

**EAST COAST FORUM 2012
SOCIOECONOMIC CONSIDERATIONS AND HUMAN DIMENSIONS
OF FISHERY MANAGEMENT**

Discussion Summary and Guide to Additional Resources

Duke University Marine Lab, Beaufort NC

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The Fisheries Leadership & Sustainability Forum (“Fisheries Forum”), a joint initiative among four of the nation's leading academic and policy institutions, promotes professional development and continuing education by bringing together fishery managers and experts from a range of disciplines. The Fisheries Forum offers fishery managers opportunities to share experiences, build leadership skills, and enhance their understanding of fisheries law, policy, science, and economics. The semi-annual forums are the cornerstone of the Fisheries Forum and provide members of the regional fishery management councils with access to the latest research and an opportunity to discuss challenges and share success stories across regions. Each interactive forum is developed and led by faculty and staff from Duke and Stanford Universities in conjunction with leading experts from a range of disciplines. The forums focus on learning from experience and applying knowledge and problem solving skills to real world challenges.

For more information about the forums and to view material from past forums, please visit the [Fisheries Forum website](#).

Introduction: Forum agenda and learning objectives

The 2012 East Coast Forum (“Forum”) fostered an open discussion about the meaningful integration of socioeconomic information and considerations into decision making among the regional fishery management councils (“Councils”). Despite the legal mandates to collect and consider social and economic information—and a growing recognition of the value that this information contributes to the Council process—there is a wide range of perspectives on what it means to effectively integrate socioeconomic information into the decision making framework. Over the two days of the Forum, participants and speakers from all of the eight regional fishery management councils shared their ideas and experiences utilizing socioeconomic information, while reflecting on challenges and opportunities for building social science capacity at the individual and Council levels, and at NOAA Fisheries.

The curriculum for the Forum focused on the fundamental question of, “What does it mean to integrate socioeconomic information into the Council decision making process?” The Fisheries Forum developed the agenda and learning objectives for the Forum based on an extensive scoping process, intended to identify issues with cross-regional relevance to an audience of fishery managers. Forum participants included Council members and their designees, Council executive directors, and Council staff, representing all eight Council

regions along with state and federal agencies, and commercial and recreational fishing interests. The Forum provided participants with an opportunity to:

- Advance their knowledge of social science disciplines, research methods, and data inputs; and enhance their ability to interpret sociocultural and economic analyses and impact assessments;
- Review the legal requirements and institutional history of social science in the Council process, including National Standard 8 and the role of fishing communities; and explore the processes through which social scientific information and data needs are identified and communicated between partners in the management process;
- Investigate the range of socioeconomic considerations, management decisions and questions for which sociocultural and economic analysis can support the decision-making process; and
- Share perspectives on the meaningful integration of social scientific information into the decision-making process.

The Forum agenda included presentations on:

- The history and legal foundations for including social science in the Council process;
- Social science research methods;
- Fundamental concepts of community, value, well-being;
- Measures of dependence, resilience, and vulnerability; and
- Advances to socioeconomic data collection in commercial, recreational, and subsistence fisheries.

The Forum agenda also included opportunities for questions and discussion following each presentation and panel session. In addition, the agenda included several full-group discussions facilitated by Fisheries Forum staff, a small group “rotating roundtables” session, and a case study exercise.

The following summary is structured in three parts:

- I. Facilitated discussions: an overview of the objectives and approach for each facilitated discussion;
- II. Themes of discussion: a compilation of the themes, ideas, and questions that emerged over the course of the two-day Forum; and
- III. Presentations and panel sessions: learning objectives and brief descriptions of each presentation and/or panel, with links to PowerPoint presentations and videos.

This summary is not comprehensive and is not intended to demonstrate consensus; rather it is meant to serve as a guide to Forum resources, and to capture the salient themes of discussion and the range of ideas shared at the Forum. A full list of Forum resources, including the final agenda, is available on our website at www.FisheriesForum.org

I. Facilitated Discussions

Roundtable discussion: What does it mean to integrate socioeconomic considerations into the decision making process?

In this full group discussion, participants explored real-life examples of how councils have utilized socioeconomic information in their decision making processes. Council members shared several of their own experiences, reflecting on the process, the relationships, and the outcomes that characterize the effective integration of socioeconomic information into the Council process:

- Process: At what point in the decision making process was socioeconomic information requested and used? How was information presented and communicated?
- Relationships: Who contributed to defining the issues? Who was involved in providing, asking for, and receiving information? (Council members, staff, SSC, stakeholders)
- Outcomes: How did socioeconomic information and considerations shape the decision-making process and/or final outcomes?

Rotating roundtables

The rotating roundtables session was an opportunity for participants to explore social science research methods in an interactive, small group format. The session began with an introduction to social science research methods, provided by Dr. Lisa Campbell (see summary in following section). Participants then rotated in small groups between three short discussions facilitated by invited speakers:

- Qualitative sociocultural analysis – Dr. Jack Kittinger, Early Career Policy Fellow, Center for Ocean Solutions, Stanford University
- Indicators and quantitative sociocultural analysis – Dr. Lisa Colburn, Anthropologist, Social Sciences Branch, Northeast Fisheries Science Center
- Survey design and primary data collection – Dr. Matthew McPherson, Social Sciences Branch Chief, Northeast Fisheries Science Center

Speakers provided a broad introduction to each category of research methods, and encouraged participants to ask questions and share examples of how socioeconomic information has been collected and utilized in different Council regions.

Case study exercise and wrap up discussion

The Fisheries Forum employs the case study method to help participants merge their existing knowledge and experiences with new information derived from presentations and discussion. Case studies are based on fictional scenarios, and are designed to foster open discussion and creative thinking. This year's case study was written specifically for the 2012 East Coast Forum. The scenario and decision points were designed to help participants:

- Examine how the attributes of fisheries, stakeholders, and fishing communities interact with management decisions to create socioeconomic costs, benefits, and tradeoffs;
- Explore concepts of vulnerability, resilience, dependence, and community;

- Translate socioeconomic concerns into questions, guidance and/or requests for additional information; and
- Develop and refine an approach for examining socioeconomic tradeoffs and concerns early in the development of a council action.

The case study exercise was based on a fictional multi-species fishery with commercial, for-hire, and private recreational stakeholders. The premise involved three common decision-making scenarios: an allocation decision, the siting of a closed area, and the design of an endorsement program. Participants were tasked with initiating a discussion about potential socioeconomic considerations and tradeoffs very early in the development of each issue, and to generating an initial set of questions and concerns to guide the Council’s development of actions and alternatives. Following the breakout sessions, participants reconvened to share highlights from discussion, and discuss how the ideas and processes discussed in the case study could apply to real life scenarios.

II. Themes of Discussion

Overview

Discussions at the East Coast Forum demonstrated that while Councils recognize the value and legal mandates for integrating the social sciences into the decision-making process, there are many different perspectives on what this should look like in practice. Participants reflected on their responsibility as decision makers to consider, interpret, and apply socioeconomic information, along with the resources available to them and the growth in social science capacity that has occurred at the NOAA Fisheries (“agency”) level. Participants and speakers proposed that in order to advance the role of the social sciences in decision making, Council members don’t need to be experts in the social sciences, but can take steps to articulate questions and better leverage the information, resources, and expertise available to them.

The group identified several steps decision makers can take to build their social science capacity at the individual and Council levels. Since most Council members are not social scientists by training, participants found it valuable to identify areas where they wanted greater clarity around key concepts, terminology, and research methods. The group also reflected on the council process and where socioeconomic considerations and information can be proactively used to set goals, shape policy, and evaluate performance. Finally, participants and speakers discussed opportunities for improving relationships, communication, and capacity, throughout the institutional social science “enterprise” that includes the Councils, NOAA Fisheries, and the academic community.

Key concepts

Participants identified several concepts and terms that are familiar to the council process, but that they felt would benefit from greater clarify and/or a more consistent definition. Three topics that sparked the most conversation were the definition of a fishing community, the difference between quantitative and qualitative research methods, and the distinction between similar sounding term, particularly “sociocultural” and “socioeconomic.”

Fishing communities

Presentations by Dr. Abbott-Jamieson and Dr. Colburn generated discussion and many questions about how fishing communities are or should be defined. While the National Standard 8 definition of a fishing community is geographically defined,¹ the term “community” can apply to other groups with common cultural, occupational, recreational, or other types of interests. While only geographically defined communities can be considered for the purposes of consistency with National Standard 8, other types of communities may be considered for the purpose of social impact assessments.

The group shared their own experiences with non-geographically defined fishing communities, including communities of recreational anglers and communities of vessels who fish in the same area. Even communities that are geographically defined can test commonly held perceptions of what a fishing community looks like; for example, communities within urban areas, and mixed-use or primarily recreational communities. The group acknowledged that there are many definitions of community, that communities can change over time, and that the National Standard 8 guidelines recognize one particular definition of community. However, many participants still felt that there can be a lack of clarity and consistency around the use of the term “fishing community.”

Qualitative and quantitative research methods

Participants’ questions about the distinction between qualitative and quantitative research methods highlighted common perceptions about qualitative sociocultural analysis. Some perceived the distinction between qualitative and quantitative as one of data quality, with quantitative analyses being more rigorous, reliable, and trustworthy, and qualitative analyses more subjective or “common sense.” Many participants also felt that quantitative analyses are also more accessible, especially to those with a background in the natural sciences. In response, speakers pointed to the theory and methods underlying qualitative research and some of the steps researchers take to establish methodological rigor. The differences are between depth (e.g. surveys vs. participant observation) and form (e.g. data tables vs. narrative) of the data, rather than quality. Also, while qualitative analyses may be perceived as “faster and cheaper,” qualitative research is in fact very time and resource-intensive.

Speakers also used examples to demonstrate that “qualitative” and “quantitative” don’t necessarily represent opposite ends of a continuum. For example, qualitative data from interviews or open-ended questions can be categorized and presented quantitatively, as a proportion of similar responses. Qualitative and quantitative methods can also be complementary. For example, qualitative research is often used to inform the

¹The Magnuson Act defines a fishing community as “a community that 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 fish processors that are based in such communities.” 16 U.S.C. §1802(17). The National Standard 8 Guidelines further describe a fishing community as “a social or economic group whose members reside in a specific location and share a common dependency on commercial, recreational, or subsistence fishing or on directly related fisheries-dependent services or industries.” 50 C.F.R. 600.345

development of responses to a quantitative research tool like a survey, or to add elaboration and depth to quantitative analyses.

While this discussion demonstrated the value of communication between researchers and decision makers, many participants still felt that their questions or concerns about qualitative research methods were not fully resolved. This complicated discussion appeared to be driven, in part, by a difference in the context in which policy makers and social scientists use the term “analysis.” From a researcher’s perspective, an analysis is the interpretation of data gathered in response to a research question. To a policy maker, “analysis” can also refer to information that is compiled to meet legal requirements, including National Environmental Policy Act (NEPA) requirements to consider a range of alternatives, and to provide additional context for a policy decision. This information is drawn from a range of different sources and was not usually generated specifically to inform the policy decision in question. Thus, where a social scientist often uses “qualitative” or “quantitative” in reference to research methods used to produce data, a policy maker may use these terms to describe the type of data that is included in a council document and how it is presented.

“Sociocultural” vs. “socioeconomic”

Several participants felt that it would be helpful to clarify the distinction between similar-sounding terms, especially “sociocultural” and “socioeconomic” relative to the broader term “social sciences.” While this was not a specific focus of discussion at the Forum, these definitions are included here as a resource. The social sciences are “the branches of science that study humans in relation to each other and the environment. This includes the study of society, its institutions and functions, its culture(s), and the relationships of individuals within and to society and the environment.”² In the context of fishery management and the Council process, “socioeconomic” is often used generally to include all social scientific data and information, while sociocultural is used in reference to data and information that is other than economic (e.g. “the subset of research activities associated primarily with anthropologists and sociologists”³).

Social science and the Council process

Throughout the Forum, discussions returned to the fundamental question of what it means to integrate socioeconomic considerations and information into the Council process. The group questioned how socioeconomic information could be used more proactively and strategically to shape policy options, and not just to characterize impacts once alternatives have been identified. Participants shared regional examples of how socioeconomic information had contributed to past Council decisions, and identified several processes and pathways for integrating this information into the Council process effectively.

Setting goals

Goal setting can provide Councils with a mechanism for communicating their data collection priorities and measuring performance, but few FMPs currently contain clear

²Abbott-Jamieson, S. and P. Clay. 2010. The long voyage to including sociocultural analysis in NOAA’s National Marine Fisheries Service. *Marine Fisheries Review* 72(2): 14-33

³*Ibid*

social or economic goals. Participants felt that social and economic outcomes are often framed as impacts to assess or to minimize, rather than as goals to achieve. Some participants expressed support for developing a long-term vision for Council-managed fisheries, to address questions such as “what are we trying to accomplish?” or, “what do we want this fishery to look like?”

The process for setting social and economic goals is challenging, especially in contrast to the clear mandates to end overfishing and rebuild overfished stocks. There are clear thresholds for triggering action on the biological side, but no comparable thresholds on the socioeconomic side. Social and economic goals can also be political and subjective in nature, making it difficult to achieve consensus. For example, decision makers and stakeholders may have very different views on the ideal of number of participants in a fishery, or the balance between larger and smaller scales of operation. The group felt that as a result, clear biological goals often drive decision making while social and economic goals are nonexistent or not clearly defined.

Shaping policy options

The group also questioned how socioeconomic information could be used more proactively and strategically to shape alternatives, set goals, measure progress, and minimize adverse impacts. Participants felt that socioeconomic information is used primarily to characterize impacts rather than to shape policy options, and that more baseline and ongoing data collection is necessary so that socioeconomic information is available to the Council earlier in the decision making process. The development of social and economic indicators and performance measures, described by Dr. Holliday, Dr. McPherson and Dr. Colburn, is a significant step toward increasing the availability of socioeconomic information at all points in the decision making process, and generating insight into concepts of vulnerability, resilience and dependence.

The Forum’s fictional case study (described in Part I) challenged participants to consider how socioeconomic information could be used early in the decision making process. Many participants commented that they struggled to complete the exercise, and observed that as decision makers their inclination is to move directly from recognizing a problem, to identifying solutions. This exercise was for the purpose of discussion, and not to suggest a particular process for discussing the socioeconomic dimensions of an issue. However, these discussions reinforced that advancing the use of socioeconomic information is not just a matter of having more or “better” data, but also depends on a thoughtful examination of how—and when—in the process that information can be used. Participants suggested that socioeconomic information can be brought into the decision making process earlier, as part of an iterative process of interacting with Council staff, asking questions, and shaping alternatives.

Evaluating tradeoffs

Speakers emphasized that social science is not the answer or the solution to an issue, but that it can provide managers with a more informed assessment of the socioeconomic costs, benefits, and tradeoffs associated with policy options. Additional information

doesn't necessarily simplify an issue, but often makes it more complex by introducing new questions and values.

In addition to considering socioeconomic tradeoffs, the group examined the complicated tradeoffs between socioeconomic and biological outcomes, demonstrating that these outcomes can be linked in unexpected ways. For example, decisions that affect scales of operation and the location and distribution of fishing effort (e.g., full-time vs. part-time, large scale vs. small scale) may be framed as socioeconomic in nature, but also have ecological consequences. Some participants also proposed that fishing community and ecosystem sustainability and resilience can be advanced through the same pathways—for example, by managing for diversity in the scale of fishing operations and the range of species targeted.

Identifying information needs

Discussions about goal setting, policy options and tradeoffs eventually turned to the topic of data collection and information needs. Participants felt that one of the major challenges to collecting and using socioeconomic information is determining the appropriate scope for a data collection program. The group observed that orienting data collection toward a specific research question can be a more efficient use of limited resources, and can provide insight into a specific policy issue. The downside of targeted socioeconomic data collection is that it's difficult to anticipate and account for future information needs. The design of a data collection program and the availability of information can have consequences for future policy options; for example, if information is collected about permit holders but not about crew.

The group generally felt that additional baseline and ongoing socioeconomic data collection should be a priority. Longitudinal data collection (collecting information on a set of variables over time, as with NOAA Fisheries' performance measures initiative) is valuable for characterizing trends and performance over time, and facilitates the inclusion of socioeconomic information earlier in the decision making process. Baseline and ongoing socioeconomic data collection also provides a foundation for setting and measuring progress toward policy goals. The group recognized that there are some limitations to how longitudinal data can be used; for example, it can demonstrate association between issues but not necessarily establish cause and effect. Long-term funding is also a concern because longitudinal data collection requires a commitment to future follow-up research.

In addition to discussing the *scope* of data collection, the group contrasted different *scales* of data collection, focusing on individuals and communities as the basis for analysis. Some participants highlighted the need to understand socioeconomic impacts at the individual level. In many regions, fishermen participate in multiple fisheries throughout the year, and at different scales of operation. Within this "portfolio" approach it can be difficult to draw broad conclusions about the socioeconomic impacts of a decision. Other participants placed more value on understanding broader, community-level impacts and interactions between fisheries. At both the individual and community levels of analysis, information about crew and supporting industries is often lacking. The

group also recognized that there are interjurisdictional challenges to assessing socioeconomic impacts at both the individual and the community levels, since stakeholders may participate in or switch between state and federally managed fisheries.

Participants cited cost data as a specific information need that transcends issues and Council regions. Some participants recommended expanding the concept of cost to include other categories such as the cost of entry. This led to further discussion about how broadly the concept of “cost” could be explored and applied; for example, to include information about opportunity cost, costs to society, and costs associated with risk. The group also pointed to the importance of gaining insight into human behavior, and anticipating how stakeholders will respond to policy decisions. Participants mentioned examples of effort shift (e.g. between fisheries and target species), which is difficult to predict and often only evident once it leads to new problems. Measures of job satisfaction (as introduced by Dr. Pollnac) can provide important insight into fishermen’s motivations and behavior. The group recognized that this type of information is valuable, but also questioned how it should inform management decisions.

Communication and relationship building

Throughout the Forum, discussions explored the pathways for communication between the Council and the other partners in the management process, including other Council bodies such as staff, SSC, and advisory panels; the regional offices and science centers, academic researchers, and the general public. These relationships have implications for how socioeconomic information is integrated into the Council process, including how information needs are identified and communicated, and how social scientific research is presented and made available to the Council.

Communication between the Council and partners

The group felt that close communication between the Council and all the partners in the management process, including Council staff, agency staff, Scientific and Statistical Committees (SSCs), and other bodies that vary by region, including Plan Development Teams, Technical Teams, and Management Teams; is valuable, and that input from the Councils is needed to align research with policy needs. Some participants felt that there can be a disconnect in this process and that more federal research should be based on real world questions and direct input from the Councils.

Participants also reflected on how socioeconomic information is communicated to the Council in the form of analyses and decision documents. While sharing regional examples and case studies, participants were particularly interested to know how socioeconomic information was presented to the Council, and how different formats helped the Council understand the social and economic aspects of different alternatives. Meanwhile, speakers and council staff members were eager for feedback on how to make analyses more useful. The group felt that continuing this dialogue is critical and that it needs to be an ongoing process. Councils can provide feedback on how to make analyses more helpful, and staff and other partners can help Councils articulate their questions and information needs.

Communication between decision makers and researchers

Participants and speakers alike commented on the value of connecting agency and academic social scientists with the managers who utilize socioeconomic information for decision making. Participants were curious to know whether researchers and agency social scientists routinely consult Councils when conducting socioeconomic research. They felt that more interaction would be beneficial, and would also enable decision makers and social scientists to communicate about research methods and questions. Meanwhile, speakers felt that direct interaction with decision makers provided insight into how decision makers process and talk about social scientific information, including common questions, concerns, and areas for clarification. They also encouraged participants to reach out directly to researchers with questions and concerns about research methods and ethics.

The group also commented on the accessibility of peer-reviewed journal articles, and expressed frustration that some relevant research is only available via paid subscription. Speakers acknowledged that this is often the case with academic researchers, but clarified that while agency scientists (in the natural as well as the social sciences) are encouraged to publish in journals, this information is in the public domain and available to the public.

Communication between managers and the public

Two-way communication with the public provides managers with valuable insight into the socioeconomic concerns that stakeholders feel are important to consider. Speakers clarified that public comment and outreach does not constitute social science research in its own right, but the group agreed that public input is critical for identifying the issues and tradeoffs for further analysis (as well as for meeting NEPA requirements). Several participants commented that feedback from the public is still important to their understanding of the socioeconomic dimensions of an issue, even if it is anecdotal.

Many participants pointed to a need for better communication with stakeholders about the value and the use of socioeconomic information, particularly around primary data collection methods such as surveys that involves direct interaction with stakeholders. Several participants shared examples of data collection efforts that were not well received by stakeholders because they were perceived as burdensome, repetitive (“survey fatigue”), or threatening, or because it was unclear how the information would be used, or if it would be linked to a particular outcome. Speakers offered suggestions for building stakeholder investment in socioeconomic data collection, including in-person contact, communicating information back to the study population, and providing context for what information is being collected, how it will be used, and why a particular format is appropriate. Some members of the group commented that while relationship building is important, individuals harvesting a publicly owned resource have an obligation to share information that contributes to the management of that resource.

Social science capacity building

Presentations by Dr. Mike Orbach, Dr. Mark Holliday, and Dr. Susan Abbott-Jamieson, focusing on the role of the social sciences at NOAA, sparked an ongoing discussion about social science capacity. The group explored two complementary pathways for building

capacity: first, supporting capacity within the scientific enterprise to produce information and analyses, and second, enhancing the capacity of decision makers to interpret and apply socioeconomic information to decision making.

Institutional capacity

Following Dr. Orbach and Dr. Holliday's presentations, the group discussed how the role and perceived value of the social sciences has changed over time, and questioned where this change was most evident in the model of the "scientific enterprise," outlined by Dr. Orbach (see Part III), and where there are still opportunities for growth. The group recognized some visible changes, such as increase in the number of agency and staff social scientists, but pointed to an imbalance between the funding and staff resources allocated to the natural versus the social sciences. Specific suggestions for building social science capacity at the agency focused on adding or re-allocating resources for social science research, and conducting more ongoing monitoring and long-term social science research.

The group questioned how limited resources should be allocated between socioeconomic and biological information needs. Some participants and speakers felt that because human behavior is the target for management, more resources should be allocated toward socioeconomic data collection. They also noted that capacity building outside the direct scope of the agency is still influenced by funding priorities at the agency level. Strong academic programs in the social sciences are necessary for training future fisheries social scientists, but the availability of funding and future employment opportunities are important for attracting new researchers to the field. Others felt that biological information is the more urgent information need, given limited resources and the ACL/AM requirements of the 2006 Magnuson-Stevens Fishery Conservation and Management Act ("Magnuson Act" or "Act").

There are also opportunities to build capacity and increase communication across Council regions. Dr. Mark Holliday noted that at the 4th National SSC Workshop in 2011, SSC members from across council regions discussed the role of social science in the Council process, and pathways for SSCs to support these discussions in their respective Council regions. One recommendation from this workshop is to continue this discussion by forming a cross-regional SSC social science working group.

Individual and Council capacity

Throughout the Forum, and particularly during the case study exercise, participants reflected on the challenges of utilizing socioeconomic information. Several participants noted that their own backgrounds are in the natural sciences, and that it can be challenging to interpret—and sometimes even to trust—information generated through unfamiliar research methods. Identifying parallels between the natural sciences and the social sciences was beneficial to some participants. Speakers emphasized that the social sciences, like the natural sciences, encompass a wide array of research methods and disciplines. Social scientists, like all scientists, are trained and specialized to address certain types of research questions, ensure methodological rigor, and follow standards for ethical research. Participants observed that with these parallels in mind, council members

can build their own capacity and better leverage the social science capacity of Council staff and others by asking questions and clarifying unfamiliar terminology.

Conclusion

Discussions at the East Coast Forum underscored many of the well-recognized challenges of incorporating the social sciences into the Council management process. Beyond the ongoing data needs, and the procedural matter of how to integrate human dimensions into a well established decision making process, discussions about the socioeconomic aspects of management decisions are characteristically difficult. Whether the emphasis is on measuring impacts or on shaping policy options and goals, the social sciences address the social and economic well-being of individuals, families, and communities. These discussions can be contentious and highly charged, and are often deeply personal.

As participants and speakers agreed, more or better socioeconomic data can support more informed tradeoffs but the social sciences don't provide the "right" answer or even necessarily lead to a different outcome. Integrating socioeconomic considerations into decision-making depends on being more transparent and deliberate about the tradeoffs that are being made, and the values behind them. The intent of the East Coast Forum was not to arrive at solutions or best practices; in fact, participants identified many new questions and concerns along the way. As the group acknowledged, asking questions, sharing ideas, and examining the Council process with a fresh perspective all represent pathways for building capacity to advance the integration of socioeconomic considerations into fishery management.

III. Presentations and Panel Sessions

Opening presentation: Portrait of a Fishery

Dr. Linwood Pendleton

Director of Ocean and Coastal Policy, Duke's Nicholas Institute for Environmental Policy Solutions, and Acting Chief Economist, NOAA

[PDF](#) [Video](#)

Objective: Provide an introduction to the intersection of economic value and outcomes, and social and cultural values, as part of a conceptual framework for monitoring performance and change in U.S. fisheries.

Dr. Pendleton provided an introduction to the topic of this year's East Coast Forum, drawing a comparison between the visual arts and the social sciences as vantage points for interpreting and communicating information about the world. Like different styles of painting, metrics for measuring the performance of a fishery vary in complexity and the amount of information they capture. Dr. Pendleton reviewed some of the metrics used to assess economic performance, explaining that while each metric provides important information about a fishery, no one metric fully captures the societal value of a fishery. Moreover, metrics often can't be compared or combined. However, all metrics help measure

and communicate about the tradeoffs inherent in fishery management decisions. While metrics for social values and community performance are less familiar than metrics for biological and economic performance, this information adds a critical dimension to the decision-making process. The challenge for fishery managers is to examine how these social and community performance metrics can be used in the policy realm.

Panel: Social science in the Council process

Speakers: Dr. Michael Orbach and Dr. Mark Holliday

Objective: Review the legal foundations and major milestones guiding the acceptance and inclusion of social science in the management process from the 1970s to the present, and look ahead to emerging applications for socioeconomic information in the context of national policy.

Legal foundations and institutional history

Dr. Michael Orbach

Professor of the Practice of Marine Affairs and Policy, Duke University

[PDF](#) [Video](#)

Dr. Orbach described how the role and acceptance of social science has evolved at NOAA Fisheries and the regional fishery management councils. Fishery management decisions are fundamentally “people decisions” informed by science but determined by human values. All decisions involve biophysical, social, and economic tradeoffs, and socioeconomic information is necessary to ensure that these tradeoffs are measurable and well informed.

Dr. Orbach described the institutional social science “enterprise,” which produces the social and economic information needed by fishery managers. All parts of this enterprise must work effectively to produce useful data. A functioning enterprise comprises:

- Theory and method;
- Academics and practitioners;
- Law and policy mandates;
- Funding;
- Receptive clients; and
- Useful and used products.

The capacity of the NOAA Fisheries social science enterprise to generate and utilize socioeconomic information has grown over time, from the passage of the Magnuson Act to the present. Dr. Orbach reviewed provisions of the Act and other legislation that guides the use of social scientific information, and the roles of NOAA Fisheries, the Councils, and others in generating and communicating that information.

Resources, and the presence of trained social scientists and professionals, continue to be critical to building social science capacity in the Council process.

Current policy directions and emerging applications

Dr. Mark Holliday

Director of the Office of Policy, NOAA Fisheries

[PDF](#)

[Video](#)

Dr. Holliday provided a high-level perspective on how social science is currently used at the agency level, and how these applications are evolving in the context of national policy directions. He began by describing the agency's performance measures initiative, then discussed the role of social science relative to emerging issues in the broader fisheries and ocean policy realm.

Performance measures

NOAA Fisheries' performance measures project will identify and operationalize social and economic performance measures, supporting Councils' ability to set and track progress toward measurable social and economic goals. While biological goals and performance measures are well established, few fishery management plans currently specify social or economic objectives, and the role of social science is often limited to evaluating the impacts of decisions. Dr. Holliday described how performance measures will contribute to a more comprehensive "triple bottom line" vision of sustainability, which includes economic and community sustainability in addition to biologically sustainable fisheries.

The performance measures project was initially developed to gauge social, economic, and ecological performance and change associated with catch share programs. Performance measures and associated indicators were first developed regionally, and will be standardized nationally and applied to non-catch-share fisheries. While some indicators are readily available (e.g. catch and landings, participation) or can be derived from available information (e.g. prices, revenue), other information will require additional research and data collection.

Dr. Holliday identified social and economic data as a major information need. He described several steps Councils can utilize their existing authority to complement steps the agency is taking to fill these information gaps:

- Set explicit goals and objectives in FMPs;
- Promote recordkeeping and reporting requirements;
- Use advisory panels to capture data;
- Improve 5-year research plans to NOAA; and
- Request more social science cooperative research.

Emerging issues

Dr. Holliday then discussed the role of social science with regard to several emerging issues that are likely affect the responsibilities of Councils in the future. These issues include:

- Building fishing community capacity to engage in the council process and advance their goals, through pathways such as financial assistance and

business planning, organizational opportunities (e.g. regional fishery associations, community trusts), marketing, and communication and outreach.

- Redefining the fishery management unit to accommodate principles of ecosystem-based management, and to recognize smaller-scale and non-commercial fishery participants.
- Planning for competing ocean uses and recognizing that fisheries operate in a broader context that involves competing uses and societal tradeoffs.
- Devolving governance/management and exploring management models that provide greater responsibility to stakeholders to self-govern, with Councils serving more of a facilitation role.

Rotating roundtables: Tools of the trade

Speakers: Dr. Lisa Campbell, Dr. Jack Kittinger, Dr. Lisa Colburn, Dr. Matthew McPherson

Objective: Provide a brief introduction to social science disciplines, focusing on what makes each discipline distinctive (theory and research methods), and what perspectives and information each can contribute to the management process; followed by a more in-depth look at three areas of social science research.

This session included a full-group presentation by Dr. Lisa Campbell, followed by a series of three “rotating roundtables,” for which participants divided into three smaller groups and rotated between three short facilitated discussions. The rotating roundtables included a short introduction to three areas of social science research followed by questions, examples, and discussion. Each set of discussions varied between breakout groups. A summary of Dr. Campbell’s introductory presentation follows, while themes from the rotating roundtable discussion are integrated into Part II of this document.

One of these things is not like the other: Scoping social science research methods

Dr. Lisa Campbell

Associate Professor of Marine Affairs and Policy, Duke University

[PDF](#) [Video](#)

Dr. Campbell provided a broad introduction to social science research methods, emphasizing that the social sciences include a diverse set of disciplines with different theories, methods, and applications. She explained that as a group, these disciplines vary along several axes:

- Epistemological – subjective, socially constructed, embedded vs. objective, “only what we see and measure”;
- Research method - intensive/qualitative, specific, case study vs. extensive/quantitative, general, meta-analysis;
- Methods of data collection and analysis (quantitative and qualitative); and
- Application or orientation – research that focuses on a policy question vs. research that provides context for an issue.

Matching the appropriate discipline to an information need is a matter of identifying the research question and the type of data needed. Dr. Campbell also addressed common misconceptions about social science, explaining that it does not include education, outreach or stakeholder engagement, and is not a solution or “common sense,” and briefly addressed research ethics. She concluded by sharing a case study from her research in Turks and Caicos, demonstrating how an interdisciplinary research project helped facilitated community engagement in the management process.

Panel: Social science research methods in practice

Speakers: Dr. Susan Abbott-Jamieson, Dr. Martin Smith, and Dr. Richard Pollnac

Objective: Review the legal foundations, key provisions and terminology, and status of knowledge regarding each concept (communities, value, and well-being), focusing on how fishery managers can use this information to meet their legal mandates.

Fishing communities in marine fisheries management

Dr. Susan Abbott-Jamieson
President, Abbott-Jamieson Consulting, Ltd.

[Video](#)

Dr. Abbott-Jamieson, a former senior social scientist with NOAA Fisheries, reviewed provisions of the Magnuson Act that pertain to fishing communities (Box 1) and described the agency’s work to identify and characterize fishing communities. While there are clear requirements to collect and consider information about the impacts of management measures on fishing communities, communities themselves are dynamic and can be defined in many different ways (e.g. by interest, occupation, ethnicity, permit type, etc.) although the National Standard 8 definition of communities is place-based. Dr. Abbott-Jamieson noted that concepts of community, along with other language in the Magnuson Act (e.g. “substantially dependent on or substantially engaged in” 16 U.S.C. §1802 (17)) are not always clearly defined, but that some definition or shared understanding is a necessary starting point for data collection.

During the early 2000s, NOAA Fisheries focused on identifying geographically defined fishing communities as a starting point for meeting the requirements of the law and National Standard 8 in particular. Researchers identified more than 800 places with substantial fishing effort, which served as the basis for a complete set of narrative fishery profiles completed in 2005. Dr. Abbott-Jamieson explained that while these initial profiles provided a starting point, the narrative format can’t be updated quickly. The agency is shifting toward including more demographic information and other data that can be updated periodically, allowing researchers to analyze cumulative impacts and changes over time.

Box 1: Excerpts from the Magnuson Act pertaining to fishing communities

Definition of “fishing community”: (Definitions, Section 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.

National Standard 8: (National Standards, Section 301(a)(8))

“...Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social and economic data...in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.”

Economic and social impacts: (Contents of fishery management plans, Section 303(a)(5))

“Any fishery management plan which is prepared by any Council, or by the Secretary, with respect to any fishery, shall—
...include a fishery impact statement for the plan or amendment which shall assess, specify, and analyze the likely effects, if any, including the cumulative conservation, economic, and social impacts...for participants in the fisheries and fishing communities affected by the plan or amendment...”

Fishing community participation in LAPPs: (Limited Access Privilege Programs, Section 303A(c)(3)(A)(i)(IV))

“To be eligible to participate in a limited access privilege program to harvest fish, a fishing community shall—
...develop and submit a community sustainability plan to the Council and the Secretary that demonstrates how the plan will address the social and economic development needs of coastal communities...”

Market and non-market value

Dr. Martin Smith

Associate Professor of Environmental Economics, Duke University

[PDF](#)

[Video](#)

Council decisions often involve tradeoffs between market and non-market value. Dr. Smith reviewed both concepts, and explained why the sum of market and non-market value equals total economic value. Dr. Smith used several commercial fishery examples to illustrate common misconceptions about market value, emphasizing that neither revenue nor employment should be equated with market value, which is instead the sum of producer and consumer surplus. He then described the concept of non-market value, including examples of use value (such as recreational fishing), and passive value (such as existence value). Using the common example of sector allocations, Dr. Smith described some of the challenges involved in comparing market and non-market value. He concluded by encouraging participants to think about their role in creating value, as stewards of a public trust resource, and

underscored the importance of quantifying total economic value to support informed and transparent decisions.

Fishery management, job satisfaction, and well-being

Dr. Richard Pollnac

Research Professor, Marine Affairs Department, University of Rhode Island

[PDF](#) [Video](#)

Dr. Pollnac discussed the concept of job satisfaction and why this metric is relevant to decision makers. In 2006, Dr. Pollnac collaborated with other researchers and social scientists at NOAA Fisheries to develop a model for social impact assessment, which identifies well-being⁴ as a dependent measure. According to this model, management decisions affect the attributes of fishing as an occupation, which in turn has social, family, and community impacts (e.g. health, relationships) that affect well-being. Measures of job satisfaction can therefore provide a pathway for understanding how management decisions impact well-being. In addition to its utility as a metric for social impact assessment, the attributes used to measure job satisfaction (including non-financial attributes such as “adventure of the job”) can also provide insight into fishermen’s motivations and responses to management decisions (for example, why fishermen reinvest in a fishery after a buyout). Dr. Pollnac discussed some of the key indicators that can be used in a survey to measure attributes of job satisfaction in three categories: social and psychological needs, self actualization, and basic needs. Using examples from New England and Mid-Atlantic fisheries, he demonstrated how these indicators can be used to measure job satisfaction over time, as well as across fisheries and regions.

Presentation: Fishing community vulnerability concepts and measurement

Dr. Lisa Colburn

Anthropologist, Social Sciences Branch, Northeast Fisheries Science Center

(In collaboration with Dr. Michael Jepson, NOAA’s Southeast Regional Office)

[PDF](#) [Video](#)

Objective: Introduce concepts of vulnerability, resilience and dependence, and their utility for evaluating impacts to individuals and communities.

Dr. Colburn introduced the concepts of fishing community vulnerability, resilience, and dependence; and described efforts to develop social indicators of community vulnerability and resilience for use in decision-making.

⁴Well-being is defined as “the degree to which an individual, family, or larger social grouping can be characterized as being healthy, happy, and prosperous.” Pollnac, R.B., S. Abbot-Jamieson, C. Smith, M.L. Miller, P.M. Clay, and B. Oles. 2006. Toward a model for fisheries social impact assessment. *Marine Fisheries Review* 68: 1-18.

Key concepts

Dr. Colburn began by asking participants to reflect on the characteristics of “vulnerable,” “resilient,” and “fishing dependent” communities in their respective council regions. As a group, participants developed a list of attributes for each concept. Dr. Colburn then described each concept as follows, noting that these definitions are specific to the context and application of her work with fishing communities.

Social vulnerability: the pre-existing condition that affects a community’s ability to prepare for and recover from a disruptive event; inherent characteristics of the community that create the potential for harm; patterns of differential access to resources or differential susceptibility to harm or loss

Social resilience: ability of the community to absorb impacts and recover from disruptive events such as regulatory change; includes coping with the event as well as post-event adaptive response

Dependence: degree to which the community of people that fish overlaps with the place based community; can be examined in terms of engagement and reliance

Social indicators project

Dr. Colburn then described her research, in collaboration with Dr. Jepson, to identify social indicators of fishing community vulnerability and resilience. Indicators are measures that can be used to assess the social condition of communities, and to understand how community vulnerability responds to regulatory changes over time. Similar to familiar indices like the consumer price index, each index of vulnerability represents a single concept, described by multiple data inputs. Indices can be developed using existing data sources (including NOAA Fisheries and census data), and used to inform social impact assessments, National Standard 8, and environmental justice determinations, and to evaluate the impacts of catch shares. The indices identified by Dr. Colburn and Dr. Jepson include measures of social vulnerability (personal disruption, population composition, and poverty), gentrification pressure (retiree migration, urban sprawl, and natural amenities), and engagement and reliance for commercial and recreational fisheries. These indices will be ground-truthed to assess how well they characterize the real-life condition of fishing communities.

Panel: Economic and social performance and change in U.S. fisheries

Speakers: Dr. Matthew McPherson, Forbes Darby, and Dr. Michael Orbach

Objective: Demonstrate how information about communities, value, and well-being contribute to understanding the impacts of management decisions, and assessing social and economic performance and impacts to different categories of stakeholders.

Defining social and economic performance measures and indicators for New England Fisheries

Dr. Matthew McPherson

Social Sciences Branch Chief, Northeast Fisheries Science Center

[PDF](#) [Video](#)

Dr. McPherson provided an overview of an initiative by the Northeast Fisheries Science Center's (NEFSC) Social Sciences Branch (SSB) to develop socioeconomic performance measures for fisheries in the northeast. The goals of this project are to proactively provide socioeconomic information to managers and the public, support managers in assessing progress toward social and economic management objectives, and provide for comparison across different regulatory approaches. SSB staff drew on published literature, expert and public input, outreach, and NMFS objectives, as well as language of the Magnuson Act and social and economic objectives in New England and Mid-Atlantic FMPs, to develop a set of 5 measures of socioeconomic performance:

- Financial viability;
- Distributional outcomes;
- Stewardship;
- Governance; and
- Well-being.

Each performance measure includes a set of measurable indicators. Dr. McPherson described several of the SSB's current initiatives to meet these information needs, including an annual cost survey. One of the ways this information will be made available is through fishery performance reports. NEFSC published the first fishery performance report for groundfish in 2011, and plans to extend this approach to other fisheries and publish performance reports on a regular basis. Dr. McPherson concluded by describing how the SSB's performance measures project will advance the national performance measures initiative, and how this work will support councils' ability to operationalize and track social and economic management objectives.

The recreational saltwater fisheries action agenda and improving socioeconomic information for recreational fisheries

Forbes Darby

National Recreational Fisheries Coordinator, NOAA Fisheries

[Video](#)

Mr. Darby described NOAA Fisheries' new efforts to improve socioeconomic data for recreational fisheries, and explained how this information will help advance goals identified during the agency's National Saltwater Recreational Fishing Summit. The summit, a starting point for strengthening the relationship between the agency and recreational anglers, highlighted differences between the motivations and information needs of recreational and commercial fisheries. In particular, the recreational community values the experience of fishing, and holds a wide range of perspectives on what constitutes a satisfying or high-quality experience. The agency's response to the summit, the Recreational Fishing Action Agenda, identifies improvements to socioeconomic information as a priority for better understanding the preferences and goals of recreational anglers.

Mr. Darby described several of the agency's ongoing and developing initiatives to gather more socioeconomic information on the recreational angling community, including a review of the recreational economics program, a for-hire cost and earnings survey, and an update to the angler expenditure survey. One specific objective outlined in the Action Agenda is to gain more insight into the human dimensions of recreational fishing, including angler motivations and satisfaction. In the near future, NOAA Fisheries will initiate a new effort to gather information on anglers' preferences and metrics of satisfaction. This information will provide managers with greater insight into the recreational community's vision for sustainable, well-managed recreational fisheries.

Concepts, cultural values, and subsistence fisheries

Dr. Michael Orbach

Professor of the Practice of Marine Affairs and Policy, Duke University

[Video](#)

Dr. Orbach discussed the role of subsistence harvest in the Council process, demonstrating that while the concept of subsistence use is very prevalent, explicitly defining and managing for subsistence use is more complicated and draws heavily on the social sciences. "Subsistence" refers to harvest for personal consumption, or for spiritual or religious purposes, as well as catch that is bartered or exchanged but does not enter a market. Sociocultural analysis contributes to identifying and characterizing these uses, and measuring attributes such as dependence.

A range of legal structures has been used to define and allocate subsistence use of marine resources, many of which operate outside the Council process (e.g. treaty tribes, the Marine Mammal Protection Act). At the Council level, subsistence use is often acknowledged but managed as a component of recreational harvest rather than regulated separately. Dr. Orbach explained that formally recognizing subsistence use can provide managers with a mechanism to regulate this harvest separately, and ensure that the benefits of this fishing are allocated to a certain group of people. However, doing so introduces a new set of decisions and information needs.

Keynote Presentation

Mr. Alan Risenhoover

Acting Deputy Assistant Administrator for Regulatory Programs (current at date of presentation)

[PDF](#)

[Video](#)

Mr. Risenhoover provided the keynote address, focusing on National Standard 1 and the concept of optimum yield as the foundation for integrating socioeconomic information into decision-making. As defined in the Magnuson Act, optimum yield provides for a balance between multiple biological, social, and economic objectives.

Mr. Risenhoover emphasized that within the conservation mandates of the Magnuson Act, there are many different pathways for achieving the same objectives. With mechanisms now in place to end overfishing and rebuild overfished stocks, Councils have an opportunity to

more fully account for the social and economic considerations referenced not only in National Standard 1, but also in National Standards 4, 5, 8, 9, and 10.

Mr. Risenhoover encouraged participants to think about the tools and information that Councils could use to support better integration of social and economic information throughout the entire decision-making process. He noted that NOAA Fisheries recently published Advance Notice of Proposed Rulemaking to revise the National Standard 1 Guidelines, and encouraged participants to provide their input. In conclusion, Mr. Risenhoover referred to the “triple bottom line” vision of biological, social, and economic sustainability discussed by Dr. Mark Holliday, and how this vision for fishery management translates to the broader ocean policy arena.