

Scientists use bait and hooks to explore the lives of sharks

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Storm clouds thickened on the horizon, thunder rumbled, close and ominous, and the shark was loose and thrashing on the bottom of the boat.

"Watch your feet!" cautioned Samantha Ehnert, a graduate student from the University of North Florida.

Chuck Bangley, a graduate student at East Carolina University, grabbed the 3 1/2-foot blacknose shark by the tail and head and turned it over.

Bangley and Ehnert held the shark against a measuring board while Madeline Heater, an undergraduate at the University of North Carolina, hovered nearby taking notes.

"It's a girl!" Bangley announced.

Bangley and colleagues have spent the better part of the last two years baiting sharks on longlines and drumlines from Bogue Sound to Core Sound and in the lower reaches of the Newport and North rivers. They also tag some species and note the temperature, salinity and other aspects of the water they are found in.

Bangley wants to know what sharks are up to when they come into the sounds and estuaries of North Carolina.

This summer, a lot of North Carolinians are wondering what sharks are

up to. In June, two teenagers lost parts of their arms to shark bites off Oak Island; five other, less serious bites have been reported on North Carolina beaches this summer.

That's more bites than typically reported in the state, but Charles "Pete" Peterson, a professor at UNC Institute of Marine Sciences, is optimistic there won't be many more this summer. The marine lab has been tracking sharks off Shackleford Banks since 1972 - three years before the movie "Jaws" was released.

"We found that the month of June is predictably the month with the highest shark catches," he said. "What that means is that these animals are exhibiting what we all know they do: a north-south migration."

The most common explanation among scientists for the peak in [shark bites](#) this year has been the heat wave that drove more swimmers into the water.

While some have speculated that warmer waters are driving sharks' prey closer to shore, scientists don't have data to back that up, Peterson said.

What the data do show, he said, is that populations of large sharks off the coast are not increasing. In fact, they have been decreasing for years.

Bangley's days on the water are long. He's typically on the boat from mid-morning until after sunset.

His hard work isn't always rewarded. Some days he hauls his lines up three, four or five times without any sharks hooked. "That's why they call it fishing, not catching," he jokes.

But there are moments of triumph, too. One evening last week, after a day without any sharks, Bangley pulled up the last drumline of the day,

fighting what he thought was a strong current.

But the line suddenly turned and headed under the boat. When Bangley pulled it to the surface, he found an 8-foot bull shark attached.

People say bull sharks are aggressive, he said, but "that shark was much more calm than I was."

Bangley isn't used to catching bull sharks. As one of the larger species off the coast, they are uncommon compared to the smaller species he typically sees, such as blacktip and Atlantic sharpnose sharks.

As water temperatures rise, the way bull sharks spend their time in North Carolina might be changing.

By combing through bycatch data collected by the North Carolina Division of Marine Fisheries, Bangley found that baby and juvenile bull sharks are increasingly caught in Pamlico Sound since about 2010.

Bull sharks have always been in Pamlico Sound, he said, but it's possible that the sound is becoming warm enough to make good nursery habitat for them. Previously, they migrated south to places like Indian River Lagoon in Florida to bear young.

Overall, though, the "great" sharks - the large, apex predators like bulls, sandbar and whites - are declining, said Peterson. And that can have big consequences for the ecosystem.

Top predators control their prey in two ways: they eat them, which keeps their populations down; and they scare them, which affects their behavior. Without the threat of large sharks, their would-be prey - such as rays and smaller sharks - multiply unchecked and eat as much as they want, wherever they want.

This can wipe out smaller animals at the bottom of the food web. Among other factors, loss of large sharks may have played a role in the collapse of the state's bay scallop fishery.

These ecosystem effects don't grab headlines the way shark attacks do.

In 1916, a series of fatal shark attacks off the Jersey Shore inspired frenzied shark hunting with "rifles, shotguns, boat hooks, harpoons, pikes, and dynamite," according to a New York Times article written at the time.

The release of the movie "Jaws" caused a similar panic in the 1970s.

Peter Benchley, who wrote the novel the movie was based on, later regretted inspiring fear and hatred of sharks and spoke on behalf of shark conservation in his later years.

Peterson, the UNC professor, was set to go on a speaking tour with Benchley to "celebrate the wonder and beauty and grandeur of sharks," he said. But Benchley died before the tour began.

Bangley shares that passion for education and conservation. But what inspired him to spend his days on the water, chasing [sharks](#) and avoiding thunderstorms, was a fascination and appreciation for the stream-lined, powerful animals he'd felt since childhood.

"I started a shark phase when I was too young to have any memories and it just kind of stuck there," he said. "They're just really incredible animals."

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