

New Approaches for Prioritizing, Implementing, and Transitioning Regional Coastal Ecosystem Research in Support of Regional Ecosystem Management



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Ecosystem Research and Coastal Management: Making the
Connection at the Regional Scale – May 18-19, 2009



Overview of Presentation

- Why do we need to look at these topics?
- What are the three phases we've used to structure this discussion?
- What kind of changes have we been contemplating and implementing?
 - Setting Research Priorities
 - Research Oversight and Guidance
 - Transition of Research to Mgmt. Application



Why do we need to look at these topics?

(1 of 3)

- **Regional management of our coastal issues is an imperative and sound, actionable science (i.e. integrative ecosystem predictions of key variables with known certainty) at this scale is needed**
- **Scientists have been very good at raising the awareness of regional coastal issues and their ecosystem connections but science is falling short of actionable information in many cases**

Why do we need to look at these topics?

(2 of 3)

- Some management initiatives are moving to regional scale but are struggling because:
 - fragmented management of ecosystem components
 - limited jurisdictional boundaries
 - old “near-field” authorities/regulations
 - lack of quantitative ecosystem goals
 - lack of political will
 - “hands off”, unfocused, or no approach to guiding science at this scale

Why do we need to look at these topics?

(3 of 3)

- #1 Reason: Our coastal ecosystems are rapidly degrading; restoration and protection gets harder ever day
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- Can strong integrative and predictive science coupled with strong management leadership overcome obstacles to managing more effectively at the regional scale?
 - I believe it can, and sound actionable science at the regional scale is necessary to enable leadership

Three Phases of Regional Research

- Setting Research Priorities
- Research Oversight and Guidance
- Transition of Research to Management Application



P1: Setting Research Priorities

(Direction CSCOR already moving toward - 1 of 4)

Binning of regional scale issues in traditional mgmt. categories by region and dissection of research questions from existing reports (NE example)

Issue/Sub-issue	North East	Issue	Research Question
Habitat Change/Loss			
-Coastal (Wetlands, Beach, etc)	x	Sea Level Rise	Effects of sea level rise on wetland communities
-Benthic (Corals, SAV, Oyster, etc)	x	SAV/Oyster degredation	Critical light levels necessary for successful recruitment and survival
-Water Column (HABs, Hypoxia)	x	HABs- New England Hypoxia – Chesapeake Bay	HABs- Impact of seed bed distribution and circulation patterns Hypoxia- Impact of increased nutrients
Water Quality/Public Health			
-Contact Recreation	x	Bacteria, pathogens	Impacts of increased nutrients and human population
-Drinking Water			
-Seafood Consumption	x	Toxin in bivalves – New England	Role of toxin uptake and trophic transfer
Living Marine Resources			
-Fisheries Regulation (Rec, Comm)	x	Georges Bank fisheries (cod, haddock)	Impact of harvest levels and climate change on population dynamics
-Protected Species	x	Whales	Impact of HABs on whale population dynamics
-Food Web Alteration	x	Predator/prey dynamics	Effects of alteration of population levels on predator / pray species

P1: Setting Research Priorities

(Direction CSCOR already moving toward - 2 of 4)

Conceptual Flow of Mgmt. Information Needs Analysis Toward Ecosystem Approaches

3-Step Iterative Process of Analysis for Gaps and Opportunities

Management Input-
Issue Binning in
Traditional
Categories

Issue/Sub-issue	North East	Issue	Research Question
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Re-Engagement of Management
Community on Ecosystem
Approaches and Required
Products and Services

Dissection and
Assembly of Research
Questions to Reflect
Ecosystem Approach

P1: Setting Research Priorities

(Direction CSCOR already moving toward - 3 of 4)

Criteria for Selecting from Universe of Regional Management Needs

- Importance of issue to coastal management at the regional scale
- “Willingness” of the management community to act
- Gap between existing research and level of understanding needed to support mgmt. decisions
- Degree to which science issues and management needs are sufficiently articulated, including needed partnerships

P1: Setting Research Priorities

(Direction CSCOR already moving toward - 4 of 4)

Criteria for Selecting from Universe of Regional Management Needs (cont.)

- Research already being pursued
- Potential to address multiple needs by pursuing an ecosystem approach
- Niche of your particular office/ responsibility/authority



P2: Research Oversight and Guidance

(Direction CSCOR already moving toward - 1 of 1)

Concepts and tools to employ:

- Strong P1 establishes issues, users, products in call for proposals
- Insure that outputs (products), outcomes, milestones and users are requirements of proposals and review process
- Build on P1 user community and engage in a more structured and iterative manner from beginning to end
- Establish early in project the pathways and timing of major mgmt. decisions that depend upon findings
- Build in periodic reviews and flexibility for mid-course corrections (from mgmt. as well as science perspective)

Transition of Research to Mgmt. Application

(Direction CSCOR already moving toward - 1 of 1)

Concepts and tools to employ:

- Strong P2 develops actionable information (i.e. integrative ecosystem predictions of key variables with known certainty) for management decisionmaking
- Transition may require additional scientific validation by expert panels
- Transition may require additional synthesis of existing knowledge beyond specific research project
- Transition may require outreach to mgmt. community, policy makers and stakeholders
- Additional knowledge gaps may be identified to cycle back into another iteration of P1

Conclusion

We Need.... New Approaches for Prioritizing, Implementing, and Transitioning Regional Coastal Ecosystem Research in Support of Regional Ecosystem Management

There are large opportunities to improve these processes and thus improve coastal mgmt.

New approaches will come at some cost

Help us to identify and implement these changes starting today....

