Measuring Economic Impacts of Outreach Programs to the Commercial Fishing Industry

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Introduction

The North American Industrial Classification System (NAICS 2021) defines fishing as the "industry comprised of establishments primarily engaged in the commercial catching or taking of finfish, shellfish, or miscellaneous marine products from a natural habitat, such as the catching of bluefish, eels, salmon, tuna, clams, crabs, lobsters, mussels, oysters, shrimp, frogs, sea urchins, and turtles." Sea Grant programs in coastal U.S. states conduct various outreach programs to assist the commercial fishing sector. These programs enable commercial fishers to improve, sustain, or support their means of livelihood as workers or owners of fishing businesses.

The Bureau of Labor Statistics (BLS 2021) and subscription data providers such as the Economic Modeling Systems (EMSI 2021) regularly publish secondary data about the fishing industry. The data include the number of workers and owners, annual wages, salaries, and proprietor incomes of fishing businesses nationwide, statewide, and countywide. Sea Grant Extension workers report the economic impacts of their outreach programs for the commercial fishing sector annually. They compile and report the number of fishers assisted and the number of fishing jobs their outreach programs support.

In assessing the economic impacts of horticulture research and Extension, Posadas et al. (2020, 2021) used primary data on the increase in sales or project funding, savings or decrease in costs, and travel and registration costs incurred by participants of horticulture programs. The primary data were collected from surveys of participants of horticulture programs conducted by the faculty and staff of Mississippi State University Coastal Research and Extension Center (MSU-CREC).

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Estimating Economic Value of Outreach Programs

Is there a way to estimate the economic value of outreach programs extended to commercial fishers without conducting primary surveys of beneficiaries? I suggest the following procedures in assessing the economic impacts of outreach programs to commercial fishers using secondary data published by federal agencies.

Let us start with a general formula of estimating the economic impacts of outreach programs as follows:

Economic Impacts = Number of Jobs Supported x Annual Wages, Salaries, and Earnings. Eq. 1.

Every year, the number of jobs supported can be compiled from outreach program records or downloaded from a secondary source, either BLS (2021) or EMSI (2021). EMSI (2021) reports average wages of workers and average salaries and earnings of owners per year and requires an annual subscription. BLS (2021) publishes for free the average wages of workers per year.

The total number of fishing jobs supported by outreach programs every year can be compiled from primary data collected by outreach programs. However, this daily record-keeping approach requires the compilation of the dates, names, nature of inquiry, and results of all contacts with fishers and owners of fishing businesses every year. Contacts with fishermen and owners are done by personal visit, training, workshops, telephone, email, and social media network.

With the actual number of fishers and owners assisted, the number of jobs supported is as follows:

Number of Jobs Supported = Number of Fishers and Owners Assisted Per Year. Eq. 2.

If the number of commercial fishers assisted by the outreach program is not collected or available from daily records, the number of workers and owners of fishing businesses can be downloaded from BLS (2021) or EMSI (2021). EMSI (2021) reports the number of workers and owners per year and requires an annual subscription. BLS (2021) publishes for free the number of workers per year.

Assume an appropriate outreach coefficient of the fishing outreach program that can be validated by

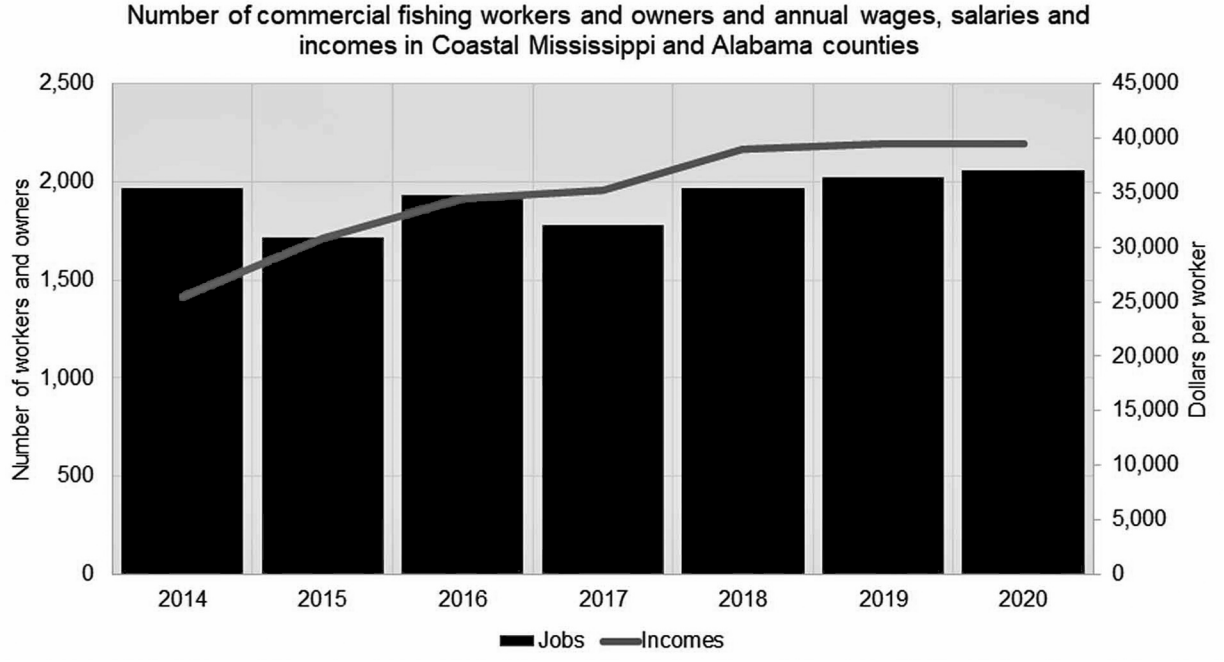

Figure 1. The number of commercial fishing workers and owners and annual wages, salaries, and earnings in coastal Mississippi and Alabama counties. Source of raw data: EMSI (2021). https://a.economicmodeling.com/.

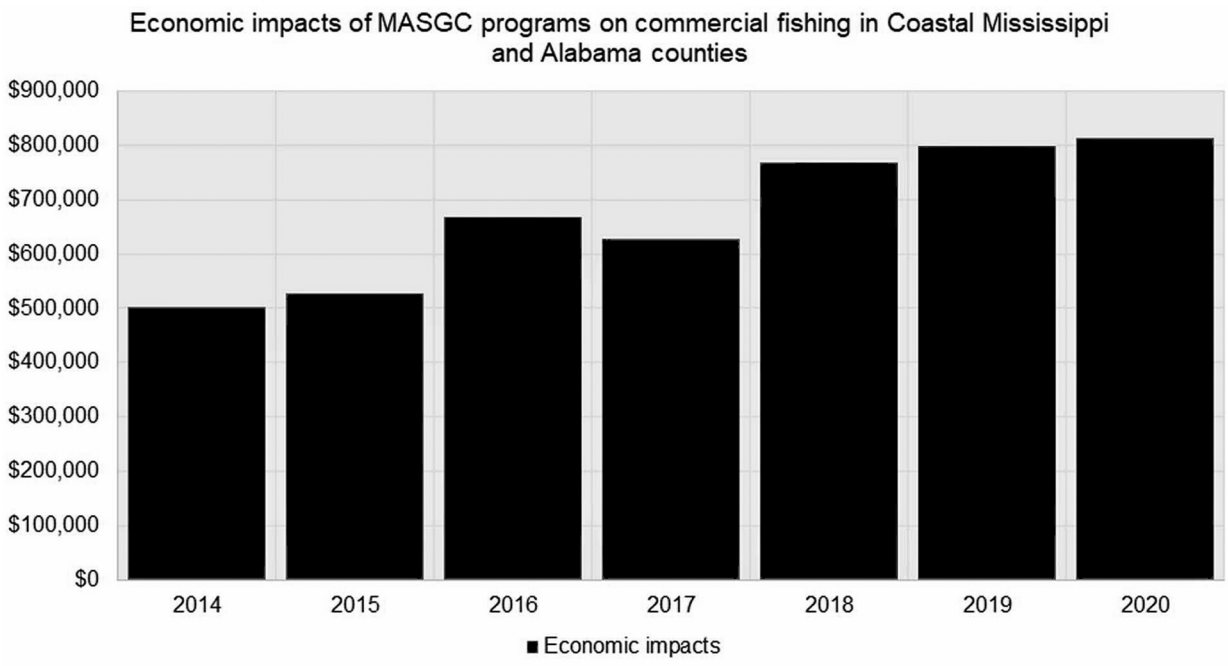

Figure 2. Economic impacts of MASGC program in coastal Mississippi and Alabama counties.

actual daily records. It is suggested to start with 1% of all fishing jobs in the counties covered by the outreach program each year. With the secondary data on the number of fishers and owners, the number of supported jobs is as follows:

Number of Jobs Supported = Number of Fishers and Owners x Outreach Coefficient. **Eq. 3.**

The secondary data on annual wages, salaries, and proprietor incomes of workers and owners of fishing businesses in five coastal counties of Mississippi and Alabama were available at the BLS (2021, free) or EMSI (2021, with subscription) websites.

The coastal counties include Hancock, Harrison, and Jackson Counties in Mississippi and Mobile and Baldwin Counties in Alabama. Between 2014 and 2020, the average number of fishers and owners in the coastal counties of Mississippi and Alabama was about 1,900 jobs per year (Figure 1). At an assumed outreach coefficient of 1% of the total number of jobs, the estimated number of fishing jobs supported by the Mississippi-Alabama Sea Grant Consortium (MASGC) programs averaged about 19 jobs per year.

The outreach program of MASGC (2021) for the commercial fishing industry in coastal Mississippi and Alabama consists of the following components:

- The Marine Disaster Economics Outreach develops economic recovery, impacts, and contributions models. It assesses damages to marine sectors impacted by natural and human-made disasters, harmful algal blooms, trade wars, recessions, and global pandemics. The program estimates the annual economic contributions of marine sectors to state and regional economies.

- The Commercial Fisheries Program provides information to commercial fishermen and seafood industry stakeholders to keep them up to date on current fisheries management and seafood-related topics. It encourages local, sustainable seafood harvest, provides emerging techniques for mitigating depredation in commercial fisheries, and provides technical assistance relevant to the commercial fishing industry.

The economic impacts of the outreach program can be estimated by multiplying the number of jobs supported by the average annual wages, salaries, and earnings (Eq. 1). The estimated annual economic impacts of the commercial fishing outreach program of MASGC in coastal Mississippi and Alabama using the suggested method were about $500,000 in 2014 and rose to more than $800,000 in 2020 (Figure 2).

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Literature Cited

BLS. 2021. Quarterly Census of Employment and Wages – QCEW. Bureau of Labor Statistics. https://data.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables.

EMSI. 2021. Economic Modeling System. https://a.economicmodeling.com/.

MASGC. 2021. Mississippi-Alabama Sea Grant Engagement Program: 2022-23 Proposal.

NAICS. 2021. North American Industrial Classification System. https://www.census.gov/naics/.

Posadas, B.C., P.R. Knight, E.K., Stafne, C.E. Coker, J.M. Del Prince, G.R. Bachman, S.A. Langlois, and E.K. Blythe. 2021. Economic Impacts of Horticulture Research and Extension at MSU Coastal Research and Extension Center. *Horticulturae* 2021, 7(8), 236. DOI: 10.3390/horticulturae7080236.

Posadas, B.C., P.R. Knight, E.K., Stafne, C.E. Coker, J.M. DelPrince, G.R. Bachman, S.A. Langlois, and E.K. Blythe. 2020. Qualitative Assessment of Economic Impacts of Horticulture Research and Extension at MSU Coastal Research and Extension Center. *Horticulturae* 2020, *6*(4), 106. DOI: https://doi.org/10.3390/horticulturae6040106.

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