

More about Sharks

Did you know that sharks are living fossils? It's true! Scientists have found fossil evidence of sharks dating back roughly 450 million years, which means they've been around since prehistoric times. They've survived five mass extinction events and outlasted even the dinosaurs. And their impressive anatomy hasn't changed much in all that time. As apex predators, they've caused other organisms in the ocean to evolve instead, shaping our oceans over millions of years. Tragically, though, sharks now face a new threat: humans.

There are over five hundred species of sharks in Earth's oceans, with different species inhabiting all ecosystems and depths. Sharks are a keystone species, meaning they're vital to the ocean's survival—and, by extension, humanity's survival. Their population loss would lead to devastating effects. We're talking a complete collapse of certain ecosystems, such as coral reefs. It can take decades (depending on the species) for sharks to be physically mature enough to reproduce, and they only give birth to a few pups at a time. For example, the female great white shark takes thirty-three years to reach reproduction age. She carries the pups for roughly a year and gives birth to a litter of two to ten pups. This means it takes a long time for shark populations to rebound after they suffer big losses, and it's especially crucial to protect sharks until they reach reproduction age. Yet humans fish roughly 100 million sharks per year, killing an estimated 11,000 sharks per *hour*.

Partly because of movies like *Jaws* and sensationalized news coverage emphasizing the dangers of shark attacks, sharks have a reputation for being more of a threat to humans than they actually are. This has encouraged shark culling, the intentional killing of sharks to reduce their populations. Governments have also instituted unnecessary "protection" plans to keep sharks away from humans. For instance, the Australian government maintains shark nets along beaches to alleviate swimmers' fears of great white shark attacks. While aiming to kill and deter sharks, these nets also catch and kill turtles, whales, dolphins, stingrays, and other marine life. The animals caught in the nets end up *attracting* sharks to feast. Misguided measures like these have killed and injured many sharks. If you go for a shark dive, you may see scars or even bullet wounds on sharks, hinting at the long-term effects of human fears.

Sharks are also targeted by fisheries for their meat, fins, teeth, cartilage, and livers. Shark jaws and teeth are often used for jewelry and wall décor. Many humans consume shark meat, which contains high levels of mercury that make it slightly toxic for our bodies. Common shark species sold in supermarkets are mako, lemon, and blacktip sharks. The fins of sharks, though relatively tasteless, have historically been seen as a delicacy in some East Asian cultures and are served at high-end restaurants throughout the world, including in parts of the United States. (As of 2022, it's banned in twelve US states.) Ordering a bowl of shark fin soup—which can cost around \$100—is a symbol of wealth and status.

Another common myth about sharks is that they don't get sick and that their cartilage—the tissue in their fins—has medicinal powers. Though this isn't true, there's still a high demand for products containing shark cartilage. Oils from shark liver are frequently used in cosmetics and pet foods and are labeled as "squalene" or "squalane." Plants can produce these oils, so there

is no need to use sharks in these products. You can do online research to find out where the squalenes/squalanes in your products come from and ensure you're not contributing to shark killings.

The largest factor contributing to shark population decline is bycatch. Bycatch is what happens when a commercial fishery targets a specific fish but ends up catching a bunch of other fish, turtles, and mammals in the process. For example, say a commercial fishing crew goes out to catch tuna. They set out longlines, which can span hundreds of miles. These lines hold thousands of hooks with bait on them. The lines soak for hours. When the fishers pull in their lines, some hooks might hold sharks, dolphins, turtles, and other fish in addition to some of the tuna they intended to catch. Official fishery observers have noted that longlines often catch, injure, and kill members of endangered species. There are more sustainable ways to catch fish that reduce bycatch of sharks and other sea life. You can research restaurants that serve seafood and companies that sell seafood at your grocery store to find out where that food is coming from.

Killing sharks for sport, for human peace of mind, or even by accident contributes to a massive decline in shark species all over the world. Our oceans depend on sharks. Everything in our environment plays a crucial role in Earth's self-sustaining system. When one species goes extinct, it drastically impacts other species in those ecosystems. The disappearance of sharks would have devastating consequences for life all over the world.

While sharks have been considered monsters for centuries, too often, humans are the monsters, hurting our planet more and more with every shark we pull out of the water. If you love the ocean, life on land, and Earth itself, caring about sharks is vital.

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