

# **State Wetland Protection: Status, Trends & Model Approaches**

A 50-state study by the Environmental Law Institute



**March 2008**



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*With support from the  
U.S. Environmental Protection Agency*

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The Environmental Law Institute is responsible for the views and research contained in this report, including any omissions or inaccuracies that may appear.

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Note: The information provided in this report is a characterization of data gathered about state programs through legal research, interviews, and document review. The raw data, available in the individual state summaries (see: [http://www.eli.org/Program\\_Areas/state\\_wetlands.cfm](http://www.eli.org/Program_Areas/state_wetlands.cfm)), were reviewed and updated by the states and are considered current as of summer 2007. The information contained here is meant to characterize the programmatic elements available in the individual states; in no way do these characterizations intend to draw any conclusions about the implementation or effectiveness of the state program elements.

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## Acronyms and Abbreviations

ASWM – Association of State Wetland Managers

Corps – U.S. Army Corps of Engineers

CWA – Clean Water Act

ELI – Environmental Law Institute

EPA – U.S. Environmental Protection Agency

FLDEP – Florida Department of Environmental Protection

FTE – Full Time Equivalent

FWS – U.S. Fish and Wildlife Service

GIS – Geographic Information System

ILF – In-Lieu Fee

HGM – Hydrogeomorphic

MAWPT – Multi-Agency Wetland Planning Team

MBRT – Mitigation Banking Review Team

MOA – Memorandum of Agreement

MOU – Memorandum of Understanding

NOAA – National Oceanic and Atmospheric Administration

NPDES – National Pollutant Discharge Elimination System

NRCS – U.S. Department of Agriculture, Natural Resources Conservation Service

NWPs – Nationwide Permits

(Project) WET – Water Education for Teachers

*SWANCC – Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*

SWCP – State Wetland Conservation Plan

USDA – U.S. Department of Agriculture

WMDs – Water Management Districts

WQS – Water Quality Standards

## I. Introduction

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.

The principle regulatory authority governing the protection of wetlands at the federal level lies with the Clean Water Act (CWA) §404 Program. Section 404, administered jointly by the U.S. Army Corps of Engineers (Corps) and U.S. Environmental Protection Agency (EPA), requires a permit for the discharge of any dredged or fill material in “waters of the United States.”<sup>1</sup> Under §401 of the Clean Water Act, states have the authority to review and approve, condition, or deny any federal permits or licenses that might impact state water quality standards.<sup>2</sup> This authority may be used by states to protect valuable wetland resources. States also have the authority to enact their own permit programs for wetlands and can adopt more stringent limitations than those established under the federal program.<sup>3</sup>

The role of states in wetland protection is a critically important one. States have long held the right and the responsibility to provide stewardship over their resources, and state agency staff typically have a well-versed understanding of the “lay of the land,” in terms of both topography and state priorities, policies, and practices. Finally, in light of recent uncertainty over federal jurisdiction of wetlands and limited federal resources for wetland protection, the role of states in conserving wetlands may be more important now than ever before.

### Core Elements of a Comprehensive State Wetland Program

States may protect and manage wetlands by adopting any of a number of wetlands programs and tools. The EPA has identified six core elements of a comprehensive state and tribal wetlands program:

- ❖ Regulation;

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<sup>1</sup> 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).

<sup>2</sup> U.S. Environmental Protection Agency, *National Guidance: Water Quality Standards for Wetlands*, at <http://www.epa.gov/owow/wetlands/regs/quality.html> (July 1990).

<sup>3</sup> 33 U.S.C. § 1251 *et seq.*; 40 C.F.R. §§ 104-149.

- ❖ Water quality standards;
- ❖ Monitoring and assessment;
- ❖ Restoration programs and activities;
- ❖ Public-private partnerships; and
- ❖ Coordination among state and federal agencies.<sup>4</sup>

EPA also deems education and outreach activities as “inherent components of water resource programs.”<sup>5</sup> In essence, these “core elements” make up the toolbox for states seeking to provide comprehensive wetland protection and management.

### Research Methodology

With funding from the EPA, the Environmental Law Institute (ELI) has examined the core elements of all 50 state wetland programs. 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. This methodology allowed the data collected from each state to be as comparable as possible.<sup>6</sup> For each state, ELI conducted a detailed legal review of the statutes and regulations that establish and direct state programs. ELI staff conducted additional research using secondary sources and the Internet. Finally, ELI staff conducted phone interviews with program administrators and other relevant individuals. Individual summaries of each state’s wetland programs and activities were provided to state and federal agency staff for review and comment before the data were included in this and supporting studies.

The research supporting this final study was conducted in four separate phases over as many years. Individual state summaries were published in four separate installments: *State Wetland Program Evaluation: Phase I* (2005); *State Wetland Program Evaluation: Phase II* (2006); *State Wetland Program Evaluation: Phase III* (2007); and *State Wetland Program Evaluation: Phase IV* (2007). The state summaries developed for phases I, II, and III were updated prior to inclusion in this final roll-up. These summaries were reviewed and revised by the states and are considered current as of summer 2007. Updated summaries for each of the 50 state programs, as well as the original four reports, are available as free downloads from ELI’s website at: [http://www.eli.org/Program\\_Areas/wetlands\\_research.cfm#states](http://www.eli.org/Program_Areas/wetlands_research.cfm#states).

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<sup>4</sup> 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 Wednesday, February 22nd, 2006).

<sup>5</sup> *Id.*

<sup>6</sup> 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 generally not included in the research gathered by ELI. Instead, this study examines the distinguishing features and trends among state wetland activities and programs.

The following chapters summarize our findings across all 50 states for each of the core elements (regulatory programs, water quality standards, monitoring and assessment, restoration, public-private partnerships, coordination, and education and outreach). The information provided in this report is a characterization of the data gathered about state programs through legal research, interviews, and document review. The information contained here is meant to characterize the programmatic elements available in the individual states; in no way do these characterizations intend to draw any conclusions about the implementation or effectiveness of the state program elements. Each section below characterizes the extent of the data collected. Where possible, we have provided examples that illustrate the range of different approaches.<sup>7</sup> The report concludes with a discussion of model state approaches—and the associated trade-offs—to wetland protection.

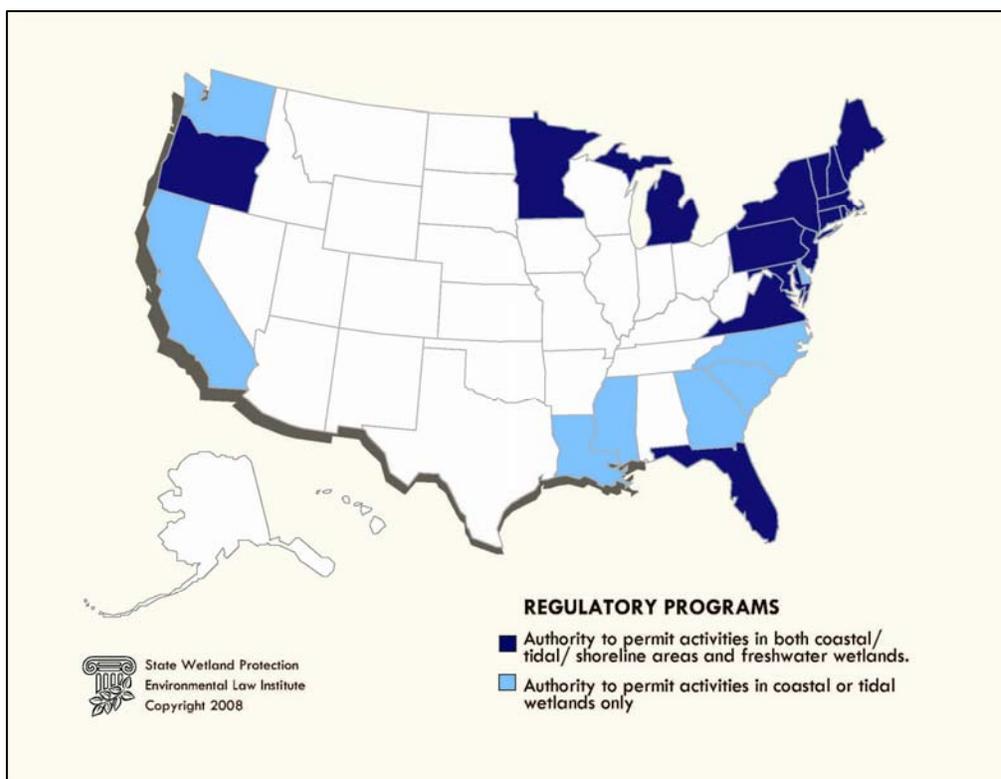
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<sup>7</sup> For more information on individual states, please visit ELI's website at:  
[http://www.eli.org/Program\\_Areas/state\\_wetlands.cfm](http://www.eli.org/Program_Areas/state_wetlands.cfm).

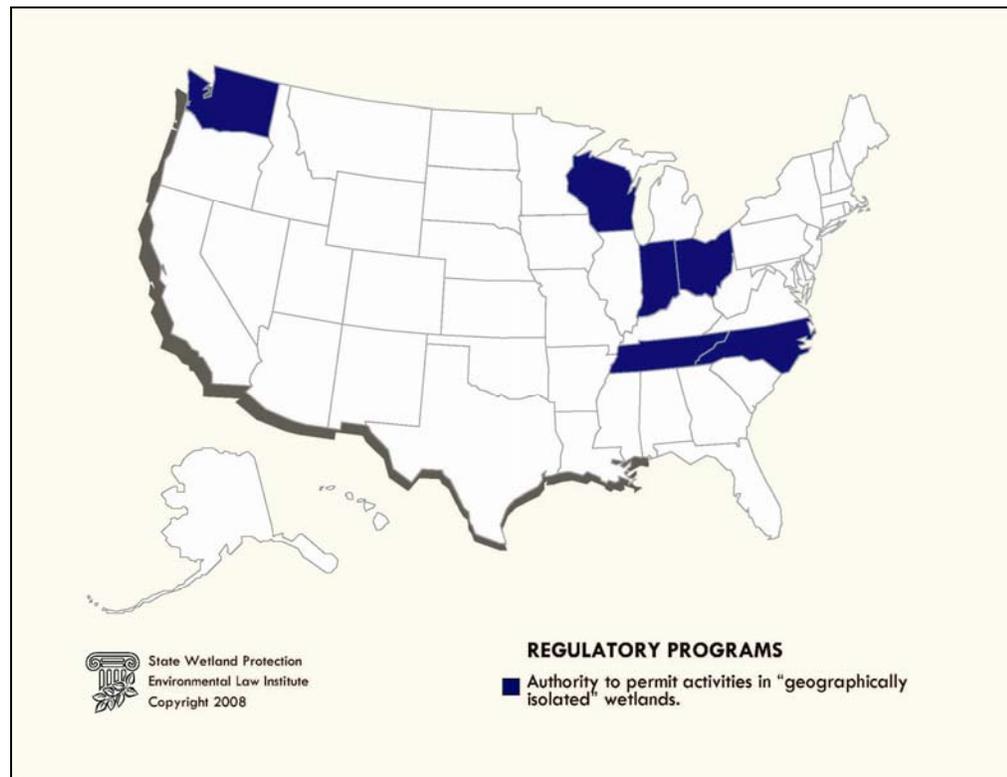
## II. Regulatory Programs

### State Wetland Regulatory Programs

Every state regulates, to some degree, activities that affect wetlands. Many states rely solely on §401 certification of federal permits, while others have adopted state laws or regulations that require permits for activities in wetlands and other waters of the state. (See Figures 2-A and 2-B.) These states utilize a wide variety of approaches to protect their wetland resources. Twenty-three states have the explicit authority to issue permits for dredge and fill activities in wetlands (see “States with Dredge and Fill Permitting Authority” below). Of these states, fifteen provide comprehensive coverage to all coastal/tidal and freshwater wetlands and eight states provide protection to only coastal/tidal wetlands.



**Figure 2-A. States that have adopted regulatory requirements for wetlands in coastal and/or freshwater wetlands.** Twenty-three states have the authority to issue permits for dredge and fill activities in wetlands and other waters. Fifteen states have authority to regulate activities in both coastal/ tidal/shoreline areas and freshwater wetlands. Eight states have authority to regulate activities in coastal or tidal wetlands only. Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.



**Figure 2-B. States that regulate activities in “geographically isolated” wetlands.** Six states have the authority to permit activities in “geographically isolated” wetlands. Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.

- ❖ *States with Dredge and Fill Permitting Authority for Coastal and Freshwater Wetlands.* Twenty-three states have the authority to issue permits for dredge and fill activities in wetlands. While some regulate activities in both coastal and freshwater wetlands, others are limited to regulating activities only in coastal/tidal waters.
  - *Regulation of Coastal/Tidal Wetlands and Freshwater Areas.* Fifteen states have authorities in place that allow them to regulate activities in both coastal/tidal/shoreline areas as well as freshwater wetlands. In many cases, these authorities stem from separate tidal and non-tidal regulatory provisions, such as in Virginia. In other states, such as Florida, Massachusetts, and Minnesota, one provision gives the state the authority to regulate activities in both coastal and freshwater wetlands. States that regulate activities in both coastal and freshwater wetlands include: Connecticut, Florida, Maine, Maryland, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, Vermont, and Virginia.
  - *Regulation of Coastal/Tidal Wetlands.* An additional eight states have provisions in place that give the state the ability to regulate activities in coastal or tidal wetlands only. These include:

California, Delaware, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Washington.

- ❖ *States that Regulate Activities in “Geographically Isolated” Wetland.* Six states (Indiana, North Carolina, Ohio, Tennessee, Washington, and Wisconsin) have adopted regulations that extend that state’s jurisdiction to “geographically isolated” wetlands. Where actions require a federal permit, license or approval that result in a discharge into waters of the state, the state requires a §401 certification. Where there is no §404 permit, and therefore no opportunity to weigh in through §401, these states also require a state permit for activities that affect aquatic resources, such as “geographically isolated” wetlands.
- ❖ *Limited Regulatory Reach.* One additional state has a more restricted ability to regulate the discharge of dredge and fill material into waters of the state. Illinois’s program only gives the Illinois Department of Natural Resources (IDNR) the ability to regulate state-funded projects and activities that impact wetlands, except for activities on private lands.<sup>8</sup>
- ❖ *Assumption of §404.* Two states, Michigan and New Jersey, have assumed the authority to issue §404 dredge and fill permits. However, in areas where the Corps retains jurisdiction (e.g., interstate waters), §401 certification or a state permit may still be required.

### **Combined Approaches**

States often use a combination of approaches in an effort to provide more comprehensive protection of their aquatic resources. For example, in addition to §401 requirements, North Carolina has adopted rules pertaining to wetlands that fall outside federal jurisdiction, requiring water quality permits for so-called “isolated” wetlands; the state has also enacted a separate regulatory program for coastal wetland resources. Both Michigan and New Jersey have assumed the §404 program, but have also adopted coastal-specific regulatory requirements that may apply to wetlands that fall within federal jurisdiction.

### **Ancillary Programs**

Several states have adopted measures that are not focused on wetlands, but that provide ancillary protection to wetlands. For example, Washington State’s wetland protection program is a true patchwork that has evolved from various historical events, political decisions, and local, state tribal, and federal influences. These factors have produced a multifaceted state approach to wetlands regulation, management, and protection. The state provides wetland protection under numerous state laws, none of which specify wetland protection as their primary purpose: State Water Pollution Control Act; Growth Management Act; Shoreline Management Act; State Hydraulic Code; and Forest Practices Act.<sup>9</sup>

### **Local Assumption of Authority**

A few states have adopted state-wide regulatory measures to protect wetlands, but either require local agencies to implement these requirements, or provide local agencies with the option to assume state authority within their jurisdictions. For example, in Massachusetts, the Department of Environmental Protection promulgates

<sup>8</sup> 830 Ill. Comp. Stat. §20/1-1 et. seq.

<sup>9</sup> See: State Water Pollution Control Act (WASH. REV. CODE § 90.48; WASH. ADMIN. CODE § 173-201A); Growth Management Act (WASH. REV. CODE § 36.70A; WASH. ADMIN. CODE § 365-190); Shoreline Management Act (WASH. REV. CODE § 90.58; WASH. ADMIN. CODE § 173-22; § 173-27; § 173-26); State Hydraulic Code (WASH. REV. CODE § 77.55; WASH. ADMIN. CODE § 220-110); and Forest Practices Act (WASH. REV. CODE § 76.09; WASH. ADMIN. CODE § 222).

state wetland regulations and policies, but permits are issued by 351 local conservation commissions.<sup>10</sup> In New York, local municipalities may assume control under the state's Freshwater Wetlands Act, provided that local wetland laws or ordinances are at least as protective as state law and do not affect activities exempted from permit requirements by the state.<sup>11</sup>

### **Section 401 Water Quality Certification**

Under §401 of the Clean Water Act, states may review any activity that requires a federal permit or license to determine its effect on the state's water quality standards.<sup>12</sup> Section 401 give states the authority to approve, condition, or deny the federal permit or license based on their review. For most states, §401 certification requirements provide the primary or the sole regulatory mechanism by which states regulate wetlands. See Figure 2-C.

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<sup>10</sup> MASS. GEN. LAWS ch. 131, § 40; 310 MASS. CODE REGS. 10.00.

<sup>11</sup> N.Y. ENVTL. CONSERV. LAW § 24-0501. Local assumption of wetlands regulation authority is uncommon; only three municipalities in New York have assumed the program as of June 2007: the Town of Union, the Town of Hempstead, and the Village of South Hampton.

<sup>12</sup> U.S. Environmental Protection Agency, *National Guidance: Water Quality Standards for Wetlands*, at <http://www.epa.gov/owow/wetlands/regs/quality.html> (July 1990).



**Figure 2-C. States that use §401 certification as the primary or sole form of state-wide wetland regulation.** Twenty-two states rely on §401 as the sole form of state-level regulation. An additional 15 states rely on §401 as the primary form of state-level wetland regulation, but have also adopted laws that provide additional protection to coastal wetlands, “isolated wetlands,” or other wetland resource categories. Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.

In 22 states §401 is the sole mechanism by which states regulate activities in wetlands; the state does not have any alternative regulatory permitting program. In 28 states, either §401 is coupled with another regulatory program (e.g., a program that regulates activities in isolated or coastal wetlands) or the state regulates all wetlands under a statewide permitting program.

For states that have adopted regulatory measures to protect wetlands in defined areas of the state, e.g., coastal wetlands, freshwater wetlands, and/or designated areas of ecological significance, §401 may provide the only form of state-level wetland regulation for the remainder of the state. For example, California, Delaware, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Washington have established coastal wetland permit programs, but rely on §401 certification for state-level regulation of inland wetlands resources.

**Beyond §401: Arkansas' efforts to use non-regulatory measures to improve statewide wetland conservation**

For 22 states, §401 certification of federal permits and licenses is the sole regulatory mechanism at the state-level: Alabama, Alaska, Arizona, Arkansas, Colorado, Hawaii, Idaho, Iowa, Kansas, Kentucky, Missouri, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, West Virginia, and Wyoming. (See Figure 2-C.)

States unlikely to strengthen wetland conservation through additional regulatory measures may provide more comprehensive protection of wetlands by investing in other, non-regulatory elements of their programs. Arkansas is such an example. Recognizing the need to improve protection of wetland resources, the state has taken several steps that do not require enactment of additional regulation.

- ❖ The Arkansas Multi-Agency Wetland Planning Team (MAWPT) formed as the result of a 1992 governor's directive aimed at increasing coordination and partnership among state agencies working on wetland conservation. The MAWPT includes six state agencies (Arkansas Natural Heritage Commission, Arkansas Game and Fish Commission, Arkansas Department of Environmental Quality, Arkansas Natural Resources Commission, Arkansas Forestry Commission, and University of Arkansas Cooperative Extension Service) that work together on restoration and planning for improved wetland conservation. The group is guided by the *Arkansas Wetlands Strategy*, a comprehensive planning document that outlines policy, watershed, and statewide objectives.
- ❖ Under the MAWPT, many new initiatives have been launched, including a state wetland inventory, a wetland restoration prioritization model, a wetland classification and characterization database, a wetland planning database, and functional assessment models and regional guidebooks based on the hydrogeomorphic approach. These tools help state and federal agencies to make better planning, management, and permitting decisions about wetlands.
- ❖ The state also operates the Wetland and Riparian Zones Tax Credit Program, which provides tax credits for the restoration or creation of wetlands and riparian zones. The program targets private landowners because most land suitable for wetland restoration, creation, or enhancement is privately owned in Arkansas. In a given year, tax credits may not exceed \$5,000 or the amount of individual or corporate income tax owed; however, unused credits may be carried over for up to nine years. Thus, a single project may yield up to \$50,000 in credits over a period of ten years. The state can forgive up to \$500,000 per year, with approval from the state's Private Lands Restoration Committee. Eligible restoration or creation projects must conform to specific design criteria and are subject to review by a professional engineer. The program has also established criteria for the restoration, creation, and enhancement of wetlands or riparian areas.

*Sources:*

Elizabeth O. Murray & Ken Brazil, *For Arkansas, Protection Begins with Multi-Agency Planning*, 25:3 NATIONAL WETLANDS NEWSLETTER, at 1 (2003).

Arkansas Multi-Agency Wetland Planning Team, *Arkansas Multi-Agency Wetland Planning Team*, at <http://www.mawpt.org/> (last visited July 11, 2007).

Arkansas Soil and Water Conservation Commission, *Wetland and Riparian Zones Tax Credit Program*, at <http://www.aswcc.arkansas.gov/WetlandTaxCredit.html> (last visited July 11, 2007).

### ***Number of Certifications***

The number of certifications issued per year varies widely across states. States with smaller acreage, fewer aquatic resources, limited staff and/or funding, and those with other regulatory measures to protect wetlands, typically issue fewer §401 certifications in a given year. For example, Connecticut, a small state that has adopted other laws for the protection of wetlands (the Inland Wetlands and Watercourses Act, the Tidal Wetlands Act, and the “Structures, Dredging, and Fill Statutes”),<sup>13</sup> reported issuing less than 20 certifications per year on average. Arizona, an arid state with low levels of staff and funding dedicated to wetland regulation, issues between 30 and 100 certifications in a typical year.

Conversely, states with larger acreage, more abundant wetland resources, more significant funding, and/or states that rely on §401 certification as the primary form of state-level wetland regulation issue many more certifications on average. For example, California, Missouri, and North Carolina each report issuing more than 1,000 certifications in an average year.

### ***Rates of Certification Application Approval, Denial, and Waiver***

With few exceptions, states report very high approval rates for §401 certification applications and few outright denials or waived reviews. Permit review staff reported that they typically work with applicants prior to application submission, providing guidance on state requirements, alternative locations, designs, and/or 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 consultation, may improve the quality of those applications submitted, resulting in a lower percentage of §401 permit denials.<sup>14</sup>

## **Definitions and Delineation**

### ***Defining Waters***

All 50 states include wetlands in either or both their statutory and regulatory definitions of state waters. Thirty-two states make this inclusion explicit, including terms such as “wetland” or “marsh.”<sup>15</sup> For example:

- ❖ Kentucky defines state waters to include “any and all rivers, streams, creeks, lakes, ponds, impounding reservoirs, springs, wells, **marshes**, and all other bodies of surface or underground water, natural or artificial, situated wholly or partly within or bordering upon the Commonwealth or within its jurisdiction.”<sup>16</sup>

<sup>13</sup> CONN. GEN. STAT. § 22a-36 *et seq.*, § 22a-28 *et seq.*, and § 22a-359 through § 22a-363f, respectively.

<sup>14</sup> Personal Communication with Ken Reisinger, Pennsylvania Department of Environmental Protection (Nov. 30, 2004).

<sup>15</sup> Thirty-two states define state waters to explicitly include wetlands: Alaska, Arizona, Arkansas, Delaware, Georgia, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oregon, Rhode Island, South Carolina, South Dakota, Texas, Utah, Virginia, West Virginia, Wisconsin, and Wyoming.

<sup>16</sup> KY. REV. STAT. ANN. § 224.01-010(33). Emphasis added.

- ❖ Wyoming defines state waters to include “all surface and groundwater, including **waters associated with wetlands**, within Wyoming.”<sup>17</sup>

Eighteen states define waters more generally, including wetlands implicitly with broad terms such as “groundwater,” “surface waters,” and/or other inclusive terms.<sup>18</sup> For example:

- ❖ Alabama defines waters of the state to include “all waters of any river, stream, watercourse, pond, lake, coastal, ground or surface water, wholly or partially within the state, natural or artificial . . .”<sup>19</sup>
- ❖ Colorado’s definition of state waters includes “any and all surface and subsurface waters which are contained in or flow in or through this state . . .”<sup>20</sup>

In North Carolina and Washington judicial interpretation has formally established that wetlands (or categories of waters such as “isolated” wetlands) are included in the states’ definitions.<sup>21</sup> See Figure 2-D.

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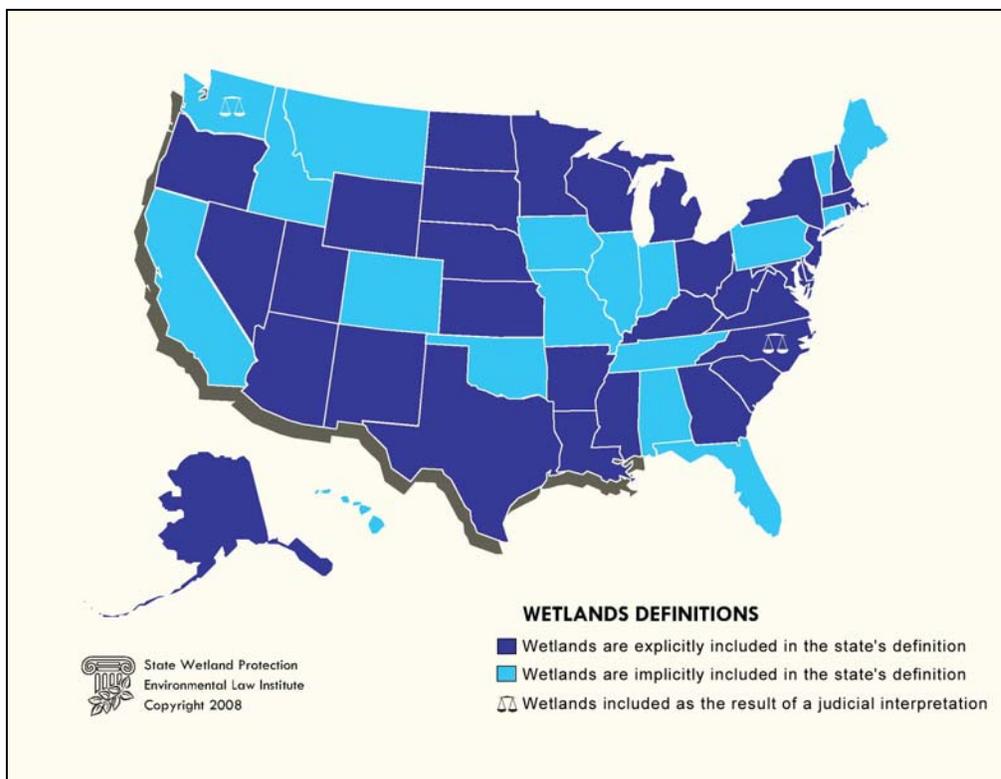
<sup>17</sup> WYO. STAT. ANN. § 35-11-103 (c)(vi). Emphasis added.

<sup>18</sup> Eighteen states include wetlands implicitly in their definitions of state waters: Alabama, California, Colorado, Connecticut, Florida, Hawaii, Idaho, Illinois, Indiana, Iowa, Maine, Missouri, Montana, Oklahoma, Pennsylvania, Tennessee, Vermont, and Washington.

<sup>19</sup> It should be noted that Alabama’s definition does not include “waters which are entirely confined and retained completely upon the property of a single individual, partnership or corporation, unless such waters are used in interstate commerce.” ALA. CODE § 22-22-1(B)(2).

<sup>20</sup> It should be noted that Colorado’s definition does not include “waters in sewage systems, waters in treatment works of disposal systems, waters in potable water distribution systems, and all water withdrawn for use until use and treatment have been completed.” COLO. REV. STAT. § 25-8-103(19).

<sup>21</sup> See: *North Carolina Home Builders Association v. Environmental Management Commission*, 573 S.E.2d 732 (N.C. Ct. App. 2002), *cert denied*, 579 S.E.2d 392 (2003), and *Building Industries Associates of Washington v. City of Lacey*, No. 91-2-02895-5. (Thurston County Super. Ct. 1993).



**Figure 2-D. Inclusion of wetlands in state definitions for water.** All 50 states include wetlands in either or both their statutory and regulatory definitions of state waters. Thirty-two states make this inclusion explicit and 18 states define waters more generally, including wetlands implicitly. In two states, North Carolina and Washington, judicial interpretation has formally established that wetlands (or categories of waters such as “isolated” wetlands) are included in the states’ definitions. Note: The data contained in this map is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.

How a state defines state waters determines which waters fall within regulatory jurisdiction for §401 certification or National Pollutant Discharge Elimination System (NPDES) permits under the CWA, or other state water provisions. However, it is important to note that not all states rely on the inclusion of wetland in the definition of state waters to regulate these resources. States with regulatory programs outside of their water quality program do not necessarily require the inclusion of wetlands in state waters definitions in order to exert jurisdiction. In addition, the inclusion of wetlands in a state’s definition of state waters does not give automatic protection to these resources; the state must have the complementary regulatory authority to issue permits for activities that alter or destroy the defined wetlands. While many states define waters of the state broadly enough to include wetlands, only 15 states have the authority to issue state permits for dredge and fill activities in freshwater wetlands.

For example:

- ❖ Maine regulates wetlands as “protected natural resources” under its Natural Resources Protection Act and provides several definitions to classify wetlands for regulation.<sup>22</sup>
- ❖ New York has adopted both freshwater and tidal wetland laws, and thus does not rely on its state definition of waters (which does include “marshes”) to regulate wetlands.<sup>23</sup>

See “*State Wetland Regulatory Programs*” (above) for a discussion of different types of state wetland regulatory programs.

**Defining Wetlands**

Which wetlands are subject to regulation, and what kind of regulation, may be further determined by definitions of wetlands and wetland types provided in state laws and regulations. Forty-two states provide one or more wetland definitions to which state laws may be applied. See Figure 2-E.

**Figure 2-E. Wetland definitions provided in state laws and regulations.**

<i>State</i>	<i>Type of definition</i>
Alabama	<i>State does not provide a statutory or regulatory wetland definition.</i>
Alaska	Freshwater wetlands; Salt water wetlands
Arizona	Wetlands
Arkansas	<i>State does not provide a statutory or regulatory wetland definition.</i>
California	Wetlands; Coastal wetlands
Colorado	Wetlands; Compensatory wetlands; Constructed wetlands; Created wetlands; Tributary wetlands
Connecticut	Inland wetlands; Tidal wetlands
Delaware	Wetlands; [Tidal] wetlands
Florida	Wetlands
Georgia	Coastal marshlands; Estuarine marshlands; Vegetated marshlands; Freshwater wetlands; Non-Forested emergent wetlands; Scrub/Shrub wetlands; Forested wetlands; Altered wetlands
Hawaii	Wetlands; Coastal wetlands; Elevated wetlands; Low wetlands
Idaho	<i>State does not provide a statutory or regulatory wetland definition.</i>
Illinois	Wetlands
Indiana	Wetlands; State regulated wetland
Iowa	Wetlands
Kansas	<i>State does not provide a statutory or regulatory wetland definition.</i>
Kentucky	Wetlands
Louisiana	Wetlands [within coastal zone]
Maine	Wetlands; Forested wetlands; Floodplain wetlands; Freshwater wetlands; Coastal wetlands
Maryland	Nontidal wetlands; Tidal wetlands; Private tidal wetlands; State tidal wetlands

<sup>22</sup> ME. REV. STAT. ANN. tit. 38, § 480-C(1).

<sup>23</sup> N.Y. ENVTL. CONSERV. LAW § 15-0107(4).

Massachusetts	Freshwater wetlands; Coastal wetlands
Michigan	Wetlands; Regulated wetlands
Minnesota	Isolated wetlands; Tributary wetlands; Shoreland wetlands; Floodplain wetlands; Non-degraded wetlands
Mississippi	Coastal wetlands
Missouri	Wetlands
Montana	<i>State does not provide a statutory or regulatory wetland definition.</i>
Nebraska	Wetlands
Nevada	Wetlands
New Hampshire	Wetlands; Prime wetlands
New Jersey	Freshwater wetlands; Coastal wetlands
New Mexico	Wetlands
New York	Freshwater wetlands; Freshwater wetlands [within Adirondack Park]; Tidal wetlands
North Carolina	Wetlands; Coastal wetlands; Isolated wetlands
North Dakota	Wetlands
Ohio	Wetlands; Isolated wetlands
Oklahoma	<i>State does not provide a statutory or regulatory wetland definition.</i>
Oregon	Wetlands
Pennsylvania	Wetlands
Rhode Island	Freshwater wetlands; Freshwater wetlands in the vicinity of the coast; Coastal wetlands
South Carolina	<i>State does not provide a statutory or regulatory wetland definition.</i>
South Dakota	Wetlands
Tennessee	Wetlands
Texas	Wetlands
Utah	<i>State does not provide a statutory or regulatory wetland definition.</i>
Vermont	Wetlands; Alpine peatland; Bog; Deep marsh; Fen; Shallow marsh; Wooded swamps
Virginia	Wetlands; Non-vegetated wetlands; Vegetated wetlands
Washington	Wetlands
West Virginia	Wetlands
Wisconsin	Wetlands
Wyoming	Wetlands

Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.

### ***Delineating Wetlands***

The majority of states (31 total, or 62 percent) rely exclusively on the U.S. Army Corps of Engineers' 1987 *Wetland Delineation Manual* for delineating wetlands.<sup>24,25</sup> Eighteen states (36 percent) rely on, or have

<sup>24</sup> 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.mvn.usace.army.mil/ops/regulatory/wlman87.pdf>.

developed, delineation criteria and/or guidelines other than, or in addition to, the 1987 *Manual*.<sup>26</sup> (ELI was unable to obtain delineation criteria/guidelines for one state: Wyoming.) For example:

- ❖ In Illinois, delineation of wetlands on agricultural lands generally relies on the *National Food Securities Act Manual*; elsewhere, delineation procedures adhere to the 1987 *Manual*. The delineation criteria in the two manuals are quite similar.<sup>27</sup>
- ❖ Vermont regulations require the use of the 1988 *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;<sup>28</sup> however, the state also delineates wetlands consistently with the criteria outlined in the Corps’ 1987 *Wetlands Delineation Manual*.

Most of these states use criteria that are roughly equivalent to, or more stringent than, the criteria that are laid out in the 1987 *Manual*. See Figure 2-F.

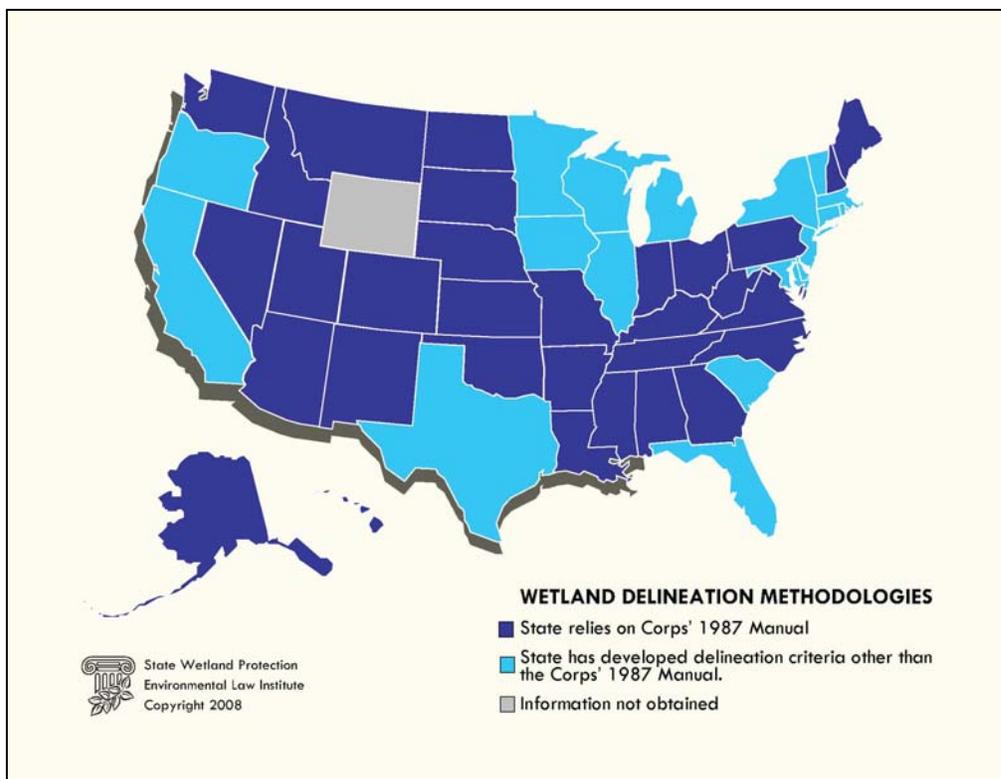
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<sup>25</sup> Thirty-one states rely exclusively on the Corps’ 1987 *Manual* for delineating wetlands: Alabama, Alaska, Arizona, Arkansas, Colorado, Georgia, Hawaii, Idaho, Indiana, Kansas, Kentucky, Louisiana, Maine, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Dakota, Tennessee, Utah, Virginia, Washington, and West Virginia.

<sup>26</sup> Eighteen states rely on, or have developed, delineation criteria and/or guidelines other than the 1987 *Manual*: California, Connecticut, Delaware, Florida, Illinois, Iowa, Maryland, Massachusetts, Michigan, Minnesota, New Jersey, New York, Oregon, Rhode Island, South Carolina, Texas, Vermont, and Wisconsin.

<sup>27</sup> Illinois Department of Natural Resources, *Delineation*, at <http://dnr.state.il.us/wetlands/ch1b.htm> (last visited July 18, 2007).

<sup>28</sup> Vt. Wetland Rules § 3.2.



**Figure 2-F. State delineation criteria for wetlands.** Thirty-one states rely exclusively on the U.S. Army Corps of Engineers' 1987 *Wetland Delineation Manual* for delineating wetlands. Eighteen states rely on, or have developed, delineation criteria and/or guidelines other than, or in addition to, the 1987 *Manual*. Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.

## General Permits

### *Nationwide Permits*

As a part of its §404 program, the U.S. Army Corps of Engineers issues nationwide permits (NWPs) for categories of activities that are "similar in nature, will cause only minimal adverse environmental effects when performed separately, and will have only minimal cumulative adverse effects on the environment."<sup>29</sup> The Corps must secure §401 certification from the states for the NWPs. Thirty-six states (72 percent) regularly review the Corps' NWPs, provide comments, and issue conditions and denials.<sup>30</sup> For example:

<sup>29</sup> 33 U.S.C. § 1344 (e) (1).

<sup>30</sup> Thirty-six states provide ongoing review of the Corps' NWPs: Alaska, Arizona, Arkansas, California, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Mississippi, Missouri, Montana, Nebraska, Nevada, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, South Carolina, South Dakota, Tennessee, Texas, Virginia, Washington, West Virginia, and Wyoming.

- ❖ Tennessee issued conditional §401 water quality certification for 22 of the Corps' 2002 NWP's, denied 7 NWP's, and issued state certification for another 7 NWP's in accordance with the state's corresponding general permits.<sup>31</sup>
- ❖ Washington has issued conditions for some of the Corps' 2002 NWP's, while other NWP's have been partially or completely denied.<sup>32</sup> The state also has applied regional conditions, e.g., non-application in mature forested wetlands or bog and bog-like wetlands.<sup>33</sup>

In fourteen states, either the state does not review and approve NWP's or NWP's are not applicable in the state.<sup>34</sup> For example:

- ❖ Colorado does not review and approve, condition, or deny NWP's, because NWP's are §401 certified by state statute.<sup>35</sup>
- ❖ Maine operates under a statewide programmatic general permit (SPGP) and therefore NWP's do not apply in the state. The current SPGP, effective October 2005 to October 2010, similarly expedites the Corps' review of certain listed activities in Maine's coastal and inland waters, as well as wetlands that are subject to federal jurisdiction.<sup>36</sup>
- ❖ In Minnesota, NWP's are not applicable because the Corps' St. Paul District replaced NWP's with two "separate and distinct" regional general permits and letter of permission evaluation procedures.<sup>37</sup>

### **Statewide Programmatic General Permits**

Ten states operate under a state programmatic general permit (SPGP) and thus do not have applicable NWP's: Connecticut, Maine, Maryland, Massachusetts, Minnesota, New Hampshire, Pennsylvania, Rhode Island, Vermont, and Wisconsin. Five additional states—Delaware, Florida, Hawaii, Louisiana, and Virginia—have SPGP's that pertain to specific activities and/or specific geographic areas. In these states, NWP's may still apply. For example:

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<sup>31</sup> TENN. DEP'T OF ENV'T AND CONSERVATION, REGIONAL CONDITIONS FOR NATIONWIDE PERMITS IN TENNESSEE. (May 2002), *available at* <http://www.mvm.usace.army.mil/regulatory/Permit/NWP.TN.Reg.Cond.2002.pdf>.

<sup>32</sup> See Final Notice for Issuance of Nationwide Permits, 67 Fed. Reg. 2020 (Jan. 15, 2002).

<sup>33</sup> This regional condition does not apply for NWP#3 - Maintenance; NWP#20 - Oil Spill Cleanup; NWP#32 - Completed Enforcement Actions; and NWP#40 - U.S. Department of Agriculture Program Participant. *Id.*

<sup>34</sup> Fourteen states do not review and approve NWP's: Alabama, Colorado, Connecticut, Maine, Maryland, Massachusetts, Minnesota, New Hampshire, New Jersey, Pennsylvania, Rhode Island, Utah, Vermont, and Wisconsin.

<sup>35</sup> 5 COLO. CODE REGS. § 1002-82.1.

<sup>36</sup> U.S. Army Corps of Engineers New England District, Permit No. GP-39, *Department of the Army Programmatic General Permit - State of Maine (2005)*, *available at* <http://www.nae.usace.army.mil/reg%5Cmeall.pdf>.

<sup>37</sup> U.S. ARMY CORPS OF ENGINEERS, ST. PAUL DISTRICT, PUBLIC NOTICE: ISSUANCE OF REGIONAL GENERAL PERMIT RGP-03-MN IN THE STATE OF MINNESOTA EXCEPT WITHIN THE EXTERIOR BOUNDARIES OF INDIAN RESERVATIONS (Aug. 1, 2006), *available at* <http://www.mvp.usace.army.mil/docs/regulatory/special%20notices/2005006862rgp-003-mn.pdf>; U.S. ARMY CORPS OF ENGINEERS, ST. PAUL DISTRICT, PUBLIC NOTICE: ISSUANCE OF LETTER OF PERMISSION PROCEDURES, LOP-05-MN, APPLICABLE WITHIN THE STATE OF MINNESOTA EXCEPT WITHIN THE EXTERIOR BOUNDARIES OF INDIAN RESERVATIONS (Jul. 31, 2006), *available at* <http://www.mvp.usace.army.mil/docs/regulatory/special%20notices/2005000825LOP05mn.pdf>.

- ❖ Delaware has two SPGPs that apply to CWA §404 waters. These SPGPs regulate activities such as that affect artificial tidal lagoons and those that deal with dock and shoreline stabilization and bulkheading.<sup>38</sup>
- ❖ Hawaii has an SPGP that applies only to the placement of up to 10,000 cubic yards of beach sand of acceptable quality for beach nourishment, restoration, and enhancement.<sup>39</sup>

### **State General Permits**

States that operate wetland permit programs also may offer general permits, which are state analogs to the Corps' NWP. State general permits similarly expedite the permit review of specified activities in waters and wetlands that are subject to state jurisdiction. For example:

- ❖ Florida issues general permits under its Environmental Resource Permit program (ERP). ERP regulates activities involving the alteration of surface water flows. The state general permits apply to activities that do not qualify for exemptions but have minimal potential for individual direct and secondary impacts.<sup>40</sup>
- ❖ Michigan, which has assumed authority to administer the §404 program, issues "General Permit Categories for Minor Activities in Wetlands in the State of Michigan."<sup>41</sup> Similar to the Corps' NWPs, general permits are issued for categories of activities that are "similar in nature, will cause only minimal adverse environmental effects when performed separately, and will have only minimal cumulative adverse effects of the environment."<sup>42</sup>

### **Mitigation**

The majority of states, 36 total or 72 percent, have adopted legislation, policies, and/or guidelines to guide mitigation for impacts to aquatic resources that are permitted in their states.<sup>43</sup> Mitigation provisions range from general requirements to specific replacement ratios, site/kind preferences, and alternative mitigation options (i.e., purchase of credits from a mitigation bank or payment to an in-lieu fee program). Some states have

<sup>38</sup> DEP'T OF THE ARMY, U.S. ARMY CORPS OF ENG'RS, PA. DIST., DEPARTMENT OF THE ARMY GENERAL PERMIT DELAWARE -SPGP-18, *available at* <http://www.nap.usace.army.mil/cenap-op/regulatory/spgp18.pdf> (last visited July 26, 2007); DEP'T OF THE ARMY, U.S. ARMY CORPS OF ENG'RS, PA. DIST., CENAP-OP-R-DELAWARE STATE PERMIT GENERAL PERMIT 20 (SPGP-20), *available at* <http://www.nap.usace.army.mil/cenap-op/regulatory/spgp20.pdf> (last visited July 26, 2007).

<sup>39</sup> Letter from Chiyo L. Fukino, M.D., Dir. of Health, to Lt. Colonel Ronald N. Light, District Eng'r Dep't of the Army, & Mr. Peter T. Young, Chair Dep't of Land and Natural Res. 2 (February 7, 2003), *available at* <http://www.hawaii.gov/health/environmental/water/cleanwater/forms/pdf/wqc536.pdf>.

<sup>40</sup> See FLA. STAT. ANN. §§ 373.118, 373.414(9); FLA. ADMIN. CODE ANN. r. 62-341, 40B-400.201 to .630, 40C-4.400.201-.630, 40D-400.201 to .630, 40E-400.201 to .630.

<sup>41</sup> See MICH. DEP'T OF ENVTL. QUALITY, GENERAL PERMIT CATEGORIES FOR MINOR ACTIVITIES IN WETLANDS IN THE STATE OF MICHIGAN (June 14, 2002), *available at* [www.deq.state.mi.us/documents/deq-lwm-wetlands-gp2.pdf](http://www.deq.state.mi.us/documents/deq-lwm-wetlands-gp2.pdf).

<sup>42</sup> MICH. COMP. LAWS § 30312(1).

<sup>43</sup> Thirty-six states have adopted legislation, policies, and/or guidelines to guide mitigation for impacts to aquatic resources: Alabama, Arkansas, California, Connecticut, Delaware, Florida, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nevada, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

adopted legislation or guidelines that apply only to specified wetland types. (It should be noted that a few state wetland laws do not outline mitigation requirements because impacts are generally prohibited for the resources under protection.) The following are examples of state mitigation provisions and guidelines:

- ❖ Vermont requires avoidance and minimization sequencing and specifies compensatory mitigation requirements for remaining impacts, including provisions regarding the replacement wetland type and function, replacement ratios, advance mitigation, site preferences, monitoring requirements, permanent protection, financial assurances, and long-term maintenance and stewardship.<sup>44</sup>
- ❖ Louisiana has not adopted mitigation requirements for impacts to inland wetlands requiring a §401 certification only; in these cases, §404 permittees are subject to the Corps' mitigation requirements. However, state laws do outline additional mitigation provisions for permitted impacts to wetlands in the coastal zone, including: avoidance and minimization requirements; compensation options (purchase of mitigation bank credits, use of advanced mitigation credits, project-specific mitigation, or, if none of these options are available or feasible, payment to an in-lieu fee program); requirements for assessing the value of impacted wetlands; replacement ratios; and site/kind preferences.<sup>45</sup>
- ❖ The Kentucky Division of Water has developed stream mitigation guidelines that include: criteria for determining when compensatory mitigation will be required; data required to support stream relocation projects; general criteria for stream relocation design; physical monitoring requirements for stream relocation/mitigation projects; biological monitoring requirements of stream projects; and acceptable compensatory mitigation types.<sup>46</sup>

Fourteen states have not adopted legislation, regulations, and/or guidelines for mitigation.<sup>47</sup> For 13 of these 14 states, §401 certification of federal permits and licenses is the sole regulatory mechanism at the state-level and these states rely on federal mitigation requirements and guidelines.<sup>48</sup> However, it should be noted that eight states that also rely solely on §401 certification for state-level wetland regulation (Alabama, Arkansas, Iowa, Kentucky, Missouri, Nevada, Texas, and West Virginia) have adopted mitigation legislation, policies, and/or guidelines in addition to federal requirements, and thus help guide how mitigation is conducted in their states. See Figure 2-G.

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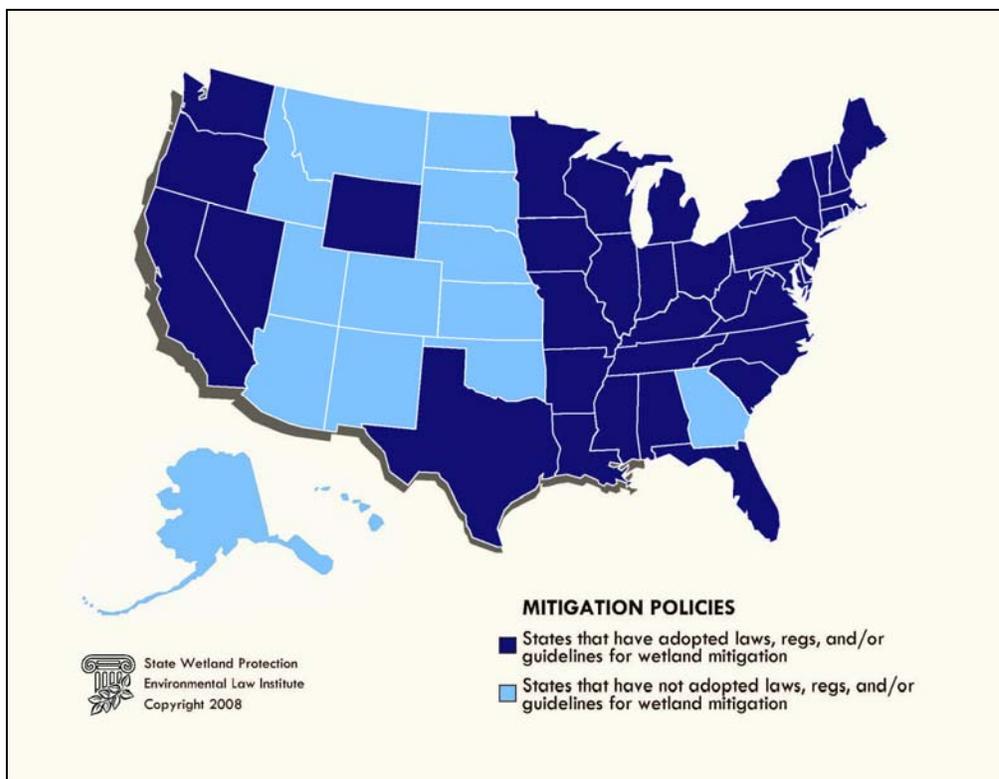
<sup>44</sup> Vt. Wetland Rules § 8.5(c).

<sup>45</sup> LA. ADMIN. CODE tit. 43 § 724.

<sup>46</sup> Ky. Div. of Water, Draft Stream Mitigation Guidelines (2002), available at [http://www.water.ky.gov/NR/rdonlyres/B8FE078D-6100-4A61-93A0-A7B49A007FDC/0/New\\_Guidelines.pdf](http://www.water.ky.gov/NR/rdonlyres/B8FE078D-6100-4A61-93A0-A7B49A007FDC/0/New_Guidelines.pdf).

<sup>47</sup> Fourteen states have not adopted legislation, policies, and/or guidelines to guide mitigation for impacts to aquatic resources: Alaska, Arizona, Colorado, Georgia, Hawaii, Idaho, Kansas, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, and Utah.

<sup>48</sup> Georgia has adopted state legislation for wetlands other than §401 (coastal wetland protection); however, the law does not outline mitigation requirements.



**Figure 2-G. State mitigation laws, regulations, and/or guidelines.** Thirty-six states have adopted legislation, policies, and/or guidelines to guide the mitigation of impacts to aquatic resources that are permitted in their states. Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.

### ***Avoidance and Minimization***

A separate study conducted by ELI examines avoidance and minimization policies for 21 states.<sup>49</sup> The states included in the study were limited to a subset of those with state wetland regulatory programs for wetlands apart from §401: Connecticut, Florida, Illinois, Indiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, Tennessee, Vermont, Virginia, and Wisconsin. Although individual state requirements vary, each of these 21 states has explicit avoidance and/or minimization procedures described in state law, regulation, or guidance.<sup>50</sup> Four states—Connecticut, Maryland, New Jersey, and New York—have separate avoidance and minimization requirements for tidal and inland wetlands. Massachusetts has adopted separate standards for riverfront areas

<sup>49</sup> Nichols, Sandra, James McElfish, Jr., and Jessica Wilkinson. March 2008. "State Wetlands Protection Programs: Avoidance and Minimization Requirements." Washington, DC. Environmental Law Institute. See also: Wilkinson, Jessica, Sandra Nichols, and Jared Thompson. March 2008. "The Federal Wetlands Protection Program: Avoidance and Minimization Requirements." Washington, DC. Environmental Law Institute.

<sup>50</sup> Twenty states have adopted avoidance *and* minimization requirements. One state, Florida, has adopted "elimination and reduction" (*not* avoidance) requirements.

that do not include minimization requirements. Florida regulations describe requirements for the “elimination and reduction” of impacts. More detailed information and discussion can be found in ELI’s study, *State Wetland Permitting Programs: Avoidance and Minimization Requirements*.<sup>51</sup>

### **Mitigation Banking**

Twenty-two states specifically address wetland mitigation banking under state laws, regulations, and/or guidance.<sup>52</sup> Types of provisions include: authorizing and specifying requirements for the use of mitigation banking as an option for compensatory mitigation; specifying preference for mitigation banking with respect to other compensatory mitigation options (e.g., permittee-responsible mitigation, payment to an in-lieu fee program); outlining requirements for the establishment and operation of mitigation banks; establishing a state-operated mitigation banking program; and/or outlining requirements and/or preferences for the use of banks by state departments of transportation; among other related provisions. For example:

- ❖ Louisiana law outlines mitigation requirements for impacts to wetlands in the state’s coastal zone. Compensatory mitigation requirements may be satisfied through the purchase of state-approved mitigation bank credits, advanced mitigation credits, project-specific mitigation, or, if none of these options is available, payment to an in-lieu fee program. Regulations also include stipulations for the use of mitigation banks.<sup>53</sup>
- ❖ The Oregon Mitigation Bank Act of 1987 established a mitigation banking program to be administered by the Oregon Department of State Lands.<sup>54</sup> The state also developed guidelines to help explain the state’s mitigation banking policies, *Wetland Mitigation Guidebook for Oregon*.<sup>55</sup>

According to a 2005 study conducted by ELI, 31 states had approved mitigation banks.<sup>56</sup> Of these 31 states, 16 have adopted laws and/or policy that address mitigation banking.<sup>57</sup>

The majority of states, 30 total or 60 percent, report active participation on interagency Mitigation Banking Review Teams (MBRTs), in coordination with one or more Corps district, as well as other federal resource agencies.<sup>58</sup> For example:

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<sup>51</sup> Nichols, Sandra, James McElfish, Jr., and Jessica Wilkinson. March 2008. “State Wetlands Protection Programs: Avoidance and Minimization Requirements.” Washington, DC. Environmental Law Institute.

<sup>52</sup> Twenty-two states specifically address wetland mitigation banking: Arkansas, California, Delaware, Florida, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, Nevada, New Jersey, North Carolina, Ohio, Oregon, Rhode Island, Texas, Virginia, Washington, Wisconsin, and Wyoming.

<sup>53</sup> LA. REV. STAT. ANN. § 49:214.41; LA. ADMIN. CODE tit. 43 § 724.

<sup>54</sup> OR. REV. STAT. §§ 196-600 – 196-655.

<sup>55</sup> OREGON DEPARTMENT OF STATE LANDS, WETLAND MITIGATION BANKING GUIDEBOOK (2000), available at [http://egov.oregon.gov/DSL/PERMITS/mit\\_guidebook\\_intro.shtml](http://egov.oregon.gov/DSL/PERMITS/mit_guidebook_intro.shtml).

<sup>56</sup> Thirty-one states had approved banks according to a 2005 study conducted by ELI: Alabama, Arkansas, California, Colorado, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Michigan, Mississippi, Missouri, Nebraska, New Jersey, New York, North Carolina, Ohio, Oklahoma, Oregon, South Carolina, Tennessee, Texas, Utah, Virginia, Washington, and Wisconsin. See ENVIRONMENTAL LAW INSTITUTE, 2005 STATUS REPORT ON COMPENSATORY MITIGATION IN THE UNITED STATES (2006), available at [http://www.eli.org/Program\\_Areas/WMB/index.cfm](http://www.eli.org/Program_Areas/WMB/index.cfm).

<sup>57</sup> Sixteen states that contain approved mitigation banks (as of 2005) have also adopted laws or policies that address mitigation banking: Arkansas, California, Florida, Kentucky, Louisiana, Maryland, Michigan, Mississippi, New Jersey, North Carolina, Ohio, Oregon, Texas, Virginia, Washington, and Wisconsin. Fifteen states that contain mitigation banks (as of 2005) have not adopted any laws or policies that address mitigation banking: Alabama, Colorado, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Missouri, Nebraska, New York, Oklahoma, South Carolina, Tennessee, and Utah.

- ❖ Indiana has not adopted laws or regulations relating to wetland mitigation banking, but the Departments of Natural Resources and Environmental Management are party to the *Interagency Coordination Agreement on Wetland Mitigation Banking within the State of Indiana*, along with the Louisville and Detroit Districts of the Corps, U.S. Department of Agriculture - Natural Resources Conservation Service (NRCS), U.S. Environmental Protection Agency, and U.S. Fish and Wildlife Service.<sup>59</sup> Under this agreement, the state has authorized the establishment of one wetland mitigation bank.

Of the 31 states with approved mitigation banks (as of 2005), 25 actively participate on an MBRT.<sup>60</sup>

The majority of states with approved mitigation banks, 27 out of 31, address mitigation banking in state law, regulation, or guidance, participate actively on an MBRT, or both.<sup>61</sup> Only four states that contain approved mitigation banks do not address banking in state law or policy and do not participate on an MBRT: Colorado, Illinois, Oklahoma, and Utah.

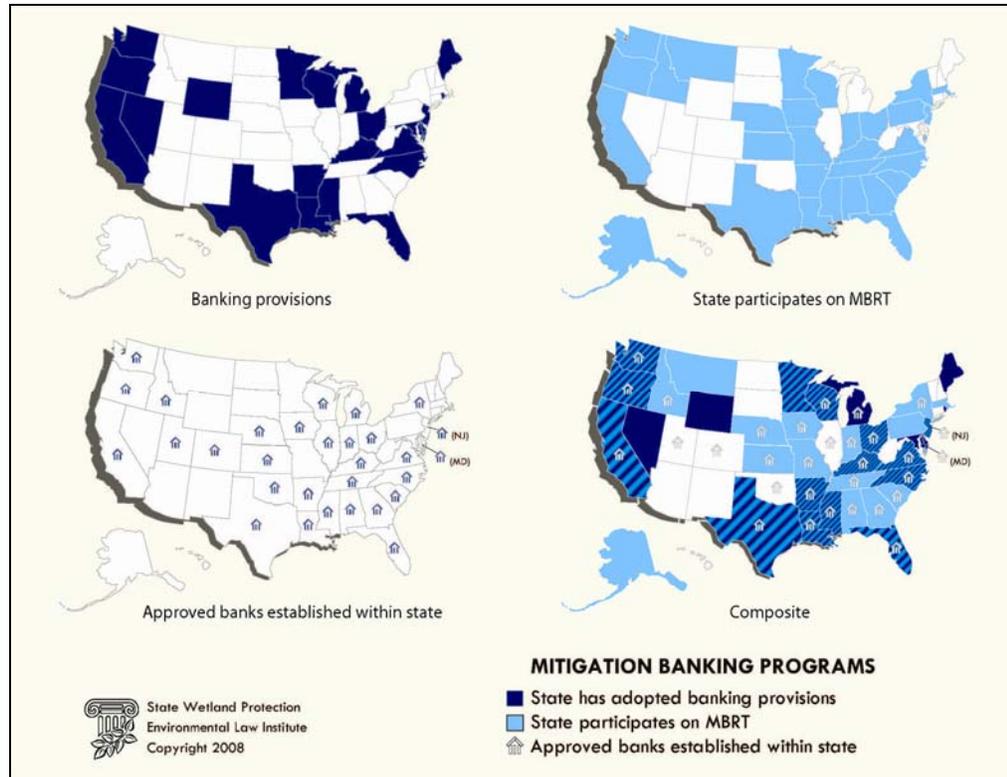
It is also worth noting that 10 of 19 states with no approved mitigation banks (as of 2005) still address banking in state law or policy, or participate actively on an MBRT, or both: Alaska, Delaware, Maine, Massachusetts, Minnesota, Montana, Nevada, Pennsylvania, Rhode Island, and Wyoming. Nine states have no approved mitigation banks (as of 2005) and have not adopted laws or policies that address mitigation banking, nor participate actively on an MBRT: Arizona, Connecticut, Hawaii, New Hampshire, New Mexico, North Dakota, South Dakota, Vermont, and West Virginia. See Figure 2-H.

<sup>58</sup> States reporting active participation on interagency Mitigation Banking Review Teams include: Alabama, Alaska, Arkansas, California, Florida, Georgia, Idaho, Indiana, Iowa, Kansas, Kentucky, Louisiana, Massachusetts, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, Washington, and Wisconsin.

<sup>59</sup> *Interagency Coordination Agreement on Wetland Mitigation Banking in the state of Indiana*, at <http://www.in.gov/idem/programs/water/401/indica1002.pdf> (last visited July 5, 2007).

<sup>60</sup> Twenty-five states contain approved mitigation banks (as of 2005) and report active participation on an MBRT: Alabama, Arkansas, California, Florida, Georgia, Idaho, Indiana, Iowa, Kansas, Kentucky, Louisiana, Mississippi, Missouri, Nebraska, New Jersey, New York, North Carolina, Ohio, Oregon, South Carolina, Tennessee, Texas, Virginia, Washington, and Wisconsin. Only six states that contain approved mitigation banks (as of 2005) do not report active participation on an MBRT: Colorado, Illinois, Maryland, Michigan, Oklahoma, and Utah.

<sup>61</sup> Twenty-seven states with approved mitigation banks (as of 2005) either address mitigation banks in state law, regulation, or guidance, or participate actively on an MBRT, or both: Alabama, Arkansas, California, Florida, Georgia, Idaho, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Michigan, Mississippi, Missouri, Nebraska, New Jersey, New York, North Carolina, Ohio, Oregon, South Carolina, Tennessee, Texas, Virginia, Washington, and Wisconsin.



**Figure 2-H. State provisions/guidance on mitigation banking.** Twenty-two states specifically address wetland mitigation banking under state laws, regulations, and/or guidance; thirty states reported participating on Mitigation Banking Review Teams; and thirty-one states had approved mitigation banks as of 2005 (data on approved mitigation banks comes from ELI’s 2005 *Status Report on Compensatory Mitigation in the United States*.) Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented on approved mitigation banks was obtained primarily through a survey, which was distributed in August 2005 and submitted to ELI between late August 2005 and early October 2005. Letters verifying the data were distributed in December 2005 and returned to ELI between December 2005 and February 2006.

***In-Lieu Fee Mitigation***

Eighteen states specifically address in-lieu fee (ILF) mitigation in state law, regulations, and/or guidance.<sup>62</sup> Types of provisions include: authorizing and specifying requirements for the use of ILF mitigation as an option for compensatory mitigation; specifying preference for ILF mitigation with respect to other compensatory mitigation options (e.g., permittee-responsible mitigation, purchase of mitigation bank credits); and/or outlining requirements for the establishment and operation of a state ILF program; among other related provisions. For example:

<sup>62</sup> Eighteen states specifically address ILF: Arkansas, California, Florida, Idaho, Kentucky, Louisiana, Maine, Maryland, New Hampshire, New Jersey, North Carolina, Oregon, Pennsylvania, Rhode Island, Tennessee, Virginia, West Virginia, and Wisconsin. (Information for one state was not obtained: Michigan.)

- ❖ Maryland state law describes general standards for mitigation, including banking and ILF mitigation.<sup>63</sup> In-ground, on-site mitigation is preferred; when that option is not feasible, the Maryland Department of Environment evaluates off-site options, mitigation banks, and, lastly, allows for payment into the state's Nontidal Wetland Compensation Fund, a state in-lieu fee program that conducts mitigation projects statewide.<sup>64</sup> Guidelines for operation of the state ILF program are also described in the state's regulations, including: how collected funds may be used; the size and types of impacts for which payment to the ILF program is an appropriate option for compensation; the types of mitigation projects that may be conducted by the program; remedial actions and responsibilities; a no-net-loss policy and replacement ratios; a fee schedule; and monitoring and reporting requirements.<sup>65</sup>

According to a 2005 study conducted by ELI, 23 states had approved, active ILF programs.<sup>66</sup> Of these 23 states, 11 had adopted laws and/or policy that address ILF mitigation.<sup>67</sup> See Figure 2-1.

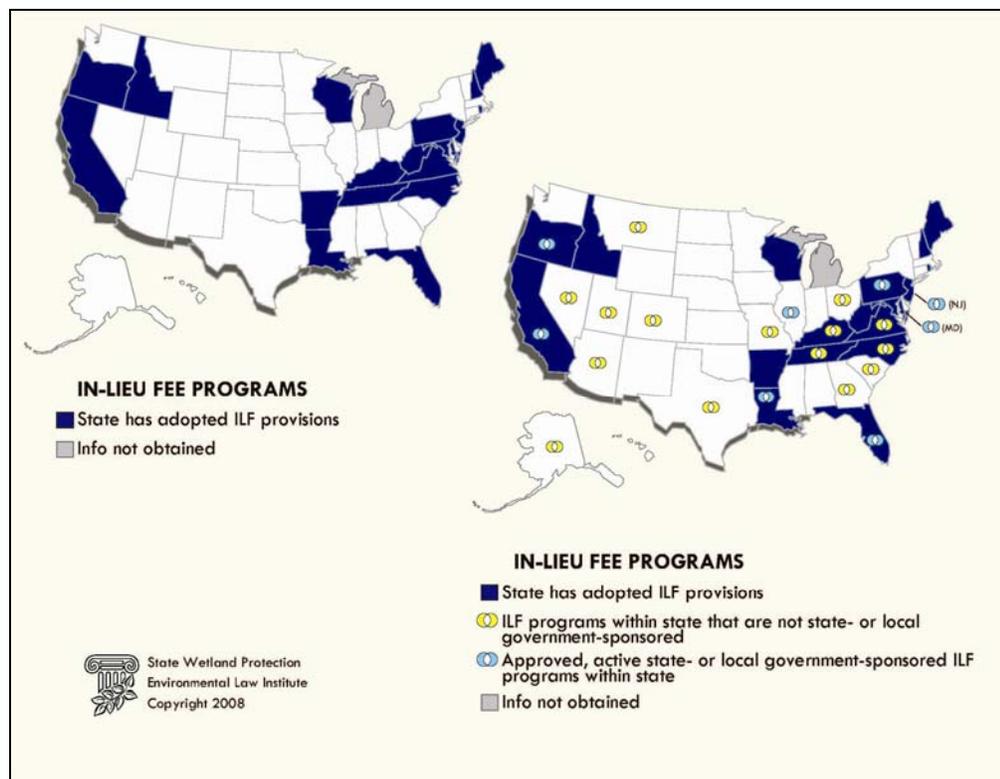
<sup>63</sup> MD. CODE REGS. 26.23.04, .24.05. The state also has compensatory mitigation guidance for wetlands. See Maryland Department of the Environment, *Maryland Nontidal Wetland Mitigation Guidance (being revised)*, at [http://www.mde.state.md.us/Programs/WaterPrograms/Wetlands\\_Waterways/documents\\_information/technicaldocuments.asp](http://www.mde.state.md.us/Programs/WaterPrograms/Wetlands_Waterways/documents_information/technicaldocuments.asp). See also Maryland Department of the Environment, *Maryland Compensatory Mitigation Guidance, order information at* [http://www.mde.state.md.us/Programs/WaterPrograms/Wetlands\\_Waterways/documents\\_information/technicaldocuments.asp](http://www.mde.state.md.us/Programs/WaterPrograms/Wetlands_Waterways/documents_information/technicaldocuments.asp).

<sup>64</sup> Personal Communication with Amanda Sigillito, Md. Dep't of the Env't (Oct. 26, 2006).

<sup>65</sup> MD. CODE REGS. 26.23.04.07.

<sup>66</sup> Twenty-three states contained approved, active ILF programs according to a 2005 study conducted by ELI: Alaska, Arizona, California, Colorado, Florida, Georgia, Illinois, Kentucky, Louisiana, Maryland, Missouri, Montana, Nevada, New Jersey, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, Tennessee, Texas, Utah, and Virginia. See ENVIRONMENTAL LAW INSTITUTE, 2005 STATUS REPORT ON COMPENSATORY MITIGATION IN THE UNITED STATES (2006), available at [http://www.eli.org/Program\\_Areas/WMB/index.cfm](http://www.eli.org/Program_Areas/WMB/index.cfm).

<sup>67</sup> Eleven states that contain approved, active ILF programs (as of 2005) have also adopted laws or policies that address ILF mitigation: California, Florida, Kentucky, Louisiana, Maryland, New Jersey, North Carolina, Oregon, Pennsylvania, Tennessee, and Virginia. Twelve states that contain ILF programs (as of 2005) have not adopted any laws or policies that address ILF mitigation: Alaska, Arizona, Colorado, Georgia, Illinois, Missouri, Montana, Nevada, Ohio, South Carolina, Texas, and Utah.



**Figure 2-1. State provisions/guidance on ILF mitigation.** Eighteen states specifically address in-lieu fee (ILF) mitigation in state law, regulations, and/or guidance, and twenty-three states had approved, active ILF programs as of 2005 – eight states with state- or local government-sponsored ILF programs and fifteen states with ILF programs that are not state- or local government-sponsored (data on approved ILF programs comes from ELI’s 2005 Status Report on Compensatory Mitigation in the United States.) Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information presented here on approved ILF programs was obtained primarily through research conducted from July 2005 through June 2006.

**Compliance and Enforcement**

State wetland compliance and enforcement mechanisms depend largely upon state wetland regulatory authority. For example, a state that relies upon surface water quality provisions to regulate and protect wetlands may pursue enforcement under the same provisions. Similarly, states that have adopted wetland resource permitting laws and regulations (in addition to S401/404) often outline enforcement options within the same set of provisions. Enforcement tools applicable under state wetland authorities vary widely, and may include: notice of violation, abatement/corrective action orders, injunctions, civil action, civil penalties, criminal prosecution, criminal penalties, cease and desist orders, administrative penalties, and compliance orders. Most states have several enforcement options that depend upon the severity of the violation.

In practice, nineteen states defer to the Corps and EPA to pursue wetland-related compliance and enforcement issues under CWA §404.<sup>68</sup> For those states that pursue compliance/enforcement issues independently or in conjunction with the Corps and EPA, typical resolutions include after-the-fact permitting, voluntary restoration, penalty fees, and other negotiated compliance actions. In general, enforcement cases are rarely elevated to formal legal action against the violator.

### Tracking Systems

The majority of states, 38 total or 76 percent, operate some system for tracking wetland-related permits, §401 certifications, mitigation, and/or other restoration and conservation activities.<sup>69</sup> However, the type and sophistication of tracking systems vary widely. For example:

- ❖ Arkansas has developed the Wetland Resource Information Management System, an on-line GIS tool that provides data to state and federal agency regulators, landowners, environmental groups, and citizens. Program information can be queried for regulatory and non-regulatory data, including impact sites, mitigation, restoration, wetland planning areas, eco-regions and watersheds, congressional districts, counties, §404 permits, acreages, easements, research, and applicable conservation programs (e.g., Wetland Reserve Program, Conservation Reserve Program). Users may utilize the “quick view graphics tool” to display program information in graphical and tabular format. The site is intended to be a one-stop shop for program managers and local leaders who are involved in wetland conservation efforts.<sup>70</sup>
- ❖ The Vermont Department of Environmental Conservation’s Wetland Section maintains a basic tracking system for all wetland projects that have come under staff review. The database includes information collected from project review sheets, enforcement proceedings, field inspections, and state permits, including responses to registered complaints.
- ❖ New York’s Department of Environmental Conservation has developed the Department Application Review Tracking (DART) system, which manages the administrative aspects of permit processing for all required resource and environmental permits issued in the state, including freshwater and tidal wetland permits. The system does not handle information associated with permitted impacts to wetlands or required mitigation.

<sup>68</sup> Nineteen states reported that they generally defer to the Corps and/or U.S.EPA on wetland-related compliance/enforcement: Alaska, Colorado, Idaho, Illinois, Iowa, Kansas, Kentucky, Louisiana (401 only), Missouri, Nebraska, New Mexico, North Dakota, Oklahoma, South Carolina (401 only), South Dakota, Texas, Utah, West Virginia, and Wyoming.

<sup>69</sup> Thirty-eight states operate a tracking system: Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Carolina, Oregon, Pennsylvania, South Carolina, Tennessee, Texas, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

<sup>70</sup> Arkansas Wetland Resource Information Management System, at <http://awrimis.cast.uark.edu/home/> (last visited July 12, 2007)

## **State Resources for Wetlands**

### ***Organization of State Agencies***

In all, 123 state agencies across the nation play a role in wetland regulation, management, and/or protection. Most states administer wetland regulatory programs and non-regulatory activities through two or more state agencies, although a significant number of the states, 12 total or 24 percent, rely on a single agency for the vast majority of state-level wetland activities. In Arizona, Connecticut, Delaware, Georgia, Michigan, Montana, New Mexico, North Carolina, Pennsylvania, South Carolina, Vermont, and Wisconsin—states with widely varying economies, ecologies, and wetland program sizes and approaches—wetland-related activities are administered by one central environmental agency. However, it is important to note that for the majority of these states, multiple divisions within the single agency—which may act as separate agencies for all intents and purposes—oversee the regulation and management of wetlands. These agencies also often administer wetland programs from regional offices.<sup>71</sup> For example:

- ❖ Delaware’s Department of Natural Resources and Environmental Control conducts wetland activities under multiple divisions: the Division of Water Resources is responsible for all wetlands, subaqueous, and marina permitting and §401 certification and conducts water quality monitoring; the Division of Fish and Wildlife participates in voluntary wetland management and restoration programs; and the Division of Soil and Water Conservation issues federal coastal consistency determinations and conducts restoration, education, and planning activities in the coastal zone.
- ❖ In Michigan, the Department of Environmental Quality oversees the vast majority of the state’s wetland-related management and protection, including permitting, outreach and technical support, enforcement, research, and restoration. The agency’s primary office for wetlands, the Land and Water Management Division, operates ten field offices in addition to the Lansing headquarters office.

For the majority of states, 26 total or 52 percent, two state resource/environmental agencies oversee wetland-related activities.<sup>72</sup> Commonly, one agency carries out regulatory activities (e.g., state wetland permits or §401 water quality certification), while another agency conducts non-regulatory activities (e.g., restoration initiatives or landowner stewardship programs). For example:

- ❖ In Kentucky, the Department of Environmental Protection administers the state’s §401 water quality certification program and is also responsible for monitoring state waters; the Department of Fish and Wildlife Resources conducts non-regulatory activities such as wetlands restoration and protection.

These states may also divide agency oversight by jurisdiction, with two or more agencies overseeing similar activities for specified regions of the state. For example:

- ❖ Maine divides wetland regulation between different agencies depending on the political designation of the area. Essentially, the Maine Department of Environmental Protection oversees wetland-related matters in towns that have the authority to regulate land use activities and the Maine Land Use

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<sup>71</sup> Only two states, Arizona and Montana, administer all wetland activities from one headquarter office or division.

<sup>72</sup> Twenty-six states conduct the vast majority of state-level wetland-related activities within two agencies: Alabama, Alaska, Colorado, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Mississippi, Missouri, Nebraska, Nevada, New Hampshire, New York, Ohio, Rhode Island, Tennessee, Utah, West Virginia, and Wyoming.

Regulation Commission oversees wetland-related activities in areas that do not have the authority to regulate land use.

Two states, California and Florida, administer regulatory programs jointly at the state and regional level. In Florida, the Department of Environmental Protection (FLDEP) and four of five regional Water Management Districts (WMDs) implement the state's environmental resource permitting program.<sup>73</sup> In practice, FLDEP and the four WMDs have divided responsibilities according to categories of activities.<sup>74</sup> FLDEP has entered into operating agreements with each of the four WMDs that implement the program to outline the division of responsibilities.<sup>75</sup> In California, the State Water Resources Control Board and nine Regional Water Quality Control Boards together constitute the California Water Board, which is responsible for regulating wetlands.<sup>76</sup> The regional boards are considered state agencies and are responsible for implementing state laws and regulations. The state board carries out regulatory functions under state and federal water quality laws, develops statewide water quality plans, policies, and standards, determines water rights, and may initiate enforcement actions within each region.

Finally, in 11 states, wetland-related activities—both regulatory and non-regulatory—are conducted by three or more state agencies.<sup>77</sup> For example:

- ❖ Six Arkansas agencies carry out wetland-related regulation and management: Natural Heritage Commission, Game and Fish Commission, Department of Environmental Quality, Natural Resources Commission, Forestry Commission, and University of Arkansas Cooperative Extension Service. In order to increase the effectiveness and efficiency of individual agency efforts on wetland conservation, the Multi-Agency Wetland Planning Team was formed to facilitate a collaborative approach to wetland conservation. (See box, “Beyond \$401.”)

### **Resources for Wetlands**

For many agencies, wetland-related activities are an integral part of larger state goals and programs, thus making it difficult to estimate the specific amount of staff or funding devoted to wetland-related activities. Of the 150 state agency divisions involved in wetland regulation, management, and/or protection nationwide, more than one-third, 56 total, were unable to estimate the number of Full Time Equivalent (FTE) staff dedicated to wetlands. Of those that were able to provide estimates, the number of FTEs varied widely from state to state, agency to agency, and program to program. For example, Colorado employs 1- $\frac{1}{3}$  FTEs statewide for wetlands (including regulatory activities conducted in the Colorado Department of Public Health and Environment and non-regulatory activities conducted in the Colorado Department of Natural Resources). However, volunteer staff are also located throughout the state to assist in wetland protection and management. In contrast, Florida employs approximately 520 staff statewide to administer the state's Environmental Resource Permit program.

<sup>73</sup> 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.

<sup>74</sup> 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.

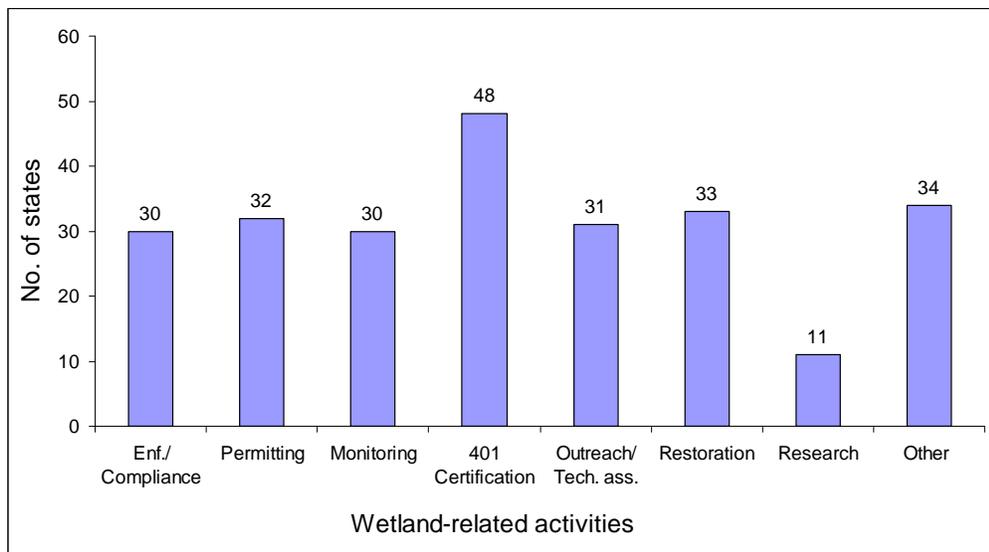
<sup>75</sup> The operating agreements are adopted as rules and regulations at FL. ADMIN. CODE § 62-113.

<sup>76</sup> The nine Regional Water Quality Control Boards are: North Coast, San Francisco Bay, Central Coast, Los Angeles, Central Valley, Lahontan, Colorado River Basin, Santa Ana, and San Diego.

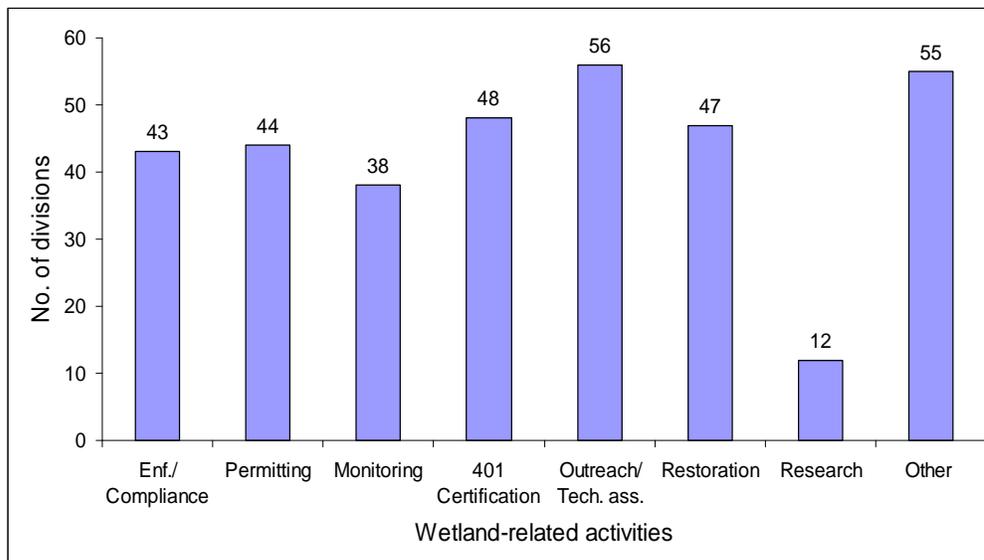
<sup>77</sup> Eleven states conduct wetland-related regulation, management, and protection under three or more state agencies: Arkansas, California, Minnesota, New Jersey, North Dakota, Oklahoma, South Dakota, Texas, Virginia, and Washington.

Although many staff share responsibilities for different program tasks, about half conduct project review, while the remainder are split between compliance and enforcement activities and administrative functions.

Activities assigned to state FTEs also range widely and vary among agencies and programs. State staff may be devoted to permitting, §401 certification, enforcement/compliance, monitoring, outreach and technical assistance, restoration, or research and more often than not, more than one of these types of wetland-related tasks. See Figures 2-J-a and 2-J-b.



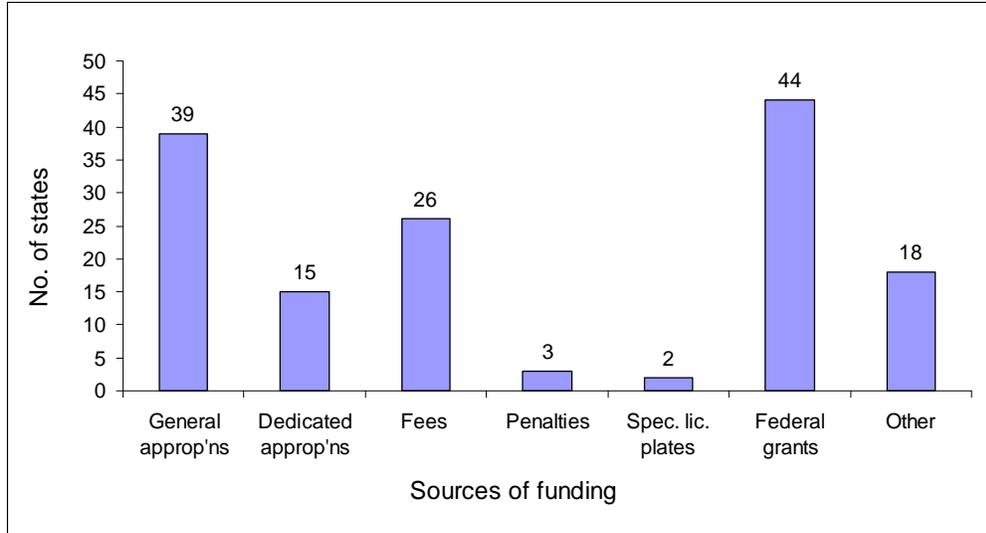
**Figure 2-J-a. Number of states reporting staff dedicated to working at least part of their time on wetland-related activities.** Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.



**Figure 2-J-b. Number of agency divisions (out of 150) reporting staff dedicated to working at least part of their time on wetland-related activities.** Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.

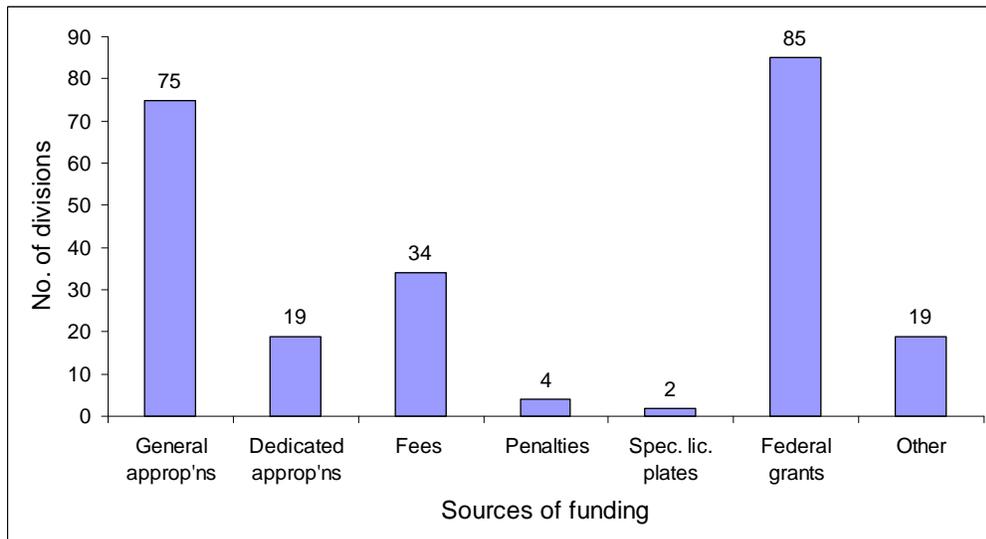
As with wetland-related staff, wetland-related funding is often folded in with larger state program budgets, making it difficult to estimate the specific amount of funding devoted to wetland-related activities. Of the 150 state agency divisions involved in wetland regulation, management, and/or protection nationwide, more than two-thirds, 109 total, were unable to estimate the amount of funding dedicated specifically to wetlands. Of those that were able to provide estimates, the level of support varied widely from state to state, agency to agency, and program to program. For example, estimated annual budgets ranged from \$75,000 for the Arizona Department of Environmental Quality's §401 program to more than \$100 million for North Carolina's multiple wetland-related programs (including §401/water quality, coastal wetlands permitting and management, and the state compensatory mitigation program).

Sources of funding for wetland-related activities also range widely and vary among agencies and programs. Funding may derive from state funds (general or dedicated), permit or certification fees, penalties, specialty license plates, or federal grants. More often than not, more than one funding source provides support for wetland-related activities. See Figures 2-K-a and 2-K-b.



**Figure 2-K-a. Number of states reporting sources of funding for their wetland-related activities.**

Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.



**Figure 2-K-b. Number of agency divisions (out of 150) reporting sources of funding for their wetland-related activities.**

Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.

### III. Water Quality Standards

The Clean Water Act requires states to develop water quality standards (WQS), which may include narrative, chemical, and biological water quality criteria, designated uses, and anti-degradation policies. Thirteen states have adopted water quality criteria, designated uses, and/or anti-degradation policies specific to wetland resources: California (regional water boards), Colorado, Florida, Hawaii, Illinois, Iowa, Maine, Minnesota, Nebraska, North Carolina, Ohio, Wisconsin, and Wyoming. States report using wetland-specific WQS when making determinations related to §401 certifications, NPDES permits, and enforcement and compliance. See Figure 3-A.

Nine of the thirteen states that have adopted wetland-specific WQS describe water quality criteria narratively: California (regional water boards), Colorado, Hawaii, Minnesota, Nebraska, North Carolina, Ohio, Wisconsin, and Wyoming. Seven states also include chemical criteria (California, Colorado, Hawaii, Minnesota, Nebraska, Ohio, and Wisconsin), and four include biological criteria (California, Colorado, Nebraska, and Wisconsin).

Seven states have adopted designated uses specific to wetlands: California (regional water boards), Colorado, Florida, Iowa, Nebraska, North Carolina, and Ohio. For example:

- ❖ Iowa regulations include a “designated use” category of “Class B(LW) – Lakes and Wetlands.”<sup>78</sup>
- ❖ California’s Lahontan Regional Water Quality Control Board has developed beneficial uses related to wetland functions, including water quality enhancement and flood peak attenuation/flood water storage.<sup>79</sup>

Four states have anti-degradation policies that specify wetlands: Florida, Illinois, Maine, and Ohio. For example:

- ❖ Maine’s anti-degradation policy requires that “designated uses for [a] water body and . . . habitat, including significant wetlands, within a waterbody supporting existing populations of wildlife or aquatic, estuarine or marine life, or plant life maintained by the waterbody . . .” must be considered in determining uses to be protected and maintained.<sup>80</sup>
- ❖ Illinois’ anti-degradation policy includes a goal of no net loss of existing wetland acres or functional values as a result of state-supported activities.<sup>81</sup>

<sup>78</sup> IOWA ADMIN. CODE r. 567-61.3(1).

<sup>79</sup> Personal communication with Bill Orme, State Water Res. Control Bd. (Jan. 16, 2007).

<sup>80</sup> ME. REV. STAT. ANN. tit. 38, § 464-F(1).

<sup>81</sup> 20 ILL. COMP. STAT. § 830/1-4.

**Figure 3-A. Wetland-specific water quality standards.**

<i>State</i>	<i>Water Quality Criteria (narrative and/or numeric)</i>	<i>Designated Use</i>	<i>Anti-degradation Policy</i>	<i>Citation</i>
<b>California</b>	X	X		Various regional water quality control plans <sup>82</sup>
<b>Colorado</b>	X	X		5 COLO. CODE REGS. § 1002 <i>et seq.</i>
<b>Florida</b>		X	X	FLA. STAT. ANN. § 403.061; FLA. ADMIN. CODE § 62-302.
<b>Hawaii</b>	X			HAW. CODE R. § 11-54-2.
<b>Illinois</b>			X	ILL. ADMIN CODE tit. 35, § 302, 303.
<b>Iowa</b>		X		IOWA ADMIN. CODE r. 567-61.1 <i>et seq.</i>
<b>Maine</b>			X	ME. REV. STAT. ANN. tit. 38, § 464.
<b>Minnesota</b>	X			MINN. R. § 7050.
<b>Nebraska</b>	X	X		NEB. DEPT. OF ENV. QUALITY, tit. 117, Chp. 7.
<b>North Carolina</b>	X	X		N.C. ADMIN. CODE 02B.0231.
<b>Ohio</b>	X	X	X	OHIO ADMIN. CODE §§ 3745-1-50 – 3745-1-54.
<b>Wisconsin</b>	X			WIS. ADMIN. CODE § NR 103.
<b>Wyoming</b>	X			Ch. 1 of Wyoming Water Quality Rules and Regulations § 12.

Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.

Thirty-seven states have not adopted water quality criteria, anti-degradation policies, or designated uses that specify wetlands. These states primarily default to surface WQS that relate to wetland functions (e.g., flood control, sediment trapping, fish and wildlife habitat, maintenance of streamflow, pollution control, shoreline protection) when making §401 certifications or water quality permitting decisions.

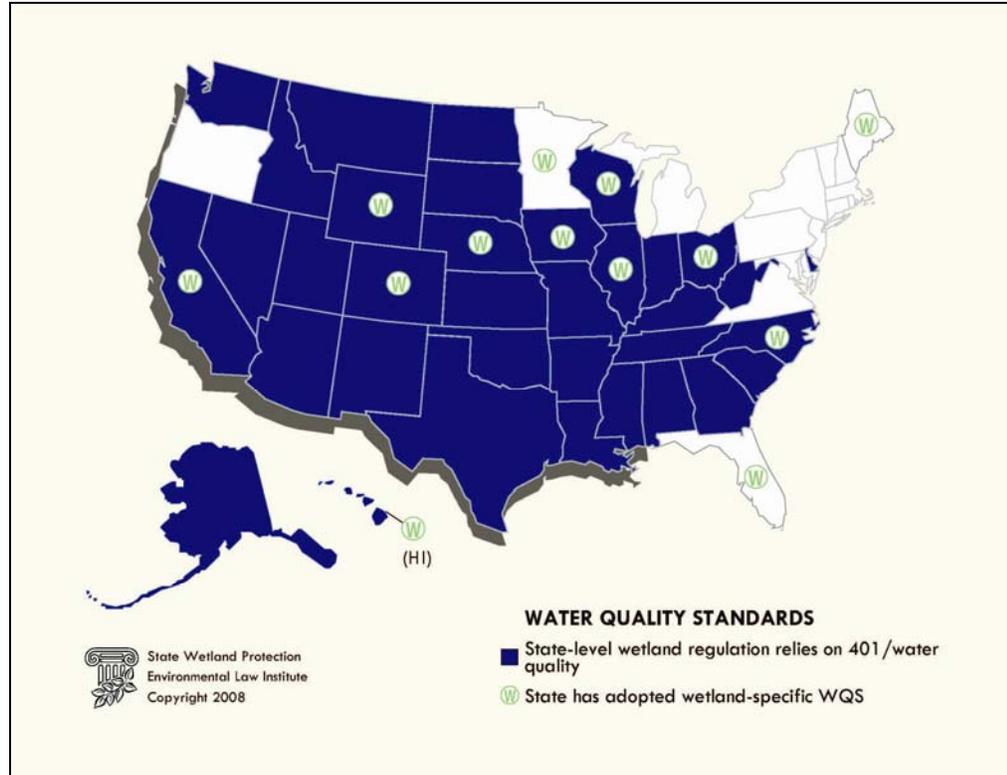
<sup>82</sup> See: SAN FRANCISCO REGION WATER QUALITY CONTROL Bd., WATER QUALITY CONTROL PLAN, CHAPTER 3 WATER QUALITY OBJECTIVES, available at [http://www.swrcb.ca.gov/rwqcb2/basinplan/web/BP\\_CH3.html](http://www.swrcb.ca.gov/rwqcb2/basinplan/web/BP_CH3.html) (last visited July 11, 2007); LOS ANGELES REGIONAL WATER QUALITY CONTROL BOARD, WATER QUALITY CONTROL PLAN: LOS ANGELES REGION, CHAPTER 2: BENEFICIAL USES (1994), available at [http://www.swrcb.ca.gov/rwqcb4/html/meetings/tmdl/Basin\\_plan/el\\_doc/BP2%20Beneficial%20Uses\\_text.pdf](http://www.swrcb.ca.gov/rwqcb4/html/meetings/tmdl/Basin_plan/el_doc/BP2%20Beneficial%20Uses_text.pdf); SANTA ANA REG'L WATER QUALITY CONTROL Bd., RESOLUTION NUMBER 94-1: WATER QUALITY CONTROL Plan (1995), available at <http://www.waterboards.ca.gov/santaana/pdf/R8BPlan.pdf>.

Seventeen states that rely on §401 certification of federal permits and licenses as the sole wetland regulatory mechanism at the state-level have not adopted wetland-specific WQS: Alabama, Alaska, Arizona, Arkansas, Idaho, Kansas, Kentucky, Missouri, Montana, Nevada, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, and West Virginia.

It is important to note, however, that many of the 37 states that have not adopted wetland-specific WQS do not rely primarily on §401 certification or other water quality permitting to protect state wetland resources. For example,

- ❖ New York takes a habitat approach to wetland protection, with a marginal focus on water quality. The state has established permitting programs for freshwater and tidal wetlands, both of which are housed in the New York Department of Environmental Conservation's Division of Fish, Wildlife, and Marine Resources. Section 401 water quality certification does not enter into the state's permitting process.
- ❖ New Jersey has assumed authority to administer dredge and fill permits under §404 of the Clean Water Act. Thus, water quality certification is not a primary wetland regulatory mechanism, although a §401 "surrogate" is written into the state rules.

See Figure 3-B.



**Figure 3-B. Adoption of wetland-specific WQS.** Thirteen states have adopted water quality criteria, designated uses, and/or anti-degradation policies specific to wetland resources. Twenty-two states rely on §401 as the sole form of state-level regulation, and fifteen states rely on §401 as the primary form of state-level wetland regulation, but have also adopted laws that provide additional protection to coastal wetlands, “isolated wetlands,” or other wetland resource categories. Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.

## IV. Monitoring and Assessment

### Assessment for Wetlands

Assessment methodologies are important tools used by wetland regulators, managers, and scientists to evaluate characteristics and functions of wetlands. Assessment methodologies may be used by states for a variety of purposes, including:

- ❖ Determining wetland type for regulatory classification (many states outline separate regulatory requirements for multiple wetland classes);
- ❖ Determining whether or not mitigation wetlands are meeting prescribed performance standards (i.e., compliance);
- ❖ Determining the amount, type, and general health and function of state wetland resources, as well as changes in wetland resources over time (e.g., determining whether or not goals for no-net-loss of acreage and/or function are being met);
- ❖ Measuring the impact, including cumulative impacts, to wetlands resulting from a project proposal;
- ❖ Surface water quality reporting (303(d)/305(b));
- ❖ Identifying reference wetlands for monitoring purposes;
- ❖ Evaluating habitat for fish and game species;
- ❖ Identifying and/or prioritizing areas with restoration potential or for protection;
- ❖ Assisting local municipalities or watershed organizations in land use planning; and
- ❖ Evaluating restoration efforts.

Thirty-one states reported having adopted an assessment methodology, and twenty-one states reported having adopted two or more assessment methodologies that serve more than one purpose.<sup>83</sup> The states also reported that a number of new methodologies were in various stages of development. Types of wetland assessment methodologies include: functional assessment, bioassessment, rapid assessment, and landscape assessment, among others. For example:

<sup>83</sup> Thirty-one states reported the adoption of an assessment methodology: Alabama, Alaska, Arkansas, California, Delaware, Florida, Idaho, Illinois, Indiana, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Montana, New Hampshire, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Vermont, Virginia, Washington, and Wisconsin. Twenty-one states reported the adoption of two or more assessment methodologies: Alabama, California, Delaware, Idaho, Indiana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Montana, New Hampshire, North Carolina, North Dakota, Ohio, Oregon, South Carolina, Tennessee, Virginia, Washington, and Wisconsin.

- ❖ The Ohio Rapid Assessment Method was developed specifically for regulatory purposes in the late 1990s. The final version was released in February 2001 (Version 5.0).<sup>84</sup> The state's water quality standards require permit applicants to use "an appropriate wetland evaluation methodology acceptable to the director" to determine a wetland's category.<sup>85</sup> Ohio Environmental Protection Agency staff have been primarily responsible for the development of the methodology, although federal agencies and other states have also contributed.
- ❖ The Idaho Department of Fish and Game conducts inventories, monitoring, and assessment of wetlands to identify issues affecting habitat. The department usually uses the Montana Department of Transportation's *Wetland Assessment Method*, as well as an assessment methodology developed by federal agencies for assessing functional condition and monitoring riparian wetlands.<sup>86</sup>
- ❖ Arkansas' Multi-Agency Wetland Planning Team has developed a variety of wetland planning tools, including a landscape-level wetland inventory of the state, a statewide wetland classification and characterization, and hydrogeomorphic (HGM) functional assessment models.<sup>87</sup> The state's HGM classification provides information about landscape and geomorphic position, water sources, and hydrodynamics, as well as wetland class, subclass, and community type.<sup>88</sup> Regional HGM guidebooks are being developed in conjunction with the Corps for five wetland planning regions, making Arkansas the first state in the nation with HGM functional assessment models for all the major forested wetland types in the state. As of June 2007, the published guidebooks included the Delta Region, Coastal Plain Region, and Ouachita Mountains/Crowley's Ridge Regions, while the Arkansas River Valley Region was undergoing final editing, and the Ozark Mountains Region was in draft form.<sup>89</sup> The guidebooks will be used for a variety of purposes, including planning, monitoring, and restoration efforts for state mitigation banks and other public holdings.

### **Wetland Monitoring and Assessment Programs**

Approximately a third of the states, 16 total or 32 percent, reported having a wetland-specific monitoring and/or assessment program or monitoring wetlands as part of a larger state monitoring program.<sup>90</sup> States that have adopted wetland assessment methodologies but that did not report having a wetland monitoring and/or assessment program were not included in the discussion below. In addition, states that were in the process of developing monitoring/ and or assessment programs for wetlands or planning to integrate wetlands into

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<sup>84</sup> OHIO ENVIRONMENTAL PROTECTION AGENCY, *OHIO RAPID ASSESSMENT METHOD FOR WETLANDS V.5.0: USER'S MANUAL AND SCORING FORMS (2001)*, available at <http://www.epa.state.oh.us/dsw/401/oram50um.pdf>.

<sup>85</sup> OHIO ADMIN. CODE § 3745-1-54(B)(2)(a).

<sup>86</sup> Personal Communication with Walt Poole, Idaho Dep't of Fish and Game (Oct. 30, 2006); Personal Communication with Chris Murphy, Idaho Dep't of Fish and Game (Apr. 27, 2007).

<sup>87</sup> ARKANSAS MULTI-AGENCY WETLAND PLANNING TEAM, *ARKANSAS WETLAND CONSERVATION PLAN – STATE WETLAND STRATEGY*, available at [http://homepage.mac.com/arkansas\\_mawpt/.Public/Strategy.pdf](http://homepage.mac.com/arkansas_mawpt/.Public/Strategy.pdf) (last visited July 11, 2007).

<sup>88</sup> Multi-Agency Wetland Planning Team, *Classification of Arkansas Wetlands* at <http://www.mawpt.org/wetlands/classification/classes.asp> (last visited July 12, 2007).

<sup>89</sup> Personal communication with Bob Singleton, Program Support Manager Water Div. Ark. DEQ (May 17, 2007). The reports are available at: Wetland Laboratory, *Technical Reports*, at <http://el.ercd.usace.army.mil/publications.cfm?Topic=techreport&Code=wetland> (last visited July 12, 2007).

<sup>90</sup> Sixteen states have a monitoring and assessment program: Delaware, Idaho, Kansas, Louisiana, Maine, Maryland, Minnesota, Nevada, North Carolina, North Dakota, Ohio, Oregon, Texas, Vermont, Virginia, and Wisconsin.

existing monitoring programs at the time the data were collected were not included (i.e., California, Illinois, Iowa, Massachusetts, Michigan, Pennsylvania, and Wyoming).

Wetland monitoring and assessment programs vary in size and focus. Five states (Idaho, Maine, Nevada, Texas, and Wisconsin) have wetland monitoring and assessment programs that operate as part of a larger program (e.g., surface water quality, watershed, habitat). The criteria tracked by the programs depend largely upon the program for which it is used and the assessment and other methodologies employed. The monitoring parameters may include biological and/or chemical criteria, as well as other state-specific measurements such as loss and gain of wetland acreage. Examples from states include the following:

- ❖ The Watershed Assessment Section of the Delaware Department of Natural Resources and Environmental Control's Division of Water Resources administers the state's wetland monitoring and assessment program. The state has developed standardized protocols to assess the condition of nontidal wetlands and identify primary stressors that are lowering wetland condition at the watershed scale.<sup>91</sup> The state is also developing standardized protocols for tidal wetlands and restoration sites.<sup>92</sup>
- ❖ Maine's freshwater wetland biological monitoring and assessment program is part of the state Department of Environmental Protection's larger water quality assessment program, which conducts monitoring and assessment for all state waters. Freshwater wetland biological monitoring is integrated with the state's river and stream biomonitoring program.<sup>93</sup>

State wetland monitoring and assessment programs are usually funded with grants from the EPA, although state general and dedicated funds may also contribute. For example, Minnesota's Comprehensive Wetlands Assessment, Monitoring, and Mapping Strategy was developed with an EPA §104(b) Wetland Program Development Grant, and implementation of the strategy is being supported by an EPA Wetland Demonstration Pilot Grant, with matching funds provided by the Minnesota Pollution Control Agency. The Minnesota legislature has also appropriated annual funding that may be used as matching funds.<sup>94</sup> See Figure 4-A.

<sup>91</sup> DEP'T OF NATURAL RES. AND ENVTL. CONTROL, DIV. OF WATER RES., WATERSHED ASSESSMENT BRANCH, SURFACE WATER QUALITY MONITORING PROGRAM (2007), available at <http://www.dnrec.state.de.us/DNREC2000/Library/Water/swmonpro.pdf>.

<sup>92</sup> Personal communication with Amy Jacobs, Del. Dep't of Natural Res., Div. of Water Res., Watershed Assessment Section (Mar. 5, 2007).

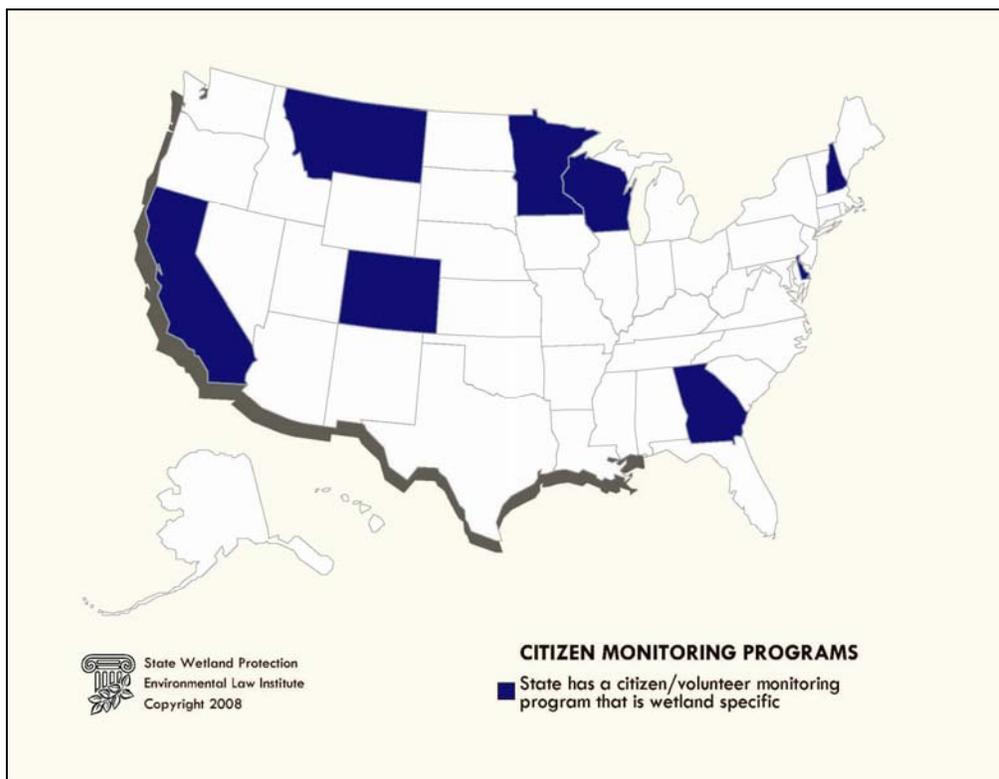
<sup>93</sup> Maine Department of Natural Resources, *Wetland Monitoring and Assessment Program*, at <http://www.maine.gov/dep/blwq/wetlands/monitoring.htm> (last visited Oct. 2, 2007).

<sup>94</sup> MINNESOTA POLLUTION CONTROL AGENCY, A COMPREHENSIVE WETLAND ASSESSMENT, MONITORING, AND MAPPING STRATEGY FOR MINNESOTA (Jul. 2006), available at [http://files.dnr.state.mn.us/ecological\\_services/wetlands/wetland\\_monitoring.pdf](http://files.dnr.state.mn.us/ecological_services/wetlands/wetland_monitoring.pdf).



- ❖ Minnesota's Pollution Control Agency began working with citizen wetland monitoring programs in the 1990s. Today, 17 communities participate in the state's Wetland Health and Evaluation Program. The state provides training for volunteers and technical oversight; cities provide funding for team leaders, equipment, and quality control; and counties coordinate and administer the local program. Data collected through the program are used primarily by local governments to make water quality planning decisions.<sup>97</sup>
- ❖ New Hampshire's Department of Environmental Services' Coastal Program administers a volunteer salt marsh monitoring program. The data collected through the program are used to develop success indicators for salt marsh restoration.<sup>98</sup>

See Figure 4-B.



**Figure 4-B. Citizen monitoring programs.** Eight states reported having a volunteer monitoring program that is specific to wetlands. Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.

<sup>97</sup> Minnesota Pollution Control Agency, *Biological Monitoring, Citizen Monitoring*, at <http://www.pca.state.mn.us/water/biomonitoring/bio-citizenmonitoring.html> (last updated Jun. 13, 2007). See also *Wetland Health Evaluation Program*, at <http://www.mnwhep.org/> (last visited Apr. 25, 2007).

<sup>98</sup> Personal Communication with Ted Diers, N.H. Dep't of Env'tl. Services (Feb. 15, 2007).

### **Assessment for Streams**

Stream assessment methodologies, although less common, are also important for evaluating the characteristics and functions of states' aquatic resources. Stream assessment methodologies are used by states for purposes similar to those of wetland assessment, e.g., determining stream type for regulatory classification, assessing compliance with WQS, ambient monitoring and assessment, decision-making with respect to Total Maximum Daily Loads and NPDES permitting, assessing habitat, identifying restoration potential and evaluating restoration efforts, assisting in land use or watershed planning, and most commonly, surface water quality reporting (303(d)/305(b)).

Twenty-five states reported the adoption of a stream assessment methodology, and ten states reported the adoption of two or more assessment methodologies that may serve more than one purpose.<sup>99</sup> Types of stream assessment methodologies include: bioassessment, rapid assessment, stream condition assessment, and standard operating protocols, among others. For example:

- ❖ Tennessee uses a bioassessment methodology, a rapid assessment methodology, and standard operating procedures to determine whether or not anti-degradation standards are being met, develop Total Maximum Daily Loads, make permitting decisions, and update the state's 303(d) list.
- ❖ Virginia uses a Stream Condition Index to determine impairments to aquatic life uses in Wadeable, Freshwater Streams and Rivers West of the State's Coastal Plain.<sup>100</sup>

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<sup>99</sup> Twenty-five states reported the adoption of an assessment methodology: Arkansas, California, Colorado, Connecticut, Florida, Georgia, Hawaii, Idaho, Illinois, Kentucky, Maine, Maryland, Michigan, Minnesota, Missouri, Montana, New Jersey, New York, North Carolina, North Dakota, Ohio, Tennessee, Utah, Vermont, and Virginia. Ten states reported the adoption of two or more assessment methodologies: Arkansas, Florida, Illinois, Kentucky, Missouri, Montana, North Carolina, Ohio, Tennessee, and Vermont. (NOTE: ELI was unable to obtain information on stream assessment methodologies for several states: Alabama, Delaware, Louisiana, Massachusetts, New Hampshire, Oklahoma, Pennsylvania, South Carolina, and Texas.)

<sup>100</sup> Virginia Department of Environmental Quality, *A Stream Condition Index for Virginia Non-Coastal Streams*, available at <http://www.deq.virginia.gov/watermonitoring/pdf/vastrmcon.pdf#search=%22Virginia%20Stream%20Condition%20Index%22> (last visited Sept. 13, 2007).

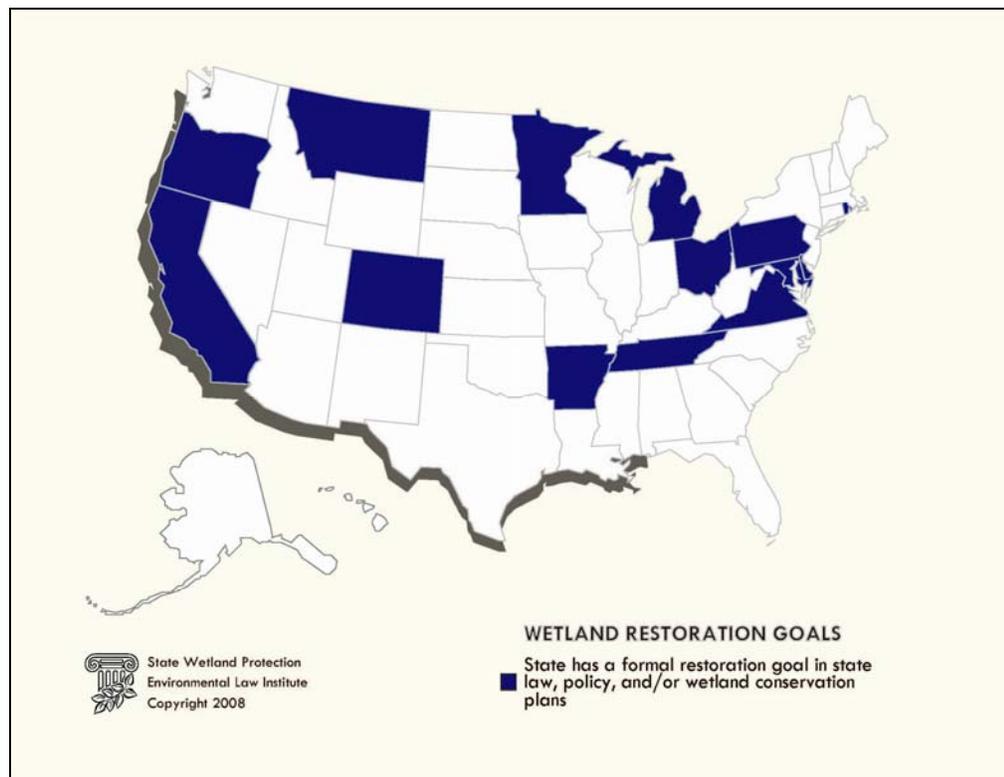
## V. Restoration

Wetland restoration programs (independent from restoration activities carried out for compensatory mitigation for permitted impacts) are central to many states' wetland programs. Fourteen states have articulated a statewide wetland restoration goal in state law, policy, and/or wetland conservation plans.<sup>101</sup> See Figures 5-A and 5-B.

<b>Figure 5-A. State wetland restoration goals.</b>	
<i>State</i>	<i>Goal</i>
<b>Arkansas</b>	Achieve no-net-loss and a long-term net gain of wetland function and value in each region...
<b>California</b>	Ensure no-net-loss and achieve a long-term net gain in the quantity, quality, and permanence of wetland acreage and values...
<b>Colorado</b>	Protect 100,000 acres of biologically significant wetlands and associated uplands for wetland-dependent species... by 2005...
<b>Delaware</b>	Restore 1,500 acres and enhance 1,500 acres of wetlands in the Chesapeake Bay watershed by 2010...
<b>Maryland</b>	Restore 60,000 acres of wetlands...
<b>Michigan</b>	The short-term goal is the restoration of 50,000 acres of wetlands (one percent of historic losses) by 2010, while the long-term goal (with no specific time frame) is the restoration of 500,000 acres of wetlands (ten percent of historic losses)...
<b>Minnesota</b>	Maintain and restore the quality and diversity and increase the overall quantity of wetlands in the state...
<b>Montana</b>	No-net-loss of Montana's remaining wetland base, in terms of quantity and quality...; conserve, restore, enhance, and create wetlands where feasible...; and to increase Montana's wetland resource base...
<b>Ohio</b>	Restore 5,000 acres of wetlands between 2001 and 2010...
<b>Oregon</b>	No-net-loss of freshwater wetlands and a net gain of 250 acres per year of estuarine wetlands...
<b>Pennsylvania</b>	No-net-loss and net gain...
<b>Rhode Island</b>	No-net-loss of wetlands in the state...
<b>Tennessee</b>	Restore 70,000 acres of wetlands by 2000...
<b>Virginia</b>	Restore 10,000 acres of wetlands by 2010...

Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.

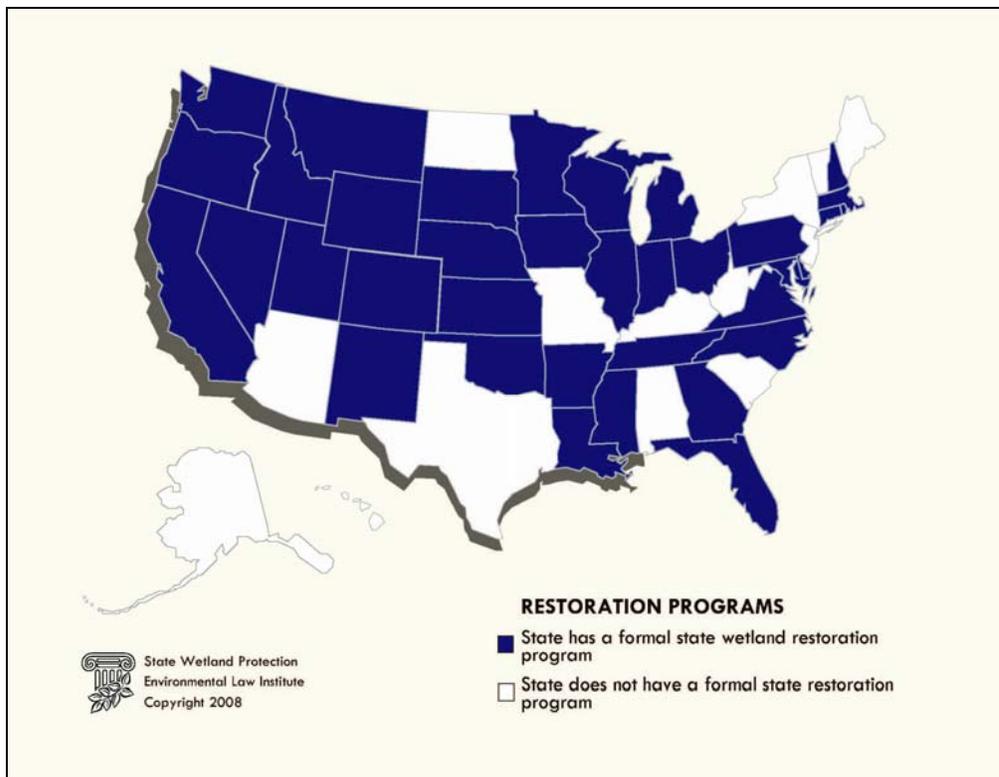
<sup>101</sup> Fourteen states have established a statewide restoration goal: Arkansas, California, Colorado, Delaware, Maryland, Michigan, Minnesota, Montana, Ohio, Oregon, Pennsylvania, Rhode Island, Tennessee, and Virginia. (ELI was unable to information on North Dakota.)



**Figure 5-B. State wetland restoration goals.** Fourteen states have outlined a statewide wetland restoration goal in state law, policy, and/or wetland conservation plans. Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.

Most states carry out wetland restoration activities or provide financial support or technical assistance to support wetland restoration. Restoration may be carried out in an ad hoc manner or, alternatively, may be part of a formal state wetland restoration strategy. Thirty-six states (72 percent) report the operation of a formal, state-administered wetland restoration program.<sup>102</sup> See Figure 5-C.

<sup>102</sup> Thirty-six states operate a formal wetland restoration program: Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Tennessee, Utah, Virginia, Washington, Wisconsin, and Wyoming.



**Figure 5-C Formal, state-administered wetland restoration programs.** Thirty-six states report the operation of a formal, state-administered wetland restoration program. Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.

These programs are often part of a larger restoration initiative, e.g., watershed program, water quality improvement, habitat restoration. For example:

- ❖ The North Carolina Clean Water Management Trust Fund was established by the state legislature to provide grant funding for water protection and restoration projects, including the acquisition and restoration of riparian buffers and wetlands. The Fund operates as an independent state agency (housed within the Department of Environment and Natural Resources for administrative purposes). A 21-member Board of Trustees appointed by the Governor and General Assembly reviews grant applications and makes funding decisions. The North Carolina Legislature appropriates \$100 million annually for the Fund.<sup>103</sup>
- ❖ The Wyoming Game and Fish Department often funds wetland construction projects through its Habitat Grant Program. The department also funds wetland restoration through its Wildlife and

<sup>103</sup> N.C. GEN. STAT. Art. 18 § 113A-255; North Carolina Clean Water Management Trust Fund, at <http://www.cwmtf.net/> (updated Nov. 28, 2007).

Natural Resource Trust Account, which reserves a portion of the state's mineral royalties for wildlife habitat improvement. The primary purpose of both these programs is to maintain wildlife habitat.<sup>104</sup>

Few states reported having a systematic method for prioritizing lands and waters for restoration, a state registry to identify potential restoration sites, or carry out monitoring for restoration success. See Figure 5-D.

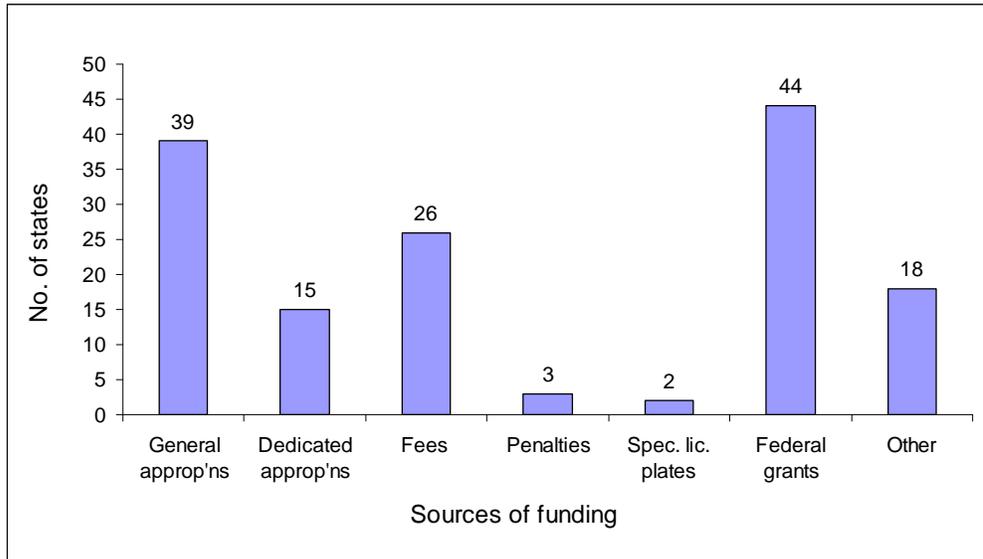
**Figure 5-D. Prioritization, registries, and monitoring for wetland restoration.**

<i>State</i>	<i>Prioritization</i>	<i>Registry</i>	<i>Monitoring</i>
<b>Arkansas</b>	X		X
<b>California</b>	X		
<b>Connecticut</b>	X	X	X
<b>Delaware</b>	X		
<b>Florida</b>	X		
<b>Georgia</b>	X		
<b>Idaho</b>			X
<b>Iowa</b>	X		X
<b>Kentucky</b>	X		
<b>Louisiana</b>	X		
<b>Maryland</b>	X		X
<b>Massachusetts</b>	X		
<b>Minnesota</b>			X
<b>Mississippi</b>	X		
<b>New Hampshire</b>			X
<b>New Mexico</b>	X	X	
<b>North Carolina</b>	X		
<b>Ohio</b>	X		
<b>Oklahoma</b>		X	
<b>Oregon</b>	X		
<b>Pennsylvania</b>	X		X
<b>Rhode Island</b>	X		
<b>Texas</b>		X	
<b>Vermont</b>	X		

Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.

Funding for state wetland restoration programs comes from a variety of sources and often includes more than one source of funding, including: general state funds, specialty license plates, hunting or fishing license or permit fees, wildlife/waterfowl/habitat stamps, and most commonly, dedicated state funds and federal grants (e.g., EPA §319 grants, National Oceanic and Atmospheric Administration (NOAA) coastal zone management funds, North American Wetlands Conservation Act grants). See Figure 5-E.

<sup>104</sup> Personal Communication with Ryan Amundson, Wyoming Department of Game and Fish (October 9, 2006).



**Figure 5-E. Number of states reporting specific sources of funding for restoration programs.** Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.

## VI. Public-Private Partnerships

Many state wetland restoration initiatives involve partnerships with private landowners, federal agencies, conservation organizations, and/or corporations.

### Landowners

Twenty-three states (46 percent) operate a formal state program for partnering with private landowners on restoration or conservation,<sup>105</sup> and thirty-seven states (74 percent) report that they conduct outreach and/or provide technical assistance to private landowners.<sup>106,107</sup> For example:

- ❖ Illinois' Private Land Wildlife Habitat Program seeks to "protect, enhance, and develop wildlife habitat, including wetlands, on private land for the purpose of improving wildlife populations, soil and water conservation, and quality of life for Illinois residents."<sup>108</sup> The program offers assistance to qualifying landowners with "plans, field equipment, plant materials, and labor to develop, implement, and maintain wildlife habitat management practices that require specialized training, equipment, or resources which would otherwise be unavailable to landowners."<sup>109</sup>
- ❖ Kansas's State Conservation Commission allocates cost-share funds to county conservation districts through its Riparian and Wetlands Program. The conservation districts then administer grants to landowners to implement best management practices on their lands to protect and improve water quality, including wetland enhancement, restoration, and creation projects.<sup>110</sup>

The majority of states, 36 total or 72 percent, also reported coordinating with the U.S. Department of Agriculture (USDA) on federal landowner partnership programs, such as the Wetlands Reserve Program, Conservation

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<sup>105</sup> Twenty-three states operate a formal state program for partnering with private landowners: Arkansas, California, Colorado, Connecticut, Delaware, Georgia, Hawaii, Illinois, Indiana, Iowa, Minnesota, Montana, Nebraska, New Mexico, North Carolina, Ohio, Oregon, Pennsylvania, South Dakota, Texas, Virginia, Wisconsin, and Wyoming. (ELI was unable to obtain this information for New Jersey.)

<sup>106</sup> Thirty-seven states report that they conduct outreach and/or provide technical assistance to private landowners: Alaska, Arkansas, California, Colorado, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Mexico, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Texas, Utah, Vermont, Virginia, Washington, Wisconsin, and Wyoming. (ELI was unable to obtain this information for Alabama, Nevada, New Hampshire, New Jersey, and North Dakota.)

<sup>107</sup> Restoration is by far the most common issue on which states and private landowners may partner. However, it is worth noting that states may also partner with and/or assist private landowners on wetland issues other than restoration—for example, compensatory mitigation, navigating the permit process, or providing educational opportunities.

<sup>108</sup> Illinois Department of Natural Resources, *Voluntary Incentive Programs*, at <http://dnr.state.il.us/wetlands/ch5b.htm> (last visited July, 2007).

<sup>109</sup> *Id.*

<sup>110</sup> Personal Communication with Rob Reschke, State Conservation Comm'n (Jan. 19, 2007).

Reserve Program, Conservation Reserve Enhancement Program, Wildlife Habitat Incentives Program, and the Environmental Quality Incentives Program.<sup>111</sup>

### Corporate Partnerships

Many states also reported partnering with corporations to conduct wetland restoration. Most notably, the Corporate Wetlands Restoration Partnership carries out marsh and other aquatic habitat restoration, fish passage improvements, invasive species control, threatened/endangered species protection, education and outreach, research, and monitoring in several states, with membership continually expanding. Under this program, corporate contributions support various stages of projects, including feasibility, design, and implementation. Corporate employees often also provide volunteer services.<sup>112</sup>

### Citizen Monitoring for Wetlands

States also often partner with citizen monitoring groups for problem screening, baseline assessment, watershed planning, and education, among other activities.<sup>113</sup> However, only eight states support a volunteer monitoring program that is specific to wetlands: California, Colorado, Delaware, Georgia, Minnesota, Montana, New Hampshire, and Wisconsin.<sup>114</sup> (See also *IV. Monitoring and Assessment, Citizen Monitoring for Wetlands*)

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<sup>111</sup> Thirty-six states reported coordinating with the USDA on landowner partnership programs: Alabama, Arkansas, California, Delaware, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming. (ELI was unable to obtain this information for Colorado, Florida, New Jersey, New Mexico, North Dakota, and Texas.)

<sup>112</sup> See: Coastal America, *Corporate Wetlands Restoration Partnership*, at <http://www.coastalamerica.gov/text/cwrp.html> (last updated Mar. 7, 2007).

<sup>113</sup> U.S. ENVIRONMENTAL PROTECTION AGENCY, EPA 843-B-00-001, VOLUNTEER WETLAND MONITORING: AN INTRODUCTION AND RESOURCE GUIDE (2000), available at <http://www.epa.gov/owow/wetlands/monitor/volmonitor.pdf>.

<sup>114</sup> NOTE: ELI was unable to obtain information on volunteer wetland monitoring for Alabama, Florida, Massachusetts, New Jersey, and Rhode Island.

## **VII. Coordination**

Most states administer wetland regulatory programs and non-regulatory activities through two or more state agencies. Moreover, many of the states relying on a single agency conduct wetland-related activities through multiple divisions that may act as separate agencies for all intents and purposes. Indeed, 123 state agencies and 150 divisions play some role in state wetland regulation, management, and/or protection across the nation—an average of more than 2 agencies and 3 divisions per state. State agencies also often administer wetland programs from regional offices. (See *II. Regulatory Programs, State Resources for Wetlands*)

Multiple federal natural resource agencies also operate wetland programs that seek to regulate, protect, restore, and/or manage wetland habitat, such as the Corps, EPA, NRCS, USDA Forest Service, NOAA, and FWS. In addition, a wide array of state agencies is concerned about and has as a central part of their mission habitat conservation, which may include a focus on wetland habitat and wetland-dependent species. These may include state park departments, natural area programs, open space programs, and wildlife agencies.

### **Coordination Among State and Federal Agencies**

In order for states to operate comprehensive wetland programs, individual agency efforts must function together as a whole, coordinated program. Many states have created formal channels in order to assure continuous, ongoing communication and coordination of efforts. For example:

- ❖ The Minnesota Interagency Wetlands Group, comprising state, federal, local, and tribal agencies, meets monthly to share information and coordinate on wetland regulation and management issues.
- ❖ The Virginia Wetlands Restoration Coordinating Committee was established to assist the state's wetland restoration and conservation goals by increasing state agency coordination and aiding the voluntary conservation, establishment, and restoration of wetlands in the Commonwealth. The Coordinating Committee includes representatives from Department of Game and Inland Fisheries, Department of Environmental Quality, Department of Conservation and Recreation, Virginia Institute of Marine Science, and several other state and federal agencies.
- ❖ In Pennsylvania, a monthly Environmental Review Committee meeting is held to discuss wetland-related permit applications that require intensive review and coordination. Staff from the Department of Environmental Protection, Fish and Boat Commission, Corps, NOAA - National Marine Fisheries Service, FWS, and EPA.

Others states rely on less formal forms of coordination, but report regular and continuous communication among agencies and organizations involved in wetland issues. In addition, some states have established or participate on coordination bodies on specific wetland issues, such as Mitigation Banking Review Teams, but coordinate less formally on other wetland topics. In total, 45 states (90 percent) report regular coordination

among state and federal agencies on wetland issues.<sup>115</sup> Twenty states (40 percent) report the establishment of formal memoranda of agreement/understanding (MOAs/MOUs) on wetland issues.<sup>116</sup>

### State Wetland Conservation Plans

Twenty-six states have developed a State Wetland Conservation Plan (SWCP) to improve the effectiveness and efficiency of state wetland program activities by identifying gaps in wetland protection programs and outlining strategies to improve regulatory and non-regulatory approaches to protecting wetlands.<sup>117</sup> Of these, half, or 13 states, report that elements of the SWCP are actively being implemented or have been implemented.<sup>118</sup> For example:

- ❖ Wisconsin's SWCP, *Reversing the Loss: A Strategy for Protecting & Restoring Wetlands in Wisconsin*, outlines strategies for building and maintaining relationships among state and federal agencies, as well as with conservation organizations, academic institutions, local governments, citizens, the regulated public, and other wetland stakeholders. Strategies pertain to education and outreach, streamlining regulatory processes, providing wetland stewardship incentives, acquisition and restoration strategies, and mapping and monitoring wetlands throughout the state.<sup>119</sup>
- ❖ The *Conservation Strategy for Montana's Wetlands 1997* is being implemented as funding and other opportunities become available. A wide range of agencies and organizations were active participants in developing the strategy. State, tribal, and federal groups and non-government entities are members of the Montana Wetland Council, which implements the strategy and promotes cooperative wetland resource management in the state.<sup>120</sup>

See Figure 7-A.

<sup>115</sup> Only three states reported that state and federal agencies do not coordinate on a regular basis: Arizona, Oklahoma, and Texas. (ELI was unable to obtain this information from Utah and Nevada.)

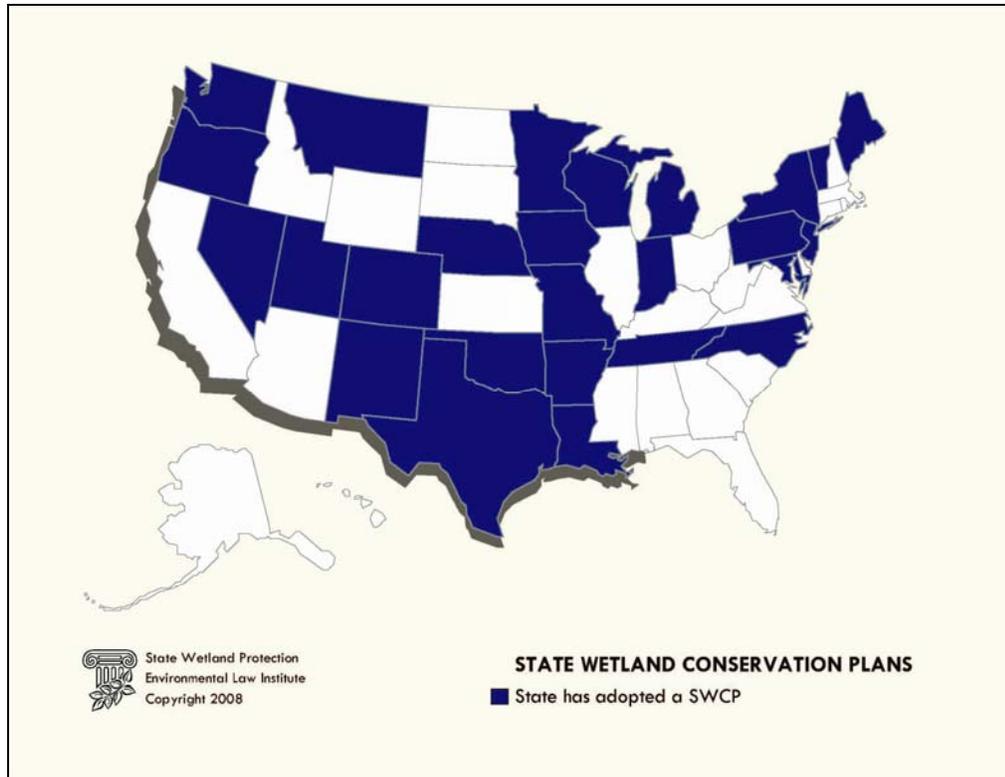
<sup>116</sup> Twenty states report holding formal MOAs/MOUs on wetland issues: Alaska, California, Connecticut, Kansas, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oregon, Rhode Island, South Carolina, West Virginia, and Wisconsin.

<sup>117</sup> Twenty-six states have developed a SWCP: Arkansas, Colorado, Indiana, Iowa, Louisiana, Maine, Maryland, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Jersey, New Mexico, New York, North Carolina, Oklahoma, Oregon, Pennsylvania, Tennessee, Texas, Utah, Vermont, Washington, and Wisconsin.

<sup>118</sup> Thirteen states report that their SWCP is actively being implemented or has been implemented: Arkansas, Indiana, Maine, Maryland, Michigan, Minnesota, Missouri, Montana, Nevada, New Mexico, Oklahoma, Pennsylvania, and Wisconsin. (Six states were unable to determine whether their SWCP was being implemented, or had been implemented: Colorado, Iowa, Louisiana, North Carolina, Oregon, and Vermont.)

<sup>119</sup> WISCONSIN DEPARTMENT OF NATURAL RESOURCES, *REVERSING THE LOSS: A STRATEGY FOR PROTECTING & RESTORING WETLANDS IN WISCONSIN 5* (2000), available at [http://www.dnr.state.wi.us/org/water/fhp/wetlands/documents/Reversing\\_the\\_Loss.pdf](http://www.dnr.state.wi.us/org/water/fhp/wetlands/documents/Reversing_the_Loss.pdf).

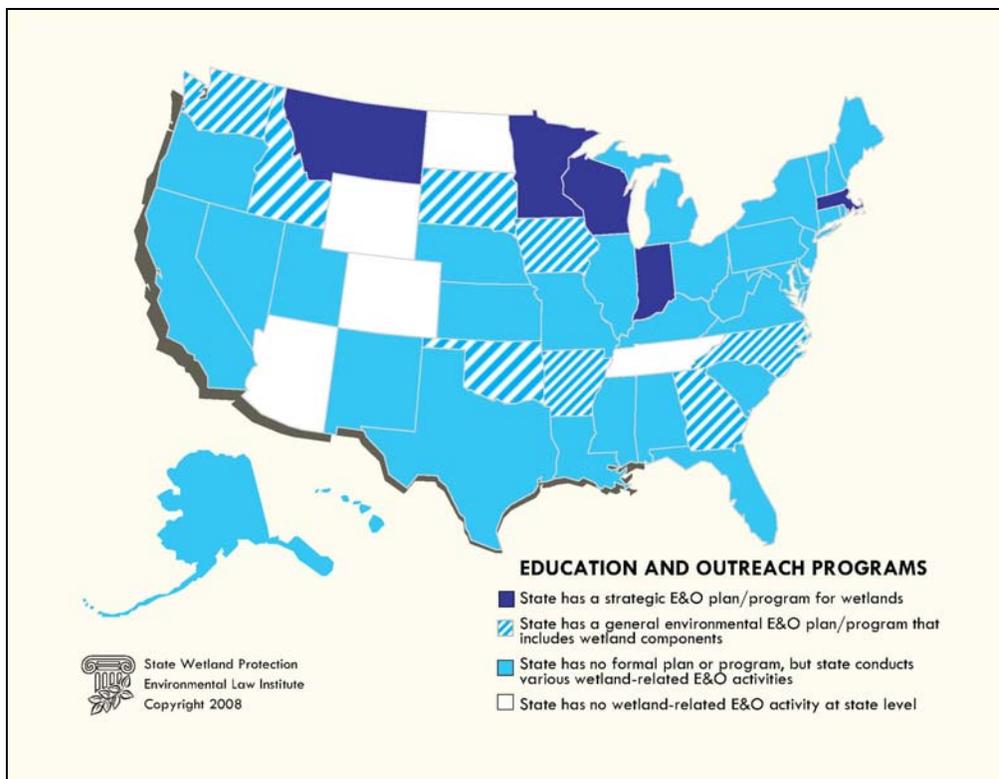
<sup>120</sup> MONT. WETLANDS COUNCIL, *DRAFT MONTANA WETLANDS CONSERVATION STRATEGY* (1997), available at <http://nris.state.mt.us/wis/strategymain.html>.



**Figure 7-A. State Wetland Conservation Plans.** Twenty-six states have developed a State Wetland Conservation Plans. Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.

## VIII. Education and Outreach

Education and outreach activities that focus on wetlands are important for increasing public awareness about the values and functions wetlands provide, maintaining support for wetlands protection, and building support for state wetland program activities. The vast majority of states, 45 total or 90 percent, have one or more agencies that carry out education and outreach activities related to wetlands.<sup>121</sup> See Figure 8-A.



**Figure 8-A. State education and outreach activities.** Five states have developed a strategic education/outreach plan or program that focuses specifically on wetlands. Eight states have developed a general environmental education/outreach plan or program that includes wetland components. Thirty-two states have not developed a formal plan or program for wetland-related education/outreach but conduct various wetland-related education/outreach activities as the need arises or as funding becomes available. Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.

<sup>121</sup> Only five states reported no education or outreach related to wetlands: Arizona, Colorado, North Dakota, Tennessee, and Wyoming.

Five states (Indiana, Massachusetts, Minnesota, Montana, and Wisconsin) have developed a strategic education/outreach plan or program that focuses specifically on wetlands. For example:

- ❖ Wisconsin's wetland conservation plan, *Reversing the Loss: A Strategy for Protecting and Restoring Wetlands in Wisconsin*, 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 education and outreach strategies, including: message development; partnerships, guidance, and education for the public; citizen monitoring programs; demonstration of land use management techniques; and strong, continued communication with agricultural and transportation communities. 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. The state plan also includes performance measures that may be evaluated to determine the success of education/outreach efforts over time.<sup>122</sup>
- ❖ Montana has been carrying out a 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 partnered with local governments experiencing rapid growth and land use changes to conduct wetland mapping and classification and capacity building.<sup>123</sup> The state also runs the Montana Wetlands Information Clearinghouse, a website that provides information on Montana's wetlands, including maps, brochures, photos, and links to wetland information throughout the country.<sup>124</sup> Finally, the Montana Watercourse is a statewide education and outreach program that provides information, tools, and resources on water resources, including the important role of wetlands within watersheds, to local governments, developers, landowners and citizens.<sup>125</sup>

Eight states (Arkansas, Georgia, Idaho, Iowa, North Carolina, Oklahoma, South Dakota, and Washington) have developed a general environmental education/outreach plan or program that includes wetland components. For example:

- ❖ Georgia Department of Natural Resources' Environmental Protection Division sponsors EEinGEORGIA.org, a collaboration of environmental educators throughout the state, agencies such as the Department of Community Affairs and Department of Education, and educational organizations such as Environmental Education Alliance of Georgia, Georgia Learning Connections, and the Georgia Parent Teacher Association. The website does not focus specifically on wetlands, but does offer several environmental education tools that include waters and wetlands, e.g., lesson plans, a

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<sup>122</sup> WISCONSIN DEPARTMENT OF NATURAL RESOURCES, REVERSING THE LOSS: A STRATEGY FOR PROTECTING & RESTORING WETLANDS IN WISCONSIN 5 (2000), available at [http://www.dnr.state.wi.us/org/water/fhp/wetlands/documents/Reversing\\_the\\_Loss.pdf](http://www.dnr.state.wi.us/org/water/fhp/wetlands/documents/Reversing_the_Loss.pdf), at 8.

<sup>123</sup> Personal Communication with Lynda Saul, Mont. Dep't of Env'tl. Quality (Sept. 20, 2005).

<sup>124</sup> Natural Resource Information System, *Montana Wetlands Information Clearinghouse*, at <http://nris.mt.gov/wis/wetlands/index.asp> (last visited July 26, 2007).

<sup>125</sup> Montana Watercourse, *About Us*, at <http://www.mtwatercourse.org/AboutUs/aboutus.htm> (last updated Mar. 29, 2007).

directory of environmental education providers and resources for the state, news, and training on various environmental education topics, including Project WET (Water Education for Teachers).<sup>126</sup>

- ❖ Iowa Department of Natural Resources' Information and Education Section offers general aquatic outreach programs that include wetland components, such as Projects WET, Wild, and Learning Tree. The agency also provides fact sheets on general wetland issues and wetland monitoring information.

The remaining 32 states have not developed a formal plan or program for wetland-related education/outreach.<sup>127</sup> However, state agency staff conduct various wetland-related education/outreach activities as the need arises or as funding becomes available. For example:

- ❖ The Nebraska Game and Parks Commission conducts various wetland-related education and outreach activities for landowners, school groups, hunters and fishers, and other outdoor groups, such as the publication, *Guide to Nebraska's Wetlands and Their Conservation Needs*.<sup>128</sup> The guide includes information on wetlands, wetland conservation programs, and Nebraska's regional wetland complexes. The Commission has also produced a *Wetlands of Nebraska* video and wetlands edition of *Trail Tales* magazine for kids.<sup>129</sup>
- ❖ The Vermont Department of Environmental Conservation organizes workshops on wetland conservation and regulation that target the regulated public, realtors, consultants, contractors, other state programs and agencies, and local government representatives. Outreach activities are often carried out through site visits and project reviews, as well as informal meetings and presentations. The agency distributes wetland-related publications on a regular basis, including wetland inventory maps, landowner guides for restoration, and various regulatory guidelines.<sup>130</sup> The department offers Project WET workshops and presents to school groups regularly.<sup>131</sup>

States report that most of the education and outreach activities they support or carry out are targeted towards teachers, youth, and citizens. Other target audiences include local governments and landowners. See Figure 8-B.

<sup>126</sup> Georgia Adopt-A-Stream, *Environmental Education in Georgia*, at <http://eeingeorgia.org/net/go/default.aspx?siteid=4863> (last visited Sept. 12, 2007).

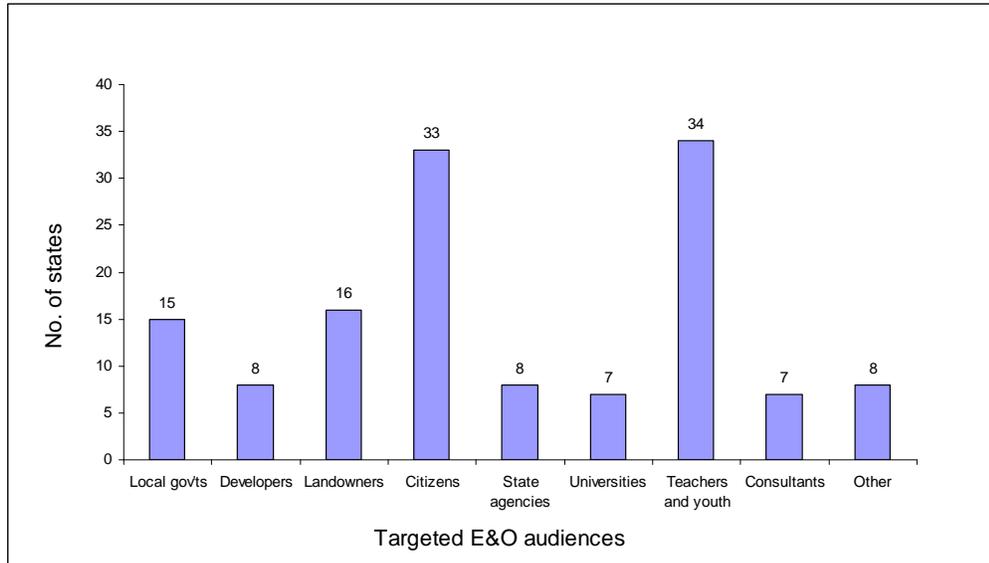
<sup>127</sup> Thirty-two states have not developed a formal plan or program for wetland-related education/outreach, but do conduct various wetland-related education/outreach activities, as the need arises or as funding is available: Alabama, Alaska, California, Connecticut, Delaware, Florida, Hawaii, Illinois, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Mississippi, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Texas, Utah, Vermont, Virginia, and West Virginia.

<sup>128</sup> Nebraska Game and Parks Commission, *Guide to Nebraska's Wetlands and Their Conservation Needs*, available at <http://www.ngpc.state.ne.us/wildlife/programs/wetlands/wetlandsguide.pdf> (last visited Sept. 7, 2007).

<sup>129</sup> Email from Ted LaGrange, Nebraska Game and Parks Commission (April 12, 2007).

<sup>130</sup> Vermont Department of Environmental Conservation, Wetlands Section, *Topic: The Vermont Wetlands Office (Wetlands Fact Sheet #1)* (February 1999), available at [http://www.anr.state.vt.us/dec/waterq/wetlands/docs/wl\\_factsheet1.pdf](http://www.anr.state.vt.us/dec/waterq/wetlands/docs/wl_factsheet1.pdf).

<sup>131</sup> Personal Communication with Carl Pagel, Vermont Department of Environmental Conservation (Feb. 9, 2005).



**Figure 8-B. Audiences targeted by states conducting education and outreach activities (out of 45).** States often target more than one type of audience with their wetland-related outreach and education activities. Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.

## IX. Conclusion: A Discussion of State Approaches

In the preceding sections we summarize state approaches to seven core elements of a comprehensive wetland program: regulation, water quality standards, monitoring and assessment, restoration, partnerships, coordination, and education and outreach. State-level wetland regulation and conservation programs are extremely diverse due to a variety of circumstances—history, geography, economics, general attitudes toward wetland resources, as well as state agency funding, resources, and enforcement activity. Furthermore, some state approaches to wetland protection are the result of well-planned efforts to construct a comprehensive program, while others are the result of incremental program development activities that have evolved organically over time. In essence, state wetland programs face diverse landscapes—both literally and figuratively—in providing protection for state wetland resources.

In this section we conclude by highlighting model approaches that may provide states with guidance on strengthening the core elements of their programs and providing more comprehensive and robust protection of state wetland resources.

### Filling Gaps in Federal Protection

Many states implement regulatory measures that extend jurisdiction beyond that of the §404 program, thus providing greater protection for so-called “isolated wetlands,” intermittent and ephemeral streams, and other waters that may not fall within federal jurisdiction under the Clean Water Act. For example:

- ❖ The Wisconsin legislature enacted the *2001 Wisconsin Act 6*<sup>132</sup> in response to post-*SWANCC* uncertainty regarding federal jurisdiction over so-called “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*]...”<sup>133</sup> The act and its corresponding statutes and regulations outline certification requirements, delineation procedures, exemptions, enforcement provisions, conditions under which water quality certifications may apply, and other various requirements.<sup>134</sup>
- ❖ In Washington State, activities that fall outside the purview of the §401/404 program may be regulated under other state water quality permitting processes such as wastewater discharge permits, short-term water quality modifications, and administrative orders (an enforcement rule).<sup>135</sup> In fact, the state has announced that any project that calls for filling or altering a wetland determined by the Corps to be “isolated” will still be subject to regulation by the state via administrative order.<sup>136</sup>

<sup>132</sup> S.B. 1, 2001 Gen. Assem., Spec. Sess. (Wis. 2001).

<sup>133</sup> *Id.*

<sup>134</sup> *Id.*

<sup>135</sup> ANDY McMILLAN, WASHINGTON STATE DEPARTMENT OF ECOLOGY, HOW ECOLOGY REGULATES WETLANDS (1998), available at <http://www.ecy.wa.gov/pubs/97112.pdf>.

<sup>136</sup> Washington State Department of Ecology, *Focus Sheet: Isolated Wetlands – Changes in the Regulatory Process*, Ecology Publication No. 00-06-020 (June 2001), available at <http://www.ecy.wa.gov/pubs/0106020.pdf>.

While these wetlands are exempt from §401/404, they are still included in the state’s definition for “wetlands.” The order is used for so-called “isolated” wetlands to ensure compliance with state law and requires mitigation and other regulatory measures.<sup>137</sup>

- ❖ Vermont operates a wetland-specific permit program apart from §401/404. Authorized under the Vermont Wetland Rules, the program seeks 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.”<sup>138</sup> The rules classify wetlands into categories based on an evaluation of functions and list and describe ten functional criteria for classification and determination of level of protection merited.<sup>139</sup> State wetland permits generally also include §401 certification.

**Wetland-specific Water Quality Standards**

Wetland-specific water quality standards (or the inclusion of wetlands in surface water quality standards) ensure that wetlands are afforded the same level of protection as other waters under the CWA. Thirteen states have adopted water quality criteria, designated uses, and/or anti-degradation policies specific to wetland resources. See Figure 9-A.

<b>Figure 9-A. Wetland-specific water quality standards.</b>				
<i>State</i>	<i>Water Quality Criteria (narrative and/or numeric)</i>	<i>Designated Use</i>	<i>Anti-degradation Policy</i>	<i>Citation</i>
<b>California</b>	X	X		Various regional water quality control plans <sup>140</sup>
<b>Colorado</b>	X	X		5 COLO. CODE REGS. § 1002 <i>et seq.</i>
<b>Florida</b>		X	X	FLA. STAT. ANN. § 403.061; FLA. ADMIN. CODE § 62-302.
<b>Hawaii</b>	X			HAW. CODE R. § 11-54-2.
<b>Illinois</b>			X	ILL. ADMIN CODE tit. 35, § 302, 303.
<b>Iowa</b>		X		IOWA ADMIN. CODE r. 567-61.1 <i>et seq.</i>

<sup>137</sup> Personal communication with Andy McMillan, Washington State Department of Ecology (Jan. 14, 2004).

<sup>138</sup> Vt. Wetland Rules § 1.1.

<sup>139</sup> See generally Vt. Wetland Rules.

<sup>140</sup> See: SAN FRANCISCO REGION WATER QUALITY CONTROL Bd., WATER QUALITY CONTROL PLAN, CHAPTER 3 WATER QUALITY OBJECTIVES, available at [http://www.swrcb.ca.gov/rwqcb2/basinplan/web/BP\\_CH3.html](http://www.swrcb.ca.gov/rwqcb2/basinplan/web/BP_CH3.html) (last visited July 11, 2007); LOS ANGELES REGIONAL WATER QUALITY CONTROL BOARD, WATER QUALITY CONTROL PLAN: LOS ANGELES REGION, CHAPTER 2: BENEFICIAL USES (1994), available at [http://www.swrcb.ca.gov/rwqcb4/html/meetings/tmdl/Basin\\_plan/el\\_doc/BP2%20Beneficial%20Uses\\_text.pdf](http://www.swrcb.ca.gov/rwqcb4/html/meetings/tmdl/Basin_plan/el_doc/BP2%20Beneficial%20Uses_text.pdf); SANTA ANA REG’L WATER QUALITY CONTROL Bd., RESOLUTION NUMBER 94-1: WATER QUALITY CONTROL Plan (1995), available at <http://www.waterboards.ca.gov/santaana/pdf/R8BPlan.pdf>.

<i>State</i>	<i>Water Quality Criteria (narrative and/or numeric)</i>	<i>Designated Use</i>	<i>Anti- degradation Policy</i>	<i>Citation</i>
<b>Maine</b>			X	ME. REV. STAT. ANN. tit. 38, § 464.
<b>Minnesota</b>	X			MINN. R. § 7050.
<b>Nebraska</b>	X	X		NEB. DEPT. OF ENV. QUALITY, tit. 117, Chp. 7.
<b>North Carolina</b>	X	X		N.C. ADMIN. CODE 02B.0231.
<b>Ohio</b>	X	X	X	OHIO ADMIN. CODE §§ 3745-1-50 – 3745-1-54.
<b>Wisconsin</b>	X			WIS. ADMIN. CODE § NR 103.
<b>Wyoming</b>	X			Ch. 1 of Wyoming Water Quality Rules and Regulations § 12.

Note: The data contained in this figure is a characterization of the programmatic element(s) available in the individual states; in no way should this characterization be viewed as drawing any conclusions about the implementation or effectiveness of the state program element(s). The information represented is considered current as of summer 2007.

Wetland-specific standards should include narrative and, when possible, numeric criteria that correspond to wetland conditions. Nine states that have adopted wetland-specific WQS describe narrative water quality criteria (California (regional water boards), Colorado, Hawaii, Minnesota, Nebraska, North Carolina, Ohio, Wisconsin, and Wyoming). Seven also include chemical criteria (California, Colorado, Hawaii, Minnesota, Nebraska, Ohio, and Wisconsin), and four include biological criteria (California, Colorado, Nebraska, and Wisconsin).

### **Strengthening Non-Regulatory Program Elements**

Many states have developed significant non-regulatory elements of their state programs in lieu of or in addition to regulatory approaches.

#### ***Restoration and Partnerships***

Restoration of wetlands (apart from compensatory mitigation for permitted impacts) is critical to achieving a “net gain” of wetland acres and functions or as a last resort to help maintain the current wetland acreage and functions a state already has. State restoration initiatives do not necessarily require legislative action and often rely on forging partnerships with private landowners, federal agencies, conservation organizations, corporations, and/or other state agencies. For example:

- ❖ The Michigan Department of Environmental Quality staffs one FTE to, among other activities, evaluate CWA §319 grant applications from state watershed planning groups. Through this process, the agency identifies watershed groups with which they might collaborate to identify and conduct restoration.<sup>141</sup>

<sup>141</sup> Personal Communication with Rob Zbiciak, Mich. Dep’t of Env’tl. Quality (June 4, 2007).

- ❖ As of 2006, with authorization and funding from the U.S. Congress, all 50 states have developed a state wildlife action plan to proactively conserve wildlife and critical habitat.<sup>142</sup> The development of the plans represents the collection of habitat conservation information to an extent unmatched by any prior nationwide planning effort. The plans have tremendous potential to inform and support conservation action in many areas, including wetlands conservation. For example, in New Hampshire the plan is being used to identify and prioritize sites for wetland restoration and enhancement.<sup>143</sup>
- ❖ Many states participate in the Corporate Wetlands Restoration Partnership, which contributes to the protection of marsh and other aquatic habitat restoration, fish passage improvements, invasive species control, threatened/endangered species protection, education and outreach, research, and monitoring. Under this program, corporate contributions support various stages of projects, including feasibility, design, and implementation. Corporate employees often also provide volunteer services.<sup>144</sup>
- ❖ The Missouri Department of Conservation provides “one-stop shopping” for landowners looking to restore, enhance, or create wetlands on their lands. Regional wetland teams provide landowner assistance and technical expertise on restoration and obtain buy-in from landowners throughout the state.<sup>145</sup>

#### ***Increasing Effectiveness Through Formal Coordination***

*Coordinating Bodies.* In order for states to operate comprehensive wetland programs, individual agency efforts must function together as a coordinated program. Creating formal channels helps ensure continuous, ongoing communication and coordination of efforts. For example:

- ❖ In Arkansas, six state agencies work on some aspect of wetland conservation and management. In order to increase coordination and partnership—as well as efficiency of efforts—a 1992 governor’s directive formed the Multi-Agency Wetland Planning Team. Through the Team, the state’s six wetland agencies work together to improve wetland restoration and planning. Many new initiatives have been launched, including a state wetland inventory, a wetland restoration prioritization model based on geographic information systems, a wetland classification and characterization database, a wetland planning database, and functional assessment models and regional guidebooks based on the hydrogeomorphic approach.
- ❖ The Minnesota Interagency Wetlands Group, comprising state, federal, local, and tribal agencies, meets monthly to share information and coordinate on wetland regulation and management issues.

*State Wetland Conservation Plan.* A statewide wetland conservation strategy is designed to improve the effectiveness and efficiency of wetland program activities by identifying gaps in wetland protection programs and outlining strategies to improve regulatory and non-regulatory approaches to protecting wetlands.

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<sup>142</sup> For more information on the state wildlife action plans, see: <http://wildlifeactionplans.org/>.

<sup>143</sup> For more information and examples of how the state wildlife action plans can inform state wetland conservation, see: <http://www2.eli.org/research/events/jointmeeting.htm>.

<sup>144</sup> See: Coastal America, *Corporate Wetlands Restoration Partnership*, at <http://www.coastalamerica.gov/text/cwrp.html> (last updated Mar. 7, 2007).

<sup>145</sup> Personal communication with Kevin Dacey, Mo. Dep’t of Conservation (May 16, 2007). See also Kevin Dacey, Missouri Department of Conservation, *Wetland Renaissance*, 68 MISSOURI CONSERVATIONIST, Jan. 2007, at 18, available at <http://www.mdc.mo.gov/documents/conmag/2007/20070101.pdf>.

However, the development of a plan does not by itself improve statewide wetland conservation; the plans must also be implemented. For example:

- ❖ Pennsylvania's *Wetlands Net Gain Strategy* seeks to move beyond the goal of no-net-loss to a net gain of wetland acreage by taking a watershed-based, community-focused approach. The strategy discusses: implementation of best management practices for the restoration, creation, and protection of wetlands to meet the needs of individual watersheds; data management, monitoring, and coordination; site prioritization; education and outreach; compensatory mitigation; federal programs such as FWS' Partners for Wildlife, USDA's Wetland Reserve Program, and EPA's §319 program; and state programs such as the Growing Greener grant program. The state is also required to evaluate the effectiveness of the strategy on an annual basis, which includes holding an interagency meeting to evaluate program implementation, to develop new initiatives and partnerships, and to make recommendations to improve the program. Functional wetland gains are tracked geographically within watersheds and by community type, and wetland restoration and enhancement efforts are tracked by the Pennsylvania Department of Environmental Protection, FWS Partners for Wildlife, USDA Wetland Reserve Program, and Bureau of Abandoned Mine Reclamation. Since 1990, 4,660 acres of wetlands have been restored through regulatory and non-regulatory efforts, resulting in a net gain of 3,765 acres of wetlands in the state.<sup>146</sup>

#### ***Education and Outreach Activities for Wetlands***

Education and outreach activities in support of wetland protection are important not only for increasing public awareness about the values and functions wetlands provide (and increasing the protection of these resources), but also for building support for state wetland program activities. For example:

- ❖ The Montana Watercourse is a statewide education and outreach program that provides information, tools, and resources on water resources. The program specifically includes wetlands and addresses the role of wetlands within watersheds. The Watercourse operates grant-based projects that target all water users, including local governments, developers, landowners, and citizens. Projects include: volunteer water quality monitoring; educator kits; realtor workshops aimed at wetland education for those interfacing with new landowners, small ranchers, and hobby farmers; working with volunteers to evaluate and develop wetland rapid assessment and bird assessment protocols; and working with local governments to disseminate information about wetland resources.<sup>147</sup>

#### **Monitoring and Assessment for Wetlands**

Monitoring and assessment are important tools used by wetland regulators, managers, and scientists to evaluate characteristics and functions of wetlands, both for regulatory requirements and decision-making and for the evaluation of statewide wetland acreage and health.

- ❖ Maine's biological monitoring and assessment program for wetlands is part of the state surface water quality monitoring and assessment program. Biological criteria for freshwater wetlands are currently

<sup>146</sup> Pennsylvania Department of Environmental Protection, *Wetlands Net Gain Strategy* (1998), at <http://www.dep.state.pa.us/dep/deputate/watermgt/Wc/Subjects/WWEC/GENERAL/WETLANDS/NetGain.htm>.

<sup>147</sup> Montana Watercourse, *About Us*, at <http://www.mtwatercourse.org/AboutUs/aboutus.htm> (last updated Mar. 29, 2007).

under development and will eventually be incorporated into the state rules for purposes of CWA §303(d) listing and §305(b) reporting.<sup>148</sup>

- ❖ Arkansas has conducted an HGM classification of the state's wetlands. The classification facilitates functional assessment and has been proposed as one of the tools used by permittees for alternatives analysis and impact assessment. Regional HGM guidebooks are being developed in conjunction with the Corps for all five wetland planning regions in the state. The guidebooks will be used for a variety of purposes, including state planning, monitoring, and restoration efforts, state mitigation banks, and other public holdings.<sup>149</sup>

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Clearly, states are equipped with a wide variety of tools to protect and restore wetlands. What may be a successful initiative in one state may not be feasible in another for a wide variety of reasons. States should, however, be creative and enterprising about how to improve their programs and can learn from other states' experiences to build program elements that work for them. The examples above should provide a starting point for states seeking to improve one or more of the core elements of their wetland programs. The next section, **X. Additional Resources on State Wetland Programs**, contains more information both for and about state wetland programs.

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<sup>148</sup> Maine Department of Natural Resources, *Wetland Monitoring and Assessment Program*, at <http://www.maine.gov/dep/blwq/wetlands/monitoring.htm> (last visited Oct. 2, 2007).

<sup>149</sup> Multi-Agency Wetland Planning Team, *Classification of Arkansas Wetlands* at <http://www.mawpt.org/wetlands/classification/classes.asp> (last visited July 12, 2007).

## X. Additional Resources on State Wetland Programs

### State Profiles

Summaries of individual state wetland programs and activities are available on ELI's website at: [http://www.eli.org/Program\\_Areas/state\\_wetlands.cfm](http://www.eli.org/Program_Areas/state_wetlands.cfm).

### Association of State Wetland Managers

Association of State Wetland Managers (ASWM) is a nonprofit membership organization established to promote and enhance protection and management of wetland resources. It is currently (as of January 2008) constructing a website designed to provide information on the core wetland program elements for each of the fifty states. Completed state program summaries, posted in a standardized format that may be revised and expanded over time, can be found at <http://www.aswm.org/swp/statemainpage9.htm>.

### Additional information from EPA

EPA also provides information both about and for state wetland programs, including:

- ❖ State, tribal, and local initiatives: <http://www.epa.gov/owow/wetlands/initiative/>;
- ❖ Landowner assistance and stewardship: <http://www.epa.gov/owow/wetlands/landasst.html>;
- ❖ Water quality and 401 certification: <http://www.epa.gov/owow/wetlands/waterquality/>;
- ❖ Monitoring and assessment: <http://www.epa.gov/owow/wetlands/monitor/>; and
- ❖ Wetland programs across the country: <http://www.epa.gov/owow/wetlands/regions.html>.

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