



# Oceans of Abundance

**AN ACTION AGENDA FOR AMERICA'S VITAL FISHING FUTURE**  
**SECRETARY BRUCE BABBITT AND CONGRESSMAN JAMES GREENWOOD, CO-CHAIRS**



Secretary Bruce Babbitt, co-chair



Congressman James Greenwood, co-chair

## Friends and Colleagues:

President Obama and the 111th Congress have before them a unique opportunity — to restore abundant oceans, that offer a sustainable source of food, employment and diverse wildlife for the American people. By expanding the use of “catch shares” — a performance-based management approach — in fisheries at home and around the globe, the President can lead the world in securing food for more than a billion people, growing the fishing economy, and improving and protecting the oceans.

The majority of the world’s fisheries have declined precipitously for decades, and U.S. fisheries have fared little better. Barely one quarter of our fisheries are known to be sustainable. Thousands of fishermen have already lost their jobs as fish populations plummeted. Signs of ecosystem collapse are on the rise, as fishing nets get clogged with jellyfish rather than sought-after types of seafood.

President Obama has a big task ahead. He faces depleted fisheries that have caused painful job loss and a ticking litigation clock if legal deadlines to end overfishing by 2011 aren’t met. Members of the 111th Congress also face important decisions as government budgets tighten and fishing families and communities suffer from shrinking economic opportunity.

The good news is that new science clearly points the way to recovery. Science-based catch shares make fish more abundant and fisheries more profitable. And catch shares will protect ocean productivity and diversity more effectively — for generations to come.

President Obama and the U.S. Congress can achieve these benefits quickly and with relatively little cost. With a straightforward change in public policy, we can end overfishing and restore the oceans — thus improving the lives and livelihoods of fishermen.

The leaders who developed the following recommendations are current and former federal and state elected officials, cabinet officers, scientists and administrators. We come from both political parties. We share a conviction that catch shares are, by far, the best way to manage the nation’s fish stocks. With catch shares we can comply with conservation goals, increase profitability, and foster an industry that provides jobs and food in an otherwise unstable world. Our conclusions are rooted in science, economics, experience, and a realistic assessment of what can be accomplished over the next few years. We pledge to work with those who seek to solve this challenge by making catch shares the management and performance standard for America’s fisheries.

*Bruce Babbitt was Secretary of the Interior from 1993–2001 and Governor of Arizona from 1978–87.*

*James Greenwood is President and CEO of the Biotechnology Industry Organization. He represented Pennsylvania’s Eighth District in Congress for 12 years.*

# Executive Summary

President Obama and the U.S. Congress have a unique opportunity to lead on an economic and environmental issue of global significance: securing a sustainable supply of wild seafood. The food security of 1 billion people is in jeopardy. Recent scientific studies predict the collapse of global fisheries in our lifetimes, with an estimated 27% already in ruin. While many threats — including climate change and habitat loss — contribute to the declining health of the oceans, overfishing is the single biggest cause of depleted fisheries worldwide. The good news is that a proven solution, called “catch shares,” can end overfishing and lead to abundance for current and future generations of Americans. This solution empowers individuals and communities to manage their catch effectively, while achieving scientifically set conservation targets. With a straightforward change in public policy, President Obama and the U.S. Congress can demonstrate leadership at home and around the world, by rebuilding a strong fishing economy that provides a stable supply of seafood while contributing to healthy and resilient ocean ecosystems.



*Captain Carey Griffith is a red snapper fisherman from Destin, Florida. A new catch share program in the Gulf has reduced wasteful discards, dramatically extended the fishing season, and increased the quality and market value of his fish.*

“This is one environmental crisis that President Obama and Congress can actually solve in the near-term.”

— Secretary Norm Mineta, *Departments of Commerce (2000-2001) and Transportation (2001-2006)*

## To unleash innovation for economic and ecosystem renewal in the oceans:

- ▲ President Obama should ensure that all federal fishery management plans are evaluated for catch shares by 2012, and that at least 50% of federal fishery management plans feature catch share management by 2016.
- ▲ The U.S. Congress should ease bottlenecks in order to achieve the President’s goal by passing legislation to require that catch shares be considered in all fishery management plans by 2012.

*Oceans of Abundance* was developed by an independent, bipartisan working group consisting of 23 prominent leaders in government, fisheries science, management, and policy. The working group was convened by Environmental Defense Fund, Marine Conservation Biology Institute, and World Wildlife Fund. Its purpose is to present policymakers with coherent, achievable methods — based on the most current scientific consensus — to reverse the economic and environmental decline of U.S. fisheries and the communities that depend on them. Generous support for this report was provided by the Walton Family Foundation.<sup>1</sup>

# The Problem:

## Overfishing is putting seafood supplies and the economy at risk

“Catch shares are a powerful way to secure the fish populations that people around the globe rely on for their main source of protein.”

— Dr. Jeffrey Sachs, Director, The Earth Institute, Columbia University

Today an estimated 1 billion people worldwide depend upon fish and shellfish for their protein.<sup>2</sup> But the security of this important food source — as well as the 200 million associated jobs around the world<sup>3</sup> — is in jeopardy.

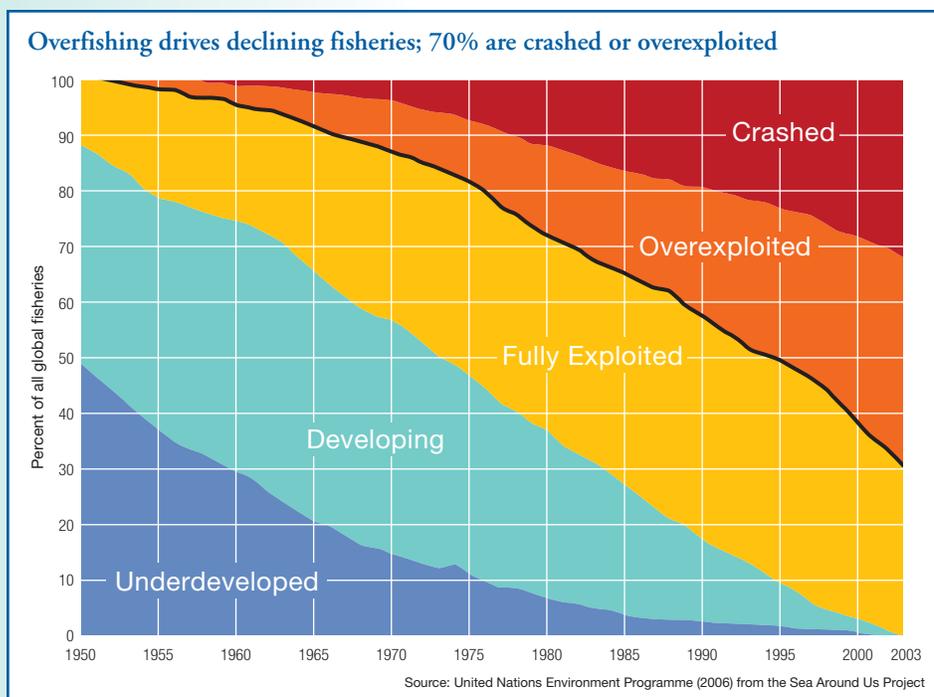
Evidence is overwhelming. The global oceans are being emptied of seafood. Scientists report that 90% of large fish — highly sought-after species like tuna and swordfish — have been removed from the oceans.<sup>4</sup> There is scientific consensus that fishing is fundamentally altering ocean ecosystems,<sup>5</sup> which are increasingly likely to yield massive swarms of jellyfish rather than food fish.<sup>6</sup> Even here in the United States, where we have comparatively strong laws on the books, scientists can only say for sure that about 25% of our fisheries are fished at sustainable levels.<sup>7</sup> Both the Pew Oceans Commission and the U.S. Commission on Ocean Policy concluded that ocean ecosystems are at risk,

and that current fishery management is insufficient to reverse the decline.<sup>8,9</sup>

Overfishing is the biggest driver of declining fisheries globally, although many threats — including habitat loss and climate change — contribute to the problem. In fact, the United Nations-sponsored Millennium Ecosystem Assessment, the best evaluation to date of Earth’s ecosystem health, concluded that overfishing is “having the most widespread and the dominant direct impact on food provisioning services, which will affect future generations.”<sup>10</sup>

Declining fish catches translate into lost jobs and lost economic opportunity. The World Bank estimates that over the last thirty years, mismanaged fisheries have cost the global economy \$2 trillion — about \$50 billion per year currently.<sup>11</sup> But with appropriate reforms, fisheries could be a driver of economic growth. In the United States, the net economic value of commercial fisheries would likely double.<sup>12</sup>

To secure our seafood supply and the jobs that depend on fishing, we must solve the overfishing problem. This is not only a moral mandate; it’s also mandated by law. When Congress revised the federal fisheries law, it required an end to overfishing in the United States by 2011,<sup>13</sup> an important deadline for the Obama Administration. But ending overfishing will be difficult and expensive if we continue to use the conventional management tools that have led us to this point.



# The Challenge:

## Changing the way fisheries are managed

Conventional fisheries management has proven ineffective and inefficient, causing fisheries and ocean ecosystems to suffer. Conventional fisheries management seeks to control fishermen's behavior in a way that is expensive for fishermen, for the oceans, and for government.

Over the last several decades, as overfishing worsened, regulators tried to limit the problem by imposing an ever-more-complicated array of "effort controls." These limits on when and how to fish are aimed at regulating fishing gear and method — without holding individual fishermen accountable for adhering to catch limits. Fishermen have generally complied with effort controls but, driven by their entrepreneurial spirit, have found innovative ways to catch more fish.

This cat-and-mouse game results in a "race for fish" as limited fishing seasons — even as short as two days — increase competition among fishermen to catch as much as they can as fast as they can. This burns excessive fuel, which is bad for fishermen's wallets, bad for energy independence, and bad for the environment. Fishermen are also forced to go to sea in inclement weather, risking their lives to earn their living. And the result is often a glut of fish on the market for a short time, concurrent with low earnings for fishermen. Couple this with regulations that require marketable fish to be thrown overboard, and one can imagine fishermen's enormous frustration with the current management system.

Working at such a frantic pace means that fishermen cannot be selective in their catch. Poorly tended lines and nets are often lost and continue to "ghost fish" in the ocean. The use of unselective methods and gear increases "bycatch" — the unintentional killing of target species above allowable limits, as well as non-target species such as sea turtles, birds and juvenile fish. The

destruction of important seafloor habitats is another consequence of unselective fishing.

This approach often results in total catches, made up of landed fish plus bycatch, which exceed limits set by science that are essential to ensuring a sustainable fishery. Such waste in turn furthers the decline of the resource, exacerbates economic disruption, and jeopardizes fishing communities. In the United States today, many overfished stocks are yielding far less than half their potential value due to declining catches.<sup>14</sup>

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“Business as usual is a continued decline in global fish wealth.”

— The Sunken Billions: The Economic Justification for Fisheries Reform.  
World Bank/FAO, October 2008

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*Cod was once plentiful in New England and across the North Atlantic. Today this iconic fishery has been decimated.*



R.E. Holloway, The Rooms Provincial Archives

# Catch Shares:

## Fishing for the future

President Obama and the U.S. Congress can solve this problem quickly and with relatively little cost. With a straightforward change in public policy, we can end overfishing and restore the oceans — all while improving the lives and livelihoods of fishermen.

Instead of trying to restrict how fishermen do their jobs, the Obama Administration should set strict performance standards and let fishermen decide how best to meet them. The mechanism to do this is called “catch shares.” Catch share programs set a scientifically allowable total catch and then allocate a percentage share of that total to fishermen. (Catch shares work for both targeted catch and bycatch.) Catch share programs can also set conservation targets (e.g. fish populations, habitat health, etc.) for specific areas — a system sometimes called “territorial use rights for fishing” (TURF) or “area-based catch shares.” Shares, based on a percentage of total allowable catch or area, can be held by individuals, cooperatives, or communities.

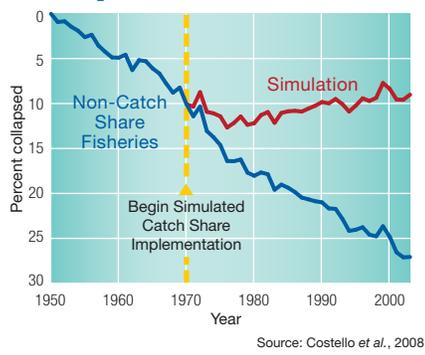
Catch shares, regardless of their form, have been proven to restore economic and environmental health to ocean fisheries because they set a mandatory scientific target and give

fishermen maximum flexibility in choosing how to meet those targets. The mandatory target holds fishermen accountable to catching only the allowable amount of fish. The flexibility gives fishermen the chance to improve their efficiency, and allows them to benefit as they help restore the oceans. The value of their shares increases as the health of the resource improves. Fishermen are thus rewarded for fishing in ways that ensure the long-term health of the ecosystem.

Recognizing the potential of catch shares to restore fisheries, Congress recently authorized their use. Since then, new scientific analyses have determined how powerful the catch share approach is.

The combination of private accountability and flexibility works better than having the government try to manage the details of the fishing business.

Catch shares prevent, and even reverse, the collapse of the world's fisheries

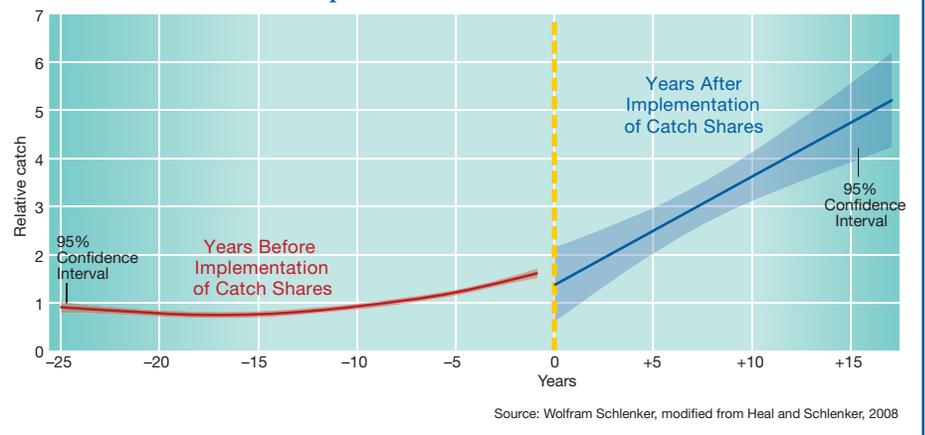


An on-board observer measures haddock from New England. Under a catch shares system, fishermen are accountable for meeting mandatory performance targets.



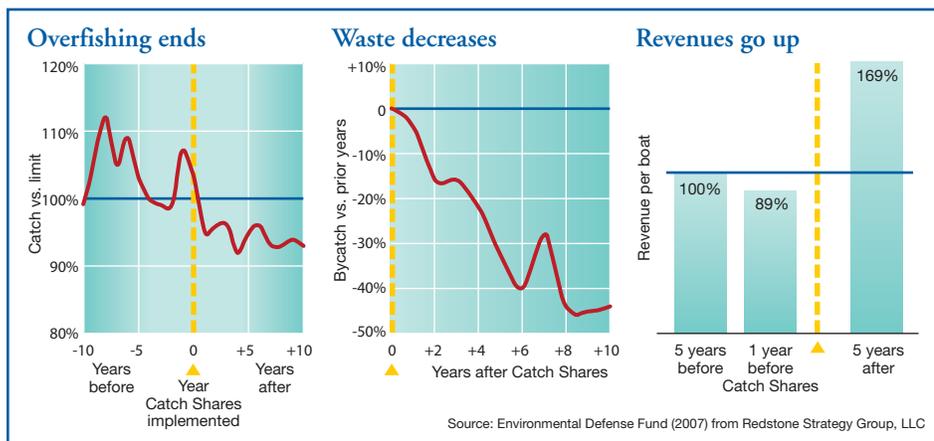
Amy Van Atten, NMFS

Catch share fisheries are more productive



## The benefits of catch shares

- ▲ **Catch shares prevent, and even reverse the collapse of the world's fisheries.**<sup>15</sup> The journal *Science* recently published the most comprehensive study of catch shares to date. The study, by Costello *et al.*, examined the fate of more than 11,000 fisheries around the world, and found that catch share fisheries remain stable in the long term.
- ▲ **Catch share fisheries are more productive.** Heal and Schlenker, writing in *Nature*, showed that in the 17 years after implementation, catch shares had driven a large increase in catch (on the order of four-fold) — while those fisheries remained stable.<sup>16</sup>
- ▲ **Catch share fisheries meet conservation targets and improve economic performance.** A detailed look at U.S. and British Columbia catch shares showed that fishermen comply with catch limits — even catching 5% less than their allowable limit. In those same fisheries, revenues per boat increased by 80% due to higher yields and higher dockside prices.<sup>17</sup> In addition, bycatch decreased on average 40%. In the first year of the Gulf of Mexico's red snapper catch share program, NOAA reports that commercial fishermen fully complied with catch limits and considerably reduced bycatch.<sup>18</sup>
- ▲ **Catch share fisheries can help restore natural wealth.** According to the World Bank, catch shares and other reforms can drive economic growth.<sup>19</sup> Costello and Gleason conservatively estimate that catch shares could double the net economic value of U.S. commercial fisheries.<sup>20</sup>



Taken together this evidence demonstrates a path toward a more stable food supply, better economic returns, and a healthier ocean. This is strong evidence that catch shares end overfishing, and offer a welcome message of hope from leading scientists.

Catch shares provide the best strategy for protecting fishing jobs, tens of thousands of which have already been lost in collapsing

fisheries. Under current management labor is needed for just a few short days. Catch shares, on the other hand, often allow fishing seasons to be dramatically extended, spreading out the economic benefits across an entire year. Until fisheries recover, the same labor hours are needed. And under catch shares the jobs are much more likely to be full-time.<sup>21</sup>

## TODAY'S INNOVATION: MARINE PRODUCTIVITY AREAS

Complementing catch shares with additional tools that can substantially enhance fishery productivity is a new frontier of innovation. Marine protected areas (MPAs) — places set aside for limited or no extraction — have been shown to improve the abundance and diversity of marine species.<sup>22</sup> Unfortunately, their ability to enhance fishery-wide productivity is often limited by size and enforceability. An emerging solution may be to design MPAs based on improving productivity.

Exciting new work suggests that when catch shares are coupled with MPAs, the important habitats where fish breed and grow can be safeguarded, and overall production can be enhanced. Protecting fish in these vulnerable life stages contributes to a healthy fishery with increased economic potential. With catch shares, fishermen are more likely to support MPAs. The Obama Administration should increase investment in research and development of this strategy, as well as complementary ecosystem-based research in universities, and support on-the-water experimental pilot projects.

“Catch shares ensure accountability. That means we stick to our catch limit.”

— David Krebs, Owner, Ariel Seafoods Inc. and shareholder, Gulf of Mexico red snapper catch share program

# RECOMMENDATIONS



“Catch shares can provide real hope for the sustainability of American fisheries and fishing communities.”

— Dr. Andy Rosenberg, former Deputy Director,  
National Marine Fisheries Service

## PRESIDENT OBAMA SHOULD:

### 1. Unleash innovation for economic and ecosystem renewal in the oceans:

#### ▲ Ensure that:

- All federal fishery management plans are evaluated for catch shares by 2012.
- At least 50% of federal fishery management plans feature catch share management by 2016.
- The portfolio for transition to catch shares includes a range of fisheries based on feasibility as well as economic, social, and biological needs.

#### ▲ Establish performance standards for fisheries management by requiring plans to consider catch shares and ensuring that all fisheries deliver results comparable to well-designed catch share programs, including:

- Compliance with catch limits
- Improved fisheries information
- Reduced bycatch
- Enhanced economics and safety

#### ▲ Work with Congress to make catch shares a priority in the first 100 days.

#### ▲ Partner with state and regional fishery managers by providing incentives and resources to design and implement catch shares in federal and state waters.

#### ▲ Place a high priority on improving the science of setting catch limits, including enhancing capacity at NOAA and universities, and establishing ecosystem-based research, monitoring, and policy frameworks at appropriate spatial scales.

#### ▲ Promote the entrepreneurial spirit of fishing families and vibrant coastal communities through public-private partnerships and assistance in the transition to sustainable fishing.

#### ▲ Create experiments that are designed to increase the productivity of fisheries by combining area-based catch shares with marine protected areas (including no-take reserves as needed). These projects should be based on the best available science, and designed in consultation with states and local stakeholders.

#### ▲ Educate stakeholders on the performance of catch shares and the efficacy of combined catch share-marine protected area experiments.

### 2. Appoint committed leaders for the Department of Commerce and regional fishery management councils who will drive economic and ecosystem renewal in the oceans.

### 3. Lead globally by working with other nations and within international regulatory bodies to which the U.S. is party to consider catch share management.

#### ▲ Develop catch share plans for Regional Fishery Management Organizations.

#### ▲ Hold a high-level meeting of Arctic nations in 2009 to negotiate a new Arctic Framework Convention by the end of 2012 that includes catch shares and marine protected areas (including no-take reserves as needed).<sup>23</sup>

#### ▲ Strongly advocate for Senate ratification of the Law of the Sea Treaty.

# The President and Congress can help create full-time jobs, stimulate economic growth, and restore the oceans.

## THE UNITED STATES CONGRESS SHOULD:

### 1. Ease bottlenecks in the economic and ecosystem renewal of the oceans:

- ▲ Pass legislation that:
  - Requires all fishery management plans to consider catch shares by 2012.
  - Ensures that all fisheries deliver results comparable to well-designed catch share programs, including:
    - Compliance with catch limits
    - Improved fisheries information
    - Reduced bycatch
    - Enhanced economic performance and safety
  - Eliminates regional disincentives to catch shares.
  - Enhances coordination among federal, interstate, and state decision-makers to ensure an ecosystem-based framework for implementing catch shares.
- ▲ Accelerate scientific understanding by funding experimental programs testing the efficacy of area-based catch shares in combination with marine protected areas and no-take reserves as needed, and provide recommendations for future use and funding.

### 2. Hold agencies accountable:

- ▲ Approve and support decision-makers who are committed to economic and ecosystem renewal in the oceans.
- ▲ Hold oversight hearings during the first 100 days in order to give the new Administration an opportunity to present its fisheries goals.
- ▲ Conduct oversight of the Department of Commerce, Department of State, and other relevant agencies.

### 3. Accelerate the transition to sustainable and profitable fisheries:

- ▲ Increase incentives and resources to design and implement catch shares.
- ▲ Establish an oceans trust fund that provides assistance in the transition to catch shares to organizations and communities through low-interest loans and grants.

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“Congress has an essential role in ending overfishing as part of the sustainable management of our oceans. Catch shares may be the best management tool we have to end overfishing and continue our fishing tradition.”

— Congressman Sam Farr  
17th District, California

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“Catch shares make good economic and environmental sense for reviving America's fishing future.”

— Senator Connie Mack  
Florida (1989-2001)

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## AMERICAN LEADERSHIP, GLOBAL RESULTS

For many people around the world who rely on fish as their main protein source, securing a sustainable supply of seafood is critical. Indeed many Low-Income Food Deficit countries have significant overfishing problems.<sup>24</sup> These impacts are often compounded as fish caught by highly subsidized foreign fleets are exported with limited benefits to the countries of origin. This instability can contribute to economic and social unrest and prompt migration to other countries by people in search of food and job security.<sup>25</sup>

The Obama Administration can help provide American leadership, expertise, and resources to solve this global problem. By helping other nations to transition to catch shares, including their use in conjunction with marine protected areas, we can increase food security, alleviate poverty, reduce fishing subsidies that distort markets, and sustain a supply of healthy seafood to the United States and the globe. The fisheries of many countries are poised for this change.

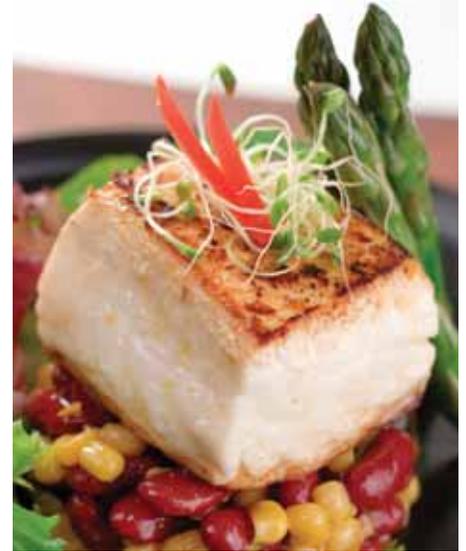
It is essential that the United States not only lead by example, but that we actively work with our partners to promote this tool in multi-national fisheries management processes, including Regional Fishery Management Organizations. The increasing accessibility of the Arctic Ocean offers a similar opportunity. A critical step for international progress is for the United States Senate to ratify the Law of the Sea Treaty, an international standard for the responsible use of ocean resources.

# Conclusion

The stage has been set for the President and Congress to act. The science shows clear benefits. The tools have been tested, and they work. The law requires an end to overfishing by 2011 and authorizes catch shares. But to achieve a new future of ocean abundance means changing business as usual. President Obama and the 111th Congress must capitalize on this deadline with the strength of America's ingenuity and innovation and lead the nation to a better fishing future.

However, transformational change can be difficult. While many in industry struggle to get by under conventional management, uncertainty in tough economic times can increase anxiety about change. Fishermen and shore-side businesses from boatyards to fish houses have legitimate concerns about being left to fend for themselves during a transition to catch shares. For instance, the shift away from lots of tough, part-time jobs to fewer high quality, full-time jobs means that those who remain in fishing have a better quality of life. But what about those who can't or don't want to fish under the new system? In the face of uncertainty, vested interests can restrain or block innovation and change.

Change is made even harder by a painfully slow regulatory process. Currently it takes several years to develop a catch share



program. Unfamiliar design issues, challenging procedural and programmatic considerations, plus competition for scarce resources, contribute to the delays. In that time, fisheries continue to decline, frustration grows, and costs associated with the regulatory process mount. The result is gridlock. Motivation to embrace bold, challenging visions of economic and environmental revival is replaced by faint hopes for incremental improvement. This is the formula that has allowed fisheries around the world to drift towards commercial extinction.

Presidential and Congressional leadership can break the logjam. A few well-placed steps taken now can restore the optimism that once characterized fishermen around the world. It is time to make clear that the question must not be "if" there will be profitable and sustainable commercial fisheries but "when."

# End Notes

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Co-chair Bruce Babbitt addressing a working group meeting

# Working Group

**Secretary Bruce Babbitt** (co-chair); former U.S. Secretary of the Interior; former Governor of Arizona

**Congressman James C. Greenwood** (co-chair); President and CEO, Biotechnology Industry Organization; former U.S. Representative (8th District, Pennsylvania); Board of Directors, Marine Conservation Biology Institute

**Congressman Sam Farr** 17th District, California; co-chair, House Oceans Caucus

**Congressman Wayne Gilchrest** former U.S. Representative (1st District, Maryland); former chair, House Resources Fisheries and Oceans Subcommittee

**Congressman Rush Holt** 12th District, New Jersey; member, House Natural Resources Committee

**Senator Connie Mack** Senior Policy Advisor, King and Spalding; former U.S. Senator (Florida)

**Secretary Norman Mineta** Vice Chairman, Hill and Knowlton; former U.S. Secretary of Commerce; former U.S. Secretary of Transportation; former U.S. Representative (13th and 15th Districts, California)

**Governor Christine Todd Whitman** President, Whitman Strategy Group; former Governor of New Jersey; former Administrator, U.S. Environmental Protection Agency; former chair, Pew Oceans Commission

**Secretary Mike Chrisman** Secretary for Resources, State of California; chair, California Ocean Protection Council

**Dr. Christopher Costello** Professor of Environmental and Resource Economics, University of California Santa Barbara

**Dr. Dan Esty** Hillhouse Professor of Environmental Law and Policy, Yale University; Clinical Professor of Law, Yale Law School

**Dr. Steve Gaines** Professor of Ecology, Evolution and Marine Biology, Director, Marine Science Institute, University of California Santa Barbara

**Terry Garcia** Executive Vice President, National Geographic Society; former Deputy Administrator, National Oceanic and Atmospheric Administration

**Dr. Les Kaufman** Professor of Biology, Boston University; Principal Investigator, Marine Management Area Science Program, Conservation International

**Dr. Jane Lubchenco** Wayne and Gladys Valley Professor of Marine Biology, Oregon State University; former President, American Association for the Advancement of Science; member, National Academy of Sciences; member, Pew Oceans Commission

**N.J. Nicholas, Jr.** Chairman, Environmental Defense Fund; member, Council on Foreign Relations; former President, Time, Inc.

**Dr. John Ogden** Director, Florida Institute of Oceanography; Professor of Biology, University of South Florida

**Wendy Paulson** Chairman, RARE; President's Conservation Council, The Nature Conservancy

**Dr. Ellen Pikitch** Executive Director, Institute for Ocean Conservation Science; Professor, School of Marine and Atmospheric Sciences, Stony Brook University

**Dr. Andy Rosenberg** Professor, Natural Resources Policy and Management, University of New Hampshire; former Deputy Director, National Marine Fisheries Service; Commissioner, U.S. Commission on Ocean Policy

**Dr. Jeffrey Sachs** Director, The Earth Institute, Columbia University; Special Advisor to Ban Ki-Moon, Secretary General of the United Nations

**Dr. Bob Steneck** Professor of Oceanography, Marine Biology and Marine Policy, University of Maine

**Christophe A.G. Tulou** Principal, Christophe Tulou Associates; Director, Sustainable Oceans, Coasts and Waterways Program, The Heinz Center; Executive Director, Pew Oceans Commission



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ENVIRONMENTAL DEFENSE FUND

finding the ways that work



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