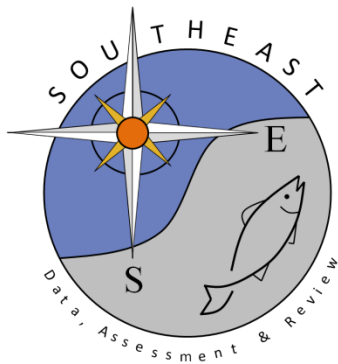


Social Dimensions of Hogfish (*Lachnolaimus maximus*)

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SEDAR 94

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Abstract

Hogfish (*Lachnolaimus maximus*) have increased in importance in the Florida Gulf, the Keys, and the South Atlantic regions over the past fifteen to twenty years among recreational and commercial fishing communities, especially since becoming a target among charter boat captains and private anglers who fish for the species with hooks & lines using live shrimp. Historically a fish targeted by divers with spears and difficult to catch with traditional baits on hook & line rigs, recent charter boat captain interest and media attention have promoted it as a highly desirable species among anglers. Both recreational and commercial fishers agree that the health and availability of hogfish stocks vary across different regions of the Gulf and South Atlantic, with the West Florida Shelf (WFA) and Carolinas home to the most robust populations and the Florida Keys, Miami, and East Florida stocks more distressed or having less suitable habitat to support large hogfish populations. Hogfish are not present in significant numbers in any U.S. Gulf states west of Florida's Big Bend region, but there are populations in Mexico, the Caribbean, and off the African coast. Commercial landings data show the WFS as the region with the highest landings. Since its rising popularity as a fish caught on hook & line, spear fishermen have become more concerned about increasing discard mortality, arguing that hogfish are particularly susceptible to barotrauma and that 100% of those landed from depths of over 25 feet never survive. By contrast, charter boat captains and some party boat companies claim that hogfish have moved from a marginally caught species to one that is regularly targeted by customers, becoming central to the for-hire business as other, formerly targeted species, such as gag and red grouper, have been more heavily regulated.

Social Dimensions of Hogfish

Introduction

Discussions of the social dimensions of hogfish (*Lachnolaimus maximus*), a member of the wrasse family, often begin with the phenomenon known as protogynous hermaphroditism, whereby hogfish are all born females before some transition to males later in life and acquire harems of 5 to 15 females that occupy a fairly stable territory, usually in and around reefs at depths of between 30 and 200 feet. While these characteristics clearly describe hogfish society, they are also relevant to a broader discussion of human interaction with the species. This report is less about the biological features of hogfish than about how, when, and why they have become a favorite commercial and recreational species along the Gulf coast of Florida and in the South Atlantic as far north as North Carolina.

As a popular food and sport fish, hogfish are a high-value commercial species that are landed commercially in at least 14 Florida ports as well as a species targeted by recreational fishermen, including by private anglers and passengers on party boats and charter boats. Hogfish are also caught off the coasts of Georgia and the Carolinas, but the Gulf fishery is confined to Florida. Recreational and commercial divers refer to them as “the darling of the diving community,” which reflects the occasionally emotional response that fishers have to regulations such as increased size limits and bag limits that, according to many, increase regulatory discards and hogfish mortality without protecting the species in any appreciable way. Instead, many claim that high grading (landing and discarding several smaller fish for each one a fisherman keeps) is common in the hogfish fishery. As evidence of the symbolic importance of hogfish, the owner of a spearfishing shop provided the logo in Figure 1 for some of his equipment, which profiles a rhinoceros spearing a hogfish. From his business, he also sells t-shirts and other goods depicting hogfish.



Figure 1: Spearfishing Equipment Company Logo

Management history

Hogfish have been caught in the Gulf and South Atlantic at least since the first landings were recorded by the state of Florida in 1939, and regulations affecting hogfish date to the early 1980s (Cooper, et al. 2013). By the mid-1990s, the three entities primarily responsible for managing hogfish—the state of Florida, the South Atlantic Fishery Management Council, and the Gulf of Mexico Fishery Management Councilⁱ—

established a 12” size limit and a recreational bag limit of 5 per angler. The size limit was increased to 14” in 2018, five years after SEDAR 37. Hogfish have also been affected by management measures covering all reef fish, such as the elimination of trawling for reef fish in the 1980s and 1990s and the phasing out of fish traps through the 1990s and into the 21st century. Bottom long lines were prohibited inside the 50-fathom line in the South Atlantic and inside the 20-fathom line in the Gulf, and additional license and permit regulations governed the sale of hogfish (Cooper, et al. 2013). Quotas for hogfish were established in the Gulf in 2011 and the South Atlantic in 2012 (Rindone 2025).

Landings, Value, and Regional Issues

Part of hogfish’s symbolic importance derives from their commercial value, selling for between \$5.00 and \$9.00 per pound at the dock and considered one of the best tasting fish of the Gulf, Keys, and South Atlantic. Commercial landings of hogfish pale next to many other Gulf and South Atlantic species, however. In the South Atlantic alone, for example, yellowtail snapper commercial landings for 2019-2023 averaged 1,314,485 pounds; in the Gulf, red grouper commercial landings in 2022 were 2,428,938 (SAFMC 2025; Pawluk and Atkinson 2024).

According to the Florida Fish & Wildlife Conservation data, 2020-2024 commercial landings have been highest in Crystal River/ Tarpon Springs and Tampa Bay—both west Florida sites. Although hogfish are landed off of the Atlantic coast of Florida and as far north as North Carolina, only the Florida keys sites have landings approaching those in the Gulf. This is reflected in how the species is allocated between the Gulf and South Atlantic coasts, with the ACL in the Gulf 150,400 lbs. ww for both commercial and recreational catches and ACL in the South Atlantic 41,934 fish for recreational and 12,677 lbs. ww for the commercial/ SG complex.

Table 1. 2024 Hogfish Landings Data, Selected Ports

Region	Pounds	Trips	Average Price	Value
Crystal River	4615	54	\$6.80	\$31,369
Tampa	2160	50	\$7.76	\$16,751
Keys*	955	98	\$6.06	\$5,679
Miami	608	27	\$5.48	\$3,328
Apalachee Bay**	162	4	\$6.45	\$1,045
Cape Canaveral	105	8	\$8.11	\$855
St. Augustine	102	6	\$6.57	\$671
GA-NC***	9	1	\$6.08	\$54
Total	8,716	248	\$6.66	\$59,752

*=includes Key West, Marathon, and Tortugas; **=Big Bend/ Panhandle region; ***=2021 data (not available for 2024).

Interviews with avid hogfish fishers, both recreational and commercial, reinforced the position that the West Florida Shelf hogfish population—particularly the shallow shelf off of the Tampa Bay/ St. Petersburg area—tends to attract the most fishing attention for having the most abundant hogfish stocks. Fishers also seem to agree that there is significant the regional variation in species abundance. Variation in hogfish abundance by habitat may be related to where hogfish spent their early years. Faletti and Stallings (2021), using isotopic analysis, found that adult hogfish found in deeper waters were more likely to have spent their juvenile years in deeper nearshore reefs than adult hogfish found in shallower waters, which were more likely to have spent their juvenile years in estuaries.

While the WFS stocks are viewed as fairly robust and healthy, those in the Keys are considered less so and around Miami the species, according to fishers, is highly stressed. One fisherman interviewed criticized a scientific report claiming that hogfish were nearly extinct because the report was based principally on hogfish off of Miami, where fishing pressure has been high for several years, particularly among Cuban American fishermen. Others reported that Florida's east coast simply did not have the habitat to support large populations of hogfish, but that, farther north, in North Carolina, the hogfish populations were healthy and the individual hogfish tended to be larger. The largest hogfish caught on hook & line on record in the Gulf and South Atlantic, at over 21 pounds, was caught off of South Carolina, although larger hogfish have been speared off of the WFS; the Gulf Council places their maximum weight at around 24 pounds with a lifespan of up to 23 years. Fishermen interviewed for this report attributed differences in sizes to the seasonal variation in fishing effort between Florida and locations farther north. Hogfish can be targeted throughout the year in Florida, they claimed, but more during the summer in the Carolinas and Georgia, allowing fish to grow larger farther north.ⁱⁱ

Fishing for the species evidently interrupts key social relations among male hogfish and their harems of up to 15 females in ways that may influence the species' ability to reproduce; Munoz, et al (2010) found that hogfish in a marine sanctuary maintained their harems while those in a nearby fished area did not. In light of this, and the fact that hogfish, born females and becoming males as they age, concern over the sustainability of the species is clearly warranted. Yet no one interviewed for this report could remember the recreational or commercial quotas for hogfish being reached any time in the past several years. Also, some fishers mentioned that hogfish are quite resilient when it comes to recovering from disruptions to social relations between males and females.

Divers who spend a good deal of time observing hogfish reported witnessing two males fighting for control of a harem nearly immediately after the male in the harem had been caught. In other cases, when a male is removed from its harem, one of the larger females begins transitioning to male to assume the previous male's role, a process that may take up to two months. One diver who regularly took part in hogfish research efforts, observing and counting them, mentioned that it was still unclear exactly what besides a harem losing its dominant male triggers the transition.

Although hogfish have been fished commercially for several years, fishers interviewed mentioned that the development of the market for hogfish occurred initially in Florida and then spread to Mexico and other international sites in the Caribbean and Latin America. The Caribbean Sea supports another species of hogfish, the Cuban Hogfish (*Bodianus pulchellus*), that is sold as an aquarium fish. While it is also a wrasse, its status is not considered in SEDAR 94. Several recent reports on hogfish in media sites with large circulations, such as USA Today, have touted the succulence of hogfish, providing multiple recipes for ways to prepare the fish. YouTube videos about hogfish have also proliferated over the past few years, again noting its superior taste (e.g. <https://www.youtube.com/shorts/RxOdf-DfYlc>) as well as teaching anglers how to catch it with hook & line rigs.

Methods of catching hogfish

Historically, hogfish have been primarily a spearfish fishery, with divers pursuing them, recreationally and commercially, along with gag grouper, mangrove snapper, and other species that bottom feed in 25 to 35 feet of water or deeper, up to 200 feet. Spearfishers note that the males make relatively easy prey because, when guarding their harems, they will come close to divers to assess whether they pose a risk, returning for a second shot if the first shot misses. One fisher interviewed for this report mentioned that, at one time, there were around 550 vessels fishing commercially for hogfish, but that that number has declined as it became more difficult to target a variety of deepwater species during the same dive. The

regulations on gag grouper have been particularly responsible for increased fishing pressures on hogfish, according to many of those interviewed. Commercial divers are limited in terms of time and space they can cover during fishing excursions; with increased regulations on other deepwater species, including gag and red grouper, commercial spearfishing has not been as lucrative. Increased regulations on red grouper have also played a part in transferring effort to hogfish on charter boats and among recreational anglers.

In 2016 and again in 2022, Frank Sargeant (2016, 2022) published articles in Florida Sportsman magazine that discussed catching hogfish with live shrimp on hook & line rigs, basing his observations largely on charter boat captains who had been targeting hogfish for their customers for some time. Fishers, scientists, and regulatory personnel interviewed for this report unanimously agreed that the shift from hogfish being an exclusively spearfished fishery to including capture by hook & line took place relatively recently, between 10 and 15 years ago. The shift seems to have been spearheaded by charter and party boat captains, originating as red grouper populations became less important as target species due to their abundance and to the Grouper-Tilefish IFQ program. Today, most West Florida charter boat and many West Florida party boat captains advertise catching hogfish from their vessels (see Figure 2).

The introduction of hook & line fishing to the hogfish fishery has been met with consternation from the diving community, who claim that rates of regulatory discards have increased because of this.ⁱⁱⁱ As noted earlier, several divers claimed that high grading was rampant in the fishery, but one owner of party boats said that few fishers on his boats catch the bag limit of 5 hogfish, saying that three is more common; he even said that he would welcome a reduced bag limit. This same owner, however, mentioned that the increased size limit from 12” to 14” had resulted in higher regulatory discards.

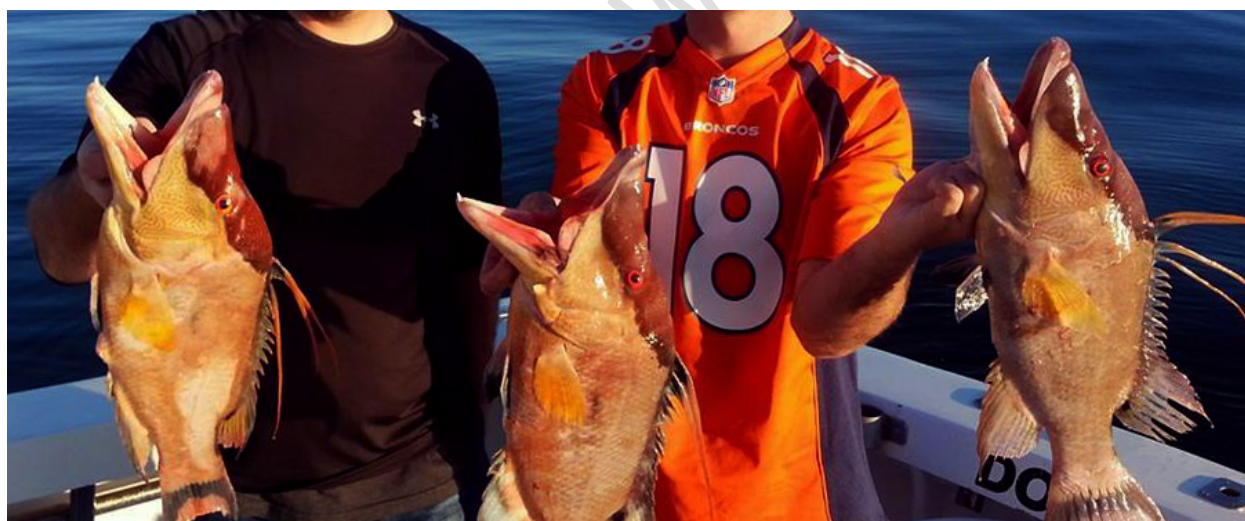


Figure 2: Recreational Anglers displaying hogfish

In contrast with the mortality associated with the hook & line portion of the fishery, divers claim that undersized hogfish can survive being speared as long as the spear does not pierce vital organs and that few divers would spear an undersized hogfish in the first place. “There is a strong stigma against bringing an undersized hogfish to the surface,” one diver said. “No one wants to be the guy who is ridiculed for shooting a short fish.” Some divers mark their spears with the 14” length to assure that they do not take undersized fish, but others claim that experienced divers can tell a 12” from a 14” or larger fish on sight.

Seasonal considerations

I noted earlier that the ability to fish for hogfish throughout the year and reduced fishing seasons farther north may account for larger fish being caught off of the Carolinas, but fishers we interviewed varied in terms of whether or not hogfish were seasonally available. While many divers said that they could target hogfish throughout the year, charter boat captains interviewed for this report said that hogfish were “more of winter than summer fishery.” During the summer months, perhaps related to hogfish spawning seasons, male hogfish become more protective of their harems and neither male nor female hogfish bite on hook & line rigs. At that time, charter boat captains shift to lane snapper and other species. Again, according to fishermen interviewed for this report, hogfish are often caught after “fishing through” large numbers of grunt, porgies, and other, less desirable species. McCarthy (2014) listed the following species as associated with hogfish from his analysis of logbook data: yellowtail snapper, mangrove snapper, mutton snapper, red grouper, black grouper, white grunt, jolthead porgy, blue runner, and lane snapper.

Barotrauma and discard mortality

Among the more contentious issues surrounding hogfish is its susceptibility to barotrauma. Fishermen interviewed for this report, particularly divers, mentioned that mature hogfish spend most of their time feeding in deep water, in and around reefs, rarely rising to mid-level depths to feed and therefore not used to lighter water pressures. In addition, hogfish have large back teeth for crushing crustaceans, their preferred food, and when they are surfaced from even as shallow depths as 25', their stomachs expand up their throats against these teeth and shred; thus, even mild amounts of barotrauma tend to be fatal to hogfish. People interviewed who are experts at hook & line fishing for hogfish mentioned that the ideal depth for catching hogfish is around 80', from which they would suffer from severe barotrauma. In light of this, as noted earlier, divers believe that hook & line capture of hogfish results in 100% fishing mortality, whether fish are landed or discarded. Many divers argued that, because many species are off-limits to spearfishing (e.g., snook, redfish), that it would not be unprecedented to limit hogfish to spearfishing, banning the landing of them with hooks & lines.

Clearly, charter boat and party boat businesses, along with recreational fishers landing them from private boats, would object to this. West Coast Florida charter boat fishermen in particular claim that hogfish have become a key part of their businesses, providing important substitute species for more heavily regulated species in the grouper-snapper complex. They tend to land hogfish with a variety of other reef species, however, so are not completely dependent on them for customer satisfaction. As just noted, they are often landed with different reef species, leading one charter boat captain to say, “There’s a lot of bycatch associated with the hogfish fishery.”

Summary

Hogfish are an extremely important fish to the recreational and commercial diving communities in West Florida and other parts of the fish’s range, as well as of increasing importance to recreational hook & line fishers, charter boat captains, and owners of party boats. Effort shifts from various species in the snapper-grouper complex to hogfish have occurred as quotas and regulations limit catches of other reef species. Controversy over the barotrauma issue noted above has caused tensions between divers and hook & line fishers over the past 10 to 15 years, leading some to advocate for catching hogfish only by spear fishing. Although regulatory discard mortality may be high with the increased popularity of catching them by hooks & lines, commercial and recreational landings tend to be low compared to other species in the Gulf and South Atlantic. These issues may increase in social importance as hogfish become better known to consumers as a superior food fish, as easily prepared as grouper and as tasty as triggerfish.

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ⁱ At the time, the Gulf of Mexico was still called the Gulf of Mexico, as it had been for 473 years; the recent temporary name change had not yet occurred.

ⁱⁱ Claims like these are from fishers' interviews and not necessarily those of the author of this report.

ⁱⁱⁱ The Gulf Council website places discard mortality at 10% for hook & line fishers but 100% for spearfishers.