

## **Partnership to Restore New Hampshire's Estuaries Meeting Minutes for 2/21/08**

### **Attendees:**

Ray Konisky, Nur Ritter, Mark Zankel (TNC), Sally Soule (DES), Jennifer Hunter, Derek Sowers (NHEP), Dave Burdick (JEL/UNH), Cheri Patterson (NHFG)

### **Minutes:**

#### I. MOU Update:

Ray began the meeting by letting members know there were some partnership members who had last minute issues arise and could not attend the meeting. Ray proceeded to provide an update on the MOU. Most organizations are comfortable with the MOU at this point, but still waiting for feedback from NRCS and USFWS. There has been some concern with the indemnity clause, and Ray is going to see if this can just be pulled from the agreement without objection. As this becomes finalized, the group can now shift discussion to how to move forward on implementing a pilot project demonstrating how the partnership can work together to achieve results.

#### II. LIDAR Presentation:

Ray provided a presentation on LIDAR, explained his efforts to research what existing LIDAR data is available for the NH seacoast region, and discussed some possible avenues to acquire additional LIDAR coverage.

He presented an overview of how LIDAR works – essentially lasers are beamed down from a plane, bounced off the ground/vegetation/water, and light signals return to the plane where a sensor picks them up. Once post-processed, this data can be used to accurately calculate relative elevations to generate high resolution mapping of ground contours. NOAA Coastal Services Center has an online data portal that serves coastal data, but the site lacks available data for our region of the coast. Ray showed an example of a map generated using LIDAR, for a planned restoration project on Fresh Creek (tributary to the Cocheco River), and how it can be used to model the predicted results of restoration efforts on vegetation response and water elevations. The imagery was acquired in 2007 by NRCS.

A standard LIDAR survey flight can provide accuracy of +/- 14 cm, which typically results in a 2' accuracy contour map. A more intensive LIDAR survey that utilizes double passes and data post-processing yields results with +/- 8cm for a 1' contour map. Costs per square mile for LIDAR decrease rapidly with the size of the block, and range from about \$500-\$2,000 per square mile.

The Army Corps of Engineers and Federal Emergency Management Agency are coordinating LIDAR surveys along a 1 km width strip of ME/NH/MA shorelines in 2007/2008. This would obviously not provide coverage of Great Bay and most of Hampton Harbor. Apart from this, there are small patches of the seacoast region that have existing LIDAR data: Fresh Creek subwatershed, a small area near Great Bog, and

Gerrish Island. Ray has obtained a bid to conduct a new survey that would provide comprehensive coverage for a 254 square mile rectangular covering most of the NH seacoast region. Imagery acquisition has been quoted at \$125,000. Ray will clarify if this cost includes image rectification and post-processing.

Funding for a seacoast LIDAR survey is already being sought by a NH Appropriations workgroup made up of conservation organizations that are working with the federal NH delegation. Mark reported that this group has put a seacoast LIDAR survey on their funding priorities list, but it is listed below funding for land acquisition, and the outlook for earmarks is not bright at this time. However, there is some hope that the work could be funded due to its obvious utility in evaluating potential impacts of climate change and sea level rise. Currently the delegation is being asked to advocate for \$230,000 for the LIDAR survey, which would include all post-processing and modeling analysis. There may be a future role for partnership members to pool funds for LIDAR work. It is unclear at this time where the data would be housed, although Ray will be meeting with UNH EOS and GRANIT managers, and will begin to discuss how it would be disseminated to partners, and what form it would take for easy transfer/use.

### III. Restoration Projects Discussion:

Meeting participants joined in a roundtable discussion to review restoration projects and activities around the major tidal tributaries of NH's estuaries.

- A. Cochecho River – Ray and Dave B. described a new joint proposal to NHCP for detailed monitoring and analysis of potential restoration of salt marsh and diadromous fish at Fresh Creek.
- B. Bellamy River – Cheri P. explained that the first dam on the Bellamy was taken down years ago, with focus now on fish passage over the two dams at Sawyer Mills. The owners have been open to discussing fish passage options, and the upstream habitat appears to be exceptional for diadromous fish. There may be toxins accumulating behind the dams and this needs investigation.
- C. Oyster River – Cheri described the potential of this system for blueback herring, which spawn in faster waters than alewife. Stream restoration may be needed to improve upstream fish habitat. The 2<sup>nd</sup> dam is used to supplement the Durham water supply, which complicates restoration potential. Ray noted that the UNH oyster conservationist study identified its maximum oyster spat growth rates for all of Great Bay along the Oyster River.
- D. Lamprey River – Cheri updated the group on the disposition of the proposed fish passage project at the Wiswall Dam. It appears that, due to landowner and town requirements, the natural fishway will not be implemented, but rather a technical fish ladder system is planned for the site.
- E. Exeter River – Sally S. noted that DES has initiated a detailed assessment of river and watershed geomorphology and will develop recommendations for culvert work, stormwater ordinances, and river bank restoration. Recommendations are expected to be ready by November 2008, and may include site-specific suggestions for restoration work. A funding pool of

\$120K was identified for possible improvements. Sally is working with a large group of state and local stakeholders to advance this initiative.

- F. Winnicut River – Cheri described the status of the dam removal project and indicated that it was currently in the design and permitting stage. Material structures in the river under the Rt 33 bridge may need additional attention, especially for fish passage at low flows. A simple pool/weir system might be needed in addition to dam removal to allow fish passage into upstream habitat. Total estimated cost of dam removal and fish passage is approximately one million dollars. NRCS is looking for non-federal match funding to proceed with implementation. Ray mentioned that TNC is currently conducting a culvert inventory and assessment of the watershed in anticipation of the dam removal, and he would contact NRCS to see if this effort might qualify as in-kind support.
- G. Taylor River – Cheri spoke about the NH DOT feasibility study for dam removal and the general need for community support to advance this option. Partnership members may want to review the completed Feasibility Study report (available at the NHEP office), and write support letters for the dam removal option.
- H. Berry’s Brook – Dave described an oyster restoration research project for this summer to assess oyster reef potential at several locations in this system. The project will compare oyster growth rates and recruitment between oysters grown on stakes versus oysters grown as ground culture.
- I. Caine’s Brook – Sally noted that this brook is classified as impaired for navigation. Dave described the need for *Phragmites* removal at the site. He also noted the work now underway by his doctoral student Alyson Eberhardt to compile a restoration compendium for Hampton-Seabrook, which may include historical information concerning dune-grass communities.

#### IV. Restoration Pilot Project Framework:

Derek S. led a discussion on how the partnership might consider, plan, and initiate a pilot restoration project. Ray noted that the local focus groups from last summer/fall identified a pilot project as a best way to move forward the restoration agenda. Derek outlined a set of ‘straw-men’ to get the group thinking about the goals, objectives, and selection criteria for a pilot:

##### Proposed Pilot Goal

Conduct a successful, replicable, measurable, and multi-faceted restoration project in a NH estuarine subwatershed (i.e., “ecologically meaningful scale”) that demonstrates regional partnership commitment and capacity for larger-scale restoration efforts.

##### Proposed Pilot Objectives

- Engage multiple partners as a requirement for success
- Address real multiple needs (i.e., degraded areas)
- Target improvements to multiple degraded habitats (shellfish, eelgrass, saltmarsh, diadromous fish habitat, etc.)
- Employ techniques that can be replicated

- Be of a reasonably short duration for implementation
- Demonstrate measurable results

#### Proposed Pilot Site Selection Criteria

- Known as historically suited for targeted multi-habitats
- Has baseline monitoring data; pre-assessment
- Offers protection from human disturbance (conservation)
- Is accessible to project team
- Political/stakeholder support and potential funding available
- Satisfies cost/benefit rationale
- Has potential for controls/management of anthropogenic stresses
- Will persist as a self-sustaining system
- Suitable to measurable outcomes
- High visibility potential

Based on this general framework, Derek agreed to work with Ray to begin to develop a decision matrix for each of the potential estuarine restoration sites identified in the project discussion (A-I), among others. They will work off-line with partners and other regional reviewers to develop an initial peer-reviewed matrix that will be distributed to all partners ahead of the next meeting, with the intent of working toward consensus on pilot direction.

#### V. Next Meeting

**Thursday, April 10<sup>th</sup>, 2-4pm, Pease DES Office**