



# SHARING THE EDGE

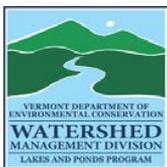


**A Guide for Lakeshore  
Property Owners in Vermont**

# WELCOME TO THE LAKE

Living by the water invites one to slow down and take notice of the many spectacular natural occurrences that define Vermont's lakes and ponds. Lakeshore residents share the space with wildlife, fish, and vegetation. Those who expect and understand that lakes are ever-changing natural systems (not backyard swimming pools) garner even greater appreciation of these special resources.

Lakeshore property owners assume part of the responsibility of protecting a lake or pond. Actions on land have a direct impact on the water quality, habitat, and shoreline stability of a public resource. Caring for the lakeshore will preserve Vermont's iconic lakes and ponds for generations to come.



# ANATOMY OF A LAKE'S EDGE

A lake shoreline is an important edge area that connects the aquatic world with the adjacent upland, and sets the stage for swimmable, fishable, and enjoyable water. Native flowering shrubs and trees attract beneficial pollinator species, including bees and butterflies, and adorn the shore with colorful blooms and foliage.

Beds of aquatic plants provide refuge for fish and invertebrates to feed, rest, and reproduce.

Overhanging tree limbs provide shady havens for wading birds and fish. Rocks, roots, and half-submerged logs protect the shoreline from wave action, and supply sunny resting spots for turtles. A forest floor of leaves, pine needles, moss, and decaying twigs (referred to as the "duff layer") acts as a natural sponge and soaks up rain and stormwater runoff.

A healthy, natural lake shoreline is a diverse and intricate place. Clearing native vegetation, converting the forest duff layer to a lawn, or pouring a new house foundation are all activities that remove a lakeshore's natural capacity to sustain wildlife and handle flood events. Resisting the urge to tidy up a "messy" shoreline will support a storm-resilient property and help contribute to a more vibrant lake overall.





# WHO OWNS THE WATER?

Public lakes and ponds belong to the people of Vermont - they are managed in a manner which preserves and protects a healthy ecosystem as well as guarantees the right for all to swim, fish, boat, and otherwise enjoy. This concept is referred to as Vermont's Public Trust Doctrine.

Lakeshore property in Vermont extends down to the mean (average) water level. Beyond mean water level, the water and lakebottom are public resources to be shared, much like space is shared at a public park.

Projects that propose work beyond mean water level may require a Lake Encroachment Permit. Encroachment projects include, but are not limited to, the installation of a shoreline stabilization project, repairs to an existing boathouse, or additions or removal of fill. Projects are reviewed to ensure the encroachment is as minimal as possible, that all other less intrusive options have been considered, and that the project is consistent with the Public Trust Doctrine.



# SHORELAND DEVELOPMENT

Landowners looking to develop lakeshore property will need to understand Vermont's Shoreland Protection Act. Under the Act, a Shoreland Protection Permit or Registration is needed to create new **cleared area** or new **impervious surface** within 250 feet of mean water level of a lake 10 acres or larger.

An impervious surface is any solid or compacted surface where stormwater runs off instead of infiltrating – this includes houses, garages, decks, parking areas, and both paved and unpaved driveways. As stormwater runs across a solid surface, it picks up sediment, oil, road salt, and other pollutants, and carries them lakeward.

Removing trees, shrubs, groundcover, or the natural forest duff layer is considered creating cleared area. Regularly maintained lawns, landscaped areas, and impervious surfaces are all cleared areas.

The Act requires new development to be set at least 100 feet back from mean water level. Expansions of existing development are permitted to the back or side, but not closer towards the lake. All projects within the protected shoreland area must follow these additional development standards:

- Avoid steep, unstable grades: keep projects in areas with a slope less than 20%.
- Minimize development: no more than 20% of the parcel should be impervious surface.
- Keep natural vegetative cover: no more than 40% of the parcel should be cleared.

The Act's Vegetation Protection Standards allows lakeshore landowners to selectively remove individual trees in a manner that allows for lake views and light, while still preserving the benefits of a forested shoreland.

# SHORELINE STABILIZATION



Waves, ice push, and upland runoff can contribute to erosion at the shoreline, especially at those areas devoid of vegetation. Minimizing "lawn-to-lake" landscaping and creating a no-mow zone along the shoreline is a simple approach to tackling erosion. For landowners who don't mind a little sweat equity, actively planting trees and shrubs can further enhance stability at the shore.

In more heavily eroded areas, bioengineering methods that use biodegradable materials, dry-laid stone, and native plants are encouraged. Mimicking a natural shoreline requires minimal long-term maintenance, provides important habitat, and is aesthetically pleasing for those viewing from land or water.

Solid, vertical retaining walls along the shoreline create an artificial barrier between land and water. Retaining walls are mistakenly perceived to be more stable - in reality, waves crashing into the retaining wall will bounce back, causing scouring around and under the edges of the wall. For these reasons, vertical retaining walls are not recommended and new walls are generally not approved.

Shoreline stabilization projects extending below mean water level will require a Lake Encroachment Permit. Occasionally, stabilization projects will need both a Shoreland Protection and Encroachment permit.



# ACTIVITIES EXEMPT FROM PERMITTING



The following activities do not require a Shoreland Protection Permit or Lake Encroachment Permit:

Maintaining existing buildings or lawns without enlarging them

Removing and rebuilding a structure in exactly the same footprint without changing its size

Selectively removing trees according to the Vegetation Protection Standards

Building a pervious deck (contact Lake and Shoreland Permitting for guidance on pervious designs)

Creating a single 6-foot wide footpath on the property to access the water

Setting up a duck blind, raft, or buoy, provided they do not impede boat navigation

Docks for non-commercial use, provided they meet size and material criteria and do not impede navigation (see FAQs)

# OTHER DEVELOPMENT CONSIDERATIONS

The Department of Environmental Conservation's Assistance Office can help identify any other permits that may be needed for your project, including:

## **Wetlands**

In addition to supporting unique plants and wildlife, wetlands provide major flood carrying capacity, which could protect your home during a storm event. Vermont protects wetlands that hold significant ecological value, and development within a protected wetland or its surrounding buffer requires review by the DEC's Wetlands Program.

## **Wastewater/Water Supply**

Proper installation and maintenance of your wastewater system is crucial to keeping nutrients and pathogenic bacteria from the lake. Adding more bedrooms to a home or converting a summer camp to a year-round residence? Your project should be reviewed by the DEC's Drinking Water and Groundwater Division.

Acquiring state permits does not relieve a landowner from complying with municipal and federal regulations. Local zoning varies across Vermont, so be sure to contact the zoning administrator or town clerk. The United States Army Corps of Engineers (USACE) may require notification if you intend to work within certain waters or wetlands.



Lastly, consider consulting a professional who has attended the DEC's Natural Shoreland Erosion Control Certification course. In addition to knowing construction practices that are protective of water quality, they will be familiar with bioengineering techniques and permitting requirements.

A photograph of a pond. The foreground is filled with a dense layer of green lily pads. In the background, tall, thin reeds stand upright. The water is dark and reflects the sky. The sky is blue with some light clouds. The overall scene is a natural, outdoor setting.

# AQUATIC PLANTS

Often disregarded as "weeds," aquatic plants are incredibly important parts of a lake ecosystem. Through photosynthesis, aquatic plants produce oxygen for the lake. They take up nutrients such as phosphorus that would otherwise fuel algal blooms. Rooted aquatic vegetation holds lake bottom sediment in place and keeps water clear. Beds of aquatic plants provide refuge for fish and birds to feed and nest.

Occasionally, some aquatic plant control may be desired in order to maintain a public swimming area, manage an invasive species, or improve boat navigation. The Lakes & Ponds Program provides guidance on plant management options. Aquatic plants can be removed by hand, but use of powered mechanical equipment, bottom barriers, or herbicides will require an Aquatic Nuisance Control Permit.

Excessive removal of aquatic plants may result in increased erosion and murky water. As spawning habitat disappears, you may notice fewer fish. Algal blooms may become frequent as phosphorus becomes more freely available.

# BECOMING LAKE WISE

The DEC's Lake Wise Program encourages landowners to voluntarily implement lake-friendly practices on their property.

Lakeshore properties that exemplify thoughtful, ecologically-minded development are proudly awarded a Lake Wise Award. The Lake Wise Award certifies that a property is managed in a manner that preserves fish and wildlife habitat, protects water quality, and maintains a shoreline's natural stability. Any lakeshore landowner can participate in the Lake Wise Program, including towns, state parks, businesses, and private homeowners.

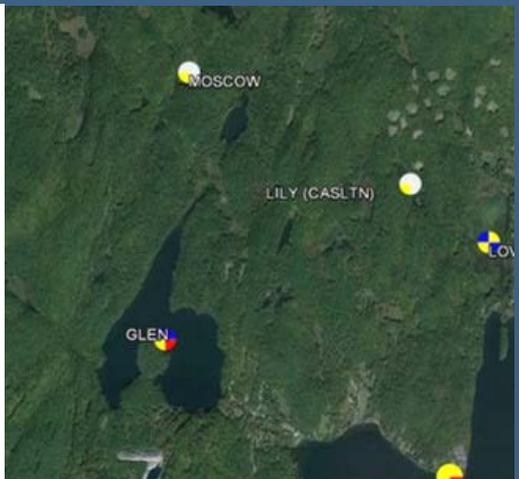
In addition to recognizing model properties, the Lake Wise Program provides one-on-one technical assistance. A carefully placed waterbar can intercept runoff travelling down steep slopes and direct it towards a vegetated area. A rain garden can soak up runoff while providing beautiful wildlife habitat. The Lake Wise Program can suggest ecologically beneficial Best Management Practices (BMPs) that build a property's capacity to handle storm events.



# HOW IS MY LAKE DOING?

The Lakes & Ponds Program has been monitoring the water quality of Lake Champlain and Vermont's inland lakes and ponds since the 1970's. Every spring following ice out, the Program's biologists suit up and head out to measure how much phosphorus is available to fuel algae and aquatic plant growth throughout the year. Later in the summer, they collect information on lake and shoreline habitat and sample for other water quality parameters.

The Vermont Inland Lake Score Card is a user-friendly visual resource available as a layer on Google Earth. A simple color-coded icon indicates how a lake scores for nutrient amount, habitat, mercury pollution, and invasive species presence. Links embedded within the Score Card allow an interested viewer to dive deeper into the data.



# GET INVOLVED WITH LAKES & PONDS

Interested in supporting Vermont's lakes and ponds as a volunteer? Owning lakeshore property is not required to volunteer with the Lakes & Ponds Program - just bring enthusiasm!



Vermont Invasive Patrollers: "VIPs" are taught how to identify aquatic invasive species, and then conduct annual surveys on their selected lake to look for potential invaders.

Public Access Greeters: Stationed at public boat launches, greeters educate lake visitors about aquatic invasive species and provide courtesy boat inspections to prevent invasive species from hitching a ride from one lake to another.



Lay Monitoring: "Lay Monitors" track lake water quality by collecting weekly water samples throughout the summer months.

Cyanobacteria Monitoring: Through a partnership with the Department of Health, volunteers are trained to assess lake conditions and monitor for harmful algal blooms.



# FREQUENTLY ASKED QUESTIONS



## **Can I have a dock?**

Yes. Provided that they do not impede navigation, docks meeting the following criteria do not need a Lake Encroachment Permit: **1)** They must be made of wood or metal (no concrete or other solid fill) and mounted on floats or posts. **2)** They cannot exceed 50 feet in total length. **3)** The combined surface area of all docks, rafts, and floats cannot exceed 500 square feet. Docks that do not meet this criteria must be reviewed under Lake Encroachment Permitting.

## **My shoreline is mucky - can I bring in some sand to make a beach?**

Because of Vermont's geology, a handful of lakes around the state do have naturally sandy bottoms. However, the majority of Vermont lakes are a mixture of clay, organic soils, and cobbles. Because lakes are managed as a natural resource, adding sand to create a beach is not allowed.

## **I have a dead tree, can I cut it?**

The removal of a dead, diseased, or unsafe tree is exempt from Shoreland Protection Permitting. Below-ground roots must be left in place, as they provide stability on fragile lakeshores. No structures at risk? Consider letting the tree fall on it's own - dead trees are wonderful habitat.

# FREQUENTLY ASKED QUESTIONS



## **Does my lawn count as vegetation?**

Maintained grass lawns are artificial and do not provide the same erosion control or habitat functions as a naturally vegetated shoreline. When applying for a Shoreland Protection Permit, lawns are counted as "cleared area."

## **What are the Vegetation Protection Standards (VPS)?**

The VPS is a point and grid method that allows for selective thinning of shoreland vegetation. Points are assigned based on tree diameter, and a certain number of points must be maintained in a 25-foot x 25-foot grid. The natural forest duff layer and a minimum of 5 saplings must remain to ensure future growth. This method allows a landowner to remove individual trees for a view, while still preserving the ecological benefits of a forested shoreland.

## **How long does it take to get a permit?**

An application must be submitted with site plans, the correct fee, and a few photos before it can be reviewed. Once reviewed, projects are posted for a 30-day public notice. All applications can be tracked on the DEC's Environmental Notice Bulletin. Please plan accordingly and apply early!



# ONLINE RESOURCES

## **Lake & Shoreland Permitting:**

<http://dec.vermont.gov/watershed/lakes-ponds/permit>

## **Assistance with other DEC permitting programs:**

<http://dec.vermont.gov/environmental-assistance/permits>

## **Lake Wise Program:**

<http://dec.vermont.gov/watershed/lakes-ponds/lakeshores-lake-wise>

## **Aquatic Invasive Species:**

<http://dec.vermont.gov/watershed/lakes-ponds/aquatic-invasives>

## **Vermont Lake Score Card:**

<http://dec.vermont.gov/watershed/lakes-ponds/data-maps/scorecard>

## **Volunteer with the Lakes & Ponds Program:**

<http://dec.vermont.gov/watershed/lakes-ponds/learn>

## **The Vermont Agency of Natural Resources Atlas:**

<http://anr.vermont.gov/maps/nr-atlas>

## **The Environmental Notice Bulletin:**

<https://enb.vermont.gov>

## **Reporting a potential environmental violation:**

<http://dec.vermont.gov/enforcement/reporting> or 802-828-1254



VERMONT DEPARTMENT OF  
ENVIRONMENTAL CONSERVATION

**Watershed Management Division  
Lakes & Ponds Management and Program  
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