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## CAMPAIGNING FOR SHARKS

Morgan Freeman joins Oceana's efforts to pass a national ban on the trade of shark fins in the United States

**PLUS:** 15 YEARS OF OCEAN VICTORIES | OCEANA ON THE WATER | HONORING DR. KRISTIAN PARKER



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## Fish need habitats, not only water

As denizens of the terrestrial realm, we humans might assume that, since the sea has more water than ever (it does, thanks to global warming), fish must now have an abundance of places to call home. We might not realize that fish don't only need water—they need habitats, and these habitats need to be protected.

For example, take salmon, which begin their lives on land. Salmon spawn in gravel nests, usually near a river's source. If these gravel beds become clogged by mud, whether from a landslide due to logging, waste from mines or other threats, the eggs deposited by the adult salmon will not hatch into the young salmon that eventually go to sea before returning to the river and completing the cycle of their wondrous lives. Clean gravel beds are essential habitats for salmon.

Other fish that spend their entire life cycle in the sea also need structure and places to grow. Most marine fishes start their lives offshore as eggs the size of a pinhead. Then they change into larvae and ride the tides and other currents toward the coasts, where they must find safe places to feed and grow without getting eaten by one of the many predators in the sea. In other words, they need habitats. In the tropics, these essential habitats are found in coral reefs and between the roots of mangrove trees, two ecosystems that provide both hiding places and abundant food in form of plankton.

And what about small cod (codlings) that live in New England, where it is too cold for either coral reefs or mangrove? Codlings and other cold-water fish seek out safety in structures on the ocean's floor such as seagrass beds, oyster reefs, bush-like animals known as gorgonians, sea pens and smaller mounds created by marine invertebrates. There they hide from would-be predators and feed on the plankton that live in these structures. Also, and very importantly, these structures provide resting places from currents that would otherwise require the small fish to continuously swim to stay in place, wasting energy in the process. These seafloor habitats are essential to them.

Yet habitats are under siege. A commonly used fishing method called bottom trawling consists of dragging a trawl, or net, along the seafloor behind a ship. The net—a strong, flexible piece of gear

kept taught by large multi-ton weights—flattens and obliterates any habitat in its way while catching all the fish in its path. Essentially, a trawl net treats seafloor structures as a bulldozer treats trees in a forest.

One single pass of a trawler bulldozes habitats that may have taken hundreds of years to build. Entire seas have been decimated in this way. For example, trawlers flattened the Java Sea (see photo below) in Indonesia beginning in the 1970s and turned the habitats on its floor into a large underwater muddy field. Similarly, the North Sea, between the British Isles and northwestern continental Europe, has endured more than

100 years of trawling. This is why trawler-free areas and marine reserves are crucial throughout the world and why it's vital that these restricted zones be protected permanently. Closures that are only temporary enable fast growing 'weed' species to proliferate but do not allow the time needed to recreate the bottom structures and essential habitats that the many species of fish and commercial invertebrates need to grow and survive.

In sum, fish need habitats. That's why it's important to advocate for fishing gear that does not destroy them and for policies that can protect them. Aside from that, what can individuals do? Buy line-caught fish when possible. Hooks and lines do not destroy essential fish habitats. Trawling does.



The catch of a research trawler in the Java Sea, Indonesia. Prior to 1975, the Java Sea had not been trawled, and sponges and other organisms covered the bottom of the sea with habitat-forming structures. Their removal transformed the Java Sea into a mudhole. Photo: ©D. Pauly