



sea saw

In a world of weird and wonderful creatures, the sawfish is perhaps one of the strangest. Once abundant along the coast of West Africa, it acquired great cultural significance among the island peoples there, a significance that is now threatened by the species' plummeting numbers. Marine biologist **Ruth H. Leeney** recently went to Guinea-Bissau in search of sawfishes. ▶

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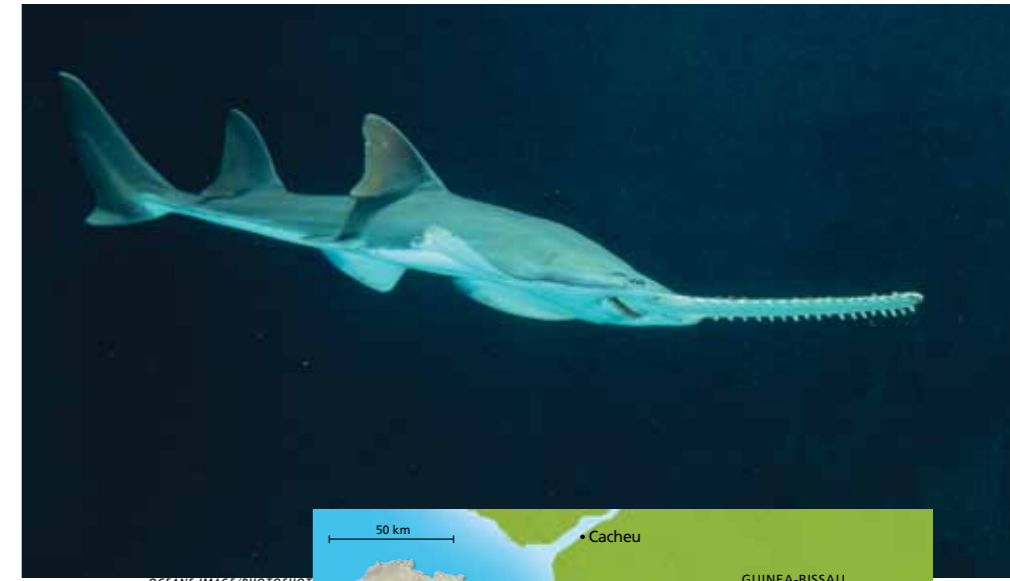


The sawfish is a strange, mysterious animal that looks as though it belongs in an undersea fairy tale. Yet this bottom-dwelling relative of sharks and rays, which can grow to seven metres long, is no mythical creature. It used to be a commonly sighted species along the West African coast, where it was seen as a symbol of strength and protection. Its significance, even today, is evident from its depiction on the coins and notes of the Central West Africa currency, the Communauté Financière Africaine franc. But sawfishes are disappearing worldwide.

This unique fish probably started to decline as soon as fishing nets were introduced to its habitats as its fearsome weapon – a tooth-embedded rostrum, or ‘saw’ – made it particularly susceptible to entanglement. The destruction of mangroves, an important habitat, the purchase of saws by collectors and additional pressure for its fins for the shark-fin trade have probably accelerated its demise. Amazingly, the extirpation of sawfishes from almost the entire west coast of Africa appears, until recently, to have gone almost completely unnoticed by the international community.

In October 2012, I set out for Guinea-Bissau in search of sawfishes. A small, little-known country to the south of Senegal, Guinea-Bissau is thought to be one of the last refuges for the species in the eastern Atlantic. Once a Portuguese colony, the country has a brightly painted capital, Bissau, that is characterised by the columns and curves of Mediterranean architecture. But the tropical West African air, warm and heavy with rain (and ever-full of chirruping cicadas), armies of ants and encroaching vines have overtaken this neglected city and the pink and lemon walls of once-stately colonial homes are faded and crumbling. Many roads are cracked and gaping; the few cars that rattle through here know well which streets to avoid.

Yet beyond this disarray Guinea-Bissau offers a view into the West Africa of a bygone era. Here is a country where the forests, mangroves and even the seas remain relatively untouched, the lack of infrastructure having prevented the onslaught of industry from the Western world hungry for its resources. Offshore, in West Africa’s only



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archipelago, the Bijagós Islands harbour a unique culture that has, thanks to limited transport options from the mainland, remained far more intact than most in this region. Football shirts, miniskirts and flip-flops may now be favoured over grass skirts, but the people on the islands still hold their animist beliefs, perform ceremonies and traditional dances, and attach special significance to creatures such as the hammerhead shark and the sawfish.

The shallow seas of Guinea-Bissau are thought to provide important habitat for sharks, rays, manatees, turtles and myriad other marine species. My study involved training teams of local people to interview fishermen along the coast and throughout the Bijagós Archipelago. Through these interviews, I hoped that we would gain information about the places where sawfishes used to be caught and where they may still be found; the last known catches of sawfishes; and the cultural and economic importance of the species to coastal communities in Guinea-Bissau. We also asked what fishers perceived to be the reason for its decline in recent decades.

I was hopeful that during more than a month of living alongside and talking to small fishing communities, we might

DID YOU KNOW?
The sawfish's rostrum can sense electric fields from prey, and is used to attack and pin fish to the seafloor.

ABOVE Once plentiful in the waters off West Africa, small-toothed sawfish, like this one photographed in a French aquarium, are an increasingly rare occurrence in the wild.

OPPOSITE The once-stately colonial buildings of the capital, Bissau, now provide a crumbling backdrop to daily life in the city.

PAGE 33 Local fishermen use simple boats and catch whatever they can to sell or to feed their families. Some nets ensnare many species, including sharks and rays.



one village only allowed us to do our interviews, perhaps eat some fish and rice, and then move on. The heat was always oppressive. Only the highways of ants that crisscrossed the village paths moved with any speed. And everywhere, fishermen said the same thing: sawfishes used to be plentiful here, but we don't find them anymore.

The culture of the Bijogo people includes numerous ceremonies to mark important life stages and events. We were told that as part of the ceremony for male circumcision, sawfishes used to be caught and brought to the village elders as an offering or sign of respect. In ceremonial dances, men used to wear headdresses topped with the saw of a small sawfish; these are so difficult to find that the headgear now bears a wooden replica instead.

Locally, the loss of such an iconic species has not gone unnoticed, and several village chiefs stated their support for any conservation action that might allow the sawfish to return to the waters of the Bijagós. Otherwise, one chief told me, the children in his village would never see a *caês* (the local name for the sawfish), or know its importance to their own cultural identity.

Following these two weeks in the Bijagós, I spent time on the mainland carrying out training courses, after which the interviewers dispersed to smaller villages and spoke to as many fishers as they could. Here, sawfishes do not have the same cultural importance as they do on the islands, and are viewed mainly as a source of food and income. The sawfish itself remained elusive, with most of the fishermen claiming that they had last seen it in the 1980s or '90s. Only in southern Guinea-Bissau did several interviewees mention catches in recent years, offering hope amid an overwhelmingly negative narrative.

Local fishermen perceived overfishing, additional fishing pressure from other West African countries, and the practice of finning (where fishermen remove the fins from a shark or ray, then throw the rest of the body back into the water) to be the most likely causes for the decline of sawfish.

'Some fishermen, they let the blood and body fall into the water, and this scares away the other fish,' explained Mamadou, one of the interviewers. 'If you went to your village and saw the blood and legs and arms of your friends, you would run away too!'

While it is unlikely that sawfishes, which are predators, would avoid an area because of the presence of sawfish blood or remains, finning does decimate shark and ray populations. The frequent mention of foreigners fishing in Bissau-Guinean waters was unsurprising, since industrial vessels from Europe, Asia and elsewhere as well as smaller craft from neighbouring West African countries are known to work in these waters, even entering protected zones where only locals are allowed to fish using approved gear. Many respondents also mentioned that the use of nets had made catching sawfishes much easier. These ideas fit closely with our understanding of the causes of sawfish decline worldwide.

Five weeks in one of Africa's poorest countries presented a litany of challenges for the project, but also allowed me to understand more deeply the hurdles Guinea-Bissau will have to overcome if it is to lift itself from its current stagnation and move forward. The challenge of conserving the sawfish must be met within this setting, working together with local and international fishing communities and conservation groups. We have also gained a better idea of where to start looking for sawfishes.

The next, critically important step is to get out on the water with local fishermen, to find live sawfishes, prevent further captures and protect their habitats from destruction. If we do find them, conserving sawfishes in Guinea-Bissau will be a race against time, against the shark-fin industry, which may have contributed to their demise, and a battle to implement strict management measures in a country that has the best of conservation intentions, but no resources to enforce protected areas.

Do you have information on past or recent sawfish catches in Africa, photographs of sawfishes or their saws? If so, please e-mail sarah@africageographic.com. To read more about Ruth Leeney's work, follow her blogs at africageographic.com



WHAT IS A SAWFISH?

Worldwide, there are five species of sawfish (in the family Pristidae, from the Greek for saw), of which two inhabited the east Atlantic, their ranges extending from Portugal and Morocco in the north to Angola in the south. A third species occurs in the Indian Ocean, including the east coast of South Africa and Mozambique. All sawfish species are now considered to be Critically Endangered (see www.iucnredlist.org for more information).

ABOVE Just four rostra were located during the five-week survey, with the only reports of recent catches of sawfish coming from southern Guinea-Bissau, where this family was photographed.

OPPOSITE, ABOVE Fishermen were interviewed wherever they could be found. This man was questioned as he sorted palm fruit using a huge turtle shell.

OPPOSITE, BELOW The use of fishing nets has had a severe impact on sawfish populations around Guinea-Bissau. To the islanders of the Bijagós Archipelago, the species has great cultural significance. On the mainland, it appears on banknotes and coins, but is valued more as a source of nutrition and fins.



hear of recent catches, verifying that these endangered fish do still inhabit Bissau-Guinean waters. I even dared to hope that I might see a sawfish with my own eyes.

We started our work in the sleepy Orango National Park, comprising five of the Bijagós Islands – Orango, Imbone, Canogo, Meneque and Orangozinho. On the island of Orango, warm seawater lapped the palm-fringed, pale gold beaches where local women and children dug for cockles at low tide. After three days of training and initial interviews, we travelled by boat to other islands within the park, sometimes wading through the mud of tidal flats and sloshing along paths across miles of rice paddies to reach villages hidden away from the coast.

Life there was quiet and slow, and outsiders were rare. The children viewed us with fascination, the adults with acceptance, but the few hours we spent in any

DID YOU KNOW?
The 'teeth' protruding from the rostrum are not real teeth, but modified tooth-like structures called denticles.