

Calais Lakes and Streams COMMITTEE

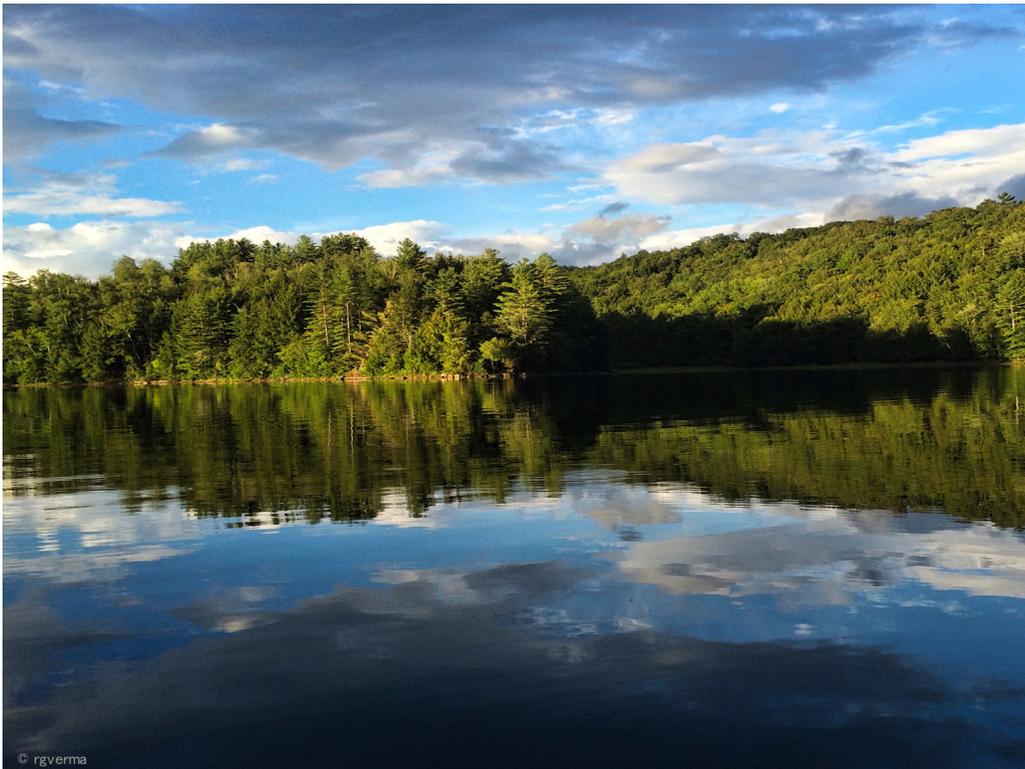
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This newsletter is devoted to WATERFRONT WISDOM. If you live beside a stream or pond, the best way to love these natural waters is to embrace a life style that will allow them to flourish for this and future generations of people and wildlife. These surface waters are precious to all living creatures. The density of species living near the shorelines of ponds and the banks of streams far exceeds those of drier land. These watery edges provide essential breeding grounds, food sources and sheltering habitat. As humans, it is critical that we restore or preserve nature's design for shore land -- a dense cover of native trees and shrubs. In contrast, lawns are barren habitats that damage water quality and rob birds, mammals and plants of the environment in which they thrive. This newsletter is devoted to shoreline life and ways in which people can help, rather than harm, nearby streams and ponds.

The center insert of this newsletter lists common sense "do's" and "don'ts" for living gently by the water's edge. Post it on your wall to remind you and your guests how to live with the smallest footprint. Birds, mammals, fish, and reptiles, as well as our friends, neighbors, and grandchildren, depend on you to protect these magnificent natural resources.

The first and foremost step is preservation of buffers. The value and importance of well-vegetated shore lands cannot be overstated. This newsletter addresses why buffers are so important and explains how to establish a buffer and restore a natural sloping shoreline.



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#10 Pond Courtesy of Ram Verma



Why Bother with Buffers?

Because it is the law! In 2014 Vermont passed the Shoreland Protection Act which requires a 100 foot buffer for all *new* development. Yet many camps and homes have been in place for decades, built long before we understood the importance of vegetation along water. The good news is you can make easy and inexpensive improvements to your land that will improve the buffer.

What do Buffers do? Buffers do the following:

- **Keep lake and stream water healthy, clear, and algae-free by preventing pollutants and soil from reaching the water;**
- **Keep the shore land from disappearing by preventing erosion;**
- **Support an abundance of birds and wildlife by protecting their habitat;**
- **Preserve the natural beauty;**
- **Protect property values -- Buyers are far less interested in land next to algae-choked water than they are in land next to clear and clean water.**
- **Provide resilience for climate change storms and events.**

How to Create a Buffer the Easy Way -- Let Nature do it for you!

The simplest action you can take is to take no action at all! Stop mowing near the shoreline except for a path no wider than six feet to access the water. The wider and larger the area is that you don't mow, the better. Even if it is only a few feet, it will help stabilize a lake's shoreline or the bank of a stream. A "no-mow" zone will allow new woody plants to readily colonize the area. Species that already exist on the shoreline will move in and thrive. You can then selectively prune out the species you don't want and encourage those you do. Woody plants (trees and shrubs), ground cover and wildflowers all hold soil together better than mowed grass, which is shallow rooted. Spend your time enjoying the lake instead of mowing the lawn.

You can also add desired plants to a no-mow zone:

- Select native species that feed and house birds and wildlife. Avoid spreading aggressive exotic species.
- Select plants based on their mature size and characteristics. For instance, choose shrubs if you want to be able to see over the top of them. Or select trees for privacy and shade. As the tree grows, prune lower branches to keep the view of the lake.
- Select species that provide fruit for birds or yourself to eat, or shrubs with attractive flowers. Look around the wild areas of the shoreline and see what plants thrive. These species are good choices.
- Save money by transplanting plants from elsewhere on your property to your shoreland. Late fall or early spring (before buds open) are the best times to transplant.

Only You Can Save Your Lake

The actions of lake, pond and stream shoreland owners are critical to healthy waters. The Following is a brief list of how you can save your favorite aquatic site and protect its ecology, health and your enjoyment in the future. The information in this insert has been approved by The Vermont Agency of Natural Resources Lake Wise Program.

<i>Please...</i>	<i>How</i>	<i>Why</i>
<i>Limit Your Lawn!</i>	<ul style="list-style-type: none">• Leave trees and shrubs in a strip up to 100 feet wide along the shore.• Replant native trees and shrubs between your house and the water.• Don't use fertilizer or pesticides on lawns near the shore.• Instead of repairing or installing a retaining wall, stabilize your shore with a vegetated bank.• Reduce lawn size	<ul style="list-style-type: none">• Lawns are not effective at erosion control or filtering runoff.• Cleared shorelands are the biggest threat to Vermont lakes, ponds, and streams.• Natural vegetation:<ul style="list-style-type: none">• stabilizes the bank• enhances in-lake habitat• looks nice from the water• provides shoreland bird and animal homes and food• Fertilizer and pesticide runoff unnecessarily pollutes the water with nutrients and toxins.
<i>Let Sleeping Logs Lie</i>	<p>Leave the majority of your shoreline wild; don't rake or remove trees, shrubs or aquatic plants from the shoreline.</p> <p>Try to coordinate with your neighbors to provide long stretches of undisturbed shoreline.</p>	<p>Fallen trees, leaves, overhanging branches, aquatic plants and natural pond floors are important habitat for fish and other wildlife.</p>
<i>No Beach is a Good Beach</i>	<p>Don't add sand or other fill to your lake or pond. (Natural beaches are, of course, fine but rare in Vermont.)</p>	<p>Adding sand suffocates the natural bottom habitat, plus can introduce polluting silt to the water. (A permit is required to add fill to a lake or pond.) See website: dec.vermont.gov/watershed/lakes-ponds/permit</p>
<i>Don't Dig Up the Shoreline</i>	<p>Keep land disturbance well back from the water; leave a wide buffer of natural vegetation between soil disturbance and the shoreline. Surround work area with a filter screen; mulch, reseed and replant as soon as possible. Complete work before Sept.15 (so seeds sprout before winter.)</p>	<ul style="list-style-type: none">• Eroded soil pollutes Vermont lakes, ponds and streams and degrades shallow water habitat.• Sediment carries phosphorus to water bodies causing algae blooms and excessive weed growth and muck deposits.• Turbidity threatens fish and other aquatic life.
<i>Mind Your Driveway Manners</i>	<p>Maintain your driveway so that runoff from it cannot reach the lake, pond, or stream.</p> <ul style="list-style-type: none">• Install water bars to direct flow into vegetated areas.• Rock line steep ditches.• Crown it annually.• Relocate if it is necessary• Work with your town road commissioner on preventing erosion of town roads.	<ul style="list-style-type: none">• Eroded soil pollutes Vermont lakes, ponds and stream degrading shallow water habitat.• Sediment carries phosphorus to water bodies.• Turbidity threatens fish and other aquatic wildlife.• Good driveway maintenance saves you money over the long run.

Don't Put Your Waste in the Lake

- Learn about your septic system.
- Conserve water: don't let water run when washing dishes or brushing teeth.
 - Don't add garbage disposals, washing machines or dishwashers unless you're sure your septic system meets current standards.
 - Replace systems that don't meet standards.
 - Pump septic tank every 3-5 years.

If any part of your septic system is closer than fifty feet to a water body or less than 2 feet above the water level, you could be polluting the water.

A poor or overloaded system can introduce disease causing organisms into lakes, ponds and streams, resulting in a human health threat, and can introduce nutrients into the water, causing algae blooms and excessive weed growth.

Watch those Ducks and Geese

- Don't feed waterfowl.
- Don't mow the lawn down to the shoreline.

- Resident duck and goose populations increase bacteria in the water and can increase the incidence of swimmer's itch.
- Ducks and geese love short grass, manicured lawns and low docks.

Be Careful Who You Invite Home

Make sure you aren't transporting organisms from one water body to another. Carefully wash and inspect your boat before moving it to another water body. Learn to identify **Eurasian watermilfoil, water chestnut, zebra and quagga mussels**. Keep watch for these invasives. Plant only native species along shorelines. Don't dump bait buckets or aquariums into water bodies.

Exotic plant and animal infestations are a serious problem in Vermont lakes and ponds, causing significant recreational and ecological damage. Only careful vigilance by all lake users can prevent the spread of harmful exotic species.

It is against the law to transport a boat with any plant material on its hull or propeller.

Gas and Water Don't Mix

- Replace 2-stroke boat engines with 4-stroke or direct-injection 2 stroke engines.
- Use an electric motor.
- Use a paddle.

- 2-stroke engines motors emit 20-30% of the fuel-oil mixture unburned into the water.
- 4-strokes are quieter, use half the gas and have 90% fewer emissions.
- Electric motors and paddles do not have any emissions.

Be kind to Your Wildlife Neighbors

- Protect and support the local wildlife:
- Stay away from Loon and other nest areas.
 - Protect shoreland wetlands.
 - Plant native plants on your shoreline.

Lakes, ponds, and streams are part of the diversity of native habitats in Vermont. Their important role in providing food, shelter, and breeding areas for Vermont fish and wildlife cannot be overstated.

Build Responsibly

Any work in a lake or pond such as building a dock or wall may require a Shoreline Encroachment Permit. See website: dec.vermont.gov/watershed/lakes-ponds/permit

Artificial structures alter the natural functions of a shoreline by removing vegetation and altering the natural lake bottom. Also, improperly done work can cause excess turbidity in the water.

Work Together

- Join Calais Lakes and Streams Committee or form a pond association.
- Join FOVLAP- Federation of Vermont Lakes and Ponds
- Get involved in town policy: assist the Planning and Conservation commissions with lake and stream protection issues.

To obtain more information, contact Calais Lakes and Streams Committee members (see address label on Newsletter) or The Vermont Department of Environmental Conservation- Lakes and Ponds Lake Wise Program. <http://dec.vermont.gov/watershed> or FOVLAP- <http://vermontlakes.org>



Trade Old Walls for Natural Shoreline

Many lakeshore lots have retaining walls. These walls were often built to stem the shoreline erosion that occurs when natural, stabilizing vegetation has been replaced. If you have a retaining wall that needs repair work, consider replacing it with a more natural shoreline that requires little maintenance, provides better protection against erosion, and encourages aquatic life. Any new wall or encroachment into the water requires a permit. For more information, refer to the Vermont State web page. Go to:

http://vtransenvironmentalmanual.vermont.gov/permit_progs/wetl/shrlnd

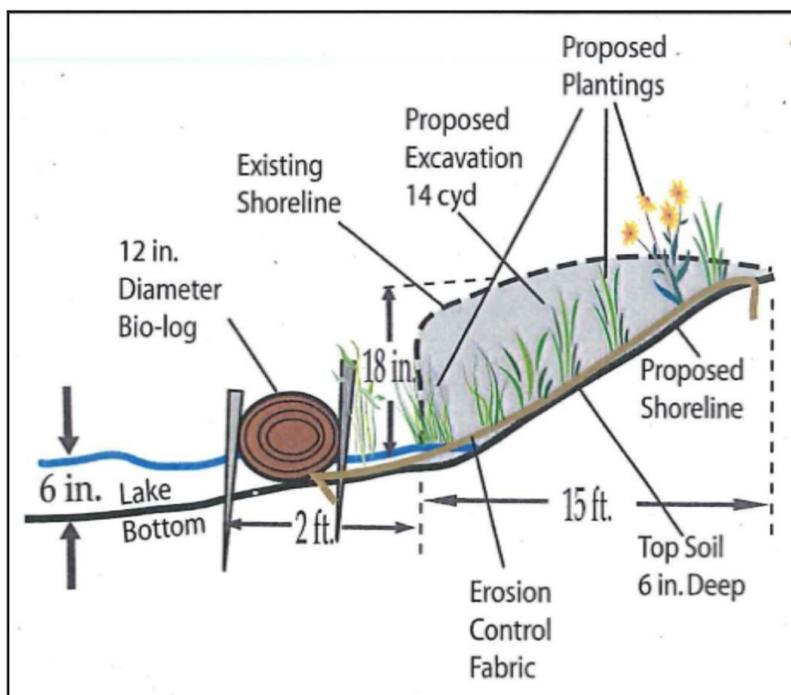
Retaining walls usually require regular, expensive repairs. Often erosion occurs at the ends of a wall, and ice and wave action undermine and tilt a wall over time. Nature has taken centuries to create a stable lakeshore. A natural sloped, slightly irregular bank is more stable than a vertical straight one because it allows wave and ice energy to dissipate. Restoring a shoreline with a variety of vegetation (trees, shrubs, and ground cover) stabilizes the shore. Lake access can be provided with a path. The following suggestions can be used in many shoreline areas to restore a more natural shoreline:

- Place angular stone (6 – 8 inch size) and/or fiber-core rolls at the toe of the bank, as shown in the diagram below. Angular rocks lock in place better than rounded or flat stone, and larger rock cause erosion by concentrating wave and ice energy elsewhere. The stone should reach approximately six inches above the average summer water level so that any waves hit the stone. Lay biologic (not plastic) filter fabric between the rock and soil of the bank to prevent the washing out of soil from behind the rock.
- Grade the bank back to no steeper than 2:1 (two horizontal feet to every one vertical foot). Biologic erosion control fabric might be needed to hold seed in place until the vegetation becomes established.
- Plant a mixture of trees, shrubs and ground cover and allow them to naturalize. Don't mow in the buffer area.
- For steeper slopes seek technical assistance to design shore restoration.

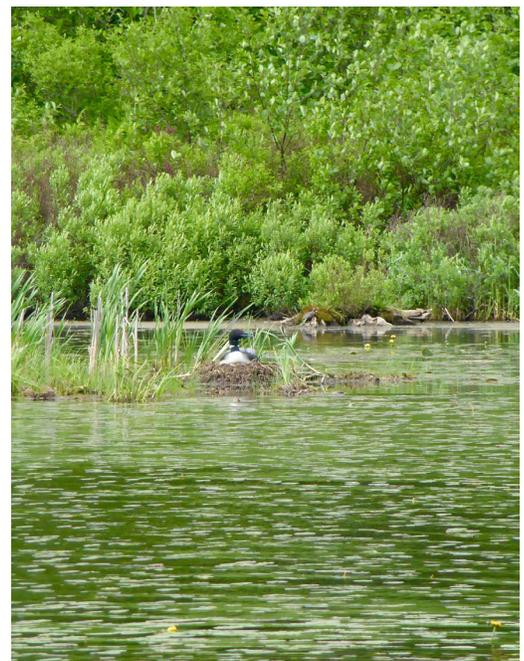
Natural Shoreland Erosion Control Workshop

For Contractors, Landscapers and Property owners offered by Lake Wise Program in November 2016

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



Wall replacement using fiber roll (bio-log)



Natural shorelines provide important habitat for wildlife



Calais Lakes and Streams COMMITTEE

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