



EXTENSION

# Economic Contributions of the Mississippi Seafood Industry by Major Species in 2020

## Introduction

Mississippi marine regulatory agencies needed updated estimates of the economic contributions of the seafood industry to manage state marine resources effectively. This need became urgent after the massive damage from the natural and technological disasters that hit the seafood industry. State regulatory agencies expressed a more vital need for additional information on the economic contributions of the seafood industry by sector and species landed, processed, distributed, and consumed in Mississippi. At a Producer Advisory Council Meeting, the American Shrimp Processors Association requested up-to-date estimates for the seafood industry by species. Recent conversations with state regulatory agency officials indicate their need for updated estimates of the economic contributions of the state seafood industry by major species. This up-to-date information is essential in their marketing and legislative campaigns.

The 2009 Mississippi seafood industry contributed \$275.59 million to the total output of goods and services and provided 6,342 jobs in harvesting, processing, wholesaling, fish markets, and restaurants. The commercial-harvesting sector contributed \$60.86 million, or 22.1 percent of the industry's total output. The seafood-processing sector added \$78.91 million, or 28.6 percent of the total industry output. The seafood-wholesaling sector produced additional sales of \$10.45 million, or 3.8 percent of the industry. Fish markets generated \$18.1 million, or 6.6 percent of the entire industry. Seafood restaurants added \$107.28 million, or 38.9 percent of the total output.

The first attempt was to break down by major species the total estimates of the economic contributions of the Mississippi seafood industry in 2009, which was reported by NOAA Fisheries. The Mississippi commercial shrimp industry in 2009 contributed \$141.77 million to the state economy. This economic output created 3,091 jobs and

generated total personal income of \$57.44 million. The commercial shrimp industry's contribution to indirect business tax collections reached \$6.73 million.

The total economic goods produced by the Mississippi commercial oyster industry reached \$23.72 million in 2009. This economic output created 562 jobs and generated an annual income of \$9 million. The commercial oyster industry contributed about \$1.15 million to indirect business tax collections.

The Mississippi commercial crab industry in 2009 created a total economic output of \$8.18 million. This economic output created 244 jobs and generated a total personal income of \$3.55 million. This industry contributed about \$0.52 million to indirect business tax collections.

The Mississippi commercial finfish industry in 2009 generated a total economic output of \$101.91 million. This economic output created 2,445 jobs and generated a total personal income of \$57.44 million. The commercial finfish industry's contribution to the indirect business tax collections reached \$4.68 million in 2009.

The breakdown was updated by major species and the total estimates of the economic contributions of the Mississippi seafood industry in 2015, which was reported by NOAA Fisheries. In 2015, the entire Mississippi seafood industry contributed \$465.4 million to the state economy, created 9,491 jobs, and generated a total personal income of \$186 million. Commercial harvesting contributed \$107.1 million (23 percent of real sales contribution). The seafood-processing sector added sales of \$138 million, 29.6 percent of the total sales contributions. Seafood imports added \$0.5 million (0.1 percent of the total sales contribution). Seafood wholesaling produced sales of \$19 million (4.1 percent of the total sales contribution). Seafood retailing generated \$200.8 million in sales (43.1 percent of the total sales contribution).

The 2015 estimates by major species covered shrimp, oysters, crabs, and finfish. The oyster and crab species were combined to protect the confidentiality of the sources, especially when their number is less than three producers.

The entire shrimp industry in 2015 contributed \$215.4 million, created 4,276 jobs, and generated a total personal income of \$88.5 million. Processing (38 percent), retailing (45.9 percent), landings (9.1 percent), and wholesaling (6.6 percent) were the most significant components of the state shrimp industry in 2015.

Oysters and crabs were combined in 2015 to prevent the disclosure of confidential data reported by seafood processors in Mississippi. The combined oyster and crab industry added \$35 million, created 831 jobs, and generated a total personal income of \$14.8 million. Retailing (69.7 percent), processing (11.4 percent), harvesting (9.7 percent), and wholesaling (9.1 percent) were the most significant parts of the state oyster and crab industry in 2015.

The entire Mississippi finfish industry in 2015 contributed \$215 million, created 4,384 jobs, and generated a total personal income of \$82.6 million. Harvesting (39.1 percent), retailing (36 percent), and processing (24.2 percent) were the largest sectors of the state finfish industry in 2015.

This Extension publication presents the techniques and estimates of the economic contribution of the Mississippi seafood industry by dominant species, sector, and type of contributions in 2020. The different sectors of the Mississippi seafood industry include seafood harvesting, processing, wholesaling, importing, and retailing. The major seafood species covered are shrimp, oysters, crabs, and finfish. The types of economic contribution included are sales, employment, income, and value-added.

## Estimating Economic Contributions by Major Species

Economic contribution is defined as the gross changes in a region's existing economy that can be attributed to a given industry, event, or policy. This publication calculates the total economic activities of four major seafood species that are harvested, processed, traded, and handled by the different sectors of the Mississippi seafood industry.

The NOAA fisheries model estimated four types of economic contributions: employment, income, total value added, and output or sales. Estimates of the indirect tax contribution of the Mississippi seafood industry were not reported in the 2020 statewide results of the NOAA

fisheries model. Economic contributions were determined by sector, including harvesting, processing, importing, wholesaling, and retailing. However, the estimates were not broken down by major seafood species. The 2020 statewide results of the NOAA fisheries economic model for Mississippi were used to determine the 2020 economic contributions of the state seafood industry by sector, dominant species, and type of contribution.

## Seafood Production Sectors

The 2020 total economic contributions of Mississippi's commercial-harvesting and seafood-processing sectors were broken down by significant species using the 2020 ex-vessel, dockside, or landing values, and processing-plant-gate or wholesale values.

The 2020 Mississippi commercial harvesting contributions were split according to the 2020 total state commercial landing values for each of the four major species. Shrimp landings contributed 34.5 percent of total dockside values in Mississippi in 2020. Brown and white shrimp are the primary species that state commercial shrimpers harvest. Oysters and crabs added 4.6 percent to total ex-vessel values. The state public oyster reefs have been closed since 2019 due to the massive damages caused by the prolonged openings of the Bonnet Carré Spillway in 2019. Finfish species contributed most of Mississippi's total landing value (60.9 percent) in 2020. Almost all the finfish dockside values consisted of menhaden landings, contributing 53.9 percent of the statewide dockside values.

The 2020 total contributions of Mississippi seafood processing were divided according to the 2015 total plant-gate values of the processed products for each of the four major species provided by NOAA Fisheries. Processed shrimp products contributed 59.4 percent of Mississippi's total plant-gate values of seafood processing in 2015. Oysters and crabs added 2.9 percent to processed seafood products' total plant-gate values. Oysters and crabs were combined in 2015 to prevent the disclosure of confidential data as required by law. Finfish species contributed 37.7 percent to the total plant-gate values in Mississippi in 2015. No data on Mississippi processed seafood products by species was available after 2015 despite repeated requests from the federal agency.

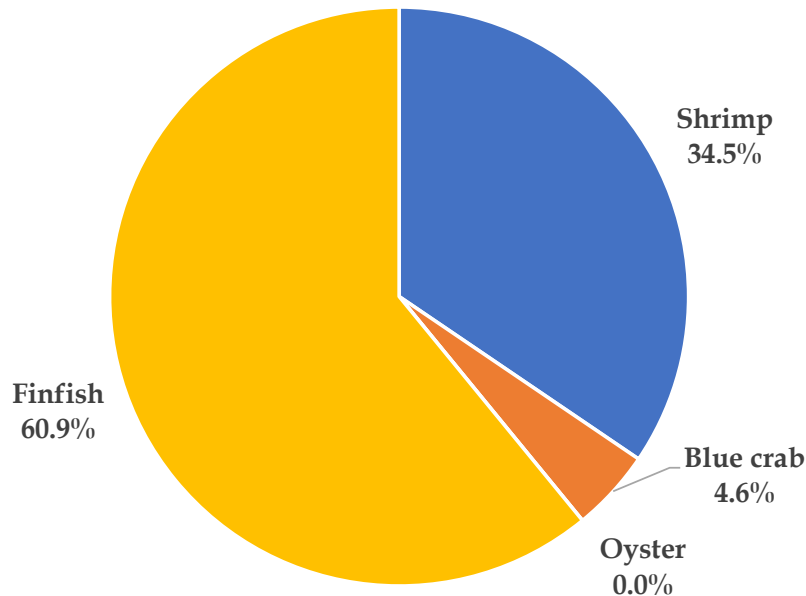


Figure 1. Percent distribution of Mississippi commercial landings values by major species in 2020. Source: NOAA Fisheries (2022).

## Seafood Distribution Sectors

The 2020 total economic contributions of seafood wholesaling were separated according to the expenditure shares of each of the four major species reported by these sectors in a survey of 2011 transactions by Mississippi seafood wholesalers conducted in 2012–2013. The 2011 wholesale sales values were the only data available for wholesaler seafood transactions broken down by major species in Mississippi. Among seafood wholesalers, shrimp products made up 74.8 percent of their total purchases of Mississippi seafood products in 2011. Oysters and crabs added 16.8 percent to total seafood purchases by seafood wholesalers in 2011. The finfish species contributed 8.3 percent more to their total wholesale seafood purchases in Mississippi in 2011.

NOAA Fisheries combined the contributions of seafood restaurants and seafood and fish markets under seafood retailing in 2020. Total seafood expenditures on individual species by seafood restaurants and seafood and fish markets were merged under seafood retailing based on the 2011 survey of Mississippi seafood and fish markets and the 2009 survey of Mississippi seafood restaurants. The 2020 seafood retailing contributions were divided according to the expenditure shares of each of the four major species reported by seafood restaurants and seafood markets.

Results of the 2010–2011 survey of Mississippi seafood restaurants for transactions in January–December 2009 were the only available seafood expenditure data for

these establishments broken down by major seafood species. Results of the January–December 2011 survey transactions by Mississippi seafood markets were the only expenditure data on seafood transactions broken down by major species. These survey data, however, are now outdated, and any further breakdown of economic impact estimation will require updated expenditure surveys of the breakdown of wholesale, retail, and restaurant sales transactions of seafood products in the state.

Among seafood-retailing establishments only, shrimp products made up 49.3 percent of their total purchases of seafood products in Mississippi. Oysters and crabs added 12.2 percent to seafood purchases by seafood markets and restaurants. Finfish species contributed 38.5 percent more to their total seafood purchases in Mississippi.

Shrimp purchases were assumed to consist mostly of Mississippi seafood imports in 2020. Seafood importers were not included in the 2011 survey of seafood wholesalers and retailers. It is important to point out the lack of data on seafood importers and the old survey data on seafood wholesalers, fish markets, and seafood restaurants. These data limitations reduce the accuracy of the estimates of the breakdown of total economic contributions by sector, major seafood species, and type of contribution.

## Estimates of Economic Contributions by Major Species

### Total Economic Contributions of the Seafood Industry

Table 1 shows the NOAA Fisheries estimates of the total economic contributions of the entire Mississippi seafood industry by sector and type in 2020. Commercial harvesting contributed \$83 million (24 percent of total sales contribution). The seafood-processing sector added sales of \$108 million (31 percent of the total sales contributions). Seafood imports added \$3 million (1 percent of the total sales contribution). Seafood wholesaling produced sales of \$14 million (4 percent of the total sales contribution). Seafood retailing generated \$139 million in sales (40 percent of the total sales contribution). In 2020, the entire Mississippi seafood industry contributed \$347 million in

sales to the state economy, created 6,460 jobs, generated a total personal income of \$137 million, and added \$204 million in value-added to the state gross regional product.

### Economic Contributions of the Shrimp Industry

Table 2 shows the breakdown of the contributions of the Mississippi commercial shrimp industry to the state economy by sector and type in 2020. The shrimp industry contributed \$166.8 million in sales, created 2,995 jobs, generated a total personal income of \$67.0 million, and added \$99.1 value-added contributions to the state gross regional product. Processing (38.4 percent), retailing (41.2 percent), harvesting (12.4 percent), and wholesaling (6.3 percent) were the largest components of the state shrimp industry in 2020.

**Table 1. Economic contributions of the Mississippi seafood industry by sector and type, 2020.**

Sector	Sales contributions (M\$)	Employment contributions (Jobs)	Income contributions (M\$)	Value added contributions (M\$)	Percent
Commercial harvesters	83	1,432	26	42	24%
Seafood processors & dealers	108	1,201	43	61	31%
Seafood importers	3	9	0	2	1%
Seafood wholesalers & distributors	14	127	5	7	4%
Seafood retailing	139	3,691	63	92	40%
Total	347	6,460	137	204	100%

**Table 2. Economic contributions of Mississippi shrimp industry by sector and type, 2020.**

Sector	Sales contributions (M\$)	Job contributions	Income contributions (M\$)	Value-added contributions (M\$)	Percent
Commercial harvesters	20.7	358	6.5	10.5	12.4%
Seafood processors & dealers	64.0	713	25.3	36.3	38.4%
Seafood importers	2.8	9	0.5	1.9	1.7%
Seafood wholesalers & distributors	10.5	95	3.7	5.2	6.3%
Seafood retailing	68.7	1,819	31.1	45.2	41.2%
Total	166.8	2,995	67.0	99.1	100.0%

## ***Economic Contributions of the Oyster and Crab Industry***

Oysters and crabs were combined in 2020 to prevent the disclosure of confidential data reported by seafood processors in Mississippi. Table 3 presents the breakdown of the contributions of the Mississippi commercial oyster and crab industry to the state economy by sector and type in 2020. The combined oyster and crab industry

added \$24.6 million, created 542 jobs, generated a total personal income of \$10.4 million, and added \$15.2 million in value-added contributions to the state gross region product. Retailing (69.0 percent), processing (12.7 percent), wholesaling (9.6 percent), and harvesting (8.7 percent) were the most significant parts of the state oyster and crab industry in 2020.

**Table 3. Economic contributions of Mississippi oyster and crab industry by sector and type, 2020.**

<b>Sector</b>	<b>Sales contributions (M\$)</b>	<b>Job contributions</b>	<b>Income contributions (M\$)</b>	<b>Value-added contributions (M\$)</b>	<b>Percent</b>
Commercial harvesters	2.1	37	0.7	1.1	8.7%
Seafood processors & dealers	3.1	35	1.2	1.8	12.7%
Seafood importers	0.0	0	0.0	0.0	0.0%
Seafood wholesalers & distributors	2.4	21	0.8	1.2	9.6%
Seafood retailing	17.0	449	7.7	11.1	69.0%
<b>Total</b>	<b>24.6</b>	<b>542</b>	<b>10.4</b>	<b>15.2</b>	<b>100.0%</b>

**Table 4. Economic contributions of Mississippi finfish industry by sector and type, 2020.**

<b>Sector</b>	<b>Sales contributions (M\$)</b>	<b>Job contributions</b>	<b>Income contributions (M\$)</b>	<b>Value-added contributions (M\$)</b>	<b>Percent</b>
Commercial harvesters	59.9	1,037	18.8	30.5	38.5%
Seafood processors & dealers	40.7	453	16.1	23.1	26.2%
Seafood importers	0.0	0	0.0	0.0	0.0%
Seafood wholesalers & distributors	1.2	11	0.4	0.6	0.8%
Seafood retailing	53.7	1,423	24.3	35.3	34.6%
<b>Total</b>	<b>155.5</b>	<b>2,923</b>	<b>59.5</b>	<b>89.4</b>	<b>100.0%</b>

## ***Economic Contributions of the Finfish Industry***

Table 4 illustrates the breakdown of the contributions of the Mississippi commercial-finish industry to the state economy by sector and type in 2020. The entire finfish industry contributed \$155.5 million, created 2,923 jobs, generated a total personal income of \$59.5 million, and added \$89.4 million in value-added contributions to the state gross regional product. Harvesting (38.5 percent), retailing (34.6 percent), and processing (26.2 percent) were the largest sectors of the state finfish industry in 2020.

## **Summary and Implications**

This publication presents the most recent estimates of the economic contributions to the Mississippi seafood industry. The estimates include four types of economic contributions: employment, income, total value added, and output or sales. Economic contributions were divided by sector, including harvesting, processing, importing, wholesaling, and retailing. However, estimates were not itemized by major seafood species.

The 2020 total economic contributions of the Mississippi commercial-harvesting and seafood-processing sectors were broken down by major species using the 2020 ex-vessel, dockside, or landing values, and processing plant-gate or wholesale values. The 2020 Mississippi commercial harvesting contributions were split according to the 2020 total state commercial landing values of each of the four major species. The 2020 total contributions of Mississippi seafood processing were divided according to the 2015 state total plant-gate values of processed products for each of the four major species. These processing expenditure data are outdated and need to be updated from NOAA Fisheries data.

The 2020 total economic contributions of seafood wholesaling were separated according to the expenditure shares on each of the four major species reported in the 2011 survey of Mississippi seafood wholesalers. The total seafood expenditures by seafood restaurants and seafood and fish markets were merged under seafood retailing based on the 2011 survey of Mississippi seafood and fish markets and the 2009 survey of Mississippi seafood restaurants. However, the results of these seafood

establishment surveys are now outdated, and any further breakdown of future economic estimates will require updated establishment surveys of the expenditures by wholesalers, retailers, and restaurants on seafood products.

The entire Mississippi seafood industry contributed \$347 million in sales to the state economy, created 6,460 jobs, generated a total personal income of \$137 million, and added \$204 million in value-added contributions to the state gross regional product. Commercial harvesting contributed \$83 million (24 percent of the total sales). The seafood-processing sector added sales of \$108 million (31 percent of the total sales contributions). Seafood imports added \$3 million (1 percent of the total sales contribution). Seafood wholesaling produced sales of \$14 million (4 percent of the total sales contribution). Seafood retailing generated \$139 million in sales (40 percent of the total sales contribution).

Mississippi's commercial shrimp industry contributed \$166.8 million in sales, created 2,995 jobs, generated a total personal income of \$67.0 million, and added \$99.1 in value-added contributions to the state's gross regional product. Processing (38.4 percent), retailing (41.2 percent), harvesting (12.4 percent), and wholesaling (6.3 percent) were the largest components of the state shrimp industry in 2020.

Oysters and crabs were combined in 2020 to prevent the disclosure of confidential data reported by seafood processors in Mississippi. The economic contribution of the Mississippi combined oyster and crab industry added a total of \$24.6 million, created 542 jobs, generated total personal income of \$10.4 million, and added \$15.2 million in value-added contributions to the state gross region product. Retailing (69.0 percent), processing (12.7 percent), harvesting (8.7 percent), and wholesaling (1.2 percent) were the biggest parts of the state oyster and crab industry in 2020.

The Mississippi commercial finfish industry contributed a total of \$155.5 million, created 2,923 jobs, generated a total personal income of \$59.5 million, and added \$89.4 million in value-added contributions to the state gross regional product in 2020. Harvesting (38.5 percent), retailing (34.6 percent), and processing (26.2 percent) were the largest sectors of the state finfish industry in 2020.

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