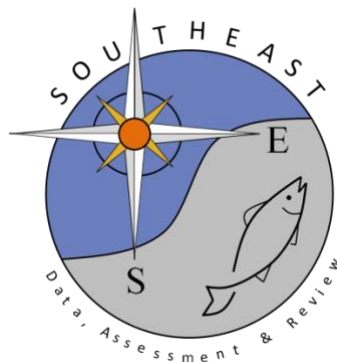


Social Dimensions of the Gulf of Mexico Shrimp Fishery: Overview

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SEDAR87-DW-02

31 August 2023



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Please cite this document as:

Griffith, D. 2023. Social Dimensions of the Gulf of Mexico Shrimp Fishery: Overview. SEDAR87-DW-02. SEDAR, North Charleston, SC.8 pp.

Social Dimensions of the Gulf of Mexico Shrimp Fishery: Overview

Working Paper prepared for SEDAR 87 Shrimp Workshop

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Changes in the Shrimping Population and Geography of the Industry, 1981-2021

When the original FMP for Shrimp in the Gulf of Mexico was developed in 1981, it was estimated that there were 4,585 vessels (displacing > 5 tons gross weight) and 5,475 boats (displacing < 5 tons gross weight) operating in the Gulf in 1980, with Texas making up around 40% of the vessels and Louisiana making up around 73% of the boats. Thirty years later, as part of an analysis of bycatch reduction in the fishery, Scott-Denton, et al. (2012) characterized the fleet comprised of large vessels (>70') with freezer storage capacity (as opposed to ice holds) and steel construction instead of wood, although they did not estimate the number of vessels or boats in the Gulf at that time.

“Currently,” according to NOAA, “there are 1,467 federally permitted vessels in the Gulf of Mexico” (www.fisheries.noaa.gov “Gulf of Mexico Reef Fish and Shrimp Observer Program”). State data supplied to NOAA, however, show nearly three times that many licenses for shrimping cross the Gulf states. The following table is based on 1984-2020 licensing data provided by NOAA, showing the distribution of licenses by state in the Gulf:

Table 1. Shrimping Licenses by State (1984-2021) and 2021

State	Number of Licenses (1984-2021)	Percent (1984-2021)	Number of Licenses (2021)	Percent (2021)
Alabama	13078	5.5	232	5.6
W. Florida	21622	9.1	197	4.8
Louisiana	120951	51.1	2640	63.8
Mississippi	13434	5.7	186	4.5
Texas	67790	28.6	889	21.4
Totals	236875	100	4141	100

Source: NOAA, Southeast Fishery Science Center.

It's clear from this table that Louisiana and Texas remain the two largest shrimping states in the Gulf but that the proportions across the five states have shifted somewhat in the 2021 statistics, with the percentages of licenses decreasing in Florida, Texas, and Mississippi yet increasing in Alabama slightly and significantly in Louisiana. Somewhat more granular data from Florida's west coast, broken down by whether fishers fished for white, pink, or brown shrimp in 2021 and 2022, shows that most fishers and vessels target pink shrimp and the fewest target white shrimp. Hart and Nance (2013) report that white shrimp (*Litopenaeus setiferus*) tend to be harvested in nearshore environments rather than offshore, and that landings of pink and brown shrimp surpassed white shrimp landings in the mid-1950s. They also note that managers have been giving increased attention to “the identification and protection of essential fish habitat (EFH) for shrimp” (2013:43), reflecting the importance of habitat for shrimp stocks in general.

Hart and Nance also report that harvests of white shrimp tend to occur more in the eastern part of the Gulf than off the coast of Texas, although Texas does have a white shrimp fishery (Texas Parks & Wildlife 2002). Statistics presented by Hart and Nance show fluctuations from a low of under 40 million pounds

in 1996 to a high of over 80 million pounds in 2006 in white shrimp landings from the 1980s to the present. For all Gulf shrimp, Scalia-Bruce (2023) reported that, in 2022, “the U.S. state of Louisiana came in as the top performer. The state had a massive increase in shrimp landings from the 18.7 million pounds caught in 2021 to 51.7 million pounds in 2022. The 2022 total represents 43.2 percent of all shrimp landed [around 120 million pounds] in the entire U.S.”

Table 2. West Coast Florida Shrimp Vessels and Fishers, 2021-2022

Year	Species	Vessels	Fishers
2021	SHRIMP, BROWN	56	73
2021	SHRIMP, PINK	149	156
2021	SHRIMP, WHITE	42	68
Total		247	297
2022	SHRIMP, BROWN	48	58
2022	SHRIMP, PINK	153	160
2022	SHRIMP, WHITE	50	77
Total		251	295

Source: Fish and Wildlife Research Institute, Florida Fish and Wildlife Conservation Commission.

Discrepancies between the Florida and federal data may be because the NOAA figures do not include shrimpers working in inshore waters without the need for federal licenses. From several sources, inshore shrimpers comprise a significant proportion of the shrimping population; the discrepancy between the federal and state data for Florida, for example, suggest that non-federally licensed vessels (or those that fish primarily in inshore, state waters) make up around 20% of the total. In the data for Texas, “bay only” vessels make up around 7% of the total. On the other hand, Nance, et al. (1991) reported that most of the Louisiana licenses for shrimp (around 34,000 of 37,000) issued in 1986 were for inshore shrimping. In the Calcasieu Lake area where they conducted a survey of inshore shrimpers, shrimpers were typically family-based and fished from vessels of <21’, landing shrimp primarily for canneries; this differed from the Galveston Bay shrimpers, who fished from vessels 21’ to 40’ primarily and landed shrimp for fresh markets rather than canneries. This may have changed since the 1980s, however.

Whether or not they make up a smaller part of the overall Gulf of Mexico shrimp fishery, inshore vessels are more restricted seasonally than offshore shrimping, depending on shrimp life cycles, and many inshore shrimpers engage in several economic activities—including fishing for species other than shrimp—to make ends meet. These include working in various branches of commercial fishing, as deck hands on commercial vessels or captains and crew on charter boats, as well as various branches of construction, shipping, off-shore oil work, and tourist-related jobs. Offshore shrimpers will also take work in these sectors when problems arise in the industry, such as after the BP oil spill in 2010 (Griffith, Halmo, and Stoffle 2017; Halmo, Griffith, and Stoffle, 2019). The ability of shrimpers, deckhands, and others to move among different economic sectors may well be a fruitful area of future research in relation to stock assessments, in that: 1) this movement impacts their ability to respond to closures and other restrictions on fishing; and 2) their temporary absence from the fishery may reduce fishing pressure on shrimp stocks.

Management and legislative efforts have been partially responsible for the reduction in the fleet. For example, to reduce inshore shrimping, Texas implemented limited entry and license buy-back programs in 1995, purchasing over 25% of the licenses at that time. Both Texas and Louisiana, the two states with the largest shrimping fleets, have added costs to shrimping over time in the form of increased costs of licenses, severance and excise taxes, fees, and via sales taxes on goods and services that shrimpers need to

deploy and maintain their vessels (e.g., fuel, haul-out facilities, insurance). In Louisiana, further, since 2005, commercial shrimpers who routinely break laws regulating shrimping can have their licenses revoked.

Most of the state and federal management efforts implemented have been designed with the biological goals of protecting shrimp stocks and sustaining commercial and recreational shrimping. These include seasonal closures during times of the year when shrimp are spawning or vulnerable, restricting various types and sizes of nets and other gear, and enacting size limits. Additional measures to protect sea turtles and other bycatch have also been implemented, resulting in the much-disputed TEDs (Turtle Excluder Devices or, for those oriented more toward the benign, Trawler Efficiency Devices). Management efforts were responsible, too, for the title of E. Paul Durrenberger’s book about the Alabama seafood industry, major parts of which focused fishing: ‘It’s All Politics’: South Alabama’s Seafood Industry. Management and legislative interventions are only a few of the many issues that Gulf of Mexico shrimpers face, however. Others are noted below.

Problems affecting Gulf of Mexico shrimping

While several people contacted and sources consulted for this report suggested that labor was the key factor constraining Gulf of Mexico shrimping, both on shrimp boats and in the processing sector, imported shrimp are certainly as significant a factor in driving down the prices of shrimp while influencing consumer appreciation of shrimp quality. Recent attempts by Louisiana shrimpers to move state legislators to ban sales of or tax imported shrimp in the state have come about as a result of shrimpers’ fears that imported shrimp will put them out of business (www.pbs.org); in 2002, the Louisiana legislature enacted an excise tax on shrimp imported into the state. This is particularly problematic after incidents like the 2010 BP oil spill lower the value of wild caught Gulf shrimp from fears of contamination; given that the life cycle of shrimp exposes them to waters at different depths and different distances from shore—in inland estuarine habitats during their larval and juvenile periods and offshore as adults—these fears are understandable. Portrayals of this life cycle, as in figure 1, are quite common.

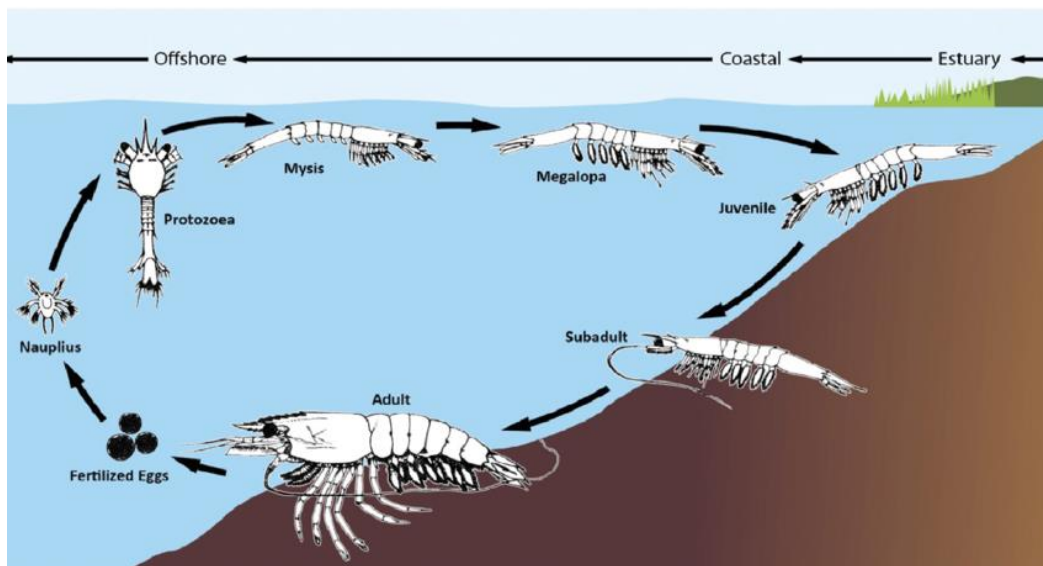


Figure 1: Typical Image of Shrimp Life Cycle

According to shrimpers and biologists, shrimp are an annual crop and, much like the “bugs” or insects they have been compared to, will return every year if just a few of the adults are left to spawn. However,

the destruction of coastal shrimp habitat from multiple common sources—gentrification, coastal erosion, sea level rise, industrial development, contamination, pollution, etc.—can influence shrimp spawning and populations. While the Gulf coast has a significant number of estuarine and other environments that are conducive to shrimp reproduction, population growth in the Gulf’s 56 coastal counties surpassed 15,000,000 in 2017, representing an increase of 26% since the turn of the century; this was the highest population growth rate of all U.S. coastal regions, adding 3,000,000 new residents (U.S. Census 2019). In line with this high growth rate, fully 8.5% of the Gulf population was employed in construction industries, presumably building homes, offices, and infrastructure for new residents and, in some cases, destroying or damaging shrimp habitat in the process.

Labor supply and ethnic issues facing Gulf of Mexico Shrimping

As with much of the seafood industry in the United States, Gulf of Mexico shrimping and shrimp processing has become dependent on immigrant and refugee labor at least since the 1970s, when Vietnamese refugees began moving into the area to take advantage of the region’s fishing resources. Some refugee migration to the Gulf Coast was secondary within the United States, after refugee service bureaus settled some of the 600,000 Vietnamese and other southeast Asian refugees in Iowa, Minnesota, and other inland locations, largely because of employment opportunities in meatpacking (Ha 2012). A decade after welcoming refugees from Vietnam, the United States also passed the 1986 Immigration Reform and Control Act (IRCA), which offered work authorization to millions of undocumented immigrants living in the United States and expanded temporary work visas, offering legal, seasonal work to people from Mexico, Central America, the Caribbean and other parts of the world to work in seafood processing as so-called guestworkers (Griffith 2006).

These two developments—the influx of refugees and new guestworkers—altered the ethnic composition of the Gulf of Mexico shrimp industry in ways that began in the 1970s and continue today (Nance, et al. 1991; Ha 2012). Ha reports that, after the 1980s, the Vietnamese populations in two coastal communities of Texas—Seadrift and Palacios—increased from practically zero to 10% and 12%, respectively, of the two towns’ populations; nearly all of these families were engaged in shrimping and shrimp processing, either directly or through network ties to shrimping families and merchants. Current estimates of the proportion of Vietnamese shrimpers range from around 20% to 40% of the fleet (Bennet 2003; Ha 2012; Patel, et al. 2018). In their work on the Deepwater Horizon oil spill, Patel, et al. (2018) note that significant numbers of Vietnamese families suffered due to the spill’s impact on shrimp and other crustaceans and shrinking markets for Gulf seafood that consumers perceived as contaminated. Specifically, nearly 60% of the Gulf coast Vietnamese community lost income due to the spill, 27% lost employment, and 12% could no longer pay all their bills.

Mexicans and other Latinos make up the bulk of the packing-shipping-processing sector for shrimp and other seafood, some of them carrying the H-2B visas that were developed under IRCA. Data from the U.S. Department of Labor on foreign labor certifications tracks numbers of H-2B visas in the United States, which are capped annually at around 66,000. Although seafood processing and shrimp vessels were among the first to use the H-2B program, they have received proportionately fewer of the visas over the years. In 2023, of 1,044,116 applications submitted to the U.S. Department of Labor for H-2B visas, only 165 were for seafood workers, deckhands, or related fields. Part of this was due to the implementation of a lottery system for H-2 visas, but it is more likely that seafood processors kept hiring former H-2B workers whose visas had expired yet who had connections to fish houses.

In short, Vietnamese and Latinos make up significant portions of the Gulf shrimping industry, with many of Vietnamese well-integrated into Gulf Coast coastal communities and many of the former H-2B workers now able to secure employment in seafood processing through ties to their employers. Researchers studying temporary visa programs have noted that workers with H-class visas have enough

documentation to obtain bank accounts, drivers licenses, social security numbers and cards, and other documents that are sufficient to evade deportation. Often, then, former H-2B workers continue working at their plants without their visas, already having satisfied I-9 requirements with their employers. In any case, most seafood dealers and processors in the Gulf of Mexico hire Latino workers.

H-2B workers have sound incentives to alter the terms of their employment in that, legally, they are contracted to work with one and only one employer. This significantly restricts their access to the wider labor market while increasing their employer's control over their working and living conditions and much of their time and movement. Employers tend to provide housing for H-2B workers, which often isolates them in remote labor camps and makes them doubly dependent on employers for their access to food, shopping, church, and other activities outside of work. Investigations around the United States have uncovered multiple cases of H-2B employers holding workers in indentured servitude or human trafficking-like conditions as well as committing wage theft (Southern Poverty Law Center 2013). Under these conditions, it is not surprising that some H-2B workers leave their primary places of work once they learn they can access additional documents with their visas.

With the current tightening labor market, however, labor is certain to remain a constraint on shrimping and shrimp processing in the near future. Further, although tensions between Vietnamese and white shrimpers have died down since the infamous KKK rally against Vietnamese in Seadrift, Texas in 1979, recent and continuing anti-immigrant and nationalist/ nativist opposition to foreign workers continue to exert pressures on those hiring immigrant workers, including Latinos, particularly in states like Florida and Texas with vocal anti-immigrant governors and legislatures. These sentiments may have a negative impact on the fleet. They may also lead to employers of H-2B workers isolating them even more than they already do under the terms of their contracts.

The other side of the labor supply coin is what may occur with economic downturns in non-fishing sectors where commercial shrimpers and shrimp processors work during slow or closed fishing seasons. Research on seasonal, low-wage workers has shown that workers in precarious economic conditions will often combine several livelihoods to survive and that these livelihood constellations provide multiple forms of income and other benefits, such as network ties to economic opportunity (Griffith 2022). Under these conditions, many workers tend not to burn their bridges, but remain attached to economic pursuits like commercial fishing or agriculture even after they have left these economic sectors for much of the year or for several years. Someone who has left commercial fishing for seasonal or permanent employment in the fossil fuel industry, working on an oil rig, for example, may return to commercial fishing as the fossil fuel industry experiences contraction with the pursuit of cleaner energy sources. Some evidence of this occurring in the Gulf of Mexico comes from Nance, et al. (1991), who reported that participation in inshore shrimping rose as employment in the petrochemical sector of Louisiana declined. Again, this may be an area to pursue for future research, in that a downturn in, say, construction, fossil fuels, or tourism, where shrimpers and shrimp processors often work during the off season, may lead to an influx of labor back into commercial fishing and shrimping.

Finally, Ha's dissertation on the Vietnamese in Texas shrimping and nail salon industries contains some interesting observations concerning the marketing of shrimp by Vietnamese shrimpers as well as the character of Vietnamese networks that, in both shrimping and nail salons, enable them to access employment through co-ethnic ties. Regarding shrimp marketing, Ha notes that, "Vietnamese shrimpers are able to sell the majority of their catch while their white counterparts threw back or discarded their by-catch... In this context, although most of the shrimp catch gets sold to a diverse market, the demand by co-ethnics for by-catch made co-ethnic consumers more important for shrimpers than for nail salon workers" (2012: 34). Ha also notes that shrimp by-catch often falls into the category of "exotic goods," which influences its value within the Vietnamese community—again one that is accessible through network ties, many reaching into the urban neighborhoods of Houston.

From these observations, it is conceivable that Vietnamese shrimpers conform to the “kinship systems” that Doerigner, et al. (1986) found in the New England fishing economy. They differentiate these systems from capitalist systems as follows: “The family-owned Portuguese and Italian fleets follow vastly different employment rules in staffing their boats than do boats in the processing sector... Kinship employment systems not only grant family members priority access to job opportunities, they also involve a commitment to provide work for relatives, even in times of substantial declines in catch” (1986:76-77). Combined with the ways that the “exotic” designation may influence the value of by-catch, the role of kinship and co-ethnic ties in the Vietnamese fleet suggests that, as a group, Vietnamese shrimpers operate according to different economic principles than others in the Gulf—principles that make it more difficult to understand and predict how they may respond to regulations, declines in catches, or the management of by-catch.

Summary: Ecosystem-Based Fishery Management and Shrimp Stock Assessments

This brief overview of some of the social, cultural, and demographic factors affecting shrimping in the Gulf of Mexico point to the need for incorporating human dimensions into stock assessments in line with ecosystem-based fishery management (EBFM) efforts. Clearly, several features Gulf Coast shrimpers and their communities intervene in the process of shrimping—including cultural practices, labor markets, political activism against shrimp imports, coastal gentrification and real estate development, attitudes toward immigrants and the foreign born, etc.—each of which can have direct affects on the numbers of shrimpers who enter and leave the fishery from season to season and year to year. Fluctuations in the shrimping population and changes to shrimp habitats—whether social or natural in origin—will certainly affect the volume and value of Gulf of Mexico shrimp, the livelihoods of shrimpers and their families who depend on them, and seafood consumer access to wild caught Gulf of Mexico shrimp instead of pond-raised, imported shrimp from abroad.

In an article on EBFM in the Caribbean, where several fish and shellfish species are experiencing overfishing, Valdes-Pizzini, et al. (2012) suggest embedding EBFM in the socio-ecological systems that Elinor Ostrom developed for managing common property natural resources, including fisheries. They note that EBFM begins with attention on ecosystems that include humans rather than focusing primarily or exclusively on target species, entailing the collection of data beyond those typically used in stock assessments (e.g., recruitment, biomass, fecundity, mortality) and considering how habitats affected by physical processes, climate change, and anthropogenic activities and behaviors have influenced stocks in the past, influence them now, and are likely to influence them in the future. Given that annual shrimp crops are highly vulnerable to changes in habitats that range from estuaries to the open ocean, as depicted in Figure 1 above, attention to human impacts on these habitats is likely to enhance our understandings and assessments of Gulf of Mexico shrimp stocks.

Acknowledgements: I am grateful for the assistance of Jade Chau of the Southeast Fisheries Science Center, Chris Bradshaw of the Florida Fish and Wildlife Conservation Commission, and John Williams of the Southern Shrimp Alliance in the preparation of this report. Any misrepresentations of data or other information they supplied is solely the responsibility of the author of this report and their participation does not necessarily mean they agree with the report’s findings or conclusions.

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