4.31	\$4.08
SOI		\$4.02	\$4.15	\$4.15	\$4.36	\$4.74	\$4.28
Non-SOI		\$3.77	\$3.89	\$3.99	\$3.83	\$4.05	\$3.91
<b>Revenue</b>							
Total		\$36,770,629	\$33,304,515	\$33,258,772	\$27,221,567	\$24,721,706	\$31,055,438
SOI		\$21,300,517	\$18,849,728	\$17,624,392	\$13,906,481	\$10,541,964	\$16,444,616
Non-SOI		\$15,470,111	\$14,454,787	\$15,634,380	\$13,315,086	\$14,179,742	\$14,610,821
% SOI		58%	57%	53%	51%	43%	52%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data, provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM IFQ Red Grouper Fishery: All Gears**  
**Trip-Level Time Series**

<b>Trip-Level Economics</b>		<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Average</b>
Number of Observations		829	1,066	1,232	1,008	743	
Response Rate (%)		78%	85%	93%	94%	94%	
<b>SOI Trip</b>							
Owner-Operated		68%	62%	64%	53%	66%	62.6%
Fuel Used per Day at Sea (gallons/day)		41	39	37	41	41	40
<b>Total Revenue</b>		100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>							
Fuel		8%	6.3%	5.1%	6.2%	7.7%	6.7%
Bait		3.7%	3.9%	4.1%	5.1%	5.3%	4.4%
Ice		1.5%	1.6%	1.7%	1.9%	2%	1.7%
Groceries		3%	3.2%	4%	4.5%	3.9%	3.7%
Miscellaneous		2.2%	3%	3.4%	2.2%	3.7%	2.9%
Hired Crew		30%	31%	29.8%	30.3%	26.9%	29.6%
IFQ Purchase		15.4%	21.8%	17.9%	13.9%	16.8%	17.2%
OC Owner-Captain Time		7.5%	6.8%	7.9%	6%	9.2%	7.5%
<b>Trip Net Cash Flow*</b>		36.2%	29.2%	33.8%	35.9%	34%	33.8%
<b>Trip Net Revenue*</b>							
Labor - Hired & Owner		44.1%	44.3%	43.8%	43.8%	41%	43.4%
Fuel & Supplies		37.5%	37.8%	37.8%	36.3%	36%	37.1%
		18.4%	18%	18.4%	19.9%	23%	19.5%
<b>Input Prices</b>							
Fuel Price (per gallon)		\$3.75	\$2.71	\$2.12	\$2.36	\$2.74	\$2.74
Hire Crew Wage (per crew-day)		\$289	\$270	\$237	\$227	\$209	\$246
<b>Productivity Measures</b>							
Landings/Fuel Use (lbs/gallon)		11.9	10.5	9.7	9.2	8.2	10
Landings/Labor Use (lbs/crew-day)		183	161	140	144	132	152

\* See Definitions in Methods Section or Glossary.

**SOI: 2018 GOM IFQ Red Grouper Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

<b>Annual, Vessel-Level Summary</b>		<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018***</b>	<b>Average</b>
<b>Effort</b>							
Vessels		389	372	373	370	369	375
Trips - Total		5,842	5,392	5,910	5,341	4,781	5,453
SOI Trips		4,010	3,931	3,856	3,488	3,138	3,685
Non-SOI Trips		1,832	1,461	2,054	1,853	1,643	1,769
Days at Sea		26,974	25,553	26,473	24,098	20,969	24,813
<b>Landings (gutted lbs)</b>							
Total		12,943,889	11,670,744	11,967,414	9,959,407	8,417,495	10,991,790
SOI		5,298,112	4,535,269	4,243,793	3,189,186	2,225,054	3,898,283
Non-SOI		7,645,778	7,135,474	7,723,621	6,770,221	6,192,441	7,093,507
% SOI		41%	39%	35%	32%	26%	35%
<b>Revenue</b>							
Total		\$50,028,999	\$46,374,457	\$46,944,629	\$39,101,322	\$35,094,223	\$43,508,726
SOI		\$21,300,517	\$18,849,728	\$17,624,392	\$13,906,481	\$10,541,964	\$16,444,616
Non-SOI		\$28,728,481	\$27,524,729	\$29,320,237	\$25,194,840	\$24,552,259	\$27,064,109
% SOI		43%	41%	38%	36%	30%	38%
<b>Vessel Characteristics</b>							
Length		38	38	38	38	38	38
Year Built		1987	1987	1987	1987	1988	1987
For-Hire Fishing Permit		23%	22%	21%	24%	25%	23%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM IFQ Red Grouper Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

Annual, Vessel-Level Economics		2014	2015	2016	2017	2018	Average
Number of Observations		66	81	97	97	77	
Response Rate (%)		65%	78%	84%	78%	79%	
<b>SOI Vessel</b>							
Owner-Operated		75%	66%	79%	65%	68%	71%
For-Hire Active		6%	20%	11%	19%	9%	13%
Vessel Value		\$132,651	\$108,033	\$79,116	\$107,988	\$104,231	\$106,404
<b>Total Revenue</b>		100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>							
Fuel		8.3%	7.6%	6.7%	6.9%	8%	7.5%
Other Supplies		10.5%	11.1%	13.2%	11.9%	13.8%	12.1%
Hired Crew		26.6%	29.3%	26.6%	26.5%	25.4%	26.9%
Vessel Repair & Maintenance		7.1%	8.7%	9.1%	11.9%	9.9%	9.3%
Insurance		0.5%	1.1%	0.9%	1%	0.8%	0.9%
Overhead		4.2%	6.3%	5.8%	6.7%	3.7%	5.3%
Loan Payment		0.9%	1.9%	1.3%	1.4%	1.5%	1.4%
IFQ Purchase		11.4%	15.4%	14.9%	12%	14.6%	13.7%
OC Owner-Captain Time		5.7%	5.5%	7.1%	4.7%	6.8%	6%
<b>Net Cash Flow</b>		30.5%	18.7%	21.5%	21.8%	22%	22.9%
<b>Net Revenue for Operations**</b>							
Depreciation		33.3%	26.7%	27.3%	26.4%	27%	28.1%
Vessel R&M, Insur, Overh		3.8%	3.9%	3.3%	4.1%	4.6%	3.9%
Labor - Hired & Owner		11.8%	16%	15.8%	19.6%	14%	15.4%
Fuel & Supplies		32.3%	34.7%	33.6%	31.2%	32%	32.8%
		18.8%	18.7%	19.9%	18.8%	22%	19.6%
<b>Economic Return** (on asset value)</b>		43.7%	34.5%	41.3%	32%	29%	36.1%

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

## SOI: 2018 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 2018 using any gear type. Gag grouper in the GOM is an IFQ fishery. Official 2018 gag grouper landings and revenue, per the IFQ-tracking system, are 451,914 lbs (gutted weight) and \$2,554,003. Hence the logbook-based gag grouper SOI accounts for about 104% of the fishery (near-census). For important **disclaimer**, see page 15.

### Trip-Level Summary

#### Effort

Trips	2,520
Vessels	363
Days at Sea	14,286
Crew Days	39,535

#### Landings (gutted lbs)

<u>Total</u>	<u>5,808,767</u>
SOI	469,456
Non-SOI	5,339,311
% SOI	8%

#### Percent by Gear

	Trips	SOI lbs
Vertical Line	71%	57%
Longline	20%	34%
Diver	8%	9%
Other	0.2%	0.3%

#### Price (mean)

<u>Total</u>	<u>\$4.29</u>
SOI	\$5.65
Non-SOI	\$4.17

#### Revenue

<u>Total</u>	<u>\$24,901,617</u>
SOI	\$2,650,875
Non-SOI	\$22,250,742
% SOI	11%

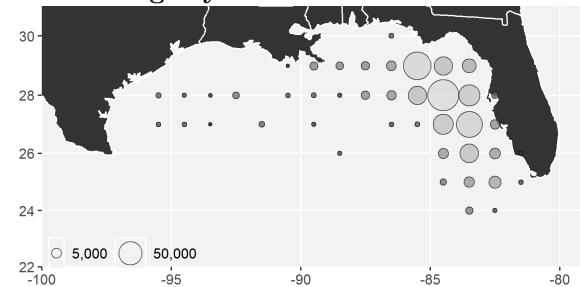
#### Percent of Revenue by Species Group

Shallow Water Groupers	49%
Shallow Water Snappers	2%
Mid-Shelf Snappers	38%
Deep Water Groupers/Tilefish	8%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	1%
Other Species	0.3%

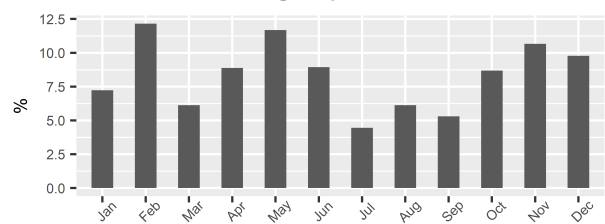
#### Revenue for Top 5 Species

Red Grouper	\$8,798,705
Red Snapper	\$7,404,691
Gag Grouper	\$2,650,875
Vermilion Snapper	\$1,797,770
Yellowedge Grouper	\$1,269,912

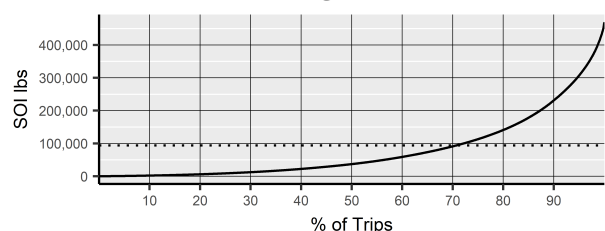
#### SOI Landings by Area Fished



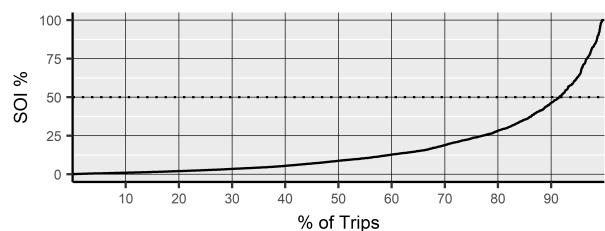
#### Share of SOI Landings by Month



#### Cumulative SOI Landings



#### SOI Share of Revenue Per Trip



#### Trip Descriptive Statistics (N=2,520)

	Mean	Min	Median	Max
Days at Sea	5.7	1	4	22
Crew Size	2.7	1	3	8
Landings	2,305	4	1,538	21,306
Revenue	\$9,882	\$25	\$6,133	\$102,383
SOI	\$1,052	\$17	\$395	\$26,809
% SOI	17%	0%	8.8%	100%



## SOI: 2018 GOM IFQ Gag Grouper Fishery: All Gears

### Trip-Level Economics

#### Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	2,520	-	-	-
Selected	723	29%	-	-
Responded	688	27%	95%	-
Used	676	27%	93%	98%

#### Economic Results (n=676)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Trip</b>					
Owner-Operated	64%	4.3	57%	71%	-
Days at Sea	6.1	0.3	5.5	6.6	5
Crew Size	2.6	0.1	2.5	2.7	3
Fuel Used	261	20	228	295	170
Landings (gutted lbs)	2,283	212	1,931	2,635	1,375
<b>Total Revenue</b>	<b>9,893</b>	<b>967</b>	<b>8,286</b>	<b>11,500</b>	<b>5,440</b>
<b>Cost</b>					
Fuel	710	54	621	799	471
Bait	503	56	409	596	172
Ice	196	20	163	229	110
Groceries	365	34	308	422	200
Miscellaneous	360	51	275	444	100
Hired Crew	2,683	336	2,125	3,241	1,178
IFQ Purchase	1,695	261	1,262	2,128	803
OC Owner-Captain Time	907	96	747	1,067	350
<b>Trip Net Cash Flow*</b>	<b>3,382</b>	<b>491</b>	<b>2,567</b>	<b>4,198</b>	<b>1,762</b>
<b>Trip Net Revenue*</b>	<b>4,170</b>	<b>552</b>	<b>3,253</b>	<b>5,087</b>	<b>2,126</b>

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

Revenue 100%	Trip Net Cash Flow* 34%	Trip Net Revenue* 42%
	IFQ Purchase 17%	Labor - Hired & Owner 36%
	Labor - Hired 27%	
	Fuel & Supplies 22%	Fuel & Supplies 22%

#### Input Prices

Fuel Price (average): \$2.71 per gallon

Hired Crew Wage (implicit): \$224 per crew-day

#### Productivity Measures

Landings/Fuel Use: 8.7 lbs/gallon

Landings/Labor Use: 144 lbs/crew-day

\* See Definitions in Methods Section or Glossary.

# SOI: 2018 GOM IFQ Gag Grouper Fishery: All Gears

## Annual, Vessel-Level Summary

### Effort

Vessels	363
<u>Trips - Total</u>	<u>4,885</u>
SOI Trips	2,520
Non-SOI Trips	2,365
Days at Sea	22,469
Crew Days	63,295

### Landings (guttled lbs)

<u>Total</u>	<u>10,797,290</u>
SOI	469,456
Non-SOI	10,327,834
% SOI	4%

### Percent by Gear

	Trips	Total lbs
Vertical Line	76%	65%
Longline	14%	32%
Diver	6%	2%
Other	3%	2%

### Price (mean)

<u>Total</u>	<u>\$4.24</u>
SOI	\$5.65
Non-SOI	\$4.18

### Revenue

<u>Total</u>	<u>\$45,833,553</u>
SOI	\$2,650,875
Non-SOI	\$43,182,678
% SOI	6%

### Percent of Revenue by Species Group

Shallow Water Groupers	31%
Shallow Water Snappers	2%
Mid-Shelf Snappers	52%
Deep Water Groupers/Tilefish	11%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	3%
Other Species	0.4%

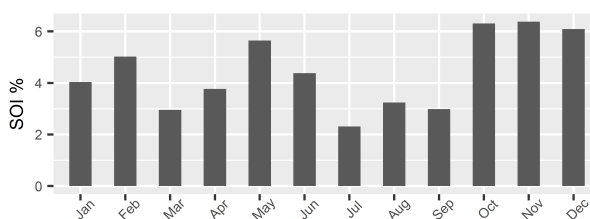
### Revenue for Top 5 Species

Red Snapper	\$20,405,188
Red Grouper	\$10,512,539
Vermilion Snapper	\$3,346,484
Yellowedge Grouper	\$3,124,496
Gag Grouper	\$2,655,660

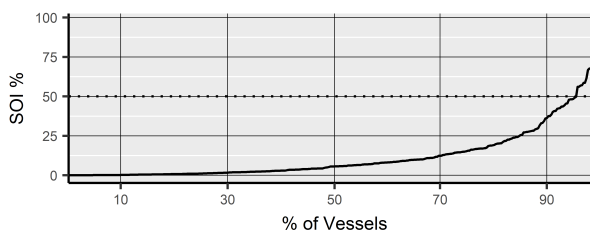
### Annual, Vessel Descriptive Statistics (N=363)

	Mean	Min	Median	Max
Trips	13.5	1	11	84
Days at Sea	61.9	1	47	225
Crew Days	174.4	1	114	927
Landings	29,745	57	14,051	403,969
Revenue	\$126,263	\$200	\$56,726	\$2,066,649
SOI	\$7,303	\$22	\$1,575	\$133,845
% SOI	12.1%	0%	5.6%	97.7%

### 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	0.6%
King Mackerel	34%
Spanish Mackerel	44%
Dolphin-Wahoo	35%
Other Commercial Fishing	17%
For-Hire Fishing	24%

### Vessel Characteristics (N=363)

	Mean	Min	Median	Max
Length	39	19	37	69
Year Built	1988	1961	1986	2018
Horsepower	414	12	350	1,600
Fiberglass Hull	94%	-	-	-
Diesel Engine	80%	-	-	-
Ice Refrigeration	94%	-	-	-

## SOI: 2018 GOM IFQ Gag Grouper Fishery: All Gears

### Annual, Vessel-Level Economics

#### Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	363	-	-	-
Selected	101	28%	-	-
Responded	82	23%	81%	-
Used	80	22%	79%	98%

#### Economic Results (n=80)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Vessel</b>					
Owner-Operated	67%	4.8	58%	75%	-
For-Hire Active	10%	3.1	5%	15%	-
Days - Commercial Fishing	67	4.6	59	75	44
Days - For-Hire Fishing	9	3.8	2	15	0
Days - Non-fishing	1	0.5	0	2	0
Vessel Value	103,478	12,843	82,100	124,857	80,000
Has Insurance	27%	4.5	19%	34%	-
<b>Total Revenue</b>	125,565	16,164	98,658	152,472	78,000
Commercial Fishing	118,390	16,030	91,706	145,073	58,225
For-Hire Fishing	7,176	2,907	2,337	12,014	0
<b>Cost</b>					
Fuel	9,543	997	7,883	11,202	7,090
Other Supplies	16,090	2,287	12,284	19,896	7,232
Hired Crew	30,946	5,077	22,495	39,397	6,800
Vessel Repair & Maintenance	12,754	1,929	9,543	15,965	6,900
Insurance	980	229	598	1,362	0
Overhead	4,135	413	3,447	4,822	2,625
Loan Payment	1,592	399	927	2,256	0
IFQ Purchase	20,751	3,712	14,571	26,931	4,700
OC Owner-Captain Time	7,314	1,213	5,294	9,334	1,050
Depreciation	5,174	642	4,105	6,243	4,000
<b>Net Cash Flow</b>	28,776	9,447	13,050	44,501	5,767
<b>Net Revenue from Operations**</b>	38,630	10,008	21,970	55,290	8,102

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

Revenue 100%	Net Cash Flow 23%	Net Revenue - Operations 31%
	IFQ Purchase 17%	Depreciation 4%
	Loan Payment 1%	Vessel R&M, Insur, Overh 14%
	Vessel R&M, Insur, Overh 14%	Labor - Hired & Owner 30%
	Labor - Hired 25%	Fuel & Supplies 20%
	Fuel & Supplies 20%	

**Economic Return\*\* (on Vessel Asset Value): 37.3%**

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

**SOI: 2018 GOM IFQ Gag Grouper Fishery: All Gears**  
**Trip-Level Time Series**

Trip-Level Summary		2014	2015	2016	2017	2018***	Average
<b>Effort</b>							
Trips		3,222	2,849	3,268	2,809	2,520	2,934
Vessels		371	362	374	368	363	368
Days at Sea		18,200	16,431	18,797	16,559	14,286	16,855
<b>Landings (gutted lbs)</b>							
Total		9,101,186	7,906,394	8,512,169	6,653,645	5,808,767	7,596,432
SOI		544,626	516,411	883,864	469,853	469,456	576,842
Non-SOI		8,556,559	7,389,983	7,628,304	6,183,793	5,339,311	7,019,590
% SOI		6%	7%	10%	7%	8%	8%
<b>Price (mean)</b>							
Total		\$3.95	\$4.08	\$4.07	\$4.10	\$4.29	\$4.1
SOI		\$5.27	\$5.38	\$5.33	\$5.37	\$5.65	\$5.4
Non-SOI		\$3.86	\$3.98	\$3.92	\$3.99	\$4.17	\$3.98
<b>Revenue</b>							
Total		\$35,916,457	\$32,262,301	\$34,678,540	\$27,241,557	\$24,901,617	\$31,000,094
SOI		\$2,866,149	\$2,776,669	\$4,716,575	\$2,523,361	\$2,650,875	\$3,106,726
Non-SOI		\$33,050,308	\$29,485,632	\$29,961,965	\$24,718,195	\$22,250,742	\$27,893,368
% SOI		8%	9%	14%	9%	11%	10%

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**SOI: 2018 GOM IFQ Gag Grouper Fishery: All Gears**  
**Trip-Level Time Series**

<b>Trip-Level Economics</b>		<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Average</b>
Number of Observations		667	771	992	819	676	
Response Rate (%)		80%	84%	95%	94%	93%	
<b>SOI Trip</b>							
Owner-Operated		66%	58%	61%	52%	64%	60.2%
Fuel Used per Day at Sea (gallons/day)		44	42	37	44	43	42
<b>Total Revenue</b>		100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>							
Fuel		7.3%	5.8%	4.4%	5.7%	7.2%	6.1%
Bait		3.5%	3.9%	3.9%	4.6%	5.1%	4.2%
Ice		1.5%	1.6%	1.7%	1.8%	2%	1.7%
Groceries		2.9%	3%	3.7%	4.2%	3.7%	3.5%
Miscellaneous		2.3%	3.1%	3.5%	2.3%	3.6%	3%
Hired Crew		29.9%	32%	30%	30.2%	27.1%	29.8%
IFQ Purchase		14.1%	19.8%	17.2%	14.3%	17.1%	16.5%
OC Owner-Captain Time		6.8%	6.2%	6.7%	5.2%	9.2%	6.8%
<b>Trip Net Cash Flow*</b>		38.6%	30.8%	35.7%	36.9%	34%	35.2%
<b>Trip Net Revenue*</b>							
Labor - Hired & Owner		45.9%	44.4%	46.2%	46%	42%	44.9%
Fuel & Supplies		36.7%	38.2%	36.7%	35.4%	36%	36.6%
		17.5%	17.4%	17.1%	18.6%	22%	18.5%
<b>Input Prices</b>							
Fuel Price (per gallon)		\$3.72	\$2.68	\$2.11	\$2.34	\$2.71	\$2.71
Hire Crew Wage (per crew-day)		\$309	\$295	\$265	\$243	\$224	\$267
<b>Productivity Measures</b>							
Landings/Fuel Use (lbs/gallon)		12.7	11.2	11.2	9.8	8.7	11
Landings/Labor Use (lbs/crew-day)		198	176	159	156	144	167

\* See Definitions in Methods Section or Glossary.

**SOI: 2018 GOM IFQ Gag Grouper Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

Annual, Vessel-Level Summary		2014	2015	2016	2017	2018***	Average
<b>Effort</b>							
Vessels		371	362	374	368	363	368
Trips - Total		5,756	5,603	6,072	5,614	4,885	5,586
SOI Trips		3,222	2,849	3,268	2,809	2,520	2,934
Non-SOI Trips		2,534	2,754	2,804	2,805	2,365	2,652
Days at Sea		26,476	26,123	27,661	25,879	22,469	25,722
<b>Landings (gutted lbs)</b>							
Total		14,274,008	13,104,425	13,845,637	12,213,218	10,797,290	12,846,916
SOI		544,626	516,411	883,864	469,853	469,456	576,842
Non-SOI		13,729,381	12,588,014	12,961,773	11,743,365	10,327,834	12,270,073
% SOI		4%	4%	6%	4%	4%	4%
<b>Revenue</b>							
Total		\$56,474,554	\$52,838,444	\$55,538,928	\$49,009,059	\$45,833,553	\$51,938,908
SOI		\$2,866,149	\$2,776,669	\$4,716,575	\$2,523,361	\$2,650,875	\$3,106,726
Non-SOI		\$53,608,404	\$50,061,775	\$50,822,353	\$46,485,698	\$43,182,678	\$48,832,182
% SOI		5%	5%	8%	5%	6%	6%
<b>Vessel Characteristics</b>							
Length		39	38	39	39	39	39
Year Built		1987	1987	1987	1987	1988	1987
For-Hire Fishing Permit		22%	22%	21%	21%	24%	22%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM IFQ Gag Grouper Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

Annual, Vessel-Level Economics							Average
	2014	2015	2016	2017	2018	2018	Average
Number of Observations	64	81	96	94	80	80	
Response Rate (%)	65%	79%	85%	80%	79%	79%	
<b>SOI Vessel</b>							
Owner-Operated	73%	63%	74%	62%	67%	67%	68%
For-Hire Active	5%	19%	13%	19%	10%	10%	13%
Vessel Value	\$134,452	\$108,305	\$94,115	\$112,073	\$103,478	\$110,485	
<b>Total Revenue</b>	100%	100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>							
Fuel	7.6%	7.1%	6.1%	6.4%	7.6%	7.6%	7%
Other Supplies	10.4%	10.8%	10.9%	11.6%	12.8%	12.8%	11.3%
Hired Crew	28.3%	29.9%	24.9%	25.5%	24.6%	24.6%	26.6%
Vessel Repair & Maintenance	7%	8%	7.9%	9.9%	10.2%	10.2%	8.6%
Insurance	0.6%	1%	0.9%	1.2%	0.8%	0.8%	0.9%
Overhead	3.9%	5.7%	4.5%	5.8%	3.3%	3.3%	4.6%
Loan Payment	0.4%	1.6%	1.4%	1.4%	1.3%	1.3%	1.2%
IFQ Purchase	11.9%	14.3%	13.6%	11.3%	16.5%	16.5%	13.5%
OC Owner-Captain Time	5.4%	5%	5.6%	4.9%	5.8%	5.8%	5.3%
<b>Net Cash Flow</b>	29.8%	21.6%	29.9%	26.9%	23%	23%	26.2%
<b>Net Revenue for Operations**</b>	33.1%	29.2%	36.3%	31.2%	31%	31%	32.2%
Depreciation	3.6%	3.4%	3%	3.5%	4.1%	4.1%	3.5%
Vessel R&M, Insur, Overh	11.6%	14.7%	13.3%	16.9%	14%	14%	14.1%
Labor - Hired & Owner	33.7%	34.8%	30.4%	30.4%	30%	30%	31.9%
Fuel & Supplies	18%	17.9%	17%	18%	20%	20%	18.2%
<b>Economic Return** (on asset value)</b>	45.9%	43.1%	61.2%	44%	37.3%	37.3%	46.3%

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

## SOI: 2018 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) IFQ species (scamp, black, yellowmouth, or yellowfin) was landed in 2018 using any gear type. Official 2018 landings and revenue, per the IFQ-tracking system, are 224,161 lbs (gutted weight) and \$1,166,757. Hence the logbook-based OSWG SOI accounts for about 77% of the fishery (not so near-census). For important **disclaimer**, see page 15.

### Trip-Level Summary

#### Effort

Trips	2,112
Vessels	330
Days at Sea	14,162
Crew Days	41,794

#### Landings (gutted lbs)

<u>Total</u>	6,726,880
SOI	168,868
Non-SOI	6,558,012
% SOI	3%

#### Percent by Gear

	Trips	SOI lbs
Vertical Line	72%	44%
Longline	25%	52%
Diver	3%	4%
Other	0.1%	0.1%

#### Price (mean)

<u>Total</u>	\$4.29
SOI	\$5.32
Non-SOI	\$4.26

#### Revenue

<u>Total</u>	\$28,850,494
SOI	\$898,785
Non-SOI	\$27,951,709
% SOI	3%

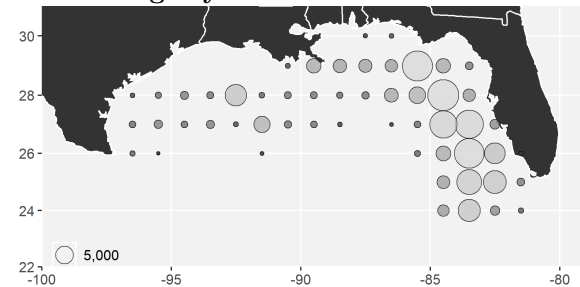
#### Percent of Revenue by Species Group

Shallow Water Groupers	36%
Shallow Water Snappers	2%
Mid-Shelf Snappers	49%
Deep Water Groupers/Tilefish	10%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	0.9%
Other Species	0.4%

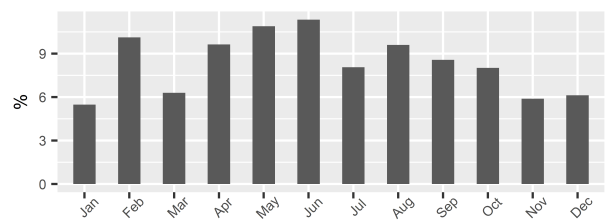
#### Revenue for Top 5 Species

Red Snapper	\$11,535,858
Red Grouper	\$7,636,206
Vermilion Snapper	\$2,457,102
Gag Grouper	\$1,948,141
Yellowedge Grouper	\$1,801,794

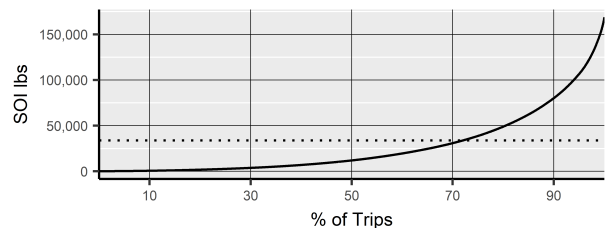
#### SOI Landings by Area Fished



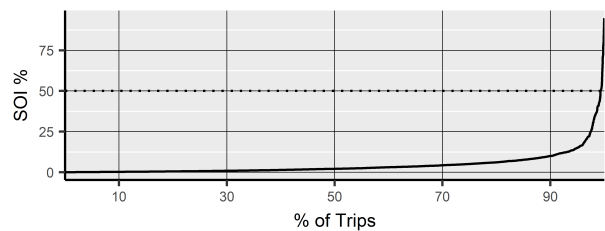
#### Share of SOI Landings by Month



#### Cumulative SOI Landings



#### SOI Share of Revenue Per Trip



#### Trip Descriptive Statistics (N=2,112)

	Mean	Min	Median	Max
Days at Sea	6.7	1	6	23
Crew Size	2.9	1	3	8
Landings	3,185	5	2,109	29,871
Revenue	\$13,660	\$25	\$8,384	\$149,980
SOI	\$426	\$5	\$152	\$8,687
% SOI	5%	0%	2.1%	95%



## SOI: 2018 GOM IFQ OSWG Fishery: All Gears

### Trip-Level Economics

#### Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	2,112	-	-	-
Selected	622	29%	-	-
Responded	589	28%	95%	-
Used	576	27%	93%	98%

#### Economic Results (n=576)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Trip</b>					
Owner-Operated	59%	4.4	51%	66%	-
Days at Sea	7	0.4	6.4	7.6	6
Crew Size	2.8	0.1	2.7	2.9	3
Fuel Used	316	22	280	351	203
Landings (gutted lbs)	3,302	266	2,860	3,745	2,133
<b>Total Revenue</b>	14,205	1,273	12,089	16,321	7,861
<b>Cost</b>					
Fuel	846	57	751	940	560
Bait	641	62	537	744	300
Ice	255	21	219	290	154
Groceries	442	38	379	506	250
Miscellaneous	435	58	340	531	107
Hired Crew	3,734	363	3,131	4,337	1,692
IFQ Purchase	2,463	475	1,674	3,252	1,000
OC Owner-Captain Time	887	125	679	1,094	57
<b>Trip Net Cash Flow*</b>	5,389	733	4,171	6,608	2,840
<b>Trip Net Revenue*</b>	6,966	875	5,511	8,420	3,627

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

Revenue 100%	Trip Net Cash Flow* 38%	Trip Net Revenue* 49%
	IFQ Purchase 17%	
	Labor - Hired 26%	Labor - Hired & Owner 33%
	Fuel & Supplies 18%	Fuel & Supplies 18%

#### Input Prices

Fuel Price (average): \$2.68 per gallon

Hired Crew Wage (implicit): \$239 per crew-day

#### Productivity Measures

Landings/Fuel Use: 10.5 lbs/gallon

Landings/Labor Use: 167 lbs/crew-day

\* See Definitions in Methods Section or Glossary.

# SOI: 2018 GOM IFQ OSWG Fishery: All Gears

## Annual, Vessel-Level Summary

### Effort

Vessels	330
<u>Trips - Total</u>	<u>4,804</u>
SOI Trips	2,112
Non-SOI Trips	2,692
Days at Sea	22,794
Crew Days	64,901

### Landings (gutted lbs)

<u>Total</u>	<u>11,821,732</u>
SOI	168,868
Non-SOI	11,652,864
% SOI	1%

### Percent by Gear

	Trips	Total lbs
Vertical Line	76%	67%
Longline	15%	30%
Diver	6%	1%
Other	3%	2%

### Price (mean)

<u>Total</u>	<u>\$4.29</u>
SOI	\$5.32
Non-SOI	\$4.28

### Revenue

<u>Total</u>	<u>\$50,741,246</u>
SOI	\$898,785
Non-SOI	\$49,842,461
% SOI	2%

### Percent of Revenue by Species Group

Shallow Water Groupers	27%
Shallow Water Snappers	2%
Mid-Shelf Snappers	57%
Deep Water Groupers/Tilefish	10%
Grunts/Porgies/Triggerfish	0.9%
Mackerels/Dolphinfish/Jacks	2%
Other Species	0.4%

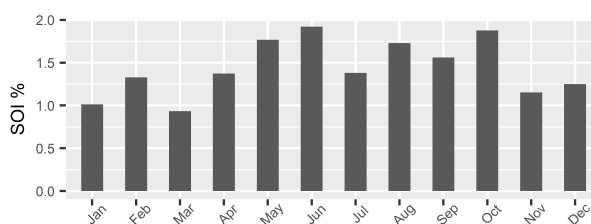
### Revenue for Top 5 Species

Red Snapper	\$25,060,509
Red Grouper	\$10,236,564
Vermilion Snapper	\$3,477,302
Yellowedge Grouper	\$3,253,113
Gag Grouper	\$2,556,226

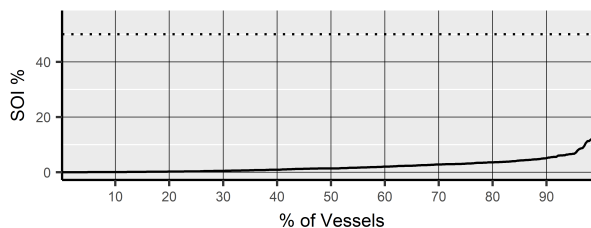
### Annual, Vessel Descriptive Statistics (N=330)

	Mean	Min	Median	Max
Trips	14.6	1	12	84
Days at Sea	69.1	1	59	225
Crew Days	196.7	1	152	927
Landings	35,823	57	20,408	403,969
Revenue	\$153,761	\$267	\$80,759	\$2,066,649
SOI	\$2,724	\$5	\$787	\$35,973
% SOI	2.4%	0%	1.4%	55.8%

### SOI Share of Monthly Landings



### SOI Share of Revenue Per Vessel



### Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	4%
SAT Snapper & Grouper - Limited	0.3%
King Mackerel	37%
Spanish Mackerel	45%
Dolphin-Wahoo	38%
Other Commercial Fishing	21%
For-Hire Fishing	23%

### Vessel Characteristics (N=330)

	Mean	Min	Median	Max
Length	41	23	39	69
Year Built	1987	1961	1984	2017
Horsepower	433	12	365	1,600
Fiberglass Hull	92%	-	-	-
Diesel Engine	84%	-	-	-
Ice Refrigeration	95%	-	-	-

## SOI: 2018 GOM IFQ OSWG Fishery: All Gears

### Annual, Vessel-Level Economics

#### Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	330	-	-	-
Selected	95	29%	-	-
Responded	76	23%	80%	-
Used	73	22%	77%	96%

#### Economic Results (n=73)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Vessel</b>					
Owner-Operated	64%	5.1	55%	72%	-
For-Hire Active	10%	3.2	5%	16%	-
Days - Commercial Fishing	77	5	69	85	68
Days - For-Hire Fishing	8	2.9	3	12	0
Days - Non-fishing	0	0.3	0	1	0
Vessel Value	115,256	13,178	93,295	137,218	88,000
Has Insurance	27%	4.7	19%	35%	-
<b>Total Revenue</b>	161,201	20,246	127,459	194,944	99,547
Commercial Fishing	153,592	19,997	120,265	186,918	99,000
For-Hire Fishing	7,610	2,999	2,611	12,608	0
<b>Cost</b>					
Fuel	10,712	977	9,083	12,340	8,560
Other Supplies	18,722	2,582	14,418	23,026	10,000
Hired Crew	38,162	5,938	28,266	48,058	17,850
Vessel Repair & Maintenance	14,206	1,969	10,924	17,488	9,986
Insurance	1,229	278	766	1,692	0
Overhead	4,701	473	3,913	5,490	3,723
Loan Payment	1,583	436	856	2,310	0
IFQ Purchase	28,745	5,450	19,663	37,827	6,818
OC Owner-Captain Time	8,856	1,453	6,435	11,278	1,050
Depreciation	5,763	659	4,665	6,861	4,400
<b>Net Cash Flow</b>	43,141	12,762	21,871	64,410	11,292
<b>Net Revenue from Operations**</b>	58,849	13,486	36,373	81,325	29,512

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

Revenue 100%	Net Cash Flow 27%	Net Revenue - Operations 37%
	IFQ Purchase 18%	Depreciation 4%
	Loan Payment 1%	Vessel R&M, Insur, Overh 12%
	Vessel R&M, Insur, Overh 12%	Labor - Hired & Owner 29%
	Labor - Hired 24%	Fuel & Supplies 18%
	Fuel & Supplies 18%	

**Economic Return\*\* (on Vessel Asset Value): 51.1%**

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

**SOI: 2018 GOM IFQ OSWG Fishery: All Gears**  
**Trip-Level Time Series**

Trip-Level Summary		2014	2015	2016	2017	2018**	Average
<b>Effort</b>							
Trips		2,437	2,333	2,626	2,191	2,112	2,340
Vessels		357	340	339	326	330	338
Days at Sea		16,251	15,772	17,748	15,431	14,162	15,873
<b>Landings (guttled lbs)</b>							
Total		8,937,837	8,420,910	9,460,644	7,467,567	6,726,880	8,202,768
SOI		218,567	225,245	339,924	191,511	168,868	228,823
Non-SOI		8,719,269	8,195,665	9,120,720	7,276,055	6,558,012	7,973,944
% SOI		2%	3%	4%	3%	3%	3%
<b>Price (mean)</b>							
Total		\$3.95	\$4.10	\$4.13	\$4.10	\$4.29	\$4.11
SOI		\$4.90	\$4.97	\$4.87	\$5.02	\$5.32	\$5.02
Non-SOI		\$3.92	\$4.08	\$4.10	\$4.08	\$4.26	\$4.09
<b>Revenue</b>							
Total		\$35,261,800	\$34,567,042	\$39,080,560	\$30,584,632	\$28,850,494	\$33,668,906
SOI		\$1,070,670	\$1,118,515	\$1,655,598	\$960,370	\$898,785	\$1,140,788
Non-SOI		\$34,191,130	\$33,448,527	\$37,424,962	\$29,624,262	\$27,951,709	\$32,528,118
% SOI		3%	3%	4%	3%	3%	3%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data, provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM IFQ OSWG Fishery: All Gears**  
**Trip-Level Time Series**

<b>Trip-Level Economics</b>		<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Average</b>
Number of Observations		577	631	857	597	576	
Response Rate (%)		82%	85%	96%	94%	93%	
<b>SOI Trip</b>							
Owner-Operated		64%	54%	59%	53%	59%	57.8%
Fuel Used per Day at Sea (gallons/day)		46	44	39	47	45	44
<b>Total Revenue</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Costs (% of Revenue)</b>							
Fuel		7.1%	4.8%	3.9%	5%	6%	5.4%
Bait		3.4%	3.5%	3.5%	4.2%	4.5%	3.8%
Ice		1.5%	1.5%	1.7%	1.7%	1.8%	1.6%
Groceries		2.8%	2.7%	3.3%	3.8%	3.1%	3.1%
Miscellaneous		2.6%	3%	3.3%	2.9%	3.1%	3%
Hired Crew		29.7%	30.1%	28.8%	29.4%	26.3%	28.9%
IFQ Purchase		14.3%	19.1%	18%	14.3%	17.3%	16.6%
OC Owner-Captain Time		6.4%	5.5%	5.8%	4.9%	6.2%	5.8%
<b>Trip Net Cash Flow*</b>		<b>38.5%</b>	<b>35.2%</b>	<b>37.5%</b>	<b>38.8%</b>	<b>38%</b>	<b>37.6%</b>
<b>Trip Net Revenue*</b>							
Labor - Hired & Owner		46.4%	48.8%	49.6%	48.2%	49%	48.4%
Fuel & Supplies		36%	35.7%	34.7%	34.3%	33%	34.7%
		17.5%	15.6%	15.7%	17.6%	18%	16.9%
<b>Input Prices</b>							
Fuel Price (per gallon)		\$3.68	\$2.63	\$2.09	\$2.25	\$2.68	\$2.67
Hire Crew Wage (per crew-day)		\$303	\$307	\$272	\$261	\$239	\$276
<b>Productivity Measures</b>							
Landings/Fuel Use (lbs/gallon)		13	13	12.6	10.8	10.5	12
Landings/Labor Use (lbs/crew-day)		202	198	174	174	167	183

\* See Definitions in Methods Section or Glossary.

**SOI: 2018 GOM IFQ OSWG Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

Annual, Vessel-Level Summary						
	2014	2015	2016	2017	2018***	Average
<b>Effort</b>						
Vessels	357	340	339	326	330	338
Trips - Total	5,783	5,706	5,943	5,087	4,804	5,465
SOI Trips	<u>2,437</u>	<u>2,333</u>	<u>2,626</u>	<u>2,191</u>	<u>2,112</u>	<u>2,340</u>
Non-SOI Trips	3,346	3,373	3,317	2,896	2,692	3,125
Days at Sea	28,053	27,091	27,718	25,302	22,794	26,192
<b>Landings (gutted lbs)</b>						
Total	<u>15,351,264</u>	<u>14,464,520</u>	<u>14,881,138</u>	<u>12,653,929</u>	<u>11,821,732</u>	<u>13,834,517</u>
SOI	<u>218,567</u>	<u>225,245</u>	<u>339,924</u>	<u>191,511</u>	<u>168,868</u>	<u>228,823</u>
Non-SOI	15,132,696	14,239,276	14,541,214	12,462,417	11,652,864	13,605,693
% SOI	1%	2%	2%	2%	1%	2%
<b>Revenue</b>						
Total	<u>\$60,951,782</u>	<u>\$58,914,454</u>	<u>\$60,819,404</u>	<u>\$52,019,224</u>	<u>\$50,741,246</u>	<u>\$56,689,222</u>
SOI	<u>\$1,070,670</u>	<u>\$1,118,515</u>	<u>\$1,655,598</u>	<u>\$960,370</u>	<u>\$898,785</u>	<u>\$1,140,788</u>
Non-SOI	\$59,881,111	\$57,795,940	\$59,163,806	\$51,058,854	\$49,842,461	\$55,548,434
% SOI	2%	2%	3%	2%	2%	2%
<b>Vessel Characteristics</b>						
Length	40	40	40	40	41	40
Year Built	1985	1986	1986	1986	1987	1986
For-Hire Fishing Permit	21%	20%	21%	23%	23%	22%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM IFQ OSWG Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

Annual, Vessel-Level Economics						
	2014	2015	2016	2017	2018	Average
Number of Observations	60	82	87	84	73	
Response Rate (%)	62%	82%	83%	82%	77%	
<b>SOI Vessel</b>						
Owner-Operated	69%	61%	73%	63%	64%	66%
For-Hire Active	9%	13%	12%	18%	10%	12%
Vessel Value	\$150,009	\$110,914	\$90,183	\$128,029	\$115,256	\$118,878
<b>Total Revenue</b>	100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>						
Fuel	7.8%	6.1%	5.9%	5.8%	6.6%	6.4%
Other Supplies	9.5%	10.1%	10.8%	10.9%	11.6%	10.6%
Hired Crew	26.8%	28.4%	24.9%	26.3%	23.7%	26%
Vessel Repair & Maintenance	7.2%	6.9%	7.7%	9.6%	8.8%	8%
Insurance	1.1%	0.8%	0.9%	1.2%	0.8%	1%
Overhead	5.1%	6.1%	4.2%	5.7%	2.9%	4.8%
Loan Payment	0.9%	1.3%	1.1%	1.4%	1%	1.1%
IFQ Purchase	11.3%	19.2%	14.6%	10.9%	17.8%	14.8%
OC Owner-Captain Time	5.1%	5.5%	5.6%	4.9%	5.5%	5.3%
<b>Net Cash Flow</b>	30.3%	21%	29.9%	28.2%	27%	27.3%
<b>Net Revenue for Operations**</b>						
Depreciation	34%	33%	37.5%	32.3%	37%	34.8%
Vessel R&M, Insur, Overh	3.4%	2.9%	2.5%	3.3%	3.6%	3.1%
Labor - Hired & Owner	13.4%	13.9%	12.8%	16.5%	12%	13.7%
Fuel & Supplies	31.9%	33.9%	30.4%	31.2%	29%	31.3%
<b>Economic Return** (on asset value)</b>	17.3%	16.3%	16.7%	16.6%	18%	17%
	50.7%	56.4%	74.5%	48.6%	51.1%	56.3%

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

## SOI: 2018 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) IFQ species (speckled hind, and snowy, warsaw, yellowedge grouper) was landed in 2018 using any gear type. Official 2018 landings and revenue, per IFQ-tracking system, are 817452, lbs (gutted) and \$4,150,613. The logbook-based DWG SOI accounts for 100% of the fishery. For important **disclaimer**, see page 15.

### Trip-Level Summary

#### Effort

Trips	723
Vessels	180
Days at Sea	6,702
Crew Days	22,004

#### Landings (gutted lbs)

<u>Total</u>	3,683,647
SOI	824,123
Non-SOI	2,859,524
% SOI	22%

#### Percent by Gear

	Trips	SOI lbs
Vertical Line	49%	6%
Longline	50%	94%
Diver	0.8%	0.1%
Other	0.1%	0.1%

#### Price (mean)

<u>Total</u>	\$4.34
SOI	\$5.02
Non-SOI	\$4.15

#### Revenue

<u>Total</u>	\$15,999,101
SOI	\$4,136,750
Non-SOI	\$11,862,350
% SOI	26%

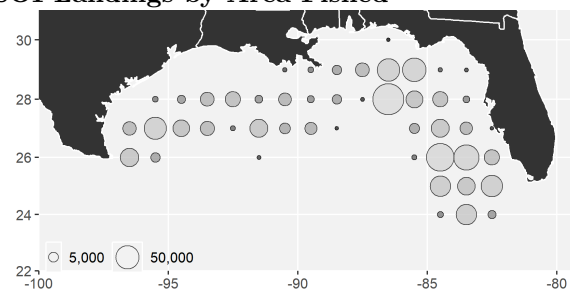
#### Percent of Revenue by Species Group

Shallow Water Groupers	20%
Shallow Water Snappers	1%
Mid-Shelf Snappers	44%
Deep Water Groupers/Tilefish	32%
Grunts/Porgies/Triggerfish	0.5%
Mackerels/Dolphinfish/Jacks	0.8%
Other Species	0.6%

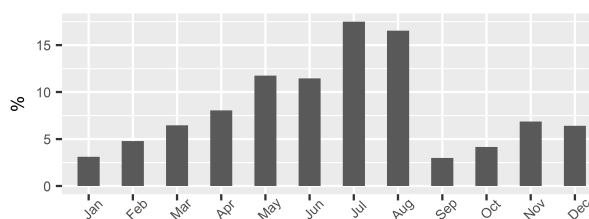
#### Revenue for Top 5 Species

Red Snapper	\$6,022,160
Yellowedge Grouper	\$3,295,016
Red Grouper	\$2,080,961
Vermilion Snapper	\$933,622
Tilefish	\$896,041

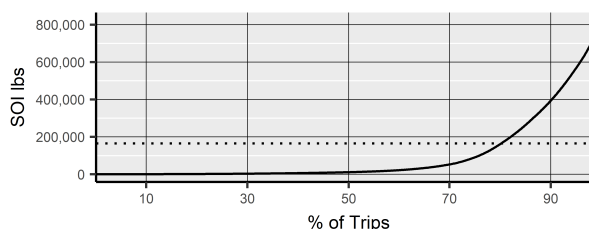
#### SOI Landings by Area Fished



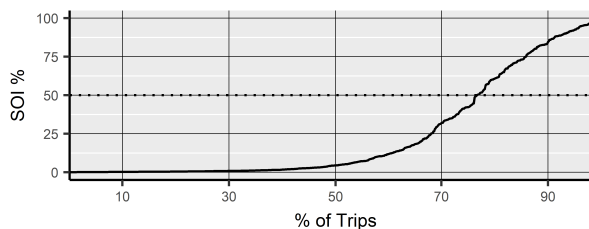
#### Share of SOI Landings by Month



#### Cumulative SOI Landings



#### SOI Share of Revenue Per Trip



#### Trip Descriptive Statistics (N=723)

	Mean	Min	Median	Max
Days at Sea	9.3	1	10	23
Crew Size	3.2	1	3	6
Landings	5,095	13	4,443	29,871
Revenue	\$22,129	\$27	\$19,349	\$149,980
SOI	\$5,722	\$4	\$382	\$75,563
% SOI	24%	0%	4.4%	100%



## SOI: 2018 GOM IFQ DWG Fishery: All Gears

### Trip-Level Economics

#### Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	723	-	-	-
Selected	211	29%	-	-
Responded	198	27%	94%	-
Used	194	27%	92%	98%

#### Economic Results (n=194)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Trip</b>					
Owner-Operated	47%	6.1	37%	57%	-
Days at Sea	9.3	0.5	8.4	10.2	10
Crew Size	3.2	0.1	3.1	3.4	3
Fuel Used	511	33	455	566	500
Landings (gutted lbs)	5,022	383	4,381	5,664	4,513
<b>Total Revenue</b>	22,667	1,859	19,551	25,783	19,106
<b>Cost</b>					
Fuel	1,346	88	1,200	1,493	1,125
Bait	1,104	92	949	1,258	1,000
Ice	453	34	397	510	400
Groceries	739	58	642	836	741
Miscellaneous	684	90	534	834	260
Hired Crew	5,814	541	4,907	6,721	4,222
IFQ Purchase	3,828	757	2,559	5,097	1,850
OC Owner-Captain Time	795	139	563	1,028	0
<b>Trip Net Cash Flow*</b>	8,699	1,155	6,763	10,635	6,392
<b>Trip Net Revenue*</b>	11,732	1,331	9,501	13,963	9,145

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

Revenue 100%	Trip Net Cash Flow* 38%	Trip Net Revenue* 52%
	IFQ Purchase 17%	
	Labor - Hired 26%	Labor - Hired & Owner 29%
	Fuel & Supplies 19%	Fuel & Supplies 19%

#### Input Prices

Fuel Price (average): \$2.64 per gallon

Hired Crew Wage (implicit): \$225 per crew-day

#### Productivity Measures

Landings/Fuel Use: 9.8 lbs/gallon

Landings/Labor Use: 166 lbs/crew-day

\* See Definitions in Methods Section or Glossary.

# SOI: 2018 GOM IFQ DWG Fishery: All Gears

## Annual, Vessel-Level Summary

### Effort

Vessels	180
<u>Trips - Total</u>	<u>2,702</u>
SOI Trips	723
Non-SOI Trips	1,979
Days at Sea	16,224
Crew Days	49,901

### Landings (guttled lbs)

<u>Total</u>	<u>9,431,727</u>
SOI	824,123
Non-SOI	8,607,604
% SOI	9%

### Percent by Gear

	Trips	Total lbs
Vertical Line	70%	62%
Longline	26%	37%
Diver	1%	0.5%
Other	3%	0.7%

### Price (mean)

<u>Total</u>	<u>\$4.39</u>
SOI	\$5.02
Non-SOI	\$4.33

### Revenue

<u>Total</u>	<u>\$41,439,722</u>
SOI	\$4,136,750
Non-SOI	\$37,302,972
% SOI	10%

### Percent of Revenue by Species Group

Shallow Water Groupers	26%
Shallow Water Snappers	1%
Mid-Shelf Snappers	57%
Deep Water Groupers/Tilefish	13%
Grunts/Porgies/Triggerfish	0.6%
Mackerels/Dolphinfish/Jacks	2%
Other Species	0.4%

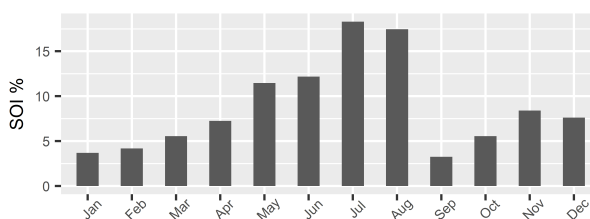
### Revenue for Top 5 Species

Red Snapper	\$20,818,078
Red Grouper	\$8,333,249
Yellowedge Grouper	\$3,327,245
Vermilion Snapper	\$2,634,072
Gag Grouper	\$1,657,044

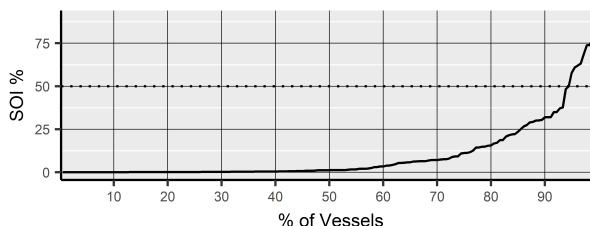
### Annual, Vessel Descriptive Statistics (N=180)

	Mean	Min	Median	Max
Trips	15	1	13	63
Days at Sea	90.1	5	86	225
Crew Days	277.2	10	244	927
Landings	52,398	552	36,774	403,969
Revenue	\$230,221	\$2,986	\$160,990	\$2,066,649
SOI	\$22,982	\$5	\$1,185	\$369,728
% SOI	10.1%	0%	1.2%	89.5%

### 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	0.6%
King Mackerel	41%
Spanish Mackerel	43%
Dolphin-Wahoo	43%
Other Commercial Fishing	29%
For-Hire Fishing	13%

### Vessel Characteristics (N=180)

	Mean	Min	Median	Max
Length	44	27	43	69
Year Built	1985	1964	1982	2017
Horsepower	385	12	300	1,600
Fiberglass Hull	88%	-	-	-
Diesel Engine	91%	-	-	-
Ice Refrigeration	94%	-	-	-

## SOI: 2018 GOM IFQ DWG Fishery: All Gears

### Annual, Vessel-Level Economics

#### Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	180	-	-	-
Selected	52	29%	-	-
Responded	43	24%	83%	-
Used	41	23%	79%	95%

#### Economic Results (n=41)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Vessel</b>					
Owner-Operated	59%	6.8	47%	70%	-
For-Hire Active	5%	3	0%	10%	-
Days - Commercial Fishing	95	8	82	109	84
Days - For-Hire Fishing	2	1.5	0	5	0
Days - Non-fishing	0	0.2	0	1	0
Vessel Value	114,976	16,751	86,769	143,182	80,000
Has Insurance	12%	4.5	5%	20%	-
<b>Total Revenue</b>	235,715	35,069	176,664	294,766	153,383
Commercial Fishing	233,462	35,225	174,149	292,775	152,102
For-Hire Fishing	2,253	1,446	-182	4,688	0
<b>Cost</b>					
Fuel	13,159	1,283	10,999	15,319	10,547
Other Supplies	27,369	4,527	19,746	34,991	19,008
Hired Crew	59,995	10,530	42,264	77,727	39,547
Vessel Repair & Maintenance	15,310	2,772	10,643	19,977	9,986
Insurance	777	335	214	1,341	0
Overhead	4,154	561	3,209	5,098	2,399
Loan Payment	395	183	86	704	0
IFQ Purchase	42,165	9,716	25,804	58,525	15,650
OC Owner-Captain Time	8,956	1,969	5,641	12,272	1,250
Depreciation	5,749	838	4,338	7,159	4,000
<b>Net Cash Flow</b>	72,390	22,498	34,508	110,273	22,053
<b>Net Revenue from Operations**</b>	100,245	22,959	61,586	138,904	45,730

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

Revenue 100%	Net Cash Flow 31%	Net Revenue - Operations 43%
	IFQ Purchase 18%	Depreciation 2%
	Loan Payment 0%	Vessel R&M, Insur, Overh 9%
	Vessel R&M, Insur, Overh 9%	Labor - Hired & Owner 29%
	Labor - Hired 25%	Fuel & Supplies 17%
	Fuel & Supplies 17%	

**Economic Return\*\* (on Vessel Asset Value): 87.2%**

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

**SOI: 2018 GOM IFQ DWG Fishery: All Gears**  
**Trip-Level Time Series**

Trip-Level Summary		2014	2015	2016	2017	2018***	Average
<b>Effort</b>							
Trips		1,022	912	986	822	723	893
Vessels		204	198	195	187	180	193
Days at Sea		8,075	8,060	8,602	7,637	6,702	7,815
<b>Landings (gutted lbs)</b>							
Total		5,754,672	5,074,047	5,383,621	4,327,543	3,683,647	4,844,706
SOI		990,356	926,964	851,577	813,159	824,123	881,236
Non-SOI		4,764,317	4,147,084	4,532,044	3,514,384	2,859,524	3,963,471
% SOI		17%	18%	16%	19%	22%	18%
<b>Price (mean)</b>							
Total		\$4.14	\$4.23	\$4.21	\$4.17	\$4.34	\$4.22
SOI		\$4.71	\$4.87	\$4.85	\$4.83	\$5.02	\$4.86
Non-SOI		\$4.02	\$4.08	\$4.10	\$4.01	\$4.15	\$4.07
<b>Revenue</b>							
Total		\$23,829,125	\$21,441,843	\$22,716,093	\$18,025,856	\$15,999,101	\$20,402,404
SOI		\$4,666,099	\$4,518,557	\$4,129,488	\$3,926,438	\$4,136,750	\$4,275,466
Non-SOI		\$19,163,026	\$16,923,286	\$18,586,605	\$14,099,418	\$11,862,350	\$16,126,937
% SOI		20%	21%	18%	22%	26%	21%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data, provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM IFQ DWG Fishery: All Gears**  
**Trip-Level Time Series**

<b>Trip-Level Economics</b>		<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Average</b>
Number of Observations		254	231	288	280	194	
Response Rate (%)		83%	87%	94%	95%	92%	
<b>SOI Trip</b>							
Owner-Operated		54%	47%	50%	45%	47%	48.6%
Fuel Used per Day at Sea (gallons/day)		54	54	44	54	55	52
<b>Total Revenue</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Costs (% of Revenue)</b>							
Fuel		6%	4.2%	3.6%	4.8%	5.9%	4.9%
Bait		3.1%	3.8%	4.1%	4.4%	4.9%	4.1%
Ice		1.5%	1.7%	1.9%	1.8%	2%	1.8%
Groceries		2.4%	2.6%	3.2%	3.6%	3.3%	3%
Miscellaneous		2.9%	2.9%	4.1%	3.5%	3%	3.3%
Hired Crew		28.8%	28.3%	28.5%	27%	25.6%	27.6%
IFQ Purchase		12%	19.3%	17.9%	16.9%	16.9%	16.6%
OC Owner-Captain Time		4%	2.7%	3.7%	4.2%	3.5%	3.6%
<b>Trip Net Cash Flow*</b>		<b>43.4%</b>	<b>37.2%</b>	<b>36.8%</b>	<b>38%</b>	<b>38%</b>	<b>38.7%</b>
<b>Trip Net Revenue*</b>							
Labor - Hired & Owner		51.3%	53.8%	51%	50.7%	52%	51.8%
Fuel & Supplies		32.7%	31%	32.2%	31.2%	29%	31.2%
<b>Input Prices</b>							
Fuel Price (per gallon)		\$3.56	\$2.46	\$2.07	\$2.21	\$2.64	\$2.59
Hire Crew Wage (per crew-day)		\$338	\$318	\$288	\$247	\$225	\$283
<b>Productivity Measures</b>							
Landings/Fuel Use (lbs/gallon)		14.5	13.7	13.6	10.9	9.8	12
Landings/Labor Use (lbs/crew-day)		239	226	197	184	166	202

\* See Definitions in Methods Section or Glossary.

**SOI: 2018 GOM IFQ DWG Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

**Annual, Vessel-Level Summary**

	2014	2015	2016	2017	2018***	Average
<b>Effort</b>						
Vessels	204	198	195	187	180	193
Trips - Total	3,513	3,665	3,579	2,961	2,702	3,284
SOI Trips	1,022	912	986	822	723	893
Non-SOI Trips	2,491	2,753	2,593	2,139	1,979	2,391
Days at Sea	19,908	20,039	20,447	18,167	16,224	18,957
<b>Landings (gutted lbs)</b>						
Total	12,596,881	12,579,160	12,800,252	10,430,611	9,431,727	11,567,726
SOI	990,356	926,964	851,577	813,159	824,123	881,236
Non-SOI	11,606,525	11,652,196	11,948,675	9,617,451	8,607,604	10,686,490
% SOI	8%	7%	7%	8%	9%	8%
<b>Revenue</b>						
Total	\$50,987,391	\$52,359,275	\$52,917,931	\$43,440,508	\$41,439,722	\$48,228,965
SOI	\$4,666,099	\$4,518,557	\$4,129,488	\$3,926,438	\$4,136,750	\$4,275,466
Non-SOI	\$46,321,292	\$47,840,718	\$48,788,443	\$39,514,071	\$37,302,972	\$43,953,499
% SOI	9%	9%	8%	9%	10%	9%
<b>Vessel Characteristics</b>						
Length	43	43	43	44	44	43
Year Built	1984	1983	1983	1984	1985	1984
For-Hire Fishing Permit	14%	13%	8%	14%	13%	12%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM IFQ DWG Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

Annual, Vessel-Level Economics		2014	2015	2016	2017	2018	Average
Number of Observations		37	39	56	51	41	
Response Rate (%)		64%	80%	86%	80%	79%	
<b>SOI Vessel</b>							
Owner-Operated		55%	51%	67%	57%	59%	58%
For-Hire Active		10%	3%	2%	4%	5%	5%
Vessel Value		\$195,464	\$123,440	\$87,504	\$149,755	\$114,976	\$134,228
<b>Total Revenue</b>		100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>							
Fuel		7.3%	4.2%	4%	5%	5.6%	5.2%
Other Supplies		9.1%	9%	9.9%	12.1%	11.6%	10.3%
Hired Crew		27.8%	25.5%	26.4%	27.3%	25.5%	26.5%
Vessel Repair & Maintenance		6.8%	4.7%	6.8%	8.7%	6.5%	6.7%
Insurance		1.2%	0.5%	0.7%	0.3%	0.3%	0.6%
Overhead		4.8%	5.2%	3.6%	5.1%	1.8%	4.1%
Loan Payment		1%	0.4%	1%	1.3%	0.2%	0.8%
IFQ Purchase		10.6%	29.2%	16%	10.4%	17.9%	16.8%
OC Owner-Captain Time		4.2%	3.9%	5.1%	4.5%	3.8%	4.3%
<b>Net Cash Flow</b>		31.5%	21.3%	31.6%	29.8%	31%	29%
<b>Net Revenue for Operations**</b>							
Depreciation		35.8%	45.4%	41.6%	33.9%	43%	39.9%
Vessel R&M, Insur, Overh		3%	1.7%	1.9%	3.1%	2.4%	2.4%
Labor - Hired & Owner		12.8%	10.3%	11%	14.1%	9%	11.4%
Fuel & Supplies		32.1%	29.3%	31.5%	31.8%	29%	30.7%
<b>Economic Return** (on asset value)</b>		16.4%	13.3%	13.9%	17.1%	17%	15.5%
		59.7%	132%	110.8%	54.2%	87.2%	88.8%

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

## SOI: 2018 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 2018 using any gear type. Tilefishes in the GOM are an IFQ fishery. Official 2018 landings and revenue, per the IFQ-tracking system, are 386,138 lbs (gutted weight) and \$1,088,903. Hence the logbook-based tilefish SOI accounts for about 96% of the fishery (near-census). For important **disclaimer**, see page 15.

### Trip-Level Summary

#### Effort

Trips	334
Vessels	122
Days at Sea	3,288
Crew Days	10,833

#### Landings (gutted lbs)

<u>Total</u>	1,661,764
SOI	360,620
Non-SOI	1,301,144
% SOI	22%

#### Percent by Gear

	Trips	SOI lbs
Vertical Line	36%	4%
Longline	62%	96%
Diver	2%	0.1%
Other	0.3%	0%

#### Price (mean)

<u>Total</u>	\$4.30
SOI	\$2.91
Non-SOI	\$4.69

#### Revenue

<u>Total</u>	\$7,148,139
SOI	\$1,049,104
Non-SOI	\$6,099,035
% SOI	15%

#### Percent of Revenue by Species Group

Shallow Water Groupers	11%
Shallow Water Snappers	0.5%
Mid-Shelf Snappers	26%
Deep Water Groupers/Tilefish	62%
Grunts/Porgies/Triggerfish	0.4%
Mackerels/Dolphinfish/Jacks	0.7%
Other Species	0.7%

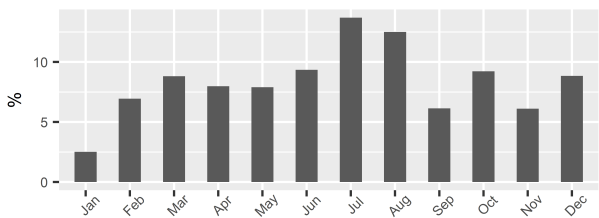
#### Revenue for Top 5 Species

Yellowedge Grouper	\$2,790,416
Red Snapper	\$1,613,241
Tilefish	\$917,303
Red Grouper	\$500,401
Snowy Grouper	\$313,809

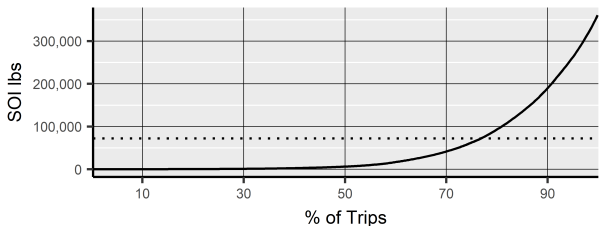
#### SOI Landings by Area Fished



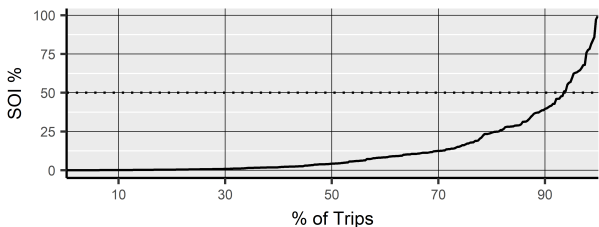
#### Share of SOI Landings by Month



#### Cumulative SOI Landings



#### SOI Share of Revenue Per Trip



#### Trip Descriptive Statistics (N=334)

	Mean	Min	Median	Max
Days at Sea	9.8	1	10	23
Crew Size	3.2	2	3	6
Landings	4,975	97	4,374	21,306
Revenue	\$21,402	\$297	\$19,318	\$102,383
SOI	\$3,141	\$2	\$461	\$24,595
% SOI	13%	0%	4.2%	99%



## SOI: 2018 GOM IFQ Tilefish Fishery: All Gears

### Trip-Level Economics

#### Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	334	-	-	-
Selected	91	27%	-	-
Responded	89	27%	98%	-
Used	86	26%	95%	97%

#### Economic Results (n=86)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Trip</b>					
Owner-Operated	55%	7.7	42%	68%	-
Days at Sea	8.1	0.5	7.2	9	9
Crew Size	3.1	0.1	3	3.3	3
Fuel Used	481	35	421	540	350
Landings (gutted lbs)	3,961	327	3,409	4,513	3,211
<b>Total Revenue</b>	18,122	1,650	15,337	20,907	14,658
<b>Cost</b>					
Fuel	1,274	94	1,115	1,432	900
Bait	905	85	761	1,048	923
Ice	412	36	351	473	330
Groceries	589	57	493	684	513
Miscellaneous	405	78	274	536	200
Hired Crew	4,759	471	3,964	5,554	2,400
IFQ Purchase	3,309	655	2,203	4,415	1,890
OC Owner-Captain Time	724	115	530	919	0
<b>Trip Net Cash Flow*</b>	6,470	1,024	4,741	8,198	3,479
<b>Trip Net Revenue*</b>	9,054	1,166	7,086	11,023	6,592

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

Revenue 100%	Trip Net Cash Flow* 36%	Trip Net Revenue* 50%
	IFQ Purchase 18%	
	Labor - Hired 26%	Labor - Hired & Owner 30%
	Fuel & Supplies 20%	Fuel & Supplies 20%

#### Input Prices

Fuel Price (average): \$2.65 per gallon

Hired Crew Wage (implicit): \$229 per crew-day

#### Productivity Measures

Landings/Fuel Use: 8.2 lbs/gallon

Landings/Labor Use: 157 lbs/crew-day

\* See Definitions in Methods Section or Glossary.

# SOI: 2018 GOM IFQ Tilefish Fishery: All Gears

## Annual, Vessel-Level Summary

### Effort

Vessels	122
<u>Trips - Total</u>	<u>1,686</u>
SOI Trips	334
Non-SOI Trips	1,352
Days at Sea	10,627
Crew Days	32,816

### Landings (guttled lbs)

<u>Total</u>	<u>6,181,229</u>
SOI	360,620
Non-SOI	5,820,609
% SOI	6%

### Percent by Gear

	Trips	Total lbs
Vertical Line	68%	56%
Longline	29%	42%
Diver	2%	0.7%
Other	2%	0.7%

### Price (mean)

<u>Total</u>	<u>\$4.44</u>
SOI	\$2.91
Non-SOI	\$4.53

### Revenue

<u>Total</u>	<u>\$27,431,602</u>
SOI	\$1,049,104
Non-SOI	\$26,382,498
% SOI	4%

### Percent of Revenue by Species Group

Shallow Water Groupers	24%
Shallow Water Snappers	2%
Mid-Shelf Snappers	53%
Deep Water Groupers/Tilefish	18%
Grunts/Porgies/Triggerfish	0.6%
Mackerels/Dolphinfish/Jacks	1%
Other Species	0.5%

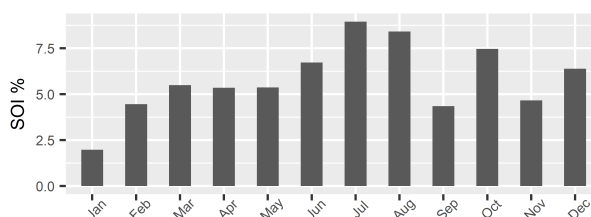
### Revenue for Top 5 Species

Red Snapper	\$13,114,683
Red Grouper	\$5,154,575
Yellowedge Grouper	\$3,175,315
Vermilion Snapper	\$1,229,246
Gag Grouper	\$1,060,054

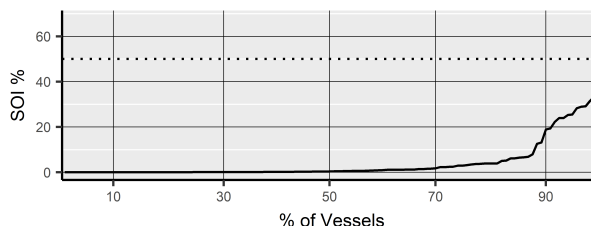
### Annual, Vessel Descriptive Statistics (N=122)

	Mean	Min	Median	Max
Trips	13.8	1	13	52
Days at Sea	87.1	2	82	225
Crew Days	269	6	226	927
Landings	50,666	254	32,714	403,969
Revenue	\$224,849	\$437	\$137,986	\$2,066,649
SOI	\$8,599	\$4	\$213	\$156,232
% SOI	4.3%	0%	0.4%	68%

### 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	37%
Spanish Mackerel	48%
Dolphin-Wahoo	52%
Other Commercial Fishing	34%
For-Hire Fishing	20%

### Vessel Characteristics (N=122)

	Mean	Min	Median	Max
Length	44	27	42.5	69
Year Built	1984	1964	1981	2016
Horsepower	405	26	350	1,320
Fiberglass Hull	87%	-	-	-
Diesel Engine	94%	-	-	-
Ice Refrigeration	94%	-	-	-

## SOI: 2018 GOM IFQ Tilefish Fishery: All Gears

### Annual, Vessel-Level Economics

#### Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	122	-	-	-
Selected	39	32%	-	-
Responded	30	25%	77%	-
Used	27	22%	69%	90%

#### Economic Results (n=27)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Vessel</b>					
Owner-Operated	59%	8.5	45%	74%	-
For-Hire Active	4%	3.3	-2%	9%	-
Days - Commercial Fishing	93	9.9	76	110	91
Days - For-Hire Fishing	2	2	-1	6	0
Days - Non-fishing	0	0	0	0	0
Vessel Value	132,333	24,133	91,171	173,495	100,000
Has Insurance	19%	6.7	7%	30%	-
<b>Total Revenue</b>					
Commercial Fishing	234,793	47,534	153,719	315,867	125,979
For-Hire Fishing	233,594	47,649	152,324	314,864	125,979
	1,199	1,058	-606	3,004	0
<b>Cost</b>					
Fuel	11,930	1,536	9,310	14,551	10,400
Other Supplies	25,215	6,027	14,936	35,494	19,008
Hired Crew	48,511	9,165	32,880	64,143	37,652
Vessel Repair & Maintenance	16,000	3,590	9,877	22,124	9,986
Insurance	1,345	576	361	2,328	0
Overhead	4,466	708	3,258	5,674	4,100
Loan Payment	1,050	602	23	2,076	0
IFQ Purchase	42,928	13,074	20,630	65,227	10,205
OC Owner-Captain Time	10,049	2,225	6,255	13,843	4,461
Depreciation	6,617	1,207	4,559	8,675	5,000
<b>Net Cash Flow</b>	<b>83,347</b>	<b>33,084</b>	<b>26,918</b>	<b>139,776</b>	<b>21,284</b>
<b>Net Revenue from Operations**</b>	<b>110,659</b>	<b>33,462</b>	<b>53,587</b>	<b>167,732</b>	<b>34,055</b>

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

Revenue 100%	Net Cash Flow 35%	Net Revenue - Operations 47%
	IFQ Purchase 18%	
	Loan Payment 0%	Depreciation 3%
	Vessel R&M, Insur, Overh 9%	Vessel R&M, Insur, Overh 9%
	Labor - Hired 21%	Labor - Hired & Owner 25%
	Fuel & Supplies 16%	Fuel & Supplies 16%

**Economic Return\*\* (on Vessel Asset Value): 83.6%**

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

**SOI: 2018 GOM IFQ Tilefish Fishery: All Gears**  
**Trip-Level Time Series**

Trip-Level Summary						
	2014	2015	2016	2017	2018***	Average
<b>Effort</b>						
Trips	392	415	346	385	334	374
Vessels	120	121	126	132	122	124
Days at Sea	3,490	3,823	3,302	3,775	3,288	3,536
<b>Landings (guttled lbs)</b>						
Total	2,265,242	2,219,948	1,783,975	1,835,850	1,661,764	1,953,356
SOI	465,619	518,582	405,377	461,841	360,620	442,408
Non-SOI	1,799,623	1,701,367	1,378,598	1,374,010	1,301,144	1,510,948
% SOI	21%	23%	23%	25%	22%	23%
<b>Price (mean)</b>						
Total	\$4.01	\$4.12	\$4.21	\$4.14	\$4.30	\$4.16
SOI	\$2.87	\$3.18	\$3.22	\$3.25	\$2.91	\$3.09
Non-SOI	\$4.30	\$4.41	\$4.51	\$4.43	\$4.69	\$4.47
<b>Revenue</b>						
Total	\$9,083,115	\$9,155,170	\$7,517,194	\$7,586,512	\$7,148,139	\$8,098,026
SOI	\$1,339,829	\$1,650,224	\$1,307,796	\$1,497,404	\$1,049,104	\$1,368,871
Non-SOI	\$7,743,285	\$7,504,946	\$6,209,398	\$6,089,108	\$6,099,035	\$6,729,154
% SOI	15%	18%	17%	20%	15%	17%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM IFQ Tilefish Fishery: All Gears**  
**Trip-Level Time Series**

<b>Trip-Level Economics</b>		<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Average</b>
Number of Observations		96	84	83	132	86	
Response Rate (%)		75%	81%	93%	93%	95%	
<b>SOI Trip</b>							
Owner-Operated		53%	41%	55%	38%	55%	48.4%
Fuel Used per Day at Sea (gallons/day)		56	60	50	55	60	56
<b>Total Revenue</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Costs (% of Revenue)</b>							
Fuel		6.7%	6.6%	5.1%	5.9%	7%	6.3%
Bait		4%	5.9%	6.1%	5.2%	5%	5.2%
Ice		1.8%	2.4%	2.4%	1.9%	2.3%	2.2%
Groceries		3.1%	4%	4%	3.9%	3.2%	3.6%
Miscellaneous		2.5%	3.2%	4.2%	3.9%	2.2%	3.2%
Hired Crew		29.6%	27.8%	27.2%	29.4%	26.3%	28.1%
IFQ Purchase		11.2%	18.2%	25%	8.9%	18.3%	16.3%
OC Owner-Captain Time		3.6%	2.8%	7.1%	3%	4%	4.1%
<b>Trip Net Cash Flow*</b>		<b>41.1%</b>	<b>31.9%</b>	<b>26%</b>	<b>40.9%</b>	<b>36%</b>	<b>35.2%</b>
<b>Trip Net Revenue*</b>							
Labor - Hired & Owner		48.6%	47.3%	43.9%	46.8%	50%	47.3%
Fuel & Supplies		33.3%	30.7%	34.3%	32.4%	30%	32.1%
		18.1%	22%	21.8%	20.8%	20%	20.5%
<b>Input Prices</b>							
Fuel Price (per gallon)		\$3.50	\$2.53	\$2.04	\$2.21	\$2.65	\$2.59
Hire Crew Wage (per crew-day)		\$305	\$240	\$230	\$224	\$229	\$246
<b>Productivity Measures</b>							
Landings/Fuel Use (lbs/gallon)		13.1	9.4	9.3	9.1	8.2	10
Landings/Labor Use (lbs/crew-day)		218	183	159	162	157	176

\* See Definitions in Methods Section or Glossary.

**SOI: 2018 GOM IFQ Tilefish Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

Annual, Vessel-Level Summary		2014	2015	2016	2017	2018***	Average
<b>Effort</b>							
Vessels		120	121	126	132	122	124
Trips - Total		2,006	2,031	2,347	2,250	1,686	2,064
SOI Trips		392	415	346	385	334	374
Non-SOI Trips		1,614	1,616	2,001	1,865	1,352	1,690
Days at Sea		12,643	12,534	13,521	13,359	10,627	12,537
<b>Landings (gutted lbs)</b>							
Total		8,737,032	8,032,838	7,560,516	7,159,424	6,181,229	7,534,208
SOI		465,619	518,582	405,377	461,841	360,620	442,408
Non-SOI		8,271,412	7,514,256	7,155,139	6,697,583	5,820,609	7,091,800
% SOI		5%	6%	5%	6%	6%	6%
<b>Revenue</b>							
Total		\$35,314,098	\$33,424,079	\$30,602,416	\$30,103,095	\$27,431,602	\$31,375,058
SOI		\$1,339,829	\$1,650,224	\$1,307,796	\$1,497,404	\$1,049,104	\$1,368,871
Non-SOI		\$33,974,269	\$31,773,854	\$29,294,619	\$28,605,691	\$26,382,498	\$30,006,186
% SOI		4%	5%	4%	5%	4%	4%
<b>Vessel Characteristics</b>							
Length		45	44	43	43	44	44
Year Built		1982	1982	1984	1985	1984	1983
For-Hire Fishing Permit		12%	14%	13%	14%	20%	15%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM IFQ Tilefish Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

Annual, Vessel-Level Economics		2014	2015	2016	2017	2018	Average
Number of Observations		25	30	29	35	27	
Response Rate (%)		69%	94%	83%	80%	69%	
<b>SOI Vessel</b>							
Owner-Operated		56%	50%	55%	43%	59%	53%
For-Hire Active		12%	7%	7%	3%	4%	7%
Vessel Value		\$227,429	\$142,229	\$97,875	\$143,536	\$132,333	\$148,680
<b>Total Revenue</b>		100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>							
Fuel		6.8%	5.2%	4.8%	5.7%	5.1%	5.5%
Other Supplies		9.6%	10.5%	13%	12.8%	10.7%	11.3%
Hired Crew		28.8%	26.5%	29.9%	28.1%	20.7%	26.8%
Vessel Repair & Maintenance		6%	6.6%	7.4%	9.8%	6.8%	7.3%
Insurance		1.1%	0.6%	0.9%	0.4%	0.6%	0.7%
Overhead		4.4%	6.6%	3.5%	2.9%	1.9%	3.9%
Loan Payment		0.3%	1%	1.1%	0.4%	0.4%	0.6%
IFQ Purchase		10.5%	23.7%	22.2%	10.6%	18.3%	17.1%
OC Owner-Captain Time		3.2%	4%	6.1%	4.8%	4.3%	4.5%
<b>Net Cash Flow</b>		32.5%	19.3%	17.2%	29.3%	35%	26.7%
<b>Net Revenue for Operations**</b>							
Depreciation		37.1%	37.6%	32.3%	32.8%	47%	37.4%
Vessel R&M, Insur, Overh		3%	2.4%	2.2%	2.7%	2.8%	2.6%
Labor - Hired & Owner		11.5%	13.9%	11.8%	13.1%	9%	11.9%
Fuel & Supplies		31.9%	30.5%	36%	32.9%	25%	31.3%
<b>Economic Return** (on asset value)</b>		61.4%	78.6%	74%	61.9%	83.6%	71.9%

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

## SOI: 2018 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 2018 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 15.

### Trip-Level Summary

#### Effort

Trips	2,732
Vessels	363
Days at Sea	13,438
Crew Days	38,679

#### Landings (guttled lbs)

<u>Total</u>	7,847,340
SOI	1,231,176
Non-SOI	6,616,164
% SOI	16%

#### Percent by Gear

	Trips	SOI lbs
Vertical Line	91%	100%
Longline	8%	0.3%
Diver	0.8%	0%
Other	0.1%	0%

#### Price (mean)

<u>Total</u>	\$4.29
SOI	\$3.03
Non-SOI	\$4.52

#### Revenue

<u>Total</u>	\$33,665,889
SOI	\$3,729,613
Non-SOI	\$29,936,276
% SOI	11%

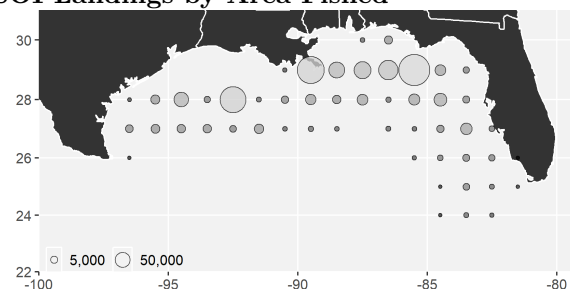
#### Percent of Revenue by Species Group

Shallow Water Groupers	19%
Shallow Water Snappers	1%
Mid-Shelf Snappers	75%
Deep Water Groupers/Tilefish	2%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	0.9%
Other Species	0.3%

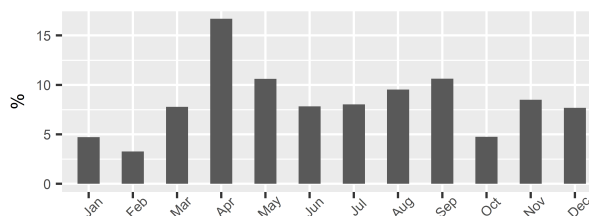
#### Revenue for Top 5 Species

Red Snapper	\$21,197,249
Red Grouper	\$4,436,061
Vermilion Snapper	\$3,729,613
Gag Grouper	\$1,502,994
Scamp	\$508,848

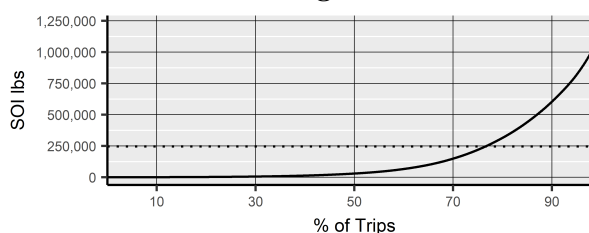
#### SOI Landings by Area Fished



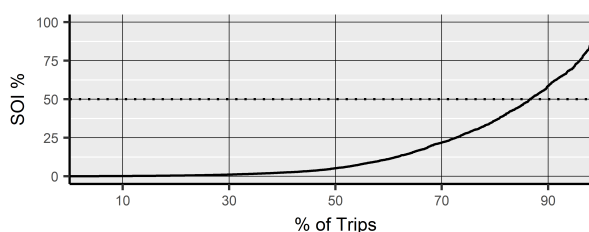
#### Share of SOI Landings by Month



#### Cumulative SOI Landings



#### SOI Share of Revenue Per Trip



#### Trip Descriptive Statistics (N=2,732)

	Mean	Min	Median	Max
Days at Sea	4.9	1	4	20
Crew Size	2.8	1	3	8
Landings	2,872	9	1,765	33,752
Revenue	\$12,323	\$26	\$6,630	\$167,058
SOI	\$1,365	\$2	\$262	\$20,410
% SOI	18%	0%	5.2%	100%



## SOI: 2018 GOM Vermilion Snapper Fishery: All Gears

### Trip-Level Economics

#### Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	2,732	-	-	-
Selected	762	28%	-	-
Responded	739	27%	97%	-
Used	720	26%	94%	97%

#### Economic Results (n=720)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Trip</b>					
Owner-Operated	65%	4.3	58%	72%	-
Days at Sea	5.6	0.3	5	6.2	5
Crew Size	2.7	0.1	2.6	2.8	3
Fuel Used	237	20	204	270	180
Landings (gutted lbs)	3,084	244	2,678	3,490	1,723
<b>Total Revenue</b>	13,475	1,175	11,524	15,427	6,157
<b>Cost</b>					
Fuel	623	50	540	706	476
Bait	456	57	361	550	230
Ice	207	19	176	238	120
Groceries	314	32	261	367	200
Miscellaneous	342	52	256	428	85
Hired Crew	3,184	334	2,629	3,740	1,178
IFQ Purchase	2,919	406	2,245	3,593	910
OC Owner-Captain Time	775	119	576	973	100
<b>Trip Net Cash Flow*</b>	5,431	681	4,300	6,563	2,071
<b>Trip Net Revenue*</b>	7,576	801	6,246	8,906	2,899

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

Revenue 100%	Trip Net Cash Flow* 40%	Trip Net Revenue* 56%
	IFQ Purchase 22%	
	Labor - Hired 24%	Labor - Hired & Owner 29%
	Fuel & Supplies 14%	Fuel & Supplies 14%

#### Input Prices

Fuel Price (average): \$2.63 per gallon

Hired Crew Wage (implicit): \$275 per crew-day

#### Productivity Measures

Landings/Fuel Use: 13 lbs/gallon

Landings/Labor Use: 203 lbs/crew-day

\* See Definitions in Methods Section or Glossary.

# SOI: 2018 GOM Vermilion Snapper Fishery: All Gears

## Annual, Vessel-Level Summary

### Effort

Vessels	363
<u>Trips - Total</u>	<u>4,976</u>
SOI Trips	2,732
Non-SOI Trips	2,244
Days at Sea	22,281
Crew Days	63,638

### Landings (guttled lbs)

<u>Total</u>	<u>11,792,980</u>
SOI	1,231,176
Non-SOI	10,561,804
% SOI	10%

### Percent by Gear

	Trips	Total lbs
Vertical Line	82%	71%
Longline	13%	26%
Diver	3%	0.9%
Other	3%	2%

### Price (mean)

<u>Total</u>	<u>\$4.27</u>
SOI	\$3.03
Non-SOI	\$4.41

### Revenue

<u>Total</u>	<u>\$50,314,805</u>
SOI	\$3,729,613
Non-SOI	\$46,585,192
% SOI	7%

### Percent of Revenue by Species Group

Shallow Water Groupers	25%
Shallow Water Snappers	2%
Mid-Shelf Snappers	61%
Deep Water Groupers/Tilefish	9%
Grunts/Porgies/Triggerfish	0.9%
Mackerels/Dolphinfish/Jacks	3%
Other Species	0.4%

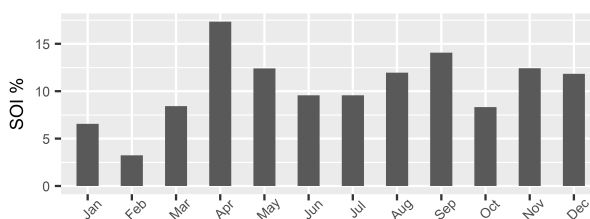
### Revenue for Top 5 Species

Red Snapper	\$26,784,205
Red Grouper	\$9,152,019
Vermilion Snapper	\$3,731,744
Yellowedge Grouper	\$2,643,997
Gag Grouper	\$2,406,306

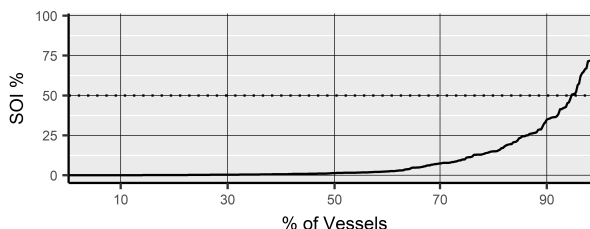
### Annual, Vessel Descriptive Statistics (N=363)

	Mean	Min	Median	Max
Trips	13.7	1	12	84
Days at Sea	61.4	1	44	225
Crew Days	175.3	2	109	927
Landings	32,488	122	15,690	403,969
Revenue	\$138,608	\$432	\$63,345	\$2,066,649
SOI	\$10,274	\$3	\$510	\$174,401
% SOI	9.8%	0%	1.4%	96.6%

### SOI Share of Monthly Landings



### SOI Share of Revenue Per Vessel



### Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	2%
SAT Snapper & Grouper - Limited	0.8%
King Mackerel	42%
Spanish Mackerel	46%
Dolphin-Wahoo	36%
Other Commercial Fishing	17%
For-Hire Fishing	25%

### Vessel Characteristics (N=363)

	Mean	Min	Median	Max
Length	40	23	38	69
Year Built	1987	1961	1985	2018
Horsepower	444	12	400	1,800
Fiberglass Hull	92%	-	-	-
Diesel Engine	83%	-	-	-
Ice Refrigeration	94%	-	-	-

## SOI: 2018 GOM Vermilion Snapper Fishery: All Gears

### Annual, Vessel-Level Economics

#### Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	363	-	-	-
Selected	101	28%	-	-
Responded	85	23%	84%	-
Used	83	23%	82%	98%

#### Economic Results (n=83)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Vessel</b>					
Owner-Operated	67%	4.7	59%	74%	-
For-Hire Active	15%	3.5	9%	21%	-
Days - Commercial Fishing	63	4.2	56	70	44
Days - For-Hire Fishing	14	3.8	7	20	0
Days - Non-fishing	1	0.4	0	1	0
Vessel Value	113,253	12,485	92,479	134,027	80,000
Has Insurance	27%	4.4	20%	35%	-
<b>Total Revenue</b>	140,449	17,533	111,276	169,622	91,986
Commercial Fishing	128,105	17,084	99,679	156,531	65,850
For-Hire Fishing	12,344	3,703	6,182	18,505	0
<b>Cost</b>					
Fuel	10,051	962	8,450	11,652	8,207
Other Supplies	16,493	2,230	12,782	20,204	8,270
Hired Crew	33,690	5,286	24,896	42,485	11,000
Vessel Repair & Maintenance	13,033	1,855	9,947	16,119	8,463
Insurance	1,165	246	756	1,575	0
Overhead	5,350	559	4,419	6,280	4,000
Loan Payment	1,930	457	1,169	2,690	0
IFQ Purchase	24,280	4,662	16,524	32,036	5,000
OC Owner-Captain Time	8,769	1,293	6,618	10,920	1,764
Depreciation	5,663	624	4,624	6,701	4,000
<b>Net Cash Flow</b>	34,458	10,837	16,426	52,489	7,561
<b>Net Revenue from Operations**</b>	46,236	11,619	26,903	65,569	8,649

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

Revenue 100%	Net Cash Flow 25%	Net Revenue - Operations 33%
	IFQ Purchase 17%	Depreciation 4%
	Loan Payment 1%	Vessel R&M, Insur, Overh 14%
	Vessel R&M, Insur, Overh 14%	Labor - Hired & Owner 30%
	Labor - Hired 24%	Fuel & Supplies 19%
	Fuel & Supplies 19%	

**Economic Return\*\* (on Vessel Asset Value): 40.8%**

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

**SOI: 2018 GOM Vermilion Snapper Fishery: All Gears**  
**Trip-Level Time Series**

Trip-Level Summary		2014	2015	2016	2017	2018**	Average
<b>Effort</b>							
Trips		2,698	2,699	2,903	3,162	2,732	2,839
Vessels		346	362	366	386	363	365
Days at Sea		13,696	13,473	14,952	16,204	13,438	14,353
<b>Landings (gutted lbs)</b>							
Total		7,899,988	8,440,925	8,877,099	8,713,423	7,847,340	8,355,755
SOI		1,439,369	1,247,206	1,377,208	1,443,801	1,231,176	1,347,752
Non-SOI		6,460,619	7,193,719	7,499,891	7,269,621	6,616,164	7,008,003
% SOI		18%	15%	16%	17%	16%	16%
<b>Price (mean)</b>							
Total		\$3.96	\$4.13	\$4.13	\$4.11	\$4.29	\$4.12
SOI		\$3.21	\$3.29	\$3.22	\$2.94	\$3.03	\$3.14
Non-SOI		\$4.12	\$4.28	\$4.30	\$4.33	\$4.52	\$4.31
<b>Revenue</b>							
Total		\$31,247,649	\$34,924,970	\$36,650,969	\$35,760,768	\$33,665,889	\$34,450,049
SOI		\$4,625,077	\$4,103,456	\$4,446,494	\$4,249,498	\$3,729,613	\$4,230,828
Non-SOI		\$26,622,572	\$30,821,514	\$32,204,476	\$31,511,270	\$29,936,276	\$30,219,222
% SOI		15%	12%	12%	12%	11%	12%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data, provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM Vermilion Snapper Fishery: All Gears**  
**Trip-Level Time Series**

<b>Trip-Level Economics</b>		<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Average</b>
Number of Observations		568	802	808	890	720	
Response Rate (%)		82%	87%	97%	96%	94%	
<b>SOI Trip</b>							
Owner-Operated		67%	56%	62%	55%	65%	61%
Fuel Used per Day at Sea (gallons/day)		45	45	40	47	42	44
<b>Total Revenue</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Costs (% of Revenue)</b>							
Fuel		6%	4%	3.4%	4.6%	4.6%	4.5%
Bait		2.8%	2.8%	2.8%	3.5%	3.4%	3.1%
Ice		1.4%	1.5%	1.6%	1.5%	1.5%	1.5%
Groceries		2.1%	2%	2.7%	3%	2.3%	2.4%
Miscellaneous		2.8%	2.4%	2.9%	2.2%	2.5%	2.6%
Hired Crew		27.3%	24.9%	26.1%	28%	23.6%	26%
IFQ Purchase		14.2%	27%	18.9%	19.5%	21.7%	20.3%
OC Owner-Captain Time		6.1%	5.7%	5.6%	5.3%	5.7%	5.7%
<b>Trip Net Cash Flow*</b>		<b>43.4%</b>	<b>35.6%</b>	<b>41.6%</b>	<b>37.7%</b>	<b>40%</b>	<b>39.7%</b>
<b>Trip Net Revenue*</b>							
Labor - Hired & Owner		51.5%	56.9%	54.8%	52%	56%	54.2%
Fuel & Supplies		33.4%	30.5%	31.7%	33.3%	29%	31.6%
<b>Input Prices</b>							
Fuel Price (per gallon)		\$3.63	\$2.56	\$2.08	\$2.30	\$2.63	\$2.64
Hire Crew Wage (per crew-day)		\$334	\$325	\$283	\$302	\$275	\$304
<b>Productivity Measures</b>							
Landings/Fuel Use (lbs/gallon)		14.9	15.2	14.2	12.1	13	14
Landings/Labor Use (lbs/crew-day)		231	246	197	206	203	217

\* See Definitions in Methods Section or Glossary.

**SOI: 2018 GOM Vermilion Snapper Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

<b>Annual, Vessel-Level Summary</b>		<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018***</b>	<b>Average</b>
<b>Effort</b>							
Vessels		346	362	366	386	363	365
Trips - Total		5,386	5,728	5,949	6,066	4,976	5,621
SOI Trips		<u>2,698</u>	<u>2,699</u>	<u>2,903</u>	<u>3,162</u>	<u>2,732</u>	<u>2,839</u>
Non-SOI Trips		2,688	3,029	3,046	2,904	2,244	2,782
Days at Sea		24,713	25,782	26,620	26,372	22,281	25,154
<b>Landings (gutted lbs)</b>							
Total		13,804,667	14,681,146	14,439,218	13,545,048	11,792,980	13,652,612
SOI		<u>1,439,369</u>	<u>1,247,206</u>	<u>1,377,208</u>	<u>1,443,801</u>	<u>1,231,176</u>	<u>1,347,752</u>
Non-SOI		12,365,298	13,433,940	13,062,010	12,101,247	10,561,804	12,304,860
% SOI		10%	8%	10%	11%	10%	10%
<b>Revenue</b>							
Total		\$54,632,898	\$59,870,888	\$58,943,674	\$55,142,724	\$50,314,805	\$55,780,998
SOI		<u>\$4,625,077</u>	<u>\$4,103,456</u>	<u>\$4,446,494</u>	<u>\$4,249,498</u>	<u>\$3,729,613</u>	<u>\$4,230,828</u>
Non-SOI		\$50,007,821	\$55,767,432	\$54,497,180	\$50,893,226	\$46,585,192	\$51,550,170
% SOI		8%	7%	8%	8%	7%	8%
<b>Vessel Characteristics</b>							
Length		41	40	40	40	40	40
Year Built		1986	1986	1986	1986	1987	1986
For-Hire Fishing Permit		23%	24%	24%	25%	25%	24%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM Vermilion Snapper Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

Annual, Vessel-Level Economics		2014	2015	2016	2017	2018	Average
Number of Observations		58	83	89	98	83	
Response Rate (%)		64%	80%	86%	80%	82%	
<b>SOI Vessel</b>							
Owner-Operated		72%	67%	74%	65%	67%	69%
For-Hire Active		9%	16%	17%	18%	15%	15%
Vessel Value		\$135,406	\$105,103	\$97,006	\$109,903	\$113,253	\$112,134
<b>Total Revenue</b>		100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>							
Fuel		8.1%	5.3%	5.8%	6.1%	7.2%	6.5%
Other Supplies		10.5%	9.1%	10.1%	11.3%	11.7%	10.5%
Hired Crew		27.7%	25.5%	25.6%	24.8%	24%	25.5%
Vessel Repair & Maintenance		7.9%	6.1%	7.9%	9.7%	9.3%	8.2%
Insurance		0.6%	0.7%	1%	1.2%	0.8%	0.9%
Overhead		4.5%	5.1%	4.7%	6.4%	3.8%	4.9%
Loan Payment		1%	1.3%	1.2%	1.2%	1.4%	1.2%
IFQ Purchase		12%	25.9%	14.9%	11.6%	17.3%	16.3%
OC Owner-Captain Time		5.3%	5.1%	5.9%	5.3%	6.2%	5.6%
<b>Net Cash Flow</b>		27.7%	21%	28.8%	27.6%	25%	26%
<b>Net Revenue for Operations**</b>							
Depreciation		32%	40.5%	36.1%	31.7%	33%	34.7%
Vessel R&M, Insur, Overh		3.4%	2.6%	3%	3.5%	4%	3.3%
Labor - Hired & Owner		13%	11.9%	13.6%	17.3%	14%	14%
Fuel & Supplies		33.1%	30.6%	31.5%	30.1%	30%	31.1%
<b>Economic Return** (on asset value)</b>		18.6%	14.3%	15.8%	17.4%	19%	17%
		47.3%	77.3%	61.1%	44.8%	40.8%	54.3%

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

## SOI: 2018 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 2018 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 15.

### Trip-Level Summary

#### Effort

Trips	744
Vessels	179
Days at Sea	4,247
Crew Days	10,840

#### Landings (gutted lbs)

<u>Total</u>	1,327,900
SOI	367,379
Non-SOI	960,521
% SOI	28%

#### Percent by Gear

	Trips	SOI lbs
Vertical Line	82%	100%
Longline	15%	0.2%
Diver	3%	0.1%
Other	0.3%	0%

#### Price (mean)

<u>Total</u>	\$4.11
SOI	\$3.65
Non-SOI	\$4.29

#### Revenue

<u>Total</u>	\$5,460,110
SOI	\$1,341,107
Non-SOI	\$4,119,003
% SOI	25%

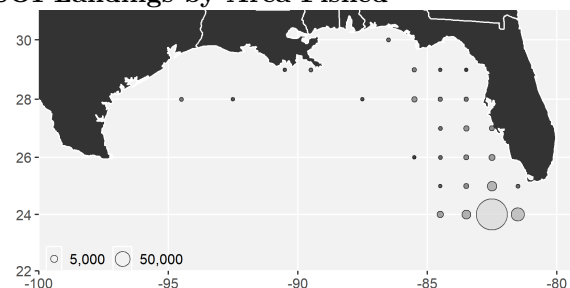
#### Percent of Revenue by Species Group

Shallow Water Groupers	52%
Shallow Water Snappers	29%
Mid-Shelf Snappers	15%
Deep Water Groupers/Tilefish	1%
Grunts/Porgies/Triggerfish	0.8%
Mackerels/Dolphinfish/Jacks	1%
Other Species	0.5%

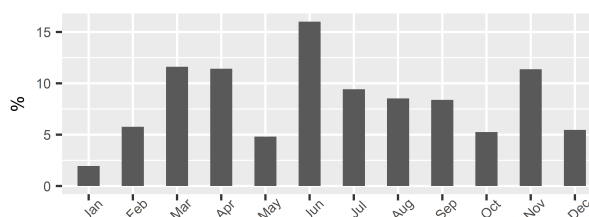
#### Revenue for Top 5 Species

Red Grouper	\$2,478,805
Yellowtail Snapper	\$1,341,107
Red Snapper	\$658,165
Gag Grouper	\$204,609
Mutton Snapper	\$157,192

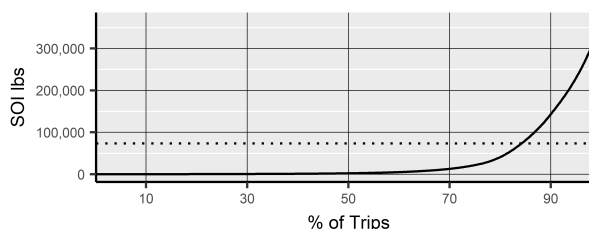
#### SOI Landings by Area Fished



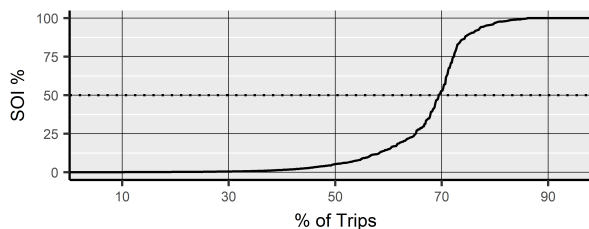
#### Share of SOI Landings by Month



#### Cumulative SOI Landings



#### SOI Share of Revenue Per Trip



#### Trip Descriptive Statistics (N=744)

	Mean	Min	Median	Max
Days at Sea	5.7	1	5	20
Crew Size	2.4	1	2	8
Landings	1,785	20	1,054	13,065
Revenue	\$7,339	\$94	\$4,011	\$54,400
SOI	\$1,803	\$3	\$87	\$22,416
% SOI	33%	0%	5.3%	100%



## SOI: 2018 GOM Yellowtail Snapper Fishery: All Gears

### Trip-Level Economics

#### Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	744	-	-	-
Selected	187	25%	-	-
Responded	184	25%	98%	-
Used	182	24%	97%	99%

#### Economic Results (n=182)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Trip</b>					
Owner-Operated	53%	7.4	41%	66%	-
Days at Sea	6.8	0.5	5.9	7.7	6
Crew Size	2.4	0.1	2.3	2.6	2
Fuel Used	246	27	200	292	200
Landings (gutted lbs)	2,119	371	1,495	2,744	1,286
<b>Total Revenue</b>	8,905	1,616	6,182	11,627	5,450
<b>Cost</b>					
Fuel	683	70	566	801	530
Bait	639	105	463	816	225
Ice	183	32	129	237	120
Groceries	446	59	346	545	300
Miscellaneous	339	112	150	528	15
Hired Crew	2,471	512	1,608	3,333	1,000
IFQ Purchase	949	459	176	1,723	0
OC Owner-Captain Time	878	155	618	1,139	200
<b>Trip Net Cash Flow*</b>	3,194	719	1,982	4,406	1,684
<b>Trip Net Revenue*</b>	3,265	884	1,776	4,754	1,437

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

Revenue 100%	Trip Net Cash Flow* 36%	Trip Net Revenue* 37%
	IFQ Purchase 11%	Labor - Hired & Owner 38%
	Labor - Hired 28%	
	Fuel & Supplies 26%	Fuel & Supplies 26%

#### Input Prices

Fuel Price (average): \$2.78 per gallon

Hired Crew Wage (implicit): \$191 per crew-day

#### Productivity Measures

Landings/Fuel Use: 8.6 lbs/gallon

Landings/Labor Use: 128 lbs/crew-day

\* See Definitions in Methods Section or Glossary.

# SOI: 2018 GOM Yellowtail Snapper Fishery: All Gears

## Annual, Vessel-Level Summary

### Effort

Vessels	179
<u>Trips - Total</u>	<u>2,781</u>
SOI Trips	744
Non-SOI Trips	2,037
Days at Sea	13,499
Crew Days	35,630

### Landings (guttled lbs)

<u>Total</u>	<u>4,549,619</u>
SOI	367,379
Non-SOI	4,182,240
% SOI	8%

### Percent by Gear

	Trips	Total lbs
Vertical Line	75%	47%
Longline	17%	50%
Diver	6%	1%
Other	2%	2%

### Price (mean)

<u>Total</u>	<u>\$4.22</u>
SOI	\$3.65
Non-SOI	\$4.27

### Revenue

<u>Total</u>	<u>\$19,198,808</u>
SOI	\$1,341,107
Non-SOI	\$17,857,700
% SOI	7%

### Percent of Revenue by Species Group

Shallow Water Groupers	51%
Shallow Water Snappers	13%
Mid-Shelf Snappers	20%
Deep Water Groupers/Tilefish	10%
Grunts/Porgies/Triggerfish	0.8%
Mackerels/Dolphinfish/Jacks	4%
Other Species	0.7%

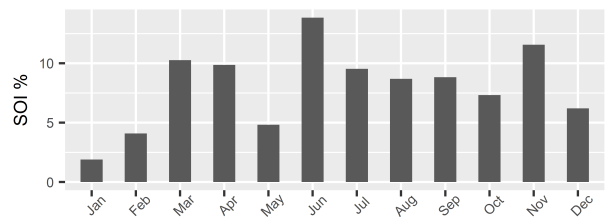
### Revenue for Top 5 Species

Red Grouper	\$7,943,117
Red Snapper	\$3,224,604
Yellowtail Snapper	\$1,879,719
Gag Grouper	\$1,333,748
Yellowedge Grouper	\$1,262,407

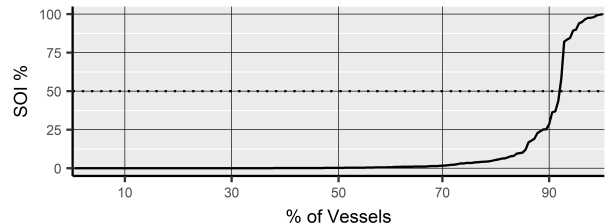
### Annual, Vessel Descriptive Statistics (N=179)

	Mean	Min	Median	Max
Trips	15.5	1	13	163
Days at Sea	75.4	1	67	218
Crew Days	199.1	1	150	764
Landings	25,417	106	14,629	144,261
Revenue	\$107,256	\$417	\$57,794	\$678,238
SOI	\$7,492	\$3	\$86	\$246,389
% SOI	10.3%	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	14%
SAT Snapper & Grouper - Limited	0.6%
King Mackerel	34%
Spanish Mackerel	51%
Dolphin-Wahoo	48%
Other Commercial Fishing	19%
For-Hire Fishing	20%

### Vessel Characteristics (N=179)

	Mean	Min	Median	Max
Length	37	20	37	62
Year Built	1987	1964	1983	2018
Horsepower	400	40	350	1,000
Fiberglass Hull	97%	-	-	-
Diesel Engine	77%	-	-	-
Ice Refrigeration	93%	-	-	-

## SOI: 2018 GOM Yellowtail Snapper Fishery: All Gears

### Annual, Vessel-Level Economics

#### Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	179	-	-	-
Selected	43	24%	-	-
Responded	35	20%	81%	-
Used	35	20%	81%	100%

#### Economic Results (n=35)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Vessel</b>					
Owner-Operated	67%	7.5	54%	80%	-
For-Hire Active	9%	4.6	1%	17%	-
Days - Commercial Fishing	83	7.5	71	96	74
Days - For-Hire Fishing	8	5.3	-1	17	0
Days - Non-fishing	1	0.6	0	2	0
Vessel Value	101,518	17,305	72,232	130,804	85,000
Has Insurance	27%	7.1	15%	39%	-
<b>Total Revenue</b>	117,556	14,511	92,999	142,114	96,658
Commercial Fishing	111,580	14,105	87,708	135,451	83,462
For-Hire Fishing	5,977	4,376	-1,430	13,383	0
<b>Cost</b>					
Fuel	9,734	1,181	7,736	11,733	8,321
Other Supplies	19,398	2,949	14,407	24,388	10,000
Hired Crew	30,030	5,447	20,812	39,248	12,600
Vessel Repair & Maintenance	12,547	2,580	8,181	16,913	6,000
Insurance	821	281	347	1,296	0
Overhead	4,101	604	3,079	5,122	3,000
Loan Payment	1,341	540	428	2,255	0
IFQ Purchase	20,361	4,615	12,550	28,172	5,000
OC Owner-Captain Time	7,682	1,967	4,353	11,012	2,256
Depreciation	5,076	865	3,612	6,540	4,250
<b>Net Cash Flow</b>	19,222	4,307	11,933	26,512	11,673
<b>Net Revenue from Operations**</b>	28,167	6,472	17,214	39,120	17,697

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

Revenue 100%	Net Cash Flow 16%	Net Revenue - Operations 24%
	IFQ Purchase 17%	Depreciation 4%
	Loan Payment 1%	Vessel R&M, Insur, Overh 15%
	Vessel R&M, Insur, Overh 15%	Labor - Hired & Owner 32%
	Labor - Hired 26%	Fuel & Supplies 25%
	Fuel & Supplies 25%	

**Economic Return\*\* (on Vessel Asset Value): 27.7%**

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

**SOI: 2018 GOM Yellowtail Snapper Fishery: All Gears**  
**Trip-Level Time Series**

Trip-Level Summary		2014	2015	2016	2017	2018***	Average
<b>Effort</b>							
Trips		592	619	726	713	744	679
Vessels		132	148	168	179	179	161
Days at Sea		3,509	3,734	3,839	3,655	4,247	3,797
<b>Landings (gutted lbs)</b>							
Total		1,242,855	1,329,908	1,470,206	1,415,671	1,327,900	1,357,308
SOI		565,317	389,762	325,841	371,960	367,379	404,052
Non-SOI		677,538	940,146	1,144,365	1,043,711	960,521	953,256
% SOI		45%	29%	22%	26%	28%	30%
<b>Price (mean)</b>							
Total		\$3.69	\$3.84	\$3.91	\$3.82	\$4.11	\$3.87
SOI		\$3.49	\$3.57	\$3.50	\$3.24	\$3.65	\$3.49
Non-SOI		\$3.85	\$3.94	\$4.03	\$4.02	\$4.29	\$4.03
<b>Revenue</b>							
Total		\$4,583,225	\$5,098,035	\$5,751,714	\$5,404,078	\$5,460,110	\$5,259,432
SOI		\$1,973,523	\$1,392,748	\$1,140,069	\$1,205,011	\$1,341,107	\$1,410,492
Non-SOI		\$2,609,702	\$3,705,287	\$4,611,644	\$4,199,067	\$4,119,003	\$3,848,941
% SOI		43%	27%	20%	22%	25%	27%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM Yellowtail Snapper Fishery: All Gears**  
**Trip-Level Time Series**

<b>Trip-Level Economics</b>		<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Average</b>
Number of Observations		83	143	173	231	182	
Response Rate (%)		66%	84%	95%	91%	97%	
<b>SOI Trip</b>							
Owner-Operated		51%	61%	66%	47%	53%	55.6%
Fuel Used per Day at Sea (gallons/day)		34	36	34	44	36	37
<b>Total Revenue</b>		100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>							
Fuel		7.2%	6.1%	5.3%	5.9%	7.7%	6.4%
Bait		4.1%	7.4%	5.7%	6.7%	7.2%	6.2%
Ice		1.5%	2%	1.7%	2.1%	2.1%	1.9%
Groceries		2.9%	3.6%	3.9%	4.3%	5%	3.9%
Miscellaneous		2.7%	3.2%	2.9%	1.9%	3.8%	2.9%
Hired Crew		29.4%	30.3%	31.7%	32.3%	27.7%	30.3%
IFQ Purchase		14.6%	15.2%	21.1%	10.8%	10.7%	14.5%
OC Owner-Captain Time		9.5%	9.9%	11.1%	8.6%	9.9%	9.8%
<b>Trip Net Cash Flow*</b>		37.7%	32.2%	27.8%	36%	36%	33.9%
<b>Trip Net Revenue*</b>							
Labor - Hired & Owner		42.8%	37.5%	37.8%	38.2%	37%	38.7%
Fuel & Supplies		38.9%	40.2%	42.8%	40.9%	38%	40.2%
		18.4%	22.3%	19.5%	21%	26%	21.4%
<b>Input Prices</b>							
Fuel Price (per gallon)		\$3.76	\$2.65	\$2.15	\$2.41	\$2.78	\$2.75
Hire Crew Wage (per crew-day)		\$254	\$243	\$265	\$294	\$191	\$249
<b>Productivity Measures</b>							
Landings/Fuel Use (lbs/gallon)		13.5	11.4	9.8	10.6	8.6	11
Landings/Labor Use (lbs/crew-day)		179	160	143	191	128	160

\* See Definitions in Methods Section or Glossary.

**SOI: 2018 GOM Yellowtail Snapper Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

Annual, Vessel-Level Summary						
	2014	2015	2016	2017	2018***	Average
<b>Effort</b>						
Vessels	132	148	168	179	179	161
Trips - Total	2,707	2,749	3,254	3,059	2,781	2,910
SOI Trips	592	619	726	713	744	679
Non-SOI Trips	2,115	2,130	2,528	2,346	2,037	2,231
Days at Sea	12,781	13,450	14,831	14,788	13,499	13,870
<b>Landings (gutted lbs)</b>						
Total	6,452,393	6,229,458	7,199,355	6,660,265	4,549,619	6,218,218
SOI	565,317	389,762	325,841	371,960	367,379	404,052
Non-SOI	5,887,076	5,839,697	6,873,514	6,288,305	4,182,240	5,814,166
% SOI	9%	6%	5%	6%	8%	7%
<b>Revenue</b>						
Total	\$24,856,123	\$25,057,435	\$28,790,513	\$26,627,193	\$19,198,808	\$24,906,014
SOI	\$1,973,523	\$1,392,748	\$1,140,069	\$1,205,011	\$1,341,107	\$1,410,492
Non-SOI	\$22,882,600	\$23,664,687	\$27,650,444	\$25,422,182	\$17,857,700	\$23,495,523
% SOI	8%	6%	4%	5%	7%	6%
<b>Vessel Characteristics</b>						
Length	38	39	39	39	37	38
Year Built	1987	1986	1987	1986	1987	1987
For-Hire Fishing Permit	17%	18%	19%	20%	20%	19%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM Yellowtail Snapper Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

<b>Annual, Vessel-Level Economics</b>		<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Average</b>
Number of Observations		17	25	39	34	35	
Response Rate (%)		50%	64%	80%	63%	81%	
<b>SOI Vessel</b>							
Owner-Operated		47%	68%	77%	53%	67%	62%
For-Hire Active		0%	11%	12%	15%	9%	9%
Vessel Value		\$159,417	\$96,379	\$95,695	\$123,512	\$101,518	\$115,304
<b>Total Revenue</b>		100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>							
Fuel		6.2%	5.9%	6.1%	6.4%	8.3%	6.6%
Other Supplies		10.5%	11.2%	10.9%	13.9%	16.5%	12.6%
Hired Crew		26.3%	24.3%	26.4%	29.2%	25.5%	26.3%
Vessel Repair & Maintenance		4%	6.2%	7.9%	11.9%	10.7%	8.1%
Insurance		0.3%	0.6%	1%	0.5%	0.7%	0.6%
Overhead		3.5%	5.7%	5.6%	2.9%	3.5%	4.2%
Loan Payment		0.6%	2%	2.1%	0.5%	1.1%	1.3%
IFQ Purchase		13.7%	23.7%	22.2%	8.1%	17.3%	17%
OC Owner-Captain Time		3.3%	4.9%	6.4%	3.5%	6.5%	4.9%
<b>Net Cash Flow</b>		34.9%	20.4%	17.7%	26.7%	16%	23.1%
<b>Net Revenue for Operations**</b>							
Depreciation		43.4%	38.9%	33%	28.7%	24%	33.6%
Vessel R&M, Insur, Overh		2.6%	2.2%	2.7%	3.1%	4.3%	3%
Labor - Hired & Owner		7.8%	12.5%	14.6%	15.3%	15%	13%
Fuel & Supplies		29.7%	29.2%	32.8%	32.7%	32%	31.3%
<b>Economic Return** (on asset value)</b>		16.7%	17.1%	16.9%	20.2%	25%	19.2%
		84.2%	87.3%	60.3%	46.6%	27.7%	61.2%

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

## SOI: 2018 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 2018 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 15.

### Trip-Level Summary

#### Effort

Trips	1,342
Vessels	269
Days at Sea	6,407
Crew Days	19,180

#### Landings (gutted lbs)

<u>Total</u>	<u>3,653,692</u>
SOI	351,193
Non-SOI	3,302,498
% SOI	10%

#### Percent by Gear

	Trips	SOI lbs
Vertical Line	83%	75%
Longline	10%	6%
Diver	7%	19%
Other	0.2%	0.2%

#### Price (mean)

<u>Total</u>	<u>\$3.94</u>
SOI	\$1.83
Non-SOI	\$4.17

#### Revenue

<u>Total</u>	<u>\$14,411,197</u>
SOI	\$643,850
Non-SOI	\$13,767,348
% SOI	4%

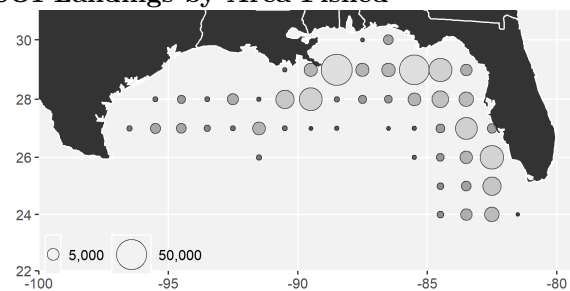
#### Percent of Revenue by Species Group

Shallow Water Groupers	20%
Shallow Water Snappers	2%
Mid-Shelf Snappers	62%
Deep Water Groupers/Tilefish	9%
Grunts/Porgies/Triggerfish	2%
Mackerels/Dolphinfish/Jacks	5%
Other Species	0.4%

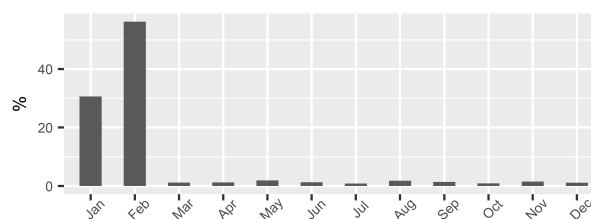
#### Revenue for Top 5 Species

Red Snapper	\$6,765,666
Vermilion Snapper	\$2,158,372
Red Grouper	\$1,755,573
Gag Grouper	\$802,860
Yellowedge Grouper	\$781,072

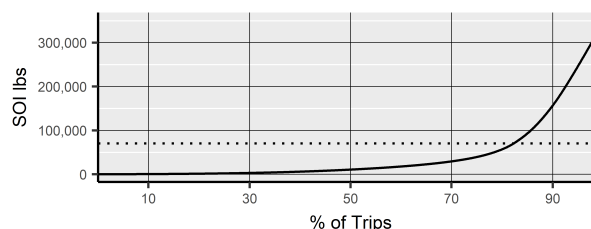
#### SOI Landings by Area Fished



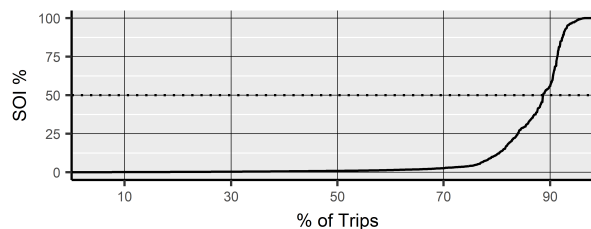
#### Share of SOI Landings by Month



#### Cumulative SOI Landings



#### SOI Share of Revenue Per Trip



#### Trip Descriptive Statistics (N=1,342)

	Mean	Min	Median	Max
Days at Sea	4.8	1	4	22
Crew Size	2.8	1	3	8
Landings	2,723	39	1,861	29,871
Revenue	\$10,739	\$147	\$6,340	\$149,980
SOI	\$480	\$1	\$63	\$4,093
% SOI	13%	0%	0.9%	100%



## SOI: 2018 GOM FMP Jacks Fishery: All Gears

### Trip-Level Economics

#### Response Rate for SOI Trips

	Trips	%SOI	%Selected	%Responded
SOI	1,342	-	-	-
Selected	365	27%	-	-
Responded	347	26%	95%	-
Used	337	25%	92%	97%

#### Economic Results (n=337)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Trip</b>					
Owner-Operated	63%	5	55%	71%	-
Days at Sea	5.4	0.4	4.7	6.1	4
Crew Size	2.8	0.1	2.7	3	3
Fuel Used	240	24	200	280	175
Landings (gutted lbs)	2,642	310	2,126	3,159	1,789
<b>Total Revenue</b>	9,952	1,481	7,483	12,420	5,294
<b>Cost</b>					
Fuel	640	62	536	743	457
Bait	424	68	312	537	200
Ice	168	26	125	211	100
Groceries	290	40	223	357	200
Miscellaneous	288	69	173	404	83
Hired Crew	2,522	401	1,854	3,190	900
IFQ Purchase	1,780	573	824	2,736	526
OC Owner-Captain Time	718	161	450	987	278
<b>Trip Net Cash Flow*</b>	3,839	883	2,367	5,311	2,069
<b>Trip Net Revenue*</b>	4,901	1,044	3,161	6,641	2,020

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

Revenue 100%	Trip Net Cash Flow* 39%	Trip Net Revenue* 49%
	IFQ Purchase 18%	
	Labor - Hired 25%	Labor - Hired & Owner 33%
	Fuel & Supplies 18%	Fuel & Supplies 18%

#### Input Prices

Fuel Price (average): \$2.67 per gallon      Hired Crew Wage (implicit): \$215 per crew-day

#### Productivity Measures

Landings/Fuel Use: 11 lbs/gallon      Landings/Labor Use: 175 lbs/crew-day

\* See Definitions in Methods Section or Glossary.

# SOI: 2018 GOM FMP Jacks Fishery: All Gears

## Annual, Vessel-Level Summary

### Effort

Vessels	269
<u>Trips - Total</u>	<u>4,101</u>
SOI Trips	1,342
Non-SOI Trips	2,759
Days at Sea	17,258
Crew Days	50,720

### Landings (guttled lbs)

<u>Total</u>	<u>9,474,755</u>
SOI	351,193
Non-SOI	9,123,562
% SOI	4%

### Percent by Gear

	Trips	Total lbs
Vertical Line	80%	71%
Longline	12%	26%
Diver	6%	2%
Other	1%	0.7%

### Price (mean)

<u>Total</u>	<u>\$4.21</u>
SOI	\$1.83
Non-SOI	\$4.30

### Revenue

<u>Total</u>	<u>\$39,848,678</u>
SOI	\$643,850
Non-SOI	\$39,204,828
% SOI	2%

### Percent of Revenue by Species Group

Shallow Water Groupers	22%
Shallow Water Snappers	2%
Mid-Shelf Snappers	61%
Deep Water Groupers/Tilefish	10%
Grunts/Porgies/Triggerfish	1%
Mackerels/Dolphinfish/Jacks	3%
Other Species	0.5%

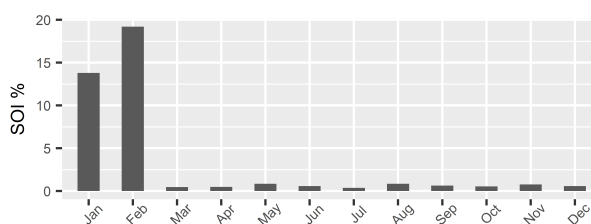
### Revenue for Top 5 Species

Red Snapper	\$20,395,973
Red Grouper	\$6,154,665
Vermilion Snapper	\$3,461,982
Yellowedge Grouper	\$2,684,695
Gag Grouper	\$1,989,417

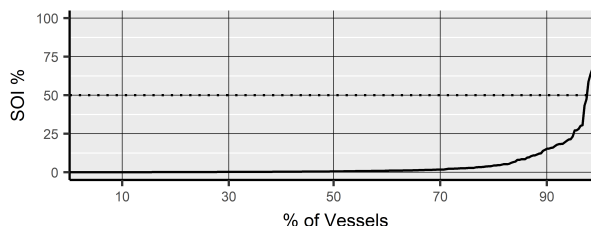
### Annual, Vessel Descriptive Statistics (N=269)

	Mean	Min	Median	Max
Trips	15.2	1	13	84
Days at Sea	64.2	1	47	225
Crew Days	188.6	2	126	927
Landings	35,222	142	19,389	403,969
Revenue	\$148,136	\$437	\$73,038	\$2,066,649
SOI	\$2,393	\$2	\$358	\$45,744
% SOI	5.1%	0%	0.5%	100%

### SOI Share of Monthly Landings



### SOI Share of Revenue Per Vessel



### Percent with Federal Permit

GOM Reef Fish	100%
SAT Snapper & Grouper - Unlimited	4%
SAT Snapper & Grouper - Limited	0.7%
King Mackerel	46%
Spanish Mackerel	49%
Dolphin-Wahoo	39%
Other Commercial Fishing	21%
For-Hire Fishing	28%

### Vessel Characteristics (N=269)

	Mean	Min	Median	Max
Length	40	19	38	69
Year Built	1988	1961	1984	2018
Horsepower	433	12	400	1,720
Fiberglass Hull	93%	-	-	-
Diesel Engine	80%	-	-	-
Ice Refrigeration	94%	-	-	-

## SOI: 2018 GOM FMP Jacks Fishery: All Gears

### Annual, Vessel-Level Economics

#### Response Rate for SOI Vessels

	Vessels	%SOI	%Selected	%Responded
SOI	269	-	-	-
Selected	78	29%	-	-
Responded	66	25%	85%	-
Used	63	23%	81%	95%

#### Economic Results (n=63)

	Mean	SE	90% L.B.	90% U.B.	Median
<b>SOI Vessel</b>					
Owner-Operated	62%	5.4	53%	71%	-
For-Hire Active	14%	3.9	8%	21%	-
Days - Commercial Fishing	75	5.8	66	85	62
Days - For-Hire Fishing	12	3.3	7	18	0
Days - Non-fishing	1	0.3	0	1	0
Vessel Value	107,929	11,051	89,471	126,387	80,000
Has Insurance	27%	5	19%	35%	-
<b>Total Revenue</b>	164,006	23,711	124,403	203,608	99,547
Commercial Fishing	152,134	23,519	112,852	191,416	73,526
For-Hire Fishing	11,872	3,485	6,050	17,693	0
<b>Cost</b>					
Fuel	11,749	1,075	9,954	13,544	9,317
Other Supplies	19,186	2,996	14,182	24,191	9,714
Hired Crew	40,041	7,236	27,955	52,127	17,850
Vessel Repair & Maintenance	13,796	2,099	10,290	17,302	8,752
Insurance	1,035	231	649	1,422	0
Overhead	5,837	620	4,801	6,873	4,550
Loan Payment	1,926	504	1,085	2,767	0
IFQ Purchase	24,408	5,156	15,796	33,020	3,800
OC Owner-Captain Time	8,943	1,617	6,243	11,643	2,432
Depreciation	5,396	553	4,474	6,319	4,000
<b>Net Cash Flow</b>	46,028	15,123	20,769	71,286	9,503
<b>Net Revenue from Operations**</b>	58,022	15,585	31,992	84,052	15,367

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

Revenue 100%	Net Cash Flow 28%	Net Revenue - Operations 35%
	IFQ Purchase 15%	Depreciation 3%
	Loan Payment 1%	Vessel R&M, Insur, Overh 13%
	Vessel R&M, Insur, Overh 13%	Labor - Hired & Owner 30%
	Labor - Hired 24%	Fuel & Supplies 19%
	Fuel & Supplies 19%	

**Economic Return\*\* (on Vessel Asset Value): 53.8%**

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

**SOI: 2018 GOM FMP Jacks Fishery: All Gears**  
**Trip-Level Time Series**

Trip-Level Summary		2014	2015	2016	2017	2018**	Average
<b>Effort</b>							
Trips		1,627	1,515	1,774	1,559	1,342	1,563
Vessels		302	285	282	298	269	287
Days at Sea		8,406	7,652	8,512	7,155	6,407	7,626
<b>Landings (guttled lbs)</b>							
Total		5,183,713	4,840,562	5,378,243	4,223,921	3,653,692	4,656,026
SOI		512,078	489,301	488,890	483,340	351,193	464,960
Non-SOI		4,671,635	4,351,262	4,889,353	3,740,581	3,302,498	4,191,066
% SOI		10%	10%	9%	11%	10%	10%
<b>Price (mean)</b>							
Total		\$3.67	\$3.84	\$3.90	\$3.76	\$3.94	\$3.82
SOI		\$1.55	\$1.57	\$1.73	\$1.78	\$1.83	\$1.69
Non-SOI		\$3.91	\$4.10	\$4.12	\$4.01	\$4.17	\$4.06
<b>Revenue</b>							
Total		\$19,054,371	\$18,596,785	\$20,980,754	\$15,881,723	\$14,411,197	\$17,784,966
SOI		\$796,890	\$769,531	\$845,598	\$860,144	\$643,850	\$783,203
Non-SOI		\$18,257,481	\$17,827,254	\$20,135,156	\$15,021,579	\$13,767,348	\$17,001,764
% SOI		4%	4%	4%	5%	4%	4%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM FMP Jacks Fishery: All Gears**  
**Trip-Level Time Series**

<b>Trip-Level Economics</b>		<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>Average</b>
Number of Observations		343	407	477	457	337	
Response Rate (%)		79%	81%	98%	96%	92%	
<b>SOI Trip</b>							
Owner-Operated		67%	57%	63%	56%	63%	61.2%
Fuel Used per Day at Sea (gallons/day)		52	50	44	50	44	48
<b>Total Revenue</b>		100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>							
Fuel		7.5%	5.1%	3.9%	5%	6.4%	5.6%
Bait		3.2%	3.5%	3.2%	3.7%	4.3%	3.6%
Ice		1.6%	1.7%	1.7%	1.5%	1.7%	1.6%
Groceries		2.6%	2.2%	3%	2.9%	2.9%	2.7%
Miscellaneous		2.7%	2.5%	3.3%	2.1%	2.9%	2.7%
Hired Crew		26.7%	26.7%	26.8%	29.6%	25.3%	27%
IFQ Purchase		14.2%	24.3%	20%	15.9%	17.9%	18.5%
OC Owner-Captain Time		7.3%	5.7%	5.7%	6.1%	7.2%	6.4%
<b>Trip Net Cash Flow*</b>		41.6%	33.9%	38.1%	39.4%	39%	38.4%
<b>Trip Net Revenue*</b>							
Labor - Hired & Owner		48.5%	52.5%	52.4%	49.1%	49%	50.3%
Fuel & Supplies		33.9%	32.4%	32.5%	35.7%	33%	33.5%
		17.6%	15.1%	15.1%	15.2%	18%	16.2%
<b>Input Prices</b>							
Fuel Price (per gallon)		\$3.64	\$2.61	\$2.12	\$2.34	\$2.67	\$2.68
Hire Crew Wage (per crew-day)		\$289	\$285	\$296	\$312	\$215	\$279
<b>Productivity Measures</b>							
Landings/Fuel Use (lbs/gallon)		12.6	13.3	13.5	12.4	11	13
Landings/Labor Use (lbs/crew-day)		219	225	214	222	175	211

\* See Definitions in Methods Section or Glossary.

**SOI: 2018 GOM FMP Jacks Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

**Annual, Vessel-Level Summary**

	2014	2015	2016	2017	2018***	Average
<b>Effort</b>						
Vessels	302	285	282	298	269	287
Trips - Total	5,339	5,042	5,265	5,068	4,101	4,963
SOI Trips	1,627	1,515	1,774	1,559	1,342	1,563
Non-SOI Trips	3,712	3,527	3,491	3,509	2,759	3,400
Days at Sea	23,708	22,350	22,001	20,675	17,258	21,198
<b>Landings (gutted lbs)</b>						
Total	13,571,445	13,242,805	12,928,840	11,515,966	9,474,755	12,146,762
SOI	512,078	489,301	488,890	483,340	351,193	464,960
Non-SOI	13,059,367	12,753,504	12,439,950	11,032,626	9,123,562	11,681,802
% SOI	4%	4%	4%	4%	4%	4%
<b>Revenue</b>						
Total	\$52,572,394	\$53,210,143	\$52,058,798	\$46,136,656	\$39,848,678	\$48,765,334
SOI	\$796,890	\$769,531	\$845,598	\$860,144	\$643,850	\$783,203
Non-SOI	\$51,775,503	\$52,440,612	\$51,213,199	\$45,276,512	\$39,204,828	\$47,982,131
% SOI	2%	1%	2%	2%	2%	2%
<b>Vessel Characteristics</b>						
Length	41	40	40	40	40	40
Year Built	1985	1986	1987	1987	1988	1987
For-Hire Fishing Permit	25%	25%	25%	26%	28%	26%

\*\*\* NMFS is aware of egregious underreporting of logbooks that occurred in the Florida Keys from 2018 to 2020, which will impact most of the summary context data provided in this report to some extent. The 2018 trip-level economic results should be minimally affected, as only a single vessel selected for economic reporting was involved. The annual economics results are not affected, as the survey is run separately.

**SOI: 2018 GOM FMP Jacks Fishery: All Gears**  
**Annual, Vessel-Level Time Series**

Annual, Vessel-Level Economics						
	2014	2015	2016	2017	2018	Average
Number of Observations	51	63	68	75	63	
Response Rate (%)	64%	76%	86%	79%	81%	
<b>SOI Vessel</b>						
Owner-Operated	71%	63%	68%	60%	62%	65%
For-Hire Active	15%	17%	17%	24%	14%	17%
Vessel Value	\$159,377	\$118,271	\$104,790	\$107,014	\$107,929	\$119,476
<b>Total Revenue</b>	100%	100%	100%	100%	100%	100%
<b>Costs (% of Revenue)</b>						
Fuel	8.5%	5.2%	5.7%	6.7%	7.2%	6.7%
Other Supplies	9.8%	9.2%	10.1%	11.4%	11.7%	10.4%
Hired Crew	26.8%	25.4%	24.9%	25.3%	24.4%	25.4%
Vessel Repair & Maintenance	7%	6.2%	6.7%	9.6%	8.4%	7.6%
Insurance	1.3%	0.6%	0.9%	0.9%	0.6%	0.9%
Overhead	5.8%	5.1%	3.7%	6.7%	3.6%	5%
Loan Payment	1.2%	1.1%	1.1%	1.4%	1.2%	1.2%
IFQ Purchase	11.3%	27.3%	15.6%	10.6%	14.9%	15.9%
OC Owner-Captain Time	4.4%	4.4%	5.4%	5%	5.5%	4.9%
<b>Net Cash Flow</b>	28.1%	19.8%	31.2%	27.5%	28%	26.9%
<b>Net Revenue for Operations**</b>						
Depreciation	33%	41.5%	40%	31.3%	35%	36.2%
Vessel R&M, Insur, Overh	3.3%	2.4%	2.6%	3.1%	3.3%	2.9%
Labor - Hired & Owner	14.1%	11.9%	11.3%	17.2%	13%	13.5%
Fuel & Supplies	31.2%	29.8%	30.3%	30.4%	30%	30.3%
	18.4%	14.4%	15.8%	18.1%	19%	17.1%
<b>Economic Return** (on asset value)</b>	50.3%	86.8%	77.4%	49.9%	53.8%	63.6%

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

## Appendices

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

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

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



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

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

### Shallow Water Groupers

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

### Shallow Water Snappers

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

### Mid-Shelf Snappers

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

### Deep Water Groupers/Tilefish

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

### Grunts/Porgies/Triggerfish

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

### Mackerels/Dolphinfish/Jacks

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

### Other Species

All other species not listed above

## Appendix 3 - Glossary/Abbreviations

- **Deep Water Groupers/Tilefish** - See Appendix 2 for particular species included.
- **Diver** - A gear type which includes spear guns.
- **Economic Return (on Asset Value)** - The economic return is calculated by dividing the mean Net Revenue from Operations by the mean Vessel Value. It is critical to note that, practically, this return is shared between owners of vessel capital AND IFQ shares. By purposefully ignoring the IFQ shareholder distribution, the focus is on the real productive capacity of the commercial fishery. All IFQ transactions are zero-sum in that they transfer wealth. The catch share management structure of the fishery allows for the realization of resource rents that will, in all likelihood, accrue to the IFQ shareholders.
- **FMP** - Fishery Management Plan
- **FMP Jacks** - GOM FMP Jack species - A species SOI 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 consisting of these IFQ grouper species: snowy grouper, speckled hind, warsaw grouper, yellowedge grouper.
- **IFQ OSWG** (Other Shallow Water Grouper) - A species SOI consisting of these IFQ grouper species: black grouper, scamp, yellowmouth grouper, yellowfin grouper.
- **IFQ Tilefish** - A species SOI consisting of these IFQ tilefish species: blueline tf., goldface tf., golden tf.
- **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. Refer to Appendix 1 for complete list.
- **OC Owner-Captain Time** - Opportunity Cost (OC) is an economic concept referring to the value of a good or service in its next best productive use. Here, the estimated opportunity cost of an owner's labor used on the fishing trip.
- **RF** - Reef Fish
- **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.
- **Trip Net Cash Flow** - Revenue minus the costs for fuel, bait, ice, groceries, miscellaneous, hired crew, and IFQ purchase. 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 of the commercial fishing process.
- **Vertical Line** - A gear type which includes hand lines, rod and reels, electrical reels and bandit gear.