Minutes
Herring River Restoration Committee (HRRC)
Cape Cod National Seashore Headquarters
Wellfleet, MA
October 12, 2016
9:30 am-5:00 pm

Members Present: Tim Smith, Steve Spear, Eric Derleth, Hunt Durey, Steve Block

Others Present: Margo Fenn, Don Palladino, Martha Craig, Helen Miranda Wilson, John Portnoy, Lauren McKean, Mark Adams, Sophia Fox, Kelly Medeiros, Steve Smith, Jason Sorenson, Laura Blake, Nita Tallent, Agnes Mittermayr, Jill Gannon and Kevin Kroeger (by phone), Dave Smith.

Workshop with United States Geological Survey (USGS) Water Quality Monitoring Team: Workshop participants introduced themselves.

Cape Cod National Seashore (CCNS) Natural Resources Monitoring Presentation: Sophia Fox, Aquatic Ecologist at CCNS provided an overview of monitoring efforts conducted in the Herring River estuary by the Natural Resources staff of CCNS. The research project included a water quality assessment and also looked at the spatial distribution and movement of sediment and nutrients, and flora and fauna. The water quality assessment measured numerous different parameters over a ten year period including salinity, pH, dissolved oxygen, nutrients, chlorophyll a, temperature and suspended solids in the water column. She presented some of the monitoring data, including salinity maps of the estuary. She also described a bioassay experiment measuring growth and condition of oysters placed in two locations, one near High Toss Rd and the other near the Chequessett Neck Road dike.

CCNS scientists have been analyzing sediment character and how sediment moves in the Herring River system. The team has also set up three stations to sample benthic invertebrates and will be comparing the water quality results with information about habitat quality. All of these efforts will help to establish a set of baseline data for monitoring the changes expected when the restoration process begins. This will support the adaptive management process.

USGS Monitoring Efforts: Laura Blake and Jason Sorenson of USGS New England Water Science Center described their ongoing monitoring program in the Herring River. USGS installed a water quality monitoring station on the Chequessett Neck Road dike in 2015. With the cooperation of Friends of Herring River (FHR) USGS is collecting weekly samples at this station measuring water velocities and levels, temperature, pH, salinity, dissolved oxygen and specific conductance over a 25 hour tide cycle. This is part of a larger three-year monitoring program that USGS is doing. They are in the process of adding new monitoring stations upstream in the estuary at Bound Brook and Pole Dike Creek and they plan to broaden the scope of the parameters measured in the next phase.

The current monitoring program is funded through March of 2017. The HRRC discussed how long a period of data collection is needed to establish a reliable baseline for the Restoration Project. The group agreed that it would preferable to have at least two full years of data to establish the baseline. In order to determine whether the Restoration Project should fund some of this upcoming monitoring work, further information is needed regarding:

-Results of data collection to date
-Costs of continuing data collection beyond the current grant funding
-What types of data are most critical for adaptive management

USGS Senior Research Hydrologist John Coleman was not able to attend the meeting, so discussion of his sediment-core and reactive-solute-flux models was postponed to a later date. Laura Blake offered to set up a time for a webinar on this topic.

Graphic User Interface (GUI) Demonstration: Tim Smith provided the group with a demonstration of how the Graphic User Interface can be used to evaluate hydrodynamic modeling questions.

Habitat Mapping: Mark Adams presented a series of GIS maps showing ground elevations and land cover types within the estuary. These maps could be useful in developing a detailed vegetation management plan, and in tracking changes in habitat types over time.

Management of Invasive Species: Cape Cod National Seashore Plant Ecologist Steve Smith provided the HRRC with a brief description of National Park Service (NPS) approaches to controlling exotic vegetation within the Park. He noted that NPS has an expert team that has been managing common reed (*Phragmites australis*). Preferred methods include hand management (cutting and flooding). Highly saline water will kill common reed but it can survive in brackish conditions. NPS uses targeted applications of herbicides where needed. This can be done by cutting individual stems and injecting a syringe into the stem, or by using back-pack sprayers. Spraying is a last resort, used only when other methods are unsuccessful.

Steve Smith noted that there is very little common reed in the Herring River now. As the restoration begins, it will be important to carefully monitor it and manage any small stands before they spread. He also suggested planting vulnerable areas with salt marsh cord-grass (*Spartina alterniflora*) to prevent the common reed from getting established. The Committee noted that no decision has been made about the use of herbicides in the Restoration Project. The methods ultimately proposed to manage vegetation will be spelled out in a Vegetation Management Plan. Public input will be sought as this plan is developed.

Workshop with USGS Adaptive Management Team: Dave Smith and Jill Gannon (by phone) joined the meeting. Dave Smith reviewed the webinar that the HRRC had on this topic in September (see minutes of 9/14/16 HRRC Meeting). Today's meeting is focused on planning for a presentation to the new Regulatory Oversight Group (ROG) at its first

meeting in November 2016. The Committee discussed what topics to cover in that meeting and agreed on the following items:

- -Update on the Restoration Project
- -Review of MEPA Certificate
- -Review of the Project Regulatory Strategy
- -Herring River Adaptive Management Plan (HRAM), including:
    - -Overview of Structured Decision Making (SDM)
    - -Review of the HRAM Decision Tool
        - -Objectives
        - -Alternative Policies for Tide Gate Management
        - -Inclusion of Secondary Management Action
        - -Hypothetical Example of Process

The HRRC agreed that it would be important to outline a hypothetical case of how the adaptive management process would work. The group also discussed the need to better define the Class 1 and Class 2 activities that will be proposed in the permitting process.

Documents Referred to in the Meeting: None