

# Lake Shoreland Protection and Restoration Management Options—Executive Summary, January 2013

## Report to the Vermont Legislature to Fulfill the Requirements of Act 138, 2012

According to a U.S. Environmental Protection Agency (USEPA) study of lakes across the country, the health of Vermont's lakes is less than both the northeast region and the national average in terms of percent of shoreland that is either in fair or poor condition, as measured by the extent of clearing, lawns and development near the shoreline. When a lake's natural vegetation (woodland) is removed and replaced by lawns and impervious surfaces, fish and wildlife habitat degrades, shores erode, and the lake is more vulnerable to water quality problems such as algae blooms. Cleared shores are also more susceptible to erosion during flood events.

Naturally vegetated lakeshores reduce pollution, protect property and fisheries, improve recreation, and greatly contribute to the economy. Some of the many benefits and values naturally vegetated lakeshores offer include:

**Revenue and property values.** Healthy lakes generate millions of dollars annually for the Vermont economy and private property maintains highest value when water quality is good.

**Flood resilience.** Well-vegetated shorelands provide flood resilience and play an essential part in buttressing Vermont's water resources against the effect of climate change.

**Recreation and tourism.** Treed shorelands are scenic, enhancing the recreational experience and contributing to Vermont's tourism economy.

In addition, a wooded shore provides ecosystem services that are essential for protecting lake ecological health:

**Pollution filtration.** Shoreland vegetation naturally filters phosphorus and sediment from uphill runoff.

**Shoreline stability.** Wooded shores provide shoreline stability with a diversity of dense root structures.



**Figure 2. Common lakeshore development** consists of clearing native vegetation and planting a lawn. Suburbanized shorelands diminish lake health.

**Habitat for fish and aquatic species.** Fallen trees and branches provide critical physical habitat for fish, amphibians, turtles and insects such as dragonflies .

**Prevention of problem plant growth.** Overhanging branches keep the water shaded and cool, thus helping to prevent algae and problem plant growth that thrive in warm and sunny waters.

**Habitat for wildlife species.** A natural shoreline enables use of the lake environment for species such as loons, kingfishers and otters.

At present, most shoreland development in Vermont involves clearing native vegetation along shorelines to establish lawns down to the water's edge, and as a result, 82 percent of Vermont's shorelands are currently in poor or fair condition. Accordingly, Vermont lakes are more threatened by phosphorus and sediment runoff from shoreland areas, habitat degradation, and flood damage than lakes in other New England states and the nation.

The Vermont Legislature passed Act 138 during the 2012 legislative session, which requires the Vermont Agency of Natural Resources (VTANR) to submit a report with options for restoring and protecting lakeshores. In particular, Act 138 calls on VTANR to address whether the state should enact statewide shoreland regulations.

### Vermont's Shoreland Management Programs

Vermont's current shoreland management programs focus on education, outreach and technical assistance. At present, there is no statewide standard for shoreland management and the responsibility for developing standards falls to municipalities. Less than 20 percent of towns have implemented ordinances to protect lakeshores. Municipal adoption of effective local shoreland zoning has progressed very slowly over the last 40 years and efforts have varied in effectiveness.



**Figure 3. Lake-friendly shoreland development** includes: setting a lawn back from the lake; allowing native trees to stabilize the bank, while pruning lower branches for a view; leaving woodlands (duff layer, shrubs, and mature trees) in place to filter runoff and provide healthy habitat for fish and other wildlife.

Act 250 and the Stormwater Management Rules have limited applicability to lakeshore management. Most shoreland development occurs one lot at a time and is thus sub-jurisdictional with respect to Act 250. The vast majority of shoreland development is also sub-jurisdictional to the Stormwater Management Rules as the developed area is usually less than one acre. Finally, 80 percent of towns lack shoreland development standards. The majority of shoreland development occurs without any guidance or requirements addressing lake protection.

The VTANR concludes that the current shoreland management approach in Vermont – education, outreach, technical assistance and voluntary municipal participation – is not providing adequate protection of Vermont’s lakes. Comparing Vermont’s current shoreland management practices to other northeastern states’ programs reveals a major gap in Vermont’s management program: Vermont is the only northeastern state without state standards for shoreland development. New approaches are needed to ensure the long term health of Vermont lakes and shorelands.

### Regulatory Options

As required in Act 138, VTANR provides the following regulatory options for consideration to supplement Vermont’s current shoreland management program:

**State administered option:** The Agency would adopt standards via rule making and administer a state-wide permit program.

**Enhanced local option:** Set minimum standards that the municipalities can choose to administer themselves. This option may be attractive to the 20 percent of towns that already have protective shoreland zoning, or towns that want to add to the state minimum standards to reflect local priorities. The Agency would administer the standards through a permit program in municipalities that choose not to do so themselves.

**Municipality administered option:** The state sets minimum standards that municipalities must incorporate into their zoning ordinances. The state would provide technical assistance to towns. The state would administer the minimum standards in the 94 towns which have no zoning.

### Non-Regulatory Options

Although VTANR concludes that Vermont’s shoreland management program relying solely on education, outreach and technical assistance is not adequately protecting Vermont’s lakes, such non-regulatory programs are a necessary component of any protection and res-

toration program. The following elements are therefore recommended for continuation, expansion or establishment:

- ◆ Encourage and enable shoreland conservation projects that preserve undeveloped lakeshores.
- ◆ Evaluate a use value appraisal-type tax credit for establishing or protecting a wooded lakeshore and to reward landowners for maintaining a naturally vegetated shore.
- ◆ Support education and outreach efforts, such as the Agency’s Lake Wise Program and literature and website materials. Continue Agency individual site visits, as requested, to provide recommendations regarding shoreland management or restoration.
- ◆ Continue to support the Vermont League of City and Towns lake protection technical assistance to towns.
- ◆ Establish a “green” certification program for contractors to provide training on water resource protection measures such as vegetated shorelands and erosion control during construction.
- ◆ Continue to fund lake events and technical assistance projects that promote and demonstrate shoreland restoration and protection. Partner with external organizations, such as the Vermont Federation of Lakes and Ponds, the Natural Resources Conservation Districts, and the Regional Planning Commissions.

There has never been a better time, or a greater need, to rethink how Vermont manages its lake shorelands. Recent flooding events caused by extreme weather, such as the 2011 spring flooding and Tropical Storm Irene, demonstrated that wooded shorelands are substantially more resilient to high water and wave action than cleared shores or those with retaining walls. Increasing public scrutiny on the effort to stem phosphorus pollution in Lake Champlain provides a reminder to all lake-front landowners that collective action is needed to prevent degradation of water quality for all Vermont lakes.

**This is an opportunity for the Vermont Legislature to implement a fair and effective program for lakeshore management and protection to ensure that the state’s economic, social, and ecological values are protected for current and future generations.**

