

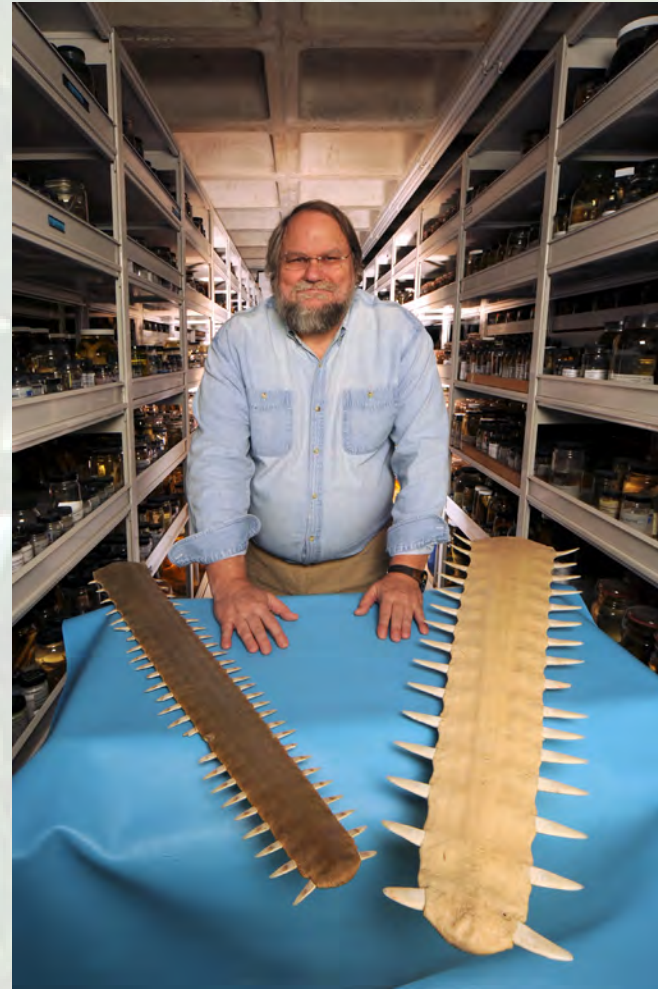
Smalltooth Sawfish:

a large yet little-known fish in local coastal waters



History

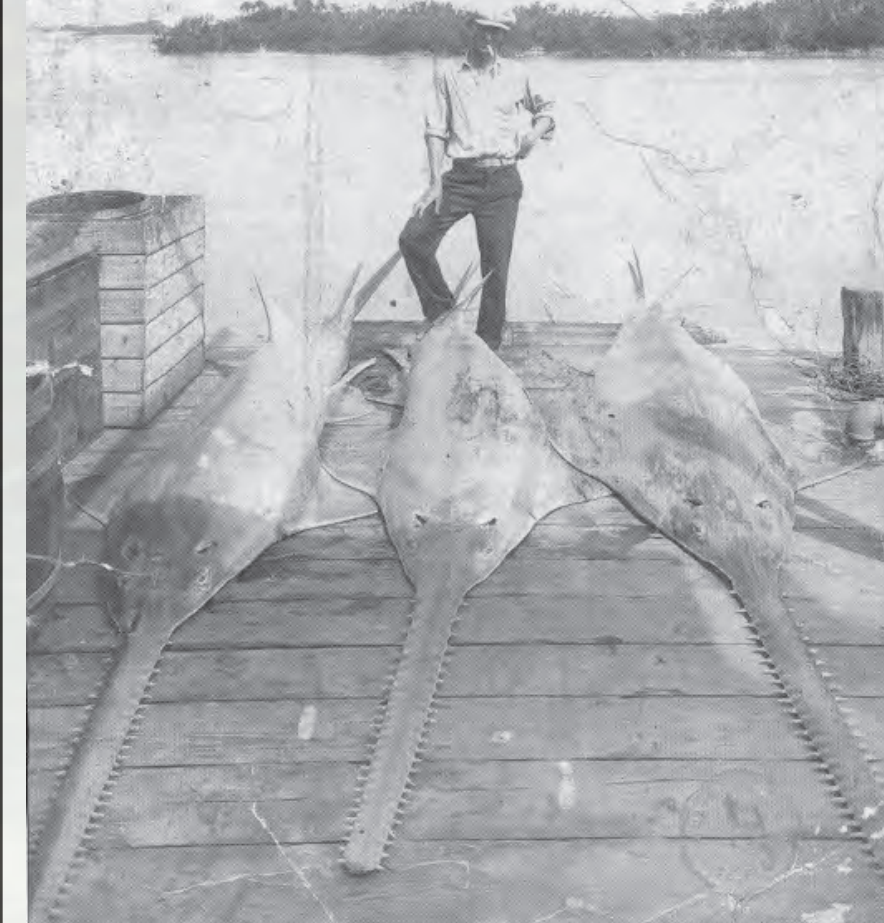
For most people, seeing a sawfish is not an everyday occurrence, in fact, most folks don't even know they exist in Florida. They are nowhere near as numerous as they used to be, and their range has been reduced significantly, but sawfish seem to be maintaining a small core population along the southwest Florida coast.



George Burgess, director of the Florida Program for Shark Research at the Florida Museum of Natural History, University of Florida; curator of the International Shark Attack File and the National Sawfish Encounter Database.

In June the Rookery Bay National Estuarine Research Reserve's "Summer of Sharks" lecture series welcomed George Burgess, curator of the National Sawfish Encounter Database from the University of Florida. In his presentation on sawfish, we learned about their history, population dynamics, threats, and the incredible importance of pristine, mangrove-forested habitat to these unique shark and ray relatives.

Reaching lengths up to 18 feet, the sawfish uses its toothed rostrum, or saw, as a hunting tool. Violently sweeping its head from side to side, it slashes through schools of fish, stunning them so they can be sucked up into the mouth whole. The saw is also used for sifting through the sandy bottom. The "teeth" on the saw are not true teeth but actually extensions of the skin, not sharp enough to cut through bone.

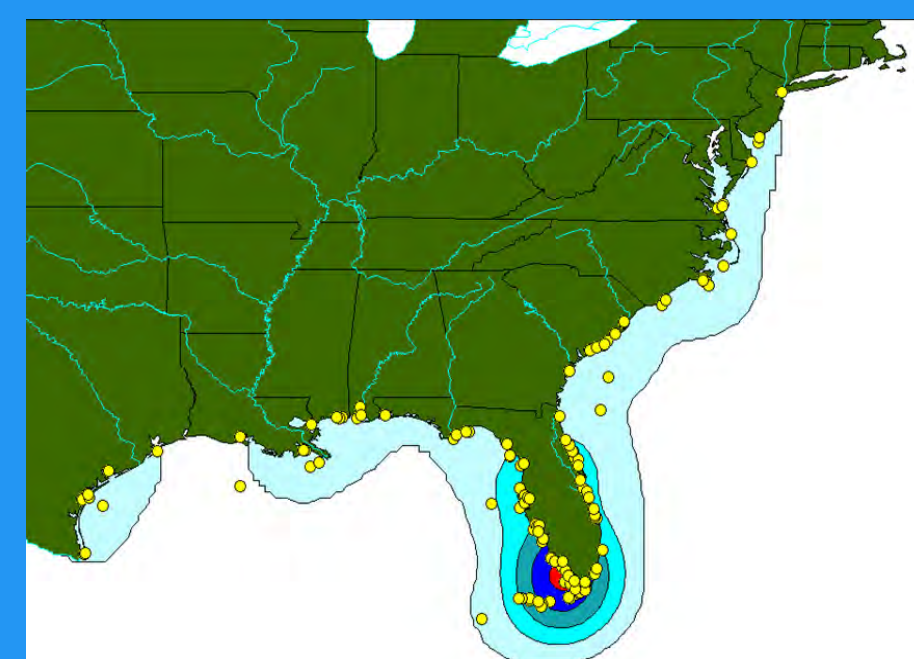


Three incredibly large sawfish were caught in a commercial fishing net in the late 1920s when fishing was even better than it is today in the Marco Island area.

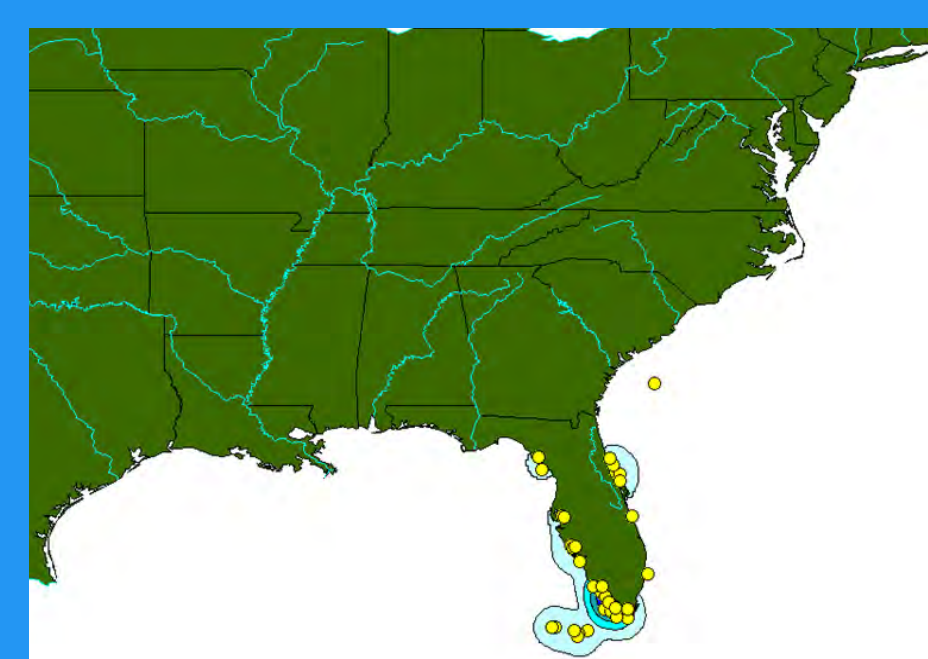
Two species of sawfish once roamed the sea floor of the Gulf of Mexico and eastern Atlantic from New York to Texas and Brazil, but they were often regarded as killers, thieves, inconveniences to fishermen, and misunderstood oddities. They were easily entangled in fishing gear and their saws were taken as trophies or sold as souvenirs. With the increase of human activity over the 20th Century, a combination of habitat loss, fishing pressure and incidental bycatch dramatically decreased their populations worldwide.

Smalltooth sawfish capture locations

George H. Burgess and Tobey H. Curtis, FLMNH - UF



Pre-1900



1985

"Mangroves provide crucial habitat for young sawfish to avoid predators." -- George Burgess

Conservation Measures

The smalltooth sawfish, *Pristis pectinata*, was reported in 1895 as regionally abundant throughout coastal Florida, including in the Indian River Lagoon which was historically known as an aggregation area. It wasn't until 1981 that scientists recognized the significance of the sawfish's disappearance from there and blamed it on habitat degradation from development. Conservation efforts came too late for the largetooth sawfish, *Pristis perotetti*, which was last seen in the U.S. off the coast of Texas in 1961.

With such a small population to work with, very little is known about the sawfish's life history. Scientists believe they:

- reach sexual maturity at about 10-12 years of age
- have a gestation (pregnancy) period lasting about one year
- deliver eight to 15 pups in a litter
- require 1-3 years between litters
- live up to 30 years in the wild

Because sawfish reproduce at such a slow pace, scientists believe it will take decades for the population to show signs of recovery. Sawfish research in Florida began in 1999. Since then, the number of sightings has increased from 50 to about 300 per year. More than 10,000 individuals have been documented since 1900, but much more information is needed to support conservation measures.

In 2003, the smalltooth sawfish was federally designated as an endangered species, making it illegal to catch, possess or harm them.

The National Sawfish Encounter Database (NSED) was established in 2008 as an effort to unify various state and independent databases, as well as a tool to better evaluate recovery efforts.

Current population estimates in the U.S. are between 5,000 and 10,000 individuals, with the majority of sightings reported in southwest Florida.

Research has revealed that sawfish use mangrove-forested estuaries as nurseries, and as they mature they move farther away from shore into deeper waters.

In 2009, the National Marine Fisheries Service designated more than 600,000 acres in the Ten Thousand Islands and Everglades National Park as critical habitat for this species.



Rookery Bay Research

Baby sawfish (neonates) and juveniles are extremely vulnerable to predators such as crocodiles, sharks and even dolphins, which is why the protective shelter provided by mangrove estuaries is so important. Plus, estuaries provide a very productive food resource of small invertebrates and fish.



A juvenile sawfish, captured in a Rookery Bay Reserve shark research net, is measured before being tagged and released.

Reserve biologist Pat O'Donnell knows firsthand that the mangrove estuaries in the Rookery Bay Reserve are good habitat for young sawfish. Since 2000, when he began monthly shark research, O'Donnell has captured, documented and released more than 30 sawfish ranging in size from 31 to 96 inches, making it clear that juveniles are using the sandy bottom estuaries of the Ten Thousand Islands as habitat.

Tag and recapture methods used for shark research are also proving extremely helpful in studying sawfish. As recorded in O'Donnell's data, several individuals have been tagged and recaptured, enabling growth rates of juvenile sawfish in the area to be documented. C.A. Simpfendorfer, G.R. Poulakis, P. M. O'Donnell (2007). Growth rates of juvenile smalltooth sawfish *Pristis pectinata* Latham in the western Atlantic. *Journal of Fish Biology* (2008) 72, 711-723.

Tips for anglers and boaters

Because sawfish haunt shallow coastal waters and feed on some of the same prey items as sport fish, they are occasionally caught on hook and line or entangled in marine debris. It is illegal to hook or net one without a permit, however, Sawfish Safe Release Guidelines have been developed:

- Keep fish in the water at all times.
- Carefully untangle and remove line from saw or cut line as close to the hook as possible.
- Do not attempt to handle the animal or remove the hook unless using a long-handled de-hooker.
- Do NOT remove the saw.

Anyone encountering a sawfish is urged to report their sighting to the National Sawfish Database to assist with ongoing research.



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<http://www.flmnh.ufl.edu/fish/sharks/sawfish/sawfishencounters.html>

Smalltooth sawfish captures 2000 - 2010					
Year	Month	Day	Sex	Length (mm)	Tag #
2000	7	24	M?	1080	9568
2002	2	18	F	1480	10449
2002	2	18	F?	1460	10450
2002	2	20	M?	1600	11301
2002	6	2	M?	980	11329
2003	3	25	F	2070	10449
2003	3	25	M	1700	11928
2003	3	25	P?	1650	11929
2003	3	25	F	2450	11926
2003	4	22	F	805	11937
2003	7	5	F	1050	12698
2003	7	5	F	1030	12691
2003	7	5	F	1000	12693
2003	7	5	M	1020	12694
2003	8	17	F	1245	12691
2003	8	17	F	1120	12693
2003	9	1	F	1250	12691
2003	9	1	F	1170	12693
2003	9	1	M	1225	12694
2004	5	5	F	1540	12693
2004	7	7	M	1750	R 0846
2004	7	7	F	1900	R 1101
2004	8	21	F	1790	R 0884
2004	11	14	M	2000	S 13444
2005	4	17	M	2150	12694
2005	10	6	M	1330	R 0903
2006	5	18	F	2280	R 0904
2007	7	5	F	1550	R 0905
2008	8	6	M	1760	R 13711
2009	7	13	M	2310	S 14852

This chart depicts each individual sawfish that has been captured, measured, tagged and released during Rookery Bay Reserve's ongoing shark research program. Color codes depict individuals that were recaptured at least once. For example, on February 18, 2002, a female measuring 1,480 mm (about 58") was tagged and released, and recaptured on March 25, 2003. During that 13 month period she grew an astounding 590 mm (23 inches).