

DEPARTMENT OF ENVIRONMENTAL CONSERVATION LEGISLATIVE REPORT

Biennial Report on River Corridor and Floodplain Protection and Lake Shoreland Management Programs

Year: 2025

Date reported: January 15, 2025

Authorizing statute: Act 110 (2010), Section 8 and Act 138 (2012), Section 17

10 V.S.A. § 1427: River Corridors and Buffers

10 V.S.A. § 1428: River Corridor Protection

10 V.S.A. Chapter 49A: Lake Shoreland Protection Standards

Committees: House Environment and Energy and Senate Natural Resources and Energy

Prime contacts: Rob Evans, Rivers Program Manager, Rob.Evans@vermont.gov

Jenny Austin, Lakes Program Manager, Jenny.Austin@vermont.gov

Executive Summary

Pursuant to the above-referenced Acts, this biennial report provides an update on the ongoing work of Rivers and Lakes and Ponds Programs to enhance protection of floodplains, river corridors, and lake shorelands.

Since 2012, the Rivers Program has worked in coordination with partners to create incentives and increase municipal protection of floodplains and river corridors, increasing the number of communities with enhanced bylaws from 31 to 104.

The Shoreland Protection Act was passed in 2014, regulating development activities within 250 feet of the mean water level of lakes greater than 10 acres in size. As a complement to the Act, the Lake Wise Program, which is an initiative that awards lake-friendly shoreland property management initiatives, was established. Since then, 2,000 shoreland permit, registration, and determination applications have been received, and 1,117 Lake Wise site visits have been completed, resulting in 383 properties awarded for excellent shoreland best management practices and 150 best management practices installed. Additionally, through the voluntary Natural Shoreland Erosion Control Certification Program, 897 contractors have been trained in shoreland Best Management Practices, including techniques for erosion control, stormwater management, bioengineering, and wildlife habitat protection.

Biennial Report on River Corridor and Floodplain Protection and Lake Shoreland Management Programs

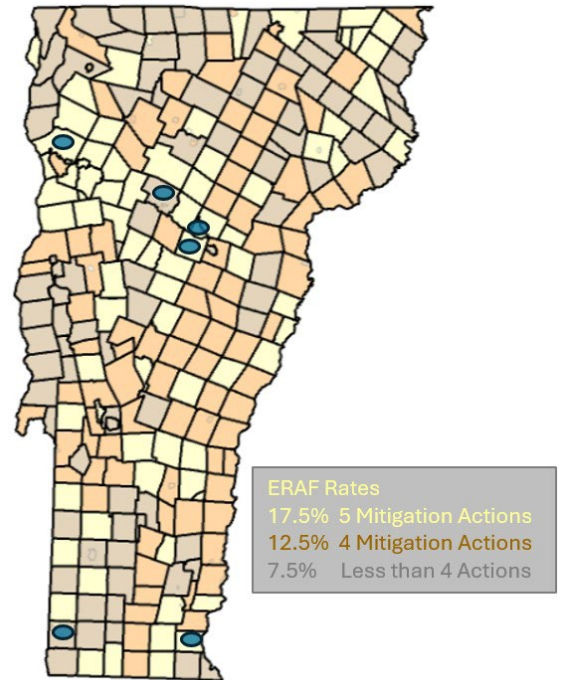
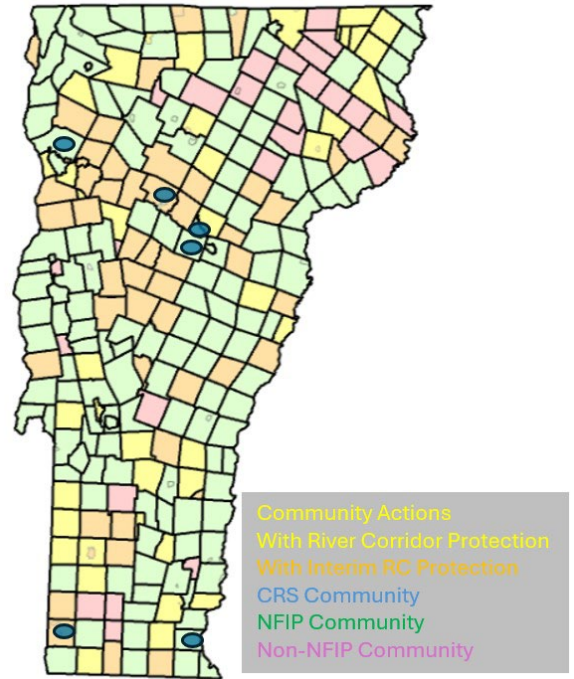
January 15, 2025

Vermont Department of Environmental Conservation

Key Takeaways

River Corridor and Floodplain Protection Program

- Many communities have taken action to protect river corridors and/or floodplains in recent years. Since 2008, the number of communities enrolled in the National Flood Insurance Program (NFIP) has increased from 226 to 247.
- 101 communities have adopted river corridor or floodplain protection bylaws consistent with [ANR Model Hazard Bylaws](#), which exceed federal minimum standards.
- [The Emergency Relief and Assistance Fund \(ERAF\)](#) provides State funding to match federal Public Assistance Grants after federally declared disasters.
- For communities that take specific steps to reduce flood damage the State will contribute 12.5% or 17.5% of the total cost.
- A [summary of current municipal actions for ERAF](#) can be found on the Community Reports page of the Flood Ready Vermont website.



The Lake Shoreland Management Program

The table below shows the number of regulatory issuances and the number of voluntary participations in establishing improved lake shoreland conditions. Actions along the shore directly impact water quality and sensitive wildlife habitat, and the numbers below show increasing awareness and engagement among shoreland owners for adopting lake-friendly practices and protecting lake conditions. These actions have direct benefit towards improving water quality in Vermont's lakes and ponds.

Regulatory Actions under the Shoreland Protection Act				Lake Wise Outreach			Natural Shoreland Erosion Control Certification
Year	Determinations	Registrations	Permits	Site Visits	Award Signs	BMPs	Contractors Trained
2013				70	41	17	
2014	3	29	25	17	4	9	
2015	7	37	106	25	17	15	
2016	2	35	90	39	20	5	296
2017	5	49	99	100	33	19	80
2018	35	36	105	108	22	45	77
2019	19	38	93	43	6	6	61
2020	17	57	115	94	14	11	60
2021	30	98	95	78	5	0	78
2022	25	61	168	163	65	8	101
2023	22	42	131	226	78	13	144
2024	27	32	113	153	78	17	TBD*
TOTAL	192	514	1140	1117	291	150	897

*The Natural Shoreland Erosion Control Certification Course is now held annually in January. The next trainings will be January 8 and 10, 2025.



Before, during, and after a shoreland restoration project at Crystal Lake State Park in Barton, VT. This project was initially identified through a Lake Wise Assessment. The project was completed using a Clean Water Service Provider grant and was implemented through cooperation between DEC, Vermont State Parks, Orleans County Conservation District, and the Northwoods Stewardship Center.

Discussion

River Corridor and Floodplain Protection Program

The River Corridor and Floodplain Protection Program works with Vermont communities in a variety of ways to increase flood resilience across the state. These efforts include: 1) enrollment in the National Flood Insurance Program (NFIP); 2) flood hazard bylaw updates and adoption; 3) Municipal Incentives for River Corridor and Floodplain Protection including ERAF incentives; 4) Outreach and Training; and 5) Model flood hazard bylaws.

The River Corridor and Floodplain Protection Program created a statewide River Corridor map layer which is publicly available on the [ANR Natural Resources Atlas](#) and on the Flood Ready Atlas bit.ly/floodatlas is used to inform state and local planning and regulatory work as well as river and floodplain restoration efforts.

The program maintains information online for the public at:

- dec.vermont.gov/watershed/rivers/river-corridor-and-floodplain-protection
- www.floodready.vt.gov – focused on municipal planning for flood resilience
- www.floodtraining.vt.gov – focused on administration of flood hazard bylaws, and
- [Safe Family and Friends | Flood Ready \(vermont.gov\)](http://SafeFamilyandFriends.org) – introduces the concept of Environmental Justice within municipal hazard management

- bit.ly/fema-map-update – updates on the FEMA map process and the need for municipalities to update bylaws, and often plans, ahead of the new maps.

FEMA Risk Management has begun flood hazard map updates by watershed across Vermont. The River Corridor and Floodplain Protection Program is working with Regional Planning Commissions to engage communities across the state in the necessary steps to become aware of flood hazard data and to update flood hazard bylaws to meet or exceed the requirements for the National Flood Insurance Program.

The Flood Safety Act (Act 121, 2024) requires the creation of set of state minimum flood hazard area standards that towns will be required to adopt and enforce. These will ultimately supplant many of the recommended standards in the current model bylaws. The statewide minimum standards rule needs to be adopted by January 2026.

In addition, the Flood Safety Act requires an NFIP study committee to evaluate the extent to which DEC may take over some or all NFIP flood hazard area regulation from towns and will provide recommendations in a legislative report to the General Assembly. As of this report, it is not clear when this will be completed, since the program has been overwhelmed with six federally declared flood disasters spanning 2023 and 2024 and will be seeking to extend timelines during the 2025 legislative session.

Lake Shoreland Management Program

The Lake Shoreland Management Program is a combined regulatory and technical assistance program aimed at improving lake shoreland property management and, in turn, improve water quality in Vermont’s lakes. The [Lakes and Ponds Program webpage](#) features information on the condition of Vermont lakes and their lakeshores and should serve as a reference to the summary material provided in this report.



Shoreland permitting preserves a 100-foot-wide buffer

Shoreland Permitting

The Shoreland Protection Act (SPA) requires permitting review for any projects that increase impervious surface or clear native vegetation within 250 feet of the mean water level on lakes greater than 10 acres in size. Of the 811 lakes and ponds in Vermont, about 440 lakes are greater than 10 acres in size. Since the passing of the SPA, 1,140 shoreland permits, 514 shoreland registrations, and 192 shoreland determinations have been issued, totaling 1,846 determinations, or close to 191 development reviews annually. The number of applications received grew significantly during the



Traditional development before the 2014 Shoreland Protection Act

pandemic, with 2021 having the highest number of permit applications of any year since 2014. The average number of applications received per year pre-pandemic was 170 (FY15 through FY20) and the average number of applications received per year since then has been 222 (FY21 through FY24).

Lake Wise Program

The Lake Wise Program is a technical assistance and assessment program offered by the Lakes and Ponds Program to help shoreland owners voluntarily improve the management of their property for upland stormwater and erosion control management, and wildlife habitat. These shoreland owners include State Parks, Fish and Wildlife Boat Access areas, municipalities, businesses, and private residents. The recommended best management practices improve shoreland conditions to ensure development near the lake's edges do not harm the lake's ecology. To date, 1117 assessments have been performed state-wide, with 379 assessments completed in the last two years. Partner organizations around the state have embraced the program and their staff has attended the DEC training to become Lake Wise Assessors. Expanding opportunities for trainings and partnerships with watershed groups has expanded the program and contributed to its success.



The “Lake Wise Gold Award” is given to lakes where 15% of properties around the lake have been awarded the individual lake wise award. In 2022, only two lakes in the state that had reached this milestone, Echo Lake in Charleston, and Seymour Lake in Morgan. In the last three years, due to expanding the Lake Wise Program efforts and collaboration, four more lakes have achieved this award: Lake Iroquois in Hinesburg, Lake Morey in Fairlee, Lake Raponda in Wilmington, and Halls Lake in Newbury.

Deputy Commissioner Heather Pembroke awards the Gold Lake Wise Award at the Lake Morey Protective Association annual meeting August 2024.

Shoreland Restoration

Over the last six years, bioengineered restoration techniques that use biodegradable products, native plants, and other natural materials have gained popularity as the best management practice for eroding shorelines. Guidance from DEC staff and funding available through Design and Implementation Block Grants and Clean Water Service Providers has increased the knowledge and ability of landowners, watershed groups, and contractors to install these projects more readily. From 2023-2024, 102 lakeshore restoration projects were identified throughout the state. 21 projects have been completed in that time frame and 13 are already proposed for implementation in 2025.

In 2022, the [Vermont Bioengineering Manual](#) was created showcasing examples of successful bioengineering projects across the state and giving designers, contractors, environmental consultants, regulators, and shoreland property owners a resource to successfully implement shoreland bioengineering practices to protect and restore Vermont's 1,500 miles of shoreland. Three quarters of the manuals have been successfully distributed throughout the state and are continually given out at shoreland trainings and workshops. The Vermont Bioengineering Manual is now used as the standard guide for all lakeshore restoration Clean Water Projects in the state.



A before (left) and after (right) of a lake shoreland restoration project at Joe's Pond in Danville, Vermont. This project removed a failing retaining wall and replaced it with a stone toe, a line of biodegradable coconut fiber coir rolls, and a 15ft wide lakeshore buffer planting. This project was identified by a DEC Lake Wise Assessment, designed through the Caledonia County Natural Resources Conservation District, and implemented by the Vermont Youth Conservation Corps. The work was funded by a Capital Grant and the Clean Water Fund and completed in the summer of 2024.

Natural Shoreline Erosion Control Certification Training (NSECC)

Through the voluntary Natural Shoreland Erosion Control Certification Training (NSECC) more than 897 contractors have been trained in shoreland Best Management Practices, including in bioengineering methods for restoring functioning shorelands. The NSECC Program trains a wide variety of professionals working on Vermont shorelines, including engineers, watershed non-profits, contractors, site-workers, landscape designers, State of Vermont employees, municipal workers, students, and lakeshore landowners. Attendees are trained to appropriately manage shoreland properties, develop lakeshore properties in sustainable and environmentally sound ways, and restore eroding shorelines in accordance with the shoreland protection act while using best management practices for managing stormwater and curtailing erosion.

This training program helps ensure that future shoreland work incorporates practices that increase storm resiliency, stormwater filtration, wildlife habitat, and erosion control. In 2024, the NSECC training workshop was paired with an on-site summer erosion control workshop at Crystal Lake State Park in Barton, Vermont. The practical, on-site training was coordinated between DEC Lakes and Ponds, the Orleans County Conservation District, Crystal Lake State Park staff, and the Northwoods Stewardship Center to give hands on training to 30 professionals in installing encapsulated soil lifts to restore the eroding lake shore (see below).

