



Battelle

The Business of Innovation

DEVELOPING A COORDINATED REGIONAL COASTAL MONITORING PROGRAM

THE ATLANTIC NORTHEAST COASTAL MONITORING SUMMIT

Carlton D. Hunt, Barry Burgan, David Keeley,
Jan Smith, Christian Krahforst, and
Lynn McLeod

NWQMC Conference
May 18, 2004
Chattanooga , TN

Why Coordinated Regional Monitoring?



- Because regional level environmental information is gaining in visibility and importance
- To inform on progress in coastal protection and restoration
- To ensure monitoring collects the correct information
- To address gaps between monitoring and management

Concept and Implementation Plan

Concept: Develop a coordinated regional approach to monitoring in the northeast Atlantic region

- Atlantic Ocean from New York to the Bay of Fundy, Canada

Implementation Plan:

1. Build a Coordination Framework
2. Identify Regionally Important Questions and Indicators
3. Implement the Framework to Answer the Identified Questions (TBD)

Activities Completed

- Conducted two 3-day workshops
 - Developed background reading material, lessons learned, white papers, an inventory of regional monitoring programs, web based survey tool
- December 2002 workshop focused on
 - Form of a regional monitoring framework
 - Key issues that should be addressed regionally
 - Key questions that must be answered regionally
- January 2004 focused on
 - Refining key questions in six focus areas
 - Developing regional environmental questions and indicators for the focus areas
 - Gaining feedback from senior environmental managers at federal and state/provincial and concerned environmental groups

Key Elements of Success

- **Find Champions**

Champions



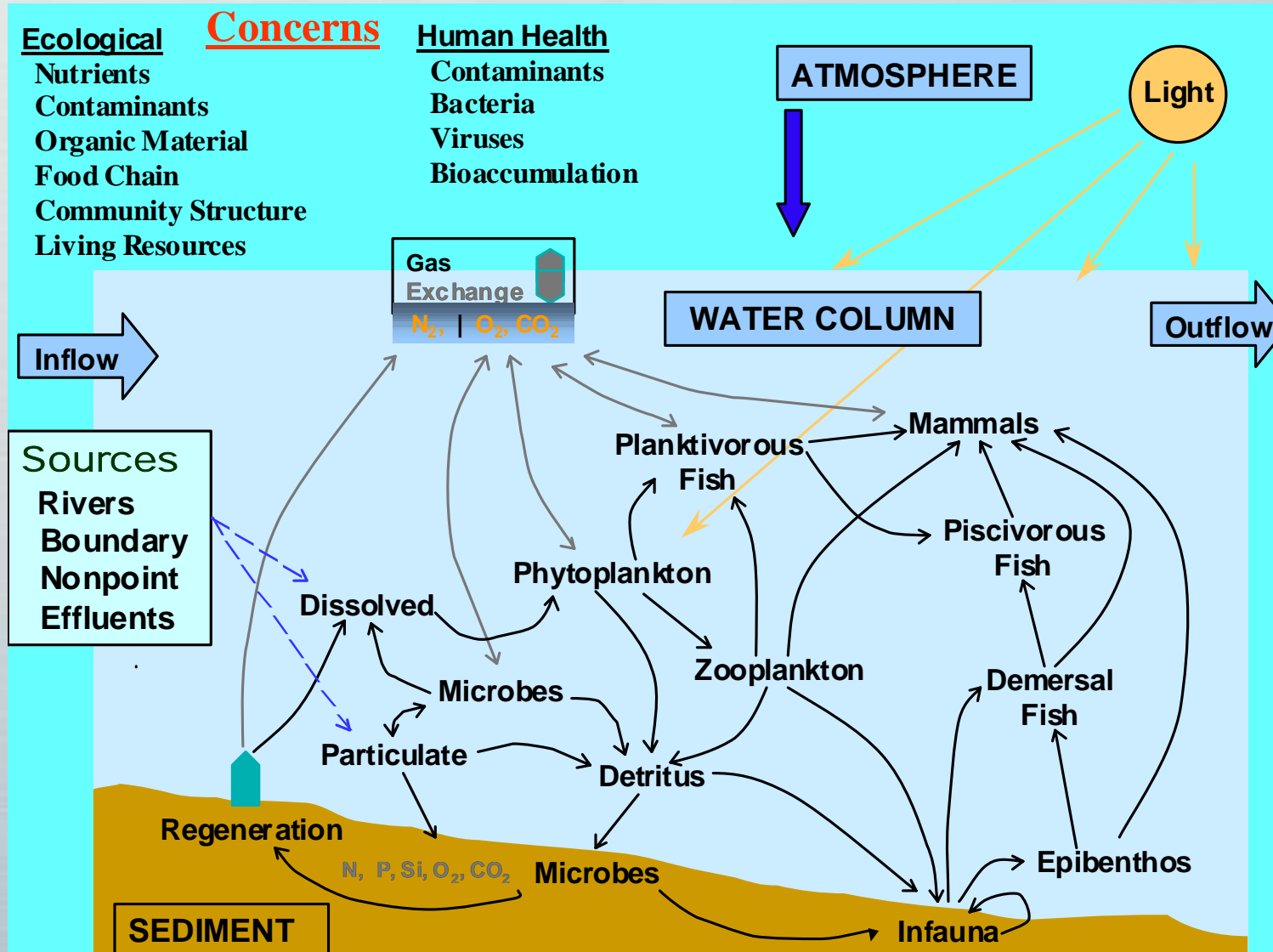
**Gulf of Maine
Council on the
Marine Environment**



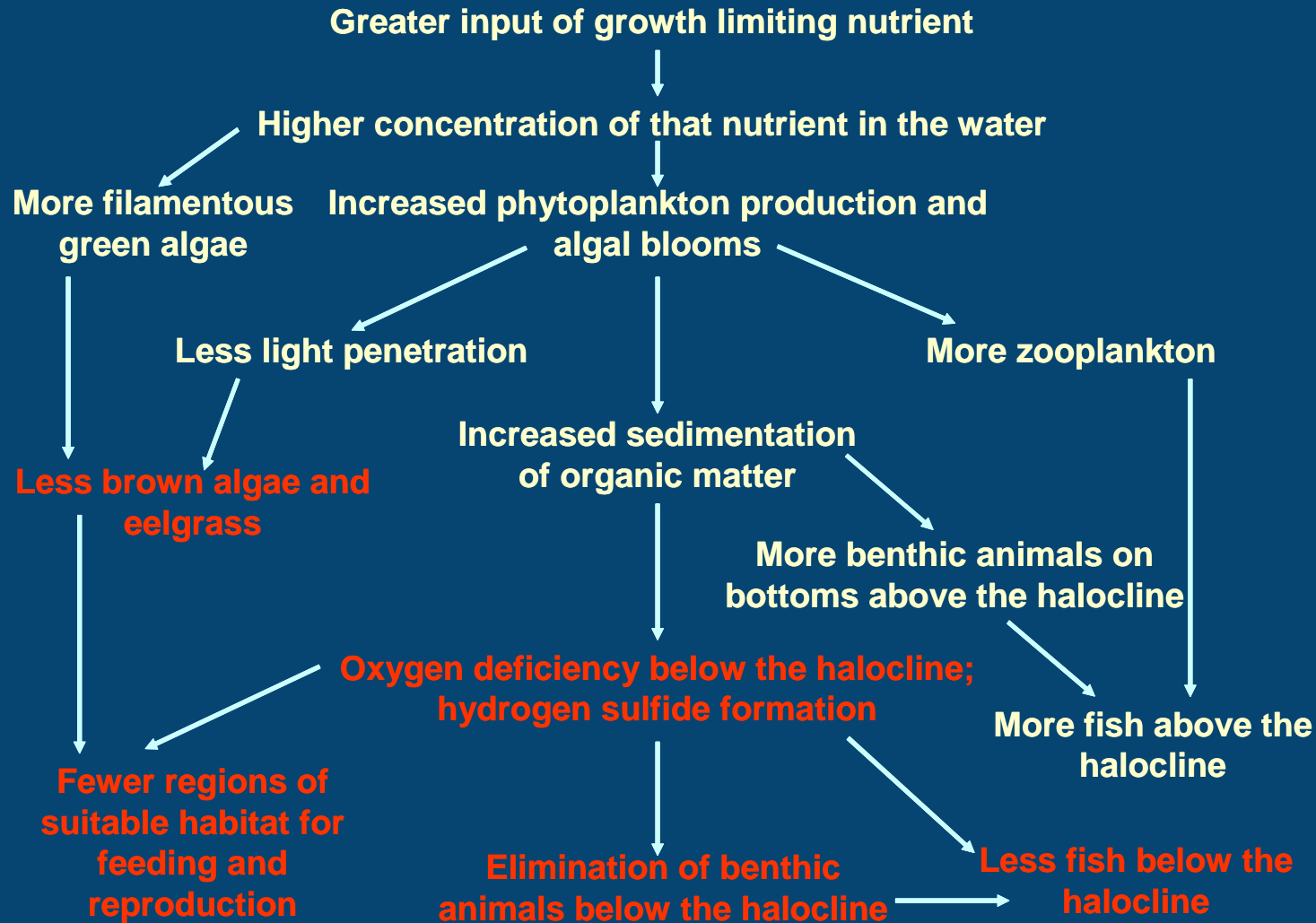
Key Elements of Success

- Find Champions
- **Develop Focused Steering Committee**
 - Set Goals and Desired Outcomes
 - Identify and Focus on Key Issue Areas
 - Develop Conceptual Ecological Models

Conceptualizing the system – Multiple Pressure/Response



Conceptualizing the system – Specific Pressure/Response



(Source: N. Rabalais, LUMCON)

Key Elements of Success

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 - Identify and Focus on Key Issue Areas
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 - **Draft Straw Questions and Indicators**

Straw Questions and Indicators

III. Eutrophication

Management questions	Indicator Categories
a) What is the extent of eutrophication in the region? b) How successful are the controls? c) Where is eutrophication manifested? d) What is the rate of eutrophication in the region? e) How does eutrophication impinging on human use? f) How is eutrophication changing the regions ecosystem? g) Are there hot spots with in the region? h) What are the sources of high nutrient levels (land, offshore current, effluent, etc.?)	Dissolved oxygen Harmful algal blooms Chlorophyll A Biomass Productivity/Respiration Dominant plankton species System metabolism Water clarity Sediment anoxia
Potential Indicators	
Dissolved oxygen levels; DO Saturation Chlorophyll concentrations Nutrient concentrations --particulate organic nitrogen, particulate organic carbon, TDN, ammonium, nitrate/nitrite, total dissolved phosphorous, phosphate/ortho-phosphate, silicate, total S Dinoflagellate cysts, diatoms, and foraminifera Seagrass Nutrient Pollution Index Trends in estuarine particulate concentrations Nutrient and Sediment Loads Nitrogen and Phosphorous Trends in Rivers Entering Bays: Monitored Loads Flow Nitrogen Phosphorous Discharges and Population	

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 - Set Goals and Desired Outcomes
 - Identify and Focus on Key Issue Areas
 - Develop Conceptual Ecological Models
 - Draft Straw Questions and Indicators
- **Convene Experts to Discuss**
 - Be Inclusive
- **Develop Synthesis Materials**
- **Gain Manager Feedback Early**
- **Follow Through**

Follow Through

- Continued involvement of management and regulator community
- Data access (Data sharing MOU's in development)
- Creation of synthesis products
- Integration of lessons learned
- Continued communication
- Guidance of scientific community on monitoring and research needs

Conclusion

- The process followed for these workshops provides a model for developing regional information that support environmental policy managers and the growing consensus on the need for integration of coastal information at the national scale.