

Delaware Wetland Program Review  
Environmental Law Institute  
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## **Executive Summary**

A variety of wetland habitat types are found in Delaware. Wetlands help control flooding and reduce storm damage, trap sediments and pollutants that otherwise might enter waterways, help to recharge groundwater, and serve as habitat for many species of wildlife. Wetlands are also an important cultural resource, supporting many traditions and customs in Delaware. The state, however, has lost more than 50 percent of its historic wetlands, primarily due to conversion for agriculture. This trend in wetland loss continues today, as wetlands are increasingly threatened by residential, commercial, and urban development. In fact, Delaware lost more wetlands in the past 15 years (1992 – 2007) than were lost in the previous 10 year period (1981 – 1992). The majority of these losses, approximately 99 percent, were to non-tidal/freshwater wetlands. Gaps in federal jurisdiction and the lack of a state non-tidal/freshwater wetlands protection statute leave more than 30,000 acres of wetlands in the state vulnerable and without protection.

The Delaware legislature has adopted laws to protect tidal and very large non-tidal wetlands and subaqueous lands. However, Delaware still primarily relies on federal authority over non-tidal wetlands. Delaware remains the only one of the five Mid-Atlantic States without its own non-tidal wetlands law.

To help support and enhance the state's existing wetland protection programs, the Environmental Law Institute was asked to perform an independent review of Delaware's wetlands programs. Specifically we were asked to identify 1) the wetlands currently protected under Delaware's programs, 2) opportunities to improve wetlands protection through existing regulations or programs, and 3) opportunities to improve wetlands protection through additional regulations or programs or changes to existing programs. The following report draws on existing studies, a current review of Delaware's regulatory and non-regulatory wetland programs, interviews with key wetlands experts (e.g., state agency staff, state wetland conservation organizations, and federal agency staff), and a review of the wetlands programs of the other Mid-Atlantic states (Maryland, New Jersey, Pennsylvania, and Virginia).

This report includes a summary of Delaware's wetlands habitat types, a review of the state's regulatory and non-regulatory wetlands programs, a list of the major challenges facing wetland protection in the state, and a description of opportunities for improving wetland protection in the state.

### **Challenges to wetland protection in Delaware**

Our review and interviews surfaced a significant number of challenges to the protection and conservation of the state's wetland resources. The challenges ranged from the lack of protection for non-tidal wetlands to a need to improve relationships with landowners and increase engagement with local governments on wetland protection issues. Specifically, we identified the following challenges:

- A lack of comprehensive non-tidal freshwater wetland protection.
- Gaps in the state tidal wetland maps that leave some tidal wetlands unprotected.

- Environmental impacts from the construction and maintenance of the state’s drainage system and Subaqueous Lands Act exemptions.
- A need to improve the enforcement of existing regulations.
- Lack of comprehensive information on the environmental impacts of approved permits and certifications.
- Lack of updated guidance on wetland mitigation.
- A need to improve data tracking of wetland permits and certifications.
- A need for more and better coordination with local land use decision-makers.
- Lack of adequate funding for state wetland programs, including enforcement.
- Lack of consistency in Delaware’s wetland protection statutes and regulations regarding the protection of species and habitat.
- A need for more and better coordination with local landowners.
- The effects of climate change and sea level rise on wetland protection.

### **Opportunities to improve wetland protection in Delaware.**

Based on our research, we have identified opportunities to use existing regulations to more effectively protect Delaware’s wetlands and to improve wetland protection through new regulations or changes to existing programs.

#### ***Improved wetlands protection through existing regulations or program activities***

1. Improve enforcement under existing authorities by developing compliance and enforcement protocols and training state and local authorities to recognize and report violations.
2. Support §401 decision-making by improving data on existing impacts, including flood risk, and updating permit applications.
3. Minimize the impacts from the construction and maintenance of drainage projects by expanding the use of best management practices and examining opportunities to balance drainage needs and resource protection through stormwater utilities or sediment and stormwater management plans.
4. Address the effects of land use decisions on wetland protection by improving coordination with local governments and fully pursuing opportunities to comment on local land use decisions.
5. Emphasize the state’s commitment to the protection of wetlands by adopting a statewide no net loss of wetlands acres and functions policy.
6. Ensure that lost aquatic resource functions are successfully offset by updating mitigation (avoid, minimize, compensate) policies and evaluating the ecological success of compensation sites in the state.
7. Ensure that all wetland impacts are compensated and help fund priority wetland restoration projects by developing a state in-lieu fee program.
8. Improve regulatory decision-making and enforcement of violations by updating data tracking systems.
9. Improve regulatory and mitigation decisions by tying identification of priority wetland sites to the regulatory program.

***Opportunities for improved protection through additional regulations or programs, or changes to existing programs***

1. Strengthen non-tidal freshwater wetland protection by adopting new wetland protections for all non-tidal wetlands, including isolated wetlands that are not currently regulated under federal law.
2. Reissue Executive Order 56 to reaffirm the importance of freshwater wetlands and the state's commitment to avoiding and minimizing impacts to these resources.
3. Develop a programmatic general permit for areas covered by the Wetlands and Subaqueous Lands Acts and future non-tidal wetland protection authority to help streamline permitting and improve the state's ability to efficiently and effectively review individual and cumulative impacts.
4. Improve enforcement under existing programs by adding administrative penalties to the Wetland and Subaqueous Acts.
5. Update tidal wetlands maps to fill any gaps in jurisdiction and better regulate tidal wetlands given changes that could have occurred to the coastline since the current map was created.

Many of the opportunities identified here will require increased staff time, at least in development, and may require additional funding to implement. However, the state would benefit from increased efficiencies in wetlands permitting, increased state control of wetland regulatory programs, increased collaboration among state and local agencies, and, ultimately, improved protection of all of the state's critical wetland resources and the valuable flood prevention and water quality services they provide to the citizens of Delaware.

# Delaware Wetland Program Review

## Introduction

Delaware contains approximately 350,000 acres of wetlands, about one-third of which are estuarine wetlands.<sup>1</sup> However, since European settlement the state has lost about 54 percent of its historic wetlands.<sup>2</sup> A new status and trends report, to be published later this summer, suggests that there have been significant losses statewide from 1992 - 2007, most notably in Sussex County. Recognizing the importance of wetlands resources, the Delaware legislature has adopted laws to protect tidal wetlands and subaqueous lands. In addition, in 2008, the state developed a comprehensive wetland conservation strategy.<sup>3</sup> A non-regulatory planning document, the strategy was designed to coordinate the state's efforts and outlines goals and strategies for improving wetland protection in the state.<sup>4</sup>

In 2010, the Environmental Law Institute was asked by Delaware Department of Natural Resources and Environmental Control (DNREC) to perform an objective review of the state's wetlands programs. Specifically we were asked to 1) Identify the wetlands currently protected under Delaware's programs, 2) Discuss where wetlands protection could be improved through existing regulations or programs, and 3) Identify opportunities where additional regulations or programs, or where changes to existing programs, would improve wetlands protection.

This report draws on existing studies, a current review of Delaware's regulatory and non-regulatory wetland programs, and interviews with key wetlands experts (e.g., state agency staff, state wetland conservation organizations, and federal agency staff). We also compared Delaware's Programs to those of Maryland, New Jersey, Pennsylvania, and Virginia. We have identified areas where existing regulations could more effectively protect Delaware's wetlands as well as opportunities for improving Delaware's wetland protection through new regulations or changes to existing programs.

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<sup>1</sup> Tiner, R.W. 2001. Delaware's Wetlands: Status and Recent Trends. U.S. Fish and Wildlife Service, Northeast Region, Hadley, MA. Prepared for the Delaware Department of Natural Resources and Environmental Control, Watershed Assessment Section, Division of Water Resources, Dover, DE . Cooperative National Wetlands Inventory Publication. 19 pp., *available at* <http://www.fws.gov/wetlands/documents/gSandT/StateRegionalReports/DelawaresWetlandsStatusRecentTrends.pdf>.

<sup>2</sup> *Id.*

<sup>3</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, DELAWARE WETLANDS CONSERVATION STRATEGY, *available at* <http://www.dnrec.delaware.gov/Admin/DelawareWetlands/Documents/Delaware%20Wetlands%20Conservation%20Strategy%2008.29.08.pdf>

<sup>4</sup> The six goals include: 1) Update wetland inventory maps and improve access to wetland related data, 2) Increase monitoring efficiency and effort to provide insight into wetland function and health, 3) Integrate wetland restoration, creation, enhancement, and protection efforts to ensure efficient use of resources, 4) Coordinate information and resources sharing among wetland protection programs, professionals, and agencies, 5) Enhance education and outreach efforts to broaden wetland stewardship among all wetland stakeholders, and 6) Work with partners to provide support and enhancement for existing regulatory programs and to provide protection of wetlands that are not covered by state and federal regulations.

## Delaware's Wetlands

### *Summary*

A number of wetland types are found in Delaware. Delaware's wetlands help to reduce impacts of storms and floods, remove nutrients and pollutants from stormwater runoff, and provide wildlife habitats. Delaware's wetlands include seasonal freshwater wetlands such as wet flatwood swamp forests, floodplain hardwood swamps, wet meadows, and coastal plain ponds; and salt and brackish marshes such as salt marshes, freshwater tidal marshes, scrub-shrub wetlands, Atlantic White Cedar swamps, and bald cypress swamps.<sup>5</sup> The Delaware State Wildlife Action Plan identified over 70 wetland habitat types in Delaware.<sup>6</sup> Coastal plain forested floodplains and riparian swamps, Atlantic white cedar non-tidal wetlands, coastal plain seasonal ponds, interdunal wetlands, Piedmont stream valley wetlands, and wetland blocks are among the habitat types listed as key wildlife habitats in the Plan.

### *Status and Trends*

The pending status and trends data (1992- 2007) show that Delaware has lost more wetlands in the most recent period compared with the previous assessment period (1981-1992). Ninety-nine percent of the losses are of non-tidal wetlands, while 1 percent of the losses are of tidal wetlands. Additional information on specific types of wetlands that are experiencing the greatest magnitude of losses will be available in the status and trends report which is expected out in fall of 2010. However, it is likely that much of the loss is to headwater flats, riparian wetlands, and isolated wetlands.

### *Delaware's Vulnerable Wetlands*

Recent Supreme Court cases have created some confusion over the extent of wetlands that are regulated under the Clean Water Act (CWA).<sup>7</sup> Generally, isolated wetlands and wetlands with no significant nexus with traditional navigable waters are not federally regulated. In addition, swales or erosional features and ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water are also not regulated.<sup>8</sup> At least 20 percent of the non-tidal/freshwater wetlands in Delaware may be considered isolated – about 30,000 acres.<sup>9</sup>

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<sup>5</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, Wetland Types of Delaware, Seasonal Freshwater Wetlands at

<http://www.dnrec.delaware.gov/Admin/DelawareWetlands/Pages/DelawareWetlandTypesSeasonalFreshwater.aspx>, Wetland Types of Delaware, Salt and Brackish Marshes

<http://www.dnrec.delaware.gov/Admin/DelawareWetlands/Pages/DelawareWetlandTypesSaltBrackish.aspx>

<sup>6</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, DIVISION OF FISH AND WILDLIFE, DELAWARE WILDLIFE ACTION PLAN, available at <http://www.fw.delaware.gov/dwap/Pages/default.aspx>

<sup>7</sup> *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* 531 U.S. 159 (2001); *Rapanos v. United States* 126 S. Ct. 2208 (2006)

<sup>8</sup> U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapnos v. United States & Carabell v. United States*. December 2, 2008.

<sup>9</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, WHAT'S AT RISK, at <http://www.dnrec.delaware.gov/Admin/DelawareWetlands/Pages/Whatsatrisk.aspx>

Wetlands that are not federally regulated are also not subject to Delaware's CWA §401 review process, and are thus left unprotected.

Tiner (2003) defines isolated wetlands as “depressional wetlands completely surrounded by upland.”<sup>10</sup> Although isolation can be defined from geographic, hydrologic, and ecological perspectives, “geographically isolated” is most commonly used definition. Geographically isolated wetlands are “wetlands with no apparent surface-water connection to perennial rivers and streams, estuaries, or the ocean. They are surrounded by dryland.” Many of these wetlands likely do have some hydrological connection to other wetlands and water bodies through ground-water flows or intermittent overflows. This definition of geographic isolation does not imply regulatory jurisdiction. Geographically isolated wetlands may actually be jurisdictional under federal, state, or local law because regulatory agencies can use different criteria to determine if a wetland is isolated (e.g., adjacency). Further, non-isolated (or connected) wetlands may not be classified as jurisdictional because their connection is through non-regulated wetlands.

According to Tiner (2003), Delaware contains several geographically isolated wetland types, including coastal plain ponds – isolated depressions where ground water flows to the surface and rain water collects and that may host unique species of plants and animals. Delaware also contains Delmarva pothole wetlands, a geographically isolated wetland type made up of marshes, shrub swamps, forested wetlands, and ponds, located along the Maryland-Delaware border from the headwaters of the Sassafras River to the Nanticoke River.<sup>11</sup> Delmarva potholes support 68 percent of the amphibian species of the Delmarva Peninsula as well as endangered plant species. They also temporarily store floodwaters and serve as ground-water discharge and recharge areas.<sup>12</sup> A second study by Tiner (2003) found that of the upper Delmarva pothole sites examined in the study, 35-39 percent of the wetland area was predicted to be potentially isolated (76 – 80 percent of the number of wetlands).<sup>13</sup>

A number of other studies have attempted to determine the extent of isolated wetlands in Delaware. A study of the Nanticoke watershed estimated that 3 percent of total wetland area in the watershed is isolated and 30 percent of total wetlands by number are isolated.<sup>14</sup> In 2005, a study by NatureServe identified five partially isolated<sup>15</sup> wetland systems in the state, including coastal plain northern basin peat swamp, a depressional isolated wetland system; coastal plain northern basin swamp and wet hardwood forest, a seepage-fed sloping isolated wetland system; coastal plain northern dune and maritime grassland, a depressional isolated wetland system;

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<sup>10</sup> Tiner, R.W., 2003. Geographically Isolated Wetlands of the United States. *Wetlands* 23:494-516.

<sup>11</sup> Tiner, R.W., 2003. Geographically Isolated Wetlands of the United States. *Wetlands* 23:494-516; Leibowitz, S.G. and T.-L. Nadeau, 2003. Isolated Wetlands: State-of-the-Science and Future Directions. *Wetlands* 23:663-684.

<sup>12</sup> *Id*

<sup>13</sup> Tiner, R.W. 2003b. Estimated Extent of Geographically Isolated Wetlands in Selected Areas of the United States. *Wetlands* 23:636-652.

<sup>14</sup> Tiner, R. W., H. C. Bergquist, J. Q. Swords, and B. J. McClain. 2001. Watershed-based wetland characterization for Delaware's Nanticoke River watershed: a preliminary assessment report. U.S. Fish and Wildlife Service, Northeast Region, National Wetlands Inventory Program, Hadley, MA, USA.

<sup>15</sup> Wetlands are defined as partially isolated “if more than 80% of all known occurrences have very infrequent interchange of surface water between the wetland and other water bodies. Practically, this is limited to geographically isolated wetlands where various types of substrates are characteristic (any unconsolidated material). No assumptions are made about the type and frequency of groundwater exchange between these wetlands and other water bodies.”

coastal plain northern pondshore, a depressional isolated wetland system; and central interior highlands and Appalachian sinkhole and depression pond, a depressional isolated wetland system.<sup>16</sup>

According to the NatureServe study, Delaware's isolated wetlands contain 3 percent (1 of 35) of the state's at risk animal species, 16 percent (7 of 45) of the known at risk plant species, and 37 percent (11 of 30) of at risk wetland plant associations.

No studies have attempted to determine which of Delaware's wetland types no longer meet federal jurisdiction tests established by the *Rapanos* Supreme Court case and subsequent federal guidance.<sup>17</sup> However, many of the geographically isolated wetlands described above, and perhaps others, may be no longer protected under federal law.

## **Delaware Wetland Program Review**

### ***Methods***

#### *Review of Existing Studies and Delaware's Regulatory and Non-regulatory Programs*

The following summary of the state's regulatory program draws directly from ELI's 2007 study of Delaware's wetlands program.<sup>18</sup> The summary has been updated where needed based on a current review of Delaware's wetlands programs and interview findings.

#### *Interviews*

Interviews were conducted with 12 agencies and organizations including: DNREC Division of Water Resources' Wetlands and Subaqueous Lands Section, DNREC Division of Water Resources' Watershed Assessment Section, DNREC Division of Fish and Wildlife, DNREC's Division of Soil and Water Conservation Coastal Management Program, Delaware Department of Transportation (DelDOT), Delaware Department of Agriculture Forest Service, Delaware Conservation Districts, U.S. Army Corps of Engineers (Corps) Philadelphia District, U.S. Environmental Protection Agency (EPA) Region III, the Delaware Nature Society, the Center for Inland Bays, and Delaware WildLands. Several of the interviews were conducted with multiple representatives from the identified agencies. In-person interviews with state agency staff and conservation organizations were conducted in Dover on May 25 and 26, 2010. Phone interviews were conducted with federal agency staff in June, 2010. See Appendix A for a list of interviewees.

Participants were asked to describe the role of their agency or organization in protecting wetlands in Delaware. Interviewees were also asked to comment, based on their experience and professional judgment, on the major opportunities for and challenges to wetland protection in

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<sup>16</sup> Comer, P., K. Goodin, G. Hammerson, S. Menard, M. Pyne, M. Reid, M. Robles, M. Russo, L. Sneddon, K. Snow, A. Tomaino, and M. Tuffly, 2005b. Biodiversity Values of Geographically Isolated Wetlands in the United States. NatureServe, Arlington, Virginia, USA.

<sup>17</sup> *Rapanos v. United States* 126 S. Ct. 2208 (2006); U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapnos v. United States & Carabell v. United States*. December 2, 2008.

<sup>18</sup> Environmental Law Institute, Delaware Wetland Program Summary, available at [http://eli.org/pdf/core\\_states/Delaware.pdf](http://eli.org/pdf/core_states/Delaware.pdf)

Delaware, as well as what tools and resources are needed to support additional protection to these resources. Although each group interviewed identified a variety of different issues, a number of overarching themes emerged across the interviews. These issues ranged from increased protection for freshwater wetlands to improved relationships with landowners and increased engagement with local governments on wetland protection issues.

### *Comparative Review*

Delaware's wetlands programs were compared with the wetlands programs of other Mid-Atlantic States including Maryland, New Jersey, Pennsylvania, and Virginia. These comparisons are based on summaries developed by ELI as part of our 50-state study of state wetland programs.<sup>19</sup> ELI's 50-state wetland program study was designed to inform and advance state wetland protection by providing information on state program regulatory and non-regulatory tools and activities to state, tribal, and federal agencies, nongovernmental conservation organizations, and the public. For each of the 50 states, ELI examined seven "core" components of state wetland programs: state laws, regulations, and programs; monitoring and assessment; restoration programs and activities; water quality standards; public-private partnerships; coordination among state and federal agencies; and education and outreach activities. See Appendix B for comparisons among state programs and Appendices C – G for individual state summaries.

## **Delaware's Wetlands Programs**

### ***Program Administration***

DNREC's Division of Water Resources' Wetlands and Subaqueous Lands Section (WSLS) serves as the primary regulatory authority for Delaware's wetlands. The section is responsible for all state wetland permitting programs and §401 certification. Applicants may submit a joint application to the WSLS for impacts regulated under the permitting and certification programs. The section has eight full time equivalents (FTEs) and operates on an annual budget of approximately \$730,000. General appropriations account for approximately \$435,000 of the total budget; the remainder is funded through fees.<sup>20</sup>

The Division of Water Resources' Watershed Assessment Section (WAS) manages the state's water quality monitoring program and is working to integrate wetlands and watershed management into program activities. WAS has developed standardized protocols for non-tidal and tidal wetlands that are used to assess wetland conditions and prioritize restoration and protection on the watershed scale.<sup>21</sup>

DNREC's Division of Fish and Wildlife (DFW) partners with state and federal agencies, private landowners, and other organizations on voluntary wetland management and restoration

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<sup>19</sup> ELI Study of State Wetland Programs, at [http://www.eli.org/Program\\_Areas/state\\_wetlands.cfm](http://www.eli.org/Program_Areas/state_wetlands.cfm); Environmental Law Institute, State Wetland Protection: Status, Trends & Model Approaches, Environmental Law Institute, Washington DC, available at [http://www.elistore.org/reports\\_detail.asp?ID=11279&topic=Wetlands](http://www.elistore.org/reports_detail.asp?ID=11279&topic=Wetlands)

<sup>20</sup> Personal communication with Laura Herr, Division of Water Resources, Wetlands and Subaqueous Lands Section (August 16, 2010)

<sup>21</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, DIVISION OF WATER RESOURCES, Delaware Wetland Monitoring And Assessment Program, at <http://www.wr.dnrec.delaware.gov/Information/OtherInfo/Pages/WetlandMonitoringandAssessment.aspx>

programs. The Division promotes conservation and restoration of wetland habitat as part of its private and public land wetland restoration program, *Phragmites* control cost-share program, and other invasive species control programs.

DNREC's Division of Soil and Water Conservation Coastal Management Program (CMP) issues consistency determinations for all federal actions, federal licenses or permits, and projects proposed in the coastal area. CMP also conducts coastal restoration and education programs and provides special area management planning and assistance to state and local governments for local land use planning.

DNREC manages a searchable state tracking system, Delaware Environmental Navigator, for information collected on permits, §401 certifications, enforcement actions, and environmental monitoring. Data is available for viewing both as a map and as text.<sup>22</sup>

### ***Regulatory Program***

#### *Definitions*

Delaware regulations governing the control of water pollution define "State waters" or "Waters of the State" as:

water, on the surface and under the ground, wholly or partially within, or bordering the State, or within its jurisdiction including but not limited to: (a) Waters which are subject to the ebb and flow of the tide including, but not limited to, estuaries, bays and the Atlantic Ocean; (b) All interstate waters, including interstate wetlands; (c) All other waters of the State, such as lakes, rivers, streams (including intermittent and ephemeral streams), drainage ditches, tax ditches, creeks, mudflats, sandflats, wetlands, sloughs, or natural or impounded ponds; (d) All impoundments of waters otherwise defined as waters of the State under this definition; (e) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in (a)-(d).<sup>23</sup>

This definition extends the state's jurisdiction to non-tidal and other wetlands for many purposes, including pollution control and water quality certification under §401. Thus, if federal jurisdiction is restored or extended to more waters, Delaware's regulatory authority under §401 will follow the expansion.

Delaware's water pollution control regulations define "wetlands" as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas."<sup>24</sup>

For the purposes of the state (Tidal) Wetlands Act, however, Delaware defines "wetlands" as:

those lands above the mean low water elevation including any bank, marsh, swamp, meadow, flat or other low land subject to tidal action in the State along the Delaware Bay and Delaware River, Indian River Bay,

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<sup>22</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, DELAWARE ENVIRONMENTAL NAVIGATOR, at <http://www.nav.dnrec.delaware.gov/dnreceis/>.

<sup>23</sup> DEL. ADMIN. CODE tit. 7 §7201 Section 2.0

<sup>24</sup> DEL. ADMIN. CODE tit. 7 §7201 Section 2.0

Rehoboth Bay, Little and Big Assawoman Bays, the coastal inland waterways, or along any inlet, estuary or tributary waterway or any portion thereof, including those areas which are now or in this century have been connected to tidal waters, whose surface is at or below an elevation of 2 feet above local mean high water, and upon which may grow or is capable of growing [any but not necessarily all of a series of wetland plants]<sup>25</sup>

“Wetlands” also include:

those lands not currently used for agricultural purposes containing 400 acres or more of contiguous nontidal swamp, bog, muck or marsh exclusive of narrow stream valleys where fresh water stands most, if not all, of the time due to high water table, which contribute significantly to ground water recharge, and which would require intensive artificial drainage using equipment such as pumping stations, drain fields or ditches for the production of agricultural crops.<sup>26</sup>

### *Wetland Related Laws and Regulations*

Wetlands that are waters of the United States are regulated by a permit program administered by the Corps under §404 of the federal Clean Water Act.<sup>27</sup> The CWA provides the state with the opportunity to review federal permits to ensure that the permitted activity will comply with applicable state water quality standards.<sup>28</sup> Delaware’s primary authority to regulate non-tidal wetlands in the absence of its own non-tidal wetlands law is through §401 water quality certification. Federal regulatory jurisdiction for wetlands is determined on a case by case basis by the Corps based on guidance issued in 2008.<sup>29</sup> Wetland areas jurisdictional under the state water quality regulations (and CWA §401) are delineated according to state regulations and Corps’ 1987 *Wetlands Delineation Manual*.<sup>30</sup>

In addition to protections offered under §§401/404 of the CWA, Delaware provides additional protections to tidal and large non-tidal wetlands (>400 acres) through the state’s Wetlands Act<sup>31</sup> and submerged lands and tidelands under the Subaqueous Land Act.<sup>32</sup>

*The Wetlands Act*,<sup>33</sup> enacted in 1973, recognizes the importance of wetlands for the protection of the critical coastal areas of Delaware and establishes a permitting program for impacts to tidal

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<sup>25</sup> For example, Eelgrass (*Zostera marina*), Wedgeon Grass (*Ruppia maritima*), Sago Pondweed (*Potamogeton pectinatus*), Saltmarsh Cordgrass (*Spartina alterniflora*), Saltmarsh Grass (*Spartina cynosuroides*), Saltmarsh Hay (*Spartina patens*), Spike Grass (*Distichlis spicata*), Black Grass (*Juncus gerardii*), Switch Grass (*Panicum virgatum*), Three Square Rush (*Scirpus americanus*), Sea Lavender (*Limonium carolinianum*), Seaside Goldenrod (*Solidago sempervirens*), Sea Blite (*Suaeda maritima*), Sea Blite (*Suaeda linearis*), Perennial Glasswort (*Salicornia virginica*), Dwarf Glasswort (*Salicornia bigelovii*), Samphire (*Salicornia europaea*), Marsh Aster (*Aster tenuifolius*), Saltmarsh Fleabane (*Pluchea purpurascens* var. *succulenta*), Mock Bishop's Weed (*Ptilimnium capillaceum*), Seaside Plantain (*Plantago oliganthos*), Orach (*Atriplex patula* var. *hastata*), March Elder (*Iva frutescens* var. *oraria*), Goundsel Bush (*Baccharis halmifolia*), Bladder Wrack (*Fucus vesiculosus*), Swamp Rose Mallow, Seaside Hollyhock or March Mallow (*Hibiscus palustris*), Torrey Rush (*Scirpus torreyi*), Narrow-leaved Cattail (*Typha angustifolia*), and Broad-leaved Cattail (*T. latifolia*)

<sup>26</sup> DEL.CODE ANN. tit. 7, § 6603(h); 59 Del. Laws, c. 213, § 1; 64 Del. Laws c. 293, § 1.

<sup>27</sup> 33 USC §1344

<sup>28</sup> 33 USC §1341

<sup>29</sup> U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, Clean Water Act Jurisdiction Following the U.S. Supreme Court’s Decision in *Rapnos v. United States & Carabell v. United States*. December 2, 2008.

<sup>30</sup> DEL. ADMIN. CODE tit. 7 §7201

<sup>31</sup> DEL. CODE ANN. tit. 7, § 6601.

<sup>32</sup> DEL. CODE ANN. tit. 7, § 7201

and large non-tidal wetlands. The Wetlands Act requires a permit for dredging, filling, bulkheading, plowing or construction of any kind in delineated wetlands.<sup>34</sup> Type I permits are required for projects involving one acre or less of wetlands and no building of structures, as well as some maintenance activities. Type II permits are required for projects involving more than one acre of wetlands, the building of structures, and some transmission line projects.<sup>35</sup> Applications procedures vary for each permit type.

Under the Act, the state extends regulatory jurisdiction to those lands that are subject to tidal action lying above the mean low water elevation and two feet or less above mean high water elevation, and that are capable of supporting the growth of wetland plants. Jurisdiction is based on a series of regulatory wetlands boundary maps that have been adopted by the state pursuant to the statute.<sup>36</sup> The maps, created from aerial photographs, depict the extent of wetlands that are regulated by the state. Very large, contiguous non-tidal wetlands (greater than 400 acres), not used for agriculture that contribute significantly to groundwater recharge are also regulated under the law.

*The Subaqueous Lands Act*,<sup>37</sup> enacted in 1969, establishes a permitting program to protect the public's interest in subaqueous lands. As defined, the Subaqueous Lands Act does provide some jurisdiction over some non-tidal waters not currently regulated by the Corps. Permits are required for deposit of materials or removal or extraction of materials, as well as construction, repair or reconstruction of structures.<sup>38</sup> The Subaqueous Lands Act includes exemptions for "work performed by any state, county, municipal government or conservation district, or their designated contractor, when that work occurs in nontidal submerged lands in the Delaware Atlantic Coastal Plain Province with a contributing drainage area of less than 800 acres."<sup>39</sup> The

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<sup>33</sup> DEL.CODE ANN. tit. 7, § 6601.

<sup>34</sup> Exceptions include certain mosquito control, construction of navigational aids, duck blinds, foot bridges, wildlife nesting structures, grazing, haying, hunting, fishing and trapping. DEL.CODE ANN. tit. 7, § 6606.

<sup>35</sup> DEL ADMIN CODE § 7502 8.2, 8.4

<sup>36</sup> DEL. CODE ANN. tit. 7 § 6607.

<sup>37</sup> DEL.CODE ANN. tit. 7, § 7201.

<sup>38</sup> Exceptions include: "(a) This chapter shall not apply to any work performed by any state, county, municipal government or conservation district, or their designated contractor, when that work occurs in nontidal submerged lands in the Delaware Atlantic Coastal Plain Province with a contributing drainage area of less than 800 acres. (b) This chapter shall not apply to maintenance, reconstruction or retrofitting work performed by or with the assistance of any state, county, municipal government or conservation district when that work occurs in any nontidal submerged lands. Such maintenance, reconstruction or retrofitting work shall comply with the standards and specifications associated with best management practices in the Delaware Erosion and Sediment Control Handbook, 1989 or as revised (68 Del. Laws, c. 268, § 2). (c) This chapter shall not apply to any work in agricultural drainage ditches created from nonsubaqueous lands that are designed according to reasonable drainage standards, when performed by or with the assistance of any state, county, municipal government or conservation district. (d) This chapter shall not apply to ponds constructed in uplands when those ponds are constructed by or with the assistance of any state, county, municipal government or conservation district. (e) This chapter shall not apply to stormwater ponds that are permitted in accordance with Chapter 40 of this title or to farm ponds or other ponds whose only source of hydrology is groundwater. (f) The lease provisions of this chapter shall not apply to any wastewater conveyance or treatment works system owned or operated by the State or any county or municipal government with the State. (g) This chapter shall not apply to subaqueous archaeological resources and unmarked human burials and human skeletal remains, which are regulated by the Department of State, Division of Historical and Cultural Affairs pursuant to Chapters 53 and 54 of this title. (68 Del. Laws, c. 268, § 2; 72 Del. Laws, c. 474, § 4; 75 Del. Laws, c. 153, § 12.)" DEL.CODE ANN. tit. 7, § 7200.

<sup>39</sup> DEL.CODE ANN. tit. 7, § 7217 (a)

law further exempts “maintenance, reconstruction or retrofitting work performed by or with the assistance of any state, county, municipal government or conservation district when that work occurs in any nontidal submerged lands.”<sup>40</sup> Under the law, permittees may be required to mitigate impacts to substantial resources.

Under the Subaqueous Lands Act, subaqueous lands are classified as “submerged lands and tidelands.” Submerged lands include: (1) lands lying below the line of mean low tide in the beds of all tidal waters within the boundaries of the state; (2) lands lying below the plane of the ordinary high water mark of nontidal rivers, streams, lakes, ponds, bays and inlets within the boundaries of the State as established by law; and (3) specific manmade lakes or ponds as designated by the Secretary of DNREC. Tidelands are defined as “lands lying between the line of mean high water and the line of mean low water.”<sup>41</sup>

*The Coastal Zone Act*<sup>42</sup> prohibits new heavy industry uses anywhere in Delaware’s Coastal Zone, as well as offshore bulk product transfer facilities in the Zone outside the Port of Wilmington. For the purposes of the State Coastal Zone Act, the Coastal Zone is an approximately four-mile wide strip along Delaware’s coastline. The Act also establishes the Coastal Zone Act permit program for industrial development other than that of heavy industry in the coastal zone of Delaware.

As part of the *Inland Bays Pollution Control Strategy* developed to implement the Total Maximum Daily Load (a calculation of the maximum amount of a pollutant that a water body can receive and still safely meet water quality standards) in the Inland Bays, the state adopted regulations that require a 100-foot buffer “landward from State-regulated wetlands, or landward from the mean high water line of all tidal waters, whichever extends farther upland, and landward from the ordinary high water mark of all other primary water features”<sup>43</sup> in all “new major subdivisions and new activities requiring a site or major subdivision plan approval by Sussex County or other local government.” The buffer size can be reduced to 50 feet under certain conditions. Buffers of 60 feet (which can be reduced to 30 feet) are required for secondary water features.<sup>44</sup>

#### *CWA §401 certification*

Delaware requires §401 certification for all activities that require a federally issued permit. Under §401, Delaware can review and approve, condition, or deny any federal permit or license that may result in a discharge to waters of the U.S. (including Corps §404 permits, nationwide permits for activities in wetlands, hydropower licenses, and wastewater treatment plant discharge

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<sup>40</sup> DEL.CODE ANN. tit. 7, § 7217 (b)

<sup>41</sup> DEL. CODE ANN. tit. 7, § 7202.

<sup>42</sup> DEL.CODE ANN. tit. 7, § 7001.

<sup>43</sup> DEL. ADMIN. CODE tit. 7 §7403 “Primary water features” means State-regulated wetlands and those waters depicted by the United States Geological Survey on the National Hydrography Dataset as perennial, and identified on maps developed by the Department and adopted as part of this Regulation in Appendix A.

<sup>44</sup> “Secondary water features” means those waters depicted by the United States Geological Survey on the National Hydrography Dataset as intermittent, and those forested ditches that flow within or are directly adjacent to forested lands, and identified on maps developed by the Department and adopted as part of this Regulation in Appendix A. DEL. ADMIN. CODE tit. 7 §7403

permits).<sup>45</sup> The state must decide if the proposed project will be consistent with a number of CWA provisions, including effluent limitations for conventional and non-conventional pollutants, water quality standards, new source performance standards, and requirement for toxic pollutants.

Delaware has not adopted water quality standards (WQS) or designated uses specific to wetlands.<sup>46</sup> However, WQS and designated uses apply to all “waters of the state,” which explicitly include wetlands. Surface WQS are narrative and numeric in nature and include criteria related to temperature, dissolved oxygen, bacteria, nutrients and toxic substances. State WQS designate wetland-related uses, including fish, aquatic life and wildlife habitat and primary and secondary contact recreational activities.<sup>47</sup> Anti-degradation standards are not specifically identified for wetlands, and so the provisions that apply to all “waters of the state” also apply to wetlands.

State regulations require that water quality certification applications include a description of the feasible alternatives considered to avoid, minimize or compensate for impacts to or loss of State waters.<sup>48</sup> An alternative is judged to be feasible if “it is available at the time of application, if it is capable of being carried out and if it would eliminate or reduce impact to State waters after taking into consideration cost, existing technology and logistics in light of overall project purposes.” The state is also authorized to analyze several aspects of a proposed project, including its impact on existing or designated uses; impacts on the physical, chemical, and biological characteristics of the receiving waters' aquatic ecosystem; effects on hydrology, circulation patterns and water movement; secondary impacts; and cumulative effects.<sup>49</sup> The WSLs issued 61 §401 certifications in the two year period from 2008 - 2009,<sup>50</sup> a significant portion of which involve nationwide permits. The majority of individual permits were for DelDOT projects. WSLs denies a small number of authorizations each year, but more typically, section staff work with applicants to redesign projects that meet approval. WSLs staff rely on qualitative assessment to make certification decisions, as determined by the state’s water quality regulations.

#### *Nationwide permits*

Section 404 nationwide permits (NWP) provide a way for the Corps to standardize routine, repeated activities that have minimal impacts. However, like individual §401 permits, NWPs are subject to state certification under §401, and in the coastal zone are also subject to federal consistency determinations by the state. In Delaware, NWPs are reviewed by WSLs as they are issued by the Corps every five years. For the 2007 NWPs, Delaware denied §401 certification and Coastal Zone Consistency for NWP #8 (Oil and Gas Structures on the Outer Continental Shelf), NWP #40 (Agricultural Activities), NWP #41 (Reshaping Existing Drainage Ditches), NWP #43 (Stormwater Management Facilities), NWP #44 (Mining Activities), and #46

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<sup>45</sup> 33 USC §1341

<sup>46</sup> DEL. ADMIN. CODE tit. 7 §7401

<sup>47</sup> *Id.*

<sup>48</sup> For example, clustering development on upland parcels, considering alternative layouts that avoid or minimize impacts to waters of the State, replacement of State waters lost due to activity where such loss can neither be avoided nor minimized. DEL. ADMIN. CODE tit. 7 §7201 5.10.1.7

<sup>49</sup> DEL. DEP’T OF NATURAL RES. AND ENVTL. CONTROL, REGULATIONS GOVERNING THE CONTROL OF WATER POLLUTION (2006), *available at* <http://www.dnrec.state.de.us/water2000/Sections/SurfWater/Library/RGCWP.pdf>.

<sup>50</sup> Personal communication with Laura Herr, *supra* note 20.

(Discharges in Ditches). In addition, §401 certification and Coastal Zone Consistency were conditionally denied in “critical resource waters” for NWP #3 (Maintenance), NWP #13 (Bank Stabilization), NWP #18 (Minor Discharges), NWP #29 (Residential Developments), NWP #39 (Residential, Commercial, and Institutional Developments), and NWP #42 (Recreational Facilities). The state also applies regional general conditions to all NWPs where a preconstruction notification is submitted to the Corps (regional general condition 1 and 4), to NWPs that require coordination by the District Engineer with the Federal and State resources agencies (regional general condition 2), and to all NWP activities located in waters of the United States that are a component of the National Wild and Scenic River System, or have been officially designated as a “study river” for possible inclusion in the system (regional general condition 3).<sup>51</sup>

#### *State Programmatic General Permit.*

Two state programmatic general permits (SPGP) apply in Delaware for navigable waters regulated by the Corps (§10 waters), but there are no SPGPs for activities regulated only under §404. SPGP #18 permits activities, including docks and shoreline stabilization, inside substantially developed artificial lagoons.<sup>52</sup> SPGP #20 regulates bulkheading, docks and piers.<sup>53</sup>

#### *Compensatory Mitigation*

Delaware sometimes requires compensatory mitigation for wetlands and subaqueous lands permits and for water quality certifications. Delaware’s water pollution control regulations outline guidelines for compensatory mitigation under the water quality certification program.<sup>54</sup> The regulations allow creation and restoration, as well as compensation through the purchase of mitigation bank credits. Preference is stated for advance compensation that is on-site and within the same watershed as the impacted water. Preferred compensation ratios are not to exceed 3:1. Conservation easements, monitoring, functional assessment, maintenance and reporting programs may be required for mitigated wetlands.

Under the Wetlands Act regulations, applications for type II projects<sup>55</sup> must include an environmental summary, including an evaluation of the project in relation to “alternatives to the proposed action which would reduce or avoid environmental damage, all measures to be taken during and after the completion of the proposed project to reduce detrimental effects, and adverse environmental impact which cannot be avoided.”<sup>56</sup>

The Subaqueous Lands regulations list a number of evaluation considerations considered when reviewing project applications, including the public interest in any proposed activity which might

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<sup>51</sup> U.S. Army Corps of Engineers, NWP Regional Conditions for Delaware, *available at* [http://www.nap.usace.army.mil/cenap-op/regulatory/nwp/NWP\\_reg\\_cond\\_DE\\_08.pdf](http://www.nap.usace.army.mil/cenap-op/regulatory/nwp/NWP_reg_cond_DE_08.pdf)

<sup>52</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>.

<sup>53</sup> 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>.

<sup>54</sup> DEL. DEP’T OF NATURAL RES. AND ENVTL. CONTROL, REGULATIONS GOVERNING THE CONTROL OF WATER POLLUTION (2006), *available at* <http://www.dnrec.state.de.us/water2000/Sections/SurfWater/Library/RGCWP.pdf>.

<sup>55</sup> DEL ADMIN CODE §7502 8.4

<sup>56</sup> DEL ADMIN CODE §7502 8.5.8

affect the use of subaqueous lands.<sup>57</sup> Public interest considerations include the extent to which the project's impacts can be avoided, minimized, or offset. The regulations also allow the Department to "consider whether any significant impacts or potential harm could be offset or mitigated by appropriate actions or changes to the proposed activity."<sup>58</sup>

### *Compliance and enforcement*

WSLS has two scientists who serve as the enforcement leads for violations and permit non-compliance under the Wetlands Act and the Subaqueous Lands Act.<sup>59</sup> WSLS coordinates with agency staff from other DNREC divisions and/or federal or local agencies as necessary and appropriate.<sup>60</sup> In cases where the federal agencies take §404 enforcement actions, the state works in coordination with the federal agencies to also enforce §401. The Corps has enforcement responsibility in Kent and New Castle Counties, while EPA takes the lead on enforcement in Sussex County. The majority of violations are resolved through voluntary compliance and very few penalties or prosecutions are necessary. Enforcement for unpermitted activities is primarily complaint driven. In the past, the program performed more inspections (including over flights) to detect violations, but the program no longer has sufficient resources to continue these measures. WSLS does conduct post construction compliance inspections on a significant number of its permitted projects.

Delaware law outlines enforcement actions for violations to the state's water quality standards. If the complaint is not resolved through voluntary means, the state may impose a civil or administrative penalty; issue a temporary restraining order, injunction or other appropriate remedy; seek criminal penalties; issue a cease and desist order; or seal any source required to have a permit.<sup>61</sup> Under the Wetlands Act, the state may issue a cease and desist order, impose civil penalties, and/or hold violators liable for the cost of restoration.<sup>62</sup> Under the Subaqueous Lands Act, the state may issue a cease and desist order, impose civil penalties of up to \$10,000 per day, and impose criminal penalties of up to \$500.<sup>63</sup>

Administrative penalties are not available as an enforcement tool under the Wetlands Act or the Subaqueous Lands Act. The significant staff time and expense (including the need to obtain legal services from the Department of Justice) required to seek civil or criminal penalties under these laws is a significant impediment to pursuing enforcement in all but the most egregious violations.

### ***Non-regulatory Wetlands Programs***

In Delaware, the state developed a comprehensive wetland conservation strategy in 2008.<sup>64</sup> A planning document, the strategy was designed to coordinate the state's efforts and outlines six

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<sup>57</sup> DEL ADMIN CODE §7504 4.6

<sup>58</sup> DEL ADMIN CODE §7504 4.7.4

<sup>59</sup> DEL.CODE ANN. tit. 7, § 6003; DEL.CODE ANN. tit. 7, § 6614.

<sup>60</sup> Personal communication from Laura Herr, *supra* note 20.

<sup>61</sup> DEL.CODE ANN. tit. 7, § 6005

<sup>62</sup> DEL.CODE ANN. tit. 7, §6617.

<sup>63</sup> DEL.CODE ANN. tit. 7, §7214 - 7215

<sup>64</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, DELAWARE WETLANDS CONSERVATION STRATEGY, available at

goals for improving wetland protection in the state. The six goals include: 1) Update wetland inventory maps and improve access to wetland related data, 2) Increase monitoring efficiency and effort to provide insight into wetland function and health, 3) Integrate wetland restoration, creation, enhancement, and protection efforts to ensure efficient use of resources, 4) Coordinate information and resources sharing among wetland protection programs, professionals, and agencies, 5) Enhance education and outreach efforts to broaden wetland stewardship among all wetland stakeholders, and 6) Work with partners to provide support and enhancement for existing regulatory programs and to provide protection of wetlands that are not covered by state and federal regulations. The strategy lays out action items that will help the state reach each of the identified goals. The state has made progress on goal number one, and is set to release an updated status and trends report in 2010.

### *Monitoring and Assessment*

WAS maintains a Surface Water Quality Monitoring Program for all waters of the state. The program collects data on the chemical, physical, and biological characteristics of Delaware waters. This information is entered into a national database called STORET (storage and retrieval system) and is used in assessing the water quality of each basin for the state's Watershed Assessment Report (CWA §305(b) Report).<sup>65</sup>

Delaware monitors the condition of natural wetlands and evaluates their health and function on a watershed basis. The state also monitors mitigation sites as required in permit conditions. However, relatively few voluntary restoration or creation sites are actively monitored.<sup>66</sup> Delaware's 2008 Wetland Monitoring Strategy states that the goal of the state's Wetland Monitoring and Assessment Program (WMAP) is to "assess the condition or health of wetlands and the functions and ecosystem services that wetlands provide."<sup>67</sup> The monitoring and assessment information inform restoration and protection efforts as well as watershed strategies and conservation plans; educate state programs, the public, and conservation partners; and inform CWA reporting. Delaware's state wetland conservation strategy outlines action items for improving monitoring efficiency in the state, including developing standard sampling protocols, adopting standard monitoring protocols, holding training workshops, making data available through the Delaware wetlands website, promoting volunteer opportunities, creating a database of monitoring activities, and developing a web-based map.<sup>68</sup>

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<http://www.dnrec.delaware.gov/Admin/DelawareWetlands/Documents/Delaware%20Wetlands%20Conservation%20Strategy%2008.29.08.pdf>

<sup>65</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>66</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, DELAWARE WETLANDS CONSERVATION STRATEGY, *available at*

<http://www.dnrec.delaware.gov/Admin/DelawareWetlands/Documents/Delaware%20Wetlands%20Conservation%20Strategy%2008.29.08.pdf>

<sup>67</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, DELAWARE WETLAND MONITORING STRATEGY, *available at*

<http://www.dnrec.delaware.gov/Admin/DelawareWetlands/Documents/Delaware%20Wetland%20Monitoring%20Strategy%20Jan08.pdf>

<sup>68</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, DELAWARE WETLANDS CONSERVATION STRATEGY, *available at*

The WMAP has developed standardized protocols for nontidal and tidal wetlands and restoration sites. The WMAP uses methods developed using a 4-tiered approach. This approach includes four levels of assessment methods including, intensive assessment, comprehensive field assessment, rapid assessment, and landscape level assessment. Protocols are based on assessing the condition of wetlands and determining the dominant stressors that are lowering wetland condition level relative to reference site condition.<sup>69</sup> Methodologies include the Delaware Comprehensive Assessment Protocol (DECAP) and the Delaware Rapid Assessment Protocol (DERAP).<sup>70</sup> DECAP is an assessment of a wetland based on the vegetation, hydrology, soils, surrounding land use, and topography of the site. DERAP is a rapid assessment methodology based on identifying the presence or absence of stressors to wetland sites in three categories: hydrology, habitat and plant community, and surrounding buffers. The program is also prioritizing land for restoration and protection.<sup>71</sup> The Wetland Monitoring and Assessment Program has developed a tidal assessment protocol with Virginia and Maryland - The MidAtlantic Tidal Rapid Assessment Method or MidTRAM. The Program currently has a grant to evaluate the use of the DERAP and MidTRAM to inform 401 decisions. In addition, the Wetland Monitoring and Assessment Program performs research on topics related to wetland restoration and protection. The wetland monitoring program is funded through grants from the U.S. Environmental Protection Agency (EPA) along with some state funds.<sup>72</sup>

DNREC coordinates the volunteer Adopt-A-Wetland Program.<sup>73</sup> The program's goals are to increase awareness of the importance of wetlands, provide education about the value of wetlands, and recruit volunteers to assist in monitoring and restoring these resources. The program is focusing on identifying priority sites for adoption into the program, including wetlands restoration sites that are not being monitored and sites where volunteers can provide data useful to WAS and Natural Heritage initiatives. The program, funded by grants from the U.S. Fish and Wildlife Service (FWS) and EPA, has produced two educational videos, a comprehensive guidebook for adopters, and a series of loan kits for monitoring different components of the wetlands.<sup>74</sup>

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<http://www.dnrec.delaware.gov/Admin/DelawareWetlands/Documents/Delaware%20Wetlands%20Conservation%20Strategy%2008.29.08.pdf>

<sup>69</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>70</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, ECOLOGICAL RESTORATION & PROTECTION STATUS REPORT 2003 – 2006 (2006), *available at* <http://www.swc.dnrec.delaware.gov/NR/rdonlyres/7C53E10A-664A-4019-9858-489A461B69C0/0/StatusRpt200306FINAL.pdf>.

<sup>71</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, DIVISION OF WATER RESOURCES, DELAWARE WETLAND MONITORING AND ASSESSMENT PROGRAM, *at* <http://www.wr.dnrec.delaware.gov/Information/OtherInfo/Pages/WetlandMonitoringandAssessment.aspx>

<sup>72</sup> Personal communication with Amy Jacobs, Del. Dep't of Natural Res., Div. of Water Res., Watershed Assessment Section (Mar. 5, 2007).

<sup>73</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, ADOPT-A-WETLAND PROGRAM, *at* <http://www.dnrec.state.de.us/DNREC2000/Divisions/FW/Adopt-A-Wetland.htm>.

<sup>74</sup> *Id.*

### *Restoration and Partnerships*

Through the Chesapeake Bay Program, Delaware has committed to restoring 1,500 acres and enhancing 1,500 acres of wetlands in the Chesapeake Bay watershed by 2010.

DFW's Delaware Landowner Incentive Program provides 75 percent cost-share for the restoration of farmed and prior converted wetlands and enhancement of existing rare and unique wetland ecosystems. Landowners receive a flat-rate payment for construction and planting of a wetland and associated 35-foot buffer and may receive an annual rental payment to compensate for income lost by taking the land out of agricultural production. Under this program, DFW develops habitat management plans for each property, oversees construction and restoration, and is beginning to monitor the sites enrolled in the program. The landowner is required to manage and maintain the land for five to ten years. Both upland and wetland habitats are created depending on the desires of the landowner and available funding.

DFW also coordinates with the FWS on the Partners for Wildlife program. The program primarily provides funds for ecosystem-based restoration of impaired waters and private lands that are in close proximity to wildlife management areas and refuges. In addition, DFW runs the *Phragmites* spraying cost-share program, which is intended to improve wildlife habitat in wetlands degraded by the invasive plant. In partnership with the Natural Resources Conservation Service's Wildlife Habitat Incentive Program, the program is able to cover approximately 88 percent of the cost of landowners' *Phragmites* treatment.

Several other state agencies are involved in wetland and stream restoration efforts across the state. DDNREC-Division of Soil and Water Conservation (DSWC) provides brochures for landowners on restoration efforts in Delaware and works with partners on ecological restoration and protection efforts. DNREC Division of Parks and Recreation runs an open space program for purchasing environmentally sensitive areas and has easements on properties containing wetlands. CMP coordinates a restoration program focused on both urban and coastal projects.<sup>75</sup> Additionally, the DSWC Coastal Programs Section implements the Coastal and Estuarine Land Conservation Program, an acquisition program designed to protect coastal and estuarine lands considered important for their ecological, conservation, recreational, historical or aesthetic values.<sup>76</sup>

### *Education and Outreach*

DFW's Office of Education and Outreach publishes wetlands information and runs several wetland education programs. DFW's Aquatic Resources Education (ARE) Center, funded with grants from FWS, hosts wetland-related teacher and youth group education trainings at the Center's overnight lodge. The Eco-Explorers Program, started with a grant from the Delaware Department of Education, is a hands-on education field-trip program that allows fifth grade students to learn about tidal salt marsh plants and animals. In addition, DFW has helped to integrate wetlands into the seventh grade watershed curriculum through a presentation on Delaware wetlands and other activities.

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<sup>75</sup> Personal communication with Sarah Cooksey, Del. Coastal Zone Mgmt. Program (March 9, 2007).

<sup>76</sup> National Oceanographic and Atmospheric Administration, The Coastal and Estuarine Land Conservation Program, at <http://coastalmanagement.noaa.gov/land/welcome.html>

Through its ARE Center, DFW has also developed, in collaboration with local high school students, Wetland Activities for Delaware Educators (WADE) kits. The kits, a series of eight interactive “curriculum-standard-correlated” learning stations, are loaned out to middle school teachers across the state. DFW runs WADE kit trainings to introduce teachers to the kit and show them how to use it. ARE has also assisted in adapting and producing copies of the WADE kits for use by educators in New Jersey.<sup>77</sup>

Several other state agencies are involved with wetland-related education programs. DNREC Division of Parks and Recreation operates a number interpretive trails and centers and educational programs that incorporate information on wetlands at several of Delaware’s 15 state parks. In addition, Delaware’s National Estuarine Research Reserve manages two reserves for research and education purposes. The Research Reserve program is a collaboration of the DSWC, CMP, and National Oceanographic and Atmospheric Administration.<sup>78</sup>

In addition, the WMAP disseminates monitoring results to other scientists, citizens and decision makers to raise awareness of and increase involvement in wetland protection efforts in the state. The program also holds workshops, trainings and conferences.

#### *Coordination with State and Federal Agencies*

Delaware’s state agencies regularly coordinate with each other as well as federal agencies. WSLs has monthly joint permit processing meeting with the Corps, EPA, state historic preservation office, and CMP. The section has also signed a mitigation banking agreement with DelDOT.<sup>79</sup> WSLs also worked with the DelDOT on developing their mitigation banks. Regionally, WAS is working with Virginia and Maryland on tidal wetlands monitoring protocols through the Chesapeake Bay Program. Monitoring activities are coordinated regionally through the MidAtlantic Wetland Workgroup (MAWWG) which consists of states in EPA Region III and other interested groups.<sup>80</sup>

#### **Issues of Concern to Wetland Protection in Delaware**

While the state administers a variety of regulatory and non-regulatory wetlands programs, our review and interviews surfaced a significant number of challenges to Delaware’s effectiveness in continuing to protect and conserve the state’s wetland resources.

- **Lack of comprehensive non-tidal freshwater wetland protection**

Delaware currently relies on its CWA §401 certification to protect non-tidal wetlands in the state. This means that its ability to protect these resources is heavily dependent on the Corps’ authority and jurisdiction over non-tidal wetlands, many of which no longer meet federal jurisdiction tests. Gaps in federal jurisdiction and the lack of a state non-tidal/freshwater

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<sup>77</sup> Personal communication with Gary Kreamer, Del. Dep’t of Natural Res., Div. of Fish and Wildlife (Feb. 20, 2007).

<sup>78</sup> DEL. DEP’T OF NATURAL RES. AND ENVTL. CONTROL, DELAWARE NATIONAL ESTUARINE RESEARCH RESERVE, at <http://www.dnrec.state.de.us/DNREC2000/Divisions/Soil/DNERR/>.

<sup>79</sup> Personal communication with Laura Herr, *supra* note 20.

<sup>80</sup> The Mid-Atlantic Wetland Working Group, at <http://www.mawwg.psu.edu/>

wetlands protection statute has left up to 30,000 acres of wetlands in the state vulnerable and without protection. Delaware's pending status and trends report suggests that there were significant losses of wetlands from 1992 – 2007, most notably in Sussex County, which appear to be predominantly unaccounted for. Preliminary data indicate that the majority of this loss, approximately 99 percent, was to non-tidal wetlands.<sup>81</sup> Several efforts have been made over the past 30 years to enact a non-tidal/freshwater wetland law in Delaware, most recently in the early 1990s. Delaware remains the only one of the five Mid-Atlantic States without its own non-tidal wetlands law. Maryland adopted its non-tidal wetlands law in 1991, Virginia in 2000.

- **Gaps in state tidal wetland protection**

The Wetlands Act has been largely successful in reducing permitted impacts to tidal wetlands within the area currently mapped for regulatory purposes. However, the current regulatory map has not been updated for over two decades and may not reflect the natural and human caused changes to the coastline that have occurred over the past twenty years.<sup>82</sup> There are also gaps in the map where tidal wetlands, as defined in the statute, are not depicted on the regulatory maps. Updating the map will require significant administrative time, and entail a lengthy regulatory process, including public comment and an economic impact analysis.

- **Environmental impacts from the construction and maintenance of Delaware's drainage system**

The vast majority of Delaware's natural streams and rivers have been ditched or modified, usually for drainage purposes. Most of the state's 5,000 miles of 'drainage ditches' were created by straightening, widening, and deepening natural stream channels. The development and maintenance of the state's drainage system has significantly altered the state's aquatic habitats, wetland hydrology, groundwater levels, and water quality. However, the state generally considers many drainage maintenance activities to be exempt from environmental review and most ditching operations in non-tidal waters are exempt from many of Delaware's environmental laws. For example, the Subaqueous Lands Act includes exemptions for "work performed by any state, county, municipal government or conservation district, or their designated contractor, when that work occurs in nontidal submerged lands in the Delaware Atlantic Coastal Plain Province with a contributing drainage area of less than 800 acres."<sup>83</sup> The law further exempts "maintenance, reconstruction or retrofitting work performed by or with the assistance of any state, county, municipal government or

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<sup>81</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, "DELAWARE WETLAND TRENDS," Presentation from the Delaware Wetlands Conference 2010. *available at* [http://www.dnrec.delaware.gov/Admin/DelawareWetlands/Documents/Conference%20presentations/Biddle\\_Trends%202010%20DE%20Wetland%20Conf.pdf](http://www.dnrec.delaware.gov/Admin/DelawareWetlands/Documents/Conference%20presentations/Biddle_Trends%202010%20DE%20Wetland%20Conf.pdf)

<sup>82</sup> Under the law regulatory jurisdiction extends to those lands that are subject to tidal action lying above the mean low water elevation and two feet or less above mean high water elevation, and that are capable of supporting the growth of wetland plants. Large non-tidal wetlands (greater than 400 acres) that contribute significantly to groundwater recharge are also regulated under the law. Jurisdictional wetland delineation under the Wetlands Act is based on a series of regulatory wetlands boundary maps that depict the extent of wetlands that are regulated by the state. DEL.CODE ANN. tit. 7 § 6607.

<sup>83</sup> DEL.CODE ANN. tit. 7, § 7217 (a)

conservation district when that work occurs in any nontidal submerged lands.”<sup>84</sup> Delaware’s water pollution regulations exempt from permitting requirements discharges associated with “[e]xisting ditches used for the express purposes of draining water from the surface of the land.”<sup>85</sup>

There continues to be concern about the effect of the construction and maintenance of the drainage system and these exemptions on the protection of wetland and in-stream habitat in the state. On the other hand, the drainage community is concerned that there is an increasing amount of documentation that is expected in order for a project to meet the criteria for an exemption under the Subaqueous Lands Act and that turnaround time for approvals is too long.

- **Enforcement of existing regulations**

Delaware law outlines enforcement actions for violations and permit non-compliance under the Wetlands Act and the Subaqueous Lands Act. However, administrative penalties are not available as an enforcement tool under the Wetlands Act or the Subaqueous Lands Act, limiting the state’s ability to effectively enforce all but the most egregious violations to the Acts. Violations of the Water Quality Regulations are punishable in accordance with the Environmental Control, Wetlands, and Subaqueous Lands statutes.<sup>86</sup> Provisions in these statutes may not provide the state with sufficient authority under state law to fully enforce §401 certifications for projects in non-tidal wetlands.

In the past, DNREC performed more compliance inspections, including over flights, to identify permit infractions and illegal filling. However, a lack of resources has required the state to increasingly rely on complaints from the public to identify illegal filling activity in both tidal and non-tidal wetlands. This leaves the state with little ability to proactively address illegal filling and permit violations. In many cases where §404 enforcement takes place, the state works in coordination with the federal agencies to enforce violations to §401 certifications. However, there is a lack of staff resources dedicated to Delaware enforcement by EPA and the Corps.

- **§401 Certification**

Delaware’s §401 certification program is the state’s primary mechanism for regulating non-tidal/freshwater wetlands. Delaware generally conditions all individual §401 certifications, and usually attaches a set of general (standard) conditions and a number of project specific conditions. More and better information on current wetland condition has allowed the state to attach appropriate conditions to §401 certifications. However, the state does not comprehensively collect information on the environmental impacts of approved projects on wetland functions and services, including the effects of the loss or degradation of wetland habitats on flood risk in the state. The state is also currently not comprehensively addressing

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<sup>84</sup> DEL.CODE ANN. tit. 7, § 7217 (b)

<sup>85</sup> DEL. ADMIN. CODE tit. 7 §7201 Section 2.0

<sup>86</sup> DEL ADMIN CODE §7201 5. 3

cumulative impacts at a watershed level in permitting decisions. Cumulative impacts are factored in for certain projects, such as boardwalks.

- **Guidance on wetland mitigation**

Delaware regulations authorize the state to require mitigation for some impacts resulting from wetlands and subaqueous lands permits and water quality certification projects. Currently, however, compensation is not consistently required for all impacts resulting from approved NWPs, §401 certifications, or state permits. Further, the state lacks updated policies on compensation, in-lieu fee mitigation, mitigation banking, and avoidance and minimization. The state's policies have not been reviewed since new federal regulations on compensatory mitigation<sup>87</sup> were issued in 2008. State monitoring and oversight of compensation sites could also be improved. Further, the state has not conducted a comprehensive evaluation of the ecological success of compensation in the state.

- **Data tracking**

The state is not effectively coordinating with the Corps and other local, state, and federal agencies to ensure comprehensive tracking and management of data on all wetland permits across agencies and levels of government. Comprehensive information on NWPs, wetlands permits, §401 certifications, and other state programs (e.g. acres of impacts, location of impacts, types of impacts, compensation required, monitoring reports, etc.) could help to identify actual permitted losses versus losses due to other sources and could help the state to improve decision-making under existing authorities (e.g. address cumulative impacts). The Delaware Environmental Navigator collects administrative processing information and basic project locations for permits, §401 certifications and tracks enforcement actions and environmental monitoring across all state environmental programs. However, the database does not currently track data on wetland mitigation. In addition, project descriptions for Wetlands and Subaqueous Lands permits or §401 certifications are only available in a text box which cannot be queried.

- **Local land-use decisions**

Habitat loss due to residential development is a major threat to wetlands in Delaware. Delaware is expected to add over 20,000 new households by 2012.<sup>88</sup> Development may be most intense in southern New Castle County, central Kent County, and eastern Sussex County. Significant loss and fragmentation of non-tidal wetland habitat in the state may result from this development.<sup>89</sup>

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<sup>87</sup> 33 CFR Parts 325 and 332

<sup>88</sup> DELAWARE STATE HOUSING AUTHORITY, DELAWARE STATEWIDE HOUSING NEEDS ASSESSMENT 2008 – 2012, available at [http://www.destatehousing.com/services/servicesmedia/tb\\_hn\\_table.pdf](http://www.destatehousing.com/services/servicesmedia/tb_hn_table.pdf)

<sup>89</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, DIV. OF FISH AND WILDLIFE, DELAWARE ACTION PLAN, CHAPTER 5 - DETERMINING CONSERVATION ISSUES AND ACTIONS, available at <http://www.fw.delaware.gov/dwap/Documents/Determining%20Conservation%20Issues%20and%20Actions.pdf>

In Delaware, as in many other states, local governments make most of the decisions regarding land use and thus influence the protection of natural resources, including wetlands. Given the gap in non-tidal freshwater protection in the state, local governments play an important role in influencing freshwater wetland protection in the state. Local land-use decisions may be especially relevant for isolated wetlands or wetlands not federally regulated under the CWA. Local governments can use their tools to influence wetland protection through ordinances dedicated specifically to wetland protection, but also through land use or zoning authorities; water management authorities; or other environmental protection efforts (i.e. floodplain management or open space protection). In Delaware, however, county or local governments often have to contend with public concern about private property rights, which may conflict with efforts to protect wetland habitats, and have to balance natural resource protection with other community concerns including needs for housing, public infrastructure, and economic development.

New Castle and Sussex Counties have both adopted ordinances that may provide protection for wetlands in the state. New Castle County's Unified Development Code includes protection for wetlands and wetland buffers, and if effectively implemented may provide coverage for some wetlands that are left unprotected by state and federal law.<sup>90</sup> Sussex County has also developed a wetland buffer ordinance, which has been inconsistently enforced for a variety of reasons including a lack of County personnel resources.<sup>91</sup> Kent County does not have a wetland buffer statute.

- **Funding**

Limited funding is a consistent concern to the state agencies that administer wetland protection and management programs in Delaware. Funding challenges may limit the effective administration and enforcement of the state's regulatory programs. For example, a lack of resources forced the state to discontinue over flights to monitor for violations to state permits. Many state programs rely on federal grants to carry out various projects. However, most of the federal grants require the state to provide matching funds. The state agency is not tracking funds available across the Department to provide match for these grants.

- **Protection of species and habitats**

Across all of Delaware's wetland protection statutes and regulations there is a lack of consistency in language addressing the protection of species and habitat. For example, the Wetlands and Subaqueous Lands regulations vary with regard to the definition of critical

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<sup>90</sup> New Castle County's Uniform Development Code provides for 100 percent protection of wetlands in the county. However, the protection "may be reduced when a permit from the United States Army Corps of Engineers is issued for filling or disturbance."<sup>90</sup> Further, "nonjurisdictional wetlands that are man-made, including but not limited to industrial ponds, sewage lagoons, irrigation ditches, stormwater management basins and other artificial features with a similar ability to evolve into wetlands may be disturbed at the Department's discretion." New Castle County, Del., Uniform Development Code § 40.10.320

<sup>91</sup> Sussex County has enacted a 50-foot buffer ordinance in tidal areas. The buffer is required "landward from the mean high water line of tidal waters, tidal tributary streams and tidal wetlands and from the ordinary high water line of perennial nontidal rivers and nontidal streams in Sussex County." Sussex County Delaware, Administrative Legislation, Article XXV, §115-193

habitat, site-specific study requirements, cumulative impact analysis, mitigation, and procedures for permit denial. The Natural Heritage and Endangered Species Program lacks direct regulatory authority to protect species and habitats of concern and thus relies on consistent regulatory authority across other programs, including wetlands-related regulations, to protect these resources.

- **Outreach to local landowners and the public**

Landowners play an important role in wetland protection and restoration efforts in Delaware. The state has developed outreach materials to help educate the public about the importance of wetlands. However, the state could be encouraging greater participation by landowners and the public in the development of wetland policy and projects. The 2008 Delaware Wetlands Conservation Strategy identifies a number of outreach efforts and goals that have not yet been implemented.

- **Climate change and sea level rise**

Wetlands in Delaware, especially tidal wetlands, are vulnerable to the likely impacts of climate change. Sea level has increased by over a foot over the past century in Delaware and threatens the long-term survival of many of Delaware's coastal marshes.<sup>92</sup> The CMP is doing inundation mapping in the state and working with communities to review comprehensive plans for coastal impacts and climate change and to develop sea level rise adaptation ordinances. For example, the program is working with the Delaware Emergency Management Agency in Bowers Beach to address flooding and sea level rise and to make sure that all of the buildings meet code or are moved out of the floodplain.<sup>93</sup>

### **Opportunities to improve protection of Delaware's wetland habitats**

Based on our research, we have identified opportunities to use existing regulations to more effectively protect Delaware's wetlands and to improve wetland protection through new regulations or changes to existing programs. All of these opportunities will likely require additional funding and staff time to implement the necessary program changes.

#### *Improved wetlands protection through existing regulations or program activities*

1. **Improve enforcement under existing authorities:** The state could review implementation of enforcement under existing authorities to determine whether or not the state is effectively identifying violations and addressing illegal filled. There may be an opportunity to use the recent status and trends data to improve implementation. By comparing areas with significant loss of wetlands to locations of permitted projects the state may be able to determine where illegal filling is taking place and target enforcement resources more effectively. The state

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<sup>92</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, CLIMATE CHANGE – DELAWARE AND SEA LEVEL RISE, at <http://www.dnrec.delaware.gov/ClimateChange/Pages/ClimateChangeDelawareSeaLevelRise.aspx>

<sup>93</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, DIVISION OF SOIL AND WATER CONSERVATION, DELAWARE COASTAL PROGRAMS, TOWN OF BOWERS BEACH, at <http://www.swc.dnrec.delaware.gov/coastal/Pages/TownofBowersBeach.aspx>

could also pursue additional resources to determine whether over flights can effectively monitor the state for violations and improve compliance.

The state could work with the federal agencies and local governments to develop compliance and enforcement protocols and identify opportunities to use available state and federal resources to more effectively identify violations and improve enforcement.<sup>94</sup> For example, the state could consider empowering and training sediment and erosion control enforcers, the State Soil and Water Conservation Districts, counties, municipalities, building inspectors, or zoning officials to recognize and report violations to the state. Compliance inspections could be integrated into sediment and stormwater programs, for example.

- 2. Support §401 decision-making by improving data on existing impacts, including effects on flood risk:** The state could undertake a review of impacts from approved state permits and certifications – including NWPs and individual certifications – to help identify the major classes of impacts that may require additional examination by the state and support the state’s decision-making under the §401 program. Given recent flooding events, the state should particularly examine the impacts of wetlands related projects on floodplain function and flood risk in the state. The state could work with floodplain managers, hazard mitigation planners, and emergency managers at the state and local level to identify these impacts.

A review of impacts would require a review of relevant permits, and could be informed by ongoing monitoring efforts. The application forms required for subaqueous lands, wetlands, marinas and §401 certifications do not currently require the applicant to include a review of all of the environmental impacts (e.g., secondary and cumulative impacts) of the project or to provide a description of feasible alternatives for all impact types. The state is currently in the process of updating the permit application. The revised permit applications could explicitly require the applicant to provide a description of feasible alternatives and a review of all environmental impacts needed by the state to adequately assess a project’s compliance with state and federal water quality statutes, including cumulative impacts, as identified in the water quality certification regulations. The state could develop instructions to help the applicant complete this section. The state could also review the environmental control, erosion and sedimentation control, stormwater management, and other water quality related statutes and programs in the state to determine whether there are provisions that could apply to, but are not currently reviewed, in §401 review (e.g., adverse impacts on natural floodplain function).

Overall, better information on project impacts would help the state to develop appropriate permit conditions, including conditions on post-construction/post-fill monitoring, that better address the project’s impacts on wetland functions and services (e.g. ensure no increase in flood risk), and will assist the state’s review of the Nationwide Permits reauthorization in 2012.

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<sup>94</sup> Pennsylvania has developed a compliance and enforcement manual to guide assessments and actions for enforcement cases. The manual includes procedures for resolving enforcement actions, as well as guidance for calculating fines and penalties.<sup>94</sup>

- 3. Minimize the impacts from the construction and maintenance of drainage projects:** The state could consider amending or removing the special exemptions for maintenance activities from the Subaqueous Lands Act. In addition, the state could expand the use of the best management practices that have been developed to minimize the impacts of drainage activities in Delaware. The current list of best management practices include minimizing clearing widths, relocating ditches around ecologically sensitive areas, performing construction on only one side of the ditch, and saving trees in the construction zone.<sup>95</sup> The state could consider updating this list. Performing a cost/benefit and needs analysis for each drainage project could help to minimize impacts. Further, DNREC could adopt a policy of requiring only the most environmentally preferred channel modification techniques for state funded or designed projects to help to ensure that in-stream and riparian habitat is preserved or enhanced during drainage improvement activities. The state could also review the state Sediment and Stormwater Regulations and Delaware Erosion and Sediment Control Handbook<sup>96</sup> to identify opportunities to improve wetland protection and reduce flood risk through Sediment and Stormwater Management Planning.

The state could also seek to engage local hazard mitigation planners, emergency managers, floodplain managers, and drainage groups to identify opportunities for collaboration. For example, DNREC Division of Soil and Water Conservation and Division of Fish and Wildlife are already working with local government agencies and landowners in several locations across the state to restore drainage ditches to provide multiple benefits including flood storage, water quality improvement, and wildlife habitat restoration.<sup>97</sup>

Finally, stormwater utilities that integrate urban tax districts may also help to balance drainage, infrastructure, and natural resource protection needs in a watershed. The City of Wilmington has a stormwater utility and New Castle and Kent Counties are evaluating the potential to develop utilities. The state could study whether and how a stormwater utility could be designed to provide effective drainage solutions and flooding analysis while protecting wetland habitats. For example, the state could examine the utility of updating the Sediment and Stormwater Regulations to require that stormwater utility ordinances provide for the protection of wetlands in the operation of the utility.<sup>98</sup>

- 4. Improve coordination with local governments and review of local land use decisions:**

The state could provide local decision-makers with information on the importance of wetlands and technical assistance to help them develop and adopt wetland protection,

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<sup>95</sup> Center for Inland Bays and DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, Delaware's Drainage and Water Management Practices, *available at*

<http://www.swc.dnrec.delaware.gov/SiteCollectionDocuments/Soil/Drainage/Drainage%20Brochure.pdf>

<sup>96</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, DIVISION OF SOIL AND WATER CONSERVATION, DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, *available at*

[http://www.dnrec.state.de.us/DNREC2000/Divisions/Soil/Stormwater/New/Delaware%20ESC%20Handbook\\_06-05.pdf](http://www.dnrec.state.de.us/DNREC2000/Divisions/Soil/Stormwater/New/Delaware%20ESC%20Handbook_06-05.pdf)

<sup>97</sup> The Conservation Fund, *Converting Drainage Ditches and Nonproductive Farmland into Functioning Streams and Wetlands: A Model for Improving Water Quality and Wildlife Habitat in Delaware in A Sustainable Chesapeake: Better Models for Conservation* *available at*

[http://www.conservationfund.org/sites/default/files/The\\_Conservation\\_Fund\\_Chesapeake\\_Bay\\_Better\\_Models\\_for\\_Conservation\\_Chapt2\\_Conversion\\_to\\_Wetlands.pdf](http://www.conservationfund.org/sites/default/files/The_Conservation_Fund_Chesapeake_Bay_Better_Models_for_Conservation_Chapt2_Conversion_to_Wetlands.pdf)

<sup>98</sup> DEL. ADMIN. CODE tit. 7 §5101 (7.0)

wetland buffer, floodplain management, land use, development codes, open space, and storm water management ordinances that help to improve wetland protection. For example, the state could work with local governments to develop floodplain management ordinances and hazard mitigation plans that protect wetland and floodplain habitat while reducing a community's flood risk.

The state's 2008 Wetland Conservation Strategy suggests that the state develop and implement a series of workshops to educate local decision makers. The state could use the pending status and trends data, state wetland monitoring data, and other sources of information to identify locations for these workshops where wetlands may be especially vulnerable to development. For example, the Delaware Wildlife Action Plan includes a map that shows the locations of statewide key wildlife habitats, including wetlands, and developed and developing areas in the state.<sup>99</sup> The state could then funnel its limited resources to help local governments in these areas improve protection of wetland habitat through their plans and policies. The state may then continue to offer local government expert services such as review of local comprehensive plans, guidance on developing standards for wetland protection ordinances, assistance with enforcement, and wetland mapping assistance. The state may seek federal grants (e.g., EPA's Wetland Program Development Grants) or other sources of funding to conduct these workshops.

The state may also examine how Delaware's Strategies for State Policies and Spending could help to inform decision-making at the local level that would result in better protection of wetlands.<sup>100</sup> Delaware's strategies are a framework for where the state intends to allocate its resources and focus its programmatic efforts and provides overall regional planning guidance for counties and local jurisdictions. The strategies highlight designated investment areas that may be appropriate for different types of growth and outline state strategies for investment in each area, including strategies for open space, parks, and other resources. The strategies provide a framework for and are a part of the criteria used for state comments on local comprehensive planning and land use decisions through the Preliminary Land Use Service (PLUS) process. The PLUS process provides an opportunity for state agency review of major land use change proposals, including county comprehensive plans and rezonings, conditional uses, site plan reviews and/or subdivisions, within environmentally sensitive areas, as identified within any local jurisdiction's comprehensive plan.<sup>101</sup> DNREC could play a more proactive role in the PLUS process by providing cohesive comments on the effects of land use change proposals on wetland habitats and provide guidance on how local governments can identify and then avoid, minimize, and offset impacts to wetlands due to land-use decisions.

**5. Adopt a statewide no net loss of wetlands acres and functions policy:** The state could issue a statewide no net loss of wetland acres and functions policy, in an executive order or

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<sup>99</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, DIV. OF FISH AND WILDLIFE, DELAWARE ACTION PLAN, FIGURE 18 – STATEWIDE KEY WILDLIFE HABITATS & DEVELOPED/DEVELOPING AREAS, *available at* <http://www.fw.delaware.gov/dwap/Documents/F%20-%20Key%20Habitats,%20Development,%20Green%20Infr.%20Maps%20-%20Fig.%2018.pdf>

<sup>100</sup> DELAWARE OFFICE OF STATE PLANNING COORDINATION, 2010 STATE SPENDING STRATEGIES, *at* <http://stateplanning.delaware.gov/strategies/strategies.shtml>

<sup>101</sup> DEL. CODE ANN. tit. 29 §9203 - 9206

other mechanism. The policy would ensure that mitigation is required for all impacts to tidal and non-tidal wetlands and subaqueous lands. Virginia and Pennsylvania have adopted state wetland ‘net gain’ programs. Pennsylvania’s strategy recognizes both regulatory and non-regulatory mechanisms to achieve the net gain goal. Delaware could also consider amending the Wetlands and Subaqueous Lands Acts to include no net loss goals.

- 6. Update mitigation (avoid, minimize, compensate) policies and evaluate current mitigation sites:** Delaware could develop updated policies on avoidance and minimization, wetland compensation, in-lieu fee mitigation, and mitigation banking to ensure that all permitted impacts to wetlands in the state are first avoided and minimized to the maximum extent possible and that compensation is consistently required for all unavoidable impacts. These policies could apply to all wetlands permits and §401 certifications. Guidance on compensation could at the minimum include specific requirements for replacement ratios, site/kind preferences, alternative mitigation options (mitigation mechanisms and methods), site selection and design criteria, assessment techniques, monitoring report criteria, and oversight procedures and could be consistent with the 2008 federal Wetlands Compensatory Mitigation Rule.

Updated guidance would help to improve clarity on mitigation requirements for applicants and state and federal agencies. All of the Mid-Atlantic States have developed mitigation guidance or regulations. For example, the Virginia Department of Environmental Quality and the Corps Norfolk District have prepared a Wetland Mitigation Checklist, as well as technical guidelines that include information on site design, example permit conditions for compensation, monitoring report criteria, and mitigation site compliance.<sup>102</sup>

The state could also consider identifying funds to perform a comprehensive overview of the ecological success of compensation sites in the state. Several states have conducted such reviews, including California, Florida, Ohio, and Washington. This review could help the state develop effective mitigation policies, including site design criteria, performance standards, and monitoring and reporting criteria.

- 7. Develop a state in-lieu fee program:** Delaware may consider developing a state run in-lieu fee program. A state in-lieu fee program could provide an opportunity for mitigation for small impacts and could help the state fund priority wetland restoration projects. ELI recently completed a report that offers model language that could be incorporated into in-lieu fee program instruments being developed by state agencies and non-profit organizations.<sup>103</sup> Maryland, New Jersey, and Pennsylvania all have state-run in-lieu fee programs (see Appendix B).

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<sup>102</sup> Norfolk District Corps and Virginia Department of Environmental Quality *Recommendations for Wetland Compensatory Mitigation*, available at <http://www.deq.virginia.gov/wetlands/pdf/mitigationrecommendabbrevjuly2004.pdf>; Norfolk District Corps and Virginia Department of Environmental Quality, *Wetland Mitigation Checklist*, available at [http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/Guidance/Corps-DEQ\\_Mit\\_Checklist\\_7-04.pdf](http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/Guidance/Corps-DEQ_Mit_Checklist_7-04.pdf)

<sup>103</sup> Environmental Law Institute, *In-Lieu Fee Mitigation: Model Instrument Language and Resources*, Environmental Law Institute, Washington DC, available at [http://www.elistore.org/reports\\_detail.asp?ID=11390](http://www.elistore.org/reports_detail.asp?ID=11390)

- 8. Improve current data tracking systems:** The state could coordinate with the Corps and other local and federal agencies to comprehensively track all regulatory information related to §404 permits, NWPs, water quality certifications, tidal permits, subaqueous lands permits, and other local, state and federal programs. The tracked data could include information on impacts (location and acreage), mitigation, and monitoring, and could be compiled in one location. This information can then be used to feedback to the regulatory program to inform and improve NWP certifications, §401 certification conditions, mitigation decisions, and enforcement of violations. The state could work with the federal agencies to ensure that the wetlands database is integrated with those already in development by the Corps and other federal agencies. The state could ensure that information is made publicly available and easily accessible to help partner conservation organizations better assess their activities. The information could be made available through the Delaware Environmental Navigator or other portal.
- 9. Tie identification of priority wetland sites to the regulatory program:** The state could tie efforts to identify priority wetland sites for restoration to the regulatory program to better inform mitigation decisions and guide site selection under a state run in-lieu fee program or payments for enforcement actions. Currently, most of the restoration projects in the state are opportunistic in nature. Restoration sites are not consolidated and the location of restoration sites is generally not well known. The state has several planning and management programs that are identifying priority sites, including the wetland monitoring and assessment program's condition assessments, the state wildlife action plan, special area management plans, regional wetlands restoration plans, the natural heritage database, and the adopt-a-wetland program, among others. The state could use the data generated by these efforts to develop a statewide map of restoration priorities that could be used to help support regulatory decisions, including avoidance, minimization, and compensation decisions, and lead to compensation that helps support more comprehensive conservation objectives.

*Opportunities for improved protection through additional regulations or programs, or changes to existing programs*

- 1. Strengthen non-tidal freshwater wetland protection:** Ultimately, the most effective way to improve non-tidal/freshwater wetland protection in the state will require adopting new wetland protections for all non-tidal wetlands, including isolated wetlands that are not currently regulated under federal law. New non-tidal wetlands protection authority could be advantageous for applicants by giving the state control of wetland regulation and improving the timeliness and consistency of permit review. There are several options for improving non-tidal wetland protection in Delaware.

First, the state legislature could adopt amendments to the Environmental Control statute and regulations to explicitly require permits for discharges (fill) to wetlands and provide funding for administration of the program. Specific changes may include an amendment to the definition of pollutants to explicitly include discharges into wetlands and amendments to the goals of the Act to include the goal of protecting wetlands or ensuring no net loss of wetland

acres and functions.<sup>104</sup> This is the approach Virginia used when it amended its Virginia Water Protection Permit program to cover filling of non-tidal wetlands.

Second, the state could build a program on its existing §401 certification that specifically covers freshwater wetlands that no longer meet federal jurisdictional standards, as Wisconsin did in 2001. The Wisconsin state legislature enacted the 2001 Wisconsin Act 6<sup>105</sup> in response to uncertainty regarding federal jurisdiction over “isolated” wetlands after the SWANCC Supreme Court decision.<sup>106</sup> The law amends the state water quality control statute to require 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>107</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>108</sup> Wisconsin rules also establish water quality standards for wetlands as well as procedures and criteria for state water quality certification application, processing, and review.<sup>109</sup> Thus, the state did not construct a whole freshwater wetlands program, but continued to rely on §401 for federal wetlands and the equivalent process for those wetlands where the Corps lacked jurisdiction. These §401 related options, however, limit the states policy options because decision-making must continue to be based on federal wetland regulations and state water quality standards. The state’s authority for enforcement may also be limited and there is no specific source of federal funding for this option.<sup>110</sup> Further, applicants may still need to obtain both state and federal permits for a single project having §404 and §401 jurisdictions.

Third, the state legislature could enact a more comprehensive wetland statute such as Maryland’s Non-tidal Wetlands Protection Act. The state legislature would also have to provide funding for administration of the new permitting program. A new permitting program will also likely require an increase in staff. The Association of State Wetland Managers has developed a model comprehensive wetland statute that could be tailored to a state’s needs and preferences.<sup>111</sup> The model statute includes provisions for implementation of the wetland program, mapping and delineation, permitting, appeals, penalties and enforcement, local regulation, and mitigation. A comprehensive wetland statute could help to reduce duplication with the §404 program and streamline the permitting process for applicants if the statute adopts the same wetland definition used in the §404 program and authorizes the state to develop a joint permit processing procedures with the Corps and a

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<sup>104</sup> Jon Kusler, 2001, Model State Wetland Statute to Close the Gap Created by SWANCC available at <http://www.aswm.org/swp/model-leg.pdf>

<sup>105</sup> S.B. 1, 2001 Gen. Assem., Spec. Sess. (Wis. 2001).

<sup>106</sup> *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* 531 U.S. 159 (2001);

<sup>107</sup> S.B. 1, 2001 Gen. Assem., Spec. Sess. (Wis. 2001).

<sup>108</sup> *Id.*

<sup>109</sup> WIS. ADMIN. CODE §§ NR 103 and NR 299.

<sup>110</sup> Association of State Wetlands Managers, 2002, Issue Paper: Increasing the Role of the States in Administration of Clean Water Act Wetland Programs, available at

<sup>111</sup> Jon Kusler, 2001, Model State Wetland Statute to Close the Gap Created by SWANCC available at <http://www.aswm.org/swp/model-leg.pdf>

state program general permit (SPGP). A comprehensive statute could also allow the state to pursue assumption of the §404 program from the Corps, as New Jersey has done. However, the state is not provided federal funding to implement the complex federal §404 regulations.<sup>112</sup> The state could also develop a general permit program, analogous to the NWP program, under a non-tidal wetlands law to address minimal impacts to non-tidal freshwater wetlands. Virginia, for example, has adopted state general permits for certain activities that result in minimal impacts.

Fourth, the state could review open space, natural areas, or other programs to identify opportunities to amend the goals and permitting criteria of these programs to add protection of wetland functions. This could leverage existing resources to provide some coverage for wetlands not currently covered under Delaware's existing authorities. For example, The Delaware Land Protection Act directs counties to "adopt and incorporate overlay zoning ordinances, guidelines and specific technically based environmental performance standards...where appropriate" to protect the "unique ecological functions" of "state resource areas." The Act authorizes the creation of state resource areas and the purchase of real property by state agencies to "protect and conserve the biological diversity of plants and animals and their habitat."<sup>113</sup> However, this option would provide only piecemeal coverage and would not provide comprehensive coverage of all non-tidal wetlands.

Whichever option or set of options is pursued, the state should collaborate early in the process with landowners, the agricultural community, and other stakeholders. The state should emphasize the multiple benefits that wetlands provide, including water quality and flood storage functions, and could remind the public that the state is indeed still losing these vital wetland habitats and the ecosystem services (e.g. flood control) they provide.

- 2. Reissue Executive Order 56:** The Governor could review and reissue Executive Order 56 which calls for state agencies to "minimize adverse effects to freshwater wetlands and conserve and enhance the environmental values and functions of freshwater wetlands in carrying out the agency's responsibilities" and "avoid undertaking or providing financial assistance for construction located in freshwater wetlands."<sup>114</sup> The order requires DNREC in collaboration with other state agencies to develop policies and procedures that "ensure consideration of the public health, safety, and welfare, the active management of wetlands systems, and the uses of freshwater wetlands including wetland enhancement, recreation, economic, scientific and cultural uses." The 1988 order is still in effect, however it is not often referred to and there are no procedures to implement the order. The executive order gives the state authority to review state agency activities or state financed activities in freshwater wetlands. The state could consider reissuing the executive order, explicitly stating a state agency goal of no net loss of wetland acres and functions, to reaffirm the importance of freshwater wetlands and the state's commitment to avoiding and minimizing impacts to these resources. The new order could require all state agencies to evaluate their activities and identify opportunities within their programs and authorities to improve protection of freshwater wetlands.

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<sup>112</sup> *Id.*

<sup>113</sup> DEL. CODE ANN. tit. 7, §7501

<sup>114</sup> State of Delaware, Executive Order Number 56, May 26<sup>th</sup>, 1988.

- 3. Develop a programmatic general permit for areas covered by the Wetlands and Subaqueous Lands Acts and future non-tidal wetland protection authority:** The state could develop a programmatic general permit for the areas and activities covered by the Wetlands and Subaqueous Lands Acts. Program general permits generally cover projects with minimal impacts and are designed to simplify the regulatory process by close advance coordination with the Corps, provide at least equivalent environmental protection for aquatic resources, promote more effective and efficient use of agency resources, and could allow the state to make decisions that better reflect state law and develop state specific policies and procedures. A state program general permit could streamline the permitting process, eliminate duplication of effort, increase clarity for the applicant, and improve compliance. Program general permits can improve the state’s ability to efficiently and effectively review individual and cumulative impacts that would otherwise be covered under NWP’s and could help the state to improve enforcement in these areas. Virginia and Pennsylvania have adopted program general permits that pertain to specific activities and/or specific geographic areas.

Adopting a comprehensive non-tidal wetlands regulatory statute would allow the state to develop a state program general permit for non-tidal wetlands. State program general permits, however, can only cover activities that have minimal adverse impacts and must be reauthorized every five years. There is also no source of federal funding for administration of the state program general permit.<sup>115</sup>

- 4. Improve enforcement under existing programs:** Delaware could review enforcement authorities under the Wetland and Subaqueous Acts. For example, the state may consider adding administrative penalties to the enforcement options available under the Acts to help the state more efficiently and effectively pursue all violations. The state could also choose to review its authority under the Water Quality Regulations to enforce certification decisions and conditions, and consider whether changes could be made to the regulations or the environmental control statute that could improve the state’s enforcement authority and provide sufficient funding for enforcement.
- 5. Update tidal wetlands map:** The regulatory map used to delineate jurisdiction under the Wetlands Act could be reviewed and updated if necessary. Although the update process may require significant administrative time, a new map would allow the state to fill any gaps in jurisdiction and better regulate tidal wetlands given changes that could have occurred to the coastline since the current map was created. Recent mapping efforts in the state could be used to identify where the current regulatory line corresponds with existing conditions on the ground and could improve the accuracy of the map.

Updating the map would require the state to amend the wetlands regulations, but a statutory amendment may not be required. The Wetlands Act does appear to allow the state to review and update the map. Section 6607(b) requires the Secretary to prepare wetland boundary maps and propose that wetlands within the mapped area be “designated as such in accordance with the map.” The Act further states that the wetlands “designated on the maps shall be

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<sup>115</sup> Association of State Wetlands Managers, 2002, Issue Paper: Increasing the Role of the States in Administration of Clean Water Act Wetland Programs

conclusive” subject to appeals and corrections to account for errors in the map as authorized in §6607(e). The section does not clearly indicate that the mapping process may only occur once. However, the Department may wish to review this provision before commencing an update process in order to anticipate and proactively address any legal challenges.

## **Conclusions**

Wetlands help control flooding and reduce storm damage, trap sediments and pollutants that otherwise might enter waterways, help to recharge groundwater, and serve as habitat for many species of wildlife. In Delaware, wetlands are also an important cultural resource, supporting many traditions and customs. Delaware has lost more than 50 percent of its historic wetlands, and this trend in wetland loss continues today. To protect some of these important resources, the legislature has adopted laws to protect tidal wetlands and subaqueous lands. However, Delaware still relies on the Corps’ authority and jurisdiction over non-tidal wetlands, many of which no longer meet federal jurisdiction tests. Delaware remains the only one of the five Mid-Atlantic States without its own non-tidal wetlands law.

Many of the opportunities identified here will require increased staff time, at least in development, and may require additional funding to implement. However, the state would benefit from increased efficiencies in wetlands permitting, increased state control of wetland regulatory programs, increased collaboration among state and local agencies, and, ultimately, improved protection of all of the state’s critical wetland resources and the valuable flood prevention and water quality services they provide to the citizens of Delaware.

Delaware Wetland Program Review  
Appendix A

Interviewees

Delaware State Staff

**Karen Bennett**

DNREC Division of Fish and Wildlife

**Mark Biddle**, Environmental Scientist  
Watershed Assessment Section  
DNREC Division of Water Resources

**Sarah Cooksey**, Coastal Programs  
Administrator  
Coastal Management Program  
DNREC Division of Soil and Water  
Conservation

**Joy Ford**

Delaware Department of Transportation

**Terry Fulmer**

Delaware Department of Transportation

**Laura Herr**

Wetlands and Subaqueous Lands Section  
DNREC Division of Water Resources

**Amy Jacobs**

Watershed Assessment Section  
DNREC Division of Water Resources

**Gary Kreamer**, Coordinator, Delaware  
Aquatic Resources Education Center  
DNREC Division of Fish and Wildlife

**Alison Rogerson**

Watershed Assessment Section  
DNREC Division of Water Resources

**Austin Short**

Delaware Department of Agriculture –  
Forest Service

**Mike Valenti**

Delaware Department of Agriculture –  
Forest Service

Delaware Conservation Districts

**Debbie Absher**, District Coordinator  
Sussex Conservation District

**Jared Adkins**, Program Manager/  
Stormwater Engineer  
Kent Conservation District

**Kevin Donnelly**, District Coordinator  
New Castle Conservation District

Delaware Conservation Organizations

**Chris Bason**

Center for Inland Bays

**Peter Martin**

Delaware Wild Lands

**Jen Mihills**, Associate Director  
Delaware Nature Society

Federal Agencies

**Ed Bonner**

U.S. Army Corps of Engineers –  
Philadelphia District

**Jim Butch**

U.S. Environmental Protection Agency –  
Region III

**Bill Jenkins**

U.S. Army Corps of Engineers –  
Philadelphia District

**Regina Poeske**

U.S. Environmental Protection Agency –  
Region III

Delaware Wetland Program Review  
Appendix B

Mid-Atlantic States Wetland Program Comparison - Summary

**Introduction**

In the United States, wetland habitats are protected through a variety of federal, state, and local laws and regulations as well as through the actions of conservation organizations, academic institutions, and citizens groups. Wetlands that are waters of the United States are regulated by a permit program administered by the U.S. Army Corps of Engineers (Corps) under §404 of the federal Clean Water Act (CWA).<sup>116</sup> Section 401 of the Clean Water Act provides states with the opportunity to review federal permits to ensure that the permitted activity will comply with applicable state water quality standards.<sup>117</sup> In addition, states may enact their own authority to regulate wetland habitats that may include more stringent requirements than those of the federal program.

The following is a comparison of the state wetland regulatory and non-regulatory programs and activities in the Mid-Atlantic States. Each of the Mid-Atlantic States - Delaware, Virginia, Maryland, Pennsylvania, and New Jersey - has established a state wetlands program. All of the states regulate activities that affect at least some wetlands in the state. Delaware regulates tidal wetlands under state law, but it is the only one of the five Mid-Atlantic States without its own non-tidal wetlands law. Maryland, New Jersey, Pennsylvania, and Virginia have all established permitting programs that affect activities in both tidal and non-tidal wetlands. All of the Mid-Atlantic States also implement a variety of non-regulatory wetland protection and education programs.

This comparison is based on summaries developed by the Environmental Law Institute (ELI) as part of our 50-state study of state wetland programs.<sup>118</sup> ELI's 50-state wetland program study was designed to inform and advance state wetland protection by providing information on state program regulatory and non-regulatory tools and activities to state, tribal, and federal agencies, nongovernmental conservation organizations, and the public. For each of the 50 states, ELI examined seven "core" components of state wetland programs: state laws, regulations, and programs; monitoring and assessment; restoration programs and activities; water quality standards; public-private partnerships; coordination among state and federal agencies; and education and outreach activities. The information on the state programs was gathered in 2003 – 2007, and should be considered current as of the summer of 2007. We did not attempt to update the information for this review.

**State Agency Organization**

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<sup>116</sup> 33 USC §1344

<sup>117</sup> 33 USC §1341

<sup>118</sup> ELI Study of State Wetland Programs, at [http://www.eli.org/Program\\_Areas/state\\_wetlands.cfm](http://www.eli.org/Program_Areas/state_wetlands.cfm); Environmental Law Institute, State Wetland Protection: Status, Trends & Model Approaches, Environmental Law Institute, Washington DC, available at [http://www.elistore.org/reports\\_detail.asp?ID=11279&topic=Wetlands](http://www.elistore.org/reports_detail.asp?ID=11279&topic=Wetlands)

Generally, one state agency is responsible for administering wetland regulatory programs in the Mid-Atlantic States. However, in some of these states, some regulatory authority is shared with other agencies (Maryland, Virginia), local wetlands boards (Virginia), or region-specific authorities (New Jersey). In Delaware, the Delaware Department of Natural Resources and Environmental Control Division of Water Resources' Wetlands and Subaqueous Lands Section serves as the primary regulatory authority for the state's wetlands. In Maryland, the Maryland Department of the Environment Wetlands and Waterways Program is primarily responsible for wetlands protection and comprehensive wetland management. However, the Maryland Board of Public Works issues licenses required for filling or dredging in state-owned tidal wetlands. In New Jersey, the New Jersey Department of Environmental Protection is the lead wetland agency. In addition, the New Jersey Pinelands Commission and New Jersey Meadowlands Commission conduct wetland regulatory and non-regulatory activities within their respective jurisdictions. In Pennsylvania, the Pennsylvania Department of Environmental Protection's Division of Waterways, Wetlands, and Stormwater Management is the state's lead agency on wetland-related activities. In Virginia, the Virginia Department of Environmental Control implements the Virginia Water Protection permit program, which covers non-tidal, tidal, and isolated wetlands. The Virginia Marine Resources Commission (VMRC) – Habitat Management Division and local Wetlands Boards together serve as the regulatory authority for tidal wetlands.

In most of the Mid-Atlantic States, several other state agencies also have well developed non-regulatory programs focused on wetlands. For example, the natural resource agencies in Delaware, Maryland, and Virginia implement voluntary wetland restoration and protection programs.

#### *Local Program Assumption of Authority*

A few states' regulatory programs include regulatory requirements that are carried out by local agencies, or allow local agencies to adopt regulatory authority within their jurisdictions. For example, in Maryland, the Chesapeake Bay and Coastal Bays Critical Area Act requires that local jurisdictions adopt zoning regulations for lands within 1,000 feet of the Chesapeake or Coastal Bays. And, the Non-tidal Wetlands Protection Act provides for the development of watershed management plans, which are developed in coordination with local governments and are incorporated into a jurisdiction's land use decision-making process.<sup>119</sup> In Virginia, localities can choose to regulate the own tidal wetlands in their jurisdiction through citizen Wetlands Boards. The Virginia Marine Resources Commission provides oversight of the Wetlands Boards' activities. Under Virginia's Chesapeake Bay Preservation Act the 84 tidewater jurisdictions must regulate certain activities within designated Resource Protection Areas along the shorelines of streams, rivers, and other waterways, including tidal wetlands.<sup>120</sup>

#### Program Resources

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<sup>119</sup> MD. DEP'T OF THE ENV'T, WETLAND REGULATIONS, *available at* <http://www.mde.state.md.us/assets/document/wetlandswaterways/regulation.doc>.

<sup>120</sup> 9 VA. CODE ANN § 10-20-10 *et seq.*

Delaware Wetland Program Review  
Appendix B: Mid-Atlantic States Wetland Program Comparison - Summary

The wetland programs of Maryland, New Jersey, Pennsylvania, and Virginia are primarily funded through general appropriations. Some state programs also derive supplementary funding from various sources including federal grants (Maryland, Virginia), permit application fees and enforcement penalties (Pennsylvania, Virginia), and special funds (Virginia).<sup>121</sup>

## Regulatory Programs

### *Wetland-related Laws and Regulations*

Each of the Mid-Atlantic States regulates, to some degree, activities that affect wetlands. With the exception of Delaware, all of the Mid-Atlantic States have explicit authority to issue permits for impacts to both tidal and non-tidal wetlands. Delaware state authority only extends to tidal wetlands and large non-tidal wetlands. Maryland and Virginia also have separate permitting programs that regulate wetlands in the Chesapeake Bay watershed.

### Tidal Programs

Delaware, Maryland, New Jersey, and Virginia have all enacted laws that specifically establish permitting programs for impacts to tidal wetlands. Delaware's Wetlands Act established a permitting program for impacts to tidal wetlands and large non-tidal wetlands (greater than 400 acres).<sup>122</sup> Under the Act, a permit is required for dredging, filling, bulkheading, plowing or construction of any kind in delineated tidal wetlands.<sup>123</sup> Delaware also regulates subaqueous lands under the The Subaqueous Lands Act.<sup>124</sup>

Under Maryland's Tidal Wetlands Act,<sup>125</sup> permits are required for filling or dredging in private tidal wetlands<sup>126</sup> and licenses are required for filling or dredging state-owned wetlands.<sup>127</sup> New

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<sup>121</sup> See Appendix B of this report for more specific information on funding sources.

<sup>122</sup> For the purposes of the Wetlands Act wetlands are defined as those lands above the mean low water elevation including any bank, marsh, swamp, meadow, flat or other low land subject to tidal action in the State along the Delaware Bay and Delaware River, Indian River Bay, Rehoboth Bay, Little and Big Assawoman Bays, the coastal inland waterways, or along any inlet, estuary or tributary waterway or any portion thereof, including those areas which are now or in this century have been connected to tidal waters, whose surface is at or below an elevation of 2 feet above local mean high water, and upon which may grow or is capable of growing [any but not necessarily all of a series of wetland plants] Jurisdictional wetland delineation under the Wetlands Act is based on a series of regulatory wetlands boundary maps that have been adopted by the state pursuant to the statute. DEL.CODE ANN. tit. 7, § 6603

<sup>123</sup> DEL.CODE ANN. tit. 7, § 6606.

<sup>124</sup> Subaqueous lands are classified as "submerged lands and tidelands." Submerged lands include: (1) lands lying below the line of mean low tide in the beds of all tidal waters within the boundaries of the state; (2) lands lying below the plane of the ordinary high water mark of non-tidal rivers, streams, lakes, ponds, bays and inlets within the boundaries of the State as established by law; and (3) specific manmade lakes or ponds as designated by the Secretary. Tidelands are defined as "lands lying between the line of mean high water and the line of mean low water." DEL.CODE ANN. tit. 7, § 7201.

<sup>125</sup> MD. CODE ANN., ENVIR. §§ 16-101 to 503.

<sup>126</sup> "Tidal wetlands" include "any land under the navigable waters of the State below the mean high tide, affected by the regular rise and fall of the tide." MD. CODE ANN., ENVIR. § 16-101(n). "Private tidal wetlands" are defined separately and include "any land not considered 'State wetland' bordering on or lying beneath tidal waters, which is subject to regular or periodic tidal action and supports aquatic growth." MD. CODE ANN., ENVIR. § 16-101(j).

Delaware Wetland Program Review  
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Jersey's Wetland Act of 1970 requires a permit for all 'regulated activities' as defined in the Act,<sup>128</sup> and generally applies to the state's coastal wetlands.<sup>129</sup> The Virginia Tidal Wetlands Act established a permitting system for any impacts to tidal wetlands,<sup>130</sup> including vegetated tidal wetlands and non-vegetated shoreline between low and mean high waters.<sup>131</sup>

Jurisdiction for tidal waters in Delaware (created in 1988), Maryland (created in 1971/1972), and New Jersey is based on state wetland boundary maps.<sup>132</sup> Regulatory jurisdiction under Virginia's Tidal Wetlands Act extends to the mean high tide line where no emergent vegetation exists, and to 1.5 times the mean tide range where marsh is present.

### Non-tidal/Freshwater Programs

Maryland, New Jersey, Pennsylvania, and Virginia all also have programs specifically designed to regulate non-tidal/freshwater wetlands. However, each of the states has taken a somewhat different approach.

In Maryland, the legislature passed a comprehensive wetland protection law – the Non-tidal Wetlands Protection Act<sup>133,134</sup> - that regulates and restricts all activities that could impact non-

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<sup>127</sup> "State tidal wetlands" are "all State and private tidal wetlands, marshes, submerged aquatic vegetation, lands, and open water affected by the daily and periodic rise and fall of the tide within the Chesapeake Bay and its tributaries, the coastal bays adjacent to Maryland's coastal barrier islands, and the Atlantic Ocean to a distance of 3 miles offshore of the low water mark." MD. CODE REGS. 26.24.01.02(B)(52).

<sup>128</sup> A "regulated activity" under the Wetlands Act of 1970 includes but is not limited to "draining, dredging, excavation or removal of soil, mud, sand, gravel, aggregate of any kind or depositing or dumping therein any rubbish or similar material or discharging therein liquid wastes, either directly or otherwise, and the erection of structures, drivings of pilings, or placing of obstructions, whether or not changing the tidal ebb and flow." Regulated activities do not include "continuance of commercial production of salt hay or other agricultural crops or activities [related to mosquito control]." N.J. STAT. ANN. § 13:9A-4(a).

<sup>129</sup> A "coastal wetland" is defined as "any bank, marsh, swamp, meadow, flat or other low land subject to tidal action in the State of New Jersey along the Delaware bay and Delaware river, Raritan bay, Barnegat bay, Sandy Hook bay, Shrewsbury river including Navesink river, Shark river, and the costal inland waterways extending southerly from Manasquan Inlet to Cape May Harbor, or any inlet, estuary or tributary waterway or any thereof, including those areas now or formerly connected to tidal waters whose surface is at or below an elevation of 1 foot above local extreme high water, and upon which may grow or is capable of growing any of a list of enumerated plant species." N.J. STAT. ANN. § 13:9A-2

<sup>130</sup> VA. CODE ANN. §§ 28.2-1300 -1320.

<sup>131</sup> "Nonvegetated wetlands" means "unvegetated lands lying contiguous to mean low water and between mean low water and mean high water, including those unvegetated areas of Back Bay and its tributaries and the North Landing River and its tributaries subject to flooding by normal and wind tides but not hurricane or tropical storm tides. . . . Vegetated wetlands means "lands lying between and contiguous to mean low water and an elevation above mean low water equal to the factor one and one-half times the mean tide range at the site of the proposed project in the county, city, or town in question, and upon which is growing and of the following species..."VA. CODE ANN. § 28.2-1300.

<sup>132</sup> DEL. CODE ANN. tit. 7 § 6607; ENVIRONMENTAL LAW INSTITUTE, 2008, STATE WETLAND PROTECTION: STATUS, TRENDS, & MODEL APPROACHES, NEW JERSEY STATE PROFILE, ENVIRONMENTAL LAW INSTITUTE, WASHINGTON, DC. available at [http://www.eli.org/pdf/core\\_states/New\\_Jersey.pdf](http://www.eli.org/pdf/core_states/New_Jersey.pdf); ENVIRONMENTAL LAW INSTITUTE, 2008, STATE WETLAND PROTECTION: STATUS, TRENDS, & MODEL APPROACHES, MARYLAND STATE PROFILE, ENVIRONMENTAL LAW INSTITUTE, WASHINGTON, DC. Available at [http://www.eli.org/pdf/core\\_states/Maryland.pdf](http://www.eli.org/pdf/core_states/Maryland.pdf)

<sup>133</sup> MD. CODE ANN., ENVIR. §§ 5-901 to 911.

<sup>134</sup> MD. DEP'T OF THE ENV'T, WETLAND REGULATIONS, available at <http://www.mde.state.md.us/assets/document/wetlandswaterways/regulation.doc>.

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tidal wetlands or waters of the state. Activities are regulated in non-tidal wetlands as well as within the 25-foot buffer of the wetland.

New Jersey has assumed authority to administer dredge and fill permits under §404 of the CWA.<sup>135</sup> The state protects freshwater wetlands and their buffers under the Freshwater Wetlands Protection Act.<sup>136</sup> In non-delegable waters, the Corps retains jurisdiction under CWA §404; thus, both federal and state requirements apply in these areas.<sup>137</sup> Three additional state statutes include provisions mandating planning and regulatory requirements that apply to wetlands in defined regions: the New Jersey Pinelands,<sup>138</sup> Hackensack Meadowlands,<sup>139</sup> and the New Jersey Highlands.<sup>140</sup>

In Virginia, the legislature passed the Non-tidal Wetlands Act in 2000,<sup>141</sup> which amended the State Water Control Law to include a goal of no net loss of existing wetland acreage and function, removed the dependence of state non-tidal wetlands program on the issuance of a federal permit, and added to the activities that are already regulated through §401/404.<sup>142</sup> Thus, isolated wetlands (i.e. wetlands that are not regulated under the CWA) are regulated by the state.

In Pennsylvania, all wetlands have been regulated since 1980 under the Dam Safety and Encroachments Act.<sup>143</sup> The purpose of the Act is “[to] conserve the water quality, natural regime, and carrying capacity of watercourses...[and to] [a]ssure proper planning, design, construction, maintenance, and monitoring of water obstructions and encroachments, in order to prevent unreasonable interference with waterflow and to protect navigation.”<sup>144</sup> The Act defines a “body of water” as “[a]ny natural or artificial lake, pond, reservoir, swamp, marsh, or wetland.”<sup>145</sup>

### Chesapeake Bay Programs

Maryland and Virginia have also established programs to protect wetlands and other waters in the Chesapeake Bay watershed. For example, Maryland’s Chesapeake and Coastal Bays Critical Area Act requires local jurisdictions to adopt zoning regulations that minimize alterations to the drainage area, surface, and subsurface flow of water for lands within 1,000-feet of the Chesapeake or Coastal Bays.<sup>146,147</sup> In Virginia, the Chesapeake Bay Preservation Act establishes

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<sup>135</sup> Michigan became the first state to assume regulatory authority under §404 of the Clean Water Act in 1984. *See* 40 C.F.R. § 233.70.

<sup>136</sup> N.J. STAT. ANN. § 13:9B.

<sup>137</sup> N.J. ADMIN. CODE. § 7:7A-2.1(c).

<sup>138</sup> The Pinelands Protection Act N.J. STAT. ANN. §§13:18A-1-13:18A-29

<sup>139</sup> The Hackensack Meadowlands Reclamation and Development Act, N.J. STAT. ANN. § 12:17-1 *et seq.*

<sup>140</sup> The Highlands Water Protection and Planning Act, N.J. STAT. ANN. § 13:20-1 *et seq.*

<sup>141</sup> VA. CODE ANN. §62.1-44.2.

<sup>142</sup> *Id.* New activities regulated under the Non-tidal Wetlands Act include new activities to cause draining that significantly alters or degrades existing wetland acreage or functions, filling or dumping, permanent flooding or impounding, and new activities that cause significant alteration or degradation of existing wetland acreage or function.

<sup>143</sup> 32 PA. CONS. STAT. §§ 693.1–693.27.

<sup>144</sup> *Id.* § 693.2.

<sup>145</sup> 32 PA. CONS. STAT. § 693.3.

<sup>146</sup> MD. CODE ANN., NAT. RES. § 8-1808.

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water quality protection measures specifically for the Chesapeake Bay, its tributaries, and other state waters, which include wetlands.<sup>148</sup> Each of Virginia’s tidewater jurisdictions is required to designate Resource Protection Areas along the shorelines of streams, rivers, and other waterways, including tidal wetlands, and to regulate certain activities in those areas, such as building and tree cutting.<sup>149</sup>

Wetland Buffer Regulation

Provisions in Delaware, Maryland, New Jersey, and Virginia state law also pertain to activities affecting wetland buffers. In Delaware, as part of the *Inland Bays Pollution Control Strategy* developed to implement the Total Maximum Daily Load (a calculation of the maximum amount of a pollutant that a water body can receive and still safely meet water quality standards) in the Inland Bays, the state adopted regulations that require a 100-foot buffer “landward from State-regulated wetlands, or landward from the mean high water line of all tidal waters, whichever extends farther upland, and landward from the ordinary high water mark of all other primary water features”<sup>150</sup> in all “new major subdivisions and new activities requiring a site or major subdivision plan approval by Sussex County or other local government.” The buffer size can be reduced to 50 feet under certain conditions. Buffers of 60 feet (which can be reduced to 30 feet) are required for secondary water features.<sup>151</sup>

Maryland’s Non-tidal Wetlands Protection Act regulates activities within a 25-foot buffer of all regulated wetlands. Buffer requirements can be expanded to 100-feet where there are steep slopes, highly erodible soils, or for non-tidal wetlands of special State concern (wetlands designated by regulation as having exceptional ecological or educational value).<sup>152,153</sup> New Jersey prohibits certain activities within transition areas of between 75 and 150 feet for a freshwater wetland of exceptional resource value and between 25 and 50 feet for a freshwater wetland of intermediate resource value.<sup>154</sup> A waiver may be granted to applicants to engage in prohibited activities in the transition area,<sup>155</sup> and the transition area may be reduced subject to a buffer averaging plan outlined in the statute.<sup>156</sup> In Virginia, the Chesapeake Bay Preservation

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<sup>147</sup> MD. DEP’T OF THE ENV’T, WETLAND REGULATIONS, *available at* <http://www.mde.state.md.us/assets/document/wetlandwaterways/regulation.doc>.

<sup>148</sup> 9 VA. CODE ANN. §§ 10.1-2100 – 2116.

<sup>149</sup> 9 VA. CODE ANN § 10-20-10 *et seq.*

<sup>150</sup> DEL. ADMIN. CODE tit. 7 §7403 “Primary water features” means State-regulated wetlands and those waters depicted by the United States Geological Survey on the National Hydrography Dataset as perennial, and identified on maps developed by the Department and adopted as part of this Regulation in Appendix A.

<sup>151</sup> “Secondary water features” means those waters depicted by the United States Geological Survey on the National Hydrography Dataset as intermittent, and those forested ditches that flow within or are directly adjacent to forested lands, and identified on maps developed by the Department and adopted as part of this Regulation in Appendix A. DEL. ADMIN. CODE tit. 7 §7403

<sup>152</sup> MD. CODE ANN., ENVIR. §§ 5-901 to 911.

<sup>153</sup> MD. DEP’T OF THE ENV’T, WETLAND REGULATIONS, *available at* <http://www.mde.state.md.us/assets/document/wetlandwaterways/regulation.doc>.

<sup>154</sup> N.J. STAT. ANN. § 13:9B-16.

<sup>155</sup> N.J. STAT. ANN. § 13:9B-17

<sup>156</sup> N.J. STAT. ANN. § 13:9B-18.

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Appendix B: Mid-Atlantic States Wetland Program Comparison - Summary

Act regulates and limits shoreline development in 100-foot buffer zones in the areas regulated under the Act.<sup>157</sup>

*§401 Water Quality Certification and Water Quality Standards*

Under §401 of the CWA, a state may review activities requiring a federal permit to ensure that it is consistent with the state's water quality standards. Under §401 the state may approve, condition, or deny the federal permit based on its review. The number of §401 certifications issued annually in Mid-Atlantic States varies widely.<sup>158</sup>

In Delaware, Maryland, New Jersey, Pennsylvania, and Virginia, §401 certification is rolled into the state's wetland permit process. In Delaware, applicants may submit a joint application for §401 certification and a state tidal wetlands permit. Section 401 certification provides the sole mechanism by which the state regulates non-tidal wetlands. In Maryland, water quality certification is incorporated into the tidal and non-tidal permitting process. For tidal wetlands, §401 certification is incorporated into the process via the State Programmatic General Permit, except for projects involving hydraulic dredging. New Jersey has assumed the §404 program, but the Freshwater Wetlands Protection Act has a §401 "surrogate" written into the rules. In Pennsylvania, the state wetland permitting process includes §401 water quality certification. Likewise, in Virginia, the Virginia Water Protection permit, applicable to both tidal and non-tidal wetlands, serves as both §401 certification for federal permits and as a state permit regardless of federal requirements

None of the states have wetland-specific water quality standards, designative uses, or anti-degradation standards. All of the states default to open water designated uses. However, in Pennsylvania, the water quality standards implementation statute provides that the functions and values in the Dam Safety and Encroachments Act (Pennsylvania's wetland regulatory statute) serve as the narrative quality that must be protected for wetlands and that the permitting and mitigation requirements of the Act may serve as anti-degradation measures for wetlands.<sup>159</sup>

*Nationwide Permits and State Programmatic General Permits*

Nationwide Permits

As part of the CWA §404 program, the Corps issues Nationwide Permits (NWP) for categories of impacts that are similar in nature and result in minimal impacts. As for individual §404 permits, a state must provide §401 certification for NWP. All of the Mid-Atlantic States, except New Jersey (who has assumed the §404 program), review NWP as they are issued by the Corps every five years. The most recent NWP were released in 2007. Delaware, Maryland, Pennsylvania, and Virginia applied conditions to several NWP, while others were certified as written, or denied. The majority of NWP in Maryland and Pennsylvania were suspended, as

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<sup>157</sup> 9 VA. CODE ANN. §§ 10.1-2100-2116.

<sup>158</sup> See tables at the end of the appendix for more specific information on the numbers of certifications issued annually in each state.

<sup>159</sup> 25 PA. CODE § 96.

state program general permits apply to these categories of impacts in those states (see below). In New Jersey permit reviews are always conducted under state law, thus NWP's are not applicable.

### State Programmatic General Permits

Delaware, Maryland, Pennsylvania, and Virginia all operate under state programmatic general permits that apply to certain activities within certain defined waters in the state. The programmatic general permits help to eliminate some of the duplication of effort that occurs between the state and federal permitting programs for minimal impacts to wetlands covered by the permits.

Delaware has two state program general permits for navigable waters regulated by the Corps (§10 waters), but there are no state program general permits for activities regulated under §404. Maryland's state programmatic general permit (MDSPGP-3) applies to the majority of activities covered under the NWP's (thus the majority of nationwide permits were suspended in the state). Projects are eligible for approval under the MDSPGP-3 if non-tidal wetland impacts are less than five acres and tidal wetland impacts are less than three acres. Virginia's statewide programmatic general permit (07-SPGP-01) pertains to the discharge of dredged and/or fill material in non-tidal waters of the U.S. associated with residential, commercial, and institutional developments, and linear transportation projects that have minimal individual and cumulative impacts.

Pennsylvania has operated under a state programmatic general permit since 1995, and the majority of the nationwide permits were suspended in the state. Activities authorized under the state program general permit are subject to a comprehensive set of state and federal general requirements, procedural conditions, and best management practices, described in the permit document. Application procedures and requirements are outlined as well.<sup>160</sup>

### State General Permits

States that operate wetland permitting programs may also develop state general permits, which are analogous to the NWP's. New Jersey and Virginia have both developed state general permits. Virginia has issued four general permits under their permit program for activities considered to have minimal impacts. All four general permits require that project impacts, both temporary and permanent, result from a single and complete project, and that the applicant submit notification; remit the required application processing fee; comply with the limitations and other requirements of the regulation; receive approval from the Virginia Department of Environmental Quality; provide compensation for unavoidable impacts; and have not been required to obtain a state individual permit for the proposed project impacts. Additional requirements and exemptions, specific to each permit, also apply.<sup>161</sup>

New Jersey has also issued statewide General Permits.<sup>162</sup> The General Permits, listed in the state regulations,<sup>163</sup> are generally equivalent to or more stringent than federal NWP's.

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<sup>160</sup> PA DEP, PENNSYLVANIA STATE PROGRAMMATIC GENERAL PERMIT-3 (1 July 2006), *available at* <http://www.dep.state.pa.us/dep/deputate/watermgt/wc/subjects/wwec/general/wetlands/paspgp3.pdf>.

<sup>161</sup> 9 VA. ADMIN. CODE § 25-670 et seq.

<sup>162</sup> N.J. STAT. ANN. § 13:9B-23(b).

### *Compliance and Enforcement*

State wetland compliance and enforcement authorities and mechanisms are largely dependent on the state's regulatory authority. State wetland permitting laws and regulations generally outline enforcement options. Alternatively, enforcement mechanisms related to §401 certification may be outlined in the state water pollution control act. Delaware law includes enforcement actions for violations and permit non-compliance under the Wetlands Act<sup>164</sup> and the Subaqueous Lands Act.<sup>165</sup> Violations of the Water Quality Regulations are punishable in accordance with the Environmental Control, Wetlands, and Subaqueous Lands statutes.<sup>166</sup> In Delaware, violations to the state water quality standards can be addressed through voluntary compliance by way of order, warning, notice or other educational means, or the state may impose a civil or administrative penalty; issue a temporary restraining order, injunction, or other appropriate remedy; seek criminal penalties; issue a cease and desist order; or seal any source required to have a permit. Under the Wetlands Act, the state may issue a cease and desist order, impose civil penalties, and/or hold violators liable for the cost of restoration. Under the Subaqueous Lands Act, the state may issue a cease and desist order, impose civil penalties of up to \$10,000 per day, and impose criminal penalties of up to \$500.

Other Mid-Atlantic States are authorized under their state wetland protection and pollution control laws to take corrective actions for violations to wetland permits and §401 certifications. Violations can be addressed through notices of violations, cease and desist orders, injunctions, civil penalties, criminal prosecution, or fines. Maryland and New Jersey handle enforcement within their primarily wetland regulatory agency. The Maryland Department of the Environment's Water Management Administration's Compliance Program handles compliance and enforcement for wetlands in Maryland. In Pennsylvania and Virginia regional offices of the Pennsylvania Department of Environmental Protection and Virginia Department of Environmental Quality are responsible for much of the compliance and enforcement activities in the state. Local wetlands boards in Virginia also have the authority to investigate noncompliance and address violations to the Tidal Wetlands Act. In all of the states, violations and permit non-compliance issues are generally resolved without having to take legal action against the violator.

Pennsylvania has developed a compliance and enforcement manual to guide assessments and actions for enforcement cases. The manual includes procedures for resolving enforcement actions, as well as guidance for calculating fines and penalties.<sup>167</sup>

### *Tracking*

All of the Mid-Atlantic States have systems for tracking wetland data. Delaware manages a searchable state tracking system, the Delaware Environmental Navigator, for information

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<sup>163</sup> General permits are listed in the Freshwater Wetland Protection Act rules at N.J. ADMIN. CODE. § 7:7A-5 *et seq.*

<sup>164</sup> DEL. CODE ANN. tit. 7, §6617

<sup>165</sup> DEL.CODE ANN. tit. 7, §7214 - 7215

<sup>166</sup> DEL ADMIN CODE §7201 5. 3

<sup>167</sup> PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION. COMPLIANCE ASSISTANCE AND ENFORCEMENT MANUAL. available at <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-48503/310-4000-001.pdf>

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collected on permits, §401 certifications, enforcement actions, and environmental monitoring. Data is available for viewing both as a map and as text.<sup>168</sup> Maryland tracks all regulatory gains and losses and non-regulatory wetland gains and coordinates with the Corps to track all regulatory actions. New Jersey tracks wetland permits, acreage, various mitigation requirements, deed restrictions, watershed, and permit status in its New Jersey Environmental Management System (NJEMS). NJEMS also includes a mapping component. Pennsylvania's Environmental Facility Application Compliance Tracking System (EFACTS) tracks information on permits, compliance, and project information such as type of wetland impacted, location, size, and mitigation. The Virginia Department of Environmental Quality tracks permit applications, issuances and enforcement, and types, amounts, and locations of impacts and compensation. Maryland, New Jersey, Pennsylvania, and Virginia also maintain or are developing databases to specifically track data related to wetland mitigation in the state.

### *Mitigation*

All of the Mid-Atlantic States have outlined mitigation requirements in state law or regulation. Delaware requires mitigation for permits under the Wetlands Act, Subaqueous Lands Act, and for water quality certifications. Delaware's Regulations for Governing the Control of Water Pollution outline guidelines for compensatory mitigation under the water quality certification program.<sup>169</sup> Maryland state law and regulations include general standards on mitigation. The state also has compensatory mitigation guidance for wetlands.<sup>170</sup> New Jersey's extensive mitigation requirements are outlined in the Freshwater Wetlands Protection Act and include provisions for type, amount, timing, locations (in-kind is preferred), banking and in-lieu fee requirements, and administrative terms.<sup>171</sup> Pennsylvania law lists 'wetland replacement criteria' that outline acreage and functional replacement requirements, as well as siting requirements.<sup>172</sup> The Pennsylvania Department of Environmental Protection has also developed guidelines that give a general overview of mitigation objectives and provide guidance for site selection and construction.<sup>173</sup> The Virginia State Water Control Law requires compensatory mitigation sufficient to achieve "no net loss" of existing wetland acreage and function and outlines basic requirements (regulations emphasize avoidance and minimization of impacts). The Virginia Department of Environmental Quality and the Corps Norfolk District have prepared a Wetland Mitigation Checklist, as well as technical guidelines that include information on site design, example permit conditions for compensation, monitoring report criteria, and mitigation site

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<sup>168</sup> DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL, DELAWARE ENVIRONMENTAL NAVIGATOR, at <http://www.nav.dnrec.delaware.gov/dnreceis/>

<sup>169</sup> DEL. CODE ANN. tit. 7, §6003; DEL. DEP'T of NATURAL RES. AND ENVTL. CONTROL, REGULATIONS GOVERNING THE CONTROL OF WATER POLLUTION (2006), available at <http://www.dnrec.state.de.us/water2000/Sections/SurfWater/Library/RGCWP.pdf>

<sup>170</sup> See MARYLAND DEPARTMENT OF THE ENVIRONMENT, MARYLAND COMPENSATORY MITIGATION GUIDANCE, 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>171</sup> N.J. ADMIN. CODE §7:7A-15 *et. seq.*

<sup>172</sup> Acreage and functions and values must be replaced at a minimum of 1:1 (replacement acres to acres affected), but the state may require a higher ratio depending on the circumstances of the project and the wetlands being affected. 25 PA. CODE § 105.20a(a)

<sup>173</sup> PA DEP, DESIGN CRITERIA FOR WETLANDS REPLACEMENT, 25 PA. CODE §105.20a

compliance.<sup>174</sup> The Virginia Marine Resource Commission has also prepared a wetland mitigation policy and supplemental guidelines.

### Mitigation Banking

Maryland, New Jersey, and Virginia have also developed mitigation banking guidance. Maryland law contains general standards on mitigation banking and in-lieu fee mitigation.<sup>175</sup> In New Jersey, the mitigation bank approval process is outlined in the Freshwater Wetlands Protection Act regulations.<sup>176</sup> Mitigation banks and in-lieu-fee programs have been legislatively authorized in Virginia. Various state agencies in Virginia have also developed guidelines for the development and operation of tidal wetland mitigation banks in Virginia,<sup>177</sup> guidelines for proposing mitigation banks,<sup>178</sup> and a template to assist in developing a mitigation banking instrument.<sup>179</sup> Pennsylvania and Virginia state agencies also serve on Interagency Review Boards.

### In-Lieu Fee Mitigation

Maryland, New Jersey, and Pennsylvania all have state-run in-lieu fee programs. In Maryland, applicants may make a payment to the state's Non-tidal Wetland Compensation Fund if impacts cannot be mitigation through on-site, off-site, or through purchasing credits from a mitigation bank. In New Jersey, the Freshwater Wetlands Protection Act established the Mitigation Council, a state in-lieu fee program (independent of the New Jersey Department of Environmental Protection) for impacts to freshwater wetlands and state open water impacts that cannot be mitigated for on-site, off-site or through purchase of mitigation bank credits.<sup>180</sup> In Pennsylvania, applicants for permits impacting one-half acre or less may contribute money into a state-managed in-lieu-fee fund (the Pennsylvania Wetland Protection Project), if there are no on-site wetland replacement options or alternative mitigation opportunities.<sup>181</sup> The fund is used to support restoration of wetlands on private lands within the watershed.

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<sup>174</sup> Norfolk District Corps and Virginia Department of Environmental Quality *Recommendations for Wetland Compensatory Mitigation*, available at

<http://www.deq.virginia.gov/wetlands/pdf/mitigationrecommendaabbrevjuly2004.pdf>; Norfolk District Corps and Virginia Department of Environmental Quality, *Wetland Mitigation Checklist*, available at [http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/Guidance/Corps-DEQ\\_Mit\\_Checklist\\_7-04.pdf](http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/Guidance/Corps-DEQ_Mit_Checklist_7-04.pdf)

<sup>175</sup> MD. CODE REGS. 26.23.04, .24.05

<sup>176</sup> N.J. ADMIN CODE §7:7A-15

<sup>177</sup> VIRGINIA MARINE RESOURCES COMMISSION, GUIDELINES FOR THE ESTABLISHMENT, USE AND OPERATION OF TIDAL WETLAND MITIGATION BANKS IN VIRGINIA, available at <http://www.mrc.state.va.us/regulations/fr391.shtm>

<sup>178</sup> LETTER FROM J. ROBERT HUME, REGULATORY BRANCH CHIEF, NORFOLK DISTRICT ARMY CORPS OF ENGINEERS TO PROSPECTIVE WETLANDS BANKERS AND CONSULTANTS, available at <http://www.deq.virginia.gov/wetlands/pdf/mitigation.pdf>

<sup>179</sup> VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY, TEMPLATE MITIGATION BANKING INSTRUMENT, available at [http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/Mitigation%20Banks/MBI\\_template\\_5-04.doc](http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/Mitigation%20Banks/MBI_template_5-04.doc)

<sup>180</sup> NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION – DIVISION OF LAND USE REGULATION – MITIGATION, at <http://www.state.nj.us/dep/landuse/fww/mitigate/mcouncil.html>

<sup>181</sup> PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION at <http://www.portal.state.pa.us/portal/server.pt/community/wetlands/10635/implementation/554348>

### *No-Net Loss/Net Gain Programs*

Maryland, Pennsylvania, and Virginia all have established no net loss or net gain of wetland acres and functions goals. In Maryland and Virginia these goals are tied to the states' non-tidal regulatory programs. For example, the goal of Maryland's Non-tidal Wetlands Protection Act is to "attain no net overall loss in non-tidal wetland acreage and function and to strive for a net resource gain in non-tidal wetlands over present conditions."<sup>182</sup> The state ensures "no net loss" of wetlands by requiring mitigation or compensation for any wetland losses and tracking regulatory gains and losses by watershed. Virginia's Non-tidal Wetlands Act also has a goal of no net loss of existing wetland acreage and function. The Act also required development of voluntary and incentive-based programs to achieve a net resource gain in wetlands.

Pennsylvania's Wetlands Net Gain Strategy is not tied to the regulatory program, but recognizes both regulatory and non-regulatory mechanisms to achieve its objectives. The strategy takes a watershed-based, community-focused approach and includes the implementation of best management practices for the restoration, creation, and protection of wetlands to meet the needs of individual watersheds.<sup>183</sup> Regulatory mitigation requirements have led to achievement of the no net loss goal in the permitting program. Achievement of the goal of a net gain of wetland acreage relies on the implementation of federal programs such as the U.S. Fish and Wildlife Service's Partners for Wildlife and Natural Resources Conservation Service's Wetland Reserve Program, as well as other programs.

### **State Non-Regulatory Programs**

#### *Monitoring and Assessment*

##### Monitoring

All of the Mid-Atlantic States have monitoring and assessment programs that include wetlands. Monitoring data are used for various regulatory and non-regulatory purposes, including state water quality assessment programs, §305(b) reports, and permitting and mitigation decisions.

Delaware monitors the condition of natural wetlands and evaluates their health and function on a watershed basis. The state also monitors mitigation sites as required in permit conditions. However, relatively few voluntary restoration or creation sites are actively monitored.<sup>184</sup> Delaware's 2008 Wetland Monitoring Strategy states that the goal of the state's Wetland Monitoring and Assessment Program (WMAP) is to "assess the condition or health of wetlands

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<sup>182</sup> MD. CODE ANN., ENVIR. §§ 5-902(b)

<sup>183</sup> COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, WETLANDS NET GAIN STRATEGY,

<http://www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/WWEC/GENERAL/WETLANDS/NetGain.htm>

<sup>184</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, DELAWARE WETLANDS CONSERVATION STRATEGY, available at

<http://www.dnrec.delaware.gov/Admin/DelawareWetlands/Documents/Delaware%20Wetlands%20Conservation%20Strategy%2008.29.08.pdf>

and the functions and ecosystem services that wetland provide.”<sup>185</sup> The monitoring and assessment information inform restoration and protection efforts as well as watershed strategies and conservation plans; educate state programs, the public, and conservation partners; and for CWA reporting. The WMAP uses methods developed using a 4-tiered approach. This approach includes four levels of assessment methods including, intensive assessment, comprehensive field assessment, rapid assessment, and landscape level assessment. Delaware’s state wetland conservation strategy outlines action items for improving monitoring efficiency in the state, including developing standard sampling protocols, adopting standard monitoring protocols, holding training workshops, making data available through the Delaware wetlands website, promoting volunteer opportunities, creating a database of monitoring activities, and developing a web-based map.<sup>186</sup>

Maryland and Virginia have specific monitoring programs for wetlands, while New Jersey and Pennsylvania actively monitor wetlands, but through general water quality monitoring programs. In Maryland, monitoring efforts include rapid assessment monitoring for regulatory purposes, a formal assessment for state highway projects, a long-term assessment of slope wetlands in the Piedmont region of the state, and assessment of mitigation sites using performance standards. Maryland also recently developed a comprehensive monitoring strategy to help the state report, track, monitor, and enhance the condition and functions of the state’s wetland resources regularly and comprehensively.<sup>187</sup> Maryland has also worked in collaboration with Delaware and other partners to assess wetland conditions and develop functional condition indices and a single score index of wetland condition in the Nanticoke Watershed and also to evaluate tidal wetland conditions in the Nanticoke.

New Jersey and Virginia have also developed long-term water monitoring and assessment strategies. New Jersey’s strategy includes goals and objectives for wetlands and streams, as well as other state waters. Virginia’s strategy is specifically designed to support wetland permitting and mitigation decisions; to allow reporting of wetland condition; to determine whether the state is meeting its goal of “no net loss” of wetland acreage and function; to evaluate cumulative impacts of wetland loss and restoration; and to provide information for policy development.<sup>188</sup> Pennsylvania is exploring ways to integrate monitoring data with the state’s water quality assessment programs, §305(b) reports, and other regulatory and non-regulatory purposes.

### Volunteer Monitoring Efforts

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<sup>185</sup> DEL. DEP’T OF NATURAL RES. AND ENVTL. CONTROL, DELAWARE WETLAND MONITORING STRATEGY, *available at* <http://www.dnrec.delaware.gov/Admin/DelawareWetlands/Documents/Delaware%20Wetland%20Monitoring%20Strategy%20Jan08.pdf>

<sup>186</sup> DEL. DEP’T OF NATURAL RES. AND ENVTL. CONTROL, DELAWARE WETLANDS CONSERVATION STRATEGY, *available at* <http://www.dnrec.delaware.gov/Admin/DelawareWetlands/Documents/Delaware%20Wetlands%20Conservation%20Strategy%2008.29.08.pdf>

<sup>187</sup> STATE OF MARYLAND’S COMPREHENSIVE WETLAND MONITORING STRATEGY. *available at* [http://www.mde.state.md.us/assets/document/Maryland\\_Monitoring\\_Strategy2009.pdf](http://www.mde.state.md.us/assets/document/Maryland_Monitoring_Strategy2009.pdf)

<sup>188</sup> VIRGINIA INSTITUTE OF MARINE SCIENCE, NON-TIDAL WETLANDS ASSESSMENT PROTOCOL, *available at* [http://ccrm.vims.edu/wetlands/nontidal\\_wetlands/index.html](http://ccrm.vims.edu/wetlands/nontidal_wetlands/index.html)

Delaware, New Jersey, and Virginia all support citizen monitoring efforts. Delaware supports the volunteer Adopt-A-Wetland Program. New Jersey coordinates the Watershed Watch Network, an umbrella group for all volunteer monitoring programs in the state. This program provides water quality monitoring protocols, and quality control and assurance for volunteers. Virginia's Citizen Water Quality Monitoring Program provides technical assistance and grants to support citizen water quality monitoring groups.<sup>189</sup> The Virginia Citizen Water Quality Monitoring Program Methods Manual assists citizens with the development of a monitoring program.<sup>190</sup>

### Wetland Assessment Methodologies

All of the Mid-Atlantic States have developed or are developing wetland assessment methodologies. Delaware's wetland monitoring program has developed standardized protocols for tidal and non-tidal wetlands. Protocols are based on assessing the condition of wetlands and determining the dominant stressors that are lowering wetland condition on the watershed level. Methodologies include the Delaware Comprehensive Assessment Protocol (DECAP), the Delaware Rapid Assessment Protocol (DERAP), and MidAtlantic Tidal Rapid Assessment Method (MidTRAM).

Maryland has conducted in the past and is currently conducting pilot projects to test wetland assessment methodologies. New Jersey has conducted research to identify appropriate quantitative methods for assessing wetland function and to identify what methods could be used to relate wetland and water quality for the purpose of watershed assessment.<sup>191</sup> Pennsylvania is also working with state and federal agencies to develop and test a wetland assessment methodology. In Virginia, three hydrogeomorphic (HGM) models have been developed for wetland habitats. In addition, Virginia has developed a web-based floristic assessment calculator, which will allow users to determine wetland health based on the list of plants gathered during delineation.<sup>192</sup>

Maryland, New Jersey, and Virginia also have developed monitoring and assessment programs for streams.

### *Restoration*

Various state agencies in all of the Mid-Atlantic States are engaged in wetland restoration. Delaware, Maryland, Pennsylvania, and Virginia all have formal state-administered wetland restoration program. In fact, Virginia state law requires that voluntary and incentive-based

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<sup>189</sup> VA. CODE ANN. §62.1-44.19:11

<sup>190</sup> VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY, VIRGINIA CITIZEN WATER QUALITY MONITORING PROGRAM METHODS MANUAL (2003), *available at* <http://www.deq.state.va.us/watermonitoring/pdf/guidancemanual/cmonman.pdf>.

<sup>191</sup> NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION, NEW JERSEY INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT 2006 (2006), *available at* <http://www.state.nj.us/dep/wms/bwqsa/docs/2006IntegratedReport.pdf>.

<sup>192</sup> VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY, FLORISTIC QUALITY ASSESSMENT INDEX (FQAI), *available at* <http://www.deq.state.va.us/wetlands/wetlands.html>

programs be developed for wetland restoration in order to achieve a “net gain” of wetland resources.<sup>193</sup>

Delaware, Maryland, Pennsylvania, and Virginia have all also set restoration goals. Through the Chesapeake Bay program, Delaware has committed to restoring 1,500 acres and enhancing 1,500 acres of wetlands in the Chesapeake Bay watershed by 2010. Maryland, Pennsylvania, and Virginia have also set restoration goals under the Chesapeake 2000 Agreement. Under the Agreement, Pennsylvania established a time line of restoring 400 acres of non-tidal wetlands restored each year. Maryland is committed to creating or restoring a total of 15,000 acres and enhancing 35,000 acres. Maryland has also established a goal of restoring 10,000 acres in the Coastal Bays watershed by 2010 through the Maryland Coastal Bays Program.<sup>194</sup> Virginia has committed to restore 10,000 acres of wetlands by 2010, including 6,000 acres in the Chesapeake Bay watershed.

### State Wetland Conservation Plans

Delaware, Maryland, New Jersey, and Pennsylvania, have all developed state wetland conservation plans. In Delaware, the state developed a comprehensive wetland conservation strategy in 2008.<sup>195</sup> A planning document, the strategy was designed to coordinate the state’s efforts and outlines six goals for improving wetland protection in the state. The six goals include: 1) Update wetland inventory maps and improve access to wetland related data, 2) Increase monitoring efficiency and effort to provide insight into wetland function and health, 3) Integrate wetland restoration, creation, enhancement, and protection efforts to ensure efficient use of resources, 4) Coordinate information and resources sharing among wetland protection programs, professionals, and agencies, 5) Enhance education and outreach efforts to broaden wetland stewardship among all wetland stakeholders, and 6) Work with partners to provide support and enhancement for existing regulatory programs and to provide protection of wetlands that are not covered by state and federal regulations. The strategy lays out action items that will help the state reach each of the identified goals. The state has made progress on goal number one, and is set to release an updated status and trends report in 2010.

Maryland completed a State Wetland Conservation Plan in 2003. Under the plan the state has identified priority areas for restoration and preservation, assessed the effectiveness of the mitigation program, and developed a wetland monitoring strategy. Pennsylvania’s Net Gain Strategy includes implementation of best management practices for the restoration, creation, and protection of wetlands to meet the net gain goal. Data management, monitoring, and coordination, site prioritization, and education and outreach are also included in the strategy.<sup>196</sup>

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<sup>193</sup> VA. CODE ANN. §62.1 1-44.15:21

<sup>194</sup> MARYLAND DEPARTMENT OF THE ENVIRONMENT, WHAT DO THE CHESAPEAKE BAY AGREEMENT, THE COASTAL BAYS PLAN, AND AN EXECUTIVE ORDER FROM THE STATE HAVE IN COMMON?, *at* [http://www.mde.state.md.us/Programs/WaterPrograms/Wetlands\\_Waterways/about\\_wetlands/agreement.asp](http://www.mde.state.md.us/Programs/WaterPrograms/Wetlands_Waterways/about_wetlands/agreement.asp)

<sup>195</sup> DEL. DEP’T OF NATURAL RES. AND ENVTL. CONTROL, DELAWARE WETLANDS CONSERVATION STRATEGY, *available at* <http://www.dnrec.delaware.gov/Admin/DelawareWetlands/Documents/Delaware%20Wetlands%20Conservation%20Strategy%2008.29.08.pdf>

<sup>196</sup> PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, WETLANDS NET GAIN STRATEGY (1998), *at* <http://www.dep.state.pa.us/dep/deputate/watermgmt/Wc/Subjects/WWEC/GENERAL/WETLANDS/NetGain.htm>

### Restoration Funding

In the Mid-Atlantic States funding for wetland restoration comes from many sources. For example, Maryland reported funding restoration projects through the Maryland Department of the Environment through funds from the state compensation fund that supports mitigation projects, from state general funds, and through the agency's Water Quality Improvement Program. Restoration under the Maryland Department of Natural Resources is funded through grants. For landowner assistance projects, the Maryland Department of Natural Resources solicits funds from the Chesapeake Bay Trust, Transportation Enhancement Fund, wetland mitigation funds, and the National Fish and Wildlife Foundation.

In Virginia, the Chesapeake Bay Restoration Fund, funded by the sale of Friend of the Chesapeake license plates, supports restoration and education projects in the Chesapeake Bay watershed. Delaware, Maryland, Pennsylvania, and Virginia also coordinate with the USDA Natural Resources Conservation Service on Farm Bill cost-share restoration programs (e.g. Wetland Reserve Program) or with other federal agencies on other habitat restoration programs.

### Restoration Prioritization

Maryland and Pennsylvania have developed wetland restoration priorities. Maryland, for example, has prioritized wetland areas for restoration, preservation, and mitigation in the state.<sup>197</sup> Data from resource inventories and management plans as well as GIS and other data were used to identify desirable and undesirable locations for wetland restoration work. The state is promoting the use of the prioritization findings to permit applicants seeking mitigation sites and is also encouraging local governments to refer to the results when planning Total Maximum Daily Loads (TMDL). The Maryland Coastal Bays Program has also targeted wetland restoration and creation in areas of historic wetland loss for water quality improvement and wildlife habitat in the Coastal Bays region.<sup>198</sup>

In Virginia, an executive order established the Virginia Wetlands Restoration Coordinating Committee to increase state agency coordination on wetlands restoration and mandate that all state agencies holding public land: identify areas suitable for wetland restoration, enhancement, or preservation; restore wetlands where appropriate; and develop measurable indicators for wetland conservation, restoration, and enhancement.<sup>199</sup>

### Restoration Partnerships

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<sup>197</sup> MARYLAND DEPARTMENT OF THE ENVIRONMENT, PRIORITIZING AREAS FOR WETLAND RESTORATION, PRESERVATION, AND MITIGATION, *at* [http://www.mde.state.md.us/Programs/WaterPrograms/Wetlands\\_Waterways/about\\_wetlands/prioritizingareas.asp](http://www.mde.state.md.us/Programs/WaterPrograms/Wetlands_Waterways/about_wetlands/prioritizingareas.asp)

<sup>198</sup> MARYLAND COASTAL BAYS PROGRAM, A COMPREHENSIVE CONSERVATION AND MANAGEMENT PLAN FOR MARYLAND'S COASTAL BAYS, *at* [http://www.mdcoastalbays.org/files/pdfs\\_pdf/CCMP\\_05-24-05.pdf](http://www.mdcoastalbays.org/files/pdfs_pdf/CCMP_05-24-05.pdf)

<sup>199</sup> COMMONWEALTH OF VIRGINIA, OFFICE OF THE GOVERNOR (OCT. 20, 2000), EXECUTIVE ORDER 72 (00), ESTABLISHING THE VIRGINIA WETLANDS RESTORATION COORDINATING COMMITTEE, *available at* [http://www.lva.virginia.gov/public/EO/EO72\(00\).pdf](http://www.lva.virginia.gov/public/EO/EO72(00).pdf)

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All of the Mid-Atlantic States coordinate with federal agencies and willing landowners on wetland restoration projects. Delaware, Maryland, Pennsylvania, and Virginia all coordinate with the USDA or with other federal agencies on habitat restoration programs. Further, all of the Mid-Atlantic States provide restoration assistance to willing landowners. Delaware, Pennsylvania, and Virginia all have formal state programs for partnering with private landowners for wetland restoration. Delaware has produced wetland restoration guidebooks for landowners including *Wetland Restoration in Delaware: A Landowner's Guide Part 1: Restoration Stories* and *Wetland Restoration in Delaware: A Landowner's Guide Part 2: Resources for Restoration*.<sup>200</sup> Maryland Department of Natural Resources staff have worked with private landowners on restoration and conservation projects and the Department of the Environment helps match landowners with other funding agencies to support landowner's objectives. The Virginia Department of Game and Inland Fisheries works with willing landowners to find appropriate federal or state programs for wetland restoration. The Virginia Department of Environmental Quality also offers information for landowners and the general public on volunteer wetland restoration projects, including *Restoring Virginia's Wetlands: A Citizen's Toolkit*,<sup>201</sup> *Tools for Targeting Sites for Voluntary Wetland Activities*,<sup>202</sup> and *Technical and Financial Resources for Voluntary Wetland Restoration Projects*.<sup>203</sup>

Delaware has also developed guidance to help local governments improve wetland protection. Delaware published the *Land Use Decision Making and Wetland Protection: A Guidebook for Public Participation* to help citizens protect wetlands by becoming involved in land use decision-making at the local level.

#### *Education and Outreach*

None of the Mid-Atlantic States have a formal education and outreach plan focused on wetlands. However, all of the states conduct various wetland-related education and outreach activities.

In Delaware, several state agencies are involved with wetland-related education programs. For example, the Delaware Department of Fish and Wildlife's Office of Education and Outreach publishes wetlands information and runs several wetland education programs. The Department's Aquatic Resources Education Center, funded with grants from the U.S. Fish and Wildlife Service, hosts wetland-related teacher and youth group education trainings at the Center's

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<sup>200</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, *WETLAND RESTORATION IN DELAWARE: A LANDOWNER'S GUIDE PART 1: RESTORATION STORIES* available at <http://www.dnrec.delaware.gov/Admin/DelawareWetlands/Documents/restoration%20guidebook%20part%201%20all%2024%20pages.pdf>; *WETLAND RESTORATION IN DELAWARE: A LANDOWNER'S GUIDE PART 2: RESOURCES FOR RESTORATION* available at

<sup>201</sup> VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY AND THE ALLIANCE FOR CHESAPEAKE BAY, *RESTORING VIRGINIA'S WETLANDS: A CITIZENS TOOLKITS*, (2005) available at <http://www.deq.virginia.gov/wetlands/pdf/restoringvawetlandstoolkit.pdf>.

<sup>202</sup> See VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY AND THE ALLIANCE FOR CHESAPEAKE BAY, *TOOLS FOR TARGETING SITES FOR VOLUNTARY WETLAND ACTIVITIES*, (2004) available at <http://www.deq.virginia.gov/wetlands/pdf/toolsvoluntaryrestoration.pdf>.

<sup>203</sup> See VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY AND THE ALLIANCE FOR CHESAPEAKE BAY, *FINANCIAL AND TECHNICAL ASSISTANCE POTENTIAL SOURCES FOR VOLUNTARY WETLAND ACTIVITIES IN VIRGINIA*. available at <http://www.acb-online.org/pubs/projects/deliverables-231-1-2004.PDF>

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overnight lodge and has also developed, in collaboration with local high school students, Wetland Activities for Delaware Educators (WADE) kits. Delaware's wetland conservation strategy outlines education and outreach goals and activities.

Maryland's Wetland Conservation Plan also outlines tasks and goals related to education and outreach. In addition, the Maryland Department of Natural Resources occasionally conducts outreach and education activities using the Planning of Wetlands materials developed by the non-profit organization Environmental Concern. New Jersey conducts water- and stream-related activities and programs, including Project WET (Water Education for Teachers); the Watershed Ambassadors Program; Watershed Education/Urban Fishing Program; Clean Water Rangers Program; and the Watershed Watch Network.<sup>204</sup> New Jersey state agencies also provide multiple handouts and publications for youth, communities, the regulated public, environmental professionals, educators, and others; coordinate with Rutgers University to hold continuing education training sessions for the regulated public, consultants, and others; and hold presentations in conjunction with local governments or planning bodies for towns with higher-than-average enforcement problems.

Pennsylvania requires an environmental science component in the public school curriculum. The Pennsylvania Department of Environmental Protection and other state agencies have provided numerous education modules, curricula, and other materials on water quality and wetlands protection to support the educational requirement. Further, Pennsylvania participates in seminars and workshops on wetlands and other environmental issues, as well as semi-annual training sessions for the public and private sector. Topics may include wetland functions and values, identification and delineation, permitting, and statewide policies. Virginia state agencies conduct field classes and wetland workshops, landowner outreach, symposiums to local Wetlands boards, and wetland education workshops. The state also provides educational materials to landowners and other private citizens and operates Virginia Naturally, a statewide environmental education program that includes educational brochures and programs on wetlands. Virginia also trains about 1,000 teachers each year through Project WET.

*Coordination with State and Federal Agencies*

All of the Mid-Atlantic state agencies regularly coordinate with other state and federal agencies on wetland issues. Delaware, Maryland, New Jersey, and Virginia all have formal agreements among state and federal agencies regarding wetlands. All of the Mid-Atlantic States regularly coordinate with the federal agencies on regulatory issues, including on issues of jurisdiction, permitting, and mitigation. Maryland, Pennsylvania, and Virginia also have formal partnerships with the Natural Resources Conservation Service, and Delaware and New Jersey have formal agreements with their state Departments of Transportation.

There are also several regional partnerships in the Mid-Atlantic, including the Chesapeake Bay Program. The Bay Program was created to direct and conduct the restoration of the Chesapeake Bay and includes representatives from Virginia, Pennsylvania, Maryland, Washington, D.C., the

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<sup>204</sup> See NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION – DIVISION OF WATERSHED MANAGEMENT, OUTREACH & EDUCATION, at [http://www.state.nj.us/dep/watershedmgt/outreach\\_education.htm](http://www.state.nj.us/dep/watershedmgt/outreach_education.htm)

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Chesapeake Bay Commission, and the U.S. Environmental Protection Agency. The program works to build and adopt policies that support Chesapeake Bay restoration.

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The information on the state programs was gathered in 2003 – 2007, and should be considered current as of the summer of 2007. We did not attempt to update the information for this review.

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Program Resources

State	Agency	Role of Agency	Field Offices	Total Full-Time Equivalents	FTEs assigned activities	Annual Budget	Funding Mechanisms
Delaware	Delaware Department of Natural Resources and Environmental Control - Division of Water Resources, Wetlands and Subaqueous Lands Section	Regulation	no	10 (for the entire section)	Permitting and 401 certification	\$550,000.00	General Appropriations; Fees
	Delaware Department of Natural Resources and Environmental Control - Division of Water Resources, Watershed Assessment Section	Monitoring and Assessment	no	18 FTE true state employees	Monitoring	unable to estimate	Federal grants, state funding- general appropriations.
	Delaware Department of Natural Resources and Environmental Control - Division of Fish and Wildlife	Restoration	don't know	<2	Restoration	unable to estimate	General appropriations; Federal Grants (Landowner Incentive Program Funds)
	Delaware Department of Natural Resources and Environmental Control - Division of Soil and Water Conservation, Coastal Management Program	Restoration and Coastal Consistency Determinations	don't know	unable to estimate	Outreach/Technical Assistance; Restoration; Coastal Consistency Determinations	unable to estimate	don't know
Maryland	Maryland Department of the Environment - Water Management Administration, Wetlands and Waterways Program, Tidal Division	Regulation	Yes	7	Issues Authorizations for Construction Work in Tidal, Private Wetlands	unable to estimate	General Appropriations
	Maryland Department of the Environment - Water Management Administration, Wetlands and Waterways Program, Non-tidal Division	Regulation	Yes	<25	Permitting; Examine Issues Impacting Wetlands on a Watershed Basis	unable to estimate	General Appropriations; Federal Grants
	Maryland Department of Natural Resources	Restoration	Yes	<25	Monitoring; Restoration	unable to estimate	General Appropriations; Federal Grants; "Special funds" (State and Private Grants)

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State	Agency	Role of Agency	Field Offices	Total Full-Time Equivalents	FTEs assigned activities	Annual Budget	Funding Mechanisms
New Jersey	New Jersey Department of Environmental Protection -Division of Land Use Regulation	Regulation	Yes	70	Enforcement/ Compliance; Permitting	unable to estimate	General Appropriations
	New Jersey Department of Environmental Protection - Division of Science Research and Technology	Monitoring and Assessment	No	2	Monitoring; Assessment/ Research	unable to estimate	General Appropriations
	New Jersey Department of Environmental Protection - Communications Office	Education and Outreach	No	unable to estimate	Outreach/ Technical Assistance	unable to estimate	General Appropriations
	Pinelands Commission	Regulation	don't know	unable to estimate	Permitting; Outreach/ Technical Assistance; Research; Assessment and Delineation; Planning	unable to estimate	Fees, Federal Grants (DOI), Other State Funds
	Meadowlands Commission	Monitoring and Assessment	don't know	unable to estimate	Monitoring	unable to estimate	don't know
	Highlands Council	Restoration	don't know	unable to estimate	Restoration	unable to estimate	don't know
Pennsylvania	Pennsylvania Department of Environmental Protection - Division of Waterways, Wetlands, and Stormwater Management	Regulation	don't know	50 to 60 (for all of DEP)	Program and Policy Development, Legislative Affairs, Coordination	unable to estimate	General Appropriations; Fees; Penalties
	Pennsylvania Department of Environmental Protection - Permitting and Technical Services Sections	Regulation; Restoration	Yes	see above	Enforcement/ Compliance; Permitting; 401 Certification; Outreach/Technical Assistance; Restoration	unable to estimate	General Appropriations; Fees; Penalties
Virginia	Virginia Department of Environmental Quality - Office of Wetlands and Water Protection/Compliance	Regulation	Yes	37	Enforcement/ Compliance; Permitting; Outreach/ Technical Assistance; Restoration	unable to estimate	General Appropriations; Fees; Federal Grants (EPA)
	Virginia Marine Resources Commission - Habitat Management Division	Regulation	No	10 (tidal wetland permits and bottomland use)	Enforcement/ Compliance; Permitting	\$400,000 to \$500,000	General Appropriations; Dedicated Appropriations; Federal Grants (NOAA CZMA Funding)
	Virginia Department of Game and Inland Fisheries	Restoration	don't know	1	Restoration	unable to estimate	General Appropriations; Federal Grants
	Virginia Department of Conservation and Recreation	Restoration	don't know	unable to estimate	Restoration	unable to estimate	don't know

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Tracking

State	System for tracking wetland permits/ 401 certifications	System for tracking mitigation
Delaware	Yes	No
Maryland	Yes	Yes
New Jersey	Yes	Yes (test phase) – includes site inspections, data submission requirements, review of results and corrective action.
Pennsylvania	Yes	Yes – includes permit application information
Virginia	Yes	Yes – includes site inspections

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Definitions

State	Regulatory definition of "waters of the state"	"Waters of the state" definition includes wetlands	Definition statute or rule citation	State definition of waters differs from federal definition?	List types of wetlands defined
Delaware	Water, on the surface and under the ground, wholly or partially within, or bordering the State, or within its jurisdiction including but not limited to: (a) Waters which are subject to the ebb and flow of the tide including, but not limited to, estuaries, bays and the Atlantic Ocean; (b) All interstate waters, including interstate wetlands; (c) All other waters of the State, such as lakes, rivers, streams (including intermittent and ephemeral streams), drainage ditches, tax ditches, creeks, mudflats, sandflats, wetlands, sloughs, or natural or impounded ponds; (d) All impoundments of waters otherwise defined as waters of the State under this definition; (e) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in (a)-(d)	Yes, Explicitly	DEL. ADMIN. CODE TIT. 7 §7201 Section 2.0	Yes	Wetlands under the Tidal Wetland Act (DEL.CODE ANN. tit. 7, § 6603(h); 59 Del. Laws, c. 213, § 1; 64 Del. Laws c. 293, § 1); Wetlands under Delaware Regulations Governing the Control of Water Pollution (DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, REGULATIONS GOVERNING THE CONTROL OF WATER POLLUTION (2006))
Maryland	"'Waters of this State' includes: (a) Both surface and underground waters within the boundaries of this State subject to its jurisdiction, including that part of the Atlantic Ocean within the boundaries of this State, the Chesapeake Bay and its tributaries, and all ponds, lake, rivers, streams, tidal and non-tidal wetlands, public ditches, tax ditches, and public drainage systems within this State, other those designed and used to collect, convey, or dispose of sanitary sewage; (b) The flood plain of free-flowing waters determined by the Department of Natural Resources on the basis of the 100-year flood frequency."	Yes, Explicitly	MD. CODE REGS. 26.08.01(B) (103)	Yes	Non-tidal (MD. CODE ANN., ENVIR. § 5-901(h)(1)); tidal (MD. CODE ANN., ENVIR. § 16-101(n)); private tidal (MD. CODE ANN., ENVIR. § 16-101(j)); and state tidal (MD. CODE REGS. 26.24.01.02(B)(52)).
New Jersey	The ocean and its estuaries, all springs, streams, wetlands, and bodies of surface or ground water, whether natural or artificial, within the boundaries of the State of New Jersey or subject to its jurisdiction.	Yes, Explicitly	N.J. ADMIN. CODE. § 7:9B-1.4.	Yes	Freshwater wetlands (N.J. STAT. ANN. § 13:9B); Coastal wetlands (N.J. STAT. ANN. § 13:9A)
Pennsylvania	Body of water defined as "[a]ny natural or artificial lake, pond, reservoir, swamp, marsh, or wetland. Regulated waters of Pennsylvania defined as "'[w]atercourses, streams, or bodies of water and their floodways wholly or partly within or forming part of the boundary of this Commonwealth."	Yes, Implicitly	32 PA. CONS. STAT. § 693.3; 25 PA. CODE § 105.1	Yes	Wetlands generally (25 PA. CODE § 93.1)
Virginia	All water, on the surface and under the ground, wholly or partially within or bordering the Commonwealth or within its jurisdiction, including wetlands	Yes, Explicitly	VA. CODE ANN. § 62.1-44.3	Yes	Wetlands generally (VA. CODE ANN. § 62.1-44.3); nonvegetated wetlands and vegetated wetlands (VA. CODE ANN. § 28.2-1300)

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Regulated Activities

State	Program authority	Agency	Regulated Activities	General/ Individual Permits?	Mitigation
Delaware	Wetlands Act (DEL.CODE ANN. tit. 7, § 6601) ( <b>Tidal</b> )	Delaware Department of Natural Resources and Environmental Control (DNREC) Division of Water Resources (DWR) Wetlands and Subaqueous Lands Section	Dredging, filling, bulkheading, plowing, or construction of any kind in delineated wetlands.		May require mitigation
	Subaqueous Lands Act (DEL.CODE ANN. tit. 7, § 7201)	Delaware Department of Natural Resources and Environmental Control (DNREC) Division of Water Resources (DWR) Wetlands and Subaqueous Lands Section	Deposit of materials or removal or extraction of materials, as well as construction, repair, or reconstruction of structures.		May require mitigation.
Maryland	Non-tidal Wetlands Protection Act (MD. CODE ANN., ENVIR. §§ 5-901 to 911);	Maryland Department of the Environment, Water Management Administration, Wetlands and Waterways Program	All activities that could impact non-tidal wetlands or waters of the state.		Requires compensation for wetland loss.
	Tidal Wetlands Act (MD. CODE ANN., ENVIR. §§ 16-101 to 503)	Maryland Department of the Environment, Water Management Administration, Wetlands and Waterways Program  Maryland Board of Public Works issues licenses required for filling or dredging state-owned tidal wetlands.	Requires permits for dredging and filling in private tidal wetlands. Requires licenses for filling or dredging state-owned wetlands.		Requires compensation to ensure no net loss.

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State	Program authority	Agency	Regulated Activities	General/ Individual Permits?	Mitigation
New Jersey	Freshwater Wetlands Protection Act ( N.J. STAT. ANN. § 13:9B; N.J. ADMIN. CODE. § 7:7A);	New Jersey Department of Environmental Protection Division of Land Use Protection	Requirements are based on the wetland classification; “exceptional resource value,” “intermediate resource value,” and “ordinary resource value.”  Regulated activities include “the removal, excavation, disturbance, or dredging of soil, sand, gravel, or aggregate material of any kind...the drainage or disturbance of the water level or water table...the dumping, discharging or filling with any materials...the driving of pilings...the placing of obstructions...and the destruction of plant life which would alter the character of a freshwater wetland, including the cutting of trees.”		
	Wetlands Act of 1970 (N.J. STAT. ANN. § 13:9A) (Coastal)	New Jersey Department of Environmental Protection Division of Land Use Protection	Regulated activities include, but are not limited to, “draining, dredging, excavation or removal of soil, mud, sand, gravel, aggregate of any kind or depositing or dumping therein any rubbish or similar material or discharging therein liquid wastes, either directly or otherwise, and the erection of structures, drivings of pilings, or placing of obstructions, whether or not changing the tidal ebb and flow.”		
Pennsylvania	Dam Safety and Encroachment Act (32 PA. CONS. STAT. §§ 693.1–693.27)	Pennsylvania Department of Environmental Protection Division of Waterways, Wetlands, and Stormwater Management (DWWSM)	A person may not construct, operate, maintain, modify, enlarge or abandon a dam, water obstruction or encroachment without first obtaining a written permit from the Department.	General and individual permits are issued	
Virginia	Tidal Wetlands Act (VA. CODE ANN. §§ 28.2-1300 -1320); State Water Control Law (VA. CODE ANN. § 62.1-44.2);	The Virginia Marine Resources Commission (VMRC) Habitat Management Division and local Wetlands Boards	Any activity that disturbs tidal wetlands.		
	State Water Control Law VA. CODE ANN. §62.1-44.2 & Non-tidal Wetlands Act VA. CODE ANN. §62.1-44.2	Virginia Department of Environmental Quality	Excavation in a wetland or the conduct of any of the following activities: (i) new activities to cause draining that significantly alters or degrades existing wetland acreage or functions, (ii) filling or dumping, (iii) permanent flooding or impounding, or (iv) new activities that cause significant alteration or degradation of existing wetland acreage or functions. Permits may also be required for withdrawal of water from a surface water body.	General and individual permits	Virginia State Water Control Law requires that permits contain compensatory mitigation requirements that are sufficient to achieve “no net loss” of existing wetland acreage and function.

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Jurisdiction

State	Wetland regulatory program other than 401?	Program authority	Thresholds for jurisdiction	Delineation
Delaware	Yes	Wetlands Act (DEL.CODE ANN. tit. 7, § 6601);	<b>Tidal wetlands:</b> "those lands above the mean low water elevation including any bank, marsh, swamp, meadow, flat or other low land subject to tidal action in the State along the Delaware Bay and Delaware River, Indian River Bay, Rehoboth Bay, Little and Big Assawoman Bays, the coastal inland waterways, or along any inlet, estuary or tributary waterway or any portion thereof, including those areas which are now or in this century have been connected to tidal waters, whose surface is at or below an elevation of 2 feet above local mean high water, and upon which may grow or is capable of growing [any but not necessarily all of a series of wetland plants]." <b>Large Non-tidal Wetlands</b> (greater than 400 acres).	Jurisdictional wetland delineation under the Wetlands Act is based on a series of regulatory wetlands boundary maps that have been adopted by the state pursuant to the statute. The maps, created from aerial photographs, depict the extent of wetlands that are regulated by the state.
		Subaqueous Lands Act (DEL.CODE ANN. tit. 7, § 7201)	<b>Submerged lands:</b> Submerged lands include lands lying below the line of the mean low tide in the beds of all tidal waters within the boundaries of the state, together with the beds of rivers, streams, lakes, bays, and inlets. Tidelands include lands lying between the line of mean high water and the line of mean low water.	
Maryland	Yes	Non-tidal Wetlands Protection Act (MD. CODE ANN., ENVIR. §§ 5-901 to 911);	<b>Non-tidal:</b> an area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation	Non-tidal - Federal Manual for Identifying and Delineating Jurisdictional Wetlands, published in 1989
		Tidal Wetlands Act (MD. CODE ANN., ENVIR. §§ 16-101 to 503)	<b>Private tidal wetlands</b> - any land not considered 'State wetland' bordering on or lying beneath tidal waters, which is subject to regular or periodic tidal action and supports aquatic growth); and <b>state-owned tidal wetland</b> - all State and private tidal wetlands, marshes, submerged aquatic vegetation, lands, and open water affected by the daily and periodic rise and fall of the tide within the Chesapeake Bay and its tributaries, the coastal bays adjacent to Maryland's coastal barrier islands, and the Atlantic Ocean to a distance of 3 miles offshore of the low water mark.	Tidal - the state's 1971/1972 tidal wetland boundary maps and tidal vegetation
New Jersey	Yes	Freshwater Wetlands Protection Act ( N.J. STAT. ANN. § 13:9B; N.J. ADMIN. CODE. § 7:7A);	<b>Freshwater wetlands</b> include areas that are "inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation; provided, however, that the NJDEP, in designating a wetland, shall use the 3-parameter approach (i.e., hydrology, soils, and vegetation) enumerated in the April 1, 1987 interim-final draft 'Wetland Identification and Delineation Manual' developed by USEPA." Prohibits activities in upland buffers adjacent to wetlands.	Relies on 1989 "Federal Manual for Identifying and Delineating Jurisdictional Wetlands" for all wetlands but those within the Pinelands where the 1991 New Jersey "Pinelands Commission Manual for Identifying and Delineating Pineland Area Wetlands" is used.

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State	Wetland regulatory program other than 401?	Program authority	Thresholds for jurisdiction	Delineation
		Wetlands Act of 1970 (N.J. STAT. ANN. § 13:9A)	<b>Coastal wetland:</b> any bank, marsh, swamp, meadow, flat or other low land subject to tidal action in the State of New Jersey along the Delaware bay and Delaware river, Raritan bay, Barnegat bay, Sandy Hook bay, Shrewsbury river including Navesink river, Shark river, and the costal inland waterways extending southerly from Manasquan Inlet to Cape May Harbor, or any inlet, estuary or tributary waterway or any thereof, including those areas now or formerly connected to tidal waters whose surface is at or below an elevation of 1 foot above local extreme high water, and upon which may grow or is capable of growing any of a list of enumerated plant species	
Pennsylvania	Yes	Dam Safety and Encroachment Act (32 PA. CONS. STAT. §§ 693.1–693.27)	<b>All wetlands regulated</b> , which are defined as “[a]reas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs and similar areas.” Special criteria are applied for “exceptional value wetlands”	U.S. Army Corps of Engineers (“Corps”) 1987 Wetlands Delineation Manual and a 1992 Corps memorandum entitled Clarification and Interpretation of the 1987 Manual.
Virginia	Yes	Tidal Wetlands Act (VA. CODE ANN. §§ 28.2-1300 - 1320); State Water Control Law (VA. CODE ANN. § 62.1-44.2);	<b>Tidal wetlands</b> - including vegetated tidal wetlands and non-vegetated shoreline between low and mean high water. Jurisdiction extends to the mean high tide line where no emergent vegetation exists, and to 1.5 times the mean tide range where marsh is present.	U.S. Army Corps of Engineers’ (“Corps”) 1987 Wetlands Delineation Manual
		State Water Control Law VA. CODE ANN. §62.1-44.2 & Non-tidal Wetlands Act VA. CODE ANN. §62.1-44.2	"Wetlands" means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.	U.S. Army Corps of Engineers’ (“Corps”) 1987 Wetlands Delineation Manual

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401 Certification and Water Quality Standards

State	State conducts 401 certification?	Is 401 the primary wetlands regulation mechanism at the state level?	401 rolled into other state wetland permit process?	# certifications/ year	% decisions waived/ year	% approved/ year	% denied/ year	State relies on 401 to protect specific wetland types/ classes?	Mechanism of 401 decisions
Delaware	Yes	No	No	50	0	most	"small number"	Yes	Qualitative assessment
Maryland	Yes	No	Yes	1864 (tidal authorizations); 874 (non-tidal authorizations)	0 (tidal and non-tidal authorizations)	95 (tidal authorizations); don't know (non-tidal authorizations)	5 (tidal authorizations); don't know (non-tidal authorizations)	No	Quantitative Methodology, Qualitative Assessment; and Best Professional Judgment. Provisions in the state laws and regulations (tidal wetlands)
New Jersey	Yes	No	Yes	5,000	don't know	100	don't know	No	Quantitative Methodology and Qualitative Assessment
Pennsylvania	Yes	No	No	150 (permits)	0	>99	<1	No	Utilize information provided in the Chapter 105 permit application, which includes an environmental assessment and information similar to the federal §404b(1) guidelines, comments from other state and federal agencies and the general public, and best professional judgment
Virginia	Yes	No	Yes	550 (VMP permits)	"occasionally" (VMP permits)	"most" (VMP permits)	"few" (VMP permits)	No	Ensure that the proposed activity is consistent with the provisions of the Clean Water Act and the State Water Control Law and will protect instream beneficial uses

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State	Wetland-specific WQS; Designated Uses; Anti-Degradation Standards?	Citation for WQS	Default to open-water designated uses?	Wetland-functions that WQS and designated uses relate to (place an "X" where appropriate, below):
Delaware	No	DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, STATE OF DELAWARE SURFACE WATER QUALITY STANDARDS (2004)	Yes	Fish and Wildlife Habitat; Water Quality/ Pollution Control
Maryland	No	MD. CODE REGS. 26.08.02.10(A)(2).	Yes	Fish and Wildlife Habitat
New Jersey	No	N.J. ADMIN. CODE. § 7:9B et seq	Yes	don't know
Pennsylvania	No	25 PA CODE § 93.1 et seq.	Yes	don't know
Virginia	No	9 VA. ADMIN. CODE § 25-260-20 to -155	Yes	Fish and Wildlife Habitat; Water Quality/ Pollution Control

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Nationwide Permits (NWP) and State Program General Permits (SPGP)

State	Ongoing review of NWPs?	State has denied or conditioned NWPs?	Has or is operating under a SPGP?
Delaware	Yes	Yes	Yes
Maryland	No	No	Yes
New Jersey	No	No	No
Pennsylvania	No	No	Yes
Virginia	Yes	Yes	Yes

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Compliance and Enforcement

State	Applicable enforcement mechanisms:	Laws/ regulations under which enforcement mechanisms in B through G apply	State generally defers to Corps and/or EPA on wetland-related enforcement/compliance
Delaware	Injunctions; Civil Penalties; Criminal Penalties or Fines; Administrative Penalties; Cease and Desist Orders	Environment Control Act; Wetlands Act, Subaqueous Lands Act	Yes
Maryland	Abatement/ Corrective Action Orders; Injunctions; Civil Penalties; Criminal Penalties or Fines	Non-tidal Wetlands Protection Act; Tidal Wetlands Act	No
New Jersey	Civil Penalties; Criminal Penalties or Fines; Civil and Criminal Actions; Administrative Orders	Freshwater Wetlands Protection Act and the Wetlands Protection Act of 1970	No
Pennsylvania	Abatement/ Corrective Action Orders	Dam Safety and Encroachment Act	No
Virginia	Abatement/ Corrective Action Orders; Injunctions; Criminal Prosecution; Civil Penalties; Criminal Penalties or Fines	Virginia Tidal Wetlands Act and State Water Control Law	No

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Mitigation

State	Avoidance/Minimization	Mitigation Guidance/ Regulations	Banking Guidance	In-Lieu Fee Guidance	Stream Mitigation Guidance	Participates on IRT
Delaware	Yes – State Regulations apply to the 401 certification process	Yes. Delaware’s Regulations Governing the Control of Water Pollution outline guidelines for compensatory mitigation under the water quality certification program.	Yes, State regulation	No	No	No
Maryland	Yes - State regulations and agency practice. Applies to the permitting process and 401 certification.	Yes	Yes, State law and regulations	Yes, State law and regulations	Yes, State regulation	No
New Jersey		Yes	Yes, State law and regulation	Yes, State law and regulation	No	In the Meadowlands District, the Meadowlands Interagency Mitigation Advisory Committee (MIMAC) coordinates all mitigation, including banking activities.
Pennsylvania	Avoidance and minimization of impacts and alternatives analysis are standard requirements applicable for all permit applications.	Yes	No	Yes, State Policy	Yes, State requirements	Yes
Virginia	Yes. State regulations and agency guidelines.	Yes	Yes, State law, regulations and guidelines	Yes, State law, regulations and guidelines and MOU	Yes, State guidelines	Yes

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Monitoring and Assessment

State	Wetland monitoring and/or assessment program?	Is the program part of a larger program?	Parameters tracked by the program	Program funding	Wetland and surface water quality monitoring programs integrated/separated?	Does wetland data feed into surface WQ program?	Monitoring data used in wetland regulatory programs?	Volunteer Wetland Monitoring Program	Wetland and Watershed Programs Coordinated
Delaware	Yes	No	Chemical Criteria	Federal Grants (EPA); Some state funding	Separated (but program is within the Watershed Assessment Office)	No	No, but will be in the future	Yes	Yes – Watershed Monitoring Program
Maryland	Yes	No	don't know	don't know	don't know	don't know	Yes	No	Yes – Watershed program supports the regulatory program
New Jersey	No	N/A	N/A	N/A	N/A	N/A	N/A	Don't know	Don't know
Pennsylvania	No	N/A	N/A	N/A	N/A	N/A	N/A	No	Don't know
Virginia	Yes	No	Level I (proximity to other wetlands, proximity to roads and highways, density of roads and highways, percent land cover); Level II (remotely sensed data and a site visit); and Level III (detailed analysis of wetland performance of certain functions)	Federal Grants (EPA)	Separated	Yes	Yes	No	Don't know

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Wetland Assessment Methodologies

State	Adopted wetland assessment methodology(ies)	Purpose for which assessment was developed:	Does regulatory program rely on assessment methodology?	If adopted assessment methodology is a <i>functional</i> assessment, did state coordinate w/ Corps to develop?	Is adopted assessment methodology used by surface water quality monitoring prog. for 303, 305, WQS?	Did state work with other state/federal agencies to develop assessment methodology?
Delaware	Delaware Comprehensive Assessment Protocol	Standardized protocols for the Watershed Assessment Section's Wetland Monitoring and Assessment Program	No	N/A	No	Yes
	Rapid Assessment Protocol (DERAP)	Standardized protocols for the Watershed Assessment Section's Wetland Monitoring and Assessment Program	No	N/A	No	Yes
	Mid-Atlantic Tidal Wetland Assessment Method	Standardized protocols for the Watershed Assessment Section's Wetland Monitoring and Assessment Program	No	N/A	No	Yes
Maryland	Rapid assessment	Wetlands classification for regulation	Yes	N/A	No	don't know
	Assessment based on New Hampshire Method	State highway projects	No	N/A	No	No
New Jersey	No	N/A	N/A	N/A	N/A	N/A
Pennsylvania	Wetland assessment (assess wetland integrity)	To evaluate wetlands in the state	No	N/A	No	Yes
Virginia	Draft Woody Depression Wetland HGM Model for the Coastal Plain of Virginia	don't know	No	No	don't know	Yes

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 Appendix B: Mid-Atlantic States Wetland Program Comparison - Tables

Stream Assessment Methodologies

State	Adopted stream assessment methodology(ies)	Purpose for which assessment was developed:
Delaware	Yes	DNREC Water Resources Environmental Lab performs habitat assessments and biological assessments on non-tidal streams using macroinvertebrates as indicators of water quality.
Maryland	Maryland Biological Stream Survey	Assess health of waterway
New Jersey	Index of Biotic Integrity	Monitoring
Pennsylvania	don't know	don't know
Virginia	Virginia Stream Condition Index	To determine impairments to aquatic life uses in wadeable freshwater streams and rivers west of Virginia's coastal plain

Delaware Wetland Program Review  
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Restoration

State	Does the state operate a legislatively mandated or formal, agency-run wetland restoration program?	Part of larger restoration initiative?	Program funding	State prioritizes lands/ waters for restoration?	State registry program to identify potential sites for restoration/mitigation?	Describe briefly how state monitors restoration program success	State provides technical support to private landowners for restoration/mitigation?	State provides outreach to private landowners for restoration/mitigation?	Established state wetlands restoration goal?	Coordinate with USDA on ag. restoration programs?
Delaware	Yes	Yes	don't know; Federal Grants (EPA)	Yes	No	don't know	Yes	don't know	Yes - to restoring 1,500 acres and enhancing 1,500 acres of wetlands in the Chesapeake Bay watershed by 2010	Yes
Maryland	Yes	No	General Appropriations; Dedicated Appropriations	Yes	No	MDNR monitors its restoration projects to ensure project objectives such as improving habitat or water quality have been met.	Yes	Yes	Yes - Restore 60,000 acres of wetlands (1997 Executive Order)	Yes
New Jersey	No	N/A	N/A	No	No	N/A	don't know	don't know	Yes – No net loss	don't know
Pennsylvania	Yes	No	EPA 319 grants, NRCS CREP and WRP, FWS Partners for Wildlife	Yes	No	Protocols have been developed to track functional wetland gains achieved through wetland enhancement projects, as well as acreage gains achieved through restoration programs. DEP tracks wetland gains geographically within watersheds and by community type consistent with the Cowardin system	Yes	Yes	Yes - No net loss and net gain (Wetlands Net Gain Strategy)	Yes
Virginia	Yes	No	don't know	No	No	don't know	Yes	Yes	Yes -Restore 10,000 acres of wetlands by 2010	Yes

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 Appendix B: Mid-Atlantic States Wetland Program Comparison - Tables

Education and Outreach

State	For each state, indicate level of education and outreach activities, with respect to wetlands:	Audiences targeted by Education and Outreach activities:							
		Local governments	Developers	Landowners	Citizens	State agencies	Universities	Teachers and youth	Other (specify)
Delaware	No formal plan or program, but state conducts various wetland-related E&O activities			x	x	x		x	Realtors in near future
Maryland	No formal plan or program, but state conducts various wetland-related E&O activities				x				
New Jersey	No formal plan or program, but state conducts various wetland-related E&O activities		x		x			x	consultants
Pennsylvania	No formal plan or program, but state conducts various wetland-related E&O activities				x			x	
Virginia	No formal plan or program, but state conducts various wetland-related E&O activities			x	x			x	

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Public-Private Partnerships

State	Formal state program for partnering with private landowners?	Purpose of program	If "yes" in column-B, indicate type of program	Does the state offer a one-stop-shopping program for state and federal incentive programs?	State coordination with corporations?	State partnership with individual citizen monitoring groups?
Delaware	Yes	Restoration	Cost-share; Incentive	don't know	don't know	Yes
Maryland	No	N/A	N/A	No	Yes	Yes
New Jersey	don't know	don't know	don't know	don't know	don't know	don't know
Pennsylvania	Yes	Restoration	Grant/loan	No	Yes	No
Virginia	Yes	Restoration	Works with landowners to provide assistance with volunteer wetland restoration	don't know	don't know	don't know

Coordination

State	Formal MOUs/ MOAs among state agencies?	State wetlands conservation plan?	Elements of plan actively being (or have they been) implemented?	Regular meetings among state and federal agencies on regulatory issues?
Delaware	No	Yes	Yes	Yes
Maryland	Yes	Yes	Yes	Yes
New Jersey	Yes	Yes	No	Yes
Pennsylvania	No	Yes	Yes	Yes
Virginia	No	No	N/A	Yes



# **State Wetland Protection**

## ***Status, Trends, & Model Approaches***

*A 50-state study by the  
Environmental Law Institute*

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

2008

# **Appendix: Delaware**

[http://www.eli.org/pdf/core\\_states/Delaware.pdf](http://www.eli.org/pdf/core_states/Delaware.pdf)

## Delaware Wetland Program Summary

### I. Overview

Delaware contains approximately 225,000 acres of freshwater and 125,000 acres of tidal wetlands.<sup>1</sup> However, since European settlement the state has lost approximately 54 percent of its historic wetlands, and much of the remaining wetland habitat has been degraded.<sup>2</sup> To address this loss, the state has adopted law designed to preserve and protect public and private wetlands.<sup>3</sup> In addition §401 water quality certification under the Clean Water Act (CWA), Delaware regulates tidal wetlands under the Wetlands Act. The Delaware Department of Natural Resources and Environmental Control (DDNREC), Division of Water Resources (DWR), Wetlands and Subaqueous Lands Section operates the state's wetland regulatory and protection programs. The state's Ecological Restoration and Protection Team (ERPT), a coalition of state and federal agencies and organizations, conducts coordinated restoration and protection efforts. Finally, state agency scientists and managers are also developing a comprehensive state wetland strategy to better integrate the state's wetland programs.

### II. Regulatory Programs

#### *Wetland definitions and delineation*

Delaware defines "State waters" or "Waters of the State" as:

water, on the surface and under the ground, wholly or partially within, or bordering the State, or within its jurisdiction including but not limited to: (a) Waters which are subject to the ebb and flow of the tide including, but not limited to, estuaries, bays and the Atlantic Ocean; (b) All interstate waters, including interstate wetlands; (c) All other waters of the State, such as lakes, rivers, streams (including intermittent and ephemeral streams), drainage ditches, tax ditches, creeks, mudflats, sandflats, wetlands, sloughs, or natural or impounded ponds; (d) All impoundments of waters otherwise defined as waters of the State under this definition; (e) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in (a)-(d).<sup>4</sup>

For the purposes of the (Tidal) Wetlands Act, Delaware defines "wetlands" as:

those lands above the mean low water elevation including any bank, marsh, swamp, meadow, flat or other low land subject to tidal action in the State along the Delaware Bay and Delaware River, Indian River Bay, Rehoboth Bay, Little and Big Assawoman Bays, the coastal inland waterways, or along any inlet, estuary or tributary waterway or any portion thereof, including those areas which are now or in this century have been connected to tidal waters, whose surface is at or below an elevation of 2 feet above local mean high

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<sup>1</sup> R.J. Tiner, Delaware Wetlands Status and Trends (2002), *noted in* DEP'T OF NATURAL RES. AND ENVTL. CONTROL, STATE OF DELAWARE 2002 WATERSHED ASSESSMENT REPORT (305(B)) (2002), *available at* [http://www.dnrec.state.de.us/water2000/Sections/Watershed/TMDL/2002\\_305b.pdf](http://www.dnrec.state.de.us/water2000/Sections/Watershed/TMDL/2002_305b.pdf).

<sup>2</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, ECOLOGICAL RESTORATION & PROTECTION STATUS REPORT 2003 – 2006 (2006), *available at* <http://www.swc.dnrec.delaware.gov/NR/rdonlyres/7C53E10A-664A-4019-9858-489A461B69C0/0/StatusRpt200306FINAL.pdf>.

<sup>3</sup> DEL. CODE ANN. tit. 7, § 6603.

<sup>4</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, REGULATIONS GOVERNING THE CONTROL OF WATER POLLUTION (2006), *available at* <http://www.dnrec.state.de.us/water2000/Sections/SurfWater/Library/RGCWP.pdf>.

## Delaware Wetland Program Review

### Appendix C - Delaware Wetland Program Summary

water, and upon which may grow or is capable of growing [any but not necessarily all of a series of wetland plants]<sup>5</sup>

“Wetlands” also include:

those lands not currently used for agricultural purposes containing 400 acres or more of contiguous nontidal swamp, bog, muck or marsh exclusive of narrow stream valleys where fresh water stands most, if not all, of the time due to high water table, which contribute significantly to ground water recharge, and which would require intensive artificial drainage using equipment such as pumping stations, drain fields or ditches for the production of agricultural crops.<sup>6</sup>

Delaware Regulations Governing the Control of Water Pollution define “wetlands” as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.”<sup>7</sup>

Jurisdictional wetland delineation under the Wetlands Act is based on a series of regulatory wetlands boundary maps that have been adopted by the state pursuant to the statute. The maps, created from aerial photographs, depict the extent of wetlands that are regulated by the state.<sup>8</sup> Wetland areas jurisdiction under the state water quality regulations (and CWA §401) are delineated according to state regulations and the U.S. Army Corps of Engineers’ 1987 *Wetlands Delineation Manual*.<sup>9</sup>

#### ***Wetland-related law and regulation***

In addition to protections offered under §401/404 of the CWA, Delaware protects tidal wetlands under the Wetlands Act and submerged lands and tidelands under the Subaqueous Land Act. Delaware issues approximately 400 permits annually under these two laws.<sup>10</sup>

*Wetlands Act*.<sup>11</sup> The Wetlands Act, enacted in 1973, recognizes the importance of wetlands for the protection of the critical coastal areas of Delaware and establishes a permitting program for

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<sup>5</sup> For example, Eelgrass (*Zostera marina*), Wedgeon Grass (*Ruppia maritima*), Sago Pondweed (*Potamogeton pectinatus*), Saltmarsh Cordgrass (*Spartina alterniflora*), Saltmarsh Grass (*Spartina cynosuroides*), Saltmarsh Hay (*Spartina patens*), Spike Grass (*Distichlis spicata*), Black Grass (*Juncus gerardii*), Switch Grass (*Panicum virgatum*), Three Square Rush (*Scirpus americanus*), Sea Lavender (*Limonium carolinianum*), Seaside Goldenrod (*Solidago sempervirens*), Sea Blite (*Suaeda maritima*), Sea Blite (*Suaeda linearis*), Perennial Glasswort (*Salicornia virginica*), Dwarf Glasswort (*Salicornia bigelovii*), Samphire (*Salicornia europaea*), Marsh Aster (*Aster tenuifolius*), Saltmarsh Fleabane (*Pluchea purpurascens* var. *succulenta*), Mock Bishop's Weed (*Ptilimnium capillaceum*), Seaside Plantain (*Plantago oliganthos*), Orach (*Atriplex patula* var. *hastata*), March Elder (*Iva frutescens* var. *oraria*), Goundsel Bush (*Baccharis halmifolia*), Bladder Wrack (*Fucus vesiculosus*), Swamp Rose Mallow, Seaside Hollyhock or March Mallow (*Hibiscus palustris*), Torrey Rush (*Scirpus torreyi*), Narrow-leaved Cattail (*Typha angustifolia*), and Broad-leaved Cattail (*T. latifolia*)

<sup>6</sup> DEL.CODE ANN. tit. 7, § 6603(h); 59 Del. Laws, c. 213, § 1; 64 Del. Laws c. 293, § 1.

<sup>7</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, *supra* note 4.

<sup>8</sup> DEL.CODE ANN. tit. 7 § 6607; Personal communication with Laura Herr, Div. of Water Res., Wetlands and Subaqueous Lands Section (Feb. 21, 2007).

<sup>9</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, *supra* note 4.

<sup>10</sup> Personal communication with Laura Herr, Div. of Water Res., Wetlands and Subaqueous Lands Section (Feb. 21, 2007).

<sup>11</sup> DEL.CODE ANN. tit. 7, § 6601.

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impacts to tidal wetlands. Under the Act, a permit is required for dredging, filling, bulkheading, plowing or construction of any kind in delineated wetlands.<sup>12</sup>

Regulatory jurisdiction extends to those lands that are subject to tidal action lying above the mean low water elevation and two feet or less above mean high water elevation, and that are capable of supporting the growth of wetland plants. Large nontidal wetlands (greater than 400 acres) that contribute significantly to groundwater recharge are also regulated under the law. Jurisdictional areas are delineated on a series of boundary maps (as described above).<sup>13</sup>

*Subaqueous Lands Act.*<sup>14</sup> The Subaqueous Lands Act, enacted in 1969, establishes a permitting program to protect the public's interest in subaqueous lands. Subaqueous lands are classified as "submerged lands and tidelands." Submerged lands include: (1) lands lying below the line of mean low tide in the beds of all tidal waters within the boundaries of the state; (2) lands lying below the plane of the ordinary high water mark of nontidal rivers, streams, lakes, ponds, bays and inlets within the boundaries of the State as established by law; and (3) specific manmade lakes or ponds as designated by the Secretary. Tidelands are defined as "lands lying between the line of mean high water and the line of mean low water."<sup>15</sup>

Permits are required for deposit of materials or removal or extraction of materials, as well as construction, repair or reconstruction of structures.<sup>16</sup> Under the law, permittees may be required to mitigate impacts to substantial resources.

*Coastal Zone Act.*<sup>17</sup> The Coastal Zone Act prohibits new heavy industry uses anywhere in Delaware's Coastal Zone, as well as offshore bulk product transfer facilities in the Zone outside

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<sup>12</sup> Exceptions include certain mosquito control, construction of navigational aids, duck blinds, foot bridges, wildlife nesting structures, grazing, haying, hunting, fishing and trapping. DEL.CODE ANN. tit. 7, § 6606.

<sup>13</sup> DEL.CODE ANN. tit. 7, § 6607.

<sup>14</sup> DEL.CODE ANN. tit. 7, § 7201.

<sup>15</sup> DEL.CODE ANN. tit. 7, § 7202.

<sup>16</sup> Exceptions include: "(a) This chapter shall not apply to any work performed by any state, county, municipal government or conservation district, or their designated contractor, when that work occurs in nontidal submerged lands in the Delaware Atlantic Coastal Plain Province with a contributing drainage area of less than 800 acres. (b) This chapter shall not apply to maintenance, reconstruction or retrofitting work performed by or with the assistance of any state, county, municipal government or conservation district when that work occurs in any nontidal submerged lands. Such maintenance, reconstruction or retrofitting work shall comply with the standards and specifications associated with best management practices in the Delaware Erosion and Sediment Control Handbook, 1989 or as revised (68 Del. Laws, c. 268, § 2). (c) This chapter shall not apply to any work in agricultural drainage ditches created from nonsubaqueous lands that are designed according to reasonable drainage standards, when performed by or with the assistance of any state, county, municipal government or conservation district. (d) This chapter shall not apply to ponds constructed in uplands when those ponds are constructed by or with the assistance of any state, county, municipal government or conservation district. (e) This chapter shall not apply to stormwater ponds that are permitted in accordance with Chapter 40 of this title or to farm ponds or other ponds whose only source of hydrology is groundwater. (f) The lease provisions of this chapter shall not apply to any wastewater conveyance or treatment works system owned or operated by the State or any county or municipal government with the State. (g) This chapter shall not apply to subaqueous archaeological resources and unmarked human burials and human skeletal remains, which are regulated by the Department of State, Division of Historical and Cultural Affairs pursuant to Chapters 53 and 54 of this title. (68 Del. Laws, c. 268, § 2; 72 Del. Laws, c. 474, § 4; 75 Del. Laws, c. 153, § 12.)" 7 Del.C. Chapter 72.

<sup>17</sup> DEL.CODE ANN. tit. 7, § 7001.

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the Port of Wilmington. For the purposes of the State Coastal Zone Act, the Coastal Zone is an approximately four-mile wide strip along Delaware's coastline.<sup>18</sup> The Act also establishes the Coastal Zone Act permit program for industrial development other than that of heavy industry in the coastal zone of Delaware.

***Organization of state agencies***

Within the Delaware Department of Natural Resources and Environmental Control numerous divisions conduct wetland-related activities, including the Division of Water Resources (DWR), Division of Fish and Wildlife (DFW), and Division of Soil and Water Conservation (DSWC).

*Division of Water Resources.* DNREC-DWR's Wetlands and Subaqueous Lands Section (WSLS) serves as the primary regulatory authority for Delaware's wetlands. The section is responsible for all wetlands, subaqueous, and marina permitting and §401 certification. Applicants may submit a joint application to the WSLS for impacts regulated under the permitting and certification programs.<sup>19</sup> The section has ten full time equivalents (FTEs) and operates on an annual budget of approximately \$550,000. General appropriations account for approximately \$350,000 of the total budget; the remainder is funded through fees.<sup>20</sup>

DNREC-DWR's Watershed Assessment Section (WAS) manages the state's water quality monitoring program and is working to integrate wetlands and watershed management into program activities. WAS has developed a standardized protocol for nontidal wetlands and is developing a standardized protocol for tidal wetland monitoring that will be used to assess wetland conditions and prioritize restoration and protection on the watershed scale.<sup>21</sup>

*Division of Fish and Wildlife.* DNREC-DFW partners with state and federal agencies, private landowners, and other organizations on voluntary wetland management and restoration programs. The Division promotes conservation and restoration of wetland habitat as part of its private and public land wetland restoration program, *Phragmites* control cost-share program, and other invasive species control programs. DFW employs two full-time biologists on their private lands program, which is funded by both general state appropriations and federal Landowner Incentive Program funds.<sup>22</sup>

*Division of Soil and Water Conservation.* DNREC-DSWC's Coastal Management Program (CMP) issues consistency determinations for all federal actions, federal licenses or permits, and projects proposed in the coastal area. CMP also conducts coastal restoration and education programs and provides special area management planning and assistance to state and local governments for local land use planning. The program employs two FTEs for federal consistency determinations.<sup>23</sup>

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<sup>18</sup> Email from Tricia Arndt, Del. Coastal Mgmt. Program (June 27, 2007)

<sup>19</sup> Personal communication with Laura Herr, *supra* note 10.

<sup>20</sup> *Id.*

<sup>21</sup> Email from Any Jacobs, Del. Dep't of Natural Res., Div. of Water Res., Watershed Assessment Section (June 26, 2007).

<sup>22</sup> Email from Shelley Tovell, Del. Dep't of Natural Res., Div. of Fish and Wildlife (June 21, 2007).

<sup>23</sup> Personal communication with Sarah Cooksey, Del. Coastal Zone Mgmt. Program (Mar. 9, 2007).

### ***§401 certification***

Delaware requires §401 certification for all activities that require a federally issued permit, such as a §404 permit, to ensure that projects will not violate Delaware's surface water quality standards (WQS). Certifications require a description of the feasible alternatives considered to avoid, minimize or compensate for impacts to or loss of State waters.<sup>24</sup> The WSLs issues approximately 50 §401 certifications per year,<sup>25</sup> a significant portion of which involve Delaware Department of Transportation projects. WSLs denies a small number of authorizations each year,<sup>26</sup> but more typically, section staff work with applicants to redesign projects that meet approval. WSLs staff rely on qualitative assessment to make certification decisions, as determined by the state's water quality regulations.<sup>27</sup>

### ***Nationwide permits***

Section 404 nationwide permits (NWP) are reviewed by WSLs as they are issued by the U.S. Army Corps of Engineers ("Corps") every five years.<sup>28</sup> For the 2002 NWPs, §401 certification and Coastal Zone Consistency were denied for NWP #40 (Agricultural Activities), NWP #41 (Reshaping Existing Drainage Ditches), NWP #43 (Stormwater Management Facilities), and NWP #44 (Mining Activities). The Corps suspended NWP #29 (Single Family Housing) in Delaware. In addition, §401 certification and Coastal Zone Consistency were conditionally denied in "critical resource waters" for NWP #3 (Maintenance), NWP #7 (Outfall Structures and Maintenance), NWP #12 (Utility Line Activities), NWP #14 (Linear Transportation Projects), NWP #27 (Stream and Wetland Restoration Activities), NWP #39 (Residential, Commercial, and Institutional Developments) and NWP #42 (Recreational Facilities).<sup>29</sup> CMP also reviews the NWPs. For the 2002 NWPs, CMP included restrictions for state natural heritage plants or animals and critical waters.<sup>30</sup> Delaware's action on the 2007 NWPs could not be reviewed within the reporting period.

*State Program General Permit.* Two state program general permits (SPGP) apply in Delaware for §10 waters, but there are no SPGPs for activities regulated under §404. SPGP #18 permits a range of activities, including docks and shoreline stabilization, inside substantially developed artificial lagoons.<sup>31</sup> SPGP #20 regulates bulkheading, docks and piers.<sup>32</sup>

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<sup>24</sup> For example, clustering development on upland parcels, considering alternative layouts that avoid or minimize impacts to waters of the State, replacement of State waters lost due to activity where such loss can neither be avoided nor minimized. DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, *supra* note 4.

<sup>25</sup> Personal communication with Laura Herr, *supra* note 10.

<sup>26</sup> WSLs estimates that a total of 9 – 10 denials are made each year for all types of authorizations including water quality certifications and other permits. Email from Laura Herr, Del. Div. of Water Res., Wetlands and Subaqueous Lands Section, (Apr. 2, 2007).

<sup>27</sup> Personal communication with Laura Herr, *supra* note 10.

<sup>28</sup> Email from Laura Herr, *Supra* note 26.

<sup>29</sup> These NWPs were approved for all other waters. Email from Laura Herr, *supra* note 26.

<sup>30</sup> Personal communication with Sarah Cooksey, *supra* note 23.

<sup>31</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).

<sup>32</sup> 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).

### ***Mitigation***

Delaware requires mitigation for wetlands and subaqueous lands permits and water quality certifications.<sup>33</sup> Delaware's Regulations Governing the Control of Water Pollution outline guidelines for compensatory mitigation under the water quality certification program.<sup>34</sup> The regulations allow creation and restoration, as well as compensation through the purchase of mitigation bank credits. Preference is stated for advance compensation that is on-site and within the same watershed as the impacted water.<sup>35</sup> Preferred compensation ratios are not to exceed 3:1. Conservation easements, monitoring, functional assessment, maintenance and reporting programs may be required on mitigated wetlands.

### ***Compliance and enforcement***

WSLS has one scientist who serves as the enforcement lead for violations and permit non-compliance under the Wetlands Act and the Subaqueous Lands Act.<sup>36</sup> WSLS coordinates with agency staff from other DNREC divisions and/or federal or local agencies as necessary and appropriate.<sup>37</sup> The majority of violations (approximately 85 percent) are resolved through voluntary compliance and very few penalties or prosecutions are necessary.<sup>38</sup> However, there are currently several pending violations. In the past, enforcement was primarily complaint driven, but the program is increasingly performing more inspections (including over flights) to detect violations.

Delaware law outlines enforcement actions for violations to the state's water quality standards. As a first step, the state may seek voluntary compliance by way of order, warning, notice or other educational means. If the complaint is not resolved through voluntary means, the state may impose a civil or administrative penalty; issue a temporary restraining order, injunction or other appropriate remedy; seek criminal penalties; issue a cease and desist order; or seal any source required to have a permit.<sup>39</sup> Under the Wetlands Act, the state may issue a cease and desist order, impose civil penalties, and/or hold violators liable for the cost of restoration.<sup>40</sup>

### ***Tracking systems***

DNREC manages a searchable state tracking system, Delaware Environmental Navigator, for information collected on permits, §401 certifications, enforcement actions, and environmental monitoring.<sup>41</sup> Data is available for viewing both as a map and as text.<sup>42</sup>

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<sup>33</sup> Personal communication with Laura Herr, *supra* note 10.

<sup>34</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, *supra* note 4.

<sup>35</sup> The state is becoming more flexible about these criteria in order to improve the quality of the resulting compensation project. Personal communication with Laura Herr, *supra* note 10.

<sup>36</sup> DEL.CODE ANN. tit. 7, § 6003; DEL.CODE ANN. tit. 7, § 6614.

<sup>37</sup> Email from Laura Herr, Division of Water Resources, Wetlands and Subaqueous Lands Section (June 13, 2007).

<sup>38</sup> Personal communication with Laura Herr, *supra* note 10.

<sup>39</sup> DEL.CODE ANN. tit. 7, § 6003; DEL. DEP'T OF NATURAL RES. AND ENVTL. CONTROL, *supra* note 4.

<sup>40</sup> DEL.CODE ANN. tit. 7, §6617.

<sup>41</sup> Data on wetlands mitigation will be added in the future. Personal communication with Laura Herr, *supra* note 10.

<sup>42</sup> Delaware Department of Natural Resources and Environmental Control, *Delaware Environmental Navigator*, at <http://www.nav.dnrec.delaware.gov/dnreceis/> (last visited July 26, 2007).

### III. Water Quality Standards

Delaware has not adopted have water quality standards or designated uses specific to wetlands.<sup>43</sup> However, WQS and designated uses apply to all “waters of the state,” which include wetlands. Surface WQS are narrative and numeric in nature and include criteria related to temperature, dissolved oxygen, bacteria, nutrients and toxic substances. State WQS designate wetland-related uses, including fish, aquatic life and wildlife habitat and primary and secondary contact recreational activities.<sup>44</sup> Anti-degradation standards are not specifically identified for wetlands, and so the provisions that apply to all “waters of the state” also apply to wetlands.

### IV. Monitoring and Assessment

WAS maintains a Surface Water Quality Monitoring Program for all waters of the state. The program collects data on the chemical, physical, and biological characteristics of Delaware waters. This information is entered into a national database called STORET (storage and retrieval system) and is used in assessing the water quality of each basin for the state’s Watershed Assessment Report (CWA §305(b) Report).<sup>45</sup>

WAS is looking to expand the water monitoring program to include wetlands. The Section’s Wetland Monitoring and Assessment Program has developed standardized protocols for nontidal wetlands and is developing standardized protocols for tidal wetlands and restoration sites.<sup>46</sup> Protocols are based on assessing the condition of wetlands and determining the dominant stressors that are lowering wetland condition on the watershed level.<sup>47</sup> Methodologies include the Delaware Comprehensive Assessment Protocol (DECAP) and the Delaware Rapid Assessment Protocol (DERAP).<sup>48</sup> DECAP is an assessment of a wetland based on the vegetation, hydrology, soils, surrounding land use, and topography of the site. DERAP is a rapid assessment methodology based on identifying the presence or absence of stressors to wetland sites in three categories: hydrology; habitat and plant community; and surrounding buffers. The program is also prioritizing land for restoration and protection.<sup>49</sup>

The program is also developing a tidal assessment protocol for the state that may eventually be used for regulation and is collaborating with Virginia and Maryland on the development of tidal assessment methodologies for the Mid-Atlantic region. In addition, the program performs

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<sup>43</sup> DEL. DEP’T OF NATURAL RES. AND ENVTL. CONTROL, STATE OF DELAWARE SURFACE WATER QUALITY STANDARDS (2004), *available at* <http://www.dnrec.state.de.us/DNREC2000/Divisions/Water/WaterQuality/WQStandard.pdf>.

<sup>44</sup> *Id.*

<sup>45</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>46</sup> Personal communication with Amy Jacobs, Del. Dep’t of Natural Res., Div. of Water Res., Watershed Assessment Section (Mar. 5, 2007).

<sup>47</sup> DEP’T OF NATURAL RES. AND ENVTL. CONTROL, DIV. OF WATER RES., WATERSHED ASSESSMENT BRANCH, *supra* note 45.

<sup>48</sup> DEL. DEP’T OF NATURAL RES. AND ENVTL. CONTROL, *supra* note 2.

<sup>49</sup> Personal communication with Amy Jacobs, *supra* note 46.

research on topics related to wetland restoration and protection. The wetland monitoring program is funded through grants from the U.S. Environmental Protection Agency (EPA) along with some state funds.<sup>50</sup>

DNREC coordinates the volunteer Adopt-A-Wetland Program.<sup>51</sup> The program's goals are to increase wetlands awareness, provide education about the value of wetlands and recruit volunteers to assist in monitoring and restoring these resources. The program is focusing on identifying priority sites for adoption into the program, including wetlands restoration sites that are not being monitored and sites where volunteers can provide data useful to WAS and Natural Heritage initiatives. The state currently has more than 80 volunteer groups enrolled in the program.<sup>52</sup> The program, funded by grants from the U.S. Fish and Wildlife Service (FWS) and EPA, has produced two educational videos, a comprehensive guidebook for adopters, and series of loan kits for monitoring different components of the wetlands.<sup>53</sup>

## V. Restoration and Partnerships

Through the Chesapeake Bay program, Delaware has committed to restoring 1,500 acres and enhancing 1,500 acres of wetlands in the Chesapeake Bay watershed by 2010. A group of state agency scientists and managers is also developing a comprehensive state wetland strategy to better integrate all of the state's wetlands programs.

The Ecological Restoration and Protection Team (ERPT) was created by DNREC in 2003 to establish and improve wildlife habitat, enhance water quality and provide stream-bank protection, and reduce erosion throughout the state.<sup>54</sup> ERPT, which includes scientists, managers, and environmentalists from more than 32 state and federal agencies and organizations, conducts coordinated restoration and protection efforts focused on streams, drainage ditches, wetlands, and riparian corridors. Since 2003, ERPT's efforts have resulted in the establishment of over 480 acres of grasses, forests, wetlands, and riparian corridors, the restoration of 7,225 feet of streams and shoreline, and the treatment of more than 36,000 acres of *Phragmites*.<sup>55</sup>

In 2005, ERPT, WAS, and DWF (Adopt-A-Wetland Program) were awarded a cooperative grant from EPA to expand their efforts in three areas: restoration, monitoring and assessment, and education. Under the grant, monitoring and assessment programs are being used to target degraded wetlands and streams for restoration, and watershed scale restoration plans are being developed to identify and address impacts.

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<sup>50</sup> *Id.*

<sup>51</sup> Department of Natural Resources and Environmental Control, *Adopt-A-Wetland Program*, at <http://www.dnrec.state.de.us/DNREC2000/Divisions/FW/Adopt-A-Wetland.htm> (last visited July 26, 2007).

<sup>52</sup> Personal communication with Gary Kreamer, Del. Dep't of Natural Res., Div. of Fish and Wildlife (Feb. 20, 2007).

<sup>53</sup> *Id.*

<sup>54</sup> The Del. Dep't of Natural Res., *Ecological Efforts Restore 20 Sites in Delaware in 2006; Projects included upland, wetland and stream restorations, shoreline stabilization and stream-side plantings*, DNREC News, Jan. 22, 2007, available at <http://www.dnrec.state.de.us/dnrec2000/admin/Press/Story1.asp?PRID=2352>.

<sup>55</sup> DEL. DEP'T OF NATURAL RES. AND ENVTL. Control, *supra* note 2.

DFW's Delaware Landowner Incentive Program provides 75 percent cost-share for the restoration of farmed and prior converted wetlands and enhancement of existing rare and unique wetland ecosystems. Landowners receive a flat-rate payment for construction and planting of a wetland and associated 35-foot buffer and may receive an annual rental payment to compensate for income lost by taking the land out of agricultural production. Under this program, DFW develops habitat management plans for each property, oversees construction and restoration, and is beginning to monitor the sites enrolled in the program. The landowner is required to manage and maintain the land for five to ten years. Both upland and wetland habitats are created depending on the desires of the landowner and available funding. In total, the program has enrolled 115 landowners and restored 958 acres.<sup>56</sup>

DFW also coordinates with the U.S. Fish and Wildlife Service (FWS) on the Partners for Wildlife program. The program primarily provides funds for ecosystem-based restoration of impaired waters and private lands that are in close proximity to wildlife management areas and refuges. In addition, DFW runs the *Phragmites* spraying cost-share program, which is intended to improve wildlife habitat in wetlands degraded by the invasive weed. In partnership with the Natural Resources Conservation Service's Wildlife Habitat Incentive Program, the program is able to cover approximately 88 percent of the cost of landowners' *Phragmites* treatment.

Several other state agencies are involved in wetland restoration efforts across the state. DDNREC-DSWC provides brochures for landowners on restoration efforts in Delaware and works with partners on ecological restoration and protection efforts. DDNREC Division of Parks and Recreation runs an open space program for purchasing environmentally sensitive areas and has easements on properties containing wetlands. CMP coordinates a restoration program focused on both urban and coastal projects.<sup>57</sup> Additionally, the DDNREC-DSWC Coastal Programs Section implements the Coastal and Estuarine Land Conservation Program, an acquisition program designed to protect coastal and estuarine lands considered important for their ecological, conservation, recreational, historical or aesthetic values.<sup>58</sup>

## VI. Education and Outreach

DFW's Office of Education and Outreach publishes wetlands information and runs several wetland education programs. DFW's Aquatic Resources Education (ARE) Center, funded with grants from FWS,<sup>59</sup> hosts wetland-related teacher and youth group education trainings at the Center's overnight lodge. The Eco-Explorers Program, started with a grant from the Delaware Department of Education, is a hands-on education field-trip program that allows fifth grade students to learn about tidal salt marsh plants and animals. In addition, DFW has helped to

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<sup>56</sup> Personal communication with Shelley Tovell, Del. Dep't of Natural Res., Div. of Fish and Wildlife (Mar. 7, 2007).

<sup>57</sup> Personal communication with Sarah Cooksey, Del. Coastal Zone Mgmt. Program (March 9, 2007).

<sup>58</sup> Email from Tricia Arndt, *supra* note 18.

<sup>59</sup> The Education Center receives Aquatic Resources Education Funds from FWS every year. The money is from the sporting industry so most of the programs are fishing related. Personal communication with Gary Kreamer, *supra* note 52.

integrate wetlands into the seventh grade watershed curriculum through a presentation on Delaware wetlands and other activities.

Through its ARE Center, DFW has also developed, in collaboration with local high school students, Wetland Activities for Delaware Educators (WADE) kits. The kits, a series of eight interactive “curriculum-standard-correlated” learning stations, are loaned out to middle school teachers across the state. DFW runs WADE kit trainings to introduce teachers to the kit and show them how to use it. ARE has also assisted in adapting and producing copies of the WADE kits for use by educators in New Jersey.<sup>60</sup>

Several other state agencies are involved with wetland-related education programs. DDNREC Division of Parks and Recreation operates a number interpretive trails and centers and educational programs that incorporate information on wetlands at several of Delaware’s 15 state parks. In addition, Delaware’s National Estuarine Research Reserve manages two reserves for research and education purposes. The Research Reserve program is a collaboration of the DNREC-DSWC, CMP, and National Oceanographic and Atmospheric Administration.<sup>61</sup>

## **VII. Coordination with State and Federal Agencies**

Delaware’s state agencies regularly coordinate with each other as well as federal agencies. WSLS has monthly joint permit processing meeting with the Corps, EPA, FWS, National Marine Fisheries Service, state historic preservation office, and CMP. The section has also signed a mitigation banking agreement with Delaware Department of Transportation (DelDOT).<sup>62</sup> WSLS also worked with the DelDOT on developing their mitigation bank. A group of state agency scientists and managers is developing a comprehensive state wetland strategy to better integrate the state’s wetlands programs.<sup>63</sup> Regionally, WAS is working with Virginia and Maryland on tidal wetlands monitoring protocols through the Chesapeake Bay Program.

## **VIII. Acronyms and Abbreviations**

ARE – Aquatic Resources Education  
CMP – Coastal Management Program  
Corps – U.S. Army Corps of Engineers  
CWA – Clean Water Act  
DDNREC – Delaware Department of Natural Resources  
DECAP – Delaware Comprehensive Assessment Protocol  
DelDOT – Delaware Department of Transportation  
DERAP – Delaware Rapid Field Assessment Protocol  
DFW – Division of Fish and Wildlife

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<sup>60</sup> *Id.*

<sup>61</sup> Delaware Department of Natural Resources, Delaware National Estuarine Research Reserve, at <http://www.dnrec.state.de.us/DNREC2000/Divisions/Soil/DNERR/> (last visited July 26, 2007).

<sup>62</sup> Personal communication with Laura Herr, *supra* note 10.

<sup>63</sup> Personal communication with Amy Jacobs, *supra* note 46.

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DSWC – Division of Soil and Water Conservation  
DWR – Division of Water Resources  
EPA – U.S. Environmental Protection Agency  
ERPT – Ecological Restoration and Protection Team  
FTE – Full Time Equivalent  
FWS – U.S. Fish and Wildlife Service  
MBRT – Mitigation Banking Review Team NWP – Nationwide Permit  
NWP – Nationwide Permit  
SPGP – State Program General Permit  
WADE – Wetland Activities for Delaware Educators  
WAS – Watershed Assessment Section  
WSLS – Wetlands and Subaqueous Land Section  
WQS – Water Quality Standards



# **State Wetland Protection**

## ***Status, Trends, & Model Approaches***

*A 50-state study by the  
Environmental Law Institute*

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

2008

# **Appendix: Maryland**

[http://www.eli.org/pdf/core\\_states/Maryland.pdf](http://www.eli.org/pdf/core_states/Maryland.pdf)

## Maryland Wetland Program Summary

### I. Overview

The State of Maryland has operated a tidal wetland regulatory program since 1970 and nontidal wetland regulatory program since 1991.<sup>1</sup> Through these programs, Maryland has achieved a “no net loss” of wetlands. The state now seeks to increase wetland acreage through restoration and preservation and operates a variety of non-regulatory programs that include planning, preservation, restoration, and enhancement to help meet these goals.<sup>2</sup>

### II. Regulatory Programs

#### *Wetland definitions and delineation*

Maryland defines “waters of the state” under its Water Pollution Act.<sup>3</sup>

‘Waters of this State’ includes: (a) Both surface and underground waters within the boundaries of this State subject to its jurisdiction, including that part of the Atlantic Ocean within the boundaries of this State, the Chesapeake Bay and its tributaries, and all ponds, lake, rivers, streams, tidal and nontidal wetlands, public ditches, tax ditches, and public drainage systems within this State, other those designed and used to collect, convey, or dispose of sanitary sewage; (b) The flood plain of free-flowing waters determined by the Department of Natural Resources on the basis of the 100-year flood frequency.<sup>4</sup>

Maryland state code defines tidal and nontidal wetlands. A “nontidal wetland” is “an area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation.”<sup>5</sup> “Tidal wetlands” include “any land under the navigable waters of the State below the mean high tide, affected by the regular rise and fall of the tide.”<sup>6</sup> Maryland’s rules further define “state tidal wetlands” as “all State and private tidal wetlands, marshes, submerged aquatic vegetation, lands, and open water affected by the daily and periodic rise and fall of the tide within the Chesapeake Bay and its tributaries, the coastal bays adjacent to Maryland’s coastal barrier islands, and the Atlantic Ocean to a distance of 3 miles offshore of the low water mark.”<sup>7</sup> “Private tidal wetlands” are defined separately and include “any land not considered ‘State wetland’ bordering on or lying beneath tidal waters, which is subject to regular or periodic tidal action and supports aquatic growth.”<sup>8</sup>

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<sup>1</sup> MD. DEP’T OF THE ENV’T, MARYLAND STATE WETLAND CONSERVATION PLAN (2003), *available at* [http://www.mde.state.md.us/Programs/WaterPrograms/Wetlands\\_Waterways/wetland\\_conservation/index.asp](http://www.mde.state.md.us/Programs/WaterPrograms/Wetlands_Waterways/wetland_conservation/index.asp).

<sup>2</sup> MD. DEP’T OF THE ENV’T, PRIORITIZING SITES FOR WETLAND RESTORATION, MITIGATION, AND PRESERVATION IN MARYLAND (2006), *available at* <http://www.mde.state.md.us/assets/document/wetlandswaterways/ES.pdf>.

<sup>3</sup> MD. CODE ANN., ENVIR. § 9-101; MD. CODE REGS. 26.08.01(B)(103).

<sup>4</sup> MD. CODE REGS. 26.08.01(B)(103).

<sup>5</sup> MD. CODE ANN., ENVIR. § 5-901(h)(1).

<sup>6</sup> MD. CODE ANN., ENVIR. § 16-101(n).

<sup>7</sup> MD. CODE REGS. 26.24.01.02(B)(52).

<sup>8</sup> MD. CODE ANN., ENVIR. § 16-101(j).

Delaware Wetland Program Review  
Appendix D - Maryland Wetland Program Summary

Maryland's nontidal delineation criteria are made "in accordance with the publication known as the *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*, published in 1989 and as may be amended."<sup>9</sup> Tidal delineation criteria are based on the state's 1971/1972 tidal wetland boundary maps and tidal vegetation.<sup>10</sup>

***Wetland-related law and regulation***

*Nontidal Wetlands Protection Act.* The Nontidal Wetlands Protection Act regulates and restricts all activities that could impact nontidal wetlands or waters of the state. The act also helps to ensure "no net loss" of wetlands by requiring mitigation or compensation for any wetland losses. This law differs from federal regulation on issues of "isolated" wetlands, the alteration of vegetation and hydrology, and regulation of a 25-foot buffer. In Maryland, buffer requirements are expanded to 100-feet for "nontidal wetlands of special State concern," which have been designated by regulation as having exceptional ecological or educational value.<sup>11,12</sup>

*Tidal Wetlands Act.* Under this act, permits are required for filling or dredging in private tidal wetlands from the Maryland Department of the Environment (MDE) Tidal Wetlands Division, and licenses are required for filling or dredging state-owned wetlands from the State Board of Public Works.<sup>13</sup>

*Water Pollution Act.* This act contains water quality standards and §401 certification provisions. MDE issues water quality certifications for proposed discharges to waters of the state pursuant to §401 of the Clean Water Act. Certifications are integrated into MDE reviews of activities under tidal and nontidal wetland permit applications.<sup>14</sup>

*Chesapeake and Coastal Bays Critical Area Act.* This act requires that local jurisdictions adopt zoning regulations for lands within 1,000-feet of the Chesapeake Bay or Coastal Bays in order to improve the water quality and habitat in the Bay. Local jurisdictions must minimize alterations to the drainage area, surface and subsurface flow of water, and water quality to protect the hydrology and water quality of wetlands. Additionally, the act places restrictions on grading, filling, excavating, draining, flooding, and removing vegetation in nontidal wetlands.<sup>15,16</sup>

***Organization of state agencies***

The MDE Wetlands and Waterways Program, located within the agency's Water Management Administration, is primarily responsible for state wetlands protection and comprehensive wetland management under the Nontidal Wetlands Protection Act and Tidal Wetlands Act. In

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<sup>9</sup> MD. CODE ANN., ENVIR. § 5-901(h)(2).

<sup>10</sup> Every county planning and zoning office whose jurisdiction includes tidal wetlands has a set of these tidal wetland boundary maps. The original mylars are at the Maryland Geological Survey office in Baltimore; Personal Communication with Robert Tabisz, Md. Dep't of the Env't (Oct. 27, 2006).

<sup>11</sup> MD. CODE ANN., ENVIR. §§ 5-901 to 911.

<sup>12</sup> MD. DEP'T OF THE ENV'T, WETLAND REGULATIONS, *available at* <http://www.mde.state.md.us/assets/document/wetlandswaterways/regulation.doc> (last visited July 25, 2007).

<sup>13</sup> MD. CODE ANN., ENVIR. §§ 16-101 to 503.

<sup>14</sup> MD. CODE ANN., ENVIR. §§ 9-313 to 316, 9-319, 9-320, 9-325.

<sup>15</sup> MD. CODE ANN., NAT. RES. § 8-1808.

<sup>16</sup> MD. DEP'T OF THE ENV'T, *supra* note 12.

Delaware Wetland Program Review  
Appendix D - Maryland Wetland Program Summary

In addition to its regulatory responsibilities for wetlands, MDE also sponsors voluntary wetland restoration efforts and is the state lead for tracking wetland restoration and protection gains. MDE provides guidance and technical assistance for activities such as watershed planning, identification of wetland restoration and preservation areas, and shoreline stabilization. The agency produces technical tools such as sample plans to assist in wetland management and is also involved in an interagency effort to develop a strategy to monitor wetlands for regulatory and non-regulatory uses. The Wetlands and Waterways Program houses both a Tidal Division and a Nontidal Division.

Although MDE is primarily responsible for wetland protection in the state, the Maryland Board of Public Works is responsible for issuing licenses required for filling or dredging state-owned tidal wetlands. In addition, the Maryland Department of Natural Resources (MDNR) acquires land for conservation and recreation and accepts easement donations, which may contain wetlands, and conducts wetland restoration projects. MDNR also monitors ambient condition and quality of the state's aquatic resources and is helping develop the state's wetland assessment program.

*Maryland Department of Environment.* MDE has offices in Salisbury, Cambridge, Centerville, and Frostburg. Tidal and nontidal wetlands are regulated separately under their respective state laws.

The Wetlands and Waterways Tidal Division, which employs seven full-time equivalent staff (FTEs), handles review, evaluation, and authorization for all construction projects in tidal wetlands. While the division reviews and authorizes projects that impacts private tidal wetlands, it only reviews and makes recommendations for action for major projects in state tidal wetlands. The Maryland Board of Public Works uses this information to make authorization decisions these projects. The division is based in Baltimore and maintains a field office in Cambridge for one staff member.<sup>17</sup> Staff members are assigned by regions to Southern Maryland, Central Maryland, the Upper Western Shore, the Upper Eastern Shore, and the Lower Eastern Shore. The division operates on state general funds.<sup>18</sup>

The Wetlands and Waterways Nontidal Division, which employs approximately 25 FTEs, handles review and evaluation of nontidal wetlands, associated buffers, waterways, floodplains, and mitigation. The division employs natural resource planners that examine wetland issues on a watershed basis and track figures on impacted, restored, and created wetlands. Division staff review permit applications and categorize them according to the Maryland State Programmatic General Permit. If the impacted area is greater in size than 5,000 square feet, the application is often jointly reviewed with the Corps.<sup>19</sup> The Nontidal Division is based in Baltimore and maintains one staff member at the Cambridge field office, five in the Salisbury field office, and four in the Frostburg field office.<sup>20</sup> The division's budget is provided by state general funds and various federal grants.<sup>21</sup>

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<sup>17</sup> Personal Communication with Robert Tabisz, Md. Dep't of the Env't (Apr. 27, 2007).

<sup>18</sup> Personal Communication with Robert Tabisz, Md. Dep't of the Env't (Oct. 12, 2006).

<sup>19</sup> Personal Communication with Amanda Sigillito, Md. Dep't of the Env't (July 25, 2006).

<sup>20</sup> Personal Communication with Amanda Sigillito, Md. Dep't of the Env't (Oct. 26, 2006).

<sup>21</sup> Sigillito, *supra* note 19.

Delaware Wetland Program Review  
Appendix D - Maryland Wetland Program Summary

*Maryland Department of Natural Resources.* MDNR is responsible for a host of wildlife management areas and parks. Approximately 25 staff members work on wetland-related issues, including wildlife biologists, land managers, and managers of programs such as Program Open Space, which purchases wetland areas among other lands. The agency conducts restoration projects in a variety of habitats, including wetlands, under its own programs and in coordination with private landowners, federal agencies, private corporations, and citizen groups. MDNR maintains offices in Cambridge and Wye Mills.<sup>22</sup>

MDNR staff also monitor and track the condition of the state's aquatic and natural resources. Data are analyzed and used in 305(b) reports and 303(d) lists. The report will be expanded in the near future to include assessments of wetland condition.<sup>23</sup> The agency's budget fluctuates annually depending upon federal, state, and private grants.<sup>24</sup> Staff are funded under state appropriations and special funds.<sup>25</sup>

### ***§401 Certification***

Parties that intend to impact tidal or nontidal wetlands must obtain state authorization, which includes §401 water quality certification, from MDE under the Tidal and Nontidal Wetlands Acts.<sup>26</sup> Applicants must demonstrate that the proposed impacts are necessary and unavoidable. MDE's application review process is designed to reduce impacts through avoidance and minimization and may require mitigation and associated monitoring.<sup>27</sup>

*Tidal Wetlands.* Under the Tidal Wetlands Act, parties must obtain authorization from MDE to make impacts to a tidal wetland.<sup>28</sup> Under the Act, MDE must consider the ecological, economic, developmental, recreational, and aesthetic values of the proposed project to determine if the project qualifies for a general wetlands license or permit, and if it requires mitigation.<sup>29</sup> Water quality certification (WQC) is incorporated into the authorization process via the State Programmatic General Permit, except for projects involving hydraulic dredging. In these cases, MDE issues an individual WQC.<sup>30</sup> The Tidal Division receives between 2,200 and 2,500 tidal wetland applications per year. The Division approves roughly 95 percent of applications and denies approximately 5 percent.<sup>31</sup> In fiscal year 2006, 1,985 applications were received for activities in tidal wetlands and waters. 1864 authorizations were made during the fiscal year.<sup>32</sup>

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<sup>22</sup> Personal Communication with Christine Conn, Md. Dep't of Natural Res. (Nov. 20, 2006).

<sup>23</sup> Personal Communication with Christine Conn, Md. Dep't of Natural Res. (Nov. 21, 2006).

<sup>24</sup> Personal Communication with Kevin Smith, Md. Dep't of Natural Res. (Aug. 15, 2006).

<sup>25</sup> Personal Communication with Kevin Smith, Md. Dep't of Natural Res (Oct. 26, 2006).

<sup>26</sup> MD. CODE ANN., ENVIR. §§ 5-901 to 911, 16; MD. CODE REGS. 26.23 to .24

<sup>27</sup> Maryland Department of the Environment, *Water Management Permits*, at

<http://www.mde.state.md.us/Permits/WaterManagementPermits/water2.asp#3.17> (last visited July 25, 2007).

<sup>28</sup> Maryland Department of the Environment, *Applications for Water Permits, Approvals and Certifications (undated)*, at

[http://www.mde.state.md.us/Programs/WaterPrograms/Wetlands\\_Waterways/permits\\_applications/index.asp](http://www.mde.state.md.us/Programs/WaterPrograms/Wetlands_Waterways/permits_applications/index.asp) (last visited July 25, 2007).

<sup>29</sup> MD. CODE REGS. 26.24.02.04 to .05.

<sup>30</sup> Tabisz, *supra* note 18.

<sup>31</sup> Tabisz, *supra* note 17.

<sup>32</sup> Personal Communication with Denise Clearwater, Md. Dep't of the Env't (May 8, 2007).

Delaware Wetland Program Review  
Appendix D - Maryland Wetland Program Summary

Decisions are based on quantitative and qualitative assessments, best professional judgment, and provisions in the state laws and regulations.<sup>33</sup>

*Nontidal Wetlands.* Under the Nontidal Wetlands Act, authorization is required for any activity that alters a nontidal wetland or its 25-foot buffer.<sup>34</sup> When evaluating a permit application, MDE must find that:

- The project is water-dependent and requires access to a nontidal wetland, or is not water-dependent and has no practicable alternative;
- The activity will avoid and minimize impacts by considering topography, vegetation, fish and wildlife, and hydrological conditions;
- The activity will not degrade ground or surface waters; and
- The activity is consistent with any applicable comprehensive watershed management plan.<sup>35</sup>

The Nontidal Division receives approximately 1,200 applications per year. The review period for a minor project typically takes eight to ten months, while reviews for major projects take ten to twelve months.<sup>36</sup> In fiscal year 2006, the division received 1,125 applications for activities in nontidal wetlands, waterways, and floodplains, granted 874 authorizations, and made 150 modifications to existing authorizations.<sup>37</sup>

### ***General permits***

The majority of nationwide permits (NWP) were suspended in Maryland when the Corps issued the Maryland State Programmatic General Permit (MDSPGP-3).<sup>38</sup> If the Corps wishes to authorize a project under one of the few remaining NWPs and the project falls under state jurisdiction, MDE would also review the project application to issue a state permit.<sup>39</sup> The state does not regularly review applicable NWPs, although the Corps will occasionally ask for state comments.<sup>40</sup> MDE's action in response the 2007 NWPs could not be reviewed within in the reporting period for this publication.

The MDSPGP-3 covers impacts to tidal and nontidal wetlands and waterways.<sup>41</sup> Projects with minimal impacts are eligible for approval under the MDSPGP if nontidal wetland impacts are less than five acres and tidal wetland impacts are less than three acres.<sup>42</sup>

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<sup>33</sup> Tabisz, *supra* note 18.

<sup>34</sup> MD. CODE REGS. 26.23.5.901 to .911.

<sup>35</sup> MD. CODE REGS. 26.23.02.04.

<sup>36</sup> Sigillito, *supra* note 19.

<sup>37</sup> Clearwater, *supra* note 32.

<sup>38</sup> The 2002 NWPs that remained in effect in Maryland were NWP#23 (Approved Categorical Exclusions), NWP#27 (Stream and Wetland Restoration Activities), NWP#30 (Moist Soil Management for Wildlife), NWP#31 (Maintenance of Existing Flood Control Facilities), NWP#32 (Completed Enforcement Actions), and NWP#37 (Emergency Watershed Protection and Rehabilitation). Public Notice # 02-07, U.S. Army Corps of Engineers, Baltimore District, Nationwide Permits Regional Conditions and Suspensions (May 7, 2002), *available at* [http://www.nab.usace.army.mil/Regulatory/Permit/nwp\\_regcond\\_pa\\_pn.pdf](http://www.nab.usace.army.mil/Regulatory/Permit/nwp_regcond_pa_pn.pdf) (last visited July 25, 2007).

<sup>39</sup> Sigillito, *supra* note 20.

<sup>40</sup> Sigillito, *supra* note 19.

<sup>41</sup> Sigillito, *supra* note 20.

<sup>42</sup> MD. DEP'T OF THE ENV'T, *supra* note 12.

### ***Mitigation***

Maryland state law and regulations include general standards on mitigation, including banking and in-lieu fee.<sup>43</sup> The state has different regulations for impacts to streams. In most cases, wetland mitigation provisions require projects impacting more than 5,000 square feet to provide mitigation in the form of restoration, enhancement, or creation.<sup>44</sup> When determining the type and amount of mitigation required of the permittee, MDE prefers in-ground, on-site mitigation projects. When that option is not feasible, the department evaluates off-site options, mitigation banks, and, lastly, payment into the State's Nontidal Wetland Compensation Fund, a state in-lieu fee program that conducts mitigation projects statewide.<sup>45</sup>

MDE holds pre-application meetings during which agency staff meet with applicants and discuss how to avoid or minimize wetland impacts, as well as various mitigation and restoration options. Permittees who choose to conduct their own mitigation projects are required to submit regular monitoring reports for five years.<sup>46</sup>

### ***Compliance and enforcement***

The MDE Water Management Administration's Compliance Program handles compliance and enforcement for wetlands. The program inspects impacted sites, advises permittees to address discrepancies between the land and inspection report, issues orders for correction, initiates legal action, and processes administrative penalties. The program refers cases requiring legal action to the Attorney General with recommendations as to whether to pursue the case criminally or civilly.<sup>47</sup>

In fiscal year 2006, the program issued nine corrective action orders and resolved 24 significant violations (some of which were carried over from previous years).<sup>48</sup> The program issued 14 penalties.<sup>49</sup> The statutory penalty amounts for tidal and nontidal wetlands violations are \$10,000 per day,<sup>50,51</sup> although the amount of penalty the program typically seeks depends upon factors such as the willfulness of the violation, environmental harm, and the violator's compliance history. No criminal penalties have been pursued in recent years.<sup>52</sup>

Enforcement cases are typically resolved with compliance assistance using inspection reports. When an inspector notices a problem he or she will address it with the permittee, and the

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<sup>43</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>44</sup> Sigillito, *supra* note 19.

<sup>45</sup> Sigillito, *supra* note 20.

<sup>46</sup> Sigillito, *supra* note 19.

<sup>47</sup> Personal Communication with Tom Boone, Md. Dep't of the Env't (Aug. 2, 2006).

<sup>48</sup> Clearwater, *supra* note 32.

<sup>49</sup> *Id.*

<sup>50</sup> MD. CODE ANN., ENVIR. § 16-502.

<sup>51</sup> MD. CODE ANN., ENVIR. § 5-911.

<sup>52</sup> Boone, *supra* note 47.

problem is usually resolved in a reasonable amount of time. MDE conducted 37 compliance assistances in 2006 on nontidal wetlands. Only 20 sites were found to have significant violations, and 13 were resolved through compliance assistance. MDE conducted 23 compliance assistances on tidal wetlands, and found 43 new significant violations. Cases rarely make it to court.<sup>53</sup>

### ***Tracking systems***

The Corps' Regulatory Analysis Management System (RAMS) tracks all regulatory actions, and information from RAMS is exchanged nightly with databases in Maryland state government and subscribing local governments. Additional databases also track regulatory gains and losses and non-regulatory wetland gains. Reports are generated to track "no net loss" by watershed, losses and gains by region, authorization type, wetland type, and mitigation required. Additionally, MDE tracks aspects of mitigation in a database, including data on amount of land, type of mitigation, and location by county and watershed.<sup>54</sup> Finally, voluntary wetland gains are generally recorded by county. In 2006, MDE began making substantial upgrades to its databases to improve and expand tracking and reporting capabilities.<sup>55</sup>

## **III. Water Quality Standards**

Maryland has not adopted wetland-specific water quality standards, designated uses, or anti-degradation standards. However, tidal and nontidal wetlands are explicitly included in the regulatory definition of "waters of this state" and so are included in the state's general water quality standards and designated uses. Under the water quality standards, discharges (covered by the National Pollutant Discharge Elimination System, or NPDES) are examined on the bases of erosion and sediment. Discharges that receive NPDES permits are certified by MDE under the §401 certification review process.<sup>56</sup>

As of 2006, MDE Wetlands and Waterways Program was operating under a U.S. Environmental Protection Agency (EPA) grant to develop a wetland monitoring strategy. The strategy will outline steps to develop designated wetland-specific use classes and water quality criteria.<sup>57</sup>

## **IV. Monitoring and Assessment**

### ***Monitoring and assessment for wetlands***

While Maryland currently practices several forms of wetland monitoring, an interagency effort is underway to develop a comprehensive monitoring strategy. Ongoing monitoring efforts include rapid assessment monitoring for regulatory purposes that use best professional judgment, a formal assessment based on the New Hampshire Method for state highway projects, and assessment of mitigation sites using performance standards. MDE is currently developing and

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<sup>53</sup> Clearwater, *supra* note 32.

<sup>54</sup> Sigillito, *supra* note 19.

<sup>55</sup> Personal Communication with Denise Clearwater, Maryland Department of the Environment (Nov. 1, 2006).

<sup>56</sup> MD. CODE REGS. 26.08.02.10(A)(2).

<sup>57</sup> Clearwater, *supra* note 55.

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testing new approaches to monitor mitigation sites and better predict likely success of replacement of lost functions. This project will be completed in 2007. MDE is also working with the University of Delaware on the comprehensive, long-term assessment of slope wetlands in the Piedmont region of the state. A validated rapid assessment based on data from the long-term assessment will be developed.<sup>58</sup>

Maryland's interagency effort to develop a wetland monitoring strategy includes MDE, MDNR, Maryland State Highways Administration, and Maryland Department of Agriculture. The workgroup hopes to broaden this coalition to include federal agencies, local governments, academia, consultants, and non-profit organizations. The ultimate goal is to develop a wetland monitoring plan that will allow the state to report, track, monitor and enhance the condition and functions of the state's wetland resources regularly and comprehensively. In addition, the strategy will lay the foundation for all state agencies to use a consistent wetland assessment methodology so they can share data and compare results.<sup>59</sup>

MDNR's Natural Heritage Division has played a particularly active role in developing the wetland monitoring strategy. MDNR is using key wildlife habitat types identified by the Division through the Maryland Wildlife Diversity Conservation Plan as a framework for wetland monitoring activities. A key aspect of the wetland monitoring program is to inform wetland management, protection, and restoration actions in order to support Maryland's biological resources, particularly those species of greatest conservation need.<sup>60</sup>

MDNR has conducted in the past and is currently conducting pilot projects to test wetland assessment methodologies. These pilot projects have employed the EPA-recommended three-level wetland evaluation approach. The first level uses GIS indicators to determine how landscape factors, such as development near a wetland, influence wetland conditions. The second level is a rapid site assessment, and the third consists of an intensive field study, including stem counts, soil samples, and plant community characterization. This third-level analysis allows MDNR to calibrate the assessment methods used in levels one and two.<sup>61</sup>

As of 2006, MDNR had already completed a pilot project focused on the Nanticoke watershed in cooperation with the Delaware Department of Natural Resources and Environmental Control (DNREC), The Nature Conservancy, and the Smithsonian Environmental Research Center to assess wetland conditions and develop functional condition indices and a single score index of wetland condition. MDNR also completed a project in cooperation with DNREC and the Virginia Institute of Marine Sciences (VIMS) to evaluate the condition of tidal wetlands in the Nanticoke watershed. MDNR is also collaborating with VIMS to develop level-one indicators for all nontidal wetlands in Maryland. MDE plays an advisory role on this project.<sup>62</sup>

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<sup>58</sup> Clearwater, *supra* note 32.

<sup>59</sup> Conn, *supra* note 22.

<sup>60</sup> *Id.*

<sup>61</sup> *Id.*

<sup>62</sup> *Id.*

MDE and MDNR recently received an EPA grant to develop a wetland monitoring strategy to assess wetland health and function.<sup>63</sup> As part of this project, MDNR will be conducting a pilot study to explore methodologies for monitoring wetland conditions. This will be an opportunity for MDNR to test strategies and approaches developed by the interagency workgroup.<sup>64</sup> As of June 2007, MDE and MDNR had developed a strategy to assign wetlands into different classes for monitoring to meet Clean Water Act requirements. The classification system contains elements from hydrogeomorphic (HGM) classes, the National Wetlands Inventory, and Maryland's key wildlife habitats. These latter classification systems will remain in use in Maryland for other management activities. Information collected about specific wetlands can be used to assign the wetland to any of the classification systems.<sup>65</sup>

### ***Monitoring and assessment for streams***

MDNR conducts statewide monitoring for the health of all waterways annually through the Maryland Biological Stream Survey. Monitoring sites are selected randomly and monitored for physical, chemical, and biological conditions.<sup>66</sup> MDE also monitors water quality parameters in numerous waterways.<sup>67</sup>

### ***Coordination with state watershed programs***

The Nontidal Wetlands Protection Act provides for the development of watershed management plans, which may be used to guide regulatory decisions. These plans are developed in cooperation with local governments and protect wetlands by incorporating them into a jurisdiction's land use decision-making process.<sup>68</sup> MDE is also represented in the Chesapeake Bay and Coastal Bays Programs—multi-agency efforts with management goals that include wetland considerations such as no-net-loss and restoration. MDE has completed a number of technical tools and documents to assist watershed-based stakeholders in wetland management protection, and restoration.<sup>69</sup>

## **V. Restoration**

In 1997, Maryland's governor established by executive order a statewide goal of restoring 60,000 acres of wetlands.<sup>70</sup> Additionally, Maryland is party to the 2000 Chesapeake Bay Agreement, which aims to restore 25,000 acres of wetlands by 2010.<sup>71</sup> Under the agreement, Maryland is committed to creating or restoring a total of 15,000 acres and enhancing 35,000 acres.<sup>72</sup> As of 2005, Maryland had created or restored between 7,000 and 8,000 acres.<sup>73</sup> Finally,

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<sup>63</sup> Clearwater, *supra* note 55.

<sup>64</sup> Conn, *supra* note 22.

<sup>65</sup> Personal Communication with Denise Clearwater, Md. Dep't of the Env't (June 5, 2007).

<sup>66</sup> Smith, *supra* note 24.

<sup>67</sup> Clearwater, *supra* note 32.

<sup>68</sup> MD. DEP'T OF THE ENV'T, *supra* note 12.

<sup>69</sup> Clearwater, *supra* note 55.

<sup>70</sup> Maryland Department of the Environment, *Maryland's Wetland Restoration Initiative*, at [http://www.mde.state.md.us/Programs/WaterPrograms/Wetlands\\_Waterways/about\\_wetlands/restoration.asp](http://www.mde.state.md.us/Programs/WaterPrograms/Wetlands_Waterways/about_wetlands/restoration.asp) (last visited July 25, 2007).

<sup>71</sup> Personal Communication with Denise Clearwater, MD. DEP'T OF THE ENV'T (Aug. 2, 2006).

<sup>72</sup> MD. DEP'T OF THE ENV'T, *supra* note 2.

the *Comprehensive Coastal Bays Management Plan* also establishes a goal of restoring 10,000 acres in the Coastal Bays watershed by 2010.<sup>74,75</sup>

### ***MDE restoration programs***

MDE has conducted several wetland restoration and enhancement projects through partnerships with schools, local governments, and organizations such as The Nature Conservancy. Funds for these projects come from the state compensation fund that supports mitigation projects (*see II. Regulatory Programs, Mitigation*), from state general funds, and through the agency's Water Quality Improvement Program.<sup>76</sup> Funds from the Water Quality Improvement Program are also available for marsh creation projects.<sup>77</sup> MDE also coordinates with the Resource Conservation and Development Council, which conducts conservation projects in various regions of the state. MDE initiates these tidal and non-tidal wetland restoration and creation projects, such as shoreline stabilization restoration, and the Council acts as the contractor.<sup>78</sup>

MDE recently completed a project, funded by EPA, to prioritize wetland areas for restoration, preservation, and mitigation in the state. MDE compiled information from resource inventories and management plans to create a comprehensive background document on wetlands and their surrounding environment. GIS and other data were used to identify desirable and undesirable locations for wetland work. The resulting document, *Prioritizing Sites for Wetland Restoration, Mitigation, and Preservation in Maryland*, also includes management and restoration recommendations based on input from counties, state agencies, and other interested parties. The May 2006 version of the report is available online.<sup>79</sup> MDE is now promoting the use of the project's findings among permit applicants seeking mitigation sites. They are also encouraging local governments to refer to the results when planning TMDLs.<sup>80</sup>

### ***MDNR restoration programs***

MDNR has a Watershed Services Unit that implements restoration projects for a variety of habitat types, including wetlands. Staff members in the Wildlife and Forestry Divisions also work on restoration. Typically, ecological problems are identified and assessed, and if appropriate, a solution is designed and developed. Staff members find or apply for funds, which are allocated to the projects. This occurs mainly on public lands. The Department does some creation work, but most projects involve restoration. MDNR also works on projects proposed by watershed groups, private landowners, and community groups.<sup>81</sup>

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<sup>73</sup> Personal Communication with Denise Clearwater, MD. DEP'T OF THE ENV'T (Sep. 29, 2006).

<sup>74</sup> Maryland Department of the Environment, *What do the Chesapeake Bay Agreement, The Coastal Bays Plan, and an executive order from the State have in common?*, at [http://www.mde.state.md.us/Programs/WaterPrograms/Wetlands\\_Waterways/about\\_wetlands/agreement.asp](http://www.mde.state.md.us/Programs/WaterPrograms/Wetlands_Waterways/about_wetlands/agreement.asp) (last visited July 25, 2007).

<sup>75</sup> Maryland Department of the Environment, *supra* note 70.

<sup>76</sup> Sigillito, *supra* note 19; Clearwater, *supra* note 55.

<sup>77</sup> Clearwater, *supra* note 32.

<sup>78</sup> Personal Communication with George Beston, MD. DEP'T OF THE ENV'T (July 27, 2006).

<sup>79</sup> Maryland Department of the Environment, *Prioritizing Areas for Wetland Restoration, Preservation, and Mitigation*, at

[http://www.mde.state.md.us/Programs/WaterPrograms/Wetlands\\_Waterways/about\\_wetlands/prioritizingareas.asp](http://www.mde.state.md.us/Programs/WaterPrograms/Wetlands_Waterways/about_wetlands/prioritizingareas.asp) (last visited July 25, 2007).

<sup>80</sup> Clearwater, *supra* note 71.

<sup>81</sup> Smith, *supra* note 24.

MDNR also uses GIS to: identify areas on public land that have been disturbed, determine what type of restoration is needed, and decide where restoration would be most effective. As of 2007, the department was doing much of this work in the Corsica Watershed.<sup>82</sup>

The department also assists individuals or private organizations that request assistance with restoration projects. MDNR can provide technical, design, and implementation assistance, as well as help with grant applications. The primary funds MDNR solicits in these cases come from the Chesapeake Bay Trust, Transportation Enhancement Fund, wetland mitigation funds, and the National Fish and Wildlife Foundation.<sup>83</sup>

MDNR monitors restoration success to ensure the project objectives have been met. Typical objectives include improving water quality or habitat.<sup>84</sup>

### ***Coastal Bays Program***

The Maryland Coastal Bays Program was established in 1996 to assist the Coastal Bays region in developing a comprehensive restoration and protection plan. The program is a joint effort among the Towns of Ocean City and Berlin, Worcester County, MDNR, MDE, Maryland Department of Agriculture, Maryland Office of Planning, National Park Service, and EPA. In 2000, the program adopted *A Comprehensive Conservation and Management Plan for Maryland's Coastal Bays*.<sup>85</sup> The plan charges MDE and MDNR with targeting wetland restoration and creation in areas of historic wetland loss for water quality improvement and wildlife habitat.<sup>86</sup> Additionally, MDE completed a comprehensive plan to target areas for wetland mitigation.<sup>87</sup>

### ***Coordination with USDA on agricultural programs***

MDE has a number of joint projects with the U.S. Department of Agriculture (USDA) on properties not already enrolled in USDA programs. There are approximately 24 conservation districts in Maryland, and MDE works with about half of them. Soil district conservation staff members often approach MDE with private landowner projects, and MDE will assist landowners with project design and implementation. These projects are often intended to create wildlife benefits or to restore agricultural land.<sup>88</sup>

MDNR also coordinates with USDA on programs such as the Wetlands Reserve Program, Wildlife Habitat Incentives Program, and Conservation Reserve Enhancement Program.<sup>89</sup>

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<sup>82</sup> Personal Communication with Kevin Smith, Md. Dep't of Natural Res. (May 2, 2007).

<sup>83</sup> *Id.*

<sup>84</sup> Smith, *supra* note 24.

<sup>85</sup> Maryland Coastal Bays Program, *Maryland Coastal Bays Program*, at <http://www.mdcoastalbays.org/> (last visited Oct. 16, 2006).

<sup>86</sup> Maryland Coastal Bays Program, *A Comprehensive Conservation and Management Plan for Maryland's Coastal Bays*, at <http://mdcoastalbays.org/archive/2003/ccmp.pdf> (last visited July 25, 2007).

<sup>87</sup> *Id.*; Clearwater, *supra* note 55.

<sup>88</sup> Beston, *supra* note 78.

<sup>89</sup> Smith, *supra* note 24.

## **VI. Public-Private Partnerships**

Neither MDE nor MDNR have formal, wetland-related programs for partnering with private landowners. Landowners may call MDE or MDNR staff, such as wildlife managers, to ask for assistance with or collaboration on a specific project. MDNR staff members have worked with private landowners on restoration and conservation projects, as well as a limited number of mitigation projects.<sup>90</sup> MDE helps match landowners with other funding agencies to support the landowner's objectives.<sup>91</sup>

MDE has partnered with groups such as The Nature Conservancy and Ducks Unlimited on restoration projects.<sup>92</sup> The funds that MDE contributes to these projects come from the state's Nontidal Wetland Compensation Fund.<sup>93</sup>

MDNR has coordinated with private companies on restoration projects. In some cases, MDNR identifies an opportunity to do additional restoration on a current corporate mitigation project and obtains funding to complete the additional work. In other cases, companies offer MDNR the opportunity to collaborate on a project. MDNR also partners with the Isaak Walton League of America to conduct monitoring on wetlands for amphibians, reptiles, and vegetation.<sup>94</sup>

## **VII. Education and Outreach**

MDE does not have a wetland-specific outreach and education strategic plan or program, although certain tasks and goals have been outlined in the Maryland Wetland Conservation Plan. When invited to community or citizen organization meetings, the Department does provide information on wetlands. MDE also has a grant from EPA which includes plans for the development of education and outreach materials. Additional guidance is under development to assist people with the permit application process, such as sample drawings for marsh creation for shoreline stabilization.<sup>95</sup>

MDNR occasionally conducts outreach and education activities on wetlands. When they do, they use the Planning of Wetlands (POW) materials developed by the non-profit organization Environmental Concern.<sup>96</sup>

## **VIII. Coordination with State and Federal Agencies**

A State Wetland Conservation Plan was completed in 2003. Certain elements of the plan have been implemented, including the identification of priority areas for restoration and preservation,

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<sup>90</sup> Sigillito, *supra* note 19; Smith, *supra* note 24.

<sup>91</sup> Clearwater, *supra* note 55.

<sup>92</sup> Sigillito, *supra* note 19.

<sup>93</sup> Sigillito, *supra* note 20.

<sup>94</sup> Smith, *supra* note 24.

<sup>95</sup> Sigillito, *supra* note 19; Clearwater, *supra* note 55.

<sup>96</sup> Personal Communication with Elena Takaki, Md. Dep't of Natural Res. (Aug. 24, 2006).

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assessment the effectiveness of the mitigation program, and development of a wetland monitoring strategy. MDE hopes to conduct a progress report in the future.<sup>97</sup>

MDE has also received an EPA implementation grant designed to facilitate improvements to the state regulatory program.<sup>98</sup> The grant will help promote and support better wetland assessment, gain and loss tracking, project analysis, and mitigation.<sup>99</sup>

MDE is party to Memoranda of Understanding (MOUs) with MDNR and the Maryland Department of Agriculture on some mitigation projects and the development of the wetland monitoring program.<sup>100</sup> MDNR also is party to MOUs with the Maryland Department of Agriculture, MDE, and the Natural Resources Conservation Service.<sup>101</sup> The MOUs provide for the exchange of technical services and funding for projects.<sup>102</sup>

MDE participates in monthly Jurisdictional Evaluation meetings with the Corps, National Marine Fisheries, U.S. Fish and Wildlife Service, and EPA, as well as with state agencies (MDNR and the Critical Area Commission) to discuss specific projects for which they have received permit applications. Applicants are invited to these meetings to receive feedback from all of the participating groups.<sup>103</sup>

## IX. Acronyms and Abbreviations

Corps – U.S. Army Corps of Engineers  
CWA – Clean Water Act  
EPA – U.S. Environmental Protection Agency  
FTE – Full-time Equivalent  
GIS – Geographic Information Systems  
MDE – Maryland Department of the Environment  
MDNR – Maryland Department of Natural Resources  
MOUs – Memoranda of Understanding  
MDSPPG – Maryland State Programmatic General Permit  
NOAA – National Oceanic and Atmospheric Administration  
NPDES – National Pollution Discharge Elimination System  
NWPs – Nationwide Permits  
POW – Planning of Wetlands  
RAMS – Regulatory Analysis Management System  
REAP – Iowa Resource Enhancement and Protection  
USDA – United States Department of Agriculture  
(Project) WET – Water Education for Teachers  
WQC – Water Quality Certification

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<sup>97</sup> Clearwater, *supra* note 71.

<sup>98</sup> *Id.*

<sup>99</sup> Clearwater, *supra* note 55.

<sup>100</sup> Personal Communication with Amanda Sigillito, MD. DEP'T OF THE ENV'T (Oct. 18, 2006).

<sup>101</sup> Smith, *supra* note 82.

<sup>102</sup> Smith, *supra* note 24.

<sup>103</sup> Sigillito, *supra* note 19; Smith, *supra* note 24.

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WQS – Water Quality Standards



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# **State Wetland Protection**

## ***Status, Trends, & Model Approaches***

*A 50-state study by the  
Environmental Law Institute*

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

2008

# **Appendix: New Jersey**

[http://www.eli.org/pdf/core\\_states/NewJersey.pdf](http://www.eli.org/pdf/core_states/NewJersey.pdf)

## New Jersey Wetland Program Summary

### I. Overview

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

### II. Regulatory Programs

#### *Wetland definitions and delineation*

In the state’s water quality rules, New Jersey defines “waters of the state” as “the ocean and its estuaries, all springs, streams, wetlands, and bodies of surface or ground water, whether natural or artificial, within the boundaries of the State of New Jersey or subject to its jurisdiction.”<sup>4</sup> The state regulates all freshwater wetlands under the Freshwater Wetlands Protection Act.<sup>5</sup> In addition, NJDEP is responsible for administering the §404 program in “delegable waters,” which include:

all waters of the United States...within New Jersey, except waters which are presently used, or are susceptible to use in their natural condition or by reasonable improvement, as a means to transport interstate or foreign commerce, shoreward to their ordinary high water mark. This term includes all waters which are subject to the ebb and flow of the tide, shoreward to their mean high water mark, including wetlands that are partially or entirely located within 1000 feet of their ordinary high water mark or mean high tide.<sup>6,7</sup>

State laws provide definitions for regulated “freshwater wetlands”<sup>8</sup> and “coastal wetlands.”<sup>9</sup>

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<sup>1</sup> U.S. Environmental Protection Agency, *Status and Trends*, at <http://www.epa.gov/OWOW/wetlands/vital/status.html> (last visited Sept. 10, 2007).

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

<sup>3</sup> New Jersey Department of Environmental Protection, *Land Use Regulation Program*, at <http://www.state.nj.us/dep/landuse/> (last visited Sept. 10, 2007).

<sup>4</sup> N.J. ADMIN. CODE. § 7:9B-1.4.

<sup>5</sup> N.J. STAT. ANN. § 13:9B.

<sup>6</sup> N.J. ADMIN. CODE. § 7:7A-1.4.

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

<sup>8</sup> “Freshwater wetlands” include areas that are “inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of

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

With the exception of the New Jersey Pinelands, New Jersey relies on the 1989 *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*<sup>11</sup> for wetlands delineation.<sup>12</sup> The New Jersey Pinelands utilizes the 1991 *New Jersey Pinelands Commission Manual for Identifying and Delineating Pineland Area Wetlands*.<sup>13</sup>

***Wetland-related laws and regulations***

New Jersey protects freshwater wetlands and their buffers under the Freshwater Wetlands Protection Act.<sup>14</sup> The state has also adopted a separate law for coastal wetlands, the Wetland Act of 1970.<sup>15</sup> The Pinelands Protection Act,<sup>16</sup> Hackensack Meadowlands Reclamation and Development Act,<sup>17</sup> and Highlands Water Protection and Planning Act<sup>18</sup> outline additional wetland-related provisions that apply only within designated areas of the state—the Pinelands,<sup>19</sup> Meadowlands,<sup>20</sup> and Highlands Region,<sup>21</sup> respectively.

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vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation; provided, however, that the [NJDEP], in designating a wetland, shall use the 3-parameter approach (i.e. hydrology, soils and vegetation) enumerated in the April 1, 1987 interim-final draft 'Wetland Identification and Delineation Manual' developed by USEPA." N.J. STAT. ANN. § 13:9B.

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

<sup>10</sup> See N.J. ADMIN. CODE. §§ 7:50-6.3 - 7:50-6.5.

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

<sup>12</sup> N.J. STAT. ANN. § 13:9B; N.J. ADMIN. CODE. § 7:7A-2.3(a).

<sup>13</sup> N.J. ADMIN. CODE. § 7:50-6.3.

<sup>14</sup> N.J. STAT. ANN. § 13:9B.

<sup>15</sup> *Id.* § 13:9A.

<sup>16</sup> *Id.* §§ 13:18A-1 to 13:18A-29.

<sup>17</sup> *Id.* § 12:17-1 *et seq.*

<sup>18</sup> *Id.* § 13:20-1 *et seq.*

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

<sup>20</sup> For more information on the New Jersey Meadowlands, see: New Jersey Meadowlands Commission, *New Jersey Meadowlands*, at <http://www.meadowlands.state.nj.us/> (last visited April 12, 2007).

<sup>21</sup> For more information on the Highlands Region and Preservation Area, see: New Jersey Department of Environmental Protection, *DEP Guidance for the Highlands Water Protection and Planning Act*, at <http://www.state.nj.us/dep/highlands/> (last updated Mar. 12, 2007).

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*Freshwater Wetlands Protection Act.*<sup>22</sup> Under the Freshwater Wetlands Protection Act (FWPA), a permit from the NJDEP is required for certain “regulated activities”<sup>23</sup> in all freshwater wetlands and state open waters, as well as for “prohibited activities” in upland buffers adjacent to the wetlands.<sup>24</sup> In non-delegable waters, the U.S. Army Corps of Engineers (Corps) retains jurisdiction under CWA §404; thus, both federal and state requirements apply in these areas.<sup>25</sup>

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

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

*Wetland Act of 1970.*<sup>30</sup> The Wetland Act of 1970 requires a permit for all “regulated activities,” as defined in the Act<sup>31</sup> and generally applies to the state’s coastal wetlands.<sup>32,33</sup> All wetlands protected under the Act are mapped, and those wetland areas that are not mapped fall under the jurisdiction of the FWPA.

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<sup>22</sup> N.J. STAT. ANN. § 13:9B; N.J. ADMIN. CODE. § 7:7A.

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

<sup>24</sup> N.J. STAT. ANN. § 13:9B-1 *et seq.*

<sup>25</sup> N.J. ADMIN. CODE. § 7:7A-2.1(c).

<sup>26</sup> N.J. STAT. ANN. § 13:9B-7.

<sup>27</sup> N.J. STAT. ANN. § 13:9B-17(b).

<sup>28</sup> Personal communication with Susan Lockwood, N.J. Dept of Env'tl Prot. (Nov. 21, 2005).

<sup>29</sup> Personal communication with Robert Piel, N.J. Dept of Env'tl Prot. (Feb. 2, 2005).

<sup>30</sup> N.J. STAT. ANN. § 13:9A.

<sup>31</sup> A “regulated activity” under the Wetlands Act of 1970 includes but is not limited to “draining, dredging, excavation or removal of soil, mud, sand, gravel, aggregate of any kind or depositing or dumping therein any rubbish or similar material or discharging therein liquid wastes, either directly or otherwise, and the erection of structures, drivings of pilings, or placing of obstructions, whether or not changing the tidal ebb and flow.” Regulated activities do not include “continuance of commercial production of salt hay or other agricultural crops or activities [related to mosquito control].” N.J. STAT. ANN. § 13:9A-4(a).

<sup>32</sup> N.J. STAT. ANN. § 13:9A.

<sup>33</sup> *Id.*

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

*Hackensack Meadowlands Reclamation and Development Act.*<sup>36</sup> The Hackensack Meadowlands Reclamation and Development Act mandates “the preservation of the delicate balance of nature” and “the provision of special protection from air and water pollution” in the Meadowlands.<sup>37</sup> The Act created the Hackensack Meadowlands Development Commission, renamed the New Jersey Meadowlands Commission (NJMC) in 2001, and authorized the preparation and adoption of a master plan for the district. “[R]egulations emphasize smart growth principles, minimal fill of wetlands, and. . . sustainability.”<sup>38</sup>

*Highlands Water Protection and Planning Act.*<sup>39</sup> New Jersey passed the Highlands Water Protection and Planning Act in 2004 to protect water resources and open space in the state. The act regulates “Highlands Open Waters,”<sup>40</sup> including wetlands, requiring a 300-foot buffer adjacent to all Highlands Open Waters and strictly limiting development activities that may impact these waters.<sup>41</sup> The Act also created the Highlands Water Protection and Planning Council (“Highlands Council”).

### ***Organization of state agencies***

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

*New Jersey Department of Environmental Protection.* NJDEP’s Division of Land Use Regulation (DLUR) oversees the implementation of the FWPA and Wetlands Protection Act of 1970 for the state, as well as numerous other land use regulatory and non-regulatory activities. Other offices within the NJDEP conduct some wetland-related activities as well, such as the Division of Science Research and Technology (some monitoring and assessment research) and the Communications Office (some education and outreach activities); however, DLUR is the

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<sup>34</sup> N.J. STAT. ANN. §§ 13:18A-1 -13:18A-29.

<sup>35</sup> See N.J. ADMIN. CODE §§ 7:50-6.1- 7:50-6.15.

<sup>36</sup> N.J. STAT. ANN. § 12:17-1 *et seq.*

<sup>37</sup> The Meadowlands, approximately 19,730 acres that includes 8,400 acres of wetland complexes, is located in northern New Jersey and represents one of the largest contiguous blocks of open space in the highly developed landscape of the New York City metropolitan area. .

<sup>38</sup> New Jersey Meadowlands Commission, *New Jersey Meadowlands - Land Use and Planning*, at [http://www.meadowlands.state.nj.us/land\\_use/index.cfm](http://www.meadowlands.state.nj.us/land_use/index.cfm) (last visited Sept. 12, 2007).

<sup>39</sup> N.J. STAT. ANN. § 13:20-1 *et seq.*

<sup>40</sup> “Highlands Open Waters” include “all springs, streams including intermittent streams, wetlands, and bodies of surface water, whether natural or artificial, located wholly or partially within the boundaries of the Highlands Region, but shall not mean swimming pools.” New Jersey Department of Environmental Protection, *DEP Guidance for the Highlands Water Protection and Planning Act – Highlands Terms*, at [http://www.state.nj.us/dep/highlands/faq\\_info.htm](http://www.state.nj.us/dep/highlands/faq_info.htm) (last visited Sept.12, 2007).

<sup>41</sup> New Jersey Department of Environmental Protection, *supra* note 21.

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primary wetland office in the agency.<sup>42</sup> DLUR operates from a central office in Trenton, and enforcement activities are conducted both from Trenton and from a field office in Toms River in southern New Jersey.<sup>43</sup>

DLUR has about 80 permitting staff for three programs. About 75 percent of these staff work directly on wetlands. Approximately ten full-time-equivalents (FTEs) work on enforcement. Two FTEs in Division of Science Research and Technology work on wetland monitoring and assessment.<sup>44</sup> Because many wetland-related activities are folded into the agency's greater program structure, a wetland-specific budget is not available.<sup>45</sup> Funding is provided by state appropriations (permitting fees feed into the state's general fund).<sup>46</sup>

*Region-specific agencies.* Within the Pinelands,<sup>47</sup> the New Jersey Pinelands Commission (NJPC) implements the rules outlined in the Pinelands Protection Act. For activities conducted in the Pinelands' wetlands, NJPC will conduct a review and may apply a general permit. If an individual permit is required, NJDEP must provide a review. NJDEP and NJPC hold a Memorandum of Agreement that outlines the roles and responsibilities of each agency regarding Pinelands wetlands.<sup>48</sup> NJPC has about 30 FTEs that perform some wetland-related activity, including permitting (both technical assistance to permit applicants and permit review for NJDEP), wetland assessment and delineation, planning, and research. Because most wetland activities are folded into the agency's greater program structure, a wetland-specific budget is not available.<sup>49</sup> Funding is derived mostly from state and federal (Department of Interior) appropriations. NJDEP occasionally provides funding for specific tasks. NJPC has also recently instituted a fee program for permit review.<sup>50</sup>

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

The Highlands Council is tasked with adopting a Regional Master Plan that includes goals to protect, restore, and enhance the quality and quantity of surface and ground waters in the Highlands region and to protect the natural, scenic and other resources of the region including

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<sup>42</sup> Piel, *supra* note 29.

<sup>43</sup> Personal communication with Susan Lockwood, N.J. Dep't Env'tl. Prot. (Feb. 16, 2005).

<sup>44</sup> Piel, *supra* note 29.

<sup>45</sup> The annual budget for all land use programs, including wetlands, is approximately \$10 million.

<sup>46</sup> Lockwood, *supra* note 43.

<sup>47</sup> See New Jersey Pinelands Commission, *supra* note 19.

<sup>48</sup> Lockwood, *supra* note 43.

<sup>49</sup> Funding for the agency as a whole was \$4.19 million in fiscal year 2004; other years are available in the NJPC annual reports. See New Jersey Pinelands Commission, *Annual Reports and Newsletters*, at <http://www.state.nj.us/pinelands/infor/annual/> (last visited Sept. 12, 2007).

<sup>50</sup> Personal communication with Staff, N.J. Pinelands Comm'n (Mar. 11, 2005).

<sup>51</sup> New Jersey Meadowlands Commission, *supra* note 38.

forests, wetlands, vegetated stream corridors, steep slopes, and critical habitat for fauna and flora.<sup>52</sup>

### ***§401 certification***

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

### ***General permits***

Because permit reviews are always conducted under state law (in both delegable and non-delegable waters), federal Nationwide Permits (NWP) are not applicable in New Jersey; instead, NJDEP issues statewide General Permits (GPs).<sup>53</sup> GPs, listed in the state regulations,<sup>54</sup> are generally equivalent to or more stringent than federal NWP.<sup>55</sup>

### ***Mitigation***

New Jersey’s extensive mitigation requirements are outlined in the FWPA and include provisions for type, amount, timing, location (in-kind is preferred), banking and in-lieu-fee requirements, and administrative terms.<sup>56</sup>

The FWPA also establishes the Mitigation Council, a state in-lieu-fee program (independent of the NJDEP) for impacts to freshwater wetlands and state open water impacts.<sup>57</sup> Under state rules, an approved applicant may make a land donation or monetary contribution in lieu of conducting compensatory mitigation.<sup>58</sup> The council also reviews and approves the establishment of freshwater wetland mitigation banks in the state.<sup>59</sup> The bank approval process is also outlined in the rules.<sup>60</sup>

In the Meadowlands District, the Meadowlands Interagency Mitigation Advisory Committee (MIMAC), a group composed of representatives from the NJMC, NJDEP, Corps (New York District), U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration

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<sup>52</sup> Personal communication with Susan Lockwood, N.J. Dep’t of Env’tl Prot. (June 7, 2007).

<sup>53</sup> The FWPA states that NJDEP “shall issue a general permit for an activity in a freshwater wetland which is not a surface water tributary system discharging into an inland lake or pond, or a river or stream, and which would not result in the loss or substantial modification of more than one acre of freshwater wetland, provided that this activity will not take place in a freshwater wetland of exceptional resource value.” N.J. STAT. ANN. § 13:9B-23(b).

<sup>54</sup> General permits are listed in the FWPA rules at N.J. ADMIN. CODE. § 7:7A-5 *et seq.*

<sup>55</sup> Lockwood, *supra* note 43.

<sup>56</sup> See N.J. ADMIN. CODE. § 7:7A-15 *et seq.*

<sup>57</sup> New Jersey Department of Environmental Protection – Division of Land Use Regulation, *Mitigation*, at <http://www.state.nj.us/dep/landuse/fww/mitigate/mcouncil.html> (last updated Dec. 28, 2006). The council, which meets in public bi-monthly meetings, comprises seven members, including the NJDEP Commissioner and six New Jersey citizens appointed by the Governor. The six citizens must serve a three-year term and must include: two members recommended by recognized building and development organizations, two members recommended by recognized environmental and conservation organizations, and two members from New Jersey institutions of higher learning. *See Id.*

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

<sup>59</sup> New Jersey Department of Environmental Protection, *supra* note 57.

<sup>60</sup> N.J. ADMIN. CODE. § 7:7A-15.

(NOAA) – National Marine Fisheries Service, and U.S. Environmental Protection Agency (EPA), coordinates all mitigation, including banking activities. MIMAC was established by written agreement in 1997 and has been meeting on a monthly basis since 1998.<sup>61</sup>

### ***Compliance and enforcement***

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

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

### ***Tracking systems***

NJDEP operates a state permit tracking system called the New Jersey Environmental Management System (NJEMS). NJEMS is an “integrated transactional Oracle database” that includes databases from NJDEP’s main programs and includes a mapping component.<sup>66</sup> For wetland permits, acreage, various mitigation requirements, deed restrictions, watershed, and permit status are among the data fields.<sup>67</sup>

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

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<sup>61</sup> Personal communication with Ross Feltes, N. J. Meadowlands Comm’n (Oct. 20, 2005).

<sup>62</sup> N.J. ADMIN. CODE. § 7:7A-16.

<sup>63</sup> N.J. STAT. ANN. § 2A:58-1 *et seq.*

<sup>64</sup> Piel, *supra* note 29.

<sup>65</sup> New Jersey Pinelands Commission, *supra* note 50.

<sup>66</sup> See generally ESRI, *Environmental Data Delivery Using ArcIMS and WebIntelligence*, at <http://gis.esri.com/library/userconf/proc02/pap0155/p0155.htm> (last visited Sept. 12, 2007).

<sup>67</sup> Lockwood, *supra* note 43.

<sup>68</sup> *Id.*; Personal communication with Jill Aspinwall, N. J. Dep’t of Env’tl. Prot. (May 23, 2007); Personal communication with Jill Aspinwall, N. J. Dep’t of Env’tl. Prot. (Mar. 2, 2005).

<sup>69</sup> Mitigation construction and performance standards are evaluated according to FWPA rules, permit requirements, and the approved mitigation plan. Personal communication with JoDale Legg, N. J. Dep’t of Env’tl. Prot. (Nov. 2, 2005).

<sup>70</sup> Piel, *supra* note 29.

### ***Watershed coordination***

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

## **III. Water Quality Standards**

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

## **IV. Monitoring and Assessment**

In response to the EPA's 2003 guidance on state water quality monitoring and assessment, the State of New Jersey developed a ten-year, long-term water monitoring strategy for the state that includes goals and objectives for wetlands and streams, as well as rivers, lakes, groundwater, and other state waters. The strategy results from a comprehensive assessment of the state's ambient water monitoring programs, and it includes goals and objectives for wetland monitoring.<sup>74</sup>

### ***Monitoring and assessment for wetlands***

New Jersey actively monitors wetlands, but has no specific wetlands monitoring program. The state also is conducting research to identify appropriate quantitative methods for assessing wetland function and to identify what methods could be used to relate wetland and water quality for the purpose of watershed assessment.<sup>75</sup>

In 2006, NJDEP also published *Wetlands Biological Indicators for New Jersey, Case Study: Forested Riparian Wetland Areas in the Highlands of New Jersey*. The study is a collaboration of NJDEP and Rutgers University and represents a first step in developing wetland biological assessments. The research built upon existing wetland assessment studies and the biological assessments will assist with developing a rapid assessment protocol for wetland condition.<sup>76</sup>

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<sup>71</sup> Aspinwall, *supra* note 68.

<sup>72</sup> New Jersey's surface water quality standards may be found at N.J. ADMIN. CODE. § 7:9B *et seq.*

<sup>73</sup> N.J. ADMIN. CODE. § 7:7A-2.1(d).

<sup>74</sup> See NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION – WATER MONITORING AND STANDARDS PROGRAM, *WATER MONITORING & ASSESSMENT STRATEGY (2005-2014) (2004)*, available at <http://njedl.rutgers.edu/ftp/PDFs/4040.pdf>.

<sup>75</sup> See NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION, *NEW JERSEY INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT 2006 (2006)*, available at <http://www.state.nj.us/dep/wms/bwqsa/docs/2006IntegratedReport.pdf>.

<sup>76</sup> RUTGERS UNIVERSITY AND NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION, *WETLANDS BIOLOGICAL INDICATORS FOR NEW JERSEY, CASE STUDY: FORESTED RIPARIAN WETLAND AREAS IN THE HIGHLANDS OF NEW JERSEY, FINAL REPORT SR03-042 (2006)*, available at <http://www.state.nj.us/dep/dsr/wetlands2/report-2006.pdf>.

Coordination, communication, and collaboration are important elements of the developing program. NJDEP participates on the Mid-Atlantic Wetlands Working Group and the National Wetlands Workgroup. The state has also formed a Wetlands Research Advisors Group to help provide insight into the program's development. The groups meet on a regular basis.

The water monitoring strategy also identifies the resources necessary to continue program development efforts, including additional research and staff to guide the program and continue methods development<sup>77</sup>

NJMC has been monitoring water quality in the District since 1993. It now conducts continuous monitoring at a few stations and performs seasonal monitoring at several. Surveys of the distribution and abundance of various plant and animal taxa, as well as concentrations of contaminants in sediments and animal tissues, also are carried out by the NJMC.<sup>78</sup>

### ***Monitoring and assessment for streams***

The ten-year strategy also describes New Jersey's well-developed rivers and streams monitoring programs. Monitoring objectives and design, quality assurance measures, core and supplemental water quality indicators, data management and analysis, reporting, program evaluation, and general support and infrastructure planning are outlined and discussed at length for the Ambient Stream Monitoring Network, Supplemental Ambient Surface Water Monitoring Network, Ambient Biological Monitoring Network, Ecoregion Reference Station Program, Fish Index of Biotic Integrity Network, and Lower Delaware Nonpoint Source Monitoring Project.<sup>79</sup>

### ***Citizen monitoring***

The NJDEP's Division of Watershed Management – Office of Education and Outreach coordinates the Watershed Watch Network, an umbrella group for all volunteer monitoring programs in the state. This program provides water quality monitoring protocols, and quality control and assurance for volunteers submitting data to the NJDEP. A "four-tiered" approach allows volunteers to pick their level of involvement based on the purpose of their monitoring program and the intended use of the data.<sup>80</sup> Although not specific to wetlands, the program applies to wetlands, as well as lakes, streams, and estuaries.<sup>81</sup>

## **V. Restoration and Partnerships**

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<sup>77</sup> *Id.* at 95.

<sup>78</sup> Personal communication with Ross Feltes, N. J. Meadowlands Comm'n (June 1, 2007)

<sup>79</sup> NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION – WATER MONITORING AND STANDARDS PROGRAM, *supra* note 74.

<sup>80</sup> See New Jersey Department of Environmental Protection – Division of Watershed Management, *Volunteer Monitoring*, at <http://www.state.nj.us/dep/wms/bfbm/vm/index.html> (last visited Sept. 12, 2007).

<sup>81</sup> See Danielle Donkersloot, New Jersey Department of Environmental Protection, *Watershed Watch Network*, available at [http://www.state.nj.us/dep/watershedmgt/DOCS/volmon/Donkersloot,%20Danielle%20\(Watershed%20Watch\).pdf](http://www.state.nj.us/dep/watershedmgt/DOCS/volmon/Donkersloot,%20Danielle%20(Watershed%20Watch).pdf) (last visited Sept. 12, 2007).

NJDEP's Office of Natural Resource Restoration (ONRR) was established in the 1990s to restore damages caused by oil spills and discharges to natural resources, including wetlands and habitat, groundwater, species, and public uses. When damages occur, ONRR assesses the "injuries"<sup>82</sup> and coordinates restoration efforts with those responsible for the damage, other NJDEP programs (e.g., the Site Remediation Program, Division of Fish and Wildlife, and Green Acres Program), and other groups, including environmental organizations, community groups, and others with expertise or knowledge on the issue. ONRR also provides technical and litigation support to the New Jersey Attorney General's Office in pursuing natural resource damage claims and restoration settlements.<sup>83</sup>

NJMC is partnering with the Corps on the restoration of degraded wetland sites in the Meadowlands District as part of the Hudson-Raritan Estuary project. The project includes the production of a Meadowlands Comprehensive Restoration Implementation Plan.<sup>84</sup> A draft of the plan has gone through a stakeholder review, and the NJMC currently is working on a final draft of the plan.<sup>85</sup> NJMC is also performing ecological enhancement at sites independent of the Hudson-Raritan Estuary project.<sup>86</sup>

## VI. Education and Outreach

NJDEP adopted a general education outreach plan in 1996, and, as of 2005, was in the process of updating the plan. NJDEP's Office of Communications oversees general education and outreach program development, provides public assistance, and provides assistance to divisions within the agency conducting education and outreach efforts. Water-related education/outreach efforts are conducted by the Division of Watershed Management (DWM).<sup>87,88</sup>

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

- Project WET (Water Education for Teachers) – a teacher education program that includes workshops and mini-grants for teachers;
- Watershed Ambassadors Program – a community-oriented AmeriCorps environmental program designed to raise awareness about water issues in New Jersey;

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<sup>82</sup> "Natural resource injuries" include "any adverse change or impact of a discharge into or on a natural resource or impairment of natural resource services, whether direct or indirect, long-term or short-term, and includes the partial or complete destruction or loss of the natural resource. Injuries can be ecological based, such as the contamination of a stream habitat and/or use based, such as the public's inability to use the same stream for fishing." See New Jersey Department of Environmental Protection - Office of Natural Resource Restoration, *Program Overview*, at <http://www.nj.gov/dep/nrr/about/overview.htm> (last visited Sept. 12, 2007).

<sup>83</sup> *Id.*

<sup>84</sup> Feltes, *supra* note 61.

<sup>85</sup> Personal communication with Ross Feltes, New Jersey Meadowlands Commission (May 29, 2007).

<sup>86</sup> Feltes, *supra* note 78.

<sup>87</sup> In a related effort, the Communications Office is currently working with the state nonpoint source control program on a public education campaign for stormwater. The campaign will include a website for K-12 educators and a statewide mailing to teachers. The website will offer lessons on stormwater, nonpoint source issues, watershed issues, and the water cycle and will promote DWM's other water education offerings.

<sup>88</sup> Personal communication with Tanya Oznovich, N.J. Dep't Env'tl. Prot. (Feb. 23, 2005).

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- Watershed Education/Urban Fishing Program – a youth education program designed to teach students living in the Newark Bay Complex and other urban areas about the hazards of eating contaminated fish and help them to discover the beauty of the resource;
- Clean Water Rainers Program – a program for educators that provides information on watersheds and nonpoint source pollution, as well as teaching materials for elementary school age students; and
- Watershed Watch Network – a citizen water quality monitoring program (also described in *Monitoring and Assessment* section above).<sup>89</sup>

DWM also provides multiple handouts and publications for youth, communities, the regulated public, environmental professionals, educators, and others.<sup>90</sup> NJDEP DLUR staff coordinate with Rutgers University to hold continuing education training sessions for the regulated public, consultants, and others. Finally, NJDEP's Bureau of Coastal and Land Use Compliance and Enforcement staff hold presentations in conjunction with local governments or planning bodies for towns with higher-than-average enforcement problems.<sup>91</sup>

NJPC also conducts some education and outreach activities related to wetlands and streams. Most notably, the agency hosts the annual World Water Monitoring Day in cooperation with the U.S. Geological Survey. Volunteer monitoring groups, water quality agencies, students, and the general public are invited to test water quality indicators in their area.<sup>92</sup>

Finally, NJMC works with Ramapo College on a cooperative education and outreach program at the Meadowlands Environment Center.<sup>93</sup> The program offers organized events, as well as tools, outreach materials, and assistance to educators, youth, and the general public.<sup>94</sup> The NJMC Wetlands Group provides outreach service through narrated water tours of the District, birding events, and assistance to community or educational groups on natural resource-related activities.

## VI. Coordination with State and Federal Agencies

New Jersey state agencies regularly coordinate both with each other and with federal agencies. NJPC and NJDEP meet one to two times a year on regulatory and non-regulatory issues.<sup>95</sup> NJDEP holds a Memorandum of Understanding (MOU) with the New Jersey Department of Transportation (NJDOT) on permitting issues, and there is a unit within the NJDEP wetlands program to specifically address transportation projects. NJDEP also holds an MOU with the EPA and the Corps, as required by the assumption of CWA §404. NJDEP works closely with

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<sup>89</sup> See New Jersey Department of Environmental Protection – Division of Watershed Management, *Outreach & Education*, at [http://www.state.nj.us/dep/watershedmgt/outreach\\_education.htm](http://www.state.nj.us/dep/watershedmgt/outreach_education.htm) (last visited Sept. 12, 2007).

<sup>90</sup> Personal communication with Kyra Hoffman, N.J. Dep't of Env'tl. Prot. (March, 7, 2005).

<sup>91</sup> Lockwood, *supra* note 43.

<sup>92</sup> New Jersey Pinelands Commission, *supra* note 50; America's Clean Water Foundation, *World Water Monitoring Day*, at <http://www.worldwatermonitoringday.org/> (last visited Sept. 12, 2007).

<sup>93</sup> New Jersey Meadowlands Commission, *Meadowlands Environment Center*, at <http://www.meadowlands.state.nj.us/ec/index.cfm> (last visited Sept. 12, 2007).

<sup>94</sup> Feltes, *supra* note 78.

<sup>95</sup> New Jersey Pinelands Commission, *supra* note 50.

both agencies—EPA regarding the oversight rule, annual reporting, etc. and the Corps regarding jurisdictional issues, etc. EPA also holds periodic workgroup meetings that are attended by numerous agencies, including the NJDOT, NJDEP, Corps, National Marine Fisheries Service, NJMC, and others. Finally, NJDEP also works closely with the U.S. Fish and Wildlife Service on their role in the DLUR program and permit review for impacts to threatened and endangered species.<sup>96</sup>

NOAA and the Port Authority of New York and New Jersey have provided funds to assist the NJMC in acquiring property for preservation or enhancement. EPA has funded research and enhancement by the NJMC. Finally, the NJMC financed development of natural resources management planning by the NJDEP.<sup>97</sup>

### **VIII. Acronyms and Abbreviations**

CWA – Clean Water Act  
Corps – U.S. Army Corps of Engineers  
DLUR – Division of Land Use Regulation  
DWM – Division of Watershed Management  
EPA – U.S. Environmental Protection Agency  
FTE – Full-Time Equivalent  
FWPA – Freshwater Wetlands Protection Act  
MOU – Memorandum of Understanding  
NJDEP – New Jersey Department of Environmental Protection  
NJDOT – New Jersey Department of Transportation  
NJMC – New Jersey Meadowlands Commission  
NJPC – New Jersey Pinelands Commission  
NOAA – National Oceanic and Atmospheric Administration  
NWP – Nationwide Permit  
ONRR – Office of Natural Resource Restoration

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<sup>96</sup> Lockwood, *supra* note 43; Piel, *supra* note 29.

<sup>97</sup> Feltes, *supra* note 78.



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# **State Wetland Protection**

## ***Status, Trends, & Model Approaches***

*A 50-state study by the  
Environmental Law Institute*

*With support from the  
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2008

# **Appendix: Pennsylvania**

[http://www.eli.org/pdf/core\\_states/Pennsylvania.pdf](http://www.eli.org/pdf/core_states/Pennsylvania.pdf)

## Pennsylvania Wetland Program Summary

### I. Overview

According to the National Wetland Inventory, the Commonwealth of Pennsylvania contains more than 400,000 acres of wetlands. Although the state has experienced significant loss of wetland acreage over the last century, studies<sup>1</sup> show that, in the early 1980s, Pennsylvania began achieving a net annual gain of wetland acreage.<sup>2</sup> Pennsylvania's 1988 *Wetland Protection Action Plan* set forth an agenda for the state to strengthen its wetlands protection programs by increasing public awareness about the importance of wetland resources and by identifying opportunities to improve regulation, policies, and programs. The majority of the plan's goals have been completed or addressed, including: the development of a comprehensive regulatory framework, the formal adoption of a wetland delineation process, the development of a compliance and enforcement manual, the designation of a wetland coordinator for the state, the creation of education and outreach programs, the completion of National Wetland Inventory maps, and an increase in staff resources to support the implementation of these programs.<sup>3</sup>

### II. Regulatory Programs

#### *Wetland definitions and delineation*

Wetlands are regulated under the Dam Safety and Encroachments Act.<sup>4</sup> The act defines a "body of water" as "[a]ny natural or artificial lake, pond, reservoir, swamp, marsh, or wetland."<sup>5</sup> Corresponding rules and regulations, given under Chapter 105 of Pennsylvania Code Title 25, define "regulated waters of [Pennsylvania]" to be "[w]atercourses, streams, or bodies of water and their floodways wholly or partly within or forming part of the boundary of this Commonwealth."<sup>6</sup>

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<sup>1</sup> A 1987 study by the National Wetlands Inventory (NWI), *Mid-Atlantic Wetlands, A Disappearing Natural Treasure*, estimates that Pennsylvania lost 28,000 acres of wetlands between 1956 and 1979. A 1994 NWI study concludes Pennsylvania gained 4,683 acres of wetland within the Chesapeake Bay watershed between 1982 and 1989, indicating a significant shift to a gain of wetland resources for the first time. See ECOLOGICAL SERVS. NE. REGION, U.S. FISH AND WILDLIFE SERVICE, MID-ATLANTIC WETLANDS, A DISAPPEARING NATURAL TREASURE (1987); ECOLOGICAL SERVICES NE. REGION, U.S. FISH AND WILDLIFE SERV., RECENT WETLAND STATUS AND TRENDS IN THE CHESAPEAKE WATERSHED (1982-1989) (1994).

<sup>2</sup> Pennsylvania Department of Environmental Protection [hereinafter PA DEP], *Wetlands Net Gain Strategy* (1998), at <http://www.dep.state.pa.us/dep/deputate/watermgt/Wc/Subjects/WWEC/GENERAL/WETLANDS/NetGain.htm>.

<sup>3</sup> Pennsylvania Department of Environmental Protection, Bureau of Watershed Management, Division of Waterways, Wetlands and Stormwater Management [hereinafter referred to as DWWSM] at <http://www.depweb.state.pa.us/watershedmgmt/site/default.asp> (last visited July 26, 2007).

<sup>4</sup> Wetlands are also included in the state's surface water quality definitions. "Surface waters" are defined as "[p]erennial and intermittent streams, rivers, lakes, reservoirs, ponds, wetlands, springs, natural seeps and estuaries, excluding water at facilities approved for wastewater treatment such as wastewater treatment impoundments, cooling water ponds and constructed wetlands used as part of a wastewater treatment process." 25 PA. CODE § 93.1.

<sup>5</sup> 32 PA. CONS. STAT. § 693.3.

<sup>6</sup> 25 PA. CODE § 105.1.

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“Wetlands” are also defined in Chapter 105<sup>7</sup> as “[a]reas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs and similar areas.”<sup>8</sup>

Wetland delineation in the state is conducted in accordance with the criteria outlined in the U.S. Army Corps of Engineers (“Corps”) 1987 *Wetlands Delineation Manual* and a 1992 Corps memorandum entitled *Clarification and Interpretation of the 1987 Manual*.<sup>9</sup>

***Wetland-related law and regulation***

In Pennsylvania, wetlands have been regulated since 1980 under the Dam Safety and Encroachments Act.<sup>10</sup> The purpose of the act, implemented by the Pennsylvania Department of Protection (PADEP), is “to protect the health, safety, and welfare of the people and property [of Pennsylvania and] ...the natural resources, environmental rights, and values secured by the Pennsylvania Constitution...[to] conserve the water quality, natural regime, and carrying capacity of watercourses...[and to] [a]ssure proper planning, design, construction, maintenance, and monitoring of water obstructions and encroachments, in order to prevent unreasonable interference with waterflow and to protect navigation.”<sup>11</sup> Regulatory provisions designed to achieve these purposes are outlined in Pennsylvania Code Title 25, Chapter 105 and include permitting criteria and mitigation requirements.

An estimated 700 individual permits<sup>12</sup> are issued under Chapter 105 each year. About 26 percent of all individual permits involve wetland resources; the remaining 74 percent involve stream-related activities. The state’s regulatory program authorizes permanent impacts to an average of less than 66 acres of wetland per year, with an average of 81 acres of compensatory acres required (does not include Pennsylvania Wetland Replacement Project acreage gains).<sup>13</sup> An additional 21 acres of temporary impacts are authorized on average per year. The state permitting process under Chapter 105 includes §401 water quality certification for those projects that require federal review and approval under Clean Water Act §404.

PADEP permit review staff work closely with applicants prior to application submission, providing guidance on state regulations and requirements and emphasizing the need to explore and provide alternative locations, designs, and mitigation strategies to avoid and minimize impacts. In addition, PADEP has conducted targeted education and outreach for more than 15 years, informing the regulated community throughout the state of basic permit requirements

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<sup>7</sup> This definition for wetlands is also provided in the state’s surface water quality standards. 25 PA. CODE § 93.1.

<sup>8</sup> *Id.*

<sup>9</sup> See PA DEP, STATEMENT OF POLICY 105.451 – IDENTIFICATION AND DELINEATION OF WETLANDS (5 December 1995), available at

<http://www.dep.state.pa.us/dep/deputate/watermgt/Wc/Subjects/WWEC/general/wetlands/policy.htm>.

<sup>10</sup> 32 PA. CONS. STAT. §§ 693.1–693.27.

<sup>11</sup> *Id.* § 693.2.

<sup>12</sup> In addition to individual permits, PA DEP and county conservation districts issue approximately 3,500 general permits under Chapter 105 annually. Most general permits cannot be used to impact wetlands. Where projects that impact wetlands are authorized by general permit, mitigation and wetland replacement is required. Personal Communication with Kenneth Murin, Pa. Dep’t of Env’tl. Prot. (Apr. 30, 2004).

<sup>13</sup> DWWSM, *supra* note 3.

(especially those related to wetland identification and delineation and alternatives analysis) and mitigation sequencing (avoidance, minimization, compensation). Education and outreach efforts and pre-application work have resulted in the improved quality of application submissions. Most permit applicants are able to meet regulatory requirements and avoid and minimize impacts prior to application submission, resulting in a low percentage of permit denial.<sup>14</sup>

In permit decision-making, PADEP staff utilize information provided in the Chapter 105 permit application, which includes an environmental assessment and information similar to the federal §404b(1) guidelines, comments from other state and federal agencies and the general public, and best professional judgment.<sup>15</sup> In addition, state regulations include special permitting criteria for “exceptional value wetlands.”<sup>16</sup>

### ***Organization of state agencies***

PADEP’s Division of Waterways, Wetlands, and Stormwater Management (DWWSM) leads the state’s wetland-related activities and is responsible for statewide program development and oversight, policy and guidance development, coordination with federal agencies, and legislative and regulatory initiatives. In an effort to integrate wetland protection into other state programs, DWWSM also coordinates with other PADEP offices that issue environmental permits. For example, DWWSM may contribute review and comment on permits being issued by the Office of Mineral Resources Management that involve wetlands.<sup>17</sup>

Permitting and Technical Services Sections within PADEP’s six regional offices review and issue permits/certifications, oversee enforcement and compliance, and conduct outreach, technical support, and restoration-related activities. Permitting and Technical Services staff process permits related to wetlands as well as those associated with stream impacts and land development. Thus, it is difficult to calculate the precise amount of staff time or funding devoted specifically to wetlands regulation and protection. When considering all the regulatory and non-regulatory efforts, PADEP estimates 50 to 60 full-time equivalents conduct wetland-related activities throughout the state. Program funding is derived mostly from state general appropriations, although permit application fees and enforcement penalties also offset program costs to a limited extent.<sup>18</sup>

### ***State programmatic general permits***

Since 1995, Pennsylvania has operated under a state programmatic general permit (SPGP). The current SPGP became effective in July 2006. Permit applications for work in wetlands, rivers, streams, and other waters are reviewed and processed by PADEP or the delegated county conservation district. If the project qualifies, an SPGP may be issued by the state, with no additional federal review. In accordance with the terms and conditions of the SPGP, those applications for projects that have the potential for significant environmental impacts are

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<sup>14</sup> Kenneth Murin, *supra* note 12.

<sup>15</sup> DWWSM, *supra* note 3.

<sup>16</sup> 25 PA. CODE § 105.18a.

<sup>17</sup> DWWSM, *supra* note 3.

<sup>18</sup> *Id.*

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forwarded to the Corps for review.<sup>19</sup> Some activities not regulated under Clean Water Act §404 or River and Harbor Act §10 have general permits that correspond to activities regulated under the state’s Dam Safety and Encroachments Act.<sup>20</sup> Other activities are not eligible for SPGP authorization and must be submitted to the Corps for §404 permit review.<sup>21</sup>

Three categories of activities are outlined in the SPGP. In general, Category I activities are reviewed by either PADEP or the delegated county conservation district and do not require notification to the Corps. An SPGP may be issued if the project complies with all applicable regulations and requirements. Category II activities, also reviewed by PADEP staff or the delegated county conservation district, require notification through the *Pennsylvania Bulletin*. The Corps and federal agencies may review and provide comments on the project or require an individual permit application if the project involves unique circumstances or concerns. Category III activities require individual project review by the Corps and full federal coordination prior to issuing the federal permit. Activities authorized under the SPGP are subject to a comprehensive set of state and federal general requirements, procedural conditions, and best management practices, described at length in the permit document. Application procedures and requirements are outlined as well.<sup>22</sup>

### ***Mitigation***

Chapter 105 lists “wetland replacement criteria” that outline acreage and functional replacement requirements,<sup>23</sup> as well as siting requirements.<sup>24</sup> In addition, the regulations cite PADEP guidelines, entitled *Design Criteria for Wetlands Replacement*.<sup>25</sup> The guidelines, written to provide “design, flexibility, and utilization of the best available technology in environmental engineering,” give a general overview of mitigation objectives and provide guidance for site selection and construction.<sup>26</sup>

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<sup>19</sup> PA DEP, PENNSYLVANIA STATE PROGRAMMATIC GENERAL PERMIT-3 (1 July 2006), *available at* <http://www.dep.state.pa.us/dep/deputate/watermgt/wc/subjects/wwec/general/wetlands/paspgp3.pdf>.

<sup>20</sup> The following activities are authorized by PADEP Chapter 105.12 Waivers, or Chapter 105.441-449 General Permits and Waiver Letters of Maintenance, provided they are implemented as described in the applicable PADEP authorization: PADEP General Permit #10 - Abandoned Mine Reclamation; PADEP Waiver #3 - Aerial Crossings; PADEP Waiver #5 - Acid Mine Drainage; PADEP Waiver #13 - Abandoned Railroad Bridges and Culverts; PADEP Waiver #15 - Abandoned Mines; and Waiver Letters of Maintenance for Channel Cleaning at Bridges and Culverts and Bridge and Culvert Repair. *Id.*

<sup>21</sup> *Id.*

<sup>22</sup> *Id.*

<sup>23</sup> Acreage and functions and values must be replaced at a minimum of 1:1 (replacement acres to acres affected), but PADEP may require a higher ratio depending on the circumstances of the project and the wetlands being affected. For activities constructed without a permit and for which mitigation cannot be achieved, the required replacement ratio is 2:1 (replacement acres to acres affected), but, again, PADEP may require a higher ratio depending on the circumstances of the project and the wetlands being affected. 25 PA. CODE § 105.20a(a).

<sup>24</sup> Regulations require that mitigation must occur adjacent to the impact site, unless an alternative site is approved by the PADEP. Alternative sites should be located in the same watershed or coastal zone as the impacted wetland. 25 PA. CODE § 105.20a(a)(3).

<sup>25</sup> PA DEP, DESIGN CRITERIA FOR WETLANDS REPLACEMENT, *available at* <http://www.dep.state.pa.us/dep/deputate/watermgt/wc/subjects/wwec/general/wetlands/wetlands.htm> (follow “Design Criteria for Wetlands Replacement” hyperlink) (last visited July 26, 2007).

<sup>26</sup> 25 PA. CODE § 105.20a.

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PADEP established the Pennsylvania Wetland Replacement Project (PWRP) in 1996. Through the PWRP, permit applicants who are impacting one-half acre of wetland or less and have no on-site wetland replacement options or alternative mitigation opportunities may contribute money into a PADEP-managed in-lieu-fee fund. Monies from the fund are then used to support the restoration of wetlands on private lands within the watershed.<sup>27</sup> Individual landowners, watershed associations, conservation organizations, sportsmen organizations, or other groups may propose potential projects for the PWRP.<sup>28</sup> PADEP staff conduct on-site assessments in cooperation with landowners, provide project design assistance and construction oversight, and conduct annual site visits to quantitatively monitor project success. Since 1996, approximately 530 contributions from applicants contributing approximately \$1.4 million to the PWRP, offsetting approximately 93 acres of impacted wetland. In addition, approximately 570 individually authorized permit actions, involving less than 0.05 acres of wetland each, have resulted in a cumulative total of 15.8 acres of wetland impact statewide. These “de-minimus” impacts are also replaced by PADEP through the PWRP. During the life of the PWRP, PADEP has assisted, funded, or participated in the restoration of roughly 128 acres of wetland.<sup>29</sup>

The state also participates on the Mitigation Banking Review Team (MBRT), along with the U.S. Fish and Wildlife Service (FWS), U.S. Environmental Protection Agency (EPA), Pennsylvania Department of Transportation (PennDOT), Pennsylvania Fish and Boat Commission (PFBC), Natural Resources Conservation Service (NRCS), Federal Highway Administration (FHWA), and the Baltimore, Philadelphia, and Pittsburgh Corps Districts. The MBRT has established 33 wetland mitigation banking service areas, emphasizing a watershed approach in banking-related decision-making.<sup>30</sup> At present, PennDOT is the only organization in the state that operates wetland mitigation banks. WWSM staff do not believe a strong market for private mitigation banking exists in Pennsylvania due to the low level of wetland impacts permitted.<sup>31</sup>

Stream mitigation differs to some extent from that required for wetlands. Although there are no specific criteria cited in state regulations (as is the case for wetlands), stream mitigation is required under the rules’ broader mitigation requirements. Avoidance and minimization of impacts and alternatives analysis are standard requirements applicable for all permit applications. In cases where adverse environmental impacts cannot be avoided or minimized, compensatory actions may include stream bank fencing, riparian protection, or fish and stream habitat enhancement.<sup>32</sup>

### ***Compliance and enforcement***

Each PADEP regional office supports a compliance and enforcement specialist and a complaint coordinator. These specialists work with permitting staff to conduct site visits and collect technical information for the Corps to determine compliance with the federal requirements. For

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<sup>27</sup> Personal Communication with Ken Reisinger (Oct. 7, 2004).

<sup>28</sup> Public Notice, PA DEP,– Pennsylvania Wetland Replacement Project (18 Jan. 1996), *available at* <http://www.dep.state.pa.us/dep/deputate/watermgt/Wc/Subjects/WWEC/general/wetlands/replfd1.htm>.

<sup>29</sup> Kenneth Murin, *supra* note 12.

<sup>30</sup> DWWSM, *supra* note 3.

<sup>31</sup> Kenneth Murin, *supra* note 12.

<sup>32</sup> *Id.*

purposes of program efficiency, one agency (PADEP or the Corps) may be designated to act as the lead agency in enforcement cases.<sup>33</sup>

If a violation is found, restoration is typically requested of the responsible party. In cases where the violation cannot be resolved through restoration of the site, the responsible party may submit a permit application for review by the Corps and PADEP. If the activity in question meets all requirements, a permit may be issued; however, wetland replacement requirements are doubled. Additionally, fines and penalties may be assessed depending on the severity of the violation. If the activity does not meet permit requirements, PADEP can require removal of the project and full site restoration, with fines and penalties. Although minor violations occasionally occur, major wetland violations in Pennsylvania have been rare over the past ten years. PADEP has developed a compliance and enforcement manual to guide assessments and actions for enforcement cases. The manual includes procedures for resolving enforcement actions, as well as guidance for calculating fines and penalties.<sup>34</sup>

### ***Tracking systems***

PADEP operates the statewide Environmental Facility Application Compliance Tracking System (EFACTS), which tracks information on permits, compliance, and project information such as type of wetland impacted, location, size, and mitigation. EFACTS generally seeks to accomplish the following objectives:

- Provide department-wide information on the multiple programs that regulate facilities;
- Provide information to the public on permits issued by PADEP and the status of pending permit applications;
- Determine compliance rates for PADEP programs so they can be tracked and compared year to year;
- Provide accurate, up-to-date information on permit compliance;
- Document the steps taken to achieve compliance (environmental audits and management systems, permits, inspections, notices of violation, orders, etc.);
- Use this information as a management tool within PADEP to identify noncompliance problems and how the agency plans to address them; and
- Help document pollution prevention efforts as a strategy for compliance.<sup>35</sup>

The system, which relies mostly on permit application information, is online and accessible to the public.

### **III. Water Quality Standards**

Pennsylvania incorporated wetland protection into the state's water quality standards in 1994, creating regulatory linkages between Chapter 105 wetland regulations and Chapters 93 and 96<sup>36</sup>

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<sup>33</sup> *Id.*

<sup>34</sup> DWWSM, *supra* note 3.

<sup>35</sup> PA DEP, *eFACTS*, at [http://www.dep.state.pa.us/efacts/about\\_efacts.asp?varinfo=obj](http://www.dep.state.pa.us/efacts/about_efacts.asp?varinfo=obj) (last visited July 26, 2007).

water quality provisions. Chapters 93 and 96 include standard definitions for surface waters and wetlands,<sup>37</sup> and water quality regulations state that “[f]unctions and values of wetlands shall be protected pursuant to Chapters 93 and 105 (relating to water quality standards and dam safety and waterway management).”<sup>38</sup> Chapter 93 refers to statewide water uses that must be protected, including aquatic life uses, water supply uses, recreational uses, and navigation. Protection for “exceptional value waters”<sup>39</sup> and “high quality waters”<sup>40</sup> are also included. Water quality standards criteria are narrative, chemical, and biological. Chapter 96 cites the functions and values in Chapter 105 as the narrative quality that must be protected for wetlands and identifies the permitting and mitigation requirements of Chapter 105 as anti-degradation measures for wetlands.<sup>41</sup>

#### IV. Monitoring and Assessment

Efforts are underway to develop a holistic evaluation for wetlands in the state. PADEP, Pennsylvania State University, EPA Region III, and EPA Headquarters are currently working collaboratively to develop a wetland assessment methodology. The methodology will be used to evaluate wetland integrity and quality on a watershed basis, utilizing reference sites and a standard three-tiered protocol. The protocol was completed and pilot field-tested in the summer of 2006. Programmatic implementation of the assessment methodology is dependent on program development efforts and adequate staffing and funding availability. PADEP is exploring ways to integrate the protocol with the state’s water quality assessment programs, §305(b) reports, and other regulatory and non-regulatory processes. EPA Region III and EPA Headquarters are currently providing funding to pilot test the methodology.<sup>42</sup>

#### V. Restoration

In an effort to move beyond its regulatory role and incorporate a more proactive restoration program, PADEP initiated the *Wetlands Net Gain Strategy*. The strategy seeks to move beyond

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<sup>36</sup> Water quality standards and anti-degradation policies are found in Chapter 93 of the Pennsylvania Code, while requirements for the implementation of water quality standards are found in Chapter 96.

<sup>37</sup> Wetlands are also included in the state’s surface water quality definitions. “Surface waters” are defined as “[p]erennial and intermittent streams, rivers, lakes, reservoirs, ponds, wetlands, springs, natural seeps and estuaries, excluding water at facilities approved for wastewater treatment such as wastewater treatment impoundments, cooling water ponds and constructed wetlands used as part of a wastewater treatment process.” 25 PA. CODE § 93.1.  
<sup>38</sup> *Id.* § 96.3.

<sup>39</sup> “Exceptional value waters” include those surface waters that are of exceptional ecological significance; are located in a National Wildlife Refuge, a State Game Propagation and Protection Area, a designated state park natural area or state forest natural area, a national natural landmark, federal or state wild river, federal wilderness area or national recreational area; are an outstanding national, state, regional or local resource water; are surface waters of exceptional recreational significance; achieve a score of at least 92 percent (or its equivalent); or are designated as a “wilderness trout stream” by the Pennsylvania Fish and Boat Commission. *Id.* § 93.4(b).

<sup>40</sup> “High quality waters” include those surface waters meeting certain biological and chemical qualifications, as required by state regulations. *Id.* § 93.4(b).

<sup>41</sup> *Id.* § 96.

<sup>42</sup> DWWSM, *supra* note 3.

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the goal of “no net loss” to a net gain of wetland acreage<sup>43</sup> by taking a watershed-based, community-focused approach. The strategy includes the 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, and education and outreach are discussed in the strategy as well.<sup>44</sup>

The strategy recognizes both regulatory and non-regulatory mechanisms to achieve its objectives. Regulatory mitigation requirements have led to achievement of the no net loss goal in the permitting program. Achievement of the goal of a net gain of wetland acreage relies on the implementation of federal programs such as the FWS Partners for Wildlife and NRCS Wetland Reserve Program. Other programs, such as §319 and Growing Greener Grants,<sup>45</sup> have also contributed to the *Wetlands Net Gain Strategy* goals. 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>46</sup>

The state is required to evaluate the effectiveness of the strategy on an annual basis. This includes 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. Wetland restoration and enhancement efforts are tracked by the PADEP (both through the PWRP and mitigation/permit activities), Partners for Wildlife, Wetland Reserve Program, and Bureau of Abandoned Mine Reclamation.<sup>47</sup>

## VI. Public-Private Partnerships

Pennsylvania has instituted various landowner partnership programs that have yielded relatively successful results. PWRP has involved dozens of willing and dedicated landowners over the ten years of its existence and has helped the state maintain a no net loss of wetland acreage. The Growing Greener Fund has contributed millions of dollars to watershed restoration and protection, including the construction and restoration of wetlands. PADEP also seeks to coordinate with U.S. Department of Agriculture programs such as the Wetland Reserve Program and the Conservation Reserve Program.<sup>48</sup>

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<sup>43</sup> The strategy also includes specific goals for the Chesapeake Bay Watershed. In the Chesapeake 2000 Agreement, Pennsylvania committed to restoring 25,000 acres of tidal and non-tidal wetlands in the Chesapeake Bay Watershed by the year 2010. As part of the goal, the state established a time line of 400 acres of non-tidal wetlands restored each year. PA DEP, *supra* note 2.

<sup>44</sup> *Id.*

<sup>45</sup> Growing Greener grant funds are used to support wetland conservation activities throughout the state. These activities are implemented through local initiatives as part of the PADEP’s focus on comprehensive watershed management.

<sup>46</sup> PA DEP, *supra* note 2.

<sup>47</sup> *Id.*

<sup>48</sup> DWWSM, *supra* note 3.

## **VII. Education and Outreach**

The state's 1988 *Wetland Protection Action Plan* recognized the need for greater outreach and education on the importance of wetlands and included a specific education and outreach program goal. Throughout the late 1980s and mid-1990s, PADEP made intensive efforts to educate the public and the regulated community about wetlands, water resources, and their importance to water quality and the environment. Numerous workshops and seminars were conducted in partnership with other state and federal agencies and private interests. In recent years, these efforts have slowed for various reasons, including saturation of the audience and increased availability of information from other sources. However, PADEP continues to participate in seminars and workshops on wetlands and other environmental issues, as well as semi-annual training sessions for the public and private sector. Topics may include wetland functions and values, identification and delineation, permitting, and statewide policies.<sup>49</sup>

The state also requires an environmental science component in the public school curriculum. PADEP and other state agencies have provided numerous education modules, curricula, and other materials on water quality and wetlands protection to support the educational requirement.<sup>50</sup>

## **VIII. Coordination with State and Federal Agencies**

PADEP coordinates with multiple state agencies in the permit review process, particularly in gathering information to be used in permit decision-making. For example, Pennsylvania Game Commission and Pennsylvania Department of Conservation and Natural Resources' Bureau of Forestry may provide information on threatened and endangered plant and animal species.<sup>51</sup>

PADEP also regularly coordinates with the federal natural resource agencies. Aside from joint site visits and interagency review for selected permit cases, a monthly Environmental Review Committee (ERC) meeting is held to discuss permit applications that require more intensive review and coordination. The ERC includes staff from the PFBC, Corps, National Marine Fisheries Service, FWS, and EPA.<sup>52</sup>

## **IX. Acronyms and Abbreviations**

CWA – Clean Water Act  
DWWSM – Division of Waterways, Wetlands, and Stormwater Management  
EPA – U.S. Environmental Protection Agency  
ERC – Environmental Review Committee  
FWS – U.S. Fish and Wildlife Service

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<sup>49</sup> *Id.*

<sup>50</sup> *Id.*

<sup>51</sup> *Id.*

<sup>52</sup> *Id.*

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FHWA – Federal Highways Administration  
MBRT – Mitigation Banking Review Team  
NRCS – Natural Resources Conservation Service  
NWI – National Wetlands Inventory  
PADEP – Pennsylvania Department of Environmental Protection  
PennDOT – Pennsylvania Department of Transportation  
PFBC – Pennsylvania Fish and Boat Commission  
PWRP – Pennsylvania Wetland Replacement Project  
SPGP – State Programmatic General Permit



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# **State Wetland Protection**

## ***Status, Trends, & Model Approaches***

*A 50-state study by the  
Environmental Law Institute*

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

2008

# **Appendix: Virginia**

[http://www.eli.org/pdf/core\\_states/Virginia.pdf](http://www.eli.org/pdf/core_states/Virginia.pdf)

## Virginia Wetland Program Summary

### I. Overview

Virginia's 1.2 million acres of wetlands cover approximately 4.5 percent of the Commonwealth's total land area.<sup>520</sup> Three-quarters of Virginia's wetlands are nontidal, yet both shores of the Chesapeake Bay have extensive estuarine wetlands. Over the last two centuries, Virginia has lost approximately 42 percent of the state's historical wetland acreage to agricultural, industrial, and urban development.<sup>521</sup>

Virginia law requires no net loss of existing wetland acreage and function.<sup>522</sup> The state's wetland regulation and protection programs are operated by the Virginia Department of Environmental Quality (VDEQ), Office of Wetlands and Water Protection/Compliance, as well as the Virginia Marine Resources Commission (VMRC), Habitat Management Division. In 2000, Virginia passed the Nontidal Wetlands Act, enabling VDEQ to regulate activities in wetlands outside federal jurisdiction. Local governments also play an important role by adopting zoning ordinances and assuming permitting responsibilities for tidal wetlands through citizen's Wetland Boards.<sup>523</sup> In addition, state agencies conduct many non-regulatory wetland activities, such restoration and education.

### II. Regulatory Programs

#### *Wetland definitions and delineation*

Wetlands are explicitly included in Virginia's definition of "state waters," defined as "all water, on the surface and under the ground, wholly or partially within or bordering the Commonwealth or within its jurisdiction, including wetlands."<sup>524</sup>

Wetlands are defined in various state statutes. In the State Water Control Law, "wetlands" are:

those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.<sup>525</sup>

The amended Virginia Tidal Wetlands Act also defines "nonvegetated wetlands" and "vegetated wetlands."<sup>526</sup>

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<sup>520</sup> C. HERSHNER ET. AL., (2000). WETLANDS OF VIRGINIA: TOTAL, ISOLATED AND HEADWATER. SPECIAL REPORT, 03-1. (Center for Coastal Resources Management, Virginia Institute of Marine Science ed., 2003), available at <http://ccrm.vims.edu/pubs/WetlandsOfVA203.pdf>.

<sup>521</sup> U.S. Geological Survey, *National Water Summary on Wetland Resources: State Summary Highlights*, at [http://water.usgs.gov/nwsum/WSP2425/state\\_highlights\\_summary.html](http://water.usgs.gov/nwsum/WSP2425/state_highlights_summary.html) (last visited Sept. 13, 2007).

<sup>522</sup> VA. CODE ANN. § 62.1-44.15:21.

<sup>523</sup> Personal communication with Tony Watkinson, Va. Marine Resources Comm'n Habitat Mgmt. Div. (Aug. 3, 2006).

<sup>524</sup> VA. CODE ANN. § 62.1-44.3.

<sup>525</sup> *Id.*

<sup>526</sup> VA. CODE ANN. § 28.2-1300. ("Nonvegetated wetlands" means "unvegetated lands lying contiguous to mean low water and between mean low water and mean high water, including those unvegetated areas of Back Bay and its

The Code of Virginia instructs the state to utilize the U.S. Army Corps of Engineers' ("Corps") 1987 *Wetlands Delineation Manual*<sup>527</sup> and to adopt appropriate guidance and regulations to ensure consistency with the Corps' implementation of delineation practices.<sup>528</sup> In 2002, the General Assembly passed a voluntary certification program for professional wetland delineators and expanded the Board of Certified Soil Scientists to include wetland professionals.<sup>529</sup>

### ***Wetland-related law and regulation***

*Virginia Tidal Wetlands Act.*<sup>530</sup> The Virginia Tidal Wetlands Act, enacted in 1972 and revised in 1982, recognizes the environmental value of tidal wetlands and establishes a permitting system for impacts to tidal wetlands, including vegetated tidal wetlands and non-vegetated shoreline between low and mean high water. VMRC is the regulating authority for tidal wetlands, although localities have the option to regulate their own tidal wetlands through citizen Wetlands Boards, with oversight from VMRC.<sup>531</sup>

The act regulates any activity that disturbs tidal wetlands. Regulatory jurisdiction extends to the mean high tide line where no emergent vegetation exists, and to 1.5 times the mean tide range where marsh is present. Under separate authority, permits are also required from VMRC to build on, dump into, or encroach upon the beds of the bays and ocean, rivers, streams, or creeks that are the property of the Commonwealth. Dredging, filling, and building on shallow water areas and establishing moorings and marinas are also regulated.<sup>532</sup> Virginia regulations also include an expedited general wetland permit process for non-vegetated shoreline stabilization during emergency situations.<sup>533</sup>

*State Water Control Law.*<sup>534</sup> The State Water Control Law provides statutory authority for the Virginia Water Protection (VWP) Permit Program, which serves as §401 certification for federal §404 permits and as a state permit regardless of federal permit requirements in both tidal and nontidal wetlands. VWP permit regulations provide detailed standards and procedures for

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tributaries and the North Landing River and its tributaries subject to flooding by normal and wind tides but not hurricane or tropical storm tides. . . Vegetated wetlands means "lands lying between and contiguous to mean low water and an elevation above mean low water equal to the factor one and one-half times the mean tide range at the site of the proposed project in the county, city, or town in question, and upon which is growing and of the following species..."

<sup>527</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://el.ercd.usace.army.mil/elpubs/pdf/wlman87.pdf>.

<sup>528</sup> VA. CODE ANN. § 62.1-44.15:21.

<sup>529</sup> VA. CODE ANN. §§ 54.1-2200 -54.1-2208.

<sup>530</sup> VA. CODE ANN. §§ 28.2-1300 -1320.

<sup>531</sup> Tony Watkinson, *supra* note 4. Of the 46 tidewater jurisdictions, 36 have formed Wetlands Boards and adopted a zoning ordinance that regulates development in wetlands.

<sup>532</sup> Virginia Marine Resources Commission, *Subaqueous Guidelines*, at [http://www.mrc.state.va.us/regulations/subaqueous\\_guidelines.shtm](http://www.mrc.state.va.us/regulations/subaqueous_guidelines.shtm) (last visited Sept. 13, 2007).

<sup>533</sup> 4 VA. ADMIN. CODE § 20-345-10.

<sup>534</sup> VA. CODE ANN. § 62.1-44.2.

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wetlands permitting.<sup>535</sup> Two types of VWP permits exist: general permits for specified activities and individual permits.

VWP permits are required for: dredge, fill, or discharge of pollutant into, or adjacent to surface waters; other alteration of the physical, chemical or biological properties of surface waters; and excavation in wetlands. VWP permits may also be required for the withdrawal of water from a surface water body. Regulations also list exemptions.<sup>536</sup> It should be noted that exempt activities may still require other permits under state and federal law. VWP regulations also outline compensatory mitigation requirements and procedures.<sup>537</sup> New VWP general permit regulations became effective on August 1, 2006, and the VWP Permit Program Regulation became effective July 25, 2007.<sup>538</sup>

*Nontidal Wetlands Act.*<sup>539</sup> In 2000, the Nontidal Wetlands Act amended the State Water Control Law to include a goal of no net loss of existing wetland acreage and function for the Commonwealth. The amendments, fully implemented in 2001, removed the dependence of state nontidal wetlands program on the issuance of a federal permit and added to the activities that are already regulated through §401/404.<sup>540</sup> The act also required development of voluntary and incentive-based programs to achieve a net resource gain in wetlands.

*Chesapeake Bay Preservation Act.*<sup>541</sup> The Chesapeake Bay Preservation Act (“Bay Act”) establishes water quality protection measures specifically for the Chesapeake Bay, its tributaries, and other state waters, which include wetlands. Each of Virginia’s 84 tidewater jurisdictions is required to designate Resource Protection Areas (RPAs) along the shorelines of streams, rivers, and other waterways, including tidal wetlands, and to regulate certain activities in those RPAs, such as building and tree cutting.<sup>542</sup>

The Chesapeake Bay Preservation Area Designation and Management Regulations, developed and administered by the Chesapeake Bay Local Assistance Board, outline criteria for implementation of the Bay Act.<sup>543</sup> Amendments to the regulations, implemented in 2001, require RPAs to be designated around all water bodies with perennial flow. A permit applicant must submit a Water Quality Impact Assessment for the review and approval of a local

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<sup>535</sup> 9 VA. ADMIN. CODE § 25-210.

<sup>536</sup> 9 VA. ADMIN. CODE § 25-210-60. (“Exempt activities include: certain activities covered under other federal and state general permits; construction of septic tanks; normal residential landscaping; silviculture and agriculture best management practices; certain withdrawals of surface water; general infrastructure maintenance; construction or maintenance of farm ponds or irrigation ditches; construction of temporary sedimentation basins; and construction or maintenance of farm roads, forest roads or temporary roads associated with mining activities.”)

<sup>537</sup> See 9 VA. ADMIN. CODE §§ 25-210, 660, 670, 680, and 690.

<sup>538</sup> Personal communication with Catherine Harold and Brenda Winn, Va. Dep’t of Env’tl. Quality (July 26, 2006). See also <http://www.deq.virginia.gov/wetlands/pdf/9vac25210final7-25-07.pdf>.

<sup>539</sup> VA. CODE ANN. § 62.1-44.2.

<sup>540</sup> *Id.* New activities regulated under the Nontidal Wetlands Act include new activities to cause draining that significantly alters or degrades existing wetland acreage or functions, filling or dumping, permanent flooding or impounding, and new activities that cause significant alteration or degradation of existing wetland acreage or function.

<sup>541</sup> 9 VA. CODE ANN. §§ 10.1-2100 – 2116.

<sup>542</sup> 9 VA. CODE ANN § 10-20-10 *et seq.*

<sup>543</sup> *Id.*

government to achieve compliance with the Bay Act. Chesapeake Bay Program regulations also establish 100-foot buffer zones in which shoreline development is regulated and limited.<sup>544</sup>

***Organization of state agencies***

Nontidal, tidal, and isolated wetland regulation is conducted by VDEQ. VMRC oversees certain subaqueous bottoms and tidal wetlands regulation. The permit process for both tidal and nontidal wetlands relies on a Joint Permit Application (JPA) that receives review by local Wetlands Boards, VMRC, VDEQ, and the Corps, as appropriate.<sup>545</sup> The Virginia Department of Game and Inland Fisheries (VDGIF) implements voluntary wetland restoration and protection programs, while the Department of Conservation and Recreation (VDCR) tracks all voluntary wetlands restoration efforts in the state.

*Virginia Department of Environmental Quality.* The VDEQ Office of Wetlands and Water Protection/Compliance implements the VWP permit program. The office also conducts outreach and technical support, enforcement, and research activities related to wetlands. Large reservoir and transportation permits, mitigation bank and transportation site inspections, and policy and programmatic matters are generally handled by the central office in Richmond. VDEQ also has seven regional offices that conduct most of the permit writing for commercial and residential projects for each region. VDEQ's wetlands program employs a total of 37 full-time equivalents (FTEs) at the time of this report and is funded through a mix of general appropriations, fees, and U.S. Environmental Protection Agency (EPA) grants.<sup>546</sup>

VDEQ also serves as the lead agency for Virginia's Coastal Zone Management (CZM) Program, a network of state and local agencies that serves to protect and manage the coastal zone, including wetlands, and plays an important role in the Chesapeake Bay Program.<sup>547</sup>

*Virginia Marine Resources Commission.* The VMRC, Habitat Management Division and local Wetlands Boards together serve as the primary regulatory authority for tidal wetlands, issuing permits under the Tidal Wetlands Act. The Habitat Management Division is involved in three regulatory programs: tidal wetlands, state-owned submerged land, and coastal primary sand dunes. Localities in tidewater Virginia may assume permitting and enforcement responsibilities for tidal wetlands and coastal primary sand dunes through citizen Wetland Boards; however, the VMRC retains oversight.<sup>548</sup>

VMRC, headquartered in Newport News, has a staff of approximately ten FTEs that review applications for tidal wetland permits and other uses of state-owned bottomland. Staff engineers perform site inspections, enforce violations, attend local Wetland Board meetings, and issue permits for tidewater jurisdictions without Wetlands Boards. The Virginia Institute of Marine Science provides technical assistance to staff engineers. The Division's annual budget ranges

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<sup>544</sup> *Id.*

<sup>545</sup> U.S. Army Corps of Engineers, *Norfolk District Regional Permits, Letters of Permission, and State Program General Permit*, at <http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/RBregional.asp> (last visited Sept. 13, 2007).

<sup>546</sup> Harold & Winn, *supra* note 19.

<sup>547</sup> *Id.*

<sup>548</sup> Watkinson, *supra* note 4.

from \$400,000 to \$500,000 and is funded through general and special funds.<sup>549</sup> In addition, one FTE is supported by CZM funds. Local Wetlands Boards are supported by local funds.

*Virginia Department of Game and Inland Fisheries.* VDGIF partners with various state and federal agencies, private landowners, and other organizations on voluntary wetland management and restoration programs. As part of its private- and public-land wetland restoration program, VDGIF promotes conservation and restoration of wetland habitat. The VDGIF wetland restoration program employs one full time wetland biologist. The program is funded by general game protection funds and grants.<sup>550</sup> In addition, proceeds from the sale of a new waterfowl stamp will be split between restoration and protection projects and grants to conservation organizations for restoration work.

*Virginia Department of Conservation and Recreation.* VDCR partners with the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) on wetland restoration programs, such as Conservation Reserve Enhancement Program, and provides financial incentives through these programs. The agency also tracks all voluntary wetland restoration efforts in the Commonwealth.<sup>551</sup> VDCR also collaborates with other state and federal agencies on the Chesapeake Bay Program and provides support for the Chesapeake Bay Restoration Fund.

#### ***§401 certification and Virginia Water Protection permit***

The VWP permit, applicable to both tidal and nontidal wetlands, serves as both §401 certification for federal permits and as a state permit regardless of federal requirements; thus, so-called “isolated wetlands” and Tulloch ditching are regulated by the state. A VMP permit is issued if it has been determined that the proposed activity is consistent with the provisions of the Clean Water Act and the State Water Control Law and will protect instream beneficial uses. All VWP permit applicants are also required to provide a functional assessment for wetland impacts greater than one acre, which is then used to determine compensatory mitigation requirements.<sup>552</sup>

The permit process relies on a Joint Permit Application (JPA), which receives review by local Wetlands Boards, VMRC, VDEQ, and the Corps, as appropriate.<sup>553</sup> Most JPAs are reviewed by VDEQ regional permit managers working in eight offices across Virginia,<sup>554</sup> although the agency often waives their permitting authority for tidal wetland permits that the Corps and VMRC have already approved.<sup>555</sup> Other state agencies, such as VDGIF, VDCR, Virginia Department of Health, and Virginia Department of Agriculture and Consumer Services, are allowed 45 days to submit comments on individual VWP permits.<sup>556</sup>

In 2006, VDEQ issued around 550 VMP permits, including individual and general permits. Permitting decisions are occasionally waived, but very few permits are denied outright because

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<sup>549</sup> *Id.*

<sup>550</sup> Personal communication with David Norris, Va. Dep’t of Game and Inland Fisheries (Sept. 15, 2006).

<sup>551</sup> Personal communication with Susan Block, Va. Dep’t of Conservation and Recreation (Sept. 15, 2006).

<sup>552</sup> *Id.*

<sup>553</sup> U.S. Army Corps of Engineers, *supra* note 26.

<sup>554</sup> Harold & Winn, *supra* note 19.

<sup>555</sup> *Id.*

<sup>556</sup> VA. CODE ANN. § 62.1-44.15:20.

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VDEQ, the applicant, and the public typically coordinate extensively prior to the Board's decision.<sup>557</sup>

### *General permits*

*Nationwide permits.* Section 404 nationwide permits (NWP), letters of permission (LOPs), and regional permits (RPs) are reviewed by VDEQ as they are revised by the Corps. For the 2002 NWPs, Virginia applied conditions to several, while others were certified as written, or denied.<sup>558</sup> Several of these NWPs have also been applied additional, individual conditions.<sup>559</sup> Virginia's action on the 2007 NWPs could not be reviewed within the reporting period.

Conditional certification has also been provided for RP #37 (Discharges performed or funding by NRCS under its Emergency Watershed Protection Program)<sup>560</sup>, RP #40 (Minor maintenance dredging in nontidal waters), and LOP #2 (Letter of Permission for central navigationally-related recreational and commercial dredging projects).<sup>561</sup> Other RPs have been certified as written.<sup>562</sup>

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<sup>557</sup> Email from Brenda Winn, Virginia Department of Environmental Quality, to Rebecca Kihlsinger, Environmental Law Institute (June 25, 2007).

<sup>558</sup> Virginia Department of Environmental Quality, *Summary of DEQ Certification of USACE Permits*, at <http://www.deq.virginia.gov/wetlands/pdf/certificationcorpspermits.pdf> (last visited Sept. 12, 2007). Section 401 certification has been denied for NWP #16 (Return Water from Upland Contained Disposal Sites) and NWP #17 (Hydropower Projects). NWP #40 (Agricultural Activities) has been certified except for the location of Concentrated Animal Feeding Operations or waste storage facilities in surface waters. Eleven other NWPs have been certified except under the following circumstances: when compensatory mitigation is accomplished through the purchase of mitigation bank credits and the bank is not located within the same or adjacent hydrologic unit as the impacted site (unless certain regulatory conditions listed in VA. CODE ANN. § 62.1-44.15:5(E) are met); when compensatory mitigation involves only preservation of wetlands and/or buffers without creation or restoration of wetlands or the purchase of mitigation bank credits, or does not meet the goal of no net loss of wetland acreage and function; for the location of a stormwater management facility in perennial streams or in oxygen- or temperature-impaired waters; for impacts to perennial streams in excess of 500 linear feet and for impacts to intermittent streams in excess of 1500 linear feet; or for any water withdrawal project. The eleven NWPs to which these conditions apply are: NPW #7 (Outfall Structures and Maintenance), except for associated intake structures; NWP #12 (Utility Line Activities), except for associated intake structures for the purposes of transporting non-potable raw surface water; NWP #13 (Bank Stabilization), except when used for the protection of intake structures; NWP #14 (Linear Transportation Projects); NWP #18 (Minor Discharges), except when used to authorize water withdrawals such as the construction of an intake structure, weir or water diversion structure; NWP #19 (Minor Dredging), except when used to create a deep space for water withdrawal; NWP #21 (Surface Coal Mining Activities); NWP #25 (Structural Discharges), except when used to authorize structures such as pilings to construct a platform to mount a pump for water withdrawals; NWP #27 (Stream and Wetland Restoration Activities), provided that when used to permit a wetland mitigation bank, compensation for any surface water impacts is debited from the bank credits; NWP #39 (Residential, Commercial and Industrial Developments), except for impoundments for irrigation of golf courses; NWP #42 (Recreational Facilities), except for impoundments for irrigation of golf courses; NWP #43 (Stormwater Management Facilities); NWP #44 (Mining Activities), except for hydraulic dredging.

<sup>559</sup> *Id.*

<sup>560</sup> *Id.* RP #37 replaced NWP #37 in Virginia on November 21, 2005.

<sup>561</sup> *Id.*

<sup>562</sup> *Id.* The following RPs have been certified as written: RP #15 (Maintenance of existing drainage ditches and mosquito control ditches), RP #17 (Private open- pile piers, mooring piles, certain covered boathouses and devices associated with shellfish gardening), RP #18 (Private piers not covered by RP-17, but with minimal individual and cumulative navigational and environmental impacts), RP #19 (Certain activities covered by VMRC and/or Local Wetland Boards), RP #20 (Development of state-owned and operated artificial fin and shellfish reefs), RP #22

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Virginia has denied §401 certification to LOP #1 (Virginia Department of Transportation Projects)<sup>563</sup> and RP #05 (Construction of Small Impoundments).<sup>564</sup>

*Statewide programmatic general permit.*<sup>565</sup> The statewide programmatic general permit (07-SPGP-01), modified in June 2007, eliminates much of the duplication of effort that otherwise occurs between the VDEQ and Corps permitting programs in Virginia. The SPGP pertains to the discharge of dredged and/or fill material in nontidal waters of the U.S. associated with residential, commercial, and institutional developments, and linear transportation projects that have minimal individual and cumulative impacts. It applies only to projects that have first avoided and minimized impacts. The adoption of 07-SPGP-01 suspends NWP #39 (Residential, Commercial and Industrial Developments) and the nontidal portion of NWP #14 (Linear Transportation Projects). VDEQ is responsible for screening all potential impacts of 07-SPGP-01 projects to threatened and endangered species and historic resources; the Corps' Norfolk District is responsible for addressing any identified impacts. SPGP Standard Operating Procedures are reviewed and updated annually.<sup>566</sup>

*General permits for the Virginia Water Protection permit program.* VDEQ has issued four general permits under the VWP permit program for activities considered to have minimal impact to human health and the environment. VWP General Permit #WP1 allows permanent and temporary impacts to less than one-half of an acre of nontidal wetlands or open water and up to 300 linear feet of nontidal stream bed. VWP General Permit #WP2 governs permanent and temporary impacts related to the construction and maintenance of utility lines, including facilities and activities of utility and public service companies regulated by the Federal Energy Commission or the State Corporation Commission.<sup>567</sup> However, #WP2 may not be used to authorize water withdrawal projects and/or reservoirs that are regulated by Federal Energy Regulatory Commission.<sup>568</sup> VWP General Permit #WP3 governs impacts related to the construction and maintenance of Virginia Department of Transportation or other linear transportation projects. Finally, VWP General Permit #WP4 governs permanent and temporary impacts related to the construction and maintenance of development activities, and activities directly associated with: aggregate mining (e.g., sand, gravel, and crushed or broken stone); hard rock/mineral mining (e.g., metalliferous ores); and surface coal, natural gas, and coalbed methane gas mining, as authorized by the Virginia Department of Mines, Minerals and Energy. A series of requirements and exemptions apply to all four general permits.<sup>569</sup>

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(Installation of certain structures in Lake Gaston), and RP #24 (Certain activities in Claytor & Smith Mountain Lake).

<sup>563</sup> *Id.*

<sup>564</sup> *Id.*

<sup>565</sup> U.S. Army Corps of Engineers: Norfolk District, *State Program General Permit – 01*, available at [http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/spgp\\_2005/SPGP-05.pdf](http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/spgp_2005/SPGP-05.pdf) (last visited Sept. 13, 2007).

<sup>566</sup> See Virginia Department of Environmental Quality, *Permits, Fees, Regulations* at <http://www.deq.virginia.gov/wetlands/permitfees.html> (last visited Sept. 13, 2007).

<sup>567</sup> 9 VA. ADMIN. CODE § 25-670 *et seq.*

<sup>568</sup> Email from Brenda Winn, Virginia Department of Environmental Quality, to author (Oct. 24, 2006).

<sup>569</sup> 9 VA. ADMIN. CODE § 25-670 *et seq.* All four general permits require that that project impacts, both temporary and permanent, result from a single and complete project, and that the applicant submit notification; remit the required application processing fee; comply with the limitations and other requirements of the regulation; receive approval from the Virginia Department of Environmental Quality; provide compensation for unavoidable impacts;

### **Mitigation**

Virginia State Water Control Law requires that permits contain compensatory mitigation requirements that are sufficient to achieve “no net loss” of existing wetland acreage and function.<sup>570</sup> The VWP permit regulations define compensatory mitigation as “actions taken that provide some form of substitute aquatic resource for the impacted aquatic resource.” Regulations emphasize sequencing (avoidance, minimization, then compensatory mitigation).<sup>571</sup> VDEQ has prepared guidance for project managers, VWP permit applicants, and other interested parties on avoidance and minimization procedures.<sup>572</sup>

In Virginia, compensatory mitigation may include: wetland creation or restoration; stream restoration; purchase or use of VDEQ-approved wetland mitigation bank credits; contributing to a VDEQ-approved in-lieu fee fund; preservation of existing wetland and streams, when utilized in conjunction with creation, restoration, or mitigation bank credits; or preservation or restoration of upland buffers adjacent to surface waters, when utilized in conjunction with creation, restoration, or mitigation bank credits.<sup>573</sup> VDEQ and the Corps Norfolk District have prepared a Wetland Mitigation Checklist, as well as technical guidelines<sup>574</sup> that include information on site design, example permit conditions for compensation, monitoring report criteria, and mitigation site compliance.<sup>575</sup>

VMRC has also prepared a wetland mitigation policy and supplemental guidelines. The policy encourages the compensation of all permitted impacts to tidal wetlands, provided that all measures have been taken avoid impact. Mitigation must be dedicated to wetland creation and restoration and can include compensation on-site, compensation in the watershed, or compensation through an approved mitigation bank or in-lieu-fee program.<sup>576</sup>

Mitigation banks and in-lieu-fee programs have been legislatively authorized.<sup>577</sup> Contribution to an in-lieu fee fund is authorized when on-site or off-site projects are deemed to be impracticable, provided that the fund is approved by VDEQ and is dedicated to the achievement of no net loss of wetland or stream acreage and function.<sup>578</sup> VDEQ also is authorized to serve as a signatory on agreements governing the operation of wetland mitigation banks. A mitigation bank may be

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and has not been required to obtain a VWP individual permit under the VWP permit regulation (9 VAC 25-210) for the proposed project impacts. Additional requirements and exemptions, specific to each permit, also apply.)

<sup>570</sup> VA. CODE ANN. § 62.1-44.15:21.

<sup>571</sup> 9 VA. ADMIN. CODE § 25-210-10.

<sup>572</sup> Guidance Memorandum from Larry G. Lawson, P.E., Director, Dep’t of Env’tl. Quality to Regional Directors (Feb. 6, 2004) available at <http://www.deq.virginia.gov/waterguidance/pdf/042007.pdf>.

<sup>573</sup> Virginia Department of Environmental Quality, *What is Mitigation?*, at <http://www.deq.virginia.gov/wetlands/mitigate.html> (last visited Sept. 13, 2007).

<sup>574</sup> Norfolk District Corps and Virginia Department of Environmental Quality *Recommendations for Wetland Compensatory Mitigation*, available at <http://www.deq.virginia.gov/wetlands/pdf/mitigationrecommendabbrevjuly2004.pdf> (last visited Sept. 13, 2007).

<sup>575</sup> Norfolk District Corps and Virginia Department of Environmental Quality, *Wetland Mitigation Checklist*, available at [http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/Guidance/Corps-DEQ\\_Mit\\_Checklist\\_7-04.pdf](http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/Guidance/Corps-DEQ_Mit_Checklist_7-04.pdf) (last visited on Sept. 13, 2007).

<sup>576</sup> 4 VA. ADMIN. CODE § 20-390-10 *et. seq.*

<sup>577</sup> VA. CODE ANN. § 62.1-44.15:23, *Id.* § 62.1-44.15:21.

<sup>578</sup> 9 VA. ADMIN. CODE § 25-210-115 E.

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utilized if: it is located in the same or adjacent hydrological unit code as the impacted site or meets prescribed certain conditions;<sup>579</sup> it is ecologically preferable to practicable on-site and off-site mitigation options; and the banking instrument has been approved by a process that included public review and comment.

The Virginia Mitigation Banking Review Team (MBRT) oversees mitigation bank permitting. Representatives from the Corps, EPA, U.S. Fish and Wildlife Service (FWS), VDEQ, VDGIF, VMRC, and VIMS serve on the MBRT.<sup>580</sup> VDEQ and the Corps take the lead on nontidal mitigation banking permits, while VMRC and the Corps take the lead on tidal mitigation banks. Currently, Virginia has 40 approved nontidal mitigation banks, 2 tidal mitigation banks, and approximately 20 proposed mitigation banks.<sup>581</sup> VMRC and VIMS, with assistance from the Mitigation Banking Advisory Committee,<sup>582</sup> private sector developers, consultants and environmental groups, have developed guidelines for the development and operation of tidal wetland mitigation banks in Virginia.<sup>583</sup> Additional guidelines for proposing mitigation banks have been developed jointly by the VDEQ and the Corps Norfolk District.<sup>584</sup> Finally, VDEQ, in collaboration with the Corps, EPA, and FWS, has also developed a template to assist in developing a mitigation banking instrument.<sup>585</sup>

VDEQ also developed a Stream Impact and Compensation Assessment Manual (SICAM) for the rapid assessment of stream compensation requirements for permitted impacts. SICAM includes methods for assigning a quality value to the stream to be impacted, assessing the type or severity of impact, and determining the types and amount of compensation that will satisfy the compensation requirement.<sup>586</sup> In January 2007, SICAM was replaced with the Unified Stream Methodology (USM),<sup>587</sup> which was developed by the Corps - Norfolk District and VDEQ as a unified and consistent method to rapidly assess proposed stream impacts and determine

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<sup>579</sup> VA. CODE ANN. §§ 62.1-44.15:23, 28.2-1308. (When the bank is not located in the same or adjacent hydrological unit as the impacted site, the purchase or use of credits shall not be allowed unless the applicant demonstrates that (i) the impacts will occur as a result of a Virginia Department of Transportation linear project; (ii) there is no practical alternative; (iii) the impacts are less than one acre; (iv) there is no significant harm to water quality or fish and wildlife resources due to the impacts; and either (v) impacts within the Chesapeake Bay watershed are mitigated within the Chesapeake Bay watershed or (vi) impacts within U.S.G.S. cataloging units 02080108, 02080208, and 03010205, as defined by the Hydrologic Unit Map of the United States (U.S.G.S. 1980), are mitigated in-kind within those hydrologic cataloging units, as close as possible to the impacted site.)

<sup>580</sup> Harold & Winn, *supra* note 19.

<sup>581</sup> Personal communication with David Davis, Va. Dep't of Env'tl. Quality (Aug. 8, 2006).

<sup>582</sup> Virginia Marine Resources Commission, *Guidelines for the Establishment, Use and Operation of Tidal Wetland Mitigation Banks in Virginia*, available at <http://www.mrc.state.va.us/regulations/fr391.shtm> (last visited Sept. 13, 2007) The Mitigation Banking Advisory Committee represents local, state and federal interests involved in tidal wetlands management and mitigation issues.

<sup>583</sup> *Id.*

<sup>584</sup> Letter from J. Robert Hume, Regulatory Branch Chief, Norfolk District Army Corps of Engineers to Prospective Wetlands Bankers and Consultants (available at <http://www.deq.virginia.gov/wetlands/pdf/mitigation.pdf>) (last visited Sept. 13, 2007).

<sup>585</sup> Virginia Department of Environmental Quality, *Template Mitigation Banking Instrument*, available at [http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/Mitigation%20Banks/MBI\\_template\\_5-04.doc](http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/Mitigation%20Banks/MBI_template_5-04.doc) (last visited Sept. 13, 2007).

<sup>586</sup> See Virginia Department of Environmental Quality, *supra* note 54.

<sup>587</sup> U.S. ARMY CORPS OF ENGINEERS, NORFOLK DISTRICT, UNIFIED STREAM METHODOLOGY (2007), available at [http://www.deq.state.va.us/wetlands/pdf/USMFinal\\_01-18-07.pdf](http://www.deq.state.va.us/wetlands/pdf/USMFinal_01-18-07.pdf).

compensation requirements for permitted impacts to streams. The USM will be used for both federal and state permits requiring stream compensation.

### ***Compliance and enforcement***

Virginia's State Water Control Law and Tidal Wetlands Act provide enforcement provisions for violations to permit terms and conditions.<sup>588</sup> Regional VDEQ staff are responsible for the majority of the nontidal wetlands compliance and enforcement activities in the Commonwealth.<sup>589</sup> In addition to working closely with the regional staff and the Corps on individual mitigation sites, the central office of the VDEQ also conducts annual site inspections for all mitigation banks to ensure compliance with the banking instrument.<sup>590</sup>

Prior to any enforcement action, a site inspection is conducted. Minor infractions may be resolved on site by means of a Request for Corrective Action or Warning Letter issued by the VDEQ, or a Letter of Agreement signed by VDEQ and the violator. For more serious violations, a Notice of Violation is issued within a few days of inspection, and a consent order is negotiated between VWP staff and the violator. The goal of the consent order is to have a compliance plan in place as soon as possible, including sufficient restoration and mitigation and a monetary penalty. The number of consent orders issued annually varies by region. In rare instances, when no agreement can be reached between VDEQ and the violator, the case may be referred to an administrative hearing or to the attorney general for civil prosecution.<sup>591</sup>

VMRC and the local Wetlands Boards have the authority to: investigate noncompliance; issue "stop work" orders, notices to comply, or restoration orders; and assess civil charges for violations in tidal wetlands.<sup>592</sup> Boards handle violations on a regular basis; VMRC rarely conducts a formal review of Wetland Board decisions.<sup>593</sup> Penalties may include civil charges, not to exceed \$10,000 for each violation, in addition to the cost of any restoration ordered by the VMRC or Wetlands Board. Wetland violations may also be prosecuted criminally.<sup>594</sup>

### ***Tracking systems***

VDEQ maintains a database that tracks permit applications, issuances and enforcement, and types, amounts, and locations of impacts and compensation. The agency also tracks annual monitoring reports and credit sales for mitigation bank sites separately. As of December 2006, VDEQ is updating the permit tracking system to include several subcomponents of mitigation.<sup>595</sup> All nontidal wetland data are available to resource managers, academics, students, politicians, and the general public through a data query program available on the VDEQ website.<sup>596</sup> VIMS also has an on-line GIS-based tracking system for nontidal and tidal wetland permits and

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<sup>588</sup> VA. CODE ANN. § 62.1-44.34:20; 9 VA. ADMIN. CODE § 25-210-240, 28.2-1317-1320.

<sup>589</sup> Personal communication with Mike Dowd, Va. Dep't of Env'tl. Quality, Enforcement (August 8, 2006).

<sup>590</sup> Harold & Winn, *supra* note 19.

<sup>591</sup> Mike Dowd, *supra* note 70. See also Virginia Department of Environmental Quality, *Final Orders*, at <http://www.deq.virginia.gov/enforcement/finalorders.html> (last visited Sept. 13, 2007).

<sup>592</sup> VA. CODE ANN. § 28.2-1320.

<sup>593</sup> Watkinson, *supra* note 4.

<sup>594</sup> VA. CODE ANN. § 28.2-1318.

<sup>595</sup> Harold & Winn, *supra* note 19.

<sup>596</sup> Virginia Department of Environmental Quality, *A Guide to the Data Query Program*, at <http://www.deq.virginia.gov/wetlands/query.html> (last visited Sept. 13, 2007).

mitigation.<sup>597</sup> The VIMS tidal database tracks every wetland permit application, total impacts, and amount of mitigation required.<sup>598</sup>

VDCR tracks statewide voluntary wetland restoration accomplishments in accordance with the Chesapeake 2000 agreement.<sup>599</sup> Data come from private organizations such as TNC and Ducks Unlimited, as well as federal agencies, such as FWS.<sup>600</sup>

### III. Water Quality Standards

Virginia has not developed water quality standards specific to wetlands, but standards do apply to all “waters of the state,” which explicitly include wetlands. Water quality standards are narrative, chemical, and biological in nature.<sup>601</sup> All state waters, including wetlands, are designated for the following uses: recreation, aquatic life, wildlife, public water supply, and the production of edible and marketable natural resources.<sup>602</sup>

In 1997, Virginia passed the Water Quality Improvement Act, creating the Water Quality Improvement Fund. The Fund provides grants to local governments, soil and water conservation districts, and individuals for point and nonpoint source pollution reduction and control programs.<sup>603</sup>

### IV. Monitoring and Assessment

#### *Monitoring and assessment for wetlands*

With funding from EPA, VDEQ and VIMS have developed a ten-year, long-term water monitoring and assessment strategy specifically designed to support wetland permitting and mitigation decisions, to allow reporting of wetland condition, and to provide information for policy development.<sup>604</sup> The three-level probabilistic monitoring strategy allows both general reporting on the status and trends of the state’s wetlands and more detailed analysis of the performance of specific functions in selected wetlands. Level One, which has been completed, involved using existing GIS data to assess the condition of the state’s wetlands based on type and surrounding landscape (e.g., proximity to other wetlands, proximity to roads and highways, density of roads and highways, percent land cover). Level Two involves a more detailed analysis of remotely sensed data and a site visit for a statistically selected sub-sample of wetlands. Level Three entails a detailed analysis of wetland performance of certain functions. The monitoring data will be used in several ways: as part of Virginia’s Clean Water Act Integrated §305(b)/303(d) report to the EPA; to help evaluate environmental impacts of proposed

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<sup>597</sup> Virginia Institute of Marine Science, *Wetlands Program*, at <http://ccrm.vims.edu/wetlands.html> (last visited Sept. 13, 2007).

<sup>598</sup> Watkinson, *supra* note 4.

<sup>599</sup> Block, *supra* note 32.

<sup>600</sup> *Id.*

<sup>601</sup> 9 VA. ADMIN. CODE § 25-260-20 - 155.

<sup>602</sup> 9 VA. ADMIN. CODE § 25-260-10(A).

<sup>603</sup> *Id.*

<sup>604</sup> Davis, *supra* note 62.

projects; to evaluate the performance of wetland restoration and mitigation efforts; to determine whether the state is meeting its goal of “no net loss” of wetland acreage and function; and to evaluate cumulative impacts of wetland loss and restoration.<sup>605</sup> In addition, the wetland monitoring and assessment strategy will include an evaluation of the current designated uses for their applicability to wetlands and a determination of whether additional uses or water quality standards should be developed specifically for wetlands.<sup>606</sup>

Three hydrogeomorphic (HGM) models have been developed for wetland habitats in Virginia, including the Draft Woody Depression Wetland HGM Model for the Coastal Plain of Virginia,<sup>607</sup> the Draft Regional Guidebook for Applying the HGM approach to Wet Hardwood Flats on Mineral Soils in the Coastal Plain of Virginia,<sup>608</sup> and the Deciduous Wetland Flats Interim HGM.<sup>609</sup> In addition, VDEQ is developing a web-based floristic assessment calculator, which will allow users to determine wetland health based on the list of plants gathered during delineation.<sup>610</sup>

### ***Monitoring and assessment for streams***

A Virginia Stream Condition Index was developed by Tetra Tech Inc. with funding from the EPA. The index uses eight measurements to determine impairments to aquatic life uses in wadeable freshwater streams and rivers west of Virginia’s coastal plain.<sup>611</sup>

### ***Citizen monitoring***

VDEQ’s Citizen Water Quality Monitoring Program provides technical assistance and grants to support citizen water quality monitoring groups.<sup>612</sup> The Alliance for the Chesapeake Bay, VDCR, VDEQ, and Virginia Izaak Walton League’s Save Our Streams have collaborated to create the Virginia Citizen Water Quality Monitoring Program Methods Manual. The manual assists citizens with the development of a monitoring program and provides guidance on the advantages and limitations of the more commonly used methods for water quality monitoring.<sup>613</sup> Citizen monitoring groups may receive state funds if they establish a memorandum of agreement

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<sup>605</sup> Virginia Institute of Marine Science, *Nontidal Wetlands Assessment Protocol*, available at <http://ccrm.vims.edu/nontidal.html> (last visited Sept. 13, 2007).

<sup>606</sup> *Id.*

<sup>607</sup> K.J. HAVENS ET AL., DRAFT WOODY DEPRESSION WETLAND HGM MODEL FOR THE COASTAL PLAIN OF VIRGINIA. FINAL REPORT TO THE U.S. EPA (CD 983598-01) (2004), available at <http://ccrm.vims.edu/hgm/woodydepressionsfinalrpt04.pdf#search=%22Draft%20Woody%20Depression%20Wetland%20HGM%20Model%20for%20the%20Coastal%20Plain%20of%20Virginia%22>.

<sup>608</sup> K.J. HAVENS ET AL., A DRAFT REGIONAL GUIDEBOOK FOR APPLYING THE HGM APPROACH TO WET HARDWOOD FLATS ON MINERAL SOILS IN THE COASTAL PLAIN OF VIRGINIA (2001), available at <http://ccrm.vims.edu/hydrogeomorphicguidebook.pdf>.

<sup>609</sup> DR. RICK RHEINHARDT ET AL., DECIDUOUS WETLAND FLATS INTERIM HYDROGEOMORPHIC MODEL, available at <http://www.pwrc.usgs.gov/wlistates/secoast.htm#Deciduous%20Wetland%20Flats%20Interim%20Hydrogeomorphic%20Model> (last visited Sept. 13, 2007).

<sup>610</sup> Davis, *supra* 62.

<sup>611</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).

<sup>612</sup> VA. CODE ANN. § 62.1-44.19:11.

<sup>613</sup> VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY, *VIRGINIA CITIZEN WATER QUALITY MONITORING PROGRAM METHODS MANUAL* (2003), available at <http://www.deq.virginia.gov/cmonitor/pdf/cmonman.pdf>.

with VDEQ, pursue projects that are consistent with VDEQ’s water quality monitoring program, conduct monitoring in a manner consistent with the Methods Manual, and pursue projects that are part of the water quality control plan.<sup>614</sup> The program focuses on traditional water quality monitoring, although it also may be utilized for wetlands once the wetlands monitoring program is fully established.<sup>615</sup>

## V. Restoration and Partnerships

Virginia state law requires that voluntary and incentive-based programs be developed for wetland restoration in order to achieve a “net gain” of wetland resources.<sup>616</sup> In response, the state has committed to restore 10,000 acres of wetlands by 2010,<sup>617</sup> including 6,000 acres in the Chesapeake Bay watershed, in accordance with the Chesapeake Bay 2000 agreement.<sup>618</sup> An executive order established the Virginia Wetlands Restoration Coordinating Committee to increase state agency coordination on wetlands restoration and mandates that all state agencies holding public land: identify areas suitable for wetland restoration, enhancement, or preservation; restore wetlands where appropriate; and develop measurable indicators for wetland conservation, restoration, and enhancement.<sup>619</sup>

VDGIF also works with willing landowners to find appropriate federal or state programs for wetland restoration. A technical assistance group of biologists works with landowners to provide assistance with volunteer wetland restoration. VDGIF also collaborates with the NRCS wetland enhancement and restoration programs and is working with the Atlantic Coast Joint Venture.<sup>620</sup>

VDCR collaborates with NRCS on the Conservation Reserve Enhancement Program (CREP) program and manages some of the state matching funds for the program.<sup>621</sup> For example, the state’s Water Quality Improvement Fund offers a landowner bonus payment of \$200 per acre of wetland restored to encourage landowners to enroll wetlands in the CREP program.<sup>622</sup> The VDCR also assists the Division of Legislative Services with the Chesapeake Bay Restoration Fund, which is funded by the sale of Friend of the Chesapeake license plates. The Chesapeake

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<sup>614</sup> VA. CODE ANN. § 62.1-44.19:11.

<sup>615</sup> Davis, *supra* note 62.

<sup>616</sup> VA. CODE ANN. § 62.1 1-44.15:21.

<sup>617</sup> Virginia Department of Environmental Quality and the Alliance for Chesapeake Bay, *Restoring Virginia’s Wetlands: A Citizens Toolkits*, (2005) available at <http://www.deq.virginia.gov/wetlands/pdf/restoringvawetlandstoolkit.pdf>.

<sup>618</sup> Chesapeake Bay Program, Chesapeake 2000 Agreement, available at <http://www.chesapeakebay.net/agreement.htm>.

<sup>619</sup> Commonwealth of Virginia, Office of the Governor (Oct. 20, 2000), *Executive Order 72 (00), Establishing the Virginia Wetlands Restoration Coordinating Committee*, available at [http://www.dpb.virginia.gov/eo/eo72\(00\).pdf#search=%22Executive%20Order%2072\(00\)%20Virginia%22](http://www.dpb.virginia.gov/eo/eo72(00).pdf#search=%22Executive%20Order%2072(00)%20Virginia%22) (establishing the Virginia Wetlands Restoration Coordinating Committee and the requirement that state land holders identify areas for wetland restoration).

<sup>620</sup> Norris, *supra* note 31.

<sup>621</sup> Block, *supra* note 32.

<sup>622</sup> Virginia Department of Conservation and Recreation, *Wetland Restoration Bonus*, at <http://165.176.249.158/WetLands/BayProcedures.cfm> (last visited Sept. 13, 2007).

Bay Restoration Fund supports restoration and education projects that affect water bodies located within the Chesapeake Bay watershed.<sup>623</sup>

Finally, VDEQ offers information to landowners and the general public on volunteer wetland restoration projects. For example, in collaboration with the Alliance for the Chesapeake Bay, VDEQ released *Restoring Virginia's Wetlands: A Citizen's Toolkit*.<sup>624</sup> The toolkit provides citizens with information on wetland functions and values, the status of Virginia's wetlands, wetland monitoring basics, regulatory protection programs, options for the use and management of wetlands, and technical and financial resources for protection, enhancement, and restoration projects. VDEQ and the Alliance for the Chesapeake Bay have also prepared *Tools for Targeting Sites for Voluntary Wetland Activities*<sup>625</sup> and *Technical and Financial Resources for Voluntary Wetland Restoration Projects*,<sup>626</sup> both available on VDEQ's website.

## VI. Education and Outreach

Several state agencies conduct education and outreach activities. VDGIF conducts two to three field classes and one to two wetland workshops per year. The department also conducts outreach with landowners through site visits and project reviews.<sup>627</sup> VMRC has provided informational symposiums on administrative issues to local Wetlands Boards and has worked with VIMS on wetlands education workshops.<sup>628</sup> In addition to educational materials provided to landowners and other private citizens, VDEQ also operates Virginia Naturally, a statewide environmental education program that includes educational brochures and programs on wetlands.<sup>629</sup> VDEQ also administers Project WET (Water Education for Teachers) and trains about 1,000 teachers each year.

## VII. Coordination with State and Federal Agencies

Virginia state agencies regularly coordinate both with each other and with federal agencies on wetland-related issues. VDEQ has established formal agreements and/or collaborative partnerships with the Corps' Norfolk District, EPA, FWS, VMRC, VDGIF, VIMS, and Alliance for the Chesapeake Bay, among others, on issues of wetlands regulation, mitigation, monitoring and restoration. In addition, VDGIF and VDCR collaborate with NRCS and others on wetland

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<sup>623</sup> See Virginia Department of Conservation and Recreation, *Chesapeake Bay Restoration Fund*, at <http://www.mde.state.md.us/Water/CBWRF/index.asp> (last visited Sept 13, 2007).

<sup>624</sup> See Virginia Department of Environmental Quality and the Alliance for Chesapeake Bay, *supra* note 98.

<sup>625</sup> See Virginia Department of Environmental Quality and the Alliance for Chesapeake Bay, *Tools for Targeting Sites for Voluntary Wetland Activities*, (2004) available at <http://www.deq.virginia.gov/wetlands/pdf/toolsvoluntaryrestoration.pdf>.

<sup>626</sup> See Virginia Department of Environmental Quality and the Alliance for Chesapeake Bay, *Technical and Financial Resources for Voluntary Wetland Restoration Projects*. available at <http://www.acb-online.org/project.cfm?vid=239> (last visited Sept. 13, 2007).

<sup>627</sup> Norris, *supra* note 31.

<sup>628</sup> Watkinson, *supra* note 4.

<sup>629</sup> See Virginia Department of Environmental Quality, *Virginia Naturally*, at <http://www.vanaturally.com/homepage.html> (last visited Sept. 13, 2007).

restoration programs, including CREP. Virginia is also involved in several formal state and regional partnerships related to wetland restoration.

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 VDGIF, VDEQ, VDCR, VIMS, and several other state and federal agencies.<sup>630</sup> VDEQ also serves as the lead agency for CZM, helping agencies and localities to develop coastal policies and administering program's annual grant program.<sup>631</sup> Virginia's CZM, established as part of the national coastal zone management program, is a network of state agencies and local governments that administers the laws, regulations and policies that protect Virginia's coastal resources.<sup>632</sup>

VDCR and VDEQ oversee Chesapeake Bay Program efforts in Virginia.<sup>633</sup> The Chesapeake Bay Program is a regional partnership created to direct and conduct the restoration of the Chesapeake Bay and includes representatives from Virginia, Pennsylvania, Maryland, Washington, D.C., the Chesapeake Bay Commission, and EPA. The program works to build and adopt policies that support Chesapeake Bay restoration. Over the next decade, the Chesapeake Bay Program's restoration activities will be guided by the "Chesapeake 2000" Agreement, adopted by the Bay Program partners in June 2000. Goals of the agreement include: a no-net loss of existing wetlands acreage and function, a net resource gain by restoring 25,000 acres of tidal and non-tidal wetlands by 2010, information and assistance for local governments and community groups, implementation of the wetland plan component in 25 percent of the land area of each state's bay watershed, and an evaluation of the potential impact of climate change on the Chesapeake Bay watershed.<sup>634</sup>

### VIII. Acronyms and Abbreviations

Bay Act – Chesapeake Bay Preservation Act  
Corps – U.S. Army Corps of Engineers  
CREP – Conservation Reserve Enhancement Program  
CZM – Coastal Zone Management Program  
EPA – U.S. Environmental Protection Agency  
ERRT – Elizabeth River Restoration Trust  
FTE – Full Time Equivalent

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<sup>630</sup> Commonwealth of Virginia, Office of the Governor, *supra* note 100.

<sup>631</sup> Virginia Department of Environmental Quality, *Virginia Coastal Zone Management Program*, at <http://www.deq.virginia.gov/coastal/> (last visited Sept. 13, 2007).

<sup>632</sup> Commonwealth of Virginia, Office of the Governor (Oct. 20, 2000), *Executive Order 21, Continuation of the Virginia Coastal Zone Management Program (2006)*, available at [http://www.governor.virginia.gov/Initiatives/ExecutiveOrders/pdf/EO\\_21.pdf#search=%22Virginia%E2%80%99s%20Coastal%20Zone%20Management%20Program%22](http://www.governor.virginia.gov/Initiatives/ExecutiveOrders/pdf/EO_21.pdf#search=%22Virginia%E2%80%99s%20Coastal%20Zone%20Management%20Program%22) (establishing the CZM; renewed each year by the governor of Virginia).

<sup>633</sup> Chesapeake Bay Program, <http://www.chesapeakebay.net/> (last visited Sept. 13, 2007).

<sup>634</sup> Email from John Kennedy, Virginia Department of Environmental Quality, Chesapeake Bay Program to author (Aug. 8, 2006).

Delaware Wetland Program Review  
Appendix G – Virginia Wetland Program Summary

FWS – U.S. Fish and Wildlife Service  
HGM – Hydrogeomorphic Model  
JPA – Joint Permit Application  
LOP – Letter of Permission  
MBRT – Mitigation Banking Review Team NWP – Nationwide Permit  
MOA – Memorandum of Agreement  
NRCS – Natural Resources Conservation Service  
RP – Regional Permit  
RPA – Resource Protection Area  
SICAM – Stream Impact and Compensation Assessment Manual  
TNC – The Nature Conservancy  
USM – Unified Stream Methodology  
VDCR – Virginia Department of Conservation and Recreation  
VDEQ – Virginia Department of Environmental Quality  
VDGIF – Virginia Department of Game and Inland Fisheries  
VIMS – Virginia Institute of Marine Science  
VMRC – Virginia Marine Resources Commission  
VWP – Virginia Water Protection (Permit Program)  
WET – Water Education for Teachers