

New York State Wetlands Assessment

As stated in New York State freshwater and tidal wetlands laws (Articles 24 and 25 of the Environmental Conservation Law), it is the policy of the state to preserve, protect and conserve wetlands and the benefits derived therefrom, to prevent the despoliation and destruction of wetlands, and to regulate use and development to secure the natural benefits of wetlands, consistent with the general welfare and beneficial economic, social and agricultural development of the state. Protection of wetlands is a priority in the state.

Wetlands provide a suite of functions and benefits to the environment and the people of the state, including: flood and storm water control; erosion and sedimentation control; water quality maintenance; primary food production, fish and wildlife habitat; recreation, open space, and educational opportunities (see Table 1).

Extent of Wetlands Resources

New York has an estimated 2.5 million acres of freshwater wetlands and 25,000 acres of tidal wetlands. They encompass about nine percent of the land mass of New York. Wetlands types include marshes; hardwood, coniferous and shrub swamps; wet meadows; bogs; fens; and coastal marshes.

There are three main wetland inventories for New York State. Two are regulatory inventories prepared under state statutes. The tidal wetlands inventory shows tidally influenced wetlands on Long Island, in New York City, and in certain counties along the southern reaches of the Hudson River. Tidal wetlands currently are being mapped in the Hudson River up to the Troy Dam. The freshwater wetlands inventory shows all freshwater wetlands protected under Article 24, which outside the Adirondack Park includes those wetlands greater than 12.4 acres in size, and certain smaller wetlands of unusual local importance. Inside the Park, wetlands are protected down to one acre, or smaller if they are connected to an open water body. The National Wetlands Inventory maps, produced by the U.S. Fish and Wildlife Service, show all wetlands and deepwater habitats, to the extent they can be detected in aerial photography. New York recently worked with the FWS to update the maps for the lake plains, and to complete mapping in the Capital district.

The U.S. Fish and Wildlife Service estimates that over half of New York's wetlands have been lost since colonization. In order to evaluate the effectiveness of the state's tidal wetlands program in protecting wetlands under the Tidal Wetlands Act (Article 25 of the Environmental Conservation Law), a tidal wetlands trends analysis is being conducted by the New York State Department of Environmental Conservation. To date, the tidal wetlands trends analysis has shown the regulatory program to protect tidal wetlands from the historic "fill and build" damage is extremely successful. In many areas (e.g. Shinnecock and Moriches Bay on Long Island) there is no detectable loss due to those activities. In fact, the wetlands have increased over 250 acres in Shinnecock and Moriches Bay due to the landward migration of wetlands.

However, NYSDEC has observed significant losses of vegetated tidal wetlands, principally saltmarsh cordgrass (*Spartina alterniflora*) (Intertidal Marsh), in marsh islands of Jamaica Bay, New York City and in Nassau and Suffolk Counties. Over 1000 acres of vegetated tidal wetlands have been lost since 1974. Strategies are being discussed to identify causes and solutions. Initial observations indicate that relative sea level rise and sediment budget disruption play a significant role.

Table 1**Functions and Values of Wetlands**

Function	Value
Flood / Storm Water Control	During heavy rains and spring snow melt, wetlands serve as natural reservoirs for excess water which reduces peak flows, and slows the movement of water, thereby reducing flooding.
Erosion/ Sedimentation Control	By decreasing water velocity, wetland vegetation reduces erosion, filters sediment, and prevents suspended particles from entering navigational channels, lakes and reservoirs. Similarly, wetlands also reduce shoreline erosion by buffering adjacent lands from wave or stream current effects.
Pollution Treatment/Reduction	Microorganisms in wetlands break down and use nutrients, reducing loads to surface water. Wetlands also lock up other pollutants, rendering them inaccessible. Wetlands are occasionally used in tertiary wastewater treatment.
Fish and Wildlife Habitat	Wetlands provide important habitats for many species of fish and wildlife, including migratory birds and species identified as endangered, threatened or of special concern. Wetlands also provide habitat for spawning, nursery, and cover for numerous fish species. Tidal wetlands, in particular, are critically important for marine species and the support of a significant commercial and recreational fishery. Wetlands are important components of the state's biological diversity.
Primary Productivity	The products of vegetative photosynthesis and primary productivity support wetlands and are transported to adjacent waters for use in aquatic and estuarine food chains.
Nutrient Cycling	Wetlands filter and recycle sediment and organic and chemical nutrients, an important link in the food web.
Recreational Opportunities	Wetlands provide numerous recreational uses including hunting, trapping, fishing, boating, hiking, bird watching, and photography. Countless New Yorkers (and out-of-state tourists) participate in these activities, generating millions of dollars in revenue annually.
Open Space	Wetlands are often the only undeveloped areas in otherwise heavily developed areas, thereby providing open, green areas for quality of life and provide a link between local residents and natural communities.
Education/ Research Opportunities	Wetlands provide readily accessible outdoor biophysical laboratories, living classrooms and vast training and educational resources.

A status and trends report of freshwater wetlands was also completed, showing that New York had a net gain of approximately 15,000 acres of wetlands between 1985 and 1995. The report compared mid-1980 and mid-1990 aerial photographs of a sample of sites in five ecological zones of the state. Gains, losses, and changes in cover type were identified, and the causes of those changes noted.

Approximately 22,000 acres of wetlands were lost to causes primarily associated with development and agriculture. Approximately 37,000 acres of wetlands were gained, primarily from abandoned agricultural land reverting back to wetland, and from increased runoff flooding previously dry areas. The majority of gains were in the Lake Plains ecological zone. In the Appalachian highlands (southern tier), Adirondacks, and coastal plains (Long Island) gains and losses balanced each other. Net losses occurred in the Hudson valley.

While a net gain of acreage is good news for the state, it must be celebrated cautiously. New York State lost 11,000 acres of wetlands to development, resulting in a loss of wetlands benefits in urbanized areas. Gains were from abandoned agricultural land, resulting in gains in rural areas. Gains also occurred mostly in the lake plains, and net losses occurred in the Hudson Valley. Consequently the state has seen a shift in where wetlands are located. Furthermore, most of the gains occurred from causes not attributable to wetlands conservation programs, but from changes in land use. When no more previously-drained farmland is abandoned, and reversion of wetlands declines, New York State may again see a net loss of wetlands. New York is seeking funding to continue the status and trends study by evaluating the period from the mid-1990s to present.

Wetlands Protection Strategies

NYSDEC administers a broad array of regulatory and non-regulatory programs, undertaken in partnership with other federal, state and local governmental agencies and with the non-governmental sector, to preserve, protect, and conserve wetlands. Through efforts such as restoration, acquisition, regulation, and management, NYSDEC strives to achieve a no overall net loss of wetlands acreage and function, and net gain in wetlands where feasible and desirable.

Planning

Planning is the means for providing a vision and context for wetlands conservation. It is integral to effectively implementing any wetlands conservation program because it establishes the context for implementation. The State Wetlands Conservation Plan was drafted to provide a broad context for wetlands conservation programs and activities in the state. However, at this time most planning that encompasses wetlands is occurring at the regional, watershed, and local levels. Planning can occur at any level of government or by the non-governmental sector but is often most effective when it is done through partnerships and when integrated with other land use and resource planning efforts. NYSDEC is including wetlands protection and restoration as components of landscape-level planning efforts, such as the DFWMR's Comprehensive Wildlife Conservation Strategy of 2005. NYSDEC's freshwater wetlands inventory and the National Wetlands Inventory are now available digitally, which increases the utility of the data in local planning efforts.

Acquisition

Acquisition is an important component of a long-term wetland conservation strategy, and New

York has a rich history of acquiring wetlands. In the past, the wetlands acquisition program was funded by Environmental Quality Bond Acts, and through various federal funding sources. Today, wetlands acquisition is coordinated through the State Open Space Conservation Plan. Acquisition, however, is expensive and other options are being sought, such as cooperative easements and agreements with landowners. There is also an increasing effort to coordinate acquisition efforts, pool resources, and emphasize a partnership approach.

Regulation

Regulation is often viewed as the primary wetlands conservation tool, and is often equated with government's overall wetlands conservation program, despite the full array of effective, positive efforts ongoing and available. Wetlands regulation at the state level began in the 1970s with the adoption of the Tidal Wetlands Act (Article 25 of the Environmental Conservation Law) in 1973. Certain freshwater wetlands are protected under the 1975 Freshwater Wetlands Act (Article 24 of the ECL). Both statutes require mapping of jurisdictional wetlands. Outside of the Adirondack Park, Article 24 only protects wetlands over 12.4 acres (5 hectares) in size or smaller wetlands of unusual local importance. This accounts for about 80 percent of the wetland acreage outside the Adirondack Park. Inside the Park, wetlands are protected down to one acre, or smaller if there is an open water connection with a permanent water body. A 100 foot adjacent area is also protected as a buffer to the wetland. Permits are required to conduct regulated activities, such as draining, filling, polluting, and dredging. Certain activities are exempt from regulation, including most normal agricultural activities (except filling). Wetlands also are regulated under Article 15, Protection of Waters Act, if they are adjacent to protected streams or state navigable waters. The vast majority of wetlands protection efforts are funded by the state's Conservation Fund (hunting and fishing license revenues), excise tax fees, and a limited amount of General Fund dollars. There is no EPA Performance Partnership Program funding provided for the wetlands protection program.

Wetlands also are regulated under Section 404 of the federal Clean Water Act and Section 10 of the River and Harbors Act.

Federal statutes have no size thresholds, and regulate any dredging, filling, or mechanized land clearing activities that impair the nation's waters, or if under Section 10, any navigability of the nation's water.

Finally, local governments can regulate wetlands either pursuant to Article 24, or independently under Home Rule Authority. Three municipalities implement Article 24, and a few dozen have local ordinances affecting wetlands. In these areas, three permits may be required to conduct a regulated activity in certain wetlands.

Restoration, Creation and Management

These options include actual on-the-ground manipulation conducted to maintain, improve, or bring back degraded or altered wetlands. There is a broad variety of restoration and management efforts underway in the state, most of which are done in partnership between agencies and other stakeholders. Until recently, most of the restoration and management was for fish and wildlife habitat, and was focused through the North American Waterfowl Management Plan and other similar efforts. However, restoration of aquatic habitat, water quality, and broad ecosystem function is becoming increasingly of interest in the state. Wetland restoration actions will be included in landscape-level planning efforts.

Incentive and Disincentives

These options generally receive unanimous support from all sectors, yet it is a very infrequently used approach to wetlands conservation, most likely because it usually includes financial motivation. Disincentive programs are often linked to denying economic benefits if a wetland is negatively impacted. While not regulatory, it still is viewed as punitive by those affected. Incentive programs try to make wetland ownership profitable, or at least less costly (e.g. tax breaks for landowners). Sometimes technical assistance or recognition may be sufficient incentive for landowners to take positive steps for conservation.

Research

Knowledge about wetlands has increased dramatically in the past ten years. Research on wetlands continues and interest by academic institutions appears to be growing as well. Gathering data through inventories, mapping, and monitoring is increasing, but gaps still remain. Use of Geographic Information Systems has drastically improved our ability to manage and track information about wetlands systems. All NYSDEC's regulatory freshwater wetlands maps are available digitally, as are some of Adirondack Park Agency's (APA) maps. Most of the National Wetlands Inventory maps are also digitized.

Education, Outreach and Technical Assistance

These programs provide the building blocks of sound conservation programs: information. They provide the delivery mechanism for information gathered through research, inventories and monitoring and provide information to decision makers to develop or modify programs. These programs deliver maps and inventory information to people who need it to make land purchases or to conduct site planning. Thus information is translated into reality, as when agency staff work with a landowner to restore a wetland on an abandoned farm field. Education, outreach and technical assistance are universally supported, but rarely adequately funded. In the past, USEPA Region II Office funded a number of education and outreach initiatives to improve the public's understanding of wetlands functions and programs to protect wetlands. NYSDEC and other agencies have been partners to these programs. Education through schools and not-for profit groups has also increased in recent years.

Development of Wetland Water Quality Standards

Wetlands, as waters of the United States, are protected under the Clean Water Act, including water quality standards under Section 303 and monitoring under Section 305(b). In 1995, NYSDEC received a grant from USEPA under Section 104(b)(3) to develop narrative water quality standards that specifically incorporate wetlands. The standards were developed by NYSDEC's Division of Fish, Wildlife, and Marine Resources (DFW&MR), wherein the expertise resides for wetlands protection and conservation. Standards have not been adopted due to workload issues and the difficulty of smoothly incorporating wetlands protection into delivery of water quality standards.

Further Integration of Wetlands Assessments

Development of wetland water quality standards is an important step in better integrating wetlands protection into other aspects of implementation of the Clean Water Act. According to USEPA guidance: "Development of wetland water quality standards provides a regulatory basis for a variety of water quality management activities including, but not limited to, monitoring and assessment under Section 305(b), permitting under Sections 402 and 404, water quality certification under Section 401, and control of nonpoint source pollution under Section 319."

USEPA has begun the process of completing a National Wetland Condition Assessment. New York State will be participating in the completion of the national assessment. New York State is also planning to apply for an EPA Grant to develop a plan for wetland monitoring for New York State. We're hopeful that a plan can be completed, but have not identified the funds for future monitoring efforts that would be needed as part of the plan. New York State has not yet integrated wetlands into existing surface water monitoring programs, nor undertaken efforts to monitor the biological, physical, and chemical integrity of wetlands.

Because no formal, coordinated monitoring of wetlands exists within NYSDEC, it is not possible to report on attainment of designated uses or to identify causes or stressors and sources of impairment. The Priority Waterbodies List effort includes wetland and other natural resources in determining impairments, and wetlands will be factored into future work. Both DFW&MR and the Division of Water recognize the need to work together to integrate wetlands into all appropriate aspects of the NYSDEC overall program to protect the chemical, physical and biological integrity of New York State waters.