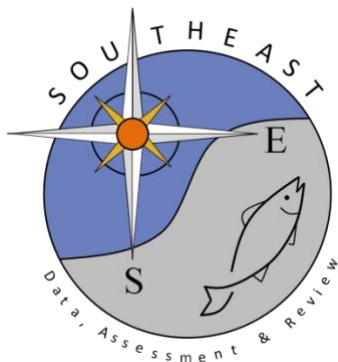


# Economics of the Federal Gulf of Mexico Shrimp Fishery

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This write-up pertains the following data file:

[shr\\_econ\\_ssrg\\_0619\\_08182023](#)

## **Introduction**

SEDAR87 plans to include economic measures and evaluate their potential usefulness for the Gulf of Mexico shrimp stock assessment. Preliminary discussions at the data scoping workshop identified general economic measures/indices (dealt with in a separate working paper) as well as NMFS SEFSC (cost) data collection and economic analysis effort specifically pertaining to the Gulf of Mexico shrimp fishery.

Since 2006, the NMFS SEFSC Social Science Research Group has conducted the Annual Economic Survey of Federal Gulf Shrimp Permit Holders in the Gulf of Mexico. The purpose of the effort is to provide fishers, fishery managers, other constituents, and the public with an overview of the financial and economic health of the federal Gulf of Mexico shrimp fishery.

The population of interest is composed of all vessels with an SPGM permit, including both active and inactive vessels. A two-page, self-administered, mail survey (OMB Control #648-0591) is sent annually to a third of the population of permit holders. The survey collects annual expenditures grouped into categories of variable costs (e.g., fuel, crew) and fixed costs (e.g., insurance, overhead).

When the survey's cost data is combined with revenue and other auxiliary data from other data collections, the financial and economic status and performance of the industry can be estimated for the population. The financial and economic analysis is based on an accounting framework of money flows and values associated with the productive activity of commercial shrimping. The results presented are vessel averages which apply to a typical or representative vessel in a given fleet.

## **Survey Design and Implementation / Survey Instruments / Other Data Sources / Analysis Methods / Standardized Results and Interpretation / Variables**

A technical memorandum (NMFSSEFSC-601) describes in detail the data collection methodology and should be consulted for details about the survey design, data processing, and variable definitions.

Liese, C. and M.D. Travis. 2010. The Annual Economic Survey of Federal Gulf Shrimp Permit Holders: Implementation and Descriptive Results for 2008. NOAA Technical Memorandum NMFS-SEFSC-601, 99 p.

It can be found here:

<https://repository.library.noaa.gov/view/noaa/8638>

The results---the economic data for SEDAR87 purpose<sup>1</sup>---were originally published in technical memorandums and reports for each year, from 2006 through 2013. The documents are available from Christopher Liese upon request.

Results from 2014 through 2019 have not yet been officially published, but have been used in the GOM shrimp management process (cited in Amendments to the FMP).

Result for 2020 and 2021 are in the works and should be ready by November 2023.

Results for 2022 could be ready by early to mid-2024.<sup>2</sup>

### **Uncertainty of How to Use the Economic Results Data**

The provided data are simple “low level” measures that can be used to derive more useful “high level” economic measures, i.e., to some extent they are an input to more advanced economic analysis. From my research on the economics of the shrimp industry, I could provide many dozens of potentially useful measures. But it is not yet clear which measures and how they might be meaningfully integrated into the stock assessment.

For example, economic data can help characterize fishing effort. Fuel and shrimp prices, maybe crew-days at sea and gallons used, are all variables that explain or characterize fishing effort fluctuations.

Alternatively, for a very different purpose, a productivity index derived from the economic survey data is probably a good proxy for shrimp abundance in a given year (as technology is known to be nearly constant in this fishery).

Pure economic measures, such as the profit margin, measure the economic performance. As it is the outcome of all other drivers in the fishery, it is completely endogenous with ALL other variables. While it probably cannot inform other within year variables, it might be meaningfully added to a vector auto-regression model, where last year’s productivity/profitability impacts the behavior of fishers this year.

These are just some possible examples.

In conclusion, the process to integrate economics into the stock assessment needs to be iterative.

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<sup>1</sup> It should be noted that the underlying vessel-specific economic data is confidential. The annual, fleet-wide economic measures provided to this SEDAR are not.

<sup>2</sup> On timing: The annual economic data collection for, say, 2022, can only start in February/March 2023 and concludes at the earliest, after three rounds and call-backs/send-backs for compliance and data verification, in August/September 2023. A further lag is introduced by the slow arrival of dealer/trip ticket data coming from the State, through the GSMFC, to NMFS. These needed revenue (and landings) data are often not comprehensive/complete across all months of a the calendar year across all five States for well over one year after the calendar year of interest has ended. A high degree of completeness is needed for meaningful economics analysis, such that total costs in one calendar year (collected on survey) match total revenue reported by each sampled vessel.