



2006 Outstanding Planning Award for a Project, Program, or Tool

Shoring Up Lake Champlain's Waterfront

A handbook gives property owners an array of stabilization techniques.

By Marya Morris, AICP

A 1998 bill proposed making Lake Champlain the sixth Great Lake. The measure, introduced by U.S. Sen. Patrick Leahy of Vermont, failed after the Great Lakes states balked at sharing their pool of federal research dollars. Vermonters contend that although it may not be great, it is certainly magnificent, and worth protecting.



The 120-mile-long, 12-mile wide (at its widest) body of water forms the upper portion of the border between New York and Vermont. It is a tremendous natural resource and the centerpiece of the region's tourism industry. As with many inland lakes, the shoreline is owned by a multitude of private and public property owners. Between 80 and 90 percent of it is in private ownership; towns and state agencies own the remaining segments. Such fragmentation presents a substantial

challenge to local agencies charged with maintaining a healthy lake and stable shoreline.

The Northwest Regional Planning Commission in Vermont, in collaboration with the Lake Champlain Sea Grant program at the University of Vermont, the Vermont Department of Environmental Conservation, and more than 60 other organizations and entities, has developed a first-of-its-kind manual to help property owners make informed decisions about the most appropriate, effective, and economical methods of stabilizing the shoreline of their waterfront land. *The Shoreline Stabilization Handbook for Lake Champlain and Other Inland Lakes* is the 2006 recipient of the Outstanding Planning Award for a Project, Program, or Tool.

Shoreline erosion has always been a concern for property owners on Lake Champlain. Strong north-to-south water flow, withering Canadian winds, unremitting waves, and ice all contribute to it. Further, many owners inadvertently worsen the situation when they cut down shoreline trees to improve their views of the lake. A 1996 ice storm, however, brought heightened attention from both citizens and local lake experts.

"That storm set the landscape back at least 20 years in terms of loss of shoreline vegetation

and the number of shoreline trees that died or were damaged," says Bonnie Waninger, assistant director of the St. Albans, Vermont-based NRPC and manager of the project. "After those trees were gone, the shoreline started eroding at a rapid rate — all of a sudden property owners could measure the amount they were losing each year in feet instead of inches." The stepped-up pace of destabilization was also evident in the town of Alburgh, Vermont, which sought advice from the NRPC when a lakeside road began eroding rapidly as well.

Misplaced sediment

A major, yet often unrecognized, problem for Lake Champlain is the degree to which shoreline erosion has caused the accumulation of unwanted sediment on the lake bottom and in the streams and rivers that feed the lake. According to Jurij Homziak, a coastal and watershed specialist with the Lake Champlain Sea Grant program, "the Lake Champlain watershed has lost so much of its effective tree and brush cover [to farming and tree cutting] that there is nothing to trap the water or sediment before it enters streams and the lake. We are talking about erosion on a grand scale here."

But sedimentation is a natural process — why should this matter? "It's the pace at which the lakes and streams are filling in that's the problem," says Homziak. "In a natural state, sedimentation only occurs in streams and lakes when there is major flooding, but with all the manmade changes upstream, it is now a constant occurrence."

"Fishermen in the area are concerned because they've seen the spawning grounds for walleye, trout, and other species become degraded," Homziak adds, noting that erosion has increased the rate of water flow and muddied streams and the lake bottom, creating a different habitat.

The commission recognized a need for better information on lakeshore stabilization and took the lead in preparing the handbook, beginning by contacting local governments in the region as well as state and federal agencies and regional councils in both New York and Vermont. Those contacts led to other stakeholder groups, including home builders, engineers, local contractors, business professionals, and environmentalists. The working group agreed early in the process that any product that resulted from their effort would have to reflect a comprehensive approach to shoreline stabilization that considered a range of environmentally sensitive options tailored to site conditions, costs, and effectiveness.

The 54-page handbook features a concise checklist of factors for property owners to consider when weighing their stabilization options. Among them are wave action, existing vegetation, current land uses, and ground and surface water.

It also contains a detailed matrix of the four groups of stabilization options — structural, nonstructural, bioengineered, and biotechnical. For each option, the book describes where it

does and does not work, the advantages and disadvantages of each, the relative costs, necessary labor, and what permits might be required.

"We are encouraging property owners to use the 'lake friendly solutions,' if we know them to be effective for countering their particular erosion problem," says Waninger, referring to the bioengineering and biotechnical stabilization methods. "We've found that a lot of people are interested in these techniques, but they don't know where or how to get started. We also want to work with engineering consultants in the region who would like to offer their clients the bioengineering options for their property," she says.

The handbook stands out in the way it skillfully presents information that is understandable and can be put to immediate use by any user, from individual lakefront landowners to transportation engineers to developers. "We hired an editor who took all the dry planning and engineering language and turned it into something very readable," says Waninger. "That was money well spent."

With the handbook completed and available to the public, NPRC is now conducting outreach and education initiatives to get the word out about both the shoreline stabilization issue and the handbook itself. Throughout this year and beyond, the commission will hold workshops to familiarize property owners, town officials, engineers, and others with the stabilization options, and it is working with local towns and cities to find 10 demonstration sites on public land where it can experiment with biotechnical and bioengineering solutions. "These sites — which will be on town beaches, along roadways, and in state parks — will allow property owners to see firsthand how these approaches work," says Waninger.

Homziak hopes that the handbook and the workshops make clear the direct connection between erosion and the lack of trees. "If you cut down trees on your property, you will destabilize your shoreline. That's a fact," he says.

For more information or to obtain a copy of the handbook, e-mail Bonnie Waninger: bwaninger@nrpcvt.com.

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Images: A quick reference guide helps Lake Champlain property owners select appropriate techniques and refers them to more detailed descriptions. Image courtesy Northwest Regional Planning Commission, Vermont.

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