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### New England Fishery Management Council EAFM Stakeholder Workshop #10 Narragansett, RI

**Date:** November 3, 2005  
**Location:** Village Inn  
**Attendees:** (10) – Jake Dykstra, Wakefield RI; Timothy Hennessey, Narragansett RI; Kate Simmons, Camden ME; James O'Malley, Narragansett RI; Frank Gable, Natick MA; Frank Blount, Peacedale RI; Kiersten Curti, Narragansett RI; Jeremy Collie, Narragansett RI; Geir Monsen, North Kingston RI; Richard Allen, Wakefield RI; Nick Battista, Bristol RI  
**Facilitators:** Chad Demarest (NEFSC), Kathy Mills (Cornell University)  
**Start time:** 5:30 scheduled, 5:35 actual  
**End time:** 8:30 scheduled, 8:30 actual  
**Questionnaires:** 4 completed on-site, 0 received in mail

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#### 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.

Due to the number of participants the workshop was run in one group. Kathy began by discussing Objectives, Indicators and Tools, followed by Chad discussing Ecosystem Boundaries and Collaborative Management.

#### 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) 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.

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### *A. Objectives*

Objectives stated by participants in this session fell into several major categories: management structure and process, fisheries, biological and ecological considerations, and science. [Note that categories were developed after the discussion and were not used to guide the session.] There was strong support among participants for use rights-based approaches to management that could be achieved by using economic instruments and frameworks to prioritize uses of the marine ecosystem. There was also a feeling that the ecosystem and associated human activities should be allowed to evolve through their own course and that management should be designed to accommodate, not attempt to restrict, these dynamics.

#### **Management Structure and Process**

- Less emphasis on management of fishermen
- Flexibility
- Establish rational basis for making trade-offs
  - Area all species equally deserving of same management and protection?
  - Define accepted measurement for trading off between choices
  - Include all uses of marine ecosystem
- Adaptive management
- Establish integrated governance system (across sectors, across existing laws)
- Improve enforcement
- Develop system to internalize costs and benefits
- Keep cost of management less than total benefits
- Let things take their course
  - Do not pre-determine a confining long-term outlook

#### **Fisheries**

- No-discard fisheries
- Maintain economic communities around fishing
  - Consider coastal supply-side access
- Maintain diversity across locality
  - Diversity should not be designed (do not pre-determine what fisheries and fleets will look like)

#### **Biological and ecological considerations**

- Prevent spread of invasive species
- Develop healthy stocks
- Maintain biodiversity

#### **Science**

- Good science
- Diversity of science
- Truly independent science
- Long-term monitoring

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- Single species advice is antithesis of EAFM

### ***B. Indicators***

Indicators put forward by the group included biological / ecological and socio-economic factors that were relevant for tracking the status fisheries and the ecosystem as well as factors that were pertinent to tracking the costs of and participation in fisheries management. [Note that categories for the indicators were developed after the group discussion.] The group of participants focused much of the discussion on ways of using economic measures to indicate preferences and to track the overall costs of management.

#### **Biological / ecological**

- Area [spatial] distribution of fish
- Species richness
- Pollutants
- pH
- Temperature
- Climate change
- Size distribution of stock
- Age or size at maturity
- Proportion of large females
- Size or length at age
- Seasonal migration patterns
- Predator-prey ratio
- Community composition
- Fish health/condition
  - Shell hardness in lobsters
  - Lesions in fish

#### **Socio-economic**

- CPUE
- Prices
- Costs : earnings
- Transaction costs
- Willingness to pay as indicator of various user groups' preferences for use of marine resources
- Participation in fisheries
  - Employment (but recognize that fisheries employment may not mean higher total employment in community)
  - Number of recreational fishermen

#### **Management**

- Cost of management (measured as public value produced by management)

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- Number of angry people at meetings
- Ratio of users to other stakeholders involved in decisions
- Public participation in key issues (e.g., “Are dogfish a cancerous growth?”)

**C. Tools**

Participants recognized some useful benefits of many currently-utilized management tools, including effort controls, technical tools, and protected areas. However, they also recognized that certain currently-used tools are antithetical to ecosystem-based management approaches if they encourage targeting of individual species and maintain a single species perspective. Encouraging specialized, selective fisheries may have negative ecosystem consequences. Instead of some current fishery management tools, the group expressed a desire to see an incentive system established as a central management tool. This system would confer rights to resources and increase efficiency by avoiding waste of time, money, and fuel in how people harvest those resources. To know what tools might be appropriate for management, the participants also expressed a need for independent science that is conducted outside of the policy umbrella and is fully adversarial (e.g., competed).

<b>Management tools</b>	<b>Useful for?</b>	<b>Acceptability?</b>
Effort controls (DAS, trip limits, trap limits)	In principle, could be good for ecosystem if effort (gear) increases ecosystem impact; Limited entry is not a useful tool in and of itself since there are many components of effort.	Appealing—not as restrictive; self adjusting Difficult to make work Very difficult in multi-spp fisheries Provide troublesome incentives to fishermen
Output controls (quotas, size limits)	Very useful Individual partial property rights should be used (ownership of portion of stock), not IQs Provide incentives to conserve stock itself Secondary effect of quotas is by-catch	
Technical tools (gear/vessel regulations)	Decrease by-catch Downside of selective fishing—may require more effort to remove same species (e.g., scallopers may specialize, then someone else harvests yellowtail)	Becoming more selective is the antithesis of EAFM Gill nets change migration patterns Mid-water trawls break up schools (unnatural, predators not finding prey) Fishermen choose different boats for different reasons (e.g., safety, comfort, crew size), not always to catch

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		more fish—methods other than boat specifications should be employed to control catch
Protected areas (spawning/year-round closures)	Protected areas have limited ability as fishery management tool (e.g., if purpose is to increase fishing yield) For other purposes (e.g., biodiversity, research), protected areas more useful	Acceptable in ecosystem context if used for biodiversity protection and research Management should encourage fishing on spawning stocks to better target individual species.

**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?

**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.

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Participants found a few novel boundary delineation criteria, such as poverty levels and fishing fleet distributions. Many encouraged an awareness of change—that is, changing environmental variables and changing human communities. The Governance theme (see below) produced very interesting discussions on strategies for approaching the use of indicators and the purposes for delineating local ecosystem boundaries. Two modes of thought emerged from participants relative to the Scale theme. One, that the scale of management should be expanded to accommodate the entire large marine ecosystem from North Carolina to Nova Scotia. The second saw promise in smaller areas with limited jurisdictional capabilities, similar to existing land-based governance structures.

### Delineation

- Species mix
- Topography
- Boundary currents
- Temperature regimes
- Poverty levels
- Existing jurisdictional boundaries
- Fishing fleet distributions

### Governance

- Must prioritize data/indicators:
  - Things we can and should influence
  - Things we should understand but can't influence
  - Things that are relatively unimportant
- Boundaries must be adaptive to:
  - Climate change and other events
  - Changing geological conditions
- Must include some ability to look/plan ahead
- These areas may need to focus on ecosystem protection vice management
- Place-based management may fail to account for cross-boundary impacts

### Scale

- Consider hierarchy of scales
  - Accounting systems that accommodate local => national scales
- There are likely to be distinct interlocking, overlapping and competing species-specific ecosystems within larger regional ecosystem boundaries
  - Like managing bumper cars
- Larger scale may be better: NE Council should be aligned with the Northeast US Continental Shelf Large Marine Ecosystem (which extends from Cape Hatteras to Cape Sable).
  - There is extensive fishery and species overlap between the two Councils
  - Should be only one Council

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### ***B. Collaborative Management***

The notion of collaborative management did not generate as much discussion as at other workshops; rather, it quickly mutated into a discussion on management tools (individual rights allocations) and incentives (changes to current management, which was felt to provide a perverse incentive structure). While somewhat off-topic, these discussions were interesting and provided a solid basis for ecosystem-based management governance discussions.

Several participants were concerned with allocation—what units might be allocated, how those allocations may take place, and what mechanisms might exist for reconciliation. Viewed through an ecosystem approach lens, such decisions may be made less contentious if mechanisms exist that encourage stakeholders to become more involved in initial discussions.

- Rights-based tenure allocation
  - Can provide standing on non-fishing impacts issues
- Try to identify interests and allocate tenure to those interests
  - Ensure structure exists for reconciliation
- Must provide an incentive structure that accommodates ecosystem health and fishery productivity
  - Radical change from current incentive structures

### **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:

- Secure marine tenure
- Depoliticized science
- Rights-based may not be a panacea
  - Where conflicts arise, problems may be exacerbated rather than solved
- Must get at the incentive system
  - Get away from current tools and start with a new system of incentives
  - May possibly, but not necessarily, be rights-based
- Federal fisheries management is a crumbling empire in its last pathetic days
- Management currently costs more than the fishery is worth
- Council may not be the best body to make allocation decisions
- Changes will need buy-in from everyone, or at least a majority of stakeholders
- Separate science from management at the agency level
- Get more fisherman involved with/in control of the science

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