The Forum

The New York State Wetlands Forum, Inc.

Abstracts

2001 ANNUAL SPRING MEETING

NEW YORK WETLANDS – REGIONAL PROGRAMS FROM A STATEWIDE PERSPECTIVE

HOLIDAY INN, ALBANY, NEW YORK
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KEYNOTE ADDRESS: A Watershed View of Wetlands

Ralph Tiner, U.S. Fish and Wildlife Service, 300 Westgate Center Drive, Hadley, MA 01035, Telephone: 413-253-8620, Ralph_Tiner@fws.gov. *No abstract provided.*

CONCURRENT SESSIONS A

Wetlands in the Courtroom: An Update on Judicial and Administrative Decisions

The Supreme Court Wades in on Isolated Wetlands and Other Recent Cases.
Jamie Woods, U.S. Attorney's Office. *No abstract provided.*

New Administrative Enforcement Procedures at EPA.
Terresa Bakner (1) and Daniel Montella (2). Address 1: Whiteman, Osterman and Hanna, One Commerce Plaza, Albany, NY 12260, Telephone: 518-487-7615, Fax: 518-487-7777, tmb@who.com. Address 2: USEPA Region 2 Wetlands Protection Branch, 290 Broadway, New York, NY 10007, Telephone: 212-637-3801, montella.Daniel@epamail.epa.gov. *No abstract provided.*

Does Anyone Ever Win a Takings Case?
Kevin Bernstein, Bond, Schoeneck, and King, One Lincoln Center, Syracuse, NY 13202, Telephone: 315-422-0121, Fax: 315-422-3598, kbernstein@bsk.com. *No abstract provided.*

NYSDOT: A Shift Towards Environmental Stewardship

A NYSDOT Culture Shift in Wetland Mitigation: URE - A Case Study.
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Abstract
Traditionally, impacts to wetlands resulting from transportation projects have been mitigated by constructing wetlands areas of equal size adjacent to the project. Often, this approach is overly expensive and has resulted in wetland creation areas of poor quality. This is due to inherent site constraints such as, large excavations, disposal costs, lack of wetland soils, lack of hydrology, unsuitable adjacent habitat, inadequate upland buffers and spread of non-native invasive plant species. In recent years, in an effort too more fully and effectively compensate for lost wetland functions and values NYSDOT has pursued more innovative mitigation options. This has included, off-site locations, In-Lieu Fees and Consolidated Mitigation Plans.

The Utica-Rome Expressway is a good example of how wetland mitigation has progressed over time. Design of Utica-Rome Expressway began in the 1970's with the Marcy -Utica Deerfield Project, during the early years of wetland awareness and protection. As a continuation of this project the final contracts for Utica-Rome Expressway continue into the 21st century. During this time, the level of sophistication of wetland science and the complexity of wetland regulation has increased many-fold. As a result of this culture shift, expectations of wetland mitigation projects have increased dramatically, as have the options for replacing the wetland acreage, functions and values. Wetland mitigation for the Utica-Rome Expressway project has ranged from traditional wetland creation to a multi-agency agreement to better spend mitigation money on wetland / public benefited projects.

Adirondack Park Non-native Invasive Plant Species Project.
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Abstract
New York State Department of Transportation (NYSDOT) has initiated a plan to monitor and control the spread of non-native invasive plant species in the Adirondack Park. The spread of invasive non-native plant species is one of the greatest threats to our natural plant communities throughout the United States. Increasingly we are seeing aggressive non-native plants taking the place of many of our native plants. Transportation systems have often contributed inadvertently to the spread of these plant species by way of construction and maintenance activities and through the conduits of their interconnected nature. Thus, the spread of invasive non-native plant species by way of our transportation systems has put the ecological balance of our native plant communities at risk.

The Adirondack Park, the largest public and private land reserve in the eastern United States, serves as an important ecological and recreational resource for our country. Until recently, the Adirondack Park has been relatively free from the degree of invasion by non-native plants found in other parts of the country. Currently non-native plant species such as Purple Loosestrife, Common Reed, Japanese Knotweed, are primarily concentrated along transportation corridors, spreading by way of highway related use and projects. Without efforts to control problem species, the future of many of the natural plant communities, many of which are unique only to the Adirondack Park, will be in jeopardy. For these reasons NYSDOT has joined with the Nature Conservancy, Adirondack Park Agency, Adirondack Student Conservation Association of AmeriCorps, New York State Department of Environmental Conservation, and local volunteers to inventory and monitor invasive plant species in an effort to develop a management plan, control methods and a Best Management Practices Guide for NYSDOT related to this problem. At working group meetings, this team has identified and prioritized problem species of which require immediate control.

NYSDOT is currently creating an inventory of problem locations using a Geographic Information System (GIS.) Data includes the invasive plant species, highway reference marker location, concentration of plants, relationship to the highway and any important resource/features (e.g. wetlands, streams, ditch out-letting to wetlands), and control recommendations. The GIS will enable our project designers and maintenance forces to quickly access this data in an effort to limit the further spread of these species (e.g. ditch cleaning and disposal to new sites.)

NYSDOT is experimenting with manual control methods at various locations throughout the State. At an old landfill located within the Adirondack Park, NYSDOT is experimenting with a control method for Japanese Knotweed. The use of geotextile fabric and capping with excavation spoils from a nearby construction project is being done in an effort to determine the effectiveness of burying this problematic species. Chemical methods of control are an area also being researched and evaluated for possible future use. Where a chemical method is determined to be the only effective, reasonable and environmentally sound control for a particular species, NYSDOT will incorporate problematic locations into their existing herbicide activities where possible (e.g. guide rail spraying.) NYSDOT has also initiated contracts including the Regional Landscape Contract, which has, as a portion of the contract, addressed control of invasive species in problematic locations.

The working group is also in the process of determining the best control methods for species, depending on the degree of infestation. Best management practices such as the use of weed free mulch (e.g. straw vs. hay) are being incorporated into all projects in the Adirondack Park and the everyday practices of NYSDOT Maintenance forces.

The combined efforts of many Agencies and concerned citizens will serve as a front-runner to address the influence transportation has on the issue of invasive species and help to maintain the ecological integrity within the Adirondack Park. Further this effort will provide valuable information to assist with this problem outside the Adirondack Park.

Spooner Creek Restoration and Fish Ladder.

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Abstract

Spooner Creek is a dendritic 2nd order stream located in Erie County, New York that flows into Cattaraugus Creek, a tributary of Lake Erie. Spooner Creek is identified by the New York State Department of Environmental Conservation (NYSDEC) as a “very significant resource” within Western New York for migratory steelhead trout from Lake Erie.

In the early summer of 1998, a severe storm occurred along the southern portions of Erie County, impacting numerous streams along the Cattaraugus Creek Watershed. One of these impacted steams was Spooner Creek, in the proximity of NY Route 39, in the Town of Concord, Erie County New York. The current alignment of the existing culvert under Route 39 and the storm event resulted in severe stream bed degradation, and erosion to the left and right channel banks. In addition, a large scour hole developed downstream of a grade stabilizing sheet pile wall. The depth of the scour hole combined with the height sheet pile wall created an impassable barrier for the upstream migration of steelhead trout.

To facilitate the migration of steelhead trout beyond the Route 39 structure, the NYSDOT constructed a fish ladder comprised of five (5) permanent sheet pile walls, along with the placement of extra heavy stone within the bed of the creek. A series of hydraulic jumps and resting pools were created from the five (5) sheet pile walls, and the placement of the extra heavy stone fill reconstructed a 200 meter section of Spooner Creek with a two (2) percent slope. In addition, a series of twelve (12) baffles were retrofitted within the concrete box culvert to increase water depths during periods of low flow to assist in the migration of fish through the structure. The riparian habitat of Spooner Creek damaged from the 1998 storm event and construction activities was restored and protected through the use of bioengineering and conventional engineering practices.

The Spooner Creek project was completed in the fall of 1999. Based upon NYSDEC fisheries survey data, graduate studies by SUNY Fredonia, and from general observations, steelhead trout are migrating effortlessly beyond the structure and reproducing successfully

in upstream nursery grounds. Bioengineering and conventional engineering methods are protecting the creek slopes from erosive forces, along with providing important habitat for fish and terrestrial fauna.

Vegetation Sampling

Vegetation Sampling - An Overview of Field Techniques, Applications, and Data Analysis Pitfalls.

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Abstract

There are many excellent, well-tested methods available for the quantitative sampling of vegetation. Most were developed by plant ecologists in the early to mid-1900s. Unfortunately, many of today's scientists have a limited background and poor understanding of these techniques and their proper application. They struggle to develop methods that are not necessary and make generalizations based on poorly collected data. An overview will be presented on vegetation sampling, including various techniques, plot sizes, sampling adequacy, field applications, and data analysis. Pros and cons of different methods will be presented, with a slant towards wetland vegetation. Terms, such as frequency, density, cover, abundance, importance value, species richness, and diversity will be explained. Data analysis pitfalls and misapplications will be reviewed.

Sampling of Aquatic Vascular Plants

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Abstract

Openwater wetland, stream, pond and lake habitats are home to a variety of submerged, floating and floating-leaved vascular plants. Strong currents and wave action have led to plant adaptations that include small, narrow or dissected leaves. Consequently, many of these aquatic plants look similar. This program will feature an illustrated introduction to common species and a brief discussion of sampling techniques that can reveal the community importance of these plants.

Importance Values - Case Study.

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Abstract

Analysis of species importance values and prevalence indices is a simple method that has utility in situations involving repeated annual sampling of vegetation plots, as in USACOE-required monitoring of constructed wetlands. It makes use of species coverage data, which can be collected relatively quickly, and which can be processed using simple computer spreadsheets. The results provide summaries of year-to-year trends in species abundance and changes in wetland character of the vegetation. The method will be outlined and a case study presented.

Classification and Mapping of New York's Calcareous Fens.

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Abstract

In 1998 The Nature Conservancy and the New York Natural Heritage Program initiated a project, funded by the Biodiversity Research Institute, to consistently classify and map New York's calcareous fens. Calcareous fens differ from other wetlands in that they are open peatlands associated with groundwater discharge areas and calcareous bedrock. The New York Natural Heritage Program's 1990 ecological community classification described five types of calcareous fens, all of which are considered rare in New York: marl fen, rich graminoid fen, rich sloping fen, rich shrub fen, and medium fen. These fen types were focused on in this project to focus conservation efforts. The goals of the project were to collect current information, including plot data, from the highest quality calcareous fens in the state, to map each fen using aerial photos, and to consistently classify and rank each fen. During the project, current information was collected from seventy calcareous fens, including fifty-four releve plots. Products of the project include updated descriptions of the fen types, an analysis of plot data, a key to the fen types, a crosswalk of the New York fen classification to The Nature Conservancy's national classification and exemplary examples of each fen type. The presentation will summarize the results of the project.

CONCURRENT SESSIONS B

Wetland Values and Mitigation

Does Wetland Area and Appearance Establish Resource Value?

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Abstract

Urban wetlands are generally considered lacking sufficient area to display valuable functional values. They are often urban spaces filled with trash and debris, visually degraded, and without measurable value. Professional and scientific focus is then applied to preservation, restoration or creation of larger ecosystems.

Urban wetlands display many environmental problems including polluted waters, sediment loading, and dominance by invasive species. Though visually and physically degraded, these mini-wetlands may display significant positive values for a range of important community oriented functions.

1.wildlife niches supporting a diverse mix of species from insects to mammals.
2.sites of visual diversity and quality in the otherwise bland and bleak landscape.
3.vegetated spaces where leaf surfaces collect, filter, and reduce dust particles.
4.Educational and recreational places for children to gain knowledge of nature.
5.renovation basins for urban runoff with its many degrading components.
6.landscape depressions that hold water and foster stormwater infiltration.
7.silt and sediment traps collecting and removing waterborne particles.
8.local open spaces important for establishing green islands or greenways.

Ecosystems that display this array of important natural functions must be considered valuable. When coupled with a location within our urban world, they provide habitat that often cannot be replaced. Size is not important. Looks can be deceiving. If habitat values are present they will be used by an array of species. Therefore, urban mini-wetlands must be considered viable natural habitats worthy of protection, preservation, restoration, enhancement, or creation.

New York State's First Wetland Mitigation Bank - Rochester's Cornerstone Group Bank in Monroe County

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Abstract

In July 1999, Rochester's Cornerstone Group completed construction of a 20-acre wetland mitigation bank in association with the Rochester International Commerce Center in the Town of Chili, Monroe County. This is the first entrepreneurial mitigation bank to be approved and developed in New York State. Permitting for the bank formally began in 1997 and was directed through a Mitigation Banking Review Team consisting of federal and state regulatory agencies. The mitigation banking agreement for the project authorizes the sale of mitigation credits as compensation for impacts to federal wetlands in the Black Creek watershed and the northern portion of the Genesee River watershed. The agreement specifies that 80% of the mitigation credits will become available upon meeting first-year monitoring goals (i.e., December 2000) and 20% after achieving second-year goals (i.e., expected in December 2001). It is anticipated that mitigation credits will be issued primarily for impacts to low quality wetlands from a variety of commercial and residential development projects.

The wetland mitigation bank consists of hemi-marsh, wet meadow, and forested wetland communities. A diversion channel from an existing stream meanders through the bank, thereby diversifying habitat availability, providing a supplemental hydrologic source, and promoting fish use of the bank. First year monitoring by Beak in September 2000 documented: 1) excellent plant establishment; 2) good interspersion of wetland plant communities; 3) a broad range of water depths; 4) a high diversity of wetland plants, with a predominance of FACW and OBL species; and 5) extensive colonization and use by wetlands wildlife.

Panel: Question and Answer Session on Mitigation in New York

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Maynard Vance, Senior Wildlife Biologist, NYS Department of Environmental Conservation, Stamford Office, Telephone: 607-652-2451, mhvance@gw.dec.state.ny.us
Daniel Montella, USEPA Wetlands Protection Branch, 290 Broadway, New York, NY 10007, Telephone: 212-637-3801, montella.daniel@epamail.epa.gov
Anne Secord, US Fish and Wildlife Service, 3817 Luker Road, Cortland, NY 13045, Telephone: 607-753-9334, Fax: 607-753-9699, anne_secord@fws.gov.

Hudson River Issues

Ecosystem Approach to Restoration Applied at a Local Level: A Strategy for Hudson River Restoration Planning.

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Abstract

Current practice calls for an ecosystem wide approach to ecological restoration. Assessment, goal setting, and success evaluation should be conducted on large spatial and temporal scales. The Hudson River estuary presents several challenges to an ecosystem wide restoration effort. The complex nature of ecological restoration is intensified by regional differences in geology, biology, and watershed use. In addition, several agencies, municipalities and private organizations have expressed interest in restoration within their jurisdiction. The Hudson River Estuary Restoration Plan currently under development will attempt to consolidate and enhance local efforts by establishing a set of guiding principles and goals for ecosystem restoration. It will then provide technical guidance to local restoration efforts, allowing independent projects to contribute to ecosystem wide goals.

Mapping of Submerged Aquatic Vegetation In the Hudson River.

Eugenia M. Barnaba (1) and Elizabeth A. Blair (2). Address 1: Institute for Resource Information Systems, 303 Rice Hall, Cornell University, Ithaca, New York 14853, Telephone: 607-255-0800, F ax: 607-255-4662, emb6@cornell.edu. Address 2: NYS Dept of Environmental Conservation, Bard College Field Station, Annandale, New York 12504, Telephone: 845-758-7011, Fax: 845-758-7033.

Abstract

Reliable information on the abundance, distribution and ecological functions of submerged aquatic vegetation (SAV) is necessary for understanding and managing what is considered to be an important component of a wide variety of aquatic ecosystems due to its contribution to primary productivity and its importance as habitat for fishes. SAV beds are being identified, mapped and monitored in a 100 mile-stretch of the Hudson River. High quality, true color aerial photographs were acquired during periods of low tide from about mid-July through August in 1995 and 1997 to document the spatial distribution of beds.

The classification focuses on identification and mapping of *Vallisneria americana* (Va) and *Trapa natans* (Tn). Although the predominant species in the Va category is *Vallisneria americana*, mixed species of plants growing submerged in the waters of the Hudson River and rooted in the riverbed may also be included. The mapping of *Trapa natans*, a floating-leaved, rooted aquatic plant, was seen useful as it is widely distributed in the river, the extent of which is also unknown. SAV data are being created in both analog and digital form. Project partners include Cornell University, Hudson River National Estuarine Research Reserve, New York State Department of Environmental Conservation, and Institute of Ecosystem Studies.

A New Phenomenon: Hudson River Bald Eagles.

Peter Nye, NYSDEC, Wildlife Resources Center, Delmar, NY 12054, Telephone: 518-478-3053.

Abstract

During most of the 20th century, especially the later half, the mighty Hudson was mostly devoid of it's largest piscivore, except for a few wintering birds which had also nearly disappeared by 1960. However, heightened environmental consciousness, the banning of the use of DDT, the restoration and conservation of habitats, and active reestablishment programs has dramatically changed the situation along this great riparian area as we begin the 21st century. By the year 2000, up to 100 bald eagles were calling the Hudson their home for 3 months, while five pairs call it home on a permanent basis, breeding and raising their young here. Since eagles began nesting along the Hudson again in 1997 after a 100 year hiatus, 20 young have successfully fledged into New York's environment. Undisturbed habitat areas, abundant prey, and suitable foraging, perching and roosting sites are among the attractions and the potential problems for eagles along the Hudson. Studies have been conducted by DEC and others since 1980, recently focusing on contaminants within their food chain. The future of bald eagles along the Hudson looks positively……

Wetland Monitoring

Avian and Herbaceous Community Characteristics Five Years After Wetland Restoration in the Montezuma Wetlands Complex.

Sheila Sleggs (1) and Cindy Patterson (2). Address1: Ducks Unlimited, Inc., Great Lakes Atlantic Region, 1069 Casey Road, Basom, NY 14013, Telephone: 716-948-8473, Fax: 716-948-8476, ssleggs@ducks.org. Address 2: Montezuma Wetlands Complex, 3395 Routes 5&20 East, Seneca Falls, NY 13148, Telephone: 315-568-5987, Fax: 315-568-8835, ckfriers@yahoo.com.

Abstract

Wetland restoration efforts continue throughout the United States. Meanwhile, minimal long term monitoring has occurred to evaluate the development of restored wetlands. The Montezuma Wetlands Complex Initiative in central New York presents an excellent opportunity to monitor and evaluate ongoing wetland restoration attempts in a complex of restored and existing wetlands. The goal of our research was to monitor and evaluate avian and herbaceous vegetation community development in restored wetlands over a five-year period.

Data were collected on two restored emergent wetlands and two control emergent wetlands, one and five years after restoration. Species richness and diversity were calculated for both birds and herbaceous vegetation and compared between year one and year five, and between restored and control wetlands. Bird species richness and diversity decreased from year one to year five on restored wetlands to become more similar to control wetlands. Herbaceous species richness and diversity increased from year one to year five to become less similar to control wetlands. Purple loosestrife (*Lythrum salicaria*), an invasive, exotic wetland plant, increased to levels significantly greater than those found at control wetlands. While our data clearly show trends in avian and herbaceous vegetation community development, differences between restored and control wetlands after five years indicate that, depending on project goals, continued monitoring and evaluation may be necessary.

A Rapid Approach to Required Post-Construction Wetland Vegetation Monitoring After Pipeline Construction.

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Abstract

With the upcoming construction of large pipeline projects within New York State, the restoration of wetlands crossed by linear projects is a topic of current interest. Federal and state authorizations for construction of pipeline projects through wetlands typically require 2-5 years of post-construction monitoring to assess the long-term condition of wetlands. The standard Federal Energy Regulatory Commission (FERC) wetland monitoring condition requires qualitative cover assessments along with quantitative sampling to calculate pre-construction and post-construction community diversity. Due to the large number of wetlands crossed by large pipeline projects, a rapid, yet scientifically valid sampling methodology is required. Northern Ecological Associates, Inc. (NEA) has implemented a modified version of an established qualitative/quantitative assessment technique that provides a means of rapidly documenting wetland characteristics.

In order to obtain both qualitative and quantitative data the established plant sampling technique, the Braun-Blanquet Releve Method (Bonahm 1989) is used. The qualitative component involves a walkover of the wetland to visually assess the overall condition of the site and recording of a variety of parameters on a checklist-type data form. The quantitative component of the program involves determination of percent cover in accordance with a variable-sized quadrat sampled at a representative location within the wetland as per the Releve method. Using cover data collected using the Releve method, diversity may be calculated using the Shannon-Weaver diversity index.

Using the approach and forms developed by NEA, the necessary qualitative and quantitative data for each wetland may be collected in about a half hour. Given good weather, terrain, and access conditions, a two-person crew can sample over 20 wetlands per field day.

Wetland Landscapes: Integrating Approaches To Evaluating Landscape Data for Effective Wetland Monitoring.

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Abstract

Wetlands are defined as waters of the United States under the Clean Water Act (CWA), and are thus part of the waters that states are required to assess and report the condition of under §305(b) of the Clean Water Act. An effective wetland monitoring program is intended to provide a systematic assessment of the chemical, physical, and biological condition of wetlands, in order to evaluate the effectiveness of our wetland programs in achieving the CWA's goals, "to restore and maintain the chemical, physical and biological integrity of the nation's waters". Efforts to assess and monitor wetlands have focused largely on the quality of individual wetland sites, most frequently in conjunction with regulatory actions under §404 of the CWA. Such assessments do not consider that wetlands act collectively across a landscape to provide functions to receiving waters within a watershed, and that some of those functions, such

as metapopulation support, can only be considered at a landscape scale. The use of landscape data can be incorporated into a monitoring program to provide landscape profiles, or the distribution of types, numbers, and abundance of wetlands by HGM class. Landscape profiles can then be used to assess wetland landscape condition, to identify goals and profiles for mitigation, and to establish priorities for watershed recovery plans. Landscape data can also be used to identify populations of wetlands at risk from environmental stressors, as well as identify populations of species at risk of local loss or extinction. Finally, landscape information can provide meaningful analyses of cumulative impacts for use in regulatory decisions. Approaches to incorporating landscape-level analyses in a broader wetland monitoring program are suggested in order to provide a more complete strategy for establishing baseline condition and monitor change in these waters.

CONCURRENT SESSIONS C

Stream Restoration

Facilitating Stakeholder Collaboration in Stream Management Planning.

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Abstract

Stream systems involve many diverse, integrated functions, making managing streams a necessarily interdisciplinary effort of many stakeholders. Notwithstanding, there are few institutional structures in the public arena focused on managing for these multiple functions in an integrated approach. The development of an interdisciplinary approach to managing stream systems will require an initiative specific to this purpose. In an effort to promote such an approach, the NYCDEP Stream Management Program, in cooperation with county Soil and Water Conservation Districts, the NYS Department of Environmental Conservation, the Cornell Program on Environment and Community, and the Cornell Cooperative Extension of Sullivan County, recently sponsored a two-day Facilitated Planning Session, drawing together ninety-five representatives of local, state and federal government agencies, sport fishing groups, and environmental NGOs. The purpose of the workshop was to begin to develop multi-objective, watershed-scale, community-based stream management plans in four Catskill region sub-basins. A series of presentations and exercises were designed to take participants through a process of identification of stakeholders, potential management themes or tracks, and public outreach strategies. A review of the workshop will be presented.

Stream Stabilization in the Catskills – The Broadstreet Hollow Project

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Abstract

In the NYC watershed, the NYCDEP has worked in cooperation with local partners such as the Greene County Soil & Water Conservation District to address turbidity sources associated with the stream systems in the City's water supply system. Completed in October 2000, the Broadstreet Hollow project presented some unique challenges to the restoration of a stable stream reach. The stream segment had been stressed since the mid 1970's when development resulted in fill encroachment on the floodplain and entrenched the stream against the adjoining high bank. In the flood of January 1968, severe lateral migration of the meander bend damaged one structure and threatened another. Emergency work preformed by the NRCS and local municipality resulted in the streambed armor being removed exposing a deep clay lens. Subsequently, after the flood the stream started to incise into the clay layer, the adjacent high slope experienced a slope rotational failure and eventually a artesian condition with a mud boil appeared in the middle of the stream. The mud boil resulted in extreme turbidity ion the stream channel and accelerated the slope failure. In September 2000, the GCSWCD started construction of a restoration project using fluvial geomorphology principles. A new channel plan form was developed, and a series of 13 cross vanes were used to establish a step-pool complex over the 1,100 ft of the impacted reach. Groundwater relief wells were used to stop the mud boil and bioengineering was used to stabilize the banks. The project was completed on November 1, 2000 and on December 17, 2000 a bankfull event occurred and the project performed very well. The project worked exceptionally well to reduce turbidity levels coming from the site, and whereas the site was producing 30-40 NTU year round at a point ½ way down the watershed (1 mile) the water is now running clear with no visible turbidity.

Fish and Habitat Monitoring at Stream Restoration Sites in the Catskills.

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Abstract

The U.S. Geological Survey (USGS) in cooperation with the New York City Department of Environmental Protection (NYCDEP) and the Greene County Soil and Water Conservation District (GCSWCD) has inventoried fish communities at several stable and unstable stream reaches in the New York City West of Hudson Watershed as part of a NYCDEP stream-restoration program. Major objectives of the fisheries effort are to determine if (1) fish populations and communities differ between stable and unstable stream reaches and (2) improved stability of restored reaches is reflected in fish populations and communities. Fishery surveys were completed in 2000 for 3 sets of streams before restoration of unstable treatment reaches were implemented.

Preliminary findings address the first objective and indicate that (a) communities at stable reference reaches generally depict productive headwater systems; juvenile and mature brook trout and slimy sculpin are common, brown trout are rare to common, and blacknose dace and cyprinid minnows are present in low to moderate densities and (b) communities at unstable treatment and control sites are atypical; slimy sculpin, blacknose dace, and cyprinids are present in high densities and few if any brook trout and brown trout are observed. Annual surveys of fisheries and habitat in 5 to 6 sets of streams after restorations are done are planned to address the second objective.

Wetland Regulatory Issues

Implementing the New York State's Wetlands Regulation Program: Views of Wetlands Owners and Permit Applicants.

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Abstract

Landowners subject to regulatory programs are often characterized as unfairly burdened. Individuals who own regulated wetlands, and who have applied for wetlands permits, are also uniquely positioned to provide insights about the NYS wetlands regulation program. However, this stakeholder group is diffuse and its opinions not well known.

We used mail questionnaires to characterize experiences and beliefs of individuals who applied for NYS wetlands permits in 1995 (n=594), and others who owned DEC-regulated wetlands (n=2,012). Three of our objectives were to: (1) estimate support for, and opposition to, land use regulation and wetlands regulation; (2) identify determinants of attitudes towards wetlands regulation; and (3) determine the extent to which applicants modify project plans to obtain permits.

Key findings included:

(1)Applicants and owners were more supportive of wetlands regulation by DEC than by municipal governments, countering arguments that land use regulation should be locally administered.

(2)Respondents were more supportive of land use regulation generally then wetlands regulation specifically, suggesting that attitudes towards land use regulation alone cannot explain attitudes towards wetlands regulation.

(3)Satisfactions with the NYS wetlands program depended upon beliefs about program effectiveness, satisfactions with the permitting process, and attitudes towards wetlands regulation.

(4)Applicants often modified proposed projects to obtain a permit. However, they generally did not believe these actions helped protect wetlands, and appeared generally skeptical about wetlands program effectiveness. These results imply a need to: inform permit recipients about how project modifications benefit wetlands; and better understand the basis of applicants' beliefs about modifications.

Alternatives Analysis Policy Review.

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Abstract

The guidelines that the Corps must apply to all Section 404 permit decisions prohibit granting a permit if "there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." [40 CFR 230.10(a)]. This test is referred to in regulatory jargon as the "least environmentally damaging practicable alternative" or "LEDPA." Thus there are three guiding principles used in evaluating other sites to decide if the proposed site is the LEDPA: 1) practicability; 2) less adverse impact on the aquatic ecosystem; and 3) lack of other significant adverse environmental consequences. If an alternative site fails to meet any one of these three tests, it cannot be the LEDPA. The EPA clarified in the guidelines what practicable means: "An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." [40 CFR 230.10(a)(2)]. The Corps has clarified that availability and capability refer to the applicant, consistent with *LWF v. York*. With respect to the "less adverse impact" test, EPA did not intend an exhaustive comparative analysis. EPA stated in the preamble to its guidelines: "Of course, where there is no significant or easily identifiable difference in impact, the alternative need not be considered to have 'less adverse' impact." Finally, with respect to the "other consequences" test, EPA states in the preamble that the permitting authority may "take into account evidence of damage to other ecosystems in deciding whether there is a 'better' alternative."

The above discussion would suggest the following general criteria for comparing alternative sites: 1) availability to the applicant; 2) capability of the applicant to develop, e.g., zoning, permitting; 3) technical or logistical restraints, e.g., size, topography, geology, infrastructure, transportation; 4) Viability (cost versus revenues); 5) impact on aquatic resources (measure only significant, identifiable differences); and 6) impact on other ecosystems, e.g., air quality, uplands, prime farm lands, floodplains. The guidelines establish a rebuttable presumption that a practicable alternative exists if the "*basic* purpose" of the proposed project is not water dependent. However, for the process of evaluating the feasibility of a project, the guidelines state that: "An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of *overall* project purposes." [40 CFR 230.10(a)(2)]. Based on this, Corps headquarters has distinguished the ***basic*** project purpose used to determine water dependency from the ***overall*** purpose used to rebut the presumption that a practicable alternative exists. This distinction is explained in detail in a draft guidance document enclosed with a June 18, 1992 letter from Corps headquarters to EPA headquarters. Although this draft guidance was provided to Corps districts, it is important to note that it has no official status since EPA neither approved nor disapproved it. However, as stated in the Corps' transmittal letter, it was written to consolidate and clarify previous guidance furnished to the field offices. Additional guidance has been provided by the ACOE regarding the number and geographic range of alterative sites; market entry; mitigation sequencing, and the concept of "significant degradation."

Alternatives Analysis: Case Studies and Practical Tips.

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Abstract

An ACOE wetland permit application must contain a number of discussions. These include basic applicant information, project descriptions, a discussion of the need for the project, and how that relates, on balance, to other issues in the public interest review. The centerpiece of most ACOE permit applications is the Section 404(b)(1) Guidelines Analysis. The purpose of this analysis is to demonstrate to the regulatory community that the applicant has chosen the "least environmentally damaging practicable alternative." Within that proof, there are a number of sub-proofs that must be met. These include the rebuttable presumption that there are no other locations which would have less impact on the wetlands; and demonstrations that the applicant has avoided and minimized wetland impacts to the maximum extent practicable. In order for the regulatory community to understand what is "practicable" for the applicant, they must gain an understanding of the business practices and perspectives of the particular applicant. That is to say, a project that does not make good business sense is probably not practicable. The presentation will focus first on the need for the ACOE permit application to establish some "rules of the game," based on both trade materials and the individual business information and perspective of that applicant. In this way, the practicability of other alternatives that might be suggested by various parties involved in the review can be evaluated using these established "rules of the game." Secondly, the Alternatives Analysis must be developed and organized around the project being proposed. Marketing, economics, business considerations, and logistics are different for golf, warehouses, retail and utility projects. The analyses methodologies utilized to evaluate alternatives, and the manner in which they are presented must be logical for the type of project being proposed.

Regulatory Perspective.

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Wetland Potpourri

Small Mammal Trapping at Burnt Swamp.

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The Burnt Swamp wetland is an eight-acre parcel in the Town of Rosendale, owned by the non-profit organization Lower Esopus River Watch. Development of an Environmental Education Center is currently underway. A number of biological surveys are being conducted at the site including a small mammal-trapping project. These projects are being integrated as a service-learning project with local high schools. The setup of this study and the integration of service learning will be discussed.

Monitoring Wetland Changes at Whitney Point Reservoir.

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Abstract

The U.S. Army Corps of Engineers Baltimore District has owned and operated the Whitney Point Dam since it was constructed in 1942. The dam is located on the Otselic River, just upstream of the Village of Whitney Point, NY. The dam is about 40 miles upstream of Binghamton, NY. Originally operated for only flood control purposes, the previously dry dam was converted to have a lake in the 1960's and added recreation to its purpose. The current operation of this lake is to maintain a roughly 1200 acre pool at elevation 973 from May 1st to December 1st each year and to draw the lake down to 966 from 1 December to May 1st over the winter. This seven-foot drawdown decreases the lake's surface area by almost 300 acres and exposes the near shore substrate to annual freezing. The District is proposing a project modification under Section 1135 of the Water Resources Development Act to keep the lake at elevation 973 all year, other than during flood control operations, when the pool can get as high as elevation 1010. This project modification would also add low flow releases for downstream river reaches as a project component.

The project modification should have many benefits to the lake ecosystem. Most significantly, the fish community and the wetland resources should experience a more stable environment. The District is predicting roughly 288 acres of wetlands and SAV to establish in the lake. The District also expects the wetlands around the lake, above elevation 973, to exhibit enhanced functions as a result of a stable hydrologic regime. This District has installed a network of shallow groundwater wells to measure the draining effects of future drought drawdowns as well as to predict which wetlands are currently impacted by the winter drawdowns. To facilitate the establishment of the wetlands in the lake, the District is proposing to plant vegetation in the lake as a source for further development of wetlands. There will also be several habitat enhancement features to the project, including excavation for shallow and deep pool habitat, fish escape channels wetland islands and other ecosystem enhancements.

Railyard Constructed Wetlands Treatment System: A Cost Effective Stormwater Management Alternative.

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Abstract

Continuing success with the use of constructed wetlands (CW) technology to mitigate heavy metals, suspended sediments, nutrients, glycol and petroleum-related contaminants in a variety of aqueous waste streams has established the efficacy of the technology for treatment of both point and non-point sources. In this project, a 3-acre CW treatment system has been designed for the treatment of stormwater runoff at a railyard located in Norfolk, Virginia. When constructed in spring 2001, the system will treat stormwater runoff from maintenance areas, fuel handling facilities and track areas located in the central section of the railyard. The principle constituents of concern include oil and grease, coal fines, heavy metals and pH.

The 3-acre system consists of four subsurface flow-type CW treatment cells designed for both independent and collective operation. Key design features include the use of high calcium carbonate treatment media, an 18-inch treatment depth, a two-day hydraulic retention time and entirely passive operation. Each cell will also be supplied with a synthetic liner to protect groundwater quality and facilitate water level maintenance. The system is sized to treat a maximum hydraulic loading rate of 270,000 gallons per day.

The presentation will provide details of the CW treatment system including design and operational features, costs, constituent removal mechanisms and performance expectations. The presentation will conclude with case histories of two operating CW systems constructed to mitigate heavy metals and suspended sediments in landfill leachate and municipal stormwater, respectively.

CONCURRENT SESSIONS D

Advanced Planning for Capitol Region Mitigation

Panel Session

Karl Parker, NYSDEC, 50 Wolf Road, Albany, NY keparker@gw.dec.state.ny.us.
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Al Briesch, NYSDEC. Telephone: 518-478-3057.
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Abstract

It seems that there is an opportunity to implement a more pro-active approach to wetland mitigation in the Capital District. (In this context, wetland mitigation means wetland creation, restoration, enhancement, and preservation.) Consultants working in the Capital District have experienced the frustration of not being able to find "the right site" for wetland mitigation for a project. It is also likely that the environmental community is also frustrated by not having adequate funding for their projects, or from working with consultants who are scared of proposing that their client singularly undertake a major wetland mitigation project in the Capital District. It seems that by joining resources to work together towards common goals, much more could be accomplished than the current mitigation situation. The purpose of this session is to examine whether there is an opportunity to do advance wetland mitigation planning in the Capital District.

One way to accomplish these goals would be to have a working group identifying areas that have the opportunity for wetland creation, enhancement, restoration, and protection. This working group may also be able to do some of the advance political leg work that might be necessary in some restoration or mitigation efforts. And the group may be able to help coordinate the efforts of the environmental community and the consulting community.

Here are some questions to encourage discussion:

1. What areas does your agency protect?
2. How do you go about identifying areas for protection?
3. Do you do any advance identification of those areas?
4. Are there any mechanisms already in place by which your different groups work together to coordinate mitigation planning or preservation efforts? How do you prioritize these activities?
5. Do you think that there is a value in pooling developer's money to do either advance planning efforts or actual wetland creation/restoration/preservation efforts in the Capital District?
6. Do you think that mitigation ratios could be worked out to give Applicants credit for implementing advance planning efforts, rather than just "on the ground" wetland mitigation?
7. What can be done to stop unauthorized ATV use in open spaces of the Capital District?
8. Who would be on such a working group?
9. What would be needed to get such a working group going?
10. Do you think that such a program has merit for further investigation?
11. In the meantime, how can a consultant work with you to find good mitigation opportunities?

If you have additional ideas regarding this discussion, please contact the panel members.

Tidal Wetlands in New York State

Draft Jamaica Bay Tidal Wetlands Losses 1857 - 1999.

Dave Fallon (1) and Fred Mushake (2), New York State DEC Marine Resources - GIS unit, 205 Belle Meade Rd E. Setauket, NY 11733. Telephone 1: 631-444-0464, djfallon@gw.dec.state.ny.us. Telephone 2: 631-444-0465, fmmushac@gw.dec.state.ny.us.

Abstract

A tidal wetlands trends analysis being conducted in New York State has shown that the regulatory program to protect tidal wetlands from the historic "fill and build" damage is extremely successful. In many areas such as Shinnecock and Moriches Bay on Long Island, there is no detectable loss due to such activities. In fact the wetlands have increased over 250 acres in Shinnecock and Moriches Bay due to a landward migration of the wetlands. However, the tidal wetlands trends analysis for the islands in Jamaica Bay in New York City shows a different and disturbing trend. The study area includes all the islands within Jamaica Bay. Between 1857 and 1924, the year of the first vertical aerial photography studied, the marsh islands varied in size from 3249 to 3452 acres with

average changes of up to 10 acres per year. Excluding wetlands lost to dredging and filling prior to protecting legislation in the 1970s (780 acres lost), 510 acres were lost between 1924 and 1974 (10 acres lost per year). 526 acres of tidal wetlands were lost between 1974 and 1994 (26 acres per year). 220 acres were lost between 1994 and 1999 (44 acres per year). This loss is almost exclusively due to the "drowning" and or erosion of the *Spartina alterniflora* marshes. The vegetated marsh is being converted to nonvegetated coastal shoals, bars and mudflats.

Tidal Wetland Mapper.

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Abstract

The New York State Department of Environmental Conservation (DEC) is mapping the Hudson River tidal wetlands from the Tappan Zee Bridge north to the Troy Dam. The DEC is undertaking this inventory as one of the 20 commitments of the Hudson River Estuary Management Plan released by Governor Pataki in May 1996. Wetlands larger than 0.5 acres are being inventoried.

To make the data more widely available, tools are being created to facilitate the use of these data. These tools include a multimedia viewer for non-GIS professionals, and an extension for Arcview GIS. Both tools incorporate image viewers (for ground photographs), video players (for ground and helicopter videos) and text viewers, for wetland site descriptions.

This presentation will be a demonstration of the viewers and data, as well as the technology used to develop these tools.

Use of On-Site Monitoring Data as an Aid in the Restoration of a Salt Marsh in Pelham Bay, New York.

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Abstract

On-site monitoring data was used to identify the relationship between tidal hydrology, soils and vegetation for the restoration of a salt marsh. The site that has been previously filled with dredge spoils degraded over a number of years contained substantial stands of nuisance vegetation, particularly *Phragmites australis*. We measured tide elevation, ground water levels, and groundwater chemistry through a full tidal cycle. Spring high tide was staked in the field and soil texture analyzed along a series of five transects perpendicular to the shoreline. Existing vegetation species including saltwater cordgrass, salt meadow cordgrass, spike rush and groundsel tree were identified and mapped. The average lowest elevations of *Spartina patens* were used as a biological indicator to estimate local mean high water (MHW). This information along with the surveyed tide tubes were used to guide the design and restoration strategy. Large amounts of dredge spoil were removed from the salt marsh and the site regarded to approximately a 10:1 slope. Planting of the restored shoreline was done last fall and included a low marsh (*Spartina alterniflora*), a high marsh (*Spartina patens*), and a scrub shrub fringe (*Iva frutescens* and *Baccharis halimifolia*).

Municipal Planning for Wetlands Protection

Erie County: Using a Watershed Approach to Wetland Management and Protection.

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Abstract

Erie County recognizes the importance of managing and protecting its wetlands and associated upland habitats. The Erie County Department of Environment and Planning is a non-regulatory body that specializes in assisting and educating individuals, communities, and private industry in interpreting and complying with environmental regulations and standards, as well as increase awareness of environmental issues. DEP is in the unique position to help facilitate the development of a regional wetland initiative. This new program will use the Niagara Frontier Wetlands Initiative (NFWI) experience as a regional model and utilize it as a template for a new wetland program. With this program proposal, DEP intends to foster a unified vision of wetlands protection from stakeholders as part of a broader watershed management concept in Erie County. The goals include monitoring and assessing the health and function of many local wetlands and significant habitats throughout Erie County; research and track the past and current effectiveness of compensatory mitigation for unavoidable impacts; to sustain, promote, and protect the integrity of wetlands and associated upland habitats through education, stewardship, and restoration and reservation.

Ultimately the program will develop non-binding guidance for municipalities to follow in an attempt to empower and encourage them to use advance wetland planning and proactive wetland management at the local level.

Legislative and Regulatory Update

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Implications of Supreme Court Decision in SWANCC: A Panel Discussion

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