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The Last Days of Fish

Words By [Peter Alsop](#)

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A mile or two off the coast of Cape Cod, just east of Wellfleet, Massachusetts, Ted Ligenza shoves a hand across the ignition switch of the *Reina Marie*, and his 31-foot boat sputters into silence and drifts to a stop. It is not yet dawn on a cold day in January. A five-foot swell lifts and lowers the boat in the semi-darkness while Ligenza stands at the wheel staring intently at his sonar. When he spots a flicker of color on the screen, he crams the rest of a peanut butter and jelly sandwich into his mouth and ducks into the hold. The *Reina Marie*, pilotless, begins to drift westward, pushed by the waves and the wind.

Ligenza, 54, is a square-built man, broad everywhere around—an impression only heightened by several layers of thick flannel underneath the billowing orange overalls he wears on his boat. He moves nimbly, pulling tackle out of boxes, returning to the helm every few moments to check the sonar. On his third or fourth pass by the wheel, a dark look flashes across his face. The flicker on the screen is gone. “This isn’t good,” he says. “There should be fish here.”

On the radio navigation system, a pair of numbers is blinking—two coordinates that mark a spot on the ocean where cod, drawn by geography or temperature or instinct, have been known to converge. Ligenza, a commercial fisherman for 35 years, lives by such numbers. They create a kind of map of the sea, a catalogue of possible fishing sites. Beside the wheel of the *Reina Marie*, a tattered notebook lists pages upon pages of coordinates, collected over decades on the water. Others are scribbled in haste on the walls and ceiling of the wheelhouse. Ligenza consults his book for a second time and confirms the numbers. Then he worries aloud about the cost of fuel for the hour-and-a-half trip, and considers the unhappy possibility that he will only break even on the day, or take a loss.

Finally, a splash of color returns on the sonar, and Ligenza quickly drops a line into the sea. Four hooks rush overboard, tethered to a steel jig, and the line hisses as it uncoils from the deck. When the jig reaches the sea floor he tugs back on the line until he feels the weight of fish on the other end. Then he plants his feet and begins to haul, hand over hand. When it emerges, the line offers up three cod, each the length of Ligenza’s forearm. They hang limply from their hooks and Ligenza shakes his head. None are close to legal size. Prying them loose, he returns them one by one to the water.

“Our oceans carry less than a tenth the number of fish they once held, yet few of us have any sense that something is wrong.”

Ligenza curses beneath his breath and drops the tackle by his feet. Then he turns and starts the engine, thumbing through his notebook for a new set of numbers.

“You know when I realized how bad it was?” he will say later, at dusk. “I looked at my numbers. All these places, and there’s none of them that have fish anymore.” Twenty years ago, if you had come to this spot off Wellfleet or, for that matter, any other along the Atlantic coast of North America, you would have found an ocean still brimming with life. The waters had been fished for hundreds of years, but they still harbored an impressive number of species. And none were more abundant than cod. They seemed innumerable and inexhaustible, and when they disappeared, as if overnight—decimated at last by years of overfishing—it came

as a profound shock.

The first to suffer were the fishermen of Newfoundland, who saw their industry collapse in the early 1990s. Later it was the fishing communities further south, along the Gulf of Maine. Fishermen of the southern Cape, like Ligenza, could still find enough cod even five or six years ago to make a decent living, but that, too, has changed. Today, cod populations in the Georges Bank, off Cape Cod, hover near the brink, at levels 10 percent of what scientists consider healthy. Large areas of the Bank are lost entirely to groundfishing.

By now, the collapse is a well-known story in New England, chronicled in books like Mark Kurlansky's *Cod* and in newspaper accounts of riotous fishery meetings and bank foreclosures in port towns. But it is only part of the story. Less appreciated is what else is missing from the New England coast. The number of overfished or threatened species makes for a sobering list: Atlantic halibut, yellowtail flounder, haddock, wolffish, river herring, Atlantic salmon. Shark populations in the North Atlantic have dropped by half since 1986, in the same time that bluefin tuna, which once swept past the Cape in schools a hundred thick, have been brought near commercial collapse. The astonishing fecundity of the New England coast has been reduced to a memory—one that haunts a generation of fishermen. In Harwich, on the Cape, a fisherman points me to a map of the coastal channels he once fished and covers it with a big, callused hand. "You can't find anything there anymore," he says.



Ted Ligenza steers the Reina Marie off the coast of Cape Cod.

What has transpired off the shores of Cape Cod is not unique. The same has occurred on coasts throughout the world. In 1988, at the peak of the output of the world's fisheries, boats around the globe landed something on the order of 80 million tons of fish. Since then, depending upon which numbers you believe, the world's annual catch has either plateaued or fallen by as much as 500,000 tons a year.

The rise of industrial fishing in the latter half of the 20th century, coupled with a growing world population, has overmatched the ocean's supply. And while the history of New England fishing might seem a stark example—and it is—American fisheries are actually among the most enlightened in the world (though that is not saying much), with stringent management plans and some notable fish recoveries. In Europe, by contrast, nearly half of fish stocks are considered seriously depleted, and the North Sea has become a relatively barren body of water (to fill their nets, the "distant water" fleets of Europe now sail the west coast of Africa). And

while fish stocks dwindle worldwide, an estimated 90 percent of large predatory fish—tuna, swordfish, cod, halibut—have disappeared since the mid-20th century. One study, published almost two years ago in *Science*, predicted a worldwide collapse of commercial fish stocks in just 40 years, if the present pace of fishing continues.

The demise of commercial fishing is beyond the limits of even our darkest environmental imaginations. And yet the evidence of the ocean's diminishment is everywhere. Leaving aside the legitimate concerns of conservationists, the possibility of a broad fish collapse is harrowing for other reasons. At a time when we are mired in a global food crisis, nearly 1.5 billion people depend upon the sea as a source of food or income. The destabilizing effect of such a collapse would be tremendous, bringing communities and countries into conflict over a resource we once considered boundless. It is fair to say that the endgame has begun.

“‘I’ve always tried to fish in what I thought was an ethical manner. But I’ve paid dearly for it. If I’d have gotten in big, with a bigger boat, I’d have something to give my children now.’”

Not long ago, I traveled to the north shore of Long Island to visit with Carl Safina, a leading ocean conservationist, who 10 years ago wrote *Song for the Blue Ocean*, an elegiac account of the consequences of overfishing. For nearly three decades, Safina has concerned himself with the sea, first working on behalf of the National Audubon Society and later co-founding the Blue Ocean Institute, a conservation organization.

We met on a bright wintry afternoon. A storm had just passed, the sky was clear, and we walked along a beach near his home. Safina, who is 53, wore a baseball cap lowered against the wind. “When I was a child,” he said, “we couldn’t conceive of there being a problem with the ocean. ... When I first came here to the Sound, it seemed a pristine place. It was only later that I started to realize that it was being overfished, and that it had been overfished even before I arrived. I spoke with people who were only in their mid-50s who could recall schools of fish that are completely unimaginable now. And then I myself started to see that those fish were dropping, year after year. Later,” he continued, “when I was old enough to go offshore ... the ocean still seemed thriving.”

Renowned fisheries scientist Daniel Pauly has a term for this habit of mind that allows us to adapt to the impoverishment of our landscapes. He calls it “shifting baseline syndrome.” Over time, we lose track of the natural state of the world. So when we hear fishermen today describe years when fish crowded the harbors, their stories have no place within our own experiences—the excesses of one generation are repeated by the next until we find ourselves at a moment such as this, when our oceans carry less than a tenth the number of fish they once held, yet few of us have any sense that something is wrong.

When I asked Safina why that is, he nodded at the water. “The reason is right there,” he said. “You can’t see beneath the surface. You can see a clear-cut in the forest, but you can’t see an ocean without fish. You can’t see the tuna that are no longer here, or the swordfish, or the dolphins that were once right off this shore.”



Many of Ligenza's most trusted fishing spots are now empty.

Such myopia is not unique to our age. As Callum Roberts shows in his book, *The Unnatural History of the Sea*, even at the turn of the 20th century, great stretches of ocean were already depleted by centuries of fishing. “In many places,” he writes, “the oceans were transformed long before scientists first began writing papers on marine ecology, or people of today’s generations first dipped their toes in the sea. The seas that we have blithely assumed to be natural and unsullied had in reality already been profoundly altered.”

If it is true that the seas have been overfished for generations, it is also the case that 50 years of industrial-scale fishing have quickened the speed of the damage. Advancements in fishing technology have taken much of the guesswork out of the game. The adoption of sonar, for instance, has allowed fishing vessels to catch entire schools at a time; bigger, more powerful factory ships can now access even the most remote places; and improvements in catching techniques—particularly bottom trawling, where a net is dragged across the sea floor—have had severe effects.

The trawl, which dates to the 14th century, came into widespread use in the North Sea around Great Britain in the 1800s. Almost from its inception, concerns arose over its use. When a trawl is towed, it snares whatever can’t outswim it, much of which is killed in the process. They have a high “bycatch”—they trap a large quantity of untargeted species, the majority of which are thrown back, dead or dying, into the sea.

“At a time when we are mired in a global food crisis, nearly 1.5 billion people depend upon the sea as a source of food or income. A collapse of the fish supply could bring countries into conflict over a resource we once considered boundless.”

Of course, the business has always been a bloody one; few methods of fishing are harmless. When bluefin grew scarce in the North Atlantic in the mid-1980s, tuna boats resorted to spotter planes to hunt for surviving fish. Longline boats, which can haul miles of line and thousands of baited hooks, frequently snare sea turtles

and sea birds. Gillnets, so named because they trap the gills of fish as they attempt to wriggle upward through mesh openings, have serious bycatch problems. And while it would be easy to blame fishermen for these practices, in many ways their hands are tied. Competing for a common, diminishing resource, they can turn their backs on technology only at their own peril.

When I asked Ted Ligenza if he resented trawlers or gillnetters, he demurred. He shares a port with men whose livelihoods depend on these techniques, and many of them are his friends. When pressed, the most he would say was that he wished more people had fished as he had, with a hook and a line. If that had been the case, he told me, there might still be fish. “I wasn’t willing to do a lot of things that other people have done,” Ligenza said. “I wasn’t willing because it wasn’t fair to the fish, and it wasn’t fair to my sons and the next generation. So I’ve always tried to fish in what I thought was an ethical manner. But I’ve paid dearly for it. If I’d have gotten in big, with a bigger boat, I’d have something to give my children now. But I never wanted to fish that way. I just didn’t have the stomach for it.”

Many experts think that governments have been too kind to the fishing industry. The European Union, China, Japan, and the United States spend as much as \$20 billion a year to subsidize a \$90 billion industry. The number of industrial-sized fishing boats in the world, which the U.N. estimates at 1.3 million, will have to be reduced by more than a third to reach sustainable levels of fishing (and some conservation organizations put the number at closer to half).

To reverse the trend, fish agencies—long beholden to industry interests—will have to set enforceable catch quotas established by independent scientists. Where quotas are in place, they often account only for “landings”—the fish brought to port. But fisheries also need to be managed for bycatch, which, if tallied, might increase global catch numbers by 20 percent or more (accurate numbers are difficult to come by, but in the notorious shrimp industry an estimated three pounds of bycatch accompany each pound of netted shrimp). In fragile areas, high-impact methods of fishing like bottom trawling will need to be outlawed entirely. And while these measures will tax already beleaguered fishing communities, the success stories of sustainable fisheries—in Alaska, New Zealand, Iceland—serve as proof that a balance can be struck.

Safina certainly thinks so. When the wind picked up, we retreated to his car. Sand rattled against the windows and in the distance a lone windsurfer cut a white line across the water. I asked if anything had given him cause for hope in the decade since the publication of his book, and he smoothed his beard and looked out to the other side of the bay, where four smokestacks issued cheerful clouds of steam. “There’s plenty to make you pessimistic,” he said. “I’m not a betting man. It’s for people on the sidelines to guess who will win or lose. If you’re working on this, you just try to find out what you can do. A lot of surprising things can happen. And you can change things. I’ve seen it. We’ve seen progress—no-where near enough and by no means widespread enough—but progress all the same. When people do the right things, fish come back. Species populations rebound. It’s really that simple. So, yes, I do have hope. I do.”

We have imperiled what is perhaps the last wilderness on earth, for the simplest reason: We believed it was so vast it couldn’t be harmed. The signs of our folly are now too numerous to ignore. Massive, swirling gyres of plastic have formed in the North Pacific, as have toxic dead zones in the Gulf of Mexico, the Black Sea, the Baltic Sea, and dozens more places. Coastal pollution and construction is destroying critical wetland habitats worldwide. And the ocean itself is warming, a development that will have consequences we can hardly imagine. Amid these challenges, overfishing represents the most immediate threat and possibly the easiest problem to remedy.

Less than 1 percent of the ocean has any form of protection, while more than 10 percent of our land has been excluded from development. Yet in places where fishing has been halted, recovery can be measured over a relatively short period of time. The ocean’s floor begins to return to a natural state, fish populations start to rebound, and fishermen experience a surge in catch as fish migrate beyond protected waters.

Some experts suggest that as much as 20 percent of the ocean will need safeguarding from fishing in the coming years, a number so high as to appear politically impossible. Yet in 2006, the Bush administration designated for protection 140,000 square miles of ocean near the northwestern Hawaiian Islands, and succeeded in creating the largest marine reserve on earth. The argument for such preservation has as much to do with our responsibility to future generations as it does with our present appetite for fish.

“ “When people do the right things, fish come back. Species populations rebound. It’s really that simple. So, yes, I do have hope.””

Because of our role as consumers, we’re no less culpable than fishermen for the state of the oceans. Global seafood consumption has doubled since 1973 and, just as its health benefits are becoming known, it seems clear that we will have to eat less fish, and that the fish we do eat will have to be smaller and lower on the food chain, where the effects of fishing are less pernicious. A cod caught by a bottom trawler carries with it a different set of environmental implications than a cod caught by a hook and line—and we ought to recognize and pay for the difference. And we would do well to contemplate, too, why it is that we become indignant at the thought of a world without wolves or elephants, yet stand idly by as bluefin tuna, for instance, are hunted into obsolescence. This animal, as grand as any we know, can live for 30 years, weigh as much as 1,200 pounds, and cross thousands of miles of ocean in a single year.

If we manage to avert ourselves from our present path, then it will be not just the fish that survive, but also the fishing towns along our coasts. The culture of fishing is as old as civilization, with its own language and wisdom. It instructs us that there is another way of living, a life based upon the seasons and the tides and the movements of other beings. If we lose the fish, we lose the fishermen—and then, at last, we will have lost something of ourselves.

At sunset, Ted Ligenza points the *Reina Marie* southwest toward home. The temperature has fallen by 10 degrees in an hour, and gusts of cold salt air sweep past the crumpled newspapers that line the cracks in the wheelhouse. Despite the chill, Ligenza has reason to be in a good mood—250 pounds of cod, a decent catch, sit in boxes on the deck. But he is quiet, carried away by his thoughts.

He begins to tell stories of the old days, recalling years when 15 or 20 hook fishermen surrounded him at any given spot, many of them his friends. Hauling cod from the water, his radio crackled with laughter. He felt safe then, out on the water with men he knew and trusted. But his is a solitary life now. Most of the hook-and-line men have sold their boats and retired, or found other work onshore. Today, in the 12 hours we’ve been out on the water, only a single boat has passed us.

“When I came here as a young man, I had a future,” Ligenza says, his voice barely rising above the groan of the engine. “And I loved this life. I loved this way of fishing. I felt good about it. I was happy every morning, heading out. Now every day I’m just praying to hell I’ll catch enough to make some money. I’m doing this just by the skin of my teeth.”

And then he tells me of a day 20 years ago, fishing with a friend at a spot offshore along the Great South Channel. The cod were thick on the sea floor then. Surrounding Ligenza on all sides were other boats: hookers, trawlers, gillnetters. Their decks were slick with fish, and flocks of gulls fought overhead for the spoils. Glancing around, his friend took it all in: the men and the fish and the many boats. “Ted,” he said,

“this can’t go on forever.”

“At the time,” Ligenza says, “I was pissed at him for saying it. But he wasn’t wrong. He wasn’t wrong.”

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Peter Alsop is GOOD's senior editor. He [wrote about Couchsurfing.com in GOOD 002](#).

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