

Fins from endangered hammerhead sharks in Hong Kong market traced mainly to Eastern Pacific

April 24 2020, by Angela Nicoletti



Credit: Stan Shea

For the first time, researchers have traced the origins of shark fins from the retail market in Hong Kong back to the location where the sharks were first caught. This will allow them to identify "high-risk" supply chains for illegal trade and better enforce international trade regulations.

Marine Scientist Demian Chapman from Florida International University in Miami, led a team based in the United States and Hong Kong—the

Special Administrative Region of the People's Republic of China—to conduct DNA analysis on [shark fins](#) from [scalloped hammerhead](#) sharks (*Sphyrna lewini*). One of the most common and valuable [species](#) in the [trade](#), these sharks face an increasing risk of overexploitation—and possibly extinction.

Many female sharks go "home" to a specific region to give birth. This makes it possible for researchers to identify where a shark was born from the DNA it inherits from its mother. This DNA is present in dried, processed shark fins. The team compared the DNA from fin trimmings collected from dried seafood shops in Hong Kong to a global database of genetic samples collected by scientists from all over the world and were able to determine where the sharks originally came from.

Testing revealed the majority of fins originated from the Eastern Pacific—the coastal strip extending from Baja California to Northern Peru—where vanishing scalloped hammerhead populations are listed as "Endangered" under the U.S. Endangered Species Act. The Eastern Pacific also includes famous island chains like Galapagos and Cocos where tourists go to dive with schools of scalloped hammerheads.

For a species like the scalloped hammerhead, where certain populations in different parts of the world are in severe decline, location information is key for implementing trade restrictions and conducting better fisheries management.



Scalloped hammerhead in Hawaii. Credit: Deron Verbeck

"The shark fin trade is a global market and international trade regulations are part of the solution to better manage threatened species like the scalloped hammerhead" Chapman said. "DNA detective work like this helps us understand which regions in the world are most heavily fishing this species and can narrow down where conservation interventions are needed most."

In 2013, scalloped hammerhead sharks received protection by Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)—an international agreement protecting animals and plants from over-exploitation in international trade. Listed in Appendix

II, all trade of these sharks requires permits certifying they were legally caught and traceable through the [supply chain](#).

Shortly afterward, Chapman and the team conducted DNA testing on more than 9,200 shark fin trimmings and found threatened species continue to be found in the Hong Kong retail market. Scalloped hammerheads were the fourth most common out of more than 80 shark species found and the team estimated that around 60% of them came from the Pacific coast of South and Central America.

This study highlights the global nature of the fin trade and emphasizes the need for increased monitoring and better implementation of CITES regulations throughout the world, particularly in the Eastern Pacific. Chapman also points out that the United States plays an important role in intercepting illegal shipments, since many shipments from the Eastern Pacific pass through major U.S. ports before reaching Asia.

The research is supported by the Pew Charitable Trusts, The Pew Fellowship Program and the Roe Foundation. The findings were published this week in *Animal Conservation*.

More information: A. T. Fields et al. DNA Zip-coding: identifying the source populations supplying the international trade of a critically endangered coastal shark, *Animal Conservation* (2020). [DOI: 10.1111/acv.12585](https://doi.org/10.1111/acv.12585)

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