DRAFT

Subject: Developing Oyster Restoration Success Metrics and Corresponding Monitoring Protocols

Background:
Oysters are a keystone species in the bay, yet overfishing, disease and pollution have left the bay with only about 1 percent of the oysters it once had. Restoring oysters and the habitat they provide for a multitude of other fish and animals is essential to improving the health of the Chesapeake Bay. Successful restoration projects like the Great Wicomico River, recent evidence indicating fewer oysters are dying from disease, and efforts to expand oyster farming suggest oysters can make a comeback. To do so, bay resource managers and scientists must initiate a new strategy based on large scale projects in tributaries targeted for their likelihood to succeed.

Executive Order 13508 Strategy for Protecting and Restoring the Chesapeake Bay Watershed calls for federal and state partners to restore 20 bay tributaries by 2025. Achieving this goal, requires a new strategy anchored by substantial collaboration among oyster restoration partners bay wide, guided by the best available science, and targeted in areas most likely to succeed. The Maryland Oyster Restoration and Aquaculture Development Plan and the U.S. Army Corps of Engineers Native Oyster Restoration Master Plan are integral components to this effort. The Sustainable Fisheries Goal Implementation Team (Fisheries GIT) has agreed to serve as the coordinating body to provide guidance and oversight in aligning oyster restoration efforts and ensure bay-wide scientific and technical capabilities are leveraged to address challenges.

Discussion:

The challenge to define “restoration success” through ecological metrics such as reef community composition and structure, water filtration and nutrient cycling, and self-sustaining populations that can be scientifically evaluated using common monitoring and assessment protocols is shared bay wide. Future restoration efforts of native oyster populations in Chesapeake Bay will need to address ecological, fishery and ecosystem benefits. Ecological benefits pertain to the recovery of oyster populations that persist over the long term in the absence of fishing pressure. Fishery benefits refer to the economic value gained from commercially and recreationally fished populations, as well as that obtained via aquaculture. Ecosystem benefits are those services provided to the ecosystem by thriving oyster populations, such as improved habitat and water quality. To determine whether or not ecological, fishery and ecosystem restoration are succeeding, it is essential that specific goals and metrics of success be developed for each of the restoration approaches. These goals and metrics will promote progress and facilitate accountability in restoration efforts. The recent Executive Order and efforts to develop ecosystem-based management of Chesapeake Bay fisheries provides a vehicle for accomplishing this objective.

This work should be coordinated on a bay wide basis drawing on expertise from across the region. This collaborative approach was recommended as an outcome of the NOAA sponsored Oyster Workshop held in Virginia on March 31, 2010 and has been supported by the Sustainable Fisheries Goal Implementation Team Executive Committee.

Recommendations:

The Fisheries GIT should establish a workgroup/technical team to develop common, bay-wide restoration goals, success metrics and monitoring protocols. Members of this team will be proposed by the Fisheries GIT Executive Committee and vetted with oyster restoration partners. The following should be considered by the team over the next 6-12 months:
1) Develop goals for a sustainable oyster population that includes specific, compatible and quantitative goals for ecological function, broader ecosystem services and fishery/aquaculture yields from a restored oyster population.
2) Develop, identify support for, and implement a baywide complementary survey of oyster abundance. A key feature of any restoration goal for the Chesapeake Bay oyster population is an accurate, and ideally, precise measure of abundance. Currently, an integrated baywide oyster survey is lacking. In the absence of such a survey it will not be possible for managers and stakeholders to determine whether any goals established in item (1) above have been attained.

Note:
MD DNR (Eric Weissberger) has initiated a draft of restoration goals and metrics that can serve as a starting point for the team.

Proposed team members:
Rom Lipcious (VIMS
Claire Oneill (USACE)
Angie Sowers (USACE)
Tom Miller (UMCES)
Eric Weissberger (MDDNR)
Mark Lukenbauch (VIMS)
Roger Mann (VIMS)
Jim Wesson (VMRC)
Mark Bryer (TNC)
Denise Brietburg (SERC)
Loren Coen (SC)
Steve Giordano (NCBO)
Jay Lazar (NCBO)
Ken Paynter (UMCES)
Dave Alves (NOAA)
Stephan Abel (ORP)

The Fisheries GIT may also consider the need to formulate technical teams around the following oyster restoration issues:

- Better assess the current state bay bottom available for oyster restoration by detailed habitat mapping;
- Determine what areas of historical bottom can be recovered and by what means;
- Develop site specific plans (include baseline science info; restoration techniques, etc.)
- Locate and secure large quantities of available substrate material;
- Increase hatchery capacity to produce spat-on-shell oysters for planting.
- Develop strategies to advance aquaculture

The Sustainable Fisheries Goal Implementation Team (GIT) is focused on facilitating fisheries management that encourages sustainable Chesapeake Bay fish populations, supports viable recreational and commercial fisheries, and promotes natural ecosystem function. The Fisheries GIT provides the forum to discuss fishery management issues that cross state and other jurisdictional boundaries. The Fisheries GIT is also working to better connect science to management decisions and create a framework/mechanism for implementing ecosystem-based approaches to fisheries management.