

Shark Test Smells Fishy to Some

by Louise Knapp

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A stormy debate between shark fishermen and conservationists has been triggered, in part, by the growing popularity of shark fin soup.

Numbers compiled by the Trade and Environment Database estimate that 200 million sharks are killed each year, earning \$240 million for suppliers. The Hong Kong market alone handles 3,000 tons of shark fins a year.

Conservationists are concerned that certain species of shark are being over-fished, while shark fishermen maintain there are more sharks out there than ever before.

A new genetic test that can identify the species of a shark from its severed fin could shed some light on the issue, although there's a good chance the rift between conservationists and fishermen will continue.

"All these eco-nazi groups have no idea of what's going on," said Ted James Jr., a fisherman in Buxton, North Carolina, speaking for many who fear conservationists' conclusions will lead to restrictions on their ability to make a living. "We're the ones out there, and we can see there are more sharks out there than ever before."

The problem is that it's hard to know which group to believe, as there is no good way to tell whether any particular species is being overexploited, or whether the shark family is surviving swimmingly.

"Once the fins are removed they are dried and exported for the fin market, and in most cases it is almost impossible to tell which species the fin came from," said Dr. Mahmood Shivji of the Guy Harvey Research Institute at Nova Southeastern University.

This, coupled with the lack of records kept on how many of each species are hooked, creates a confusing situation. Shivji, one of the masterminds behind the new genetic test, said the main benefit of the test is that for the first time researchers can determine how many individuals of each species are being fished.

Despite the fact that no population estimates exist, Shivji said that if his test shows one species is being fished significantly more than others, that could be grounds for regulation.

"Sharks have these life-history characteristics that make it very hard for them to rebound from intensive fishing," Shivji said. "They have a very long reproduction period and produce few young at a time."

If a species is being intensively fished, it simply can't produce enough replacements to make up for the numbers being taken, he said.

Existing genetic tests are too slow and expensive to be practical for monitoring the shark trade. Shivji said his test can identify nine species with just one analysis, making it a faster and cheaper alternative.

So far Shivji has devised two tests, so he can identify 18 species. There are about 450 species of shark in the ocean, but only 60 of them are commercially fished. Shivji said he will devise tests for the remaining 42 species within the next five years.

The test is based on a polymerase chain reaction (PCR). The technique is used to multiply the number of copies of DNA to produce a big enough sample to test.

"We've taken this procedure and used small samples of the shark fin and can study them," Shivji said.



Photograph courtesy of Shelley Clarke of Imperial College and the Wildlife Conservation Society in London

A species-specific primer is added to the PCR.

"A primer is a short stretch of synthetic DNA that's specific to an individual species," Shivji said. "So, for example, you can make a short synthetic piece of, say, the shortfin mako shark so that the synthetic piece of DNA will recognize that species of shark."

If the species-specific primer matches the unknown DNA of the fin sample, it will bind with it and make copies of it using PCR.

The fishermen are not opposed to the test, just suspicious of how it will be used.

"I think it is a good idea -- at least with this you can make a case that species are over-fished," said captain Tom King, a fisherman in Scituate, Massachusetts. "But then you have to get into politics, and the people on the left coast use these types of tests to keep too many things off-limit."

James, the fisherman from Buxton, agrees.

"There may be a good intention behind this test, but it will be taken over by those who view sharks as their pets in the ocean, and they will use it as a tool against the fisherman," James said.

Jeff Oden, a fisherman in Buxton, said the way the conservationists go about trying to protect the shark doesn't work.

"They want us to keep a record of the amount of pounds we catch, but they don't ask us how many of each species we have," Oden said. "There's no common sense in what they are trying to do."

King also says the conservationists mismanage the situation.

"A lot of conservationists are not conservationists at all -- they are preservationists. They don't want any harm to come to a certain species, even if you're overrun with them," King said.

Shivji, however, says the aim is not to stop fishing altogether, but rather to better manage it.

"We want to develop long-term sustainable fishing practices," Shivji said.

For more information about the Guy Harvey Research Institute, or to make donations for FISH CONSERVATION RESEARCH:

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