

SHARK AND RAY RECOVERY FACTSHEET

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Recovery Toolkit Series by Shark and Ray Recovery Initiative



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Smalltooth sawfish recovery in Florida, USA

SUMMARY

Direct and indirect protection measures, public education and a long-term science-based recovery plan are bending the curve for a rare and iconic species in US waters.

LOCATION

South and southwest Florida, USA



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SPECIES PROFILE

The smalltooth sawfish is one of five sawfish species. It grows up to 5m in length and can live for 30 years.² Juvenile smalltooth sawfish live in shallow nearshore coastal and estuarine waters, including mangroves, while adults venture further offshore.



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IUCN RED LIST STATUS
Critically Endangered

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CITES' APPENDIX I
LISTED

Commercial International trade prohibited

Aa

SCIENTIFIC NAME
Pristis pectinata

Kg

WEIGHT
up to 350kg

🐟

LENGTH
up to 5m



HISTORICAL POPULATION TRENDS

Globally, sawfish populations have declined by 95% from their pre-fishing size, and they're found in only 20% of their former range.³ They're susceptible to commercial and recreational fishing, and are sometimes targeted for their saws, fins and meat for use as food and in traditional medicine.

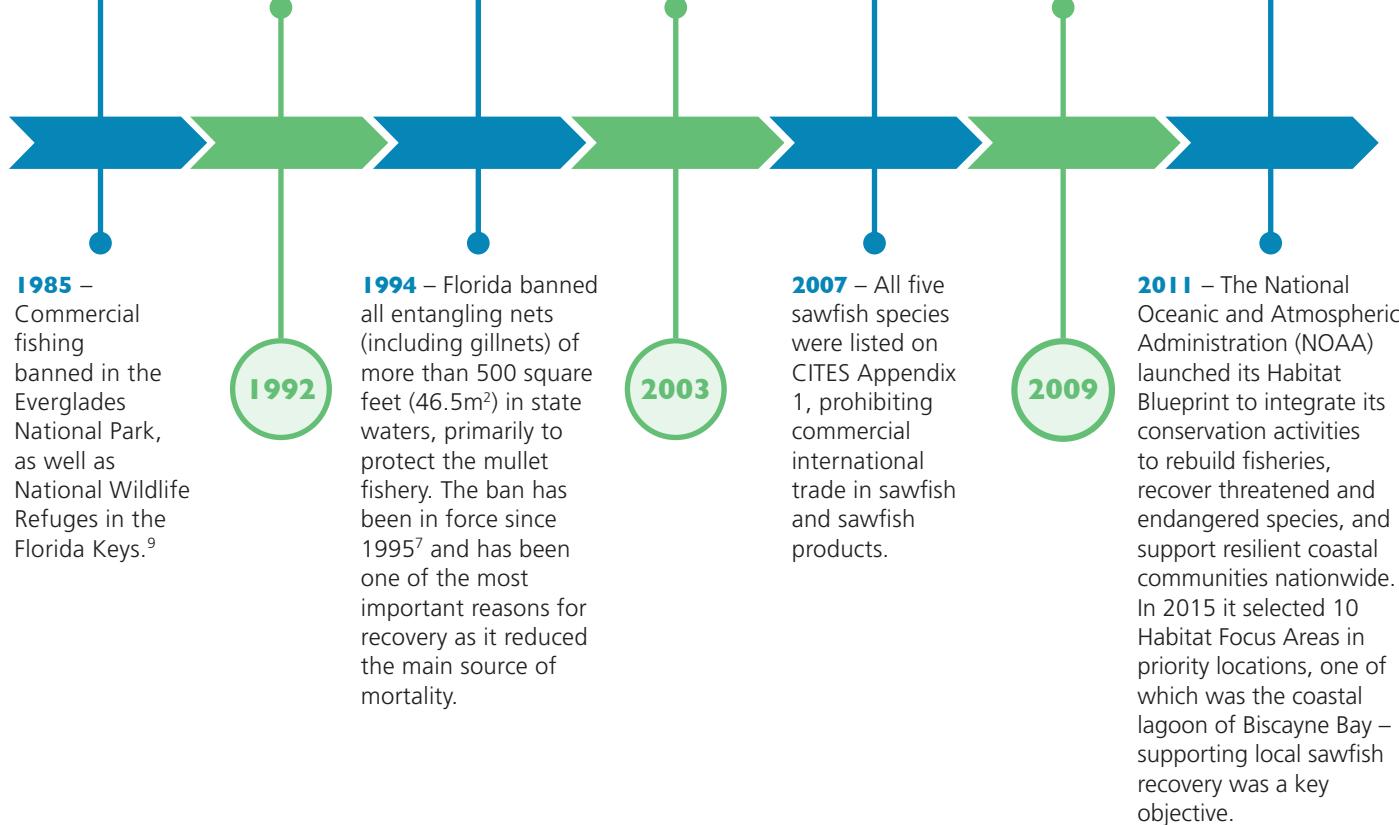
The primary vulnerability of the US population of smalltooth sawfish was as bycatch: its saw means it easily gets entangled in any large-meshed fishing gear, and releasing it without harm usually means damaging the net – so

instead most fishers used to either kill the animal or cut off its saw to remove it.⁵

The smalltooth sawfish is also particularly vulnerable to habitat destruction. On the Florida coast, agricultural and urban development (the rate of urbanization is four times the national average⁶), dredge and fill operations, boating, erosion, and poorly managed freshwater run-off have led to a substantial loss in sawfish habitats. Before recovery efforts began, it had disappeared from most of its historical Floridian ranges and was at risk of local extinction.



RECOVERY TIMELINE



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Indirect Florida state conservation and management measures have also considerably reduced smalltooth sawfish bycatch and appear to have helped avoid local extinctions:

- The use of large trawls with more than 500 square feet of mesh area is prohibited within 3 miles of the coast of the Gulf of Mexico and within 1 mile of the coast of the Atlantic Ocean.
- Longline gear with more than 10 hooks is prohibited in state waters unless in transit.

Source: National Marine Fisheries Service. (2009). Recovery Plan for Smalltooth Sawfish (*Pristis pectinata*). Smalltooth Sawfish Recovery Team for the National Marine Fisheries Service, Silver Spring, Maryland. <https://repository.library.noaa.gov/view/noaa/15983>



BENEFITS OF RECOVERY

The US smalltooth sawfish population has been stabilizing and potentially increasing back into its historic range. When it was listed as Endangered in 2003, there had been just two records of sightings in the previous 20 years on the Florida Panhandle. By contrast, there were six records in 2016 alone. An optimistic projection suggests full recovery could be achieved in 40-50 years.¹⁰

A 2020 study focused on Biscayne Bay shows an exponential increase in sawfish sightings in recent years, and suggests some individuals could be making annual visits to the area.¹¹ (Admittedly, this increase in sightings could also partly be due to increased public awareness following the Sawfish Recovery Team campaign.)

Smalltooth sawfish may well play important roles in estuarine communities,¹² but there is limited direct evidence and further research is needed. However, all sawfish conservation efforts have positive spillover effects for other issues facing coastal communities, notably food security and ecosystem resilience.

"If you can solve the sawfish problem, you've solved the blue carbon and food security problem," says Professor Nick Dulvy of Simon Fraser University and former Co-Chair of IUCN Shark Specialist Group. "Because if you've solved sawfish, you've figured out how to make tropical fisheries appropriately selective and sustainable."



KEY SUCCESS FACTORS

The Smalltooth Sawfish Recovery Plan was a serious strategic operation: the expert team spent several years gathering data and other information to ensure there was a firm scientific foundation for their efforts before any other work took place. Sawfish are slow-growing, slow to mature, and bear few young – so it was also very important to be biologically realistic about how long recovery might take. When the Plan was launched, it had a 100-year time horizon.

One of the Plan's focuses has been to protect the habitats of juvenile sawfish – reducing early life mortality means that more sawfish reach sexual maturity and reproduce.

Banning fishing in multiple marine park areas has also helped stop inadvertent catches – and for occasions when sawfish do still get accidentally captured there are clear guidelines for their safe handling and release, including gear-specific procedures.

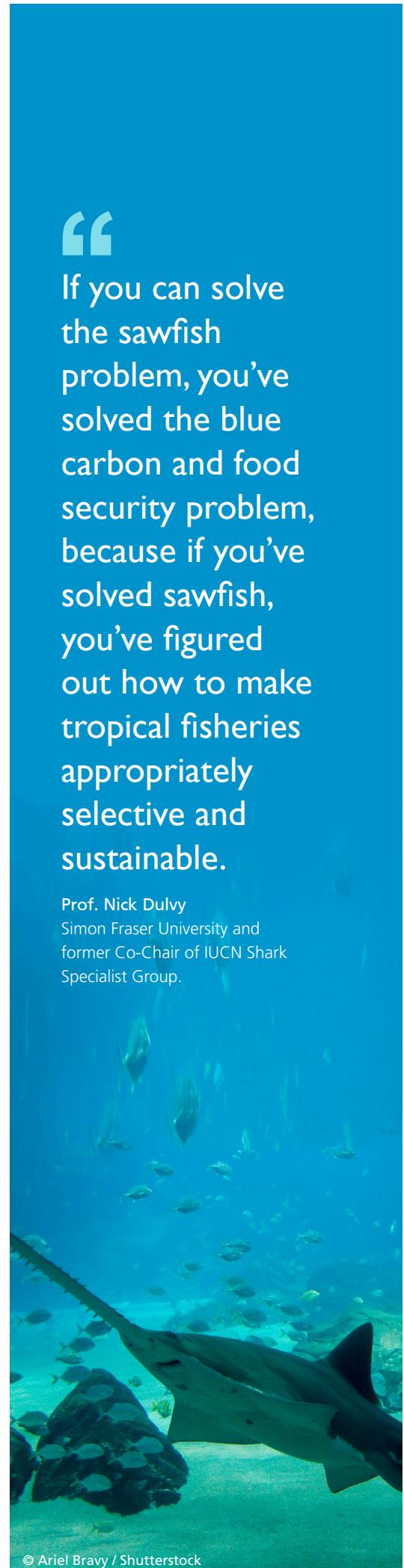
The Sawfish Recovery Team also put a lot of effort into working with conservation organizations to raise public awareness: as a result, people in Florida now know what a sawfish actually is, which makes an enormous difference to conservation efforts. Citizen science data¹³ have been particularly useful in building up evidence about sawfish habitats.

Finally, the state of Florida takes a zero-tolerance approach to violation of its sawfish policies. For example, a commercial fisher who killed a sawfish in 2019 was sentenced to two years of probation and 80 hours of community service, and fined US\$2,000.¹⁴



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Prof. Nick Dulvy
Simon Fraser University and former Co-Chair of IUCN Shark Specialist Group.



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CHALLENGES

One of the most important factors in the recovery of Florida's smalltooth sawfish population was the 1995 ban on large mullet nets – but this faced a lot of resistance from commercial fishers. Critics argued that the ban destroyed livelihoods and simply shifted the catch to the more politically powerful sport fishing lobby.

REFERENCES

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This factsheet was produced by the Shark and Ray Recovery Initiative (SARRI), a partnership between Elasmo Project, James Cook University, Wildlife Conservation Society, and WWF, working together to recover some of the most threatened sharks and rays in their last refuges around the world.

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FOR FURTHER INFORMATION: To learn more about the Shark and Ray Recovery Initiative and discover the other factsheets from this series, visit www.sarri.org.

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LESSONS LEARNED

- Strong science-based recovery and management plan with a biologically realistic timescale
- Clear decisive leadership of recovery plan by multiple experts
- Plans supported in the long term by realistic levels of financial investment
- Well planned public education and awareness-raising activities won broad backing for conservation plans
- Multiple actions – marine reserves, awareness raising, gear alterations etc. – together created a snowball effect