Chapter 6: Wetlands

A few years ago, the Wisconsin Department of Natural Resources began a process to determine the vision and goals for protecting and restoring Wisconsin's wetlands. The state had many different programs with wetland responsibilities and their own individual goals, but there was no "big picture" strategy for wetlands. The department's Wetland Team was assigned to develop a vision and goals for protecting and restoring Wisconsin's wetlands. *"Reversing the Loss - A Strategy for Protecting and Restoring Wetlands in Wisconsin"* was the product of that process. The strategy will guide wetland staff over the next six years by charting a course for current and future department policies and programs involved in wetland education, protection, restoration, enhancement and management.

As part of the process, the Wetland Team has identified performance measures by which the success of the plan is measured and analyzed. The Wetland Team is evaluating progress toward achieving the goals of the plan and reporting that progress. The plan will be reviewed and modified, as appropriate, each biennium.

"Reversing the Loss" – the Wetland Strategy

Once considered wastelands and breeding grounds for mosquitoes that brought disease and death, Wisconsin wetlands are now recognized for providing critical habitat for wildlife, water storage to prevent flooding and protect water quality, and recreational opportunities for wildlife watchers, anglers, hunters, trappers and boaters. While better understood and no longer destroyed as rapidly as they were during Wisconsin's first century of statehood, wetlands continue to be lost and degraded today.

Only 53 percent, or 5.3 million acres, remain of the 10 million acres of wetlands present before statehood — and many of those wetlands are in peril. Wetlands continue to be drained for agriculture and filled for development and roads. Others are deteriorating as changing land use around them dramatically alters water flows to them and causes erosion, sedimentation and poor water quality. Invasive species such as purple loosestrife and reed canary grass are increasingly inhabiting wetlands and crowding out native plants, reducing species diversity and degrading wildlife habitat. Even some projects intended to improve wetlands are contributing to the loss of wetlands' natural functioning and species diversity. The result decreases the benefits wetlands themselves bring and decreases the overall health and functioning of the other ecological systems in the same watershed. Because Wisconsin wetlands are so interspersed with other major community types in the state - lakes, rivers, prairies, forest - any loss detracts from the diversity of species and the ecological health of these other landscape communities.

Federal, state and local regulations, wetland restoration, and acquisition programs are making progress in slowing further wetland loss. However, laws will never prevent all losses nor will financial resources ever provide enough funds to acquire all the wetlands that need protection. To reverse the loss, and to restore the benefits of wetlands, the department must act on many fronts. This strategy establishes four major goals and a series of performance measures to accomplish those goals. The timeframe for implementing the performance measures is by the year 2007. Below are the goals and performance measures that have been or are currently being accomplished:

GOAL 1

Strengthen relationships with property owners, nonprofit conservation organizations and local governments.

Over 75 percent of the state's wetlands (over 4 million acres) are in private ownership. The department will need to enlist wetland owners, nonprofit conservation organizations and local governments in preserving and restoring wetlands on private property while sustaining agriculture, forestry, recreation, and other wetland uses including development when compatible with wetland health. An established dialogue with wetland owners, and focused outreach, education and incentives along with technical assistance, will be necessary components to make this strategy work.

Public Outreach:

The department developed a wetland website with general information on wetland news, the Strategy, wetland functional values, wetland protection, wetland permits, inventory, restoration and management, publications and important links. The website address is www.dnr.state.wi.us/org/water/fhp/wetlands All new laws, rules and reports are or will be available at or through the site.

The department's 6-year wetland strategy, *Reversing the Loss: A Strategy for Protecting and Restoring Wetlands in Wisconsin* was published and widely distributed in 2001. The strategy forms the basis wetland work planning and budgeting in the department. Progress on implementing the strategy is posted on the departments' wetland website as a "report card".

The *Wetland Restoration Handbook for Wisconsin Landowners,* has been quite popular and has been used in hands-on workshops private property owners interested in restoring their wetlands.

GOAL 2

Manage wetlands to protect diversity of species, wildlife health, and ecological integrity.

Wetlands are naturally productive and interspersed among our state's aquatic and terrestrial communities. Because protecting, restoring and enhancing wetlands contributes significantly to the ecological health of other biological communities, wetland communities should be a focus when managing Wisconsin's biodiversity. Wildlife that depends on water — everything from water fleas to mink to osprey — require adequate habitat and protection from ecosystem contaminants. Establishing a system of connected aquatic and terrestrial features for each eco-region will help target resources and activities on areas with the highest ecological potential. Acquiring exceptionally high quality or scarce wetland communities such as calcareous fens and floodplain forests, and managing them to preserve a diversity of species are key aspects of this strategy.

Restoration and Acquisition:

The Department's major restoration efforts are through the Upper Mississippi River and Great Lakes Region Joint Venture. In 2000 (the latest report) 2,486 acres were protected by purchase or easement, 2,030 acres restored and 230 acres enhanced.

The Wetland Reserve Program, administered by the US Natural Resources Conservation Service, funds wetland restoration efforts. In the years 2000 through 2001, it has restored 2.990.9 acres of wetlands in Wisconsin.

The department established a Land Legacy Team to identify priority acquisition areas for the next 50 years. Wetlands are a key component of that acquisition effort.

GOAL 3

Streamline our regulatory approach for permits and restoration activities in wetlands.

Because Wisconsin's regulatory and enforcement program for wetlands is based primarily upon federal laws and regulations, several state and federal agencies are typically involved in every permitting decision. That system often leads to inefficient, inconsistent decision-making, which frustrates wetland owners and doesn't sufficiently protect wetlands. The department can improve the process by identifying and removing barriers to efficient and effective decision-making. The department can also eliminate duplication and provide consistency by establishing a state wetland protection program that supersedes federal regulation and oversight. New legislation authorizing compensatory mitigation and providing state enforcement authority is a necessary part of

this regulatory approach. The department can encourage local officials and development interests to avoid wetlands or incorporate them into their project as a site amenity, reducing the need for wetland permits.

Regulation

2001 Wisconsin Act 6 was signed into law on May 7, 2001 in response to the U.S. Supreme Court decision in *SWANCC v. Corps of Engineers.* The new law requires that a state water quality water certification be obtained for activities conducted in nonfederal wetlands. The law identifies certain activities that are exempt from state water quality certification subject to meeting specific performance requirements and requires the use of the 1987 Corps delineation manual. The following rules are being promulgated to interpret and implement the provisions of Act 6:

Chapter NR 300, Fees and Time Limits for Waterway and Wetland Permit Decisions

Chapter NR 351, Exemptions for Non-Federal Wetlands

Chapter NR 352, Delineation of Non-Federal Wetlands

After numerous public and legislative hearings the administrative rule, Chapter NR 350, *Wetland Compensatory Mitigation,* implementing 2000 legislation authorizing a compensatory mitigation program has gone into effect February 1, 2002.

The 2001-2003 state budget authorized 2.5 positions to begin implementation of the wetland compensatory program (the formal department request was for 5 positions). None of these positions has been filled, however, a 2001 US EPA Wetland Protection State Development Grant funded a half-time position to assist with wetland compensatory mitigation training.

The department has prepared and published a technical guide, *Guidelines for Wetland Compensatory Mitigation in Wisconsin,* for use by applicants, consultants, and agency staff and in training.

The Department is also pursuing a memorandum of agreement with the U. S. Environmental Protection Agency - Region 5, the St. Paul District of the U. S. Army Corps of Engineers, the U.S. Fish and Wildlife Service and the Natural Resources Conservation Service. All agencies are agreeing to use the standards and criteria in NR 350 and the *Guidelines* when reviewing and approving compensatory mitigation in Wisconsin.

A new administrative code, Chapter NR 353, *Wetland Conservation Activities*, is being promulgated to create a general permit for specific activities used in wetland conservation projects. The rule establishes a streamlined process to authorize wetland restoration and maintenance activities by private landowners.

A Memorandum of Agreement between WDNR, the United States Fish and Wildlife Service, and the Natural Resources Conservation Service was signed on September 11, 2001. The MOA creates a process for streamlining the regulatory approval process for federally funded wetland restoration and enhancement activities.

GOAL 4

Develop and use modern technology to map, monitor, protect and manage wetlands.

Giving the public and staff a common up-to-date source of wetland information to use in making decisions is essential for the preceding strategies to succeed. An integral component of wetland information is the Wisconsin Wetland Inventory, which consists of over 1,700 maps showing the location and types of wetlands in Wisconsin. The cycle for updating inventory information is currently 24 years due to staff shortages and needs to be shortened to make it more useful. Making the wetland inventory available for planning and managing wetlands, in addition to its current use in regulating wetlands, is crucial to the success of this strategy, as is developing a unified tracking and reporting system.

Much progress has been made and will continue to be made developing new strategies for wetland monitoring due to support through the US EPA's State Development Grant Program.

Monitoring and Assessment

The department completed a monitoring strategy - *One Step at a Time, Wetland Monitoring Strategies* - which will be used as the implementation plan for future wetland monitoring efforts.

The department was successful in creating a permanent wetland monitoring position. This position should be filled in early 2002.

The University of Wisconsin Environmental Remote Sensing Center in cooperation with our Wetland Inventory program investigated new technologies to facilitate wetland map production. While new technologies will be incorporated into the Wisconsin Wetland Inventory to greatly speed the digitizing of wetland maps, none of the new photo interpretation technologies offered any advantages in speed or accuracy. The study report will be published in 2002.

Quality Assessment of Wetlands

The Department is developing a floristic quality assessment for Wisconsin. This project involves adapting a site-specific method for assessing plant community quality for use in Wisconsin. The method involves gathering a complete plant inventory and applying a "coefficient of conservatism" on a scale of 0-10, to each species, based on its likelihood of occurring in an undisturbed plant community. A mean coefficient of conservatism and a floristic quality index can then be calculated for the site.

An wetlands experts group assigned coefficients of conservatism (C of C values) to all 1700 species native to Wisconsin, considering the entire state as a region, using the Checklist of the Vascular Flora of Wisconsin, maintained by the University of Wisconsin – Herbarium. C of C values are listed on the UW-Herbarium website and are available directly from WDNR. A description of Floristic Quality Assessment is also included on the webpage. The website is http://wiscinfo.doit.wisc.edu/herbarium/. The FWS Regional Wetland Indicator Status for Wisconsin has also been added to the website.

The final report to EPA (funded under a 104 grant) is targeted for publication in May 2002. It will contain a table with scientific and common name, physiognomy, C of C value, regional indicator status, and threatened, endangered, special concern status, for all vascular species native to Wisconsin. Varieties, hybrids and subspecies are generally not treated except in special circumstances where they are recognizably distinct and the experts assigned different C of C values. A computer program is being developed to utilize the C of C values to calculate mean C and Floristic Quality Index (FQI) values. This will be housed on a WDNR website and made available to the public.

The Department is investigating mapping reed canary grass as a coarse-level, first-cut assessment of wetland quality at a landscape scale. This project involves developing a method to map occurrence of the most extensive invasive species in Wisconsin wetlands, reed canary grass, and correlate the extent of its occurrence with land cover and indicators of hydrologic disturbance, primarily wetland drainage features.

A classification has been performed using 30m resolution Landsat imagery to categorize wetlands in Landsat Scene (path 24, row 30), a182 km X 182 km area of southern Wisconsin. Wetlands in the pilot area are classified into 3 classes relative to dominance by the invasive species, reed canary grass: "reed canary dominated" (>80% cover), "mixed" (50% - 80% reed canary grass cover, mixed with other vegetation), and "other" (<50% reed canary grass cover). Accuracy assessment has begun.

Integrating Wetlands into the Watershed Approach

With the goal of developing a process to assess wetland functions on a watershed scale to provide managers and planners with information to guide allocation of scarce resources for protection and restoration, a two-year pilot project in the Milwaukee River Basin started in November of 2001. The project will utilize existing GIS information and develop some new data layers where necessary, to provide input into expert-derived GIS-based decision models of wetland functions that will also be developed in the project. The models will generate assessments (or predictors) of wetland function in the six watersheds that comprise the basin.

Staff training and method testing of the recently developed multi-metric biotic index for depressional wetlands (based on plants and macroinvertebrates) has begun. A 2-day training session in the use of the method was held in August 2001 for 12 department and Natural Resources Conservation Service staff volunteers. Training covered sampling methods, and focused on family-level macroinvertebrate identification.

In 2002 the twelve volunteers will work in six teams and each team will assess three wetlands for a total of 18 assessment sites distributed throughout the state. Each team will attempt to select their three sites to span a range of disturbance conditions. The original researcher will also sample the same 18 sites and compare results with the volunteers, for a quality control test. The volunteer field staff will evaluate the method's feasibility for use in various wetland assessment contexts.

In 2002 refinement of the depressional wetland biotic index to assess additional metrics will begin. This project will test and develop additional metrics for the Depressional Wetland Biotic Index. Field sampling and laboratory work was completed for the set of 75 wetlands used to investigate expanding the plant and macroinvertebrate based depressional IBI to include metrics for small mammals, zooplankton, and amphibians. Metrics are being developed for an expanded Index which will be published in May 2002 in the final report to EPA.

A survey protocol has been developed and baseline monitoring has been conducted at *Galerucella* beetle release sites to monitor the effectiveness of the beetles in reducing purple loosestrife populations and documenting the response of native vegetation. The biennial state budget for FY 02-03 includes a position for a statewide coordinator for the growing Purple Loosestrife Biocontrol Network. This person will coordinate distributing education and technical assistance in all aspects of the biocontrol project to teachers, organizations and interested citizens. This will include both volunteer driven surveys to identify existing purple loosestrife infestations and monitoring the response of vegetation at beetle release sites.

Contingent on grant funding, plans are underway to join with the Wisconsin Wetlands Association to offer workshops for volunteers to conduct surveys and workshops to train volunteers to rear and release beetles and monitor vegetation at release sites. Survey information will be checked for quality control and entered into a GIS developed and maintained by the Great Lakes Indian Fish and Wildlife Commission (GLIFWC).

Table 30. Development of Wetland Water Quality Standards

	In Place	Under Development	Proposed
Use Classification	X		
Narrative Biocriteria	X		
Numeric Biocriteria		X	
Antidegradation	X		
Implementation Method		X	

Figure 38. Percent of County Mapped as Wetland

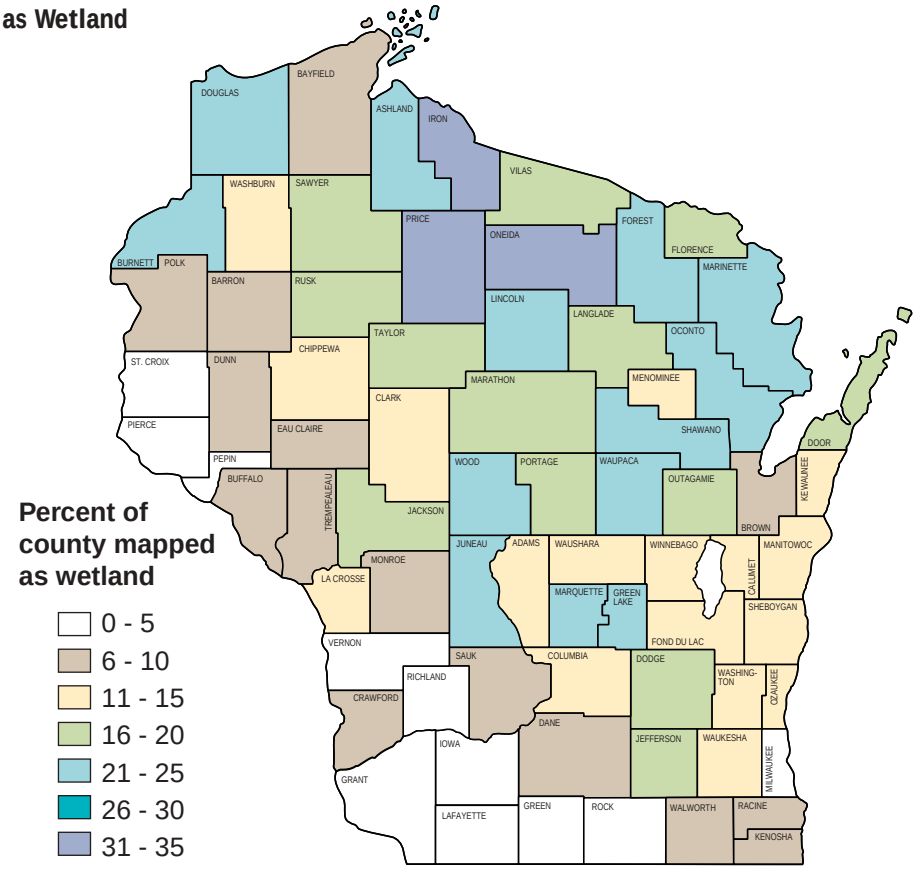


Figure 39. Percent of GMU mapped as wetland

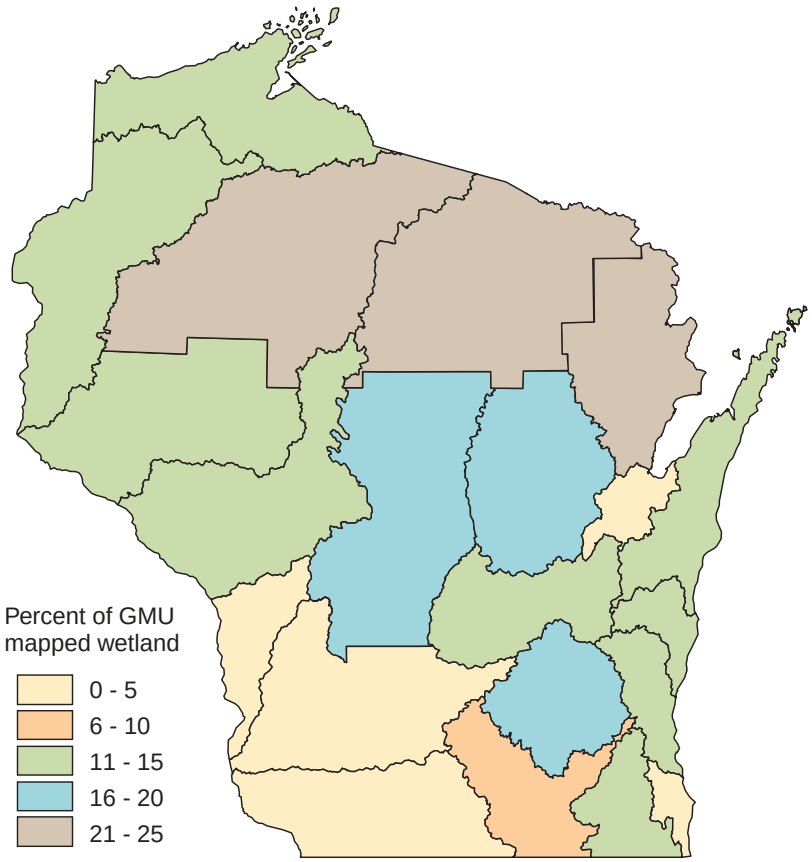
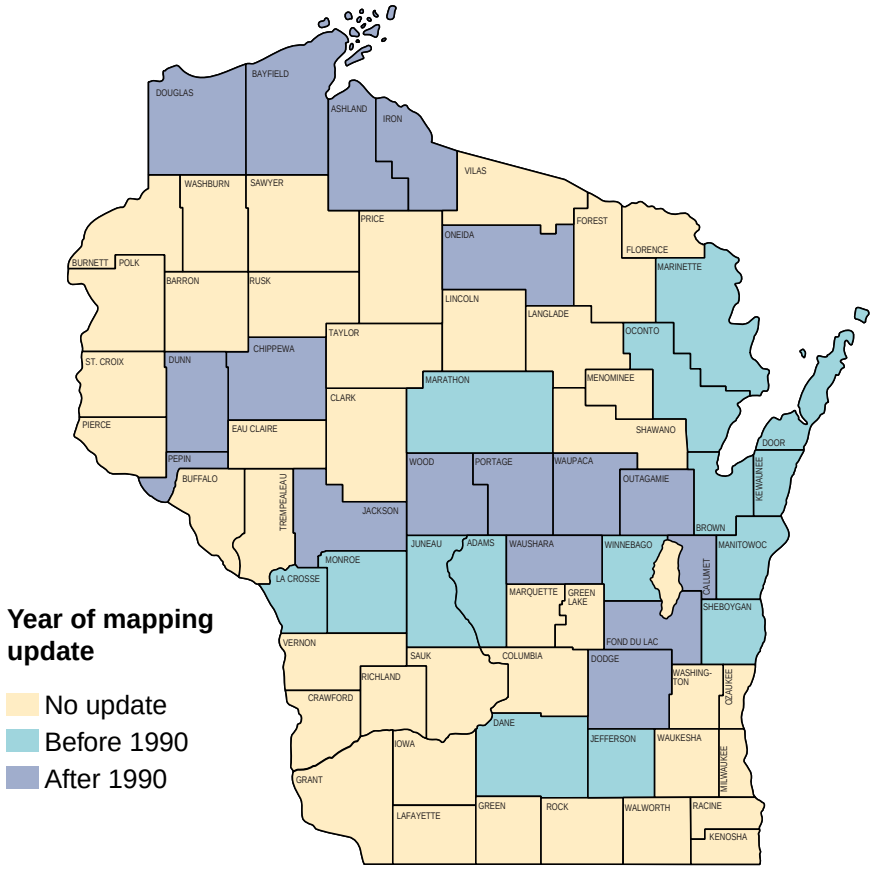


Figure 40. Year of Mapping Update



Recent Wetland Legislation

Wisconsin Gov. Scott McCallum, DNR staff, conservation groups and key lawmakers made Wisconsin the first state to restore protection to small, isolated wetlands left vulnerable to filling and dredging as a result of a January 2002 U.S. Supreme Court decision. The law, passed unanimously by both the Wisconsin Senate and Assembly, gives the state authority to protect more than 1 million acres of "isolated wetlands," among them sedge meadows, shallow marshes and seasonal wetlands that are among some of Wisconsin's most productive in providing waterfowl and amphibian habitat, storing flood waters, and helping protect water quality. The law was one of several victories for wetlands and water quality in a year that saw DNR staff make significant progress in carrying out DNR's strategic plan for protecting Wisconsin's 5.3 million acres of wetlands. Other achievements under that strategic plan, "Reversing the Loss," include:

- Signing an agreement with two federal agencies that will enable more wetlands to be restored more quickly under federal programs at the same time it saves taxpayers money by eliminating duplication of services;
- Creating rules that streamline the permitting process for people who wish to restore wetlands on their property while retaining the same safeguards for assuring the projects don't harm the environment;
- Completing the rules that will implement a program that may allow property owners in some cases to fill in poor quality wetlands if their proposal to develop their land includes restoring other wetlands. Wetland officials hope the new program, wetland compensatory mitigation, could give the state flexibility to make decisions that will result in the best overall outcome for the environment.