SOCIETY of WETLAND SCIENTISTS

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SWS-New England Chapter
2014 Research Conference and Chapter Meeting
May 1, 2014
Holy Cross College, Worcester, MA

AGENDA

8:00-9:00	Registration and Continental Breakfast	-
9:00-9:45	presentation	Tiner (NWI)
9:45-10:30	presentation	Minkin, Sachs-Lambert (Wet/VP Assmt)
10:30-10:45	coffee break	-
10:45-11:30	presentation	Rhodes and Jackson (Assmt)
11:30-12:15	presentation	Wolf and Capotosto (Coastal)
12:15-1:15	Buffet lunch & Business meeting	-
1:15-2:00	presentation	Karberg (coastal)
2:00-2:45	presentation	Marks et al (Floodplain forests)
2:45-3:00	Coffee break	
3:00-3:45	presentation	Ladd (regulatory)
3:45-4:05	presentation - abbreviated	Sachs-Lambert (regulatory)
4:05-….	informal Q&A and cocktails	

ABSTRACTS:

Ralph W. Tiner, Regional Wetland Coordinator, U.S. Fish and Wildlife Service; ralph_tiner@fws.gov

An Update of National Wetlands Inventory Activities in New England

During the past two years, the National Wetlands Inventory (NWI) has done considerable work in New England. Wetland maps have been updated for many areas with the data enhanced in several areas to include hydrogeomorphic properties. The expanded NWI database (NWI+ data) has been used to predict wetland functions at the landscape level for Connecticut and similar work is underway for Rhode Island, Massachusetts, coastal New Hampshire, and southwestern Vermont. The Connecticut work also included inventories of potential wetland restoration sites, identification of areas that may support wetlands based on soil mapping, and an analysis of recent wetland trends. The presentation will briefly summarize study findings. In addition, I will discuss plans to establish permanent plots for monitoring the effect of sea-level rise on coastal vegetation to track salt marsh migration into lowland forests.

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Paul Minkin, U.S. Army Corps of Engineers, New England District
Erica Sachs-Lambert, U.S. Environ. Protection Agency New England Region

Development of Functional/Condition Assessments for Wetlands and Vernal Pools under The Clean Water Act §404 Regulatory Program in New England

The US Army Corps of Engineers, New England District ("District"), is developing a new quantitative functional assessment methodology to replace the qualitative method that has been used since the mid-1990s. The move to a more quantitative method is designed to bring the District more in line with Corps of Engineers functional assessment methods nationally and to have a method that fits better with the debit/credit concepts found in the Mitigation Rule. In addition, a new methodology can incorporate the past two decades of knowledge gained on aquatic resource functions.

An interagency team, led by the District, started with review of existing functional assessment methods from New England and elsewhere. Parts of several methodologies have been incorporated into the current development effort. The base classification system for the new methodology follows NWI+, which is an enhanced National Wetland Inventory that incorporates wetland landscape position, landform, water flow path, and waterbody type descriptors. With these new descriptors, NWI+ identifies possible functions of the aquatic resource based on the classification. This allows for a two-level approach to functional assessment. The first level, for planning-level studies, identifies likely functions of particular aquatic resources based on the classification and remote sensing. The second level is based on site data collection and would be more accurate for evaluating the functions of specific aquatic resources.

This methodology is primarily a functional assessment, not a condition assessment (though some elements of condition will be incorporated into the biota support functions) and does not lump goods and services into functions. There are three main suites of functions and then several individual functions within each suite. The three main function suites are Water Quality Maintenance, Hydrologic Integrity, and Biota Support. Individual functions and variables to represent those functions are currently being evaluated.

Independent from the development of the functional assessment methodology effort, the District is working on developing far less encompassing assessment methods for streams and vernal pools. These are not true functional assessments, but will be used more to determine project impacts and identify appropriate compensatory mitigation. These will be included in the "New England District Mitigation Guidance" update, also going on this year.

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Lisa Rhodes – Massachusetts Department of Environmental Protection
Scott Jackson – University of Massachusetts

Monitoring and Assessment in Massachusetts

The U.S. Environmental Protection Agency (EPA) has been encouraging states to develop and implement wetland monitoring and assessment programs. The objective is to create programs in all states that can assess the condition of wetlands as "waters of the United States" for reporting in the 305(b) Integrated Waters Report and for assessing the status and trends of all wetlands. EPA guidance recommends a three level approach: 1) Level one assessment is landscape-based and uses GIS data and models; 2) Level two is a rapid assessment and typically involves a single field visit to document indicators of condition or stressors; and 3)the Level three involves intensive field data collection (e.g. soils, hydrology and biological taxa). The challenge for any state is to determine how to best integrate these three levels into a comprehensive monitoring & assessment program covering the diversity of wetlands found in that state. Since 2006, the MassDEP Wetlands Program, the University of Massachusetts in Amherst ("UMass") and the Massachusetts Office of Coastal Zone Management (MCZM) have collaborated to develop a strategy to monitor and assess wetlands. In addition to reporting, our goal is to better protect wetlands through regulation, policy & outreach.

The central feature of the Massachusetts strategy is the Conservation Assessment and Prioritization System (CAPS), a landscape-level assessment model developed by UMass. CAPS does not assess wetland condition on the ground so site-level assessment methods (SLAMs) have been developed for forested wetlands and salt marshes to date. Using these SLAMs we have sampled 219 forested wetland sites and 175 salt marsh sites that were randomly selected along a gradient of IEI values. These data, plus data from 490 wadable streams collected by MassDEP Division of Watershed Planning have been used for the purposes of testing and validating the CAPS predictions and modifying (as needed) the CAPS models; and for the development of Indices of Biological Integrity (IBI) for use in assessing site specific wetland condition. In addition, the strategy includes the Continuous Aquatic Life Use (CALU) assessment approach that is based on the relationship between IEI (i.e. CAPS value representing constraints on biological condition from the surrounding landscape) and IBI (i.e. actual condition of a site based on field assessments). The first pilot assessment will occur in the Chicopee Watershed in the summer of 2014.

For detailed information on MassDEP's Wetland Monitoring and Assessment Program, please go to the following web sites: www.umasscaps.org;
http://www.umasscaps.org/applications/wetlands-assessment.html;
http://www.mass.gov/eea/agencies/massdep/water/watersheds/wetlands-protection.html#2;
http://www.mass.gov/eea/docs/dep/water/resources/a-thru-m/ibifin.pdf

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Roger Wolfe and Paul Capotosto.
Connecticut Department of Energy and Environmental Protection

INTEGRATED MARSH MANAGEMENT IN CONNECTICUT: A HOLISTIC APPROACH TO MANAGING TIDAL WETLANDS FOR MULTIPLE OBJECTIVES

The Connecticut Wetland Habitat and Mosquito Management (WHAMM) Program of the DEEP's Wildlife Division, promotes the practice of Integrated Marsh Management (IMM) for restoring and managing Connecticut's degraded coastal wetlands while minimizing public health risks caused by mosquito-borne diseases. IMM is a holistic approach to wetland management utilizing a variety of techniques to achieve site-specific goals. IMM takes into consideration the many aspects of wetland restoration and management including mosquito source reduction and biological control, invasive plant (Phragmites) control, wildlife habitat enhancement, hydrologic modification, tidal flow restoration and fill removal. Because of the unique character each location and site-specific objectives, IMM projects can be relatively simple, while others can be quite complex requiring input from many disciplines. The success of IMM projects depends on diligent education and the formation of partnerships to share expertise, equipment and funding. Pre- and post-monitoring is important to evaluate success, document where follow up work may be needed, and provide further research opportunities. Several projects will be examined including discussion of some of the specialized equipment used by the WHAMM Program. The term, Integrated Marsh Management, is also promoted to help alleviate semantics issues that can occur among agencies caused by the use (or misuse) of certain terminology used in wetland management such as "restoration" and "open marsh water management" (OMWM).

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Jennifer M. Karberg, Karen C. Beattie, Danielle I. O'Dell and Kelly A. Omand
Nantucket Conservation Foundation, Science and Stewardship Department, Nantucket MA.

Salt Marsh Restoration and Phragmites Control with Tidal Re-introduction at the Medouie Creek Wetland Complex, Nantucket MA

The Medouie Creek wetland complex located in Polpis Harbor, MA was historically one large connected salt marsh. This marsh experienced diking and ditching sometime prior to 1938 which altered the marsh hydrology. A portion of the marsh became isolated from tidal salt water inputs and converted to a freshwater marsh. Additionally, a large stand of the invasive Phragmites australis colonized and began to dominate portions of the freshwater marsh. In 2004, the Massachusetts Department of Fish and Game designated Medouie Creek as a high priority wetland restoration site prompting the design and implementation of a salt marsh restoration project to reestablish salt marsh hydrology and vegetation and reduce the cover and robustness of Phragmites.

In December 2008, the Nantucket Conservation Foundation, Inc. (NCF) completed construction work designed to restore saltwater to the restricted marsh, through the installation of a box culvert under the dike road and dredging of existing marsh channels to facilitate saltwater movement through the previous freshwater marsh. NCF only altered hydrology and salinity in the previous freshwater marsh at Medouie Creek, allowing the marsh vegetation to naturally reestablish. To determine the success and progress of this restoration, we monitor a suite of ecological characteristics established pre-restoration including water level fluctuations, soil porewater salinity, vegetation transects throughout the marsh and Phragmites population dynamics.

In 2013 water level monitoring stations, including subsurface water stations, showed daily tidal pulses throughout the previously restricted marsh. Soil porewater salinity increased significantly compared to pre-restoration, indicating that not only tides but also increased levels of saltwater are moving into the marsh. We observed extensive freshwater plant dieback immediately post-restoration and vegetation community composition shifting from predominantly freshwater to saltwater plants, particularly adjacent to the ditches. Additionally, Phragmites stem density and plant height have significantly decreased.

The previously restricted marsh is gradually converting to salt marsh vegetation, salinity and hydrology more quickly than expected. This wetland restoration project is one of the most intensely monitored salt marsh restoration projects in New England and will provide useful information to guide land managers and restorations in similar projects.

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Christian Marks, Keith Nislow, Francis Magilligan
The Nature Conservancy

Flooding requirements of different floodplain forest species in the Connecticut River basin.

Determining the flooding regime needed to support distinctive floodplain forests is essential for effective river conservation. These hydrologic relationships still lack sufficient detail in New England. At over 100 sites throughout the Connecticut River basin, we characterized species composition, valley and channel morphology, and hydrologic regime to define conditions promoting distinct floodplain forest assemblages. To determine spatially-explicit flood regimes we used extensive USGS streamflow data and a hydrologic model (HEC-RAS) to calculate flood frequency curves and associated channel hydraulic parameters (e.g. stream power). Species assemblages were dominated by floodplain-associated trees and were relatively free of most woody invasive species on surfaces experiencing flood durations between 5% (18 days/year) and 26% (91 days/year), which were generally well below the stage of the two-year recurrence interval flood, a widely-used benchmark for floodplain restoration. These flood-prone surfaces were jointly determined by characteristics of the hydrograph (high discharges of long duration) and topography (low gradient and reduced valley constraint), resulting in increased availability of floodplain habitat with increasing watershed area and/or decreasing stream gradient. Downstream mainstem reaches provided the most floodplain habitat, largely associated with low-energy features such as back swamps and meanders, and dominated by silver maple (*Acer saccharinum*). However, we were able to identify a number of suitable sites in the upper part of the basin and in large tributaries, often associated with in-channel islands and bars and frequently dominated by sycamore (*Platanus occidentalis*) and other disturbance-dependent species. Our results have general implications for conservation and management. First, restoring flows by modifying dam operations to benefit floodplain forests on existing surfaces need not conflict with flood protection in some regional settings. More generally, these results underscore the need to understand how interactions between flow, geomorphology, and species traits interact to produce characteristic patterns of floodplain vegetation, and that these interactions should form the basis of effective river restoration and conservation.

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REGULATORY SECTION

Ruth M. Ladd, PWS, U.S. Army Corps of Engineers, New England District

THIRD PARTY MITIGATION IN NEW ENGLAND

Third party mitigation is where an independent sponsor takes on the responsibility for providing compensatory mitigation by selling credits in a mitigation bank or in-lieu fee (ILF) program to permittees required to provide compensatory mitigation. This means of providing mitigation is given 'soft' preference over permittee-responsible mitigation by the Corps and EPA as explained in 33 CFR Part 332 and 40 CFR Part 230, popularly known as the "Mitigation Rule." The Mitigation Rule was published in the Federal Register on April 10, 2008.

In New England we now have four approved ILF programs: Maine, New Hampshire, Vermont, and Connecticut. There is one pending in Massachusetts. In addition, there is an umbrella mitigation bank in Maine with MaineDOT as the sponsor and sole user. Umbrella meaning it can have multiple projects under the "umbrella" banking instrument. Two of the existing ILF programs are sponsored by the state's environmental protection regulatory agency (Maine and New Hampshire). Two are sponsored by non-profits (Ducks Unlimited in Vermont and National Audubon Society – Connecticut) and neither state environmental protection agency in those states is involved other than serving on the Interagency Review Team. In the pending Massachusetts program, a state agency is the sponsor but it is not a regulatory agency. There may be potential conflicts between use of an ILF program and state requirements for mitigation such as in Connecticut and Massachusetts.

The Corps and EPA feel the greater environmental benefit of pooling compensatory mitigation and thereby enabling the development of ecologically sustainable mitigation projects outweighs any negative aspects (e.g., mitigation sites may not be very close to impacts). However, this does not necessarily mesh with current state laws or regulations.

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Erica Sachs-Lambert, U.S. Environ. Protection Agency New England Region

Proposed Waters of the U.S. Rule and the Agriculture Interpretive Rule – A Brief Synopsis

(Thank you to Erica for last-minute preparation of this timely topic!)

SWS New England Chapter Business Meeting
Thursday, May 1st, 2014
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I. Call to Order and Address by President (Gillian Davies)

II. Determination of Quorum

III. Introductions

IV. Reading of minutes and report of the Secretary (Jen James)

V. Financial Report

VI. Committee Reports – report on progress since 11/21/13 conference call
   a. Awards – Ruth Ladd, Chair
   b. Bylaws – Paul McManus, Chair
   c. Communications/Publications – Jen Karberg, Chair
      Publicity - Cori Rose (Vice President)
      i. Cori Rose & Jen Karberg activities, new SWS Chapter website, new social sites
   d. Education – Cori Rose, Chair
   e. Events – Paul McManus, Chair
   f. Executive Committee – Paul McManus/Gillian Davies
   g. Legislation – Alan Quackenbush, Chair
   h. Membership – Dale Knapp & Jeff Simmons, Chairs
   i. Nominations – Paul McManus, Chair
   j. 2015 Local Planning Committee – Gillian Davies, Chair
   k. Archives – Chair is open

VII. Status of elections and officer terms

VIII. Proposed Bylaw changes

IX. Development of Chapter Logo, if this task has not been completed

X. Assess submissions of photo contest to select photos for new website (need 4), if this still needs to be done

XI. Networking with state wetland organizations
   a. What has been done since 11/21/13 conference call, and what should be done going forward

XII. Other Topics

XIII. Adjournment