

## ADVENTURES IN

# PHILANTHROPY

### Taking Stock of the Seas

*Decades of overfishing have devastated the world's oceans. Today, private donors are helping devise market-based solutions to restore the seas.*

**B**ARRETT WALKER HAS ALWAYS LOVED spending time on the water. When he's not out boating, he's underwater diving. So it's not surprising that, about a decade ago, he began noticing signs of the environmental effects of overfishing. His worst suspicions were confirmed, however, when he read a 2003 article in *Nature*: overfishing had already caused 27 percent of the world's fisheries to collapse, and the rest were in danger of collapsing by 2048. As director of the Alex C. Walker Foundation, Barrett set about trying to find a solution that would conserve fisheries and protect fishermen.

"For years I'd been aware of the impact overfishing had on ecosystems," Walker explains. "But after the *Nature* study, there was no longer any doubt. And the loss of fisheries has impacts all around the world and on the American economy. Something had to be done."

Walker, like other donors, carefully considered the economics of fishing. When fish stocks are over-fished, populations dwindle, depleting the oceans and devastating fishermen. Population declines cause disruptions in the food chain, and fishermen face declining catches and income.

It's a textbook case of the tragedy of the commons. Fish don't live on private property where individual owners can thoughtfully control the harvest. They swim in communal waters,



*A fishing boat heads to sea from Homer, Alaska, the "halibut fishing capital of the world."  
(Photo courtesy of Barrett Walker)*

which gives individual fishermen every incentive to catch as many as they can, as quickly as they can, before someone else does—with no regard for the long-term prospects of the fishery. A farmer who owns a corn field has incentives to make it productive in the long term. A fisherman at sea doesn't.

Walker understood that, at its heart, the collapse of fisheries represents a failure of imagination. The goal should be to create incentives for fishermen to catch fish at a sustainable rate. For the last 30 years, however, the regulatory system designed by the federal government has had precisely the opposite effect, encouraging overfishing and driving down prices.

But first, an explanation of fishing jurisdiction is in order. In the United States, individual states have authority over the waters from their shores to

three miles out. After that point, the federal government controls the waters out to 200 miles from the nation's coastline.

In 1976, Congress passed the Magnuson-Stevens Act, which established a system for regulating the fisheries in federal waters. The law gave authority for fisheries to the National Oceanic and Atmospheric Administration (NOAA), an agency within the Commerce Department. The act divided U.S. territorial waters into eight regional fisheries management councils. These councils are made up of various stakeholders, including government representatives, scientists, fishermen, and conservationists. The councils vote to recommend policies to

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NOAA, which turns those recommendations into law.

For the first 20 years of Magnuson-Stevens, NOAA sought to control catch levels by telling fishermen what equipment they could and could not use and by setting the duration for fishing seasons. The results of these attempts to regulate behavior were decidedly sub-optimal.

The North Pacific Fishery Management Council (NPFMC) is responsible for Alaska's fisheries, and in the late 1970s it was clear that stocks of Alaskan halibut were diminishing. So the NPFMC recommended that the 1980 halibut season be set to 65 days, which it was. That year 333 vessels went fishing for halibut. At the end of the season, they brought home 115 percent of what scientists thought was a sustainable catch level.

So the next year, the NPFMC tried shortening the season, hoping that by cutting the number of days fishermen could fish, they would cut the amount of total catch. Instead, fishermen responded to the shorter season by using more boats, harnessing more expensive and sophisticated gear, and fishing longer hours. Each subsequent year, the halibut season was shortened, and every year fishermen caught more than the target catch. By 1990, halibut season was only six days long. That year, fishermen employed 100 extra boats and brought in 106 percent of the projected sustainable catch. In 1991, halibut season was reduced to a 48-hour derby.

The regulations were having precisely the opposite of their intended effect. The 48-hour halibut season meant a frantic scramble of fishermen working without sleep, in crowded waters, with overloaded boats. Compressing the catch into such a short period of time meant that an enormous catch of fresh halibut glutted the market all at once, driving prices down. Consumers lost out, too, since they only had a very short window in which to buy fresh Alaskan halibut.

In 1995, the NPFMC tried something new. The council abandoned the idea of trying to control the length of



*Alaskan halibut caught under the economically and environmentally sustainable catch-shares program. (Photo courtesy of Barrett Walker)*

the season. Instead, it implemented a regime of “catch shares.” Under the catch-share program, scientists studied the halibut population before the season began, determined the optimal sustainable catch, and then allocated “shares” of this total catch to individual fishermen. Instead of dictating behavior and hoping to reach a desired outcome, the catch-share regime dictated the outcome, and allowed fishermen to adjust their behavior accordingly.

The results for Alaskan halibut were striking. Without the compressed fishing season, fishermen were able to use fewer boats over longer periods of time. They were free to use less invasive and more environmentally friendly techniques (namely, fishing lines instead of trawling nets). The halibut season stretched to nine months, meaning that fish hit the market in smaller numbers, but over a sustained period. Which in turn meant that the per-pound price of halibut increased and consumers enjoyed better access to year-round fresh fish.

For centuries, notes Walker, fishermen in Palau and other Pacific islands had practiced a fairly well-developed system of property rights. In its more recent form, however, the catch-share program was pioneered in New

Zealand, with Iceland and Australia also being early adopters. But in the United States, catch shares (technically, “rights-based fishing”) have presented a unique opportunity for private donors to work with the public and for-profit sectors to resolve the fishing industry's tragedy of the commons.

Initially, there was political resistance to rights-based fishing. The 1996 version of the Magnuson-Stevens Act put a moratorium on catch-share programs, despite the successful program with the Alaskan halibut. But the public sector's hesitation created space for private philanthropy.

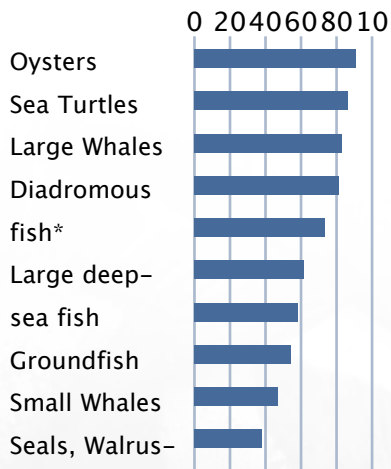
Before getting involved with fisheries, the Walker Foundation had a long tradition of finding free-enterprise solutions to environmental problems. After the *Nature* study appeared, Walker took the lead in bringing the Bradley Fund for the Environment and the Charles G. Koch Charitable Foundation together to fund a grant studying fishery sustainability.

The eventual grantees—the Property and Environment Research Center, the Reason Foundation, and Environmental Defense—came to the conclusion that catch shares offered the most promise as a mechanism for protecting both fisheries and the livelihoods of fishermen.



**SINKING FAST**

Marine life in estuaries and coastal seas



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Source: Jeremy Jackson, PNAS, August 2008

The Walker Foundation’s efforts baited the hook, as it were, for larger foundations. In May 2006, the Paul G. Allen Family Foundation made a \$5 million grant to the Bren School of Environmental Science and Management at the University of California, Santa Barbara. That money funded a study examining the efficacy of catch shares. The Bren study looked at 11,135 fisheries across the globe, examining data from 1950 to 2003. The results were striking. It became clear that rights-based management halts—and, in many cases, reverses—fishery collapse.

Armed with hard data proving the effectiveness of catch shares, various fishing groups began to take a closer look at rights-based fishing. But making the switch to catch shares isn’t easy. The general principle of rights-based fishing is simple enough, but there are variables which need to be configured to suit individual fisheries. How are rights allocated—through auctions or awards based on historical performance? Can shares be sold or traded? If so, should there be rules

against consolidation of shares? And how are fish populations, and catches, monitored? Halibut fishing in Alaska is different from sea urchin harvesting in San Diego, both of which are different from cod fishing in New England. Every fishery has its own distinct economic, social, historical, and environmental circumstances.

And then there are the start-up costs. Compiling data on fish stocks and installing monitoring systems to record catches can be expensive. Encouraged by the Bren School’s research, the Allen Family Foundation backed the creation of the California Fisheries Fund, which functions as a bank to help fisheries make the transition to rights-based management. The fund’s capital was provided by other philanthropic groups, including the Gordon and Betty Moore Foundation.

Meaghan Calcari, a program officer at the Moore Foundation’s Marine Conservation Initiative, explains that its philosophy is that “healthy oceans mean healthy fisheries. And vibrant coastal communities with sustainable economies are part of this.” To that end, the Moore Foundation has invested in helping fisheries make the transition to catch shares.

For instance, the Cape Cod Commercial Hook Fishermen’s Association (CCCHFA) was an early adopter of catch shares, having successfully petitioned the New England Fisheries Management Council (NEFMC) to institute catch shares in 2003. But the fishermen were looking for a more efficient system to monitor catches. So in 2005, the Moore Foundation made a \$491,000 grant to test an onboard video monitoring system. The results of the CCCHFA’s catch-share system were so impressive that the Moore Foundation gave them a second grant in 2007 to create a model for the NEFMC to move the entire regional groundfish fishery to catch shares.

In New England and off the California coast, the Moore Foundation

has given grants to help create dedicated access plans which will eventually be shepherded through the regional management councils and approved by NOAA. Across New England, the California Current, and British Columbia, the Moore Foundation has granted between \$2 million and \$4 million per year for fishery reform since 2005. Ultimately, the Moore Foundation aims to transform fisheries management throughout North America with “practice-based theory”: demonstrating success in these regional projects and communicating their learning to key decision-makers, and to the broader fisheries management community.

All of this work has been rewarded. Thoughtful donors used a limited amount of targeted philanthropy to bring about a fundamental shift in policy. Scientists and policymakers are now increasingly turning from command-and-control strategies toward strategies based on ownership and property rights. The outcome is not just better governance, but a market-based system that improves the health of the environment while making fishing safer, more sustainable, and more profitable. Many donors feel there is enormous potential for applying such market-based systems to other environmental problems.

In the meantime, the 2006 reauthorization of the Magnuson-Stevens Act has encouraged rights-based management, and fishermen have rushed to embrace the scheme. “Now the challenge is that there are so many fisheries that want to transition from a days-at-sea approach to catch shares,” explains Barrett Walker. There’s still work to be done, though. “This is a success story that now faces a bureaucratic bottleneck because the National Marine Fisheries can’t handle all of the applications to transition to catch shares.”

Which means that there’s still a role for private donors. They’ve had a good catch so far, and they’re looking for a better haul tomorrow. **P**