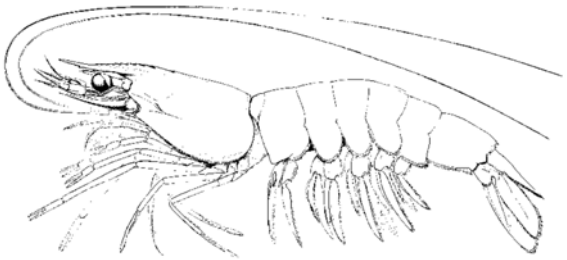
# 2009
# Economics of the Federal South Atlantic Shrimp Fisheries
# Annual Report



National Marine Fisheries Service
Southeast Fisheries Science Center
Miami Laboratory
75 Virginia Beach Drive
Miami, Florida 33149

July 2011

Table of Contents

# Federal South Atlantic Shrimp Fisheries

This report presents results of the Annual Economic Survey of Federal South Atlantic Shrimp Permit Holders for the calendar year 2009. The report provides fishermen, fishery managers, other constituents, and the public with an overview of the financial and economic health of the South Atlantic (SA) shrimp fisheries.

## Shrimp Landings and Revenue

Total landings of penaeid and rock shrimp in South Atlantic ports were over 16 and 4 million pounds (live weight), respectively, in 2009 (Table 1). Total ex-vessel revenue approached $33 million. Rock shrimp were caught exclusively by federally-permitted vessels, while 23% of penaeid shrimp revenue was generated by vessels without federal permits (Table 2).

Table 1: SA Shrimp Landings and Revenue

| | Total Landings (lbs) | Total Revenue ($) |
|---|---|---|
| Penaeid Shrimp | 16,092,004 | 30,046,152 |
| Rock Shrimp | 4,040,094 | 2,860,696 |
| Total | 20,132,098 | 32,906,848 |

Table 2: Share of Fishery by Permit Status

| | Vessels without Federal Permit | Federally-Permitted |
|---|---|---|
| Penaeid Shrimp | 23% | 77% |
| Rock Shrimp | 0% | 100% |
| Total | 21% | 79% |

## Permits and Vessels

The commercial shrimp fleet that operates in federal waters off the coasts of North and South Carolina, Georgia, and the east coast of Florida is managed under the Fishery Management Plan for the Shrimp Fishery of the South Atlantic Region. Fishing vessels are required to have the federal SA Penaeid Shrimp permit (the open-access SPA permit) for the commercial catch of penaeid shrimp, or one of two permits for the catch of rock shrimp (the limited-access RSLA permit south of the SC-GA border or the open-access RSCZ permit to the north; the latter is primarily for the incidental catch of rock shrimp). There were approximately 733 vessels that held one or more SA shrimp permits in 2009. Vessels in this fleet are, on average, 60 feet long, powered by 463 hp motor(s), and 29 years old. One-third of the vessels have steel hulls and 35% use a freezer for refrigeration. Vessels with rock shrimp permits are, on average, larger, more powerful, and newer. Most are made of steel (73%) and have freezers (87%).

## Fishing Revenue by Permitted Vessels

Vessels with federal South Atlantic shrimp permit(s) are active in a wide variety of shrimp and non-shrimp fisheries in the SA region and elsewhere. As a result, SA shrimp landings are responsible for about $26 million of permitted vessels' total revenue (23%). Gulf shrimp landings (all species) accounted for 35%, while 42% are derived from non-shrimp landings (with Northeast scallops being important). Table 3 shows the total revenue derived from different fisheries for vessels with different South Atlantic shrimp permit(s) configurations.

Table 3: Total Fishing Revenue ($) by Fishery and SA Shrimp Permit Configuration

| | Vessels with SA shrimp permit configuration: | | | | Total |
|---|---|---|---|---|---|
| | SPA-only | SPA & RSLA | SPA & RSCZ | RSLA or RSCZ | |
| Number of Vessels | 440 | 97 | 155 | 41 | 733 |
| SA Penaeid Shrimp | 12,768,670 | 6,058,442 | 4,226,179 | 0 | 23,053,291 |
| SA Rock Shrimp | 0 | 2,860,696 | 0 | 0 | 2,860,696 |
| Gulf Shrimp | 16,321,607 | 15,088,239 | 4,884,371 | 2,526,881 | 38,821,097 |
| Non-Shrimp Landings | 10,317,814 | 8,527,666 | 23,167,384 | 4,071,472 | 46,084,337 |

# Annual Economic Survey of Federal South Atlantic Shrimp Permit Holders

## Data Collection

A two-page, self-administered, mail survey (OMB Control # 0648-0591) is sent annually to 33% 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 combined with revenue from other data collections, the financial and economic status and performance of the industry can be documented. A technical memorandum (NMFS-SEFSC-601) describes in detail the data collection methodology and should be consulted for details about the survey design, data processing, and definitions. The memorandum and the survey questionnaire are available at: www.sefsc.noaa.gov/socialscience/shrimp.htm

The population of interest is all vessels with an SPA, RSLA, or RSCZ permit, including active and inactive vessels. In 2010, 282 vessels were randomly selected, stratified by state, from the population of approximately 733 vessels with permits to shrimp in federal waters of the South Atlantic. Of the 282 surveys that were sent out, 217 were completed. After adjusting for 33 vessels that were deemed ineligible because their permits were sold or terminated, a response rate of 87% was achieved. Due to problems linking cost and revenue datasets, the final number of observations used in the analyses is 200 (71% of the sample; 27% of the population).

## Results

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. Results based on different fleet definitions provide different perspectives on the fishery. Most vessels owning South Atlantic shrimp permits are engaged in multiple fisheries, with less than half actually reporting SA shrimp landings in 2009. In this report, economic results are presented for five fleets (which are not mutually exclusive!):

- A: Vessels holding a penaeid shrimp permit (SPA)
- B: Vessels holding a limited access rock shrimp permit (RSLA)
- C: Vessels reporting penaeid shrimp landings in the South Atlantic in 2009 (active SPA)
- D: Vessels reporting rock shrimp landings in the South Atlantic in 2009 (active RSLA)
- E: Vessels, for which penaeid shrimp revenue exceeded 50% of total revenue (“shrimpers”)

Results for other fleets are reported in the appendix, including for 25 inactive vessels not engaged in commercial fishing, 21 vessels not harvesting any shrimp, and 66 vessels only harvesting shrimp in the Gulf of Mexico. In the appendix, results are presented in a standardized table format that links vessel characteristics and operations to simple financial statements, including balance sheet, cash flow, and income statements.

# Economics of the Federal South Atlantic Shrimp Fisheries

## A: Economic Status of the SPA-permitted Fleet (penaeid shrimp permit)

In 2009, approximately 692 vessels had a South Atlantic penaeid shrimp permit (SPA). The results below are based on a random sample of 190 permits from this population with complete and usable surveys. Tabulated results for this fleet can be found in the Appendix, Table 1, column 1. The sample's vessel characteristics are not materially different from the SPA population and all vessels with SA shrimp permits (page 1). The geographic distribution of the permit owners' residence across the Northeast, the individual South Atlantic states, and the Gulf of Mexico region is provided in Figure A1, and indicates that many SPA permits were held by vessels outside the SA region.

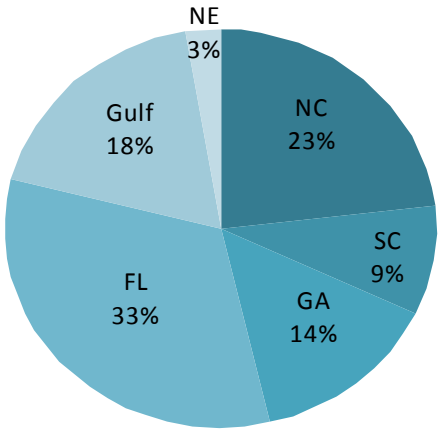


Figure A1: State of Residency of Owner

Balance Sheet

The average market value of a vessel was $162,455 in 2009, about $42 thousand less than the original purchase price. The average vessel only has $32,462 of liabilities, and only 24% of the vessels have an outstanding loan. This implies an average equity of $129,993 for each owner and a debt to equity ratio of only 25%. This is a small amount of leverage. Only 34% of the vessels had hull insurance. However, because newer, more valuable vessels are much more likely to have insurance, 59% of total asset value is insured. The average implicit value of a vessel's fishing permits is $89,633. The high value reflects the ownership of valuable Atlantic scallop permits by some of vessels in the sample. The value of the limited access rock shrimp and Gulf shrimp permits might account for a fraction of the total.

Table A1: Landings, prices, and revenue by (fishery) category

| | Landings (lbs, head-off) | Price ($ per lbs) | Revenue ($) |
|---|---|---|---|
| Shrimp landings - Atlantic - Penaeid shrimp | 11,442 | 3.07 | 35,142 |
| Shrimp landings - Atlantic - Rock shrimp | 3,807 | 1.18 | 4,498 |
| Shrimp landings - Gulf - Any shrimp | 34,063 | 2.50 | 85,089 |
| Non-shrimp landings | - | - | 73,376 |
| Government payments (shrimp related) | - | - | 3,201 |

Landings and Revenue

Of the vessels with SPA permits, 46% landed SA penaeid shrimp, 5% landed SA rock shrimp, and 34% landed Gulf shrimp. In 2009, the average vessel landed 11, 4, and 34 thousand pounds of SA penaeid, SA rock, and Gulf shrimp, respectively (Table A1). SA penaeid shrimp averaged $3.07 per pound, while a pound of SA rock shrimp only yielded $1.18. In 2009, average annual revenue from all sources was $201,307. As a percentage of revenue, Gulf shrimp accounted for 42%, non-shrimp landings for 36%, SA penaeid shrimp for 18%, SA rock shrimp for 2%, and government payments for 2% (Figure A2).

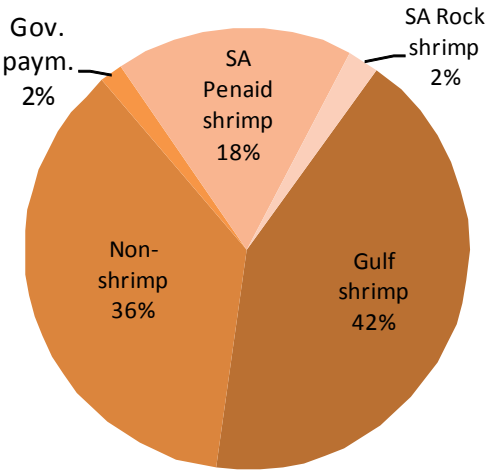


Figure A2: Revenue by Fishery

Costs

In 2009, average annual expenses for operations were $190,009, where operations refer to commercial fishing activities. Operating expenses include both variable costs, usually paid on a trip basis, and fixed costs, such as insurance. The average vessel used 26,533 gallons of fuel, and the average gallon of fuel was purchased for $2.11 in 2009. Fuel accounted for 29% of operating expenses, while other supplies accounted for 10%, leading to a total of 39.5% for non-labor variable costs (Figure A3). The expense for hired crew and captains is on average $59,265, or 31% of expenses, which indicates the importance of the industry as a source of wage income. Of the vessels, 49% are owner operated, and we estimate that the average owner operator's contribution *as captain* is about $12,000 per year ("opportunity cost of time"). Overall, labor accounts for 34% of operating expenses. Fixed costs account for the remaining 26% of operating expenses, split among maintenance (9%), major repairs (5%), estimated depreciation (4%), insurance payments (4%), and other overhead (5%).

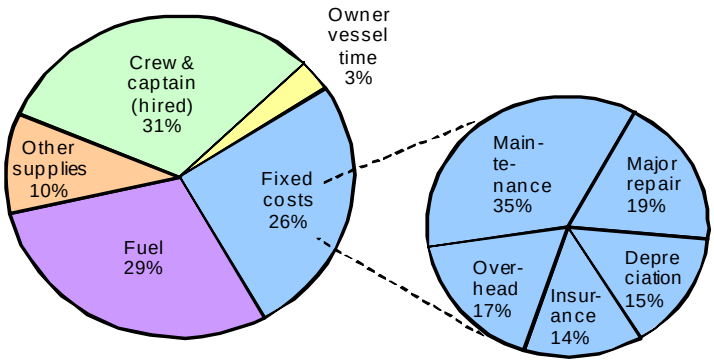



Figure A3: Percentage Breakup of Total Costs and Fixed Costs

Additional expenses in 2009, not counted as operating expenses, include interest payments of $2,320 (financing costs), principal payments of $5,057 (paying down debt), and new investment of $2,380 (beyond maintenance and repair). Tabulated results for this fleet can be found in the Appendix, Table 1, column 1.

Financial Performance

For the average vessel, the difference between total revenue and total expenses---the net cash flow---is on average $14,844 (Figure A4). This is a measure of the industry's liquidity and should usually be positive in an established industry. Yet it does not account for owner operators' labor contribution or the vessels' depreciation. The difference between revenue from commercial fishing operations and operating expenses---net revenue from operations---is on average $8,097, which accounts for all costs of production. Finally, when financing costs are subtracted and non-operational income (e.g., gov. payments) is added, the average profit for each owner is $8,979.

Figure A4: Net Cash Flow, Net Revenue, Profit

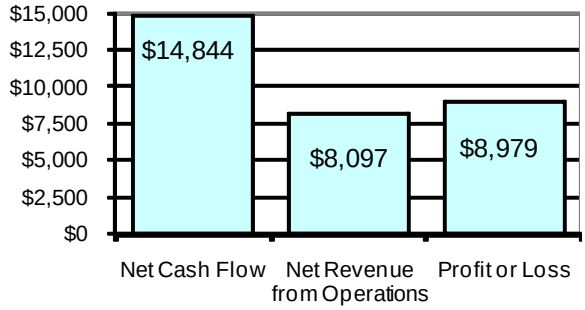
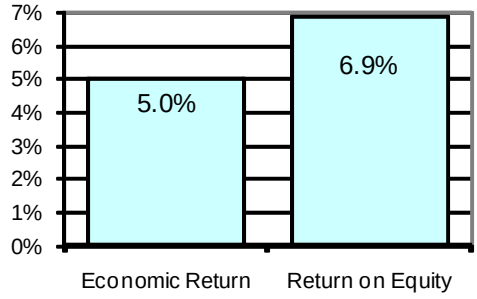



Figure A5: Financial Returns




An average economic return of 5.0% is calculated by dividing net operating revenue by the value of vessel assets (Figure A5). Economic return quantifies the productivity of a shrimp vessel's production from a societal perspective. In contrast, the return on equity is the primary concern of the individual owner. The return on equity of 6.9% is calculated by dividing the profit by the equity currently invested by the owner in the vessel. Finally, we estimate that the fleet generated fishing revenue of $7.47 for each gallon of fuel used (measure of fuel efficiency).

## B: Economic Status of the RSLA-permitted Fleet (rock shrimp permit)

In 2009, approximately 112 vessels had a South Atlantic rock shrimp permit (RSLA). The results below are based on a random sample of 40 permits with complete and usable surveys from this population. Tabulated results for this fleet can be found in the Appendix, Table 1, column 2. The sample's vessel characteristics are not materially different from the RSLA population, but are larger, more powerful, and newer compared to all vessels with SA shrimp permits. The geographic distribution of the permit owners' residence across the Northeast, the individual South Atlantic states, and the Gulf of Mexico region is provided in Figure B1, and indicates that more than half of RSLA permits were held by vessels outside the SA region.

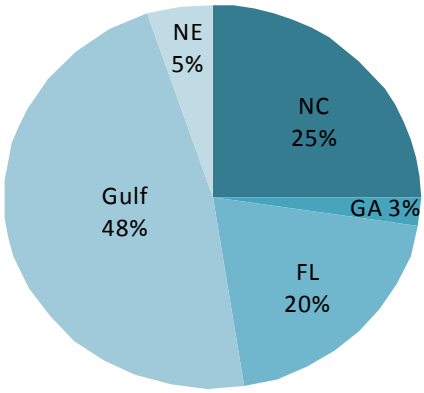


Figure B1: State of Residency of Owner

Balance Sheet

The average market value of a vessel was $379,925 in 2009, about $49 thousand less than the original purchase price. The average vessel has $86,478 of liabilities, and 55% of the vessels have an outstanding loan. This implies an average equity of $293,447 for each owner and a debt to equity ratio of only 29%. This is a small amount of leverage. 80% of the vessels had hull insurance. The average implicit value of a vessel's fishing permits is $216,175. The high value reflects the ownership of valuable Atlantic scallop permits by some of vessels in the sample. The value of the limited access rock shrimp and Gulf shrimp permits might account for a few thousand dollars of the total.

Table B1: Landings, prices, and revenue by (fishery) category

| | Landings (lbs, head-off) | Price ($ per lbs) | Revenue ($) |
|---|---|---|---|
| Shrimp landings - Atlantic - Penaeid shrimp | 18,797 | 3.20 | 60,061 |
| Shrimp landings - Atlantic - Rock shrimp | 18,084 | 1.18 | 21,366 |
| Shrimp landings - Gulf - Any shrimp | 77,351 | 2.56 | 197,956 |
| Non-shrimp landings | - | - | 131,767 |
| Government payments (shrimp related) | - | - | 5,209 |

Landings and Revenue

Of the vessels with RSLA permits, 40% landed SA penaeid shrimp, 25% landed SA rock shrimp, and 60% landed Gulf shrimp. In 2009, the average vessel landed 19, 18, and 77 thousand pounds of SA penaeid, SA rock, and Gulf shrimp, respectively (Table B1). SA penaeid shrimp averaged $3.20 per pound, while a pound of SA rock shrimp only yielded $1.18. In 2009, average annual revenue from all sources was $416,359. As a percentage of revenue, Gulf shrimp accounted for 48%, non-shrimp landings for 32%, SA penaeid shrimp for 14%, SA rock shrimp for 5%, and government payments for 1% (Figure B2).

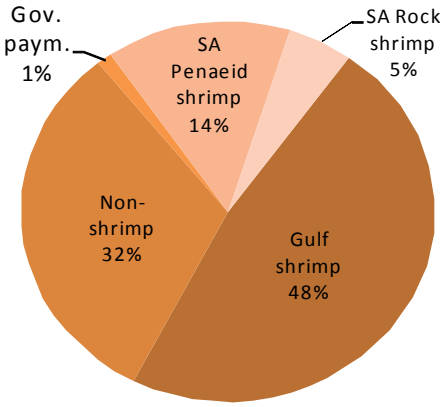


Figure B2: Revenue by Fishery

Costs

In 2009, average annual expenses for operations were $365,912, where operations refer to commercial fishing activities. Operating expenses include both variable costs, usually paid on a trip basis, and fixed costs, such as insurance. The average vessel used 55,116 gallons of fuel, and the average gallon of fuel was purchased for $2.12 in 2009. Fuel accounted for 32% of operating expenses, while other supplies accounted for 8%, leading to a total of 40% for non-labor variable costs (Figure B3). The expense for hired crew and captains is on average $114,877, or 31% of expenses, which indicates the importance of the industry as a source of wage income. Of the vessels, 28% are owner operated, and we estimate that the average owner operator's contribution *as captain* is about $25,000 per year ("opportunity cost of time"). Overall, labor accounts for 33% of operating expenses. Fixed costs account for the remaining 27% of operating expenses, split among maintenance (8%), major repairs (5%), estimated depreciation (4%), insurance payments (5%), and other overhead (5%).

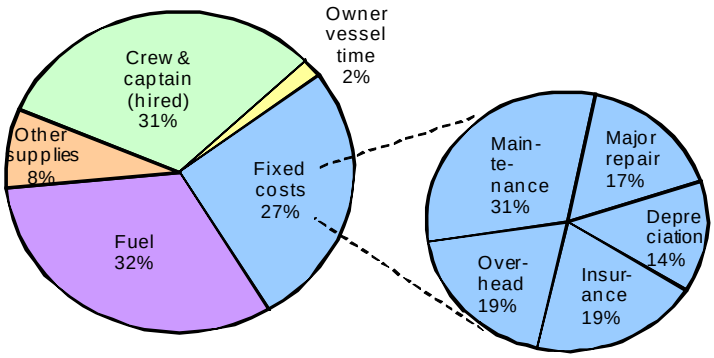



Figure B3: Percentage Breakup of Total Costs and Fixed Costs

Additional expenses in 2009, not counted as operating expenses, include interest payments of $6,487 (financing costs), principal payments of $15,996 (paying down debt), and new investment of $2,551 (beyond maintenance and repair). Tabulated results for this fleet can be found in the Appendix, Table 1, column 2.

Financial Performance

For the average vessel, the difference between total revenue and total expenses---the net cash flow---is on average $46,101 (Figure B4). This is a measure of the industry's liquidity and should usually be positive in an established industry. Yet it does not account for owner operators' labor contribution or the vessels' depreciation. The difference between revenue from commercial fishing operations and operating expenses---net revenue from operations---is on average $45,238 which accounts for all costs of production. Finally, when financing costs are subtracted and non-operational income (e.g., gov. payments) is added, the average profit for each owner is $43,960.

Figure B4: Net Cash Flow, Net Revenue, Profit

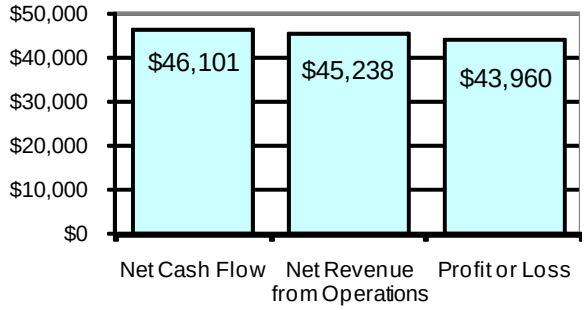
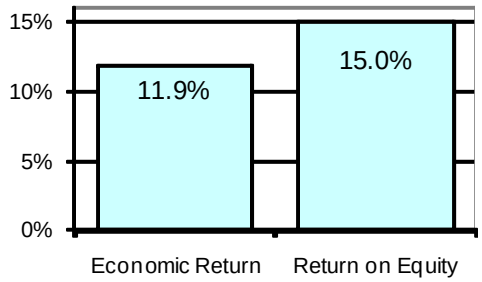



Figure B5: Financial Returns




Average economic return of 11.9% is calculated by dividing net operating revenue by the value of vessel assets (Figure B5). Economic return quantifies the productivity of a shrimp vessel's production from a societal perspective. In contrast, the return on equity is the primary concern of the individual owner. The return on equity of 15% is calculated by dividing the profit by the equity currently invested by the owner in the vessel. Finally, we estimate that the fleet generated fishing revenue of $7.46 for each gallon of fuel used (measure of fuel efficiency).

## C: Economic Status of the Active South Atlantic Penaeid Shrimp Fleet

In 2009, approximately 324 vessels landed SA penaeid shrimp---the active SA penaeid shrimp fleet. The results below are based on a random sample of 88 vessels from this population with complete and usable surveys. Tabulated results for this fleet can be found in Appendix, Table 2, column 1. The sample's vessel characteristics are not materially different from the SPA population and all vessels with SA shrimp permits (page 1). The geographic distribution of the permit owners' residence across the Northeast, the individual South Atlantic states, and the Gulf of Mexico region is provided in Figure C1, and indicates that owners of active SPA permits mostly reside in the SA region.

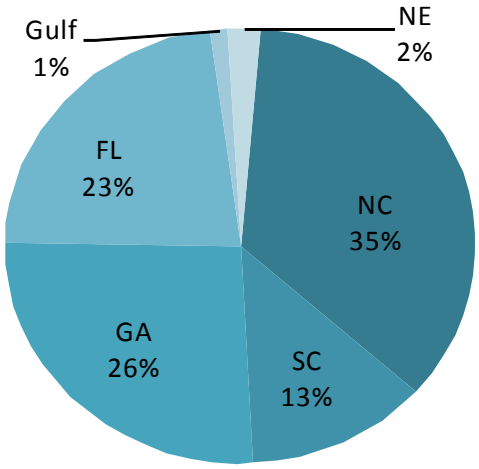


Figure C1: State of Residency of Owner

Balance Sheet

The average market value of a vessel was $121,180 in 2009, about $44 thousand less than the original purchase price. Since only 22% of the vessels have an outstanding loan, the average vessel only has $22,736 of liabilities. This implies an average equity of $98,444 for each owner and a debt to equity ratio of only 23%. This is a small amount of leverage. Only 27% of the vessels had hull insurance. However, because newer, more valuable vessels are much more likely to have insurance, 64% of total asset value is insured. The average implicit value of a vessel's fishing permits is $97,966. The high value reflects the ownership of valuable Atlantic scallop permits by some of vessels in the sample. The value of the limited access rock shrimp and Gulf shrimp permits might account for a few thousand dollars of the total.

Table C1: Landings, prices, and revenue by (fishery) category

| | Landings (lbs, head-off) | Price ($ per lbs) | Revenue ($) |
|---|---|---|---|
| Shrimp landings - Atlantic - Penaeid shrimp | 24,705 | 3.07 | 75,876 |
| Shrimp landings - Atlantic - Rock shrimp | 8,220 | 1.18 | 9,712 |
| Shrimp landings - Gulf - Any shrimp | 1,392 | 2.27 | 3,160 |
| Non-shrimp landings | - | - | 68,101 |
| Government payments (shrimp related) | - | - | 1,174 |

Landings and Revenue

Of vessels in the active SA penaeid shrimp fleet, 100% landed SA penaeid shrimp, 11% landed SA rock shrimp, and 6% landed Gulf shrimp. In 2009, the average vessel landed 25, 8, and 1 thousand pounds of SA penaeid, SA rock, and Gulf shrimp, respectively (Table C1). SA penaeid shrimp averaged $3.07 per pound, while a pound of SA rock shrimp only yielded $1.18. In 2009, average annual revenue from all sources was $158,023. As a percentage of revenue, SA penaeid shrimp accounted for 48%, non-shrimp landings for 43%, SA rock shrimp for 6%, Gulf shrimp for 2%, and government payments for less than 1% (Figure C2).

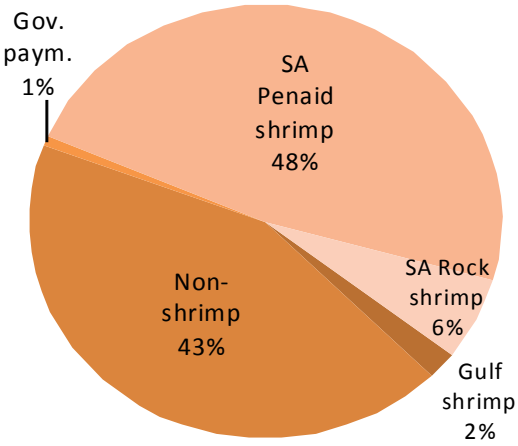


Figure C2: Revenue by Fishery

Costs

In 2009, average annual expenses for operations were $150,862, where operations refer to commercial fishing activities. Operating expenses include both variable costs, usually paid on a trip basis, and fixed costs, such as insurance. The average vessel used 19,544 gallons of fuel, and the average gallon of fuel was purchased for $2.12 in 2009. Fuel accounted for 27.5% of operating expenses, while other supplies accounted for 11.5%, leading to a total of 39% for non-labor variable costs (Figure C3). The expense for hired crew and captains is on average $47,623, or 32% of expenses, which indicates the importance of the industry as a source of wage income. Of the vessels, 63% are owner operated, and we estimate that the average owner operator's contribution *as captain* is about $12,000 per year ("opportunity cost of time"). Overall, labor accounts for 37% of operating expenses. Fixed costs account for the remaining 24% of operating expenses, split among maintenance (9%), major repairs (4%), estimated depreciation (4%), insurance payments (4%), and other overhead (4%).

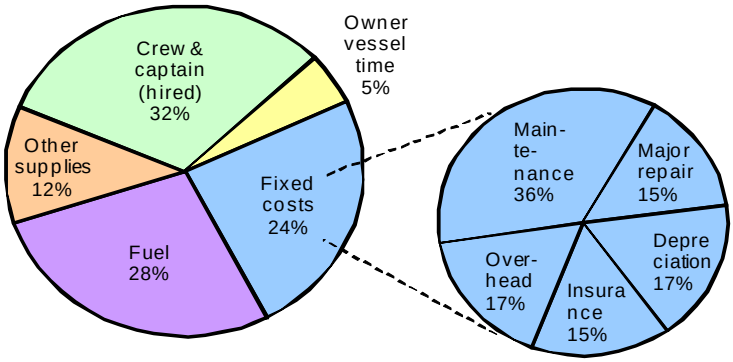



Figure C3: Percentage Breakup of Total Costs and Fixed Costs

Additional expenses in 2009, not counted as operating expenses, include interest payments of $1,728 (financing costs), principal payments of $4,290 (paying down debt), and new investment of $2,169 (beyond maintenance and repair). Tabulated results for this fleet can be found in the Appendix, Table 2, column 1.

Financial Performance

For the average vessel, the difference between total revenue and total expenses---the net cash flow---is on average $13,010 (Figure C4). This is a measure of the industry's liquidity and should usually be positive in an established industry. Yet it does not account for owner operators' labor contribution or the vessels' depreciation. The difference between revenue from commercial fishing operations and operating expenses---net revenue from operations---is on average $5,987, which accounts for all costs of production. Finally, when financing costs are subtracted and non-operational income (e.g., gov. payments) is added, the average profit for each owner is $5,433.

Figure C4: Net Cash Flow, Net Revenue, Profit

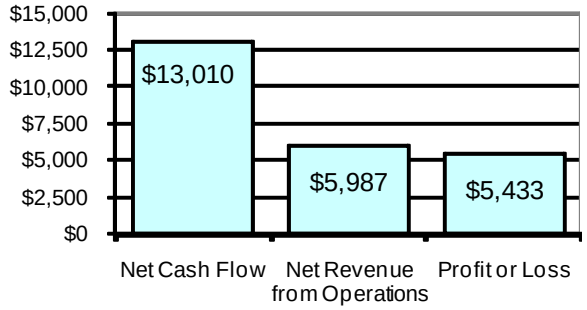
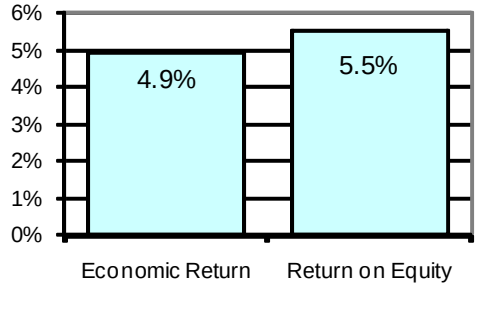



Figure C5: Financial Returns




An average economic return of 4.9% is calculated by dividing net operating revenue by the value of vessel assets (Figure C5). Economic return quantifies the productivity of a shrimp vessel's production from a societal perspective. In contrast, the return on equity is the primary concern of the individual owner. The return on equity of 5.5% is calculated by dividing the profit by the equity currently invested by the owner in the vessel. Finally, we estimate that the fleet generated fishing revenue of $8.03 for each gallon of fuel used (measure of fuel efficiency).

## D: Economic Status of the Active South Atlantic Rock Shrimp Fleet

In 2009, approximately 31 vessels landed SA rock shrimp---the active SA rock shrimp fleet. The results below are based on a random sample of 10 permits from this population with complete and usable surveys. A sample of 10 is very small, leading to a high level uncertainty concerning these results. Tabulated results for this fleet can be found in Appendix, Table 2, column 2. The sample's vessel characteristics are not materially different from the RSLA population, but are larger, more powerful, and newer compared to all vessels with SA shrimp permits. The geographic distribution of the permit owners' residence across the Northeast, the individual South Atlantic states, and the Gulf of Mexico region is provided in Figure D1. Note that none of the active vessels were from the Gulf region.

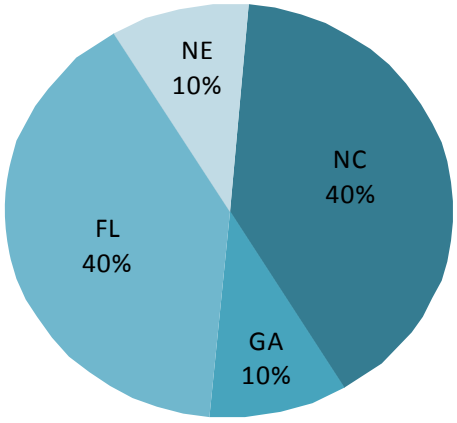


Figure D1: State of Residency of Owner

Balance Sheet

The average market value of a vessel was $324,000 in 2009, about $31 thousand less than the original purchase price. The average vessel has $103,355 of liabilities, and 70% of the vessels have an outstanding loan. This implies an average equity of $220,646 for each owner and a debt to equity ratio of 47%. This is the "highest" leverage among the fleets considered in this report. 100% of the vessels had hull insurance. The average implicit value of a vessel's fishing permits is $28,000. In addition to the limited access RSLA permit, all 10 vessels also owned the limited access Gulf shrimp permit. It is unknown if any other fishing permits contributed to the $28,000 value.

Table D1: Landings, prices, and revenue by (fishery) category

| | Landings (lbs, head-off) | Price ($ per lbs) | Revenue ($) |
|---|---|---|---|
| Shrimp landings - Atlantic - Penaeid shrimp | 60,313 | 3.23 | 195,070 |
| Shrimp landings - Atlantic - Rock shrimp | 72,336 | 1.18 | 85,463 |
| Shrimp landings - Gulf - Any shrimp | 11,144 | 2.11 | 23,466 |
| Non-shrimp landings | - | - | 6,272 |
| Government payments (shrimp related) | - | - | 1,744 |

Landings and Revenue

Of vessels in the active SA rock shrimp fleet, 100% landed SA penaeid shrimp, 100% landed SA rock shrimp, and 40% landed Gulf shrimp. In 2009, the average vessel landed 60, 72, and 11 thousand pounds of SA penaeid, SA rock, and Gulf shrimp, respectively (Table D1). SA penaeid shrimp averaged $3.23 per pound, while a pound of SA rock shrimp only yielded $1.18. In 2009, average annual revenue from all sources was $312,015. As a percentage of revenue, SA penaeid shrimp accounted for 63%, SA rock shrimp for 27%, Gulf shrimp for 8%, non-shrimp landings for 2%, and government payments for less than 1% (Figure D2).

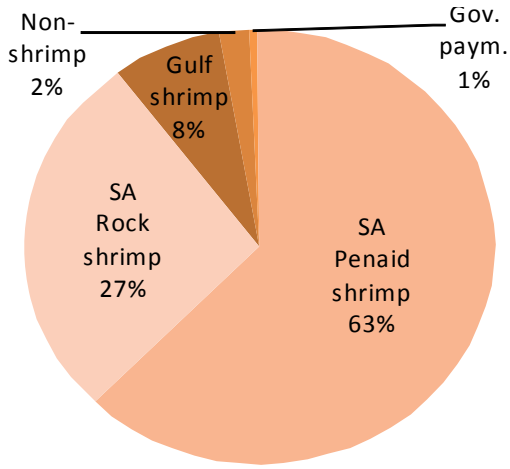


Figure D2: Revenue by Fishery

Costs

In 2009, average annual expenses for operations were $320,765, where operations refer to commercial fishing activities. Operating expenses include both variable costs, usually paid on a trip basis, and fixed costs, such as insurance. The average vessel used 50,775 gallons of fuel, and the average gallon of fuel was purchased for $2.08 in 2009. Fuel accounted for 33% of operating expenses, while other supplies accounted for 7%, leading to a total of 40% for non-labor variable costs (Figure D3). The expense for hired crew and captains is on average $89,818, or 28% of expenses, which indicates the importance of the industry as a source of wage income. Of the vessels, 30% are owner operated, and we estimate that the average owner operator's contribution *as captain* is about $35,000 per year ("opportunity cost of time"). Overall, labor accounts for 31% of operating expenses. Fixed costs account for the remaining 29% of operating expenses, split among maintenance (10%), repairs (4%), estimated depreciation (5%), insurance payments (5%), and overhead (5%).

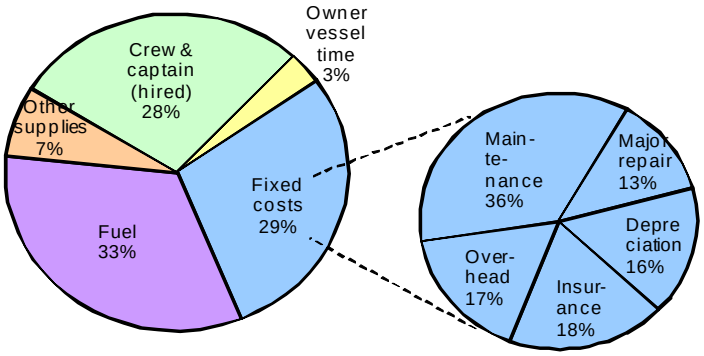



Figure D3: Percentage Breakup of Total Costs and Fixed Costs

Additional expenses in 2009, not counted as operating expenses, include interest payments of $6,217 (financing costs), principal payments of $14,413 (paying down debt). New investments (beyond maintenance and repair) were not reported by sampled rock shrimp permit holders. Tabulated results for this fleet can be found in the Appendix, Table 2, column 2.

Financial Performance

Given the small sample size, caution is advised when interpreting the results. The fleet might be "breaking even" and the negative numbers could be the result of the small sample size. For the average vessel, the difference between total revenue and total expenses---the net cash flow---is negative $3,798 (Figure D4). This is a measure of the industry's liquidity and should usually be positive in an established industry. Yet it does not account for owner operators' labor contribution or the vessels' depreciation. The difference between revenue from commercial fishing operations and operating expenses---net revenue from operations---is on average negative $10,494, which accounts for all costs of production. Finally, when financing costs are subtracted and non-operational income (e.g., gov. payments) is added, the average loss for each owner is $14,967.

Figure D4: Net Cash Flow, Net Revenue, Profit

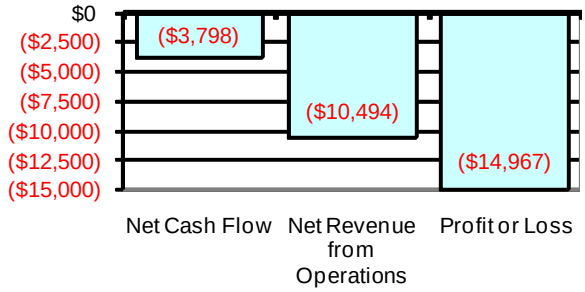
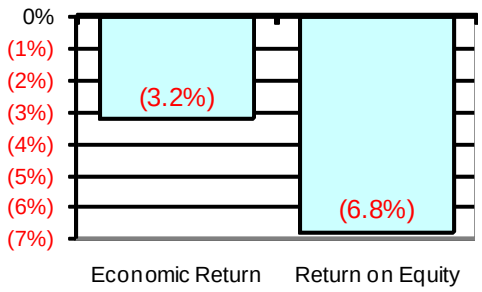



Figure D5: Financial Returns




An average economic return of negative 3.2% is calculated by dividing net operating revenue by the value of vessel assets (Figure D5). Economic return quantifies the productivity of a shrimp vessel's production from a societal perspective. In contrast, the return on equity is the primary concern of the individual owner. The return on equity of negative 6.8% is calculated by dividing the loss by the equity currently invested by the owner in the vessel. We estimate that the fleet generated fishing revenue of $6.11 for each gallon of fuel used (fuel efficiency).

## E: Economic Status of the Active, *Predominantly-SA Penaeid Shrimp* Fleet

This section reports results for vessels which, in 2009, predominantly caught SA penaeid shrimp. Of the 88 sampled vessels in the active SA penaeid shrimp fleet, only 63 derive the majority of their revenue from SA penaeid shrimp landings. Tabulated results for this fleet can be found in Appendix, Table 2, column 3. Results for the 15 vessels whose primary catch is not SA penaeid shrimp are reported in Table 2, column 4. Vessels specializing on SA penaeid shrimp are generally smaller and older than the overall fleet and are rarely made of steel or use freezers. The geographic distribution of the permit owners' residence across the Northeast, the individual South Atlantic states, and the Gulf of Mexico region is provided in Figure E1, and indicates that owners of SPA permits predominantly fishing SA penaeid shrimp mostly reside in the SA region.

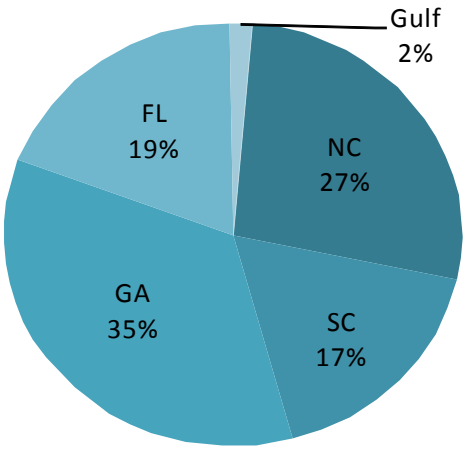


Figure E1: State of Residency of Owner

Balance Sheet

The average market value of a vessel was $61,639 in 2009, about $29 thousand less than the original purchase price. This is substantially less than for the overall fleet. Since only 13% of the vessels have an outstanding loan, the average vessel only has $2,874 of liabilities. This implies an average equity of $58,765 for each owner and a debt to equity ratio of only 5%. Hence, the use of credit is practically absent among these vessels. Also, only 8% of the vessels had hull insurance.

Table E1: Landings, prices, and revenue by (fishery) category

| | Landings (lbs, head-off) | Price ($ per lbs) | Revenue ($) |
|---|---|---|---|
| Shrimp landings - Atlantic - Penaeid shrimp | 19,935 | 3.10 | 61,810 |
| Shrimp landings - Atlantic - Rock shrimp | 0 | - | 0 |
| Shrimp landings - Gulf - Any shrimp | 176 | 3.92 | 689 |
| Non-shrimp landings | - | - | 2,146 |
| Government payments (shrimp related) | - | - | 1,336 |

Landings and Revenue

Of the vessels that primarily fished for SA penaeid shrimp, 100% landed SA penaeid shrimp, none landed SA rock shrimp, and 2% landed Gulf shrimp. In 2009, the average vessel landed 20 thousand pounds of SA penaeid shrimp and about 200 pounds of Gulf Shrimp (Table E1). SA penaeid shrimp averaged $3.10 per pound. In 2009, average annual revenue from all sources was $65,981. As a percentage of revenue, SA penaeid shrimp accounted for 94%, non-shrimp landings for 3%, government payments for 2%, and Gulf shrimp for 1% (Figure E2).

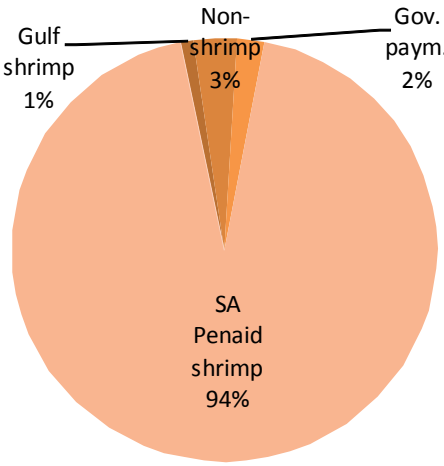


Figure E2: Revenue by Fishery

Costs

In 2009, average annual expenses for operations were $77,586, where operations refer to commercial fishing activities. Operating expenses include both variable costs, usually paid on a trip basis, and fixed costs, such as insurance. The average vessel used 10,014 gallons of fuel, and the average gallon of fuel was purchased for $2.26 in 2009. Fuel accounted for 29% of operating expenses, while other supplies accounted for 14%, leading to a total of 43.5% for non-labor variable costs (Figure E3). The expense for hired crew and captains is on average $17,920, or 23% of expenses. Of the vessels, 75% are owner operated, and we estimate that the average owner operator's contribution *as captain* is about $10,500 per year ("opportunity cost of time"). Overall, labor accounts for 33% of operating expenses. Fixed costs account for the remaining 23% of operating expenses, split among maintenance (9%), major repairs (5%), estimated depreciation (4%), insurance payments (1%), and other overhead (6%).

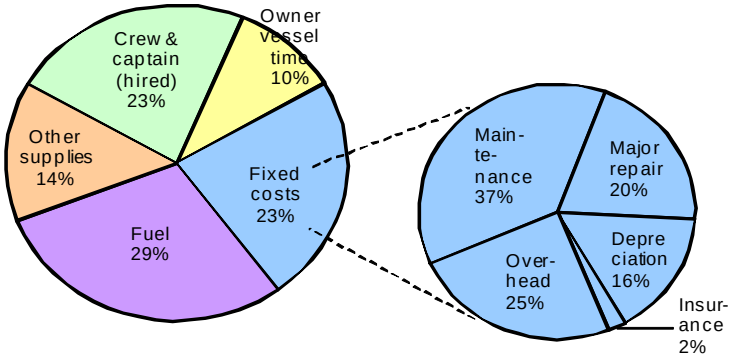



Figure E3: Percentage Breakup of Total Costs and Fixed Costs

Additional expenses in 2009, not counted as operating expenses, include interest payments of $321 (financing costs), principal payments of $1,076 (paying down debt), and new investment of $2,353 (beyond maintenance and repair). Tabulated results for this fleet can be found in the Appendix, Table 2, column 3.

Financial Performance

For the average vessel, the difference between total revenue and total expenses---the net cash flow---is on average negative $4,618 (Figure E4). This is a measure of the industry's liquidity and should usually be positive in an established industry. Yet it does not account for owner operators' labor contribution or the vessels' depreciation. The difference between revenue from commercial fishing operations and operating expenses---net revenue from operations---is on average negative $12,941, which accounts for all all costs of production. Finally, when financing costs are subtracted and non-operational income (e.g., gov. payments) is added, the average loss for each owner is $11,926.

Figure E4: Net Cash Flow, Net Revenue, Profit

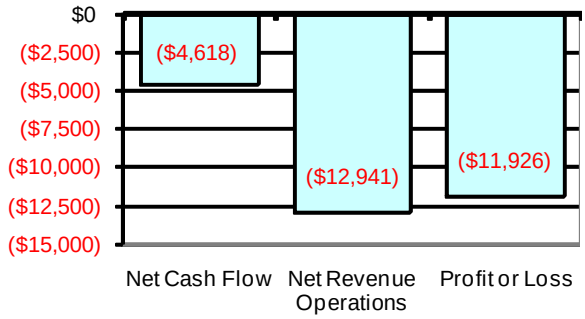
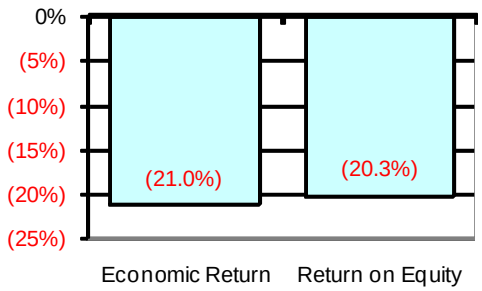



Figure E5: Financial Returns




An average economic return of negative 21.0% is calculated by dividing net operating revenue by the value of vessel assets (Figure E5). Economic return quantifies the productivity of a shrimp vessel's production from a societal perspective. In contrast, the return on equity is the primary concern of the individual owner. The return on equity of negative 20.3% is calculated by dividing the loss by the equity currently invested by the owner in the vessel. Finally, we estimate that the fleet generated fishing revenue of $6.46 for each gallon of fuel (fuel efficiency).

## Summary

This report provides an overview of the financial and economic health of vessels holding a federal permit for harvesting shrimp in the South Atlantic. This data was collected for the first time in 2009. The analysis suggests that SPA permitted vessels (Fleet A) are, on average, generating a positive cash flow and even some profit (Table 4). The return on the investment is positive. However, much of this profit is being made by vessels not active or not primarily active in the SA penaeid or rock shrimp fisheries. When only vessels that land penaeid shrimp are considered (Fleet C), the results are somewhat moderated, but qualitatively similar, with positive cash flow, net revenue, and returns. When only vessels that generate a majority of their revenue from penaeid shrimp are considered (Fleet E), the results change dramatically. The cash flow is negative, the net returns substantially negative, and the negative returns unsustainable.

Looking at fleets defined by ownership of the limited-entry rock shrimp permit (RSLA) leads to similar results. All vessels that own a RSLA permit (Fleet B) have quite substantial positive cash flow and net revenues. Returns are over 10%. Yet when only vessels actually landing rock shrimp are considered (Fleet D), the results also change for the worse. Cash flow becomes negative, the net revenues become substantially negative, and the returns are negative as well.

Table 4: Financial Results for the Average Vessel by Fleets in 2009 (thousand dollars)

| | # of Obs. | Assets | Equity | Net Cash Flow | Net Rev. from Operations | Profit / Loss | Economic Return | Return on Equity |
|---|---|---|---|---|---|---|---|---|
| A: SPA-permitted fleet | 190 | 162 | 130 | 15 | 8 | 9 | 5% | 7% |
| B: RSLA-permitted fleet | 40 | 380 | 293 | 46 | 45 | 44 | 12% | 15% |
| C: Active SA penaeid shrimp fleet | 88 | 121 | 98 | 13 | 6 | 5 | 5% | 6% |
| D: Active SA rock shrimp fleet | 10 | 324 | 221 | (4) | (10) | (15) | (3%) | (7%) |
| E: Predominantly SA penaeid fleet | 63 | 62 | 59 | (5) | (13) | (12) | (21%) | (20%) |

In summary, the results indicate that the commercial harvest of South Atlantic shrimp is currently not a profitable activity. Yet many vessels with SA shrimp permits are active in other, more profitable fisheries managing to break-even or post a profit. The more specialized a vessel is in harvesting SA penaeid shrimp, the worse its economic performance. However, these results are averages and hence hide the wide variation that clearly exists within all fleets. The reader is cautioned that many further caveats apply to these results, including small sample sizes, the general difficulty of collecting economic data, and the fact that 2009 was the first year of this data collection. Hence the results should be viewed as tentative indicators of the general economic health of the industry.

# Appendix

## Data Tables

Table 1: F&E Results: Averages for the Permitted Fleet by Shrimp Permit (2009)

| (in USD unless otherwise noted) | Permitted Fleet | | |
|---|---|---|---|
| | SPA | RSLA | RSCZ |
| # of Observations | 190 | 40 | 46 |
| **Vessel Characteristics** | | | |
| Length (feet) | 62 | 78 | 61 |
| Gross tons | 86 | 136 | 84 |
| Horse power | 458 | 633 | 545 |
| Year built | 1982 | 1992 | 1984 |
| Hull material - Steel (%) | 38% | 90% | 39% |
| Refrigeration - Freezer (%) | 41% | 93% | 33% |
| State of Owner - North Carolina (%) | 23% | 25% | 26% |
| State of Owner - South Carolina (%) | 9% | 0% | 9% |
| State of Owner - Georgia (%) | 14% | 3% | 4% |
| State of Owner - Florida (%) | 33% | 20% | 33% |
| State of Owner - Gulf of Mexico Region (%) | 18% | 48% | 17% |
| State of Owner - Northeast Region (%) | 3% | 5% | 11% |
| Permit - SPA (%) | 100% | 90% | 87% |
| Permit - RSLA (%) | 19% | 100% | 0% |
| Permit - RSCZ (%) | 21% | 0% | 100% |
| Permit - SPGM (%) | 54% | 95% | 48% |
| **Balance Sheet (end of 2009)** | | | |
| **Assets -** Market value of vessel | **162,455** | **379,925** | **166,267** |
| *Original value of vessel (purchase price)* | *204,734* | *428,527* | *207,668* |
| *Implicit value of fishing permit(s)* | *89,633* | *216,175* | *139,166* |
| **Liabilities -** Loan on vessel | **32,462** | **86,478** | **31,212** |
| *% of vessels with loan* | *24%* | *55%* | *17%* |
| **Equity -** Owner's equity in vessel | **129,993** | **293,447** | **135,055** |
| *Insurance coverage (% of vessels / % of assets)* | *34% / 59%* | *80% / 75%* | *41% / 58%* |
| **Vessel Operation (2009)** | | | |
| Owner-operator (%) | 49% | 28% | 59% |
| Actively shrimping - Atlantic - Penaeid shrimp (%) | 46% | 40% | 24% |
| Actively shrimping - Atlantic - Rock shrimp (%) | 5% | 25% | 0% |
| Actively shrimping - Gulf - Any shrimp (%) | 34% | 60% | 33% |
| Shrimp landed - Atlantic - Penaeid shrimp (pounds) | 11,442 | 18,797 | 5,234 |
| Shrimp landed - Atlantic - Rock shrimp (pounds) | 3,807 | 18,084 | 0 |
| Shrimp landed - Gulf - Any shrimp (pounds) | 34,063 | 77,351 | 33,838 |
| Price / lbs - Atlantic - Penaeid shrimp (vessel / pound basis) | 3.18 / 3.07 | 3.23 / 3.20 | 3.32 / 3.22 |
| Price / lbs - Atlantic - Rock shrimp (vessel / pound basis) | 1.47 / 1.18 | 1.47 / 1.18 | - |
| Price / lbs - Gulf - Any shrimp (vessel / pound basis) | 2.73 / 2.50 | 2.70 / 2.56 | 2.70 / 2.48 |
| Price /lbs - Overall (vessel / pound basis) | 2.94 / 2.53 | 2.70 / 2.45 | 2.93 / 2.58 |
| Annual fuel use (gallons) | 26,533 | 55,116 | 27,706 |
| Fuel price per gallon (vessel basis / gallon basis) | 2.27 / 2.11 | 2.16 / 2.12 | 2.41 / 2.12 |
| Fuel efficiency I (vessel basis / gallon basis) | - | - | - |
| Fuel efficiency II (vessel basis / gallon basis) | 8.49 / 7.47 | 8.00 / 7.46 | 12.58 / 8.63 |

| | Permitted Fleet | | |
|---|---|---|---|
| | SPA | RSLA | RSCZ |
| # of Observations | 190 | 40 | 46 |
| **Cash Flow (2009)** | | | |
| **Inflow - Total** | **201,307** | **416,359** | **242,865** |
| Shrimp landings - Atlantic - Penaeid shrimp | 35,142 | 60,061 | 16,873 |
| Shrimp landings - Atlantic - Rock shrimp | 4,498 | 21,366 | 0 |
| Shrimp landings - Gulf - Any shrimp | 85,089 | 197,956 | 84,007 |
| Non-shrimp landings | 73,376 | 131,767 | 138,206 |
| Government payments received (shrimp related) | 3,201 | 5,209 | 3,779 |
| **Outflow - Total** | **186,463** | **370,257** | **217,405** |
| Fuel | 55,951 | 116,881 | 58,815 |
| Other supplies | 19,018 | 29,365 | 20,607 |
| Crew & captain (hired) | 59,265 | 114,877 | 82,354 |
| Regular maintenance (vessel and gear) | 17,594 | 29,876 | 22,342 |
| Major repair and haul-out | 9,264 | 16,614 | 7,678 |
| Insurance | 6,861 | 19,103 | 7,714 |
| Overhead (excluding loan payments) | 8,754 | 18,508 | 8,733 |
| Interest payments made (on vessel loans) | 2,320 | 6,487 | 2,041 |
| Principal payments made (on vessel loans) | 5,057 | 15,996 | 3,558 |
| New investments and upgrades (in vessel) | 2,380 | 2,551 | 3,563 |
| **Net Cash Flow** | **14,844** | **46,101** | **25,460** |
| **Income Statement (2009)** | | | |
| **Operating Activities** | | | |
| **Revenue (from commercial fishing)** | **198,106** | **411,150** | **239,086** |
| **Expenses** | **190,009** | **365,912** | **222,608** |
| *Variable costs - Non-Labor* | *39.5%* | *40.0%* | *35.7%* |
| Fuel | 29.4% | 31.9% | 26.4% |
| Other supplies | 10.0% | 8.0% | 9.3% |
| *Variable costs - Labor* | *34.3%* | *33.3%* | *39.8%* |
| Crew & captain (hired) | 31.2% | 31.4% | 37.0% |
| Owner's vessel time | 3.1% | 1.9% | 2.8% |
| *Fixed costs* | *26.2%* | *26.7%* | *24.5%* |
| Regular maintenance (vessel and gear) | 9.3% | 8.2% | 10.0% |
| Major repair and haul-out | 4.9% | 4.5% | 3.4% |
| Depreciation | 3.9% | 3.7% | 3.6% |
| Insurance | 3.6% | 5.2% | 3.5% |
| Overhead (excluding loan payments) | 4.6% | 5.1% | 3.9% |
| **Net Revenue from Operations** | **8,097** | **45,238** | **16,478** |
| **Non-Operating Activities** | | | |
| Interest payments made (on vessel loans) | 2,320 | 6,487 | 2,041 |
| Government payments received (shrimp related) | 3,201 | 5,209 | 3,779 |
| **Net Revenue (before taxes) - "Profit or Loss"** | **8,979** | **43,960** | **18,217** |
| *Owner's vessel time* | *5,921* | *7,124* | *6,310* |
| *Depreciation* | *7,381* | *13,564* | *8,055* |

Table 2: F&E Results: Averages for the South Atlantic Fleet Actively Shrimping and by Primary Fishery (Rock Shrimp, Penaeid Shrimp, or Other Fish) (2009)

| (in USD unless otherwise noted) | Active S. Atl. Shrimp Fleet | Active South Atlantic Shrimp Fleet | | |
|---|---|---|---|---|
| | | Rock Shrimp | Penaeid - Primary | Penaeid - Secondary |
| # of Observations | 88 | 10 | 63 | 15 |
| **Vessel Characteristics** | | | | |
| Length (feet) | 61 | 80 | 56 | 67 |
| Gross tons | 75 | 146 | 59 | 96 |
| Horse power | 404 | 590 | 353 | 494 |
| Year built | 1979 | 1994 | 1975 | 1987 |
| Hull material - Steel (%) | 30% | 100% | 8% | 73% |
| Refrigeration - Freezer (%) | 20% | 100% | 8% | 20% |
| State of Owner - North Carolina (%) | 35% | 40% | 27% | 67% |
| State of Owner - South Carolina (%) | 13% | 0% | 17% | 0% |
| State of Owner - Georgia (%) | 26% | 10% | 35% | 0% |
| State of Owner - Florida (%) | 23% | 40% | 19% | 27% |
| State of Owner - Gulf of Mexico Region (%) | 1% | 0% | 2% | 0% |
| State of Owner - Northeast Region (%) | 2% | 10% | 0% | 7% |
| Permit - SPA (%) | 100% | 100% | 100% | 100% |
| Permit - RSLA (%) | 18% | 100% | 3% | 27% |
| Permit - RSCZ (%) | 13% | 0% | 13% | 20% |
| Permit - SPGM (%) | 28% | 100% | 14% | 40% |
| **Balance Sheet (end of 2009)** | | | | |
| **Assets -** Market value of vessel | **121,180** | **324,000** | **61,639** | **236,042** |
| *Original value of vessel (purchase price)* | *165,178* | *354,500* | *91,012* | *350,462* |
| *Implicit value of fishing permit(s)* | *97,966* | *28,000* | *8,604* | *519,929* |
| **Liabilities -** Loan on vessel | **22,736** | **103,355** | **2,874** | **52,412** |
| *% of vessels with loan* | *22%* | *70%* | *13%* | *27%* |
| **Equity -** Owner's equity in vessel | **98,444** | **220,646** | **58,765** | **183,629** |
| *Insurance coverage (% of vessels / % of assets)* | *27% / 64%* | *100% / 92%* | *8% / 9%* | *60% / 99%* |
| **Vessel Operation (2009)** | | | | |
| Owner-operator (%) | 63% | 30% | 75% | 33% |
| Actively shrimping - Atlantic - Penaeid shrimp (%) | 100% | 100% | 100% | 100% |
| Actively shrimping - Atlantic - Rock shrimp (%) | 11% | 100% | 0% | 0% |
| Actively shrimping - Gulf - Any shrimp (%) | 6% | 40% | 2% | 0% |
| Shrimp landed - Atlantic - Penaeid shrimp (pounds) | 24,705 | 60,313 | 19,935 | 21,000 |
| Shrimp landed - Atlantic - Rock shrimp (pounds) | 8,220 | 72,336 | 0 | 0 |
| Shrimp landed - Gulf - Any shrimp (pounds) | 1,392 | 11,144 | 176 | 0 |
| Price / lbs - Atlantic - Penaeid shrimp (vessel / pound basi | 3.18 / 3.07 | 3.28 / 3.23 | 3.19 / 3.10 | 3.11 / 2.64 |
| Price / lbs - Atlantic - Rock shrimp (vessel / pound basis) | 1.47 / 1.18 | 1.47 / 1.18 | - | - |
| Price / lbs - Gulf - Any shrimp (vessel / pound basis) | 2.51 / 2.27 | 2.16 / 2.11 | 3.92 / 3.92 | - |
| Price /lbs - Overall (vessel / pound basis) | 3.06 / 2.59 | 2.22 / 2.11 | 3.19 / 3.11 | 3.11 / 2.64 |
| Annual fuel use (gallons) | 19,544 | 50,775 | 10,014 | 38,751 |
| Fuel price per gallon (vessel basis / gallon basis) | 2.28 / 2.12 | 2.07 / 2.08 | 2.30 / 2.26 | 2.32 / 2.01 |
| Fuel efficiency I (vessel basis / gallon basis) | - | 2.8 / 2.8 | 2.2 / 2.0 | - |
| Fuel efficiency II (vessel basis / gallon basis) | 7.62 / 8.03 | 6.00 / 6.11 | 6.82 / 6.46 | 12.04 / 11.40 |

| | Active S. Atl. Shrimp Fleet | Active South Atlantic Shrimp Fleet | | |
|---|---|---|---|---|
| | | Rock Shrimp | Penaeid - Primary | Penaeid - Secondary |
| # of Observations | 88 | 10 | 63 | 15 |
| **Cash Flow (2009)** | | | | |
| **Inflow - Total** | **158,023** | **312,015** | **65,981** | **441,936** |
| Shrimp landings - Atlantic - Penaeid shrimp | 75,876 | 195,070 | 61,810 | 55,491 |
| Shrimp landings - Atlantic - Rock shrimp | 9,712 | 85,463 | 0 | 0 |
| Shrimp landings - Gulf - Any shrimp | 3,160 | 23,466 | 689 | 0 |
| Non-shrimp landings | 68,101 | 6,272 | 2,146 | 386,329 |
| Government payments received (shrimp related) | 1,174 | 1,744 | 1,336 | 117 |
| **Outflow - Total** | **145,012** | **315,813** | **70,599** | **343,681** |
| Fuel | 41,430 | 105,416 | 22,620 | 77,774 |
| Other supplies | 17,353 | 23,098 | 11,109 | 39,752 |
| Crew & captain (hired) | 47,623 | 89,818 | 17,920 | 144,249 |
| Regular maintenance (vessel and gear) | 13,114 | 32,851 | 6,741 | 26,725 |
| Major repair and haul-out | 5,472 | 11,477 | 3,656 | 9,094 |
| Insurance | 5,661 | 17,083 | 404 | 20,125 |
| Overhead (excluding loan payments) | 6,172 | 15,440 | 4,400 | 7,438 |
| Interest payments made (on vessel loans) | 1,728 | 6,217 | 321 | 4,644 |
| Principal payments made (on vessel loans) | 4,290 | 14,413 | 1,076 | 11,036 |
| New investments and upgrades (in vessel) | 2,169 | 0 | 2,353 | 2,843 |
| **Net Cash Flow** | **13,010** | **(3,798)** | **(4,618)** | **98,255** |
| **Income Statement (2009)** | | | | |
| **Operating Activities** | | | | |
| **Revenue (from commercial fishing)** | **156,848** | **310,271** | **64,645** | **441,819** |
| **Expenses** | **150,862** | **320,765** | **77,586** | **345,350** |
| *Variable costs - Non-Labor* | *39.0%* | *40.1%* | *43.5%* | *34.0%* |
| Fuel | 27.5% | 32.9% | 29.2% | 22.5% |
| Other supplies | 11.5% | 7.2% | 14.3% | 11.5% |
| *Variable costs - Labor* | *36.7%* | *31.3%* | *33.3%* | *43.2%* |
| Crew & captain (hired) | 31.6% | 28.0% | 23.1% | 41.8% |
| Owner's vessel time | 5.1% | 3.3% | 10.2% | 1.5% |
| *Fixed costs* | *24.4%* | *28.6%* | *23.3%* | *22.7%* |
| Regular maintenance (vessel and gear) | 8.7% | 10.2% | 8.7% | 7.7% |
| Major repair and haul-out | 3.6% | 3.6% | 4.7% | 2.6% |
| Depreciation | 4.2% | 4.7% | 3.7% | 4.4% |
| Insurance | 3.8% | 5.3% | 0.5% | 5.8% |
| Overhead (excluding loan payments) | 4.1% | 4.8% | 5.7% | 2.2% |
| **Net Revenue from Operations** | **5,987** | **(10,494)** | **(12,941)** | **96,469** |
| **Non-Operating Activities** | | | | |
| Interest payments made (on vessel loans) | 1,728 | 6,217 | 321 | 4,644 |
| Government payments received (shrimp related) | 1,174 | 1,744 | 1,336 | 117 |
| **Net Revenue (before taxes) - "Profit or Loss"** | **5,433** | **(14,967)** | **(11,926)** | **91,942** |
| *Owner's vessel time* | *7,715* | *10,552* | *7,894* | *5,071* |
| *Depreciation* | *6,321* | *15,031* | *2,843* | *15,121* |

Table 3: F&E Results: Averages for the South Atlantic Fleet NOT Actively Shrimping (in the S. Atlantic) by Activity (Not Active, Other Fish, and Gulf Shrimp) (2009)

| (in USD unless otherwise noted) | IN-Active South Atlantic Shrimp Fleet | | |
|---|---|---|---|
| | Not Active | Non-Shrimp Only | Gulf Shrimp Only |
| # of Observations | 25 | 21 | 66 |
| **Vessel Characteristics** | | | |
| Length (feet) | 52 | 52 | 71 |
| Gross tons | 60 | 61 | 119 |
| Horse power | 334 | 463 | 593 |
| Year built | 1981 | 1986 | 1986 |
| Hull material - Steel (%) | 20% | 38% | 56% |
| Refrigeration - Freezer (%) | 32% | 10% | 83% |
| State of Owner - North Carolina (%) | 16% | 43% | 0% |
| State of Owner - South Carolina (%) | 16% | 10% | 0% |
| State of Owner - Georgia (%) | 16% | 0% | 0% |
| State of Owner - Florida (%) | 36% | 33% | 44% |
| State of Owner - Gulf of Mexico Region (%) | 12% | 5% | 53% |
| State of Owner - Northeast Region (%) | 4% | 10% | 3% |
| Permit - SPA (%) | 100% | 81% | 91% |
| Permit - RSLA (%) | 8% | 10% | 30% |
| Permit - RSCZ (%) | 24% | 71% | 21% |
| Permit - SPGM (%) | 48% | 29% | 98% |
| **Balance Sheet (end of 2009)** | | | |
| **Assets -** Market value of vessel | **49,817** | **186,155** | **250,968** |
| *Original value of vessel (purchase price)* | *79,240* | *222,562* | *291,379* |
| *Implicit value of fishing permit(s)* | *12,698* | *315,866* | *26,464* |
| **Liabilities -** Loan on vessel | **16,000** | **33,475** | **52,393** |
| *% of vessels with loan* | *8%* | *10%* | *38%* |
| **Equity -** Owner's equity in vessel | **33,817** | **152,680** | **198,575** |
| *Insurance coverage (% of vessels / % of assets)* | *8% / 7%* | *67% / 83%* | *47% / 55%* |
| **Vessel Operation (2009)** | | | |
| Owner-operator (%) | 60% | 62% | 26% |
| Actively shrimping - Atlantic - Penaeid shrimp (%) | 0% | 0% | 0% |
| Actively shrimping - Atlantic - Rock shrimp (%) | 0% | 0% | 0% |
| Actively shrimping - Gulf - Any shrimp (%) | 0% | 0% | 100% |
| Shrimp landed - Atlantic - Penaeid shrimp (pounds) | 0 | 0 | 0 |
| Shrimp landed - Atlantic - Rock shrimp (pounds) | 0 | 0 | 0 |
| Shrimp landed - Gulf - Any shrimp (pounds) | 0 | 0 | 105,915 |
| Price / lbs - Atlantic - Penaeid shrimp (vessel / pound basis) | - | - | - |
| Price / lbs - Atlantic - Rock shrimp (vessel / pound basis) | - | - | - |
| Price / lbs - Gulf - Any shrimp (vessel / pound basis) | - | - | 2.75 / 2.55 |
| Price /lbs - Overall (vessel / pound basis) | - | - | 2.75 / 2.55 |
| Annual fuel use (gallons) | 218 | 18,996 | 50,343 |
| Fuel price per gallon (vessel basis / gallon basis) | 2.66 / 2.48 | 2.41 / 2.12 | 2.18 / 2.11 |
| Fuel efficiency I (vessel basis / gallon basis) | - | - | 2.9 / 2.1 |
| Fuel efficiency II (vessel basis / gallon basis) | - | 21.11 / 19.01 | 7.06 / 5.55 |

| | IN-Active South Atlantic Shrimp Fleet | | |
|---|---|---|---|
| | Not Active | Non-Shrimp Only | Gulf Shrimp Only |
| # of Observations | 25 | 21 | 66 |
| **Cash Flow (2009)** | | | |
| **Inflow - Total** | **800** | **365,028** | **286,067** |
| Shrimp landings - Atlantic - Penaeid shrimp | 0 | 0 | 0 |
| Shrimp landings - Atlantic - Rock shrimp | 0 | 0 | 0 |
| Shrimp landings - Gulf - Any shrimp | 0 | 0 | 269,627 |
| Non-shrimp landings | 600 | 361,185 | 9,634 |
| Government payments received (shrimp related) | 200 | 3,843 | 6,806 |
| **Outflow - Total** | **8,275** | **274,791** | **282,568** |
| Fuel | 542 | 40,208 | 106,130 |
| Other supplies | 275 | 24,071 | 25,371 |
| Crew & captain (hired) | 96 | 140,139 | 71,697 |
| Regular maintenance (vessel and gear) | 1,491 | 30,954 | 24,388 |
| Major repair and haul-out | 1,857 | 8,864 | 16,972 |
| Insurance | 411 | 13,573 | 8,901 |
| Overhead (excluding loan payments) | 3,603 | 10,184 | 13,299 |
| Interest payments made (on vessel loans) | 0 | 2,126 | 4,128 |
| Principal payments made (on vessel loans) | 0 | 1,410 | 8,422 |
| New investments and upgrades (in vessel) | 0 | 3,263 | 3,261 |
| **Net Cash Flow** | **(7,475)** | **90,237** | **3,499** |
| **Income Statement (2009)** | | | |
| **Operating Activities** | | | |
| **Revenue (from commercial fishing)** | **600** | **361,185** | **279,261** |
| **Expenses** | **10,037** | **280,932** | **282,881** |
| *Variable costs - Non-Labor* | *8.1%* | *22.9%* | *46.5%* |
| Fuel | 5.4% | 14.3% | 37.5% |
| Other supplies | 2.7% | 8.6% | 9.0% |
| *Variable costs - Labor* | *9.8%* | *52.5%* | *27.2%* |
| Crew & captain (hired) | 1.0% | 49.9% | 25.3% |
| Owner's vessel time | 8.8% | 2.6% | 1.8% |
| *Fixed costs* | *82.1%* | *24.7%* | *26.3%* |
| Regular maintenance (vessel and gear) | 14.9% | 11.0% | 8.6% |
| Major repair and haul-out | 18.5% | 3.2% | 6.0% |
| Depreciation | 8.7% | 2.0% | 3.9% |
| Insurance | 4.1% | 4.8% | 3.1% |
| Overhead (excluding loan payments) | 35.9% | 3.6% | 4.7% |
| **Net Revenue from Operations** | **(9,437)** | **80,253** | **(3,620)** |
| **Non-Operating Activities** | | | |
| Interest payments made (on vessel loans) | 0 | 2,126 | 4,128 |
| Government payments received (shrimp related) | 200 | 3,843 | 6,806 |
| **Net Revenue (before taxes) - "Profit or Loss"** | **(9,237)** | **81,970** | **(942)** |
| *Owner's vessel time* | *888* | *7,215* | *5,152* |
| *Depreciation* | *874* | *5,725* | *10,971* |

## Definitions

Balance Sheet: A balance sheet is a snapshot of a company's financial condition. A company's balance sheet has three parts: assets, liabilities, and the owner's equity. The asset side of a balance sheet lists all assets of a company and their value at a given point in time. The liability side lists the various sources of money invested to acquire these assets (the financial capital). Beyond investing their own capital (money), most company owners borrow financial capital from other sources, such as banks. The current equity, the net worth of the company to the owner, always equals the difference between the value of all assets and what is owed.

Cash Flow Statement: The cash flow statement shows a company's flow of money. Money accruing to the company is called cash inflow. In this study, the most important cash inflow is revenue generated through the sale of commercially harvested seafood. Money leaving the company is called cash outflow, which includes the various costs of owning and operating the shrimp vessel. Transactions that do not directly create cash receipts and payments are excluded. The difference between inflow and outflow---the net cash flow---reflects the vessel owner's liquidity or solvency and is useful in determining the short-term viability of a company.

Income Statement: An income statement is intended to help owners and investors determine the true economic performance of a company over a specified period of time. The income statement is sometimes called the profit and loss statement. The income statement begins with the revenue generated from operations (sale of product or service) and subtracts all operating costs, including non-cash costs such as the value of owner's labor and depreciation. The result is the net revenue from operations. This is a measure of the true economic return to a productive activity. More relevant to the owners of a company is the net revenue before taxes, i.e. their actual profit or loss. This "bottom line" is calculated by subtracting financing costs (such as interest payments) and adding non-operating revenue, income, and costs to net revenue from operations.

## Data Sources

| | |
|---|---|
| Permit and vessel data: | Constituency Services Branch, Southeast Regional Office, NMFS. |
| Revenue and landings data: | Trip ticket programs of the various Atlantic and Gulf States as consolidated by the Atlantic Coastal Cooperative Statistics Program; Florida Trip Ticket Program; & NMFS, SE Fisheries Science Center, Galveston lab (Gulf shrimp system). |
| Economic data: | NMFS, SE Fisheries Science Center, Miami lab, Social Science Research Group. |

## More Information

For more definitions, as well as background on the survey design, processing and cleaning of the data, and the quality, caveats, and idiosyncrasies associated with each data field, please see the NOAA technical memorandum (NMFS-SEFSC-601) available at:
www.sefsc.noaa.gov/socialscience/shrimp.htm

## Contact

Christopher Liese, Industry Economist
Social Science Research Group
Email: Christopher.Liese@noaa.gov
Telephone: (305) 361-4263