The Outreach and Education Advisory Panel met on May 27 – 28 in Tampa, Florida, to hear a presentation by the Gulf of Maine Research Institute on its Marine Resource Education Program, and to prioritize and develop tactics for its list of recommendations to the Council on improving outreach and education efforts.

Chairman Blome called the meeting to order at 1:15 p.m.
The agenda was adopted, and the minutes of the prior meeting were approved as written.
Marine Resource Education Program Presentation

Representatives of the Marine Resource Education Program administered by the Gulf of Maine Research Institute, gave a presentation on their education program. (See PowerPoint presentation attached and summary attached).

The program is a professional development program for the fishing industry and other individuals working on fisheries issues.

The main program objectives are to encourage more industry involvement in fishery data and management systems, familiarize managers and scientists with industry realities and concerns, and get the best available science with more industry involvement.

Each class consists of approximately 20 participants – 15 fishermen and 5 “others”. The curriculum is presented in two modules - science and management – each lasting three days.

The Science module discusses population biology, surveys and stock assessments, biological reference points, general oceanography, gear technology, and ecosystem principles.

The Management module discusses the federal regulatory process, legal framework, attending a council meeting, the role of the Coast Guard in fisheries management, the role of Congress, hot topics at the Council, and includes a negotiation exercise.

So far, 330 individuals have participated in the Marine Resource Education Program, including Council members from the New England, Mid-Atlantic, and South Atlantic Fisheries Management Councils.

Review and Prioritize Advisory Panel Recommendations

Chairman Blome then discussed Council action from the April meeting and advised the Panel that it was to prioritize its list of recommendations and develop tactics.

Bob Gill noted that he envisioned this Advisory Panel as a partner to the Council, working together to reach the different networks, and that the Advisory Panel would not only set priorities, but also structure how to accomplish those priorities.

Chairman Blome reviewed the priorities specifically approved by the Council during its April meeting, which are:

1. Improve the Council’s web site;
2. Provide online coverage of Council activities;
3. Schedule presentation by the Marine Resource Education Program to the Advisory Panel;
The panel then reviewed its full list of recommendations to the Council and began discussions on prioritizing and developing tactics for those recommendations. After a lengthy discussion, the panel moved to recommend the following as priorities to the Outreach and Education Committee.

Motion:
1. Develop a one-page fact sheet about the Gulf of Mexico Fishery Management Council
2. Improve the distribution of meeting notices
3. Improve the website
4. Provide real time online coverage of Council meetings and associated activities to be available on the Council website
5. Create an educational program for our region similar to the Marine Resource Education Program that benefits Gulf of Mexico stakeholders (commercial, recreational and other related interests).

The goals of the program are:
   a. To bring stakeholders, scientist and managers together in a neutral setting outside the regulatory process.
   b. To increase the number of people involved with Gulf Fisheries who are comfortable working with the fishery data and management systems
   c. To help policy makers and scientists become more familiar with the inner workings of the fishing communities
   d. To increase the number of stakeholders involved in collaborative research and pursuit of better data and science
   e. To increase dialog, rapport and respect between managers, scientists and stakeholders
   f. To foster leaders in the fishing community

Motion carried

The Advisory Panel also discussed the need for public presentations to be delivered in a more easily understood format and moved the following:

Motion: To recommend a review process for all presentations at public hearings to ensure clarity and consistency.

Motion carried

The panel then discussed outreach to the outdoor media and the benefit of targeting that stakeholder group to better educate them on what the Council does and its importance. The panel moved the following:
Motion: Have the council expand outreach to Outdoor media. For example, if the opportunity arises, have a representative from the Gulf Council attend the Southeastern Outdoor Press Association meeting or other outdoor writer groups/conferences.

Motion carried

The Committee then discussed the need to meet at least once more before the end of the year, but agreed to wait for further direction from the Outreach and Education Committee.

With no further business, the meeting adjourned.
New England’s Marine Resource Education Program

Building Bridges between Fishermen, Scientists and Managers

Mary Beth Tooley and Meredith Mendelson
MREP Implementation Team

Gulf of Mexico Fishery Management Council
Outreach and Education Advisory Panel
May 27, 2009
Marine Resource Education Program (MREP)

- What is MREP?
- How did it get started?
- Nuts and Bolts
- Outcomes in New England
- Applicability to other regions
- Q & A
Professional development program for fishing industry and other individuals working on fisheries issues
How Did MREP Come About?
Scientific and management complexity ...

Amendment 13 Process
Bridging the gap ...
Assembling the right advisory team ...

- Fishermen
  - Geographically diverse
  - Various gear types
- Northeast Fisheries Science Center Staff
- Northeast Regional Office Staff
- New England Fisheries Management Council Staff
- Academics
Securing the funding …


• NMFS/Cooperative Research Partners Program (2006 – 2008)
  
  – Focus on fishermen/scientist interaction;
  – Develop partnerships between commercial fishermen and scientists, educators, and coastal managers;
  – Help bring fishermen's information, experience, and expertise into the scientific framework needed for fisheries management;
  – Competitive process
Program Objectives

Neutral setting

More industry involvement in fishery data and management systems

Familiarize managers and scientists with industry realities and concerns

Get the best available science with more industry involvement!

Increase trust
Nuts and Bolts

Two 3-day sessions
- Fisheries science
- Management process

Retreat Setting

20 participants
- 15 fishermen
- 5 “others”
Deliberate and diverse participants ...
Presenters and Moderators
Curriculum -- Fisheries Science

- Population biology
- Surveys and stock assessments
- Biological Reference Points
- General oceanography
- Gear technology
- Ecosystem principles
Curriculum -- Federal Management Process

- Federal Regulatory Process
- Legal Framework
- Attending a Council meeting
- Role of Coast Guard in fisheries management
- Role of Congress in fisheries management
- Hot topics at the Council
- Negotiation exercise
Open dialogue and thoughtful exchange ...

Spawning Stock Biomass of 12 Groundfish Stocks, 1985-2004

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*GARM II (2004)

Regulatory Review Process (1st Phase)

- Council submits PMP-related document
- NERO PRD (MAPA, ESA)
- NERO HCD (EFH)
- NFBN, NEPMA (NEPA)
- NERO GC (MSA, etc.)
- NEFSC (NSI, RFA, EO 12866)
- HQ (concurrent review)

Document Acceptable?
- Yes → NERO SFD Complete Proposed Rule
- No → NERO SFD
Connecting with science ...
What has the impact been?
MREP Alumni

- 209 Commercial Fishermen
- 21 Recreational and Charter Fishermen
- 100 Participants from State and Federal Government and Other Institutions
Alumni involvement...

- New England Fisheries Management Council
- South Atlantic Fisheries Management Council
- Mid-Atlantic Fisheries Management Council
- State Marine Commissions or Advisory Councils
  - Species/Topic Specific Advisory Boards
- Stellwagen Bank National Marine Sanctuary
- Pew Oceans Commission
Increased fishing industry dialogue ...
Program Impact Assessment

• Completed in 2008
• Census Survey
  – 282 mailed, 165 returned (59% return rate)
  – 14 questions, 4 open-ended
• Qualitative Interviews of 15 alumni
Survey Highlights

- Half respondents thought MREP was very unique,
- One third felt it was “one of a kind”

Critical components:
- Participation of scientists and fishery managers as presenters
- Having industry moderators

- “Over 95% of respondents said that the opportunity to interact with scientists and fishery-managers one-on-one and the opportunity to hear ideas, concerns and questions from fishing industry members was an important or very important component.”
Survey Highlights continued...

Over 50% of respondents said that MREP improved the relationships between scientists and fishermen (56%), and managers and fishermen (53%).

88% agreed or strongly agreed that MREP made them more aware of the challenges inherent in fisheries science and management.

Approximately 2/3 agree that improvement in fisheries science and management is an achievable goal and that MREP increased their ability to have a positive impact on fisheries management. But only half agreed that MREP increased their ability to have a positive impact on fisheries science.
“MREP helped me to better understand how science is used in management.”
Has the sense of trust towards other participants in the management process been increased due to participating in MREP?
Interview Results Summary

• Motivation
  – The participant has a vested interest in the future of a fishery for the common good or because they have a family member who they would like to see continue the family fishing business.

• Outcome
  – The program changed their perception regarding challenges inherent to science and management by gaining a sense of the bigger picture and level of complexity in fisheries management.

• Knowledge
  – The knowledge the participant gains through MREP builds their confidence and understanding, which facilitates involvement.

• Value
  – Participants valued the neutral forum and the opportunity.

• Critical Components
  – Participants identified the quality of the presenters and their ability to convey information in an easy-to-understand format, as well as being able to answer questions the most important component.
Interview Quotes: What are alums saying?

“I didn’t know what I was getting into, but it became very clear that it was nothing more than an educational opportunity. There was no agenda. It turned out to be one of the best educational experiences of my life.

--Chris Brown, commercial fisherman, Pt. Judith, RI

“I knew what was wrong with our program and I got the confidence, experience, and exposure to make it happen from the MREP program. Without MREP I would have been flailing around for a year or two before I finally got traction.”

--Ted Platz, commercial fisherman, Newport, RI
Application to Other Regions

Critical Components:

• Interest, support, and willingness to participate from a diverse group of commercial and recreational fishermen, fisheries scientists, fisheries managers, environmental organizations, and other relevant federal staff (e.g., Coast Guard, Congressional representative staffers, regional fishery management council staff);

• An identified implementation team made up of a diverse mix of stakeholders reflecting the collaborative nature of the program; and

• Viable options in the region for a trusted, non-governmental administrative home for the program with adequate coordination and administrative staff support.

Helpful Components:

• Statutory (Magnuson-Stevens Act), federal or regional FMC mandate/priorities for cooperative research, education and/or outreach similar to MREP model.

• Strong cooperative research occurring and funded by an appropriate institution or federal program in the region.

• Broad community of fishing industry eager to build capacity and effectively participate in process.
Replication

1. Exploration
2. Implementation Team Engagement
3. Curriculum Development
4. Program Delivery
5. Program Evaluation
What We’ve Learned

- No Quick Fix
- National Framework – Regional Approach
- Join Forces
- Total Immersion
- Dialogue → Engagement
Questions?

Thank you!
MARINE RESOURCE EDUCATION PROGRAM: BUILDING BRIDGES AND FOSTERING LEADERSHIP IN NEW ENGLAND’S FISHING COMMUNITY

Acknowledgements:

The success of the Marine Resource Education Program is the result of the tremendous contributions of so many individuals over the last eight years. We are especially grateful to our funders at the Northeast Consortium and National Marine Fisheries Service, who have helped the program reach so many members of the New England fisheries community. We are also deeply appreciative of the dedication shown by our presenters, whose commitments to this program are truly remarkable. Most importantly, Mary Beth Tooley, John Williamson, our industry moderators and Board of Directors are the roots and heart of this program, which would not exist were it not for their vision and continued involvement.

The program impact analysis was made possible by the generous contributions of both staff time and funding from the Northeast Consortium and University of New Hampshire. Special thanks go to Jessica Joyce, who dedicated herself to understanding the program and produced a document that will certainly prove valuable to MREP’s evolution, and to Rob Robertson for his statistical analysis and guidance.

On behalf of the MREP Implementation Team, thank you to all of the MREP alums who attended the program and responded to this survey—we have learned a great deal from each of you.

INTRODUCTION:

The Marine Resource Education Program (MREP) was established in 2001 as a professional development program for the fishing community with several important objectives. First, MREP aimed to substantially increase the number of individuals working in New England fisheries who are comfortable navigating the fishery science and management arena. The training provided by MREP was also focused on fostering leadership capable of promoting trust in the management processes, reducing historical barriers to cooperation, forging new areas of involvement for fishermen in the regulatory system, and fully engaging the industry in the development of the best available science. While it was a crucial objective for fishermen to understand the science and management tools used to regulate their industry, of equal importance was the need to deepen the familiarity of policy and science professionals with the workings of the fishing community.

After providing the program in New England to 303 alumni through 13 seminars, what kind of impact is MREP having on the fishing community? Is the program achieving its objectives? What are some the key components of the program that are critical to the success of the MREP experience? What direction should the program take in the future? This report presents the results of a programmatic impact assessment of the Marine Resource Education Program, designed to assess how those who have participated in MREP have used the
information from the program in their fisheries careers over time. We hope to identify not only the successes of the program, but also to identify areas of opportunity for improvement and future work.

**PROGRAM BASICS:**

MREP consists of biannual seminars on the science and management of the fisheries resources in New England. Each seminar is divided into two three-day modules generally held within four weeks of each other. The class size is kept to approximately twenty participants comprised of fifteen fishermen and five participants from related marine professions, including industry associations, shore-side services, environmental organizations, and state and federal agencies. Participants generally complete the Fisheries Science module prior to the Fisheries Management module.

The Fisheries Science module provides foundational principles of oceanography and population biology as well as survey sampling techniques, statistical methods, stock assessments, models and their uses. Ecosystem-based scientific principles are outlined, and provide a strong link to the management module. Also included in this module is a discussion on gear design and innovation, which often provides a great deal of learning for all involved, as participants explain their gear to each other, and trade ideas about improved designs.

A complex web of agencies and legislation governs the fishing industry. The Fisheries Management module provides participants with the tools needed to effectively contribute to policy development through the Council process. The module gives an overview of relevant legislation, the federal management process under the Fishery Management Council system and the Atlantic States Marine Fisheries Commission, as well as the roles of economic and social sciences, the Coast Guard, and Congress in fisheries management. Alternative ways for fishermen to initiate management solutions, including training in consensus building and negotiation skills, are also covered.

**ABOUT THIS REPORT:**

This report is a brief summary of two studies conducted to document the Marine Resource Education Program’s accomplishments by assessing impact on past participants. The first study was a census survey, funded by the Northeast Consortium and conducted by the Survey Research Center at UNH. This survey provided data on a limited number of issues related to program outcomes and impacts. The second project was a case study of 15 graduates of the MREP to assess their subsequent experience. The case study attempted to document any change in perception that a graduate may have taken from the MREP experience, whether

The assessment was implemented with the full-involvement of the MREP Board of Directors, Gulf of Maine Research Institute (GMRI), and the Northeast Consortium. Assessment methods were developed jointly between staff at GMRI, MREP’s administrative home, and faculty at the University of New Hampshire (UNH).
and how they have communicated course information to their peers, and whether and to what extent they have participated in cooperative research or the fishery management process. The full reports from both of these studies can be found at http://www.gmri.org/community/mrep.

ASSESSMENT METHODS:

Census Survey:
A questionnaire was sent to 282 people who have participated in MREP since the program was first offered in 2002. The survey consisted of 14 questions, including 4 open-ended questions. In total, 165 surveys were returned, for a response rate of 59 percent. The quantitative responses were entered into a statistical database, and the open-ended questions were reviewed, coded for content and analyzed qualitatively for patterns among codes. Upon completion of the data entry, Dr. Rob Robertson at UNH and GMRI collaborated on the types of analyses to run on the data. Frequency analyses, as well as additional statistical analyses (One-way ANOVA and Chi-Square) were conducted using Statistical Package for Social Scientists.

Case Study:
The 15 interview participants were chosen from a range of MREP alumni from 2002 to the present. Care was taken to select a cross-section of fishing communities and sectors, as well as to represent the non-governmental organization (NGO) community. The interviews did not consist of set questions, and instead covered general topics. The interviews were recorded and transcribed, then reviewed, coded for content, and analyzed qualitatively for patterns among codes (e.g., frequencies of concepts mentioned, clustering of concepts mentioned by certain stakeholder groups, etc.) consistent with standard content analysis methods.

WHAT WE LEARNED:

Census Survey:
The majority of MREP alumni who responded to the survey were fishermen with over 25 years of experience, 40 years or older, and fished primarily groundfish (with 75% fishing for more than one species). Of those who targeted more than one species, the most common combination was shrimp and groundfish, followed by herring and groundfish. Survey respondents represent 45 home ports and nine states, ranging from ports concentrated in Maine south to Virginia, and one in Florida. Figure 3 depicts the proportions of states represented, with Massachusetts at the top (40%), followed by Maine (20%), and Rhode Island (14%). The top two most frequent home ports are Point Judith, Rhode Island (10%) and Gloucester, Massachusetts (10%), followed by Portland, Maine (7%).

When asked, almost half of the respondents indicated that they considered MREP to be “very unique and special”, and one-third thought it was “one of a kind”. One of the most frequent responses given when asked why they thought MREP was special or unique, was that it brought together diverse interests to share perspectives and exchange information.
Participants were asked the extent to which a variety of program components added to the value of MREP on a scale ranging from “not important” to “very important”. The most important component of MREP identified by respondents was the participation of scientists and fishery managers as presenters. Another important component noted among alumni was inviting representatives of the fishing industry to be moderators for the program. The overwhelming majority (over 95%) of respondents believed that the opportunity to interact with scientists and fishery-managers one-on-one and the opportunity to hear ideas, concerns and questions from fishing industry members was an important or very important component.

More than half of the respondents agreed that MREP improved the relationship between scientists and fishermen (56%), and managers and fishermen (53%). However, only 41% agree that it improved the relationship between fishermen and non-fishermen participants, such as environmental organizations. Non-fishermen (e.g., representatives of environmental organizations, the government, or shore-based industries) responded significantly differently than fishermen in their ranking of the importance of recreational fishermen and non-fishermen as program components, as well as the ratio of fishermen to non-fishermen. Non-fishermen also agreed that the opportunity to spend time with members of the fishing community in a social setting was an important component of the program. These results underscore the uniqueness of the opportunity for fishery scientists, managers and those involved in non-governmental work related to fisheries to interact with the industry.

The majority of respondents (81%) thought that the ratio of fishermen to non-fishermen (currently about three to one) was an important or very important component to the program (Figure 5). The participation of commercial fishermen representing a variety of gear types as well as inclusion of non-fishermen participants were also noted as important or very important by a majority of respondents. However, when asked about the importance of including recreational fishermen in the program, nearly half of the respondents thought that recreational sector participation is not important or somewhat important, while the other half of the respondents felt that their participation was important or very important.

The survey also asked MREP alumni to evaluate the impact of MREP on their perceptions, involvement in fisheries management and relationships since completing the program. The following results highlight the key responses of this self-evaluation:

- My participation in MREP made me more aware of the challenges involved in fisheries science and management (88% agree or strongly agree).
- My participation in MREP increased my ability to have a positive impact on how fisheries are managed (85% agree or strongly agree).
- I use what I learned from participating in MREP when communicating with fishermen (82% agree or strongly agree).

[“... to my knowledge and my experience, this program is one of a kind. It is a great step in the right direction. The scientists, management, enforcement, and various user groups must meet face-to-face and speak in person. that is of utmost importance.”]

[I benefited by] “hearing what fishermen were going through. Coming from the government side of things it really put things in perspective.”—NMFS employee
I am less optimistic about the future of commercial fishing as a result of my participation in MREP (50% disagree or strongly disagree).

The overall outlook of the majority of MREP alumni is positive. 65% of respondents agreeing or strongly agreeing that, based on their experience in MREP, improvement in fisheries science is an achievable goal, with 62% agreeing or strongly agreeing that fisheries management can be improved. However, 14% of respondents disagreed or strongly disagreed with this statement as it relates to science, and 16% disagreed or strongly disagreed that management could be improved.

Survey participants were also asked their opinion of several ideas for the future of MREP. There was broad support (86%) from respondents to hold an advanced program for alumni on a specific topic. When asked what topics would interest them for advanced programs, alumni most often recommended a fishery-specific course on a fishery other than groundfish. A majority of the alumni also support the idea of exporting MREP to other parts of the country. Although it has been suggested that MREP consider eliminating the stipend paid to fishermen, eliminating the stipend received the least amount of support from respondents.
Finally, the survey asked alumni to identify where they obtained information on fishery management before and after the program. MREP does not appear to have a strong impact on the ways participants obtain information on fisheries issues. The responses demonstrated that alumni sought information from the same sources before MREP as they did after, with industry newspapers being identified as the most important source of information.

Case Study:

The case study results are a testament that the program has met its objectives, though some with greater success than others. A primary objective of the program is the cultivation of informed leadership within the fishing industry. The number one motivating reason given for involvement in MREP by interviewees was a vested interest in the future of a fishery for the common good or because they have a family member who they would like to see continue the family fishing business, reflecting a high level of commitment to the future of the fishing industry among these alumni. Many interviewees agreed that pursuing the fishery management decision that benefits the industry as a whole is more important than ‘voting’ for your own personal interests. Almost half of those interviewed attended MREP to gain a better understanding of the fisheries management process and the science that the decisions are based on. One participant who was previously involved in management stated that, “I was participating in a process that I didn’t understand.”

A reoccurring theme throughout the interviews was that the knowledge the participant gained through MREP built their confidence and understanding, which facilitated greater involvement in fisheries science and management. While many interviewees mentioned this outcome, it appears as though those who actually increased their involvement were already involved in management, have had success in effecting change, and thus, were more apt to remain involved. Those with no previous experience or negative past experiences with the management process were less likely to participate and utilize the knowledge gained, even
though they may have noted that their capacity to participate had been increased by their participation in MREP.

Overall, the MREP alumni interviewed had a very positive view of the program, even if their outlook on current management schemes and the future of fisheries was negative. The primary outcome identified by MREP alumni is that the program changed their perception regarding challenges inherent to science and management by gaining a sense of the bigger picture and level of complexity in fisheries management. This is a significant achievement when weighed against the perceptions these fishermen had going into the program, which included apprehension and concerns that the organizers were planning to advocate a particular political agenda. When asked about the most critical components of the program, interviewees identified the quality of the presenters and their ability to convey information in an easy-to-understand format, as well as being able to answer questions. Of those alumni that indicated they valued one module over the other, the science module was preferred. There was a continued quest for knowledge among the majority of MREP alumni interviewed, which was apparent in their requests for advanced or specialized programs and refresher courses.

Finally, alumni recognized great value in the MREP model of bringing all the stakeholders to the table to be able to learn each other’s views, which provides all participants with a broader perspective. In addition, networking in between class and after hours facilitated this exchange of information and experiences that wouldn’t have been possible under different circumstances.

[MREP gave me an] “appreciation of the diversity of views and perspectives, and the complexity of fisheries management in the region.”—commercial fisherman

LEARNING FROM THE PAST, LOOKING TO THE FUTURE

Overall, support for the Marine Resource Education Program remains strong within the alumni body and there was a high level of support for the current structure of the program. Many comments touched on the unique value of bringing together diverse interests and the benefit of seeing things from another’s perspective, demonstrating that the program’s key objective of bridging the gap between managers, scientists and fishermen has been achieved. Of course, many challenges remain for the New England fishery stakeholder community.

Despite the successes of MREP as a unique forum for communication across stakeholder groups, and a valuable mechanism for information sharing, the program does not appear to be an effective mechanism to sustain faith in the existing process’s ability to be improved. While there appears to be subset of alumni who are empowered by the program and believe their ability to effect positive change was improved, there is room for improvement. We recognize that circumstances in management and resource health may impact the responses to this question in ways that are beyond the control of this program, but hope that the growing
number of MREP alumni involved in the process will lead to positive changes in science, management, and industry perceptions, over time. The program’s primary challenge in the future may be continuing to attract engaged and motivated participants in the face of ever-changing fisheries regulations and increased operating costs.

MREP will adapt to these challenges by considering the recommendations identified through these interviews and the questionnaire, and will strive to serve the evolving interests of New England’s fishing community in years to come.