

A zebra shark, also known as the Indo-Pacific leopard shark, patrols a reef off Vaavu Atoll in the Indian Ocean. Aquariums are trying to use eggs produced by captive sharks to boost wild populations of the endangered species. JORDI CHIAS/MINDEN PICTURES

Aquariums hatch unusual plan to save endangered zebra shark

By **Catherine M. Allchin** | Feb. 17, 2021 , 10:45 AM

A leopard can't change its spots, and a zebra can't change its stripes. But the zebra shark has long delighted ocean divers and aquarium visitors with its ability to transform the white bands it is born with into spots as it grows. Now, the endangered shark is grabbing attention for another reason: It's at the center of an unprecedented effort to rebuild a wild shark population using eggs from aquariums.

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“It is very important to us to protect and preserve this unique and charismatic species,” says Charlie Heatubun, a botanist at the University of Papua, Manokwari, and head of Indonesia’s West Papua Research and Development Agency, which is participating in the project.

The distinctive zebra shark (*Stegostoma tigrinum*, also known as the Indo-Pacific leopard shark) was a popular attraction for snorkelers and divers in Southeast Asia a few decades ago.

Considered harmless to humans, the sharks are slow moving and spend most of their time in shallow reef habitats. In recent years, the shark fin trade has decimated *S. tigrinum* populations. In 2016, the International Union for Conservation of Nature (IUCN) elevated the shark to endangered on its Red List, and it is now likely locally extinct in several areas in Indonesia.

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At the same time, zebra sharks are thriving in aquariums around the world. In fact, the animals do so

well in captivity that aquariums keep males and females separated to prevent unintentional breeding and production of unwanted eggs. That ready supply of eggs, however, has provided conservationists with an opportunity to repopulate the species in the wild, **the Association of Zoos & Aquariums (AZA) announced recently.**

Scientists say the effort, *Stegostoma tigrinum* Augmentation and Recovery, is the first time such a recovery strategy has been tried for elasmobranch fishes, which include sharks and rays. Most shark species give birth to live young, but about 40% of species, including the zebra shark, lay eggs. And because the eggs have hardy, leathery cases, researchers consider them good prospects for trans-Pacific air travel.

Later this year, participating aquariums plan to send about a dozen eggs to conservation sites in Raja Ampat in West Papua. The egg cases will be shipped in checked luggage, with seawater changed at

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stops along the way to maintain a target temperature. Within a few months, after the pups hatch and are big enough (about 70 centimeters) and able to forage for food, researchers will attach acoustic monitoring tags and release them in marine protected areas.

In anticipation of the new arrivals, the West Papua provincial government is working with aquariums to train shark husbandry professionals and build hatcheries. “It’s a privilege to be the first place for this project,” says Heatubun, whose team, along with other local partners, will manage the introductions.

The goal is to introduce several hundred sharks over time, to bring numbers back and allow the Indonesian populations to become self-sustaining. The multinational partnership—made up of conservation groups, government entities, aquariums, and academic institutions—is working with IUCN officials to determine how many eggs will be needed. Researchers

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are also planning to monitor the introduced animals, using tags and diver surveys. Each adult has a unique spot pattern, which will make identification easier.

The effort ultimately hopes to expand to other areas, likely first in Indonesia. And in a bid to raise the odds of success, AZA-accredited aquariums are trying to collect eggs from captive zebra sharks that are genetically similar to wild sharks in the areas where the releases will occur. But that's not always possible. For example, few zebra sharks remain in the Raja Ampat archipelago, so scientists now have no samples from that location.

There isn't time to wait for exact genetic matches, says Erin Meyer, director of conservation programs and partnerships at the Seattle Aquarium. "This species is not recovering in Raja Ampat like other shark and ray species, and we have the opportunity to save it from extinction," she says. "We're concerned about waiting."

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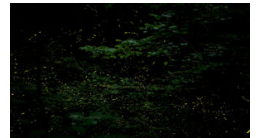
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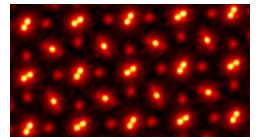
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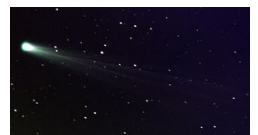
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