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# Let Us Eat Fish

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THIS Lent, many ecologically conscious Americans might feel a twinge of guilt as they dig into the fish on their Friday dinner plates. They shouldn't.

Over the last decade the public has been bombarded by apocalyptic predictions about the future of fish stocks — in 2006, for instance, an article in the journal *Science* projected that all fish stocks could be gone by 2048.

Subsequent research, including a paper I co-wrote in *Science* in 2009 with Boris Worm, the lead author of the 2006 paper, has shown that such warnings were exaggerated. Much of the earlier research pointed to declines in catches and concluded that therefore fish stocks must be in trouble. But there is little correlation between how many fish are caught and how many actually exist; over the past decade, for example, fish catches in the United States have dropped because regulators have lowered the allowable catch. On average, fish stocks worldwide appear to be stable, and in the United States they are rebuilding, in many cases at a rapid rate.

The overall record of American fisheries management since the mid-1990s is one of improvement, not of decline. Perhaps the most spectacular recovery is that of bottom fish in New England, especially haddock and redfish; their abundance has grown sixfold from 1994 to 2007. Few if any fish species in the United States are now being harvested at too high a rate, and only 24 percent remain below their desired abundance.

Much of the success is a result of the Magnuson Fishery Conservation and Management Act, which was signed into law 35 years ago this week. It banned foreign fishing within 200 miles of the United States shoreline and established a system of management councils to regulate federal fisheries. In the past 15 years, those councils, along with federal and state agencies, nonprofit organizations and commercial and sport fishing groups, have helped assure the sustainability of the nation's fishing stocks.

Some experts, like Daniel Pauly of the University of British Columbia Fisheries Center, who warns of "the end of fish," fault the systems used to regulate fisheries worldwide. But that condemnation is too sweeping, and his prescription — closing much of the world's oceans to fishing — would leave people hungry unnecessarily.

Many of the species that are fished too much worldwide fall into two categories: highly migratory species that are subject to international fishing pressures, and bottom fish — like cod, haddock, flounder and sole — that are caught in "mixed fisheries," where it is impossible to catch one species but not another. We also know little about the sustainability of fish caught in much of Asia and Africa.

The Atlantic bluefin tuna is emblematic of the endangered migratory species; its numbers are well [below the target](#) set by the International Commission for the Conservation of Atlantic Tunas, and the catches in the Eastern Atlantic are too high. Many species of sharks also fall into this category. Because these stocks are fished by international fleets, reducing the catch requires global cooperation and American leadership. But not all highly migratory fish are in danger; the albacore, skipjack and yellowfin tuna and swordfish on American menus are not threatened.

Managing the mixed fisheries in American waters requires different tactics. On the West Coast, fish stocks have been strongly revived over the past decade through conservative management: fleet size reductions, highly restrictive catch limits and the closing of large areas to certain kinds of nets, hooks and traps. Rebuilding, however, has come at a cost: to prevent overharvesting and protect weak species, about 30 percent of the potential sustainable harvest from productive species (those that can be harvested at higher rates) goes untapped.

A similar tradeoff is going on in New England, where the management council, made up of federal and state representatives, restricts the harvesting of bottom fish like cod and yellowtail flounder in both the Gulf of Maine and Georges Bank, off Cape Cod. In trying to rebuild the cod, regulators have had to limit the catch of the much more abundant haddock, which are caught in the same nets.

The Magnuson Act regulating federal fisheries has been successful, but it needs to be revised. The last time it was reauthorized, in 2006, it required the rebuilding of overfished stocks within 10 years. That rule is too inflexible and hurts fishing communities from New England to California. A better option is to give the management councils greater discretion in setting targets and deadlines for rebuilding fish stocks.

We are caught between the desire for oceans as pristine ecosystems and the desire for sustainable seafood. Are we willing to accept some depleted species to increase long-term sustainable food production in return? After all, if fish are off the menu, we will likely eat more beef, chicken and pork. And the environmental costs of producing more livestock are much higher than accepting fewer fish in the ocean: lost habitat, the need for ever more water, pesticides, fertilizer and antibiotics, chemical runoff and “dead zones” in the world’s seas.

Suddenly, that tasty, healthful and environmentally friendly fish on the plate looks a lot more appetizing.

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