



## **Cooperative Research and Cooperative Management White Paper**

*Submitted to NOAA Fisheries Leadership by the Cooperative Research and Cooperative Management Working Group:*

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## **Executive Summary**

For several years, NOAA Fisheries has carried out cooperative management and cooperative research under several statutes. A diverse group of environmental non-governmental organizations (ENGO), fishing industry, and academic stakeholders sent a letter to Dr. Sullivan, NOAA Administrator, in November 2013 requesting that NOAA strengthen the use of co-management in fisheries management. The letter writers suggested that co-management could be a means to bring new resources to fisheries management, enhance NOAA's capabilities, and improve stakeholder relationships.

Specifically, the stakeholders recommended that NOAA devolve more substantial research and management roles to states and stakeholders. In addition, they requested that NOAA develop guidance for (1) cooperative research and management authorized under section 318 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), (2) confidentiality of fisheries data, (3) electronic monitoring, and (4) cost recovery.

In order to formulate the agency position, the NOAA Fisheries Leadership Council requested a review of the agency's co-management and cooperative research activities undertaken pursuant to NOAA Fisheries' major statutes (e.g., Endangered Species Act (ESA), Marine Mammal Protection Act (MMPA), and MSA). A NOAA Fisheries working group conducted this review and also interviewed 50 NOAA Fisheries staff and nine external stakeholders on the successes and challenges of these existing activities. This White Paper provides an overview of those activities to date and provides recommendations to the NOAA Fisheries Leadership Council on how to move forward. The paper is divided into the following sections:

- Review of relevant literature and legal mandates.
- Examples of NOAA Fisheries' existing activities.
- Analysis of internal and external interviews.
- Recommendations for NOAA Fisheries' future engagement in cooperative management and cooperative research.

Given the various definitions and understandings of "co-management," this White Paper uses (and recommends use of) the term "cooperative management," except when the former term is used in literature cited or by interviewees. Based on its analysis, the working group determined that successful cooperative management and cooperative research activities have several key attributes. These include:

- A clear legal framework
- An organized stakeholder group, with leadership
- Clear roles for partners, stakeholders and NOAA Fisheries personnel
- Clear goals
- Buy-in of partners and stakeholders
- Trust between stakeholders and NOAA Fisheries personnel
- Transparent and clearly understood decision-making process
- Strong and regular communication

- Matching the scale of the cooperative management system with the distribution and mobility of the managed species
- Use of results to make fishery management decision making
- Funding

The Working Group found that cooperative research can support cooperative management, but is not a pre-requisite for cooperative management arrangements to be established. Further, cooperative research is often conducted independently of a cooperative management framework.

The Working Group recommends that there are several ways that NOAA Fisheries can use existing legislative mandates and resources to build upon current cooperative management and cooperative research efforts. These recommendations include the following (more detail can be found on page 40):

Communication:

- 1) The HQ Communications Office, Regional Offices and Science Centers should review the specific communication mechanisms and platforms being used to assist agency partners and stakeholders interested in learning more about participating in cooperative management (i.e. regional points of contact, information on how to obtain an EFP, grants, etc.).
- 2) NOAA Fisheries Leadership should create or facilitate more opportunities to engage possible cooperative research/cooperative management partners.

Cooperative Management Policy:

- 1) Provide guidance to NOAA Fisheries Employees, partners and stakeholders on the range of cooperative management tools that NOAA Fisheries has.
- 2) NOAA Fisheries Policy Office should evaluate our partnership with Sea Grant.
- 3) Improve In-reach by training all appropriate NOAA Fisheries staff on the common understanding of cooperative management and the suite of tools available to NOAA Fisheries under the MMPA, ESA and MSA.
- 4) NOAA Fisheries Leadership and their staff should develop and maintain good working relationships with cooperative management partners and be accountable for the success of those relationships.
- 5) NOAA Fisheries Leadership and the NOAA Fisheries Office of Management and Budget should continue to push for statutory language needed to accept private donations.
- 6) Employees and cooperative management partners should establish clear objectives and expectations of their respective roles, as well as regularly review whether there are challenges that need to be addressed.
- 7) Regional Offices should explore whether NEPA review/analysis for EFP's and grants can be streamlined.

Cooperative Research:

- 1) Request the Science Board to review how Cooperative Research feeds into management priorities.

- 2) The Cooperative Research Program should ensure that cooperative research projects are aligned with management priorities and focus on science gaps (e.g. habitat science and its integration into stock assessments).
- 3) The Cooperative Research Program and other cooperative research activities (i.e., SK Grants and BREP) should ensure that both stakeholders and NOAA Fisheries are involved from start to finish so results have the best chance to be used for management purposes. Because cooperative research may be important in providing data necessary for stock assessments, stock assessment scientists should be included in the design, implementation, and analysis of projects.
- 4) NOAA Fisheries Leadership should ensure cooperative research is visible in Science Center planning, engage their staff and be accountable for good working relationships with cooperative research partners.
- 5) NOAA Fisheries should champion peer review products as a preferred component of the research activities, thereby providing maximum impact in support of NOAA Fisheries science (e.g., stock assessments) and management priorities.
- 6) The Cooperative Research Program should review existing long-term/multi-year cooperative research projects and develop recommendations for how to transition funding for these projects to other sources (internal or external).
- 7) Working with NOAA Office of General Counsel, develop a way to help program offices to identify quickly which legal authorities and types of agreements might be relevant to cooperative research activities with external partners (academics, industry, NGOs, etc.).
- 8) NOAA Fisheries should conduct cooperative research, such as testing new fishing gear, within MSA established fishing mortality limits. A variety of mechanisms have been developed and should be applied to allow such cooperative research to move forward.

Metrics:

- 1) NOAA Fisheries Office of Science and Technology should survey external partners on their perceptions of NOAA's cooperative management and cooperative research programs and re-survey them in 2-3 years to see if perceptions have changed.
- 2) NOAA Fisheries Office of Science and Technology should review 2014 cooperative research program projects and determine how many of them led to management decisions.

Process for sharing White Paper:

- 1) This white paper should be shared for review and comment on the recommendations with the following advisory groups:
  - Marine Fisheries Advisory Committee
  - Council Coordination Committee
  - Marine Mammal Commission
- 2) Share the final white paper with all internal and external interviewees.

## Cooperative management

### What Is Cooperative Management?

Traditional “co-management” refers to shared decision-making with government devolving (i.e., transferring or delegating) some of its power to others.<sup>1</sup> The term has been used in a broader sense to refer to a variety of arrangements, with different degrees of power sharing, for joint decision-making by the state and community or user groups, about a set of resources or area.<sup>2</sup> No single standardized definition is used for fisheries or other natural resource sectors. The World Bank defines co-management as the sharing of responsibilities, rights, and duties between the primary stakeholders, particularly local communities and the nation state.<sup>3</sup> The United Nations Food and Agriculture Organization (FAO) states that co-management is typically defined as a partnership arrangement between government and the local community of resource users, sometimes also connected with agents such as NGOs, research institutions, and other resource stakeholders, to share the responsibility and authority for management of a resource.<sup>4</sup>

A major component of cooperative management is not just management of the resource, but also of the relationships among users, regulators, and other stakeholders. The logic is that governance systems that combine state control with local, decentralized decision-making and accountability combine the strengths and mitigate the weaknesses of each.<sup>5</sup> As described below, there is a continuum or spectrum of resource management arrangements,<sup>6</sup> including traditional governance, partnerships, collaborations, cooperative activities, self-governance, and mechanisms for user group participation in decision-making.<sup>7</sup>

NOAA Fisheries already engages in many arrangements along this continuum. For example, the MSA established Regional Fishery Management Councils, who are responsible for developing fishery management plans and submitting them to NOAA Fisheries for approval. NOAA Fisheries, the States, and federally recognized tribes have special roles and responsibilities with regard to the management of marine resources, including protected species. In addition, the fishing industry is actively engaged in fisheries data collection through cooperative research

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<sup>1</sup> Berkes, F. 1994. *Co-management: bridging the two solitudes*. *Northern Perspectives*, 22(2-3): 18-20.

<sup>2</sup> Berkes F (2009) Evolution of co-management: Role of knowledge generation, bridging organizations and social learning. *J Environmental Management* 90:1692 at 1693.

<sup>3</sup> The World Bank (1999) Report from the International Workshop on Community-Based Natural Resource Management.

<sup>4</sup> FAO, Fisheries and Aquaculture Department. Available at: <http://www.fao.org/fishery/topic/16625/en>

<sup>5</sup> See, Carlsson L & Berkes F (2005) Co-management: concepts and methodological implications. *J Environmental Management* 75:65 at 66

<sup>6</sup> It has been suggested that co-management should be viewed as a process of resource management that will adjust over time in response to changes in trust, credibility, legitimacy, and success of the partners and arrangements. Pomeroy R. *Fisheries Co-Management*. Connecticut Sea Grant Publication Number CTSG-04-01

<sup>7</sup> See McCay BJ & Jentoft S (1996) From the Bottom Up: Participatory Issues in Fisheries Management. *Society & Natural Resources* 9:237 at 238 (discussing advisory committees, management councils, and other bodies facilitating communication between government and industry).

initiatives. For purposes of this White Paper, “cooperative management” is being used in the broad sense to refer to arrangements along the continuum, except for cooperative research which is treated separately. In our recommendations we have outlined the continuum and its end points (see Figure 3).

## A Review of the Literature

The literature on fisheries cooperative management spans several decades but its existence as a management regime predates these publications<sup>8</sup>. These examples often describe and analyze smaller communities with long traditions of fishery resource use, which often organize and self-manage their resources in the absence of, or in cooperation with, a central governing body (federal, state, provincial, etc.).

Ostrom<sup>9, 10</sup> was one of the first U.S. scholars to write about the ability of resource users within communities (whether defined by ethnicity, geography, or other characteristic) to self-organize and manage common pool resources. At the time, the prevailing theories focused on resource management regimes that established private property rights. Ostrom identified 10 variables that aid in identifying the likelihood that a community of resource users will self-organize toward the management of a shared resource (Figure 1). Social cohesion and mutually agreed upon rules and norms were noted as necessary for supporting the success of such arrangements.<sup>11</sup>

### Ostrom’s 10 variables toward self-organization

- Size of the resource system
- Productivity of the system
- Predictability of system dynamics
- Resource unit mobility
- Number of users
- Leadership
- Shared morals and ethical standards
- Knowledge of how their actions affect each other
- Importance of resource to users
- Collective-choice rules

<sup>8</sup> Notable examples include: Maine: Acheson, J. 1975. The lobster fiefs: economic and ecological effects of territoriality in the Maine Lobster industry. *Human Ecology*, 3(3): 183-207; Norway: Jentoft, S. and T. Kristoffersen. 1998. Fishermen’s co-management: the case of the Lofoten Fishery. *Human Organisation*, 48(4): 355-365; Japan: Ruddle, K. and T. Akimichi. 1984. Japanese fishing cooperatives in *Maritime Institutions in the Western Pacific*, Osaka: National Museum of Ethnology; Southeast Asia: Pomeroy, R. 1995. Community-based and co-management institutions for sustainable coastal fisheries management in Southeast Asia. *Ocean & Coastal Management*, 27(3): 143-162; New Zealand: Taiepa et al. 1997. Co-management of New Zealand’s conservation estate by Maori and Pakeha: a review. *Environmental Conservation*, 24(3): 236-250; and a global review: Pinkerton, E., ed. 1989. *Cooperative management of local fisheries: new directions for improved management & community development*. The University of British Columbia Press, 307 p.

<sup>9</sup> Ostrom, E. 1990. *Governing the commons: the evolution of institutions for collective action*. Cambridge University Press.

<sup>10</sup> Ostrom, E., 2009. A general framework for analyzing sustainability of social-ecological systems. *Science*, 325: 419-422.

<sup>11</sup> *Ibid.* 1.

Figure 1. Variables related to self-organization, adapted from Ostrom<sup>12</sup>.

Berkes<sup>13</sup> suggested that cooperative management represented a range of different levels of collaboration between government and resource users (Figure 2). He stated that “[c]o-operative management or ‘co-management,’ broadly refers to various degrees of integration of local- and state-level systems. It would be pointless to try to define the term co-management more precisely because of the variety of arrangements possible. It is true that traditionally co-management is thought of shared decision-making power by the partners and requires governments to devolve some of their power to the partners; but in practice there is a wide variety of partnership arrangements that involve various degrees of power-sharing.”<sup>14</sup>

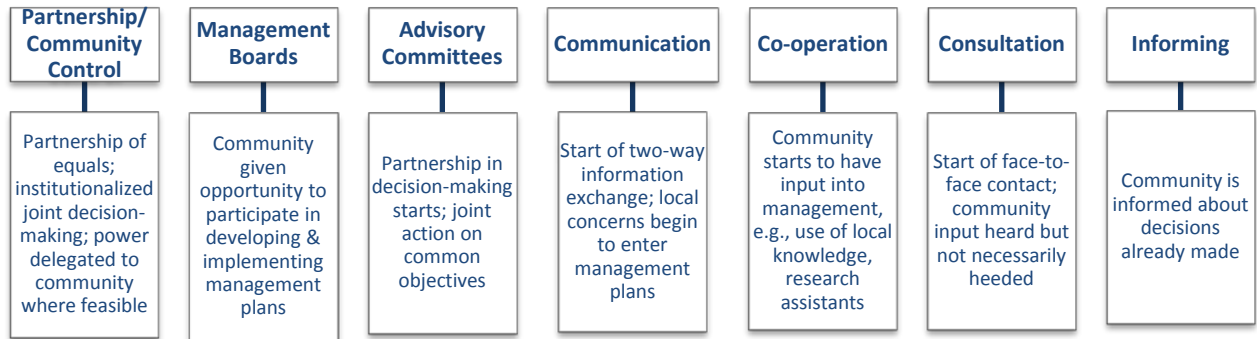


Figure 2. Levels of co-management, adapted from Berkes<sup>15</sup>

Other cooperative management spectrums have been proposed in the literature such as McCay’s ladder of participation<sup>16</sup> and Pomeroy and Berkes’ hierarchy of co-management arrangements<sup>17</sup>. Yet, what seems to matter is the degree (e.g., data collection, fishery management plans, enforcement) and strength (e.g., trust) of partnerships between government and resource users. The ability of those resource users to be organized enough to take-on responsibilities shared with them is also an important consideration.

### Co-management between Federal, State, and Tribal governments

In the United States, the term co-management is often used with respect to legally-defined resource management arrangements between Federal and State governments, and specific coastal Tribes in the Northwest, Alaska, and the Great Lakes. In Washington State, Oregon and Idaho, co-management can be traced to the federal court decisions protecting treaty-Indian fishing rights that led to the current fisheries management relationships between Tribes, the

<sup>12</sup> *Ibid.* 12.

<sup>13</sup> *Ibid.* 1.

<sup>14</sup> *Ibid.* 1, p. 18.

<sup>15</sup> *Ibid.* 1, p. 19.

<sup>16</sup> McCay, B.J. 1993. Management regimes. Beijer Discussion Paper Series No. 38. Property rights and the performance of natural resource systems background paper prepared for the September 1993 workshop. Beijer International Institute of Ecological Economics, The Royal Swedish Academy of Sciences.

<sup>17</sup> Pomeroy, R. and F. Berkes. 1997. Two to tango: the role of government in fisheries co-management. *Marine Policy*, 21(5): 465-480.



states, and the Federal government of trust resources such as salmon shellfish and groundfish.<sup>18</sup> Subsequently, it is now common practice for NOAA to engage in fisheries co-management with these tribes who have legally recognized rights to harvest and manage these resources. In Alaska, the co-management relationship between Federal, State and Tribal governments, and Alaska Native organizations, are defined through Marine Mammal Cooperative Agreements to harvest marine mammals. In part, this is due to the unique nature of the relationship between the U.S. Government and Tribal Governments.<sup>19</sup> Many arctic indigenous groups have chosen to form organizations that may be local, regional, or international in scope and membership to deal with these shared management objectives—to co-manage resources with NOAA.

### Legal Authorities

A broad range of legal authorities may be relevant to cooperative management and cooperative research initiatives between NOAA Fisheries and others. The following summarizes potentially relevant statutory provisions (citations are given to find further information). In addition, different initiatives may raise considerations under statutes that are generally applicable to federal agencies, such as the Federal Advisory Committee Act, Freedom of Information Act, and Administrative Procedure Act. For questions regarding applicability of statutes in particular instances, NOAA Fisheries should consult with the NOAA and Department of Commerce Offices of General Counsel, as appropriate.

Two statutory compilations that may be of interest are:

1. Cooperative Conservation Authorities, Department of Commerce (December 15, 2006) (see Appendix 1)<sup>20</sup>
2. Statutes That Authorize a Transfer of Funds to Support International Engagement (see [http://www.gc.noaa.gov/gcil\\_mandates.html](http://www.gc.noaa.gov/gcil_mandates.html))

Other legal provisions not included in the above compilations include:

#### Magnuson-Stevens Fishery Conservation and Management Act

- a. Cooperative Research and Management Program (16 U.S.C. § 1867): See Cooperative Research section, *below*, for full text of this provision – MSA section 318.

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<sup>18</sup> For purposes of this paper, the focus is on tribes and their participation in fisheries managed under the Magnuson-Stevens Fishery Conservation and Management Act.

<sup>19</sup> The United States consults at a “Government to Government” level, and many indigenous groups have chosen to form political entities that may be local, regional, or international in scope and membership to deal with these shared management objectives.

<sup>20</sup> This 2006 document was compiled in response to Executive Order 13352, “Facilitation of Cooperative Conservation” (August 30, 2004). That Executive Order addressed implementation of laws relating to the environment and natural resources in a manner that promotes collaborative activity among Federal, State, local, and tribal governments, private for-profit and nonprofit institutions, other nongovernmental entities and individuals. E.O. 13352 §§ 1 and 2.

- b. Bycatch Reduction Engineering Program (16 U.S.C. § 1865): This provision authorizes NOAA Fisheries, in cooperation with the Councils and other affected interests, and based upon the best scientific information available, to establish a bycatch reduction program, including grants, to develop technological devices and other conservation engineering changes designed to minimize bycatch, seabird interactions, bycatch mortality, and post-release mortality in Federally managed fisheries.
- c. Fisheries Research (16 U.S.C. § 1881c): These fishery research programs are to be developed in cooperation with Councils and affected States and to provide for coordination with the Councils, affected States, and other research entities. These programs require the Secretary to ensure that affected commercial fishermen are actively involved in the development of the portion of the plan pertaining to conservation engineering research.
- d. Regional Fishery Management Councils and Fishery Management Plans (16 U.S.C. §§ 1852-1854): These provisions establish the Councils and set forth their roles and responsibilities, enumerate mandatory and discretionary provisions for fishery management plans, and set forth requirements regarding Secretarial action on plans, plan amendments, and regulations.

#### Marine Mammal Protection Act

- a. Regulations and Administration, Section 112 (16 U.S.C. § 1382): In this section, the Secretary is authorized to enter into contracts, leases, cooperative agreements or other transactions with Federal or State agencies, public or private institutions or other persons. It also authorizes the Secretary to develop measures to alleviate impacts on strategic stocks after consulting with Marine Mammal Commission and Federal agencies.
- b. Assistance and Contributions, Section 118(i)-(j) (16 U.S.C. § 1387(i)-(j)): Subsection (i) authorizes the Secretary to provide assistance to regional fishery management councils, States, interstate fishery commissions, and Indian tribal organizations in meeting the goal of reducing incidental mortality and serious injury to insignificant levels. Subsection (j) provides that, for purposes of carrying out section 1387, the Secretary may accept, solicit, receive, hold, administer, and use gifts, devises, and bequests.
- c. Take Reduction Teams (TRTs), Section 118(f)(6) (16 U.S.C. § 1387(f)(6)): To address taking of marine mammals incidental to commercial fishing, the MMPA authorizes the establishment of TRTs, which include representatives of Federal and State agencies, commercial and recreational fishing groups, environmental groups, and others, to develop draft take reduction plans.
- d. Marine Mammal Cooperative Agreements in Alaska, Section 119 (16 U.S.C. § 1388): This section authorizes the Secretary to enter into cooperative agreements with Alaska Native organizations to conserve marine mammals and provide co-management of subsistence use by

Alaska Natives. These agreements include grants that may be used to develop marine mammal co-management structures with Federal and State agencies.

### Endangered Species Act

- a. Cooperation With The States (16 U.S.C. § 1535): Secretary may enter agreements with States for administration and management of areas. This section also allows the Secretary to enter into cooperative agreements with States that establish and maintain adequate and active programs for the conservation of endangered and threatened species, for the purpose of assisting in implementation of the programs. It provides the agency with the authority to provide financial assistance to States with cooperative agreements and specifies a percentage limit for Federal share of costs. Finally, this section establishes a Cooperative Endangered Species Conservation Fund and authorizes amounts deposited to be appropriated annually.
- b. International Cooperation (16 U.S.C. § 1537): This section authorizes the Secretary to provide personnel and funds for developing personnel resources and programs for the conservation of species and for training in management, research and law enforcement including providing assistance abroad.

### **Cooperative Management Examples for NOAA:**

NOAA Fisheries already engages in a number of cooperative management arrangements across several statutes. A few examples are outlined below. Examples are provided for informational purposes only and not necessarily to advocate for use of particular approaches. When considering a cooperative management approach, it would be important to have a more thorough discussion of strengths and weaknesses of and challenges in developing, implementing and administering the approach. What works in one fishery may not work in another.

#### *Salmon Bycatch in the Bering Sea Pollock*

NOAA Fisheries and the North Pacific Fishery Management Council collaborate using a form of cooperative management to address salmon bycatch in the Bering Sea pollock fishery. This arrangement has been implemented through an MSA fishery management plan amendment. Under this arrangement, federal regulations establish shared responsibility between NOAA Fisheries, the pollock industry, and other “third party” entities for the management of chum salmon bycatch. The American Fisheries Act (AFA) allows the pollock industry to form fishing cooperatives and to harvest specific proportions of the Bering Sea pollock quota. The cooperatives use private contracts to establish rules and procedures for conducting their pollock fishery. NOAA Fisheries uses this cooperative structure and the existence of private contracts to allow exemptions to time and area closures for industry members who comply with a voluntary bycatch management program that meets the requirements outlined in Federal regulations.

*Community Fishing Associations in the West Coast Groundfish Fishery*

In 2005, The Nature Conservancy (TNC) purchased Federal groundfish trawl permits and vessels with the intention of leasing these permits back to fishermen who were interested in helping TNC test the selectivity and feasibility of different types of fishing gear. In 2009 and 2010, NOAA Fisheries issued Exempted Fishing Permits (EFPs) to TNC that allowed them to test this gear and to test possible benefits associated with establishing a community-based fishing association (CFA). CFAs would allow members to pool catch limits for target and bycatch species.

In 2011, the limited entry trawl sector of the west coast groundfish fishery transitioned to an Individual Fishing Quota system. TNC, based on the EFP experience, then partnered with the Fort Bragg Groundfish Association and the Central California Seafood Marketing Association to form a risk pool whereby members pooled their IFQ allocations. In this example of management that is independent of NOAA Fisheries but complementary to the federal management scheme, , members signed a formal agreement to pool some or all of their very limited IFQ of overfished species, therefore sharing the risk of catching these species. Members also prepared and adopted fishing plans intended to reduce the risk of catching overfished species. The fishing plans used the best available information to identify areas where catch of overfished species was highest or most likely, and members avoided these areas voluntarily. Members also used an electronic logbook system, developed by TNC, to capture high resolution spatial and temporal data on fishing activity, and used these data to update and adapt the fishing plans. Since launching, the California Risk Pool has added a third fishing association, the Half Moon Bay Groundfish Marketing Association. TNC reports that this risk pool has been effective at reducing bycatch of overfished species while harvesting target species, and has improved the tracking and sharing of fishing information.

## **Cooperative Research:**

In the United States and around the world, the dominant method for obtaining information for the management of fisheries and protected species has been through centralized, government-staffed research programs. A different approach under the general umbrella term “cooperative research” involves a broad range of external stakeholders including: state and tribal managers and scientists (including interstate fishery commissions), fishing industry participants (including commercial and recreational fishermen), ENGOs and educational institutions.

Cooperative research is defined as a scientific activity involving two or more partners that gain more collectively than each would separately in the pursuit of a shared research goal. A scientific activity uses statistically robust methodology, maximizes precision, and either minimizes or accounts for bias. In cooperative partnerships, all parties contribute in some manner to the scientific activity, and all parties gain from the results.

For NOAA Fisheries, there are various levels of technical involvement in the design and implementation of cooperative projects depending on regional and fisheries-specific information needs and opportunities, program and survey costs, and potential benefits of the proposed research. Cooperative research activities range in scope from limited involvement by stakeholders (e.g., fishermen keeping logbooks) to greater participatory involvement where stakeholders are included in all phases of the research program (e.g., survey and statistical design, analysis of the collected data, interpretation of the results, and communication of study findings). Cooperative research designed and conducted by NOAA Fisheries scientists using commercial or recreational fishing vessels typically has involved fishermen either through using their fishing vessels, as well as handling of fishing gear (e.g., conservation engineering studies).

Given the number of fishermen, their expertise, and their regularity on the water, cooperative research between NOAA Fisheries and fishermen is valuable. The agency’s cooperative research can: (a) be used to increase the precision and expand the scope of resource surveys; (b) provide supplemental information about fishing operations; (c) use the knowledge gained from fishing to help design and implement research; and (d) build mutual understanding and respect among scientists and fishing people.

The formal Cooperative Research Program portfolio has a number of mature/longstanding projects that have been deemed essential to the agency’s overall science enterprise, but their continuation under cooperative research funding limits the agency’s ability to address new issues and establish new partnerships.

## **Legal Authority**

Cooperative research programs and projects have existed in NOAA Fisheries for most of the agency’s history and are considered an important component for conducting fisheries research. On January 12, 2007, the Magnuson-Stevens Reauthorization Act created Section 318 (16 U.S.C. § 1867), which requires the Secretary of Commerce, in consultation with the Fishery

Management Councils, to establish a program to address needs identified under the Act and under any other marine resource laws enforced by the Secretary. Under section 318, this program will:

1. Be implemented on a regional basis;
2. Be developed and conducted through partnerships among federal, state, and tribal managers and scientists (including interstate fishery commissions), fishing industry participants (including commercial charter or recreational vessels for gathering data), and educational institutions;
3. Promote and encourage efforts to utilize sources of data maintained by other federal agencies, state agencies, or academia; and
4. Be funded on a competitive basis and based on regional fishery management needs.

Section 318 also identifies priority areas that should be addressed by projects conducted under the research program including:

1. Collecting data to improve, supplement, or enhance stock assessments, including the use of fishing vessels or acoustic or other marine technology (Section 318(c)(i));
2. Assessing the amount and type of bycatch or post-release mortality occurring in a fishery (Section 318(c)(ii));
3. Conducting conservation engineering projects designed to reduce bycatch, including avoidance of post-release mortality, reduction of bycatch in high seas fisheries, and transfer of such fishing technologies to other nations (Section 318(c)(iii));
4. Identifying habitat areas of particular concern as well as conducting projects relevant to the conservation of habitat (Section 318(c)(iv)); and
5. Collecting and compiling economic and social data (Section 318(c)(v))

In addition, MSA Section 408(a)(4) (16 U.S.C. § 1884(a)(4)) requires the agency, subject to availability of appropriations, to establish a program “to conduct research, including cooperative research with fishing industry participants, on deep sea corals and related species, and on survey methods” and to engage in other specified activities.

### ***Project Identification***

NOAA Fisheries, through the regional cooperative research coordinators and in collaboration with Fishery Management Councils/Marine Fishery Commissions, solicits stakeholder involvement using a variety of methods including: workshops, regional and area outreach forums, trade-show booths and presentations, websites, and one-on-one engagement of key stakeholders.

The project identification occurs under the umbrella of current agency guidance (including the Fisheries Priorities and Annual Guidance for 2015 and other agency strategic planning documents). Additionally, all proposed projects are linked to respective Fishery Management Council multi-year research priority plans. MSA Section 302(h)(7) directs the Fishery

Management Councils, in conjunction with their Scientific and Statistical Committees, to develop multi-year research priorities for fisheries, fisheries interactions, habitats, and other areas of research that are necessary for management purposes, for 5-year periods.

#### **NOAA Cooperative Research Examples:**

##### *Southern California Hook and Line Survey in Cooperation with Sportfishing Industry*

Now in its 11th year, this fishery-independent survey of groundfish species, which inhabit untrawlable habitats in the Southern California Bight utilizes recreational charter vessels that have been selected through a bidding process and meet the survey specifications. As a result of the survey strong and successful working relationships have developed between NOAA Fisheries scientists and the sportfishing industry. The survey provides NOAA better-quality information for stock assessments, more engaged stakeholders, low charter costs, and a track record of 10 years without a single day lost due to mechanical problems, crew delays, or other issues. More specifically, the data derived from this survey is used to support stock assessments and other research for multiple species of shelf rockfish. The survey's design, protocols, and analytical methods have undergone rigorous peer review through publications, the stock assessment review (STAR) process, and a Center for Independent Experts (CIE) review in 2012.

##### *Bycatch Reduction Engineering Program*

The Bycatch Reduction Engineering Program (BREP) supports the development of technological solutions and fishing practices to minimize bycatch and reduce post-release injury and mortality of non-target species in our nations' fisheries. U.S. fishermen are involved with all aspects of BREP research from designing new gear and assisting with data collection, to verifying and testing the application of gear in the field. Fishermen often identify needed innovations to reduce non-target bycatch while maintaining target catch. Based on Congressional direction, BREP transitioned from funding internal projects to funding external projects in FY2012. NOAA/BREP supported 14 projects across the country in 2012 (\$2.44 million). In September 2013, NOAA Fisheries/BREP awarded 16 grants totaling \$2.39 million.

## Analysis

The working group interviewed 50 NOAA employees, in various positions, in headquarters, regional offices, and science centers that are involved in cooperative management or cooperative research efforts. All participants were asked the same set of questions, which are analyzed in five categories below. In addition, nine external partners from around the country, also with various levels of experience and familiarity with cooperative management/cooperative research, were interviewed using the same set of questions. That information and a listening session (“roundtable”) with the letter writers inform the external analysis. [Note: During the interviews, the term “co-management” was used].

### Successful/unsuccessful attributes of cooperative management arrangements

#### Internal Interviews:

Participants were asked to identify attributes that made cooperative management programs successful or unsuccessful. The interviewees identified several factors which contributed to the success or failure of programs. A single attribute may not have been identified as the most important aspect for success or failure, but was instead a confluence of many conditions and processes. In total, 17 attributes were identified for successful programs and 18 for unsuccessful programs.

	Attributes Cited for Successful Co-Management	Attributes Cited for Unsuccessful Co-management
1	common need(s)/problem(s) between co-managing parties/clearly defined goals	inequity/feeling of being not a valued partner
2	benefits to all parties	no clear understanding of division of authority
3	seeking input from stakeholders to find ideas	unrealistic expectations/disagreement of goals
4	statutory mandates for cooperation and legal framework	parties unwilling to compromise
5	good faith/transparency in engagement and collaboration to establish buy in from all parties	fiscal constraints/lack of capacity
6	ownership/stake in the management process	lack of sufficient information for effective management
7	small scale of fishery/community	lack of engagement/top down approach
8	equitable distribution of catch	lack of trust between parties
9	focus on science based decision making	restrictive/poor legal framework
10	recognition of importance of subsistence lifestyle	lack of communication
11	neutral third party facilitation	failure to follow process/agreement
12	united industry, trust to carry out plan	short term planning/no long term goals
13	grass roots/industry driven or initiation at a small scale or pilot project	too much compromise or disregard of some views
14	operating by consensus	poor monitoring and enforcement
15	clearly defined roles	not enough checks/balances
16	sophisticated/structured industry parties	legal issues/litigation
17	good communication	politically motivated process or parties
18		competing uses in management area



Although many attributes of successful programs were identified, this does not imply that those interviewed uniformly supported cooperative management, or that examples given as successful were believed to be fully successful. For example, nine of the responses used the same example for both successful and unsuccessful attributes. This implies that, while some attributes led to successful relationships and management decisions, other attributes within the same program resulted in suboptimal solutions.

### *Successful Attributes*

The most common response from respondents identified **legal frameworks** and **collaborations** as the two attributes related to successful cooperative management arrangements.

#### **1. Legal framework**

Respondents saw statutory mandates, or legal framework, as important to allow for and encourage co-management. When highlighting statutory mandates, interviewees were most often discussing the Regional Fisheries Management Council process mandated by the MSA, with 13 responses highlighting at least some aspect of the Council process as positive for co-management. A common response was that without a statutory requirement, NOAA Fisheries may not have used ideas from stakeholders, nor shared decision-making authority with the Council. Not all participants viewed the Council process as truly co-management, but they often felt it did embody some elements essential for co-management.

Interestingly, the explanation for the resulting benefits of the Council process also identifies two of the more popular attributes for success: *seeking input* from stakeholders to find ideas (12%; 6), and stakeholders *having ownership* or a stake in the management process (17%; 9). This also helps to clarify the overall disagreement on the degree to which the Council process is considered co-management. Undoubtedly, the process solicits advice and information on how to best allocate fisheries resources with the fishing industry. But three interviewees felt that, from their perspective NOAA held the ultimate decision-making authority, therefore there was unequal ownership in the process for all stakeholders.

Five interviewees discussed aspects of the unique relationship between NOAA and Native American groups supported by a legal structure. This was embodied in both marine mammal subsistence hunting programs, and the legal structure that evolved over time following the Boldt Decision in how to share salmon between tribal and non-tribal fishermen in the Pacific Northwest. It was suggested that these arrangement are perhaps closer to a strict definition of co-management as tribal authorities share authority in planning, management, and enforcement.

#### **2. Collaboration**

Thirteen participants identified **good faith, transparent collaboration and facilitated buy-in** from all stakeholders as critical for success of co-management. This reflects the importance of the process and relationships built, in addition to the structure of the arrangement previously discussed. Similar relationship-building attributes identified included first identifying a common

need or problem, so there can be clearly defined goals (8). Others identified a need for clearly defined roles (5), having good communication (2), and having a united industry that was trusted to carry out the management plan (4).

Some participants noted the need for **organization amongst the stakeholders** as an important attribute. This could reflect a perceived need for either a greater ability to control activities and parties or, in the case of homogenous communities, a lack of diversity of opinions on problems and solutions that would lead to greater buy in.

Finally, some attributes could be categorized as outcome-based goals. For example, one response suggested that an equitable distribution of catch was a sign of success in a co-management program, and three responses offered that a focus on science-based decision-making could lead to greater management objectives. When considering process-based outcomes, another response suggested that operating by consensus would allow for successful management. In instances of a lack of consensus, two responses stated that a neutral third party was essential for the facilitation of a co-management plan.

#### *Unsuccessful Attributes*

The issues identified leading to unsuccessful programs could be divided into the general categories of implementation of **legal framework, relationship or process-oriented, and factual or objective attributes**. Several respondents' answers reflected a lack of the attributes that have previously discussed as beneficial. When discussing a lack of success, the interviewees also placed an increased emphasis on implementation as a controlling factor.

By far the most common reason given for a lack of success, with 11 responses, was **unrealistic expectations or a disagreement about overall goals**. Interviewees suggested that, despite the promise of increased ownership and collaboration, tough decisions still had to be made in the management process and that co-management should not be viewed as a cure-all. Even with an optimal arrangement, not every party will be able to achieve all desired outcomes, and it is therefore important to clearly define what can and cannot be achieved through a co-management arrangement. Perhaps leading to unrealistic expectations, one of the more common attributes cited (5) was a lack of **sufficient information for effective management (e.g. stock status)**.

The most commonly cited structural attribute (5) was **fiscal constraints or a lack of capacity to accomplish desired processes**. Co-management is generally thought to shift some of the financial and technical burden from the regulatory authorities to the stakeholders. A shift to co-management could be financially or technically difficult for smaller-scale operations, which are less well financed or those that have historically employed less-sophisticated monitoring methods. In addition, four responses indicated that the statutory framework, or legal process, was too restrictive. In this view, legal constraints prevented innovative approaches to problem-solving, or the structure slowed the ability to adaptively manage changing conditions in a dynamic ecosystem. Conversely, another response suggested that in some instances not enough checks and balances were built into the system to allow for successful co-management.

In addition, one interviewee also mentioned litigation and the threat of litigation as an attribute that has limited success.

Overall, relationships between co-managing parties yielded the widest array of problematic attributes. The most commonly cited (5) was a **lack of trust between the parties**. This could be due to other relationship processes identified, including a sense of inequity or not being valued as a partner (3), that parties were **unwilling to compromise** (2), or a **general lack of communication** (3). Additionally, the motivations of some viewpoints during negotiations were questioned as either **politically motivated** (1) or that some **views were disregarded unjustly** (1). These qualities reflect attributes for good relationship-building identified earlier such as **clearly defining goals, objectives**, and roles of parties involved.

In hindsight, interviewees also identified **problems with processes** that ultimately led to less effective implementation. For example, two responses cited a focus on short-term planning or a lack of long-term objectives. Another two responses noted that there was **no clear understanding of the division of authority**, preventing issues integral to success from being adequately addressed. However, once the plan was initiated, four responses cited a failure to follow the agreement as the reason for failure. This could also be due to poor monitoring and enforcement practices noted by two participants. This would suggest that in some arrangements the aspired benefit of self-enforcement by industry, which some think is improved by co-management arrangements, did not materialize to the extent needed.

Competing uses in the management areas is a confounding factor to co-management arrangements. However, this could possibly be identified as another instance of a lack of sufficient information for management. Arguably, had the effects of competing uses been adequately considered in the management plan, they should not detrimentally affect the arrangement.

#### ***External Interviews:***

In the interviews with fisheries stakeholders, there was also a broad range of opinions on what attributes lead to successful or unsuccessful co-management programs. One participant chose not to answer since they did not have a favorable opinion of co-management and therefore did not identify a successful or unsuccessful program.

#### ***Successful Attributes***

Of the successful attributes identified, half of those providing input (4) emphasized that actually **having valued input in the decision-making process was a key to success**. In the case of agreements with Native communities, the ability to have equal authority, without one party overruling the other, was uniformly identified as beneficial. Most of the non-Native claims did not argue that there needed to be complete parity among the parties, provided they felt their input was valued and informed management decisions.

Two of the external interviewees also identified **statutory and legal authorities** as attributes beneficial to co-management. Again, the interviewees identified both the MSA mandated initiatives, and legal authorities enforcing Native American treaty rights. One noticeable trend, when compared to the internal interviews, is the idea that the Council system under MSA is not viewed as co-management. Three of the four external participants who mentioned the MSA Council process felt that, while it is a forum for discussion, there is no true sharing of power by the government. The fourth respondent took a more nuanced view: the large scale commercial fishing industry dominated any outside input, marginalizing all other parties.

Along with legal structure, participants also identified structural and procedural components. One suggested that **working towards consensus** was optimal for management among parties. In order to reach consensus, a good management relationship, with informal interactions among the stakeholders was suggested. In addition, it was also stated that having a correct size and composition of the management group, including sophisticated parties, aided the consensus building process.

Another area highlighted by the external interviews was a **greater emphasis on the value of external participation providing information**. For example, one interviewee suggested that a marine mammal co-management process was successful because the government sought specialized knowledge from Arctic indigenous peoples about the ecosystem and marine mammal populations that had been hunted for subsistence. Another response valued the process where parties worked together to fill gaps in capacity so that all parties can rely on their relative comparative advantages.

#### *Unsuccessful Attributes*

Reasons offered for unsuccessful outcomes were more diffuse, but largely tracked the themes identified in successful programs. **The themes of trust, and equitable power sharing in management decisions were again prominent**. For example two interviewees stated that the feeling of inequity, or a lower level of input, led to disenfranchisement of some communities. Two others offered that in the case of some catch share co-management arrangements, too much control was shifted to a handful of larger commercial fishers, creating resentment among the smaller scale stakeholders. In addition, one cited a case where some members of the management council refused to negotiate any points and felt they did not act in good faith.

Two responses also identified a **lack of flexibility** in the statutory authority as an impediment to innovative or appropriate solutions. This was also implied by another interviewee who suggested that the regulatory process removed actual decision making from the region to Washington, where there was a lack of local knowledge needed to deviate from procedures in place. This was viewed as an inappropriate insertion of parties not truly relevant to the co-management process.

Finally, the external interviews also mentioned **resources**. One response stated that the co-management arrangement put too large a burden on communities. Specifically, it was the time burden that stalled operations, as opposed to fiscal constraints.

Overall, the external parties identified issues similar to those in the internal process. Based on these accounts, a meaningful inclusion of stakeholder driven knowledge and technical capacity, and greater flexibility to adaptively manage the resource, and initiatives to build trust among parties would lead to a greater success rate. However, it is important to note that there is not a uniform definition of success when discussing co-management. In some perspectives, success is the sustainable management of the resource. In others, it is an improvement in the management process, or mutual satisfaction among parties. Yet again, it could be defined as meeting all legal obligations to all parties, including the public trust. Therefore, before any discussion of which attributes to include in a co-management process objectives should be established at the beginning of the process.

## Successful/unsuccessful attributes of cooperative research projects/programs

### *Internal analysis*

Respondents provided numerous examples of cooperative research projects and programs covering all of the U.S. regions.

#### *Successful Attributes*

These examples had varying levels of industry involvement, but there were similarities throughout these projects and programs. Generally, **successful cooperative research projects and programs proactively engage with industry very early on in the process**. Industry can identify research questions that are of importance to their own operations. Or in other examples, the agency identified a management question; the agency and industry collaboratively determined the data needs and assessed the current status of data collection. Successful cooperative research projects should have a clear management focus, have a tightly designed process and feed into the research and management process. This should include clear and open communication from the beginning, shared priorities, resources to support the work, transparent and clear protocols for data management, data collection, and proper incentives for stakeholder engagement.

In many instances, industry collected data on their own vessels and these results were compared to agency-collected data. Or the agency charters vessels and works with the crew, so they see the scientific process and understand how data are collected. These simple arrangements built credibility and trust between the agency and industry.

#### *Unsuccessful attributes*

The most important attribute which contributed to unsuccessful cooperative research was **misalignment of the management objectives of the agency, the science needs and the needs of the fishermen**. An attribute of successful cooperative research projects is that practical input from stakeholders or fishermen can improve the results of cooperative research. For example a scientific program was designed and mandated for use by the fishing industry. Fishermen rejected this program because they felt it was flawed and if they had been involved, the results would have been better. This can be seen as the opposite of one of the main successful attributes of cooperative research – projects are closely aligned with fishermen's interests and the agency's science and management needs.

Cooperative research programs which were unsuccessful tended to be directive projects rather than bottom up. Another attribute to consider was the level of mandates for management. For example, high authority mandates (such as those from Congress or the United Nations) that were issued without considering the research results, negatively affected cooperative research collaborations.

Respondents noted that a lack of management commitment to the results of the cooperative research outcome can undermine the program. Likewise, if fishermen have preconceived expectations for how the data would be used and these expectations are not met, this can lead to unsuccessful projects.

Cooperative research projects that do not identify a solution to a problem are not necessarily failures. For instance, the buoy-less lobster gear feasibility study improved NOAA Fisheries understanding of fisheries operations (e.g., gear deployment and retrieval processes), even though it did not necessarily lead to a regulatory change.

Respondents reported that unsuccessful cooperative research projects occurred when there were **uncooperative partners**. Partners were not inclined to participate in cooperative research because they believed they already had a solution and were not interested in testing alternative hypotheses. Successful communication early in the process may remedy this issue.

### *External interview*

The results of the external interviews reveal a very similar pattern as the internal interviews. Stakeholders repeatedly mentioned the need for clear communication and stakeholder involvement from the beginning of the project.

### *Successful Attributes*

All external respondents noted that **industry, including tribes, must be involved in the design of the project from the beginning**. Partners should be included in the design and implementation of the research. This improves confidence and buy-in in the project results, and these arrangements improve knowledge of all those involved.

Respondents noted that cooperative research could include cases where industry is given the freedom to evaluate a management problem and devise a solution without the government's interference. For example, in Hawaii, fishermen were given the opportunity to try different hook sizes in their operations, with the collaboration of NOAA Fisheries scientists, to evaluate, which hooks best minimized interactions with false killer whales.

One respondent noted that successful cooperative research is not necessarily led by NOAA Fisheries, but it includes cases where federal, state and academic partners use common consensus techniques. The respondent noted that this type of independent monitoring is costly and could be the reason for the limited use.

Another component of successful cooperative research was **making sure that all the stakeholders, including industry or Tribal partners, had access to the data**. Also, respondents noted that cooperative research must feed into the management process. For instance, one respondent noted that the results of cooperative research in their respective region dovetailed with the Annual Catch Limits setting process.

*Unsuccessful attributes*

External respondents noted that cooperative research projects were unsuccessful when **assessment scientists were not involved in the projects because the results were not incorporated into future stock assessments**. This angered fishermen as they thought it was a waste of their effort.

Another example noted by the external respondents was when government agencies assessed beaches on Tribal properties to identify areas for fishery closures. This assessment was conducted without the involvement of the affected Tribes. They were presented the results without **being involved in the process** and were outraged.

Cooperative research can be unsuccessful in certain communities if a **social network** is not in place to establish and create community capacity.

Attributes of unsuccessful cooperative research included cases where **adequate funding was not provided**. This was especially an issue for regions with few academic partners.

Another issue for unsuccessful projects was a **lack of accountability**, with an example being the Research Set-Aside quota in the Mid-Atlantic. There were inadequate controls over compensation fishing activities, which allowed abuses of the system, quota overharvest, and the eventual suspension of the program.



## **Under the current laws and regulations, what can NOAA Fisheries do to advance the use of cooperative management?**

### *Internal Interviews:*

Of the 50 completed interviews, five people had no response to this question. Of the remaining 45 interviews **many believed that NOAA Fisheries is currently doing co-management and that the tools are available for increased co-management.** Several themes came up during the interviews as important for successful co-management: **trust, collaboration, communication/listening, and flexibility in rules.** Eight interviewees specifically highlighted the Council process as a form of co-management. However, one interviewee indicated the Councils were not a form of co-management, noting that representation is lacking and it does not reflect a co-management model. Three participants indicated that the first step for co-management is to determine where this type of management makes sense.

Eight participants mentioned that there are some necessary conditions for successful co-management for a fishery, including that the **fishery should be a discreet small-scale fishery that has a strong community aspects and some sort of legal or corporate structure.** It was noted that disparate ill-defined fisheries are not well suited for co-management approaches. The fishing community would need to have a spokesperson or an individual who is responsible for communicating within the industry. There would need to be an appropriate level of science/monitoring support. Since **co-management is an iterative process,** it would be essential that NOAA Fisheries remain actively engaged in the Council process and in communicating what is going on, continue to re-examine current programs to make sure goals and objectives are being met, and refine goals and objectives as things change. Finally, NOAA Fisheries should recognize, and accommodate, regional differences within the United States.

Four interviewees indicated that NOAA Fisheries could best advance the use of co-management by conducting **pilot studies.** It was noted that this could be done as an experimental fishery. The agency would need to find an appropriately scaled fishery and then follow-up with management regimes which could operationalize the results. Education and outreach with users was flagged as a necessity for a pilot study. One interviewee indicated that NOAA Fisheries is already doing pilots and should continue to work on them. Some examples noted that could be built upon are: the Gulf of Mexico headboat survey, PacFin, surf clam, scallop, groundfish, and more generally catch share programs (CDQs, ITQs).

Five interviewees believed that **cooperative research could bridge the gap to co-management.** Some believed that increasing the use of fishery-dependent data—and more completely engaging industry in collecting more data and subsequent analysis of that fishery-dependent data—are key. One interviewee pointed out that the NOAA Fisheries Science Board is currently discussing possible mechanisms to increase cooperative research that could lead to co-management.

Six interviewees indicated that **flexibility** is an important aspect of co-management, in particular efforts by all parties to problem solve. One person noted that NOAA Fisheries currently work closely with the industry, Council partners, and state partners to try to develop programs that provide flexibility. Both the MSA and AFA were noted as laws that provide the agency with options for addressing issues (i.e., statutes do not mandate one specific approach). One person noted that NOAA Fisheries should look for additional administrative means to create flexibility. A component of flexibility is a willingness to work together to develop solutions. More emphasis from the Agency to encourage stakeholder cooperation to develop creative ways of management of fisheries is necessary. It was noted that if a manager is rigid this will create tension. One interviewee noted that stakeholders other than the fishing industry should be involved in the development of more creative and effective approaches to meeting stakeholder objectives as well as Agency objectives. Finally, interviewees indicated that NOAA Fisheries should find ways to work cooperatively to provide data and partner on cooperative research that feeds the cooperative management process.

Six respondents mentioned **funding** as a hurdle to implementing co-management programs. There is a limit on how much time employees can spend in the field due to resources, which limits their time for work with commercial and recreational fishermen. Budget cuts and travel caps hinder employees from working cooperatively with stakeholders; if the agency wants to do more, these will need to be revisited. Some needs mentioned for supporting co-management were additional training for staff, in particular for facilitation and experts to lead discussions. No grant programs are currently available to assist co-management development.

Four people mentioned **enforcement or Joint Enforcement Agreements** as an important aspect of co-management. One person noted that the JEA program has \$2M in grant funding for ideas that were suggested from different states, and pointed out that the most effective way to help with enforcement is to engage the stakeholders (states). One person noted that NOAA Fisheries would need to hire more law enforcement personnel if we increased the use of co-management.

Eight interviewees mentioned a **culture shift to encourage employees to listen more** and that open and transparent information sharing is needed to be effective. Interviewees indicated that NOAA Fisheries needs to do a better job of trying to be inclusive by thinking about additional entities, stakeholders, or agencies that should be involved in discussions. There needs to be strong relationships between stakeholders to ensure a better dialog. The involvement and trust of all stakeholders is needed. However, it was noted that the industry has to be willing and able to have a similar respectable dialog. Interviewees also indicated that NOAA Fisheries should have knowledgeable staff to communicate with industry to establish rapport, trust, and respect. Finally, the agency as a whole should put more emphasis on a structure or process in which NOAA Fisheries and Councils are working more cohesively; otherwise the system fails and the process fails.

Six people mentioned there is **more work to be done on the protected resources side**. Protected species are an area of increasing attention and priorities of the past will be

challenged by new priorities. One respondent suggested that NOAA Fisheries should identify how fishery management and protected resources programs can leverage common structures to more effectively engage stakeholders. For example, the Council process is a consistent and highly structured process that could be better utilized for protected species management purposes when there are MSA and ESA-listed species issues (i.e. a fish eating a protected species). Under the ESA, it was noted that Incidental Take Permits could be much more collaborative. Another way to advance co-management of protected species is to better establish or define working relationships among multiple agencies that have different jurisdictions. Greater recognition is needed of the value of existing protected species management processes (e.g., TRTs).

Three interviewees specifically referred to **agreements with the Alaska Native Organizations (ANO)**. One noted that NOAA Fisheries needs to start the process of establishing an agreement with a meeting to understand boundaries, limits, and desires on both sides. NOAA should provide better support for ANO representatives to attend and participate fully in co-management meetings to better support the use of traditional knowledge in management decisions, and to better support scientific studies needed to address critical questions.

Two interviewees indicated we should consider **delegating more to the states or territories**. There is sufficient authority in the MSA to do so. One person noted that a recreational fishery co-management effort could work if we delegate more responsibility to the states. However, states and territories don't always want the responsibility. If this is done, it should be done in a constructive framework to protect species.

Two people mentioned that **clarifying our current co-management authorities should be a priority for MSA Reauthorization**. One interviewee indicated it should provide explicitly for co-management and involve Commissions, as they have direct links with states and managed species cross jurisdictional boundaries. Three people endorsed establishing a policy that will streamline our ability to do this, indicating that rules need to be defined on how co-management could work and be structured.

#### **External Interviews:**

Of the 9 interviews, 8 people answered this question. **Many people believed that the existing laws were sufficient.** However, one person had three specific changes to the MSA that could facilitate greater co-management include: 1) amend the selection process for Council membership to allow fishermen and the industry a greater say in who represents them (e.g. direct election by the industry/fishing community, or formal industry endorsement), 2) allow for more equitable division of seats on the council, and 3) provide a more meaningful appeals process when the Department of Commerce overrules the Council's policy recommendation, to promote a stronger co-management relationship.

One interviewee noted that NOAA Fisheries leadership needs to embrace co-management and should support incorporating stakeholder knowledge into management and research. Other

respondents and the roundtable participants indicated that forums exist for co-management while others indicated new ones needed to be identified to include states and other stakeholders. This indicates a lack of clarity of what tools exist for co-management and of what priority NOAA Fisheries gives to co-management. Some respondents suggested development of a policy to clarify how co-management will be used to further agency mandates.

Four interviewees discussed **communication at all levels – States, NOAA and the Industry** – as a necessary element for co-management. While robust communication can be very time intensive at the end of the day the products are likely better. Public meetings and comments are not sufficient for understanding viewpoints and shared visions for the future of the fishery. One person indicated that the government tends to be superficial when it comes to understanding diverse and representative public perspectives.

Two interviewees and the roundtable attendees identified **flexibility** as an important attribute that is needed under existing laws. Respondents noted that NOAA Fisheries should allow the Councils to maintain flexibility to engage in co-management that is effective for each region. Regional context must be taken into account when considering a future co-management policy (i.e. mainland definitions do not necessarily apply well to western Pacific issues). Within a region, fishers (both commercial and non-commercial) may not be well-organized and centralized than in other regions and it will be more difficult to involve them in co-management. Support from NOAA to develop and enhance such organization would increase the effectiveness of co-management.

While respondents indicated that NOAA Fisheries could pursue co-management under existing resources, three respondents also identified current obstacles to co-management. These included: (1) **lack of resources** for partnerships (2) **need for funding positions to work with the Indigenous Peoples Council on Marine Mammals** to do visioning and planning for the future, and (3) **confidentiality rules for releasing data**.

One respondent indicated that it was necessary to devolve authority from NOAA Fisheries Headquarters to the regions and expedite their review of regional rulemaking documents. They flagged that NOAA Fisheries Headquarters maintains too much oversight over regional management decisions, which undermines a core principle of co-management and power sharing, and creates unnecessary delays to an already slow and cumbersome process.

## **Under the current laws and regulations, what can NOAA Fisheries do to advance cooperative research?**

### *Internal Interviews*

Nationwide, 50 NOAA Fisheries employees were interviewed. These interviewees provided insight into how NOAA Fisheries can advance cooperative research efforts. These responses were categorized into the following seven themes and topics:

- Foster collaboration by communicating opportunities, building relationships and trust
- Define and communicate cooperative research standards and goals
- Foster collaboration by changing Agency attitudes
- Assess where cooperative research would be beneficial and what allows for success
- Funding: increase, re-allocate, or consider non-Federal sources
- Improve or change the current cooperative research process
- Increase leadership towards promoting cooperative research

Within each of these theme and topic areas, responses varied. For example, interviewees differed in whether they preferred NOAA Fisheries researchers leading cooperative research projects. Variation in responses likely signals that differences between regions exist and/or the level of direct, cooperative research experience varies between our interviewees.

#### **Foster collaboration by communicating opportunities, building relationships and trust**

Sixteen interviewees mentioned the importance of building trust and collaborative opportunities with cooperative research partners, suggesting ways the Agency might facilitate this. One suggested that the Agency - "... develop guidelines for setting new cooperative research agreements to help facilitate partnership building." That is, make partnership building a requirement of cooperative research projects. Four interviewees mentioned that the Agency should be proactive about seeking out partners, "don't wait for them to come to you." Two interviewees suggested that NOAA Fisheries actively seek feedback from cooperative research partners. One suggested that research set aside (RSA) programs could serve as a model in this regard.

Other interviewees suggested that cooperative research partners should be fully engaged in all stages of the process, including strategic planning and the development of cooperative research programs, formulating research questions and proposals, and data collection and analysis. That is, "... take a look at the research that needs to be done; early on... [ask] is there a way to involve the industry through cooperative research? Be more deliberate in finding opportunities."

Seven interviewees suggested that the Agency engage in more outreach and publicize cooperative research opportunities, past projects, and successes. "[Cooperative research] Project results need more outreach and notoriety... Communicate successes." One individual suggested involving Sea Grant to assist with this outreach. Similarly, some interviewees

mentioned the importance of communicating the Agency’s scientific needs and capabilities to potential cooperative research partners in order to facilitate discussions about where stakeholders might be able to fill a niche, data gap, or help address existing issues and challenges. Several forums, such as the Council, the Alaska Native Organizations (ANOs) and others could be used as possible forums to discuss cooperative research needs and strategies with existing and potential partners.

Regardless of the type of outreach, one interviewee suggested that it was important to have “ongoing engagement rather than periodic visits from on high” to encourage and promote cooperative research. As one respondent said, the agency needs to “... create dialogue, common ground, and trust...” between Agency staff and fishermen, and a better understanding of each other’s perspectives. This “... is built over time and frequent conversations...” and promotes transparency which “... is critical and feeds directly into trust and support for scientific advice.”

Seven interviewees mentioned who they believed the key cooperative research partners were. Some focused on seeking partners who had a “stake” in the research; other mentioned the fishing industry, academic institutions, states, Tribes, NGOs, and other governments. At the same time one interviewee was concerned that if a cooperative research partner, e.g., industry partner, had a stake in the outcome, then they will want a certain outcome. In contrast, the same concern was not mentioned when partnering with academic institutions, as those were seen as strengthening NOAA Fisheries’ science and credibility.

#### **Define and communicate cooperative research standards and goals**

Four interviewees mentioned data quality and sharing as important considerations. Some voiced concern about the quality of data collected from cooperative research projects and how NOAA Fisheries can ensure that the collected data is reliable. This is critical if the data are will be used, for example, in stock assessments or for ground-truthing electronic monitoring technologies. How data will be shared with cooperative research partners should be discussed and decided early in the process. This related to the identification and communication of a project’s goals and objectives. Five interviewees mentioned the importance of communicating project goals and objectives. One stated that, “[c]ooperative research’s most important factor or function is to impart a shared understanding of why the agency is collecting or analyzing data and how that data is synthesized and used.” Similarly, another interviewee mentioned that communicating management priorities within the Agency was also important, so that research can be more aligned with these priorities.

#### **Foster collaboration by changing Agency attitudes**

Respondents (4) mentioned that attitudes within the Agency related to cooperative research should change. It was mentioned that the Agency should embrace “equal involvement among parties” and a “cooperative spirit,” and increase the role of stakeholders in cooperative research activities. Similarly, another interviewee suggested that cooperative research partners should be engaged in analyses, not just data collection. Another individual mentioned that partners should be involved in “... science beyond just bycatch reduction, such as surveys and

assessments.” Two additional interviewees also suggested that the agency should embrace the use of fishery dependent data.

**Assess where cooperative research would be beneficial and what contributes to success**

Eleven interviewees suggested that some assessment of past and current cooperative research projects was necessary to better understand what worked and what did not. One respondent suggested these should be regional assessments, while others suggested these assessments could be conducted through workshops with past participants. Assessments could aid in:

- 1.) identifying the capabilities of cooperative research;
- 2.) identifying where this research can fill gaps;
- 3.) identifying opportunities for cooperative research within the Agency’s “science framework”;
- 4.) assessing the feasibility of multi-year or periodic projects towards developing a time series.

**Funding: increase, re-allocate, or consider non-Federal sources**

Comments about funding from 38 interviewees were broken into the following five subcategories:

*1. Increase funding of cooperative research efforts.* Eighteen interviewees suggested that more funding would help to advance cooperative research programs. For example, it was noted by one interviewee that part of the reason why the Agency is not more proactive in its interactions with Tribal governments on groundfish and marine mammals comes down to funding.

Some of these interviewees expressed their views on specific funding problem areas. Regarding the Bycatch Reduction Engineering Program, money should not be awarded to Agency principal investigators as they have been in the past. However, it was unclear from this interview why this was a problem. Several interviewees mentioned increasing the flexibility of funding. Also, NOAA Grants Management was noted as an area where improvements in timeliness could be focused, particularly when they are involved in moving funds from the Agency to cooperative institutions like academic institutions.

*2. Funding that is stable and multi-year.* Five interviewees suggested that “stable” or multi-year funding was key to advancing cooperative research programs. This would provide for more predictability in whether funds are available each year (which “facilitates an ongoing dialog on cooperative research”) and flexibility in how cooperative research funds can be used and invested over time (which “would allow broader research programs,” making it “easier to attract and retain people to do the research when funding is assured over multiple years”). Similarly, one interviewee suggested developing “long term programs for continued data collection in perpetuity.”

Re-prioritize existing funding. Eleven interviewees suggested that lack of additional funding was not an issue. Instead, a re-allocation or re-prioritization of existing funding was needed. For example, one individual stated that “... just having the agency’s leadership be on board is the important thing, it sounds like the end result of this [working group] will be a report to leadership and I hope they take it to heart and basically provide guidance and free up their staff

to think about this more, both on the science side and management side.” If cooperative research projects are a priority, this direction needs to be given and weighed against other Agency priorities.

Several interviewees identified needs for more funding:

- Staff should be increased so as to facilitate, assist with, and evaluate cooperative research efforts, such as Research Set-Aside (RSA) programs and Exempted Fishing Permits (EFPs). EFPs in particular can help the Agency evaluate new fishing opportunities by allow new gear to be tested that may more efficiently target desired species and reduce bycatch of protected species.
- Science Centers should emphasize and prioritize cooperative research projects.
- There should be better coordination between the Agency and cooperative partners, such as the Councils, so that they can provide input on research needs, there is a clear process of data collection, and research results are shared.

These interviewees recognized that prioritizing agency resources towards cooperative research would require the Agency to “... give up some core research/monitoring work to process” if additional funding is not available and that this would need to be evaluated carefully whether this is the best resource allocation.

*3. Allocate resources to non-fish cooperative research.* Four interviewees suggested that more cooperative research funds (either new or existing) could be focused on non-fishery species such as marine mammals or protected species. There was a perception by some of these interviewees that existing cooperative research funding was “directed toward fish-centric research” when it could, instead, be more inclusive of “ecosystem components, not just harvested species.” One interviewee suggested, “[f]or example, providing research to protected species like turtles so that you can have an idea of how many turtles can be [taken] before the fishery is affected. The effective number of turtles that can be caught before the fishery is closed is dependent not just on the number of turtles caught but also on the size of the turtle population. If you do not have information on the protected species (i.e. there are no funds available to research them), the fishery may be shut down prematurely or even unnecessarily.” Another interviewee mentioned that in the past there was a “Species of Concern” list towards which “pro-active conservation efforts” were supported by a grant program. However, the “[c]urrent ESA listing workload has impacted the ability to” pursue this type of research.

*4. Funding from non-Federal sources.* Four interviewees mentioned that cooperative research programs would benefit by allowing the Agency to accept non-Federal funding (e.g., private gifts, donations). One interviewee mentioned that the fishing industry funds research in New Zealand. Another suggested that the Agency could “identify funding mechanisms for cooperative research associations or conglomerates” as a way to do this. Others suggested that allowing the agency to receive non-Federal funding “may require legislative authorization.” Similarly, one interviewee stated “... if they [the fishing industry] wants a newer, broader, more extensive survey, it takes time and resources... If they see it as beneficial to them, then how do we set it up so they can give us [NOAA Fisheries] money to do that?”



**Improve or change the current cooperative research process**

Twenty-seven interviewees suggested ways that the current cooperative research proposal or process could be improved or changed. These ideas include – 1.) improve proposal development process, 2.) examine who receives funding, 3.) streamline the current processes, 4.) allow regions more discretion, and 5.) align cooperative research goals with management priorities

*Provide incentive for researchers to use the cooperative research model:* One interviewee suggested that requests for proposals (RFPs) be “incentive-based... E.g. If you conduct this research through [a] cooperative research model, then we [NOAA Fisheries] can provide 75% of the funding, or some other incentive.”

*Examine who receives cooperative research funds.* Respondents provided varying views as to whether cooperative research projects were best led by NOAA Fisheries scientists or those outside of the agency. Respondents suggest examining what strengths each might bring in conducting the research

*Streamline current processes.* Three interviewees mentioned the need to streamline existing processes: a reduction in “regulation and bureaucracy of formal agreements” and “[p]rocedural issues such as permitting and ESA Section 7 reviews” was necessary to prevent delays to research. Also, one acknowledged that cooperative research is confusing for non-NOAA Fisheries partners because “... there are multiple grant programs with different timeframes and varying priorities... some program priorities overlap and others don’t.”

*Allow regions more discretion.* One interviewee recommended that regions should have more discretion to set priorities for their regional cooperative research programs and to choose which cooperative research projects are funded.

*Align cooperative research goals with management priorities.* Four interviewees mentioned that science priorities and management needs could be better aligned to ensure resources are spent wisely.

*Identify and acknowledge how cooperative research data is used and communicate this.* One interviewee noted that most cooperative research data goes into “benchmark assessments” rather than a “stock assessment update.” Benchmark assessments occur less frequently and so this data may not be used immediately. This needs to be communicated to stakeholders.

*Acknowledge existing cooperative efforts.* One interviewee noted that there are “... a lot of agency efforts/mechanisms that operate in a ‘cooperative-mode’, but aren’t formally designated as ‘cooperative research’ or funded through cooperative research dollars. A good example is the Fishery Information Networks (FINs). These are regional co-operative state-federal programs to design, implement, and conduct marine fisheries statistics data collection

programs and to integrate those data into a single data management system that will meet the needs of fishery managers, scientist, and fishermen.”

*Identify impediments to cooperative research.* Four interviewees identified the following impediments to engaging in more cooperative research:

- Insurance requirements related to worker safety and having non-Federal staff on government vessels or Federal staff on non-government vessels can impede research.
- Data confidentiality restrictions and the “... the ability to utilize the data collected for agency priorities” can be a problem.
- Logistical difficulties with contracts and cooperative agreements.
- Institutional impediments such as whether quota or research set asides are used for cooperative research projects.

*Increase leadership towards promoting cooperative research.* Respondents gave varying feedback on how cooperative research could be better promoted. One said current programs were sufficient, while others suggested that NOAA Fisheries should enhance its leadership of and promotion of cooperative research. For example, one individual suggested that a “clear national-level leader and strategic plan”, similar to the recreational fishing initiative, was a way to promote cooperative research programs. Another interviewee similarly stated that the Agency’s leadership “...needs to make it known to those out there in the management and science realm that this is important... So it’s just making it a priority.”

### *External interviews*

This analysis includes results from nine “external” (non-NOAA Fisheries) interviews and feedback from the attendees at the “roundtable.” These interviews identified themes or topics that related to improving or changing the current cooperative research process to increase or enhance cooperative research within the Agency. These themes were categorized into five categories:

- Foster collaboration/ be more inclusive by engaging communities early
- Define/communicate research goals
- Increase leadership
- Streamline the EFP and grants processes
- Increase or better utilize funding

### *Foster Collaboration*

Two interviewees mentioned the importance of **engaging both commercial and recreational fishermen in research projects**. Engagement referred to making an effort to let fishermen know about cooperative research opportunities as well as education and training about the research process (from data collection to analysis to interpreting results to use in management). Another interviewee stated that the Agency should, “[f]igure out how to involve anglers. Start with simple data collection. A good example is the research... to determine what kind of toxins were involved in the fish kills. Constituents were actively involved in bringing in carcasses to

collection centers—getting [that] kind of constituent involvement yields tremendous results and saves money.”

Two additional interviewees reflected on cooperative research between NOAA Fisheries and Tribal scientists. One mentioned that despite all the work done on Tribal consultation (under Executive Order 13175 that requires consultation and coordination with Tribal governments), this requirement to consult with Tribes “... hasn’t done much of anything” to improve the status quo. Another interviewee suggested that if additional resources were available, it may be beneficial to create a “full-time well-defined position focused on cooperative research and cooperative management” who would serve as a **liaison between each Tribe and the Agency**. This interviewee suggested that creating such positions would go “a long way” in improving research collaboration and relationships. In lieu of additional funding, this interviewee suggested having organized, well-defined “summit meetings” on a periodic basis to discuss cooperative research priorities, projects, and progress. It was suggested that better structured meetings at Council meetings which Agency and Tribal representatives already attend could facilitate cooperative research.

#### **Define and communicate research goals**

Respondents indicated that all the relevant stakeholders should work together to define **research goals collaboratively**. Further, the research outcomes should be clearly identified and understood how they will fit into existing or future management needs. For pilot studies, such as EFPs, it may be necessary to emphasize that the outcomes of such a study may or may not be applicable to a particular management need, so expectations of how the results will be use are tempered. Likewise, additional barriers to engaging partners in cooperative research, e.g., data-sharing, should be identified.

#### **Increase Leadership**

One interviewee noted the importance of **good leadership**. “We need to have good leaders, not just people who go to meetings. We need to have people who will check back with the people they represent and bring a good product to them.” Within the context of this interview, the call for “good leaders” applied to all cooperative research partners (i.e., not just Agency representatives) and suggests that a good leader is one who communicates progress on and outcomes of research projects to all partners and the groups they represent.

#### **Streamline the EFP and grants processes**

Two interviewees mentioned the importance of having more cooperative research opportunities to conduct **pilot studies or the issuance of experimental or exempted fishing permits (EFPs)**. The Agency should work to “streamline” and increase the “timeliness” of the EFP process, and communicate why EFPs are not always issued. This comment ties back to the importance of communicating research (and management) priorities and goals to partners, to help temper expectations. Streamlining the cooperative research grants process was also mentioned. An additional interviewee mentioned that this streamlining included the interaction between the Federal and State permitting processes.

### **Increase or better utilize funding**

Six of the nine external interviewees mentioned that to advance cooperative research, **funding should either be increased or better utilized**. Suggestions included that NOAA Fisheries look at the National Science Foundation’s process of cooperative research, and also suggested that the NOAA Fisheries Science Centers should consider changing policies on how they conduct fisheries research.

One interviewee suggested that cooperative research programs and projects would be improved if existing funds were re-allocated: update the proportion of funds that are allocated to each region. This interviewee stated that the Northeast and Southeast received the majority of funds, and the other regions had to compete for the remaining funds. This interviewee said that, if regions were allocated and allowed to administer their own cooperative research funds, then competition for funding could (and should) occur regionally, rather than nationally.

## **How does Cooperative Research feed into Cooperative Management?**

### *Internal Interviews*

The interviewees **did not universally feel that cooperative research feeds into co-management**. The lack of consensus was primarily due to an inconsistent understanding between interviewees on what constitutes co-management, and the opinion that there are few, if any, true co-management programs in place for cooperative research to support. Several interviewees viewed “co-management” as meaning there must be a strong element of power sharing, while other interviewees viewed the term as referring to any participation (whether be voluntary or mandatory) in support of the management program. As a result, the responses regarding the role and significance of cooperative research to support co-management was colored by the interviewee’s definition for co-management, confounding the results.

However, there was consensus among interviewees that **cooperative research is an important tool in supporting science and management programs**. Cooperative research supports these programs by leveraging expertise and resources that may not be otherwise available, addressing important research needs, and helping to garner buy-in from the vested fishing industry and other stakeholders. It was consistently noted that cooperative research is a valuable tool, even in the absence of a co-management program. Conversely, some interviewees noted that a successful co-management program would need a strong cooperative research component.

Interviewees stated that cooperative research feeds into co-management (or could) in several important ways, most notably from the data generated from cooperative research that feeds into management. Many interviewees noted that cooperative research is most effective when **leveraging stakeholder expertise and resources to address discrete science and management questions**. Types of research most frequently cited include conservation engineering, enhanced fishery dependent data collection, biological sampling, and industry based surveys. Cooperative research was also cited several times as being relatively responsive and flexible to

emerging research issues, which can allow research results to be produced and applied in a more timely fashion. It was noted by several interviewees that stakeholders need to be engaged throughout the process, including the development of the research issue, execution of the research, and the review and application of the results. Industry participants need to be invested beyond just financial compensation for the use of their vessels. In addition to project participants being engaged throughout the process, it is important that end users are also engaged in cooperative research efforts, and steps should be taken to ensure that they are prepared to use the research results, as appropriate. A frequent critique of cooperative research is that the results are not used, which undermines current and future cooperative research efforts. Although most interviewees feel cooperative research has a role to play, the relative importance and potential contribution of cooperative research results varied among interviewees, from significant to minor. Some of the interviewees stated that cooperative research has limitations, and that it does not have a significant role in improving stock assessments, or supporting management programs in general, and that it could not replace most of the core science programs run by the agency. There were several comments that cooperative research projects must have realistic objectives and follow sound scientific methods, and that research should not be done to provide financial subsidies to the fishing industry, or to mollify political pressures. Several interviewees noted that efforts must be made to ensure strong quality assurance over research results, and that conflict of interest issues should be addressed before cooperative research projects are designed and, again, when considering research results.

In addition to support derived from research results, most interviewees cited **stakeholder engagement and buy-in** as a primary way in which cooperative research can feed into and support co-management programs. The basic sentiment was that cooperative research fosters stakeholder buy-in to the science and consequently, management. Cooperative research also can bring diverse stakeholders together, which helps establish common ground, promotes communication, can build trust, and increases the body of expertise to draw on for making management decisions, elements generally agreed critical to an effective co-management program. It was noted several times that follow-through with the research is critical to maintaining stakeholder engagement and support of cooperative research and co-management. There must be clear benefits to participating in the research. Along these same lines, there needs to be strong communication about reasonable expectations for the research. One interviewer commented that it can be difficult to garner industry buy in, even from individuals directly involved in conducting the research.

Research results and industry buy-in were the most frequently cited ways in which cooperative research can support co-management. All but 1 of the 49 interviewees mentioned one or both of these attributes of cooperative research. Of these, 20 interviewees referenced both, 20 only referenced the scientific benefits, and 8 only referenced the less tangible benefits of creating buy-in and engagement. There was generally a consistent balance between regions and HQ, although the northeast was the only region that was more apt to reference both attributes, whereas the other regions were more likely to just reference the benefits of the science. Although these results are based on summarized interview comments, they indicate the science

products are the principal driver for cooperative research, with industry buy-in and capacity building providing a supporting role.

Finally, several interviewees commented on the process of how cooperative research results feed into co-management. Cooperative research results can be used to inform a management action or a new regulation, or a cooperative research product can be voluntarily adopted by the fishing industry. Voluntary adoption of a cooperative research product, such as a selective fishing gear design or participation in a bycatch avoidance network, indicates some level of buy-in to the science and management program, a cornerstone attribute of cooperative research and co-management.

There was consensus that cooperative research, with careful planning, can be an effective research strategy which can be used to support science and management programs, but there was no consensus on how cooperative research is feeding into co-management programs. There was a very consistent message that this support is realized in the form of useful research results, and stakeholder engagement and buy-in.

### *External Interviews*

Although the external interviewee areas of expertise are diverse, their responses regarding how cooperative research feeds into and supports co-management were largely consistent amongst the external respondents, as well as with the internal interviewee responses, although there were some notable differences. The external interviewee responses focused more on the need for early engagement and close coordination for cooperative research to be effective, and less on some of the technical aspects of implementing cooperative research projects and using the results. Comparing the internal and external responses was complicated due to the different questions which were asked. As with the internal interviews, the definition of co-management varied, which affected opinions on how cooperative research feeds into co-management.

There was consensus that cooperative research plays a significant role in supporting co-management systems, with each interviewee providing at least one example of success. Similar to internal interviewee responses, the manner in which cooperative research feeds into and supports co-management programs is through providing valuable information and research products, and through creating buy-in and building capacity with stakeholders. The areas of cooperative research that were most often cited as being successful include gear technologies and conservation engineering, data collection programs (e.g., study fleets), industry-based surveys, and testing or developing new data collection and reporting technologies.

A prominent sentiment was the importance of **early stakeholder engagement** for cooperative research to be effective. Early engagement and collaboration leverages both practical and technical stakeholder expertise that is often lacking at NOAA Fisheries (e.g., working efficiently on the water, fishing gear design and performance, resource knowledge). In addition to adding value to the research project, early engagement help achieve some of the less tangible attributes of cooperative research, including stakeholder engagement, and science and management buy-in. Adding to this point, several commented that cooperative research

entails more than hiring a vessel platform to conduct the research, and that the fishing industry (or other stakeholders) needs to be true partners in the project. Conversely, several interviewees commented on the negative outcomes due to poor communication and bringing stakeholders into a project late in the process. Foremost, critical expertise is missed in the development of a research project, which may result in backtracking (which wastes valuable time and resources) or moving forward with a poor or flawed research plan. In addition, late engagement undermines trust between stakeholders, buy-in to the research project and results, and faith that NOAA Fisheries is truly interested in working collaboratively. Several commented that NOAA Fisheries does not adequately engage stakeholders when developing cooperative research projects. One interviewee extended the need for early engagement to the end-users for the research results (e.g., managers and assessment scientists). End users can help refine the research issue and address technical concerns that could affect the utility of the research.

External interviewees had less direct experience with implementing research programs and cooperative research projects than internal interviewees. As such, there were fewer comments on logistical and technical aspects for how cooperative research feeds into co-management. However, several did note that cooperative research is best suited to addressing discrete research needs with direct applicability to science and management programs. Several noted the importance of having tangible benefits to maintain stakeholder buy-in and participation.

In summary, all of the interviewees strongly supported cooperative research and the benefits that it can provide for fulfilling science and management needs, and generating stakeholder buy-in. Early and earnest engagement is critical for these benefits to be realized.

## Recommendations to Leadership on Cooperative Management and Cooperative Research:

**Note:** These recommendations will be tracked by the NOAA Leadership Council.

### Communication:

- 1) The Regional Offices and Science Centers should review the specific communication mechanisms and platforms being used to assist agency partners and stakeholders interested in learning more about participating in cooperative management (i.e. regional points of contact, information on how to obtain an EFP, grants, etc.). As part of this, the Regions and Science Centers -- through their Regional Communications Council lead -- should:
  - a. Identify and evaluate the cooperative management information currently available on their own websites and via other communications tools used by the agency (i.e. brochures, workshops, etc.); and
  - b. Identify and evaluate their related Fishery Management Council websites to determine what cooperative management information exists there.
  - c. The Fisheries Communication Office will lead a similar evaluation of the headquarters program websites, including SF, PR, S&T, and others. In addition to reporting on the HQ evaluation, the Communications Office will work with the Regional Communication Council to collect and report Regional and Science Center information.
- 2) The HQ Programs, Regional Offices and Science Centers should create or facilitate more opportunities to engage possible cooperative research/cooperative management partners. This could range from encouraging NOAA Fisheries staff to work with outside partners including regular, regional town halls, roundtable discussions, or other meetings to engage stakeholders in addition to the existing Council process. Consistent with the recently adopted Engagement Principals (11/2014).

### Cooperative Management Policy:

- 1) Provide the guidance below to NOAA Fisheries Employees, partners and stakeholders on the range of cooperative management tools that NOAA Fisheries has.

*Given the various definitions and understandings of “co-management,” this White Paper recommends use of the term “cooperative management.” It may be helpful to establish explicitly a common understanding of what that term means to NOAA, as the working group noted internal and external differences in views regarding such arrangements. Some ideas:*

*“Cooperative management” could refer generally to increased stakeholder engagement in the fishery management process – from data collection to development of management plans to addressing buy-in and accountability – to foster a shared understanding of the condition of and responsibility for managed resources, consistent with conservation and management standards*



and legal requirements. This understanding would span NOAA’s responsibilities under the MSA, ESA, and MMPA.

As reflected in Figure 3, cooperative management has an analog in cooperative research: stakeholders work together to develop the research design and collect data, consistent with standards that ensure that the data can be used for scientific and management purposes.

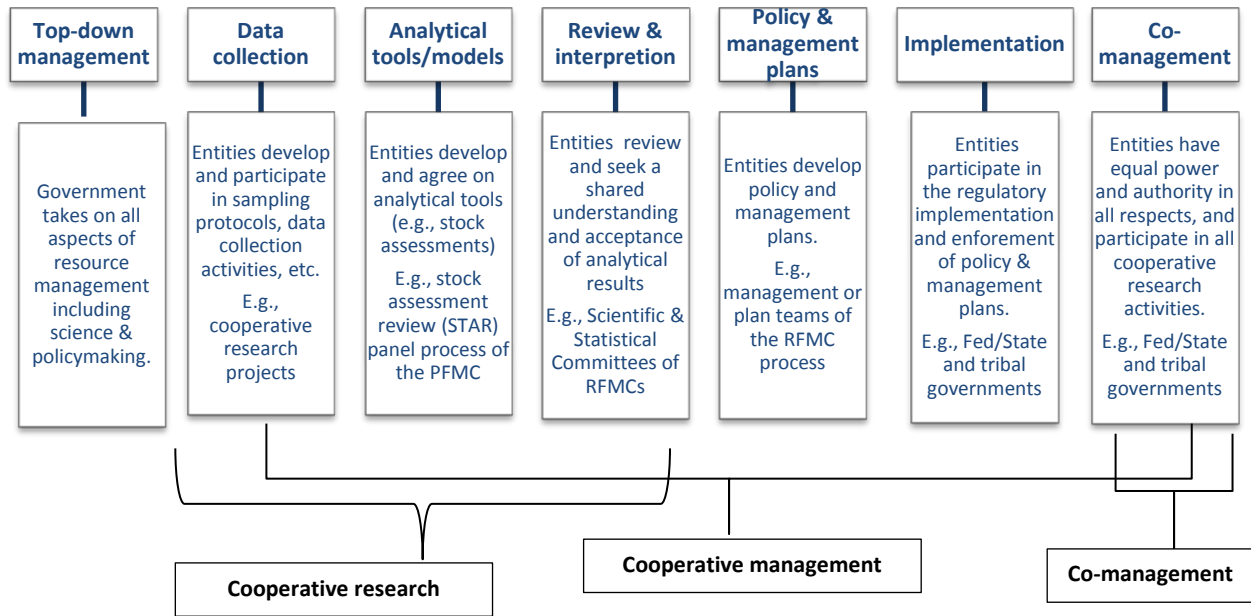


Figure 3: Levels of cooperative management, modified from Berkes<sup>21</sup>

*It is important to note that, under existing authorities related to cooperative management between NOAA and most user groups, final decision-making and enforcement authority would rest with NOAA. This is different in the case of co-management, i.e., government-to-government arrangements in which statutory and other legal principles and authorities prescribe the jurisdiction and authority of Federal, State, Tribal and local governments.*

- 2) NOAA Fisheries Policy Office should evaluate our partnership with Sea Grant, particularly regarding research, outreach, and education, to determine if there are additional ways to engage the academic and stakeholder communities.
- 3) NOAA Office of Communications and the Office of Policy should facilitate in-reach by training all appropriate NOAA Fisheries staff on the common understanding of cooperative management and the suite of tools available to NOAA Fisheries under the MMPA, ESA and MSA. Facilitation and/or customer service training may be appropriate for specific staff to improve interactions between NOAA Fisheries staff and constituents. Training could take place through webinars, training videos and publicized information

<sup>21</sup> *Ibid.* 1, p. 19.

on the NOAA Fisheries intranet. This recommendation will likely require additional funding resources.

- 4) NOAA Fisheries Leadership and their staff shall develop and maintain good working relationships with cooperative management partners and be accountable for the success of those relationships.
- 5) NOAA Fisheries Leadership and NOAA Fisheries Management and Budget should continue to push for statutory language needed to accept private donations.
- 6) Employees and cooperative management partners should establish clear objectives and expectations of their respective roles, as well as regularly review whether there are challenges that need to be addressed. Dialog is needed in both directions.
- 7) Regional Office and Science Centers should explore whether NEPA review/analysis for EFP's and grants can be streamlined.

Cooperative Research:

- 1) The Science Board should review how Cooperative Research feeds into management priorities.
- 2) The Cooperative Research Program should ensure that cooperative research projects are aligned with management priorities and focus on science gaps (e.g. habitat science and its integration into stock assessments).
- 3) The Cooperative Research Program and other cooperative research activities (i.e. SK Grants and BREP) should ensure that both stakeholders and NOAA Fisheries are involved from start to finish so results have the best chance to be used for management purposes. Because cooperative research may be important in providing data necessary for stock assessments, stock assessment scientists should be included in the design, implementation, and analysis of projects.
- 4) NOAA Fisheries Leadership should ensure cooperative research is visible in Science Center planning, engage their staff and be accountable for good working relationships with cooperative research partners.
- 5) NOAA Fisheries should champion peer review products as a preferred component of the research activities, thereby providing maximum impact in support of NOAA Fisheries science (e.g., stock assessments) and management priorities.
- 6) The Cooperative Research Program should review existing long-term/multi-year cooperative research projects and develop recommendations for how to transition funding for these projects to other sources (internal or external).
- 7) Working with NOAA Office of General Counsel, develop a way to help program offices to identify quickly which legal authorities and types of agreements might be relevant to cooperative research activities with external partners (academics, industry, NGOs, etc.).
- 8) NOAA Fisheries should conduct cooperative research, such as testing new fishing gear, within MSA established fishing mortality limits. A variety of mechanisms has been developed and should be applied to allow such cooperative research to move forward.

Metrics:

- 1) NOAA Fisheries Office of Science and Technology should survey external partners on their perceptions of NOAA’s cooperative management and cooperative research programs and re-survey them in 2-3 years to see if perceptions have changed
- 2) NOAA Fisheries Office of Science and Technology should review 2014 cooperative research program projects and determine how many of them led to management decisions.

Process for sharing White Paper:

- 1) This white paper should be shared for review and comment on the recommendations with the following advisory groups:
  - ✓ Marine Fisheries Advisory Committee
  - ✓ Council Coordination Committee
  - ✓ Marine Mammal Commission
- 2) Share the final white paper with all internal and external interviewees.

**Conclusion:**

The November 25, 2013 letter recommended that NOAA support co-management as a means to bring new resources to fisheries management, enhance NOAA’s capabilities, and improve stakeholder relationships. Through this review, NOAA has reviewed its current activities and engagements, identified areas which could benefit from improvement and new resources, and considered ways to draw better upon the strengths that State, Tribal and local governments and stakeholders bring to fishery conservation and management efforts. What we found is that NOAA Fisheries does a lot of cooperative management and cooperative research. But more can be done to promote these activities. The working group hopes that the recommendations provided here offer a path forward.