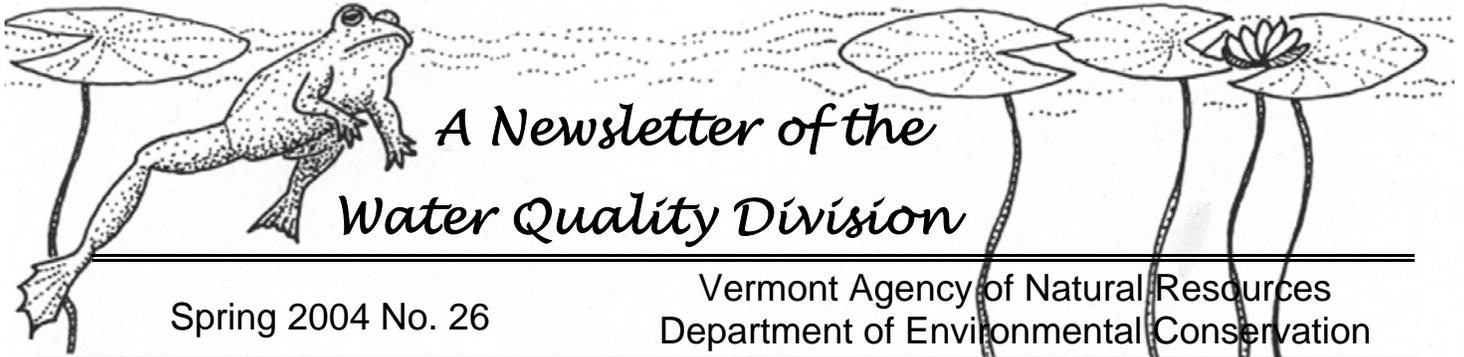


# Out of the Blue



Spring 2004 No. 26

Vermont Agency of Natural Resources  
Department of Environmental Conservation

## The Clean and Clear Action Plan

In the fall of 2003, Governor Douglas announced his Clean and Clear Action Plan, an ambitious strategy for improving water quality statewide, with particular emphasis on addressing phosphorus and algae problems in Lake Champlain. The Governor pledged to accelerate pollution reduction measures for Lake Champlain in every possible instance to achieve our water quality goals by 2009, in time for the 400-year anniversary of the exploration of the lake by Samuel de Champlain.

Clean and Clear is a comprehensive clean-up plan that includes assistance to farmers to reduce agricultural runoff and improve riparian zone management, a science-based strategy to reduce erosion of sediment and phosphorus in our rivers and streams, support for municipalities in improving backroad maintenance and local water quality protection, citizen-based action planning for watershed management and protection, wetland restoration and protection, wastewater treatment plant upgrades, enhanced water quality monitoring to identify problems and document progress, and public education.

The Governor's budget request for state fiscal year 2005 included over \$6 million in new state funds for the Clean and Clear Action Plan, with the expectation of at least \$8 million in federal funds to support these programs this year as well. Meeting the Governor's goal by 2009 will require over \$100 million in state, federal, and private funds. At press time (late May 2004), the Vermont General Assembly has just passed a Clean and Clear 2005 budget in the appropriations and capital bills.

## Better Backroads Make Better Lakes

Several lake associations have recently taken advantage of the Better Backroads Program grants to reduce erosion on roads and thus reduce nutrient and sediment loading to their lake. Road erosion can be a significant problem for a lake, resulting in enlarged deltas at stream mouths and increased turbidity. In addition, eroded soil is a source of phosphorus to lakes. Several recent projects to benefit lake water quality are highlighted below.

**Woodford Lake** – The Woodford Lake Estates, in the Town of Woodford near Bennington, completed erosion control work in the Woodford Lake watershed such as crowning the road, replacing undersized culverts, installing culvert header protection, and rock lining ditches on steep slopes. Two grants were obtained to help defray the costs of the work.

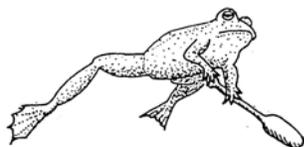
**Lake Parker** – The Lake Parker Association worked with the Town of Glover's Road Commissioner to design stabilization measures and apply for Backroads Program grants. To date, three projects have been successfully completed.

### In This Issue...

See page 2, "Backroads"

Lake-Friendly Lawn Care .....	3
ANS Highlights .....	3
Lab Services Grants Awarded.....	4-5
State of the Lakes .....	6
The Tail of the Beaver .....	7
Project WET .....	7

**“Out of the Blue”  
Available on the Web**



Check out the latest and future newsletter issues on the Water Quality Division Web Page at [www.vtwaterquality.org](http://www.vtwaterquality.org)

*Out of the Blue*

is produced semi-annually by the Lakes and Ponds Section. Our purpose is to share information on lake, river, and wetland environments, water quality and state activities through articles on aquatic ecology and Division programs. Feel free to let us know what articles you would like to see in future issues. To be placed on the mailing list, or to receive extra copies, please contact:

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(continued from page 1) — **Backroads** —

The picture below shows a new larger culvert with rock-lined ditches on either side of the drainage slope that were installed to address severe erosion on a steep hill.



**Town of Glover road crew’s work to stabilize a culvert and ditch in the Lake Parker watershed**

**Caspian Lake**

– A series of flash flood events in the mid-1990s in the Town of Greensboro resulted in several severe road washouts that delivered significant amounts of sediment to the lake. The town applied for and received three

different grants from the Backroads Program to install larger culverts and culvert headers, and rock-line unstable ditches. They also received funding from the Federal Emergency Management Agency to complete these and other projects.

**Sunset Lake** – The Sunset Lake, Sunrise Lake and Perch Pond Association received a grant in 2002 to correct erosion problems on the private roads that serve some of the camps on these waters. In addition, the Town of Benson stabilized 1,300 feet of chronically eroding road bank along the lake using two Backroads Program grants and federal Section 319 Nonpoint Source funding.

In addition to the projects mentioned above, the Better Backroads Program has funded 102 erosion control projects statewide since 1997 to benefit the water quality of lakes, rivers, streams and wetlands. Annual application information is mailed each year in April to towns, and lake and watershed associations. For more information, contact Susan Warren at 802-241-3794.

**New Kid on the Block: Welcome Crystal!**

There’s a new voice answering the phones in the Water Quality Division. Crystal French has joined the Division as support staff, bringing a cheerful, experienced approach to serving the public and staff. Crystal is well prepared for the upcoming summer season, typically the busiest time for lake and river questions, and looks forward to helping with all the different water quality issues.

## Spreading the Message About Lake-Friendly Lawn Care Practices

On a rainy spring day, how many people in the northern Lake Champlain watershed look at the stormwater runoff from a neighborhood and notice inorganic fertilizers and pesticides? The average person would not discern their presence in the runoff that makes its way to the storm drains. Educational efforts by all sectors of the community are responsible for helping people understand what pollutes stormwater runoff and how this ends up in rivers and lakes.

As part of the ongoing Agency of Natural Resources' northern Lake Champlain basin planning process, people have voiced concerns about the use of fertilizers and pesticides in residential areas. Despite these concerns, a survey of Chittenden County indicated that over 40% of the community spreads fertilizers and pesticides with little understanding of its impact on water quality (survey results available at: [www.smartwaterways.org/facts.html](http://www.smartwaterways.org/facts.html)). In addition, preliminary soil test results in Chittenden County indicated that 76% of the lawns sampled might have enough or too much phosphorus (contact the Lake Champlain Committee for more information, 802-658-1414). Excess phosphorus added to a lawn will easily leach into stormwater runoff. These survey results indicate that more needs to be done to change the behavior of the public.

Basin planning discussions with the northern Lake Champlain community have identified strategies that may lead to a wider recognition of per-

sonal responsibility and acceptance of lake-friendly lawn and garden practices. One strategy of improved collaborative efforts on lawn care and stormwater runoff issues is already underway. Several examples are listed below.



- Eight towns and six partners initiated the Regional Stormwater Education Program, see [www.smartwaterways.org/index.html](http://www.smartwaterways.org/index.html)
- The Greater Burlington Industrial Core (GBIC), various businesses and the Lake Champlain Basin Program developed the brochure, "Your Lake, Your Lawn."
- The Voice of Potash Brook and Middlebury College have teamed up to educate homeowners and businesses on lawn care choices in lower Potash Brook.
- The Vermont Green Lawn Coalition is working on providing the public with information about lawn care projects.
- The St. Albans Area Watershed Association, BFA High School, UVM Extension, Master Gardener's Program and others will provide education to St. Albans City neighborhoods.

The basin planning process will continue to facilitate discussions and find resources to support and strengthen these existing and new projects. For more information on the northern Lake Champlain basin planning process, contact Karen Bates at the Division's Essex Office, 802-879-2339.

## Aquatic Nuisance Species

### HIGHLIGHTS

**Lake Group/Town Receive Environmental Award.** The Lake Dunmore / Fern Lake Association together with the Town of Leicester was awarded US EPA's Environmental Merit Award for the successful and environmentally sensitive control of Eurasian watermilfoil in Lake Dunmore and Fern Lake. The award, presented at a special Earth Day ceremony in Boston on April 22nd, is in recognition of the "exceptional work and commitment to the environment" and "outstanding work toward improving and preserving the quality of our environment." The program to control watermilfoil in Lake Dunmore and Fern Lake is a model program that has succeeded in managing Eurasian watermilfoil utilizing a team of well-trained divers to map and survey the lakes and hand-pull individual watermilfoil plants. Other program components include education and outreach and access area monitoring.

**Federation of VT Lakes and Ponds Seminar on Eurasian Watermilfoil and Lake Protection.** June 25, 2004, 9 a.m. - 3 p.m. in Waterbury, VT. See back page for more details.

**Water Chestnut Public Forum.** August 7, 2004 9:30 a.m. - 12:30 p.m. with optional afternoon Lake Champlain boat trip, Whitehall, NY. Contact Lisa Windhausen at the LCBP, 1-800-468-5227.



## Lab Services Grants Awarded

In 2003, the Water Quality Division awarded analytical laboratory services grants from the state LaRosa Laboratory in Waterbury to nine volunteer watershed groups across Vermont. This pilot year of sharing laboratory services with volunteer watershed monitoring programs reconfirmed that partnerships between state and citizen monitoring groups can produce credible and reliable water quality data from more waterbodies than any group could monitor alone.

For the 2004 sampling season, the analytical laboratory services grants have been awarded to

11 volunteer watershed monitoring groups. Some received grants in 2003, and others are new programs taking advantage of the Water Quality Division's laboratory assistance. The volunteer watershed monitoring groups involved manage, interpret and distribute all their data results to their interested local communities. Listed on the next page are the volunteer watershed monitoring groups receiving grants in 2004.

Contact them for more information about their individual monitoring efforts.

### Vermont's 17 Major Watersheds

◆ Indicates location of a volunteer watershed monitoring group benefiting from laboratory analytical services provided by the state LaRosa Laboratory and the Water Quality Division.

#### Hudson River Watershed

1. Battenkill, Walloomsac, Hoosic

#### Lake Champlain Watershed

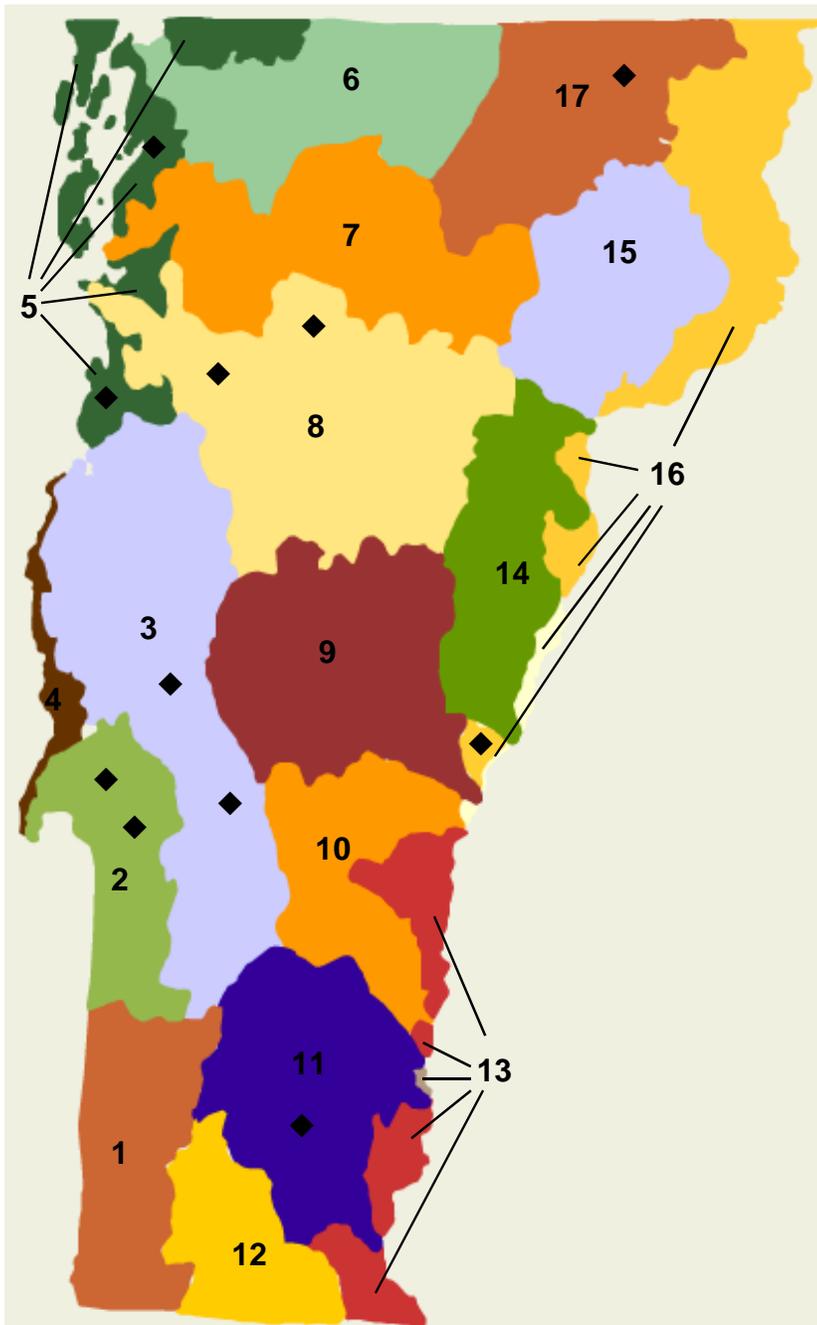
2. Poultney, Mettawee
3. Otter Creek, Little Otter Creek, Lewis Creek
4. Lower Lake Champlain
5. Upper Lake Champlain, LaPlatte, Malletts Bay, St. Albans Bay, Rock, Pike
6. Missisquoi
7. Lamoille
8. Winooski

#### Connecticut River Watershed

9. White
10. Ottauquechee, Black
11. West, Williams, Saxtons
12. Deerfield
13. Lower Connecticut, Mill Brook
14. Stevens, Wells, Waits, Ompompanoosuc
15. Passumpsic
16. Upper Connecticut, Nulhegan, Willard Stream, Paul Stream

#### Lake Memphremagog Watershed

17. Lake Memphremagog, Black, Barton, Clyde, Coaticook



## Basin 2

◆ **Lake St. Catherine Monitoring:** The Poultney Mettowee Watershed Partnership and Green Mountain College have teamed up to perform long-term sampling on Lake St. Catherine. Contact Susan Sutheimer at Green Mountain College, [sutheimers@greenmtn.edu](mailto:sutheimers@greenmtn.edu)

◆ **Poultney Mettowee Watershed Partnership** has designed a monitoring program to determine the level of nutrients, sediments and *E. coli* bacteria in the Poultney River. For more information, contact Joel Flewelling, [Joel@gwriters.com](mailto:Joel@gwriters.com)

## Basin 3

◆ **Addison County River Watch Collaborative:** This group was formed in late 1997 “to unite stream monitoring efforts by citizens in the Addison County region.” The ACRWC consists of seven partner groups: Otter Creek Audubon, Otter Creek Natural Resources Conservation District, Middlebury River Watershed Partnership, New Haven River Anglers Association, the Watershed Center, Lewis Creek Association and the Weybridge Conservation Commission. Citizens monitor for various water quality parameters, including *E.coli* bacteria, pH, phosphorus, and water temperature. Contact Sheila Schwaneflugel at the ACRWC, [schwaneflugel@globalnetisp.net](mailto:schwaneflugel@globalnetisp.net)

◆ **Rutland Natural Resources Conservation District Upper Otter Creek Monitoring Program:** In an effort to assess the condition of the upper Otter Creek, various parameters will be sampled from different locations along the upper Otter Creek. The contact for this effort is Nanci McGuire, District Manager, Rutland NRCD, 170 South Main Street, Rutland, VT 06764, or [nanci-mcquire@vt.nacdnet.org](mailto:nanci-mcquire@vt.nacdnet.org)

## Basin 5

◆ **LaPlatte Watershed Volunteer Water Quality Monitoring Program:** This group monitors to assess land use changes and management practices, and to establish priorities for improving the condition of the LaPlatte River system and Shelburne Bay. The project contact is Dr. Alfred Hoadley, [bhoadley@together.net](mailto:bhoadley@together.net)

◆ **St. Albans Area Watershed Association, Inc.:** This group will sample Stevens, Rugg and Jewett Brooks that flow into St. Albans Bay to identify phosphorus loading from urban and agricultural sources. The contact for this monitoring is Dan Lindley, St. Albans Town Administrator, [townadmin@adelphia.net](mailto:townadmin@adelphia.net)

## Basin 8

◆ **Huntington Conservation Commission:** Contact Project Chair, Aaron Worthley, [aaronw@gmavt.net](mailto:aaronw@gmavt.net) for *E.coli* bacteria sampling results on the Huntington River in Huntington.

◆ **Calais Conservation Commission:** Noreen Bryan, Co-Chair for the Lakes and Ponds Working Group, can be contacted for *E.coli* bacteria sampling results on Curtis Pond, located in Calais, [noreen1945@yahoo.com](mailto:noreen1945@yahoo.com)

## Basin 11

◆ **West River Watershed Alliance Stream Action Team:** This team has designed a monitoring program to evaluate the overall health and sustainability of the West, Williams and Saxtons Rivers. Contact Em Richards at [em.richards@vacd.org](mailto:em.richards@vacd.org)

## Basin 16

◆ **Norwich Conservation Commission:** The Norwich Conservation Commission will be sampling *E. coli* bacteria levels in Blood Brook, which flows through Norwich and into the Connecticut River. Contact Frank Olmstead at [Folmstead@doolaw.com](mailto:Folmstead@doolaw.com) for the sampling results.

## Basin 17

◆ **The Westmore Association** will sample Lake Willoughby, located in Westmore, to identify potential sources of pollution to Lake Willoughby. Dr. Arthur Brooks can be contacted about this project, [abrooks@uwm.edu](mailto:abrooks@uwm.edu)



### **Greener Shores on Caspian Lake**

The shores of Caspian Lake in Greensboro will be greener this summer as part of a grant to the Town of Greensboro. Funding to purchase native trees and shrubs species will be made available to up to ten landowners. In addition, landscaping advice will be made available to help landowners decide on a planting plan. In coordination with this project, Land Works of Middlebury, a landscape design company, will be hired to prepare planting plans for a variety of lakeshore property situations. The landscaping plans will also address care and maintenance of existing vegetation and replacing old trees. These designs will help with both the Caspian Lake project and future projects with other lake associations.

The grant is part of an effort of the Lakes and Ponds Section to promote the re-establishment of a band of woody vegetation along lakeshores. A diverse mix of vegetation along the lake will prevent shoreline erosion, offer habitat to species that depend on shorelands, and, if wide enough, filter pollutants out of uphill runoff. If your association might be interested, please contact Susan Warren, 802-241-3794.

### **Curtis Pond Completes Watershed Survey**

A new Curtis Pond Watershed Survey details conditions in Curtis Pond and its watershed, and identifies project needs to protect and improve the pond. During the summers of 2001-03, the Lakes and Ponds Working Group of the Calais Conservation Commission, under a grant from the Lake Champlain Basin Program and using methodology developed by VTDEC Lakes and Ponds Section, carried out the work.

The Survey results include maps and text describing current conditions in the lake (e.g. plant and algae growth, sediment buildup), a summary of sampling results from the Lay Monitoring Program, and land use conditions both along the shore and in the watershed as a whole. Along with detailing the current conditions relative to nutrient enrichment, results of bacteria sampling over the past three years were reported, and actions were identified to lessen the impact of runoff on the lake by implementing pollution prevention projects. For more information on this or general watershed survey work, please contact Susan Warren at 802-241-3794.

### **\*New\* Lake Champlain Shoreline Stabilization Manual**

The shore of Lake Champlain is subject to many erosion forces including wind, waves, ice and a highly variable water level. These forces are often aided by the removal of natural vegetation along the shore to accommodate land uses. At the same time, a certain amount of natural erosion supplies the constant along-shore transport of sediment and builds beaches. A new manual published by the Northwest Regional Planning Commission (located in St Albans) explains these processes and provides a variety of stabilization measures that landowners can choose from to provide stabilization where necessary. The manual is intended to inform landowner and municipal decisions and includes numerous "bioengineering" and "biotechnical" methods that make use of vegetation to offer longer-term stability and habitat benefits. A copy of the manual can be requested from NRPC at 802-524-5958 or the Lakes and Ponds Section at 802-241-3777.

### **2004 Watershed Grants**

In February the 2004 Watershed Grant awards were announced, with 25 projects totaling \$70,000 funded. The Watershed Grants are available on a competitive basis for water resource projects on lakes, rivers and wetlands. Funded projects include ones that are educational, monitoring, recreational, restoration, planning, or historical in nature and are listed on the Water Quality Division's web page, [www.vtwaterquality.org](http://www.vtwaterquality.org)

## The Tail of the Beaver

Beavers (*Castor canadensis*) are more than intriguing animals with flat tails and lustrous fur. Native Americans called the beaver the "sacred center" of the land because this species creates rich habitats for other mammals, fish, turtles, frogs, and birds. Since beavers prefer to dam streams in shallow valleys, much of the flooded area becomes wetlands. Such wetlands are cradles of life with biodiversity that can rival tropical rain forests.



Beavers' ability to change the landscape is second only to humans. Wetlands created by beavers are the only increasing form of wetlands in the United States. Almost half of endangered and threatened species in North America rely upon wetlands. Beavers' activities are not the only reasons this flat-tailed species is fascinating.

Adult beavers may weigh over 40 pounds. They mate for life during their third year. Both parents care for the kits (usually one to four) that are born in the spring. The young normally stay with their parents for two years, and yearlings act as babysitters for the new litter.

By damming streams, beavers often raise the water level to surround their lodge with a protective moat, and create the deep water needed for

winter food storage. While other wildlife endure wintertime cold and hunger, beavers stay warm in their lodges with an underwater food cache of branches nearby. While there are many benefits to damming, beaver activity can be very problematic to neighboring landowners.

When human-beaver conflicts arise, working with the beaver is most often the best solution. If beavers are removed from good habitat, others will normally move into the empty habitat. Allowing the beavers to remain while addressing the specific problem (for example, flooded roads or tree cutting) also preserves the many beaver benefits. By installing flow devices, often most of the beaver-created wetlands can be saved, while ending the unwanted flooding. Problems with objectionable tree cutting can often be solved with fencing or other methods suggested in the Vermont Agency of Natural Resources' recent manual "Best Management Practices for Resolving Human-Beaver Conflicts in Vermont."

Proven, cost-effective devices, such as beaver pipes in dams, are successfully used to control objectionable flooding. Road flooding is a common human-beaver conflict that can be solved with methods such as "exclosures," "Beaver Bafflers" or "Beaver Deceivers." Since beavers are quite adaptable, it is best to use proven techniques. To learn more about these techniques, request "Best Management Practices for Resolving Human-Beaver Conflicts in Vermont" from the Water Quality Division. Much of the information in this article was taken with permission from the educational, nonprofit group, Beavers: Wetlands & Wildlife's web site, [www.beaversww.org](http://www.beaversww.org), provided here as another terrific source of information about beavers and how to control potential beaver damage.

### Project WET and the Healthy Water Healthy People Program

The Vermont Project WET (Water Education for Teachers) program will be presenting activities from the program's latest addition, the Healthy Water Healthy People Program, at several events during the summer. The HWHP program trains educators and others in water quality monitoring using the *Educator's Guide* (high school level) and the water quality monitoring book, the *Testing Kit Manual* (youth to adult level). Check the Division's web site for event dates and locations. Otherwise, contact the Vermont Institute of Natural Science (802- 457-2779) or UVM's Watershed Alliance (802-656-5428) for the July 14th-16th "Watersheds Interactive" workshop, or Amy Picotte (802-241-3789) for workshop information with Girl Scouts on Lake Carmi in Franklin, educators in Bennington, or the Fish and Wildlife's Educators' Course at Buck Lake in Woodbury.



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**2004 Lake Seminar –  
Milfoil and Watersheds**

The Federation of Vermont Lakes and Ponds and VTDEC will host the second Lake Seminar on June 25, 2004. This year's seminar, to be held in Waterbury, will feature presentations from lake associations about both Eurasian watermilfoil management, and lake and watershed protection. The watermilfoil presentations will include both control and spread prevention projects, and cover design, costs and funding, and staffing aspects. Lake and watershed protection involves both surveying a lake and its watershed to understand the land use issues that may affect a lake, and carrying out projects to correct pollution sources.

You are invited to come hear from the experts: the people designing and implementing projects to benefit their lake! Seminar fliers are being mailed in late May, call 802-241-3777 to request additional copies.



**2004 Federation of  
Vermont  
Lakes and Ponds  
Annual Meeting**

The Federation will hold its annual meeting July 26th in Randolph at Vermont Technical College. The third annual meeting since the Federation became a statewide group, the meeting will feature reports from all member lake associations and discussions on lake issues. This year's featured speaker will be Eric Palmer from the Department of Fish and Wildlife speaking on historic and current fish stocking in Vermont. Come meet and

greet your fellow lake friends! For registration information, contact

Jackie Sprague  
at [Jackie@sprague.org](mailto:Jackie@sprague.org)  
or 802-482-2885.