From the SelectedWorks of Chad J McGuire

August 2011

Who Owns the Fish? Moving from the Commons to Federal Ownership of Our National Fisheries

Contact Author

Start Your Own SelectedWorks

Notify Me of New Work

Available at: http://works.bepress.com/chad_mcguire/27

Defending Liberty
Pursuing Justice

ABA SECTION OF ENVIRONMENT ENERGY AND RESOURCES

Marine Resources Committee Newsletter

Vol. 14, No. 2 **August 2011**

MESSAGE FROM THE CHAIR SUMMER 2011

Dear Members of the Marine Resources Committee:

With this newsletter, the Marine Resources Committee wraps up another year of service to SEER members. I would like to take this opportunity to thank all of my committee vice chairs for their efforts this year and to thank all of the members of the committee who have participated in its activities, such as by contributing to this newsletter.

Next year, the committee begins a transition year. I will continue as co-chair of the committee, joined by Chad McGuire, who has ably served this committee for many years as vice chair for the newsletter. We have several goals for the next year, but my personal one for my last year as co-chair is to get our committee Web site up and functional. I hope, by the end of the year, to have links to important sites and documents and regular summaries of new cases up on our Web site. To that end, I ask all members to send links and names of new cases to me directly at rcraig@law.fsu.edu.

Chad has assembled an excellent last newsletter for this ABA SEER year, focusing on fishing and the many issues that surround it. John Walden, an economist with the National Oceanic and Atmospheric Administration Fisheries, and Chad lead off our articles with a basic history and discussion of "Who Owns the Fish?" Crista Bank, a fisheries research technician at the University of Massachusetts, Dartmouth, then follows with a discussion of the National Science Foundation's new Pioneer Array, its legal process, and its implications for fisheries. Finally, Jonathon Feinberg, a graduate student in environmental policy at the University of Massachusetts, Dartmouth, and Chad discuss the contours and implications of Amendment 16 to the Northeast Multispecies Fishery Management Plan.

I hope that you enjoy these articles! The Marine Resources Committee continues to encourage member involvement in the committee's activities. Please feel free to send Chad and me your ideas for Quick Teleconferences, newsletter articles, SEER conference programs, and *Trends* articles in additions to suggestions for the committee Web site. Thank you for another great year, and here's to the next!

Robin Craig
Chair, Marine Resources Committee, 2010–2011

Visit the Marine Resources Committee Web site:
http://apps.americanbar.org/dch/committee.cfm?com=NR250800

Marine Resources Committee Newsletter
Vol. 14, No. 2, August 2011
Chad J. McGuire, Editor

In this issue:

Message from the Chair
Robin Craig 1

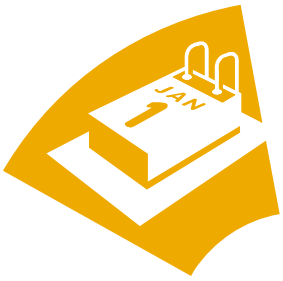
Who Owns the Fish? Moving from the Commons to Federal Ownership of Our National Fisheries
John B. Walden and Chad J. McGuire 3

The Pioneer Array and Its Impact on the Fishing Industry: An Example of the Need for Ocean Policy Initiatives to Ensure All Fishing Industry Stakeholders Are Represented in Coastal and Marine Spatial Planning
Crista Bank 8

A Review of Amendment 16 to the Northeast Multispecies Fishery Management Plan
Jonathon N. Feinberg and Chad J. McGuire 12

Copyright © 2011. American Bar Association. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher. Send requests to Manager, Copyrights and Licensing, at the ABA, e-mail: copyright@americanbar.org.

Any opinions expressed are those of the contributors and shall not be construed to represent the policies of the American Bar Association or the Section of Environment, Energy, and Resources.



Upcoming Section Programs—

For full details, please visit the "Events & CLE" link on our Section Web site:

www.americanbar.org/environ/

August 24, 2011
Siting Wind Power Facilities: Cape Wind and Beyond
Live Webinar and Teleconference

September 20, 2011
Key Environmental Issues in U.S. EPA Region 1
Boston, MA

October 12-15, 2011
19th Section Fall Meeting
Indianapolis

October 18-19, 2011
Western Conference of the Bench & Bar
Primary Sponsor: The United States Court of Federal Claims
Berkeley, CA

February 22-24, 2012
30th Annual Water Law Conference
San Diego

March 22-24, 2012
41st Annual Conference on *Environmental Law*
Salt Lake City

WHO OWNS THE FISH? MOVING FROM THE COMMONS TO FEDERAL OWNERSHIP OF OUR NATIONAL FISHERIES

John B. Walden and Chad J. McGuire

Note: The views expressed in this article are solely those of the authors, and do not necessarily represent the opinions of the National Oceanic and Atmospheric Administration, or the University of Massachusetts.

Introduction

The purpose of this article is to explore a premise that fishery management at the federal level would be more effective if the U.S. government simply charged for the privilege to commercially harvest fish. This argument is supported by a mix of historical fact-finding and legal precedent, brought together in an attempt to identify a basic economic principle of property rights. The goal is to allow both practitioners and policy makers an opportunity to view fishery management options through a lens of government property rights, and show how a rational distribution of those rights through advancing market mechanisms may provide for a more sustainable fisheries management scheme.

Historical Underpinnings

Beginning with Gordon, the concept of fisheries as a common property resource has permeated the policy debate concerning overfishing (H.S. Gordon, *The Economic Theory of a Common Property Resource: The Fishery*, 62 J. Pol. Econ. 124–42 (1954)). This was reinforced a decade later with Hardin's seminal contribution, "The Tragedy of the Commons," which was principally about perceived dangers of overpopulation (Garrett Hardin, *The Tragedy of the Commons*, 162 Science 1243-48 (1968)). Together with Anthony Scott's article (Anthony Scott, *The Fishery: The Objectives of Sole Ownership*, 63 J. Pol. Econ. 116-124 (1955)), which examined sole ownership in a fishery, these works formed the intellectual underpinnings of current market-based fishery management strategies. The mere fact that conversations were taking place about the limits of our fish resources was a huge change from 400 years ago, when the Dutch lawyer Hugo Grotius declared that offshore fisheries were inexhaustible. Perhaps if Grotius had lived but a few years longer, he would have altered his view, when in the 1650s local fishing grounds near Boston showed signs of overfishing (W.B. Leavenworth, *The Changing Landscape of Maritime Resources in Seventeenth-Century New England*, 20 Int'l J. Mar. Hist. 33–62 (2008)). Despite early overfishing, the fishing industry in the English colonies expanded and by the time the Revolutionary War started, salt cod was the fourth leading export from the colonies (K.E. Alexander et al., *Gulf of Maine Cod in 1861: Historical Analysis of Fishery Logbooks, with Ecosystem Implications*, 10 Fish & Fisheries 428–49 (2009)). By the late 19th century, any overfishing that occurred near Boston was long forgotten, as scientist T.H. Huxley declared in 1882 that our most important fisheries, such as cod, herring, and mackerel were "inexhaustible" (A. Scott, *Phases in the Evolution of Property in Sea Fisheries*, *in* Advances in Fisheries Economics (2007)).

During the 20th century, management of marine fisheries was considered an individual state function, as it had been since colonial times. This was confirmed by the passage of the Submerged Lands Act of 1953, which specifically granted individual states the right to manage marine resources within their boundaries, which was generally three miles offshore. Shortly after World War II, foreign fleets were starting to fish in U.S. coastal zones. To further protect domestic fishing interests, Congress passed the Bartlett Act in 1964, which excluded foreign fishing within three miles of the U.S. coast. This was followed two years later by passage of the Contiguous Fisheries Zone Act, which effectively extended the U.S. exclusive zone to 12 nautical miles from shore (http://law.jrank.org/pages/6915/Fish-Fishing-Ocean-Fisheries-Law.html).

Regulation of fishing was still mainly a state matter, with little federal control. However, the growing presence of offshore fishing fleets was gaining increased attention, and U.S. commercial interests were demanding greater protection. Ten years after the Contiguous Fisheries Zone Act, the U.S. Congress adopted the Fishery Conservation and Management Act (subsequently renamed the Magnuson-Stevens Fishery Conservation

and Management Act, or MSA) in 1976 and expanded the U.S. exclusive economic zone (EEZ) to 200 nautical miles. This virtually eliminated foreign fishing, and "Americanized" fish resources within 200 miles of our shores. It also effectively ended state fishing regulation seaward of three miles, and established a federal regulatory system for both domestic and recreational fishing fleets (J.J. Kalo et al., Coastal and Ocean Law (2007)).

After passage of the MSA in 1976, the federal government developed a regulatory structure to manage diverse fisheries and a growing commercial and recreational industry. This led to several amendments of the MSA, including the Sustainable Fisheries Act of 1996 and the reauthorized Magnuson-Stevens Act of 2006. Generally, the history of fisheries management has been one of increasingly restrictive management measures. Most commercial fisheries now restrict entry and impose other regulations that either limit catch, or limit the fishing effort that can take place. In 1990, the United States implemented its first market-based approach for managing a fishery when it crafted an individual transferable quota (ITQ) system for surf clams and ocean quahogs on the east coast. Under this system, vessels were allocated a share of the quota based on their historical participation, and were then allowed to trade quota among themselves. Since that time, other fisheries have moved to market-based management methods. Anderson and Holliday highlighted 10 different U.S. fisheries with management arrangements that used market-based methods (NOAA Technical Memorandum, *NMFS-F/SPO-86* (2007)). More recently, the National Marine Fisheries Service explicitly adopted "catch shares" as a policy to be used in managing domestic fisheries, thus further advancing market mechanisms for fisheries management (http://www.nmfs.noaa.gov/sfa/domes_fish/catchshare/docs/noaa_cs_policy.pdf).

The movement to catch shares, including transferrable quotas, evolved over a 35-year time period, but could have occurred much quicker if the federal government had provided earlier recognition of EEZ fishery resources as "state property" as opposed to "common property." In this article, it is argued that much of the 35 years of increasing regulatory complexity could have been avoided if the government had instead charged for the privilege to commercially harvest fish. Further, the "catch share" systems that are now being implemented still fail to charge for the allocation of quota share, and this is resulting in a large giveaway of public wealth.

The following sections of this article are divided as follows. First, the evolving legal view of fishery property rights is examined. Second, these evolving property rights are placed in a historical context, allowing us to understand how changes in legal designations of the resource have impacted our understanding of the property rights at issue. Third, the emerging catch shares strategy currently being employed in federal fisheries management is outlined and critiqued, showing where the failure to capture the rents associated with the fisheries resource is creating additional sets of policy problems. Finally, the article concludes with a summary of the major points expressed, as well as offering some basic policy prescriptions including the need to charge for the privilege to harvest national fish stocks.

The Evolving Legal View of Fishery Property Rights

How do we perceive our fish resources? Are they a wildlife species such as deer, subject to the right of first possession, or can we restrict harvest and assign harvest rights? Is "ownership" of fish resources a prerequisite for restricting harvest and state regulation of the fish resource? Do individual states actually "own" the fish within their territorial seas? These issues have been the focus of cases before the U.S. Supreme Court dating back to the early 19th century, and are an important window into how we identify the property rights associated with the fishery resource.

In what was the beginning of recognition of the state ownership doctrine, the U.S. Supreme Court in 1842 embraced the public trust doctrine in *Martin v. Waddell* (41 U.S. 367 (1842)), and then, in 1896, extended the concept of state ownership to all forms of wildlife in *Geer v. Connecticut* (161 U.S. 519 (1896)). However, subsequent cases slowly eroded this early embrace of state ownership. In *Missouri v. Holland* (252 U.S. 416 (1920)), the Supreme Court rejected Missouri's claim to *exclusive* authority over

wildlife on Supremacy Clause grounds. In 1948, the Supreme Court recognized the right of South Carolina to exercise its police powers to regulate the shrimp fishery within its coastal three-mile zone in *Toomer v. Wistell* (334 U.S. 385 (1948)). However, it further undermined the concept of "ownership" of fish resources by declaring that "the whole ownership theory, in fact, is now generally regarded as but a fiction expressive in legal shorthand of the importance to its people that a State have power to preserve and regulate the exploitation of an important resource" (http://supreme.justia.com/us/334/385/case.html). In 1977, state "ownership" was again taken up by the Supreme Court in *Douglas v. Seacoast Products* (431 U.S. 265 (1977)). This case concerned Virginia's attempt to restrict vessels not licensed in Virginia from fishing in Chesapeake Bay. In overturning Virginia's statutes the Supreme Court stated, "A State does not stand in the same position as the owner of a private game preserve and it is pure fantasy to talk of 'owning' wild fish, birds, or animals. Neither the States nor the federal government, any more than a hopeful fisherman or hunter, has title to these creatures until they are reduced to possession by skillful capture" (*Id*. at 284). This ruling was followed in 1979 by *Hughes v. Oklahoma* (441 U.S. 322 (1979)), which explicitly overturned *Geer*, reducing any clarity offered by *Geer* in establishing state ownership rights of fishery resources.

In the light of these rulings, did the declaration of our EEZ change the "ownership" status of fish resources? The United States, in extending its claims to 200 miles implicitly, if not explicitly, is declaring that it values the resources within the EEZ. The nation is laying claims to the subsequent income stream that the stocks can provide, and also the ecosystem services that fish stocks provide (in 1976, ecosystem services were not yet being discussed). Control over an income stream is part of the modern comprehension of property rights. Because fish resources that are in the EEZ are now part of federal territory, the EEZ declaration is claiming federal ownership, and control over those resources. Stewardship and management responsibility by the federal government of natural resources is clear in our national forests, parks, grazing land, and military bases. It also now clearly exists for our EEZ fishery resources.

Property Rights in Historical Context—The Tragedy of the Commons

Hardin (1968) used the phrase "Tragedy of the Commons" to describe a grazing pasture with open access to the resource, where all can graze their cows until the pasture is no longer capable of producing grass. In the example used by Hardin, the rate of grass extraction by the cows exceeded the ability of the grass to reproduce itself, thus leading to the exhaustion of the resource. This *rate of extraction* is amplified by the relative ease of access to the resource itself, otherwise referred to as the "commons" nature of the resource, or lack of privatization of the resource. He then points out that this situation exists in the ocean and that maritime nations "bring species after species of fish and whales closer to extinction." Prior to the work of Hardin, Gordon (1954) recognized that fisheries were similar to petroleum production, hunting, and trapping, in that vessels were all pursuing the same stock of fish. Gordon showed how too much effort would be expended pursuing the fish, and that there would be no socially efficient outcome. Scott (1955) followed up Gordon's work a year later by showing that a sole owner with privately held fishing vessels would be socially optimal. Although these two works were well known by the time the federal fisheries conservation laws (the MSA) were passed, there was no consideration of a sole owner approach for fisheries management. However, these two works greatly influenced the now popular movement to privatize fisheries.

The work of Gordon (1954) and Scott (1955) took place a decade before the Bartlett Act was passed, and over twenty years before the MSA was passed. During that time period, international fleets routinely made their way to the United States coast to fish. This was also the situation when Hardin published his 1968 article. The "commons" that existed in the ocean had not yet been fenced off. But, do the conditions of a commons still exist, or did they change given the expansion of our EEZ to 200 miles? The declaration of an EEZ "federalized" our ocean resources, and control of fish stocks has been the realm of the federal government for nearly 35 years. Why then are fishery resources managed so differently than other natural resources under federal control?

The declaration of an EEZ eliminated foreign competitors, but effectively increased domestic fishing capacity. In essence, the "first possession" concept dominated fisheries management. This is a different philosophy than that which governs our terrestrial resources. Timber harvest rights on our national forests are auctioned, as are grazing permits on Bureau of Land Management and Forest Service land, oil and gas extraction in our offshore waters, and radio spectrum for cell phone use. With the exception of hard minerals in the west, all other resources managed by the federal government are harvested only after an extensive bidding process. In other words, the government makes the harvester pay.

Would a competitive bidding process implemented in 1976 have made a difference in management of our fish resources over the last 35 years? Competitive bidding would have undoubtedly been a foreign concept at the time, as fishery resources were still being managed under the concept of "first capture," where the first fishing vessel to harvest the fish claims "ownership" of the fish. However, failing to charge for the fish constitutes a subsidy, and a subsidy impacts vessels' profits by either increasing their revenues or decreasing their costs.

In the case of fishing vessels, failing to pay for the fish stock lowers the cost of producing the final product, which is landed fish (fish can be landed in different product forms including fillets, headed and gutted, and live). The economic theory of the firm tells us that the supply curve for an individual firm is the portion of its marginal cost, which lies above its average cost curve. The industry supply for a product is the horizontal summation of all the firm's marginal cost curves in an industry. By allowing vessels to obtain their fish inputs freely, both marginal and average costs are lower than they would be under truly competitive conditions, leading to greater supply at the firm level, as well as greater aggregate supply. Greater supply in the case of fisheries generally leads to a level of harvest which results in biological overfishing. It also results in more vessels fishing than is desirable because vessels that are relatively inefficient may still make a profit since they are provided free fish.

Property Rights Moving in New Directions—The Emerging Catch Shares Strategy

Fishery management regulations in this country have been based on the use of output controls, input controls, or some combination of the two. Output controls limit the overall catch, or the amount that can be harvested per trip. Input controls limit the size of vessels, allowable crew size, gear size, or allowable fishing time. Recently, new management approaches have been advanced which attempt to implement what is being referred to as *market-based* solutions. The reauthorized Magnuson-Stevens Act of 2006 legislated hard deadlines for ending overfishing and strict rebuilding time frames for depleted stocks. However, it also gave the regional fishery management councils, who develop regulations in partnership with the federal government, broad latitude to recommend fishery management measures. These include the use of limited access privilege (LAP) programs, which run the spectrum from community development quotas (CDQs) to individual tradable quotas (ITQs). Subsequently, the National Oceanic and Atmospheric Administration (the parent agency of the National Marine Fisheries Service) has embarked on an explicit program of implementing *catch shares* to manage fisheries, which is one form of a LAP program.

Presently, the catch shares policy that has been adopted merely continues past traditions of freely giving away a federally owned resource. Simply put, the policy does not seem to recognize the change from an open access resource to one of federal ownership that occurred when our EEZ was expanded to 200 miles. This may be, in part, due to a failure by the public to fully realize the value of our EEZ fish resources. For example, a past study by Bromley estimates that based on a 2003 value of $3.6 billion for commercial fish landings, the present value of this income stream is $101 billion dollars (discounted at a 3% rate) (D.W. Bromley, *Purging the Frontier from Our Mind: Crafting a New Fisheries Policy*, 15 Rev. Fish Biology & Fisheries 217–29 (2005)). With increased stock biomass, and increases in prices, this value may be presently higher than what Bromley initially estimated. Extracting this value for U.S. taxpayers could be done through several different

mechanisms, although it would likely take changes in federal law for this to occur. For example, under the Magnuson-Stevens Act, only cost recovery for management measures can take place for LAP programs.

One critical question in attempting to create value is how might we charge a *fair price* for extracting our fish resources, and how would that value be established? One method is through charging a *resource rent*. Resource rent, simply put, is the value of the annual extraction from the resource stock. This value is usually established for most natural resource-based commodities through a competitive bidding process, usually via an *auctioning* of the resource. Research has analyzed, at least, four different methods for capturing fishery rent which are (1) annual rental charges; (2) annual charges on fishing profits; (3) ad valorem royalties on landings; and (4) annual lump sum fees.

Auctions are prevalent in other publicly held resources. Examples include the allocation of timber harvests, as well as the assignment of oil and gas exploration rights on the outer continental shelf. Even though such examples have a long history of use in public resource management, such auctions are actually quite rare in the fisheries context. One exception is Washington state, which has been auctioning rights for geoduck clams for three decades, producing roughly $60 million in revenue between 1996 and 2005 (D.D. Huppert, *Auctions of ITQs as a Means to Share the Rent*, *in* Advances in Fisheries Economics (2007). Internationally, there is a relatively strong history of fish auctions in various parts of the world. Fish quota auctions have taken place in Estonia, the Russian Far East, and in Chilean fisheries.

Bromley (2009) makes the case that the government can extract resource rents by requiring those who fish to submit a royalty bid indicating what fraction of their annual gross landings revenue they are going to pay for the privilege to fish. Trading could then take place among winning bidders. In order to make the transition from a fleet dependent on freely available fish to one that pays for the privilege of fishing, funds raised through royalty bids could be used to compensate those who could no longer fish for the first several years of the plan (D.W. Bromley, *Abdicating Responsibility: The Deceits of Fisheries Policy*, 34 Fisheries (6) 280–90 (2009)).

Conclusion

The 1976 proclamation extending our exclusive economic zone to 200 miles effectively fenced off our marine fishery resources from foreign countries, and established an era of federal ownership over our fish stocks. The conditions that existed during the time period when Gordon (1954), Scott (1955), and Hardin (1968) published their work no longer exist. Instead, we now have a situation similar to that of our other national holdings of natural resources, such as timber, grazing land, and oil and gas. However, fisheries continue to be perceived as common property resources and as a result the government is forfeiting a significant amount of resource rents.

Currently, the United States has embarked on a policy path of promoting catch share systems to manage fisheries. This policy continues to freely distribute the fish resource without implementing mechanisms to recover resource rents. Although the government can implement cost recovery for administrative costs, legally it cannot extract a royalty payment for the resource itself. Thus, we are still trapped in the mind-set of the past where the fish stock is treated as a free resource, rather than a national asset. This represents a transfer of national wealth to those who were fortunate to have participated in past harvests. Once quota is given away, it is likely to be very difficult to ever take back. The way out of this policy trap will be politically difficult. Ultimately, charging for the privilege to harvest our national fish stocks would be a move that would benefit future generations, and be consistent with how we manage our other natural resources.

John B. Walden *is an economist with NOAA Fisheries. He can be reached for comment at John.Walden@NOAA.gov.*

Chad J. McGuire *is an assistant professor of Environmental Policy at the University of Massachusetts, Dartmouth. He can be reached for comment at cmcguire@umassd.edu.*

THE PIONEER ARRAY AND ITS IMPACT ON THE FISHING INDUSTRY: AN EXAMPLE OF THE NEED FOR OCEAN POLICY INITIATIVES TO ENSURE ALL FISHING INDUSTRY STAKEHOLDERS ARE REPRESENTED IN COASTAL AND MARINE SPATIAL PLANNING

Crista Bank
Department of Fisheries Oceanography, School for Marine Science and Technology University of Massachusetts, Dartmouth

Introduction

The Pioneer Array is one part of a multimillion dollar National Science Foundation (NSF) funded project called the Ocean Observatories Initiative (OOI). It is an integrated network of both fixed moorings and movable sensors that will be placed in six strategic locations throughout the worlds' oceans collecting oceanographic data throughout the water column. The proposed location of the Pioneer Array is in prime fishing grounds and has the potential to negatively impact the economic viability of the commercial fisheries utilizing the resources in that area. The federal permitting process for a project of this magnitude is extensive and includes both federal and state agencies. However, it was two years into the National Environmental Policy Act process before the fishing industry became aware of the project and an analysis of the economic impact on the fishing industry had not been done. The OOI is an example of why ocean policy is needed to require industry involvement in the early stages of program development since it is frequently the most affected by the outcome. This article will focus on the current federal permitting process for the OOI and the shortcomings in the system that allow fishing industry stakeholders to be overlooked in both the environmental assessments and the decision-making process.

Specifics of the Pioneer Array

The design of the OOI is based upon three main technical elements across global, regional, and coastal scales. The infrastructure includes cables, buoys, deployment platforms, moorings, junction boxes, electric power generation (solar, wind, fuel cells, and/or diesel), mobile sensors (autonomous underwater vehicles (AUVs) and gliders), and two-way communications systems. This large-scale infrastructure would support sensors located at the sea surface, in the water column, and at or beneath the sea floor (*see* NSF, 2008, p. ES-1, *available at* http://nsf.gov/geo/oce/envcomp/ooi/appendix_a-programmatic_ea-pea_2008.pdf).

The Pioneer Array and the Endurance Array are the two coastal scale components. The Endurance Array is located off the West Coast of Washington and Oregon, and the East Coast Pioneer Array begins approximately 40 nm south of Martha's Vineyard and encompasses an area approximately 6500 nm^2. The Pioneer Array will have ten fixed moorings; three surface moorings, two surface piercing profiler moorings, five wire-following profiler moorings, and both active and nonactive acoustic sensors on the moorings. The movable sensors consist of three AUVs continuously moving through an area approximately 2489 nm^2, and six gliders covering an area approximately 5697 nm^2 moving both vertically and horizontally throughout the water column (*see* NSF, 2010, p. ES-4, *available at* http://nsf.gov/geo/oce/envcomp/ooi/ooi_draft_ssea_august_2010.pdf).

Potential User Conflicts

The Pioneer Array is located in prime fishing grounds that support commercial fisheries for groundfish, monkfish, lobster, and tilefish. The area is heavily fished with fishermen from New York, Rhode Island, and Massachusetts constantly competing for space to fish along the continental shelf edge and into the canyons. There are "gentlemen's agreements" between fishermen with different gear types to allow for the movable gear to be towed in specific areas that are clear of the fixed gear: lobster pots, gillnet, and long line. As one fisherman explained at the public hearing, "Every inch of that area is spoken for." The economic impact on the fishing industry as a result from the Pioneer Array could be as minimal as an occasional interaction with one of the movable sensors, to the other extreme of large areas being closed to fishing.

With movable sensors continually moving throughout the water column, and fishing vessels either towing gear through the water or setting nets that stay in fixed locations for days before they are retrieved, the potential for serious damage to both the expensive sensors and the fishing gear is substantial. There is also the additional lost revenue resulting from the lost catch due to the gear damage.

The current plan has a one nm proposed buffer zone around each mooring; however, the Coast Guard has the authority to increase that area to prevent any possible interaction with the moorings and equipment that could compromise the safety of any nearby vessels. If there is continuous and extensive damage to the sensors and equipment, the possibility of larger areas being closed to fishing is not out of the realm of possibility. With the current regulations and management system the areas to fish are limited and any closure in this location would have severe economic repercussions for fishermen. They would either not be able to fish altogether or would have to travel farther to reach open fishing grounds resulting in economic loss. This would also increase fishing pressure in other areas causing additional conflicts and hardship.

The Permitting Process

The permitting process for this multimillion dollar major research equipment and facilities construction effort coordinated by the NSF is extensive and includes the National Environmental Policy Act (NEPA), compliance with the Coastal Zone Management Act (CZMA), Clean Water Act (CWA), Rivers and Harbor Act, National Historic Preservation Act, Magnuson-Stevens Act (MSA) regarding essential fish habitat (EFH), Marine Mammal Protection Act (MMPA), Endangered Species Act (ESA), and the National Marine Sanctuaries Act (NMSA).

The major environmental compliance requirement for the analysis of potential impacts from the installation and operation of the OOI is NEPA and the preparation of an environmental assessment (EA). Within an EA, potential impacts to the natural and human environment must be considered for a number of resource areas, such as biological resources, cultural resources, socioeconomics, transportation, water quality, geology, etc. (*see* NSF, 2008, p. 53, *available at* http://nsf.gov/geo/oce/envcomp/ooi/appendix_a-programmatic_ea-pea_2008.pdf). Once the EA is completed and it is determined there is a significant environmental impact, a more detailed environmental impact statement (EIS) is required. If from the EA there is a finding of no significant impact (FONSI), the more detailed EIS does not have to be done.

In June 2008 the final programmatic EA was published by TEC Inc. on behalf of the NSF. This EA provided a programmatic analysis of the environmental impacts associated with the OOI. In the EA the analysis for the Endurance Array, the other coastal component on the West Coast, included an analysis of marine biological resources, geological resources, water quality, cultural resources, and socioeconomics (fisheries). However, the analysis for the Pioneer Array did not include a socioeconomic analysis and stated, "Several additional resources that are generally evaluated in the preparation of an EA were not evaluated in this Programmatic EA because it was determined that implementation of the Proposed Action would be unlikely to have any effect on these resources. The reason why each resource has been exempted from analysis or is not analyzed in detail in this Programmatic EA is provided below" (*see* NSF, 2008, p. 79, *available at* http://nsf.gov/geo/oce/envcomp/ooi/appendix_a-programmatic_ea-pea_2008.pdf).

The analysis that was done for the Pioneer Array included geological resources, air quality, water quality, cultural resources, and marine biological resources that included an analysis of the EFH, MMPA, and the ESA, and the impact of active acoustic sources. Commercial fisheries are not mentioned again until the cumulative impacts are addressed. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (*see* NSF, 2008, p. 99, *available at* http://nsf.gov/geo/oce/envcomp/ooi/appendix_a-programmatic_ea-pea_2008.pdf). It is acknowledged

in the EA that there are potential cumulative effects on socioeconomics (fisheries) that require further consideration. "These potential impacts would be reduced, but not eliminated, through coordination with local fishing groups, such as the Oregon Fisheries Cable Committee, and the implementation of agreements regarding damage to fishing gear and preclusion from fishing areas, as part of the Proposed Action" (*see* NSF, 2008, p. 100, *available at* http://nsf.gov/geo/oce/envcomp/ooi/appendix_a-programmatic_ea-pea_2008.pdf). Again, in this cumulative impact assessment no consideration is given to the commercial fisheries impacted by the Pioneer Array; only the impacts associated with the Endurance Array are discussed, even though it was recognized "because of the expanding, incremental loss of access to fishing grounds due to the placement of structures on the seabed and in the water column, the potential exists for the proposed action to have cumulative effects on commercial fishing. Such impacts could be mitigated by the finalization of fishing agreements with the affected parties" (*see* NSF, 2008, p. 104, *available at* http://nsf.gov/geo/oce/envcomp/ooi/appendix_a-programmatic_ea-pea_2008.pdf). The final impact conclusion in the EA states, "Potential impacts resulting from the Proposed Action and the No-Action Alternative were analyzed for marine biological resources, geological resources, water quality, cultural resources, and socioeconomics (fisheries). No significant environmental impacts were identified with implementation of the Pioneer and Endurance arrays of the Coastal Scale Nodes, the Regional Scale Nodes, and the Global Scale Nodes" (*see* NSF, 2008, ES-3, *available at* http://nsf.gov/geo/oce/envcomp/ooi/appendix_a-programmatic_ea-pea_2008.pdf).

The intergovernmental review of federal programs requires notification of the preparation of the EA and its availability for public comment to appropriate state and federal regulatory agencies. The agencies that were notified included the U.S. Army Corps of Engineers; Oregon and Washington state historic preservation offices; and Oregon, Washington, New York, Rhode Island, Massachusetts, and Connecticut coastal zone management offices (*see* NSF, 2009, p. 1, *available at* http://nsf.gov/geo/oce/envcomp/ooi/appendix_c-fonsi_2009.pdf).

The CZMA has a federal consistency requirement that specifies that "federal actions and activities directly affecting the coastal zone must be conducted in a manner which is, to the maximum extent practicable, consistent with approved state management programs" (Donna R. Christie, Coastal and Ocean Management Law in a Nutshell (2007)). If activities in federal waters are not consistent with the state's coastal zone management plan, which include a provision to protect economic resources, a consistency review is required. In a memorandum sent January 7, 2008, to the Massachusetts Office of Coastal Zone Management (CZM), the NSF gave an overview of the OOI and its determination that the OOI "would not place infrastructure in any marine protected areas and would not interfere with activities in fisheries within or adjacent to Massachusetts' coastal zone, the proposed OOI would not have any effects on the coastal uses or resources of the State of Massachusetts" (*see* NSF, 2008, appendix, *available at* http://nsf.gov/geo/oce/envcomp/ooi/appendix_a-programmatic_ea-pea_2008.pdf). It isn't until the draft site specific environmental assessment (draft SSEA) is drafted that a consistency determination is made, and on September 21, 2010, the Massachusetts Office of CZM replied, "In terms of the site-specific design, installation, and operation of the Ocean Observatories Initiative, based on our review of the Draft SSEA, CZM has determined that there are no significant foreseeable coastal effects to Massachusetts uses or resources at this time, and therefore federal consistency review is not required" (R.L. Boeri, personal communication, Dec. 17, 2010). A further inquiry was made to the CZM office asking, "What are the criteria for determining if a project might have significant impact on the fishing industry and would therefore affect coastal resources and require a consistency determination?" At the time of writing this article there has been no response.

Based on the EA, in February of 2009 a finding of no significant impact (FONSI) was determined so the detailed EIS was not required. However, the FONSI is approved by the agency funding and supporting the project, NSF. There is no other agency or oversight to challenge the FONSI. In April 2009, a supplemental environmental report (SER) was issued to address a

minor design adjustment. In August 2010 the draft SSEA was issued for public comment. The draft SSEA assesses the potential impacts on the human and natural environment associated with the proposed design, installation, and operation of the OOI that were not previously addressed in the EA and the SER. It wasn't until the public comment period that the fishing industry was first made aware of this project—two years after the original project proposal was published. In September 2010, public hearings were scheduled to inform the public and allow for comments; however, the notice about the hearings was not well publicized. There is only a 30-day public comment period requirement. The public meeting was held in New Bedford a week before the comment period ended and no Massachusetts fishermen were at the meeting or aware of the project.

Conclusion

Our national ocean policy acknowledges the need for ocean spatial planning that includes all stakeholders in the process, addresses potential user conflict, and operates through an open and transparent approach that encourages broad public participation (CEQ, Interim Report of the Interagency Ocean Policy Task Force, Sept. 2009, p. 16). Currently the only mechanism in place for involving the fishing industry in federally permitted projects is embedded in a NEPA process or in the CZMA federal consistency requirements. The fact that it was over two years before the fishing industry was made aware of the project although numerous state and federal agencies were notified, and yet no one thought to consult with fishing industry representatives, shows how flawed the current system is. Ocean policy needs to be created to ensure the coastal and marine spatial plans that are developed include clear and concise protocols that require all stakeholders to be informed and included at the initial planning stages of a project. On the state level, Rhode Island's Coastal Resources Management Council has been proactive in obtaining fishermen input for their ocean special area management plan (SAMP) by creating a fishery advisory board comprised of fishing industry representatives. In networking with other state groups working on their own marine spatial, the Rhode Island group has learned that fishermen involvement is not that common (T. Smythe, personal communication, Dec. 10, 2010). The positive feedback that the Rhode Island SAMP has received will hopefully motivate other states to include the fishing industry in their own coastal and marine spatial plans. However, as described in this article, there is a real need for specific guidelines at the federal level to include the fishing industry in a timely manner in the ocean spatial planning process.

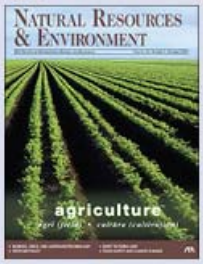
Crista Bank *is a fisheries research technician working toward her master's degree in Fisheries Science at the University of Massachusetts, Dartmouth's School for Marine Science and Technology. Her work involves cooperative research with commercial fishermen. She can be reached for comment at cbank@umassd.edu.*

SECTION OF ENVIRONMENT, ENERGY, AND RESOURCES PUBLICATIONS ARE ONLINE!

ABA Section of Environment, Energy, and Resources

Are you taking full advantage of your Section membership?

Only Section members have access to current and past issues of Section publications online:



NATURAL RESOURCES & ENVIRONMENT

TRENDS

THE YEAR IN REVIEW

Visit www.americanbar.org/environ/ and log in with your ABA Member ID number and password to view these valuable Section Member benefits.

A REVIEW OF AMENDMENT 16 TO THE NORTHEAST MULTISPECIES FISHERY MANAGEMENT PLAN

Jonathon N. Feinberg and Chad J. McGuire

Introduction

The purpose of this article is to review Amendment 16 to the Northeast Multispecies Fishery Management Plan, highlighting some of the legal and policy implications to the fishing community and regulatory bodies. Questions of impact are framed from the local fishing community perspective, while larger questions of regulatory implications, including statutory purpose, are identified where appropriate. The article concludes by identifying necessary policy questions that need to be resolved if we are to move toward a coherent strategy of national fisheries management that is both rational for the sake of the resource, and equitable to those who are most directly impacted.

In 2009, the Fisheries Service Northeastern Regional Office of the National Oceanic and Atmospheric Administration (NOAA), governed by the U.S. Department of Commerce, implemented Amendment 16 to the Northeast Multispecies Fishery Management Plan. Amendment 16 was intended to help rebuild and protect stocks of groundfish in the Northeastern region. Within six months after the amendment's implementation, fishermen and community representatives began seeking assistance to alleviate the economic consequences of Amendment 16 on local fishermen.

Has the federal government acted against the interests of those citizens with greatest dependence on this common resource, or is this an example of the inherent difficulties in preserving a public, and traditionally open, access resource? Are the effects felt by local fishermen the direct result of policies, intended or unintended, favoring larger businesses, or merely an inevitable result in transitioning to a new regulatory system? Regardless of the answers to these questions, one policy implication begs the question of what can be done to help local fishing communities impacted by new regulations while also ensuring the long-term sustainability and beneficial use of a vital common resource?

Background

Ocean resources have traditionally been viewed as a common-pool, or open-access resource; access for customary uses is considered an equal right of all people under the public trust doctrine. The discussion of sharing resources in an increasingly crowded world has a long history populated by such thinkers as Hobbes, Marx, Malthus, and more recently Garrett Hardin. As Hardin discussed in his seminal work, rational individuals sharing a common resource tend to exploit it to maximize their own interests and benefits, regardless of the costs to others or to sustainability (Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243-48 (1968))..

The federal government has a strong investment in protecting and maintaining national coastal areas for security and economic considerations. Preserving the 10th Amendment rights of states to control their coastal areas and resources is of particular importance. The Coastal Zone Management Act of 1972 created a framework wherein states and the federal government work together "to preserve, protect, and where possible, to restore or enhance, the resources of the Nation's coastal zones for this and succeeding generations" (16 U.S.C. §1451(1)). This includes the management of fisheries by regional fishery management councils, created by the Magnuson-Stevens Fishery Conservation Act of 1976 (MSA). Acting under the Department of Commerce (DOC), regional councils formulate and implement management plans that follow national standards set out in the MSA that rely on the best scientific evidence to support an optimum yield of fish while also ensuring the long-term viability of fish populations.

Fishery management plans attempt to balance environmental and economic sustainability. On a basic level, if a species is fished to extinction, it is no longer available for economic exploitation, but if this species is made unavailable to fishermen, they cannot gain the economic benefits needed for their livelihood.

Therefore a balance is necessary to ensure continued economic prosperity through the proper utilization of resources supported by a healthy environment. Changes to the environment, such as global climate change, may pose a threat to fishery management structures. Professor Brian Rothschild, a long-time fishery ecologist, has noted the question of human impact on fisheries is complicated by the potential background impact of climatic changes and natural variability in the environment (*see* Richard Gaines, *Leading Fishery Scientist Sees "Crisis" in Catch Shares*, GLOUCESTER TIMES, Nov. 10, 2010).

Amendment 16

In a 2003 report, the Pew Oceans Commission recognized that "tens of thousands of jobs in fishing" are at risk due to environmental degradation, but went on to note that "more than jobs are at stake" and recommended that NOAA "restructure fishery management institutions and reorient fisheries policy to protect and sustain the ecosystems on which our fisheries depend" (*see* Pew Oceans Commission, *America's Living Oceans: Charting a Course for Sea Change: A Report to the Nation: Recommendations for a New Ocean Policy, available at* http://www.pewtrusts.org/our_work_report_detail.aspx?id=30009 (last visited Feb. 11, 2011)). NOAA administrator Jane Lubchenko, a former Pew fellow and Environmental Defense Fund board member, implemented an amendment to the Northeast Multispecies Fishery Management Plan developed by the New England Fishery Management Council to take effect May 1, 2010. Amendment 16 introduces new requirements under the reauthorized Magnuson-Stevens Fishery Conservation and Management Act, including expansion of the use of fishing sectors, and for those not in fishing sectors, modifications to the days-at-sea (DAS) program. The main purpose of Amendment 16 is to decrease fishing mortality to avoid overfishing and introduce new programs to rebuild overfished stocks. The three primary points of contention in the amendment are new monitoring requirements, strict annual catch limits, and the transition from DAS to sector-based management.

Monitoring Requirements

Amendment 16 mandates extensive at-sea, observer, and dockside monitoring requirements. Common-pool vessels are required to continue with an at-sea observer program and implement dockside monitoring of 50 percent of fishing trips, reducing to 20 percent after 2011. Active vessels are required to pay for monitoring and are further required to report landings and discard to NOAA on a weekly basis. At a public hearing on May 26, 2009, common-pool gillnetter Dave Marciano noted the importance of this monitoring, but related that "the costs are too excessive for a small boat" (Public Hearing 2009; 2–3). The DOC Office of the Inspector General (OIG) commented on the commonality of such claims in describing complaints against NOAA: "NOAA is intentionally putting small fishermen out of business in favor of corporate fishing entities" (*see* U.S. Department of Commerce, Office of the Inspector General, *Review of NOAA Fisheries Enforcement Programs and Operations*, Final Report No. OIG-19887, p. 9 (2010)).

Annual Catch Limits

Strict annual catch limits have negatively impacted smaller fishing operations by regulating the catch of certain choke stocks; species with low sector fishing quotas must cease all fishing when the quota is met for any choke species. Amendment 16 dramatically reduces the amount of choke species capable of being caught, meaning the likely reduction in target species landed. The result here is that commercial fishermen are often incapable of maximizing allocated quotas of target species because of reduced by-catch limits on certain choke species. The 2006 revision to the Magnuson-Stevens Act requires regional management councils to establish mechanisms for specifying annual catch limits for each managed fishery (16 U.S.C. §1852).

Amendment 16 mandates strict limits for a variety of commercial groundfish species, even when underlying catch limits are increased for certain target species. For example, in July 2010, Secretary of Commerce Gary Locke announced a sixfold increase in the allowable catch limit for pollock from six million to 36 million pounds. However, this action did not allow for a corresponding increase in by-catch limits of other choke species, meaning the actual allocations of pollock were meaningless if by-catch limits were reached prior to obtaining the catch limits of the target pollock species. Thus, while the move to increase the

overall catch limit of pollock moved the commercial fishery in an economically positive direction, the quota was placed in jeopardy by a failure to also increase by-catch limits of associated species that would inevitably be caught while fishing for the target species. The result here is a partial policy decision that does little to impact the viability of increased catch loads by the fishing community.

Sectors

Amendment 16 creates seventeen new sectors and modifies two extant sectors to facilitate the management of new fishery regulations. Generally speaking, *sector fishing* allows for an annual quota to be provided on a particular target fish species (including multiple species) for a particular geographically defined area. This quota is then given to a group of fishermen, who then manage the overall quota, distributing allocations of the quota amongst themselves based on rules they agree to as a group. The benefits of such a system are potentially derived in allowing for greater decision making in the distribution of fishing effort amongst the fishermen themselves, so that fishermen are deciding who gets what out of a set quota of overall fishing rights, rather than these decisions being made by public entities. Such a program may be said to be related to a quasi-privatization of fishing rights, allowing the private fishermen a greater role in decisions related to the distribution of fishing rights.

There is some concern amongst certain fishing interests that sector management will harm small fishing operations, ultimately driving them out of the industry. This concern is largely based on the implementation of similar "privatization" efforts in other fishing areas of the United States, as well as in other countries. It centers on the idea that many fishing areas are overcapitalized, and the economic rationalization that tends to follow privatization leaves smaller operations incapable of competing for sector shares against larger operations. Ultimately, a consolidation of the fishing fleet within the sector is argued to occur, with a few large commercial operations dominating the fishing landscape within the given sector.

Issues Presented

According to a new report conducted by the University of Massachusetts at Dartmouth's School for Marine Science and Technology, two-thirds of the fleet has been deactivated since the May 1 implementation of Amendment 16:

The transition to catch shares (sector management) under Amendment 16 to the Northeast Multispecies Fishery Management Plan caused unforeseen major shifts in the distribution of quota (and income) resulting in $21 million in direct economic losses and forgone yield of $19 million for the Massachusetts groundfish fishery. Scientifically valid alternative reference points have been identified which can trigger increases in annual catch limits (ACLs) without sacrificing conservation. These increases are particularly helpful with regard to raising limits for choke species (*see, A Report on Economic and Scientific Conditions in the Massachusetts Multispecies Groundfishery*, submitted to the Executive Office of Energy and the Environment and Department of Fish and Game, *available at* http://www.mass.gov/Cago/docs/press/Exhibit_A_MA_Economic_and_Scientific_Report_filed.pdf (last visited Feb. 11, 2011).

The report highlights concern regarding the privatization of common-pool ocean resources by changing the ocean commodity exchange system to one of private trade, the questionable legality of implementing Amendment 16, and the lack of proper analysis that would be expected from such a large government action. Inherent in this concern are the oft-argued conflicting *national standards* (16 U.S.C. §1851) that exist under the Magnuson-Stevens Act, specifically standard 1 (conservation to prevent overfishing), and standard 8 (minimizing economic impact of decisions on fishing communities). The argument may be summarized as follows: while we seek to rationalize fishing effort and sustain fish populations through sector management, it cannot be done without considering the impact, both economically and socially, that such management changes have on the social fabric of any fishing community. It may be argued that marginalizing smaller fishing operations significantly impacts local fishing

communities, especially where fleet consolidation limits individual vessel ownership and associated small fishing operations that traditionally define many fishing communities.

Conclusion

Monitoring costs must be rationalized and related to the actual perceived threat posed by the fishing industry. Monitoring can make sense, especially where the data help to identify actual by-catch threats of nontarget populations that are shown to be in severe decline. However, the priorities set in monitoring, as well as the use of the monitoring information to drive policy directions, must be made explicitly clear.

The results of sector management under Amendment 16 are still to be fully realized. There is some evidence existing policies limit the full potential of the fishery resource. For example, increasing overall quotas of target species makes sense when the best available science suggests such an increase is justified. However, failure to provide for accommodations in by-catch limits severely limits any perceived benefit of quota increases because the actual quota cannot be realized due to the lower by-catch limits. While science should always inform this process, by-catch limit policies must likely be rethought so there is sufficient support for any increases in quota limits.

Sector management must also be viewed in relation to the impacts it has on existing national standards identified in the federal laws that define our national fishery management policy. The impacts of exclusion must be considered equally with the impacts of a more rationalized fleet management system. It may be inevitable, and advisable, for excess capacity to be removed from any commercial operation, but the manner in which this is done is as important as any goal achieved through its implementation. The policy balance to be struck here is a difficult one at best, but one that needs to be worked on by federal regulators in hand with those most affected by these changes. Time will allow for further critique and analysis of Amendment 16, but in the meantime this article serves as an early example of some of the issues that have already occurred, and are likely to occur into the foreseeable future.

Jonathon N. Feinberg *is a graduate student in the Environmental Policy Certificate Program at the University of Massachusetts, Dartmouth. He can be reached for comment at jfeinberg@umassd.edu.*

Chad J. McGuire *is an assistant professor of Public Policy and is a member of the Graduate Faculty of the School of Marine Sciences at the University of Massachusetts, Dartmouth. He can be reached for comment at cmcguire@umassd.edu.*

One Million Trees Project—Right Tree for the Right Place at the Right Time

Tree Event:
Wednesday, Oct. 12, 2011

Join your 19th Section Fall Meeting colleagues at the Paul I. Miller Elementary School in transforming the school's grounds into a tranquil oasis for students and neighbors. Section volunteers will work with Keep Indianapolis Beautiful (KIB) and school volunteers to plant 6' to 12' native trees and to build pathways through the landscaped areas. KIB, a leading, recognized nonprofit with over thirty years of experience, will provide the tools and training. Once the trees are planted, the organization will enlist its Youth Tree Team to care for them for two years. Participants should dress casually and bring work gloves. This activity is part of the Section's One Million Trees Project, which has the goal to plant one million trees by 2014. For more information, see the One Million Trees Project page.

http://ambar.org/EnvironTrees

19th Section
Fall Meeting
The ABA Section of Environment, Energy, and Resources Law Summit
October 12–15, 2011
JW Marriott
Indianapolis, IN
For full details, please visit
www.ambar.org/EnvironFM
Section of Environment, Energy, and Resources
AMERICAN BAR ASSOCIATION
The premier forum on environment, energy, and resources law.