MEETING SUMMARY
Freshwater Wetland Restoration Strategy Topic Meeting 2
August 31, 2010, 1:30 PM to 3:30 PM, RIDEM, Room 300

Project coordinators present:
Christine Caron, NEIWPCC
Carol Murphy, DEM Office of Water
Sue Kiernan, DEM Office of Water

Advisors present:
Wendy Gendron, Army Corps of Engineers
Scott Ruhren, Audubon Society of Rhode Island
Caitlin Chaffee, Coastal Resources Management Council
Gregg Cassidy, DEM Office of Planning and Development
Peter Holmes, EPA Region 1
Margherita Pryor, EPA Region 1
John Richard, Natural Resources Conservation Service
Guy Lefebvre, RI Rivers Council
Rachel Calabro, Save the Bay
John O'Brien, The Nature Conservancy
Chris Mason, University of Rhode Island Dept. of Natural Resources Science
Suzanne Paton, U.S. Fish and Wildlife Service
Alicia Lehrer, Woonasquatucket River Watershed Council

Others present:
Russell Chateauneuf, DEM Office of Water, Chief of Groundwater and Wetlands Protection
Walter Berry, EPA Office of Research and Development
Marisa Mazzotta, EcoBenefits Research
Raina Huebner, Narragansett Bay Estuary Program

Welcome
Christine Caron opened the meeting with a brief welcome and introduction.

Recap
Carol Murphy provided a recap of some of the main points discussed during past meetings, including: what the restoration strategy is and is not; why to restore wetlands; what wetland types the strategy would focus on; what is meant by wetland restoration; and the broad statewide goals that wetland restoration can support (restore fish and wildlife habitat; improve water quality; protect people and property from flooding; and restore heritage values – recreation, education, open space, biodiversity). {Notes from the recap are attached at the end of the meeting notes.}

Carol asked the group if there were any other statewide goals missing from the list. The discussion included:

- Economic goals (value of improving wetlands, value of the resource; could be under heritage values or tied to each goal).
- The Department will talk to others in the state to see if there is information to get more specific about the goals or to ID geographic areas with priorities where wetland restoration can contribute.

- Ecological functions of wetlands (groundwater recharge; sediment transport).
- Goals should ink to CWA and waters of the US (might not be the public goals)
    - Ecological functions and biological integrity
    - Function/value assessment has broader or more detail function goals
- NWS has major river units, causal analysis of what caused flooding this past spring; suggestion to touch base with them.

Goal Setting and Planning at the Watershed Level

Carol Murphy introduced this topic by reaffirming that the office believes goal-setting should be on a statewide level and that watersheds are a good unit to establish freshwater wetland restoration goals and are a good geographic unit to plan at (supporting examples include the anadromous fish plan, water quality plans (TMDLs), and the Rivers Council riparian buffer goals and projects).
Not all of the statewide goals would be as important in different watersheds. For example, urban areas may be important and effective for flood abatement, water quality improvement, education, and open space, but not for fish and wildlife habitat and biodiversity. Whereas, rural area may provide a wider variety of functions that can be restored, including fish and wildlife habitat, high quality recreation, flood abatement, and water quality improvement in agricultural areas.

We would like to find out what information is available in different watersheds in order for the DEM to provide more specific guidance; for example, are there any particular watersheds that are flood prone that wetland restoration projects could support flood protection. The aim is to move away from ad hoc restoration and improve coordination.

Carol referred the group to the "wetland restoration premise" and solicited feedback. The premise was: "Wetland restoration planning is best accomplished at watershed-scale; e.g. watersheds or sub-basins. While there may be reasons to work across watersheds, the goals that wetland restoration supports are generally realized within the watershed in which the restoration takes place. The effectiveness of individual restoration projects is enhanced by understanding the context of the site within its watershed. Working at the watershed scale acknowledges the interconnectedness of aquatic resources and buffers within a watershed and provides opportunities to align wetland restoration activities with other related management activities including water quality planning and fisheries management. Wetland restoration goals are expected to reflect watershed conditions which DEM acknowledges vary across the state; e.g. severity of flooding, extent of intact habitat, etc."

Comments included the following:

- The premise does conform with Federal wetland mitigation policy (i.e. DOT – supposed to look for mitigation within the watershed).
- If abutting site is degrading, may want to improve the degrading site to protect on there (incorporated in statement) – what can be done to make it better and protect it from getting worse.
- The premise is founded in the overall goal of wetland protection.
- Is there a short cut for methods from the Woon study and how much did it cost?
    - Carol Murphy will look up the cost.
    - The work was done 7-9 years ago, there has been more technical improvements since that time that would make the process easier (i.e. digital aerials vs. hard copy, more improved GIS tools)
- There were not any disagreements raised with the premise, but there were questions about what watersheds would be used.

- The anadromous fish plan IDed goals in 11 watersheds
- DEM Office of Water has IDed 25 watersheds (planning units), most with hydrological boundaries, but also takes into account islands, or existing watershed groups, or small pieces of watersheds – request to share this list and map with the group.

Site ID

Carol Murphy led the discussion about Site ID.

The question was presented about whether is it practical to ID states on a statewide level and if so, what is the best way to do this (i.e. to be selective geographically or certain time periods)? There was a discussion about the methods used by the State of Massachusetts which use time-lapse aerial analysis. In MA, it has been used for enforcement purposes by comparing 2 wetland data sets (polygons mapped from aerial photos for two different time periods) to see where they are changes. If Rhode Island were to pursue this type of analysis, there would be a need for new wetland maps first, and the method would then be able to compare to the 1988 wetland data (which has some positional inaccuracy). This would also be limited because it would not capture any historic loss and technically any wetlands lost since the Act (1971) would be subject to regulatory enforcement. Our project is looking at voluntary restoration, but it could ID some gross differences in wetlands. A new coverage would be needed, as well as the software and a person to do it, and a process to ID if the gross differences were permitted or not.

Comments arising from this discussion included:

- Believe that MA DEP uses this method to generate revenue through fines.
- MA also released a lot in the press about violations.
- Another use could be to assess the effectiveness of the existing regulations or to establish a baseline now in terms of the past (and with new stormwater manual).
- Would be good to overlay the old data with current (about 22-23 years difference) and compare to the status and trends reporting to see how accurate.
- Is there a schedule for updated the RIGIS wetlands coverage? No, it was looked at in 2001 and at the time the cost seemed prohibitive and there was varying degrees of interest. USFWS has updated NWI coverage using 2003/2004 imagery and built on the 1970s coverage; but this has a broader scale.
- If undertake new coverage, suggest coordination with NRCS hydric soils group
- Acquisition of aerial photos is most cost effective if done for state as a whole; cost of processing could be phased if the imagery was available to work from.
- Suggestion that the wetlands program should not be the only program to bear the cost; however, wetlands coverage would need specific aerial photo requirements - need leaf off spring photos, also best for wetlands if color infrared and need optimum scale/resolution.
- Note that there are significant technological improvements in converting stereo photos to ortho photos and it would be good to correct the 1988 coverage (the original aerials are still available, the error was in the translation process).
- A comparison with the 1988 data as is would only be able to ID gross areas of fill.
- Maybe there can be a place in the strategy to recommend updating statewide maps.

Following the discussion about statewide ID, the group discussed processing for IDing sites within a watershed. Carol noted that there is more available since the Woon plan (improved GIS tools, more protected lands; more restoration planning). Carol suggested that one process to ID sites within a watershed could be to narrow the area in which to use focused site ID steps, by overlaying coverages

of what other restoration plans have identified with protected lands, and look for connections and how wetlands could contribute to those areas. This could narrow the area using what is already known, and then the URI type methods could be applied in a more focused area and could be looking for opportunities to link other restoration work or within protected lands.

Comments arising from this discussion were:

- This is a great idea, especially for a 1st cut, but there could be bias looking at areas where already efforts because some areas are politically driven, but not necessarily the highest quality areas.
- Find hot spots with lots of attention, think about what is driving it, try to get the most restoration for the cost.
- NRCS is looking at this type of model in some parts of the state and working with TNC. Looking first at protection opportunities then at restoration or enhancement; just starting out with this process. Funding is tied to the WRP program.
- In any given watershed, need to feed into the goals in that watershed (yes, would want to use this process in the context of first IDing the goals).
- Is there funding for this? There is a composite map on the restoration portal, which includes some activity in place at the time it was created; but not a centralized maintained coverage of sites.

Sue Kiernan asked the group if they found it effective to survey locals.

- The response was that when the coastal habitat (CRMC/STB) did it in 1998, it was very effective. The session was professionally facilitated. The process facilitated the maps where people IDed sites on the maps because of their potential. NRCS is still using the list produced from this effort.
- It was also suggested that enforcement groups/agencies and people in the field a lot would know the sites. It might not come to mind just to ask them, but if you lay out a map in front of people, it can stimulate the process.
- It was also suggested that there should be a process for internal review in DEM pending a suite of sites to capture knowledge of streams/ponds, fish, amphibians, birds, etc. If get to a point where starting to prioritize sites, then should give others in the department to weigh in knowledge to help see where the sites would fall out.
- The wetland staff knows where there are alterations, but can be too big a question, too may sites, so that not any one stands out; but the wetland strategy could point out that is important to sift these out so that they come to the surface and can be targeted as restoration opportunities, so that if a landowner wants to develop, these issues may arise.
    - There is a database of site complaints, may take staff and money, but may be opportunities there.
- Within the Department, there is a lot of knowledge, find a way to use this.
- It is helpful to be proactive, where are major transportation issues, town comprehensive plans for development, what are restoration opportunities there they may not be aware of.
- Could guide the overarching goals if know where to target.
- Add waste remediation.
- CT Audubon uses citizen science, people go through courses, connected to a staff person so not out and about on own afterwards.
    - Support is a factor for success.
    - The volunteers need to have a scientific inclination.
    - Helps if volunteer effort is connected to something that goes the next step; knowing that someone will use what you find.

Measuring Success

Christine Caron introduced the topics of tracking and monitoring by breaking the questions up into four stages: 1.) What was authorized?; 2.)Was the project completed? – start and finish; 3.) Was the project successful?; and 4.) If problems are found, is there a commitment to maintain the site in a restored condition?

Christine reviewed the current triggers for tracking and monitoring within DEM, many of which occur within the permitting process. To track "what was authorized, DEM reports on wetlands losses and gains to EPA. For applications that go through the Permitting program wetland losses are recorded at the time the permit is issued ("permitted loss") and wetland gains are not recorded until "the project is completed to the Department's satisfaction, when it appears that the area will function as a wetland." For restoration projects that come to DEM's Restoration Team, Lisa McGreavy maintains list of projects with descriptions and tracking of permits and authorizations.

DEM's mechanisms that would answer the questions "was the project completed" and "was the project successful" would generally vary by project type. Permitted restoration projects may require the applicant to monitor and report back (i.e. when starts, during construction, or post-construction). Invasive projects might be exempt under Rule 6.02K, but the project still requires review by the DEM Restoration Team to ensure it contains "the necessary controls, expertise and follow-up monitoring to ensure success of the invasive control project." Planting projects in perimeter or riverbank wetland may be exempt under Rule 6.18, which requires that "the property owner … notifies the *Department's* Water Quality and Wetland Restoration Team, in writing, within ten (10) days after completion of the plantings." In addition, Phil Edwards (DEM F&W) tracks Anadromous Fish Projects and provides as updates to the Fish Plan. The place where any "problems" with maintaining the restored conditions could be part of the permit conditions (i.e. there is a standard condition that plants have to survive for 1 year and responsible for replacing if they don't).

In practice, even if required, the Department does not often receive information from project proponents about projects after the authorization stage. One idea to enhance the tracking process could be to recommend development of an online interactive system where applicants can enter information about their projects (i.e. date completed, monitoring updates, etc.).

Christine solicited ideas from the group about the tracking and monitoring of restoration projects.

Comments included the following:

- If the reporting policy indicates it must function as a wetland, there must be some guidance for this already.
    - The project needs to go beyond complete; need to find out how they implement that; project required to notify if complete.
    - This is not an extensive detailed monitoring, done visually in one visit.
    - If large scale (i.e. Galilee) – there was a commitment to more detailed monitoring.
    - Department does not have all the data we would like to have.
    - Sometimes there is a requirement to report each year out.
- The Army Corps has well developed monitoring (Ruth Ladd) – requires 5 year monitoring. In CT – require 10 years of monitoring for invasive species – a good idea, because of settling in period, monitoring forces people to see if it is working. Corps requires to fix it if needed – restore, then apply delineation in year 1, 3, 5 and then functional assessment in year 5.

Should we be treating voluntary projects the same as a developer?

- Suggest that it would be project depended – if state or federally funded, would want to tie it in; if voluntary on private property, possibly exemptions. Sometimes tie reporting to permitting.
- CRMC uses self policing – property owners submit photos and simple form (presence/absence); have to report back what found over a 3 year period.
- Sometimes funding includes monitoring requirements (i.e. 319 has some).
- For ASRI, it is a lineable funding item for monitoring before and after; pre-assessment of habitat – there is a vested interest to know if making it better or worse. ASRI continues to monitor post-funding as well with staff and volunteers.
- NRCS can fund up to 3 years of funding for monitoring for all restoration sites, even for smaller private land owner – check sheet; more funds for higher ends (i.e. transects).
- Suggest a tiered approach to monitoring many things and tie it to the primary goal (i.e. Water Quality, monitor for that if that was the primary goal). Have different protocols available – help ID what the highest priority monitoring components are, site specific.
- EPA experience – monitoring costs money; works if including in funded (tied to many programs); starts to break down if for volunteer groups or private owners.
- Make sure at the end of the process, it functions as a wetland.
    - This educates on what a wetland does.
    - Have monitoring follow from what wetland is functioning as; could be simple – this gets further than just requiring monitoring.
- Look at what goals were in the project originally; go to make a permanent change. Monitor the things you actually care about and whether it is serving that purpose.
- What are we going to do with the data even if we get them to do it? What if the project doesn't work, now what?
    - CT/Corps (?) requires keep working on it until achieve success, if don't achieve it and working on it (implication that it could go on forever) – have to achieve particular standards by year 5, then "off the hook" with Corps; open ended is troubling to people
    - The onus is on the grantor to look at the data, to see if techniques were not effective for future if other projects want to try it; lessons learned – will be better informed and make projects better.
    - Can we put in the strategy this is not a problem restricted to wetlands; it is difficult because attitude of "you learning is not my problem" – have to do it otherwise it doesn't work.
- Look back at what works and what doesn't work; ex: CRMC habitat trust fund; look at projects, can be rated low because of techniques that are proposed.
    - CRMC also struggles with getting results and doing something with them; struggling with a consistent system; they finally have reporting requirement, but challenging to use it.
- If monitoring is in the strategy, talk about standardization of monitoring results; hard to answer questions if lots of different formats from individual projects; recommend developing a report format that can be used by different projects.
    - CRMC – has tiered requirements, established protocols, standardized reporting form (next step doing something with it)
    - National Estuary programs has a detailed report of most minute detail, answers a lot of questions ("Neport").
    - Follow up to this would be technical assistance – how to monitor results? Don't leave it up to the volunteer groups to figure out themselves; would be very helpful to be able to go for training/assistance.

- Also, the Beaver population in the state creates wetland; what happens when you remove them (can get phrag, etc.)

Conclusion

Christine Caron concluded the meeting and informed the group that the next meeting would be scheduled for the week of September 27 to October 1.

RI Freshwater Wetland Restoration Strategy Development
Where are we at?

What is the wetland restoration strategy?
- a written document to guide voluntary freshwater wetland restoration statewide;
- a framework to improve coordination and effectiveness of voluntary wetland restoration statewide;
- it is to reflect work completed to date and recommended actions.

Why restore wetlands?
- to undo damage we have caused;
- to return some of the lost benefits;
- to increase the quantity and quality of wetlands.

What wetland types will the strategy focus on?
- freshwater (palustrine) wetlands including ponds, marshes, wet meadows, streams, vernal pools, shrub swamps, forested swamps, bogs, fens, and their buffers;
- riverine wetlands have also been impacted historically and there are important restoration opportunities

What do we mean by wetland restoration?
- the re-creation (or say reestablishment) of a former wetland that has been destroyed (such as by filling or draining) and
- the rehabilitation of a wetland that has been degraded (such as by trash dumping, sedimentation, invasive species); and
- the reinstatement of a former wetland's or a degraded wetland's characteristics to return its lost functions and values.

What broad goals does wetland restoration support?
- 1) Return fish and wildlife habitat;
- 2) Improve water quality;
- 3) Protect people and property from flooding;
- 4) Replace heritage values important to people – recreation, education, open space, biodiversity.
- Are there other goals missing?
- State resource managers may be able to articulate more specific sub-goals.
- Goals may vary watershed to watershed and perhaps within a watershed.

What level should restoration goal setting and planning be conducted?
- Statewide goals.
- Watershed-based goals?
- Largely watershed-based planning?

What are common impacts to RI wetlands that may be removed to support the goals?
- Filling or draining;
- Removal of buffer vegetation;
- Removal of wetland vegetation;
- Trash dumping;
- Invasive species present;
- Sedimentation;
- Impedance of surface flow; and
- Stream channelization.
- Consider other hydro-alterations, such as small dam and floodwall removal