



Photo credit: Guy Harvey

## Another shark species is found

By Susan Cocking  
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Scientists from Nova Southeastern University and the University of South Carolina have discovered a previously unknown species of hammerhead shark in the southeastern Atlantic.

The species -- as yet unnamed -- so closely resembles the scalloped hammerhead (*Sphyrna lewini*) that the only ways to tell them apart are to compare DNA and count vertebrae.

Mahmood Shivji, director of the Guy Harvey Research Institute at the NSU Oceanographic Center in Dania Beach, says the two species share the same waters but do not interbreed. Shivji adds that the cryptic, or unrecognized species, may be less abundant than the scalloped, making it more susceptible to fishing pressure.

"They're catching these things they don't know they're catching," Shivji said. "You could wipe out a whole genetic lineage if you are not managing these species separately."

Hammerhead sharks, of which there are believed to be eight species, occur worldwide. In U.S. waters, hammerheads are managed under the umbrella of 11 large coastal shark species -- not including those on the federal prohibited species list. Commercial fishing for large coastal sharks is regulated through seasons and quotas.

The practice of finning -- cutting off a shark's fins and discarding the carcass -- is illegal in the United States but widely practiced around the world because fins are believed to have aphrodisiacal and medical benefits. Hammerheads are particularly vulnerable because their fins are worth hundreds of dollars per kilogram at markets in the Far East, while their meat is much less valued. As a result, hammerhead abundance in the western Atlantic is believed to have declined by 89 percent since the mid-1980s, according to a study by researchers at Canada's Dalhousie University published in the journal *Science* in 2003.

### TRAILBLAZERS

Shivji and his NSU colleagues are at the forefront of using genetics to identify sharks exploited in the international fin trade, which is how they stumbled on the previously unknown species of hammerhead. In trying to develop a DNA forensic marker for scalloped hammerheads, they collected 143 samples of *Sphyrna lewini* from around the world. They were puzzled to find that the test worked on all the sharks except for three, which were caught by recreational anglers off Fort Lauderdale.

At first, the scientists thought something was wrong with their forensic marker. But more extensive testing on the three South Florida sharks showed their DNA was completely different from all other scalloped hammerheads caught locally and around the world, suggesting a separate species.

"The genetic difference is greater between the new cryptic species and the regular scalloped hammerhead than between the geographically separate populations of the scalloped hammerhead," Shivji said.

### SIMILAR RESULTS

The startling discovery didn't create much of a stir at first. But coincidentally, scientists at the University of South Carolina came to the same conclusion, using genetic testing to separate eight anomalous sharks caught in their coastal waters. In a paper published online last December, they suggested that bays in their state serve as nurseries for the cryptic species, and should be protected. Intense fishing pressure, they warned, could imperil both the scalloped hammerhead and the new species.

The scientists wrote: "Concentrated reproduction in South Carolina coastal waters also could increase the risk of extinction of the cryptic species. . . . Data on the geographic distribution and relative abundance of both scalloped hammerhead species is critical at this juncture and should be used to evaluate current management plans."

It is too soon to tell how the discovery of the previously unknown hammerhead could affect shark management. NOAA [nova.edu/.../newsharkspecies.html](http://nova.edu/.../newsharkspecies.html)

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Fisheries research biologist Enric Cortés, who prepares shark-stock assessments for the U.S. east coast, calls the news ``shocking -- it will be another curveball that will be thrown at us." Cortes says it will be difficult to separate the new hammerhead in stock assessments because it can only be recognized genetically. More likely, it would be lumped with the other large coastal sharks.

Meanwhile, Shivji said, more research is required to count and describe it.

Said Shivji: ``This is the next project that needs to be done: What population of scalloped hammerheads are the new cryptic species? Someone has to do the taxonomy on this and give it a name."

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