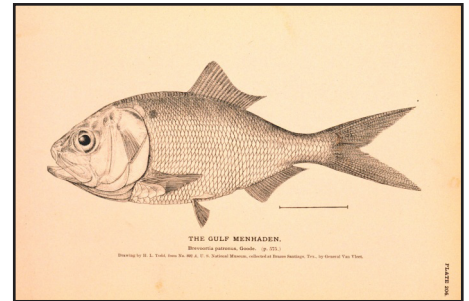




## The Gulf Menhaden; *Brevoortia patronus*. Part Two: History of the Fishery

The Gulf menhaden fishery was not always second in the country for most pounds of finfish landed per year. In fact, it was not until the 1980s that the industry ascended to prominence. Without the influence from several individuals, as well as from innovations in gear and maritime equipment, the Gulf menhaden fishery would not be where it is today.

The fishery dates back to the late 1800s, though early records for landings, processing plants and equipment types are scarce until the 1940s. Some of the earliest information recorded involves the men credited with establishing the Gulf menhaden fishery. Wallace Quinn, "Kerosene" John Santos Carinhas, and brothers Harvey, Otis and Gilbert Smith were some of the first fishermen to get the fishery off the ground. Quinn was from Maryland who, in 1939, built a menhaden plant along the Singing River near Pascagoula, Miss., and then later another plant at Apalachicola, Fla. Carinhas, also from the East Coast, was responsible for bringing his shrimping and menhaden boats to the Gulf. His boats served various companies, as he himself never owned any factories. The Smith brothers built two factories as a part of their Smith Gulf Operations, one at Moss Point, La., in the early 1940s and the other at Cameron in 1945. During this time, annual landings were slim - from 1918 to 1944 estimates range between 2,000 and 12,000 tons.



The Gulf Menhaden. *Brevoortia patronus*. Photo credit: NOAA's Historic Fisheries Collection

The end of World War II marks the time when the fishery expanded, and the resulting growth was recorded. Beginning in 1945 log books and maps were used by vessels to record landings, gear used and locations where catches were made. This information has been valuable to researchers as the fishery has increased and has given managers important insight about where the fishery began, as well as where it is heading.

One of the first advances in the fishery came in the late 1940s as spotter planes were utilized to help find menhaden schools. These aerial aides located schools of menhaden and relayed the information to the nearby vessel captains. This helped eliminate the uncertainties of where menhaden were located and allowed companies to use their resources more efficiently. For the next two decades, the number of spotter planes in the fishery increased to more than 30, with each company either owning, renting or leasing them. Today spotter planes are both a standard and essential element of the fishery, and have been a major factor in the fishery's success.

The 1950s saw several changes in the fishery that helped to relieve the strain placed on the menhaden fishermen and increased the efficiency of the fishery. In 1951 the first fish pumps were added to carrier vessels as an alternative method to removing the fish from the seine by hand. Before pumps, crewmen would have to hand-load pogies from the seine into a brailer, a large basket that was then lifted into the hold of the carrier. The fish pump saved time and effort by drawing the fish into the hold through a large, suctioned hose.

The mid '50s also saw a change in net material, from natural fiber seines to nylon ones. Nylon proved to be much stronger than its predecessor, thus saving fishermen repair time and money due to nets breaking from large hauls. Hydraulic power blocks were also incorporated during this time. First recorded in 1956, power blocks were, and still are, utilized by both purse boats when retrieving the seine from either end. As the seine is retrieved, fish are concentrated into the bunt, allowing for an easier transfer to the carrier vessel. Before hydraulic blocks, men had the arduous task of drawing in the net by hand. Power blocks saved companies an estimated six minutes per set, and required 6-10 fewer crew. Its benefits were welcomed, and in only eight years 80 percent of pogy vessels were outfitted with the gear.

Refrigeration is a necessity for harvesting large amounts of fish in the Gulf during the summer months. However, no refrigerated vessels existed when the fishery first started. Early vessels in the Gulf were forced to fish close to port and offload more frequently so that the product would remain useable. In 1956 two menhaden vessels were outfitted with cooling systems that pumped chilled seawater through the fish holds. By 1972, all 75 Gulf vessels in the fishery were equipped with the technology, allowing boats to remain at sea for 4-5 days before having to offload the menhaden.

The number of menhaden reduction plants increased through the '50s, '60s and '70s to capitalize on this relatively new fishery. Beginning with only two facilities in 1945, the number rose to 13 by 1965. At the height of the fishery, reduction plants ranged from Sabine Pass, Texas, to Apalachicola, Fla. The number of plants slowly declined through the latter part of the 20th century as companies either consolidated or left the fishery, and currently only four plants remain - plants in Abbeville and Cameron, La., and Moss Point, Miss., are owned by Omega Protein, and the plant in Empire, La., is owned by Daybrook Fisheries.

The reduction process has not changed much over time, besides being more efficient with processing. When vessels come into port to offload, menhaden are removed via a large hose attached to a fish pump. Fish are pumped into rotating hoppers within the reduction plant that hold between 1,000-1,500 "standard" fish, the equivalent of 670-1,005 pounds. Fish are then moved to the cookers, where steam is used to cook the fish mass. Oils, solubles and water are pressed from the fish, and the liquid products are separated by centrifugation and stored in tanks. The pressed fish, called press cake, is dried into "scrap," which is then ground up into fish meal. The oil is shipped throughout the country, as well as overseas, for use as a nutritional supplement and in cooking oils. Fish meal is used in feeds for poultry, swine, cattle and domestic animals, and aquaculture.

Like most modern fisheries, the Gulf menhaden fishery has taken advantage of technological advancements to make fishing and processing more efficient and profitable, and to meet market demands. As the fishery looks to the future, new emphasis on ecosystem management and multiple-species interactions will also require new evaluations of each component of the composite Gulf fishery.

- William Sheftall IV

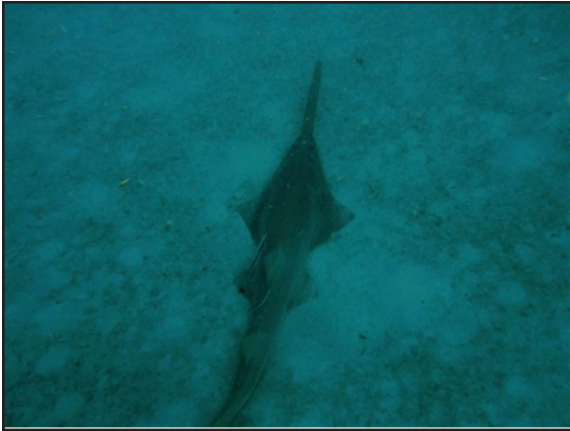
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Smalltooth sawfish. Photo credit: Mote Marine Lab/NOAA Fisheries

### **Sawfish Recovery Plan Finalized**

In January 2009, NOAA fisheries published the final plan for recovery of the endangered smalltooth sawfish (*Pristis pectinata*). This fascinating animal lived, at one time, from Brazil to New York, and throughout the Caribbean and Gulf of Mexico.

An elasmobranch, it is related to sharks, skates and rays, and looks like a cross between a skate and a shark, with a snout that is equipped with a long two-bladed saw fitted with rostral teeth along each edge. It is a long-lived and very slow growing animal that produces few young.

These factors, combined with its slow-moving nature and tendency to get tangled in every sort of fishing gear and marine debris, make this animal extremely susceptible to population depletion.

From the first records in the 1830s and for the next 100 years, smalltooth sawfish were common in the warmer coastal U.S. waters. Population concentrations occurred on both coasts of Florida, with common reports from the mid-Atlantic coast during the summer. It is thought that these fish may have been seasonal migrants from Florida. In the northern Gulf of Mexico, smalltooth sawfish were most common during summer, but the presence of small specimens and presence in winter may have indicated a reproducing, resident population.

Like all elasmobranchs, sawfish utilize internal fertilization, but surprisingly little is known about other aspects of reproduction in this species. Sawfish are thought to be ovoviviparous, which refers to development within an egg within the female, and hatching just before birth. The long toothed rostrum is very flexible in the embryo, and there is a membranous sheath covering the rostrum until just after birth. Litter size is unknown, but may be as small as 5-10. The youngest sawfish live in very shallow waters; a few inches deep. It is thought that this helps them avoid predation by sharks. Exposure to predation by birds in shallow water may not be a problem with sawfish, as the

## **Lagniappe Fisheries Newsletter**

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possession of a toothed rostrum nearly as long as their bodies would make them poor choice of a meal for a predator that swallows prey whole. Mangrove lagoons are a particularly important habitat for juvenile sawfish. Sawfish tend to move to deeper waters as they grow, but remain over relatively shallow sand/mud habitats throughout their lives.

Smalltooth sawfish have been considered endangered since 2000, and the largetooth sawfish (with fewer, larger rostral teeth) is considered a Species of Concern. Sawfish used to be a fairly common incidental catch in Louisiana; one data set showed that shrimp trawlers averaged about 40 fish

per year in 1950. By the '60s, averages dropped to a couple of fish per year. Since 1990, only one specimen has been verified in Louisiana.

The recovery plan for this species emphasizes habitat preservation in the south Florida areas where the fish is still fairly common, with the expectation that occurrence in places like Louisiana that are outside of the core areas should also increase. Strengthening the prohibition of any killing of these fish is also specified. Sawfish have been sometimes killed for food (meat and fins), or just to get them

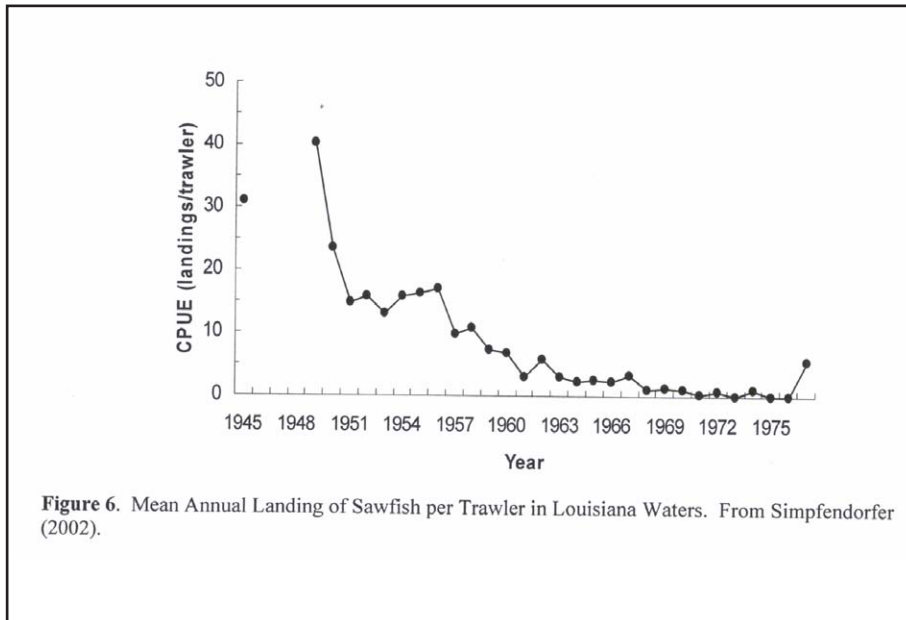


Figure 6. Mean Annual Landing of Sawfish per Trawler in Louisiana Waters. From Simpfendorfer (2002).

off lines or of nets. Their rostra have also been cut off to sell as souvenirs, and have been used as ceremonial objects in Asia. It will take decades of protection to produce significant population effects with sawfish, if it is possible.

Why does the sawfish have a saw? Some early accounts describe the fish slashing at schools of baitfish in order to feed on the injured bait. Not everyone is convinced that this would be an efficient feeding strategy for the sawfish, but it would fall in line with the known uses of the rostral "bill" in the billfishes (like marlin). (<http://sero.nmfs.noaa.gov/pr/pdf/STS%20Recovery%20Plan-Final-011309.pdf>)

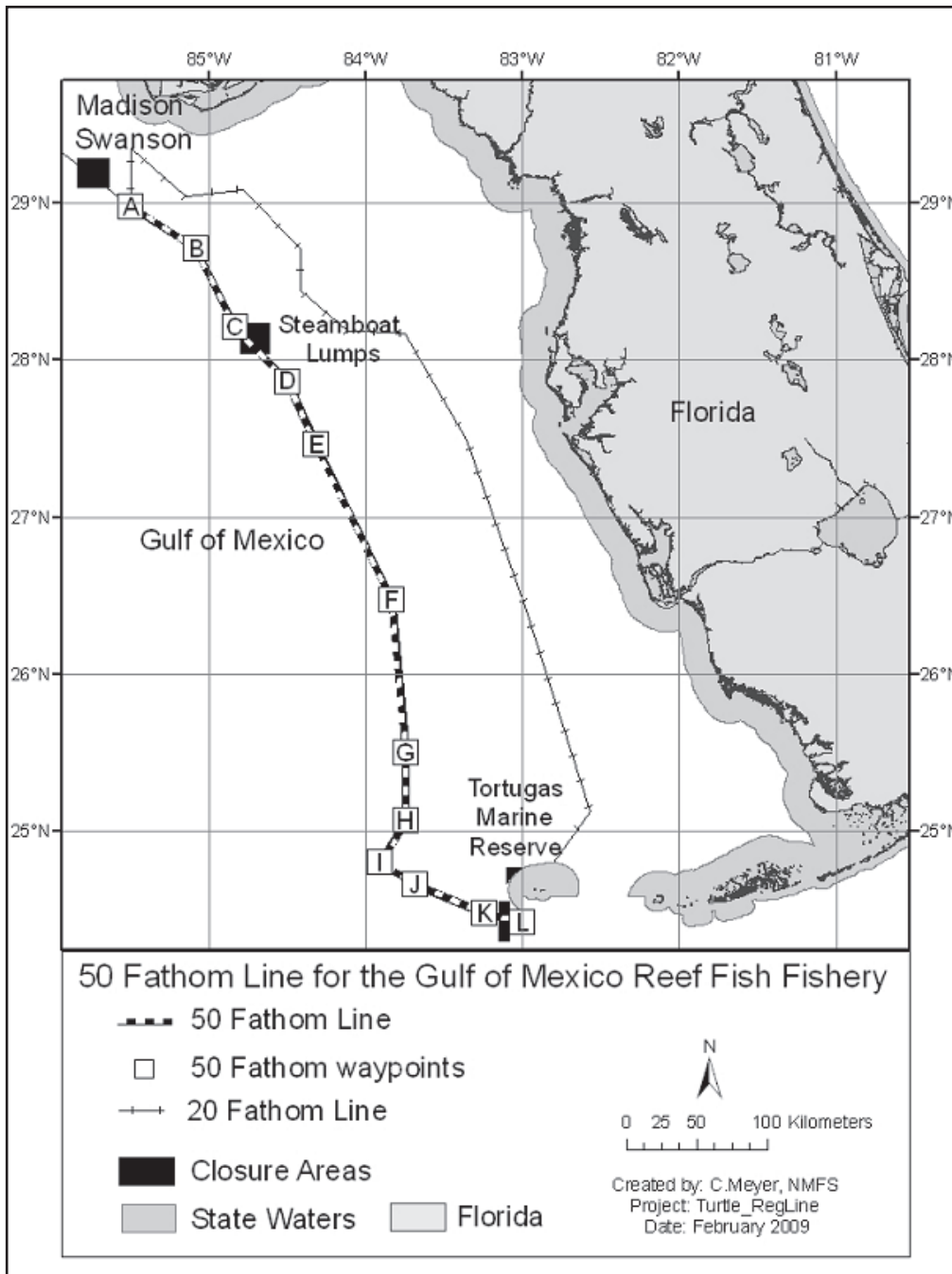
- Glenn Thomas

## NOAA Announces Emergency Rule to Protect Threatened Sea Turtles

NOAA's Fisheries Service has announced an emergency rule to protect threatened sea turtles in the Gulf of Mexico. The temporary rule, which takes effect May 18, 2009, will require the commercial reef fish longline fleet to fish seaward of a line approximating the 50-fathom contour in the Gulf of Mexico. Current regulations require this fleet to fish seaward of 20-fathoms.

The Gulf of Mexico Fishery Management Council requested this emergency rule after a NOAA observer study documented the reef fish longline fleet was incidentally catching and killing too many loggerhead sea turtles.

This emergency rule will primarily affect longline fishermen who target shallow-water grouper species, such as red grouper. Most shallow-water grouper fishing occurs within the 50-fathom contour off the west Florida shelf – an important sea turtle feeding area – where most of the incidental sea turtle bycatches occur. The emergency rule also prohibits all reef fish longline fishing east of 85 degrees 30 minutes west longitude in the Gulf of Mexico after the quotas for deep water grouper and tilefish are reached.



“We are working closely with the council and constituents to find more permanent solutions to protect sea turtles affected by this fishing gear,” said Roy Crabtree, NOAA’s Fisheries Service southeast regional administrator. “I hope we can identify options that not only provide sea turtles the protection they need, but minimize the economic affects to the fishing industry.”

Loggerhead sea turtles are listed as “threatened” under the Endangered Species Act. NOAA’s Fisheries Service is implementing the emergency rule in accordance with both the Endangered Species Act and the Magnuson-Stevens Act.

The Magnuson-Stevens Act requires that conservation and management measures minimize bycatch of non-target species and minimize mortality when bycatch cannot be avoided. The

emergency rule will be in effect for 180 days and can be extended for up to an additional 186 days. The Gulf of Mexico Fishery Management Council is considering actions to address this issue on a long-term basis.

## Accountability Measures and Annual Catch Limits

The Gulf of Mexico Council is currently developing a generic amendment to implement catch limits (ACLs) and accountability measures (AMs) for the remainder of the stocks it manages. For stocks managed jointly by the South Atlantic and Gulf councils (coastal migratory pelagics and spiny lobster) separate joint ACL amendments will be developed. The new provisions of the Magnuson-Stevens Act require the Gulf council to set annual catch limits for stocks managed under its fishery management plans to ensure that overfishing does not occur.

In the event that the catch limits are exceeded, accountability measures are predetermined actions to either prevent further catches in the current fishing year or return catches to the specified levels in the following year, depending upon the availability of real-time data and the current status of the stock. Additionally, the council is required to prevent overfishing and rebuild stocks to levels that will support maximum sustainable yield - the largest catch that can be taken from a stock over an indefinite period.

Annual catch limits must be established by 2010 for all fisheries where overfishing is occurring, and by 2011 for all other fisheries. In January, the council requested an emergency rule that would address the issue in the short-term. That rule will temporarily close the bottom longline fishery in waters less than 50 fathoms for the entire eastern Gulf of Mexico and will become effective May 18, 2009. Additionally, during the 2009 fishing year while the emergency longline closure is in effect, once the 2009 deep-water grouper quota is caught reef fish bottom longline gear will be prohibited in the eastern Gulf of Mexico (east of Cape San Blas).

The emergency can remain in effect for 180 days, but the council has requested that NOAA Fisheries end the emergency action as soon as possible if the biological opinion currently under development indicates that actions outlined in Amendment 31 will sufficiently address the turtle bycatch issue in the longline fishery. The updated biological opinion is expected to be completed by August. Council staff is drafting a scoping document to discuss the new requirements and possible approaches to establishing ACLs and AMs. A draft scoping document is tentatively scheduled for review by the council in June. Scoping meetings will be held later this summer to garner public input. The council has established ACLs and AMs for stocks that are classified as overfished or undergoing overfishing (greater amberjack, gray triggerfish, red snapper and gag), as well as for red grouper. These ACLs are subject to adjustment when new stock assessments are completed.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/newslet/NEWSLTR04a-2009.pdf>

## Recreational Red Snapper Fishery to Open June 1

The 2009 recreational red snapper season will open June 1 and close at 12:01 a.m. Aug. 15, 2009, as long as the State of Florida agrees to adopt compatible regulations. Early indications are that the state will comply.

An early closure is necessary because new data shows that the 2008 recreational catch in the Gulf exceeded the quota by approximately 1.2 million pounds, and federal rules require a reduction in harvest when the quota is met or projected to be met.

Red snapper are overfished and undergoing overfishing in the Gulf. Shortening the fishing season will reduce the harvest of Gulf red snapper and help rebuild the fishery's population.

### **New Regulations for Gulf Grouper Effective May 18, 2009**

NOAA Fisheries Service has published a final rule implementing new regulations to end overfishing of gag and revise shallow-water grouper (SWG) management measures. These measures are outlined in Amendment 30B to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico submitted by the Gulf of Mexico Fishery Management Council.

For the recreational fishery, the rule:

- Establishes annual catch limits (ACLs) and accountability measures (AMs) for gag and red grouper.
- Reduces the gag bag limit to two fish per person per day and the aggregate grouper bag limit to four fish per person per day.
- Increases the red grouper bag limit to two per person per day.
- Extends the closed season for recreational shallow-water grouper to February 1 through March 31.

For the commercial fishery, the rule:

- Establishes ACLs and AMs for gag, red grouper, and SWG.
- Establishes a commercial quota for gag of 1.32 million pounds (mp) in 2009, 1.41 mp in 2010, and 1.49 mp in 2011.
- Increases the commercial quota for red grouper to 5.75 mp.
- Sets the SWG quota as the sum of the gag and red grouper quotas with an additional 0.41 mp allowance for other SWG species.
- Establishes an incidental bycatch allowance trip limit for commercial gag and red grouper of 200 pounds for the species that first reaches 80 percent of its quota.
- Reduces the commercial minimum size limit for red grouper from 20 inches to 18 inches total length to reduce bycatch.
- Ends the February 15 to March 15 season closure in favor of a four month closure of "The Edges" that applies to both commercial and recreational fishing.

The rule also:

- Eliminates the end date for the Madison-Swanson and Steamboat Lumps marine reserves.
- Requires a person aboard a federally-permitted Gulf of Mexico commercial or for-hire reef fish vessel to comply with federal regulations for reef fish species regardless of where the fish are harvested to increase compliance with federal regulations.

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## THE GUMBO POT

### Louisiana Shrimp Sauce Piquant

2 lbs peeled shrimp	1 cup parsley tops, chopped
2 medium onions, chopped	1 t salt
1 cup water	¼ t black pepper
½ cup vegetable oil	few drops of Tabasco sauce
3 toes garlic, chopped	6 thin slices lemon, quartered
1 cup celery, chopped	1 cup green onions, chopped
1 16-oz can whole tomatoes	1 16-oz can tomato sauce

In a large skillet sauce onions in heated oil until light brown. Add water, garlic and celery. Cover and cook until tender. Add tomatoes, tomato sauce, salt, pepper and Tabasco. Simmer uncovered over low heat for 30 to 40 minutes until thickened. Add shrimp and lemon slices. Cover and cook 15 minutes over low heat. A few minutes (2-3) before serving, add parsley and green onions. Serve over cooked rice. Serves 6.

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