

The Case for Cooperative Management in U.S. Fisheries

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Introduction

In 2007, in a paragraph tucked away in a draft report, federal fishery managers predicted the demise of the City of Morro Bay, California as a trawl fishing port. The latest blow cited by the government was the recent acquisition by The Nature Conservancy of the last six trawl permits landing fish in that community. The blow was significant, but it wasn't the first hit. It also proved to be the turnaround point.

The central coast of California has five fishing ports that have depended largely on groundfish landings and bottom trawling since at least the 1970s (Half Moon Bay, Moss Landing, Monterey, Morro Bay, and Port San Luis). Economic conditions in these small ports in the central coast reflected coastwide conditions; landings and fishing efforts declined substantially from 1980 to 2006. Dockside prices of trawl-caught species remained low, and overhead costs were high.

Many fishermen in the region held a dim view of the future of the industry. Management decisions and litigation resulted in new management measures that restricted harvest of depleted species. Sharp declines in catches of groundfish resulted in a federal disaster declaration in 2000. There was a growing acceptance that nonselective bottom trawling contributed to the decline of groundfish (principally a variety of rockfish) along the entire West Coast and resulting harvest restrictions. Some fishermen were actively seeking ways to reduce trawling effort, reform the fishery, or engage in alternative harvest opportunities.¹

By 2007, federal managers and industry leaders were in the midst of engineering a restructuring of the fishery—to what is known as a 'catch share', or an individual tradable quota program. Under the old system, fishermen had permits and a daily, weekly, or monthly cap on what they could catch, irrespective of market or weather conditions. Under the new system, fishermen with permits would receive an annual percentage of the harvest of nearly 90 different species of groundfish to harvest as they saw fit. The quotas could be freely traded with other fishermen on the west coast. It is a big, valuable, and diverse fishery, and managers and fishery stakeholders had been working on these new rules for years. But the prospects for small trawling ports were uncertain. It seemed likely that many fishermen, fed up with the poor performance of the fishery, would sell their quota and leave these ports high and dry.

Fishermen and community leaders in Morro Bay, The Nature Conservancy, and partners at Environmental Defense Fund found opportunity in these stark conditions.

Fishing permits represent the opportunity to catch and land fish, activity that is necessary to the operation of businesses—fishermen, processors, fuel suppliers, etc.—that make up a fishing community. After consulting with local leaders, the Conservancy decided to offer up the permits it had acquired to provide fishing opportunity for local fishermen and ensure continued landings at the dock in Morro Bay. In return, fishermen would voluntarily share harvest information, and commit to participate in the design and implementation of innovative new local fishery management measures designed to reduce the likelihood of catching depleted species.

In 2015, the fishing quota the Conservancy bought in Morro Bay is being transferred back to the community, in the form of the Morro Bay Community Quota Fund. The Quota Fund leases quota each year to local fishermen who commit to operate in a way to meet a triple bottom line of environmental, economic, and social benefits. A board of directors oversees the Fund with representatives from the fishing industry, community leaders, and independent scientists committed to advancing an economically stable and environmentally sustainable fishery.

The results have been surprising—an eye-opening example of cooperation between those who many expected would be opponents, providing tangible benefits for fishermen that stemmed from their conservation work, and truly extraordinary conservation benefits from establishing a means of local control over the fishery. Its success has also resulted in expansion to five other California communities. But what was truly startling was the extent to which the deck was stacked against this partnership ever getting off the ground. But for the initiative of these partners to find their own way forward, those leading the fishery management process would have embraced the conventional wisdom that, in any process, there must be winners and losers, and Morro Bay would have lost.

U.S. Fisheries at a Crossroads

There is widespread agreement that the Magnuson-Stevens Act (MSA) has largely succeeded at putting U.S. fisheries on a path to sustainability.² The MSA is unique among natural resource regulatory regimes in that it establishes ten, high-level national standards—covering everything from long-term sustainability, to data quality, to protecting fishing communities. It created a system of regional fishery management councils that places the majority of key

¹ Gleason, Mary, et al. "A Transactional and Collaborative Approach to Reducing Effects of Bottom Trawling." *Conservation Biology*. Vol. 27, No. 3. 2013. pp. 470-479.

² Since 2000, 37 depleted fisheries have been declared rebuilt and many more are on the path to rebuilding. (NMFS. *Status of Stocks 2014*. April 15, 2015)

decisions close to the places where they will take effect.³ The U.S. is recognized as a global leader for its commitment to prevent overfishing, rebuild overfished stocks, reduce bycatch, and protect essential fish habitat. But with this success, we have come to rely on a high-conflict system that is expensive to maintain, and which seems to work well only for very high-value fisheries.

The MSA is implemented through a relatively prescriptive system whereby the regional fishery management councils establish allocations, craft fishery management plans, and set annual catch limits.⁴ The National Marine Fisheries Service (NMFS) issues regulations to effect those council actions, determines how fishermen will comply with them, and enforces those determinations. The agency also does much of the fisheries science that undergirds stock assessments and catch limits, monitors fishing activity, opens and closes the fishery, and manages the market for trading quota among fishermen.

Our nation's fishery goals require increasingly creative and highly adaptive management. However, top-down systems implemented through federal regulations are inherently inflexible. This manifests in several ways:

- Regulators – NMFS and the councils - may be slow to enact and implement measures in response to new information or changing conditions, and such efforts may be dogged by politics or lack of funding and capacity. Even under the best of circumstances, the federal regulatory process is lengthy and complex and may simply be an inappropriate tool for addressing rapidly evolving marine conditions and fishery dynamics.
- Fisheries data are often expensive or difficult to collect. In addition, NMFS is not clear about the data it needs to conduct stock assessments and enforce fishery rules, and often appears unwilling to accept data and analyses developed by those “outside” the agency.
- The NMFS budget has been static to declining in real dollars for about a decade. Although Congress has directed NMFS to take on new responsibilities (setting annual catch limits, for instance), its budget has not grown in pace with its duties, making the system much less responsive than it otherwise would be.

As a result, stakeholders often view the agency as hidebound and unresponsive to their needs and ideas.

³ Eagle, Josh, et al. *Taking Stock of the Regional Fishery Management Councils*. 2003. Island Press.

⁴ In consultation with the Councils' respective Scientific and Statistical Committees.

Absent a better alternative, fishermen put their energy into avoiding run-ins with regulators or challenging the data on which management is based, rather than bringing their practical knowledge to solve problems. Today, in many regions of the country, relationships between fishermen and federal regulators are frayed and close to breaking because the goals of the MSA have proven difficult to achieve, and fishermen view the management system with mistrust.

Parties constantly in opposition are doomed to a vicious dysfunctional cycle where each party continually seeks out a higher authority to force action one side or the other believes is indicated. The result is a strong incentive to work around the system, by litigating or by asking Congress for relief. Unfortunately, these sorts of ‘wins’ rarely meet the ambitious and achievable standards for environmental, economic, and social benefits set forth in the MSA.

This is not an indictment of the law. In fact, as the examples in this report will show, the MSA contains the building blocks needed to have a robust fishing industry, strong coastal fishing economies, and sustainable ocean and fishery resources. So, why aren't we achieving these goals? To get there will require us to redefine the relationship between the regulators and the regulated to one based on communication, understanding and cooperation.

The Solution—A Model for Cooperative Fishery Reform

In the Malpai Borderlands region of Arizona and New Mexico, a partnership of ranchers, conservation organizations, federal agencies, academics, and others show how working collaboratively is a way for government, resource users, and conservation interests to break through conflict and stalemate to make real progress that benefits people, their communities, and the environment.

What could a group more than 500 miles from the nearest ocean, in a landscape that gets less than eight inches of rainfall a year, possibly have to tell us about managing fishing? When the Malpai Borderlands Group (MBG) got its start in the early 1990s, the group was concerned about maintaining profitable ranching and traditional livelihoods. Most ranchers rely on leases to graze their cattle on public lands. But, the patchwork of various public agencies plus private landownership, little real communication with environmental interests outside of the courts, and a host of policies and regulations on everything from species protection to fire management made traditional livelihoods harder. What's worse, the health of the ecosystem and many rare species of concern weren't improving. Was this really all the fault of the ranchers? Or, did the families that

had called the Malpai home for generations hold the keys to a better future?

As one of the MBGs founding members, Bill McDonald, put it, “We’d gotten awfully good at knowing what we were against, and decided it was time to figure out what we were for.”⁵

It turned out that they were for an extraordinary partnership that has transformed this huge and complex landscape. They have worked with public agencies to restore the range to health, undertaken numerous efforts to protect and recover rare and imperiled species, and drawn interest from world class scientists who have helped them understand better the system, their home, that they are trying to save.⁶

The approach used by these ranchers has played out in a number of American fisheries to great success. The problems with fisheries are often associated with the idea of the commons as the “commons.” The tragedy of the commons is that when a resource is available to everyone and owned by no one, no one is compelled or empowered to care for it.⁷ Therefore, it is thought necessary for lawmakers and government agencies to intervene and create rules or privatize the resource and allow market forces to do their work to protect the health of the commons from the depredations of remorseless, yet rational, actors.

But are those really the only plausible options? Government may lack the authority, will, or resources to act. Purely market-driven systems may cause undesirable social or economic outcomes that provoke opposition and political backlash, as has been seen in some attempts to implement catch share systems in some fisheries. And, many communities have managed fisheries sustainably with neither system in play.⁸

A constructive approach is one in which local fishermen’s energy and knowledge are engaged, much like the Malpai ranchers and the Morro Bay leaders, in finding the best ways to make their fishery—their industry, their communities, the resource—more sustainable.

This approach is known as cooperative management. Cooperative management is an arrangement where responsibility for the fishery is shared between government and users groups. Cooperative management is not an alternative to regulation. Rather, it focuses on using locally led management as a way to encourage innovation in fishing practices and compliance with conservation performance

standards. Participants may advocate for better regulations, but they may also influence fishermen’s operational decisions or a community’s decisions in support of shared goals. This approach can produce superior conservation benefits, while providing the industry and fishing communities greater control, regulatory certainty, and stability.⁹

Cooperative management works because participants “feel a greater sense of ownership over the resource,” which in turn creates powerful incentives “to view the resource as a long-term asset rather than to discount its future returns.”¹⁰ The management plans developed in this process are seen as more legitimate by the fishermen who are governed by them, and, therefore, compliance is higher. Rather than complaining about poor information, fishermen and scientists work together to identify and address information needs. The greater level of communication under cooperative management tends to reduce social conflict and result in more cohesive communities. Finally, the accountability and enforcement burden is shared as government holds the group accountable, and the group’s leaders oversee the actions of its members.

Participants in this type of management typically report a high level of satisfaction with the results once things are up and running. Management functions in which cooperative strategies are potentially relevant include research (characterization of distribution and abundance patterns by age and location, stock assessment, protected area design, trophic interactions and ecosystem-based management), operations (catch accounting, quota management systems, closed area avoidance), monitoring (including at-sea monitoring programs, vessel monitoring systems, and bycatch characterization and reduction performance), and enforcement.

The benefits of such a cooperative system are numerous. First and foremost, because cooperative management requires fishermen to take responsibility for many aspects of management, these systems can require fewer government resources in the long run as compared to centralized bureaucracies (they do require initial investment, however), and they bring more resources to the table for management in terms of tasks that fishermen assume themselves.¹¹ Cooperative management plans can be much more tailored to local conditions, leading to more effective management. Because of the improved accountability in these systems, the conservation performance is higher. Cooperative management systems are more participatory and

⁵ Cash, Kelly. “Malpai Borderlands: The Searchers for Common Ground.” In *Across the Great Divide: Explorations in Collaborative Conservation and the American West*. 2001. pp. 112–121.

⁶ *Id.* at p. 116.

⁷ Hardin, Garrett. “The Tragedy of the Commons.” *Science*. Volume 162. December 13, 1968. pp. 1243–1248

⁸ Ostrom, Elinor. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge University Press. 1990.

⁹ Pomeroy, Robert and Meryl Williams. *Fisheries Co-Management and Small-Scale Fisheries: A Policy Brief*. ICLARM. 1994.

¹⁰ Pomeroy, Robert and Rebecca Rivera-Guieb. *Fishery Co-management: A Practical Handbook*. IDRC. 2005.

¹¹ Assuming, of course, that the government agency relaxes or reconsiders its regulatory approach and footprint.

transparent, and do a better job of incorporating local knowledge into the scientific process, which makes fishermen more accepting of management decisions.¹²

Cooperative management is not an alternative to government control, and it is not a panacea for all resource management conflicts and problems, but it can create a process that allows parties to adjust to changing conditions on an adaptive basis.¹³ It does this by creating and maintaining an appropriate relationship among parties that can receive and respond to new information about a complex and dynamic system. It is not a crisp solution but the creation of functional relationships that can open up opportunities to solve a diverse array of problems, such as community leaders who want to stabilize landings in a fishing port, fishermen finding new ways to reduce bycatch, or a group of ranchers who want to save a landscape and their livelihoods.

How Will Cooperative Management Work In U.S. Fisheries?

Some of the most innovative and effective fishery management systems are moving toward a cooperative approach to management. Groups of fishermen or fishing communities are changing their relationship with government fishery managers and are taking on a co-equal or even a leading role in science and management decisions about the best ways to meet the nation's conservation and management standards for their fishery.

However, the examples of this type of conservation approach in U.S. fisheries show that cooperative approaches tend to be the exception rather than the rule, and are often achieved after overcoming significant barriers within the regulatory system. It is worth looking at some of these examples, both to understand the benefits of this approach and the challenges.

In **New England**, cooperation between northeast sea scallop fishery in conjunction with the University of Massachusetts, Dartmouth, School for Marine Science and Technology (SMAST) has led to extensive cooperative research and management that has improved conservation and management of the fishery. Relatively low quotas for yellowtail flounder, a bycatch species for the fishery, resulted in closures of the sea scallop fishery within 57 days in 2008

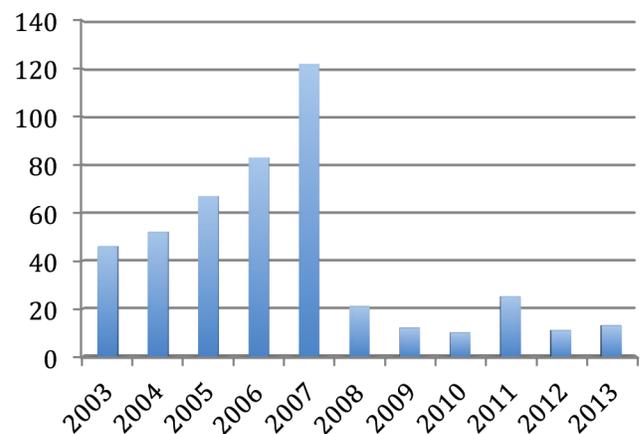
and 15 days in 2009, resulting in total economic losses of \$25 million for both years combined.¹⁴

To avoid similar early closures in the following years, researchers at SMAST worked with leaders in the scallop fishing industry to develop a sophisticated cooperative research and management system that:

- advises fishermen before the season starts of areas that might be prone to high rates of yellowtail flounder bycatch;
- collects and analyzes data from the fleet as the season progresses in order to identify bycatch hot spots in near real time; and,
- uses observer reports to validate the accuracy of fishermen-reported data.

In the first year the cooperative program was in operation (2010), scallop fishermen landed 100% of their quota, while using only 32% of the yellowtail flounder quota. Similar results obtained over larger areas as the number of participating vessels and geographic areas covered grew in 2011 and 2012. In addition to landing 100% of their scallop quotas, "[d]erby effects also decreased, and fishing effort was sustained over 3 months."¹⁵

FIGURE 1
Annual Chinook salmon bycatch catch in the Bering Sea pollock fishery (in thousands of fish)



Source: NMFS.

The **Bering Sea** supports the pollock fishery, the largest by volume in the United States. In 1998, Congress passed the

¹² Ostrom. 1990.

¹³ Berkes, Fikret. "Community-based conservation in a globalized world." *Proceedings of the National Academy of Sciences* 104.39. 2007. pp.15188–15193.

¹⁴ O'Keefe, Catherine E. and DeCelles, Gregory R., "Forming a Partnership to Avoid Bycatch," *Fisheries*, Vol. 38 No. 10 (October 2013) at p. 441.

¹⁵ *Id.* at p. 443.

American Fisheries Act, which reduced the size of the fishery and created a quota management system, creating allocations to various sectors, including inshore catcher vessels, offshore catcher/processor vessels, motherships, and local interests in the form of Community Development Quota Programs. The fleets organized themselves into harvesting cooperatives, both within and across sectors.

Overall, the Bering Sea pollock fishery is a clean fishery; more than 98% of the catch is pollock. Though minuscule in percentage terms, salmon bycatch is significant in numbers, including an average take of 74,000 Chinook salmon per year for 2003-2007. Pollock fishermen are prohibited from keeping Chinook salmon, which are fully allocated to salmon-specific user groups. Once again, the industry faces the challenge of avoiding a non-target stock, which in this case varies widely in terms of distribution and abundance both within and between seasons, to maintain access to the lucrative target fishery.

In order to do so, the pollock fleet worked with federal fishery managers to create an innovative solution. Each Bering Sea pollock vessel provides its bycatch data to a private monitoring agent, who uses it to flag interactions with Chinook salmon, design discrete closure areas that members of the cooperative must avoid to reduce the risk of bycatch, and to monitor in near real time each vessel's salmon bycatch amounts. This arrangement is entirely established and enforced through private agreements designed to meet a bycatch performance standard set by federal managers through regulation. Most recently, in 2007, industry and NMFS identified Chinook salmon bycatch caps; if fishermen stay well under the cap in five out of seven years, they will work under a higher limit in the remaining two years. The results have been dramatic, as Chinook salmon bycatch has decreased substantially (see Figure 1).

This effort demonstrated a whole new way of doing business that was overseen by NMFS but created by the industry. The marketplace changed, relationships between members of the industry changed, and fishery management changed as the fleet realized they could organize themselves to better manage bycatch and provide greater stability and opportunity for their businesses.¹⁶

This understanding carried over into reform of the **Pacific Coast whiting fishery**. Whiting are allocated among several sectors, including motherships, catcher-processors, and shore-based sectors. Many whiting fishermen also participate in the Bering Sea pollock fishery. These leaders, inspired by their experience in that fishery, decided to attempt something similar in the whiting fishery.

What these fisheries have in common is the risk of bycatch. Highly constrained catch levels for several depleted

rockfish species could—if exceeded—put at risk the fleet's access to abundant whiting stocks. Overall, the amount of bycatch available was sufficient to allow the fishery to take place. But the industry was reluctant to allocate bycatch to individual vessels. In this fishery, bycatch is not caught pro rata to the quota for target species. Of far greater concern was the risk of a “lightning strike” event in which one vessel inadvertently exceeds the bycatch quota for the entire sector, putting the entire fishery at risk.¹⁷

Industry leaders saw, based on their experience in Alaska, the benefits of creating cooperatives in some sectors of the fishery. For example, the mothership cooperative manages a pool of bycatch quota. In exchange for access to the pool, each member commits to follow federal and cooperative rules for the fishery. This creates a strong incentive to share information, modify fishing behavior, and establish management measures such as closures that minimize the risk of bycatch. Members who fail to follow the rules will have their access to the pool curtailed or may be forced to wait longer to fish.

The first three years of the program saw a dramatic reduction in bycatch with the notable exception of a 2014 event. However, the improved accountability, information sharing and demonstrated effort by the fleet have improved relationships and trust with federal managers and other fishery stakeholders, which makes it easier to address and solve problems.¹⁸

These types of industry-driven solutions are hallmarks of cooperative management.

If cooperative management were fully embraced by NMFS and the regional fishery management councils, and barriers to its use removed, there would be real opportunities for solving other fishery management challenges.

For example, a large number of U.S. fisheries are data poor and do not have a regular scientific assessment of the health of the stock. High-value fisheries tend to receive a higher priority for limited federal science dollars. There is a strong relationship between the health and sustainability of a fish stock and whether it has been assessed, particularly for smaller-scale fisheries.¹⁹ The failure to assess many of these fisheries—often smaller, lower value fisheries—puts the resource and the livelihoods of the fishermen and the communities who rely on them at risk.

¹⁷ In October 2014, the Pacific whiting mothership cooperative closed because it exceeded its quota of darkblotched rockfish after harvesting only 30% of the whiting quota. The Pacific Fishery Management Council stepped in to take emergency measures to reallocate darkblotched rockfish quota and reopen the fishery. (PFMC Briefing Book, November 2014)

¹⁸ Bob Dooley, personal communication. June 12, 2015.

¹⁹ Costello, C., et al. “Status and Solutions for the World’s Unassessed Fisheries.” *Science*. Vol. 338, No. 6106. 2012. pp. 517-520.

¹⁶ Bob Dooley, Personal communication. June 12, 2015.

This situation could provide an excellent opportunity for partnership. A group of local fishermen could work with a local university, NMFS, and perhaps the local government to create a partnership that could identify and address information needs and conduct stock assessments and periodically update them. NMFS could provide technical advice and support, while other partners provide funding and manpower to do the work. As this partnership grows, it is likely that it would provide other benefits for the fishery. The fish, the fishermen, and the government would all be better off.

A major problem for most **recreational fisheries** is that data on the recreational fishery are not collected in real-time, and the season is often over before managers have any estimates as to how many fish were caught. As a result, recreational sectors often over-run their quota, even as individual fishermen stay within their daily limits. Angler groups like Florida's Snook & Gamefish Foundation have taken it upon themselves to create innovative angler self-reporting tools like iAngler, a smartphone application that allows fishermen to record their fishing success in real time. These types of tools hold great promise for solving recreational fishery data challenges, but they require NMFS to work with anglers to figure out how they can be utilized in a scientifically credible way. It is clear, though, that some groups of anglers are willing to step forward to do the hard work of solving problems in their fisheries. The key is to have a management system that fosters and rewards this type of initiative.

Moving Forward

Cooperative management offers real hope to resolve conflict and stalemate for the benefit of the resource and those that use it. This is not a question of conservation versus communities or economic development. Instead, we should have high expectations of a healthy, sustainable resource and a vibrant and globally competitive fishing industry—and find ways to foster creativity, cooperation, and flexibility in how we meet those intertwined goals at the fishery level. The U.S. exports 70-80% of fishery landings each year and our reputation as a world leader in sustainable seafood is important to the U.S. industry's competitiveness. The fishing industry's ability to meet these goals confers advantages in the marketplace as major retailers around the world have made commitments to source from sustainable fisheries. To ensure all sectors of U.S. fisheries benefit, we need targeted reform at the fishery level to get rid of barriers to unleash innovation and creativity. Both Congress and NMFS have a role to play in these reforms.

Recommendations for NMFS

Create a process for cooperative management partnerships

Creating cooperative management partnerships is a complex process and cannot be accomplished through a top-down decree. It must take into account local social, economic, institutional, and natural resources conditions.²⁰ Although Section 318 of the MSA gives NMFS the authority to engage in these partnerships, the language of the Act is vague, and NOAA has offered little guidance on how cooperative management should work. Without such guidance, regional NOAA offices, fishery management councils, and fishery stakeholders are, in practice, forced to break new ground as they explore innovative and potentially beneficial cooperative management approaches. As shown above, cooperative management initiatives can be implemented if the parties work hard enough. But the complexity and time required for implementation is excessive, the prospects for success are uncertain, and the cost—in terms of human resources and often, professional fees—is high. These impediments are especially burdensome given that many fisheries in need of reform are in a financially weakened state; it should not be the case that only prosperous fisheries can implement new approaches.

Some fisheries that are exploring cooperative management may have only tepid initial support for the initiatives, so obstacles or time delays may cause proposals to be abandoned. Often, stakeholders need to see tangible benefits before fully buying in. Cooperative management tends to evolve and grow over time, as wins are earned and success is built upon.

Further, roles and responsibilities are unclear. Stakeholders are provided little guidance about what NOAA Fisheries needs in order to consider a partnership. It can be difficult to get answers to even basic questions: Who must review new partnerships? What is the role of the fishery management council? How are partnerships reviewed and how often and what conditions must be satisfied for partnerships to be extended or ended by either party? How will partnerships be held accountable?

Some actions by NMFS that would provide clarity on cooperative management are:

- Work with stakeholders to re-define the roles and responsibilities of parties in the fishery management system—recognizing a greater role for the Councils in setting fishery performance standards, more clearly establishing NMFS as an agency responsible for implementing and enforcing performance standards, and

²⁰ omeroy & Williams. 1994. At p. 6.

a greater role for the private sector in creating the method and mechanisms by which those standards will be met.

- Adopting national guidance under Section 318 of the MSA that provides clear instructions for developing successful cooperative management partnerships with NMFS, including a description of any necessary procedures for review by the relevant fishery management councils.
- Define NMFS role in supporting the development of new cooperative management partnerships, including providing technical assistance and expertise as well as extramural grant funding.

Improve Data-Sharing and Management

Many cooperative management efforts have at their heart a focus on better information—about harvest operations, stock status, and ocean conditions. They often have designed creative and sophisticated new data collection and management systems to support their operations. It can be very difficult to integrate these privately developed data systems with government data collection systems. The result is duplication of effort and higher costs.

First, NMFS should address regulatory and other barriers to information sharing. For example, federal rules designed to protect the confidentiality of fishermen's business information have been cited as a bar to sharing information with the third parties who assist in managing data for a partnership.²¹ Further, few fishery management systems use automated interfaces to allow fishermen access to their own data in real time.

Second, NMFS should design clear standards and specifications for fishery monitoring data systems that would enable a third-party provider to design systems that could also meet federal fishery managers' needs. Industry groups are increasingly interested in using third-party systems, but the companies that provide these services are frustrated by the lack of clear and consistent data standards and specifications.

Third, NMFS should work to improve data integration. Often a single fishing trip may generate several records—a logbook documenting catch; a landing receipt documenting what was landed and sold; an observer record, documenting discards and other biological information; and a vessel monitoring system documenting the position and speed of the vessel during a fishing trip. Lack of integrated systems

to handle these disparate records complicates the use of this data, increasing costs, and making it difficult for stakeholders to understand these labyrinthine systems.

Create Greater Clarity in Allocating the Costs of Management

A significant issue in implementing cooperative management is how NMFS credits the contributions of fishermen who take on management duties themselves. As shown above, the fishing industry is often willing to take on more responsibility and contribute to the costs of management. In exchange, the industry often seeks more secure access and greater flexibility in implementing performance standards. Just as important, they also want to know that the management responsibilities they are taking on actually lead to a concomitant decrease in the costs of management by the government, or at least a redirection of resources to other important functions, such as stock assessment.

NMFS should implement a transparent and efficient cost-recovery program, including clearer guidance regarding which costs are to be recovered, and, when actual cost information is unavailable, how to estimate their costs. Cost-recovery fees should follow a clear legal framework and be consistent with national implementation guidance that allows consistency in determining cost-recovery fees across fisheries.

A New Mindset

Last but not least, NMFS could make an important change that involves little or no cost, and that involves a shift in mindset and approach—toward the role of stakeholders and the role of the Councils in cooperative management. As noted above, the agency has authority to use a cooperative management approach, but what has often been missing is the mindset necessary to carry it out. More than anything, cooperative management requires a problem-solving orientation on the part of both the regulator and the regulated. There are promising signs that the leadership of NMFS recognizes the value of cooperative management and wants to move in that direction.

NMFS should issue a clear policy statement that cooperative management is a high priority for the agency, and make as many regulatory changes as needed to facilitate cooperative management partnerships. But after that, it will be up to the rank-and-file employees of the agency to embrace the idea of partnerships, expanded communications with stakeholders, and greater transparency. Their mindset will make or break cooperative management. NMFS leadership should develop this mindset in agency employees by providing training in cooperative management, embedding cooperative management goals in the performance plans of agency managers, or other

²¹ There are different methods in other contexts that have been developed to protect sensitive business information while creating the type of transparency that makes cooperative ventures possible. For example, the U.S. Fish & Wildlife Service has faced similar challenges in working out safe harbor agreements and other credit systems. (source: Lynn Scarlett, personal communication. July 27, 2015)

management tools to enhance such cultural change. Cooperative management to date has succeeded in part because of the receptivity and engagement from agency partners. By working with the fishing industry to help it meet strong environmental performance standards, these employees are likely to find their careers more rewarding, and more productive, than under a more rigid command-and-control approach.

Legislative Changes

While there is much that NOAA Fisheries could do to encourage cooperative management under existing law, there are a number of actions Congress could take to clarify the MSA and make cooperative approaches a favored approach under the Act. Congress can use its oversight authority to encourage the agency to make these changes and should consider amendments to the MSA to establish cooperative management as a preferred method of managing fisheries in the U.S.

1. Define cooperative management and incorporate it into the Act. Congress should define “cooperative management” and clarify the language of Section 318 to set forth a clear process for establishing new partnerships. This would encourage NMFS to include cooperative efforts as a regular part of fishery management.

2. Cooperative science and data. Another barrier to implementation of cooperative management is the agency’s resistance to using data generated from outside the agency. A bill introduced in the 114th Congress by Rep. Rob Wittman (R-Va.), the “Fisheries Science Improvement Act,” would require NMFS to publish guidelines that would “facilitate greater incorporation of data, analysis, and stock assessments from nongovernmental sources, including fishermen, fishing communities, universities, and research institutions into fisheries management decisions.”²² If such information meets the terms of the guidelines, the agency would either have to accept and use it as the “best scientific information available” under the Act, or explain its decision not to. Such a provision would encourage outside parties to fund high-quality research, and make the agency’s scientific process more open and inclusive. And, such data would have to meet NMFS’s standards under the Data Quality Act for third-party data, ensuring the quality of information used for management, regardless of the source.

3. Incorporate use of technology in fishery monitoring. The MSA should be modernized to reflect advances in technology. The language of the act is outdated—contemplating

that monitoring fisheries at-sea is a task that could only be accomplished with human observers. Advances in electronic monitoring and reporting technology (EM/ER) now make it possible to achieve very high standards for observing catch at sea without requiring that vessels carry an additional person on board. NMFS has been working on new guidance for EM/ER, but the MSA could do more to clarify what the agency should do to facilitate adoption of these technologies. To date, different regions of the country have had very different answers for what they are trying to achieve through their observing programs, and fishermen often feel that the answer is always “more.”

Congress could make several changes that would provide clarity and set deadlines for action. This could include defining “electronic monitoring” in the Act, revise Section 303(a) to require fishery management plans to describe the information needed to manage the fishery, the performance standards and objectives for fishery monitoring systems, and to periodically review whether existing systems are achieving those objectives. That way, if electronic systems can produce equal or greater results at the same or lower cost, there will be a means to introduce and evaluate these systems as the preferred method of monitoring.

4. Authorize NOAA to accept contributions from partners. Participants in cooperative management projects, as well as outside institutions like universities and non-governmental organizations, benefit directly from fishery management and are often willing to help share the costs of management with the agency. Research, stock assessment, and catch monitoring and reporting are examples of programs for which entities outside of the agency may be willing to make financial contributions. For example, a group of fishermen on the west coast – working with NMFS to strengthen the monitoring for their fishery – agreed to purchase computers for the observers but found it impossible to give them to the NMFS office that oversees the observer program. Because of federal legal requirements, NOAA is constrained in many situations from being able to accept such off-budget assistance. Congress has acted to allow most other resource agencies to accept third-party payments, and it should do so for NMFS as well.

5. Investment. While cooperative management leads to a more efficient, effective, and lower-cost system in the long run, it does require an upfront investment in both time and money to get cooperative management partnerships off the ground. This investment can take the form of grants or loans to industry cooperatives, community-based fishing associations, or permit banks. For fisheries that operate on slim profit margins, the need for start-up funding can be a significant impediment to implementing cooperative

²² This language was incorporated into the text of H.R. 1335 that was approved by the House in June 2015.

management. In addition to smoothing out the regulatory barriers, providing funding to make this transition is the most important thing the federal government can do. This type of upfront investment will create wins for all parties, as fishermen will enjoy higher profitability, and the federal outlays for management can be reduced over time, or redirected to other purposes.

In addition to funding external grants for electronic monitoring and reporting, Congress should increase funding for the agency to make needed improvements in data management infrastructure—especially those to support use of EM/ER. Such an investment in the agency could better enable NMFS to validate and accept fishery monitoring data collected by third parties. That in turn would allow industry to take on (and pay for) a greater role in fishery data collection. A more self-sufficient and self-regulating fishing industry ultimately requires much less bureaucracy and federal funding to manage it.

Conclusion

Fisheries management is difficult. Allocation is contentious. Information is often incomplete and hard to come by. The challenges facing us in the future—changing ocean ecosystems, competing ocean uses, declining public sector budgets, and more – are not going to make the job easier. And, the conflicts of the past do nothing to help us solve the problems in front of us.

A shift to cooperative management can leave us better equipped to deal with increasingly complex management problems, and it can do so with minimal top-down regulation and provide for a more efficient use of federal dollars. Moreover, it will enhance the competitiveness of U.S. fishermen and offer greater certainty and stability for local communities.

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