

SciAm Perspectives

Fishing Blues

Without limits on industrial-scale catches, marine populations will continue to collapse

BY THE EDITORS

If there is any benefit to be salvaged from the disastrous overfishing of the bluefin tuna (see “The Bluefin in Peril,” by Richard Ellis, on page 70), it’s the spotlight that it shines on the plundering of the world’s marine life. It has been 16 years since the demand for cod led to the collapse of the once superabundant cod fisheries in the North Atlantic off Newfoundland. Disappearing with them were some 40,000 jobs. Seafood Watch, an online information clearinghouse run by the Monterey Bay Aquarium in California, has placed all Atlantic populations of flatfish, including flounder, halibut, plaice and sole, on a list of fishes that it urges consumers to avoid. The list goes on.

You can’t entirely blame the fishers. Yes, a lot of pirates are out there, taking fish illegally, underreporting their catches, fishing under the flags of countries not party to international fishing agreements. But for many cultures, fishing is a way of life—and sadly, because of overfishing, a hard way to carry on. The lure of dollars—or euros or yen—becomes all but irresistible when the alternatives become ever more limited. As Ellis reports, a single bluefin tuna fetched \$173,600 in Tokyo, and prices of a sushi dinner for two in New York City can reach \$1,000.

With that kind of money at stake, it is hardly surprising that industrial-scale technology has caught on, big time. Hooks are paid out on “long-lines” more than 50 miles in length. Factory ships that can hold 1,000 tons of fish store and process the catches. Fishing on such a massive scale can quickly exhaust a fishing ground, but when that happens, the factory ships just move on. As a result, fisheries themselves are becoming ever more remote.

The bottom of what is known as the continental slope, between 600 and 6,000 feet deep, is home to several species that swim in schools and grow as long as two to three feet. Their presence opened up the continental slope to industrial deep-sea fishing that pays off handsomely. The usual method, known as bottom trawling, is to drag a large cone-shaped net, weighted with 15 tons of gear, across the seabed. The net catches everything in its path, and the gear crushes any 1,000-year-old coral that stands in its way.

What are the environmental costs? No one really knows—and that is part of the problem. According to Richard L. Haedrich, an ichthyologist writing in a recent issue of *Natural History*, catch quotas for deep-sea fishes were set “essentially by guesswork, relying on . . . knowledge of shallow-water species. They took no

account of the far slower turnover rates in a typical population of deep-sea fishes.” The predictable result is that two deep-sea species have already been depleted: the orange roughy, formerly known as the slimehead, and the Chilean sea bass, aka Patagonian or Antarctic toothfish. When they’re gone, Big Fishing will pack up and move on once again.

What is to be done? Biologists must have the chance to study fish populations before sustainability levels are set and fish are taken. Laws, treaties, police work and stiff penalties are essential to curb the pirates and keep honest fishers in business. But market forces are ultimately to blame, and market forces will determine the outcome. Consumers who vote with their pocketbooks can turn the tide of demand.

The first step is finding out what is safe to buy. Numerous Internet sites such as Seafood Watch, mentioned earlier, give basic information about the sustainability of various marine populations. The second step is determining the provenance of a fish on the market: Where does it come from, and how can you know the information is reliable? The provenance system is already in place for wine and in some countries for beef. A similar system of tracking fish from catch to consumer could drive down demand, and hence price, for endangered, uncertified products.

With provenance determined, fish lovers could harness the power of the Internet. Does a restaurant or supermarket persist in selling “red card” fish? A comment in an online review might get results. Publicity and shame are powerful tools, not to be used lightly or without warning. But those who knowingly trade in fish that are demonstrably at risk lose their right to be ignored. ■



Want to Take Action?

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MATT COLLINS

Name: _____

Date: _____ Period: _____

Fishing Blues
article questions

1. When did the Cod fishery collapse?
2. What was the effect of the Cod fishery collapse?
3. What is the record sale for a Bluefin Tuna?
4. Describe bottom trawling.
5. Name two deep sea species that are already depleted.
6. Who is ultimately to blame for fishery declines?
7. Where can you find out what fish to buy sustainably?

