

BUFFER OPTIONS FOR THE BAY: EXPLORING THE TRENDS, SCIENCE, AND OPTIONS OF BUFFER
MANAGEMENT IN THE GREAT BAY WATERSHED

SYNTHESIS OF RELEVANT POLICY OPTIONS

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I. Executive Summary

In New Hampshire, the management of buffer lands surrounding water bodies is governed by a combination of federal, state, and local policies focused on the protection of wetlands and shorelands. Administered by the New Hampshire Department of Environmental Services (NHDES), state and federal regulations offer minimum protection only for [specified public freshwater](#) and coastal shorelands and [prime](#) wetlands. Communities can and do use local land use controls to protect other water bodies. Many of the state's smaller shorelands and undesignated wetlands are unprotected and at risk for degradation as New Hampshire communities continue to grow and develop. This risk is compounded by insufficient understanding of policy options, inadequate access to related resources, and confusion over terminology among stakeholders.

This report seeks to address these challenges by presenting a synthesis of the current regulatory framework regarding wetland protection, buffers, setbacks, and land use regulations in New Hampshire. It also includes non-regulatory options for management of areas containing buffers and innovative case studies from other states. There are many resources to facilitate understanding of wetland and shoreland regulations in New Hampshire; this report does not intend to duplicate those. Rather, its purpose is to connect available information to municipalities as they craft and enforce local ordinances related to buffer protection and also to connect the information to landholders as they navigate the complicated regulatory framework that governs use of their land. This analysis indicates these decision makers face the following challenges and opportunities in the years to come:

- Decentralized shoreland and wetland policies allow for flexibility at the community level, giving municipalities the opportunity to apply local knowledge to their regulations. Yet, this flexibility comes at the price of consistent enforcement and protection across the state. Buffer width size regulations vary widely; some towns having no regulations at all. This inconsistency leaves many smaller shorelands and undesignated wetlands beyond state jurisdiction and without protection.
- There are many innovative land use control regulations communities could use to protect smaller shoreland and undesignated wetland areas, but their implementation requires resources, motivation and empowerment. Current use regulations and the Land Use Change Tax, for example, are incentive-based approaches to encourage and reward land conservation in and around wetland areas. Traditional land conservation strategies also can protect these areas through fee acquisitions or conservation easements. Funding for land acquisitions can come from partnerships with land trusts, as well as a broad array of funding sources in the state and beyond.
- While the existing regulatory framework presents challenges for the management of these resources, the [EPA-approved Wetland Program Plan](#) offers strategic guidance for change. The plan's objectives include strengthening regulations, policies, and guidance documents, developing and operating under consistent application procedures, and maintaining consistency and coordination to support strong compliance and enforcement actions.

This analysis was commissioned by Buffer Options for the Bay (BOB), a grant-sponsored collaboration of public, academic, and nonprofit organizations dedicated to enhancing the capacity of New Hampshire stakeholders to make informed decisions that make best use of buffer lands to protect water quality, guard against storm surge and sea level rise, and sustain fish and wildlife in the Great Bay region. The project defines buffers as naturally vegetated segments of land directly upslope of a water resource, such as a lake, stream, river, pond, estuary, or other wetland type.

This analysis is intended to be a resource for the organizations involved in the BOB project and others engaged in helping communities and individuals with decisions related to buffer management and policy. The team also has conducted an analysis of the biophysical and social scientific literature that underpins buffer management, an economic analysis of the values placed on the water quality benefits provided by buffers, a buffer-focused GIS analysis of the Great Bay region, and an assessment of the barriers and opportunities related to buffer management in four communities in the Exeter/Squamscott subwatershed.

The results of these analyses are captured in individual reports. They also have been integrated into an online framework intended to inform discussions around buffer management in the region, open the door to new and needed research; and encourage strategic investment available at www.bufferoptionsnh.org. Finally, the team created a collective action plan to encourage collaboration among outreach professionals as they work with towns on advancing effective buffer policy and practice at the community level.

II. Federal & State Regulations Related to Buffers

A. Overview

In New Hampshire, federal and state level regulations combine to restrict certain land use activities within shoreland and wetland areas and the buffers they encompass. These regulations represent the minimum protection communities can rely on to protect these natural resources and the water quality they support.

Many valuable areas are not included under these regulations and therefore are at risk for degradation. For example, while the Shoreland Water Quality Protection Act establishes a statewide minimum buffer that all municipalities must observe, it only applies to water bodies described in the regulations. If a stream or river is not designated or is less than fourth order, no protection is offered. Similarly, wetlands that are not considered “prime” receive less protection under state regulations.

In such cases, it is up to municipalities to create more restrictive, local regulations to protect these resources. Some have taken the initiative to provide such additional protection for shoreland and wetland areas, however, many have not. This has led to inconsistency in regulations and enforcement across the state, making it difficult to properly manage the landscape to protect water quality, control flooding, protect wildlife habitat, and provide many other valuable services.

However, within existing federal and state regulations, there are policies and nonregulatory opportunities that municipalities and individual landowners can explore to enhance local protection of these areas and the many services they provide. The following section provides an orientation of current federal and state shoreland and wetland policies, along with the regulatory and nonregulatory options these policies create related to the management of buffers areas.

B. Federal Regulations: General Permit

The federal government's jurisdiction over New Hampshire's wetlands is found under [Section 404 of the Clean Water Act](#). The United States Army Corps of Engineers (USACE) carries out this jurisdiction by issuing a [Programmatic General Permit](#) in New Hampshire. The current permit came into effect August 18, 2017, and will expire August 3, 2022. USACE and the State of New Hampshire concurrently approve most wetlands permits under the General Permit. This system is intended to simplify the process of submission, review, and approval. The permit emphasizes the importance of buffers (page 19) for special wetlands (page 3)

C. State Regulations Involving Wetlands

1. Fill and Dredge in Wetlands

State jurisdiction over these activities can be found in [RSA 482-A: Fill and Dredge in Wetlands](#) and the NHDES [Administrative Rules Env-Wt 100 through Env-Wt 800](#). [RSA 482-A: 2,X](#) defines a wetland as an area that is "inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal conditions does support, a prevalence of vegetation typically adapted for life in saturated soil conditions." These areas are more specifically described in [RSA 482-A:4](#).

Most projects that disturb soils in these areas, regardless of size or scale, require a permit from NHDES before any changes to the landscape can be made. Projects are classified as major, minor, or minimal based on their potential impact to the environment, criteria for which is described in [Administrative Rules Env-Wt 303: Classification of Projects](#). These define minimal impact as less than 3,000 square feet and minor impact as 3,000 to 20,000 square feet. [Administrative Rules Env-Wt 303.02: Major Projects](#) states that major disturbance projects include projects areas including sand dunes, tidal wetlands, or bogs, except for repair of existing structures pursuant to Env-Wt 303.04(v) and those involving alteration of nontidal wetlands, nontidal surface waters, and banks adjacent to nontidal surface waters in excess of 20,000 square feet in the aggregate. (See [Env-WT 303.02](#) for a complete list.)

[RSA 482-A](#) creates several zones to protect wetland areas, however, only some encompass buffer land. These include prime wetland buffers and tidal buffer zones. (See the "[Frequently Asked Questions](#)" on the NHDES website.) A "prime wetland buffer" is defined as a 100-foot upland buffer for wetlands that have been designated as [prime](#) by a municipality. A "tidal buffer zone" is the area extending landward 100

feet from the highest observable tide line. It can contain wetlands, transitional areas, and natural and developed uplands. Potential development projects classify as “major” if there are impacts to a prime wetland buffer or tidal buffer zone. This requires the applicant to demonstrate they have avoided and minimized impacts to important resource functions in the area in question.

2. Local Prime Wetlands Designation

Under [RSA 482-A:15](#) and Administrative Rules [Env-Wt 700](#), a municipality may designate wetlands as “prime” if they are determined to be of high-quality, i.e. of large size, unspoiled character, and able to sustain populations of rare or threatened plant and animal species. This holds promise for municipalities that wish to maintain local control over decision making regarding important wetland areas, even if the state gains more control over basic wetland standards.

To achieve this designation, a municipality conducts a thorough analysis and then holds a public hearing and vote with residents. Once the community designates a wetland as *prime*, it provides the NHDES Wetlands Bureau with the analysis and tax maps to identify the wetlands. NHDES reviews the submission to ensure it is complete and in accordance with [Env-Wt 702.03](#) and then applies relevant laws and rules to future projects within the prime wetland or its 100-foot buffer.

3. Wetland Mitigation

[RSA 482-A](#) requires that applicants for projects classified as “major” provide information to demonstrate they have avoided and minimized impacts to the important natural resource functions of wetlands. If permanent impacts will remain after avoidance and minimization measures have been addressed, an applicant submits a compensatory mitigation proposal in accordance with [Administrative Rules Env-Wt 800](#), unless exempted by [Administrative Rules Env-Wt 302.03\(c\)](#). Criteria in [Administrative Rules Env-Wt 501.02\(a\)](#) provide details about information to be submitted with an application.

4. Compensatory Mitigation

Compensatory mitigation is required to replace or protect wetland functions and values that are impacted by a project in the same watershed or within the vicinity of the impacts when available and practicable. (For more information, see the [NHDES Fact Sheet on Aquatic Resource Mitigation](#).) In general, an applicant must provide compensatory mitigation if the project meets any of the following criteria:

- Results in 10,000 square feet or greater of permanent wetland impact.
- Alters the course of, or disturbs, 200 linear feet or more of an intermittent or perennial nontidal stream or river channel or its banks. (For intermittent streams, the distance shall be measured along the thread of the channel, for perennial streams or rivers, the total disturbance shall be calculated by summing the lengths of disturbance to the channel and each of the banks.)
- Involves construction of a pond with more than 20,000 square feet of impact in a wetland or surface water.
- Involves only the installation of accessory docking structures, the construction of new shoreline structures and breakwaters, or includes such work in combination with other qualifying criteria,

provided the resulting dock surface area of all new shoreline structures on the frontage is less than 2,000 square feet.

Applicants required to perform compensatory mitigation have the following options:

- *Upland Buffer Preservation*: Preserve an area contiguous to an aquatic resource that contributes to the functions and values of that resource. To qualify as acceptable mitigation, this land must be protected through a conservation easement or transfer of fee simple ownership to an acceptable agency or organization.
- *Wetland Restoration*: Reestablish a filled, dredged, or drained wetland to its historic condition, so as to restore lost functions to the greatest extent practicable. It can occur by removal of fill, restoration of hydrology to the area, or by such other means necessary.
- *Wetland Creation*: Transform an upland area to a wetland at a site where the existing upland was not created by human activity such as by filling or water diversion.
- *Aquatic Resource Mitigation (ARM) Fund*: If no other mitigation option is feasible, the applicant can explore “In Lieu Payment” to the Aquatic Resource Mitigation Fund. These funds become eligible to support restoration and/or preservation projects in the watershed where the impacts occurred. Under RSA 482-A:29, the ARM Fund is an important source of funding state-wide for projects related to wetlands creation or restoration, stream and river restoration or enhancement, preservation of upland areas adjacent to wetlands and riparian areas, and the subsequent monitoring and maintenance of such areas. More information on obtaining ARM funding can be found on the [NHDES website](#) under [ARM Fund Grant Instructions](#).

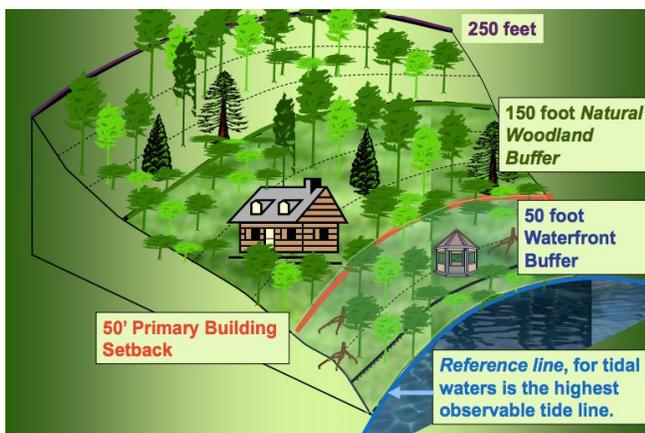
D. State Regulations Involving Shorelands

1. Shoreland Water Quality Protection Act

The NHDES Wetlands Bureau also administers [RSA 483-B: The Shoreland Water Quality Protection Act \(SWQPA\)](#), which establishes minimum standards for the subdivision, use, and development of shorelands adjacent to public water bodies. This act was originally named the Comprehensive Shoreland Protection Act (CSPA). A commission convened in 2005 contained 17 recommendations for changes to the CSPA, 16 of which have been enacted into law, including limits on impervious surfaces and the establishment of a permit requirement for many new construction, excavation and filling activities within the Protected Shoreland. The CSPA became the SWQPA in 2011.

The SWQPA corresponds with [Chapter 1400 of the New Hampshire Code of Administrative Rules on Water Quality / Water Quantity: Shoreland Protection](#). These rules implement the SQWPA and apply to all land areas subject to the act as specified in RSA 483-B:4, XV and RSA 483-B:4, XVI. NHDES reviewed and re-adopted these rules in December 2016. To learn more about the review and the Shoreland Advisory Committee responsible for this process, refer to [RSA 483-B:21 - Shoreland Advisory Committee](#), the enabling statute, and the subsequent [summary report](#) outlining the recommended changes made by the committee.

Waterbodies protected under SWQPA are located on the [Consolidated List of Water Bodies](#). Under RSA 483-B:4, XV, "protected shoreland" includes all land located within 250 feet of the reference line of public waters, including natural, freshwater bodies without artificial impoundments, artificially impounded fresh water bodies (except private garden water features and ponds of less than 10 acres), and coastal waters and rivers. It also includes all land located within 50 feet of the reference line of public water for river segments of third order or lower that have been designated as protected under RSA 483:15 after December 31, 2015, or for which specific exemptions are repealed.



Within protected shorelands, new construction or construction that modifies the footprint of existing impervious surfaces (through mechanized equipment to excavate, remove or form a cavity in the ground and fill any areas with rocks, soil, gravel or sand) requires a Shoreland Impact Permit.

2. Buffer Zoning Under the Shoreland Water Quality Protection Act (SWQPA)

The SWQPA protects a 150-foot wide vegetated buffer adjacent to public waters, ponds, and impoundments greater than 10 acres and all lakes, 4th order and greater streams and rivers, designated rivers and river segments (regardless of size or order) under RSA 483—The Rivers Management & Protection Act, and all waters subject to the ebb and flow of the tide, including tidal marshes, rivers, and estuaries.

The 150-foot vegetated buffer is divided into waterfront buffer and natural woodland buffer zones. Under [RSA 483-B:9, V.\(a\)\(1\)](#), waterfront buffer zones include protected shorelands within 50 feet of the reference line. Their purpose is to protect the quality of public waters, while allowing homeowner discretion with regard to water access, safety, viewscape maintenance, and lot design. Within this zone, many land use restrictions apply, including vegetation removal, fertilizer use, construction, and other alterations. (See [RSA 483-B:9, V.\(a\): Maintenance of a Waterfront Buffer](#).)

Natural woodland buffer zones encompass the waterfront buffer zone and must be maintained within 150 feet of the reference line in protected shoreland areas. Defined at [RSA 483-B:4, XI](#), these include forested areas with various species of trees, saplings, shrubs, and groundcovers in any combination and at any stage of growth. Under [RSA 483-B:9, V.\(b\)\(1\)](#), the purpose of these buffers is to protect the quality of public waters by minimizing erosion, preventing siltation and turbidity, stabilizing soils, preventing excess nutrient and chemical pollution, maintaining natural water temperatures, maintaining a healthy tree canopy and understory, preserving fish and wildlife habitat, and respecting the overall natural condition of the protected shoreland.

Within these zones, 25% of the area must remain in an unaltered state. This means native vegetation is allowed to grow without cutting, limbing, trimming, pruning, mowing, or similar activities, except as needed for renewal or to maintain or improve plant health. Other land use restrictions in the natural woodland buffer zone can be found in [RSA 483-B:9, V.\(b\): Maintenance of a Natural Woodland Buffer](#).

In addition to the waterfront and natural woodland buffer zones, the SWQPA also requires several types of **setbacks** with protected shoreland areas. These can be found under [RSA 483-B:9: Minimum Shoreland Protection Standards](#) and include 50-foot setbacks for all new primary structures; 20-foot setbacks for accessory structures, such as sheds, gazebos, and patios; and for septic systems, at least a 75-foot setback or more, depending on soil conditions.

3. Alteration of Terrain under the Shoreland Water Quality Protection Act (SWQPA)

The SWQPA also requires that all excavation, earth moving, and filling activities occupying an area greater than 50,000 square feet within the protected shoreland must [have appropriate erosion and sedimentation control](#) in accordance with the [RSA 485-A:17: Terrain Alteration](#) and [Administrative Rules Env-Wq 1500](#). An alteration of terrain permit is required whenever a project proposes to disturb more than 100,000 square feet of terrain, no matter the location of the project. The goal of these regulations is to protect surface water quality by controlling soil erosion and managing, treating, and recharging stormwater runoff from development activities.

The SWQPA also restricts the impervious cover allowed within protected shoreland areas. Under [RSA 483-B:9, V.\(g\)\(1\)](#), no more than 30 percent of the area of a lot located within the protected shoreland shall be composed of impervious surfaces, unless it includes a stormwater management system designed and certified by a professional engineer.

III. Municipal Regulations

A. Overview

The municipal regulatory options presented in this section in some way support local control and allow individual towns to apply local knowledge to specific cases regarding land use management decisions, including shoreland and riparian protection. However, effectiveness of this approach relies heavily on the willingness, motivation, and expertise of municipalities to properly manage these areas, as well as the availability of sufficient resources.

While proper management at the local level is feasible, studies in New Hampshire and elsewhere indicate that the benefits of application of local knowledge are often outweighed by the lack of resources and technical expertise available to municipalities when making these types of land use decisions. When charged with exploring this issue, Rhode Island's 2013 Legislative Task Force found that, in many instances, the state was the entity with sufficient funding, expertise, and experience in shoreland and riparian management. For more, see the Rhode Island case study on page 16 and the findings of a Dartmouth policy group that explored New Hampshire's Wetlands Buffer Policy on page 14.

B. Grant of Power and Innovative Land Use Controls

In New England, most land use decisions are made at the town or city level, which provides for a large degree of local control. RSA 674:16: Grant of Power provides the foundation of a municipality's right to zone. Under this regulation, municipalities can adopt zoning ordinances in their communities to determine how land use and development decisions are made. This includes the power to regulate development in wetland and shoreland areas. The Grant of Power regulation clarifies that the power to adopt a zoning ordinance "...expressly includes the power to adopt innovative land use controls which may include, but which are not limited to, the methods contained in RSA 674:21: Innovative Land Use Controls." This regulation outlines many of the land use control options municipalities can utilize to regulate the types of activities that can be accommodated on a given piece of land. Those controls include the following:

1. Timing incentives
2. Phased development
3. Intensity and use incentives
4. Transfer of development rights
5. Planned unit development
6. Cluster development
7. Impact zoning
8. Performance standards
9. Flexible and discretionary zoning
10. Environmental characteristics zoning
11. Inclusionary zoning
12. Accessory dwelling unit standards

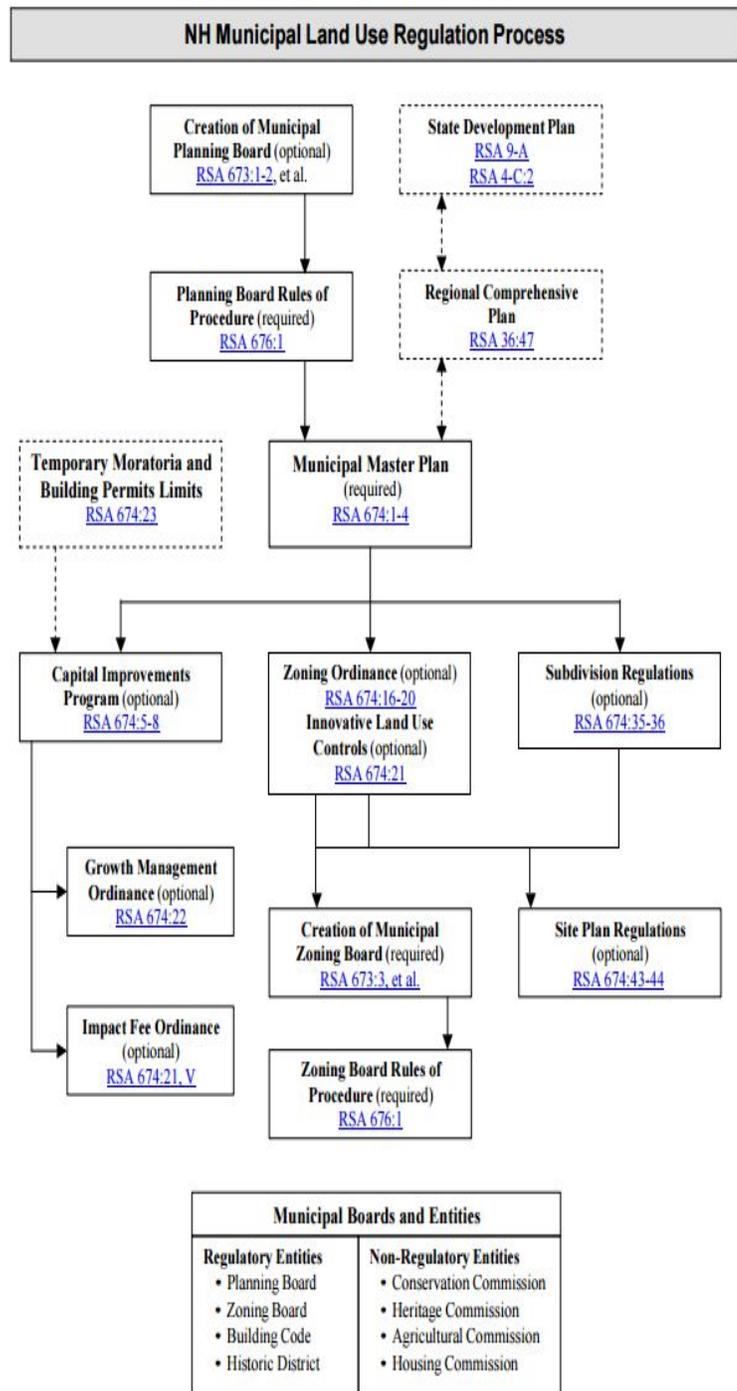
While not all of these innovative land use control strategies are appropriate for protecting shoreland and wetland areas, several can be used to direct development away from important natural resource areas:

- **Environmental characteristics zoning** regulates the types of activities that can be accommodated on a given piece of land based on the environmental characteristics of that given piece of land. This type of zoning can also be used to control the area of disturbance on a given piece of land as well as what types of buildings are allowed. For example, a **Conservation Overlay District** prohibits or restricts development in drinking water or wellhead source areas, wetlands, shoreland buffers, wildlife corridors, cold-water streams, and other critical natural resource areas.
- **Transfer of Development Rights** permanently protects farmland and other natural and cultural resources by redirecting development that would otherwise occur on these resource lands to areas planned to accommodate growth and development. Under municipal zoning, land owners can legally sever the "development rights" from their land and sell these rights to another landowner or a real estate developer for use at another location. The land from which the development rights have been severed is permanently protected through a conservation

easement or other appropriate form of restrictive covenant, and the development value of the land where the transferred development rights are applied is enhanced by allowing for new or special uses, greater density or intensity, or other regulatory flexibility that zoning without the transfer option would not have permitted.

According to [Chapter 2.6 Shoreland Protection: The Importance of Riparian Buffers](#) in NHDES's *Innovative Land Use Planning Techniques: A Handbook for Sustainable Development*, municipalities "currently have four options to regulate development for Shoreland or riparian purposes (p. 237)."

1. They may rely solely on the SWQPA (RSA 483-B) which has limited jurisdiction.
2. They can choose to adopt regulations for their community that extend the same protections laid out in the SWQPA to other streams and surface water bodies that do not fall under the jurisdiction of the State's SWQPA.
3. They can adopt regulations that are more stringent than the SWQPA minimum standards for their community.
4. They can develop separate stream corridor (watershed) regulations to protect riparian buffers along 1st-3rd order streams in their municipality but leave the State's SWQPA to regulate the lakes, ponds, and higher order streams in the community.



To aid municipalities in adopting their own local innovative land use controls, NHDES has model ordinance guidance in the Innovative Land Use Planning Techniques Handbook for both a **Wetlands Conservation Overlay District** and **Shoreland Zoning Ordinance** to create a **Shoreland Protection District and Riparian Buffer Standards**.

The Wetlands Conservation Overlay District recommends that buffers be 100-feet wide around bogs over 1,000 square feet, vernal pools over 500 square feet, wetlands of any size adjacent to open water, and all other wetlands larger than 40,000 square feet. Through these innovative land use controls, municipalities can not only establish the size of buffers and setbacks in their communities, but also determine what types of land use activities are considered “allowable uses” of the land within any given overlay district. Many municipalities in New Hampshire already have overlay districts for wetlands, conservation, shoreland, and drinking water protection. They also have other components of their Zoning Ordinance that are designed to protect water quality and other natural resources.

The Office of Energy and Planning currently maintains a list of New Hampshire communities that have adopted local regulations for shoreland and riparian protection. For more information on municipal options, please refer to the Environmental Law Institute’s 2008 “Planner’s Guide to Wetland Buffers for Local Governments.” For more information on the details of how municipalities can regulate land use within their own community, consult [OEP’s table of the NH Municipal Land Use Regulation Process](#).

C. Floodplain Management and the National Flood Insurance Program

Buffers are often important flood storage areas and several state and federal programs that promote informed floodplain management are important tools for managing buffer areas. The [National Flood Insurance Program](#) (NFIP) is a partnership between a local community and the federal government. In participating communities, property owners and renters may purchase insurance to protect them against losses from flooding. Communities participate through an agreement to adopt and enforce floodplain regulations designed to reduce future flood risks.

Though enrollment is done at the municipal level, the State of New Hampshire has authored a [Floodplain Management Handbook](#) to assist those at the state and local level in navigating the process of addressing flooding in New Hampshire. Chapter 2 Section 3 of this Handbook outlines the roles and responsibilities of the different levels of government in the NFIP, including local municipalities and local regulations, enabling state statutes and state technical assistance, and the administrative functions of Federal Emergency Management Agency (FEMA) at the federal level. The University of New Hampshire also provides an online resource titled [Floodplain Learning on Demand](#). This provides, maps, regulatory information, quizzes, and a diversity of other information for those interested in learning more about floodplain management in New Hampshire.

D. Floodplain and Fluvial Erosion Hazard Zones

Under [RSA: 674:56: Flood Hazards](#), municipalities also have the power to use their right to zone to adopt Floodplain and Fluvial Erosion Hazard Ordinances. Fluvial erosion is defined as erosion caused by rivers and streams, ranging from gradual bank erosion to massive, sudden changes in river channel location and dimension during flood events. Floodplain and Fluvial Erosion Hazard Ordinances can be implemented by municipalities to restrict and control development in areas that are at risk for flooding and fluvial erosion. To do so, the municipality must map all at risk areas within the town jurisdiction. These areas are known as fluvial erosion hazard (FEH) areas.

The goal of these ordinances is to minimize future flood impacts and enhance public safety by protecting local residents, property, and infrastructure. More information on creating a Fluvial Erosion Hazard Overlay District can be found in [Chapter 9 of the Innovative Land Use Planning Techniques Handbook](#). The New Hampshire Office of Energy and Planning (NHOEP) [Floodplain Management Program](#) also offers a [variety of resources and model Floodplain Ordinances](#) for local municipalities to utilize. NHOEP also offers an extensive list technical assistance documents on NFIP regulations on its [Technical Information and Guidance](#) webpage. While these types of local ordinances do not expressly establish and protect riparian buffers, they do create setbacks associated with base flood elevation and prevent development in the floodway. These types of local land use control indirectly discourage development on the edge of waterways thus protecting both water quality and local property.

E. Municipal Regulations: Incentive-based Land Use Controls

1. Current Use

The purpose of the [Current Use Regulation RSA 79 A](#) is to establish a tax strategy that enables landowners to keep their open space property undeveloped. Under current use, land is assessed at its present use rather than at its highest potential use. Those who possess qualified open space property pay a reduced tax rate, based on the land's ability to generate income in its current use rather than its potential developed use. Property owners of qualifying land submit an application and other necessary documentation in order to place the current use classification on a given property, thus agreeing not to develop the property. If property owners later decide to develop the land, they agree to pay a contingent lien (penalty) against the fair market value of the portion of the property being developed. The Town of Sunapee has a [useful guide to current use](#).

2. Land-Use Change Tax

The Land-Use Change Tax is the penalty property owners pay for removing land from Current Use. RSA 79 – A:7 states that land classified as open space land and assessed at current use values on or after April 1, 1974, shall be subject to a land use change tax when it is put to a use that does not qualify for current use assessment. The penalty is 10% of the fair market value at highest and best use, at the time of change, as determined by the assessor. (Also see CUB 308.01). Unless a governing body or town vote dictates otherwise, the land use change tax goes to the general fund. However, several New Hampshire communities have approved having all or some of the tax go into the town's conservation fund. The New

Hampshire Department of Revenue publishes a [booklet](#) on current use every year. However, the [Sunapee guide](#) is much more concise for those who want an overview of this option.

3. Washington State Case Study: Public Benefit Rating System

Washington State’s [King County Public Benefit Rating System](#) is a prime example of how incentive-based land use controls can help encourage open-space conservation. Like New Hampshire’s current use policy, King County’s system “offers an incentive to preserve open space on private property in King County by providing a tax reduction (see King County Code, Chapter 20.36).” Unlike New Hampshire, King County incorporates a point system to determine the tax reduction for a given area, depending on uses and characteristics. (See Table 1 for examples of land use and associated points.)

Table 1. Excerpt of King County Public Benefit Point System

Land use & characteristics category	Points
Public recreation, aquifer protection, forest stewardship, farm and agricultural conservation, rural or urban open space, or rural stewardship lands	5
Buffer to public and current use classified land	3
Equestrian, pedestrian, bicycle trail, or active trail linkage	15 to 35
Historic landmark or archaeological site: eligible site or buffer to eligible site	3
Significant plant site or wildlife or salmonid habitat	5
Watershed protection area, surface water quality buffer, scenic resource, view corridor	5
Bonus Categories	
Resource restoration, unlimited public access, ltd. public access due to resource sensitivity	5
Additional surface water quality buffer, environmental education access,	3 to 5
Easement and access	35
Conservation easement or historic preservation	15

Points allocated to a property earn a percent tax reduction and assigned a current use value. (See Figure 3.) If the property owners want to remove their property from current use, they “will have to pay the difference between the amount of tax paid as open space and the amount that would have been paid for those years had the land not been in the program for up to a maximum of seven years, plus interest and a 20% penalty. If the land has been in the program for ten years or more and the owner has given two years written notice of withdrawal to the Assessor, the 20% penalty is excused.”

Figure 3. King County Public Benefit Rating System: Tax Reductions and Current Use Value

Public Benefit Rating	Tax Reduction	Current Use Value
0 - 4 points	0 %	100 % of Market Value
5 - 10 points	50 %	50 % of Market Value
11 - 15 points	60 %	40 % of Market Value
16 - 20 points	70 %	30 % of Market Value
21 - 34 points	80 %	20 % of Market Value
35 - 52 points	90 %	10 % of Market Value

F. Findings from Dartmouth on New Hampshire’s Wetlands Buffer Policy

A decentralized wetland and shoreland policy that relies on individual municipalities to regulate undesignated wetlands and smaller water bodies appeals to the local control culture that pervades New Hampshire governance. However, as a result, many of the state’s smaller shorelands and undesignated wetlands that are unprotected by state policy are at risk for degradation as New Hampshire communities continue to grow and develop. Would a statewide buffer similar to the policy enacted in Rhode Island be an option for the Granite State?

In late 2014, an undergraduate policy research group from Dartmouth College’s Center for Public Policy and Social Science presented a [“Political Feasibility Study of a Centralized Wetlands Buffer Policy”](#) to the New Hampshire Department of Environmental Services that weighed the costs and benefits of a centralized and decentralized buffer policy in New Hampshire. Despite the appeal of allowing local communities maximum flexibility to tailor buffer regulations to their own municipal contexts, the group determined two important benefits of imposing a statewide buffer zone requirement.

- It’s likely that state officials could determine optimal buffer size for a site in a more consistent way than their local counterparts, as municipalities may not possess the resources or expertise necessary to conduct a thorough study to determine buffer size needed.
- Determining the optimal buffer for an area requires a comprehensive analysis of the soil type, topology, and economic needs of the area that local policymakers may not have the resources to conduct.

These findings echoed those of the Rhode Island Legislative Task force, particularly the conclusion that most municipalities lack sufficient means to determine buffer widths in a scientifically robust manner. There is not enough funding or expertise available to communities to construct a compelling argument for why the EPA’s 100-foot buffer recommendation should not apply in their community. In addition to lacking the resources and expertise to accurately assess the necessary buffer width for protecting water quality and wetland health, the policy group found that “ Maintaining a patchwork of local regulations

imposes a cost on developers who must discover multiple buffer requirements when they want to begin a new development.” Rhode Island also highlighted this administrative and economic challenge in its assessment.

As studies in New Hampshire and other New England states have discovered, this degree of local control has resulted in an inconsistent and confusing regulatory landscape that is economically inefficient and difficult to navigate for all parties. There are many municipalities with no local protections in place for these important natural resources. These conditions contradict the objectives outlined in New Hampshire’s current [Wetland Program Plan](#), which prioritizes regulatory consistency and high enforcement. Given the parallels between Rhode Island and New Hampshire’s regulatory challenges and priorities, it would be prudent for New Hampshire to consider how the regulatory change undertaken by Rhode Island could apply to the Granite State.

IV. Non-Regulatory Options for Buffer Management

A. Protection of Critical Resource Areas

There are many options to conserve land permanently. Two of the most popular used by communities are *conservation fee acquisitions* and *voluntary conservation easements*.

Conservation land acquisitions are outright purchases or donations through which the landowner sells or grants all rights, title and interest in a property to a conservation organization. Thereafter, the organization owns the land and may grant conservation easements on it in fee to another conservation group, agency, or town. The organization is responsible for stewardship and management of the land in perpetuity.

Conservation easements are voluntary, legal agreement between a landowner and conservation organization or government agency that permanently limit land use by extinguishing its development rights to protect its conservation values. They are the most permanent and assured protection of sensitive resource areas and allow the landowner to continue to own and use the land and to sell it or pass it on to heirs. A landowner may sell an easement to the holding organization, but most often easements are donated.

There are many opportunities for protecting important resource areas in New Hampshire. For more information, please refer to The Society for the Protection of New Hampshire Forests’ guide document [Saving Special Places: Community Funding for Land Conservation](#). There are also a variety of federal, state, and private funding sources designed to support land conservation efforts. (See Appendix A.)

V. Case Studies From Other States

The following case studies offer examples of how other states have addressed regulation of riparian buffers and management of development in areas where buffers play an important role in maintaining water quality. Their selection was informed by availability of information on relevant state policies, proximity to New Hampshire, capacity to illustrate a successful strategy with elements that could be applied to New Hampshire, or a regulatory framework for riparian buffers comparable to that of New Hampshire.

A. Rhode Island: Forging a Strong State Position on Buffers

Rhode Island offers an example of how a state with decentralized wetland policies can reclaim decision-making authority in a way that protects the interest of local communities and ecosystems and explore the use of variable width buffers based on surrounding land use. After an extensive review of the effectiveness of its former policies, Rhode Island underwent significant changes in its buffer regulations in 2017. These are the first major changes to the state's wetland laws in 40 years and follow several unsuccessful attempts to update the 1971 Wetlands Act. The review and subsequent changes were spurred by a shared feeling among management, business, and local communities that the existing regulatory framework was in need of improvement to address issues that included the following.

- State standards provide inadequate protection, prompting differing municipal standards.
- Various municipal standards result in diverse outcomes.
- Lack of uniform process is burdensome and unpredictable.
- Duplicative reviews and competing interests add costs to businesses and landowners.

To address these issues, the Rhode Island General Assembly charged the state's Division of Planning to create a Legislative Task Force to determine the adequacy of protection afforded to state wetlands or waters under Rhode Island General Laws § 2-1-18-25 (Agricultural Functions of Department of Environmental Management), § 42-17.1 (Department of Environmental Management), and § 42-64.13-10 (The Rhode Island Regulatory Reform Act). The task force was also charged with identifying gaps in protection for septic setbacks and wetlands and recommending statutory or regulatory changes needed to protect wetlands statewide while streamlining permit reviews.

The task force reviewed Rhode Island's existing regulations, studied regulatory frameworks from other states, listened to local stakeholders, and compiled a detailed, scientific literature review that included presentations from wetland science and management. After 15 meetings over 14 months, the state Department of Planning compiled a findings report for the task force and submitted it to the Governor and Rhode Island General Assembly in 2014.

The findings confirmed that state standards did not offer enough protection for smaller wetlands and any protection to the areas surrounding wetlands that play an important role in protecting wetland health.

They concluded that the 50-foot perimeter jurisdictional zone surrounding large wetlands—other than rivers and streams—was not sufficient. They also found that inconsistency in regulations was problematic for developers and property owners; leading to duplicative reviews, adding to the cost of the review process, and introducing uncertainty due to the way variances were introduced at the local level.

The report noted that municipalities generally lack the scientific expertise to implement their environmental ordinances and that expertise was present in state programs. While applicants typically had environmental scientists and or engineers to present evidence, local officials did not have that support. Ultimately, it recommended that “state authority for regulating development and other alterations in proximity to wetlands, including surface waters, should be expanded by modifying RI General Law and agency regulations to increase state jurisdiction and responsibilities, including critical wetlands, as nominated by municipalities.”

Their [final report](#) was reviewed by Rhode Island’s General Assembly, which passed legislation to implement the report in 2015. This new legislation required the establishment of state standards for freshwater wetland buffers and setbacks, thus ending the promulgation of stricter municipal standards. It amended [Rhode Island General Laws § 2-1-1 through § 2-1-28: Agricultural Functions of Department of Environmental Management](#), as well as [Rhode Island General Laws § 45-24-27 through § 45-24-7: the Zoning Enabling Act](#).

As a result, municipalities can no longer use their local zoning ordinances to regulate setbacks for wetlands and buffers. The sole authority for regulating wetlands and buffers now lies with the State of Rhode Island, though the state does have to keep municipalities informed of wetland permitting proceedings in their jurisdiction. Municipalities cannot enact new buffer regulations and restrictions after Rhode Island’s Department of Environmental Management (DEM) adopts new rules and regulations to enforce the Act, and any existing municipal setbacks must be rescinded.

It is now the responsibility of DEM to draft new regulations setting new standards to which all permit applicants will adhere. Local municipalities have the power to petition the state agencies who deal with buffer protection (the Coastal Resources Management Council (CRMC) or DEM) if they want to increase buffer protections for a certain resource. All of these regulatory changes are designed to extend as much protection to wetlands and buffers as possible, streamline the permitting process where appropriate, and eliminate confusing instances of overlap and contradiction between state and local regulations.

As of spring of 2016, Rhode Island had been developing revised wetlands regulations that will be applied statewide. Currently, RIDEM and CRMC are considering a “tiered approach” to buffers and setback regulations that take into account a variety of environmental attributes, including watershed characteristics, existing land uses, vulnerability and extent of wetland resources, as well as wetland functions and values. The state has a unique opportunity to create cutting edge regulations, and the agencies responsible for developing these are interested in a dynamic approach that divides the landscape into different regions, potentially based on the following characteristics.

→ Region A: High priority areas for fish and wildlife habitat conservation, as well as water quality

- Region B: Areas with a mix of land uses and watershed characteristics, including urban, suburban and rural characteristics
- Region C: Most densely developed areas, including metropolitan Providence and other urban centers

The state is considering using these classifications to determine the buffer width enforced in a given area. The goal is to establish maximum buffer widths in high-value watersheds, for example, watersheds with drinking water supply reservoirs or high-value habitat wetlands or rare wetland types. Other, more densely developed and populated areas may not require such strong protections due to their already degraded status and/or conflicting social and economic interests. Areas where minimum buffers could be applied might include small, isolated wetlands, wetlands within “Region C” urban cores, and wetlands in median strips of travel corridors. Though it may be unnecessary to enforce maximum buffer protections for all wetland areas, it is unlikely that any wetland area in Rhode Island will have a buffer width of zero once the new regulations are completed.

As with all regulatory development, the drafting of these regulations requires significant time and effort on the part of the state. DEM and CRMC continue to work to ensure that the final product delivers on its charge to create standards that are straightforward and effective. While revising these regulations has been a vast undertaking, the process has allowed the state to address many ecological and social problems that plague not just Rhode Island, but many other states as well, including New Hampshire.

B. Washington: Island County’s Matrix-based Approach to Setting Buffer Widths

While many regulations, from statewide rules to local ordinances, simply prescribe a fixed buffer width to protect wetland and shoreland areas, some management entities have taken a different approach. Buffer width can be varied, based on a variety of criteria, by a regulatory agency with jurisdiction over a given area. These criteria can include type or quality of the wetland from which the buffer extends, the slope or grade of the area leading toward the wetland or shoreland, the type or intensity of land use in the area in question, or the type of habitat present. The [zoning ordinance](#) of Island County in Washington State, for example, employs several matrices to calculate the appropriate buffer width for wetland areas. The step-by-step process for calculating these buffer widths can be found in the County’s [Chapter 17.02A.090 - Wetlands](#) under Section F. Wetland buffers. These steps are as follows:

- Step 1: County establishes wetland type and the wetland size to determine whether a buffer is required.
- Step 2: County determines land use intensity of development proposal and wetland's contributing area.
- Step 3: For...
 - Wetlands regulated by this chapter that are under 1,000 square feet in size, use 15-foot buffer plus 15-foot setback required under [subsection 1.a.](#)
 - Bogs, coastal lagoon wetlands, and delta estuary and other estuarine wetlands, required buffer can be determined from [Table 1.](#)
 - For all other wetland types, determine the habitat rating for the wetland. If the score is 22 or higher, use [Table 2](#) to determine the required buffer. If the habitat rating is less than 22, then go to step 4.

- Step 4: Determine whether the wetland has a surface water outlet and determine the slope gradient between the development proposal and the wetland.
- Step 5: Determine the applicable water quality buffer using [Tables 3 and 4](#).
- Step 6: Determine whether any buffer modification standards are applicable.
- Step 7: Determine which buffer is larger. If the habitat buffer is larger, apply it to the entire wetland. If the water quality buffer is larger, apply it to the contributing area and apply a 20-foot buffer to the non-contributing area.

To classify land use intensity, the ordinance states, “land use intensity shall be determined by the Planning Director on a case-by-case basis for development proposals that contain or are affected by a wetland or wetland buffer....The Planning Director shall determine land use intensity as follows...”

- *High intensity.* This is applied to *all* uses and structures located on lots less than one acre in size initially *and* all non-residential uses and structures located on lots equal to 1 acre but less than 5 acres in size. For residential uses and structures, it applies to more than 10% of the lot is covered with an impervious surface; or the cleared area exceeds specified thresholds.
- *Medium Intensity:* This is applied to non-residential uses and structures located on lots equal to 1 acre but less than 5 acres. Residential uses and structures that do not meet the cleared area and impervious surface ratios established for high and low intensity are typically classified as medium intensity.
- *Low Intensity:* For residential uses and structures, less than five % of the lot is covered with an impervious surface; and the cleared area exceeds specified thresholds. Low intensity uses and structures must adhere to the following standards:
 - Structures, patios and decks shall be setback fifteen (15) feet from the outer edge of the buffer;
 - Exterior lighting fixtures shall comply with the lighting standards of chapter 17.03 and shall be shrouded and directed away from the wetland or wetland buffer;
 - Fertilizers, pesticides and herbicides shall not be applied in a manner that adversely impacts wetland functions or wetland buffers;
 - Stormwater from impervious surfaces shall be controlled before it reaches the wetland buffer.

Once land use intensity is determined, the ordinance outlines appropriate buffers for especially sensitive wetlands (such as bogs, coastal lagoons and estuarine wetlands), with wider buffers for more intensive land uses, as outlined in Table 2.

Table 2. Special Cases for Buffers for Specific Wetland Types

Land Use Intensity	Bog	Coastal Lagoon Wetland	Delta Estuary Wetland	Other Estuarine Wetlands
Low	125 ft.	100 ft.	40 ft.	30 ft.
Moderate	190 ft.	150 ft.	90 ft.	55 ft.
High	250 ft.	200 ft.	125 ft.	90 ft.

The ordinance uses matrices to calculate habitat buffers for other wetlands based on land use intensity, habitat condition (based on the score achieved through the county’s habitat rating system), and wetland sensitivity (based on the presence or absence of a wetland outlet), as outlined in Table 3.

Table 3. Habitat Buffers

Land Use Intensity	Habitat Functions Score					
	Wetland Outlet	40 or higher	32—39	29—31	22—28	Less than 22
Low	Yes	125 ft.	75 ft.	75 ft.	75 ft.	Use Tables 3 and 4
	No	150 ft.	125 ft.	100 ft.	75 ft.	
Moderate	Yes	200 ft.	110 ft.	110 ft.	110 ft.	
	No	225 ft.	175 ft.	150 ft.	110 ft.	
High	Yes	250 ft.	150 ft.	150 ft.	150 ft.	
	No	300 ft.	200 ft.	175 ft.	150 ft.	

The ordinance also establishes the criteria for determining water quality buffers, including wetland classification and land use intensity. Habitat buffers are different than water quality buffers. For most wetlands, both habitat and water quality buffers are calculated separately and the larger buffer (usually habitat) is applied, as outlined in Table 4.

Table 4. Water Quality Buffers

Land Use Intensity	Wetland Category					
	Wetland Outlet	A*	B	C**	D	E
Low	Yes	40 ft.	35 ft.	30 ft.	25 ft.	20 ft.
	No	75 ft.	50 ft.	40 ft.	35 ft.	25 ft.
Moderate	Yes	90 ft.	65 ft.	55 ft.	45 ft.	30 ft.
	No	105 ft.	90 ft.	75 ft.	60 ft.	40 ft.
High	Yes	125 ft.	110 ft.	90 ft.	65 ft.	40 ft.
	No	175 ft.	150 ft.	125 ft.	90 ft.	50 ft.

Finally, the ordinance includes an adjustment table that allows managers to account for the impact of the slope or grade of the area surrounding a wetland. Wetlands that are adjoined by steep slopes are generally more sensitive to sediment and contaminant accumulation and receive larger buffers, as outlined in Table 5.

Table 5. Slope Adjustment

Slope Gradient	Additional Buffer Multiplier
5—14%	1.3
15—40%	1.4
>40%	1.5

This matrix approach is more nuanced and responsive than a single number and can reflect scientific understanding, particularly with diverse wetland types and land use conditions in a locality. Though this dynamic approach is more complex and hands on, the [Environmental Law Institute](#) found that, “With appropriate public outreach and technical support, a matrix-driven buffer can gain public support and achieve good results (pg. 22).”

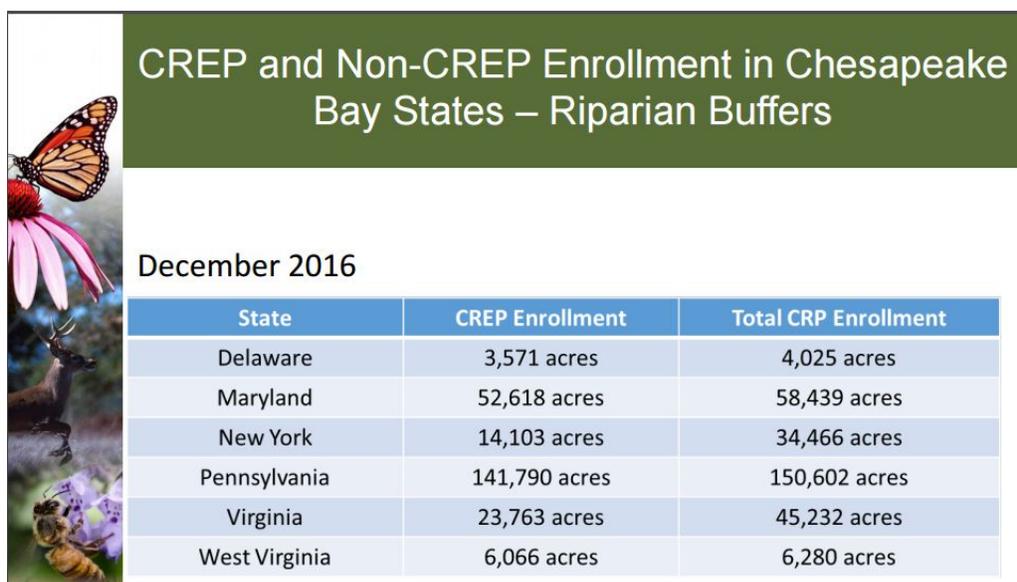
C. Maryland: Chesapeake Bay Riparian Forest Buffer Conservation

The Buffer Incentive Program implemented through the Maryland Department of Natural Resources is an example of a state incentive program designed to encourage riparian buffers along important waterfront areas. According to a [list of funding sources](#) on the Maryland state website, the program encourages the planting and maintenance of streamside forested buffers on privately owned land around Chesapeake Bay and its tributaries by helping to defray associated landowner costs. To qualify, a property must be between one and 50 acres and be a crop field, pasture, open or bare ground, or earlier successional vegetation. Additionally, the property must meet criteria for location near a stream or wetland.

This program is part of a larger initiative to protect the Chesapeake and its watersheds—the [Riparian Forest Buffer Initiative or Stream ReLeaf](#). A driving force behind buffer restoration in Maryland since 1996, this program also has been adopted by Virginia and Pennsylvania. Its original goal was to restore 2010 miles of riparian buffer by the year 2010. Initial efforts have been very successful, largely due to landowner incentives provided by the [Conservation Reserve Enhancement Program \(CREP\)](#), a federally-funded program through the United States Department of Agriculture’s Farm Service Agency. CREP encourages agricultural producers not to farm or ranch environmentally sensitive land and instead plant it with “cover” species that control soil erosion, improve water quality, and support wildlife habitat. In exchange, they receive an annual rental rate and other federal and state incentives. (Learn more with this [informational flyer](#) created by the [Chesapeake Bay Foundation](#) and this [informational video](#).)

So many landowners enrolled in CREP that buffer plantings increased dramatically and the multi-state goal of 2,010 miles was achieved eight years early in 2002. The goal was expanded to restore, promote and protect 10,000 miles of riparian forest buffers by 2010. A 2013 [Buffering the Bay Progress Report](#) states that an estimated 63,000 acres of riparian forest buffers were under CREP contract in the Chesapeake Bay watershed at the time of publication. In 2015, the [USDA announced](#) it would commit \$4 million to several states in the Chesapeake Bay watershed for buffers. Delaware, New York, Virginia, and West Virginia were each approved for an additional \$1,000,000 million of CREP funding, and the Farm Service Agency continues to work in Maryland and Pennsylvania to increase CREP enrollment and promote technical assistance programs for buffers. (See Figure 4 for current estimates as reported in a [2016 Farm Service Agency presentation](#) and learn more about CREP on the [Stream ReLeaf page](#).)

Figure 4. 2016 Estimate of Acres Enrolled in CREP in the Chesapeake Bay Region



D. Vermont: River Corridor and Floodplain Management

Between 2010 and 2014, the Vermont General Assembly passed four distinct Acts (110 (2010), 138 (2012), 16 (2013), and 107 (2014)) directing the Agency of Natural Resources (ANR) to create a River Corridor and Floodplain Management Program to promote and encourage identification and protection of flood hazard areas and river corridors to reduce flood and fluvial erosion hazards. This dynamic way of looking at buffers acknowledges that when the adjacent water body changes shape—due to, for example, sea level rise or changes in groundwater—buffers change as well and communities must plan for that if they are to preserve ecosystem services in the future.

Vermont ANR delineates “river corridors” as areas of land surrounding a river that provide for the meandering, floodplain, and the riparian functions necessary to restore and maintain the naturally

stable or least erosive form of the river. According to the agency, giving rivers room to move is critical to avoid increases in erosion that adversely affects public safety, riparian landowners, and river ecosystems. River corridors are comprised of the river meander belt and a riparian buffer. The meander belt area is calculated to accommodate the amplitude of future stream meanders that keep the river in equilibrium, and its width depends on the amount of land draining to a given point along the stream or river. As a result the width of the river corridor varies based on stream size.

The riparian buffer component is an extension of the meander belt that provides extra development setback space so that as the river meanders continue to grow, space still exists to establish or maintain a naturally vegetated buffer to prevent erosion and protect ecosystem function. Under the ANR program, all river corridors, except small streams with a drainage of less than or equal to two square miles, shall include a 50-foot setback as an extension on either side of the meander belt. For small streams, the 50-foot setback from each bank described in Section 4(b)(1) serves both meander and riparian buffer functions. The buffer may extend past the mapped line of a naturally confining feature (e.g., the toe of the natural valley wall), but shall not go beyond the boundary of an engineered levee, railroad, or federal aid highway.

Currently, Vermont towns are not required to adopt River Corridor Maps. However, Vermont ANR is required to create advisory river corridor maps for all municipalities, adopt State River Corridor Protection Procedures that include BMP's, and draft model bylaws and other incentives to provide assistance for municipalities adopt corridor maps if they wish to protect river corridors at their community's level.

More information is available on the ANR website: [Flood Hazard Area and River Corridor Protection Procedure](#). This procedure describes the Stream Alteration Rule and Flood Hazard Area & River Corridor Rule.

[The Vermont Agency of Natural Resources \(ANR\) Rivers Program](#) prioritizes management decisions and actions that accommodate stream meander and floodplain processes that encourage natural river stability. They define stability as, "the ability of a stream, over time and in the present climate, to transport the flow and sediment of its watershed in such a manner that it maintains its dimension, pattern, and profile without aggrading or degrading." Such stability cannot be maintained without committed riparian corridor protection efforts. The Rivers Program provides technical assistance for river corridor planning, protection, and restoration projects statewide. For more information on [River Corridor Planning](#), consult the [River Corridor Planning Guide](#), the [River Corridor Protection Guide](#), or an example [Corridor Plan](#).

Vermont's [River Corridor Easement Program](#) is an incentives-based program encourages landowners "to allow for passive restoration of channel stability by allowing the natural erosive forces of the river to establish its least erosive form over time." Under a river corridor easement, landowners sell their rights to manage the area on their property that falls within the meander belt of sensitive and erosive streams. Once channel management rights are sold, often to a land trust, landowners cannot intervene with channel erosion or changes within the river corridor. They can no longer develop or build structures in

the river corridor, and they must maintain a minimum 50-foot riparian buffer of native woody vegetation whose location floats with the river. For more information on Vermont's River Corridor Protection and River Corridor Easement programs, consult the [Vermont ANR Guide to River Corridor Easements](#).

The [Vermont Clean Water Initiative](#) is a new collaborative effort to protect water quality among state, local, and municipal agencies and partners including farmers, businesses, and the general public. The program coordinates projects to restore Vermont's rivers, streams, lakes, ponds, and wetlands. It awards approximately 60 grants. (Information on these projects is available in [annual reports of the Ecosystem Restoration Program](#)). The initiative also led to the [Clean Water Fund](#), which provides "additional state funds to help municipalities, farmers and others implement actions that will reduce pollution washing into Vermont's rivers, streams, lakes, ponds and wetlands." The fund is supported by a 0.2 % surcharge on property transfer taxes for properties valued at more than \$100,000, and the state is working to secure longer-term support. The fund supports river corridor easements and buffer restoration work, and it factors prominently as an incentive for riparian management. Information about these efforts is available in the [Vermont Clean Water Initiative Investment Report](#).

One of the greatest incentives Vermont has created to encourage communities to adopt river protection corridors is the increased state cost share from the [Emergency Relief and Assistance Fund \(ERAF\)](#), which helps communities who have adopted river corridor protection recover from flood disasters. The ERAF provides state funding to match federal public assistance after federally-declared disasters. Eligible public costs are reimbursed by federal taxpayers at 75%. For disasters after October 23, 2014, the state will contribute an additional 7.5% toward the costs. For communities that take specific steps to reduce flood damage the state will contribute 12.5% or 17.5% of the total cost. To qualify for the 17.5% state contribution, communities must have updated bylaws that protect river corridors. To learn more about updating bylaws to protect river corridors, refer to the [Flood Ready Vermont Resources page](#).

Appendix A. Federal, State, and Private Funding that Supports Land Conservation

Federal Grant Programs		
Program	Agency	Details
Conservation Reserve Program (CRP)	US Department of Agriculture, Farm Service Agency (FSA)	Administered by the FSA, CRP is a land conservation program in which farmers agree to remove environmentally sensitive land from agricultural production and to plant species to improve environmental health and quality in exchange for a yearly rental payment. The long-term goal is to re-establish valuable land cover to improve water quality, prevent soil erosion, and reduce loss of wildlife habitat.
Environmental Quality Incentives Program (EQIP)	US Department of Agriculture	EQIP is a voluntary program that provides financial and technical assistance to agricultural producers to plan and implement conservation practices that improve soil, water, plant, animal, air, and related natural resources on agricultural land and non-industrial private forestland. Owners of land in agricultural or forest production or people engaged in livestock, agricultural, or forest production on eligible land who have a natural resource concern on that land may apply. Eligible land includes cropland, rangeland, pastureland, non-industrial private forestland, and other farm or ranch lands. For more information on EQIP in New Hampshire, refer to this brochure .
Agricultural Conservation Easement Program (ACEP)	US Department of Agriculture, Natural Resources Conservation Service (NRCS)	ACEP provides financial and technical assistance to conserve agricultural lands, wetlands and related benefits. The 2014 Farm Bill replaced the Wetland Reserve Enhancement Program with the Wetland Reserve Enhancement Partnership (WREP) as an enrollment option under ACEP: Wetlands Reserve Easements. WREP is a voluntary program through which NRCS signs agreements with partners to carry out high priority wetland protection, restoration, and enhancement and to improve wildlife habitat. Under the Wetlands Reserve Easements (WRE) component, NRCS helps to restore, protect and enhance enrolled wetlands; eligible land includes farmed or converted wetland that can be successfully and cost-effectively restored.

Federal Grant Programs continued		
Program	Agency	Details
Partners for Wildlife Program (PWP)	US Fish and Wildlife Service	This voluntary cost-share program protects, enhances, and restores fish and wildlife habitats on private lands. In New England, habitat restoration priorities include impaired aquatic systems and terrestrial habitats for which the restoration actions would benefit trust resource fish and wildlife species, i.e. endangered or threatened species, migratory birds, and diadromous fish.
National Coastal Wetlands Conservation Grant Program	US Fish and Wildlife Service	This program annually provides grants of up to \$1 million to protect, restore, and enhance coastal wetland ecosystems and associated uplands. Funding comes from the Sport Fish Restoration Account, which is supported by excise taxes on fishing equipment and motorboat and small engine fuels.
Land and Water Conservation Fund	National Parks Service	This fund invests earnings from offshore oil and gas leasing to help strengthen communities, preserve history, and protect our national endowment of lands and waters. It is used to acquire lands, waters, and interests therein necessary to achieve the natural, cultural, wildlife, and recreation management objectives of the National Park Service.
Coastal and Estuarine Land Conservation Program	National Oceanic and Atmospheric Administration Office for Coastal Management	This program provides matching funds to state and local governments to purchase threatened coastal and estuarine lands or obtain conservation easements. Land must be important ecologically or possess other coastal conservation values, such as historic features, scenic views, or recreational opportunities. Participants develop conservation plans that are used to select which projects get national funding.
National Fish and Wildlife Foundation Grants	National Fish and Wildlife Foundation	A variety of grant options can be found on the foundation's website under Conservation Programs
Partners for Wildlife Program	US Fish and Wildlife Service	This voluntary cost-share program offers a chance to regain important natural resources and build on the strength and interest of committed individuals and organizations to accomplish shared conservation goals. In New England, habitat restoration priorities for the program include impaired aquatic systems (tidal and freshwater wetlands) and terrestrial (grassland and forest) habitats for which the restoration actions would benefit trust resource fish and wildlife species, i.e. endangered or threatened species, migratory birds, and diadromous fish.

State Funding Programs		
Program	Agency	Details
NH Land and Community Heritage Investment Program (LCHIP)	The New Hampshire Land and Community Heritage Investment Program	This program provides matching grant funds for the conservation and preservation of the state’s valuable natural, cultural, and historic resources. Land must remain undeveloped, with passive dispersed recreation, agriculture and forestry allowed. Public access is required, limits on certain activities may be acceptable.
NHDES Water Supply Land Protection Grant Program	New Hampshire Department of Environmental Services	This program protects community and non-transient non-community drinking water supplies by providing grant funds for the acquisition of land or conservation easements. It normally provides 25% of project costs.. Match sources can include donated land or easements that lie within the source water protection area, public funds, donated transaction expenses, or private funds.
New Hampshire Coastal and Estuarine Land Conservation Program	New Hampshire Department of Environmental Services Coastal Program	This program provides matching funds to state and local governments to purchase threatened coastal and estuarine lands or obtain conservation easements. Land must be important ecologically or possess other coastal conservation values. Participants develop conservation plans that are used to select projects for funding.
Aquatic Resource Mitigation Fund	New Hampshire Department of Environmental Services	This fund serves as a compensatory mitigation option for wetlands permit applicants. It is available after avoidance and minimization of impacts to aquatic resources has been achieved. Projects supported must consider service area goals and replace and/or protect wetlands and other aquatic resources impacted by development projects in the service area. Ideal projects provide resource restoration in the context of a land conservation proposal. Successful projects often provide connectivity to other protected resources, are in close proximity to the wetland impacts, or provide benefits to rare resources. See the ARM Fund instruction packet or on the NHDES website .
Land and Water Conservation Fund Stateside Program	NH’s Department of Resources and Economic Development & Division of Parks and Recreation	This program provides matching grants to states and local governments for the acquisition and development of public outdoor recreation areas and facilities. In NH, the program has supported 640 acquisition and development projects, totaling almost \$40,000,000.00 in grant assistance. Learn more: New Hampshire’s LWCF Program .
Moose Plate Grant Program	NH Conservation and Heritage License Plate Program	This program supports protection of critical resources. Revenues from Moose Plate sales are distributed to state agencies to 1) preserve and conserve publicly owned historic properties, archaeological sites, natural resources, documents and artifacts; 2) conduct research and manage wildlife and native plant species, and educate the public, and expand roadside lilac and wildflower plantings.

