

Fisheries management in New England

Advancing an ecosystem-
based approach

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An overview



-  **What we do**
-  **Challenges**
-  **Impacts**
-  **Ecosystem Approaches**

What we do

Eight fisheries

 Groundfish, Whiting, Scallops,
Monkfish, Red Crab, Herring,
Skates, Atlantic Salmon, Dogfish

 21 managed species, 32 stocks

 EFH


 MFCMA, MMPA, ESA, NEPA,
E.O.'s, etc.

What we do

22-member Council

 18 voting: five states, NOAA, twelve at-large

 4 non-voting: ASMFC, USCG, US F&W, DOS

 Forward fishery management plans to DOC (NOAA) for approval

 Public process

 Advisory in nature

Challenges



Rebuilding depressed stocks



Obtaining optimum yield



Balancing societal objectives



**Regulatory compliance: NEPA,
MMPA, etc.**



Challenges



Adjacent jurisdictions



State-waters fisheries



Canadian fisheries



Shared stocks



Resource Sharing Agreement



Non-fishing impacts



Pollution



Marine resource uses

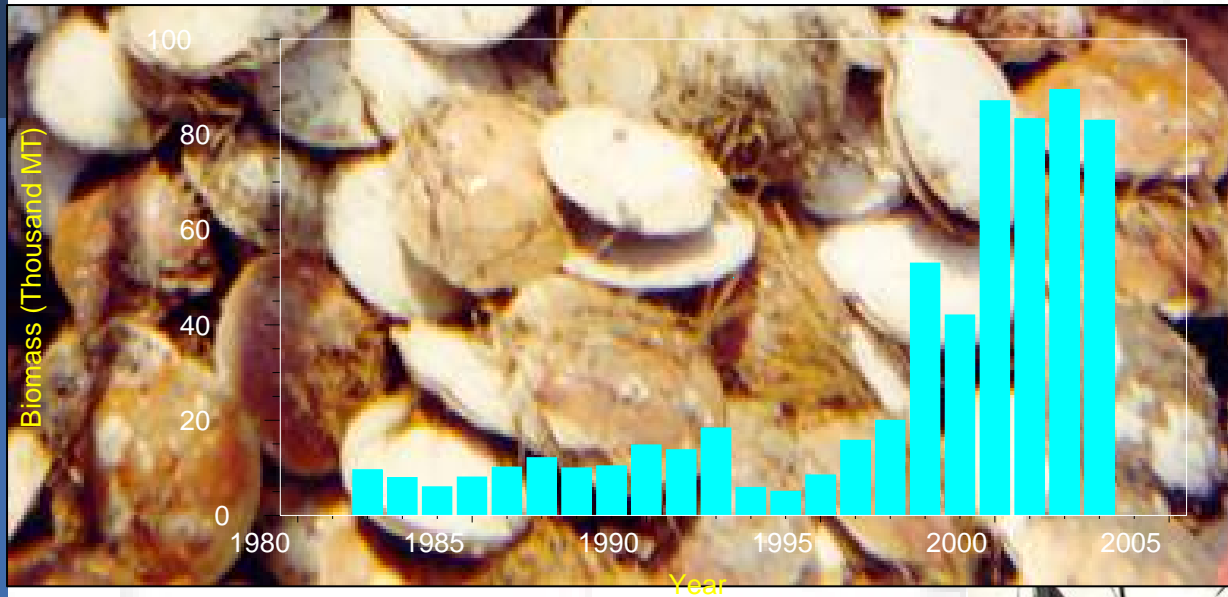


LNG, wind, oil & gas



Shipping, military, etc.

Impacts



Ecosystems approaches








What is an ecosystem approach to management?

An ecosystem approach to management is a geographically specified and adaptive process which (a) takes account of ecosystem knowledge and uncertainties, (b) considers multiple external influences, and (c) strives to balance diverse societal objectives

NOAA Ecosystems Principals Advisory Panel (1999)

Ecosystems approaches







Principles

-  Objectives are a matter of societal choice
-  Management should be decentralized to lowest possible level –*subsidiarity*–
-  Consider effects on adjacent ecosystems
-  Need to manage in an economic context, focusing on:
 -  Reducing market distortions that adversely affect ecosystem structure, function and biodiversity
 -  Align incentives to promote conservation and sustainable use
 -  Internalize costs and benefits within a given ecosystem



Ecosystem approaches

Principles (con't)

-  Maintaining ecosystem services (structure and function) should be a primary objective
-  Focus on appropriate spatial and temporal scales
-  Set long-term objectives for management
-  Recognize that change is inevitable
-  Consider all forms of relevant information, including indigenous and local knowledge
-  Seek to involve all relevant sectors of society and scientific disciplines

Ecosystems approaches

The Council's Pilot Project:



Accounting for non-fishing impacts:



Other marine resource uses



Coastal pollution



Improving fisheries management:



Workshops







Survey

Other marine resource uses

A coordinated approach to marine resource management in federal waters would require cooperation with no fewer than 14 Federal agencies.

This does not account for:

-  **Military**
-  **Commercial shipping**
-  **Sand mining/dredging**
-  **State activities**

Marine pollution



Pollution sites:



Sediment contamination



Eutrophication



Pollution effects:



Chemical contamination: *larval mortality, reproduction and development impairments, and disease, lesions and parasites*



Nutrient overenrichment: *mortality and community change, reproduction and development*







Workshops/ survey

Ecosystems approaches may offer improvements by providing:

1. Stronger focus on local area
 - a) Productivity
 - b) Management objectives
 - c) Governance
 - d) Use of management tools
2. Mechanisms for addressing inter- and intra-fishery trade-offs
3. Increased emphasis on non-fishing impacts (esp. pollution)

Ecosystems approaches









How might management change?

-  Shift from species-based to area-based management
-  Explicitly specified spatially-based objectives with a focus on stakeholder input
-  Non-fishing impacts incorporated into both science and management advice
-  Broader metrics for success, including indicators of ecosystem structure and function
-  Longer time horizons, less individual actions
-  Simpler regulatory structure
 -  more flexibility for fisherman
 -  greater margin of error for regulatory effectiveness



Potential future directions

Essential questions:

-  How do we define an ecosystem approach?
-  How do we maximize involvement of our stakeholders?
-  What is the appropriate spatial scale?
 -  Management vs. monitoring
 -  Objectives, indicators and tools
-  What are appropriate management units?
-  How do we make appropriate, objective decisions on inter- and intra-fishery tradeoffs
-  How do we improve accounting for cross-boundary and cross-jurisdiction impacts?



Potential future directions



**Establish a standing Ecosystems
Committee**



Initiate a Fishery Ecosystem Plan



**Increase involvement in non-
fishing activities impacting
marine environment**



www.nefmc.org/ecosystems