



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

Virginia

I. Overview

Virginia's 1.2 million acres of wetlands cover approximately 4.5 percent of the Commonwealth's total land area.¹ 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.²

Virginia law requires no net loss of existing wetland acreage and function.³ 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.⁴ In addition, state agencies conduct many non-regulatory wetland activities, such as 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."⁵

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.⁶

The amended Virginia Tidal Wetlands Act also defines "nonvegetated wetlands" and "vegetated wetlands."⁷

¹ 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>.

² U.S. Geological Survey, *National Water Summary on Wetland Resources: State Summary Highlights*, at http://water.usgs.gov/nwsum/WSP2425/state_highlights_summary.html (last visited Sept. 13, 2007).

³ VA. CODE ANN. § 62.1-44.15:21.

⁴ Personal communication with Tony Watkinson, Va. Marine Resources Comm'n Habitat Mgmt. Div. (Aug. 3, 2006).

⁵ VA. CODE ANN. § 62.1-44.3.

⁶ *Id.*

⁷ 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*⁸ and to adopt appropriate guidance and regulations to ensure consistency with the Corps' implementation of delineation practices.⁹ 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.¹⁰

Wetland-related law and regulation

*Virginia Tidal Wetlands Act.*¹¹ 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.¹²

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.¹³ Virginia regulations also include an expedited general wetland permit process for non-vegetated shoreline stabilization during emergency situations.¹⁴

*State Water Control Law.*¹⁵ 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

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..."

⁸ 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.erdc.usace.army.mil/elpubs/pdf/wlman87.pdf>.

⁹ VA. CODE ANN. § 62.1-44.15:21.

¹⁰ VA. CODE ANN. §§ 54.1-2200 -54.1-2208.

¹¹ VA. CODE ANN. §§ 28.2-1300 -1320.

¹² 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.

¹³ Virginia Marine Resources Commission, *Subaqueous Guidelines*, at http://www.mrc.state.va.us/regulations/subaqueous_guidelines.shtm (last visited Sept. 13, 2007).

¹⁴ 4 VA. ADMIN. CODE § 20-345-10.

¹⁵ VA. CODE ANN. § 62.1-44.2.

wetlands permitting.¹⁶ 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.¹⁷ 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.¹⁸ New VWP general permit regulations became effective on August 1, 2006, and the VWP Permit Program Regulation became effective July 25, 2007.¹⁹

*Nontidal Wetlands Act.*²⁰ 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 §401/404.²¹ The act also required development of voluntary and incentive-based programs to achieve a net resource gain in wetlands.

*Chesapeake Bay Preservation Act.*²² 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.²³

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.²⁴ 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 government to

¹⁶ 9 VA. ADMIN. CODE § 25-210.

¹⁷ 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.”)

¹⁸ See 9 VA. ADMIN. CODE §§ 25-210, 660, 670, 680, and 690.

¹⁹ Personal communication with Catherine Harold and Brenda Winn, Va. Dep’t of Env’t. Quality (July 26, 2006). See also <http://www.deq.virginia.gov/wetlands/pdf/9vac25210final7-25-07.pdf>.

²⁰ VA. CODE ANN. § 62.1-44.2.

²¹ *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.

²² 9 VA. CODE ANN. §§ 10.1-2100 – 2116.

²³ 9 VA. CODE ANN § 10-20-10 *et seq.*

²⁴ *Id.*

achieve compliance with the Bay Act. Chesapeake Bay Program regulations also establish 100-foot buffer zones in which shoreline development is regulated and limited.²⁵

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.²⁶ 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.²⁷

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.²⁸

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.²⁹

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

²⁵ *Id.*

²⁶ 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).

²⁷ Harold & Winn, *supra* note 19.

²⁸ *Id.*

²⁹ Watkinson, *supra* note 4.

from \$400,000 to \$500,000 and is funded through general and special funds.³⁰ 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.³¹ 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.³² 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.³³

The permit process relies on a Joint Permit Application (JPA), which receives review by local Wetlands Boards, VMRC, VDEQ, and the Corps, as appropriate.³⁴ Most JPAs are reviewed by VDEQ regional permit managers working in eight offices across Virginia,³⁵ although the agency often waives their permitting authority for tidal wetland permits that the Corps and VMRC have already approved.³⁶ 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.³⁷

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

³⁰ *Id.*

³¹ Personal communication with David Norris, Va. Dep’t of Game and Inland Fisheries (Sept. 15, 2006).

³² Personal communication with Susan Block, Va. Dep’t of Conservation and Recreation (Sept. 15, 2006).

³³ *Id.*

³⁴ U.S. Army Corps of Engineers, *supra* note 26.

³⁵ Harold & Winn, *supra* note 19.

³⁶ *Id.*

³⁷ VA. CODE ANN. § 62.1-44.15:20.

VDEQ, the applicant, and the public typically coordinate extensively prior to the Board's decision.³⁸

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.³⁹ Several of these NWPs have also been applied additional, individual conditions.⁴⁰ 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)⁴¹, RP #40 (Minor maintenance dredging in nontidal waters), and LOP #2 (Letter of Permission for central navigationally-related recreational and commercial dredging projects).⁴² Other RPs have been certified as written.⁴³

³⁸ Email from Brenda Winn, Virginia Department of Environmental Quality, to Rebecca Kihslinger, Environmental Law Institute (June 25, 2007).

³⁹ 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.

⁴⁰ *Id.*

⁴¹ *Id.* RP #37 replaced NWP #37 in Virginia on November 21, 2005.

⁴² *Id.*

⁴³ *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 (Installation of certain structures in Lake Gaston), and RP #24 (Certain activities in Claytor & Smith Mountain Lake).

Virginia has denied §401 certification to LOP #1 (Virginia Department of Transportation Projects)⁴⁴ and RP #05 (Construction of Small Impoundments).⁴⁵

*Statewide programmatic general permit.*⁴⁶ 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.⁴⁷

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.⁴⁸ However, #WP2 may not be used to authorize water withdrawal projects and/or reservoirs that are regulated by Federal Energy Regulatory Commission.⁴⁹ 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.⁵⁰

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ 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 (last visited Sept. 13, 2007).

⁴⁷ See Virginia Department of Environmental Quality, *Permits, Fees, Regulations* at <http://www.deq.virginia.gov/wetlands/permitfees.html> (last visited Sept. 13, 2007).

⁴⁸ 9 VA. ADMIN. CODE § 25-670 *et seq.*

⁴⁹ Email from Brenda Winn, Virginia Department of Environmental Quality, to author (Oct. 24, 2006).

⁵⁰ 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; 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.)

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.⁵¹ 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).⁵² VDEQ has prepared guidance for project managers, VWP permit applicants, and other interested parties on avoidance and minimization procedures.⁵³

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.⁵⁴ VDEQ and the Corps Norfolk District have prepared a Wetland Mitigation Checklist, as well as technical guidelines⁵⁵ that include information on site design, example permit conditions for compensation, monitoring report criteria, and mitigation site compliance.⁵⁶

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.⁵⁷

Mitigation banks and in-lieu-fee programs have been legislatively authorized.⁵⁸ 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.⁵⁹ VDEQ also is authorized to serve as a signatory on agreements governing the operation of wetland mitigation banks. A mitigation bank may be utilized if: it is located in the same or adjacent hydrological unit code as the impacted site or

⁵¹ VA. CODE ANN. § 62.1-44.15:21.

⁵² 9 VA. ADMIN. CODE § 25-210-10.

⁵³ 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>.

⁵⁴ Virginia Department of Environmental Quality, *What is Mitigation?*, at <http://www.deq.virginia.gov/wetlands/mitigate.html> (last visited Sept. 13, 2007).

⁵⁵ 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).

⁵⁶ 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 (last visited on Sept. 13, 2007).

⁵⁷ 4 VA. ADMIN. CODE § 20-390-10 *et. seq.*

⁵⁸ VA. CODE ANN. § 62.1-44.15:23, *Id.* § 62.1-44.15:21.

⁵⁹ 9 VA. ADMIN. CODE § 25-210-115 E.

meets prescribed certain conditions;⁶⁰ 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.⁶¹ 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.⁶² VMRC and VIMS, with assistance from the Mitigation Banking Advisory Committee,⁶³ private sector developers, consultants and environmental groups, have developed guidelines for the development and operation of tidal wetland mitigation banks in Virginia.⁶⁴ Additional guidelines for proposing mitigation banks have been developed jointly by the VDEQ and the Corps Norfolk District.⁶⁵ Finally, VDEQ, in collaboration with the Corps, EPA, and FWS, has also developed a template to assist in developing a mitigation banking instrument.⁶⁶

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.⁶⁷ In January 2007, SICAM was replaced with the Unified Stream Methodology (USM),⁶⁸ which was developed by the Corps - Norfolk District and VDEQ as a unified and consistent method to rapidly assess proposed stream impacts and determine

⁶⁰ 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.)

⁶¹ Harold & Winn, *supra* note 19.

⁶² Personal communication with David Davis, Va. Dep't of Env'tl. Quality (Aug. 8, 2006).

⁶³ 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.

⁶⁴ *Id.*

⁶⁵ 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).

⁶⁶ 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 (last visited Sept. 13, 2007).

⁶⁷ See Virginia Department of Environmental Quality, *supra* note 54.

⁶⁸ 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.

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.⁶⁹ Regional VDEQ staff are responsible for the majority of the nontidal wetlands compliance and enforcement activities in the Commonwealth.⁷⁰ 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.⁷¹

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.⁷²

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.⁷³ Boards handle violations on a regular basis; VMRC rarely conducts a formal review of Wetland Board decisions.⁷⁴ 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.⁷⁵

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.⁷⁶ 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.⁷⁷ VIMS also has an on-line GIS-based tracking system for nontidal and tidal wetland permits and

⁶⁹ VA. CODE ANN. § 62.1-44.34:20; 9 VA. ADMIN. CODE § 25-210-240, 28.2-1317-1320.

⁷⁰ Personal communication with Mike Dowd, Va. Dep't of Env'tl. Quality, Enforcement (August 8, 2006).

⁷¹ Harold & Winn, *supra* note 19.

⁷² 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).

⁷³ VA. CODE ANN. § 28.2-1320.

⁷⁴ Watkinson, *supra* note 4.

⁷⁵ VA. CODE ANN. § 28.2-1318.

⁷⁶ Harold & Winn, *supra* note 19.

⁷⁷ 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.⁷⁸ The VIMS tidal database tracks every wetland permit application, total impacts, and amount of mitigation required.⁷⁹

VDCR tracks statewide voluntary wetland restoration accomplishments in accordance with the Chesapeake 2000 agreement.⁸⁰ Data come from private organizations such as TNC and Ducks Unlimited, as well as federal agencies, such as FWS.⁸¹

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.⁸² 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.⁸³

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.⁸⁴

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.⁸⁵ 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

⁷⁸ Virginia Institute of Marine Science, *Wetlands Program*, at <http://ccrm.vims.edu/wetlands.html> (last visited Sept. 13, 2007).

⁷⁹ Watkinson, *supra* note 4.

⁸⁰ Block, *supra* note 32.

⁸¹ *Id.*

⁸² 9 VA. ADMIN. CODE § 25-260-20 - 155.

⁸³ 9 VA. ADMIN. CODE § 25-260-10(A).

⁸⁴ *Id.*

⁸⁵ 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.⁸⁶ 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.⁸⁷

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,⁸⁸ the Draft Regional Guidebook for Applying the HGM approach to Wet Hardwood Flats on Mineral Soils in the Coastal Plain of Virginia,⁸⁹ and the Deciduous Wetland Flats Interim HGM.⁹⁰ 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.⁹¹

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.⁹²

Citizen monitoring

VDEQ’s Citizen Water Quality Monitoring Program provides technical assistance and grants to support citizen water quality monitoring groups.⁹³ 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.⁹⁴ Citizen monitoring groups may receive state funds if they establish a memorandum of agreement

⁸⁶ Virginia Institute of Marine Science, *Nontidal Wetlands Assessment Protocol*, available at <http://ccrm.vims.edu/nontidal.html> (last visited Sept. 13, 2007).

⁸⁷ *Id.*

⁸⁸ 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>.

⁸⁹ 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>.

⁹⁰ 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).

⁹¹ Davis, *supra* 62.

⁹² 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).

⁹³ VA. CODE ANN. § 62.1-44.19:11.

⁹⁴ 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.⁹⁵ The program focuses on traditional water quality monitoring, although it also may be utilized for wetlands once the wetlands monitoring program is fully established.⁹⁶

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.⁹⁷ In response, the state has committed to restore 10,000 acres of wetlands by 2010,⁹⁸ including 6,000 acres in the Chesapeake Bay watershed, in accordance with the Chesapeake Bay 2000 agreement.⁹⁹ 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.¹⁰⁰

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.¹⁰¹

VDCR collaborates with NRCS on the Conservation Reserve Enhancement Program (CREP) program and manages some of the state matching funds for the program.¹⁰² 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.¹⁰³ 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

⁹⁵ VA. CODE ANN. § 62.1-44.19:11.

⁹⁶ Davis, *supra* note 62.

⁹⁷ VA. CODE ANN. § 62.1-44.15:21.

⁹⁸ 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>.

⁹⁹ Chesapeake Bay Program, Chesapeake 2000 Agreement, available at <http://www.chesapeakebay.net/agreement.htm>.

¹⁰⁰ 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).

¹⁰¹ Norris, *supra* note 31.

¹⁰² Block, *supra* note 32.

¹⁰³ 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.¹⁰⁴

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*.¹⁰⁵ 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*¹⁰⁶ and *Technical and Financial Resources for Voluntary Wetland Restoration Projects*,¹⁰⁷ 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.¹⁰⁸ VMRC has provided informational symposiums on administrative issues to local Wetlands Boards and has worked with VIMS on wetlands education workshops.¹⁰⁹ 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.¹¹⁰ 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

¹⁰⁴ 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).

¹⁰⁵ See Virginia Department of Environmental Quality and the Alliance for Chesapeake Bay, *supra* note 98.

¹⁰⁶ 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>.

¹⁰⁷ 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).

¹⁰⁸ Norris, *supra* note 31.

¹⁰⁹ Watkinson, *supra* note 4.

¹¹⁰ 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.¹¹¹ VDEQ also serves as the lead agency for CZM, helping agencies and localities to develop coastal policies and administering program's annual grant program.¹¹² 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.¹¹³

VDCR and VDEQ oversee Chesapeake Bay Program efforts in Virginia.¹¹⁴ 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.¹¹⁵

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

¹¹¹ Commonwealth of Virginia, Office of the Governor, *supra* note 100.

¹¹² Virginia Department of Environmental Quality, *Virginia Coastal Zone Management Program*, at <http://www.deq.virginia.gov/coastal/> (last visited Sept. 13, 2007).

¹¹³ 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 (establishing the CZM; renewed each year by the governor of Virginia).

¹¹⁴ Chesapeake Bay Program, <http://www.chesapeakebay.net/> (last visited Sept. 13, 2007).

¹¹⁵ Email from John Kennedy, Virginia Department of Environmental Quality, Chesapeake Bay Program to author (Aug. 8, 2006).

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