

Maryland Sea Grant's
Thresholds Session at
the Chesapeake
Research Consortium's
Ecosystem-Based
Management Meeting

<http://www.chesapeakemeetings.com/EBM/>

Monday, March 23, 2009
2:00-5:30 pm

Baltimore Inner Harbor Marriott
110 S. Eutaw Street
Baltimore, Maryland 21201

Lessons from History: How Could Long-term Perspectives Inform the Chesapeake Bay's Response to Restoration Efforts?

Background

Despite thirty years of significant public investment, the ambitious management effort in the Chesapeake Bay has not reached its goals for nutrient reduction or ecological recovery. As restoration efforts continue to push nutrient concentrations toward target levels, scientists and managers will need to anticipate a range of possible ecological responses. They will need to be poised to modify management approaches to direct change towards desirable outcomes as the ecosystem begins to respond.

Today, the Chesapeake Bay appears stuck in an ecological rut — a state that is undesirable and difficult to alter. Accumulated changes in the Chesapeake watershed over time — loss of forest buffers, increased nutrient loading due to fertilizer use and increased human population, decreased capacity for oyster filtration, changing food web interactions, rapid urban development of the landscape, and hypoxic conditions — caused the ecosystem to cross a threshold from a clear water, benthic-driven estuary to one more dominated by water column microbial processes. One driving question behind restoration efforts is whether targeted management can push the Bay to cross another threshold — back to a clear water state that more closely resembles the Bay of the past.

Prudent management decisions for restoration require clear understanding of how and why different elements of the ecosystem have responded in the past. Existing data sets, including time series on ecological properties such as water quality and on human activities such as waste loading and fisheries harvest, contain a wealth of untapped information.

Objectives

The goal of this session is to probe how long-term perspectives might help us understand the Chesapeake Bay's response to restoration efforts in the future. Additionally, this session will explore ideas for how managers could use long-term data streams to monitor the success or shortcomings of ongoing restoration efforts.

Format and Speakers

Participants in an ongoing pilot project on long-term data sets and thresholds in Chesapeake Bay will serve as panelists — Michael Kemp (UMCES), Denise Breitburg (SERC), Rich Batiuk (Chesapeake Bay Program) and Walter Boynton (UMCES). Invited speakers will be giving short presentations, 15 minutes with a facilitated discussion with the panel after every third talk.

Presenting Speakers

Han Lindeboom
Wageningen University & Research Centre,
Netherlands
Tentative title: Shifting baselines and regime shifts in the coastal sea of The Netherlands.

Holly Greening
Tampa Bay Estuary Program (TBEP)
Tentative title: Application of long-term monitoring data for adaptive management in the Tampa Bay Estuary.

Elizabeth Canuel
Virginia Institute of Marine Science (VIMS)
Tentative title: Changes in carbon delivery to estuarine ecosystems: Insights from molecular fossils in sediments.

Thomas Jordan
Smithsonian Environmental Research Center (SERC)
Tentative title: Thirty-year variability of nutrients and chlorophyll in the Rhode River subestuary of Chesapeake Bay.

Jeremy Testa
University of Maryland Center for Environmental Science (UMCES), Horn Point Laboratory
Tentative Title: The response of the Patuxent River estuary to nutrient input reductions: Lessons learned from long-term monitoring data and box-models.

Chris Jones
George Mason University
Tentative title: Long-term monitoring reveals progress in restoring eutrophied Gunston Cove, a tidal fresh embayment of the Potomac River.



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