

Managing Our Nation's Fisheries **3** *Advancing Sustainability*

CONCURRENT SESSIONS: THEME AND FOCUS TOPICS

Session 1: Improving Fishery Management Essentials

1. Annual catch limit (ACL) science and implementation issues, including managing “data-limited” stocks
2. Rebuilding program requirements and timelines
3. International fisheries management: Leveling the playing field

Chair: Dave Witherell, Deputy Director, North Pacific Fishery Management Council

After 35 years of evolution under the Magnuson-Stevens Fishery Conservation and Management Act¹ (MSA), marine fishery management in the United States now involves an impressive set of principles, practices, and tools that are essential to our current success in achieving long-term sustainability. Such elements include the recently-implemented system of setting annual catch limits (ACL) for each fish stock or stock complex, including accountability measures to insure their achievement; efforts to rebuild depleted stocks²; and the promotion of the U.S. model of science-

¹ The primary law governing marine fishery management in the United States, the *Magnuson-Stevens Fisheries Conservation and Management Reauthorization Act of 2006* (referred to here as the Magnuson-Stevens Act), was originally enacted as the *Fishery Conservation and Management Act of 1976* (also referred to as the *Magnuson Fishery Conservation and Management Act* and the *Magnuson Act*) and reauthorized in 1996 as the *Sustainable Fisheries Act* (also referred to as *Magnuson-Stevens Fishery Conservation and Management Act*).

² Stocks in a depleted condition are designated to be in an overfished condition in current Federal parlance, even if overfishing was not the primary cause of the depletion. While fishing is often the cause of the depletion of stocks involved in an active fishery, depletion could also be caused by ecosystem productivity cycles or changes (see Session 2, focus topic 1) or

based, precautionary management in international arenas. However, recent experience has shown that there is still room for improvement in how these elements are approached and implemented. Finding ways to refine current practices will improve fishery management sustainability and the attendant benefits to the nation.

All federally-managed fisheries are now required to have ACLs and accountability measures (AMs) to ensure their effectiveness at ending and preventing overfishing. Unlike season approaches or effort controls, total catch limits have consistently proven effective for sustainably managing fisheries, preventing overfishing, and addressing overfishing when it occurs. Nevertheless, the transition to ACLs has posed challenges in many commercial and recreational fisheries. Some say this change has led to overly precautionary restrictions, while others say ACLs do not sufficiently account for scientific and management uncertainties, and should be more precautionary. One area of concern is how to best set ACLs on data-limited stocks—stocks with inadequate scientific information for sophisticated management.

Rebuilding plans for depleted (overfished) stocks also affect the amount of fish available to a fishery. The MSA requires that rebuilding take as short a time as possible, after due consideration of the effect on fishing communities, with a maximum rebuilding time of 10 years if possible. Alternatively, for long-lived stocks that cannot rebuild in 10 years, rebuilding must occur in the time to rebuild if there were no fishing, plus one generation time. This requirement necessarily leads to large reductions in catch of directed fishery stocks that are being rebuilt, and can restrict mixed-stock fisheries when the rebuilding stock coexists with healthy stocks. However, it is important to note that rebuilding programs are designed to increase stock sizes to provide for biological stability and the attendant future economic benefits.

Some believe that the current focus on rebuilding in a certain amount of time results in overly restrictive fishery management that is unnecessarily harmful to fishermen and fishing communities, and that more flexibility is needed to optimize multiple goals. Others believe current rebuilding policies are too lenient towards short-term economic urgencies, and that they insufficiently consider the long-term benefits of fully rebuilt stocks.

Advancing the U.S. model for science-based, precautionary management in international arenas has been done towards the goal of providing long term fishery and seafood production sustainability and to “level the playing field”

habitat destruction (see Session 2, focus topic 3). Notably, full rebuilding depends on normal environmental conditions allowing average reproduction and growth, which, in some cases, is outside the control of fishery managers.

in terms of conservation burden equity. The 2006 reauthorization provided some impetus to accomplish this, and mechanisms to assess compliance of foreign countries and their vessels with international conservation measures with potential impact on U.S. seafood markets³. While there have been improvements in international fishery management, some say that more should be done to achieve conservation objectives and help the U.S. fishing industry remain competitive. As an example, U.S. fishing restrictions that limit incidental take of protected species can result in a domestic fishery being unable to harvest its quota of a particular stock, only to see the market demand filled by imports of the same species from international fisheries that are not subject to similar restrictions.

The purpose of this session is to examine the challenges of using ACLs, implementing rebuilding programs, and participating in international fishery management, towards a meaningful discussion of potential ways to improve sustainable management practices that maintain vibrant fisheries.



Improving Fishery Management Essentials

ACL Science and Implementation Issues, including Managing Data-Limited Stocks

The 2006 reauthorization of the MSA included requirements for ACLs and AMs to be put in place by 2011 in order to end and prevent overfishing. However, the MSA did not specify how ACLs would be developed and implemented. To assist the Regional Fishery Management Councils (Councils) in meeting these requirements, the National Marine Fisheries Service (NMFS) developed extensive guidance on ACLs and AMs through a process that revised National Standard 1 guidelines in 2009.

The MSA and National Standard 1 guidance defines an ACL to be no greater than the biologically permitted safe catch level. The National Standard 1 guidelines require a buffer for scientific uncertainty in determining the acceptable biological catch level, and providing a buffer for management uncertainty in achieving a particular catch target. Three national workshops of Council Scientific and Statistical Committee (SSC) members were held to explore the scientific basis and best practices for establishing the scientific uncertainty buffer. With the help of this collective groundwork, all of the Councils were able to meet the MSA requirements by amending existing Fishery Management Plans, and ACL provisions have been fully implemented.

³ Also see Session 3, *Providing for Fishing Community Sustainability*, Focus Topic 2, *Integrating Community Protection, Jobs Emphasis, and Seafood Quality Assurance*.

However, experience dealing with ACLs and AM specifics has shown that there are still improvements to be made in both the scientific basis and management application areas. Many people do not support how ACLs and AMs are currently implemented. Challenges remain in addressing scientific and management issues such as taking into account multi-year overfishing definitions, accounting for discards, operating in mixed stock fishery situations, identifying and quantifying scientific and management uncertainty buffers, and ensuring accountability of unharvested (carry-over) allocations from one year to the next. Some believe implementation of the new ACL system has greatly reduced the amount of fish they are allowed to catch compared to previous management approaches, and that the scientific and management uncertainty buffers represent an overly precautionary risk policy. On the other hand, there are others who believe that the Councils' policies do not adequately protect against systematic uncertainty, and therefore undermine the long-term sustainability of fishery resources.

One area of concern that has emerged is how to develop and implement ACLs effectively when the requisite data are lacking (also known as a “date-limited” situation). This includes situations where essential data are lacking or no data collection program is in place, and when major natural fluctuations in stock abundance occur more rapidly than stock assessments can be updated. ACLs have greatly increased demand for timely and accurate stock assessments, but resources (e.g., surveys, quantitative assessment analysts, landings and bycatch information processing) are not available to fully address these issues. When less information about a stock is available, or the data are outdated, the current model calls for a Council to set a particularly low ACL compared to the theoretically maximum allowable catch, out of recognition of a higher level of scientific uncertainty. This can be frustrating for fishermen who believe fish to be in great abundance based on their observations, but who are restricted from catching the fish because of the limited scientific data available to set a higher ACL. It can also lead to severe economic consequences when a rarely-caught stock about which little is known appears occasionally in a healthy mixed stock fishery, and a new, highly buffered ACL for this rare stock suddenly requires a large reduction in catch, creating a bottleneck species that closes or substantially reduces an otherwise healthy fishery (Reference 1.1.3).

The purpose of this focus topic session is to consider experiences with ACLs to date, to discuss ways to address problems and limitations, and to attempt to reach findings to improve current practices. Prior to this conference, NOAA Fisheries convened a National ACL Science workshop in February 2011 to advance understanding of the issues (Reference 1.1.5), and an Advanced Notice of Proposed Rulemaking process was issued in 2012 to collect a broad perspective of issues and possible solutions (Reference 1.1.4).

Trigger questions to propel conference dialogue and relevant reference material are shown below.



**Improving Fishery Management Essentials
ACL Science and Implementation Issues**

Trigger Questions

1. How can we advance sustainability with ACLs?
2. Are the Councils' risk policies for setting ACLs overly precautionary with regard to accounting for scientific and management uncertainty?
3. What socioeconomic and biological factors influence the right degree of precaution?
4. What is the appropriate way to set an ACL for a complex of species?
5. How can we better manage data-limited stocks with ACLs?
6. Are ACLs for data-limited stocks effective in meeting the dual objectives of National Standard 1 (prevent overfishing and achieve optimum yield)?
7. Is there an alternative management approach that would be more effective than ACLs in meeting the dual objectives of National Standard 1?
8. Are multi-year average ACLs the best approach for highly fluctuating stocks?
9. Have sector ACLs improved fishery management? (e.g. separate commercial and recreational ACLs and AMs)
10. How could the MSA or National Standard Guidelines be changed to provide additional details on ACLs?



**Improving Fishery Management Essentials
ACL Science and Implementation Issues**

Speakers and General Perspectives

- Richard Methot, NMFS, Science Advisor for Stock Assessments, Office of Science and Technology. A NMFS perspective on challenges and successes with ACLs, and possibilities to improve fishery sustainability.
- Bill Kelly, Executive Director of the Florida Keys Commercial Fisherman's Association and South Atlantic Fishery Management Council Advisory Panel member. A fishing industry perspective on impacts of ACL implementation and consequent changes in fishing regulations.
- Dick Brame, Atlantic States Fisheries Director, Coastal Conservation Association. A recreational fishery perspective on possible improvements in the development and implementation of ACLs.

Moderator: David Witherell, Deputy Director, North Pacific Fishery Management Council
Rapporteurs: Diana Stram, North Pacific Fishery Management Council, Fishery Management Plan Coordinator
John DeVore, Pacific Fishery Management Council, Groundfish Fishery Staff Officer



**Improving Fishery Management Essentials
ACL Science and Implementation Issues**

References

- 1.1.1. H.R. 1646 - American Angler Preservation Act. Amends the MSA to require each SSC of the eight Regional Councils to provide ongoing risk neutral scientific advice. Prohibits SSCs from recommending to increase or decrease an ACL by 20 percent or greater unless the recommendation has been approved in a nongovernmental peer review process. <http://tinyurl.com/afyqect>
- 1.1.2. H.R. 2304 - Fishery Science Improvement Act of 2011. Amends the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 to postpone from fishing year 2011 to 2014 the effective date upon which a mechanism for specifying ACLs and AMs for fisheries other than those determined by the Secretary of Commerce to be subject to overfishing. <http://tinyurl.com/by4pt5w>
- 1.1.3. House Natural Resource Committee Legislative Hearing on Legislative Hearing on H.R. 594, H.R. 1013, H.R. 1646, H.R. 2304, H.R. 2610, H.R. 2753, H.R. 2772 and H.R. 3061; testimony of Chris Oliver, North Pacific Fishery Management Council Executive Director. December 1, 2011. <http://tinyurl.com/a9eevo5>
- 1.1.4. Comments received on NMFS Advance Notification of Proposed Rule to modify National Standard 1. <http://tinyurl.com/beybn78>
- 1.1.5. Proceedings of the February 15-17, 2011 National ACL Science Workshop. <http://tinyurl.com/bxkceg2>
- 1.1.6. Reports from the 2009, 2010, and 2012 National SSC Workshops. <http://fisherycouncils.org/>
- 1.1.7. Summary of Comments received on the Advance Notice of Proposed Rulemaking on potential adjustments to the National Standard 1 guidelines (77 FR 26238; May 3, 2012). <http://tinyurl.com/catuocq>



**Session 1
Topic 2**

Improving Fishery Management Essentials

Rebuilding Program Requirements and Timelines

The MSA requires that if a stock is designated overfished, the relevant Council must implement conservation and management measures to rebuild it. The MSA further requires that a time period for rebuilding must be 1) as short as possible (taking into account the biology of the fish stock, the needs of fishing communities, international recommendations, and ecosystem interactions); and 2) not to exceed 10 years (with few exceptions: biology of the stock, environmental conditions, international agreements). The MSA also specifies that overfishing restrictions and recovery benefits must be fairly and equitably allocated among sectors of the fishery.

The National Standard 1 guidelines provide additional details on how Councils should address rebuilding. In particular, the MSA term “as short as possible” is interpreted to be the amount of time it would take a stock to rebuild to MSY biomass level in the absence of any fishing mortality, including directed fishing and incidental take in all other fisheries, regardless of how minor the incidental take may be. Further, the guidelines note that if the time for the stock to rebuild in the absence of fishing is 10 years or less, then the maximum rebuilding time must be 10 years. This can be problematic if it requires complete closure of all fisheries with any incidental take. If the time period to rebuild in the absence of fishing is more than 10 years, the National Standard 1 guidelines state that rebuilding must take place in the minimum time to rebuild with no fishing, plus one generation time (time between birth of an individual and birth of its first offspring).

There have been numerous disputes about how to appropriate take into account “the needs of fishing communities” in setting a rebuilding date target that otherwise rebuilds as quickly as possible. Notably, current policy has been shaped by challenges in court, and subsequent court decisions, claiming that the Councils and NMFS have not interpreted these criteria appropriately. For example, in a court decision on the West Coast regarding a challenge that the Pacific Fishery Management Council and NMFS chose too lengthy of a rebuilding period, the Court described the need for the Pacific Fishery Management Council to avoid “disastrous short-term consequences for fishing communities” in achieving the correct balance between impacts to communities and the benefits of rebuilding as quickly as possible (Reference 1.2.2).

On the other hand, some believe the current practice is too generous to the short-term needs of fishing communities because the long-term socio-economic benefits of rebuilt stocks have not been adequately described. Still others believe that current scientific methods are incapable of detecting real biological differences and benefits in rebuilding long-lived species over a period of many years, and that more flexibility is needed in weighing policy choices about the benefits of shorter rebuilding targets.

The purpose of this session is to use our experience with past and current rebuilding plans to discuss issues associated with these plans, towards identifying findings that could improve contemporary practices. Trigger questions to propel conference dialogue, and relevant reference material, are shown below.



Session 1
Topic 2
Questions

Improving Fishery Management Essentials
Rebuilding Program Requirements and Timelines

Trigger Questions

1. Is 10 years a reasonable time span for a rebuilding requirement? If not, what should the time span be, and why?
2. How does one properly evaluate stock rebuilding effects many decades into the future?
3. What is the best way to address factors to extend rebuilding times beyond the shortest time possible?
4. Is there a better scientific approach to setting and modifying rebuilding targets for long-lived stocks, when it is expected that stock assessments will show a great deal of variability and methodological change over the course of the rebuilding plan?
5. What type of environmental conditions should be presumed when calculating the minimum time to rebuild and setting a rebuilding date target? How should rebuilding parameters be adjusted if an environmental regime shift occurs during the course of the rebuilding plan?
6. Should the MSA be amended to add clarity to a “disaster” criteria, as described above in litigation case history, in balancing impacts to fishing communities with speed of rebuilding?
7. Should there be more situational flexibility for Councils to rebuild stocks at an optimum rate for fishermen, communities, and the ecosystem?
8. Can longer rebuilding times be adopted without sacrificing essential elements of a fully sustainable approach?
9. Would it be more appropriate to emphasize control of fishing rate in rebuilding, rather than focusing on achieving rebuilding by a specific date?

10. How can cooperative research, and information besides full stock assessments, be used to monitor whether stocks are making adequate progress in rebuilding?
11. Should the overfished designation be redefined as depleted to acknowledge habitat and environmental effects?



Session 1
Topic 2
Speakers

Improving Fishery Management Essentials
Rebuilding Program Requirements and Timelines

Speakers and General Perspectives

- André Punt, Professor, School of Aquatic and Fishery Sciences, University of Washington. A perspective from the scientific community about the strengths and weaknesses of rebuilding time period estimates.
- Jackie Odell, Northeast Seafood Coalition. A commercial fishing industry perspective on the adequacy and appropriateness of rebuilding program requirements as currently administered.
- Chris Dorsett, Gulf of Mexico Restoration and Fish Conservation Director, Ocean Conservancy. An environmental perspective on the strengths of rebuilding as quickly as possible in the context of the current law as interpreted by court.

Moderator: David Witherell, Deputy Director, North Pacific Fishery Management Council

Rapporteurs: Kelly Ames, Pacific Fishery Management Council, Groundfish Fishery Staff Officer
Richard Seagraves, Mid-Atlantic Fishery Management Council, Fishery Management Specialist



Session 1
Topic 2
References

Improving Fishery Management Essentials
Rebuilding Program Requirements and Timelines

References

- 1.2.1. S. 632 (H.R.3061) - Flexibility in Rebuilding American Fisheries Act of 2011. Amends the MSA to require fishery management plans, amendments, or regulations for overfished fisheries to specify a time period for ending overfishing and rebuilding the fishery that is as short as practicable (under current law, as short as possible). Modifies the exceptions to the requirement that such period not exceed 10 years. <http://tinyurl.com/bxw6nx3>
- 1.2.2. NRDC v. NMFS, 421 F.3d 872, 880 (9th Circuit 2005); see also NRDC v. Locke, No. 01-cv-421, Slip Op. at 9 (Northern District California Apr. 23, 2010). <http://tinyurl.com/am4cy2o>

1.2.3. Summary of Comments received on the Advance Notice of Proposed Rulemaking on potential adjustments to the National Standard 1 guidelines (77 FR 26238; May 3, 2012). <http://tinyurl.com/catuocq>



**Session 1
Topic 3**

Improving Fishery Management Essentials

International Fisheries Management - Leveling the Playing Field

Over the last decade, the U.S. has promoted the application of its domestic model of science-based, precautionary fisheries management to the highly migratory fish stocks subject to the jurisdiction of various international Regional Fishery Management Organizations (RFMOs). The demand for international cooperation is high, since a large proportion of seafood consumed in the United States (84 percent) is imported from other nations, and there is a broad expectation of equity in the conservation burden of international fisheries that provide seafood to American markets. The 2006 MSA reauthorization and the 2011 Shark Conservation Act contained provisions designed to enhance U.S. influence in international fishery management arenas. The application of these provisions is seen as having mixed success by those involved and affected by the changes: while most U.S. constituents generally support the current provisions, they also believe that limitations in the statute have prevented the United States from being as effective as possible in addressing fishing activities of concern by foreign fishing fleets, including especially illegal, unreported, and unregulated (IUU) fishing. Further, there is broad concern about an uneven “playing field” that results in international seafood production and common stock conservation when some countries practice high levels of precautionary management and compliance with internationally adopted measures and other countries do not.

The 2006 reauthorization of the MSA required that NMFS and the Councils take various steps to advance the sustainability of international fisheries and level the playing field, strengthen RFMOs, combat IUU fishing, and reduce the bycatch of protected marine species such as sea turtles, marine mammals, and corals. It also required a biennial report to Congress to include a list of nations whose vessels have been identified as engaging in IUU fishing or insufficient protection of identified bycatch species. After notification and a process of consultation with the nation in question, remedial actions are required or enabled that range from negotiation of bilateral agreements to institution of economic sanctions. Two biennial reports to Congress have been written in response to the charge to identify IUU fishing or insufficient protection of protected species, one in 2009 and one in 2011. Both reports identified six countries engaged in IUU fishing (Reference 1.3.1).

There have been both successes and difficulties in promoting the U.S. domestic model of science-based, precautionary fisheries management as a global model. Catch data collection and reporting, observer systems and vessel tracking technologies, scientifically defensible overfishing and

overfished reference points, fishing gear and operations practice improvements, ACLs designed to not exceed quotas, intensified post-season evaluations and at-sea enforcement practices are just a few of the approaches U.S. delegations have emphasized in the RFMO arenas. Further, there has been continued success in international fishery management at the bilateral level, such as the International Pacific Halibut Commission, the U.S. - Canada Pacific Salmon Treaty and the U.S.-Canada Resource Sharing Agreement in the Northeast region. While there have been successes, there have also been difficulties. Convincing countries to alter their fishery management practices towards a preferred U.S. model in unanimous consent RFMO arenas is time consuming and complicated. Some feel the U.S. has made insufficient progress in enhancing international conservation objectives. On the other hand, there are those who are critical of U.S. positions to lead by example, characterizing the positions as “leading with their chin” that fail to garner conservation improvements from foreign countries and, by default, provide them a competitive advantage in the international seafood markets.

The promotion of international cooperation and assistance warrants further consideration. Given the highly migratory nature of some U.S. fish stocks and protected living marine resources, it is crucial for the U.S. to work cooperatively with its international partners to implement fishery management programs, improve data collection and monitoring, and utilize fishing gear and practices that reduce bycatch and adverse impacts of fishing. One of the most effective ways to promote these practices is to provide other nations with the tools, training, and technical resources to increase their own ability to manage sustainably and enforce effectively. Consistent with authority provided under the MSA, federal agencies and Councils have been involved in many international technical assistance efforts. The U.S. has hosted workshops on how to reduce bycatch of turtles and other protected species; conducted cooperative research to understand species statistics and improve harvesting practices; and provided training to strengthen enforcement of IUU fishing and improve fisheries observer programs in other countries.

The discussion during this focus topic is intended to increase our understanding of the domestic-international interface and to explore current activities and future challenges. It is also intended to identify ways to increase the sustainability of international stocks and achieve a more level playing field for domestic fishery production with international seafood markets. Possible findings include prioritization of current international activities, identification of areas for potential Congressional actions, and identification of possible policy changes.



**Improving Fishery Management Essentials
International Fisheries Management**

Trigger Questions

1. What measures are necessary to level the playing field in RFMO forums?
2. What international activities (research, management, enforcement) should receive priority?
3. Is Congressional action is needed to mandate stronger consequences for nations with IUU or inadequate protection of certain bycatch species, or when U.S. fishermen are regulated more than fishermen from other countries when fishing for international stocks?
4. How should NOAA and the Councils change the way they currently implement international fishery management policy?
5. How can consideration of transfer effects be incorporated into management of international stocks?
6. Should inadequate compliance with international fishery conservation measures, such as typically exceeding quotas and incomplete catch reporting, be incorporated into a broader definition of IUU fishing?



**Improving Fishery Management Essentials
International Fisheries Management**

Speakers

- Russell Smith, Deputy Assistant Secretary for International Fisheries, NOAA. The U.S. Government perspective on achieving conservation goals in RFMO forums while also achieving equity between U.S. and foreign seafood production sectors.
- Sean Martin, President, Hawaii Longline Association. A perspective on a playing field tilted against U.S. fishery interests as currently administered, and potential ways to address inequities.
- Bill Fox, Fisheries Vice President, World Wildlife Fund. An environmental perspective on ways to improve U.S. performance in RFMO arenas while not disadvantaging U.S. fisheries.

Moderator: David Witherell, Deputy Director, North Pacific Fishery Management Council

Rapporteurs: Eric Kingma, Western Pacific Fishery Management Council, Enforcement/NEPA Coordinator
Kit Dahl, Pacific Fishery Management Council, Highly Migratory Species Staff Officer



**Improving Fishery Management Essentials
International Fisheries Management**

References

- 1.3.1 Implementation of Title IV of the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006; 2009 and 2011 Biennial reports to Congress. <http://tinyurl.com/bcopjhy>
- 1.3.2 S. 52 - International Fisheries Stewardship and Enforcement Act. 2011. A bill to establish uniform administrative and enforcement procedures and penalties for the enforcement of the High Seas Driftnet Fishing Moratorium Protection Act and similar statutes, and for other purposes including implement the Antigua Convention. <http://tinyurl.com/byc5b6t>
- 1.3.3 Improving International Fisheries Management: Report to Congress. NOAA Fisheries, January 2013. <http://tinyurl.com/aftsrr3>

Managing Our Nation's Fisheries **3** *Advancing Sustainability*

CONCURRENT SESSIONS: THEME AND FOCUS TOPICS

Session 2: Advancing Ecosystem-Based Decision Making

1. Assessing Ecosystem Effects and Adapting to Climate Change
2. Forage Fish Management
3. Integrating Habitat Considerations

Session Chair: John Henderschedt

Executive Director, Fisheries Leadership & Sustainability Forum

Fisheries affect, and are affected by, an ever-changing ocean ecosystem; and decision-makers must consider the relationships between managed species and their environment when setting policy and developing management strategies. Despite general acknowledgment of the concept and relevance of ecosystem-based management, the investment of hundreds of millions of dollars over the past decade, and notable progress in many arenas, agreement over exactly how to implement ecosystem-based management principles remains elusive. However, there is a strong consensus that more active consideration of ecosystem effects will advance the sophistication of fishery management decision-making, and thus the sustainability of fisheries and their attendant benefits to the nation.

Like the ecosystem itself, exploring the totality of ecosystem-based management should begin with an examination of its parts. This session addresses three of many possible topics that might be most effectively woven into the fabric of ecosystem-based fisheries management. The first topic focuses on an emerging adaptive management tool, the Integrated Ecosystem Assessment, which is designed to help fishery managers

recognize, understand, and respond to ocean ecosystem changes. While this tool is presented in the focus topic dealing with climate change adaptation, it applies to all three focus topics. Discussions during the second focus topic dealing with the role of forage fish and their directed fisheries in the ecosystem will coalesce competing perspectives towards possible consensus findings for improved policy and decision-making. The third focus topic will include highlights of how National Oceanic and Atmospheric Administration (NOAA) Habitat Blueprint policy initiative can advance U.S. sustainable fishery management, and include potential findings on refinements or additional improvements in the integration of healthy habitat as an essential component of successful fishery management.

This session is designed to provide an enhanced understanding of the focus topics, examine differences of opinion regarding their significance, and develop findings for application in the decision-making process. Both speakers and conference participants are invited to share their views regarding the interrelationship of these topics in ecosystem-based decision-making, as well as regulatory and legislative opportunities and impediments to implementing ecosystem-based fisheries management.



**Session 2
Topic 1**

Advancing Ecosystem-Based Decision Making

Assessing Ecosystem Effects and Integrating Climate Change

The relationships between marine resources and their habitat, fisheries, other ocean uses, and the ocean environment are characterized by change. In an ever-changing system, fisheries managers must continuously improve their understanding of the marine ecosystem and integrate current information in their decision-making. The deeper our understanding and the more developed our analytical tools, the better we're prepared to recognize ecosystem changes and adapt our management of fisheries resources in response. There is currently a great need to assess ecosystem change if sustainable fishery management is to be advanced to the next level, including the need for management system to be able to adapt to climate-based changes in the ecosystem as they occur.

National Marine Fisheries Service (NMFS) is developing an adaptive analytical tool, known as an [Integrated Ecosystem Assessment \(IEA\)](#), that provides information about ecosystem relationships and interactions for use in fishery management decision-making (Reference 2.1.1). The IEA approach is a decision-support system that uses data and ecosystem models to forecast future conditions; evaluates alternative management scenarios; and assesses economic and ecological tradeoffs to guide decisions, implement, and evaluate management actions relative to objectives. IEAs

hold significant promise. For example, an IEA for the California Current ecosystem could describe the effects of fishing Pacific anchovy on salmon stocks or marine mammal populations, and consequent effects on humans. Notably, the FY2013 President's requested budget proposed a significant investment for additional IEA development (Reference 2.1.2). However, questions remain about how IEAs might be integrated in the regional fishery management council (Council) process that establishes fishing seasons.

While there is debate about the causes and parameters of climate change, no one claims ecosystems to be absolutely stable. Climate-based ecosystem change has the potential to affect fish stock distribution, population size, productivity, and fishery yield. Informative and predictive indicators of natural variability, combined with an understanding of their effects on fish stocks, could improve fishery management and minimize harvest as a contributor to stock declines. With modern oceanographic observing systems, changes in parameters such as sea temperatures, ocean chemistry, and sea levels can be identified and measured; current data processing technology also allows for enormous amounts of information to be available for analysis. However, it is not clear what information fishery managers need to improve decision-making, or how they can best adapt regulatory approaches when presented with specific information about ecosystem change.

Discussion under this focus topic will allow participants to examine the emerging IEA analytical tool and consider findings about its application in fishery management decision-making. Similarly, this topic will increase awareness about climate-based ecosystem changes, indicate the current status of scientific information available for use, and explore ways to integrate large volumes of scientific data and projections into the management process. Additionally, this session will demonstrate uses of the IEA tool as it might apply to the forage fish and habitat focus topics within this overall session.



Session 2
Topic 1
Questions

Advancing Ecosystem-Based Decision Making
Assessing Ecosystem Effects and Integrating Climate Change

Trigger Questions

1. What are IEAs capable of doing to enhance fishery management decision-making towards improved sustainability?
2. How could IEAs be integrated into the Council process?
3. How can fisheries management prepare and adapt to shifts associated with climate change, including distribution shifts of fish stocks across Council and international boundaries and changes in fish stock productivity?

4. What are successful examples of the utilization of climate information in decision-making processes, and what is necessary for wider application of these successful approaches?



**Session 2
Topic 1
Speakers**

**Advancing Ecosystem-Based Decision Making
Assessing Ecosystem Effects and Integrating Climate Change**

**Speakers and General Perspective of
Presentations**

- Phil Levin, Ecosystem Science Program Manager, NMFS Northwest Fisheries Science Center. A perspective on the capabilities of IEA use by fishery managers, with examples on climate change, forage fish, and habitat.
- Malin Pinsky, Smith Fellow, Princeton University. A perspective on climate trend information and its integration into active fishery management, including climate velocity and related scientific information.
- Cora Campbell, Commissioner, Alaska Department of Fish and Game. A State government perspective on integrating climate change information into the Council process.

Moderator: John Henderschedt, Fisheries Leadership & Sustainability Forum

Rapporteurs: Whitney Tome, Fisheries Leadership & Sustainability Forum
Kim Gordon, Fisheries Leadership & Sustainability Forum



**Session 2
Topic 1
References**

**Advancing Ecosystem-Based Decision Making
Assessing Ecosystem Effects and Integrating Climate Change**

Reference Material

- 2.1.1. NOAA Technical Memorandum, June 2008. Integrated Ecosystem Assessments. <http://tinyurl.com/a7ctzn8>
- 2.1.2. IEA Report to the Pacific Council, Nov. 2011. Development of an Annual Report on Conditions in the California Current Ecosystem. <http://tinyurl.com/c4cngtx>
- 2.1.3. Fiscal Year 2013 President's Request Budget, NMFS budget presentation and comparison to FY 2012. <http://tinyurl.com/bafmvhy>



**Session 2
Topic 2**

- 2.1.4. NOAA Report to Congress. 2009. “The State of Science to Support an Ecosystem Approach to Regional Fishery Management.”
<http://tinyurl.com/b6pf2d3>
- 2.1.5. 2006 NOAA Administrative Version of Magnuson-Stevens Fishery Conservation and Management Act. <http://tinyurl.com/bbved8j>
- 2.1.6. NOAA’s Integrated Ecosystem Assessment Program.
<http://www.noaa.gov/iea/>

Advancing Ecosystem-Based Decision Making

Forage Fish Management

Forage fish clearly play an important role in marine ecosystems. Scientists generally agree on the basic characteristics that define forage species: they are small in size, comprise a considerable portion of total ecosystem biomass, are found in the diet of other predators throughout their lifespan, mature early and have high inherent productivity potential, exhibit schooling behavior and can show high variation in inter-annual recruitment. Forage fish are an important linkage of energy and biomass between primary production and higher trophic levels. They are also the target of valuable and regionally important directed fisheries. As ecosystem-based management concepts have evolved in recent years, there has been a growing public focus on proper management of forage fish.

The competing interests of stakeholders results in widely diverging perspectives among environmental groups, recreational anglers, and those involved in the commercial fishing industry on what proper forage fish management means. Forage fish have traditionally represented an important resource for commercial fisheries, both for direct consumption and for the production of bait, fishmeal, and other valuable products. Many recreational anglers view forage fish as a food source for larger game species, arguing for greater protection of forage species to ensure more large fish to improve the angling experience. Some environmental groups believe that current forage fish fisheries, and the chance that these fisheries could expand, create a high risk of undesirable ecosystem effects.

Forage fishery conflicts have emerged on both coasts. On the east coast, NMFS is considering a petition to list river herring under the Endangered Species Act as environmentalists fear that incidental bycatch is contributing to declining populations. Also on the east coast, anglers and environmental groups argue that localized depletion of menhaden by large factory trawlers limits food available to predatory fish populations such as recreationally important striped bass, sea birds, and marine mammals. Menhaden is the second largest fishery in the United States by volume and its products are used for aquaculture, livestock, and health supplements. Commercial

fishermen argue that the removals are so small compared to the overall population biomass that they cannot cause a significant ecological impact, and note that it is ecologically safer to fish lower on the food chain than for predatory fish at higher trophic levels.

On the Pacific coast, some environmental groups worry that fishing levels for sardines do not adequately account for forage needs within the ecosystem. At the same time, there are those in the fishing industry who feel that ecosystem “set-asides” and low fishing rates represent more than sufficient protection. The many questions posed in various Council arenas around these complex considerations illustrate the importance of forage fishery conflicts.

In addition to concerns about existing fisheries, there are concerns about developing new fisheries for forage species. There are fears that the rising demand for aquaculture or terrestrial animal feed, or other markets, may result in initiation of new fisheries for species low on the food chain. There has been some action in this regard, such as the Pacific Council [ban on krill fishing](#) and consideration of additional forage species protections (Reference 2.2.4), and the North Pacific Council’s Arctic Fishery Management Plan bans harvesting a variety of unfished species in the arctic area. Currently, regulations at 50 CFR § 600.747⁴ define a process for Councils to consider new fisheries, but these regulations have not been updated for several decades and may not have sufficient flexibility for regionally-specific application.

All of these uses and interests require careful consideration of forage fish management options, as management policies and goals are ultimately a reflection of the values placed on forage fish populations and their predators. During this session, speakers will provide views on a range of uses, values, and trade-offs related to the management and protection of forage fish, towards a group discussion on potential findings to advance sustainability of this important resource.



**Advancing Ecosystem-Based Decision Making
Forage Fish Management**

Trigger Questions

1. Do current characteristics of forage fish warrant a departure from the current management approaches, characterized by some as a traditional single species approach?

⁴ These regulations reflect MSA section 305(a); the legislative and regulatory language is collectively shown in Reference 2.2.5.

2. Where on the trophic scale should we be harvesting and managing species? As societal targets change, is there a need to redefine optimum yield (OY) and what the Councils should be managing for?
3. Are current fishing rates for forage fish too high in U.S. fisheries?
4. How should management reconcile ecosystem services valuation and the economic value of forage fisheries? What are some of the tradeoffs?
5. How do inter-jurisdictional, including international situations, factors influence the protection and recovery of forage fish stock?
6. Are legislative changes necessary for Councils to best leverage their management objectives in the international processes (e.g. co-managed stocks, incidental catch)?
7. Do Councils have the flexibility to address emerging forage issues under the current law and regulations? Are MSA Section 305 and Administrative Rules § 600.747 obsolete?



Session 2
Topic 2
Speakers

Advancing Ecosystem-Based Decision Making
Forage Fish Management

Speakers and Perspective of Presentations

- Peter Baker, Director, Northeast Fisheries Program, Pew Environment Group. An environmental perspective advocating for higher levels of protection of forage fish in U.S. domestic fisheries.
- Ronald Lukens, Senior Fisheries Biologist, Omega Proteins Corporation, Inc. A perspective on safe, sustainable commercial fishing for forage fish in U.S. fisheries.
- Isaac Kaplan, Research Fishery Biologist, NMFS Northwest Fisheries Science Center. A scientific perspective on ecosystem relationships of forage fish.

Moderator: John Henderschedt, Fisheries Leadership & Sustainability Forum

Rapporteurs: Amy Kenney, Fisheries Leadership & Sustainability Forum
Abigail Furnish, Fisheries Leadership & Sustainability Forum



Session 2
Topic 1
References

Advancing Ecosystem-Based Decision Making
Forage Fish Management

Reference Material

- 2.2.1. Lenfest Ocean Program's Forage Fish Task Force Report: "Little Fish, Big Impact: Managing a Crucial Link in Ocean Food Webs." 2012. <http://tinyurl.com/6thkwtl>

- 2.2.2. Smith, A.D.M et al. (2011). Impacts of Fishing Low–Trophic Level Species on Marine Ecosystems. *Science*, 333, 1147-1150.
<http://tinyurl.com/b629vvg>
- 2.2.3. NOAA Alaska Fisheries Science Center Forage Fish documents.
<http://tinyurl.com/ajk5ajo>
- 2.2.4. Pacific Council: Draft Fisheries Ecosystem Plan (Nov 2011).
<http://tinyurl.com/bp8wlyu>; potential species and developing markets and deliberations on mechanisms to protecting unfished species from future directed fisheries. <http://tinyurl.com/axmqt5f>
- 2.2.5. MSA Section 305(a), (<http://tinyurl.com/abb96sx>), 50 CFR Section 600.747 (<http://tinyurl.com/b3cdfw>) for list of current allowable fisheries and gear see 50 CFR Section 600.725 (<http://tinyurl.com/bdszttb>).



Advancing Ecosystem-Based Decision Making

Integrating Habitat Considerations: Opportunities and Impediments

In 1996 when the Fishery Conservation and Management Act of 1976 was amended as the Sustainable Fisheries Act (also known as the MSA⁵), the requirements for habitat conservation as a component of managing ocean fisheries were widely considered as one of the major accomplishments of the new legislation. In 2006, the MSA was reauthorized and further amended to include deep sea coral protection and research provisions in recognition of the special contribution deep corals play in ocean ecosystems. Councils and NMFS have made great strides to conserve important habitats since 1996. Councils have designated “essential fish habitat” for more than 1,000 managed species and have designated over 100 Habitat Areas of Particular Concern; review and update of these essential fish habitat designations occurs on a routine, periodic basis. Since 2004, NMFS and the Councils have protected over 700 million acres of ocean habitat essential to marine fisheries from damaging fishing practices, and NMFS conducts thousands of consultations with other Federal agencies on non-fishing impacts to habitat.

Despite the volume of important habitat conservation activity over the past two decades, there is a general consensus that additional habitat protection is necessary. Some fish stocks continue to show signs of distress even after

⁵ The primary law governing marine fishery management in the United States, the *Magnuson-Stevens Fisheries Conservation and Management Reauthorization Act of 2006* (referred to here as the Magnuson-Stevens Act), was originally enacted as the *Fishery Conservation and Management Act of 1976* (also referred to as the *Magnuson Fishery Conservation and Management Act* and the *Magnuson Act*) and reauthorized in 1996 as the *Sustainable Fisheries Act* (also referred to as *Magnuson-Stevens Fishery Conservation and Management Act*).

substantial reductions in fishing intensity; and for some of these stocks, this distress may be due to a shortage of healthy habitat. As fishing is only one impact on habitats, Councils need to collaborate with non-fishing ocean users to protect and conserve important fish habitat. One impediment is a lack of shared understanding about how best and where to focus conservation efforts for the benefit of fisheries and ecosystems; and without this focus, it can be very difficult for NMFS and the Councils to convince other ocean users to reduce their impacts on habitats. Without a stated habitat conservation objective, it also becomes challenging for the Councils to frame the value of their own habitat conservation efforts to minimize fishing impacts on the ecosystem. Some of these impediments are exacerbated by a shortage of habitat science and information. One might also question whether all of the necessary habitat policy and management pieces are in place within the MSA mandates and guidance.

These challenges and impediments are reflected in the recently-announced NOAA Habitat Blueprint (Reference 2.3.1), a strategy to better align NOAA's habitat-related programs, use habitat as a fisheries tool more prominently within NOAA, and demonstrate the impact and value of these programs. The National Ocean Policy also highlights, among other things, the opportunities and challenges that fisheries managers face in protecting fish habitat from non-fishing ocean uses (Reference 2.3.2). Additionally, there is debate about whether artificial habitat structures, such as off-shore gas and oil platforms, represent an opportunity or an impediment to habitat protection for sustainable fishery management.

This session will explore regulatory and legislative measures to improve integration of habitat considerations into fishery management, through examining real-world examples. The discussion will include how Councils might better engage and consult on the permitting of non-fishing ocean uses that impact fisheries habitat. Potential findings will enable better policy development to advance fishery sustainability through more effective habitat protection.



Session 2
Topic 3
Questions

Advancing Ecosystem-Based Decision Making
Integrating Habitat Considerations

Trigger Questions

1. How effective are current consultations regarding non-fishing habitat impacts, and how can they be improved?
2. How can regulatory and legislative provisions support Council engagement in non-fishing ocean uses and minimize impacts on fisheries and habitat?

3. Is there a need for national standards on habitat quality, productivity, or allowable degradation? Should a maximum sustainable yield-equivalent standard be established for habitat “removal”?
4. What is the proper role of non-natural habitat structures, such as off-shore petroleum platforms and artificial reefs, in optimizing habitat for sustainable fisheries?
5. Should habitat protection and improvements have a designated role in fish rebuilding programs? If so, what are meaningful alternatives?



Session 2
Topic 3
Speakers

**Advancing Ecosystem-Based Decision Making
Integrating Habitat Considerations**

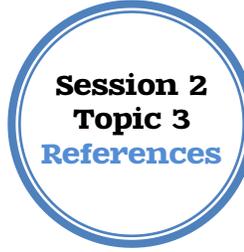
**Speakers and General Perspective of
Presentations**

- Frederick “Buck” Sutter, Director of the Office of Habitat Conservation, NMFS . NMFS policy perspective on opportunities and impediments to achieve on-the-ground conservation, including setting new objectives.
- Rip Cunningham, Chairman, New England Fishery Management Council. A perspective on challenges and opportunities with designation, protection and management of habitat within the Council process.
- John Boreman, Adjunct Professor, North Carolina State University. A perspective on establishing a National Standard on habitat, including implications for both scientific information and management decision-making.

Moderator: John Henderschedt, Fisheries Leadership & Sustainability Forum

Rapporteurs: Katie Latanich, Fisheries Leadership & Sustainability Forum

Whitney Tome, Fisheries Leadership & Sustainability Forum



Session 2
Topic 3
References

**Advancing Ecosystem-Based Decision Making
Integrating Habitat Considerations**

Reference Material

- 2.3.1. NOAA Habitat Blueprint Documents. <http://tinyurl.com/aaqlfo3>
- 2.3.2. National Ocean Council: National Ocean Policy. <http://tinyurl.com/3lpp9xr>
- 2.3.3. American Fisheries Society 2012 Annual Meeting: The NOAA Habitat Blueprint: Improving Fisheries, Marine Life, and Coastal

Communities through Habitat Conservation, Symposium summary.
<http://tinyurl.com/ao7p9kc>

- 2.3.4. Fisheries Forum. 2011. Excerpts on essential fish habitat from “The Role of the Regional Fishery Management Councils in Multi-Sector Spatial Planning: Exploring Existing Tools and Future Opportunities” (pg. 16-17). <http://tinyurl.com/ahdmkz7>
- 2.3.5. NOAA. 2012. Deep Sea Coral Research and Technology Program Report to Congress. <http://tinyurl.com/ay2ltxc>

Managing Our Nation's Fisheries **3** *Advancing Sustainability*

CONCURRENT SESSIONS: THEME AND FOCUS TOPICS

Session 3: Providing for Fishing Community Stability

1. Recreational and Subsistence Fishery Connections
2. Integrating Community Protection, Jobs Emphasis, and Seafood Quality Assurance
3. Assessment and Integration of Social and Economic Tradeoffs

Session Chair: Mark C. Holliday, Ph.D.

Director, Office of Policy, National Marine Fisheries Service

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) sets out multiple responsibilities for the National Oceanic and Atmospheric Administration (NOAA) and the Regional Fishery Management Councils (Councils). Through legislative authority and national standards, NOAA and the Councils are obligated to conserve the country's living marine resources and simultaneously provide for communities' sustained participation in fisheries. These responsibilities are often cast as in conflict (jobs vs. rebuilding stocks), each an impediment to the other. This conflict, real or perceived, stands as a challenge to effectively managing fisheries in general, and specifically in providing for fishing community sustainability. Placing greater emphasis on community sustainability in our national fisheries policy will require a combination of legislative, policy, and regulatory change. The three topics chosen for this session illuminate the challenges of managers working to advance community stability while balancing the diverse goals and objectives of different communities. A

fishing community is defined in law⁶ as “a community which is substantially dependent or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such community.” We commonly see application of the term “community” modified based on type of fishery, such as commercial, recreational, subsistence fishery. Not only are there multiple types of fishing communities, but many individuals may be members of more than one fishing community.

The strong focus of managers on commercial fisheries remains an important social and economic priority for the nation, as it has been since the inception of the country. However, recreational fisheries are also a high priority of contemporary society, with historic cultural and increasingly substantial economic benefits to the nation. Obligations to indigenous cultures and customary subsistence fisheries add to this multiple-objective challenge to policymakers. The factors that motivate and satisfy the objectives of recreational and subsistence fishing sectors are different, and their social and economic drivers and measures of successful policy outcomes differ. The first focus topic in this session looks at recreational and subsistence⁷ fishery connections and how they can optimally be managed in the future to enhance fishing community sustainability, including identifying any necessary legal, policy, and process changes necessary to reconcile competing goals and objectives between all fishery sectors.

The second focus topic drills deeper beyond the policy level. It highlights specific tools, methods, and means to protect the integrity of fishing communities in general, emphasize fishery-related jobs, and assure domestic seafood quality in the face of future transitions in fishery management, ecosystem and economic conditions. The session will focus on opportunities to adopt “community-friendly” tools and the legislative, policy, and regulatory changes necessary to apply them in the future.

The final focus topic zeroes in on measuring our fishery management performance, and the degree of community sustainability success, in the context of how such measurements can be better integrated into decision-making on the relevant tradeoff choices. There are different perspectives for monitoring and evaluating the attainment of the greatest overall benefit to

⁶ 16 USC 1802(17)

⁷ For the purposes of this conference, the term subsistence fishery means the full spectrum of non-commercial and non-recreational subsistence, customary, and ceremonial fisheries, including the West Coast Treaty Indian ceremonial and subsistence fisheries that have been legally defined through the Supreme Court decision stage; non-treaty indigenous people subsistence and customary fisheries such as those occurring in Pacific Island Territories; and common citizen subsistence fisheries such as the personal-use halibut and sockeye salmon fisheries in Alaska.

the nation, and specifically fishing community sustainability. This session will identify findings related to how Councils and NOAA can better evaluate the social and economic outcomes of policy choices.



**Session 3
Topic 1**

Providing for Fishing Community Stability

Recreational and Subsistence Fishery Connections

In the last few decades, great progress has been made in meeting ambitious goals for conservation and sustainability of fish stocks. While there is still much to be done, the U.S. leads the world in eliminating overfishing and rebuilding overfished stocks. Although all fishing sectors benefit from sustainable stocks, fishery management has affected commercial, recreational and subsistence fisheries differently. Some believe that shifts in management resulting from a focus on the status of fish stocks have not fully considered the viability of recreational and subsistence fishing. This topic looks at requirements for fishing community sustainability from recreational and subsistence fishery perspectives, and evaluates impediments to, and opportunities for, collaboration to advance community sustainability across all fishery sectors and groups.

As noted in the session description above, recreational and subsistence fishing sectors are motivated by different goals, and their social and economic drivers and measures of successful policy outcomes differ. One objective of this topic is to look at these differences and identify legal, policy, and process reforms that may be necessary for reconciling competing goals and objectives.

The session will be informed by the results of the April 2010 NOAA Recreational Saltwater Fishing Summit (Reference 3.1.1). Participants highlighted a range of issues, including better catch, effort and economic data, improved and more regular communication regionally and nationally, and more consistent inclusion of recreational interests in management processes. Participants also asked to focus on management approaches that recognize the distinct needs of recreational anglers for improved access, more time on the water, and quality fishing experiences. The resulting National Action Agenda for Recreational Fishing (Reference 3.1.2) laid out a strategy to address priority concerns of the recreational fishing community. In addition to reflecting on the Summit references and progress made to date, the current session will access results from a 2012-2013 NOAA nationwide survey of anglers to provide insight on angler perceptions of management, management preferences, and expectations for the future.

Discussions during this topic will include perspectives on how recreational and subsistence fisheries can be managed to enhance fishing community

sustainability, including both impediments and opportunities. Speakers and participants will be challenged to identify findings for legal, policy and process changes that may be necessary for reconciling competing goals and objectives in the future.



Session 3
Topic 1
Questions

Providing for Fishing Community Stability
Recreational and Subsistence Fishery Connections

Trigger Questions

1. What are the key attributes of a successfully-managed recreational or subsistence fishery?
2. How will recreational and subsistence fishery sector requirements change over the next 10 years?
3. Where is there conflict and where is there convergence on the future of fisheries among recreational, subsistence, and commercial sectors?
4. What changes in legislation, policy, or regulations are necessary to satisfy the essential elements of a sustainable multiple-fishery fishing community?
5. What is the greatest impediment to increasing recreational and subsistence fishery sector satisfaction?



Session 3
Topic 1
Speakers

Providing for Fishing Community Stability
Recreational and Subsistence Fishery Connections

Speakers and General Perspective of Presentations

- Ken Franke, President, Sportfishing Association of California. A recreational fishery perspective on changes needed to achieve a more effective recreational fishery connection to fishing community sustainability.
- Manny Duenas, President, Guam Fishermen’s Cooperative. An indigenous culture perspective on changes needed to achieve a more effective subsistence fishery connection to fishing community sustainability.
- Mike Nussman, President and CEO, American Sportfishing Association. A perspective on ways to improve the sustainability of fishing communities by strengthening recreational and subsistence fishery connections.

Moderator: Mark Holliday, Director, Office of Policy, National Marine Fisheries Service

Rapporteurs: Josh Stoll, Policy Analyst, NMFS HQ

Mike Jepson, Social Scientist, NMFS Southeast Regional Office



**Session 3
Topic 1
References**

**Providing for Fishing Community Stability
Recreational and Subsistence Fishery Connections**

Reference Material

- 3.1.1. NOAA. 2010. Recreational Saltwater Fishing Summit.
<http://tinyurl.com/b7fl2tm>
- 3.1.2. NOAA. 2010. Recreational Saltwater Fisheries Action Agenda.
<http://tinyurl.com/2fkcykv>
- 3.1.3. 2013 Regional Recreational Roundtable Preliminary Summary.
<http://tinyurl.com/cwpmosw>



**Session 3
Topic 2**

Providing for Fishing Community Stability

**Integrating Community Protection, Jobs
Emphasis, and Domestic Seafood Quality
Assurances**

Management innovations in controlling or rebuilding fish stocks, such as annual catch limits, require balancing companion innovations to address the social and economic needs of fishing communities. Annual catch limits and rebuilding programs designed for fish population sustainability often require short- and long-term adjustments to fishing capacity in both commercial and recreational fisheries. However, fishing controls to improve biological outcomes may conflict with employment and distribution of income goals for the fishery.

Some biologically-derived management policies limiting catch or effort do not adequately account for unintended social and economic consequences; this may also be true for some other fishery management policies designed specifically for social or economic efficiency, such as catch share programs. Undesirable community or employment outcomes in commercial fisheries could include unchecked consolidation, disproportionately negative impacts on small scale and geographically-limited fisheries, and impediments to future entry into the fishery. In recreational fisheries, examples might include closures of small support or ancillary businesses such as charter fishing operations, fishing tackle stores, restaurants, or hotels. In some areas, fishery management can be argued to have resulted in significant changes in permit values and other access costs for existing fishermen and new entrants, shifted fishing participation away from local fishermen and communities, resulted in declines in the small-boat owner-operated fishing fleet, and exacerbated the loss of working waterfront infrastructure and “shirt-tail” businesses.

The effects of fishery management policies must also be considered in the broader context of changing market forces (globalization, increased consumption of seafood in Asia), the full range of tools to produce seafood including aquaculture, and economic competition for coastal land (tourism, real estate development).

Thus, there is a need to protect fishing communities from adverse social and economic effects of fishery management decisions, with an emphasis on preserving jobs and ensuring seafood quality. Why jobs? Because an active labor pool helps a business's access to capital, whether it is used to finance a vessel, gear, fishing permit or the purchase or lease of quota in a catch share program, and because the amount of jobs related to fishing is inextricably linked to the communities' overall wellbeing. Why seafood quality? Because quality seafood products help to ensure entry into the marketplace, and seafood quality is a primary determinant of ex-vessel price.

Discussion during this focus topic will include whether and to what degree "community-friendly" tools and legislative, policy, and regulatory changes are necessary, as well as how to apply them in the future. Examples will include specific tools, methods, and means to protect the integrity and infrastructure of fishing communities and seek optimum yield in the face of future transitions in fishery management and changes in ecosystem and economic conditions. The discussion will include potential responses to changing market forces, possible adoption of new management tools that may broaden the economic base of seafood communities, such as integrating aquaculture with fisheries, and exploring the appropriate roles and responsibilities of communities, government, and private sector third-parties in finding ways to support and improve fishing community sustainability.



**Providing for Fishing Community Stability
Integrating Community Protection, Jobs, and Domestic Seafood Quality
Assurances**

Trigger Questions

1. Are there new ways for fishermen to organize their business and improve access to permits and quota to ensure benefits flow back to active fishermen and into communities reliant on the resource?
2. What changes in community capacity and innovation in financial capital, improved product quality, and value-added/value-chain seafood products will accelerate fishing community sustainability?
3. What innovative financial and business approaches, including fishing community organizations, can help create and protect sustainable local fisheries?

4. What fishery management tools are available and effective in maintaining fishery jobs, especially in small fishing communities?
5. How can the health of fishing-dependent communities be better preserved when developing fish stock rebuilding programs?
6. Can aquaculture serve as a “community friendly” tool to enhance the integrity of fishing communities and to secure employment and seafood supply objectives?



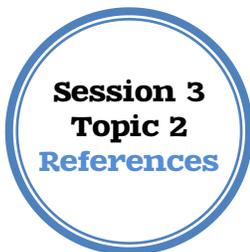
**Providing for Fishing Community Stability
Integrating Community Protection, Jobs, and Domestic Seafood Quality Assurances**

Speakers and General Perspective of Presentations

- Robin Alden, Executive Director, Penobscot East Resource Center. A community perspective on new organizational and governance means to ensure the sustainability of hundreds of local small-scale ports and fisheries.
- Larry Band, Senior Advisor, California Fisheries Fund. A finance and capital flow perspective on the importance of commercial and recreational fishery-related jobs in achieving coastal community sustainability at a healthy level.
- Roger Bing, Vice President of Protein Purchasing, Darden Restaurants USA. A perspective on the importance of seafood quality assurances for fishing community sustainability.

Moderator: Mark Holliday, Director, Office of Policy, National Marine Fisheries Service

Rapporteurs: Heidi Lovett, Policy Analyst, NMFS Silver Spring
Jenny Thompson, Policy Analyst, Office of Policy, NMFS



**Providing for Fishing Community Stability
Integrating Community Protection, Jobs, and Domestic Seafood Quality Assurances**

Reference Material

- 3.2.1 Magnuson-Stevens Act Definition of fishing community (16 USC 1802(3)(17)): “The term ‘fishing community’ means a community which is substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such community.”

- 3.2.2 Definition of regional fishery association (16 USC 1802 (3)(14)):
“The term ‘regional fishery association’ means an association formed for the mutual benefit of members— (A) to meet social and economic needs in a region or subregion; and (B) comprised of persons engaging in the harvest or processing of fishery resources in that specific region or subregion or who otherwise own or operate businesses substantially dependent upon a fishery.”
- 3.2.3 National Standard 8 (16 USC 1851(a)(8)): “Conservation and management measures shall, consistent with the conservation requirements of the Magnuson-Stevens Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to: (1) Provide for the sustained participation of such communities; and (2) To the extent practicable, minimize adverse economic impacts on such communities.”
- 3.2.4 Limited Access Privilege Programs, Fishing Communities & Regional Fishing Associations: 16 USC 1853a(c)(3) (<http://tinyurl.com/am83bot>) and (4) Community Quota Programs (e.g., Alaska & Western Pacific Islands) 16 USC 1855(i) (<http://tinyurl.com/as4d8zq>)
- 3.2.5 H.R. 3109: Keep America’s Waterfronts Working Act. <http://www.govtrack.us/congress/bills/112/hr3109>
- 3.2.6 U.S. Department of Commerce. 2011. “Proceedings of the Catch Shares and Commercial Fishing Communities Workshop.” <http://tinyurl.com/atdes3z>
- 3.2.7 Department of Commerce and NOAA Aquaculture Policies. <http://tinyurl.com/bz6jo9s>
- 3.2.8 U.S. Department of Commerce. 2010. “Memorandum of Agreement between NOAA’s National Marine Fisheries Service United States Department of Commerce and New Hampshire Fish and Game Department For the Administration of a Pilot Permit Bank Program.” <http://tinyurl.com/b7jq4xg>
- 3.2.9 Alaska Seafood Marketing Institute: <http://sustainability.alaskaseafood.org/intro>
- 3.2.10 NOAA Fishwatch program: <http://www.fishwatch.gov/>



Session 3
Topic 3

Providing for Fishing Community Stability

Assessment and Integration of Social and Economic Tradeoffs

Measuring degrees of community sustainability in relation to fishery management performance requires the integration of social and economic metrics. Many of these data are currently unavailable, in some cases due to decisions made by Council and NMFS not to require submission of such information. The task is made more difficult because there are many different perspectives on what constitutes the greatest overall benefit to the nation and, more specifically, how fishing community sustainability is defined. However, there is no question about the need to improve the assessment and integration of social and economic tradeoffs in order to improve fishery management decision-making relative to community sustainability.

As the governmental stewards of the nation's living marine resources, the Councils and NMFS are tasked with achieving, in economic terms, that long term environmental benefits in terms of goods and services are not compromised by short term management activities. However, the bulk of our scientific data and analysis is focused on the biology of fish, not the social and economic conditions of human populations; social and economic impacts are usually given secondary attention. Without sufficient social and economic data and a relevant analytical framework, it is extremely difficult to resolve the following commonplace public policy choices:

1. When should local culture and custom take priority over national interests?
2. How much should the nation invest to make fishing communities more resilient to environmental, economic and policy threats?
3. Does the incremental economic benefit to the nation of a five-year extension in a 40-year rebuilding plan for a long-lived fish species outweigh the long-term benefits of a shorter rebuilding period?
4. Is advancing wild-caught seafood a higher priority than recreational fishing trips?
5. Is the value of U.S. jobs more important than inexpensive imported fish to consumers?
6. What is the value of passing on a fishing way of life to the next generation?
7. What are the trade-offs to coastal communities between a focus on aquaculture as opposed to an active fishery?

8. Are the economic benefits of ecosystem-based fishery management being properly integrated into policy decision-making?

It is thus relevant to determine whether we have the right policies, tools, processes, and priorities in place to evaluate social and economic tradeoffs that can provide for greater assurances of sustainable fishing communities in the future. Given the current expectations for great competitiveness in the allocation of Federal budgets in at least the near future, considerations for higher priority assignments to social and economic data integration need be discussed in the context of the many other ocean uses and values besides fisheries, and the context of competing needs within the fishery management system as a whole. This session will discuss the current need for improvements, and focus on identifying findings to improve current approaches or legislation.



**Providing for Fishing Community Stability
Assessment and Integration of Social and Economic Tradeoffs**

Trigger questions

1. Do we have clear social and economic objectives in regional Fishery Management Plans? What are the social and economic performance metrics of a sustainable fishery? What data and methods are necessary to measure such success?
2. What is the appropriate role of socio-economic objectives in fisheries management?
3. How can/should socioeconomic objectives be identified and established?
4. Where socioeconomic objectives have not be identified or included, why haven't they? What are the concerns with reporting socioeconomic data?
5. How can socioeconomic objectives be better integrated into decision-making?
6. How should fishery management be conducted when it is impossible to maximize all sustainable and beneficial uses of the marine environment and there is no clear optimization plan?
7. Do we have the necessary and sufficient authority in the MSA to succeed?
8. Are there alternative means to pay for the future challenges of fisheries management, and do they require statutory, policy, or regulatory changes?



Session 3
Topic 3
Speakers

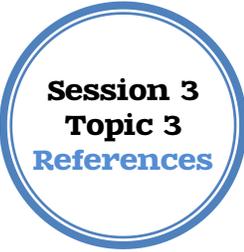
Providing for Fishing Community Stability
Assessment and Integration of Social and Economic Tradeoffs

Speakers and General Perspective of Presentations

- Richard Robins, Mid-Atlantic Fishery Management Council Member. A Council perspective on fisheries and community sustainability.
- Marty Smith, Associate Professor, Duke University. A perspective on the technical and policy aspects of evaluating fisheries policy tradeoffs in a community sustainability context.
- Jim Martin, Conservation Director, Berkley Conservation Institute. A recreational fishery perspective on changes needed to achieve a more effective recreational fishery connection to fishing community sustainability.

Moderator: Mark Holliday, Director, Office of Policy, National Marine Fisheries Service

Rapporteurs: Kari MacLauchlin, Fishery Social Scientist, South Atlantic Fishery Management Council Staff
Craig Severance, Western Pacific Fishery Management Council SSC Member, University of Hawaii



Session 3
Topic 3
References

Providing for Fishing Community Stability
Assessment and Integration of Social and Economic Tradeoffs

Reference Material

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- 3.3.3. National Ocean Council. 2012. Draft National Ocean Policy Implementation Plan. <http://tinyurl.com/aktqngf>
- 3.3.4. 2013 Regional Recreational Roundtable Preliminary Summary.
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