



JOHN BRUNO

# TROUBLED WATERS

A marine massacre leads Carolina scientists to question the role of the ocean's most dangerous predator: humans. by Jason Smith

The bodies kept piling up. They were brought up one after another from the dark hold of the *Fer Mary I* and laid out on the deck, which was getting slippery from the water and blood. Ten bodies. Fifty. A hundred. Many had been gutted; some were beheaded. They were starting to get to John Bruno.

It was the largest illegal shark-fishing seizure the Galápagos National Park Service had ever carried out. As soon as Bruno heard that the boat had been seized, he petitioned the park service to let his team aboard. Not a lot is known about many of the shark species that live in the Galápagos, so Bruno asked if his team could identify, count, sex, and catalog the animals. A judge had to sign an eleventh-hour order approving Bruno's

request. While the team waited, they rushed out to buy knives, gloves, coolers, a tape measure, and several thousand Ziploc bags. "But once we got out there," Bruno says, "we realized we were vastly unarmed for what we had to do."

The ship held 379 dead sharks. Their bodies, when totaled, weighed more than 48,000 pounds.

Bruno's team identified 303 bigeye threshers (about half had their heads and tails cut off), 42 silkie, 24 blues, 5 smooth hammerheads (all had their hammers cut off), 2 tigers, 1 Galápagos shark, and 1 shortfin mako. The team couldn't identify one shark because the head, fins, tail, and part of the body were missing. Almost every shark's dorsal fin—what you picture slicing through

the water when you think *shark*—had been severed. "This is what a marine massacre looks like," Bruno wrote the next day as he posted pictures on his blog. "It was one of the most depressing and intense days of my life. I felt like we were unearthing a mass grave in a war zone."

The team measured each animal, determined its sex, and removed the third through the fifth cervical vertebrae for genetic and population analysis. Then, in accordance with Ecuadorian law, they helped return the bodies to the ocean. To Bruno, it felt like a funeral at sea. "It was rough and windy and the sun was going down and all 379 sharks were dragged to a gap in the gunwale and eased in the water as the ship moved along," he told MSNBC. "They slowly sank, which



was for some reason the most powerful aspect of the whole day for a lot of people on board. Lots of tears were shed.” The captain and two crew from the *Fer Mary I* were brought along so they could see that the researchers and the park service weren’t themselves going to sell the sharks.

The *Fer Mary I*, which was based in Manta on the coast of Ecuador, had been longlining for sharks and swordfish. In the Galápagos Marine Reserve, that’s illegal. Thirty fishermen were hauled off the boat to jail. Had they made it back home with their catch, they stood to make a killing: each shark’s body, Bruno says, would have netted about two thousand dollars back in port. The animals’ market value comes largely from their fins, which are used to make a soup that is popular in China.

**B**runo and his team will use the vertebrae they removed to develop a kind of shark census for the area. Each vertebra contains growth rings, like those found in trees, that can help determine the age of each animal and how fast it grew. Each ring will also help the team determine the temperature of the water the animal was living in at the time. That will help the team establish habitat ranges for each individual and species, and will give them clues about where the animals live at different stages of their lives. And that information can help scientists and the park

service figure out how to best protect them.

The team members were able to react to the ship’s seizure so quickly because they were already stationed at Carolina’s Galápagos Science Center on San Cristóbal Island. And when they put their normal research projects on hold to document the shark slaughter, it was all hands on deck—everyone who could help did. That’s how Steve Walsh, who normally studies invasive plants and other land-use issues, found himself on a boat with rubber boots and gloves and a knife cutting vertebrae out of sharks. “It was horrific, gruesome, fascinating,” he says. “We hope that something good might emerge from all of this: a greater understanding of sharks and their ecology. This contribution to scientific knowledge will benefit conservation in the Galápagos and beyond.”


**A**ll of the sharks on the *Fer Mary I* were species listed by the International Union for the Conservation of Nature as vulnerable or near-threatened. The ship’s crew face three years in prison for fishing illegally and three more for capturing protected species. A judge released them to Ecuador, over six hundred miles from the scene of the crime, on the condition that they report every eight days to another judge in Manta. (The captain

and chief engineer have to stay on San Cristóbal Island in the Galápagos until the end of the preliminary investigation.) In order for *any* of the fishermen to be prosecuted, they *all* have to show up in the Galápagos for their trial. Previous cases have suggested that that won’t happen. “Without enforcement, legislation is meaningless,” Bruno says. “For enforcement to work, the judicial system has to act as a partner.”

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On some level, Bruno understands why those fishermen were on the *Fer Mary I*. “People have to eat,” he says. “People need jobs.” Fishermen

in the area have legally pulled so many sea cucumbers and lobsters out of the water that those fisheries are close to collapse. So now some people bait longlines for sharks.

But Bruno points out that many people have moved away from fishing and into jobs based on tourism. The ocean can still provide, he says, regardless of how you feel about sharks. “You don’t have to care about the animals themselves,” Bruno says. “But they’re an economic resource to the area.” He mentions that a globe-spanning study of shark-diving operations tagged the tourism value of each individual shark at a million dollars over the course of its lifetime. “The Galápagos Islands are one of the few places left that you can dive with sharks,” he says. “Going to the Galápagos is like going to the Serengeti. You go to see wildlife, big predators. These marine animals need the same kinds of protection that terrestrial species have. They’re worth far more alive and in their natural habitat than dead on a dinner plate or in a bowl of soup.” 

*John Bruno is an associate professor of marine sciences in the College of Arts and Sciences. Follow his blog at [www.theseamonster.net](http://www.theseamonster.net). Steve Walsh is the director of the UNC Center for Galápagos Studies, codirector of the Galápagos Science Center on San Cristóbal Island, and a professor of geography in the College of Arts and Sciences. Many of the shark vertebrae will be analyzed in Joel Fodrie’s lab at UNC’s Institute of Marine Sciences in Morehead City. The Galápagos Science Center, a joint effort between the University of North Carolina at Chapel Hill and Universidad San Francisco de Quito, promotes science and education that will help protect the Galápagos and enhance the lives of their inhabitants.*



Workers from the Galápagos Science Center rest after hauling dozens of dead sharks from the hold of the *Fer Mary I*. Photo by John Bruno.