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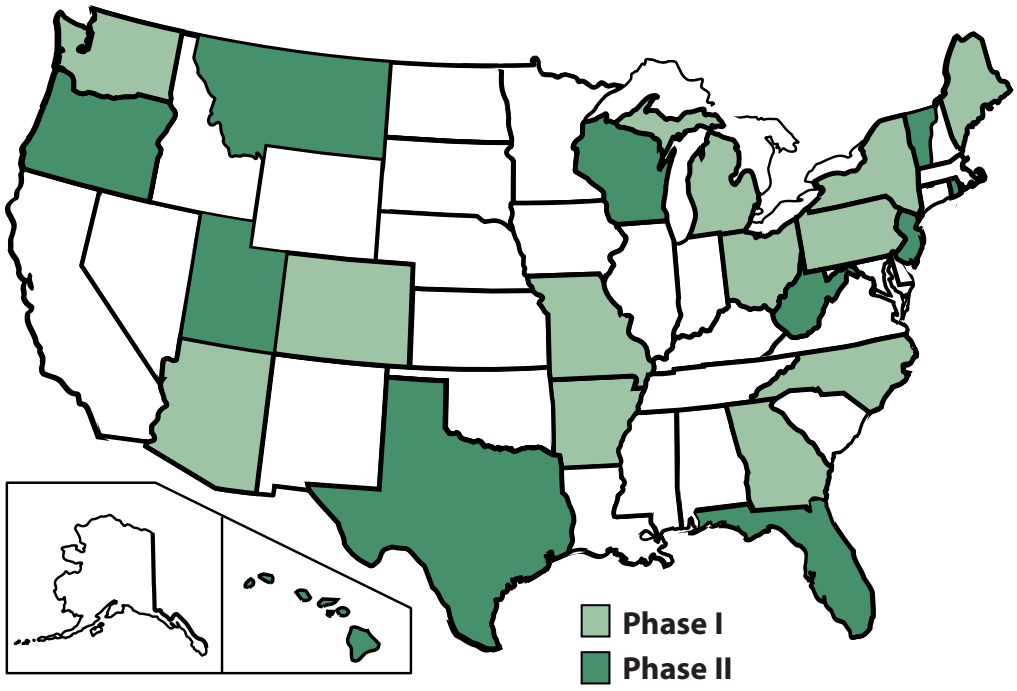
State Wetland Program Evaluation: Phase II



June 2006

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State Wetland Program Evaluation: Phase II

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Introduction

Overview

Wetlands in the United States are regulated and protected through a variety of federal, state, and local laws and regulations, as well as through the actions and initiatives of governmental agencies, nongovernmental organizations, universities and schools, and citizens. The efforts of these many groups are often intended to complement each other and many rely upon planning and science in their design and implementation. Other approaches to wetland protection are the result of circumstance and incremental program development that have evolved organically over time.

State wetland programs are no exception. The principle regulatory authority governing the protection of wetlands at the federal level lies with the Clean Water Act (CWA) §404 Program. Section 404 establishes a regulatory and permitting regime, administered jointly by the U.S. Army Corps of Engineers and U.S. Environmental Protection Agency, for dredging and for discharges of fill material into "waters of the United States."[1] Under the Clean Water Act, states have the authority to enact their own regulatory (and non-regulatory) programs for wetlands and can adopt more stringent limitations than those established under the federal program.[2]

States take a variety of approaches to wetland regulation and protection. Some utilize a water quality-based approach to wetlands regulation, relying on CWA §401, which authorizes states to determine whether activities permitted by the federal government are in accordance with state water quality laws and regulations. Other states have enacted regulations establishing resource- or habitat-focused permitting regimes in addition to §401 water quality certification. Still others do not have well-developed regulatory programs, instead focusing on restoration, education and outreach, and other non-regulatory mechanisms to protect and restore wetlands in their states. A multitude of reasons explain the differences we see among state wetland programs—history, geography, economics, politics, general attitudes toward aquatic resources, as well as state agency funding, resources, and enforcement activity.

Phase II: State Wetland Program Evaluation

This report represents the second phase of a multi-phased study designed to describe and analyze seven "core" components of state wetland programs. The U.S. Environmental Protection Agency (EPA) has identified six core elements of a comprehensive state and tribal wetlands program: regulation (state laws, regulations, and programs), monitoring and assessment, restoration programs and activities, water quality standards, public-private partnerships, and coordination among state and federal agencies. In addition to these

[1] The term "waters of the United States" is defined as "[a]ll waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; [a]ll interstate waters including interstate wetlands; [a]ll other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce . . .; [a]ll impoundments of waters otherwise defined as waters of the United States under the definition; [t]ributaries of waters . . .; [t]he territorial seas; [w]etlands adjacent to waters (other than waters that are themselves wetlands) . . ." "Waters of the U.S. do not include "[w]aste treatment systems, including treatment ponds or lagoons . . . or prior converted cropland." *See* 33 C.F.R. § 328.3(a).

[2] 33 U.S.C. § 1251 *et seq.*; 40 C.F.R. §§ 104-149.

six core elements, ELI's study also examines state outreach and education activities, which the EPA deems as "inherent components of water resource programs."[3]

Phase I. In the first phase of the study, ELI examined a cross-section of states representing various approaches to wetland protection and regulation, as well as geographic diversity. The study examined state-level programs and activities in twelve states: Arizona, Arkansas, Colorado, Georgia, Maine, Michigan, Missouri, New York, North Carolina, Ohio, Pennsylvania, and Washington. The Phase I report, *State Wetland Program Evaluation: Phase I*, was published in 2005 and is available for free download on ELI's website at: http://www.elistore.org/reports_detail.asp?ID=11079.[4]

Phase II. In this second phase of the study, ELI again examined a cross-section of states representing various approaches to wetland protection and regulation, as well as geographic diversity. The twelve states included in Phase II of the study are: Florida, Hawaii, Montana, Nebraska, New Jersey, Oregon, Rhode Island, Texas, Utah, Vermont, West Virginia, and Wisconsin.

Additional phases. ELI anticipates conducting additional research in future years that cover states not included in Phases I and II of the study. A final report will likely be released summarizing the findings in all 50 states, along with some comparative analysis.

Methodology

In order to allow for the evaluation of state wetland programs in a uniform manner, ELI developed a methodology and format for gathering and organizing information on the core elements of each state program. This methodology allowed the data collected from each state to be as comparable as possible and was utilized during Phases I and II of the study.[5] For each state, ELI conducted a detailed legal review of the state statutes and regulations that establish and direct the state programs. ELI policy staff conducted additional research using secondary sources and the Internet. Finally, ELI staff conducted phone interviews with program administrators and other relevant individuals. State agency staff reviewed each state summary prior to its inclusion in this report.

[3] *See* U.S. Environmental Protection Agency, *Core Elements of Comprehensive State and Tribal Wetlands Programs*, *at* http://www.epa.gov/owow/wetlands/initiative/fy02elements.html (last revised Feb. 22, 2006).

[4] The information contained in the Phase I report was obtained primarily through legal and policy research and personal interviews conducted from November 2003 to November 2004.

[5] Some state-level wetland activities were not included among the issues covered because they are common to all states. For example, every state's transportation authority operates as a regulated party, applying for permits under CWA §401/§404 and conducting mitigation. Also, most states' park or forest agencies manage some lands with wetlands located on them. Most of the fifty states operate National Pollutant Discharge Elimination System permit programs that regulate point source discharges into waters of the United States, which may include wetlands. These types of state-level regulatory or management activities were not included in the research gathered by ELI. Instead, this study examines the distinguishing features and trends among state wetland activities and programs.

Observations and Analysis

This study examines twenty-four distinct state wetland programs. Although these programs represent a diversity of approaches and conditions, ELI does not attempt to draw inferences that apply to all 50 states. However, numerous observations can be made about each of the state programs, as well as their core elements. It should be noted that statements made about Phase I states (Arizona, Arkansas, Colorado, Georgia, Maine, Michigan, Missouri, New York, North Carolina, Ohio, Pennsylvania, and Washington) are based on information collected in 2003 and 2004. Statements made about Phase II states (Florida, Hawaii, Montana, Nebraska, New Jersey, Oregon, Rhode Island, Texas, Utah, Vermont, West Virginia, and Wisconsin) are based on information collected in 2005 and 2006.

I. State Laws, Regulations and Programs

Wetland Definitions and Delineation

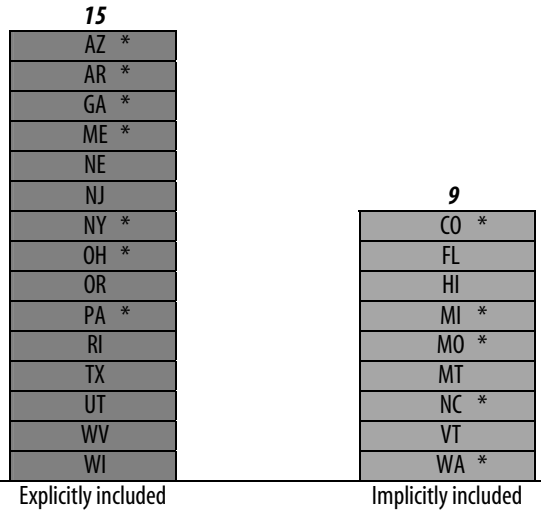
Of the 24 states examined in Phase I and II of the study, all include wetlands in their definitions of "state waters," albeit some implicitly.[1] Several states do not specifically identify "wetlands" or "marshes" in the definition for state waters, but do include broad definitions of surface waters, groundwaters, and/or bodies of water that may include wetlands. See *Figure 1* (next page).

For example, Hawaii defines "waters of the state" to include "any and all water on or beneath the surface of the ground, including natural or artificial watercourses, lakes, ponds, or diffused surface water and water percolating, standing, or flowing beneath the surface of the ground."[2] In Colorado, wetlands are not explicitly referenced in the definition itself, but separate regulations clarify that wetlands are included in the state definition of waters, stating that "the existing definition of 'state waters' is broad enough to include wetlands."[3] In North Carolina and Washington, the states' definitions of "waters" do not explicitly include wetlands, but court decisions in both states have ruled that wetlands must be included.[4]

Most of the 24 states covered in this study have also adopted one or several definitions of wetlands. Many states' definitions echo that of the Clean Water Act (CWA).[5] State laws and regulations in Colorado, Georgia, Hawaii, Maine, New Jersey, New York, Rhode Island, and Vermont provide definitions for multiple wetland types that are regulated in the state.[6] The two delegated states, Michigan and New Jersey, supply further clarification for wetlands that are regulated by the state's §404 program.[7] North Carolina, one of three of

[1] Michigan does not include wetlands in its definition of "waters" for the purposes of the state point discharge program. MICH. COMP. LAWS § 324.3101. Wetlands are instead regulated under the a separate authority. MICH. COMP. LAWS § 324.30301.
[2] HAW. REV. ST. ANN. § 174C-3.
[3] 5 COLO. CODE REGS. § 1002-31.27
[4] *See Building Industries Associates of Washington v. City of Lacey*, No. 91-2-02895-5. (Thurston County Superior Ct. 1993) and *North Carolina Home Builders Association v. Environmental Management Commission*, No. COA02-99 (N.C. App. Dec. 31, 2002) available at: http://www.aoc.state.nc.us/www/public/coa/dsheets/020099-1.htm.
[5] The federal definition of "wetlands" is "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." *See* 33 C.F.R. § 328.3(b).

Figure 1.
Number of states (out of 24) that include wetlands in the state definition of "waters."



* *Based on research conducted in 2003 and 2004. The Phase I report, which includes detailed summaries of these twelve states, may be accessed at: http://www.elistore.org/reports_detail.asp?ID=11079*

the study's 24 states that has adopted provisions specifically for the protection of isolated wetlands, provides an "isolated wetlands" definition in addition to the state's definition for "wetlands."[8]

[6] Colorado water quality regulations provide definitions for "compensatory wetlands," "constructed wetlands," "created wetlands," and "tributary wetlands." *See* 5 COLO. CODE REGS. § 1002-31.5. Georgia laws and regulations provide definitions for "coastal marshlands," "vegetated marshlands," "estuarine areas," "freshwater wetlands," "non-forested emergent wetlands," "scrub/shrub wetlands," "forested wetlands," and "altered wetlands." *See* GA. CODE ANN. § 12-5-282; GA. COMP. R. & REGS. r. 391-3-16-.03(3)(a); GA. CODE ANN. § 50-8-1. Hawaii regulations define "coastal wetlands," "elevated wetlands," and "low wetlands." *See* HAW. ADMIN. RULES § 11-54-1. Maine laws for both "organized" and "unorganized/deorganized" areas of the state define "coastal wetlands," "forested wetlands," "floodplain wetlands," "freshwater wetlands," and "peatlands." *See* ME. REV. STAT. ANN. tit. 38, §§ 480-A; Maine Department of Conservation, Maine Land Use Regulation Commission, *The Commission's Rules and Standards, Chapter 10, Land Use Districts and Standards* (April 1, 2004). New Jersey laws provide definitions for regulated freshwater wetlands and coastal wetlands, as well as separate definitions for coastal and inland wetlands within the boundaries of the New Jersey Pinelands. *See:* N.J. STAT. ANN. §§ 13:9A and 13:9B; N.J. ADMIN. CODE. §§ 7:50-6.3 to 7:50-6.5. New York laws regulating freshwater and tidal wetlands define both, emphasizing vegetation in each definition. N.Y. ENVTL. CONSERV. LAW § 24-0107(1); N.Y. ENVTL. CONSERV. LAW § 25-0103.

[7] MICH. COMP. LAWS § 324.30301; MICH. ADMIN. CODE § 281.921. Rhode Island law elaborates three categories of wetlands: "freshwater wetlands," "freshwater wetlands in the vicinity of the coast," and "coastal wetlands." *See:* R.I. GEN. LAW § 2-1-20; RICRMC, Rules and Regulations Governing the Protection and Management of Freshwater Wetlands in the Vicinity of the Coast, § 5.04; and R.I. GEN. LAW § 46-23-6(B)(3)(e), respectively. Finally, Vermont regulations provide definitions for "alpine peatland," "bog," "deep marsh," "fen," "shallow marsh," and "wooded swamps." *See:* Vermont Wetland Rules § 2.

[8] N.C. ADMIN. CODE tit.15A, r. 02H.1300.

Most states rely on the delineation methodology outlined in the U.S. Army Corps of Engineers' 1987 *Wetlands Delineation Manual*,[9] although some states use other state and/or federal delineation manuals that either supersede or supplement the 1987 Corps *Manual*. For example, Florida has adopted a unified wetlands delineation methodology that is binding on all state, regional, and local governments throughout the state.[10] The methodology is specific to Florida and recognizes the unique vegetation, hydrology, and soil features that exist in the state. Although the Florida methodology differs from the 1987 Corps *Manual*, state and federal wetland delineation lines are often very close or identical.[11] New Jersey relies on the 1989 *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*[12,13] with the exception of the New Jersey Pinelands, where the 1991 *New Jersey Pinelands Commission Manual for Identifying and Delineating Pineland Area Wetlands* is utilized.[14] New York utilizes its 1995 *Freshwater Delineation Manual*, which emphasizes, but is not limited to, vegetation criteria. The state's delineation techniques parallel those offered in the Corps' manual, and soil and hydrological classifications can be used if needed.[15] Generally, criteria are similarly stringent, but the amount of documentation required by New York State is less rigorous than that required by the Corps.[16] Oregon's Department of State Lands works closely with the U.S. Army Corps of Engineers' Portland District and U.S. Environmental Protection Agency Region X in issuing wetland delineation guidelines, and has adopted regulations for wetland delineation reporting.[17] These additional requirements supplement those outlined in the 1987 Corps *Manual*. Washington has also created a state delineation manual,[18] but again, its criteria are consistent with the Corps' 1987 *Manual*.[19]

Wetland-related Laws and Regulations

States utilize a variety of legal approaches to the regulation and protection of wetlands. Many states rely on water quality regulations and CWA §401 (See *Box A*). Two states, Michigan and New Jersey, have assumed the CWA §404 program. Other states have enacted laws establishing resource-based permitting programs that include wetlands. Still others have adopted laws establishing non-regulatory wetland protection programs. Multiple states have enacted different types of laws in combination, creating a more comprehensive approach to wetland protection in these states. See *Figure 2* (page 8).

[9] U.S. Army Corps of Engineers, Wetlands Research Program Technical Report Y-87-1, *Corps of Engineers Wetlands Delineation Manual (1987)*, *available at* http://www.saj.usace.army.mil/permit/documents/87manual.pdf.
[10] *See* FL. STAT. ANN. § 373.421; FL. ADMIN. CODE § 62-340.
[11] Florida Department of Environmental Protection, *Florida Wetland Regulatory Program Demonstration Project (undated) (on file at ELI)*, at 9.
[12] Federal Interagency Committee for Wetland Delineation (U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Soil Conservation Service), Federal Manual for Identifying and Delineating Jurisdictional Wetlands (1989), *unofficial copy available at* http://www.wetlands.com/pdf/89manv3b.pdf.
[13] N.J. STAT. ANN. § 13:9B; N.J. ADMIN. CODE. § 7:7A-2.3(a).
[14] N.J. ADMIN. CODE. § 7:50-6.3.
[15] New York State Department of Environmental Conservation, *Freshwater Wetlands Delineation Manual (1995)*, *available at* http://www.dec.state.ny.us/website/dfwmr/habitat/wdelman.pdf.
[16] Personal communication with Pat Reixinger, New York Department of Environmental Conservation (Nov. 12, 2003).
[17] OR. ADMIN. R. § 141-090-0030 and 141-090-0035 (2005).
[18] *See* Washington State Department of Ecology, *Ecology Publication No. 96-94, Washington State Wetlands Identification and Delineation Manual (1997), available at* http://www.ecy.wa.gov/pubs/9694.pdf.
[19] The 1995 Washington State Legislature enacted a bill requiring the Washington Department of Ecology to adopt a wetland delineation manual that "implements and is consistent with the 1987 manual in use on January 1, 1995 by the U.S. Army Corps of Engineers and the U.S. [Environmental Protection Agency]." *See* WASH. REV. CODE § 90.58.380.

A water quality focus. Many states rely primarily on water quality laws to regulate wetlands as "waters of the state." In Arizona, Colorado, Hawaii, Montana, Missouri, Nebraska, Texas, Utah, and West Virginia, §401 water quality certification is the sole mechanism by which wetlands are regulated at the state level. North Carolina, Ohio, and Wisconsin rely on §401 water quality certification, but have also enacted legislation regulating "isolated wetlands." Finally, Washington relies primarily on §401 water quality certification to regulate wetlands at the state level, but has also adopted several other statutes that authorize additional approaches for state oversight as well (described further below).[21]

Assumption of CWA §404. To date, Michigan and New Jersey are the only two states in the nation that have assumed authority to administer dredge and fill permits under CWA §404.

A resource focus. Ten of the twenty-four states examined in Phases I and II have established permitting regimes focused on particular state resources. In Florida, the Environmental Resource Permit Program[22] effectively regulates all alterations to the landscape, including all tidal and freshwater wetlands and other surface waters (including isolated wetlands) and uplands. The program addresses dredging and filling in wetlands and other surface waters, as well as stormwater treatment and attenuation and flooding of other properties, including flows resulting from alterations of uplands.[23] Maine's Natural Resources Protection Act[24] requires permits for activities in or adjacent to

Box A.
Clean Water Act § 401 Water Quality Certification.

Clean Water Act §401(a)(1) states that:

> *"Any applicant for a Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters, shall provide the licensing or permitting agency a certification from the State in which the discharge originates or will originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over the navigable waters at the point where the discharge originates or will originate, that any such discharge will comply with the applicable provisions . . . In the case of any such activity for which there is not an applicable effluent limitation or other limitation . . . the State shall so certify. . . No license or permit shall be granted until the certification required by this section has been obtained or has been waived . . . No license or permit shall be granted if certification has been denied by the State, interstate agency, or the Administrator, as the case may be."*

Some states rely on §401 water quality certification as a regulatory mechanism for the management and protection of wetlands. The basic elements of water quality standards (WQS), including designated uses, criteria, and an antidegradation policy, provide a legal basis for protecting wetland resources through state water quality management programs. Prior to the 1990s, state water quality standards were typically only applied to waters such as rivers, lakes, estuaries, and oceans and were applied tangentially, if at all, to wetlands. Today, standards can play a critical role in state water quality certification by providing the basis for approving, conditioning or denying federal permits and licenses and by providing a benchmark against which to assess the many activities that impact wetlands.[20]

[20] U.S. Environmental Protection Agency, *National Guidance: Water Quality Standards for Wetlands*, *at* http://www.epa.gov/owow/wetlands/regs/quality.html (July 1990).

[21] All states included in the study, with the exception of Michigan and New Jersey, do apply § 401 water quality certification to wetlands. However, some rely primarily on other types of regulation, with §401 certification serving an auxiliary role in wetland-related permitting processes.

[22] FL. STAT. ANN. § 373, Part IV.

[23] Florida's panhandle operates under a wetland resource permit program that regulates dredging and filling in waters of the state. The rules applicable to the panhandle program are currently "grandfathered" until the year 2010, when they will be replaced by the Environmental Resource Permit program. *See:* FL. STAT. ANN. § 373.4145, which preserves FL. ADMIN. CODE §§ 62-312.010-312.470; and FL. ADMIN. CODE § 62-25.

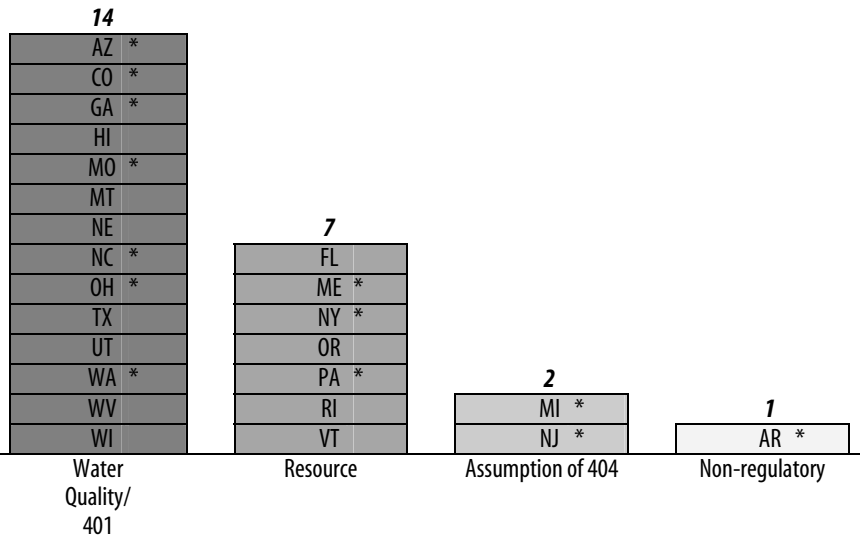
the state's "protected natural resources," which include "a coastal wetland, great pond, river, stream or brook or significant wildlife habitat contained within a freshwater wetland, or . . . [certain] freshwater wetlands."[25] In Georgia, Michigan, North Carolina, and Rhode Island, state permitting programs have been established for coastal wetlands.[26] North Carolina has also developed riparian area buffer rules.[27] New York relies on three separate resource-based authorities to protect wetlands. These statutes address, respectively, freshwater wetlands,[28] tidal wetlands,[29] and resources adjacent to the state's navigable waters.[30] Pennsylvania has also enacted a resource-based law entitled the Dam Safety and Encroachments Act.[31] The law is designed to regulate dams and reservoirs, water obstructions, and encroachments in Pennsylvania, including wetlands. Vermont's Wetland Rules require permits for regulated activities in certain wetlands, classified according to functional value. Oregon has also adopted wetland legislation that requires permits for certain removal/fill activities. Finally, Washington has adopted a forest-focused law[32] and a water resource-focused law,[33] both of which indirectly involve wetland protection.

Local legal authority. Five of the 24 states have established laws requiring local governments to adopt ordinances that provide wetland regulation and protection and/or incorporate planning criteria into their minimum standards. Although administered locally, state resource agencies in Georgia, Maine, Oregon, Washington, and Wisconsin are charged with providing guidance and technical assistance to local governments. In Maine and Washington, planning laws that focus on "shoreland" and "shoreline" areas, respectively, require local governments to implement planning ordinances that protect coastal resources, including wetlands.[34]

A non-regulatory focus. Arkansas and Oregon are unique among the 24 states, having adopted laws that seek to protect wetlands through non-regulatory approaches. The Arkansas Wetland Mitigation Bank Act establishes a state mitigation banking program designed to improve cooperative efforts in the restoration and management of wetlands and to encourage a predictable, efficient regulatory framework for environmentally acceptable mitigation.[35] The Arkansas Private Wetland and Riparian Zone Creation and Restoration Incentive Act was designed to target private landowners by providing tax credits for the restoration or creation of wetlands and riparian zones.[36] The Oregon Mitigation Bank Act of 1987 establishes a program

[24] Similar laws apply in areas of the state not included within the jurisdiction of the Natural Resources Protection Act. Maine's "Use Regulation," regulated by the Land Use Regulation Commission, establishes comparable standards in "unorganized" and "deorganized" areas of the state. *See* ME. REV. STAT. ANN. tit. 12, § 206-A(2).
[25] ME. REV. STAT. ANN. tit. 38, § 480-C(1).
[26] State permitting programs for coastal resources are authorized in Georgia, Michigan, North Carolina, and Rhode Island under GA. CODE ANN. § 12-5-280, MICH. COMP. LAWS §§ 324.32301 - 324.32315, N.C. GEN. STAT. § 113A-100, and R.I. GEN. LAW § 46-23 *et seq.*, respectively. Rhode Island has also adopted regulations that address "freshwater wetlands in the vicinity of the coast. *See:* R.I. GEN. LAW § 46-23-6.E.
[27] N.C. ADMIN. CODE tit.15A, r. 02B.0233, 02B.0259.
[28] N.Y. ENVTL. CONSERV. LAW § 24, Title 7.
[29] N.Y. ENVTL. CONSERV. LAW § 25.
[30] N.Y. ENVTL. CONSERV. LAW § 15, Title 5.
[31] 32 PA. CONS. STAT. §§ 693.1–693.27.
[32] WASH. REV. CODE § 76.09; WASH. ADMIN. CODE § 222.
[33] WASH. REV. CODE § 77.55; WASH. ADMIN. CODE § 220-110.
[34] *See* ME. REV. STAT. ANN. tit. 38, §§ 435-449 and WASH. REV. CODE § 90.58.
[35] Arkansas Wetland Mitigation Bank Act, ARK. CODE ANN. §§ 15-22-1001.
[36] Arkansas Private Wetland and Riparian Zone Creation and Restoration Incentive Act, ARK. CODE ANN. §§ 26-51-1501.

Figure 2A.
Primary type of law utilized for wetland protection/regulation at the state level.



* *Based on research conducted in 2003 and 2004. The Phase I report, which includes detailed summaries of these twelve states, may be accessed at: http://www.elistore.org/reports_detail.asp?ID=11079*

Figure 2B.
States utilizing a combination of wetland laws.

State	***Wetland-related law***				
	Water Quality/401	Resource	Local reg.	CWA §404	Non-reg.
AR *	✓				✓
FL	✓	✓			✓
GA *	✓	✓	✓		
ME *	✓	✓	✓		
MI *		✓		✓	
NJ		✓		✓	
NC *	✓	✓			
OR	✓	✓	✓		✓
PA	✓	✓			
RI	✓	✓			
VT	✓	✓			
WA *	✓	✓	✓		
WI	✓		✓		✓

* *Based on research conducted in 2003 and 2004. The Phase I report, which includes detailed summaries of these twelve states, may be accessed at: http://www.elistore.org/reports_detail.asp?ID=11079*

for private or public mitigation banks under the authority of the Department of State Lands.[37] Many states have also adopted rules outlining best management practices and/or coastal conservation considerations, which often pertain to wetlands.

§401 Certification

Figure 3 (next page) shows the estimated annual number of §401 certifications issued by states that rely primarily on water quality provisions to regulate and protect wetlands, as shown in *Figure 2A* (previous page).[38]

All states have a low percentage of §401 water quality certifications that are outright denied. Permit review staff reported that they often work closely with applicants prior to application submission, providing guidance on state regulations and requirements, alternative locations, designs, and mitigation strategies. Certifications may also be issued with modifications or conditions, such as mitigation or stormwater management requirements. In Pennsylvania, the Department of Environmental Protection has also conducted targeted education and outreach to inform the state's regulated community on basic permit requirements and permit review procedures, especially those related to wetland identification, delineation, alternatives analysis, and sequencing. These efforts, along with pre-application work, have improved the quality of application submissions, resulting in a low percentage of permit denial.[39]

Organization of State Activities

The majority of the 24 states studied in Phases I and II administer wetland regulatory programs and non-regulatory activities through two or more state agencies, although a significant number of the states rely on a single agency for all state-level wetland activities. In Arizona, Georgia, Michigan, Montana, North Carolina, Pennsylvania, Vermont, and Wisconsin—states with widely varying economies, ecologies, and wetland program sizes and approaches—state-level wetland-related activities are administered by one main environmental agency. However, Georgia, North Carolina, and Wisconsin's wetland-related programs are operated by multiple divisions within the single agency.

Another common organization of state activities involves two state resource agencies – one that administers state laws and regulations and one that oversees non-regulatory activities, such as restoration initiatives and landowner stewardship programs. Such is the case in Colorado, Hawaii, Missouri, Nebraska, Ohio, and Utah, where water quality regulation is generally overseen by one agency[40] and restoration, landowner partnership, and other non-regulatory programs are administered by another agency.[41]

[37] *See* OR. REV. STAT. § 196-610.

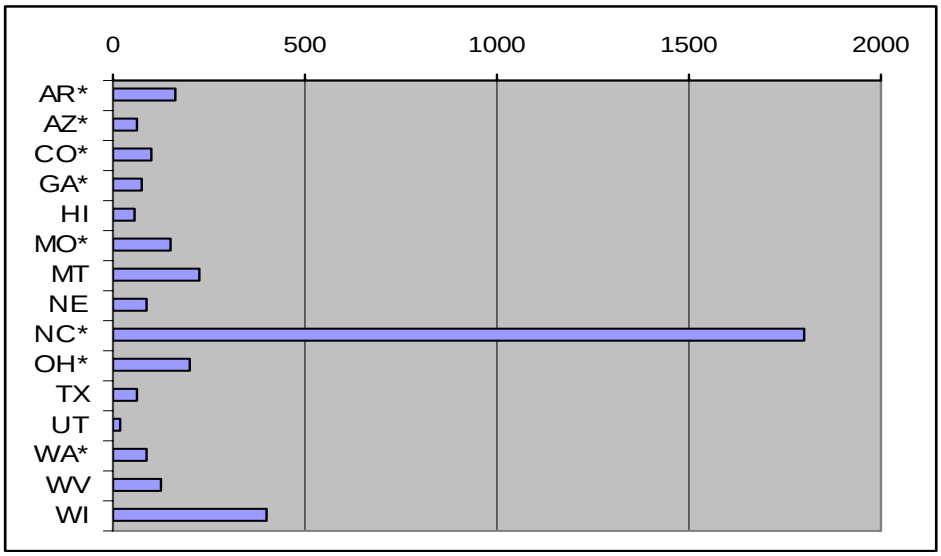
[38] The numbers depicted in *Figure 3* are based on estimates by state staff and are ***not*** considered to be exact figures.

[39] Personal Communication with Ken Reisinger, Pennsylvania Department of Environmental Protection (Nov. 30, 2004).

[40] The Colorado Department of Public Health Environment, Hawaii Department of Health, Nebraska Department of Environmental Quality, Missouri Department of Natural Resources, Ohio Environmental Protection Agency, and Utah Department of Environmental Quality administer these states' water quality regulatory programs.

[41] The Colorado Department of Natural Resources, Hawaii Department of Land and Natural Resources, Missouri Department of Conservation, Nebraska Game and Parks Commission, Ohio Department of Natural Resources, and Utah Department of Natural Resources conduct these states' restoration and landowner stewardship activities.

Figure 3. Estimated number of 401 certifications issued annually for states relying primarily on water quality provisions to regulate



* *Based on research conducted in 2003 and 2004. The Phase I report, which includes detailed summaries of these twelve states, may be accessed at: http://www.elistore.org/reports_detail.asp?ID=11079*

** *Note that the number for NC includes stream-related certifications. Also, numbers for NC, OH, and WI include isolated wetland permits.*

Although Maine, New York, and Rhode Island also divide their state wetland-related programs between two agencies, they use a different approach. Agencies in these states are organized by jurisdiction, rather than by the activities they oversee. Maine divides regulation among "organized" and "unorganized" or "de-Organized" areas of the state (Maine Department of Environmental Protection and Maine Land Use Regulation Commission, respectively), while New York gives wetland regulatory authority to the Department of Environmental Conservation in all areas of the state except the Adirondack Park, where the Adirondack Park Agency administers state wetland laws. Rhode Island also divides regulation by jurisdiction—the Department of Environmental Management oversees most freshwater wetland regulation and the Coastal Resources Management Council oversees regulation of coastal wetlands and freshwater wetlands in the vicinity of the coast.

Florida is unique in that its regulatory program is administered jointly by the Department of Environmental Protection (FLDEP) and four of five regional Water Management Districts (WMDs).[42] In practice, FLDEP and the four WMDs have divided responsibilities according to categories of activities.[43] FLDEP has entered into

[42] The five regional WMDs are: Northwest Florida, Saint John's River, South Florida, Southwest Florida, and Suwanee River. The Florida Department of Environmental Protection administers the wetland permitting program in the Northwest Florida WMD, covering the "panhandle" region in the northwest portion of the state.

[43] FLDEP generally reviews and takes action on activities involving extraction, waste disposal, dredging, energy production, industry, and communications, as well as those involving coastal zone construction. WMDs generally take action on applications involving commercial and residential developments. *See:* Florida Department of Environmental Protection, *ERP Primer (undated) (on file at ELI)*, at 5.

Figure 4. State agencies conducting significant wetland-related activities.

State	Name of Agency(ies)					
*AZ**	Dept. of Env'l Quality					
*AR**	Dept. of Env'l Quality	Soil and Water Conservation Comm.	Game and Fish Comm.	Natural Heritage Comm.	Forestry Comm.	Univ. of Ark. Coop. Ext. Service
*CO**	Dept. of Public Health and Env't	Dept. of Natural Resources				
FL	Dept. of Env'l Protection	Reg'l Water Mgmt Districts				
*GA**	Dept. of Natural Resources					
HI	Dept. of Health	Dept. of Land and Natural Resources				
*ME**	Dept. of Env'l Protection	Land Use Regulatory Comm.				
*MI**	Dept. of Env'l Quality					
*MO**	Dept. of Natural Resources	Dept. of Conservation				
MT	Dept. of Env'l Quality					
NE	Dept. of Env'l Quality	Game and Parks Comm.				
NJ	Dept. of Env'l Protection	Pinelands Comm.	Meadowlands Comm.			
*NY**	Dept. of Env'l Conservation	Adirondack Park Agency				
*NC**	Dept. of Env. and Nat. Resources					
*OH**	Env'l Protection Agency	Dept. of Natural Resources				
OR	Dept. of State Lands	Dept. of Env'l Quality	Watershed Enhancement Board	Dept. of Land Conservation & Devt.	Dept. of Forestry	
*PA**	Dept. of Env'l Protection					
RI	Dept. of Env'l Management	Coastal Resources Mgmt. Council				
TX	Commission on Env'l Quality	General Land Office	Parks and Wildlife	Forest Service		
UT	Dept. of Env'l Quality	Dept. of Natural Resources				
VT	Dept. of Env'l Conservation					
*WA**	Dept. of Ecology	Dept. of Fish and Wildlife	Dept. of Natural Resources	Dept. of Community, Trade, & Econ. Devt.		
WV	Dept. of Env'l Protection	Division of Natural Resources				
WI	Dept. of Natural Resources					

* *Based on research conducted in 2003 and 2004. The Phase I report, which includes detailed summaries of these twelve states, may be accessed at: http://www.elistore.org/reports_detail.asp?ID=11079*

operating agreements with each of the four WMDs that implement the program to outline the division of responsibilities.[44]

In five of the 24 states, wetland-related activities are conducted by multiple state agencies. In Washington, the Department of Ecology is the foremost wetland agency in the state, administering the §401 program and providing guidance and technical assistance to local governments and the regulated community. However, Washington's Departments of Fish and Wildlife; Natural Resources; and Community, Trade, and Economic Development also conduct wetland-related activities through various state statutes. Similarly, Oregon's Department of State Lands is the leading wetland regulatory agency for the state, although the Department of Environmental Quality, Watershed Enhancement Board, and Department of Land and Conservation Development also conduct significant wetland-related activity. Arkansas takes a very collaborative approach to wetland activities with the state's Multi-Agency Wetland Planning Team (MAWPT). The MAWPT includes six state agencies: Natural Heritage Commission, Game and Fish Commission, Department of Environmental Quality, Soil and Water Conservation Commission, Forestry Commission, and University of Arkansas Cooperative Extension Service. Each MAWPT agency conducts individual wetland activities, but also works in partnership on wetland conservation efforts in the state. In New Jersey, the Department of Environmental Protection is the state's leading agency on wetland-related regulation and conservation; however, the Pinelands Commission and the Meadowlands Commission conduct some wetland activities in their respective jurisdictions. *See Figure 4* (previous page).

Agency structure. Almost all of the 24 states[45] administer wetland-related programs from both headquarter and regional offices. In states that exclusively utilize a water quality approach to wetland regulation (see *Box A*), §401 water quality certifications are typically issued from the state's headquarter office. States that use another approach, or combination of approaches, to wetland protection (such as a resource-based permitting program and/or locally administered planning or regulatory programs) tend to conduct activities out of both headquarter and regional offices.

In most cases, wetland-related activities are an integral part of larger state programs, thus making it difficult to estimate the specific amount of funding or resources devoted to wetland programs. Estimated annual budgets ranged from $75,000 for the Arizona Department of Environmental Quality's §401 program to as much as $31 million for Florida's Environmental Resource Permitting Program.[46] Similarly, the number of

[44] The operating agreements are adopted as rules and regulations at FL. ADMIN. CODE § 62-113.

[45] Arizona, Nebraska, Montana, and Rhode Island are the only states examined that administer all wetland-related activities out of headquarter offices. However, some states have multiple agencies involved in wetland-related activities, with some operating exclusively out of headquarter offices and others out of both headquarter and regional offices. The Arkansas Soil and Water Conservation Commission operates the state's mitigation banking and restoration tax credit programs out of the agency headquarters in Little Rock; the North Carolina Ecosystem Enhancement Program conducts watershed planning and administers the state's in-lieu-fee program from its Raleigh headquarters; the Oregon Department of State Lands' management of wetlands is centralized and administered primarily from Salem; Utah Department of Environmental Quality issues §401water quality certifications from the headquarters office in Salt Lake City; and the Washington Department of Community, Trade, and Economic Development provides technical assistance to local governments on land use planning from its headquarters in the state capital of Olympia.

[46] It should be noted that Florida's Environmental Resource Permitting Program expands beyond wetlands, effectively regulating all alterations to the landscape, including all tidal and freshwater wetlands, other surface waters (including isolated wetlands), and uplands. The program addresses dredging and filling in wetlands and other surface waters, as well as stormwater treatment and attenuation and flooding of other properties, including flows resulting from alterations of uplands.

full-time equivalents (FTEs) dedicated to wetland activities varies from state to state, agency to agency, and program to program. The State of Colorado employs 1-$^{1}/_{3}$ FTEs for wetland activities conducted in the Colorado Department of Public Health and Environment and the Colorado Department of Natural Resources. However, volunteer staff are also located throughout the state. On the other hand, Florida employs approximately 520 staff statewide to administer the Environmental Resource Permitting Program. North Carolina's Department of Environment and Natural Resources, the primary agency for wetland regulation and conservation in the state, employs more than 80 FTEs to specifically administer wetland-related activities.

Nationwide Permits

Sixteen of the 24 states examined conduct regular reviews of the U.S. Army Corps of Engineers' Nationwide Permits (NWPs). These states provide comment on Corps regional NWP conditions, and many issue general conditions or denials. Five of the remaining states, Maine, Pennsylvania, Rhode Island, Vermont, and Wisconsin, instead operate under State Programmatic General Permits (SPGP).[47] Colorado and Utah do not provide review and comment, condition, or deny NWPs (Colorado certifies all NWPs by state statute).

In Michigan and New Jersey, although the state has assumed authority to administer dredge and fill permits under CWA §404, the Corps retains jurisdiction of traditionally navigable waters. NWPs are still applicable in these areas. The states have also issued general permits for their assumed 404 programs. Analogous to the federal NWPs, general permits in Michigan and New Jersey allow the state agencies to evaluate applications on an expedited basis. For the most part, general permit categories are similar those found in the Corps' NWPs.[48]

North Carolina has also created a general permit for wetlands regulated under the state's isolated wetlands rules and buffer rules,[49] while Florida has issued a number of general permits for the Environmental Resource Permitting Program.[50]

State Programmatic General Permits

Maine, Pennsylvania, Rhode Island, Vermont, and Wisconsin operate under an SPGP and therefore do not have applicable NWPs. The SPGPs expedite the Corps' review of certain activities that are subject to federal jurisdiction, but do not preclude permit applications required under state regulations. Florida, Hawaii, and Oregon also have SPGPs, although they cover limited sets of activities and/or defined geographic areas within the state.

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[47] Florida, Hawaii, and Oregon also have SPGPs, although they cover limited sets of activities and/or defined geographic portions of the state.

[48] *Id*.

[49] North Carolina Department of Environment and Natural Resources, Division of Water Quality, *State General Permit for Impacts to Isolated Wetlands and Isolated Waters*, Permit No. IWGP100000 (Sept. 10, 2003), *available at* http://h20.enr.state.nc.us/ncwetlands/isogp.pdf; North Carolina Department of Environment and Natural Resources, Division of Water Quality, *North Carolina General 401 Water Quality Certifications matching the U.S. Army Corps of Engineers 404 Nationwide, Regional and General Permits*, *at* http://h2o.enr.state.nc.us/ncwetlands/certs.html (last revised Apr. 2, 2003).

[50] Activities subject to a general permit include: construction and modification of boat ramps of certain sizes; installation and repair of riprap at the base of existing seawalls; installation of culverts associated with stormwater discharge facilities; and construction and modification of certain utility and public roadway construction activities. *See*: FL. STAT. ANN. § 403.927; FL. ADMIN. CODE § 373.406.

Mitigation

Mitigation regulations vary greatly from state to state. Arizona, Arkansas, Colorado, Georgia, Hawaii, Missouri, Montana, Nebraska, and Utah, all states relying on §401 water quality certification as the primary state-level wetland regulatory mechanism, have not adopted mitigation provisions beyond what is required under CWA §404. However, some of these states have developed, on their own or in coordination with federal agencies, mitigation guidance on replacement ratios, site/kind preferences, mitigation banking, and in-lieu-fee mitigation. North Carolina, Ohio, Texas, Washington, West Virginia, and Wisconsin also rely on water quality provisions, but have adopted mitigation regulations in addition to requirements under the federal §404 program. Florida, Maine, New York, Oregon, Pennsylvania, Rhode Island, and Vermont have adopted resource-based wetland protection laws that include mitigation requirements. These mitigation provisions typically establish a "no net loss" goal, include ratio requirements and site/kind preferences, and may provide language on banking and in-lieu-fee options.

Arkansas, Oregon, and Michigan, three states with extremely different strategies for wetland protection, have each established mitigation banking programs. Washington has drafted legislation authorizing the establishment of a state mitigation banking program; however, funding cuts have prevented implementation of the rule to date. Most of the states covered in this review participate in Mitigation Banking Review Teams to some degree.

Four states reviewed in Phases I and II have established in-lieu-fee programs. In Pennsylvania, permit applicants impacting one-half acre of wetland or less, and who have no on-site wetland replacement options or alternative mitigation opportunities, may contribute money into the Pennsylvania Wetland Replacement Project, an in-lieu-fee fund managed by the Pennsylvania Department of Environmental Protection.[51] North Carolina has also established the North Carolina Ecosystem Enhancement Program (NCEEP), an in-lieu-fee program that provides an alternative mitigation option to permitted applicants.[52] The Montana Wetlands Legacy partnership operates an in-lieu fee program to mitigate impacts on wetlands and, beginning in 2006, impacts to streams as well. Payment to the program is one option for satisfying §404 mitigation requirements, as well as for settling some enforcement cases. Finally, New Jersey wetland laws establish the Mitigation Council, a state in-lieu-fee program for impacts to freshwater wetlands and state open water impacts.[53] Collected monies are deposited into the Wetland Mitigation Fund and may be granted by the council to conduct enhancement or restoration or to acquire land. The council also reviews and approves the establishment of freshwater wetland mitigation banks in the state.[54] The bank approval process is outlined in the states' rules.[55]

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[51] *See* PA DEP, *Public Notice – Pennsylvania Wetland Replacement Project (18 Jan 1996)*, *available at* http://www.dep.state.pa.us/dep/deputate/watermgt/Wc/Subjects/WWEC/general/wetlands/replfd1.htm.

[52] The NCEEP was established in 2003 by a Memorandum of Agreement signed by the North Carolina Department of Environment and Natural Resources, North Carolina Department of Transportation, and the US Army Corps of Engineers' Wilmington District. *See* Memorandum of Agreement among the North Carolina Department of Environment and Natural Resources and the North Carolina Department of Transportation and the United States Army Corps of Engineers, Wilmington District (2003) (*available at* http://www.saw.usace.army.mil/wetlands/Policies/EEP_FinalMOA_NCDOT.pdf).

[53] New Jersey Department of Environmental Protection – Land Use Regulation Program, *Mitigation, at* http://www.state.nj.us/dep/landuse/fww/mitigate/mcouncil.html (last updated Dec. 23, 2004).

[54] New Jersey Department of Environmental Protection – Land Use Regulation Program, *Mitigation, at* http://www.state.nj.us/dep/landuse/fww/mitigate/mcouncil.html (last updated Dec. 23, 2004).

[55] N.J. ADMIN. CODE. § 7:7A-15.

The NCEEP seeks to increase regulatory efficiency and ecological effectiveness by providing a unified, watershed-based approach for all of the state's aquatic resources planning and mitigation activities. The program consolidates and streamlines state mitigation programs, including the numerous mitigation operations performed by the North Carolina Department of Transportation.[56] Washington's Departments of Ecology and Transportation are also developing a watershed-based mitigation program to guide mitigation projects for unavoidable impacts resulting from transportation activities. The program focuses on improving ecological benefits to watersheds and streamlining the permitting process.[57] Florida has also established a mitigation program specific to the state's Department of Transportation (FLDOT).[58] FLDOT annually provides an inventory of anticipated wetland impacts to the regional Water Management Districts, which then develop mitigation plans in coordination with other state and federal regulatory agencies.[59]

Separate standards and procedures for stream mitigation are uncommon among the 24 states reviewed. Maine, North Carolina, and Pennsylvania offer the only examples of states that have adopted regulations or guidelines specifying criteria for stream mitigation.

Enforcement and Compliance

In most of the 24 states reviewed, wetland-related enforcement activities are administered through state water quality programs. Such is the case in Arizona, Arkansas, Colorado, Georgia, Hawaii, Missouri, Montana, Nebraska, North Carolina, Ohio, Texas, Utah, Washington, and West Virginia. Enforcement tools vary from state to state and may include compliance orders, injunctions, and civil and criminal penalties/prosecution. Many of these states, however, defer to the U.S. Army Corps of Engineers and/or U.S. Environmental Protection Agency to pursue wetland-related enforcement.[60]

In Florida, Maine, Michigan, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, Vermont, and Wisconsin, enforcement provisions are outlined in the states' wetland-related laws and regulations. Again, typical enforcement mechanisms include civil and criminal penalties/prosecution, abatement orders, and injunctions. Enforcement actions are rarely pursued at elevated levels. See *Figure 5* (next page).

Tracking Systems

Most of the 24 states reviewed maintain systems to track permits and/or certifications to some degree (exceptions include Hawaii and Montana). In Florida, Maine, Michigan, Oregon, New Jersey, Pennsylvania,

[56] North Carolina Department of Environment and Natural Resources, *Wetlands Restoration Program: 2003 Annual Report*), *available at* http://h2o.enr.state.nc.us/wrp/publications/2003/03WRPAnnual.pdf (2003).
[57] Washington Department of Transportation, Environmental Services, *Watershed Based Mitigation*, *at* http://www.wsdot.wa.gov/environment/watershed/watershed_mitigation.htm (last revised 2001).
[58] FL. STAT. ANN. § 373.4137.
[59] This program does not relieve FLDOT from eliminating or reducing impacts or obtaining permits for the impacts and FDOT must provide funding to conduct the required mitigation projects. *See* Florida Department of Environmental Protection, *Florida Wetland Regulatory Program Demonstration Project (undated) (on file at ELI)*, at 15.
[60] One notable exception is Washington's Shoreline and Environmental Assistance Program, which has a fairly active enforcement and compliance program. The program's focus is often on isolated wetlands and waters that fall outside federal jurisdiction. In addition, Georgia and North Carolina's coastal wetland programs conduct enforcement separately from the states' water quality programs and are quite active, performing regular overflights to locate and investigate possible violations to the state's coastal protection laws.

***Figure 5*. Enforcement mechanisms.**

	Abatement/ Compliance Orders, Injunctions	Civil penalties	Civil prosecution	Criminal penalties	Criminal prosecution	Other
AZ*	✓	✓		✓	✓	
AR*		✓		✓	✓	
CO*						✓
FL	✓	✓	✓	✓	✓	
GA*	✓	✓				
HI		✓	✓	✓	✓	
ME*	✓	✓	✓			✓
MI*	✓	✓	✓	✓	✓	
MO*						✓
MT	✓	✓		✓	✓	
NE		✓				
NJ	✓	✓	✓	✓	✓	
NY*	✓	✓	✓	✓	✓	✓
NC*	✓	✓	✓	✓	✓	✓
OH*	✓	✓				✓
OR	✓	✓	✓			✓
PA*		✓				✓
RI	✓	✓	✓	✓	✓	
TX	✓	✓	✓	✓	✓	
UT	✓	✓	✓	✓	✓	
VT	✓	✓	✓			
WA*		✓				✓
WV		✓	✓	✓	✓	
WI	✓	✓	✓			

* *Based on research conducted in 2003 and 2004. The Phase I report, which includes detailed summaries of these twelve states, may be accessed at: http://www.elistore.org/reports_detail.asp?ID=11079*

Rhode Island, Washington, and Wisconsin, tracking systems also include data related to enforcement, mitigation, restoration, monitoring, and/or assessment.

Other states are currently developing more comprehensive tracking systems. The New York Department of Environmental Conservation maintains a system that tracks state wetland permits, but is also initiating efforts to track wetland-related compliance, delineations, mitigation, and the resource impacts of permits.[61] Ohio is also in the process of developing a tracking system called the Surface Water Information Management System (SWIMS), which will eventually handle §401 certifications and isolated wetlands permits, in addition to the state's other water permits. SWIMS will track applicant information, acreage, impacts, mitigation actions, fees, annual reporting, permit compliance, preparation of enforcement actions, and other

[61] The New York Adirondack Park Agency (APA) also maintains a tracking system for activities conducted on APA lands.

data. All the information will be geographically referenced, incorporating geographic information system (GIS) data. In the future, SWIMS will also include ambient chemical and biological databases.[62]

Arkansas is currently developing the Arkansas Wetland Information Management System (AWIMS), which utilizes GIS and will include a variety of data fields such as mitigation (based on proposed actions only), individual wetland planning areas, eco-regions and watersheds, congressional districts, counties, §404 permits, acreages, and conservation programs.[63] Finally, North Carolina maintains a database of project and permit information for §401 water quality certifications and isolated wetlands permits, but is also improving the system to better handle monitoring information. The state's coastal permitting program is in the process of developing a GIS-based system that tracks coastal permits (including monitoring data) and mitigation. These systems will include GIS data. Finally, the NCEEP is also developing a comprehensive information management system that will track wetland type, acreage, permit information, enforcement and compliance actions, performance criteria, and forecasting and debiting functions. NCEEP envisions eventually linking the system to other state and federal information management systems in the state.

Rhode Island's statewide permit tracking system keeps record of all §401 water quality certification decisions, as well as coordinated enforcement and compliance efforts. Rhode Island Department of Environmental Management maintains a computerized tracking system for wetland permit decisions and associated loss/gain data.[64] The agency has incorporated a geographic component for internal use, and Rhode Island's official website recently launched a wetland application search tool.[65] The state's Coastal Resource Management Council is currently proposing to add a loss/gain tracking function to their permit database as well.

II. Water Quality Standards

Five of the 24 states have adopted wetland-specific water quality standards: Colorado, Nebraska, North Carolina, Ohio, and Wisconsin. Pennsylvania has also incorporated wetlands into the state's water quality provisions by creating linkages between state wetland regulations and water quality standards. In addition, Hawaii Administrative Rules include criteria specific to "elevated wetlands,"[66] as well as "inland waters,"[67] "marine waters,"[68] "marine bottom types,"[69] and "recreational areas."[70] The remaining states have not adopted water quality standards, anti-degradation policies, or designated uses specific to wetlands (with the sole exception of Maine, where wetlands are identified in the state's antidegradation policy and

[62] Ohio Envtl. Prot. Agency, Division of Surface Water, *SWIMS: Surface Water Information Management System*, *at* http://www.epa.state.oh.us/dsw/swims/swims.html (last visited June 18, 2004).
[63] Personal Communication with Ken Brazil, Arkansas Soil and Water Conservation Commission (Apr. 26, 2004).
[64] RIDEM, *Freshwater Wetland Protection and Regulation Status and Trends Report 2001 through 2003 (Oct. 2004), available at* http://www.dem.ri.gov/programs/benviron/water/wetlands/pdfs/wet2003.pdf, at 7.
[65] RIDEM, *Wetlands Permit Application Search, at* http://www.ri.gov/dem/wetlands/ (last visited Feb. 10, 2006).
[66] HAW. ADMIN. RULES §11-54-5.2 (c)
[67] HAW. ADMIN. RULES §11-54-5
[68] HAW. ADMIN. RULES §11-54-6
[69] HAW. ADMIN. RULES §11-54-7
[70] HAW. ADMIN. RULES §11-54-8

designated uses), although surface water quality standards, uses, and antidegradation policies do apply to wetlands included in state-defined waters.[71]

III. Monitoring and Assessment

Few of the states examined maintain a formal monitoring and assessment program for wetlands. In Maine, the biological monitoring and assessment program has been under development since 1998. It is administered as part of the Maine Department of Environmental Protection's overall water quality assessment program, which also oversees biological assessment and monitoring for streams and rivers.[72]

Some states have developed and/or adopted one or more wetland assessment methodologies, while others are currently in the development phase. In Arkansas, state agencies are developing a hydrogeomorphic (HGM) classification for the state's wetlands. Regional HGM guidebooks are also being developed in conjunction with the U.S. Army Corps of Engineers, making Arkansas the first state in the nation with HGM functional assessment models for all the major forested wetland types in the state. The classification and guidebooks will likely be used for a variety of purposes, including state planning, monitoring, and restoration efforts, state mitigation banks, and other public holdings.[73]

Vermont's wetland classification, conducted for regulatory purposes, relies on Adamus et al.'s *Wetland Evaluation Technique*, a functional criteria methodology.[74] Functional criteria include: water storage for flood water and storm runoff; surface and groundwater protection; fisheries habitat; wildlife and migratory bird habitat; hydrophytic vegetation habitat; threatened and endangered species habitat; education and research in natural sciences; recreational value and economic benefits; open space and aesthetics; and erosion control through binding and stabilizing the soil.[75]

North Carolina utilizes several wetland assessment methodologies for a variety of purposes. A rating system is used primarily to provide guidance for §401 water quality certification decisions on freshwater wetlands.[76] In addition, the state is currently involved in the development of an updated functional assessment meth-

[71] It should be noted that New York has *developed* but not adopted wetland-specific water quality standards.

[72] The biological monitoring and assessment program will eventually include water quality impairment assessments and coordinate with the state's watershed and nonpoint source programs. The program conducts basin-wide watershed monitoring and biological assessment, throughout the state, on a rotating five-year schedule. Department staff have worked closely with the U.S. Environmental Protection Agency and other states developing bioassessment methodologies. As of 2004, Maine Department of Environmental Protection (MDEP) has conducted wetland biomonitoring at 126 different sites encompassing 172 sampling events. Today, a database is being developed for the multitude of collected data. MDEP program staff are also developing biocriteria and impairment thresholds. MDEP plans to incorporate the methodology into the state rules for purposes of CWA §303(d) listing and §305(b) reporting. The methodology may also be used for state discharge licensing, stormwater, hydropower licensing, measuring mitigation success, and other regulatory measures. CWA § 104(b)(3) competitive grants for wetlands have supported the program for seven years. *See* Maine Department of Natural Resources, *Wetland Monitoring and Assessment Program, at* http://www.maine.gov/dep/blwq/wetlands/monitoring.htm (last visited Aug. 9, 2004).

[73] Personal Communication with Elizabeth O. Murray, Arkansas Game and Fish Commission (Sept. 1, 2004).

[74] *See* P.R. ADAMUS ET AL., WETLAND EVALUATION TECHNIQUE (WET) VOLUME II: METHODOLOGY (1987).

[75] Vermont Wetland Rules §5.

[76] North Carolina Department of Environment, Health, and Natural Resources, *Guidance for Rating the Values of Wetlands in North Carolina (Jan. 1995)*, *available at* http://h2o.enr.state.nc.us/ncwetlands/wetval.pdf.

odology. The North Carolina Coastal Region Evaluation of Wetland Significance, or NC-CREWS, is a watershed-based wetlands functional assessment model that uses GIS software and data to assess the level of water quality, wildlife habitat, and hydrologic functions of individual wetlands. The primary objective of the NC-CREWS wetland functional assessment tool is to provide users with information about the relative ecological importance of wetlands for use in planning and the overall management of wetlands.[77] Finally, the state is also developing a functional assessment tool for coastal wetlands that will provide detailed wetland information for resource planning, with the specific objectives of locating high quality mitigation sites and identifying high quality wetlands that should be avoided.[78]

A variety of assessment methodologies are used in wetlands management and protection in Ohio. The Ohio Rapid Assessment Method was developed specifically for regulatory purposes in the late 1990s, with the final version released in February 2001 (Version 5.0).[79] Bioassessment methodologies are also being utilized more and more by Ohio Environmental Protection Agency staff.[80] Efforts are underway to develop a holistic evaluation for Pennsylvania wetlands as well. The methodology will be used to evaluate wetland integrity and quality on a watershed basis, utilizing reference sites and an U.S. EPA-recommended three-tiered protocol.[81] Finally, Washington State utilizes a quantitative, HGM-based, functional assessment methodology, used mainly for mitigation decision-making.[82]

The Montana Department of Environmental Quality employs several assessment methodologies for wetlands. The state currently has landscape-level and rapid assessments and is developing a bioassessment focused on vegetation, birds, and amphibians. In the future, Montana hopes to develop a strategy to integrate the assessment of wetlands with stream and landscape assessments to focus on overall watershed health. Beginning in 2006, the state will use assessments in watersheds to identify sites for wetland protection and restoration.[83] The main purposes of the methodology will be local watershed management, identification of wetland restoration priorities, and general ambient assessment.[84]

Other states, such as Michigan, New Jersey, Oregon, Rhode Island, Utah, and Wisconsin, are in the process of developing wetland assessment methodologies and strategies and capacity-building.

[77] North Carolina Department of Environment and Natural Resources, Division of Coastal Management, *NC-CREWS: North Carolina Coastal Region Evaluation of Wetland Significance, A Report of the Strategic Plan for Improving Coastal Management in North Carolina (May 1999)*, *available at* http://dcm2.enr.state.nc.us/Wetlands/NCCREWSDOC.pdf.
[78] North Carolina Department of Environment and Natural Resources, Division of Coastal Management *Wetlands: Inventory and Assessment*, *at* http://dcm2.enr.state.nc.us/wetlands/inventory.htm (last revised Sept. 8, 2003).
[79] Ohio Envtl. Prot. Agency, *Ohio Rapid Assessment Method for Wetlands v.5.0: User's Manual and Scoring Forms*, *at* http://www.epa.state.oh.us/dsw/401/oram50um.pdf (Feb. 1, 2001).
[80] Personal communication with Randy Bournique, Ohio Envtl. Prot. Agency (Nov. 6, 2003).
[81] Personal Communication with Ken Reisinger, Pennsylvania Department of Environmental Protection (Oct. 7, 2004).
[82] Personal communication with Andy McMillan, Washington State Department of Ecology (Jan. 22, 2004).
[83] Personal Communication with Randy Apfelbeck, Montana Department of Environmental Quality (Mar. 9, 2005).
[84] Personal Communication with Randy Apfelbeck, Montana Department of Environmental Quality (Mar. 9, 2005).

IV. Restoration and Partnerships

Most of the 24 states reviewed conduct restoration-related activities to some extent, although most states do not have a formal wetland restoration program outside of federal programs (i.e., Natural Resources Conservation Service's Wetland Reserve Program or programs related to the North American Waterfowl Management Plan).

For example, one of Wisconsin's notable wetland restoration efforts is funded by waterfowl stamp revenues. State, federal, and conservation groups within the State of Wisconsin are eligible for funding to conduct restoration. The program allocates funds according to criteria based on wildlife priorities identified in the *Upper Mississippi River and Great Lakes Region Joint Venture - Wisconsin Plan*. The Wisconsin Joint Venture Plan states its goal to be the involvement of "state and federal agencies and private organizations in a broad-based, unified effort to increase populations of waterfowl and other wildlife species by preserving, restoring, and enhancing wetland and upland habitat…" The plan outlines multiple, concrete objectives designed to achieve this goal, including increasing bird populations and additional habitat – specifically, "a minimum of 55,500 additional acres of habitat (3,700 acres per year) in perpetuity with a 3:1 upland to wetland ratio" and "177,350 acres of habitat on public (4,340 acres per year) and private (7,500 acres per year) lands by the year 2005."[85] As of 2005, the program has accomplished more than 70 percent of the goal.[86]

Oregon's Watershed Enhancement Board administers a watershed enhancement program that focuses on the protection and restoration of naturally functioning habitats. The program was established, partially, as a result of salmon listing and water quality degradation and assists with salmon recovery and water quality improvement.[87] Funding for the board's activities comes from the state lottery and is used for land acquisition, watershed restoration, technical assistance, monitoring, watershed assessment, outreach, and education.

Florida has restoration projects underway in multiple regions of the state, each with its own individual legislation, targeted plan, goals, sponsors, and partners. Two major, multi-year, multi-billion dollar wetland restoration efforts include those on the Kissimmee River and in the Florida Everglades. In addition, the Florida Forever program is the state's major land conservation and acquisition program, devoting $300 million annually to land acquisition and management. Nearly a quarter of those funds may be used for facilities development, ecological or hydrological restoration, or other capital improvements.[88] The Florida Department of Environmental Protection also maintains a wetland restoration database to aid local governments and community organizations by providing online tools and research materials needed for the

[85] *See:* Upper Mississippi River Great Lakes Region Joint Venture – Wisconsin Plan (1992) (on file with author).
[86] Personal Communication with Michele Cipiti, Wisconsin Department of Natural Resources (Nov. 28, 2005).
[87] Personal Communication with Ken Bierly, Oregon Watershed Enhancement Board (July 13, 2005).
[88] Florida Department of Environmental Protection, *Florida Forever, at* http://www.dep.state.fl.us/lands/acquisition/FloridaForever/default.htm (last updated Feb. 14, 2006); ; *See also:* Florida Department of Environmental Protection, *Florida State Parks Land Management, at* http://www.dep.state.fl.us/parks/bncr/landmanagement.htm (last updated May 26, 2005).

implementation and management of restoration projects.[89] The state also has a very active invasive plant management program that is critical to its wetlands restoration programs.[90]

Florida has also established the Surface Water Improvement and Management (SWIM) Program to address the degradation and impairment of surface water bodies throughout the state.[91] SWIM required that each Water Management District identify and maintain a priority list of water bodies of regional or statewide significance and develop plans and programs for their improvement. In implementing SWIM, the districts work with all levels of government and the private sector, with each partner contributing funding or in-kind contributions, or both. SWIM has proven to be one of the state's most important public-private partnership that preserves and restores state wetlands, in large part because program is designed to address a waterbody's needs as a system of connected resources on a priority basis.[92]

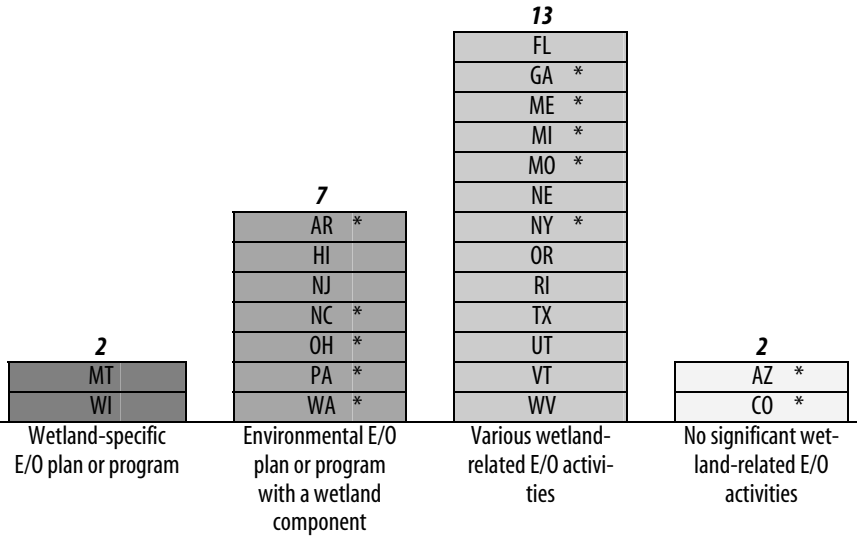
Other state-initiated restoration programs are landowner stewardship programs. For example, Arkansas' Wetland and Riparian Zones Tax Credit Program provides tax credits to private landowners for the restoration or creation of wetlands and riparian zones.[93] The Georgia Department of Natural Resources' Wildlife Resources Division operates the Bobwhite Quail Initiative, a voluntary and experimental program that provides private landowners with monetary incentives to restore habitat for bobwhite quail, songbirds, and other farm wildlife, improve water quality, and reduce soil erosion.[94] The Montana Wetlands Legacy (MWL) is voluntary, incentive-based partnership that focuses on wetland conservation and private landowners. MWL provides a point of contact for landowners looking for technical and financial assistance from federal, state, tribal, and local government, as well as private conservation organization programs.[95]

V. Education and Outreach

Most of the 24 states conduct some level of wetland-related education and outreach (See *Figure 6,* next page). Two states, Montana and Wisconsin, conduct strategic education and outreach activities specific to wetlands. Montana's proactive wetland outreach and education program includes: public service television and radio spots about the importance and value of wetlands; targeted outreach material for landowners, local government planning officials, wetland pond owners, developers, and the regulated community; and numerous community meetings addressing local wetland issues. The state has also partnered with local governments experiencing rapid growth and land use change to conduct wetland mapping and classification, as well as capacity building so that local governments can better manage and protect local wetland resources.

[89] Florida Department of Environmental Protection, *Florida Wetland Restoration Information Center, at* http://www.dep.state.fl.us/water/wetlands/fwric/index.htm (June 8, 2005).
[90] Florida Department of Environmental Protection, *State Lands Invasive Plant Management, at* http://www.dep.state.fl.us/lands/invaspec/index.htm (last updated Jan. 30, 2006).
[91] FL. STAT. ANN. §§ 373.451-373-4595.
[92] Florida Department of Environmental Protection, *Summary of the Wetland and Other Surface Water Regulatory and Proprietary Programs in Florida (May 22, 2002) (on file at ELI)*, at 24.
[93] Arkansas Private Wetland and Riparian Zone Creation and Restoration Incentive Act, ARK. CODE ANN. §§ 26-51-1501
[94] Georgia Department of Natural Resources – Wildlife Resources Division, *About the Bobwhite Quail Initiative*, *at* http://georgiawildlife.dnr.state.ga.us/content/displaycontent.asp?txtDocument=108 (last revised July 29, 2002).
[95] Montana Wetlands Legacy, *Protecting and Restoring Wetland and Riparian Habitat in Montana (Home), at* http://www.wetlandslegacy.org/home.htm (last visited Sept. 7, 2005).

Figure 6. Education and outreach activities at the state level.



* *Based on research conducted in 2003 and 2004. The Phase I report, which includes detailed summaries of these twelve states, may be accessed at: http://www.elistore.org/reports_detail.asp?ID=11079*

In addition, the Montana Watercourse is a statewide education and outreach program that provides information, tools, and resources on water resources, including wetlands.

Wisconsin's state wetland conservation plan specifically addresses education and outreach goals, strategies, and performance measures. Envisioning that "[p]ublic and private owners of wetlands make sound decisions to use their land in a way that sustains both wetlands and socio-economic benefits," the plan outlines ten strategies, which include message development and presentation by the Wisconsin Department of Natural Resources; partnerships, guidance, and education for the public, including regulated parties, youth, and landowners; citizen monitoring programs; demonstration of land use management techniques; and strong, continued communication with agricultural and transportation communities.[96]

Other states operate broader environmental education programs, of which wetlands may be a component. For example, the North Carolina Department of Environment and Natural Resources' (NCDENR) Office of Environmental Education (OEE) conducts education and outreach on behalf of NCDENR divisions; serves as a clearinghouse for other state agencies and organizations to distribute educational and outreach materials; and promotes workshops, professional development programs, North Carolina's Environmental Education Centers, and other formal and non-formal environmental education programs and providers. OEE also administers the North Carolina Environmental Education Certification Program. This program recognizes edu-

[96] Wisconsin Department of Natural Resources, *Reversing the Loss: A Strategy for Protecting & Restoring Wetlands in Wisconsin* (Dec. 2000), *available at* http://www.dnr.state.wi.us/org/water/fhp/wetlands/documents/Reversing_the_Loss.pdf, at 8.

cators who complete a required amount of professional development in environmental education. Many of the workshops that count towards the certification program include education related to wetlands.[97]

Numerous states have not adopted strategic environmental education strategies or formal programs, but do conduct various wetland-related education and outreach activities, such as: giving wetland-related presentations to scientific/professional meetings, contractors and developers, schools, conservation groups, and others; producing materials aimed at promoting stewardship among local governments and landowners, K-12 students and teachers, and the general public; displaying wetland materials at events; creating curricula for K-12 students and teachers; offering training programs for the regulated community and the general public; and sponsoring and organizing Project WET (Water Education for Teachers) and Project WILD workshops, which offer interdisciplinary environmental education training for educators and include lessons on aquatic habitat and wildlife.

VI. Coordination with State and Federal Agencies

Each of the 24 states reviewed coordinates to some extent with other state and federal agencies on various issues, typically involving pending permit applications and project reviews or federal conservation and agricultural programs. Most states hold regular meetings among state and federal agency staff to discuss wetland-related issues and projects within the state. State agencies in Florida, Hawaii, Maine, Michigan, Oregon, New Jersey, New York, North Carolina, Ohio, Rhode Island, West Virginia, and Wisconsin are party to intrastate memoranda of agreement involving wetland practices and/or regulation within the state.

Utah has an inter-agency group specifically devoted to the review and coordination of technical and policy actions that may affect the state's natural resources.[98] The Resource Development Coordinating Committee (RDCC), a group of state and federal natural resource agencies, serves as a state clearinghouse for development projects involving natural resources, including wetlands. The RDCC ensures that the appropriate state and local agencies are involved and that the proposed actions are consistent with state plans.[99]

Montana has organized a Wetland Council as part of its State, tribal, and federal groups and non-government entities are members of the Montana Wetland Council, a forum that promotes cooperative wetland resource management in the state and is implementing the strategy. The council meets three times per year.

As part of the Montana's wetland conservation plan, *Conservation Strategy for Montana's Wetlands*, the state has created the Montana Wetland Council, which includes representatives from state, tribal, and federal groups and non-government entities. The council promotes cooperative wetland resource management for the state and is charged with implementing the wetland conservation strategy.[100]

[97] Personal communication with Janine Nicholson, North Carolina Department of Environment and Natural Resources (Nov. 5, 2004).
[98] Governor's Office and Planning and Budget, *Resource Development Coordinating Committee, at* http://governor.utah.gov/planning/rdcc.htm (last visited Nov. 1, 2005).
[99] Personal communication with Eric Millis, Utah Department of Natural Resources - Division of Water Resources (Oct. 25, 2005).
[100] Personal Communication with Lynda Saul, Montana Department of Environmental Quality (September 14, 2005).

Arkansas exemplifies intrastate coordination with its Multi-Agency Wetland Planning Team (MAWPT). The MAWPT includes six state agencies that work in partnership to determine what paths to take towards wetland conservation efforts in the state. Under the MAWPT, numerous initiatives have been launched to help state agencies make better planning and management decisions about wetlands.[101]

[101] Elizabeth O. Murray and Ken Brazil, *For Arkansas, Protection Begins with Multi-Agency Planning*, 25:3 National Wetlands Newsletter, at 1 (2003).

Conclusion and Plans for Continued Study

The 24 states examined in Phases I and II of ELI's study represent a diversity of approaches to wetland protection, and numerous observations can be made about each of the states and the core elements of their wetland programs.

State-level wetland regulation and conservation programs are extremely diverse due to a variety of circumstances — history, geography, economics, politics, general attitudes toward wetland resources, as well as state agency funding, resources, and enforcement activity. All of these factors contribute to the unique nature of the programs observed in each of the 24 states. Although some of the state approaches to wetland protection are the result of well-planned efforts to construct a comprehensive program, others are the result of incremental program development activities that have evolved organically over time.

Phases I and II of ELI's State Wetland Program Evaluation Study examine 24 states, chosen for their geographic diversity and program variety.[1] Phase III of the study will examine an additional twelve to fifteen states. ELI hopes eventually to examine state wetland programs in all fifty states, conduct statistical analysis, and draw firm conclusions about the status of and trends among the nation's state wetland programs.

[1] *State Wetland Program Evaluation: Phase I*, published in 2005, is available for free download on ELI's website at: http://www.elistore.org/reports_detail.asp?ID=11079.

Appendix A: Phase II State Wetland Program Summaries

Florida

Hawaii

Montana

Nebraska

New Jersey

Oregon

Rhode Island

Texas

Utah

Vermont

West Virginia

Wisconsin

** *State Wetland Program Evaluation: Phase I*, published in 2005, includes individual summaries for Arizona, Arkansas, Colorado, Georgia, Maine, Michigan, Missouri, New York, North Carolina, Ohio, Pennsylvania, and Washington. The report is available for free download on ELI's website at: http://www.elistore.org/reports_detail.asp?ID=11079.

Florida

I. Overview

Historically, the State of Florida contained an estimated 20 million acres of diverse wetland types. However, by the mid-1970's, Florida's wetlands had decreased to approximately 11 million acres, about 31 percent of the state's surface area. Wetland losses were significantly reduced after the establishment of various state regulatory programs that governed dredging and filling of wetlands in the 1970's, the passage of the Clean Water Act, and the establishment of conservation land acquisition programs. Today, Florida has a comprehensive wetland protection strategy that addresses new construction affecting surface water flows, stormwater runoff, dredging and filling, and conservation land acquisition.[1] The Florida Department of Environmental Protection (FLDEP) implements these wetland protection programs in partnership with the five regional Water Management Districts (WMDs), as well as with various delegated local government programs.

II. Regulatory Programs

Wetland Definitions and Delineation

Florida defines "water" or "waters in the state" as "any and all water on or beneath the surface of the ground or in the atmosphere, including natural or artificial watercourses, lakes, ponds, or diffused surface water and water percolating, standing, or flowing beneath the surface of the ground, as well as all coastal waters within the jurisdiction of the state."[2] Wetlands are defined separately as "those areas that are inundated or saturated by surface water or ground water at a frequency and a duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils… Florida wetlands generally include swamps, marshes, bayheads, bogs, cypress domes and strands, sloughs, tidal marshes, mangrove swamps, and other similar areas. Florida wetlands generally do not include longleaf or slash pine flatwoods with an understory dominated by saw palmetto."[3]

Florida has adopted a unified wetlands delineation methodology that is binding to all state, regional, and local governments throughout the state.[4] This methodology is specific to Florida and recognizes the unique vegetation, hydrology, and soil features that exist in the state. Although the Florida methodology differs from the U.S. Army Corps of Engineers' 1987 *Wetland Delineation Manual*,[5] state and federal wetland delineation lines are often very close or identical.[6]

[1] Personal Communication with Douglas Fry, Florida Department of Environmental Protection (Jan. 24, 2006).
[2] FL. STAT. ANN. § 373.019(20).
[3] FL. STAT. ANN. § 373.019(25).
[4] *See:* FL. STAT. ANN. § 373.421; FL. ADMIN. CODE § 62-340.
[5] U.S. Army Corps of Engineers, Wetlands Research Program Technical Report Y-87-1, *Corps of Engineers Wetlands Delineation Manual (1987)*, *available at* http://www.saj.usace.army.mil/permit/documents/87manual.pdf.
[6] Florida Department of Environmental Protection, *Florida Wetland Regulatory Program Demonstration Project (undated) (on file at ELI)*, at 9.

FLDEP, WMD, and delegated local government staff delineate wetland boundaries as part of Florida's permit review process and also perform formal and informal wetland delineations for specific properties. Formal determinations require an application and are binding to the petitioner and the relevant state agencies for a minimum period of five years. Informal delineations are provided as staff are available and are typically limited to single family parcels.[7] FLDEP has published a number of publicly available manuals and documents to inform wetlands delineation for the state.[8]

A number of map sources provide information on the statewide distribution of wetlands.[9] Much of this information is also made available to state, regional, and local agency staff and the general public through geographic information systems (GIS).[10]

Wetland-related Laws and Regulations

Environmental Resource and Wetland Resource Permits. Florida has established a comprehensive regulatory program designed to achieve the programmatic and project-permitting goal of no net loss in wetland or other surface water functions. Two wetlands regulatory programs exist at the state level: a dredge and fill (wetland resource) permit program within the panhandle of Florida[11] and an environmental resource permit (ERP) program throughout the rest of the state.

The wetland resource permit program for the Florida panhandle is implemented by the FLDEP and regulates dredging and filling in waters of the state,[12] which generally consist of waters connected to other "named" waters, including lakes of more than ten acres in size, but excluding isolated wetlands.[13] The rules applicable to the panhandle program are currently "grandfathered" until the year 2010, when they will be replaced by the ERP program.[14]

The ERP program, administered in the rest of the state, is authorized under the Florida Environmental Reorganization Act of 1993.[15] Effective beginning in October 1995, the law represents the merger of the wetland resource permit program, which was originally implemented by the FLDEP, with the Management and Storage of Surface Waters (MSSW) program,[16] which had been implemented by Florida's five WMDs since the mid 1970's. The ERP program regulates the construction, alteration, operation, maintenance, abandonment, and removal of stormwater management systems, dams, impoundments, reservoirs, appurtenant work, and activities in all tidal and freshwater wetlands and other surface waters (whether

[7] *Id*.
[8] *See:* Florida Department of Environmental Protection – Wetland Evaluation and Delineation Program, *Delineation Program Publications, at* http://www.dep.state.fl.us/water/wetlands/delineation/pubs.htm (© 2004).
[9] Personal Communication with Maynard Sweeley, Florida Department of Environmental Protection (Sept. 20, 2005).
[10] Florida Department of Environmental Protection, *Geographic Information Systems (GIS) Database Development for the Environmental Resource Permitting (ERP) Program, at* http://www.dep.state.fl.us/water/wetlands/techgis/index.htm (© 2004).
[11] Generally, this includes the area within the Northwest Florida Water Management District, which extends from mid-Jefferson County westward to Alabama. This area has a more limited regulatory jurisdiction owing to legislative "grandfathering." *See:* FL. STAT. ANN. § 373.4145.
[12] *See:* FL. ADMIN. CODE § 62-312.030.
[13] It should be noted that a separate stormwater program also regulates construction of new sources of stormwater runoff throughout the panhandle. *See:* FL. ADMIN. CODE § 62-25.
[14] *See:* FL. STAT. ANN. § 373.4145, which preserves FL. ADMIN. CODE §§ 62-312.010-312.470; and FL. ADMIN. CODE § 62-25.
[15] FL. STAT. ANN. § 373, Part IV, chp. 93-213, sec. 19 (1993).
[16] The MSSW program was authorized through FL. STAT. ANN. § 373, Part IV in 1972.

connected or isolated), including dredging and filling. This effectively includes most alterations to the landscape, including activities in uplands, as well as stormwater treatment, attenuation, and flooding.[17,18] Regulated activities include construction of single family residences in wetlands; construction and alteration of residential and commercial developments in uplands or wetlands; dredging of channels, canals, and ditches; construction of roads; and agricultural construction and alteration that impedes or diverts the flow of surface waters.[19] Certain specified activities are exempt from the requirement to obtain an ERP according to state statutes and rules.[20] The ERP program is implemented by the FLDEP, four of the five WMDs,[21] and by delegated local governments[22] in accordance with Operating Agreements that divide activity-specific responsibilities between the agencies, including permit review, agency action, and compliance and enforcement activities.[23] Substantive ERP permitting rules of the FLDEP adopt by reference the rules of WMDs.[24]

The FLDEP and the WMDs use a step-by-step methodology to review ERPs and wetland resource permit applications.[25] A proposed project must demonstrate: avoidance and minimization of any potential adverse impacts; verification of compliance with surface and groundwater quality standards; consideration of direct, secondary, and cumulative impacts to water resources, and, for activities located in wetlands and other surface waters, confirmation that the project is not contrary to the public interest according to a prescribed multiple factor balancing test[26] (or confirmation that proposed activities located in an Outstanding Florida Water are clearly in the public interest).[27]

[17] The basic ERP permit standard is that activities must not adversely impact water resources, including water quality, water quantity, and the value of functions provided to fish and wildlife and listed species by wetlands and other surface waters. Florida Department of Environmental Protection, *supra* note 6, at 10.

[18] Sweeley, *supra* note 9.

[19] Florida Department of Environmental Protection, *supra* note 6, at 6.

[20] Some examples of activities exempt from ERP requirements are: hunting and fishing; boating (unless the motor causes prop dredging); trimming of trees (other than mangroves) if the cut vegetation is removed; construction, repair, and replacement of certain private docking facilities below certain size thresholds; maintenance dredging of existing navigational channels and canals; construction and alteration of boat ramps within certain size limits; construction, repair, and replacement of seawalls and rip rap in artificial waters; and repair and replacement of structures. *See* FL. STAT. ANN. § 403.813; FL. ADMIN. CODE § 373.406. Certain agricultural activities are also exempt, such as alteration of topography for purposes consistent with the practice of agriculture, silviculture, floriculture, or horticulture, provided the alteration is not for the sole or predominant purpose of impounding or obstructing surface waters. *See* FL. STAT. ANN. § 403.927; FL. ADMIN. CODE § 373.406.

[21] WMDs include the Suwannee River, St. Johns River, Southwest Florida, and South Florida water management districts. At this time, the Northwest Florida WMD is implementing a limited MSSW program for agriculture, silviculture, and dam safety activities.

[22] The only delegated local government at this time is Broward County, although Miami-Dade County has a pending delegation petition before the FLDEP and the South Florida WMD.

[23] The ERP permit program rules include FL. ADMIN. CODE §§ 62-330, 62-341, 62-343, 40B-4, 40-B-400, 40C-4, 40C-40, 40C-41, 40C-400, 40D-4, 40D-40, 40D-400, 40E-4, 40E-40, 40E-41, and 40E-400.

[24] *See:* FL. ADMIN. CODE § 62-330.

[25] Florida Department of Environmental Protection, *supra* note 6, at 11-12. Applicant handbooks and permit review basics may be accessed at: Florida Department of Environmental Protection*, Environmental Resource Permitting (ERP) and Sovereign Submerged Lands (SSL) Rules, at* www.dep.state.fl.us/water/wetlands/erp/rules/guide.htm (last updated Mar. 2, 2006).

[26] The balancing test for regulated activities is based on the following criteria: adverse effects to public health, safety, or welfare, or the property of others (based solely on environmental, not economic, considerations); adverse effects the conservation of fish and wildlife, including endangered and threatened species, or their habitats; adverse effects on navigation or the flow of water, or causing harmful erosion or shoaling; adverse effects on fishing or recreational values or marine productivity in the vicinity of the activity; temporal nature (whether the activity will be temporary or permanent); adverse effects on or enhancement of

Proprietary authorizations. In addition to obtaining a wetland resource permit or an ERP, activities that are located on state-owned (including "sovereignty")[28] submerged lands also require a proprietary authorization (PA) from the state.[29] The authorization addresses issues such as riparian rights, impacts to submerged land resources, and preemption of other uses of the water by the public. The state's rules regarding sovereignty submerged lands outline the authorization required for construction and uses of state-owned submerged lands,[30] as well as special criteria that apply to construction and uses of state aquatic preserves.[31] The PA program is implemented jointly by the FLDEP and four of the state's five WMDs, which are authorized to act as staff of the Governor and Cabinet sitting as the Board of Trustees of the Internal Improvement Trust Fund.[32]

For activities located on state-owned submerged lands, the proprietary review is linked to the ERP review. In these areas, applicants must qualify for both authorizations, if applicable, in order to receive either authorization.[33] This means that an application requiring both a state-owned submerged lands authorization and an ERP or wetland resource permit is not complete until all the information required for both has been received. The ERP or wetland resource permit cannot be issued until all criteria for both the state-owned submerged lands program and the wetland resource permit or ERP program has been met.[34]

Beach and shore preservation. The Beach and Shore Preservation Act[35] contains requirements related to wetland protection and coordinated review of coastal construction activities. FLDEP's Bureau of Beaches and Coastal Systems conducts concurrent processing of applications for coastal construction permits, ERPs, wetland resource permits, and state-owned submerged lands authorizations. These permits and authorizations, which were previously issued separately and by different state agencies, have now been consolidated into a joint coastal permit (JCP).[36] A JCP is required for activities that meet all of the following criteria: (1) are located on Florida's natural sandy beaches facing the Atlantic Ocean, the Gulf of Mexico, the

significant historical and archaeological resources; and the current condition and relative value of the functions being performed by areas affected by the proposed regulated activity.

[27] FL. ADMIN. CODE §§ 40B-400.103-104, 40C-4.301-302, 40D-4.301-302, 40E-4.301-302. *See also* Florida Department of Environmental Protection, *supra* note 6, at 11.

[28] "Sovereignty" submerged lands are those lands that were deeded to the State of Florida by the federal government at the time of statehood in 1845.

[29] State sovereignty submerged lands generally extend waterward from the mean high water line of tidal waters out to the state's territorial limit (which is three miles in the Atlantic Ocean and approximately ten miles in the Gulf of Mexico) or the ordinary high water line of navigable fresh waters. The state's sovereignty submerged lands rules are authorized under FL. STAT. ANN. § 253. Additional protection is given to state-owned submerged lands within aquatic preserves. *See:* FL. STAT. ANN. § 258.

[30] FL. ADMIN. CODE § 18-21.005.

[31] FL. ADMIN. CODE § 18-20.

[32] FL. ADMIN. CODE § 18-21.0051.

[33] FL. STAT. ANN. §§ 253.77 and 373.427. *See also:* Florida Department of Environmental Protection, *supra* note 6, at 7.

[34] *See* FL. STAT. ANN. §§ 253 and 258; FL. ADMIN. CODE §§ 18-14, 18-18, 18-20, and 18-21.

[35] FL. STAT. ANN. §§ 161.52-161.58; FL. ADMIN. CODE §§ 62B-41, 62B-33, and 62B-49.

[36] *See* FL. STAT. ANN. § 161; *see also* Florida Department of Environmental Protection, *Beaches and Coastal Systems, at* http://www.dep.state.fl.us/beaches/ (© 2004). The BBCS also implements a coastal zone construction permitting program for activities within the coastal construction control line that has been established along the beaches of the Gulf of Mexico and the Atlantic Ocean. This permitting program is not an ERP, and those coastal construction activities that require a coastal zone permit and a wetland permit also need to obtain a coastal construction permits. FL. STAT. ANN. § 161; Personal Communication with Douglas Fry, Florida Department of Environmental Protection (Jan. 27, 2006).

Straits of Florida or associated inlets; (2) extend seaward of the mean high water line; (3) extend into sovereign submerged lands; and (4) are likely to affect the distribution of sand along the beach.

Mine reclamation. An ERP, wetland resource permit, or state-owned land application for a mine is processed by FLDEP Bureau of Mine Reclamation[37] or the applicable WMD. The WMD will process the application if the mine is a borrow pit, and will not have on-site material grading or sorting facilities.

Coastal zone management. Florida's Coastal Zone Protection Act[38] contains requirements related to coastal zone management and wetland protection, including consistency and coordinated review of all pertinent coastal construction activities. For activities in coastal counties, issuance of the state wetland resource permit or ERP also constitutes a consistency concurrence or waiver thereto that the activities are in compliance with the state's federally-approved coastal zone management program. Additional information on Florida's coastal zone management program is contained in the *Coordination with State and Federal Agencies* section below.

Mangroves. Florida is a subtropical state that provides habitat to three species of mangrove trees. Because the waterfront growth of these trees tends to block the views of waterfront property owners, a large number of mangroves throughout Florida have been eliminated by dredging, filling, trimming, and alteration. The trimming and alteration of mangroves is not regulated by the wetland resource or environmental resource permitting programs when there is no associated dredging or filing. To protect mangrove resources, the Florida legislature has enacted a program[39] that enables the FLDEP and delegated local governments to regulate the trimming or alteration of mangroves.

Organization of State Agencies

Multiple agencies participate in cooperative and coordinated partnerships to implement both regulatory and non-regulatory wetland activities throughout the state.

The FLDEP has six district offices and each of the five regional WMDs oversees its district offices. Consistent implementation of the program in those offices is coordinated through the training, rulemaking, and programmatic guidance by FLDEP's Office of Submerged Lands and Environmental Resources in Tallahassee. Both the FLDEP and WMDs are responsible for overseeing implementation of the ERP program delegated to any delegated local government.[40,41] FLDEP and the five regional WMDs[42] have equivalent authority to

[37] FL. STAT. ANN. § 378.

[38] FLDEP coordinates the review of certain coastal activities for the state's federally-approved coastal zone management program. FL. STAT. ANN. §§ 380.20-.23 (1).

[39] FL. STAT. ANN. §§ 403.9321-403.9333.

[40] Personal Communication with Douglas Fry, Florida Department of Environmental Protection (Dec. 23, 2005).

[41] Local governments may be delegated all or part of the ERP program, by FLDEP and/or the relevant WMD. *See:* FL. STAT. ANN. § 373.441; FL. ADMIN. CODE § 62-344. To date, the only comprehensive delegation has been to Broward County, which assumed many ERP permitting responsibilities but not the PA program. In addition, the City of Tallahassee and Miami-Dade County have both received limited delegations from FLDEP (power to grant stormwater general permits and power to verify certain and publish the consent by rule that accompanies those docks, respectively). A pending petition from Miami-Dade County for a comprehensive delegation of the ERP program from both FLDEP and the South Florida WMD is under currently under review. Fry, *supra* note 40.

administer the ERP program under state law.[43] In practice, FLDEP and the four WMDs outside of the panhandle have divided responsibilities according to categories of activities. For certain activities, FLDEP conducts permit application review and takes all agency action (e.g. any associated compliance and enforcement activities or issuance of the ERP and any associated PAs). For other various activities, the applicable WMD takes the lead on permit review and associated regulatory actions.[44] This division of responsibilities between the FLDEP and the four WMDs that implement the ERP program is specified in operating agreements that have been adopted by rule by each of the agencies.[45]

FLDEP and the WMDs coordinate regularly to ensure consistency of ERP issuance and other decision-making. Coordination generally occurs via quarterly meetings between FLDEP and WMD staff; regular, ongoing correspondence; rulemaking (the FLDEP uses the rules of each of the WMDs, and the WMDs use certain rules of the FLDEP); joint training; and ongoing discussion on administrative hearings and court cases that affect the agencies.[46]

Statewide, approximately 520 staff administer the ERP program. About half conduct project review, while the remainder are split between compliance and enforcement activities and administrative functions, although many staff share responsibilities for different program tasks. Current annual funding is estimated at approximately $31 million. This funding comes from a variety of sources, including state general revenue, WMD property taxes, permit application fees, and state trust funds.[47]

§401 Certification

As described previously, Florida's wetland regulatory program is based on independent state authority and applies in addition to (not as a substitute for or superseded by) the federal §404 program.[48] ERP program jurisdiction is broader than the §404 program because it regulates alterations of uplands that may affect surface water flows (including issues of flooding and stormwater treatment) and alterations to "isolated"

[42] The five regional WMDs are: Northwest Florida, Saint John's River, South Florida, Southwest Florida, and Suwannee River. As noted, the Northwest Florida WMD, covering the "panhandle" region (the 16 counties in the northwest portion of the state), does not administer the ERP program in its district. At the time the ERP program was established, the state's regulatory program in the panhandle was grandfathered to function under the then-existing program due a shortage in funding. The grandfathered program in the panhandle has been legislatively extended until 2010. In the meantime, the panhandle continues to operate the precursory state dredge and fill program, whose jurisdiction generally encompasses waters and contiguous wetlands, as well as a stormwater program that addresses stormwater quality. *Id. See also:* Florida Department of Environmental Protection, *supra* note 6, at 2; FL. STAT. ANN. § 373.4145; FL. ADMIN. CODE §§ 62-25 and 62-312.

[43] FL. STAT. ANN. § 373, Part IV.

[44] FLDEP generally reviews and takes action on activities involving extraction, waste disposal, dredging, energy production, industry, and communications, as well as those involving coastal zone construction. WMDs generally take action on applications involving commercial and residential developments. *See:* Florida Department of Environmental Protection, *ERP Primer (undated) (on file at ELI)*, at 5.

[45] The operating agreements are adopted as rules and regulations at FL. ADMIN. CODE § 62-113. Copies of the operating agreements are available on the FLDEP website at www.dep.state.fl.us (under the links General Counsel/Delegations and Agreements/Water Management Districts).

[46] Fry, *supra* note 1.

[47] Florida Department of Environmental Protection, *supra* note 6, at 14.

[48] Florida has not assumed the federal §404 program for several reasons, including differences between the state and federal delineation methodologies and "navigable waters" (i.e. most of Florida's waters are non-assumable under §404 because they are navigable, navigable in fact, or navigable with improvement). *See:* Florida Department of Environmental Protection, *Summary of the Wetland and Other Surface Water Regulatory and Proprietary Programs in Florida (May 22, 2002) (on file at ELI)*, at 13.

wetlands that lie beyond federal jurisdiction; however, wetland resource program jurisdiction may be less than the §404 program because it does not include any isolated wetlands. Applicants must get all appropriate permits and authorizations from both the appropriate state and federal agencies before beginning work. The issuance of an ERP or wetland resource permit also constitutes the state's water quality certification or waiver; the state does not have a separate program for granting or waiving state water quality certifications. Thus, the Corps may not act on applications that require a §404 permit unless an ERP or wetland resource permit has been issued or the project is exempt.[49]

State and Federal General Permits

Nationwide permits. Florida has determined U.S. Army Corps of Engineers Nationwide Permits # 8 (Oil and Gas Structures) and # 29 (Single Family Housing) to be inconsistent with the Florida Coastal Zone Management Program.[50] Water quality certification also has been denied for NWP # 29.[51] The state has otherwise conditionally approved the remaining NWPs,[52] subject to an applicant obtaining the applicable state wetland resource or environmental resource permit or exemption, any applicable sovereignty submerged lands authorization, and meeting other specified special conditions and limitations.[53]

State Programmatic General Permit. The Corps has also issued a State Programmatic General Permit (SPGP) to FLDEP that authorizes the agency to issue federal wetland permits (§404/§10) for certain activities.[54,55]

[49] The FLDEP has determined that projects exempt from the ERP permit requirements are automatically certified as complying with state water quality standards. The ERP integrated permit review process also includes a determination of the proposed project's consistency with the Florida Coastal Zone Management Program, and issuance of an ERP constitutes the state's finding of such consistency. Florida's incorporation of the coastal zone management program consistency determination into the ERP process also precludes §404 permitting. *Id.* at 1-2.

[50] Letter from David B. Struhs, Secretary, Florida Department of Environmental Protection, to Steven M. Seibert, Secretary, Florida Department of Community Affairs (Mar. 11, 2002) (*available at* http://www.dep.state.fl.us/water/wetlands/docs/erp/NWP_conditions2002.pdf).

[51] Note that water quality certification for the following NWPs is not applicable in the State of Florida: # 1 (Aids to Navigation), # 2 (Structures in Artificial Canals), # 8 (Oil and Gas Structures), # 9 (Structures in Fleeting and Anchorage Areas), # 10 (Mooring Buoys), # 11 (Temporary Recreational Structures), # 28 (Modification of Existing Marinas), and # 35 (Maintenance Dredging of Existing Basins). *See:* Letter from David B. Struhs, Secretary, Florida Department of Environmental Protection, to Colonel James G. May, Department of the Army (Mar. 11, 2002) (*available at* http://www.dep.state.fl.us/water/wetlands/docs/erp/NWP_conditions2002.pdf).

[52] NWPs # 21 (Surface Coal Mining), # 24 (State Administered Section 404 Programs) and # 34 (Cranberry Production Activities) do not apply within Florida. Letter from David B. Struhs, Secretary, Florida Department of Environmental Protection, to Colonel James G. May, Department of the Army (Mar. 14, 2002) (*available at* http://www.dep.state.fl.us/water/wetlands/docs/erp/NWP_conditions2002.pdf).

[53] For a description of regional conditions, *see:* Letter from David B. Struhs, Secretary, Florida Department of Environmental Protection, to Colonel James G. May, Department of the Army (Mar. 14, 2002) (*available at* http://www.dep.state.fl.us/water/wetlands/docs/erp/NWP_conditions2002.pdf). *See also:* Florida Department of Environmental Protection, *Jacksonville District Nationwide Permits – Summary of Applicability and Final Regional Conditions (May 2002), available at* http://www.dep.state.fl.us/water/wetlands/docs/erp/NWP_RegionalConditionTable2002.doc.

[54] Activities covered by the current SPGP, SPGP III, include: construction of shoreline stabilization structures; boat ramps and launch areas and associated activities; docks, piers, marinas and associated facilities; maintenance dredging of canals and channels; selected regulatory exemptions; and selected ERP noticed general permits. *See:* Florida Department of Environmental Protection, *Environmental Resource Permitting Program - State Programmatic General Permit, at* http://www.dep.state.fl.us/water/wetlands/erp/spgp.htm (© 2004).

[55] The geographic area covered by the SPGP excludes Monroe County and the Northwest Florida WMD, which is subject to the panhandle exemption. Florida Department of Environmental Protection, *supra* note 48, at 12.

Permits processed by the WMDs are not included in the SPGP, but, as of spring 2006, negotiations are underway to replace the existing SPGP with SPGP IV, which would narrow some of the previously authorized activities, but would be expanded to include the four WMDs that implement the ERP program, as well as eligible delegated local programs.[56]

General permits. The state has issued a number of noticed general permits for ERP program. Applicable activities are slightly larger than those that qualify for exemptions and have been determined to have minimal potential for individual direct and secondary impacts.[57] Similarly, the Corps has issued a number of Regional General Permits for various activities throughout Florida.

Mitigation

Florida's mitigation provisions are designed to further the state's goal of "no net loss" of wetland and other surface water functions. Mitigation measures may be considered only after modifications have been made to eliminate or reduce adverse impacts.[58] Florida applies a uniform mitigation assessment methodology (UMAM) to calculate required compensatory mitigation.[59] The methodology calculates the amount of functional loss of impacted wetlands and amount of proposed functional gains produced by mitigation wetlands. On-site mitigation is preferred, but mitigation also may occur off-site if it provides greater long-term viability or ecological value. If an applicant proposes to mitigate any adverse impacts within the same drainage basin as the impacts, and if the mitigation fully offsets those impacts, the regulated activity will be considered to have no unacceptable cumulative impacts upon wetlands and other surface waters.[60]

Mitigation banks and in-lieu fee programs have been legislatively authorized.[61] Public or private mitigation banks must obtain an environmental resource/mitigation bank permit from FLDEP or the appropriate WMD.[62] FLDEP, a WMD, or a local government may sponsor a regional off-site in-lieu fee mitigation project that is paid for by monies accepted as mitigation.[63]

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[56] *Id.* at 13.

[57] Activities subject to general permits include: construction and modification of boat ramps of certain sizes; installation and repair of riprap at the base of existing seawalls; installation of culverts associated with stormwater discharge facilities; and construction and modification of certain utility and public roadway construction activities. *See*: FL. STAT. ANN. § 373.118 and 373.414(9); FL. ADMIN. CODE §§ 62-341, 40B-400.201-.630, 40C-4.400.201-.630, 40D-400.201-.630, and 40E-400.201-.630.

[58] *See:* Suwannee River Water Management District Applicant's Handbook 12.2.1-12.2.2.3, St. John's River Water Management District Applicant's Handbook 12.2.1-12.2.2.3, Southwest Florida Water Management District Basis of Review 3.2.1-3.2.2.3., and South Florida Water Management District Basis of Review 4.2.1-4.2.2.3. *See also:* Florida Department of Environmental Protection, *supra* note 6, at 15.

[59] FL. ADMIN. CODE § 62-345. *See also:* Florida Department of Environmental Protection, *Mitigation and Mitigation Banking, at* http://www.dep.state.fl.us/water/wetlands/Mitigation/index.htm (© 2004).

[60] Florida Department of Environmental Protection, *supra* note 6, at 13-15.

[61] *See*: FL. STAT. ANN. § 373.4135 and 373.4136 ; FL. ADMIN. CODE § 62-342; Suwannee River Water Management District Applicant's Handbook 12.4; St. John's River Water Management District Applicant's Handbook 12.4; Southwest Florida Water Management District Basis of Review Appendix 4; and South Florida Water Management District Basis of Review 4.4.

[62] An environmental resource/mitigation bank permit prescribes the following requirements: the banker must have sufficient legal interest in the property to preserve it by a perpetual conservation easement or donation to the state prior to any release of credits; a detailed mitigation plan must be presented to support viable and sustainable functional improvements for the regional watershed; the number and type of potential mitigation credits must be established, as well as the environmental criteria and schedule for the release of those credits for use; the mitigation bank must maintain a ledger to track the number and type of credits released and used; a mitigation service area, based on watersheds and other ecological criteria, must be established; a long-term plan must be established to maintain the mitigation success in perpetuity; and financial assurance must be established

FLDEP and the WMDs participate on the state's interagency Mitigation Bank Review Team (MBRT), along with U.S. Army Corps of Engineers - Jacksonville District, National Marine Fisheries Service, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, and USDA Natural Resources Conservation Service. The goals of the MBRT are "to obtain consensus on issues related to the establishment, use and operation of mitigation banks," "to streamline the respective evaluation process and reduce redundancy between the state and federal laws," "to evaluate the technical aspects of mitigation banking through a team approach," and "to provide input to applicants regarding the feasibility of proposed mitigation bank projects before extensive time and money resources are put into developing proposed banks."[64]

In 1995, Florida established a mitigation program specific to the Florida Department of Transportation (FLDOT).[65] FLDOT annually provides an inventory of anticipated wetland impacts to the regional WMDs, which then develop mitigation plans in coordination with other state and federal regulatory agencies.[66]

Compliance and Enforcement

A variety of administrative, civil, and criminal remedies are available to enforce state wetland requirements.[67] FLDEP, the WMDs, and delegated local governments are authorized to take administrative and civil actions, but criminal provisions may only be enforced by the Office of the State Attorney.[68] The division of responsibility for enforcement between FLDEP, the WMDs, and the delegated local governments is based on the division of permitting responsibilities under the ERP program.[69] FLDEP maintains a Compliance and Enforcement Manual to provide guidance to staff and conducts an annual compliance/ enforcement workshop for government staff.[70]

Available enforcement actions include: civil damage and penalties for injury to air, waters or property, including plants, animals, and aquatic life,[71] and administrative fines.[72] Only FLDEP may recover damages and civil penalties for violations involving state-owned submerged lands.[73] Injunctive relief is also available to redress wetlands violations.[74] Criminal provisions prescribe fines and imprisonment for willful or reckless

for both the implementation and perpetual management of the bank. *See:* Florida Department of Environmental Protection, *supra* note 6, at 15.

[63] A memorandum of agreement (MOA) is required between the sponsoring organization and the FLDEP or WMD, as appropriate, for any regional offsite mitigation area (ROMA) project used for five or more projects or for more than 35 acres of impact. The MOA must address most of the same requirements required by mitigation bank permits. In addition, the sponsoring agency must provide a full cost accounting of the monies received to ensure that all monies were used in the ROMA. *Id.*

[64] Florida Department of Environmental Protection, *supra* note 59.

[65] FL. STAT. ANN. § 373.4137.

[66] This program does not relieve FLDOT from eliminating or reducing impacts or obtaining permits for the impacts and the agency must provide funding to conduct the required mitigation projects. *See:* Florida Department of Environmental Protection, *supra* note 6, at 15.

[67] FL. STAT. ANN. § 373.129.

[68] *See:* Florida Department of Environmental Protection, *supra* note 6, at 13.

[69] Fry, *supra* note 40.

[70] Florida Department of Environmental Protection, *supra* note 6, at 13.

[71] FL. STAT. ANN. § 403.121(1).

[72] FL. STAT. ANN. §§ 373.129, 403.121 and 253.04; FL. ADMIN. CODE § 18-14.

[73] FL. ADMIN. CODE § 18-14.

[74] FL. STAT. ANN. § 403.131.

violations of wetlands requirements and violations of sovereign submerged lands requirements.[75] In practice, the majority of violations are resolved using administrative or civil procedures; criminal actions are used only in the most serious cases that cannot otherwise be resolved.[76]

Tracking Systems

The FLDEP and each WMD have their own tracking systems to record the permit processes, assessment findings, enforcement actions, and compensatory mitigation. Most data are reported statewide.[77]

III. Water Quality Standards

The goals and objectives of state water policy, including the wetland program, are outlined in Florida's water plan.[78] Compliance with the state's surface water quality standards is an integral part of Florida's wetlands protection program and all ERP and wetland resource permit applications must demonstrate such compliance.[79]

Under Florida's water quality regulatory scheme, all surface waters in Florida fall into one of five classifications based upon their present and future most beneficial use.[80] Narrative and numeric water quality criteria are designed to support those designated uses,[81] and an antidegradation policy applies to wetlands based on designated use classifications.[82,83] In general, an activity cannot cause or contribute to violations of state water quality standards. Additional, more stringent, water quality standards apply to those waters designated as Outstanding Florida Waters (OFWs). In general, an activity in or directly discharging into an OFW cannot degrade the ambient water quality within the OFW.[84]

In order to qualify for an ERP or wetland resource permit, a regulated activity must also comply with the state's groundwater standards.[85] In addition, special standards have been adopted for discharge of treated stormwater and wastewater into wetlands.[86]

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[75] FL. STAT. ANN. § 403.161.
[76] Florida Department of Environmental Protection, *supra* note 6, at 13.
[77] *Id.*
[78] FL. ADMIN. CODE § 62-40; *see also:* Florida Department of Environmental Protection, *Office of Water Policy, at* http://www.dep.state.fl.us/water/waterpolicy/index.htm (last updated June 8, 2005).
[79] FL. STAT. ANN. § 373.414; FL. ADMIN. CODE § 62-302.
[80] The five designated use classifications are: (I) Potable Water Supplies; (II) Shellfish Propagation or Harvesting; (III) Recreation, Propagation and Maintenance of a Healthy Population of Fish and Wildlife; (IV) Agricultural Water Supplies; and (V) Navigation, Utility, and Industrial Use. Most bodies of water in Florida, including most wetlands, are Class III waters. Florida Department of Environmental Protection, *supra* note 6, at 14-15.
[81] FL. ADMIN. CODE §§ 62-302.500, .62-302.520, .62-302.530.
[82] FL. ADMIN. CODE §§ 62-302.300, 62-302.700 and 62-4.242.
[83] Florida's water quality regulatory scheme also provides several "relief mechanisms" that allow for limited lowering of water quality, including Site Specific Alternative Criteria, mixing zones, variances, and exemptions, provided specified conditions are met. *See generally:* FL. STAT. ANN. §§ 120.542 and 403.201; FL. ADMIN. CODE §§ 62-4.243 and 62-4.244.
[84] FL. ADMIN. CODE § 62-4.242.
[85] FL. ADMIN. CODE §§ 62-520, 62-522, and 62-550.
[86] FL. ADMIN. CODE § 62-25.042; FL. STAT. ANN. § 373.414(3) and (4); Florida Department of Environmental Protection, *supra* note 6, at 12.

IV. Monitoring and Assessment

Monitoring and Assessment for Wetlands

Florida does not currently operate a comprehensive wetlands monitoring network. Some monitoring data are collected in the permit review process and from restoration programs that may require water quality monitoring data.[87]

Monitoring and Assessment for Streams

FLDEP's Biological Assessment Program for rivers and streams uses two biomonitoring tools: the Stream Condition Index (SCI) and BioReconnaissance (BioRecon). The SCI is a composite macroinvertebrate metric for use in flowing streams,[88] and the BioRecon is the screening tool version of the SCI. Habitat and physical/chemical characterizations are conducted in conjunction with all macroinvertebrate sampling.[89]

Several FLDEP regulatory programs areas use SCI and BioRecon, including: the Fifth Year Inspection Program, a domestic wastewater facilities permitting program; the 305(b) Program for reporting to the U.S. Environmental Protection Agency on the status of state waters; the Total Maximum Daily Load Program; and the National Pollutant Discharge Elimination System permitting program. The tools are also used for non-regulatory purposes, including assessing forestry and agricultural effects and best management practices and WMD mini-basin studies.[90]

V. Restoration and Partnerships

Florida restoration projects are underway in multiple regions of the state, each with its own individual legislation, targeted plan, goals, sponsors, and partners. Two major, multi-year, multi-billion dollar wetland restoration efforts include those on the Kissimmee River and in the Florida Everglades. Authorized by the U.S. Congress in 1992, the Kissimmee River restoration is jointly led by the South Florida WMD and the U.S. Army Corps of Engineers. The effort involves the restoration of an estimated 40 square miles of rivers and floodplains and includes land acquisition, advanced science and engineering, and monitoring.[91] Federal and state legislation have also been established to restore Florida's Everglades and Florida Bay.[92] Guided by the 2000 Comprehensive Everglades Restoration Plan, the Corps, South Florida WMD, and numerous other federal, state, local, and tribal partners, many projects have been completed to date,

[87] Florida Department of Environmental Protection, *Integrated Water Quality Assessment for Florida: 2004 305(b) Report and 303(d) List Update (July 29, 2004), available at* http://www.dep.state.fl.us/water/docs/2004_Integrated_Report.pdf, at 95.

[88] Sampling consists of 20 sweeps of the most productive habitats found in a 100-meter stretch of stream using a dip net. Organisms are collected and identified. The SCI assigns points to seven biological metrics to rate a site as excellent, good, poor, or severely degraded. The scoring system is the calibrated to be regionally specific for three bioregions in Florida: the panhandle, peninsula, and northeast.

[89] Florida Department of Environmental Protection, *Bioassessment, at* http://www.dep.state.fl.us/water/bioassess/flupdate.htm (last updated June 8, 2005).

[90] *Id.*

[91] *See* South Florida Water Management District, *Kissimmee, at* http://www.sfwmd.gov/site/index.php?id=15 (last viewed Mar. 1, 2006); *See also:* Florida Department of Environmental Protection, *Florida State Parks Land Management, at* http://www.dep.state.fl.us/parks/bncr/landmanagement.htm (last updated May 26, 2005).

[92] FL. STAT. ANN. §§ 373.4592-373.45931.

leading to significant milestones in the restoration effort.[93] Additional legislation is targeted to the restoration of Lake Okeechobee, the Geneva Freshwater Lens, Lake Apopka, Lake Panasoffkee, and the Harris Chain of Lakes.[94]

The Florida Forever program is the state's major land conservation and acquisition program, devoting $300 million annually to land acquisition and management. Nearly a quarter of those funds may be used for facilities development, ecological or hydrological restoration, or other capital improvements. Most ecological and hydrological restoration funds are distributed through the regional WMDs.[95]

FLDEP maintains a wetland restoration database to aid local governments and community organizations by providing online tools and research materials needed for the implementation and management of restoration projects.[96] The state also has a very active invasive plant management program that is critical to its wetlands restoration programs.[97]

In the late 1980's, Florida established the Surface Water Improvement and Management (SWIM) Program to address the degradation and impairment of surface water bodies throughout the state.[98] SWIM requires that each WMD identify and maintain a priority list of water bodies of regional or statewide significance and develop plans and programs for their improvement. In implementing SWIM, the WMDs work with all levels of government and the private sector, with each partner contributing funding or in-kind contributions, or both. SWIM has proven to be one of the state's most important public-private partnerships that preserves and restores Florida's wetlands, in large part because the program is designed to address a waterbody's needs as a system of connected resources on a priority basis.[99]

VI. Education and Outreach

FLDEP, the water management districts, and delegated local governments produce a variety of education programs, videos, and publications for the general public. In addition, FLDEP and the WMDs have regular and active training programs for agency staff, as well as the staff of delegated local governments. These programs concentrate on technical procedures (e.g. wetlands delineation) and implementation of the wetlands program.[100] This training is also provided to consultants and other members of the public when

[93] South Florida Water Management District, *Everglades, at* http://www.sfwmd.gov/site/index.php?id=17 (last viewed Mar. 1, 2006).
[94] FL. STAT. ANN. §§ 373.4595-373.468.
[95] Florida Department of Environmental Protection, *Florida Forever, at* http://www.dep.state.fl.us/lands/acquisition/FloridaForever/default.htm (last updated Feb. 14, 2006); *see also:* Florida Department of Environmental Protection, *supra* note 91.
[96] Florida Department of Environmental Protection, *Florida Wetland Restoration Information Center, at* http://www.dep.state.fl.us/water/wetlands/fwric/index.htm (June 8, 2005).
[97] Florida Department of Environmental Protection, *State Lands Invasive Plant Management, at* http://www.dep.state.fl.us/lands/invaspec/index.htm (last updated Jan. 30, 2006).
[98] FL. STAT. ANN. §§ 373.451-373-4595.
[99] Florida Department of Environmental Protection, *supra* note 48, at 24.
[100] Florida Department of Environmental Protection, *Environmental Resource Permitting (ERP) Program Training and Public Education, at* http://www.dep.state.fl.us/water/wetlands/erp/edutrain.htm (last updated Dec. 7, 2005).

appropriate. Upon request, FLDEP staff make presentations on the state's wetland protection programs to private and public organizations. This also includes participating in two "short course" conferences hosted by the Florida Chamber of Commerce each year for consultants and other representatives of the regulated community.[101]

VII. Coordination with State and Federal Agencies

The U.S. Army Corps of Engineers and the State of Florida have adopted joint permit application booklets and forms and coordinate under an operating agreement. The agreement stipulates that FLDEP or the applicable WMD (or delegated local government) initially receives all permit applications. Copies of those applications that do not qualify under the SPGP are forwarded to the Corps within five working days. At that point, both the Corps and the state independently process permit applications.[102] The agreement also specifies what actions taken by the FLDEP, the WMDs, and delegated local governments constitute a state water quality certification or waiver thereto and a coastal zone consistency concurrence or waiver thereto, as well as measures to share programmatic information on mitigation banks, training opportunities, and compliance and enforcement activities.

Florida's federally-approved coastal zone management program reviews all activities in the coastal zone that involve federal actions and/or funding, as well as activities that require federal permits or licenses. As part of this effort, FLDEP coordinates with numerous state agencies that evaluate relevant activities for consistency with statutory authorities.[103]

At the state level, FLDEP and the WMDs have worked with the Florida Department of Agricultural and Consumer Services to develop various Best Management Practices handbooks that assist the agricultural and silvicultural communities in minimizing adverse impacts to wetlands and other surface waters.[104]

[101] Florida Department of Environmental Protection, *supra* note 6, at 16.
[102] *Id.* at 14.
[103] Multiple Florida agencies are consulted during this coordinated process, including the Florida Fish and Wildlife Conservation Commission, Department of Community Affairs, Department of State, Department of Agriculture and Consumer Services, Department of Health, and Department of Transportation.
[104] Florida Department of Agricultural and Consumer Services - Division of Forestry, *Silviculture Best Management Practices, at* http://www.fl-dof.com/forest_management/bmp/index.html (© 2004-2005).

VIII. Acronyms and Abbreviations

BioRecon – BioReconnaissance
ERP – Environmental Resource Permit
FLDEP – Florida Department of Environmental Protection
FLDOT – Florida Department of Transportation
GIS – Geographic Information Systems
JCP – Joint Coastal Permit
MBRT – Mitigation Banking Review Team
MOA – Memorandum of Agreement
MSSW – Management and Storage of Surface Waters
NWP – Nationwide Permit
OFW – Outstanding Florida Waters
PA – Proprietary Authorization
ROMA – Regional Offsite Mitigation Area
SCI – Stream Condition Index
SPGP – State Programmatic General Permit
SWIM – Surface Water Improvement and Management
UMAM – Uniform Mitigation Assessment Methodology
USDA – U.S. Department of Agriculture
WMD – Water Management District

Hawaii

I. Overview

Historically, Hawaii contained an estimated 59,000 acres of wetlands. Hawaii has lost over 12 percent of its original wetland acreage and over 30 percent of its natural lowland wetlands.[1] Although the remaining wetlands cover less than three percent of Hawaii's surface area, they provide important functions, including habitat for plant and animal species endemic to the Hawaiian Islands. Hawaii's unique hydrological conditions—heavy rainfall, porous volcanic soil, and steep terrain—create wetlands that are different from those found in any other region of the United States.[2] State approaches to the protection of these important, unique resources include management of wildlife and habitat and regulation of aquatic resources, among other activities.

II. Regulatory Programs

Wetland Definitions and Delineation

Wetlands are not explicitly included in Hawaii's definition of "waters." The State Water Code defines "water" or "waters of the State" as "any and all water on or beneath the surface of the ground, including natural or artificial watercourses, lakes, ponds, or diffused surface water and water percolating, standing, or flowing beneath the surface of the ground."[3] However, the Water Code does clearly include wetlands in its definition of "stream system," which it defines as "the aggregate of water features comprising or associated with a stream, including the stream itself and its tributaries, headwaters, ponds, wetlands, and estuary."[4]

Although wetlands are not explicitly included in the definition of state waters, Hawaii's surface water quality standards do apply to wetlands.[5] The water quality standards define "wetlands" as "land that is transitional between terrestrial and aquatic ecosystems where the water table is usually at or near the surface or the land is covered by shallow water. A wetland shall have one or more of the following attributes: (1) at least periodically the land supports predominantly hydrophytic vegetation; (2) the substratum is predominantly undrained hydric soil; or (3) the substratum is nonsoil (gravel or rocks) and is at least periodically saturated with water or covered by shallow water. Wetlands may be fresh, brackish, or saline and generally include swamps, marshes, bogs, and associated ponds and pools, mud flats, isolated seasonal ponds, littoral zones of standing water bodies, and alluvial floodplains."[6] The regulations further define several different kinds of wetlands,[7] including "coastal wetlands,"[8] "elevated wetlands,"[9] and "low wetlands."[10]

[1] NOAA National Marine Fisheries, *Habitat Connections: Wetlands, Fisheries and Economics, at* http://www.nmfs.noaa.gov/habitat/habitatconservation/publications/habitatconections/habitatconnections.htm (last visited Feb. 6, 2006).
[2] UNITED STATES GEOLOGICAL SURVEY, *National Water Summary on Wetland Resources, available at* http://water.usgs.gov/nwsum/WSP2425/state_highlights_summary.html (last modified Mar. 7, 1997).
[3] HAW. REV. ST. ANN. § 174C-3.
[4] *Id.*
[5] HAW. ADMIN. RULES §11-54-5.2.
[6] HAW. ADMIN. RULES § 11-54-1.
[7] *Id.*

The state relies on the U.S. Army Corps of Engineers' 1987 *Wetlands Delineation Manual*[11] for delineating wetlands.

Organization of State Activities

The primary state agencies participating in wetlands protection in Hawaii include the Department of Health (HDOH) and the Department of Land and Natural Resources (HDLNR). HDOH's Clean Water Branch (CWB) has administered the state's §401 water quality certification program since 1986. HDLNR Division of Aquatic Resources manages aquatic resources and ecosystems, including restoration. HDLNR Division of Forestry and Wildlife manages wetland habitats for native species recovery and conducts habitat restoration and monitoring.

Hawaii Department of Health. The Clean Water Branch oversees all HDOH wetland activities. CWB's Engineering Section issues §401 water quality certifications, while CWB's Monitoring Section conducts area surveillance, routine inspections, and complaint investigations for all water quality permits, including §401 certifications. Although CWB does not have funds dedicated specifically to wetland work, HDOH funds the salaries of two engineers who work on §401 certifications with an equal combination of state and federal funds. Approximately ten percent of the applications the state reviews for §401 water quality certification are related to wetlands.[12]

Hawaii Department of Land and Natural Resources. Within HDLNR, the Commission on Water Resource Management (the Commission), the Division of Aquatic Resources (DAR), and the Division of Forestry and Wildlife (DOFAW) all conduct wetland-related activities. The Commission focuses mostly on water quantity issues, but within that role, it receives and processes permit applications for stream channel alterations, well drilling, pump installations, and diversion works construction, all of which can affect wetlands in specific projects.[13]

[8] "Coastal wetlands" are "natural or man-made ponds and marshes having variable salinity, basin limits, and permanence. These wetlands usually adjoin the coastline and may be subject to tidal, seasonal, or perennial flooding. Coastal wetlands are generally maintained by surface and subterranean sources of fresh and salt water. Many natural coastal wetlands have been modified significantly by man and are characterized by introduced aquatic life. Coastal wetlands include, but are not limited to, salt marshes, open ponds, mudflats, man-made or natural waterbird refuges, isolated seasonal lakes and mangrove flats." *See* HAW. ADMIN. RULES § 11-54-1.

[9] "Elevated wetlands" are "natural freshwater wetlands located above 100 m (330 ft) elevation. They are generally found in undisturbed areas, mainly in remote uplands and forest reserves with high rainfall. Elevated wetlands include upland bogs, marshes, swamps, and associated ponds and pools." *See* HAW. ADMIN. RULES § 11-54-1.

[10] "Low wetlands" are "freshwater wetlands located below 100 m (330 ft) elevation that may be natural or artificial in origin and are usually found near coasts or in valley termini. Low wetlands are maintained by either stream, well, or ditch influent water, or by exposure of the natural water table. Low wetlands include, but are not limited to, natural lowland marshes, riparian wetlands, littoral zones of standing waters (including lakes, reservoirs, ponds and fishponds) and agricultural wetlands such as taro lo'i." *See* HAW. ADMIN. RULES § 11-54-1.

[11] U.S. Army Corps of Engineers, Wetlands Research Program Technical Report Y-87-1, Corps of Engineers Wetlands Delineation Manual (1987), *available at* http://www.saj.usace.army.mil/permit/documents/87manual.pdf.

[12] Personal communication with Denis Lau, Hawaii Department of Health (Feb. 9, 2006).

[13] Commission on Water Resources Management, *Stream Protection and Management Branch, at* http://www.hawaii.gov/dlnr/cwrm/brspam.htm (last visited Feb. 9, 2006).

The mission of the DAR "is to manage, conserve and restore the state's unique aquatic resources and ecosystems for present and future generations."[14] DAR restores habitats, including wetlands, for aquatic species.[15]

DOFAW manages wetland habitats for native species and conducts habitat restoration and monitoring.[16] Two full-time equivalent staff, including two coordinators and many other staff, share responsibility for the division's wetland work. DOFAW has no dedicated funding source; instead it relies on competitive, external grants secured by the staff.[17]

§401 Certification

Any actions requiring a federal permit, license, or approval that result in a discharge into waters of the state, including §404 dredge and fill permits and nationwide permits, require Clean Water Act (CWA) §401 certification. Applicants for §401 certification must submit a request to HDOH.[18] Individual certification applications are required for all projects creating discharges that cannot be authorized under HDOH's conditional blanket §401 certification. The individual application must include information about associated federal permits, names and classifications of waters where discharges will occur, and a complete description of the project. HDOH requires a $1,000 filing fee for each individual application.[19]

HDOH staff members ensure that a project meets the state's water quality standards before issuing a §401 certification. If a proposed project does not meet HDOH's requirements, the department will work with the applicant to modify the project to make its related discharges certifiable. This cooperative effort leads to a nearly 100 percent certification rate. The number of §401 certifications issued per year fluctuates with the state of the economy and has ranged from a minimal number to over a hundred.[20]

For each certified project, HDOH creates mandatory, site-specific best management practices and monitoring and assessment plans to ensure that project-related discharges comply with state water quality standards. HDOH bases these plans on specific guidelines for monitoring §401 water quality certified projects. The guidelines include information on which parameters to monitor and how often, based on the type of project and how long the construction phase of the project will last.[21]

[14] Hawaii Department of Land and Natural Resources - Division of Aquatic Resources, *About DAR, at* http://www.hawaii.gov/dlnr/dar/about.htm (last visited Feb. 9, 2006)

[15] PACIFIC COOPERATIVE STUDIES UNIT UNIVERSITY OF HAWAII AT MANOA, STATEWIDE AQUATIC WILDLIFE CONSERVATION STRATEGY 5-8 (Dec. 2005), *available at* http://www.hawaii.gov/dlnr/dar/pubs/sawcs/hi_sawcs.pdf.

[16] Hawaii Department of Land and Natural Resources, *Division of Forestry and Wildlife, at* http://www.dofaw.net (last visited Mar. 9, 2006).

[17] Personal communication with Jeannie Fujikawa, Hawaii Department of Land and Natural Resources (Jan. 2006).

[18] HAWAII DEPARTMENT OF HEALTH - CLEAN WATER BRANCH, *CWB-WQC Application*, *available at* http://www.hawaii.gov/health/environmental/water/cleanwater/about/cleanwater/forms/pdf/cwb-wqc.pdf (revised June 26, 2000).

[19] HAW. ADMIN. RULES §11-54-9.1.02.

[20] Personal communication with Edward Chen, Hawaii Department of Health (Feb. 6. 2006).

[21] HAWAII DEPARTMENT OF HEALTH, *General Monitoring Guideline for Section 401 Water Quality Certification Projects*, *available at* http://www.hawaii.gov/health/environmental/water/cleanwater/forms/pdf/matrix.pdf (revised Apr. 7, 2000).

Nationwide Permits

HDOH has conditionally certified 16 categories of the Nationwide Permits promulgated by the Department of the Army in the January 15, 2002, Federal Register Notices.[22] HDOH has established requirements and conditions for these Nationwide Permits, including notification requirements, limits of coverage, and more specific conditions for each of the 16 Nationwide Permits. HDOH does not charge a filing fee for projects seeking certification under HDOH's conditional blanket §401 certification authorization. The blanket §401 certification does not apply when projects are located in natural lakes and anchialine pools, Class 1 inland waters, estuaries, Class AA marine waters, embayments, Class I marine bottoms, and stream segments on HDOH's CWA §303(d) water quality-limited segment list.[23] The current conditional approval of Nationwide Permits expires on March 19, 2007.

Statewide Programmatic General Permit

HDOH issued a conditional §401 certification for the State's Programmatic General Permit (SPGP) on February 7, 2003 (expiring on February 1, 2008) that covers placement of up to 10,000 cubic yards of beach sand of acceptable quality for beach nourishment, restoration, and enhancement.[24] The conditional §401 certification outlines exclusions and limitations of the coverage, modification and revocation rules, notification requirements, and discharge limitations for permitted projects.[25] HDOH has received only three applications for certification under the SPGP.[26]

Mitigation

The State of Hawaii has not adopted legislation, policies, or guidelines regarding compensatory mitigation for wetlands and generally defers to the Corps for jurisdictional, wetland-related, mitigation issues.

Enforcement

HDOH handles civil enforcement for violations of the state's water quality standards, and in 2005, brought one enforcement case. Criminal violations are handled by the State Attorney General's Office.[27]

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[22] Letter from Gary Gill, Deputy Director of Environmental Health Administration to Lt. Colonel Ronald N. Light, District Engineer Department of the Army 2-3 (July 5, 2002) (*available at* http://www.hawaii.gov/health/environmental/water/cleanwater/forms/pdf/wqc543.pdf). The Nationwide Permits that Hawaii has conditionally approved are: NWP#3 - Maintenance; NWP#4 - Fish and Wildlife Harvesting, Enhancement, and Attraction Devices and Activities; NWP#5 - Scientific Measurement Devices; NWP#6 - Survey Activities; NWP#12 - Utility Activities; NWP#13 - Bank Stabilization; NWP#14 - Linear Transportation Projects; NWP#16 - Return Water From Upland Contained Disposal Areas; NWP#18 - Minor Discharges; NWP#19 - Minor Dredging; NWP#22 - Removal of Vessels; NWP#25 - Structural Discharges; NWP#31 - Maintenance of Existing Flood Control Facilities; NWP#33 - Temporary Construction, Access, and Dewatering; NWP#36 - Boat Ramps; and NWP#38 - Cleanup of Hazardous and Toxic Wastes.

[23] *Id.* Definitions of the various water classifications are found in Hawaii Administrative Rules 11-54.

[24] Letter from Chiyome L. Fukino, M.D., Director of Health, to Lt. Colonel Ronald N. Light, District Engineer Department of the Army, and Mr. Peter T. Young, Chair Department of Land and Natural Resources 2 (February 7, 2003) (*available at* http://www.hawaii.gov/health/environmental/water/cleanwater/forms/pdf/wqc536.pdf).

[25] *Id*, p 2-17.

[26] Chen, *supra* note 20.

[27] *Id.*

III. Water Quality Standards

Although wetlands are not explicitly included in Hawaii's definition of state waters, the Hawaii Administrative Rules specifically state that water quality standards apply to wetlands.[28] The rules outline general numeric and narrative water quality criteria[29] and also include criteria specific to "elevated wetlands,"[30] "inland waters,"[31] "marine waters,"[32] "marine bottom types,"[33] and "recreational areas."[34] Anti-degradation policies[35] and use designations[36] are also described.

IV. Monitoring and Assessment

Monitoring and Assessment for Wetlands

Hawaii does not have a specific, state-funded program for wetland monitoring and assessment, but does conduct these activities through grant-funded projects. For example, in 2003, DOFAW received a $75,000 grant from the U.S. Environmental Protection Agency (EPA) for the Hamakua Wetland Restoration and Monitoring Program at the Hamakua State Wildlife Sanctuary.[37] One of the project goals is to develop a "comprehensive monitoring protocol to assess the biological health of coastal Hawaiian wetlands."[38] The final report is due to EPA no later than September 2006.[39]

Monitoring and Assessment for Streams

The HDOH Environmental Planning Office's Water Quality Management Program updated the Hawaii Stream Bioassessment Protocol Version 3.01 in January 2002.[40] The protocol employs a multimetric approach to assessment, establishes expectations of biotic quality, and standardizes assessment methods and sampling protocol.[41] For each stream, the protocol calls for a Stream Index of Biotic Integrity and a Stream

[28] HAW. ADMIN. RULES §11-54-5.2.
[29] HAW. ADMIN. RULES §11-54-4.
[30] HAW. ADMIN. RULES §11-54-5.2 (c).
[31] HAW. ADMIN. RULES §11-54-5.
[32] HAW. ADMIN. RULES §11-54-6.
[33] HAW. ADMIN. RULES §11-54-7.
[34] HAW. ADMIN. RULES §11-54-8.
[35] HAW. ADMIN. RULES §11-54-1.1.
[36] HAW. ADMIN. RULES §11-54-3.
[37] U.S. EPA REGION 9: PRESS RELEASES, *U.S. EPA Awards $75,000 to Hawai'i Department of Land and Natural Resources, available at* http://yosemite.epa.gov/r9/r9press.nsf/268400f6f4b727f288256b6100659fe6/6f7d9282454c8d6688256d6b00654a6d!0penDocument (July 22, 2003).
[38] Personal communication with Scott Fretz, Hawaii Department of Land and Natural Resources (Jan. 5, 2006).
[39] U.S. EPA GRANT AWARDS DATABASE, *Project Title: Wetlands Protection Development – Hamakua Monitoring and Restoration, at* http://yosemite.epa.gov/oarm/igms_egf.nsf/8593a94eb528feab85256fb60070e5a3/047a9511c449ade185257014001ddb61!OpenDocument (last updated Feb. 14, 2006).
[40] Michael Kido, The Hawaii Stream Research Center, Center for Conservation Research and Training, University of Hawaii, *The Hawaii Stream Bioassessment Protocol Version 3.01.* (Jan. 2002).
[41] *Id,* p 4, 23.

Habitat Assessment.[42] Hawaii Stream Bioassessment Reports for five streams are available on HDOH's website.[43]

V. Restoration and Partnerships

Hawaii does not operate a formal, state-level, wetland restoration program; however, HDLNR does conduct some restoration-related activities. For example, the Hamakua Wetland Restoration and Monitoring Program (see above) includes restoration. Grants and other non-state monies typically fund restoration projects, which often involve partners such as local non-governmental organizations and federal agencies.[44]

On a case-by-case basis, the CWB's Polluted Runoff Control Program also provides CWA §319 grants for qualified wetland restoration projects.

As of 2006, DOFAW was recruiting and training volunteers for monitoring wetland habitats after restoration. The state is interested in developing a volunteer corps to assist in wetland restoration and monitoring efforts.[45]

VI. Education and Outreach

Hawaii has no formal, strategic plan making education the goal of a comprehensive state wetland program; however, many of the grant-funded projects that the state administers include an educational component.[46] For example, as part of the Hamakua Wetland Restoration and Monitoring Program, schoolchildren constructed a website about the importance of wetlands.[47] Also, DOFAW provides access to state-managed wetlands and logistical support for education and outreach programs that target citizens, universities, teachers, and youth.[48]

VII. Coordination with State and Federal Agencies

HDOH coordinates regularly with the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service on §404 permit applications. Furthermore, HDOH and HDLNR consult (and, in some cases, hold memoranda of agreement/understanding) with each other and the state transportation agency on multiple wetland-related issues, which may include waterbird recovery, habitat/ecosystem improvements/restoration, water

[42] *Id*, p 5.
[43] Hawaii State Department of Health, *Water Quality Management Program, at* http://www.hawaii.gov/health/environmental/env-planning/wqm/env-planning/wqm/wqm.html (last updated May 2, 2005).
[44] *See* Ducks Unlimited, *Hawaii Region 32*, *at* http://www.ducks.org/conservation/icp/Part2/Hawaii.html; National Resource Conservation Service, *Wetlands Reserve Program in Hawaii*, *at* http://www.hi.nrcs.usda.gov/programs/prwrp99.html; and U.S. EPA, *River Corridor and Wetland Restoration, at* http://www.epa.gov/owow/wetlands/restore/5star/fy04grants.html#kihapai_hi.
[45] Fujikawa, *supra* note 17.
[46] *Id.*
[47] *See Hamakua Marsh, at* http://hamakuamarsh.com (last visited Mar. 9, 2006).
[48] Fujikawa, *supra* note 17.

quality remediation, wetlands conservation, anchialine pool protection, and native shrimp recovery. The state agencies also often work with the USDA Natural Resources Conservation Service and nonprofit conservation organizations.[49]

A State Wetland Conservation Plan is currently in the planning stages.[50] In addition, the state's recently completed Comprehensive Wildlife Conservation Strategy includes wetland priorities.[51]

VIII. Acronyms and Abbreviations

Commission – Commission on Water Resource Management
CWA – Clean Water Act
CWB – Clean Water Branch
DAR – Division of Aquatic Resources
DOFAW – Division of Forestry and Wildlife
EPA – U.S. Environmental Protection Agency
HDLNR – Hawaii Department of Land and Natural Resources
HDOH – Hawaii Department of Health
SPGP – Statewide Programmatic General Permit
USDA – U.S. Department of Agriculture

[49] Chen, *supra* note 20.
[50] *Id.*
[51] *See:* Hawaii Department of Land and Natural Resources - Department of Fish and Wildlife, *Aloha and Welcome to Hawaii's Comprehensive Wildlife Conservation Strategy, at* http://www.state.hi.us/dlnr/dofaw/cwcs/ (last updated Oct. 4, 2005).

Montana

I. Overview

Montana has lost approximately 27 percent of its naturally occurring wetlands since the early 1800s, primarily due to conversion for cropland.[1] Although wetlands and riparian areas cover less than four percent of the state's land, they provide habitat for 60 percent of amphibian, bird, reptile, and mammal species of greatest conservation need.[2] The state's sparse population and expansive area present unique challenges for the state wetland staff.

The primary form of wetland regulation at the state level is water quality certification under §401 of the Clean Water Act (CWA). The state is developing a pilot program to track wetland acreage in three watersheds and makes extensive use of public-private partnerships to enhance wetland protection.

II. Regulatory Programs

Wetland Definitions and Delineation

The definitions of "state waters" and "surface waters" in Montana's Water Quality Act do not explicitly include wetlands, but broadly cover "bodies of water." "State waters" include any "body of water, irrigation system, or drainage system, either surface or underground."[3] "Surface waters" mean "any waters on the earth's surface including, but not limited to, streams, lakes, ponds, and reservoirs; and irrigation and drainage systems discharging directly into a stream, lake, pond, reservoir or other surface water.[4]

Montana delineates wetlands in accordance with the criteria outlined in the U.S. Army Corps of Engineers 1987 *Wetlands Delineation Manual*.[5]

§ 401 Certification

Montana relies on §401 water quality certification as its primary form of wetlands regulation. The §401 program is administered by the Montana Department of Environmental Quality (MDEQ). For wetlands that have a surface water component, state water permits are used in conjunction with §401 permits.[6] The MDEQ makes very few formal certifications each year because §401 certification is usually waived on projects that are of minimal impact or projects that require a 318 permit, a short-term permit for turbidity,

[1] United States Geological Survey, *National Summary on Wetland Resources, at* http://water.usgs.gov/nwsum/WSP2425/state_highlights_summary.html (last modified Mar. 7, 1997).
[2] Montana Watercourse, *Water Facts for Montana*, *at* http://www.mtwatercourse.org/waterfacts.htm (last visited Dec. 27, 2005).
[3] The term does not include (i) ponds or lagoons used solely for treating, transporting, or impounding pollutants; or (ii) irrigation waters or land application disposal waters when the waters are used up within the irrigation or land application disposal system and the waters are not returned to state waters. MONT. CODE ANN. § 75-5-103(29)(a)-(b).
[4] Water bodies used solely for treating, transporting or impounding pollutants are not considered to be surface water. ADMIN. R. MON. § 17.30.602(32).
[5] U.S. Army Corps of Engineers, Wetlands Research Program Technical Report Y-87-1, Corps of Engineers Wetlands Delineation Manual (1987), *available at* http://www.saj.usace.army.mil/permit/documents/87manual.pdf.
[6] Personal Communication with Jeff Ryan, Montana Department of Environmental Quality (Jul. 25, 2005).

from the MDEQ.[7] Between 200 and 250 authorizations with conditions are issued per year; virtually all applications are approved.

Approval decisions are based on a combination of quantitative methodology, qualitative assessment, and best professional judgment. The overall size of a wetland and water body, as well as a project's impact on erosion, are all important considerations.[8]

Organization of State Activities

Montana administers its §401 program out of the MDEQ office in Helena. Approximately 0.5 full-time equivalents (FTEs) are involved in §401 certification and monitoring and assessment, and one FTE coordinates the grant program and non-regulatory conservation strategy. Annual funding is approximately $400,000, mostly derived from U.S. Environmental Protection Agency (EPA) 104(b)(3) grants and matched by general state appropriations.[9] The §401 certification program is supported mostly by EPA 319 funds (approximately $30,000 per year).[10] The enforcement program within MDEQ has 14 FTEs and an annual budget of approximately $1 million; these resources are devoted to all types of environmental enforcement, not just wetlands.[11]

Nationwide and General Permits

MDEQ staff review nationwide permits (NWPs) approximately every five years.[12] The state does not impose any regional conditions for NWPs. Montana has general permits for certain activities, such as wastewater.[13]

Mitigation

Montana does not have regulations, policies, or legislation that guide wetland mitigation. A Mitigation Banking Review Team does operate in the state.[14] The voluntary Montana Wetlands Legacy partnership operates an in-lieu fee program to mitigate impacts on wetlands and, beginning in 2006, impacts to streams as well. *(See "Section V. Restoration and Partnerships" below.)*

Enforcement

Enforcement actions under the state's water quality laws apply but are not specific to wetlands.[15] Under Montana law, it is unlawful to cause pollution in state water.[16] The MDEQ only enforces the statutes if it can document pollution and if "state water" is affected.[17] The definition of "state water" does not include wet-

[7] Turbidity permits may include, but are not limited to, wetlands. Ryan, *supra* note 6. *See also:* MONT. CODE ANN. § 75-5-318.
[8] Ryan, *supra* note 6.
[9] Personal Communication with Lynda Saul, Montana Department of Environmental Quality (Jul. 14, 2005).
[10] Personal Communication with Jeff Ryan, Montana Department of Environmental Quality (Sept. 19, 2005).
[11] Personal Communication with John Arrigo, Montana Department of Environmental Quality (Jul. 26, 2005).
[12] Saul, *supra* note 9.
[13] Ryan, *supra* note 6.
[14] A recent prospectus submitted to the U.S. Army Corps of Engineers for a private wetland mitigation bank in the Blackfoot Valley, near Ovando, Montana, prompted the Corps to request the formation of a Mitigation Banking Review Team (MBRT). The MBRT is comprised of federal and state agencies that have an interest in wetland protection, including MDEQ. Ryan, *supra* note 10.
[15] MONT. CODE ANN. §§ 75-5-601 to 75-5-641.
[16] MONT. CODE ANN. §§ 75-5-605.
[17] Personal Communication with John Arrigo, Montana Department of Environmental Quality (Jul. 20, 2005).

lands, so MDEQ only considers the presence of surface water or groundwater in determining whether "state water" has been polluted.

Violations of state water quality laws may result in administrative penalties of up to $10,000 per day or civil penalties of up to $25,000 per day, with each day constituting a separate violation.[18] Montana law allows for criminal penalties of $25,000 per day of violation and one year of imprisonment. Subsequent convictions are punishable with $50,000 per day of violation and two years of imprisonment.[19] However, violations of the state's water quality laws seldom result in criminal penalties. MDEQ resolves many cases with an administrative order on consent and a settlement penalty. If an alleged violator is recalcitrant, MDEQ will issue orders that require corrective action or compliance and assess a penalty. If the parties fail to comply with the administrative order, the case will be elevated to district court to seek injunctive relief with civil penalties. To combat defendants who refuse to pay or dissolve themselves, as of January 1, 2006, the MDEQ will have the authority to hire a collection agency to collect unpaid penalties and fees.[20]

Tracking Systems

Montana does not have a state system for tracking permits or mitigation. With the assistance of a grant from the U.S. Environmental Protection Agency (USEPA), the state is establishing a pilot program to track net loss and net gain of wetlands in three watersheds.[21] Funding for the three-year program will begin in January 2006.

III. Water Quality Standards

Montana's water quality standards, anti-degradation policy, and designated uses are not specific to wetlands.[22] General water quality criteria are narrative, chemical, and biological[23] and recognize that "certain state waters are of such environmental, ecological, or economic value that the state should, upon a showing of necessity, prohibit, to the greatest extent practicable, changes to the existing water quality of those waters."[24]

IV. Monitoring and Assessment

The MDEQ employs several assessment methodologies for wetlands. The state currently has landscape-level and rapid assessments and is developing a bioassessment focused on vegetation, birds, and amphibians. In the future, Montana hopes to develop a strategy to integrate the assessment of wetlands with stream and landscape assessments to focus on overall watershed health. Stream assessment methodologies consist of a qualitative stream reach assessment, water chemistry sampling, and a bioassessment with

[18] MONT. CODE ANN. § 75-5-631.
[19] MONT. CODE ANN. § 75-5-632.
[20] Arrigo, *supra* note 17.
[21] Saul, *supra* note 9.
[22] *Id.*
[23] MONT. CODE ANN. § 75-5-301.
[24] MONT. CODE ANN. § 75-5-315.

a focus on invertebrates and algae. Landscape assessments include geographic information system (GIS) models for conducting risk assessments that are based on land use activities. Beginning in 2006, the state will use assessments in watersheds to identify sites for wetland protection and restoration.[25] The main purposes of the methodology will be local watershed management, identification of wetland restoration priorities, and general ambient assessment.[26]

MDEQ works closely with the Montana Natural Heritage Program and universities in developing monitoring and assessment methodologies. Other partners, including the U.S. Department of Agriculture's Forest Service, the Bureau of Land Management, the U.S. Fish and Wildlife Service and EPA, provide technical review.[27] Montana also hopes to work with local governments and volunteers to help collect wetland data, recommend priorities for wetland and water quality monitoring and assessment programs, and assist in the dissemination of information. The state recently began to work with the Local Gallatin Water Quality District and the Montana Watercourse, a citizen monitoring program, to assist in evaluating and refining wetland rapid assessment and bird assessment protocols.[28]

V. Restoration and Partnerships

The Montana Wetlands Legacy (MWL) is a voluntary, incentive-based partnership that focuses on wetland conservation and private landowners. MWL provides a point of contact for landowners looking for technical and financial assistance from federal, state, tribal, and local governments, as well as private conservation organization programs.[29]

MWL also administers the In-Lieu-Fee (ILF) Aquatic Resource Mitigation Program, with funds managed by Montana Fish, Wildlife & Parks. Payment to the ILF program is one option for satisfying §404 mitigation requirements, as well as for settling some enforcement cases. Participants in the program typically include landowners, commercial and residential developers, transportation organizations, and others. Fees are currently calculated on a per-acre basis to include all costs of planning, design, and construction, and costs for acquisition or permanent protection of the site through easements. Fees for stream restoration projects are being developed on a per-foot basis in anticipation of the Corps' initiation of Montana's stream mitigation program beginning in 2006.

ILF funds may be used to restore, enhance, and protect aquatic habitats and resources throughout the state, which may include land acquisition, purchase of permanent easements, purchase of water rights, in-stream flow leasing, development of mitigation and monitoring plans, physical mitigation and monitoring, long-term management of mitigation parcels, and covering of administrative costs for the ILF program. ILF projects must be in the same watershed as the impacts that generated the source of funds, and replacement is

[25] Personal Communication with Randy Apfelbeck, Montana Department of Environmental Quality (Mar. 9, 2005).
[26] *Id.*
[27] *Id.*
[28] Personal Communication with Randy Apfelbeck, Montana Department of Environmental Quality (Sept. 20, 2005).
[29] Saul, *supra* note 9.

based on federal wetland mitigation ratios and stream mitigation guidelines.[30] Mitigation projects are reviewed by a committee composed of representatives of wetland and stream management agencies. The committee reviews mitigation projects and funding expenditures and provides guidance on mitigation issues, projects and sites.[31] Programmatic goals include the protection of 50,000 acres of ecologically important wetlands, riparian areas, and associated uplands annually.[32]

VI. Education and Outreach

Montana has been developing a proactive wetland outreach and education program since the 1990s. Outreach has included public service television and radio spots about the importance and value of wetlands; targeted outreach material for landowners, local government planning officials, wetland pond owners, developers, and the regulated community; and numerous community meetings addressing local wetland issues (e.g. wetlands and water rights, West Nile Virus, and threatened and endangered species). The state has also partnered with local governments experiencing rapid growth and land use changes to conduct wetland mapping and classification and capacity building so that local governments can better manage and protect local wetland resources.[33]

The Montana Watercourse is a statewide education and outreach program that provides information, tools, and resources on water resources.[34] The program specifically includes wetlands and also addresses the role of wetlands within watersheds. The Montana Watercourse operates grant-based projects that target all water users, including local governments, developers, landowners and citizens.[35] Volunteer water quality monitoring and educator kits are two examples of projects conducted by Montana Watercourses. MDEQ recently began to work with Montana Watercourse and other volunteers to assist in evaluating and developing wetland rapid assessment and bird assessment protocols. The state hopes to work closely with the Watercourse Group and local governments in disseminating information about wetland resources in the future.[36]

VII. Coordination with State and Federal Agencies

With goals "to build a wetland conservation program to achieve no overall net loss of Montana's remaining wetland base, in terms of quantity and quality; to conserve, restore, enhance and create wetlands where feasible; and to increase Montana's wetland resource base,"[37] the *Conservation Strategy for Montana's Wet-*

[30] Montana Wetlands Legacy, *Protecting and Restoring Wetland and Riparian Habitat in Montana (Home), at* http://www.wetlandslegacy.org/home.htm (last visited Sept. 7, 2005).
[31] Montana Wetlands Legacy, *In-Lieu-Fee Aquatic Resource Mitigation Program, at* http://www.wetlandslegacy.org/inlieufee_mitigation.htm (last visited Sept. 7, 2005).
[32] Personal Communication with Tom Hinz, Montana Wetlands Legacy (Sept. 8, 2005).
[33] Personal Communication with Lynda Saul, Montana Department of Environmental Quality (Sept. 20, 2005).
[34] Montana Watercourse, *About Us, at* http://www.mtwatercourse.org/AboutUs/aboutus.htm (last visited Dec. 27, 2005).
[35] Saul, *supra* note 9.
[36] Apfelbeck, *supra* note 28.
[37] Montana Wetlands Council, *Montana Wetlands Conservation Strategy, available at* http://nris.state.mt.us/wis/strategymain.html.

lands is being proactively implemented as funding and other opportunities become available.[38] The strategy lists the following objectives: (1) improve the wetlands knowledge base by completing a wetland inventory for Montana; (2) provide resources to support wetland protection, including information and education, technical assistance, and funding; and (3) encourage voluntary conservation on private land.[39] Local, tribal, state, and federal government agencies, as well as agricultural community representatives, biology- and environment-based conservation groups, consultants, land trusts, industry (e.g. mining, wood products) representatives, real estate/development interests, the recreation/sportsman community, educational representatives, and other water- and wetland-related organizations were active participants in developing the strategy. State, tribal, and federal groups and non-government entities are members of the Montana Wetland Council, a forum that promotes cooperative wetland resource management in the state and is implementing the strategy. The council meets three times per year.[40]

State and federal agencies also coordinate regularly to discuss §404 permit applications that involve impacts to aquatic resources. Meetings are generally held every two to three weeks, and projects discussed are typically larger, more controversial projects.[41] The Montana wetland monitoring and assessment program has held several workgroup meetings since 2002 to solicit input from federal, tribal, and state agencies. The state has also coordinated closely with the Montana Natural Heritage Program to develop an efficient and effective monitoring and assessment strategy that meets multiple objectives and that could be implemented jointly by several state and federal agencies. The program has also coordinated with the Montana Department of Transportation and USDA Natural Resource Conservation Service to provide wetland assessment training.[42] Federal agencies are also key partners in the MWL, providing voluntary incentive programs to willing landowners for wetland restoration and protection.[43]

VIII. Acronyms and Abbreviations

CWA – Clean Water Act
EPA – U.S. Environmental Protection Agency
FTE – Full-Time Equivalent
GIS – Geographic Information System
ILF – In-Lieu-Fee
MBRT – Mitigation Banking Review Team
MDEQ – Montana Department of Environmental Quality
MWL – Montana Wetlands Legacy
NWP – Nationwide Permit

[38] Saul, *supra* note 9.
[39] Montana Wetlands Council, *supra* note 37.
[40] Personal Communication with Lynda Saul, Montana Department of Environmental Quality (Sept. 14, 2005).
[41] Ryan, *supra* note 10.
[42] Apfelbeck, *supra* note 28.
[43] Saul, *supra* note 40.

Nebraska

I. Overview

When Nebraska was founded in 1867, the state held more than 2,910,000 acres of wetlands, approximately six percent of the landscape. Since that time, Nebraska has lost approximately 35 percent of its original wetland acreage.[1] To address continuing losses, the state created the Wetland Conservation Plan in 1998.[2] Today, two primary agencies are involved in wetland protection in the state – the Nebraska Department of Environmental Quality (NDEQ) and the Nebraska Game and Parks Commission (NGPC). The state relies on §401 water quality certification under the Clean Water Act (CWA) to regulate impacts to wetlands and has adopted wetland-specific water quality standards. Other state activities include conservation, restoration, education, and outreach programs; however, limited resources have restricted state activities to some extent.[3]

II. Regulatory Programs

Wetland Definitions and Delineation

Nebraska explicitly includes wetlands in the state definition of waters. "Waters of the state" include "all waters within the jurisdiction of [the] state, including all streams, lakes, ponds, impounded reservoirs, marshes, wetlands, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, situated wholly or partly within or bordering upon the state."[4] Wetlands are specifically defined as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas."[5]

Nebraska's Surface Water Quality Standards require wetland delineation according to the U.S. Army Corps of Engineers' 1987 *Wetlands Delineation Manual*.[6]

Organization of State Activities

Nebraska Department of Environmental Quality. The Nebraska Department of Environmental Quality is the primary wetland regulatory agency in the state and is responsible for issuing §401 water quality certifications. Most wetland-related activities are conducted out of the main office in Lincoln, although field offices do provide some technical and administrative support. Approximately one-half of a full-time equivalent (FTE) handles wetland-related regulation for the state. Staff activities include issuance of §401 certifications, technical support, and administration of state-based funds. The agency's annual budget for all wet-

[1] THOMAS E. DAHL, U.S. FISH AND WILDLIFE SERVICE, WETLANDS LOSSES IN THE UNITED STATES 1780'S TO 1980'S (1990).
[2] *Id.*
[3] Personal communication with John Bender, Nebraska Department of Environmental Quality (June 15, 2005).
[4] NEB. REV. ST. § 81-1502(21).
[5] NEB. DEPT. OF ENV. QUALITY, Tit. 120, Chp.1 (005).
[6] NEB. DEPT. OF ENV. QUALITY, Tit. 117, Chp. 7 (003).

land-related activities, including staff salaries, mailings, publications, travel, or various other activities, is approximately $40,000, funded by the U.S. Environmental Protection Agency's §604(b) Water Quality Management Program.[7]

Nebraska Game and Parks Commission. The Nebraska Game and Parks Commission conducts some non-regulatory wetland activities within the state, including outreach, research, conservation, management, and restoration. Staff may also provide comment on §401 certifications issued by the NDEQ. NGPC staffs two FTEs solely for wetland activities, though approximately 30 additional staff work on a variety of issues which may involve wetlands in some way. The agency's annual budget for private land wetland restoration activities is approximately $80,000, funded by habitat stamp proceeds. Other wetland activities are funded by multiple sources, including federal and state grants, private conservation organization contributions, and revenue from the sale of hunting and fishing licenses and habitat stamps.[8]

§401 Certification

Any actions that require a federal permit, license, or approval that results in a discharge into waters of the state, including §404 individual dredge and fill permits and nationwide permits, require state water quality certification. The state has adopted water quality standards specific to wetlands[9] and has regulations describing certification issuance procedures such as the public comment process.[10]

Fewer than 100 §401 water quality certifications are typically issued by the NDEQ each year. Projects are generally approved, although some certifications may be issued with conditions. For example, in Fiscal Year 2004, NDEQ issued 61 certifications, 35 conditional certifications, and 2 denials. Decisions are never waived. NDEQ staff rely on both quantitative and qualitative assessments, as determined by the state's water quality regulations.[11]

Nationwide Permits

NDEQ reviews nationwide permits (NWPs), issued by the Corps on an approximately five-year cycle, for compliance with Nebraska's water quality standards, and may adopt additional, more stringent conditions for state water quality certifications.[12] NDEQ currently issues project-specific water quality certifications after a mandatory 30-day public notice period for NWP activities pertaining to Class A State Resource Waters,[13] Rainwater Basin Wetlands, and Category I Eastern Saline Wetlands of the state (as designated by the NDEQ and the Corps), as well as activities falling under NWP#40(c) (pertaining to the construction of building pads for farm buildings in wetlands).[14]

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[7] Personal communication with Terry Hickman, Nebraska Department of Environmental Quality (August 26, 2005).
[8] Personal communication with Ted LaGrange, Nebraska Game and Parks Commission (June 10, 2005).
[9] NEB. DEPT. OF ENV. QUALITY, Tit. 117, Chp. 7.
[10] NEB. DEPT. OF ENV. QUALITY, Tit. 120.
[11] Bender, *supra* note 3.
[12] Hickman, *supra* note 7.
[13] "Class A State Resource Waters" constitute "…an outstanding state or national resource, such as waters within national or state parks, national forests or wildlife refuges, and waters of exceptional recreational or ecological significance. Waters which provide unique habitat…and rivers designated under the Wild and Scenic Rivers Act are also included…" NEB. DEPT. OF ENV. QUALITY, Tit. 117, Chp. 7 (002).
[14] Hickman, *supra* note 7.

Mitigation

The Corps handles most wetland mitigation; however, both NDEQ and NGPC participate on the Nebraska Mitigation Banking Review Team (MBRT), which has created a draft Standard Operating Procedure that guides wetland mitigation bank development. Other participating MBRT agencies include the Corps, U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (FWS), Federal Highway Administration, and Natural Resources Conservation Service (NRCS). The group is also in the process of developing stream mitigation guidelines.[15]

Enforcement

The main enforcement tool for violations to water quality standards in Nebraska is the issuance of a civil penalty (up to $10,000 per day of violation).[16] There are no enforcement measures specific to wetlands, although past violations have been resolved through voluntary compliance.[17] More typically, wetland-related enforcement and compliance issues typically fall to the U.S. Army Corps of Engineers (for violations to CWA §404), with minor assistance provided by the NDEQ.[18]

Tracking Systems

The NDEQ maintains a §401/404 permit-tracking database, but does not track wetland mitigation in the state.

III. Water Quality Standards

The State of Nebraska has developed wetland-specific water quality standards (WQS) and use classifications. WQS are based on narrative, chemical, and biological criteria, and relate to a variety of wetland functions, including flood control, sediment trapping, fish and wildlife habitat, and water quality/pollution control.[19] Designated uses include aquatic life, wildlife, agricultural water supply, and aesthetics.[20] The state has also adopted a water quality antidegradation policy that applies to all waters of the state, including wetlands.[21]

IV. Monitoring and Assessment

Nebraska has not developed monitoring and assessment programs specific to wetlands and streams. The state does conduct general surface water quality monitoring, which technically includes wetlands and streams. Furthermore, NDEQ routinely works with the U.S. Army Corps of Engineers, U.S. Fish and Wildlife

[15] Email from Ted LaGrange, Wetland Program Manager, Nebraska Game and Parks Commission, to Alison Rau, Environmental Law Institute, (July 1, 2005, 16:10:12 EST) (on file with author).
[16] NEB. REV. STAT. § 81-1508.02.
[17] Bender, *supra* note 3.
[18] Email from John Bender, Water Quality Standards Coordinator, Nebraska Department of Environmental Quality, to Alison Rau, Environmental Law Institute, (June 17, 2005, 11:16:37 EST) (on file with author).
[19] NEB. DEPT. OF ENV. QUALITY, Tit. 117, Chp. 7.
[20] *Id.*; NEB. REV. STAT. 81-1501(1) and 81-1505(1)(2).
[21] NEB. DEPT. OF ENV. QUALITY, Tit. 117, Chp. 3.

Service, and other federal resource agencies to improve mitigation and monitoring of wetlands and streams.[22]

V. Restoration and Partnerships

NGPC coordinates with the NRCS and FWS in administering the USDA's National Wetlands Reserve Program. Contributed state funds are derived from the sale of habitat stamps and hunting and fishing licenses. State wetland restoration goals, often regionally-specific, revolve around jointly developed USDA program goals.[23] NGPC also operates the WILD Nebraska program, partnering with landowners, nongovernmental organizations, joint ventures, and local and state entities to protect wildlife habitat on private lands, including wetlands.[24]

VI. Education and Outreach

NGPC does conduct education and outreach for landowners, school groups, hunters and fishers, and outdoor groups, in addition to outreach conducted as part of the restoration initiatives described above.[25]

VII. Coordination with State and Federal Agencies

The NPGC coordinates regularly and is party to memoranda of agreement with multiple federal and local partners, including FWS, Ducks Unlimited, the Rainwater Basin Joint Venture, the Playa Lakes Joint Venture, the Upper Mississippi River Joint Venture, the Saline Wetlands Conservation Partnership, the Sandhills Task Force, the Platte River Partnership, and NRCS, among others.[26] NDEQ also regularly participates in meetings with many federal agencies on regulatory issues.[27]

[22] Hickman, *supra* note 7.
[23] LaGrange, *supra* note 15.
[24] Nebraska Game and Parks Commission, *WILD Nebraska, at* http://www.ngpc.state.ne.us/wildlife/programs/wildnebraska/wildnebraska.asp (last visited Aug. 10, 2005).
[25] LaGrange, *supra* note 8.
[26] LaGrange, *supra* note 15.
[27] LaGrange, *supra* note 8.

VIII. Acronyms and Abbreviations

CWA – Clean Water Act
EPA – U.S. Environmental Protection Agency
FTE – Full-Time Equivalent
FWS – U.S. Fish and Wildlife Service
MBRT – Mitigation Banking Review Team
NDEQ – Nebraska Department of Environmental Quality
NGPC – Nebraska Game and Parks Commission
NRCS – Natural Resources Conservation Service
NWP – Nationwide Permits
USDA – U.S. Department of Agriculture
WQS – Water Quality Standards

New Jersey

I. Overview

Although an estimated 39 percent[1] of the state's wetlands have been lost to agricultural, residential, and industrial development over the last two centuries, New Jersey retains a diversity of tidal and freshwater wetlands, as well as important wetland complexes such as the New Jersey Pinelands and the Hackensack Meadowlands District. In 1994, New Jersey became the second state to assume authority to administer dredge and fill permits under §404 of the Clean Water Act (CWA).[2] The state's wetland permitting programs are administered by the New Jersey Department of Environmental Protection (NJDEP) and play an important role in the state's overall environmental protection strategy.[3]

II. Regulatory Programs

Wetland Definitions and Delineation

In the state's water quality rules, New Jersey defines "waters of the state" as "the ocean and its estuaries, all springs, streams, wetlands, and bodies of surface or ground water, whether natural or artificial, within the boundaries of the State of New Jersey or subject to its jurisdiction."[4] The state regulates all freshwater wetlands under the Freshwater Wetlands Protection Act.[5] In addition, NJDEP is responsible for administering the §404 program in "delegable waters," which include "all waters of the United States…within New Jersey, except waters which are presently used, or are susceptible to use in their natural condition or by reasonable improvement, as a means to transport interstate or foreign commerce, shoreward to their ordinary high water mark. This term includes all waters which are subject to the ebb and flow of the tide, shoreward to their mean high water mark, including wetlands that are partially or entirely located within 1000 feet of their ordinary high water mark or mean high tide."[6,7] State laws provide definitions for regulated freshwater wetlands[8] and coastal wetlands.[9]

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[1] U.S. Environmental Protection Agency, *Status and Trends, at* http://www.epa.gov/OWOW/wetlands/vital/status.html (last revised March 23, 2005).

[2] Michigan became the first state to assume regulatory authority under §404 of the Clean Water Act in 1984. *See* 40 C.F.R. § 233.70.

[3] New Jersey Department of Environmental Protection, *Land Use Regulation Program, at* http://www.state.nj.us/dep/landuse/ (last visited Sept. 27, 2005).

[4] N.J. ADMIN. CODE. § 7:9B-1.4.

[5] N.J. STAT. ANN. § 13:9B.

[6] N.J. ADMIN. CODE. § 7:7A-1.4.

[7] In "non-delegable waters," the U.S. Army Corps of Engineers retains jurisdiction under federal law, and both federal and state requirements apply. N.J. ADMIN. CODE. § 7:7A-2.1(c). Waters that are not delegable waters include, but are not limited to "the entire length of the Delaware River within the State of New Jersey;" "waters of the United States under the jurisdiction of the Hackensack Meadowlands Development Commission;" and "Greenwood Lake." N.J. ADMIN. CODE. § 7:7A-1.4.

[8] "Freshwater wetlands" include areas that are "inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation; provided, however, that the [NJDEP], in designating a wetland, shall use the 3-parameter approach (i.e. hydrology, soils and vegetation) enumerated in the April 1, 1987 interim-final draft 'Wetland Identification and Delineation Manual' developed by USEPA." N.J. STAT. ANN. § 13:9B.

The New Jersey Pinelands, an area of over one million acres in the southeastern part of the state, is governed by additional legislation that outlines separate definitions for coastal and inland wetlands within the area's boundaries.[10]

New Jersey relies on the 1989 *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*[11] for wetlands delineation statewide,[12] with the exception of the New Jersey Pinelands, where the 1991 *New Jersey Pinelands Commission Manual for Identifying and Delineating Pineland Area Wetlands* is utilized.[13]

Wetland-related Laws and Regulations

New Jersey protects freshwater wetlands and their buffers under the Freshwater Wetlands Protection Act.[14] The state has also adopted a separate law for coastal wetlands, the Wetland Act of 1970.[15] In addition, the Pinelands Protection Act,[16] Hackensack Meadowlands Reclamation and Development Act,[17] and Highlands Water Protection and Planning Act[18] outline provisions in addition to the state's wetland regulations that apply only within designated areas of the state (the Pinelands,[19] Meadowlands,[20] and Highlands Region,[21] respectively).

Freshwater Wetlands Protection Act.[22] Under the Freshwater Wetlands Protection Act (FWPA), a permit from the NJDEP is required for certain "regulated activities"[23] in all freshwater wetlands and state open waters, as

[9] A "coastal wetland" is defined as "any bank, marsh, swamp, meadow, flat or other low land subject to tidal action in the State of New Jersey along the Delaware bay and Delaware river, Raritan bay, Barnegat bay, Sandy Hook bay, Shrewsbury river including Navesink river, Shark river, and the costal inland waterways extending southerly from Manasquan Inlet to Cape May Harbor, or any inlet, estuary or tributary waterway or any thereof, including those areas now or formerly connected to tidal waters whose surface is at or below an elevation of 1 foot above local extreme high water, and upon which may grow or is capable of growing any of a list of enumerated plant species." N.J. STAT. ANN. § 13:9A.

[10] *See* N.J. ADMIN. CODE. §§ 7:50-6.3 to 7:50-6.5.

[11] Federal Interagency Committee for Wetland Delineation (U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Soil Conservation Service), Federal Manual for Identifying and Delineating Jurisdictional Wetlands (1989), *unofficial copy available at* http://www.wetlands.com/pdf/89manv3b.pdf.

[12] N.J. STAT. ANN. § 13:9B; N.J. ADMIN. CODE. § 7:7A-2.3(a).

[13] N.J. ADMIN. CODE. § 7:50-6.3.

[14] N.J. STAT. ANN. § 13:9B.

[15] N.J. STAT. ANN. § 13:9A.

[16] N.J. STAT. ANN. §§ 13:18A-1 to 13:18A-29.

[17] N.J. STAT. ANN. § 12:17-1 *et seq*.

[18] N.J. STAT. ANN. § 13:20-1 *et seq*.

[19] For more information on the New Jersey Pinelands area, see: New Jersey Pinelands Commission, *New Jersey Pinelands Commission, at* http://www.state.nj.us/pinelands/index.shtml (last visited Jan. 10, 2006).

[20] For more information on the New Jersey Meadowlands, see: New Jersey Meadowlands Commission, *New Jersey Meadowlands, at* http://www.meadowlands.state.nj.us/ (last visited Jan. 10, 2006).

[21] For more information on the Highlands Region and Preservation Area, see: New Jersey Department of Environmental Protection, *DEP Guidance for the Highlands Water Protection and Planning Act, at* http://www.state.nj.us/dep/highlands/ (last updated Aug. 24, 2005).

[22] N.J. STAT. ANN. § 13:9B; N.J. ADMIN. CODE. § 7:7A.

[23] Regulated activities may include: "the removal, excavation, disturbance or dredging of soil, sand, gravel, or aggregate material of any kind;" "the drainage or disturbance of the water level or water table;" "the dumping, discharging or filling with any materials;" "the driving of pilings;" "the placing of obstructions;" and "the destruction of plant life which would alter the character of a freshwater wetland, including the cutting of trees." N.J. STAT. ANN. § 13:9B.

well as for "prohibited activities" in upland buffers adjacent to the wetlands.[24] In non-delegable waters, the U.S. Army Corps of Engineers retains jurisdiction under CWA §404; thus, both federal and state requirements apply. A project in non-delegable waters requires two permits, one from the NJDEP and one from the Corps.[25]

FWPA permits are based on a classification system described in the statute. Criteria distinguish wetlands of "exceptional resource value," "intermediate resource value," and "ordinary resource value." While all classifications require a permit, higher classification levels may have more requirements.[26] The statute also requires a "transition area waiver" for regulated activities that occur in wetland buffers – 150 feet for wetlands of exceptional resource value and 50 feet for freshwater wetlands of immediate resource value.[27]

The state makes approximately 5,000 permit decisions per year (though it can vary from 4,000 to 7,000), including coastal permits (~2,000), flood hazards (~500), and wetlands (~1,000). For example, in 2004, 7,334 permit applications were received (1,311 for coastal permits, 754 for flood hazards, and 1,412 for freshwater wetlands, and the remainder for freshwater wetland jurisdictional determinations). Decisions made for the same period totaled 4,518 (1,420 coastal, 529 flood hazards, 1,028 freshwater wetlands, and the remainder for freshwater wetland jurisdictional determinations).[28] Permit decisions are made based on quantitative and qualitative parameters established in the rules.[29]

Wetland Act of 1970.[30] The Wetland Act of 1970 requires a permit for all "regulated activities," as defined in the act,[31] and generally applies to the state's coastal wetlands.[32,33] All wetlands protected under the act are mapped, and those wetland areas that are not mapped fall under the jurisdiction of the FWPA.

Pinelands Protection Act.[34] The New Jersey Pinelands Protection Act outlines regulatory policies that specifically protect the "significant and unique natural, ecological, agricultural, archaeological, historical, scenic, cultural, and recreational resources of the Pinelands." This includes some wetland-related provisions that apply in addition to state and federal protections, such as land use planning requirements, development prohibitions, and specifications on impact types and requirements.[35]

[24] N.J. STAT. ANN. § 13:9B-1 *et seq.*
[25] N.J. ADMIN. CODE. § 7:7A-2.1(c).
[26] N.J. STAT. ANN. § 13:9B-7.
[27] N.J. STAT. ANN. § 13:9B-17(b).
[28] Personal communication with Susan Lockwood, New Jersey Department of Environmental Protection (Nov. 21, 2005).
[29] Personal communication with Robert Piel, New Jersey Department of Environmental Protection (Feb. 2, 2005).
[30] N.J. STAT. ANN. § 13:9A.
[31] A "regulated activity" under the Wetlands Act of 1970 includes but is not limited to "draining, dredging, excavation or removal of soil, mud, sand, gravel, aggregate of any kind or depositing or dumping therein any rubbish or similar material or discharging therein liquid wastes, either directly or otherwise, and the erection of structures, drivings of pilings, or placing of obstructions, whether or not changing the tidal ebb and flow." Regulated activities do not include "continuance of commercial production of salt hay or other agricultural crops or activities [related to mosquito control]." N.J. STAT. ANN. § 13:9A-4(a).
[32] N.J. STAT. ANN., *supra* note 9.
[33] N.J. STAT. ANN. § 13:9A.
[34] N.J. STAT. ANN. §§ 13:18A-1 to 13:18A-29.
[35] *See* N.J. ADMIN. CODE. §§ 7:50-6.1 to 7:50-6.15.

Hackensack Meadowlands Reclamation and Development Act.[36] The Hackensack Meadowlands Reclamation and Development Act, which became effective January 13, 1969, mandates "the preservation of the delicate balance of nature" and "the provision of special protection from air and water pollution" in the Meadowlands.[37] The Act created the Hackensack Meadowlands Development Commission, renamed the New Jersey Meadowlands Commission (NJMC) in 2001, and authorized the preparation and adoption of a master plan for the district. Regulations emphasize smart growth principles, minimal fill of wetlands, and the concept of sustainability.[38]

Highlands Water Protection and Planning Act.[39] New Jersey passed the Highlands Water Protection and Planning Act in 2004 to protect water resourcse and open space in the state. The act regulates "Highlands Open Waters,"[40] including wetlands, requiring a 300-foot buffer adjacent to all Highlands Open Waters and strictly limiting development activities that may impact these waters.[41]

Organization of State Activities

The lead wetland agency in the state is NJDEP. The New Jersey Pineland Commission and the New Jersey Meadowlands Commission conduct wetland regulatory and non-regulatory activities within designated portions of the state as well.

New Jersey Department of Environmental Protection. NJDEP's Land Use Regulation Program (LURP) oversees the implementation of the FWPA and Wetlands Protection Act of 1970 for the state, as well as numerous other land use regulatory and non-regulatory activities. Other offices within the NJDEP conduct some wetland-related activities as well, such as the Division of Science Research and Technology (some monitoring and assessment research) and the Communications Office (some education and outreach activities); however, LURP is the primary wetland office in the agency.[42] LURP operates from a central office in Trenton, and enforcement activities are conducted both from Trenton and from a field office in Toms River in southern New Jersey.[43]

LURP has about 80 permitting staff for three programs. About 75 percent of these staff work directly on wetlands. Approximately ten full-time-equivalents (FTEs) work on enforcement. Two FTEs in Division of Science Research and Technology work on wetland monitoring and assessment.[44] Because many wetland-

[36] N.J. STAT. ANN. § 12:17-1 *et seq*.
[37] The Meadowlands, approximately 19,730 acres that includes 8,400 acres of wetland complexes, is located in northern New Jersey and represents one of the largest contiguous blocks of open space in the highly developed landscape of the New York City metropolitan area. For more information on the New Jersey Meadowlands, *see:* New Jersey Meadowlands Commission, *supra* note 20.
[38] New Jersey Meadowlands, *New Jersey Meadowlands - Land Use and Planning, at* http://www.meadowlands.state.nj.us/land_use/index.cfm (last visited Jan. 10, 2006).
[39] N.J. STAT. ANN. § 13:20-1 *et seq*.
[40] "Highlands Open Waters" include "all springs, streams including intermittent streams, wetlands, and bodies of surface water, whether natural or artificial, located wholly or partially within the boundaries of the Highlands Region, but shall not mean swimming pools." New Jersey Department of Environmental Protection, *DEP Guidance for the Highlands Water Protection and Planning Act – Highlands Terms, at* http://www.state.nj.us/dep/highlands/faq_info.htm (last updated Aug. 24, 2005).
[41] New Jersey Department of Environmental Protection, *supra* note 21.
[42] Piel, *supra* note 29.
[43] Personal communication with Susan Lockwood, New Jersey Department of Environmental Protection (Feb. 16, 2005).
[44] Piel, *supra* note 29.

related activities are folded into the agency's greater program structure, a wetland-specific budget is not available.[45] Funding is provided by state appropriations (permitting fees feed into the state's general fund).[46]

Region-specific agencies. Within the Pinelands,[47] the New Jersey Pinelands Commission (NJPC) provides regulatory oversight, implementing the rules outlined in the Pinelands Protection Act (see "*Wetland-related Laws and Regulations*" section above). For activities conducted in the Pinelands' wetlands, NJPC will conduct a review and may apply a general permit. If an individual permit is required, NJDEP must provide a review. NJDEP and NJPC hold a Memorandum of Agreement that outlines the roles and responsibilities of each agency regarding Pinelands wetlands.[48]

NJPC has about 30 FTEs that perform some wetland activity, including permitting (both technical assistance to permit applicants and permit review for NJDEP), wetland assessment and delineation, planning, and research. Because most wetland activities are folded into the agency's greater program structure, a wetland-specific budget is not available.[49] Funding is derived mostly from state and federal (Department of Interior) appropriations. NJDEP occasionally provides funding for specific tasks. NJPC has also recently instituted a fee program for permit review.[50]

The NJMC oversees and/or monitors several natural resource, smart growth, and sustainable development activities in the Meadowlands District, including various wetland-related activities. Jurisdiction for the §404 program remains at the federal level in the Meadowlands District; LURP reviews §401 water quality certification (essentially, equivalent to the FWPA permit) and Coastal Zone Management consistency for activities being conducted under CWA §404.[51]

§401 Certification

Because New Jersey is a delegated state under §404 of the CWA, §401 water quality certification is not the primary wetland regulatory mechanism. However, the FWPA does have a §401 "surrogate" written into the rules.

General Permits

Because permit reviews are always conducted under state law (in both delegable and non-delagable waters), federal Nationwide Permits (NWPs) are not applicable in New Jersey; instead, NJDEP issues statewide General Permits (GPs).[52] GPs, listed in the state regulations,[53] are generally equivalent to or more stringent than federal NWPs.[54]

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[45] The annual budget for all land use programs, including wetlands, is approximately $10 million.
[46] Lockwood, *supra* note 43.
[47] *See:* New Jersey Pinelands Commission, *supra* note 19.
[48] Lockwood, *supra* note 43.
[49] Funding for the agency as a whole was $4.19 million in fiscal year 2004; other years are available in the NJPC annual reports (See New Jersey Pinelands Commission, *Annual Reports and Newsletters, at* http://www.state.nj.us/pinelands/infor/annual/ (last visited Oct. 5, 2005).
[50] Personal communication with Staff, New Jersey Pinelands Commission (Mar. 11, 2005).
[51] New Jersey Meadowlands Commission, *supra* note 38.
[52] The FWPA states that NJDEP "shall issue a general permit for an activity in a freshwater wetland which is not a surface water tributary system discharging into an inland lake or pond, or a river or stream, and which would not result in the loss or substantial

Mitigation

New Jersey's extensive mitigation requirements are outlined in the FWPA and include provisions for type, amount, timing, location (in-kind is preferred), banking and in-lieu-fee requirements, and administrative terms.[55]

The FWPA also establishes the Mitigation Council,[56] a state in-lieu-fee program (independent of the NJDEP) for impacts to freshwater wetlands and state open water impacts.[57] Under state rules, an approved applicant may make a land donation or monetary contribution in lieu of conducting compensatory mitigation.[58] Collected monies are deposited into the Wetland Mitigation Fund and may be granted by the council to conduct enhancement or restoration or to purchase land for enhancement or restoration of degraded freshwater wetlands, as well as to preserve freshwater wetlands and transition areas determined to be of critical importance in protecting freshwater wetlands. The council also reviews and approves the establishment of freshwater wetland mitigation banks in the state.[59] The bank approval process is also outlined in the rules.[60]

In the Meadowlands District, the Meadowlands Interagency Mitigation Advisory Committee (MIMAC), a group composed of representatives from the Mitigation Council, NJMC, U.S. Army Corps of Engineers (New York and Philadelphia Districts), U.S. Fish and Wildlife Service, NOAA Fisheries, and U.S. Environmental Protection Agency, coordinates all banking activities. The MIMAC was established by written agreement in 1997 and has been meeting on a monthly basis since 1998.[61]

Enforcement

Both the FWPA and the Wetlands Act of 1970 (coastal wetlands) outline penalties for violations, enforceable by the NJDEP. Enforcement options under the FWPA include administrative orders, civil and criminal actions.[62] Coastal wetlands violations are punishable by fines and the cost of restoration.[63] Since 2001, the number of enforcement cases has increased notably. Typical outcomes include bringing the violator into compliance by issuing a permit or ordering restoration.[64]

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modification of more than one acre of freshwater wetland, provided that this activity will not take place in a freshwater wetland of exceptional resource value." N.J. STAT. ANN. § 13:9B-23(b).

[53] General permits are listed in the FWPA rules at N.J. ADMIN. CODE. § 7:7A-5 *et seq.*

[54] Lockwood, *supra* note 43.

[55] *See:* N.J. ADMIN. CODE. § 7:7A-15 *et seq*.

[56] The council, which meets in public bi-monthly meetings, comprises seven members, including the NJDEP Commissioner and six New Jersey citizens appointed by the Governor. The six citizens must serve a three-year term and must include: two members recommended by recognized building and development organizations, two members recommended by recognized environmental and conservation organizations, and two members from New Jersey institutions of higher learning.

[57] New Jersey Department of Environmental Protection – Land Use Regulation Program, *Mitigation, at* http://www.state.nj.us/dep/landuse/fww/mitigate/mcouncil.html (last updated Dec. 23, 2004).

[58] In-lieu fee applicants must have demonstrated that all other on- and off-site mitigation options, including the purchase of bank credits within the service area, are not possible. N.J. ADMIN. CODE. § 7:7A-15.

[59] New Jersey Department of Environmental Protection, *supra* note 57.

[60] N.J. ADMIN. CODE. § 7:7A-15.

[61] Personal communication with Ross Feltes, New Jersey Meadowlands Commission (Oct. 20, 2005).

[62] N.J. ADMIN. CODE. § 7:7A-16.

[63] N.J. STAT. ANN. § 2A:58-1 *et seq*.

[64] Piel, *supra* note 29.

The NJPC does not handle enforcement and compliance matters. If activities are exempt under the Pinelands Act, violations are forwarded to the NJDEP for enforcement under the Freshwater Wetlands Act; if not, the Pinelands Act does have some enforcement provisions but no fining capability. Typically, the NJPC will work with local governments to address compliance problems, as they typically have some fining capability. In actual fact, fining is rare for violations to the Pinelands Act.[65]

Tracking Systems

NJDEP operates a state permit tracking system called the New Jersey Environmental Management System (NJEMS). NJEMS is an integrated transactional Oracle database that tracks environmental information for NJDEP's major program databases and includes a mapping component.[66] For wetland permits, acreage, various mitigation requirements, deed restrictions, watershed, and permit status are among the data fields.[67]

The state is also developing a mitigation tracking system (separate from NJEMS) that will include data fields for permit requirements, impacts, acreage, wetland type, mitigation success, donations, geographic source of donation, impacted watershed, reports, monitoring, site visits, correspondence, and other information.[68] The system will contain a spatial component that integrates GPS and GIS data. Data is collected from permits, site inspections, data submission requirements, performance reviews,[69] corrective actions, and other sources.[70]

Watershed Coordination

LURP mitigation staff coordinate regularly with NJDEP's watershed programs in order to maintain awareness of ongoing watershed activities and identify potential mitigation/restoration sites for permittees or grantees.[71]

III. Water Quality Standards

The State of New Jersey does not have wetland-specific water quality standards, designated uses, or antidegradation policies;[72] FWPA permits constitute water quality certifications under New Jersey law. Activities exempt from the FWPA but still requiring water quality certification are permitted under the same rules.[73]

[65] New Jersey Pinelands Commission, *supra* note 50.
[66] ESRI, *Environmental Data Delivery Using ArcIMS and WebIntelligence, at* http://gis.esri.com/library/userconf/proc02/pap0155/p0155.htm (last visited Oct. 5, 2005).
[67] Lockwood, *supra* note 43.
[68] *Id.;* Personal communication with Jill Aspinwall, New Jersey Department of Environmental Protection (Mar. 2, 2005).
[69] Mitigation construction and performance standards are evaluated according to FWPA rules, permit requirements, and the approved mitigation plan. Personal communication with JoDale Legg, New Jersey Department of Environmental Protection (Nov. 2, 2005).
[70] Piel, *supra* note 29.
[71] Aspinwall, *supra* note 68.
[72] New Jersey's surface water quality standards may be found at N.J. ADMIN. CODE. § 7:7B-1.4.
[73] N.J. ADMIN. CODE. § 7:7A-2.1(d).

IV. Monitoring and Assessment

In response to the U.S. Environmental Protection Agency's 2003 guidance on state water quality monitoring and assessment, the State of New Jersey has developed a ten-year, long-term water monitoring strategy for the state that includes goals and objectives for wetlands and streams, as well as rivers, lakes, ground water, and other state waters. The strategy results from a comprehensive assessment of current ambient water monitoring programs, including the well-established stream monitoring program and the wetland monitoring program, which is still undergoing research and development.[74]

Monitoring and Assessment for Wetlands

As of 2005, functional wetland monitoring and assessment methodologies were under development in collaboration with Rutgers University and other wetland scientists throughout the region. Methodologies are being developed to be consistent with New Jersey laws and regulations. NJDEP anticipates having a program designed by 2007 and implemented by 2010.[75]

Coordination, communication, and collaboration are important elements of the developing program. NJDEP participates on the Mid-Atlantic Wetlands Working Group and the National Wetlands Workgroup for these purposes. New Jersey has also formed a Wetlands Research Advisors Group to help provide insight into the program's development. The groups meet on a regular basis. The strategy also identifies the resources necessary to continue program development efforts, including additional research and staff to guide the program and continue methods development.[76]

Citizen monitoring. While interest exists within the state (wetland monitoring is a long-term goal of the state's Watershed Watch Network[77]), lack of program staff, equipment, and financial resources have prevented the operation of a wetland monitoring program. The state plans to initiate a volunteer program once the appropriate staff and resources become available.[78]

Monitoring and Assessment for Streams

The ten-year strategy also describes New Jersey's well-developed rivers and streams monitoring programs. Monitoring objectives and design, quality assurance measures, core and supplemental water quality indicators, data management and analysis, reporting, program evaluation, and general support and infrastructure planning are outlined and discussed at length for the Ambient Stream Monitoring Network, Supplemental Ambient Surface Water Monitoring Network, Ambient Biological Monitoring Network, Ecoregion Reference

[74] New Jersey Department of Environmental Protection – Water Monitoring and Standards Program, *Water Monitoring & Assessment Strategy (2005-2014) (Sept. 2004)*, available at http://njedl.rutgers.edu/ftp/PDFs/4040.pdf.
[75] *Id.*at 91.
[76] *Id.*at 95.
[77] The Watershed Watch Network (WWN) is a state volunteer monitoring program coordinated by NJDEP's Division of Watershed Management – Office of Education and Outreach. *See* New Jersey Department of Environmental Protection – Division of Watershed Management, *Volunteer Monitoring, at* http://www.nj.gov/dep/watershedmgt/volunteer_monitoring.htm (last updated Sept. 27, 2005).
[78] New Jersey Department of Environmental Protection, *supra* note 74, at 97.

Station Program, Fish Index of Biotic Integrity Network, and Lower Delaware Nonpoint Source Monitoring Project.[79]

Citizen monitoring. The Watershed Watch Network (WWN) is a state volunteer monitoring program coordinated by NJDEP's Division of Watershed Management – Office of Education and Outreach. The WWN serves as an umbrella group for all volunteer monitoring programs in the State of New Jersey. A "four-tiered" approach allows volunteers to pick their level of involvement based on the purpose of their monitoring program and the intended use of the data. WWN also provides acceptable protocols and quality control requirements for volunteers that submit data to the NJDEP and assists in volunteer program design and development.[80]

V. Restoration and Partnerships

NJDEP's Office of Natural Resource Restoration (ONRR) was established in the 1990s to restore damages caused by oil spills and discharges to natural resources, including wetlands and habitat, groundwater, species, and public uses. When damages occur, ONRR assesses the "injuries"[81] and coordinates restoration efforts with those responsible for the damage, other NJDEP programs (e.g. the Site Remediation Program, Division of Fish and Wildlife, and Green Acres Program), and other groups, including environmental organizations, community groups, and others with expertise or knowledge on the issue. ONRR also provides technical and litigation support to the New Jersey Attorney General's Office in pursuing natural resource damage claims and restoration settlements.[82]

NJMC is partnering with the U.S. Army Corp of Engineers on the restoration of degraded wetland sites in the Meadowlands District as part of the Hudson-Raritan Estuary project. The project includes the production of a Meadowlands Comprehensive Restoration Implementation Plan.[83]

VI. Education and Outreach

NJDEP adopted a general education outreach plan in 1996, and, as of 2005, was in the process of updating the plan. NJDEP's Office of Communications oversees general education and outreach program development, provides public assistance, and provides assistance to divisions within the agency conducting educa-

[79] *See:* New Jersey Department of Environmental Protection – Water Monitoring and Standards Program, *Water Monitoring & Assessment Strategy (2005-2014) (Sept. 2004)*, available at http://njedl.rutgers.edu/ftp/PDFs/4040.pdf, pp. 21-39 for detailed information on NJDEP stream monitoring programs.
[80] New Jersey Department of Environmental Protection, *supra* note 77.
[81] "Natural resource injuries" include "any adverse change or impact of a discharge into or on a natural resource or impairment of natural resource services, whether direct or indirect, long-term or short-term, and includes the partial or complete destruction or loss of the natural resource. Injuries can be ecological based, such as the contamination of a stream habitat and/or use based, such as the public's inability to use the same stream for fishing." *See* New Jersey Department of Environmental Protection - Office of Natural Resource Restoration, *Program Overview, at* http://www.nj.gov/dep/nrr/about/overview.htm (last updated Oct. 23, 2003).
[82] *Id.*
[83] Feltes, *supra* note 61.

tion and outreach efforts. Water-related education/outreach efforts are conducted by the Division of Watershed Management.[84,85]

While the NJDEP Division of Watershed Management (DWM) does not have a strategic education and outreach program in place specifically for wetlands, it does conduct water- and stream-related activities and programs, including the following:

- Project WET (Water Education for Teachers) – a teacher education program that includes workshops and mini-grants for teachers;
- Watershed Ambassadors Program – a community-oriented AmeriCorps environmental program designed to raise awareness about water issues in New Jersey;
- Watershed Education/Urban Fishing Program – a youth education program designed to teach students living in the Newark Bay Complex and other urban areas about the hazards of eating contaminated fish and help them to discover the beauty of the resource;
- Clean Water Raingers Program – a program for educators that provides information on watersheds and nonpoint source pollution, as well as teaching materials for elementary school age students; and
- Watershed Watch Network – a citizen water quality monitoring program (also described in *Monitoring and Assessment* section above).[86]

DWM also provides multiple handouts and publications for youth, communities, the regulated public, environmental professionals, educators, and others.[87] NJDEP LURP staff coordinate with Rutgers University to hold continuing education training sessions for the regulated public, consultants, and others. Finally, LURP enforcement staff also hold presentations in conjunction with local governments or planning bodies for towns with higher-than-average enforcement problems.[88]

NJPC also conducts some education and outreach activities related to wetlands and streams. Most notably, the agency hosts the annual World Water Monitoring Day in cooperation with the U.S. Geological Survey. Volunteer monitoring groups, water quality agencies, students, and the general public are invited to test water quality indicators in their area.[89]

[84] In a related effort, the Communications Office is currently working with the state nonpoint source control program on a public education campaign for stormwater. The campaign will include a website for K-12 educators and a statewide mailing to teachers. The website will offer lessons on stormwater, nonpoint source issues, watershed issues, and the water cycle and will promote DWM's other water education offerings.
[85] Personal communication with Tanya Oznowich, New Jersey Department of Environmental Protection (Feb. 23, 2005).
[86] New Jersey Department of Environmental Protection – Division of Watershed Management, *Outreach & Education, at* http://www.state.nj.us/dep/watershedmgt/outreach_education.htm (last updated July 13, 2005).
[87] Personal communication with Kyra Hoffman, New Jersey Department of Environmental Protection (March, 7, 2005).
[88] Lockwood, *supra* note 43.
[89] New Jersey Pinelands Commission, *supra* note 50; America's Clean Water Foundation, *World Water Monitoring Day, at* http://www.worldwatermonitoringday.org/ (last visited Oct. 6, 2005).

Finally, the NJMC works with Ramapo College on a cooperative education and outreach program at the Meadowlands Environment Center. The program offers organized events, as well as tools, outreach materials, and assistance to educators, youth, and the general public.[90]

VII. Coordination with State and Federal Agencies

New Jersey state agencies coordinate both with each other and with federal agencies regularly. NJPC and NJDEP meet one to two times a year on regulatory and non-regulatory issues.[91] NJDEP holds a Memorandum of Understanding (MOU) with the New Jersey Department of Transportation (NJDOT) on permitting issues, and there is a unit within NJDEP wetlands program to specifically address transportation projects. NJDEP also holds an MOU with the U.S. Environmental Protection Agency (EPA) and the Corps, as required by the assumption of CWA §404. NJDEP works closely with both agencies—EPA regarding the oversight rule, annual reporting, etc. and the Corps regarding jurisdictional issues, etc. EPA also holds periodic workgroup meetings that are attended by numerous agencies, including the NJDOT, NJDEP, Corps, National Marine Fisheries Service, NJMC, and others. Finally, NJDEP also works closely with the U.S. Fish and Wildlife Service on their role in the LURP program and permit review for impacts to threatened and endangered species.[92]

VIII. Acronyms and Abbreviations

CWA – Clean Water Act
DWM – Division of Watershed Management
EPA – U.S. Environmental Protection Agency
FTE – Full-Time Equivalent
FWPA – Freshwater Wetlands Protection Act
LURP – Land Use Regulation Program
MOU – Memorandum of Understanding
NJDEP – New Jersey Department of Environmental Protection
NJDOT – New Jersey Department of Transportation
NJMC – New Jersey Meadowlands Commission
NJPC – New Jersey Pinelands Commission
NWP – Nationwide Permit
ONRR – Office of Natural Resource Restoration
WWN – Watershed Watch Network

[90] New Jersey Meadowlands Commission, *Meadowlands Environment Center, at* http://www.meadowlands.state.nj.us/ec/index.cfm (last visited Jan. 10, 2006).
[91] New Jersey Pinelands Commission, *supra* note 50.
[92] Lockwood, *supra* note 43; Piel, *supra* note 29.

Oregon

I. Overview

The State of Oregon has lost approximately 38 percent of its wetlands—including tidal flats and marshes along the coastline, as well as interior marshes and swamps—to various land use changes such as agriculture and urban development.[1] Multiple state agencies participate in wetlands protection and regulation. The primary agency involved in state wetland activity is the Oregon Department of State Lands (ODSL), although the Oregon Department of Environmental Quality (ODEQ), Oregon Department of Forestry (ODF), Oregon Parks and Recreation Department (OPRD), and the Oregon Watershed Enhancement Board (OWEB) also have wetland-related programs. Various other agencies, such as the Oregon Department of Fish and Wildlife (ODFW), provide technical expertise related to wetland habitat and state permits.

II. Regulatory Programs

Wetland Definitions and Delineation

Oregon explicitly includes wetlands in its definition of waters of the state. Under the state's removal-fill law, "waters of this state" are defined as "natural waterways including all tidal and nontidal bays, intermittent streams, constantly flowing streams, lakes, wetlands and other bodies of water in this state, navigable and nonnavigable, including that portion of the Pacific Ocean which is in the boundaries of this state." "Waters of this state" does not include "the ocean shore. . .with the exception of those areas where removal or fill activities are regulated under a state-assumed permit program."[2] Wetlands include "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."[3]

The Department of State Lands works closely with the U.S. Army Corps of Engineers' Portland District and U.S. Environmental Protection Agency (EPA) Region X in issuing wetland delineation guidelines.[4] ODSL also adopted regulations for wetland delineation reporting.[5] These additional requirements supplement those outlined in the U.S. Army Corps of Engineers' 1987 *Wetlands Delineation Manual*.[6]

Wetland-related Laws and Regulations

The primary form of regulation for wetlands at the state level is Oregon's Removal-Fill Law. The Oregon State Legislature has also approved a state mitigation banking program. Local planning initiatives are also addressed at the state level.

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[1] THOMAS E. DAHL, U.S. FISH AND WILDLIFE SERVICE, WETLANDS LOSSES IN THE UNITED STATES 1780'S TO 1980'S (1990).
[2] OR. REV. STAT. § 196.800(15).
[3] OR. REV. STAT. § 196-800(17).
[4] Personal Communication with Janet Morlan, Oregon Department of State Lands (Jul. 6, 2005).
[5] OR. ADMIN. R. § 141-090-0030 and 141-090-0035.
[6] U.S. Army Corps of Engineers, Wetlands Research Program Technical Report Y-87-1, Corps of Engineers Wetlands Delineation Manual (1987), *available at* http://www.saj.usace.army.mil/permit/documents/87manual.pdf.

Oregon's Removal-Fill Law.[7] Under the 1967 Removal-Fill Law, a permit from ODSL is required to remove or fill fifty cubic yards or more of material in any waters of the state.[8] A permit is required to remove any amount of fill material in areas designated as essential salmonid habitat or scenic waterways.[9] The law applies to all landowners, whether private individuals or public agencies. A separate law regulates activities that occur on the ocean shore, requiring a permit from the Parks and Recreation Department.[10] Estuaries are regulated by ODSL under the Removal-Fill Law; however, ODSL rarely contends with fill permits for estuarine wetlands.[11] Oregon permits the following options for compensatory mitigation: (1) on-site mitigation; (2) off-site mitigation; (3) payment to provide for mitigation; and (4) the purchase of credits from a mitigation bank.

Oregon Wetlands Mitigation Bank Act.[12] The Oregon Mitigation Bank Act of 1987 establishes a program for private or public mitigation banks under the authority of ODSL.[13]

Local wetland protection initiatives. Statewide planning goals and guidelines direct local governments to provide some forms of wetland regulation/protection. Statewide planning Goal 5 relates to natural resources, scenic and historic areas, and open spaces.[14] Local governments are required to inventory natural resources, including wetlands.[15] Based on the inventory, cities and counties develop a wetland protection program that must be reviewed and approved by ODSL.[16] Approximately 60 cities have developed and adopted wetland inventories that have been approved by ODSL. Many of these cities have adopted wetland protection programs as well.[17]

Other statewide planning goals also address wetlands. Significant wetlands located within coastal shoreland areas, as defined in statewide planning Goal 17, also require enhanced local government protection, including a wetland inventory. In addition, estuarine wetlands are subject to the provisions of Goal 16, which, again, requires inventory and protection through the local comprehensive plan and land use regulations.[18]

ODSL approves the wetlands inventories and wetland function and condition assessment; ODLCD must approve the local plan and implementing ordinances.[19]

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[7] OR. REV. STAT. §§ 196.795 – 196.990.
[8] OR. REV. STAT. § 196.850.
[9] OR. REV. STAT. § 196.810(b).
[10] OR. REV. STAT. § 390.640.
[11] Morlan, *supra* note 4.
[12] OR. REV. STAT. §§ 196-600 – 196-655.
[13] *See* OR. REV. STAT. § 196-610.
[14] OR. ADMIN. R. § 660-015-0000(5).
[15] State of Oregon, Oregon's Statewide Planning Goals and Guidelines, Goal 5: Natural Resources, Scenic and Historic Areas, and Open Spaces (1996), *available at* http://egov.oregon.gov/LCD/docs/goals/goal5.pdf.
[16] Morlan, *supra* note 4.
[17] One of Oregon's most notable local wetland initiative successes has been the City of Eugene, which protected a significant amount of wetland through an ODSL-approved conservation plan that allows expedited permit review from ODSL and the U.S. Army Corps of Engineers. *Id*.
[18] Personal Communication with Dale Blanton, Oregon Department of Land Conservation and Development (Oct. 26, 2005).
[19] Morlan, *supra* note 4.

Oregon Forest Practices Act. The Oregon Department of Forestry (ODF) implements the Forest Practices Act (FPA). Rules governing activities in wetlands were first adopted in 1987. The ODF regulates forest management activities in forest lands by identifying "significant wetlands" and requiring best management practices to protect those resources. ODSL does not require a separate permit for activities in wetlands that are covered by the FPA.[20]

Organization of State Activities

Oregon Department of State Lands. In addition to administering the Removal-Fill Law, ODSL maintains the Statewide Wetlands Inventory (SWI). The SWI consists of the National Wetlands Inventory, developed by the U.S. Fish and Wildlife Service, and Local Wetlands Inventories, which are developed by cities and counties according to standards set by ODSL.[21]

ODSL management of wetlands is centralized and administered primarily from Salem, which operates with 21 professional staff and 6 support staff. ODSL's approximate biannual budget is between $3.5 million and $3.7 million. About $400,000 of this budget comes from fees; the remainder is funded by revenue from state-owned lands (e.g. forestry, leases, etc.).[22]

Oregon Department of Environmental Quality. The ODEQ administers the §401 water quality certification program for the State of Oregon. The §401 program operates from the Headquarters Office in Portland, although complaints are generally received at regional offices. The portion of ODEQ's annual budget that is dedicated to wetlands is approximately $230,000.[23] Two full-time equivalent (FTE) staff and one limited duration (LD) staff work in the §401 program.

Oregon Watershed Enhancement Board. OWEB administers the state's watershed enhancement program, which includes wetland acquisition and restoration. Approximately $20 million from constitutionally-dedicated state lottery funds is available to fund watershed restoration annually. Additional federal funds are available through the Pacific Salmon Recovery Fund, but these are used primarily for education, monitoring, and assessment.[24] Although wetlands are integrated with many OWEB activities, staff are not specifically dedicated to wetland issues.

Oregon Department of Land Conservation and Development. The ODLCD is the lead coastal management agency and is involved in federal actions for wetland permits. The agency has also adopted statewide planning goals.

Federal funds authorized by the Coastal Zone Management Act provide for two FTEs, based in Salem, to work with state and federal permits; one of those FTEs also reviews federal activities under the Coastal Zone

[20] OR. REV. STAT. § 527.
[21] Department of State Lands, *Statewide Wetland Inventory*, *at* http://egov.oregon.gov/DSL/WETLAND/swwi.shtml (last visited Dec. 28, 2005).
[22] Personal Communication with Janet Morlan, Oregon Department of State Lands (Oct. 14, 2005).
[23] Personal Communication with Tom Melville, Oregon Department of Environmental Quality (Jul. 20, 2005).
[24] Personal Communication with Ken Bierly, Oregon Watershed Enhancement Board (Jul. 13, 2005).

Management Act.[25] ODLCD also works with local governments on requirements for wetland planning, provides planning assistance grants, and is responsible for approving wetland protection programs to ensure that they meet state guidelines.[26]

§401 Certification

The ODEQ oversees §401 certification and issues approximately 300 certifications each year. Water quality certification is consistent with the state's water quality standards and requires extensive field review and collaboration with other state and federal agencies. No decisions are waived, and less than 1 percent of certifications are denied by ODEQ; almost all certifications are issued with conditions.[27]

Nationwide and Statewide Permits

ODEQ reviews and evaluates the U.S. Army Corps of Engineers' Nationwide Permits (NWPs) pursuant to issuance of §401 water quality certification. Individual NWPs may be certified, partially certified, or denied.[28] The ODLCD also provides ongoing review of NWPs. Certain NWPs receive advance concurrence for coastal zone requirements, often with conditions.[29] A permittee seeking approval of a project through the NWP program must demonstrate that the project is consistent with the requirements of the relevant local comprehensive plan and land use regulations, which include wetland protections and other statewide planning provisions (based on an ODLCD-approved local conservation plan), and obtain local government approval. ODLCD reviews NWP permits on a case-by-case basis, depending on the nature of the project and the relationship with protected resource areas.[30]

Effective January 3, 2006, a new statewide programmatic general permit (SPGP) will allow ODSL to issue a Corps authorization along with a state permit for ½-acre or less of wetland fill and/or up to 1,000 cubic yards of material for eight specified activities.[31] The new SPGP is a significant development and will alter the permitting process in Oregon, as certain NWPs will be suspended by the U.S. Army Corps of Engineers and replaced with a general permit. The ODSL is also exploring the possibility of §404 assumption, but this would require statutory changes and is not likely to occur before 2007.[32]

[25] Federal licenses and permits must be consistent with the state's enforceable policies, including statewide planning goals, local comprehensive plans and land use regulations, and the requirements of networked state agencies (e.g. ODSL removal fill requirements, ODFW protections, ODEQ water quality requirements, etc.) Personal Communication with Dale Blanton, Oregon Department of Land Conservation and Development (Jul. 28, 2005).

[26] Personal Communication with Janet Morlan, Oregon Department of State Lands (Nov. 3, 2005).

[27] These statistics do not include denials from the U.S. Army Corps of Engineers or ODSL, with which DEQ collaborates in certification review. Melville, *supra* note 23.

[28] Personal Communication with Tom Melville, Oregon Department of Environmental Quality (Oct. 31, 2005).

[29] Blanton, *supra* note 18.

[30] OR. ADMIN. R. § 660-015-0010(16); Blanton, *supra* note 25.

[31] The eight activities are as follows: (1) stream bank stabilization; (2) water control structures; (3) utility lines; (4) road repairs and improvements; (5) building site preparation; (6) stream and wetland restoration activity; (7) minor fill and removal for activities such as cleaning boat ramps and seismic activity; and (8) piling installation and removal. Personal Communication with Eric Metz, Oregon Department of State Lands (Jul. 7, 2005).

[32] *Id.*

Mitigation

Oregon requires compensatory mitigation for all wetland permits and allows for mitigation to be met through on- and off-site mitigation, payment in lieu, and mitigation banking.[33] State rules establish the following wetland replacement ratios for compensatory mitigation: 1:1 for restoration; 1.5:1 for creation; 3:1 for enhancement; and 2:1 for enhancement of cropped wetlands.[34] These ratios apply to both compensatory mitigation and mitigation banks. However, mitigation banks can add additional ratios and criteria, such as the ecological value of the habitat. For unique habitats, such as vernal pools, ODSL may consider conservation instead of mitigation banking.[35] In-lieu-fee payment is also an option for compensatory mitigation in Oregon.[36]

The Oregon Mitigation Bank Act of 1987 established a mitigation banking program administered by the ODSL.[37] The state currently has ten approved mitigation banks. Nine of these are private and one is managed by the City of Eugene. Eight additional banks of smaller acreage are in development.[38] To help explain the state's mitigation banking policies, ODSL produced the EPA-funded "Wetland Mitigation Guidebook for Oregon."[39] ODSL is attempting to establish maintenance endowments to address the lack of funds for bank maintenance and problems with weeds and invasive species.[40]

Oregon actively participates in Mitigation Banking Review Teams (MBRT) in coordination with the Portland District of the U.S. Army Corps of Engineers. The ODSL and the Corps jointly chair the MBRT, which also consists of representatives from ODEQ, ODLCD, ODFW, U.S. Fish and Wildlife Service, EPA, Soil and Water Conservation Districts, and local government planners.[41] The MBRT operates by consensus and serves in an advisory capacity to the ODSL and U.S. Army Corps of Engineers.[42]

Enforcement

The state considers non-compliance with the wetland permit process a public nuisance.[43] ODSL officials are authorized to investigate, hold hearings, make orders, and take action on suspected violations.[44] A variety of enforcement options are available, including injunctions and civil penalties of not more that $10,000 per day of violation.[45] If a violation is found, problems are more typically handled administratively – court action is rarely pursued.[46] In 2003-2004, the ODSL assessed $101,613 in civil penalties for 12 violations. All

[33] OR. ADMIN. R. § 141-085-0115 (2) and 0.A.R. § 141-085-0400.
[34] OR. ADMIN. R. § 141-085-0136.
[35] Personal Communication with Dana Field, Oregon Department of State Lands (Jul. 7, 2005).
[36] OR. REV. STAT. §§ 196-643 to 196-655.
[37] *Id*.
[38] Field, *supra* note 35.
[39] Oregon Department of State Lands, Wetland Mitigation Banking Guidebook, *at* http://egov.oregon.gov/DSL/PERMITS/mit_guidebook_intro.shtml (Oct. 2000).
[40] Field, *supra* note 35.
[41] OR. ADMIN. R. § 141-085-0421(8)(a).
[42] OR. ADMIN. R. § 141-085-0421(9)(f).
[43] OR. REV. STAT. § 196-855.
[44] OR. REV. STAT. § 196-860.
[45] OR. REV. STAT. §§ 196-870 and 196-890.
[46] Personal Communication with Lori Warner-Dickson, Oregon Department of State Lands (Jul. 11, 2005).

but one of these was paid within one year of assessment. ODSL also monitors compliance and found that 70 percent of monitored projects were in compliance in 2003-2004.[47]

Criminal sanctions are also possible if the Oregon state police issue a criminal citation for the public nuisance.[48] Criminal sanctions are very rare, and when they occur ODSL acts in a supporting role for the state police.

Tracking Systems

The ODSL Land Administration System tracks permit types and processing, compensatory mitigation, and violations. The system also tracks wetland losses and gains, although it is difficult to track gains from in-lieu-fee payment as funds are commingled. Wetland delineations are also tracked. In addition, OWEB tracks restoration and acquisition activities in a statewide watershed restoration database.

III. Water Quality Standards

Oregon does not have water quality standards, designated uses, or anti-degradation standards specific to wetlands. While not specific to wetlands, the anti-degradation standards apply to waters of the state and are the strongest enforcement tool of ODEQ. Under the anti-degradation standard, one cannot discharge untreated or unmanaged water. The ODEQ has combined completed and EPA-approved total maximum daily loads (TMDLs) into its §401 program.[49]

IV. Monitoring and Assessment

Monitoring and Assessment for Wetlands

Oregon's wetland monitoring program is limited to wetland function and value assessment for permit applications and targeted studies on wetland status and trends. The state has developed a hydrogeomorphic (HGM) guidebook for the Willamette Valley (the state's most populated region) and for the coast. Use of HGM guidebooks for state permit applications is the preferred wetland assessment method.[50] ODSL is also in the process of developing a rapid assessment procedure for statewide use and hopes to have it in place before 2007. The primary purpose of the procedure will be permitting.

ODSL has also collaborated with other state and federal agencies to conduct wetland status and trends research. The state does not actively support a volunteer wetland monitoring program, although local watershed councils occasionally involve volunteers.[51]

[47] Metz, *supra* note 31.
[48] Warner-Dickson, *supra* note 46.
[49] Melville, *supra* note 23.
[50] OR. ADMIN. R. § 141-085-0121(11).
[51] Personal Communication with Janet Morlan, Oregon Department of State Lands (Jul. 7, 2005).

The ODSL wetland monitoring program is separate from the surface water quality monitoring program administered by ODEQ. The methodology for the two programs differs, but TMDL standards are incorporated into ODSL regulations.[52]

Monitoring and Assessment for Streams

Extensive cooperative monitoring of freshwater resources is aimed especially at salmonid species and the habitats that support them. The Oregon Department of Fish & Wildlife conducts a spatially balanced random sampling of coastal streams for juvenile, spawning adult and fish habitat. The ODEQ uses the same sample frame for characterizing water quality (physical and chemical parameters) and macroinvertebrate and vertebrate faunas. Monitoring of streams is coordinated through the Oregon Plan Monitoring Team.[53]

V. Restoration

The Oregon Watershed Enhancement Board (OWEB) administers the state's watershed enhancement program, which focuses on the protection and restoration of naturally functioning habitats. The program was established, partially, as a result of salmon listing and water quality degradation and assists with salmon recovery and water quality improvement.[54] Funding for OWEB's activities comes from the state lottery and is used for land acquisition, watershed restoration, technical assistance, monitoring, watershed assessment, outreach, and education.

Acquisition of property is prioritized based on critical habitats for species and operates through grants provided by OWEB. When OWEB acquires a property interest, it does not hold title but instead receives a conservation easement over each parcel of land. OWEB is establishing a program to monitor the protection value for which easements are placed. While the current focus is on habitat, OWEB is in the process of developing regional restoration priorities.[55]

OWEB does not have any specific acreage goals but instead follows ODSL's statewide goals of no net loss of freshwater wetlands and a net gain of 250 acres per year of estuarine wetlands.[56] OWEB coordinates with several local, state, and federal agencies and programs to develop common regulatory standards and joint funding priorities.[57]

VI. Public-Private Partnerships

OWEB's restoration activities are primarily implemented on private land through local organizations (watershed councils, soil and water conservation districts, etc.). OWEB also works with watershed councils and funds 57 groups that cover the entire state. The councils are expected to focus on restoration within their

[52] *Id.*
[53] Personal Communication with Ken Bierly, Oregon Watershed Enhancement Board (Dec. 28, 2005).
[54] Bierly, *supra* note 24.
[55] *Id.*
[56] Morlan, *supra* note 51; Bierly, *supra* note 24.
[57] Bierly, *supra* note 24.

geographic boundaries and receive support through two-year grants. Councils bring projects to OWEB, which compete for funding. Councils often have corporate partners that sometimes provide an additional source of funding for projects.[58]

VII. Education and Outreach

Both ODSL and OWEB conduct education and outreach activities. ODSL publishes an electronic newsletter that typically includes wetland-related discussion. ODSL also hosts a monthly wetland technical advisory group that consists of state agencies and interested citizens. ODSL conducts some citizen workshops but these are few due to limited staff time.[59] OWEB conducts targeted outreach through local groups looking for specific activities, such as farmers interested in the USDA's Conservation Reserve Enhancement Program.[60]

VIII. Coordination with State and Federal Agencies

ODSL coordinates with other federal and state agencies, most notably the U.S. Army Corps of Engineers. ODSL has a Memorandum of Understanding (MOU) on gravel removal and coastal stream activities with the Corps. ODSL also holds MOUs with the ODEQ and the ODF. The ODSL exempts activities covered by the Forest Practices Act. While joint enforcement of violations with the ODF is possible and has occurred, it is rare.[61]

[58] *Id.*
[59] Personal Morlan, *supra* note 51.
[60] Bierly, *supra* note 24.
[61] *Id.*

IX. Acronyms and Abbreviations

EPA – U.S. Environmental Protection Agency
FPA – Forest Practices Act
FTE – Full-Time Equivalent
HGM – Hydrogeomorphic
LD – Limited Duration
MBRT – Mitigation Banking Review Team
MOU – Memorandum of Understanding
NWI – National Wetlands Inventory
NWP – Nationwide Permit
ODEQ – Oregon Department of Environmental Quality
ODF – Oregon Department of Forestry
ODFW – Oregon Department of Fish and Wildlife
ODLCD – Oregon Department of Land Conservation and Development
ODSL – Oregon Department of State Lands
OPRD – Oregon Parks and Recreation Department
OWEB – Oregon Watershed Enhancement Board
SPGP – Statewide Programmatic General Permit
TMDL – Total Maximum Daily Load

Rhode Island

I. Overview

Rhode Island is a low-lying Atlantic coastal state with an abundance of coastal and freshwater wetlands. Approximately 18.4 percent of the state's area (127,721 acres in total) is wetland and deepwater habitat.[1] Rhode Island was among the first states to pass legislation specifically addressing wetlands protection. Two agencies administer state-level wetland regulation by jurisdiction: Rhode Island Department of Environmental Management (RIDEM) oversees most freshwater wetland regulation and Rhode Island Coastal Resources Management Council (RICRMC) oversees regulation of coastal wetlands, as well as freshwater wetlands in the vicinity of the coast.

II. Regulatory Programs

Wetland Definitions and Delineation

Rhode Island's water quality regulations explicitly include wetlands in the definition of "Waters of the State," stating that "Waters of the State or The Waters means all surface water and groundwater of the State of Rhode Island, including all tidewaters, territorial seas, wetlands, and land masses partially or wholly submerged in water; and both inter-state and intra-state bodies of water which are, have been or will be used in commerce, by industry, for the harvesting of fish and shellfish or for recreational purposes."[2] Rhode Island law elaborates three categories of wetlands: "freshwater wetlands,"[3] "freshwater wetlands in the vicinity of the coast,"[4] and "coastal wetlands."[5] The three major categories of defined wetlands reflect the regulatory jurisdiction of RIDEM and RICRMC. The scope of wetlands regulation in Rhode Island extends

[1] Rhode Island Department of Environmental Management (RIDEM), *2004 Section 305(b) State of the State's Waters Report (2004)*, *available at* http://dem.ri.gov/pubs/305b/index.html.

[2] RIDEM, Water Quality Regulations, Rule 7.

[3] "Freshwater wetlands" includes, but is not limited to, "marshes, swamps, bogs, ponds, rivers, river and stream flood plains and banks, areas subject to flooding or storm flowage, emergent and submergent plant communities in any body of fresh water including rivers and streams and that area of land within fifty feet (50') of the edge of any bog, marsh, swamp or pond." R.I. GEN. LAW § 2-1-20. Freshwater wetland types are further defined at: RIDEM, Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act, Rule 5.0.

[4] "Freshwater wetland in the vicinity of the coast" means the following: "A. Bog, pond, marsh, swamp, river, area(s) subject to flooding, areas(s) subject to storm flowage, floodway, flowing body of water, stream, intermittent stream, submergent and emergent plant communities, special aquatic sites, and shrub and forested wetland located in the vicinity of the coast;" "B. Those areas located in the vicinity of the coast, that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions;" and "C. Any or all wetlands located in the vicinity of the coast created as part of, or the result of, any activity permitted or directed by DEM after July 16, 1971 including, but not limited to, restored wetlands." RICRMC, Rules and Regulations Governing the Protection and Management of Freshwater Wetlands in the Vicinity of the Coast, § 5.04.

[5] "Coastal wetland and contiguous freshwater wetlands" are defined as "any salt marsh bordering on the tidal waters of [Rhode Island], whether or not the tidal waters reach the littoral areas through natural or artificial watercourses, and those uplands directly associated and contiguous thereto which are necessary to preserve the integrity of that marsh." R.I. GEN. LAW § 46-23-6(B)(3)(e).

to all wetlands in the state without exception. Moreover, most freshwater wetlands areas are ascribed an additional upland buffer area subject to regulation.[6]

A field inspection by a wetlands scientist is required to determine and delineate wetlands on parcels of property for regulatory purposes.[7] State rules and regulations outline delineation criteria for vegetated wetlands, perimeter wetlands, flowing and standing water wetlands, riverbank wetlands, and flood plain wetlands.[8]

Wetland-related Laws and Regulations

Rhode Island adopted legislation in 1971 to regulate both freshwater wetlands under the Freshwater Wetlands Act[9] and coastal wetlands with the creation of the RICRMC.[10]

Freshwater Wetlands Act.[11] Rhode Island's basic goal is no net loss of wetlands.[12] To help achieve that goal, the Freshwater Wetlands Act, administered by RIDEM, requires wetland permit applicants to demonstrate that: proposed projects or activities do not include any random, unnecessary, or undesirable alteration of wetlands; all alternatives to avoid and minimize impacts to wetlands have been pursued; and the proposed project adheres to the technical permit review criteria.[13] Permit review includes consideration of the cumulative impacts of incremental alterations to freshwater wetlands, which may be considered significant even if a proposed alteration is considered insignificant.[14] Certain activities are exempt from permitting requirements, provided they are carried out in accordance with conditions specified in the rules.[15]

[6] All bogs and certain other wetlands types of a minimum size are ascribed an additional 50 feet upland "buffer" area, denominated as "perimeter wetlands" or "riverbank wetlands." The minimum size is three acres for swamps; ¼-acre for ponds; and one acre for marshes. In addition, flowing bodies of water are ascribed "riverbank wetland" area: 100 feet for bodies less than ten feet wide; and 200 feet for those ten feet wide or greater. *See* RIDEM, Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act, Rules 5.57 and 5.74; *see also* RIDEM, *What's The Scoop on Wetlands? (May 2000), available at* http://www.dem.ri.gov/programs/benviron/water/permits/fresh/pdfs/scoop.pdf, at 7-8.

[7] As part of the delineation process for individual parcels, property owners are encouraged to contact RIDEM to ascertain whether the state has any prior wetlands determinations listed in its computer files. If no determinations appear on record, the property owner may submit a "Request To Determine the Presence of Wetlands" application, accompanied by a site plan. If the property owner knows of or suspects the presence of freshwater wetlands, he is encouraged to submit a "Request To Verify the Delineated Edge of Wetlands" form, accompanied by a property plan with surveyed wetland flag locations. *See:* RIDEM, Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act, Rule 9.02. Upon submission of a request form, an agency representative will undertake a site visit to confirm the wetlands information. *See:* RIDEM, *What's The Scoop on Wetlands? (May 2000), available at* http://www.dem.ri.gov/programs/benviron/water/permits/fresh/pdfs/scoop.pdf, at 11-13.

[8] Delineation criteria are outlined at length in the state's freshwater wetland regulations. *See:* RIDEM, Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act, Appendix 4.

[9] R.I. GEN. LAW § 2-1-18 *et seq.*

[10] R.I. GEN. LAW § 46-23 *et seq.*

[11] R.I. GEN. LAW § 2-1-18 *et seq.*

[12] *See:* RIDEM, Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act, Rule 1.01; *See also:* Rhode Island Coastal Resources Management Program, Activities Under Council Jurisdiction, § 300.12.B.3.

[13] RIDEM, Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act, Rule 11.00.

[14] RIDEM, Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act, Rule 3.01(C), Appendix 2.

[15] The following activities are exempt: limited clearing and cutting; limited maintenance and repair activities; demolition of buildings or property accessories; single family residences and property accessories; nonresidential buildings or multifamily residences or accessories; emergency environmental protection; site remediation; utility emergencies; new utility lines;

RIDEM issues two types of permits. Permit applicants submitting a "Request for Preliminary Determination" may be granted an "insignificant alteration permit" for activities that would result in minimum impact on the functions and values of wetlands. Permit applicants submitting an "Application to Alter" may be granted a "significant alteration permit."[16] Alterations of perimeter and riverbank wetlands are permitted more frequently than alteration of other wetland types.[17]

RIDEM grants approximately 400 wetland alteration permits per year. Very few permit applications are denied outright. Permitting supervisors make decisions on a case-by-case basis, considering whether or not applicants have adequately avoided and minimized impacts and demonstrated that alterations are unavoidable and insignificant or significant, as well as whether review criteria have been met. Although decisions are based on best professional judgment, permitting staff also rely on quantitative and, to some extent, qualitative reports and documentation to support decisions, e.g. floodplain compensation calculations, stormwater drainage calculations, and wildlife evaluations.[18]

Coastal wetland regulation.[19] The Coastal Resources Management Council was created in 1971 to preserve, protect, develop, and restore the coastal areas of the state. RICRMC operates as a state agency and is administered by a council representing the public, state and local government, and resource professionals.[20]

RICRMC's permit system for coastal wetlands differs somewhat from RIDEM's freshwater permit system, although it is no less stringent and also operates on a "no net loss" policy.[21] An RICRMC "assent" is required for any alteration or activity proposed within shoreline features, which by definition includes coastal wetlands.[22] Filling, removing or grading, dredging and dredged materials disposal, significant cutting of vegetation, excavation, draining, damming, and/or diverting of hydrological flows in a coastal wetland are considered alterations requiring a permit.[23] The RICRMC may also review any activity within the watersheds of poorly flushed estuaries.[24] Like RIDEM, RICRMC also has a preliminary determination request process that facilitates accurate identification of wetlands within its jurisdiction.[25] Under RICRMC's rules and regulations, certain activities are prohibited outright in particular coastal wetland areas.[26] RICRMC also oversees

agricultural practices; normal farming and ranching activities; conservation activities; monitoring and research activities; temporary recreational structures; moorings and anchorage for single boats; and emergency water withdrawal for fighting fires. RIDEM, Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act, Rules 6.02-6.09.

[16] RIDEM, *What's The Scoop on Wetlands? (May 2000), available at* http://www.dem.ri.gov/programs/benviron/water/permits/fresh/pdfs/scoop.pdf, at 34.

[17] *Id.* at 27.

[18] Personal Communication with Carolyn Murphy, Rhode Island Department of Environmental Management (Feb. 13, 2006).

[19] R.I. GEN. LAW § 46-23 *et seq.*

[20] Coastal Resources Management Council, *What is CRMC?, at* http://www.crmc.state.ri.us/whatis/index.html (last modified Feb. 8, 2006).

[21] Rhode Island Coastal Resources Management Program, Activities Under Council Jurisdiction, § 300.12.B.3.

[22] Rhode Island Coastal Resources Management Program, Authorities and Procedures, § 100.1.

[23] Rhode Island Coastal Resources Management Program, Activities Under Council Jurisdiction, § 300.12.

[24] Rhode Island Coastal Resources Management Program, Authorities and Procedures, § 100.3.

[25] Coastal Resources Management Council, *Application Forms, at* http://www.crmc.state.ri.us/applicationforms/index.html (last modified Feb. 8, 2006).

[26] *See:* Rhode Island Coastal Resources Management Program, Authorities and Procedures, §§ 100 *et seq.*

permitting for some freshwater wetlands within their jurisdiction;[27] permit requirements and procedures for freshwater wetlands are similar to those of RIDEM.

In making permitting decisions, staff rely on state coastal regulations and best professional judgment.[28] In 2005, 65 assents were issued for projects related in some way to wetlands (e.g. minor and major alterations, delineations, jurisdictional determinations, *Phragmites* control, verification of a wetland edge, etc.). The number of applications received, and subsequently approved, varies from year to year.[29]

Organization of State Activities

Since 1971, RIDEM and RICRMC have cooperatively administered the state's two parallel wetland programs. Jurisdiction over "freshwater wetlands" (overseen by RIDEM) and "freshwater wetlands in the vicinity of the coast" or "coastal wetlands" (overseen by RICRMC) is delineated on a jointly-developed master map. The jurisdictional line generally runs along road and highway boundaries. Wetlands shoreward of the line fall under the jurisdiction of RICRMC; wetlands landward of the line fall under the jurisdiction of RIDEM.[30] For proposed projects that straddle the jurisdictional line, RICRMC and RIDEM resort to case-by-case determination of agency jurisdiction.[31] Certain circumstances may also arise in which both RIDEM and RICRMC continue to be involved in the regulation of the same freshwater wetland. Examples of such concurrent jurisdiction include cases in which RICRMC's 200-foot contiguous coastal zone area or the limit of a RICRMC Special Area Management Plan extend landward of the jurisdictional line.

RICRMC has statewide jurisdiction to review specified categories of projects for any impacts they may have on the coastal region.[32] RIDEM retains exclusive jurisdiction to permit and certify aspects of projects regardless of where they fall in relation to the jurisdictional line. Specifically, RIDEM possesses exclusive authority to issue Individual Sewage Disposal System, Underground Injection Control, and Rhode Island Pollution Discharge Elimination System permits, as well as state-triggered water quality certifications, regardless of the location of the proposed project.[33] RIDEM also has exclusive jurisdiction over all farmers pursuing agricultural projects, regardless of the location of the farm.[34]

[27] In 1997, an amendment to the Rhode Island Coastal Zone Management Act gave RICRMC the authority to regulate "freshwater wetlands in the vicinity of the coast" in addition to coastal wetlands. *See:* R.I. GEN. LAW § 46-23-6.E.

[28] Personal Communication with Megan Higgins, Rhode Island Coastal Resources Management Council (Feb. 14, 2006).

[29] Personal Communication with Megan Higgins, Rhode Island Coastal Resources Management Council (Feb. 27, 2006).

[30] Maps delineating the jurisdictional line are available at RICRMC's and RIDEM's offices. Maps are also available online at http://www.dem.ri.gov/maps/wetjuris.htm.

[31] The procedure for handling proposed projects that straddle the jurisdictional line prescribes that RICRMC act as the "gatekeeper" for those projects, make a coordinated decision on jurisdiction with RIDEM, and notify applicants of the appropriate wetland review agency. *See* RIDEM, *Freshwater Wetlands in the Vicinity of the Coast (Sept. 2001), available at* http://www.dem.ri.gov/programs/benviron/water/permits/fresh/pdfs/wfs06.pdf.

[32] Specified categories of activities that may impact coastal regions include mineral extraction, chemical processing, energy projects, sewage treatment and disposal, solid waste disposal and desalination plants. If RICRMC determines that any such inland activity may have environmental impacts on the coastal region, the project must obtain council assent. *See* R.I. GEN. LAW §§ 46-23-6(B)(3) and 46-23-6(E); Rhode Island Coastal Resources Management Program, Authorities and Procedures, § 100.2; Rhode Island Coastal Resources Management Program, Activities Under Council Jurisdiction, § 300.6 *et seq.*

[33] RIDEM, *supra* note 16, at 41.

[34] RIDEM, *supra* note 31.

Rhode Island Department of Environmental Management. RIDEM's Office of Water administers the state's permitting program for freshwater wetlands and oversees multiple regulatory activities, including permitting, 401 certification, technical assistance, compliance and enforcement, and rule writing. Non-regulatory activities include education and outreach, monitoring, and restoration. Approximately 17 full-time equivalent (FTE) staff are devoted to wetland permitting,[35] as well as two FTEs for water quality certification.[36] Five staff work in the Office of Compliance and Inspection on wetland enforcement.[37] The program is generally supported by funding from Rhode Island's General Fund, although EPA grants also provide support for monitoring and outreach.[38,39]

Rhode Island Coastal Resources Management Council. RICRMC administers the state's wetland permitting program for coastal wetlands and freshwater wetlands in the vicinity of the coast. Staff activities generally include permitting, policy development, restoration, and technical support/outreach. Although no individual staff is dedicated specifically to wetland-related activities, two biologists, one coastal policy analyst, and one coastal geologist oversee wetland-related activities for the agency. Funding for this work is supported by general state appropriations.[40]

§401 Certification

Rhode Island's wetland regulatory programs are not based on the state's authority to provide water quality certification under §401 of the Clean Water Act (CWA); however, §401 authority does provide an important supplement to the state's programs, thus providing comprehensive protection for wetland resources. Section 401 regulatory responsibilities include the review, approval or denial determination, and enforcement. Certifications are tied to RIDEM and RICRMC permits.[41] On average, approximately 80 certifications are made annually. Less than one percent of decisions are denials or waivers. Staff rely on qualitative assessments in making certification decisions.[42]

State Programmatic General Permit

As a result of cooperative efforts between RIDEM, RICRMC, and the U.S. Army Corps of Engineers, a state programmatic general permit (SPGP) has been in effect in Rhode Island since February 1997. Under the SPGP, projects are characterized as Category I or Category II. Category I projects represent minor impacts to the state's waters and need not be reported to Corps. Category II projects represent more significant impacts and are reviewed for compliance with all applicable state and local requirements at monthly

[35] RIDEM Office of Water wetland permitting staff positions include two supervisory scientists, eleven environmental scientist positions (however, two positions are vacant and not approved for filling as of February 2006), four engineer positions (again, one is vacant and not approved to fill as of February 2006), two administrative staff, and one policy position. Time from the program's Chief and Deputy Chief is not included in this FTE estimate.

[36] RIDEM Office of Water 401 certification staff include one scientist and one engineer. Time from the program's Chief and Deputy Chief is not included in this FTE estimate.

[37] RIDEM Office of Compliance and Inspection wetland enforcement staff include one supervisory scientist and four staff scientists. Time from the program's Chief and Deputy Chief is not included in this FTE estimate.

[38] The New England Interstate Water Pollution Control Commission also provides technical assistance to RIDEM in the form of two staff funded by EPA 104(b)(3) grants. These positions support outreach and monitoring activities.

[39] Murphy, *supra* note 18.

[40] Higgins, *supra* note 28.

[41] Murphy, *supra* note 18.

[42] Personal Communication with Terry Simpson, Rhode Island Department of Environmental Management (Mar. 8, 2006).

screening meetings attended by RICRMC, RIDEM, Corps, and other agencies as appropriate. For both Category I and II projects, RICRMC or RIDEM may issue the SPGP, along with the appropriate state permit.[43]

Mitigation

RIDEM's rules and regulations include strict avoidance and minimization provisions, requiring that all probable impacts to freshwater wetlands be avoided to the maximum extent possible, and if unavoidable, be minimized to the maximum extent possible. RIDEM does not have formal guidelines on compensatory mitigation and, in practice, allows mitigation only in unusual circumstances.[44] Functional criteria for RIDEM's discretionary mitigation requirements include the nature and value of the wetland, as well as the area of the replacement wetland.[45]

CRMC has adopted compensatory mitigation requirements for coastal wetlands.[46] To fulfill its "no net loss" policy,[47] RICRMC requires altered coastal wetlands to be replaced by wetlands of a similar type that provide an ecological value equal to or greater than that of the altered wetland. The ratio of replacement to permanently altered or lost coastal wetland is 2:1; specific replacement requirements are determined on a case-by-case basis.[48] RICRMC's rules and regulations explicitly prohibit monetary compensation as an acceptable form of mitigation.[49]

Enforcement

RIDEM's wetland compliance program is located within the Office of Compliance and Inspection. RICRMC maintains wetland compliance and inspection activities through dedicated enforcement staff, as well as permitting staff. Both RIDEM and RICRMC are authorized to take a range of administrative, civil, and criminal actions to achieve compliance with the requirements of their wetlands programs.[50] Enforcement options include notices of violation (NOVs), immediate compliance orders, cease and desist orders, civil penalties,[51] injunctive proceedings, criminal penalties, and imprisonment.[52]

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[43] Rhode Island Department of Environmental Management, *supra* note 1, at III.G-7.

[44] Personal Communication with Hank Ellis, Rhode Island Department of Environmental Management (Nov. 14, 2005). *See also:* RIDEM, Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act, Appendices 3 and 6(E).

[45] Personal Communication with Hank Ellis, Rhode Island Department of Environmental Management (Nov. 14, 2005).

[46] *See:* Rhode Island Coastal Resources Management Program, Activities Under Council Jurisdiction, § 300.12.E.

[47] Rhode Island Coastal Resources Management Program, Activities Under Council Jurisdiction, § 300.12.B.3.

[48] Rhode Island Coastal Resources Management Program, Activities Under Council Jurisdiction, § 300.12.F.1.

[49] Rhode Island Coastal Resources Management Program, Activities Under Council Jurisdiction, § 300.12 B.10.

[50] R.I. GEN. LAW §§ 2-1-23 and 2-1-24; R.I. GEN. LAW §§ 46-23-7.

[51] RIDEM is authorized to assess an administrative penalty of up to $5,000 for each wetland violation and up to $10,000 for each wetland alteration that is knowing or reckless. *See:* R.I. GEN. LAW § 2-1-23. RICRMC is authorized to assess an administrative penalty of up to $2,500 for each violation and to assess additional penalties of not more than $500 for each day of continued violation after receipt of a cease and desist order. The penalties in the aggregate shall not equal or exceed $10,000. *See:* R.I. GEN. LAW § 46-23-7.

[52] Any person who violates an order of RIDEM is subject to a criminal fine not to exceed $500 and to imprisonment not to exceed 30 days for each day of violation. *See:* R.I. GEN. LAW § 2-1-24(c). A knowing violation of a RICRMC requirement is considered a misdemeanor subject to maximum fine of $500 and a maximum imprisonment of three months for each day of violation. *See:* R.I. GEN. LAW § 46-23-7.3.

In practice, both RICRMC and RIDEM primarily rely on administrative tools to ensure compliance with wetlands requirements, in particular, administratively assessed penalties and NOVs. RIDEM requires that NOVs be recorded in the Land Evidence Records of the relevant city or town in order to notify all parties that a violation has occurred. In most circumstances, RIDEM may take informal action by issuing warnings letters or Notices of Intent to Enforce to achieve compliance. RIDEM may settle enforcement proceedings by entering into a consent agreement, proceeding to an administrative hearing, or by proceeding to Superior Court. RIDEM's compliance and inspection program routinely requires restoration of freshwater wetlands through its informal and formal enforcement actions. Typically, any fill material or other structures placed within a freshwater wetland must be removed, and areas cleared of vegetation must be replanted with trees, shrubs, and groundcover.[53] RICRMC typically settles administrative enforcement proceedings by entering into a consent agreement with the violator. Often, the fine is reduced to an administrative fee as part of the consent agreement.[54]

Over the past five years, RIDEM has issued an average of 19 formal orders (NOVs or Immediate Compliance Orders) per year. In 2004, RIDEM assessed $56,400 in penalties for wetlands violations.[55] RICRMC issued a total of 31 administrative violation notices in the first eleven months of 2005. Typical fines in RICRMC enforcement cases range from $250 (lowest administrative fee-based disposition) to $2,500.[56]

Tracking System

A statewide permit tracking system keeps record of all §401 water quality certification decisions, as well as coordinated enforcement and compliance efforts. Computerized tracking of RIDEM wetland decisions and associated loss/gain data went on line in 1998.[57] RIDEM has incorporated a geographic component for internal use since 1995, and Rhode Island's official website recently launched a wetland application search tool.[58] RICRMC is currently proposing to add a loss/gain tracking function to their permit database.

III. Water Quality Standards

All public and private wetlands in the state are subject to CWA §401 water quality certification. RIDEM has promulgated narrative water quality standards for all state waters, which include wetlands. These standards are used to determine if a proposed activity would result in a significant adverse impact to the water quality of wetlands. State water quality standards designate wetland-related uses, including fish and wildlife habitat and primary and secondary contact recreational activities.[59] Wetlands are also included under Rhode Island's anti-degradation policy.[60]

[53] Personal Communication with Hank Ellis, Rhode Island Department of Environmental Management (Jan. 25, 2006).
[54] Personal Communication with Megan Higgins, Rhode Island Coastal Resources Management Council (Dec. 5, 2005).
[55] Personal Communication with Hank Ellis, Rhode Island Department of Environmental Management (Nov. 11, 2005).
[56] Personal Communication with Megan Higgins, Rhode Island Coastal Resources Management Council (Nov. 15, 2005).
[57] RIDEM, *Freshwater Wetland Protection and Regulation Status and Trends Report 2001 through 2003 (Oct. 2004), available at* http://www.dem.ri.gov/programs/benviron/water/wetlands/pdfs/wet2003.pdf, at 7.
[58] RIDEM, *Wetlands Permit Application Search, at* http://www.ri.gov/dem/wetlands/ (last visited Feb. 10, 2006).
[59] RIDEM, Water Quality Regulations, Rule 8.
[60] RIDEM, Water Quality Regulations, Rule 18.

IV. Monitoring and Assessment

Monitoring and Assessment for Wetlands

The New England Interstate Water Pollution Control Commission, with support from the U.S. Environmental Protection Agency (EPA), has assisted RIDEM with the development of a draft plan for systematic monitoring of freshwater wetlands. The plan includes a three-tiered approach to monitoring to meet the overall goal of improved protection and management of wetlands.[61]

Monitoring and Assessment for Streams

Stream monitoring is conducted under the RIDEM's monitoring program for all "Waters of the State."[62] A program monitoring strategy was finalized in 2005 and includes sampling designs and monitoring strategies to protect the designated uses of the state's waters. In practice, a variety of assessment methodologies are used, including biological sampling and water chemistry sampling. Data feeds in the state's §303(d) listing/§305(b) reporting. Multiple state and federal partners are involved in the effort.[63]

V. Restoration

Gains in both freshwater and coastal wetland quantity and quality are realized through proactive restoration projects spearheaded by RIDEM, RICRMC, the Narragansett Bay Estuary Program, as well as other federal, state, local, and watershed agencies and organizations.[64]

For example, the Rhode Island Habitat Restoration Team, pursuant to the Coastal and Estuary Habitat Restoration Program and Trust Fund, drafted and adopted the State Estuary and Coastal Habitat Restoration Strategy, which was approved by RICRMC. According to the strategy, grant monies are dispersed for habitat restoration design, planning, construction or monitoring. The Rhode Island Habitat Restoration Team coordinates planning in the state.[65] RICRMC has also spearheaded the development of the Rhode Island Habitat Restoration Portal to provide data and information about habitat restoration in Rhode Island to the public, federal and state agencies, and nonprofit groups. The associated Project Inventory is a database designed to help users identify restoration opportunities and completed projects in Rhode Island watersheds.[66]

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[61] New England Interstate Water Pollution Control Commission and RIDEM, *Rhode Island Wetland Monitoring and Assessment Plan – Draft (May 2005), available at* http://www.ci.uri.edu/Projects/RI-Monitoring/Docs/DRAFT_RI_Wetland_Monitoring_Plan_MAY05.pdf.

[62] RIDEM, Water Quality Regulations, Rule 7. Also defined in *"Wetland definitions and delineation"* section above.

[63] RIDEM, *State of Rhode Island and Providence Plantations Water Monitoring Strategy – Working Draft – 2005-2010 (Jan. 2005), available at* http://www.ci.uri.edu/Projects/RI-Monitoring/Docs/DEM_WQ_Mon_Jan5_05.pdf.

[64] There are many successful examples of restoration projects. Two large and noteworthy projects resulting in gains in wetland quantity and quality have been accomplished on state-owned land at the Galilee Bird Sanctuary (Narragansett) and the Lonsdale Marsh (Lincoln). Personal Communication with Carolyn Murphy, Rhode Island Department of Environmental Management (Jan. 31, 2006).

[65] *Id.*

[66] *See:* University of Rhode Island, *Habitat Restoration, at* http://www.edc.uri.edu/restoration/ (last visited Feb. 10, 2006).

RIDEM, working with the University of Rhode Island and supported by EPA, has completed the development of a watershed-based methodology to identify and determine priorities among freshwater wetland and buffer restoration sites.[67] In cooperation with the local watershed council, these methods have been successfully piloted in Rhode Island's Woonasquatucket River Watershed.[68]

VI. Public-Private Partnerships

RIDEM's wetland activities are guided by the final report of the Director's Task Force. The Task Force brought together over 40 public, private, and non-profit stakeholders and experts with the goal of permit streamlining.[69]

RICMRC and RIDEM also actively participate in the National Corporate Wetlands Restoration Partnership (CWRP).[70] CWRP is a public-private partnership between the federal government, state governments, and private corporations to restore wetlands and other aquatic habitats through matching private and public funds, thus leveraging collective resources and skills.[71]

In addition, the state also partners with individual citizen groups, such as watershed organizations that routinely perform water quality monitoring and the University of Rhode Island's Watershed Watch Program, which works with local governments and other organizations to assess water quality by recruiting and training volunteers to become citizen scientists.[72]

VII. Education and Outreach

Wetlands outreach and education has been strategically implemented by RIDEM with other agencies and partners since 1999, primarily in support of the regulatory program. Both RIDEM and RICRMC have composed a number of fact sheets, pamphlets, sample applications, engineering guidance, and other guidance documents that describe the state's wetland programs and procedures as an aid to applicants and the general public.[73] Targeted outreach includes: workshops for consultants and municipalities to review regulatory requirements; informational open houses; and maintenance of a booth at the Rhode Island

[67] Nicholas A. Miller and (University of Rhode Island), *Development of a Statewide Freshwater Wetlands Restoration Strategy: Site Identification and Prioritization Methods (Aug. 2001), available at* http://www.dem.state.ri.us/programs/benviron/water/wetlands/pdfs/strategy.pdf.

[68] Francis C. Golet, Dennis H.A. Myshrall, Nicholas A. Miller, and Michael P. Bradley (University of Rhode Island), *Wetland Restoration Plan for the Woonasquatucket River Watershed (Nov. 2002), available at* http://www.dem.ri.gov/programs/benviron/water/wetlands/woonrest/files/p2.pdf .

[69] RIDEM, *Wetlands Task Force Final Report (March 2001), available at* http://www.dem.ri.gov/programs/ombuds/pstream/wetlands/index.htm.

[70] Higgins, *supra* note 56.

[71] Corporate Wetlands Restoration Partnership, *Corporate Wetlands Restoration Partnership, at* http://www.coastalamerica.gov/text/cwrp.html (last updated Feb. 2, 2006).

[72] University of Rhode Island, *URI Watershed Watch, at* http://www.uri.edu/ce/wq/ww/html/ww.html (last visited Feb. 10, 2006).

[73] *See generally:* RIDEM, *Freshwater Wetlands, at* http://www.dem.ri.gov/programs/benviron/water/permits/fresh/index.htm (last revised Feb. 6, 2006); RICRMC, *Publications, at* http://www.crmc.ri.gov/pubs (last modified Feb. 8, 2006).

Home Show to interact with current and future homeowners. RIDEM also regularly conducts presentations to civic groups on the importance of wetlands and on components of Rhode Island's wetland protection and restoration programs.[74]

VIII. Coordination with State and Federal Agencies

In order to guide the state's dual regulatory scheme for wetlands, RIDEM and RICRMC initiated an interagency coordination review process that resulted in a Memorandum of Agreement (MOA) executed on September 17, 2001. The MOA includes procedures on the transition of the regulation of "freshwater wetlands in the vicinity of the coast" from RIDEM to RICRMC. The MOA also addresses the achievement of equivalent protection of freshwater wetlands under the jurisdiction of each agency based on RIDEM's existing regulations, includes clarification of the jurisdictional line, and provides for the exchange of technical and regulatory information on an ongoing basis. RICRMC and RIDEM currently achieve a high degree of coordination in wetlands regulation, although minor program differences, such as different administrative structures, do result in some discrepancy.[75]

Through Special Area Management Plans (SAMPs), RIDEM provides integrated planning and coordination for natural resource protection and reasonable coastal-dependent economic growth. Preparation of the SAMPs involves the participation of a broad range of actors, including federal and state agencies, boards, commissions, economic development corporations, cities and towns, institutions of higher education, advocacy groups, community-based organizations, and private citizens.

RICRMC is also authorized to serve as a final arbitrator in disputes between local governments or state agencies involving coastal resources.[76] RICRMC's Technical Advisory Committee to the Rhode Island Habitat Restoration Team also provides a continuing forum for cooperatively reviewing projects with state and federal agencies and institutions, including RIDEM, EPA, U. S. Fish and Wildlife Service, and USDA Natural Resources Conservation Service.[77]

RIDEM's Performance Partnership Agreements with EPA demonstrate institutionalized federal-state cooperation on wetlands protection, including the identification of cooperative activities that serve as performance measures.[78] In addition, monthly meetings conducted as part of the SPGP process facilitate interagency coordination. Finally, RIDEM coordinates regularly and holds an MOA with the Rhode Island Department of Transportation on the review of transportation applications affecting wetlands.[79]

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[74] Personal Communication with Chuck Horbert, Rhode Island Department of Environmental Management (Oct. 6, 2005).
[75] Most of the differences between RICRMC and RIDEM's requirements and procedures are relatively minor (e.g. permit and public notice procedures) and predate the development of the freshwater wetlands jurisdictional boundary.
[76] R.I. GEN. LAW §§ 46-23-6(v)(B) to (D).
[77] Higgins, *supra* note 56.
[78] *See:* Rhode Island Department of Environmental Management and U.S. Environmental Protection Agency - Region I, *Performance Partnership Agreement Between the Rhode Island Department of Environmental Management and the U S Environmental Protection Agency Region I* : *State Fiscal Years 2004 and 2005 (Feb. 26, 2004), available at* http://www.dem.ri.gov/pubs/plan2003/pdf/ppa0405.pdf, at 32.
[79] Murphy, *supra* note 64.

RICRMC also coordinates with USDA on agricultural restoration programs, principally by providing information to help USDA make priority decisions on Farm Bill programs.[80] RIDEM's Division of Agriculture handles threshold applications for farmers who propose to alter wetlands.[81,82]

IX. Acronyms and Abbreviations

CWA – Clean Water Act
CWRP – Corporate Wetlands Restoration Partnership
EPA – U.S. Environmental Protection Agency
FTE – Full-Time Equivalent
MOA – Memorandum of Agreement
NOV – Notice of Violation
RICRMC – Rhode Island Coastal Resources Management Council
RIDEM – Rhode Island Department of Environmental Management
SAMPs – Special Area Management Plans
SPGP – Statewide Programmatic General Permit
USDA – U.S. Department of Agriculture

[80] Higgins, *supra* note 56.
[81] RIDEM, *supra* note 16, at 23.
[82] RIDEM's Division of Agriculture is authorized to adopt regulations, in conjunction with the agricultural council's coordinating committee, regarding the definition of normal farming activities. Ellis, *supra* note 53.

Texas

I. Overview

An ecologically-varied, large state, Texas holds an abundance of diverse wetland resources—however, the state has experienced moderate to severe wetland losses over the last two centuries.[1] Today, Texas regulates wetlands primarily through water quality certification under §401 of the Clean Water Act (CWA), although multiple state agencies also conduct non-regulatory activities directed at wetland conservation.

II. Regulatory Programs

Wetland Definitions and Delineation

Texas has more than one definition for waters of the state. "State water," defined as "the water of the ordinary flow, underflow, and tides of every flowing river, natural stream, and lake, and of every bay or arm of the Gulf of Mexico, and the storm water, floodwater, and rainwater of every river, natural stream, canyon, ravine, depression, and watershed in the state is the property of the state," does not explicitly include wetlands.[2] Water quality provisions do clearly include wetlands, defining "water" or "water in the state" as "groundwater, percolating or otherwise, lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, wetlands, marshes, inlets, canals, the Gulf of Mexico, inside the territorial limits of the state, and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, navigable or nonnavigable, and including the beds and banks of all watercourses and bodies of surface water, that are wholly or partially inside or bordering the state or inside the jurisdiction of the state."[3] State water codes define a wetland as "an area (including a swamp, marsh, bog, prairie pothole, or similar area) having a predominance of hydric soils that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and that under normal circumstances supports the growth and regeneration of hydrophytic vegetation."[4]

State wetland delineation relies on both the U.S. Army Corps of Engineers' 1987 *Wetlands Delineation Manual*[5] and the U.S. Fish and Wildlife Service's *Classification of Wetlands and Deepwater Habitats of the United States*.[6]

[1] U.S. Environmental Protection Agency, *Wetlands Loss Index – 1780s-1990s (Region 6), at* http://www.epa.gov/watershed/1999sept/iv7_r6map.html (last revised Aug. 23, 1999).
[2] V. TEX. CODE ANN., WAT. CODE § 11.021.
[3] V. TEX. CODE ANN., WAT. CODE § 26.001.
[4] V. TEX. CODE ANN., WAT. CODE § 11.502(1). The term "wetlands" does not include "irrigated acreage used as farmland;" "man-made wetlands of less than one acre;" or "man-made wetlands not constructed with wetland creation as a stated objective…" V. TEX. CODE ANN., WAT. CODE § 11.502(4).
[5] U.S. Army Corps of Engineers, Wetlands Research Program Technical Report Y-87-1, *Corps of Engineers Wetlands Delineation Manual (1987)*, *available at* http://www.saj.usace.army.mil/permit/documents/87manual.pdf.
[6] COWARDIN, L. M., CLASSIFICATION OF WETLANDS AND DEEPWATER HABITATS IN THE UNITED STATES (Department of the Interior, Fish and Wildlife Service 1979).

Wetland-related Laws and Regulations

Water quality certification under CWA §401 is the state's primary form of wetland regulation and is conducted according to the state's water quality standards.[7] Additionally, however, Texas has various other rules in place that affect wetlands throughout the state.

Conservation of state-owned wetlands is guided by the Texas Parks and Wildlife Code, which mandates the creation of a State Wetlands Conservation Plan specifically for coastal wetlands. The rules require the plan to: define wetlands; establish a no-net-loss goal; inventory coastal wetlands, impacts, and functions; clarify and unify state wetland-related policies and actions; guide mitigation policies; prepare a long-range navigational dredging and disposal plan; establish a public education program; and outline other various actions.[8] A Texas Wetlands Conservation Plan for state-owned coastal wetlands was drafted in 1994, but has not been finalized to date.[9]

Furthermore, coastal management practices, which pertain to coastal wetlands, are outlined in the state's natural resource codes. These include ongoing analysis and prioritization of best-use practices, land acquisition, inventory of natural resource areas, jurisdictional analyses, review of state and federal actions that affect coastal areas, and other duties.[10]

Organization of State Activities

Multiple state agencies are involved in wetland-related activities. On the regulatory side, the Texas Commission on Environmental Quality (TCEQ) conducts §401 water quality certification.[11] Permits are reviewed and certified at the agency's headquarters in Austin, while staff located throughout the state's 16 regional offices may provide some assistance on technical advisory and enforcement. Funding for the program is derived mostly from fees, but also federal grants and state appropriations.[12]

The Texas General Land Office (TGLO) oversees management of coastal wetlands as provided for under the Texas Natural Resource Codes. TGLO heads the Coastal Coordination Council, which has developed a Texas Coastal Management Program and a Coastal Zone Management Plan with other state agencies. Texas Parks and Wildlife (TPW) acquires, manages, and protects wildlife and its habitat, which includes wetland areas. The agency also coordinated the development of a draft State Wetlands Conservation Plan.[13] The Texas Forest Service advises private landowners on various issues, including those relating to wetlands. Finally, the Texas Review and Comment System, coordinated by the Governor's Office, allows all state resource agencies the opportunity to review and comment on all projects that use federal funds and might have an impact on wetlands.

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[7] TEX. ADMIN. CODE, tit. 30, § 279.1 *et seq.*; TEX. ADMIN. CODE, tit. 30, § 307.1 *et seq.*

[8] V. TEX. CODE ANN., TEX. PARKS AND WILDL. CODE § 14.001 *et seq.*

[9] Personal communication with Tom Calnan, Texas General Land Office (Dec. 27, 2005).

[10] V. TEX. CODE ANN., TEX. NAT. RES. CODE § 33.001 *et seq.*

[11] The Railroad Commission of Texas is responsible for reviewing the water quality certifications related to oil and gas production.

[12] Personal communication with Peter Schaefer, Texas Commission on Environmental Quality (Feb. 24, 2006).

[13] A Texas Wetlands Conservation Plan for state-owned coastal wetlands was drafted in 1994, but has not been finalized to date. Calnan, *supra* note 9.

§401 Certification

Any actions that require a federal permit, license, or approval that results in a discharge into waters of the state, including §404 individual dredge and fill permits and nationwide permits, require state water quality certification. The state has adopted procedures and criteria for water quality certification for Department of Army permits and National Pollutant Discharge Elimination System permits. The regulations address application submission, public notice and comment, agency review, and enforcement.[14] The rules also establish a no-net-loss goal.[15]

TCEQ uses a tiered system for §404 certification review based on project size and the amount of jurisdictional waters of the U.S. affected. Tier I applies to small projects that affect less than three acres of "waters in the state" or less than 1500 linear feet of streams. For Tier I, TCEQ requires the incorporation of certain best management practices to address water quality concerns, and requires no additional §401 review. A Tier II project is any project that is not eligible for Tier I processing, including projects that: impact rare or ecologically significant wetlands;[16] projects that are submitted after the fact; and projects that otherwise qualify for Tier I, but for which the Corps has not received a complete, signed Tier I checklist before issuance of its permit decision document. Tier II projects are subject to individual §401 certification review.[17] TCEQ waives less than 50 Tier I permits annually, and grants an average of 60 Tier II permits annually. Certification is rarely outright denied.[18]

Nationwide Permits

TCEQ reviews nationwide permits (NWPs), issued by the Corps on an approximately five-year cycle, for compliance with Texas' water quality standards. As of 2003, the state applied general conditions that relate to erosion control, sedimentation control, and total suspended solids control, as well as some administrative requirements, for most NWPs.[19] In general, implementation of certain best management practices is required for NWP compliance.[20]

Mitigation

The U.S. Army Corps of Engineers oversees most wetland mitigation under the §401/404 program; however, TCEQ, TGLO, and TPW[21] review and comment on permits and required mitigation.[22,23] Texas law also speci-

[14] TEX. ADMIN. CODE, tit. 30, § 279.1 *et seq.*
[15] TEX. ADMIN. CODE, tit. 30, § 279.2(b).
[16] Rare and ecologically significant wetlands generally include pitcher plant bogs, swamps dominated by bald cypress and tupelo gum trees, mangrove marshes and coastal dune swales.
[17] Schaefer, *supra* note 12.
[18] Personal communication with Peter Schaefer, Texas Commission on Environmental Quality (Aug. 5, 2005).
[19] Individual certification is usually required for NWP #16 (Return Water From Upland Contained Disposal Areas), although the TCEQ has not officially denied the NWP.
[20] For specific conditions and the NWPs to which they apply, see: Texas Commission on Environmental Quality, *401 Water Quality Certification Conditions for Nationwide Permits – Attachment I, at* http://www.tceq.state.tx.us/assets/public/permitting/waterquality/forms/20230.pdf (revised Aug. 21, 2003).
[21] Specifically, TPW must review permits that would allow the storage, removal, or diversion of more than 5,000 acre-feet per year for any effects on fish and wildlife habitat. The agency may require mitigation for any adverse impacts to habitat. *See* V. TEX. CODE ANN., WAT. CODE § 11.152.
[22] V. TEX. CODE ANN., TEX. PARKS AND WILDL. CODE § 14.002.
[23] Additionally, Texas law mandated the creation of the 1994 Texas Wetland Conservation Plan for state-owned coastal wetlands that includes "provisions for an inventory of sites for compensatory mitigation, enhancement, restoration, and acquisition priori-

fies provisions for the establishment and operation of wetland mitigation banks.[24] State agencies also participate on the Mitigation Banking Review Team in coordination with the Fort Worth and Galveston Corps Districts.[25]

Compliance and Enforcement

The state's water quality certification rules provide enforcement measures for violations to permit terms and conditions.[26] Under these rules, TCEQ may "institute legal proceedings to compel compliance…"[27] In practice, the Corps usually takes the lead on enforcement cases involving unauthorized discharge of fill material into jurisdictional waters.[28]

Tracking Systems

TGLO records and tracks all coastal projects, including those that involve wetland-related actions.[29]

III. Water Quality Standards

The State of Texas has not developed wetland-specific water quality criteria, but does explicitly recognize the applicability of its surface water quality standards to wetlands.[30] The state's antidegradation policy also applies to wetlands, stating "…the antidegradation policy and public coordination is implemented through the evaluation of alternatives and mitigation under Federal Clean Water Act, §404(b)(1). State review of alternatives, mitigation, and requirements to protect water quality may also be conducted for federal permits which are subject to state certification, as authorized by Federal Clean Water Act, §401 and conducted in accordance with [the state's water quality certification rules]."[31]

Narrative surface water quality standards do identify wetland water quality functions to be protected.[32] "Wetland water quality functions" are defined as "[a]ttributes of wetlands that protect and maintain the quality of water in the state, which include storm water storage and retention and the moderation of extreme water level fluctuations; shoreline protection against erosion through the dissipation of wave energy and water velocity, and anchoring of sediments; habitat for aquatic life; and removal, transformation, and retention of nutrients and toxic substances."[33]

ties," "clarification and unification of wetland mitigation policies" among state agencies, and development of "guidelines and regulations for mitigation." Although the Texas Wetlands Conservation Plan was drafted in 1994, it has not finalized to date. Calnan, *supra* note 9.

[24] V. TEX. CODE ANN., TEX. NAT. RES. CODE § 221.001 *et seq.*

[25] Personal communication with Tom Calnan, Texas General Land Office (Summer 2005).

[26] TEX. ADMIN. CODE, tit. 30, § 279.13.

[27] V. TEX. CODE ANN., WAT. CODE § 7.002.

[28] Schaefer, *supra* note 12.

[29] Calnan, *supra* note 25.

[30] TEX. ADMIN. CODE, tit. 30, § 307.2(b).

[31] TEX. ADMIN. CODE, tit. 30, § 307.5(c)(1)(B).

[32] TEX. ADMIN. CODE, tit. 30, § 307.7(b)(5).

[33] TEX. ADMIN. CODE, tit. 30, § 307.3(70).

IV. Monitoring and Assessment

Although there is no separate wetland monitoring program, wetlands are monitored as part of Texas' Water Quality Management Program, which requires water quality monitoring to be conducted on a watershed basis. State law directs that "[w]ater management functions shall be oriented on a watershed basis in consideration of the priorities identified by river authorities and basin steering committees."[34] Regulations establish watershed-based water quality monitoring and assessment procedures designed to support management decisions and allow for the involvement of citizens, local governments, and other entities.[35] TCEQ assessment methodologies evaluate the physical, chemical, and biological characteristics of aquatic systems with reference to human health concerns, ecological condition, and designated uses. Data feed into 303(d)/305(b) reporting for the state.[36]

V. Restoration and Partnerships

TPW provides technical support and outreach materials, such as newsletters, guides, videos, and web resources, on restoration opportunities and available programs for landowners interested in conservation. TPW has also established an online wetland registry under grants from the EPA. The Wetlands Project Site Registry links landowners with those who need or want to restore wetlands. The registry is a mechanism by which landowners become interested in wetlands restoration and its benefits.[37]

TCEQ also manages the Galveston Bay Estuary Program, primarily under grants from EPA. Working in partnership with local, state, federal agencies, as well as citizens, corporations,[38] academics, and other interested stakeholders, the program's goal for restoration is 24,000 acres by 2010.[39]

A Texas Wetlands Conservation Plan for state-owned coastal wetlands was drafted in 1994, but has not been finalized to date.[40] The draft Texas Wetlands Conservation Plan (TWCP) focuses on voluntary, non-regulatory approaches to conservation of wetlands in the state by providing financial, technical, and educational incentives to private landowners to encourage stewardship.[41]

[34] V. TEX. CODE ANN., WAT. CODE § 26.0136.
[35] TEX. ADMIN. CODE, tit. 30, § 220 *et seq*.
[36] Texas Commission on Environmental Quality, *Surface Water Quality Monitoring, at* http://www.tceq.state.tx.us/compliance/monitoring/water/quality/data/wqm/mtr/swqm.html (Sept. 26, 2005).
[37] Texas Parks and Wildlife, *The Wetlands Project Site Registry, available at* http://gbic.tamug.edu/gbeppubs/T3/gbnepT3_165-168.pdf (last visited Dec. 26, 2005).
[38] Under the Texas Corporate Wetlands Restoration Partnership (CWRP), a branch of the National CWRP, Texas corporations and organizations join forces with federal and state agencies to restore wetlands and other aquatic habitat. Texas CWRP, *About Texas CWRP, at* http://www.texascwrp.org/about_txcwrp.htm (2003).
[39] Calnan, *supra* note 25.
[40] Calnan, *supra* note 9.
[41] Texas Parks and Wildlife, *Texas Wetlands Conservation Plan, available at* http://www.tpwd.state.tx.us/landwater/water/habitats/wetland/publications/conservation_plan.phtml (1994).

VI. Education and Outreach

Education and outreach are focused on landowners, as described above. TPW provides technical support and outreach materials, such as newsletters, guides, videos, and web resources, on restoration opportunities and available programs for landowners interested in conservation.

VII. Coordination with State and Federal Agencies

A primary focus of the draft TWCP was to identify wetland programs in Texas and address gaps in coordination. Multiple state, federal, local, and private entities are involved in both regulatory and non-regulatory efforts throughout the state.

TCEQ and the Corps hold a memorandum of agreement on streamlining regulatory coordination. TCEQ and TPW, as well as the TGLO and other regional and state groups, private organizations, and land trusts, coordinate occasionally on wetland conservation efforts.

VIII. Acronyms and Abbreviations

CWA – Clean Water Act
CWRP – Corporate Wetlands Restoration Partnership
NWPs – Nationwide Permits
TCEQ – Texas Commission on Environmental Quality
TGLO – Texas General Land Office
TPW – Texas Parks and Wildlife
TWCP – Texas Wetland Conservation Plan

Utah

I. Overview

A characteristically arid state, less than one percent of Utah's total land area is covered by wetlands. However, the state has lost approximately 30 percent of its original wetland acreage to development, particularly around the Great Salt Lake, and human water demand.[1] In order to protect the state's few major wetlands, state, federal, and community actions include acquisition of important land, management of wildlife and habitat, education and outreach, and regulation of aquatic resources, among other activities. Indeed, multiple state agencies play a role in both regulatory and non-regulatory wetland-related activities.

II. Regulatory Programs

Wetland Definitions and Delineation

The State of Utah defines "waters of the state" as "all streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, which are contained within, flow through, or border upon this state or any portion of the state…"[2,3] It should be noted that the Utah Pollutant Discharge Elimination System states that "'Waters of the State' includes 'wetlands' as defined in the federal Clean Water Act."[4,5]

Wetland delineation criteria rely on the U.S. Army Corps of Engineers' 1987 *Wetlands Delineation Manual*.[6]

Organization of State Activities

The chief state agencies involved in wetlands issues in Utah include the Department of Environmental Quality (UDEQ) and the Department of Natural Resources (UDNR). UDEQ administers the state's §401 water quality certification program. UDNR divisions[7] undertake a variety of wetland-related activities, including education and outreach, technical support and commentary, restoration, acquisition, and monitoring and

[1] Utah Reclamation, Mitigation, and Conservation Commission, *Wetland Projects, at* http://www.mitigationcommission.gov/wetlands/wetlands.html (last visited Sept. 12, 2005).

[2] The state's definition of waters does not include "bodies of water confined to and retained within the limits of private property, and which do not develop into or constitute a nuisance, a public health hazard, or a menace to fish or wildlife." UTAH CODE ANN. § 19-5-102(18).

[3] UTAH CODE ANN. § 19-5-102(18); UTAH CODE ANN. § 317-8-1(59).

[4] The Clean Water Act, and, accordingly, the Utah Pollutant Discharge Elimination System, defines "wetlands" as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstance do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." 33 C.F.R. § 328.3(b); UTAH ADMIN. CODE, tit. R317-8-1(60).

[5] UTAH ADMIN. CODE, tit. R317-8-1(59).

[6] U.S. Army Corps of Engineers, Wetlands Research Program Technical Report Y-87-1, Corps of Engineers Wetlands Delineation Manual (1987), *available at* http://www.saj.usace.army.mil/permit/documents/87manual.pdf.

[7] The department/divisions distinction is important in Utah because many of the various legal authorities and statutory responsibilities are vested within the respective divisions, and not the Department.

assessment research; the agency's Division of Water Rights also conducts a stream alteration permitting program which occasionally involves the regulation of impacts to wetlands.

Utah also has a group specifically devoted to the review and coordination of technical and policy actions that may affect the state's natural resources.[8] The Resource Development Coordinating Committee (RDCC), a group of state and federal natural resource agencies, serves as a state clearinghouse for development projects involving natural resources, including wetlands. The RDCC ensures that the appropriate state and local agencies are involved and that the proposed actions are consistent with state plans.[9]

Utah Department of Environmental Quality. UDEQ's Division of Water Quality administers the state's §401 water quality certification program. Less than one full-time equivalent (FTE) is devoted to the issuance of §401 certifications for the state. Program costs are usually funded by general state appropriations.[10] Other activities include various research and development projects, funded by federal grants.[11] The program is based in the UDEQ headquarters office in Salt Lake City.[12]

Utah Department of Natural Resources. Both UDNR's Division of Wildlife Resources and Division of Water Rights are the primary divisions conducting wetland-related activities within the agency, although other groups, such as the Division of Water Resources, provide comment during the RDCC state action review process.[13] All UDNR divisions are headquartered in Salt Lake City; regional offices vary among divisions.[14]

The Division of Wildlife Resources' Habitat Section conducts various wetland activities that contribute to state wildlife and habitat goals. For example, habitat restoration and land acquisition for the purpose of habitat protection may involve jurisdictional wetlands. The Habitat Section often conducts impact analyses for development proposals (both within and outside the RDCC review process) that may involve wetlands. The group also participates in wetland mitigation bank siting with the U.S. Army Corps of Engineers and U.S. Fish and Wildlife Service. Dedicated monies from the sale of hunting and fishing licenses, as well as some federal monies, fund the program.[15] The Division's Outreach Section also conducts wetland-related activities, including wetland-specific education and outreach and technical assistance. The wetland program manager is funded largely by federal grants, with state appropriations for matching purposes.[16] Staff

[8] Governor's Office and Planning and Budget, *Resource Development Coordinating Committee, at* http://governor.utah.gov/planning/rdcc.htm (last visited Nov. 1, 2005).
[9] Personal communication with Eric Millis, Utah Department of Natural Resources - Division of Water Resources (Oct. 25, 2005).
[10] Personal communication with William Moellmer, Utah Department of Environmental Quality - Division of Water Quality (Oct. 25, 2005).
[11] UDEQ is continuing the development of the state's Reference Wetland Network, a compilation of wetland profiles for the state's eco-regions. The agency is also the lead in the development of a state rapid assessment methodology in cooperation with the Corps, consultants, and UDNR staff, among others. (See *Monitoring and Assessment for Wetlands* section below). Personal communication with Nancy Keate, Utah Department of Natural Resources - Division of Wildlife Resources (Nov. 7, 2005).
[12] Moellmer, *supra* note 10.
[13] The department/divisions distinction is important in Utah because many of the various legal authorities and statutory responsibilities are vested within the respective divisions, and not the Department.
[14] Personal communication with Bill James, Utah Department of Natural Resources - Division of Wildlife Resources (Nov. 3, 2005).
[15] Personal communication with Bill James, Utah Department of Natural Resources - Division of Wildlife Resources (Oct. 31, 2005).
[16] Personal communication with Nancy Keate, Utah Department of Natural Resources - Division of Wildlife Resources (Oct. 28, 2005).

activities are spread among many areas of habitat and wildlife protection and are not exclusively wetland-related.[17]

UDNR's Division of Water Rights is responsible for regulating the appropriation and distribution of water rights, including the operation of a stream alteration permitting program.[18] The program focuses on the regulation of alterations to natural stream channels,[19] which may also include associated fringe wetlands within 30 feet of a stream. Permits are issued for one year, after which compliance with the original permit conditions is assessed. Specific provisions regarding jurisdiction, thresholds, regulated activities, and the permit process are outlined in the state's rules.[20] Two FTEs based in the division's headquarters conduct permitting, compliance, and enforcement, although regional offices may also coordinate for on-the-ground actions. The program operates entirely on state funds.[21]

§401 Certification

Any actions that require a federal permit, license, or approval that results in a discharge into waters of the state, including §404 dredge and fill permits and nationwide permits, require Clean Water Act (CWA) §401 certification. UDEQ staff rely on best professional judgment in reviewing for consistency with state water quality standards. Between 12 and 24 certifications are made annually. Project applications are generally approved with conditions. Outright denials are rare.[22]

Nationwide Permits

UDEQ does not review and approve, condition, or deny nationwide permits issued by the U.S. Army Corps of Engineers. Section 401 water quality certifications are always issued with general conditions, which relate to the protection of spawning and preventing excessive siltation.[23]

Mitigation

The State of Utah has not adopted any legislation, policies, or guidelines regarding compensatory mitigation for wetlands and generally defers to the Corps for jurisdictional, wetland-related mitigation issues.[24] UDNR's Division of Wildlife Resources does play a role in siting wetland mitigation banks, providing technical advisory regarding wildlife species.[25]

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[17] *Id.*; James, *supra* note 15.
[18] UTAH CODE ANN. § 73-3-29; UTAH ADMIN. CODE, tit. R655-13.
[19] "Natural streams" are defined as "any waterway, along with its fluvial system, that receives sufficient water to sustain an ecosystem that distinguishes it from the surrounding upland environment." UTAH ADMIN. CODE, tit. R655-13-4.
[20] *See* UTAH ADMIN. CODE, tit. R655-13.
[21] Personal communication with Charles Williamson, Utah Department of Natural Resources - Division of Water Rights (Oct. 25, 2005).
[22] Moellmer, *supra* note 10.
[23] *Id.*
[24] It should be noted that there does exist a special commission in the state that conducts directed compensatory mitigation activities: the Utah Reclamation Mitigation and Conservation Commission (URMCC). While state agencies do participate as partners or advisors, the commission is a federal executive branch agency. The URMCC was established under the Central Utah Project Completion Act of 1992, which both sets the terms and conditions for completing a major water diversion, storage and delivery project, but also for mitigation the impacts of the project. The URMCC also engages in mitigation banking through private entities and conservation groups such as The Nature Conservancy. For more information, see: http://www.mitigationcommission.gov/index.html.
[25] James, *supra* note 15.

Enforcement

Compliance and enforcement procedures are outlined in the state's water quality standards.[26] However, violations to CWA §401/404 for the state are handled at the federal level.

Tracking Systems

Utah's RDCC is devoted to the review and coordination of technical and policy actions that may affect the state's natural resources, including §401 water quality certifications for actions involving wetlands.[27] The group essentially serves as a state clearinghouse, ensuring that the appropriate state and local agencies are involved in regulatory and non-regulatory capacities, and that the proposed actions are consistent with state plans.[28]

III. Water Quality Standards

Utah has not adopted wetland specific water quality standards, but the rules do outline both numeric and narrative standards for "waters of the state."[29,30] Anti-degradation policies and use designations[31] are also described.[32] Section 401 water quality certifications are assessed based on whether or not the proposed actions will affect (surface or groundwater) "waters of the state."

IV. Monitoring and Assessment

Monitoring and Assessment for Wetlands

Utah is in the process of developing a reference-based rapid assessment methodology for wetlands under funding from the U.S. Environmental Protection Agency. The methodology will have multiple purposes, including water quality assessments (particularly assessments related to the Utah's use designations for waterfowl and shorebirds), evaluating mitigation requirements, identifying restoration sites, and developing Special Area Management Plans, among other purposes. UDEQ is leading the effort, in cooperation with the U.S. Army Corps of Engineers, UDNR, and others.[33]

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[26] UTAH CODE ANN. § 19-5-115.

[27] Governor's Office and Planning and Budget, *supra* note 8.

[28] Millis, *supra* note 9.

[29] "Waters of the State," as defined in the *Wetland definitions and delineation* section above, include "all streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, which are contained within, flow through, or border upon this state or any portion of the state…" They does not include "bodies of water confined to and retained within the limits of private property, and which do not develop into or constitute a nuisance, a public health hazard, or a menace to fish or wildlife." UTAH CODE ANN. § 19-5-102(18); UTAH CODE ANN. § 317-8-1(59).

[30] UTAH ADMIN. CODE, tit. R317-2-7.

[31] Use designations relate to drinking water, recreational use, aesthetics, use by aquatic wildlife, waterfowl and shorebirds, agricultural uses, and for the Great Salt Lake, mineral extraction. UTAH ADMIN. CODE, tit. R317-2-6.

[32] UTAH ADMIN. CODE, tit. R317-2-3 and R317-2-6.

[33] Keate, *supra* note 16.

Monitoring and Assessment for Streams

UDEQ's Division of Water Quality operates a stream monitoring program that focuses on the assessment of surface water quality in order to determine consistency with the state's use designations. Data are used to identify impaired water bodies, and reports are written to raise awareness of the issue throughout the state.[34]

The stream monitoring program consists of a network of 63, long-term, basin-intensive monitoring stations. In general, samples are collected every six weeks[35] and a reference-based assessment methodology is used to determine if stream segments are meeting their use designations. Determinations are based on a combination of quantitative assessment, best professional judgment, and site visits.[36]

V. Restoration and Partnerships

Utah does not operate a formal, state-level restoration program; however, restoration-related activities are conducted regularly at UDNR. The Wildlife Resource Division's Habitat Section conducts restoration that benefits certain wildlife and habitat. In fact, Utah statutes establish a Wildlife Habitat Account that may be used to fund projects that benefit waterfowl, including preservation, development, and restoration of wetlands (and grants to conservation organizations conducting these activities). The account is funded by revenue from the sale of licenses, permits, and certificates of registration.[37] UDNR staff also provide technical support to parties conducting restoration and mitigation within the state, including private landowners, consultants, Utah Department of Transportation, and others, and coordinate regularly with U.S. Department of Agriculture restoration programs.[38]

VI. Education and Outreach

The UDNR Division of Wildlife Resources' Outreach Section has conducted multiple wetland education activities, including the development of a wetland-specific curriculum for the 4th grade and the supply of wetland-related materials for teachers to check out and use in their classrooms.[39] The Habitat Section also conducts education and outreach activities informally as opportunities arise, for example, speaking at public meetings or providing a lecture to a local conservation group.[40]

[34] Utah Department of Environmental Quality, *Monitoring and Assessment of Water Quality, at* http://www.waterquality.utah.gov/watersheds/monitor.htm (last visited Nov. 3, 2005).
[35] Water quality sampling and analysis are consistent with U.S. Environmental Protection Agency guidelines.
[36] Utah Department of Environmental Quality, *supra* note 34.
[37] UTAH CODE ANN. § 23-19-43.
[38] James, *supra* note 15; Keate, *supra* note 16.
[39] *Id.*
[40] James, *supra* note 15.

VII. Coordination with State and Federal Agencies

Utah developed a State Wetland Conservation Strategy that addressed topics such as wetland education programs and the development of a state wetland assessment methodology. Although the strategy was not formally adopted, some state staff have used it to guide wetland protection efforts.[41]

The state has formalized its coordination process through the RDCC, which serves as a state clearinghouse for projects that might affect natural resources, including wetlands. The RDCC ensures that the appropriate state and local agencies are involved and that the proposed actions are consistent with state plans.[42]

VIII. Acronyms and Abbreviations

CWA – Clean Water Act
FTE – Full-Time Equivalent
RDCC – Resource Development Coordinating Committee
UDEQ – Utah Department of Environmental Quality
UDNR – Utah Department of Natural Resources
URMCC – Utah Reclamation Mitigation and Conservation Commission

[41] Keate, *supra* note 16.
[42] Millis, *supra* note 9.

Vermont

I. Overview

Although wetlands compose less than five percent of Vermont's land area, the state has recognized the important functions these resources provide. With approximately 35 percent of wetland resources lost to draining, dredging, filling, pollution, and other activities, the state passed legislation in 1990 that protects "Vermont's most productive ecosystem."[1] Loss of wetland acreage continues as the state works to achieve its goal of no net loss of wetlands and their functions.[2]

II. Regulatory Programs

Wetland Definitions and Delineation

Vermont law does not explicitly include wetlands in its definition of "waters," which are "any and all rivers, streams, brooks, creeks, lakes, ponds or stored water, and groundwaters, excluding municipal and farm water supplies."[3] State regulations do define "wetlands" as "those areas of the state that are inundated by surface or ground water with a frequency sufficient to support significant vegetation or aquatic life that depend on saturated or seasonally saturated soil conditions for growth and reproduction. Such areas include but are not limited to marshes, swamps, sloughs, potholes, fens, river and lake overflows, mud flats, bogs, and ponds, but excluding such areas as grow food crops in connection with farming activities."[4] Regulations also provide definitions for "alpine peatland,"[5] "bog,"[6] "deep marsh,"[7] "fen,"[8] "shallow marsh,"[9] and "wooded swamps."[10,11]

The state delineates wetlands consistently with the criteria outlined in the U.S. Army Corps of Engineers'1987 *Wetlands Delineation Manual*.[12] In addition, Vermont regulations instruct the use of the 1988

[1] Vermont Wetland Rules § 1.
[2] *Id.*
[3] VT. STAT. ANN. , tit. 10, chp. 37, § 902.
[4] Vermont Wetland Rules §2.29; VT. STAT. ANN. , tit. 24, chp. 117, § 4303(19).
[5] An "alpine peatland" is defined as "a wetland which is over 2500 feet in elevation, which has organic soils and is situated at or near the alpine zone in mountains."
[6] A "bog" refers to "a peat-accumulating wetland with hydric, organic soils, a complete, or nearly complete, sphagnum cover, and a pH value ranging from 3.5 to 5.6 that receives water primarily from precipitation."
[7] "Deep marsh" refers to "those wetlands with an average water depth between six inches and three feet during the growing season which have hydric soils and which are dominated by greater than 50 percent areal cover of herbaceous vegetation."
[8] A "fen" is "a peat-accumulating wetland with hydric organic soils and a pH value ranging from 4.0 to 8.0. *Sphagnum* moss may be present, however, not as a complete cover. It generally receives water and minerals from runoff flowing through it."
[9] "Shallow marsh" refers to "those wetlands with an average water depth of less than six inches during the growing season having hydric soils and dominated by greater than 50 percent areal cover of herbaceous vegetation."
[10] "Wooded swamps" are "those wetlands with greater than 50 percent areal cover over perennial woody vegetation greater than 20 feet tall with hydric soils."
[11] *See* Vermont Wetland Rules § 2.
[12] U.S. Army Corps of Engineers, Wetlands Research Program Technical Report Y-87-1, *Corps of Engineers Wetlands Delineation Manual (1987)*, *available at* http://www.saj.usace.army.mil/permit/documents/87manual.pdf.

Wetland Plant List of the State of Vermont, published by the U.S. Fish and Wildlife Service (FWS), to "determine the frequency of vegetation occurrence in wetlands" for delineation purposes.[13]

Wetland-related Laws and Regulations

The State of Vermont identifies and protects wetlands under the Vermont Wetland Rules[14] and the Land Use and Development Law.[15] Until 2004, the state also participated in review of local development plans and regulations under the Municipal and Regional Planning and Development Act.[16] However, the Vermont legislature eliminated the VTDEC's oversight role in order to increase efficiency of efforts.[17] The state also conducts Clean Water Act §401 water quality certification in association with the federal §404 permit program.

Vermont Wetland Rules. In 1986, the Vermont legislature passed a law requiring the adoption of wetland protection rules for the state.[18] In 1990, the state adopted the Vermont Wetland Rules.[19] The purpose of the regulations, implemented by the Vermont Department of Environmental Conservation's (VTDEC) Wetland Section, are "to identify and protect significant wetlands and the values and functions which they serve in such a manner that the goal of no net loss of such wetlands and their functions is achieved."[20]

The rules classify wetlands into three categories based on an evaluation of functions:[21] Class One wetlands are those wetlands that are "exceptional or irreplaceable in their contribution to Vermont's natural heritage and are therefore so significant that they merit the highest level of protection;" Class Two wetlands are "so significant, either taken alone or in conjunction with other wetlands, that they merit protection;" and Class Three wetlands are those wetlands that "have not been determined by the [Water Resources] Board to be so significant that they merit protection under the rules," either because they have not been evaluated or because when last evaluated, were did not merit Class One or Class Two classification.[22] The rules establish a permitting program for Class One and Class Two wetlands and adjacent buffer zones.[23] Conditional and allowed activities,[24] exemptions,[25] permitting procedures, and mitigation requirements are described in the

[13] Vermont Wetland Rules § 3.2.
[14] Vermont Wetland Rules.
[15] VT. STAT. ANN. , tit. 10, chp. 151.
[16] VT. STAT. ANN. , tit. 24, chp. 117.
[17] Personal Communication with Carl Pagel, Vermont Department of Environmental Conservation (Feb. 9, 2005).
[18] VT. STAT. ANN. , tit. 10, chp. 37, § 905 (7-9).
[19] The Vermont Wetland Rules were amended in 2002. *See* Vermont Department of Environmental Conservation - Wetlands Section, *Topic: Conditional Use Determinations (Wetlands Fact Sheet #5)*, *at* http://www.anr.state.vt.us/dec/waterq/wetlands/docs/wl_factsheet5.pdf (July 2003).
[20] Vermont Wetland Rules § 1.1.
[21] Functional evaluation for classification purposes relies on the Wetland Evaluation Technique developed by Adamus et al. *See* P.R. ADAMUS ET AL., WETLAND EVALUATION TECHNIQUE (WET) VOLUME II: METHODOLOGY (1987).
[22] Vermont Wetland Rules § 4.1.
[23] Buffer zones include a 100 foot area contiguous to the boundaries of a Class One or Class Two wetland (unless designated otherwise by the Water Resources or Natural Resources Boards). *See* Vermont Wetland Rules § 4.3.
[24] Allowed uses include certain types of silvicultural activities, road maintenance, farming activities, recreation, scientific research, wildlife or fisheries management activities, hunting activities, invasive species control, pesticide use, as well as various activities associated with the operation and maintenance of utilities. All uses which are not allowed are considered conditional uses and require a permit. Vermont Wetland Rules §§ 6.2-6.3.
[25] Exemptions relate to activities conducted prior to adoption of the rules in 1990. *See* Vermont Wetland Rules § 1.1.

rules, as well as enforcement provisions and wetland classification. Procedures to petition for a change in wetland classification are also listed.[26]

State wetland permits are called Conditional Use Determinations (CUDs). The permitting process includes §401 water quality certification for those projects that require federal review and approval under Clean Water Act §404. Less than 100 CUDs are issued in a typical year.[27] The majority of project applications are approved, with approximately two percent denied on average annually.[28] In making CUD determinations, VTDEC staff rely on the regulatory framework provided by the Vermont Wetland Rules, as well as best professional judgment.[29] The rules list and describe ten functional criteria for evaluating a wetland's significance,[30] both for purposes of classification and determination of level of protection merited.[31]

Vermont's Land Use and Development Law. The Land Use and Development Law, also known as Act 250, requires a land use permit to be obtained prior to certain kinds of development. To obtain a permit, applicants must demonstrate that they are in compliance with the Vermont Wetland Rules as well as wetland-related criteria listed in Act 250.[32] The law is administered by District Environmental Commissions; however, the VTDEC's Wetland Section reviews all Act 250 permit applications and, when appropriate, makes recommendations to the relevant District Environmental Commission and Environmental Board to protect wetlands. Because District Environmental Commissions are separate legal entities, the recommendations of the Wetlands Section are only advisory in nature. VTDEC provides review for Class One and Class Two Wetlands, as designated under the Vermont Wetland Rules. Class Three wetlands are evaluated exclusively under Act 250 criteria.[33] The Wetlands Office reviews approximately 650 Act 250 permit applications annually, about 30 percent of which involve wetlands.[34]

Organization of State Activities

Vermont's Agency of Natural Resources (ANR) holds the Department Fish and Wildlife, Department of Forests, Parks, and Recreation, and Department of Environmental Conservation (VTDEC). The VTDEC's Division of Water Quality holds the state Wetlands Section. The state also has a Natural Resources Board, a nine-

[26] Vermont Wetland Rules § 7.
[27] For example, 86 CUDs were issued in 2004.
[28] The majority of CUD applications involve residential or commercial development projects. Public projects, ponds, roads, agriculture and forestry, and utility projects are also common types of project applications. *See* Vermont Department of Environmental Conservation - Wetlands Section, *Topic: The Vermont Wetlands Office (Wetlands Fact Sheet #1)*, *at* http://www.anr.state.vt.us/dec/waterq/wetlands/docs/wl_factsheet1.pdf (February 1999).
[29] Pagel, *supra* note 17.
[30] Functional evaluation for classification purposes relies on the Wetland Evaluation Technique developed by Adamus et al. Criteria for evaluating a wetland's significance include: water storage for flood water and storm runoff; surface and groundwater protection; fisheries habitat; wildlife and migratory bird habitat; hydrophytic vegetation habitat; threatened and endangered species habitat; education and research in natural sciences; recreational value and economic benefits; open space and aesthetics; and erosion control through binding and stabilizing the soil. Adamus et al., *supra* note 21.
[31] Vermont Wetland Rules.
[32] Act 250 lists criteria that must be considered by the District Environmental Commission and Environmental Board in decision-making concerning land use permits. Criteria relate to water pollution, waste disposal, floodways, streams, shorelines, erosion control, rare and irreplaceable natural areas and aesthetics, necessary wildlife habitat, and public investments.
[33] *See* Vermont Department of Environmental Conservation - Wetlands Section, *Topic: Act 250 Review Guidelines (Wetlands Fact Sheet #9)*, *at* http://www.anr.state.vt.us/dec/waterq/wetlands/docs/wl_factsheet9.pdf (April 2003).
[34] Vermont Department of Environmental Conservation - Wetlands Section, *supra* note 28.

member board that is divided into two panels: the Land Use Panel and the Water Resources Panel (WRP).[35] The WRP oversees the adoption of state water quality standards and the development of rules regulating public water, lake levels, wetlands and their buffers, including the designation of significant wetlands and outstanding resource waters. The Water Resources Panel does not hear appeals of Agency of Natural Resources water-related permits or other decisions, but it may intervene in appeals of those permits or decisions.[36]

The VTDEC Wetland Section's central office is located in Waterbury, with regional offices located in Barre and Essex Junction.[37] Six full-time equivalents conduct various wetland-related activities, including permitting, enforcement and compliance, monitoring and assessment, outreach and technical assistance, and restoration. Two additional staff join the Wetlands Section each summer to work specifically on issues associated with Purple Loosestrife.[38] The program's annual budget ranges from $350,000 to $400,000, and is derived from federal grants, such as the U.S. Environmental Protection Agency's (EPA) Performance Partnership Grant, and state matching funds.[39]

Statewide Programmatic General Permit

Section 404 authorization for activities with minimal environmental impact is granted under the Vermont General Permit (VTGP).[40] Qualifying activities are classified as either:

- Category A, eligible without screening, non-reporting to the U.S. Army Corps of Engineers; or
- Category B, determination of eligibility made through interagency screening by the Corps and other federal resource agencies.

All other activities impacting navigable and inland waters and wetlands of the State of Vermont require an individual §404 permit from the U.S. Army Corps of Engineers. Obtainment of federal authorization under §404 does not preclude state permit requirements. The VTGP lists general requirements related to lands of national concern, the minimization of environmental impacts, procedural requirements, grandfathering, and other general conditions.[41]

[35] The Natural Resources Board was created on February 1, 2005 to replace the state's Environmental and Water Resources Boards. The Water Resources Board, composed of five citizens appointed by the governor, oversaw rule-making, as well as some quasi-judicial functions, related to water quality standards, wetlands, use of public waters, and manipulation of the surface level of lakes and ponds. The Water Resources Board will be officially dissolved once all cases pending prior to February 1, 2005 have been completed. *See* Natural Resources Board, *Summary of Act 115 Changes, at* http://www.nrb.state.vt.us/act115.htm (last updated Feb. 1, 2005).

[36] CUD appeals go directly to the Environmental Court (pursuant to 10 V.S.A., Chp. 220, any appeal must be filed with the clerk of the Environmental Court within 30 days of the date of the decision). *See* Natural Resources Board, *Water Resources Panel, at* http://www.nrb.state.vt.us/wrp/index.htm (last visited Sept. 7, 2005).

[37] In addition to Wetlands Section staff, each office contains watershed planners, water quality engineers, Department of Fish and Wildlife staff, Department of Forests, Parks, and Recreation staff, and other VTDEC staff.

[38] Purple loosestrife (*Lythrum salicaria*) is an invasive plant that threatens wetlands throughout the State of Vermont, as well as other areas of the country.

[39] Pagel, *supra* note 17.

[40] Minimal impacts are specified by the terms and conditions of the VTGP. *See* U.S. Army Corps of Engineers - New England District, *Notice of 401 Water Quality Certification for the Vermont General Permit and Amendment to the Vermont General Permit (#58) (27 Dec 2002)*, *available at* http://www.nae.usace.army.mil/reg/vtpgp.pdf.

[41] *Id.*

The VTDEC has granted §401 water quality certification for Category A VTGP-authorized activities,[42] and conditionally granted certification for Category B activities. Conditions for Category B certification relate to duration of authorization, applicability of the general permit to single and complete projects (vs. multi-phased projects), and previously authorized activities.[43] The VTDEC has the authority to request that a Category A or B project be reviewed as an Individual Permit.

Mitigation

The Vermont Wetland Rules state that adverse impacts, other than minimal impacts, will not be permitted unless avoidance and minimization sequencing has been conducted. Once sequencing requirements have been met, compensation may be considered if in accordance with the rules. Restoration and creation will be permitted to compensate for necessary impacts to Class One[44] and Class Two wetlands. Mitigation must compensate for the impacted functions specified in the rules through wetland creation at a minimum of a 1:1 ratio.[45] Other general mitigation requirements are described as well.[46,47]

Most mitigation in the state is conducted in accordance with federal projects such as transportation. The majority of the time, VTDEC staff work with permittees to develop an appropriate mitigation plan. At present, the state is not active on a Mitigation Banking Review Team, and state staff feel mitigation banking is not always an appropriate option for Vermont wetland permitting.[48]

Enforcement

Vermont law states, "[i]f any person's action, or an activity, results in the construction, installation, operation, or maintenance of any facility or condition which reasonably can be expected to violate rules relating to significant wetlands, the ANR Secretary may require specific methods and procedures for the control of that activity and the management of substances used in the activity that cause discharges or violations."[49] Furthermore, state law lists several enforcement measures available for violations to the Vermont Wetland Rules.[50] Violations may be subject to civil suit, injunction, remediation, the assessment of punitive damages, and reimbursement for damages caused by the violation,[51] as well as administrative penalties of up to

[42] Category A activities do require a waiver from the Vermont Agency of Natural Resources.
[43] U.S. Army Corps of Engineers - New England District, *supra* note 40.
[44] Compensation for adverse impacts to Class One wetlands is permitted only if a compelling need to protect public health or safety has been demonstrated. *See* Vermont Department of Environmental Conservation - Wetlands Section, *Topic: Wetland Mitigation (Wetlands Fact Sheet #15)*, *at* http://www.anr.state.vt.us/dec/waterq/wetlands/docs/wl_factsheet15.pdf (February 1999).
[45] Functional evaluation for classification purposes relies on the Wetland Evaluation Technique developed by Adamus et al. Criteria for evaluating a wetland's significance include: water storage for flood water and storm runoff; surface and groundwater protection; fisheries habitat; wildlife and migratory bird habitat; hydrophytic vegetation habitat; threatened and endangered species habitat; education and research in natural sciences; recreational value and economic benefits; open space and aesthetics; and erosion control through binding and stabilizing the soil. *See* Adamus et al., *supra* note 21.
[46] The rules specify the following provisions: compensation measures must be completed prior to the proposed activity, a preference for on-site mitigation, monitoring requirements for up to five years, long-term sustainability, adequate financial surety, and preservation in perpetuity.
[47] Vermont Wetland Rules § 8.5(c).
[48] Pagel, *supra* note 17.
[49] VT. STAT. ANN. , tit. 10, chp. 47, § 1272.
[50] Vermont Wetland Rules § 1.2.
[51] VT. STAT. ANN. , tit. 10, chp. 47, § 1274.

$25,000 per violation plus $10,000 per day the violation continues,[52] and civil penalties of up to $50,000 per violation plus $25,000 per day the violation continues.[53]

After a complaint is received, staff from the Wetlands Section are assigned to investigate. If evidence of a violation is discovered, a Notice of Alleged Violation (NOAV) may be issued to the responsible party.[54] Compliance issues are usually resolved through after-the-fact permitting or voluntary restoration. A small number of cases involving substantial wetland impact or willful violation are resolved through formal enforcement proceedings.[55] These cases usually conclude with a civil fine and some sort of remediation. A recent mandate by the ANR Secretary orders the state resource agencies to place more emphasis on compliance and the prevention of enforcement actions.[56]

Tracking Systems

The VTDEC Wetland Section maintains a basic tracking system for all wetland projects that have come under staff review. The database relies on information collected from project review sheets, enforcement proceedings, field inspections, and CUDs, including responses to registered complaints.[57]

III. Water Quality Standards

Vermont has not developed water quality standards specific to wetlands, but standards do apply to all "waters of the state," which implicitly include wetlands (see *Wetland Definitions and Delineation* section above). State water quality regulations list a water quality antidegradation policy, a water conservation policy, and a riparian area conservation policy, as well as designated uses. However, any area involving a Class One or Two wetland ultimately requires a separate CUD evaluation and permit (which includes §401 water quality certification).[58] Water quality standards are narrative, chemical, and biological in nature.[59]

[52] VT. STAT. ANN. , tit. 10, chp. 201, § 8010(c).
[53] VT. STAT. ANN. , tit. 10, chp. 211, § 8221(b)(6).
[54] *See* Vermont Department of Environmental Conservation - Wetlands Section, *Topic: Policy of Enforcement of Wetland Rules (Wetlands Fact Sheet #7)*, *at* http://www.anr.state.vt.us/dec/waterq/wetlands/docs/wl_factsheet7.pdf (February 1999).
[55] Vermont Department of Environmental Conservation - Wetlands Section, *supra* note 28.
[56] Pagel, *supra* note 17.
[57] *Id.*
[58] The VTDEC has described the following water quality certification evaluation process: (1) determine if a federal permit or license is required; (2) determine if the area qualifies as waters of the United States; (3) determine if a permit or license involves a discharge into waters of the United States; (4) determine the existing uses of the wetland; (5) determine whether there is a significant impact on those uses. *See* Vermont Department of Environmental Conservation - Wetlands Section, *Topic: Water Quality Certification (Wetlands Fact Sheet #19)*, *at* http://www.anr.state.vt.us/dec/waterq/wetlands/docs/wl_factsheet19.pdf (February 1999).
[59] Vermont Water Quality Standards.

IV. Monitoring and Assessment

Monitoring and Assessment for Wetlands

Wetland classification for regulatory purposes is conducted using Adamus et al.'s *Wetland Evaluation Technique*, a methodology that relies on functional criteria.[60] The Vermont Wetland Rules list ten criteria for evaluating "whether any wetland is so significant that it merits protection, and if so, whether it is a Class One or Class Two wetland."[61] Functional criteria include: water storage for flood water and storm runoff; surface and groundwater protection; fisheries habitat; wildlife and migratory bird habitat; hydrophytic vegetation habitat; threatened and endangered species habitat; education and research in natural sciences; recreational value and economic benefits; open space and aesthetics; and erosion control through binding and stabilizing the soil.[62]

Wetland classification was originally documented using the U.S. Fish and Wildlife Service's National Wetland Inventory maps for the state, which were revised to conform to the Vermont Wetland Rules. The resulting Vermont Significant Wetland Inventory (VSWI) maps were generated in the 1970s and have been updated periodically over the last three decades based on reclassification, though the rules specify that the maps be updated and re-distributed annually.[63]

Monitoring and Assessment for Streams

The VTDEC Division of Water Quality also houses the Biomonitoring and Aquatic Studies Section (BASS). BASS conducts monitoring of aquatic resources, including streams, with an emphasis on assessment of biological integrity. The section's activities include: biological, physical, and chemical sampling and analysis; data quality assurance; and measures to integrate results into other VTDEC programs. BASS conducts more than 100 comprehensive biological assessments annually, with emphasis on evaluation of fish and aquatic macroinvertebrate communities. Information is used for a variety of purposes, including regulation and permitting. BASS also conducts special studies in areas of special concern such as acid rain, malformed frogs, aquatic nuisance control and seasonal pools.[64]

The state has adopted a standard operating procedure (SOP) for bioassessment of wadeable streams that emphasizes aquatic life uses and biocriteria.[65] The methodology was developed specifically to detect the biological condition and aquatic life use support (ALUS) status of wadeable streams and is used in developing §§303(d) and 305(b) reports. The SOP was developed independent of other state and federal agencies, and is fairly specific to the State of Vermont.[66]

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[60] *See* Adamus et al., *supra* note 21.
[61] Vermont Wetland Rules § 5.
[62] *Id.*
[63] Vermont Wetland Rules § 4.5.
[64] Vermont Department of Environmental Conservation – Biomonitoring and Aquatic Studies Section, *Welcome to the Biomonitoring and Aquatic Studies Section*, *at* http://www.anr.state.vt.us/dec/waterq/bass.htm (last updated June 2004).
[65] For waters other than wadeable streams, including wetlands, monitoring and assessment methodologies are developed as appropriate for specific projects. Biological criteria for determining ALUS status are currently available only for wadeable streams; biocriteria are under development for lakes and certain types of wetlands. Personal Communication with Doug Burnham, Vermont Department of Environmental Conservation (Mar. 2, 2005).
[66] Personal Communication with Doug Burnham, Vermont Department of Environmental Conservation (Feb. 14, 2005).

V. Restoration and Partnerships

Although no formal restoration program exists within the VTDEC, restoration initiatives are on the rise throughout the state. There are an increasing number of opportunities for restoration projects, and the state has begun participating in these efforts regularly. Wetland Section staff often lend their expertise and technical assistance to restoration efforts on subjects such as monitoring and assessment, as well as priority restoration areas within the state. In addition to participation in U.S. Department of Agriculture and FWS Programs, the state also often partners with environmental organizations such as Ducks Unlimited and the Audubon Society.[67] VTDEC staff have also participated in developing the wetlands component of the Vermont Clean and Clear Action Plan. One element of this plan calls for a study to identify impaired wetlands in the Lake Champlain watershed that have the greatest potential to act as a sink for phosphorus. Once these wetlands are identified, restoration plans will be developed and implemented to restore impaired function.[68]

VI. Education and Outreach

The VTDEC conducts a various education and outreach activities that sometimes include a wetland component. For example, the Lakes and Ponds Management and Protection Section organizes Water Education Training (Project WET) workshops and presents to school groups regularly.[69] The Wetland Section also organizes workshops on wetland conservation and regulation that target the regulated public, realtors, consultants, contractors, other state programs and agencies, and local government representatives. Education and outreach efforts related to Purple Loosestrife are organized annually.[70] "One on one" education is conducted through site visits and project reviews, as well as informal meetings and presentations. The office also distributes wetland-related publications on a regular basis, including VSWI maps, landowner guides for restoration, and various regulatory guidelines.[71]

VII. Coordination with State and Federal Agencies

The Vermont ANR released the state's Wetland Conservation Strategy in 1994. The Strategy was developed with public involvement and identifies protection and conservation goals for the state.[72] The plan is currently in the process of being updated.[73]

The VTDEC Wetlands Section regularly works with other state offices on meeting wetland regulatory requirements (e.g. the Agency of Transportation), as well as agencies seeking to foster wetland conservation

[67] Pagel, *supra* note 17.
[68] Agency of Natural Resources, *Governor's Clean and Clear Action Plan, at* http://www.anr.state.vt.us/cleanandclear/wetlands.htm (last visited Sept. 7, 2005).
[69] Vermont Department of Environmental Conservation – Lakes and Ponds Management and Protection Section, *Vermont Project WET*, *at* http://www.anr.state.vt.us/dec/waterq/lakes/htm/lp_projectwet.htm (last updated Dec. 2002).
[70] Pagel, *supra* note 17.
[71] Vermont Department of Environmental Conservation - Wetlands Section, *supra* note 28.
[72] *See* Vermont Wetland Conservation Strategy (on file at the Vermont Department of Environmental Conservation).
[73] Pagel, *supra* note 17.

(e.g., the Agency of Agriculture, Food, and Markets). The Wetland Section also regularly coordinates with federal agencies, such as the Corps and EPA, on regulatory and non-regulatory issues. Section staff attend bi-monthly meetings to discuss transportation-related permitting issues; the meetings are also attended by the Vermont Agency of Transportation, EPA, Corps, and FWS, and other state and federal agencies. The VTDEC also meets with other New England state agencies on occasion. In past years, states have coordinated on issues such as mitigation, mapping, and monitoring and assessment.[74]

VIII. Acronyms and Abbreviations

ALUS – Aquatic Life Use Support
ANR – Agency of Natural Resources
BASS – Biomonitoring and Aquatic Studies Section
CUD – Conditional Use Determination
EPA – U.S. Environmental Protection Agency
FWS – U.S. Fish and Wildlife Service
NOAV – Notice of Alleged Violation
SOP – Standard Operating Procedure
VSWI – Vermont Significant Wetland Inventory
VTDEC – Vermont Department of Environmental Conservation
VTGP – Vermont General Permit
WET – Wetland Evaluation Technique
WRP – Water Resources Panel

[74] *Id.*

West Virginia

I. Overview

West Virginia, a mountainous state, contains relatively few wetlands—some 102,000 acres comprising less than one percent of the state's total land area. Recognizing the important functions wetlands provide, the state relies primarily on Clean Water Act §401/§404 to protect its remaining precious wetland areas.[1] Section 401 water quality certifications are issued by two offices within the West Virginia Department of Environmental Protection (WVDEP): the Division of Mining and Reclamation for all mining-related projects requiring §404 permits, and the Division of Water and Waste Management for all other §404 projects. Finally, the West Virginia Division of Natural Resources conducts various wetland-related activities associated with state wildlife goals and actions, including §401 certification review.

II. Regulatory Programs

Wetland Definitions and Delineation

West Virginia explicitly includes wetlands in its definition of state waters, which are defined as "any and all water on or beneath the surface of the ground, whether percolating, standing, diffused or flowing, wholly or partially within this state, or bordering this state and within its jurisdiction, [including], without limiting the generality of the foregoing, natural or artificial lakes, rivers, streams, creeks, branches, brooks, ponds…, impounding reservoirs, springs, wells, watercourses and wetlands."[2] Wetlands are further defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."[3]

West Virginia delineates wetlands in accordance with the criteria outlined in the U.S. Army Corps of Engineers 1987 *Wetlands Delineation Manual*,[4] although state code also allows for delineation "by accepted methods approved by the West Virginia Division of Natural Resources."[5]

Organization of State Activities

The West Virginia Department of Environmental Protection (WVDEP) oversees §401 water quality certification, although the state's Division of Natural Resources (WVDNR) also participates in §401 review, as well as other various wetland-related, non-regulatory activities.

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[1] West Virginia Department of Environmental Protection, *Preserving Our Wetlands, at* http://www.dep.state.wv.us/Docs/215_07%20pow%20pm.pdf (© 1997).
[2] W. VA. CODE § 22-11-3(23).
[3] W. VA. CODE ST. R. § 47-5A-2(17).
[4] U.S. Army Corps of Engineers, Wetlands Research Program Technical Report Y-87-1, Corps of Engineers Wetlands Delineation Manual (1987), *available at* http://www.saj.usace.army.mil/permit/documents/87manual.pdf.
[5] W. VA. CODE ST. R. § 47-5A-4(2a).

West Virginia Department of Environmental Protection. WVDEP's Division of Water and Waste Management (DWWM) conducts §401 certification for all non-mining activities that require a federal permit, license, or approval for discharges into waters of the state, including §404 dredge and fill permits and nationwide permits. DWWM conducts certification from the WVDEP's headquarters office in Charleston. Approximately two full-time equivalents (FTEs) work on certification, although other wetland-related activities can include education and outreach and technical assistance. Staff are funded by mostly by state general funds, although application fees are also used to support certification activities.[6]

The WVDEP Division of Mining and Reclamation (DMR) oversees §401 water quality certification for all mining activities requiring a §404 permit under the Clean Water Act (CWA). DMR conducts certification from the headquarters office in Charleston, as well as four regional offices. Four to six permit writers are located in each regional office (19 total) and work on water quality certification among other numerous activities. One FTE located in the headquarter office is devoted to coordinating certification-related review/decision-making, as well as coordinating with other state and federal agencies on various wetland-related issues. An estimated total of two to three FTEs work on wetland activities at DMR. Division activities are funded primarily by federal and state matching funds under the Surface Mining Control and Reclamation Act (overseen by the U.S. Department of Interior's Office of Surface Mining). Application fees and permit fees from §401 certifications and National Pollutant Discharge Elimination System permits are also used to support DMR activities.[7]

West Virginia Division of Natural Resources. The WVDNR conducts both regulatory and non-regulatory wetland-related activities. The agency reviews proposed §401 certifications for consistency with state fish and wildlife and water quality goals[8] and conducts research on various wetland-related topics, e.g. accessing created wetland success, identifying and classifying wetland communities, and monitoring biota. Staff also perform various education and outreach activities.[9]

WVDNR staff, approximately two FTEs (with five total staff working on wetland-related activities), are based both in headquarters and regional offices. Funding is provided under multiple federal grants, including the Federal Aid in Wildlife Restoration Act and the Federal Aid in Sport Fish Recreation Act (commonly known as the Pittman-Robertson and the Dingell-Johnson Acts, respectively). An additional three to four FTEs are funded in part by U.S. Environmental Protection Agency (EPA) grants for work related to wetlands and water quality. The DNR's total budget is approximately $250,000 for all agency activities (wetland-related and non-wetland-related).[10]

§401 Certification

State-level wetland regulation is conducted through CWA §401 water quality certification. DMR oversees certification for all mining activities that affect jurisdictional wetlands, while DWWM oversees certification for all other activities. State regulations outline provisions for obtaining individual certifications, including application procedures, public notification, mitigation and monitoring requirements (described further

[6] Personal Communication with Lyle Bennett, West Virginia Department of Environmental Protection (Nov. 16, 2005).
[7] Personal Communication with Ken Politan, West Virginia Department of Environmental Protection (Nov. 17, 2005).
[8] WVDNR review of water quality certifications is guided by a memorandum of agreement with the WVDEP.
[9] Personal Communication with Roger Anderson, West Virginia Division of Natural Resources (Nov. 28, 2005).
[10] *Id.*

below), and enforcement provisions.[11] The rules authorize WVDEP to impose conditions and also prescribe elements of the decision-making process, which may include consideration of the proposed activity's "impact on water resources, fish and wildlife, recreation, critical habitats, wetlands, and other natural resources under the [state] jurisdiction."[12]

DWWM issues between 25 and 80 individual certifications in any given year,[13] while DMR issues approximately 70 annually.[14] The majority of project applications are ultimately approved (oftentimes after applicants work with state staff to meet state requirements), although certifications are occasionally denied or waived.[15]

Nationwide Permits

DMR and DWWM conduct regular reviews of the U.S. Army Corps of Engineers' nationwide permits (NWPs) and have issued conditions and minimal parameters required for §401 certification.[16]

Mitigation

Compensatory mitigation provisions are outlined in the state's certification rules.[17,18] Where mitigation is necessary, on-site/in-kind mitigation is the first preference, followed by off-site/in-kind (preferably in the same watershed as the impacts), on-site/out-of-kind, and finally, off-site/out-of-kind.[19] The regulations also outline required ratios for impacts to streams, open water wetlands, emergent wetlands, scrub-shrub wetlands, and forested wetlands.[20] Acquisition of existing wetlands may be considered in certain instances and requires greater ratios.[21] Finally, the rules allow for in-lieu-fee mitigation and in-kind land donations if no other forms of mitigation are achievable.[22] Monitoring is required for all mitigation sites until "success

[11] W. VA. CODE ST. R. § 47-5A.
[12] W. VA. CODE ST. R. § 47-5A-3(1).
[13] Bennett, *supra* note 6.
[14] Politan, *supra* note 7.
[15] *Id.*; Bennett, *supra* note 6.
[16] Instances for which an individual certification is required, as well as state conditions for various NWPs, can reviewed at: http://www.lrh.usace.army.mil/_kd/Items/actions.cfm?action=Show&item_id=6349&destination=ShowItem. An additional note concerning NWP # 21 for surface coal mining activities: in July 2004, the U.S. District Court for the Southern District of West Virginia struck down the NWP # 21, thus requiring coal companies to seek individual permits. The case is expected to be heard on appeal in 2005. *See* 2004 U.S. Dist. LEXIS 12690; 34 ELR 20048.
[17] *See* W. VA. CODE ST. R. § 47-5A-6.
[18] West Virginia also requires mitigation for surface coal mining operations that affect more than 250 acres of watershed. Mitigation for temporary impacts is discretionary. W. VA. CODE § 22-11-7a. It should be noted that this section was recently amended by the 2005 West Virginia Act 110 to remove the mitigation requirement for "isolated waters" and to provide credit for mitigation as a component of a required federal permit.
[19] W. VA. CODE ST. R. § 47-5A-6.2.a.
[20] W. VA. CODE ST. R. § 47-5A-6.2.c.
[21] W. VA. CODE ST. R. § 47-5A-6.2.6.c.
[22] *See* W. VA. CODE ST. R. § 47-5A-6.2.d. Monies collected for impacts resulting from surface mining operations are deposited into the Stream Restoration Fund and used toward "restoration and enhancement of streams and water resources. . . which have been impacted by coal mining." Coal mining-related mitigation fees are assessed at $200,000 per acre of impact in watersheds larger than 250 acres from the toe of the farthest downstream permanent structure and/or watersheds with a 1/2-acre or greater loss or impact. W. VA. CODE ST. R. § 47-5A-6.2.d.1. Non-coal mining-related mitigation fees are assessed at $100 per lineal foot of impacted stream and $30,000 per acre of replaced wetland. W. VA. CODE ST. R. § 47-5A-6.2.d.2. A state in-lieu-fee mitigation program for non-coal impacts to aquatic resources was pending authorization as of November 2005. Bennett, *supra* note 6.

criteria outlined in the restoration plan" have been met, and monitoring reports must be submitted annually "until the project has been determined complete and successful for three concurrent years."[23] Both WVDEP and WVDNR must review and approve mitigation plans.[24]

Enforcement

Enforcement of state water quality certification requirements is available under West Virginia's water quality laws.[25] In practice, the U.S. EPA takes the lead on enforcement under the §404 program.[26]

Tracking Systems

WVDEP maintains a database of permits called the Environment Resource Information System, which includes data on water quality certifications.[27]

III. Water Quality Standards

West Virginia's water quality standards (WQS) do not identify criteria specific to wetlands. The state surface WQS are both narrative and numeric in nature and include chemical and biological criteria for water quality.[28] The regulations do not identify designated uses or antidegradation standards for wetlands specifically, defaulting to water use categories[29] and antidegradation provisions[30] for surface waters. It should also be noted that, in the absence of wetland-specific WQS, WVDEP staff consider impacts on water resources, fish and wildlife, recreation, critical habitats, and state resources for §401 decision-making.[31]

IV. Monitoring and Assessment

West Virginia does not operate a formal monitoring and assessment program for wetlands but does for streams. DWWM collects and compiles water quality data for the state's impaired streams listing and for the creation and implementation of total maximum daily load (TMDL) plans. Water quality data and biological information are collected and interpreted for each of the state's 32 watersheds on a five-year rotation.[32]

The WVDEP also coordinates a citizen stream monitoring program, Save Our Streams. The agency provides training for volunteers on biological sampling and data collection, as well as assessment of physical, chemical, and habitat conditions, and certifies volunteers to become stream monitors. The program also supplies

[23] W. VA. CODE ST. R. § 47-5A-6.3.
[24] W. VA. CODE ST. R. § 47-5A-6.2.c.5.C.
[25] W. VA. CODE ST. R. § 47-5A-8. *See also:* W. VA. CODE §§ 22-1-3(a), 22-11-24, and 22-11-25.
[26] Bennett, *supra* note 6.
[27] *Id.*; Politan, *supra* note 7.
[28] W. VA. CODE ST. R. § 46-1.
[29] W. VA. CODE ST. R. § 46-1-6.
[30] W. VA. CODE ST. R. § 46-1-4.
[31] W. VA. CODE ST. R. § 47-5A-3(1).
[32] West Virginia Department of Environmental Protection, *Water Quality Monitoring, at* http://www.dep.state.wv.us/item.cfm?ssid=11&ss1id=192 (last visited Dec. 28, 2005).

volunteer monitors with basic equipment, reference manuals, and stream assessment survey forms. Certified volunteer stream monitors submit survey forms to the state coordinator for a quality assurance review, and the information becomes part of a statewide database that is used for program reports, public information and outreach, and for assisting other sections of WVDEP with the overall characterization of the state's streams and rivers. Data is also collected on the state's online Volunteer Access Database.[33]

V. Restoration and Partnerships

West Virginia Department of Environmental Protection does not operate a formal restoration program, but does coordinate to some extent with the U.S. Department of Agriculture Natural Resources Conservation Service and Soil Conservation Districts on restoration activities.[34]

VI. Education and Outreach

WVDEP does not have a strategic plan or formal program in place for wetlands outreach and education, but does conduct various water education activities, such as Project WET (Water Education for Teachers) and Save Our Streams,[35] and provides fact sheets on aquatic resources for the state.[36]

WVDNR has been involved in multiple, wetland-specific, education and outreach activities, including the development of a wetland course for teachers, the creation of a wetland video dealing with the value of wetlands and applicable regulations, and the publication of *West Virginia's Wetlands, Uncommon, Valuable Wildlands*.[37]

VII. Coordination with State and Federal Agencies

WVDEP and WVDNR regularly coordinate on §401 certification review and decision-making, and have an Memorandum of Agreement in place to guide efforts.[38] WVDEP also coordinates with federal agencies on a regular basis, including the U.S. Army Corps of Engineers, EPA, Natural Resources Conservation Service, and U.S. Fish and Wildlife Service.[39]

WVDEP and WVDNR meet quarterly with EPA's Region III on wetland and/or water quality "current events" for the state. Corps, WVDEP, and U.S. Fish and Wildlife Service staff usually attend as well. WVDEP and

[33] West Virginia Department of Environmental Protection, *WV Save Our Streams, at* http://www.dep.state.wv.us/item.cfm?ssid=11&ss1id=202 (last updated Nov. 23, 2005).
[34] Bennett, *supra* note 6.
[35] West Virginia Department of Environmental Protection, *Division of Water and Waste Management – Our Mission, at* http://www.dep.state.wv.us/item.cfm?ssid=11 (last updated Sept. 19, 2005).
[36] West Virginia Department of Environmental Protection, *Public Information Office – Our Mission, at* http://www.dep.state.wv.us/item.cfm?ssid=24 (last visited Nov. 23, 2005).
[37] Anderson, *supra* note 9.
[38] Bennett, *supra* note 6.
[39] *Id.*; Politan, *supra* note 7.

WVDNR also sit on the EPA Region III-chaired Resource Interagency Steering Committee that addresses multi-state wetland issues.[40]

VIII. Acronyms and Abbreviations

CWA – Clean Water Act
DMR – Division of Mining and Reclamation
DWWM – Division of Water and Waste Management
EPA – U.S. Environmental Protection Agency
FTE – Full-Time Equivalent
NWP – Nationwide Permits
TMDL – Total Maximum Daily Load
(Project) WET – Water Education for Teachers
WQS – Water Quality Standards
WVDEP – West Virginia Department of Environmental Protection
WVDNR – West Virginia Division of Natural Resources

[40] Anderson, *supra* note 9.

Wisconsin

I. Overview

Rich in wetland resources, Wisconsin holds roughly 5.3 million acres of diverse wetland types throughout the state. However, before statehood, Wisconsin held more than 10 million acres of wetlands—indeed, approximately 47 percent of the state's original wetland acreage has been lost to agriculture, development, roads, and other land use changes over the past 150 years.[1] Recognizing the need to protect its remaining resources, Wisconsin has formed a comprehensive, strategic wetland protection program with active regulatory and non-regulatory components at the local, state, and federal level.

Wisconsin's state wetland conservation plan, *Reversing the Loss: A Strategy for Protecting & Restoring Wetlands in Wisconsin*, outlines a series goals, strategies, and performance measures to guide the state's wetland protection and conservation.[2] At the state level, the Wisconsin Department of Natural Resources (WDNR) regulates wetlands primarily through water quality certification. In addition to §401 certification as required under the Clean Water Act (CWA), in 2001 Wisconsin became the first state to enact a nonfederal wetlands protection law in reaction to the *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers (SWANCC)* decision that cast doubt on federal jurisdiction over some intrastate isolated wetlands. Wisconsin statutes also regulate wetlands below the ordinary high water mark of navigable lakes and streams. Finally, the agency conducts numerous other wetland-related activities, including mapping, monitoring and assessment, restoration, education and outreach, and other research.

II. Regulatory Programs

Wetland Definitions and Delineation

Wisconsin statutes define "waters of the state" as "those portions of Lake Michigan and Lake Superior within the boundaries of this state, and all lakes, bays, rivers, streams, springs, ponds, wells, impounding reservoirs, marshes, watercourses, drainage systems and other surface water or groundwater, natural or artificial, public or private, within [the State of Wisconsin] or its jurisdiction."[3] "Wetlands," defined separately, mean "[areas] where water is at, near, or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and which has soils indicative of wet conditions."[4]

[1] Wisconsin Department of Natural Resources, *Reversing the Loss: A Strategy for Protecting & Restoring Wetlands in Wisconsin* (Dec. 2000), *available at* http://www.dnr.state.wi.us/org/water/fhp/wetlands/documents/Reversing_the_Loss.pdf, at 5.
[2] *Id.*
[3] WISC. STATS. § 281.01(18); WISC. ADMIN. CODE § NR 103.02.
[4] WISC. STATS. § 23.32(1).

State law requires the use of the U.S. Army Corps of Engineers' 1987 *Wetlands Delineation Manual*.[5,6] Non-federal wetland regulations also allow the use of additional guidance for delineation, including *Guidelines for Submitting Wetland Delineations in Wisconsin to the St. Paul District Corps of Engineers* and U.S. Army Corps Regulatory Guidance Letters 88-03 (Wetland Jurisdictional Determinations), 90-06 (Expiration Dates for Wetlands Jurisdictional Delineations), and 64-01 (Expirations of Geographic Jurisdictional Determinations).[7] The state generally requires a qualified wetland professional to make determinations, which are subject to state review. WDNR has established a professional assurance program[8] for wetland consultants that meet certain qualifications. Under the program, delineations conducted by professionally assured wetland professionals may receive a more cursory review, allowing for faster permitting decisions.[9]

Wetland-related Laws and Regulations

Water quality certification. Wisconsin regulates wetlands primarily under two complementary provisions. First, any actions that require a federal permit, license, or approval that results in a discharge into waters of the state, including §404 dredge and fill permits and nationwide permits, require Clean Water Act (CWA) §401 certification. Wisconsin rules establish water quality standards for wetlands as well as procedures and criteria for state water quality certification application, processing, and review.[10] In addition, the state legislature enacted the *2001 Wisconsin Act 6*[11] in response to post-*SWANCC* uncertainty regarding federal jurisdiction over isolated wetlands. The law requires water quality certification for "nonfederal wetlands," which include wetlands that are "determined not to be subject to [federal] regulation…due to the decision in [*SWANCC*]" and/or wetlands that are "determined to be a nonnavigable, intrastate, and isolated wetland under the decision in [*SWANCC*]…"[12] The act and its corresponding statutes and regulations outline certification requirements, delineation procedures, exemptions, enforcement provisions, conditions under which general water quality certifications may apply, and other various requirements.[13]

The state makes around 400 individual wetland water quality certifications each year, approving approximately 90 to 95 percent of received applications. Five to ten percent of certifications are denied, and no decisions are waived.[14] Under direction of the state rules, WDNR staff must determine whether a proposed activity will result in discharges to state waters and if the activity complies with state effluent limitations for categories of discharges, water-based related effluent limitations, water quality standards, performance

[5] Wisconsin Department of Natural Resources, *Wisconsin Wetlands: Wetland Boundary Delineation, at* http://www.dnr.state.wi.us/org/water/fhp/wetlands/boundaries.shtml (last updated July 20, 2005).
[6] Wisconsin water quality standards actually specify the use of delineation procedures outlined in the *Basic Guide to Wisonsin's Wetlands and Their Boundaries (Wisconsin Department of Administration PUBL-WZ-029-94)*, a document based on the 1987 Corps Delineation Manual. *See:* WISC. ADMIN. CODE § NR 103.8(1m).
[7] WISC. ADMIN. CODE § NR 352.03.
[8] *See:* Wisconsin Department of Natural Resources, *Wisconsin Wetlands: Wetland Delineation Professional Assurance Initiative, at* http://www.dnr.state.wi.us/org/water/fhp/wetlands/assurance.shtml (last updated July 20, 2005).
[9] Wisconsin Department of Natural Resources, *supra* note 5.
[10] WISC. ADMIN. CODE §§ NR 103 and NR 299.
[11] S. 1, 2001 Spec. Sess. (Wi. 2001).
[12] *Id.*
[13] *Id.*
[14] Personal Communication with Tom Bernthal, Byron Simon, and Pat Trochlell, Wisconsin Department of Natural Resources (Nov. 21, 2005).

standards, toxic and pretreatment effluent standards, public interest and public rights standards pertaining to water quality, and any other applicable state requirements.[15]

Additional laws and regulations. Wisconsin regulations also provide procedures for reviewing wetland conservation activities, such as restoration, enhancement, and the management of existing wetlands.[16] Under the rules, certain conservation activities may receive a general permit for wetland conservation practices. The rules outline conditions required for eligibility, project design specifications, application requirements, general and individual permit provisions, enforcement, and maintenance.[17]

Wisconsin's laws on Navigable Waters Protection also apply to wetlands below the Ordinary High Water Mark. In general, regulations apply to construction and waterway alteration pertaining to navigable waters, which may include dredging and filling, as well as dam construction, water diversion, and grading.[18]

Finally, the state also participates in local wetland regulation. Wisconsin statutes require the WDNR to assist local governments in designing and administering zoning laws for shorelands and wetlands in the shoreland zone. Under the statute, WDNR must provide technical assistance to local zoning officials and oversee local decisions and development of shorelands standards.[19]

Organization of State Activities

State-level wetland activities are conducted by multiple sections in the Wisconsin Department of Natural Resources (WDNR). Within the Division of Water, the Bureau of Fisheries Management and Habitat Protection and the Bureau of Watershed Management conduct wetland-, lake-, and stream-related activities. Within the Division of Land, the Bureau of Wildlife Management conducts wetland acquisition, protection, and restoration projects. Within the Division of Enforcement and Science, the Integrated Science Services Bureau is responsible for the review and development of Environmental Impact Statements and Environmental Assessments that include analyses of wetland impacts; the division also coordinates with the Wisconsin Department of Transportation (WDOT) on environmental issues. Finally, the Office of Energy was recently created to centralize the review of important energy and utility projects and to help streamline the permitting process, including wetland water quality certification.

Division of Water. As of 2005, the Bureau of Fisheries Management and Habitat Protection housed the state's two primary wetland sections: the Lakes and Wetland Section and the Rivers and Habitat Section. However, in 2006 both sections will be moved to the Bureau of Watershed Management. In general, the Lakes and Wetland Section maintains the Wisconsin Wetland Inventory, performs research, and conducts other non-regulatory activities; the Rivers and Habitat Protection Section performs regulatory functions, although staff activities, including water quality certification, enforcement, monitoring and assessment program development, research, restoration, education and outreach, and technical assistance, do overlap between the two sections. In addition to the headquarter office in Madison, the wetland program also operates from WDNR's 31 service centers. Approximately 35 field staff work primarily on the public waters

[15] WISC. ADMIN. CODE § NR 299.04.
[16] WISC. ADMIN. CODE § NR 352.03(15).
[17] WISC. ADMIN. CODE § NR 353.
[18] WISC. STATS. §§ 30, 31.
[19] WISC. STATS. §§ 59.971, 61.351, 62.231.

protection/navigable waters protection program and wetland water quality certification. Seven permanent staff who work on waterway and wetland projects are located in the headquarter office.[20] Staff activities are spread among many areas of habitat protection, making difficult the calculation of funding devoted specifically to wetlands management and protection. However, a rough estimate for the Water Division's annual budget related to wetlands is $1.278 million (FY2006).[21] Funding for program activities comes from multiple sources, including state general purpose revenues, water quality certification application fees, and federal grants.[22,23]

The WDNR is also responsible for delineating and classifying wetlands for the Wisconsin Wetland Inventory (WWI). Wetlands are delineated through aerial photo interpretation and are classified according to vegetative type, hydrology, human influence, and other wetland characteristics. The interpreted photography is scanned and processed to create digital orthophotography (DOP). Wetland linework is extracted off the rectified photography and vectorized in ArcGIS. Currently, most of the wetland data available for Wisconsin was not digitized from digital orthophotos. The newer process will allow the Digital Wisconsin Wetlands Inventory to become a seamless geographical information systems (GIS) product.[24]

Division of Land. The Bureau of Wildlife Management's Wildlife and Landscape Ecology Section conducts wetland restoration pertaining to waterfowl and wildlife conservation and recreation.[25] Two staff located in the headquarter office oversee program funding decision-making, and field staff assist in implementing projects and activities by providing technical assistance, outreach, monitoring, and maintenance.[26]

The Bureau of Wildlife Management provides between $300,000 and $400,000 annually for restoration of wetlands and associated uplands. Funding comes from collected waterfowl stamp fees.[27]

Division of Enforcement and Science. The Integrated Science Services Bureau and the Office of Energy are involved in the review of larger, often linear projects related to the construction and maintenance of transportation and utility infrastructure. The size and unique nature of these projects requires a separate review process. Transportation projects are reviewed by 19 field liaison staff and two central office staff under a cooperative agreement with the WDOT. Staff time devoted to waterway and wetland project review is estimated at the equivalent of 10 FTEs.[28] Wetland and waterway permitting for utility projects is conducted

[20] Bernthal et al., *supra* note 14.
[21] This estimate includes WDNR staff salary plus fringe for 15 FTEs (after prorating the wetlands portion out of the total waterways and wetland budget), supplies, contracts, and Wisconsin Wetland Inventory-related expenses. Personal Communication with Tom Bernthal and Mary Ellen Vollbrecht, Wisconsin Department of Natural Resources (Jan. 11, 2006).
[22] Approximately half of the annual budget is funded by general purpose revenue from the state. Approximately one-third is funded by fees. The remainder comes from federal grants (e.g. U.S. Environmental Protection Agency, U.S. Army Corps of Engineers) for various types of research.
[23] Bernthal et al., *supra* note 14.
[24] Personal Communication with Tom Bernthal, Wisconsin Department of Natural Resources (Jan. 24, 2006).
[25] Multiple state-level groups conduct restoration within the state. In addition to WDNR's Bureau of Wildlife Management, the Bureau of Fisheries and Habitat and the Bureau of Endangered Resources conduct restoration and enhancement throughout the state. This narrative will focus on the work of the Bureau of Wildlife Management.
[26] Personal Communication with Michele Cipiti, Wisconsin Department of Natural Resources (Nov. 28, 2005).
[27] *Id.*
[28] Wisconsin Department of Natural Resources, *Science Services Support: Department of Transportation Cooperative Agreement, at* http://dnr.wi.gov/org/es/science/dot_coop.htm (last revised Jul. 5, 2005). *See also:* Wisconsin Department of Natural Resources,

by three Office of Energy staff located in the central office.[29] Review is governed by a cooperative agreement with the Public Service Commission.[30]

Statewide Programmatic General Permit

Wisconsin re-issued a Statewide Programmatic General Permit (SPGP) on January 1, 2004 (expiring on December 31, 2008) that covers certain activities permitted by WDNR. The SPGP outlines excluded activities, general permit conditions, and application procedures.[31]

Mitigation

In May 2000, Wisconsin revised its wetland laws in order to improve the environmental consequences resulting from the state's wetland regulatory process.[32] Wetland mitigation rules outline sequencing standards, planning requirements and preferences, compensation ratios, site crediting, construction inspection and monitoring procedures, financial assurance requirements, permanent protection requirements, procedures for the establishment of wetland mitigation banks in the state (including the role of the Mitigation Banking Review Team), and enforcement provisions.[33]

State legislation allows WDNR to consider wetland compensatory mitigation in its wetland permitting decision process, and regulations define the circumstances under which WDNR can consider a mitigation project as part of a project proposal.[34] The state holds a Memorandum of Agreement (MOA) with the U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, and U.S. Fish and Wildlife Service on compensatory mitigation review procedures and coordination among agencies.[35]

Enforcement

Wisconsin law offers multiple options for enforcement of wetland violations. General environmental statutory provisions include civil penalties of $10 to $5,000 per violation (per day), plus the cost of court expenses.[36] Water and sewage statutes describe investigation procedures, civil procedures, WDNR inspection powers and procedures, and enforcement mechanisms, which may include abatement orders and penalties of $10 to $5,000 per violation (per day), plus the cost of court expenses.[37,38]

Science Services Support: Wisconsin Environmental Policy Act (WEPA) Compliance, at http://dnr.wi.gov/org/es/science/eis/ (last revised Feb. 17, 2006).

[29] Personal Communication with Dave Siebert, WDNR Office of Energy (May 2006).

[30] Wisconsin Department of Natural Resources, *Office of Energy Staff Contacts, at* http://dnr.wi.gov/org/es/science/energy/oe.htm (last revised Mar. 30, 2006).

[31] The full provisions of the SPGP are outlined at: U.S. Army Corps of Engineers – St. Paul District, *Department of Army Permit (GP-001-WI), at* http://www.mvp.usace.army.mil/regulatory/ (Jan. 1, 2004).

[32] Wisconsin Department of Natural Resources, *Wetlands Compensatory Mitigation: Introduction, at* http://www.dnr.state.wi.us/org/water/fhp/wetlands/mitigation/applicantguidance.shtml (last updated Nov. 23, 2005).

[33] WISC. STATS. § 281.37(2m); WISC. ADMIN. CODE § NR 350.

[34] A. 859, 1999 Sess. (Wi. 1999).

[35] Memorandum of Agreement Concerning the Adoption of Guidelines for Wetland Compensatory Mitigation in Wisconsin (2002) (*available at* http://www.dnr.state.wi.us/org/water/fhp/wetlands/mitigation/documents/mitigation_moa.pdf).

[36] WISC. STATS. §§ 299.95 and 299.97.

[37] WISC. STATS. §§ 281.91-281.98.

[38] Additional, various enforcement measures are also included throughout Wisconsin's rules. For example, violations to the state's mitigation banking regulations may result in removal from the state's approved mitigation banking registry. WISC. ADMIN. CODE § NR 350.14.

In practice, wetland violations are addressed at multiple levels – local, state (WDNR, Wisconsin Department of Justice), and federal (Corps, EPA, U.S. Department of Justice) government agencies leverage partnerships and pool resources to most effectively address violations. Enforcement cases are typically resolved through voluntary restoration, although the full range of action may be utilized, depending on the situation.[39]

Tracking Systems

The state records all wetland permits in the Waterways and Wetlands Database. All mitigation actions are tracked in the Wetland Compensatory Mitigation Database. Aspects tracked include type of wetland impacted, type of wetland mitigated, type of mitigation (e.g. on-site, off-site, bank, etc.), acreage impacted, acreage of mitigation, location, dates of submitted reports, enforcement actions, and more. Data is collected via site inspection, permittee data submission, and state data.[40]

A tracking system and GIS data layer for voluntary restoration projects conducted by state, federal, and non-profit partners is under development. This tracking data will be combined with existing data on permitted fills and compensatory mitigation data to provide an annual report on recorded wetland losses and gains. The annual report will also estimate continued needs to explore a means of identifying unpermitted fills and other wetland losses.[41]

Watershed Programs

The WDNR's two primary wetland sections, the Lakes and Wetland Section and the Rivers and Habitat Section, regularly coordinate with the Bureau of Watershed Management and other Department programs at the local level,[42] both for regulatory and non-regulatory purposes. For example, developing wetland monitoring strategies are coordinated with the Bureau's water monitoring programs and are carried out by field staff in Geographic Management Units (GMUs) that based on the state's 23 major water basins. Restoration and mitigation are also focused on a watershed approach.[43]

III. Water Quality Standards

Wisconsin has established wetland-specific water quality standards that seek to "protect public rights and interest, public health and welfare, and the present and prospective uses of all waters of the state for public and private water supplies, propagation of fish and other aquatic life and wild and domestic animals, preservation of natural flora and fauna, domestic and recreational uses, and agricultural, commercial, industrial and all other uses…"[44] The standards are applicable to most state jurisdictional determinations where wetlands may be impacted.

[39] Bernthal et al., *supra* note 14.
[40] *Id.*
[41] Bernthal, *supra* note 24.
[42] In 2006, the Lakes and Wetland Section and the Rivers and Habitat Section will be housed within the Bureau of Watershed Management (both were housed in the Bureau of Fisheries Management and Habitat Protection previously).
[43] Wisconsin Department of Natural Resources, *Bureau of Watershed Management, at* http://www.dnr.state.wi.us/org/water/wm/ (last revised Sept. 2, 2005).
[44] WISC. ADMIN. CODE § NR 103.01(2).

The rules specify wetland functions to be protected, including sediment and pollution attenuation, storm and floodwater retention, hydrologic cycle maintenance, shoreline protection, biodiversity, and recreation.[45] Criteria are narrative[46] and serve as a basis for "developing and implementing strategies to achieve legislative policies and goals" and for "decisions in regulatory, permitting, planning or funding activities that impact water quality and which impact wetlands," including water quality certifications and NPDES permitting.[47] The rules also specify circumstances under which exemptions are acceptable and procedures for WDNR's regulatory determinations.[48]

IV. Monitoring and Assessment

Monitoring and Assessment for Wetlands

Wisconsin is developing a broader monitoring and assessment program that utilizes multiple assessment methodologies to characterize the health of the state's wetlands and the functions they provide. New monitoring methodologies have been developed with funding from the U.S. Environmental Protection Agency's Wetland Program Development Grants. Wetland monitoring is being integrated with other surface water and ground water monitoring programs coordinated by the Water Monitoring Team in the WDNR's Division of Water. The Wetland Monitoring Sub-Team is guiding the development of several pilot projects to begin implementation of methodologies.

WDNR's primary assessment methodology, used for water quality certifications, is a site-level rapid assessment methodology that evaluates wetland functions and values.[49] WDNR developed the Wisconsin Rapid Wetland Assessment Methodology (WRWAM) in 1984 in conjunction with the Corps' Rock Island and St. Paul Districts and the State of Minnesota.[50] The methodology was revised in 1991.

In recent years, WDNR has developed a biological assessment methodology, the Wisconsin Floristic Quality Assessment (WFQA), to provide an accurate measure of plant community biological integrity at the site level. Multi-metric biological indices for isolated depressional wetlands have been developed based on plants, macroinvertebrates, amphibians and zooplankton and diatoms.[51] Plant and macroinvertebrate indices have been tested successfully for use by staff or trained volunteers. WDNR is currently conducting pilot watershed-level assessment projects in the Milwaukee River Basin and the Mead Lake Watershed.

These assessment methods have been developed under grants from the U.S. Environmental Protection Agency (EPA).[52] State matches to the EPA grant also support the program. WDNR is currently capacity-

[45] WISC. ADMIN. CODE § NR 103.01(3).
[46] *See* WISC. ADMIN. CODE § NR 103.03.
[47] WISC. ADMIN. CODE § NR 103.01(4).
[48] WISC. ADMIN. CODE §§ NR 103.06(4) and 103.08.
[49] Wisconsin Department of Natural Resources, *Wisconsin Wetlands: Assessment and Monitoring, at* http://www.dnr.state.wi.us/org/water/fhp/wetlands/assessment.shtml (last updated Dec. 1, 2005).
[50] Bernthal et al., *supra* note 14.
[51] Wisconsin Department of Natural Resources, *supra* note 49.
[52] Wisconsin Department of Natural Resources, *Development of a Floristic Quality Assessment Methodology for Wisconsin, Final Report to USEPA Region V, Wetland Grant # CD975115-01-0 (2003), available at* http://www.dnr.state.wi.us/org/water/fhp/wetlands/documents/FQAMethodWithAcknowledgements.pdf

building and planning further implementation of the bioassessment methodology as part of the state's Water Monitoring Strategy.[53,54]

Monitoring and Assessment for Streams

The WDNR's Water Division oversees monitoring, assessment, and reporting of stream quality. State monitoring and assessment strategies are three-tiered: first, baseline monitoring provides an overall picture of stream health; second, stream-specific sampling informs regulatory processes (e.g. 303(d)/305(b)); and third, monitoring and assessment in order to evaluate management actions.[55]

With more than 84,000 miles of wadeable and non-wadeable streams throughout the state, WDNR sought to broaden the understanding of statewide stream health in 2004 by developing a probabilistic sampling design for stream water quality monitoring. Under the sampling design, approximately 55 watersheds (out of 334 watersheds statewide) are selected at random. Within those selected watersheds, ten stream segments are further selected at random, resulting in about 650 assessments per year. Stream assessments are generally conducted using electrofishing methodologies, although macroinvertebrate sampling, habitat assessments, and other methodologies are also used where appropriate. The stream monitoring strategy was developed by WDNR with occasional input from other entities such as the U.S. Environmental Protection Agency, other states, and the National Water Quality Monitoring Council. The stream monitoring program is funded under both the Bureau of Fisheries and Habitat and the Bureau of Watershed Management.[56]

Citizen Monitoring Programs and Opportunities

The state actively supports volunteer stream and wetland monitoring programs operating within the state by directing interested citizens to the appropriate organizations and providing information to the public. Recognizing the value of citizen participation, the state promotes citizen monitoring and funds a volunteer coordinator.[57] While most monitoring groups operate for mostly education purposes, the state does anticipate developing methodologies and sampling designs to improve data quality and consistency, with the eventual goal of using citizen-collected data as a state resource.[58]

[53] Wisconsin operates a "State of the Basin" Program, under which the state's large river basins -- 23 Geographic Management Units in total -- are assessed every five years to provide a picture of the status and health of water-based ecological resources and to identify focal areas for WDNR efforts. The program is similar to the U.S. EPA 305(b) listing process but is not necessarily tied to regulatory requirements. Reports track a combination of criteria for wetlands. *See:* Wisconsin Department of Natural Resources, *State of the Basin Reports, at* http://www.dnr.state.wi.us/org/gmu/stateofbasin.html (last updated Nov. 3, 2003).
[54] Bernthal et al., *supra* note 14.
[55] Personal Communication with Michael Miller, Wisconsin Department of Natural Resources (Dec. 2, 2005).
[56] *Id.*
[57] Bernthal et al., *supra* note 14.
[58] Miller, *supra* note 55.

V. Restoration and Partnerships

The Bureau of Wildlife Management runs one of Wisconsin's foremost state-level wetland restoration programs.[59] Funded by waterfowl stamp revenues, the state awards between $300,000 and $400,000 annually for the restoration of wetlands and associated uplands on both public and private land. State, federal, and conservation groups within the State of Wisconsin are eligible for funding.[60] The program allocates funds according to criteria based on wildlife priorities identified in the *Upper Mississippi River and Great Lakes Region Joint Venture - Wisconsin Plan*. The Wisconsin Joint Venture Plan states its goal to be the involvement of "state and federal agencies and private organizations in a broad-based, unified effort to increase populations of waterfowl and other wildlife species by preserving, restoring, and enhancing wetland and upland habitat…" The plan outlines multiple, concrete objectives designed to achieve this goal, including increasing bird populations and additional habitat – specifically, "a minimum of 55,500 additional acres of habitat (3,700 acres per year) in perpetuity with a 3:1 upland to wetland ratio" and "177,350 acres of habitat on public (4,340 acres per year) and private (7,500 acres per year) lands by the year 2005."[61] As of 2005, the program has accomplished more than 70 percent of the goal.[62]

Multiple other restoration programs exist at all levels of government, as well as nongovernmental conservation organizations – for example, USDA Natural Resources Conservation Service, Ducks Unlimited, Wisconsin Wetlands Association, and Wisconsin Waterfowl Association, among others. State staff participate in these programs, leverage partnerships, provide technical and financial assistance for wetland restoration where possible, and conduct education relating to wetland restoration opportunities in the state.[63]

State-restored properties, known as Wildlife Management Areas, are maintained by Bureau of Wildlife Management staff. These stewardship activities, along with other general staff activities, are funded by grants under the Federal Aid in Wildlife Restoration Act (also known as the Pittman-Robertson Act). Funding for wetland-related maintenance and management is also available from segregated state funds from the sale of various licenses. Finally, stewardship funds are available directly from the state for wetland protection and acquisition. WDNR and conservation organizations can apply for these funds for habitat protection, including wetlands.[64]

The Bureau of Wildlife Management also works with partners throughout the state to submit North American Wetlands Conservation Act (NAWCA) applications for grants, which are used to perform restoration. WDNR provides matches for other groups who receive NAWCA grants, e.g. DU, Madison Audubon, Western Wisconsin Land Trust, and The Nature Conservancy. WDNR leverages these partnerships to submit proposals, receive grant funds, provide matches, and perform the restoration work in priority areas as identified in

[59] Multiple state-level groups conduct restoration within the state. In addition to WDNR's Bureau of Wildlife Management, the Bureau of Fisheries and Habitat and the Bureau of Endangered Resources conduct restoration and enhancement throughout the state. This narrative will focus on the work of the Bureau of Wildlife Management.
[60] Cipiti, *supra* note 26.
[61] *See:* Upper Mississippi River Great Lakes Region Joint Venture – Wisconsin Plan (1992) (on file with author).
[62] Cipiti, *supra* note 26.
[63] Bernthal et al., *supra* note 14; Cipiti, *supra* note 26.
[64] Cipiti, *supra* note 26.

the *Joint Venture*. The amount received by participating partners varies annually, but since the beginning of NAWCA, over $22 million in grant funds have been secured for the state.[65]

VI. Education and Outreach

One of the main components of the state's wetland conservation plan, *Reversing the Loss: A Strategy for Protecting & Restoring Wetlands in Wisconsin*, specifically addresses education and outreach goals, strategies, and performance measures.[66] Envisioning that "[p]ublic and private owners of wetlands make sound decisions to use their land in a way that sustains both wetlands and socio-economic benefits," the plan outlines ten strategies, which include message development and presentation by WDNR; partnerships, guidance, and education for the public, including regulated parties, youth, and landowners; citizen monitoring programs; demonstration of land use management techniques; and strong, continued communication with agricultural and transportation communities.[67]

The state has begun implementing the strategies in multiple ways, for example: partnering with conservation organizations to provide education and outreach; providing technical support, seminars, courses, and workshops to various audiences; developing a Purple Loosestrife curriculum for science teachers that is designed to teach the evaluation of infestations and biocontrol practices; and conducting outdoor education programs.[68] Although the success of the program has not been recently evaluated against its performance measures,[69] prescribed wetland strategies are consistently being implemented by WDNR.[70]

VII. Coordination with State and Federal Agencies

Partnerships with state and federal agencies, as well as with conservation organizations, academic institutions, local governments, citizens, the regulated public, and other wetland stakeholders, guide many of the state's regulatory and non-regulatory wetland protection efforts. Strategies for building and maintaining these relationships are outlined in the state's wetland conservation plan, *Reversing the Loss: A Strategy for Protecting & Restoring Wetlands in Wisconsin*, and include education and outreach, streamlining regulatory processes, providing wetland stewardship incentives, acquisition and restoration strategies, and mapping and monitoring wetlands throughout the state.[71]

The state holds multiple memoranda of agreement with federal agencies (e.g. U.S. Army Corps of Engineers, EPA, U.S. Fish and Wildlife Service, Natural Resources Conservation Service, etc.), tribes, and state agencies (Wisconsin Department of Transportation, Department of Agriculture Trade and Consumer Protection, etc.) on wetland related issues (permitting, mitigation, management and restoration, etc.) Partnerships are

[65] Personal Communication with Michele Cipiti, Wisconsin Department of Natural Resources (Jan. 24, 2006).
[66] Wisconsin Department of Natural Resources, *supra* note 1, at 8.
[67] *Id.*, at 8-9.
[68] Bernthal et al., *supra* note 14.
[69] Wisconsin Department of Natural Resources, *supra* note 1, at 10.
[70] Bernthal et al., *supra* note 14.
[71] Wisconsin Department of Natural Resources, *supra* note 1.

further exemplified by regular meetings among agencies to discuss wetland-related issued throughout the state.[72]

VIII. Acronyms and Abbreviations

CWA – Clean Water Act
DOP – Digital Orthophotography
EPA – U.S. Environmental Protection Agency
FTE – Full-Time Equivalent
GIS – Geographical Information Systems
GMU – Geographic Management Unit
NAWCA – North American Wetlands Conservation Act
SPGP – Statewide Programmatic General Permit
SWANCC – Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers
WDNR – Wisconsin Department of Natural Resources
WDOT – Wisconsin Department of Transportation
WFQA – Wisconsin Floristic Quality Assessment
WRWAM – Wisconsin Rapid Wetland Assessment Methodology
WWI – Wisconsin Wetland Inventory

[72] Bernthal et al., *supra* note 14; Cipiti, *supra* note 26.

Appendix B: Acronyms and Abbreviations

~A~

ALUS – Aquatic Life Use Support
ANR – Agency of Natural Resources
APA – Adirondack Park Agency
AWIMS – Arkansas Wetland Info. Management System

~B~

BASS – Biomonitoring and Aquatic Studies Section
BioRecon – BioReconnaissance

~C~

Commission – Comm. on Water Resource Management
CUD – Conditional Use Determination
CWA – Clean Water Act
CWB – Clean Water Branch
CWRP – Corporate Wetlands Restoration Partnership

~D~

DAR – Division of Aquatic Resources
DMR – Division of Mining and Reclamation
DOFAW – Division of Forestry and Wildlife
DOP – Digital Orthophotography
DWM – Division of Watershed Management
DWWM – Division of Water and Waste Management

~E~

ELI – Environmental Law Institute
EPA – U.S. Environmental Protection Agency
ERP – Environmental Resource Permit

~F~

FLDEP – Florida Dept. of Environmental Protection
FLDOT – Florida Department of Transportation
FPA – Forest Practices Act
FTE – Full-Time Equivalent
FWPA – Freshwater Wetlands Protection Act
FWS – U.S. Fish and Wildlife Service

~G~

GIS – Geographic Information Systems
GMU – Geographic Management Unit

~H~

HDLNR – Hawaii Dept. of Land and Natural Resources
HDOH – Hawaii Department of Health
HGM – Hydrogeomorphic

~I~

ILF – In-Lieu-Fee

~J~

JCP – Joint Coastal Permit

~L~

LD – Limited Duration
LURP – Land Use Regulation Program

~M~

MAWPT – Multi-Agency Wetland Planning Team
MBRT – Mitigation Banking Review Team
MDEP – Maine Department of Environmental Protection
MDEQ – Montana Department of Environmental Quality
MOA – Memorandum of Agreement
MOU – Memorandum of Understanding
MSSW – Management and Storage of Surface Waters
MWL – Montana Wetlands Legacy

~N~

NAWCA – North American Wetlands Conservation Act
NCEEP – NC Ecosystem Enhancement Program
NDEQ – Nebraska Dept. of Environmental Quality
NGPC – Nebraska Game and Parks Commission
NJDEP – New Jersey Dept. of Environmental Protection
NJDOT – New Jersey Department of Transportation
NJMC – New Jersey Meadowlands Commission
NJPC – New Jersey Pinelands Commission
NOAV – Notice of Alleged Violation
NOV – Notice of Violation
NRCS – Natural Resources Conservation Service
NWI – National Wetlands Inventory
NWP – Nationwide Permit

~O~

ODEQ – Oregon Department of Environmental Quality
ODF – Oregon Department of Forestry
ODFW – Oregon Department of Fish and Wildlife
ODLCD – OR Dept. of Land Conservation and Dev't.
ODSL – Oregon Department of State Lands
OFW – Outstanding Florida Waters
ONRR – Office of Natural Resource Restoration
OPRD – Oregon Parks and Recreation Department
OWEB – Oregon Watershed Enhancement Board

~P~

PA – Proprietary Authorization

~R~

RDCC – Resource Development Coordinating Committee
RICRMC – RI Coastal Resources Management Council
RIDEM – RI Department of Environmental Management
ROMA – Regional Offsite Mitigation Area

~S~

SAMPs – Special Area Management Plans
SCI – Stream Condition Index
SOP – Standard Operating Procedure
SPGP – Statewide Programmatic General Permit
SWANCC – Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers
SWIM – Surface Water Information Management

~T~

TCEQ – Texas Commission on Environmental Quality
TGLO – Texas General Land Office
TMDL – Total Maximum Daily Load
TPW – Texas Parks and Wildlife
TWCP – Texas Wetland Conservation Plan

~U~

UDEQ – Utah Department of Environmental Quality
UDNR – Utah Department of Natural Resources
UMAM – Uniform Mitigation Assessment Methodology
URMCC – Utah Reclamation Mitigation and Conservation Commission
USDA – U.S. Department of Agriculture

~V~

VSWI – Vermont Significant Wetland Inventory
VTDEC – Vermont Department of Environmental Conservation
VTGP – Vermont General Permit

~W~

WDNR – Wisconsin Department of Natural Resources
WDOT – Wisconsin Department of Transportation
(Project) WET – Water Education for Teachers
WET – Wetland Evaluation Technique
WFQA – Wisconsin Floristic Quality Assessment
WMD – Water Management District
WQS – Water Quality Standards
WRP – Water Resources Panel
WRWAM – Wisconsin Rapid Wetland Assessment Methodology
WVDEP – West Virginia Department of Environmental Protection
WVDNR – West Virginia Division of Natural Resources
WWI – Wisconsin Wetland Inventory
WWN – Watershed Watch Network

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