

TRAVEL

05 October 2014

Protecting sharks off Florida's eastern coast

Web link <http://www.bbc.com/travel/feature/20140828-protecting-the-sharks-off-floridas-eastern-coast>

In Florida Wildlife

By David Fleshler



Predators of the deep
(James RD Scott/Getty)



Life on the boat
(Andrew Milne Photography)



On the hook
(Andrew Milne Photography)



A helping hand
(Andrew Milne Photography)



Sizing one up
Sizing one up (Andrew Milne Photography)

Under a darkening Florida sky, with lightning flashing in the distance, we rode our 46ft dive boat away from Ft Lauderdale's strip of beach hotels, on a mission to find the animals that most humans fear.

Leading our expedition was Derek Burkholder, an imposing, barefoot encyclopaedia of shark biology and a research associate at [the Nova Southeastern University's Guy Harvey Research Institute](#). Under his direction – and through a new periodic weekend offering at the Westin Beach Resort and Spa – we were participating in a new study that aims to protect the sharks off Florida's eastern coast; catching the animals, fixing them with identification tags, taking tissue samples and returning them unharmed – though possibly irritated – to the ocean.

Personally, I hate boats. I hate the seasick feeling that settles in about half an hour into a trip. I hate the clouds of diesel exhaust. I hate being trapped on a rolling, pitching craft until the captain decides to return to shore.

But for a good cause, I was willing to endure a certain amount of nausea. As a newspaper reporter in South Florida, I've written dozens of stories about sharks. I've covered attacks – a kite boarder killed by a

bull or tiger shark, a woman attacked while floating on an inner tube, a diver in the Bahamas suffering a fatal leg bite – but the score has been sharply in favour of humans, who kill an estimated 100 million sharks every year. They die as accidental by-catch on commercial fishing gear and they're caught for their valuable fins – sometimes hacked off while they're still alive – to make shark fin soup, considered a delicacy in China. About one-fourth of the world's sharks and rays are threatened with extinction.

"For the last couple of decades, they had a really bad reputation because of [the movie] Jaws," said Sonja Fordham, president of Shark Advocates International. "There have been some terrific advances in shark conservation over the past 20 years. You see kids getting more and more fascinated with them, like they do with dinosaurs. But that doesn't mean we have all the protections in place. For the most part, sharks are still in deep trouble, and we need to channel that fascination into sound policy."

As a slow-to-mature species, sharks give birth to few young and can't easily recover from years of industrial-scale fishing. And even though Florida, a leader in shark conservation, has banned the killing of 25 shark species, including the sandbar, dusky, lemon, tiger and great hammerhead, many of these species migrate thousands of miles, so a shark protected by state or even national laws could end up on a hook someplace else.

Burkholder's plan was to set out 10 baited hooks marked by red buoys, let them sit for an hour and then check for sharks, using the collected data to establish exactly which species live where, at what depths and at what times of year, as well as what they eat and how far they travel over the course of their lives. The hooks, fist-sized arcs of stainless steel, are too big to catch anything else.

"This gear is designed to be as healthy for the shark as can be," Burkholder said. "We are going to hook them, but only in a way that doesn't hurt the shark."



(Andrew Milne Photography)

Like most stretches of ocean, the waters off southeast Florida have seen few systematic studies on the dozens of shark species that live there. Bull sharks, lemon sharks, great hammerheads and several others prowl the coral reefs near shore, often seen by snorkelers and divers. Tiger sharks and the occasional great white and whale shark can be seen farther out to sea. Vast swarms of blacktips migrate along the coast, coming close enough to prompt lifeguards to whistle swimmers out of the water. In the 12 expeditions Burkholder had led so far, he and his usual corps of graduate students had obtained data on 59 sharks.

"Never, ever wrap your hand for any reason in the line," Burkholder said to the volunteers who were eager to do the menial labour of science in exchange for getting a closer look at the creatures they were

hoping to save. "If a shark's going to run, there's no way anyone on this boat is going to stop them. It's never worth trying to fight the shark and going overboard."

Taylor James, a petite, 20-year-old marine biology student, took a bloody hunk of bonito and drove a hook through its head as bait. Then she dropped a 50lb weight overboard to hold the line to the ocean floor.

"Clear!" Burkholder shouted as the weight carried the baited line deep into the water.

Catching sharks is never a routine business, even for experts like Burkholder and his crew. Several times on past expeditions, when they brought up the line, they discovered that the shark they'd been hoping to catch had been consumed by a larger shark, the bigger predator now dangling from the hook. In the case of a 3ft bonnethead shark that had been eaten by a 6ft lemon shark, they tagged the larger animal and sent it on its way – full and unharmed. One tiger shark they caught turned out to have a hook already lodged deep in its stomach, so they used a long pole called a de-hooker to reach inside and remove it, returning the shark to the ocean healthier than it had arrived. Their biggest catch? A bluntnose sixgill shark that measured more than 15ft long.

When the time came to haul up the first line, everyone was tense. We crowded around the stern, watching silently as James, Burkholder and a few others pulled on the line with gloved hands. We waited for a saw-toothed monster to rear out of the water.

But the line came in too easily; the hook picked clean of the bonito.

"No bait!" Burkholder yelled.

This happened a few more times, providing a realistic taste of scientific research, where the most common experience is failure. By the fifth time, people stopped crowding around to watch – and that turned out to be a mistake.

As a few people pulled on the line, it grew taut, as a green, eerie shadow resolved itself into the classic, menacing profile.

"Shark! Shark!" everyone was shouting.

One of the grad students looped a line around its tail, and Burkholder and a couple of others hauled the shark toward the stern. A sleek, gray 6ft Caribbean reef shark – a species that typically grows to 10ft long and sits at the top of the coral reef food chain – thrashed around before lapsing into a sort of grumpy passivity, the hook protruding from the corner of its mouth.

Working as fast as a Formula 1 pit crew, the professionals on Burkholder's team secured the shark and removed the hook. The volunteers did the grunt work - setting out lines, baiting them again if the hook

came up empty, taking measurements and getting tissue samples – all tasks that were easily handed over after some quick training on board. A volunteer named Nona Shields attached an orange tag with the number 020 to the dorsal fin. Another volunteer clipped a skin sample from its fin.

Once the research was done, they removed the line from the shark's tail, extracted the hook from its mouth and set it free. It lanced through the water like a torpedo.



(Andrew Milne Photography)

"Is he OK?" Shields asked.

"He's swimming away nice and strong," Burkholder said. "That's what we're looking to see."

The hope, odd as it may seem, is that someone will catch the shark again. The tag contains instructions for reporting the date and location where the shark was caught, and the return rate is roughly 1% to 13%, depending on the species. The reports help scientists and conservation agencies learn what areas are important to sharks for feeding, migration and nursery grounds.

Our second catch, an 8ft nurse shark, ended up shaking off the hook and plunging untagged into the ocean. As soon as it surfaced, it started rolling over and thrashing violently, baring its long teeth and reminding us that it is several hundred pounds of powerful marine predator.

"There he goes," Burkholder said as the shark disappeared into the water. "Sorry guys. He was not hooked very well at all. He just shook it off."

We had better luck with our last catch, a 6ft sandbar shark, a species whose long fins are considered excellent for soup. It lay there placidly for its examination and then swam off into the black water, affixed with tag number 023.

The tissue samples we secured would go back to the lab for analysis of both their DNA and chemical composition, which can reveal whether a shark spends most of its time around a coral reef or a mangrove coastline and how far up the food chain it eats.

Somewhere in the ocean, thanks to the afternoon's work, two sharks were swimming with orange tags firmly attached to their dorsal fins – their brief run in with the crew likely making a much larger impact on us than it did them.

Practicalities

While this kind of work is usually reserved for scientists and graduate students, the Westin Beach Resort and Spa in Ft Lauderdale offers shark-tagging packages on periodic weekends throughout the year.