



ENVIRONMENTAL
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State Wetland Protection

Status, Trends, & Model Approaches

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

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U.S. Environmental Protection Agency*

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Appendix: State Profiles

Pennsylvania

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, studies¹ show that, in the early 1980s, Pennsylvania began achieving a net annual gain of wetland acreage.² 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.³

II. Regulatory Programs

Wetland definitions and delineation

Wetlands are regulated under the Dam Safety and Encroachments Act.⁴ The act defines a "body of water" as "[a]ny natural or artificial lake, pond, reservoir, swamp, marsh, or wetland."⁵ 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."⁶

¹ 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).

² Pennsylvania Department of Environmental Protection [hereinafter PA DEP], *Wetlands Net Gain Strategy* (1998), at <http://www.dep.state.pa.us/dep/deputate/watermgmt/Wc/Subjects/WWEC/GENERAL/WETLANDS/NetGain.htm>.

³ 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).

⁴ 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.

⁵ 32 PA. CONS. STAT. § 693.3.

⁶ 25 PA. CODE § 105.1.

“Wetlands” are also defined in Chapter 105⁷ 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.”⁸

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*.⁹

Wetland-related law and regulation

In Pennsylvania, wetlands have been regulated since 1980 under the Dam Safety and Encroachments Act.¹⁰ 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.”¹¹ 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 permits¹² 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).¹³ 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

⁷ This definition for wetlands is also provided in the state’s surface water quality standards. 25 PA. CODE § 93.1.

⁸ *Id.*

⁹ 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>.

¹⁰ 32 PA. CONS. STAT. §§ 693.1–693.27.

¹¹ *Id.* § 693.2.

¹² 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).

¹³ 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.¹⁴

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.¹⁵ In addition, state regulations include special permitting criteria for “exceptional value wetlands.”¹⁶

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.¹⁷

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.¹⁸

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 forwarded to the Corps for review.¹⁹ Some activities not regulated under Clean Water Act §404

¹⁴ Kenneth Murin, *supra* note 12.

¹⁵ DWWSM, *supra* note 3.

¹⁶ 25 PA. CODE § 105.18a.

¹⁷ DWWSM, *supra* note 3.

¹⁸ *Id.*

¹⁹ 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>.

or River and Harbor Act §10 have general permits that correspond to activities regulated under the state's Dam Safety and Encroachments Act.²⁰ Other activities are not eligible for SPGP authorization and must be submitted to the Corps for §404 permit review.²¹

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.²²

Mitigation

Chapter 105 lists “wetland replacement criteria” that outline acreage and functional replacement requirements,²³ as well as siting requirements.²⁴ In addition, the regulations cite PADEP guidelines, entitled *Design Criteria for Wetlands Replacement*.²⁵ 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.²⁶

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

²⁰ 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.*

²¹ *Id.*

²² *Id.*

²³ 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).

²⁴ 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).

²⁵ 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).

²⁶ 25 PA. CODE § 105.20a.

restoration of wetlands on private lands within the watershed.²⁷ Individual landowners, watershed associations, conservation organizations, sportsmen organizations, or other groups may propose potential projects for the PWRP.²⁸ 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.²⁹

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.³⁰ 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.³¹

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.³²

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 purposes of program efficiency, one agency (PADEP or the Corps) may be designated to act as the lead agency in enforcement cases.³³

²⁷ Personal Communication with Ken Reisinger (Oct. 7, 2004).

²⁸ 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>.

²⁹ Kenneth Murin, *supra* note 12.

³⁰ DWWSM, *supra* note 3.

³¹ Kenneth Murin, *supra* note 12.

³² *Id.*

³³ *Id.*

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.³⁴

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.³⁵

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 96³⁶ water quality provisions. Chapters 93 and 96 include standard definitions for surface waters and wetlands,³⁷ and water quality regulations state that “[f]unctions and values of wetlands shall be

³⁴ DWWSM, *supra* note 3.

³⁵ PA DEP, *eFACTS*, at http://www.dep.state.pa.us/efacts/about_efacts.asp?varinfo=obj (last visited July 26, 2007).

³⁶ 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.

³⁷ 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,

protected pursuant to Chapters 93 and 105 (relating to water quality standards and dam safety and waterway management).”³⁸ 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”³⁹ and “high quality waters”⁴⁰ 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.⁴¹

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.⁴²

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 the goal of “no net loss” to a net gain of wetland acreage⁴³ 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

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.

³⁸ *Id.* § 96.3.

³⁹ “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).

⁴⁰ “High quality waters” include those surface waters meeting certain biological and chemical qualifications, as required by state regulations. *Id.* § 93.4(b).

⁴¹ *Id.* § 96.

⁴² DWWSM, *supra* note 3.

⁴³ 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.

watersheds. Data management, monitoring, and coordination, site prioritization, and education and outreach are discussed in the strategy as well.⁴⁴

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,⁴⁵ 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.⁴⁶

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.⁴⁷

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.⁴⁸

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

⁴⁴ *Id.*

⁴⁵ 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.

⁴⁶ PA DEP, *supra* note 2.

⁴⁷ *Id.*

⁴⁸ DWWSM, *supra* note 3.

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.⁴⁹

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.⁵⁰

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.⁵¹

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.⁵²

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

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

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ *Id.*

⁵² *Id.*