

Could stressed out sharks save more fish? (w/ Video)

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Austin Gallagher free diving with whale sharks in Mexico.

(PhysOrg.com) -- Marine biology graduate student Austin Gallagher has studied the dwindling shark population around the world—from the waters of the South Pacific to those off Southern California.

Now, as a research assistant at the New England Aquarium, the 23-year-old is focused on tracking the stress levels of [sharks](#). He's working on a portable way to measure stress in the giant fish when they're accidentally captured and thrown back during [commercial fishing](#) expeditions. It turns out that the stress alone causes some of these species—including the hammerhead shark—to die.

The goal is to make it easier to collect information that illuminates for fishermen and conservationists the connection between fishing practices

and the overall health and sustainability of fish populations.

“This is just a small piece of the larger puzzle about the [conservation](#) of marine life,” cautions Gallagher about the big-picture applications of his work. “But if these portable analyzers can help us better gauge the physiology of threatened sharks, then we may be able to make more informed conservation decisions.”

Video: A trailer of Gallagher’s underwater documentary on marine protected areas inside a Marine Reserve on California’s Catalina Island.

Over the past 50 years, global shark catch increased nearly three-fold, peaking at roughly 900,000 in 2003. And as of last year, nearly 17 percent of shark and ray species landed on the Nature’s Red List of Threatened Species compiled by the Switzerland-based International Union of Conservation, the world’s largest environmental network. As shark species continue to show up on endangered lists, research such as Gallagher’s could become increasingly important in protecting these commercially exploited marine animals.

Gallagher is conducting his research as part of the Three Seas graduate program at Northeastern, a 15-month master’s program during which students study [marine biology](#) in three different aquatic environments—in Massachusetts, the French Polynesia, and off the coast of Southern California.

Working with Aquarium research scientist Dr. John Mandelman, Gallagher is testing the reliability of a small blood analyzer that could be used right on the boat, rather than previous methods that were too cumbersome to accompany fishermen at sea. To assess the tool’s accuracy, Gallagher draws blood from a caudal vein in the shark’s tail immediately after the [fish](#) is taken from the water, tests the sample using a remote blood analyzer, and compares the value against conventional

analyses.

The blood-sampling process resembles the one a physician uses drawing human blood. “What I do with sharks is actually quite similar,” says Gallagher, “but my patients have sharper teeth and are more difficult to calm down.”

Gallagher credits Northeastern’s Three Seas program for giving him the jumpstart he’ll need for a career in shark research. “The program is teaching me how to do sound science, collect my own data, and interact with the scientific community,” he says.

He hopes eventually to combine his passion for science with that of filmmaking in order to more effectively communicate conservation messages. Right now, he’s awaiting the green light on a project documenting sharks and humans interacting.

Provided by Northeastern University ([news](#) : [web](#))

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