Vermont
Natural Shoreland Erosion Control Certification Program

2018 Legislative Report

2014 Act 172, Section 4
Submitted to the
House Committee on Natural Resources, Fish and Wildlife
Senate Committee on Natural Resources and Energy

Agency of Natural Resources
Department of Environmental Conservation
January 15, 2018

VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
LAKES & PONDS PROGRAM

Lake Wise
lake friendly living

Why This Legislative Report

Effective July 1, 2014, the Vermont Legislature passed the Shoreland Protection Act (Chapter 49A of Title 10, §1441 et seq.), which regulates shoreland development within 250 feet of a lake's mean water level for all lakes greater than 10 acres in size. Reporting on the status of the Voluntary Natural Shoreland Erosion Control Certification Program is in accordance to the **Shoreland Protection Act, Section 4**, which reads:

VOLUNTARY SHORELAND EROSION CONTROL CERTIFICATION

(a) **Voluntary certification.** Beginning on January 1, 2016, the Agency of Natural Resources, in consultation with the Associated General Contractors of Vermont, shall offer an optional shoreland erosion control certification program. The program shall include training related to development activities in a shoreland area, including best management practices for erosion control, clearance of vegetation, and construction of impervious surfaces in shoreland areas. The voluntary certification program shall be offered until January 1, 2018.

(b) **Report.** On or before January 1, 2018, the Secretary of Natural Resources shall report to the House and Senate Committees on Natural Resources and Energy and the House Committee on Fish, Wildlife and Water Resources regarding the voluntary shoreland erosion control certification program created in subsection (a) of this section. **The report shall include:**
(1) a general summary and evaluation of the program's success, including an overview of the number of persons certified by the program and the projects constructed by certified persons;

(2) a recommendation of whether the State and the Associated General Contractors of Vermont should continue the shoreland erosion control certification program, including whether to make the erosion control certification program mandatory and whether to allow certified persons to certify compliance with the shoreland protection standards in this chapter in lieu of obtaining the permit required under 10 V.S.A. § 1444 or 1445; and

(3) any other recommendations for improving the program.

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In Consultation with:
The Associated General Contractors of Vermont

Cover photo, Lake Bomoseen, Castleton
This photo, Lake Willoughby, Westmore

Summary

The Purpose for the NSECC Trainings

The purpose of the Natural Shoreland Erosion Control Certification training is to educate contractors who design and construct along shorelands in the ecological principles and practices that help to protect lakeshores and water quality. Based on the EPA National Lakes Assessment Study, Vermont lakes had a higher percentage of shoreland that ranked either in fair or poor condition than both the northeast region and the national average. The ranking measures the extent of clearing and lawns near the shoreline. This study also showed that more Vermont lakes are stressed by the removal of shoreland vegetation than by phosphorus pollution or acid rain.

Poorly developed shorelands are detrimental to water quality and wildlife habitat, and immediate action is needed to remediate this situation. The Shoreland Protection Act (2014) established a permit program to clear vegetation or to create new impervious surface within 250 feet of a lake, and the NSECC Program helps explain the new law and train contractors in development practices that are protective of the lake, natural shorelands, and the property.

Other states have established similar, successful contractor trainings to demonstrate landscaping practices for erosion control and habitat protection. Since 2013, Maine has mandated that all contractors who disturb soil within 250 feet of a river, lake, wetland, or along the coast attend a seven hour certification training in erosion control. Maryland and Georgia have similar mandated contractor trainings, while Minnesota, Wisconsin, and Michigan offer voluntary erosion control contractor trainings that vary from one to three days (Appendix A shows a table comparing state erosion control programs). According to Maine's DEP, studies show their trainings to be effective for protecting water quality.

The training is cost effective in that it helps to protect valuable natural resources and reduces staff time in having to deal with erosion and sediment violations.
~ Bill LaFlamme, Maine, DEP

Photo simulation concept for shoreland restoration site on Lake Iroquois, Hinesburg. Design by NSECC professionals from Nectar Landscape Design with Winooski NRCD

Vermont Lake Facts

- There are more than 800 lakes, with 445 greater than 10 acres.
- The total miles of shoreland is 1,480, including 441 miles of Lake Champlain shore in Vermont.
- Before the 2014 Shoreland Protection Act, 45% of all shoreland had been cleared and developed.
- Residential density along shorelands is more than double that of urban areas of the state. 4.4% of all Vermont residences are within 100 feet of a lake.
- Thirty-five of the 53 State Parks are located on lakes, each generating about one million dollars annually.
- Fishing and wildlife watching at lakes generates approximately $160 million annually.
- Property values drop with a decrease in water clarity, affecting tax revenues.
- Despite the fact that shoreland clearing leads to loss of wildlife habitat, excessive loading of sediment and nutrients, and a decline in water quality, establishing a lawn down to the lake continues to be the dominant development pattern.
- There is a tremendous opportunity to develop, redevelop, and restore shorelands using lake-friendly practices that protect water quality and wildlife habitat.

What NSECC Offers

The NSECC course covers Shoreland Best Management Practices (BMPs), including techniques for erosion control, stormwater management, bioengineering, and wildlife habitat protection. It also reviews the new Shoreland Protection Act regulation, and the importance of restoring shorelands to protect water quality. Lakeshore owners often rely on contractors, landscapers, engineers and others to advise and help them manage their property. The course teaches these professionals both the science of BMPs and how they work to protect the lake while the property continues to be attractive to homeowners.

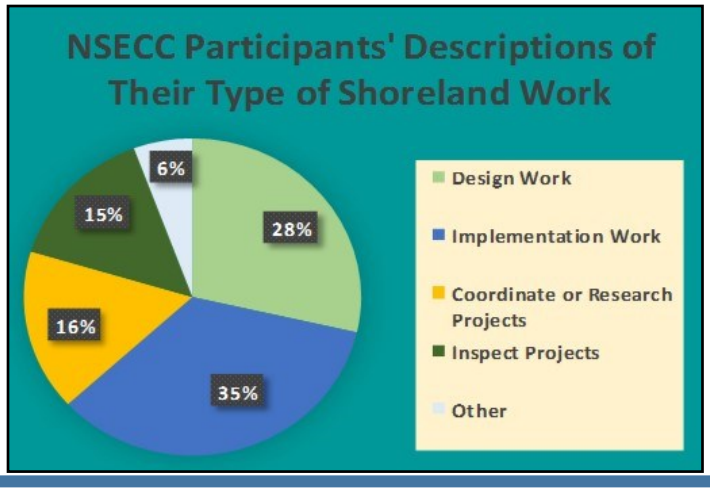
All those certified through this eight-hour training course are listed on the Agency of Natural Resources website and shared with lakeshore property owners. Those certified through this course are given preference for grants and contracts for shoreland projects awarded through the Vermont Clean Water Initiative Program, and are eligible for professional development credits, including credits for Licensed Designers.

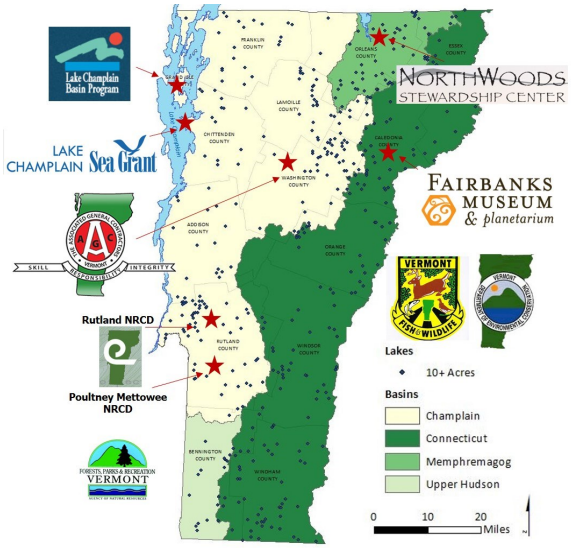
Brighton State Park, Island Pond

NSECC Participants and Partners

Since January 2016, **12 eight hour workshops have been held throughout the state, training 340 engineers, site-workers, landscapers, designers, consultants, shoreland owners and regulatory administrators** in shoreland development and management practices.

Trainings have been offered statewide and hosted by various partners. Annual trainings are offered in November when field season slows and contractors are more available. The Associated General Contractors of Vermont has hosted three trainings and has provided outreach and promotional support through their newsletter.





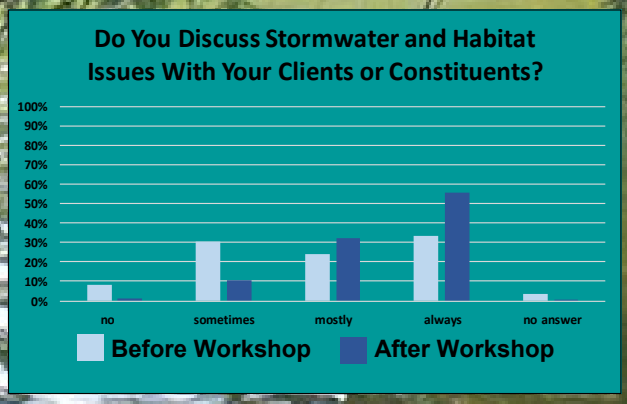
NSECC Partners—*red stars indicate training locations*

Partners provide host sites for workshops, expertise in erosion control, wildlife habitat, native plantings, green stormwater infrastructure, and support for shoreland development that protects and restores natural shorelands.

NSECC Training Evaluations

At the start of the workshops, all participants are asked to complete a Pre-Survey. At the end of the day, all participants complete the Post-Survey. Based on 332 surveys, **100 percent of the participants from all 12 workshops say they would recommend this training to their colleagues.** And, 99 percent of the participants stated that the workshop met or exceeded their expectation for the training. This indicates a real interest and need for providing contractor trainings to help disseminate information on lake science and shoreland best management practices.

The graphs to the right show a significant increase in awareness of and appreciation for addressing threats to water quality and wildlife habitat when working along shorelands. The Pre and Post Survey responses show a significant positive change in contractors understanding of why it is important to include stormwater and habitat protection in their work. **The Pre-Surveys show that most contractors "sometimes" included stormwater management and habitat protection in their shoreland work, while the Post-Surveys show an "always" response after learning from the information presented at the training**.



Great job! Well organized and good speakers!
Jane Brown, VTrans Landscape Architect

Good examples of work in real life situations
Eric Daigle, Jay Landscape and Tree Service LLC

Excellent!
Dwight Jarvis, Jarvis and Sons Construction Inc

Very informative and ... straight forward positive presentation
Gary Kenyon, Engineer Kingsbury Companies, LLC

Great Course, the group work was really helpful
Emmalee Cherington, EIV Technical Services

This was great– the presentations were wonderful! And the permitting portion was excellent!
Jeni Menendez, Great River Hydro, LLC

Very good, well done!
Todd Hill, Todd Hill, Land Planning & Design

Effective training, well delivered, good from start to finish. Hats off!
Dean Pierce, Town of Shelburne Planner

NSECC Projects

During 2017, contractors were invited to help install encapsulated soil lifts and fiber coir rolls at Brighton State Park on Island Pond and at Cedar Mountain Road along Lake Bomoseen in Castleton. GEI Consultant, Brian Majka, Michigan's Lead Contractor Trainer with 15 years of experience using bioengineering along the Great Lakes, led the project training. Bioengineering methods are considered the best "Best Management Practice" for restoring natural shorelands and protecting water quality. However, due to lack of experience, these soft scape methods have rarely been used along Vermont lakeshores, resulting in excessive hard scaping (sea walls and rip rap). Bioengineering methods offer an ecological approach to stabilizing eroding banks, using living plant material, biodegradable materials and other natural products.

NSECC contractors have already begun installing BMPs along the shore since trainings started in January, 2016. At least nine lakes, Seymour Lake in Morgan, Woodward Reservoir in Plymouth, Maidstone Lake in Maidstone, Lake Iroquois in Hinesburg, Shadow Lake in Glover, Raponda Lake in Wilmington, Island Pond in Island Pond, Silver Lake in Barnard, and Lake Bomoseen in Castleton have had shoreland BMPs installed by NSECC contractors. The BMPs installed range from stabilizing eroding banks with bioengineering to installing stormwater practices such as raingardens, infiltration stairs, permeable paths, and vegetative swales.

The positive feedback from the trainings indicates a strong commitment by those certified in adapting ecological approaches to future shoreland work. An online information site is needed to track projects, feature exemplary work, and share information on products, lake science, and funding opportunities.

In 2017, 200 feet of shoreland was restored at Brighton State Park on Island Pond which also allowed for a handicapped accessible permeable pathway ~ *Funded by State Parks and ERP*

A YouTube Bioengineering Installation Video was made at the Brighton State Park project and now available on the web for instructional purposes

NSECC Funds

Workshop Fees: The cost of attending the training is $20 per person. This fee covers the cost of supplies and materials, as well as site rental expenses.

Field Installation Training Days: These are free to NSECC participants when possible to offer by the NSECC Program. The two field trainings offered in 2017 were pulled together by dedicated staff and partners to meet the popular request for field installation trainings for bioengineering techniques.

Staff Time: 0.20 FTE from the VTDEC Watershed Management Division's Lakes and Ponds Program.

In 2017, the Town of Castleton stabilized 300 feet of shore along Lake Bomoseen
Funded by VTrans Better Roads Program

View framed by natural shoreland along Lake Memphremagog, Newport ~ ***Photo by Jeff Merrell***

Recommendations

The Future for the NSECC Trainings

The NSECC Technical Advisory Committee, in agreement with the Associated General Contractors of Vermont, recommend the following for the future of the NSECC Program.

1. **The Natural Shoreland Erosion Control Certification Program should continue as a voluntary training.** The Program offers a high quality training in lake science and shoreland management practices and has received a 100 percent recommendation rating by the participants. Recertification should occur after three years from the year the certificate was first earned. Recertification would occur by either completing a NSECC webinar and on-line tutorial, by attending a half day shoreland seminar, by participating in another full day shoreland workshop, or by a field training day event when available. This training is working well as a voluntary certification program and there is no need at this time to change it.

2. **"Self-permitting" under the Shoreland Protection Act is not recommended.** The Shoreland Protection Act permit requirement often raises unique site-specific questions, which at this time the Permitting Analysts are the most experienced in addressing. The NSECC trainings help explain the law and permit process to applicants and provide information on how to avoid erosion and sediment violations, but the Permitting Analysts have a complete perspective on what approaches best comply with the intent of the Act.

3. The NSECC Program is an important outreach and training opportunity that helps to ensure that future shoreland work incorporates practices that increase storm resiliency, stormwater filtration, wildlife habitat, and erosion control. **The NSECC Program could be strengthened with a regular field training component, which would allow participants to apply the classroom learning to actual site work.** Over the next five years, $20,000 annually would support field trainings in shoreland BMPs, including bringing in national experts in bioengineering and green stormwater infrastructure to teach the Vermont contractors how to best install these ecological methods. This recommendation is consistent with the feed back from NSECC participants. Demonstration projects across the state would showcase exemplary shoreland management and the practices needed now to protect Vermont lakes into the future.

NSECC Classroom Training

Before and After
Infiltration Stairs to Manage Stormwater
Maidstone Lake in Maidstone

Before and After
Raingarden to Manage Stormwater
Shadow Lake, Glover

Before and During Construction
Permeable Pavers to Manage Stormwater
Silver Lake State Park, Barnard

Appendix A. Comparisons of Selected State Shoreland Erosion Control Programs

State and Year Started	Voluntary or Mandatory	Program Oversite and Registration Fee	Certification Requirements	Certification Benefits	Number Certified
Vermont 2016	Voluntary	State $20	▪ Eight hour course ▪ Recertification after three years	▪Public State Listing ▪Preference for ERP Shoreland Grants ▪Various Professional Dev Credits	340
Maine 2013	Mandatory (started in 1997 as voluntary)	State Fees Vary (~$40)	▪Seven hour training and completion of field BMP inspection ▪Recertification after three years by attending a four hour erosion course and not involved in any DEP enforcement act	▪Advertise as "DEP Certified Contractor" ▪Eligible to certify erosion control plans under MPDES Const Act General Permit ▪Eligible for Awards ▪Eligible for discounts from some suppliers of erosion control products	2400 Individuals 43 Companies (all the site supervisors)
Maryland	Mandatory	State No Fee	▪Four– five hour on line course	▪Certification is required for "Responsible Person" to implement and maintain erosion and sediment controls in MD	1000s
Georgia 2007 revised 2005 started	Mandatory	State 234 private trainers set costs from $75-$300	▪One-two days training ▪Recertification required after three years with a four hour training	▪Certification has four tiers with increasing benefits for each tier, including inspecting sites	93,613
Minnesota 2015	Voluntary	MN Utility Contractors Association and WSB University $200—$400	▪ One day course ▪ Recertification after three years	▪ The MN Dept of Transportation accepts this certification as a co-permittee on NPDES permits	161
Michigan 2010	Voluntary (Some MI Townships have local ordinances that require use of Certified Contractors)	State and MI State University Extension with the Natural Shoreline Partnership Prg $375	▪Four day course with one day of field project installation ▪Re-certification after three years	▪Public State Listing ▪Preference for ERP Shoreland Grants ▪Various Professional Dev Credits	410
Wisconsin 2010	Voluntary	WI Chapter of North American Stormwater Erosion Ctr Assoc. $240	▪Two day course with a certificate of completion. There is no recertification as this is not a certification course.	▪Public State Listing ▪Soil Erosion Inspector Credentials	> 400