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New England Fishery Management Council
EAFM Stakeholder Workshop # 3
Portland, ME

Date: October 4, 2005
Location: Portland Fish Exchange
Attendees: (21) -- John Annala, Portland ME; Curt Rice, Cumberland ME; Peter Hayes, Cumberland ME; Frank Gable, Natick MA; Laura Singer, Portland ME; Shelly Tallack, Portland ME; John Williamson, Kennebunk ME; Madeleine Hall-Arber, Cambridge MA; Eric Nagle, Brunswick ME; Barbara Stevenson, Portland ME; Cyrus Hamlin, Scarborough ME; Craig Pendleton, Saco ME; Pat Kavanagh, Falmouth MA; Tom Bell, Portland ME; Allyson Jordan, Portland ME; Maggie Raymond, Portland ME; Kevin Kirby, Portland ME; Anne Brown, Wells ME; Lew Incze, Cumberland ME; Brian Tarbox, North Yarmouth ME; Mike Love, North Yarmouth ME
Facilitators: Chad Demarest (NEFMC), Kathy Mills (Cornell University)
Start time: 5:30 scheduled, 5:45 actual
End time: 8:30 scheduled, 8:45 actual
Questionnaires: 18 completed on-site, 0 received in mail

I. Purpose and format

The purpose of this workshop was to engage participants in a discussion, and to solicit a wide range of opinions, on topics critical to integrating ecosystem approaches into the Council's stewardship of marine resources and our fisheries.

After introductions, the workshop was divided into two groups: Group A began with 9 people and Group B with 12. Kathy led Group A through Objectives, Indicators and Tools first, while Chad led Group B through Ecosystem Boundaries and Collaborative Management. After approximately 1 hour and 50 minutes, the groups were rotated.

II. Break-out Session: Objectives, Indicators and Tools

Implementing an ecosystem-based approach to fisheries management requires drawing upon stakeholder input to define objectives for both local fisheries and ecosystems. Identifying indicators to track the status of these fisheries and ecosystems, and determining methods or tools for reaching these objectives, follow closely after. Participants were asked to consider changes in fisheries management that may result if ecosystem approaches are utilized, and to identify objectives related to the fishery management process and its outcomes for both fisheries and the ecosystem. From this information, we hoped to gain a sense of the issues and priorities stakeholders want to see addressed through an ecosystem approach, and the results they hope such an approach will achieve. Participants were also asked to identify indicators (including biological, ecological, social, and economic features)

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that can be used to track how well fisheries and the ecosystem are doing based on metrics relevant to our stakeholders. Finally, participants shared their perceptions of the usefulness and acceptability of common current management tools and offered suggestions for other tools that could be adapted under an ecosystem approach.

A. Objectives

Objectives put forward by participants at this meeting focused on the management structure and process, fisheries, ecological considerations, and science. [Note that these categories were developed after the discussion and were not used to guide the session.] Many expressed a need for a flexible and adaptive approach to management that accommodates that uncertainty and complexity of stocks and the ecosystem. At the same time, management needs to be stable enough to allow fishermen and associated industries to function as businesses (e.g., time horizon that allows business planning). Many also expressed a desire for a more holistic approach to management and the incorporation of greater accountability into the management process.

Management structure and process

- Find tools that can be used for management given uncertainty/complexity
 - Utilize anthropology to identify management tools that will achieve desired results
- Adapt management approaches to relevant scales
- More flexibility in management structure
 - Rules and regulations
 - Timing of events (rolling closures need to be better timed to spawning)
 - Tools
- Create planning process (step-by-step progression so can see where heading)
- Picture will change over time
 - Management needs to be flexible and adaptable
 - Treat management as an experiment—hypothesis driven, monitoring and assessment
- Tie management environment and business planning to stock assessment
 - Need higher chance of reaching targets
 - Manage using more risk-averse confidence intervals from assessments
- Governance structures with principles
 - Decisions based on biological, ecological, organizational (ethical) principles
- Accountability
 - Fisheries managed by CEOs, not political appointees
 - Accountability at regional government / administrative level (“if fisheries don’t reach targets on RA’s watch, get new RA”)
- Management rewards for best practices
 - Incentives
 - Environmental management system—3rd party determines if fishing sustainably

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- No “use it or lose it” clause
- National standards for quota programs
 - Prevent lending or ownership consolidation
 - Referendum on new programs (ITQs)
- Account for socio-economic effects of management decisions
- Think holistically—can’t continue working with the parts alone
 - Holistic thinking not encouraged under current laws
 - Some feel it’s not possible under current laws

Fisheries

- Move beyond single species fishing and associated negative impacts
- Greater diversity of opportunities in fishery
 - Diversity in space and time of fishing
 - Diversity in species targeted
 - Diversity necessary for long-term sustainability
- Maintain diversity
 - Vessel size
 - Gear types
 - Fishing community sizes
- Sustainability equals greater economic efficiency
- Balance of small and big boats—issue of scale
- As much access (as many people) as possible within limits of resource base
- Minimize accumulated impacts as more people fish
 - Shift from industrial fishery to low-impact commercial/recreational
- Steadier, less variability, gradual changes
 - Price/availability (consumer)
 - Hard to commit resources or find crew long-term
 - Need long time horizon (5-yr business planning horizon)

Ecological considerations

- Preserve habitat and recognize how it fits into bigger picture
- Address by-catch issue
- Maintain diversity
 - Species targeted
 - Biodiversity
- Minimize negative impacts on ecosystem
 - Appropriate matching of gear to areas

Science

- Understand ecosystem drivers and use for predictions that affect management
 - Understand what is being driven by nature vs. what can actually be managed
- Understand forage base and be sure management decisions protect it
- Work on stock identification (genetic, molecular techniques)

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B. Indicators

Participants put forward a variety of ecological and socio-economic factors that could be used to track the status of fisheries and the marine ecosystem. In some cases (e.g., spatial distribution of species, price), it was recognized that many factors might affect an indicator's behavior, and special attention would need to be devoted to understanding what was actually causing a change in an indicator. In other cases (e.g., biodiversity of 35 years ago), research would be necessary to define the targets for indicators. Participants expressed support for tracking indicators that go beyond current stock assessment-based indicators and that look at the ecosystem and fisheries more broadly.

Ecological

- Water quality
- Habitat
 - Indicators specific to each habitat type
- Spatial distribution
 - Why aren't fish coming into nearshore anymore?
 - Spatial distribution may change with temperature or climate change
- Size composition of populations
- Recruitment and early life history indices
- Demographic bottlenecks in populations
 - Is the problem at the egg stage, or is natural mortality or pollution killing the young?
- Magnitude of variability in populations
- Diversity of species
- Amount of by-catch
- Diversity of landings
- Return to biodiversity of 35 yrs ago
 - Birds
 - Whales
 - Fish

Socio-economic

- New boat construction
 - People are broke now; new construction would show economic health if it increases.
- Price (market consolidation)
 - Recognition that price is influenced by many factors
- Consistency of landings
 - Total landings with special eye on individual species
- Amount of waterfront access
- Number of youth entering fishery
- Availability and participation in apprenticeship program
- Potential economic reward will influence entry to fishery
- Quality of life

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- Comfort of boat
- Feeling that fishermen are in charge of their own destiny
- Time at home
- Maintenance and safety of vessels
- Size of bureaucracy
- Grassroots participation in management
 - Recognition that participation in management may be difficult to interpret...frustration with management may spur involvement or may cause people to throw up their hands; good management may reduce participation as people feel satisfied; simpler management may require less participation.
- Availability of retirement benefits

C. Tools

Participants in this session recognized that the usefulness and acceptability of various management tools depends on how they are implemented. Hard TACs were disliked, technical tools were more favorable, and protected areas received a mixed response. Participants encouraged the implementation of professional certification and incentive programs; they felt such programs would instill a stewardship ethic and encourage smarter choices among those who are fishing. Some also wanted to see new models (e.g., multi-species models) and technologies (e.g., VMS) more widely used to benefit fisheries management.

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Management tools	Useful?	Acceptable?
Effort controls	Not worked well for lobster trap limits; traps not easily enforceable DAS easily enforceable—no discard problems, no high-grading problems	Acceptable relative to hard TACs
Output controls	Hard TACs are in essence single species tools; opposite of EAFM Leads to irrationality, discards	How hard TACs are managed will determine if useful and acceptable. Hard TACs will lead to the demise of all of us.
Technical tools	Prevent juvenile captures Prevent by-catch Protect habitat Protects small fish Mesh regulations protect non-target forage species (squid, herring, etc).	Like these tools selectively For vessel regs, it depends on rules whether these make sense (DAS—yes, in general; hard TACs—not really) Brings in fishermen’s talents; allows them to be innovative Allows people to invest in conservation Better way to achieve goal without something more onerous
Protected areas	Too big to accomplish goals Maybe useful if clear goal Spawning closures have potential to work but not flexible enough Not properly utilized now Maintain diversity, population structure, and trophic structure	Too hard for fisheries Some will be necessary for EAFM but must be sure we know what we want to achieve and how much area is needed Risk of being shut out is too great If large enough (in area or networks), they <u>alone</u> can prevent overfishing Simple management approach that allows less reliance on other regulations Need to protect safety at sea—don’t encourage movement further offshore

Other tools potential EAFM tools that were discussed by this group included:

- Multi-species models that include predator-prey interactions
- Professional certification programs with an apprenticeship and continuing education requirements.
 - Foster community sustainability
 - Establish professional standards and practices
 - Instill a conservation ethic and knowledge of how to meet goals
 - Emphasize safety and preparedness training
 - Provide business training

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- Reward or incentive programs
 - Encourage adherence to rules
 - Encourage good behavior
 - Positive focus
- Accessible educational tools for fishermen and managers
 - Cooperative research has been helpful
 - Fishermen and scientists learn from one another and understand each other's process and knowledge better
- Tools that allow feedback to industry (e.g., VMS)
 - Link industry to management
 - Consider broader information technologies and potential uses
- Individual transferable quotas
 - Basing IQ on history doesn't encourage or recognize conservation efforts (one person liked idea of basing quota on history)
 - Unfair because people who fish when stocks are low get long-term benefits
 - Not good for stocks—lead to decimation of fish
 - Could be good for reducing race to fish

III. Break-out Session: Ecosystem Boundaries and Collaborative Management

One of the foundational concepts underlying Ecosystem Approaches to Management is that different geographically-defined areas have different biological production capacities, and that it may be advantageous to scale science and management to these areas. The first step, obviously, is to define the areas. The group was asked the question “what makes a particular area unique.” The answers in many cases may be predictable, such as “temperature,” “salinity,” “sediment,” etc., but the question was designed to get the participants thinking in terms of spatially-differentiated geographical areas. It was especially interesting to note when novel indicators were explored, and to what degree participants felt that actions of humans (fishing and non-fishing) should be factored into the equation.

Input was then solicited on the appropriate geographic scale for fisheries management, the link between ‘scientifically-defined ecosystems’ and potential ‘management areas,’ and any governance issues that may arise as a result of spatially-defined ecosystems.

Terrestrial and, to some extent, international literature on ecosystems approaches to management frequently target community-based (or co-management, collaborative management) principals as a primary driver for ecosystems approaches to management. The group was asked to comment on the perceived advantages of collaborative management, such as an increased sense of stewardship and the potential to see gains from personal conservation-based behaviors, and how these benefits may dovetail with what might be considered a highly geographically mobile fishing fleet in New England. Does the capacity for local management exist? Is there a way to maintain geographic flexibility while achieving the perceived benefits of community-based management? Are communities necessarily geographic, or can they take on other units?

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A. Ecosystem Boundaries

Responses by participants are categorized (below) into one of three themes: delineation, governance, and scale. These themes emerged from discussions during the workshop and they were not presented to participants in this structured format.

Participants generated what have now become fairly standard ecological considerations rather quickly, but also highlighted the idea of energy flows as a method for delineating local ecosystem boundaries. As it was explained, this may involve determining the primary energetics of an area and drawing boundaries as those energies wane or new causes of energy flow emerge. This was the first time this concept was discussed at a workshop. Notably, the only reference to the relationship between people and the ecosystem came in the form of a preference for using existing management areas in delineating local ecosystems.

Participants hinted at a preference for divorcing governance issues from the scientific basis for ecologically-derived local ecosystems. A strong preference for maintaining flexibility was expressed by several participants, who were opposed to spatially-constrained management. Several participants spoke in favor of an inshore/offshore distinction, while others were passionately opposed to such an idea.

The most vocal participants expressed a strong desire to continue with the regional nature of management, and not to localize objectives or tools any further.

Delineation

- Biology found in an area
- Existing management areas
- Energy flows
- Topography
- Species characteristics
- Primary productivity
- Species assemblages
- Depth, bathymetry

Governance

- Fish don't follow political boundaries
- We must consider all impacts on the ecosystem (including especially those outside traditional fisheries realms) otherwise there is no reason to proceed
- Must account for impacts across areas
- Ecosystem boundaries and fishery management areas may differ
- Boundaries must be drawn for the benefit of ecosystem understanding
- May be better to keep separate boundaries for ecology and management
- Flexibility is important
- There is a need for sub-dividing the New England area, recognizing that the result will likely be imperfect
- Don't try to link management to these areas

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Scale

- Broad scale important
- Must maintain flexibility
- Don't draw lines in the ocean – large (regional) scale preferred

B. Collaborative Management

Participants pointed out the collaborative and somewhat locally-based nature of the MFCMA. Hesitancy regarding the applicability of ecologically-derived ecosystems to community-based management was expressed. Several participants discussed the idea that there may be objectives for fisheries management that supersede the objectives of communities and fisherman. The example of providing reasonably-priced quality seafood to the population of Chicago was used. Several participants noted that gear-type and fishing-style definitions of community may be sufficient to generate increased involvement in governance, if the governance structure would allow it. Community quotas were discussed as a way of engendering this participation.

- Ecosystem scale is too large for community-based management
- Council process is already somewhat spatially-based and local
- Approaches may be different for different species/fisheries
- There is an increasing capacity for cooperative science to support ecosystems approaches to management
- We need to think about/develop a reward system for individual acts of conservation
- Community quotas, broadly defined, may be a good idea
- Methods for getting more local and community involvement in management are worth thinking about
- There should be an established process for community objectives
- Council process is already collaborative, although the community is very broadly defined
- An increased involvement by communities may not be easier
- Appropriateness of “bottom-up” approaches may vary with the nature of various fisheries
- Geographic or other versions of exclusivity may be problematic
- There may be overarching objectives that supersede local objectives
- Allocation issues are not best handled at the community level
- Geographically restrictive definitions of ‘communities’ may not be possible
- Unless the objective is for social welfare, communities are not the best decision makers
- There may be a strong endorsement in this region (Portland area) for co-management vice community-based management
- Must be careful of exclusivity
- Must recognize stakeholder roles in the process

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IV. Summary statements

Both groups were reassembled in plenary and given an opportunity to provide any comments or feedback on any issues pertinent to ecosystem approaches to fisheries management. Here is what they felt was most important:

- More steadiness in fisheries management
- Ecosystem management units do not have to be the same as fishery management units
- Avoid increases in regulatory by-catch
- Define what want to accomplish
 - Create picture of what this approach has to do with the fish
 - There has been a gross neglect of looking and people and this could be a good attempt to turn that neglect around.
- Use this approach to create more opportunities like this
 - Foster joint, collaborative stakeholder input
- Can't manage every species for MSY...EAFM is a way of taking this reality into account