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Researchers find unique shark DNA, possible new species
By Kara Starzyk



While researching the DNA of 143 scalloped hammerhead sharks, biologists at Nova Southeastern University made a surprising discovery. Three sharks in the study were slightly different from the 140 DNA samples taken from around the world.

“It was a huge surprise and unexpected. It was quickly clear that, potentially, we had discovered a new species of shark,” said Dr. Mahmood Shivji, director of the Guy Harvey Research Institute at Nova Southeastern University.

Shivji and a team of student researchers noticed the unusual DNA while creating genetic markers for scalloped hammerhead sharks.

The genetic markers help to keep track of the shark population. Shivji explained that genetic markers are similar to forensic markers such as

blood, sperm and urine specimens found at crime scenes. In the case of a shark, DNA from the fin can identify the species.

Identification will assist in counting the number of hammerhead sharks being exploited in the fin trade. The fins of hammerhead sharks are in high demand in Asian markets and are sold at exorbitant prices for shark soup, Shivji said.

“Unregulated trade in shark fins is a serious threat to shark populations worldwide. Without monitoring, an entire species can be wiped out,” Shivji said.

He had externally viewed scalloped hammerheads while diving, but was unaware of another species until testing the DNA.

“The DNA difference was sufficient enough to conclude that these hammerheads are distinctive from the scalloped or any of the eight species of hammerheads,” he said.

The three unique DNA samples were taken from sharks off the coast of Fort Lauderdale. However, there is no need to worry about a new shark in the water. This hammerhead has most likely been in the Northwest Atlantic all along, but has gone unidentified due to its identical appearance to the scalloped hammerhead, Shivji said.

Dr. Enric Cortes is a scientist with the U.S. National Marine Fisheries Service. He conducts research pertaining to the status of shark populations in U.S. waters.

“The hammerhead is categorized as large coastal sharks, which are known to migrate along the eastern seaboard each year.” Cortes said.

Due to the similar appearance to the scalloped hammerhead, Cortes said it will be difficult to assess the population of the new species. “We won’t be able to tell it apart from the scalloped hammerhead unless we do [a] DNA test on each individual shark,” Cortes said. “This discovery is very surprising, and many questions remain.”

Hoping to answer the questions, students from around the country have contacted Shivji to inquire about studying the shark. However, after creating a genetic marker, Shivji intends to let someone else describe the species and give it a name.

Shivji said a separate team of biologists at the University of South Carolina was also conducting research on genetic markers. The set of DNA used in this study concluded the same genetic signature found in the new species.

In order for further research to be conducted, Shivji hopes that government fishery managers will protect the scalloped hammerhead as well

as the nursery grounds in order to learn more about the new species of hammerhead.

According to the National Marine Fisheries Service website, the U.S. has established laws prohibiting fining and selling of the hammerhead and other large coastal sharks in federal waters. Only one shark per person per trip is permitted to be brought on land. The fin must be landed with the carcass and weigh five percent or less of the landed carcass. In any case, it is difficult to protect sharks that migrate to international waters.