

Uptick in East Coast shark sightings has lifeguards on alert and experts searching for answers

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Credit: Pixabay/CC0 Public Domain

Cary Epstein has always known sharks lurk in the ocean off the Long Island shore. But it wasn't until recently that the New York lifeguard

started to see them for himself.

Last summer, a lifeguard at Jones Beach on Long Island got bit by something—a minor injury that didn't require stitches. There was no clear culprit, so state park officials asked Epstein to fly his drone over the area to see what might be swimming near the shore.

"Our minds were blown," Epstein said. "I started finding [sharks](#). A lot of them."

That discovery led New York State Parks to purchase their own fleet of drones and train more than a dozen lifeguards to fly them three times a day this summer, searching for sharks and large schools of fish that might attract them. The 550 lifeguards that patrol several state parks on Long Island have also been taught to identify different kinds of dorsal fins and will undergo Jet Ski training next summer to help with shark patrols, Epstein said.

In July, sharks bit five people on Long Island beaches over the course of two weeks, leading New York Gov. Kathy Hochul to urge state agencies to increase their surveillance.

Epstein said he's noticed more reported shark sightings at Jones Beach in the last two years than his entire 25-year career as a lifeguard. He believes it's because of cleaner, warmer waters and fishing regulations that have increased the populations of fish that attract predators like [blacktip reef sharks](#), [sand tiger sharks](#) and thresher sharks.

Shark experts who spoke to USA TODAY said climate change may be changing migration patterns and bringing certain species to areas they aren't typically found. Attacks are still rare, but the uptick in sightings has led lifeguards, researchers and beachgoers along the East Coast to more closely monitor shark movements as they flock to beaches for

Labor Day.

Meanwhile, researchers are using new technology to safeguard sharks and humans.

"It's kind of like the perfect storm for a cleaner, better, more thriving ocean," Epstein said. "We're just kind of changing with the times and using technology to our advantage to most importantly help keep the people safe."

'The new normal': Sightings, bites grab headlines this summer

Worldwide, there have been less than 10 fatal, unprovoked shark attacks each year, according to the International Shark Attack file. But each summer, [shark bites](#) make national news and sightings close beaches.

In Florida, often called the "shark bite capital of the world," a 10-year-old boy and a teenage girl each had to have a leg amputated after separate shark attacks this summer.

Neil Hammerschlag, director of the University of Miami's Shark Research and Conservation Program, attributed Florida's reputation for shark bites to the behavior of humans, not sharks. He noted that much of the state's tourism revolves around the ocean in areas with low water visibility and nutrients that attract fish.

For example, he has tracked three species of sharks off the Florida coast and was surprised to find they spend much of their time near the shore, possibly attracted by human activities like the discarding of fish carcasses.

"Most cases are bite and release," said Hammerschlag, a marine ecologist. "The shark doesn't keep on biting and eating the person ... they're just curious, they don't know what it is, they use their teeth as sensory structures."

"Fortunately for us, humans are not on the menu," he added.

Attacks in other areas along the East Coast have also made headlines this summer. Last month, two people were bitten by sharks on the same day just blocks apart in Myrtle Beach, South Carolina, officials said. One person reportedly required hundreds of stitches.

It's not uncommon to see a few bites each summer in the Carolinas particularly from blacktip sharks, but they aren't usually as serious as the recent incidents, said Daniel Abel, a professor of marine science at Coastal Carolina University.

Experts and lifeguards said sightings are also increasing and species are being spotted in new areas. Abel said a colleague recently spotted bull sharks in a North Carolina estuary where they have not historically been. Others have reported seeing fine tooth sharks and hammerheads closer to shore than usual, he said.

In the town of Hempstead, on the south shore of Long Island, there have been more anecdotal reports of shark sightings in the last two years than the previous decade combined, said town supervisor Don Clavin, a lifelong resident who grew up working as a lifeguard.

Traditionally, the area is home to smaller animals like sand sharks, but Clavin said lifeguards and members of the public have spotted larger, more aggressive bull sharks close to the shoreline—and even a great white shark.

"This is going to be the new normal," he said.

Sightings could be linked to a number of factors

Experts speculate that warmer waters—and in some areas cleaner waters—could be bringing sharks closer to shore and further north.

Abel said there have been early signs that warmer waters are pushing the animals to arrive sooner and in areas they haven't been seen before. But he said it can be hard to track changes each year because there is no comprehensive monitoring of sharks along the Carolina coast and "the data are anecdotal at this point."

Hammerschlag said climate change may also be encouraging some species like tiger sharks to start migrating earlier and spend more time in the warming waters around New England. He said these shifts could have consequences because they are spending less time in protected marine areas.

Tiger sharks are cold-blooded, which leads them to behave like snowbirds moving up and down the East Coast depending on the temperature, Hammerschlag said.

"Over the last 40 years, we've seen that in the summertime ... they're spending more and more time further north because the seasons, the oceans are changing. The water is not only warming up, but warming up earlier," he said, citing a study he published this year.

But not all experts agree. Gavin Naylor, the director of the Florida Program for Shark Research, said the total number of bites are consistent with a long-term global trend. He called the attacks in Long Island "strange" but said hotspots for shark bites change each year.

"We don't have data that suggests that the changing patterns of sharks are due to climate change," Naylor said.

Hammerschlag noted reported sightings could also be increasing due to better tracking technology and vigilance from the public. Beachgoers can track the movement of tagged sharks through apps like the Atlantic White Shark Conservancy's Sharktivity app or the shark tracker from nonprofit OCEARCH.

Environmental protections of prey animals—like the seals in Cape Cod or fish in Long Island—implemented decades ago may also have a positive impact on shark populations, but environmental protections for sharks themselves take a long time to create results because it takes a long time for sharks to mature, Hammerschlag said.

He said while some populations may be rebounding, many species are still threatened by human activity, like boat traffic and pollution. Shark populations have declined by more than 70% since 1970, according to a study published last year in the British journal Nature.

Researchers finding new ways to deter sharks

Researchers like Craig O'Connell, founder of the O'Seas Conservation Foundation, are trying to develop new ways to keep members of the public and sharks safe.

O'Connell has spent nearly 15 years developing shark deterrence technology, including a system of piping that houses magnets that act as a visual deterrent and interfere with sharks' electrosensory system called "an exclusion barrier." He ran a successful trial of the barrier on bull sharks in the Bahamas and plans to test it in Cape Cod this fall or next summer.

The barrier would be an effective alternative to tactics like nets and drum lines used in countries like South Africa and Australia, which can be lethal for sharks and other wildlife, O'Connell said.

The test "was an indication that we have a very good technology that's noninvasive, it's eco-friendly, that's cost effective," he said.

He said Cape Cod—one of the places where white shark populations have rebounded—is a place the technology could be deployed in the near future.

As part of a special on Discovery Channel's "Shark Week," O'Connell and a team of researchers also experimented with a speaker on a buoy 200 yards offshore that lifeguards can activate to alert swimmers and deter sharks, a system he said needs more extensive testing.

But sharks are in need of protection, too. Naylor noted that as apex predators, sharks are ecologically important in controlling populations of their prey.

Research suggests sharks perform a number of other ecological functions and in some locations the predators may even be able to help mitigate the effects of [climate change](#).

Sharks are portrayed as "man-eating, killing machines," O'Connell said, "and that couldn't be further from the case.

"These are really beautiful and curious animals that we need in our ocean because if we lose sharks, there's going to be nothing left."

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