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New S.C. Shark Species Found
Jennifer Viegas, Discovery News

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July 12, 2006 — Researchers have recently identified a new species of hammerhead shark hailing from waters just off the coast of South Carolina according to two independent studies.

The Southern shark, referred to as "cryptic species" for now because little is known about it, has been classified under the genus *Sphymain* in the hammerhead family. It resembles scalloped hammerheads, which can grow to over 13 feet in length and possess facial "hammers" consisting of a central dent and an arched front edge.

The similarities are so striking, in fact, that researchers still have a hard time telling the two species apart.

"A physical difference is that the total number of vertebrae differ," said Joe Quattro, a professor of biology at the University of South Carolina. "The new species appears to have 20 fewer vertebrae along the body and tail than the other sharks. It's something like 180 versus 200."

Quattro discovered the species as he was studying South Carolina coastal fish.

While conducting DNA studies, he noticed that some of the hammerhead sharks in his samples had genes in their mitochondrial DNA — strands of DNA passed directly from mothers to offspring — that differed significantly from those of other hammerheads. A few other genes in the mitochondrial DNA also differed.

"This cryptic shark was genetically different," said Quattro, whose research was recently published in the journal *Marine Biology*.

He explained to Discovery News that while the newly identified shark and scalloped hammerheads do not interbreed, the two types of similar sharks appear to frequent South Carolina estuaries in relative harmony.

"Our estuaries are well known as pupping grounds for sharks, so we've found cryptic shark pups here along with other young sharks," he said. "South Carolina's estuaries are very extensive with good food sources, since other fishes use them as nursery grounds too. They are also warm, which many sharks like."

A few of the sharks have also been found in Florida and North Carolina waters, but since numbers in these areas were very low, the researchers think the sharks may have merely wandered outside their usual South Carolina swimming grounds.

Around the same time Quattro and his colleagues discovered the cryptic shark, another team of researchers was studying shark fins collected from Asian markets, to see if endangered animals were killed for sale.

Many hammerhead species have experienced serious population declines in recent years, in part due to the fin market. Some fishermen will cut off fins and discard the rest of the dead or dying shark.

Mahmood Shivji, director of the Guy Harvey Research Institute at Nova Southeastern University, and his team were studying DNA from the samples when they noticed three of the sharks thought to be South Carolina hammerheads were genetically different from the rest.

"Dr. Quattro's research and our research both independently confirmed the hammerhead as a new species based on different genetic markers," Shivji told Discovery News. "Collectively, the genetic evidence is very strong."

Shivji and his team published their findings in *Conservation Genetics*.

Both Shivji and Quattro hope conservation efforts will be strengthened to preserve the new species, which is believed to be rare, along with other endangered sharks.

Quattro and his colleagues are now working to find other morphological differences present in the new species so that, in the future, they can distinguish it more easily from other hammerheads.

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