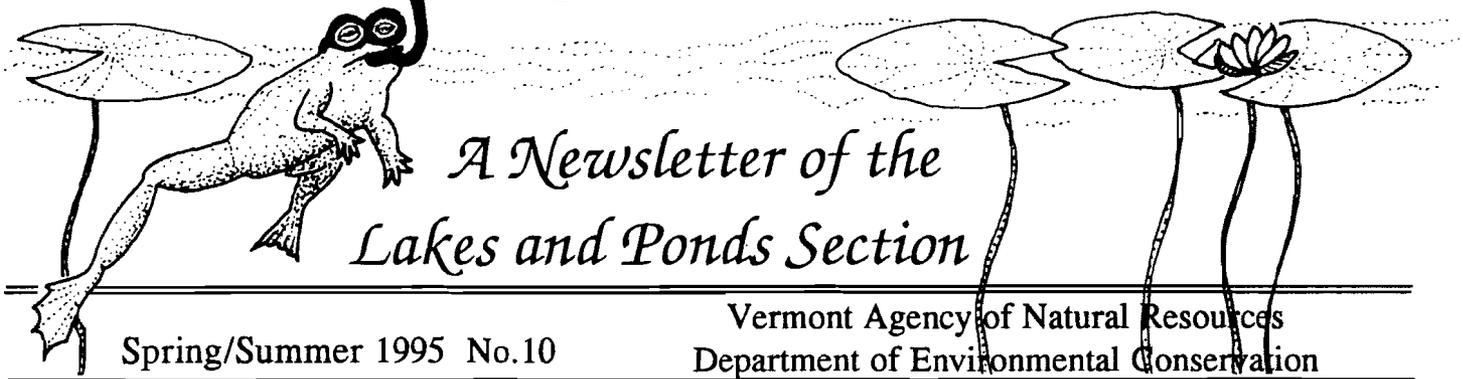


# Out of the Blue



## A Newsletter of the Lakes and Ponds Section

Spring/Summer 1995 No.10

Vermont Agency of Natural Resources  
Department of Environmental Conservation

### Phosphorus in Missisquoi Bay

Missisquoi Bay, located in the northeast section of Lake Champlain, contains some of the highest phosphorus and algae levels found anywhere in Lake Champlain. Figure 1 compares long-term average phosphorus concentrations in Missisquoi Bay recorded by the Vermont Lay Monitoring Program with levels found in other areas of Lake Champlain. The average summer phosphorus value of 40 micrograms per liter is high enough to promote frequent algae blooms, surface scums, and other unpleasant effects, as most users of Missisquoi Bay can attest. Current phosphorus levels are

See "Missisquoi" page 3

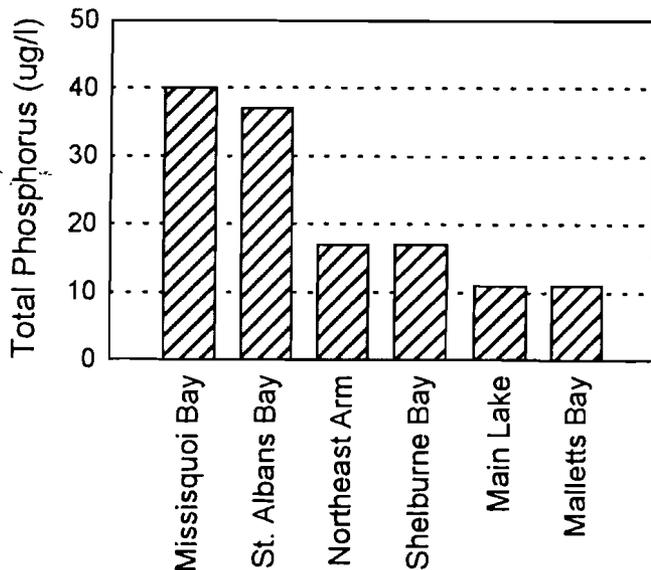


Figure 1. Average summer total phosphorus concentrations in segments of Lake Champlain recorded by the Vermont Lay Monitoring Program during 1979-1993.

### Get WET

#### Water Education for Teachers in Vermont!

Teaching important water concepts does not have to be a dry subject any longer! Project WET, the new National Project Water Education for Teachers curriculum is now sponsored by the Vermont Department of Environmental Conservation, Water Quality Division. Project WET is an interdisciplinary water educational program intended to enrich a school's existing curriculum. The Water Quality Division will offer Project WET workshops and distribute teaching materials.

Water is the common denominator for all subjects. Project WET helps teachers make connections amongst art, math, history, literature, and science classes. The Project WET Curriculum and Activity Guide is a collection of innovative multidisciplinary activities and teaching aids which facilitates and promotes the awareness, appreciation, knowledge and stewardship of water resources. The activities, for kindergarten through

See "WET" page 4

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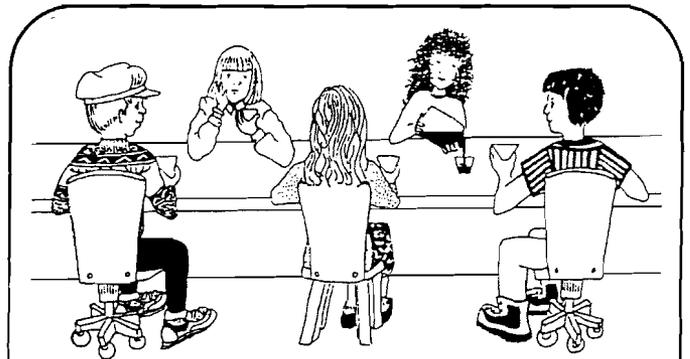
twelfth grade, are hands-on and easy to use. For example, students can learn how ancient cultures celebrated rain and build their own rainsticks; travel through the water cycle; discover the past through a "Liquid Treasure Trunk"; solve the mystery of a waterborne disease; or debate contemporary water management issues.

Many Project WET activities include action steps which allow students to move beyond the classroom and involve their family, friends, and community in their learning process. Through these experiences and more, students will view water not only as a shared resource but as a shared responsibility. Project WET promotes education that leads to public participation, informed leadership and ultimately, sound water management.

Project WET is founded by the Western Regional Environmental Education Council (WREEC) which is a leader in environmental education. WREEC has also sponsored Project WILD and Project Learning Tree, which are among the most long-lived and successful environmental education programs in the country. Project WET was developed along the same principles as these programs, with hundreds of educators and resource specialists coming together to create, write, field test, and evaluate the activities. As a result Project WET is written along national and state curriculum

guidelines and is consistent with local educational objectives.

The Water Quality Division will begin conducting Project WET workshops throughout the state in July, 1995. The Project WET Curriculum and Activity Guide and other Project WET materials are only available by attending one of these workshops. If you are interested in hosting a workshop in your community or school, please call Deb Parrella, Project WET Coordinator, at (802) 241-3777. Look for a schedule of workshop offerings in the next edition of *Out of the Blue*. Then, dive in and get WET!



### Pass The Jug

**Summary:** Students stimulate and analyze different water rights policies to learn how water availability and people's proximity to the resource influence how water is allocated.

**Subject Areas:** social studies, environmental science, history, government



### We Need Old Water-Related Stuff!

The Water Quality Division is collecting old water related photographs, historical documents, and artifacts to produce a "Liquid Treasure Trunk." Such a collection would make the past come alive for a class of students opening the trunk, and help them trace and connect with historical water uses. If you have anything to contribute from old family photographs (newspaper clippings), to an old washboard, to your great uncle's dowsing rod, please contact Deb Parrella, at the Lakes and Ponds Section.

### Help Create the Water Otter!

The water otter has been chosen as the logo for Vermont Project WET. We need your help to bring the Project WET water otter to life. Please submit any logo or symbol ideas for a Vermont water otter and its association with Project WET to Deb Parrella at the Lakes and Ponds Section. Thank you.

## Vermont's Lakes Need Milfoil Watchers!

Volunteers concerned about the threat the non-native aquatic plant Eurasian watermilfoil poses to Vermont's lakes are needed. Milfoil Watchers, trained in milfoil identification and lake search methods, annually keep a watchful eye on lakes not known to support this fast growing nuisance as well as on lakes supporting pioneer milfoil infestations. Some Milfoil Watchers have even organized lake association members into a coordinated network of volunteers. The volunteers are assigned to search different sections of a lake to ensure that all areas of the lake's shoreline are protected.

Early detection of Eurasian watermilfoil if newly introduced into a lake or pond is critical to successfully preventing the plant from spreading lakewide. To find out if a lake you care about is protected by a Milfoil Watcher or how you can become trained as one, contact the Lakes and Ponds Section. You can help stop the spread of this exotic species!

### Milfoil Educational and Spread Prevention Tools Available from the Lakes and Ponds Section:

◆ Pressed, dried Eurasian watermilfoil specimens, mounted on heavy paper and encased with a waterproof covering, are available to assist in positive identification.

◆ Metal boater warning signs are again available for posting at lake access and boat launching areas to inform lake users of milfoil infestations and remind them of the importance of removing **any** plant material from their equipment before putting in or leaving the area.



## CAUTION

THIS LAKE IS INFESTED  
WITH EURASIAN MILFOIL - AN  
OBNOXIOUS NUISANCE WEED.

## STOP

ITS SPREAD TO OTHER LAKES!

REMOVE ALL PLANT FRAGMENTS  
OFF BOATS, ANCHORS, MOTORS AND  
TRAILERS BEFORE LEAVING THIS ACCESS.

VERMONT AGENCY OF NATURAL RESOURCES  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
WATER QUALITY DIVISION  
244-5638

### WARNING.....Illegal herbicide use may be hazardous to your health (and your neighbor's too)!

In the Fall/Winter 1992-93 issue of *Out of the Blue*, the VTDEC reported on the suspected illegal use of aquatic herbicides in lakes for control of nuisance aquatic vegetation such as Eurasian watermilfoil. Concern regarding this problem has heightened, as the VTDEC continues to see signs of illegal 2,4-D use in several Vermont lakes, including Lake Bomoseen, Burr Pond, Cedar Lake, Echo Lake (Hubbardton), Lake Hortonia, Metcalf Pond, Lake Morey, Lake St. Catherine and Sunrise Lake.

As summer approaches, the VTDEC would like to remind all lake users that the application of herbicides to waters of the State without a permit from the VTDEC is strictly prohibited. The widely advertised product known as *Aquacide (2,4-D pellets)*, sold through the mail by the Minnesota company of the same name, is not registered by the Vermont Department of Agriculture. **It is illegal to use this product on any lake in the state! Please heed this warning to avoid potential health risks to yourself and other lake users.**

## The Role of the National Association of Exotic Pest Plant Councils

Picture your favorite destination for a vacation or long weekend getaway. Is it a national park, wilderness area, nature preserve or state natural area? How about a national forest, that "pristine" lake an hour or two away, or even your own back yard? Chances are that the area is presently affected by exotic plants, or will be at some time in the future. This silent invasion by exotic pest plants can be termed "biological pollution" and is believed by many people to be destroying more natural habitat in the U.S. annually than development. Not all non-native plant species become invasive and cause problems. However, some of these plants, particularly those lacking predators that keep them in balance in their native habitat, have the potential to rapidly invade natural areas with far-reaching environmental and socio-economic costs.

As a lake user in Vermont, you are probably very familiar with the problems caused by non-native aquatic plant species such as Eurasian watermilfoil and water chestnut in our lakes and ponds. Another example of biological pollution occurring in Vermont is purple loosestrife, a European plant that continues to invade wetlands throughout the state at the rate of more than 150 acres per year, displacing cattails and other native plant species. The problem with both aquatic and terrestrial non-native plants is widespread throughout New England and the United States.

There are currently more than 2,000 aquatic and terrestrial exotic plants in the United States. In New England there are 821 exotic pest plants (a conservative estimate), out of approximately 2,831 species in the region. At least 16 of these exotic species are aquatic or wetland plants.

### Problems With Exotics:

Infestations of aquatic and terrestrial exotic plant species interfere with navigation, recreation, power generation, water supplies, and production on agricultural and range lands. They can also create public health and safety hazards. Perhaps the most insidious impact, though, is the effect exotic plants have on the biodiversity of natural ecosystems. The aggressive nature of many of these introduced



**Purple Loosestrife Plant**  
(drawing by Libby Walker Davidson)

plants allows them to outcompete native plants which are generally more beneficial to native wildlife populations. Declines in native plant populations frequently occur after exotics move in and in some cases, as has happened in the State of Hawaii, the introduction of exotic plants has been correlated with native species extinction.

Ecological communities can also be drastically changed when exotic plants alter basic physical and chemical features in the landscapes they invade. The introduced iceplant in California has changed the soil chemistry enough to prevent restoration of native vegetation in rare coastal dune communities. The Australian melaleuca tree is rapidly invading the Florida Everglades at an estimated rate of 50 acres per day. It has been reported that this tree uses four times more water than the native grasses it is displacing, causing severe

impacts to the native plant and animal populations in the area.

Biological pollution has truly reached epidemic proportions in the U.S. Nearly 16 million acres of federal lands alone are infested with exotic plants. The National Park Service has identified a need for \$46 million for 109 weed control projects; however, less than \$1 million will be spent annually for this effort. Over \$100 million is spent annually by federal, state and local entities to control non-native aquatic plants in the U.S., but most agree that this amount of funding does not adequately address the problems caused by these plants in our nation's waterways.

### How to Stop the Spread:

So, what can we do to improve this situation?

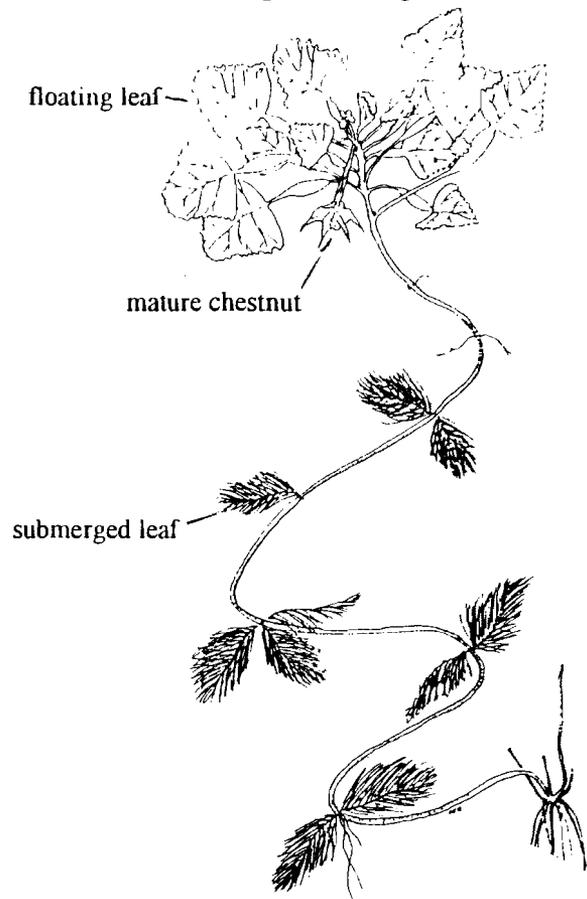
1. Strengthen the Federal Noxious Weed Act (1974) which has been grossly ineffective in restricting entry and spread of new noxious weeds in the U.S. Unless a plant is on the federal noxious weed list, it can easily be imported into this country. There are currently 750 plants meeting the Act's definition of a noxious weed that remain unlisted, including Eurasian watermilfoil, water chestnut and purple loosestrife. Current federal and state laws regulating the cultivation, sale, importation, transportation and release of exotic plants need strengthening or creation to prevent the intra- and inter-state spread of exotic plants.

2. Promote public education so citizens understand the impacts of exotic species and can make good decisions regarding personal actions to prevent their further spread.

3. Create a strong collective voice against the spread of exotics. The Exotic Pest Plant Council (EPPC), a nonprofit organization founded in Florida in 1984, has worked hard to create a national association of EPPC's (NAEPPC), whose main goals are threefold: a) to build public awareness about the serious threat invasive exotic plants pose to native ecosystems, b) to secure funding for development of integrated management strategies that will lead to long-term management of current exotic pest plants and c) to develop methods to prevent the spread of exotic pest plants throughout the United States. Membership is open to anyone, from federal, state and local groups, to private sector businesses and individuals concerned

about the impacts of invasive exotic plants.

In addition to the founding group in Florida, EPPC Chapters are now established in California, the Pacific Northwest and Tennessee. The newly formed NAEPPC has already begun to tackle important issues relating to management of exotic pest plants that are national in scope (like strengthening the Federal Noxious Weed Act), and is encouraging the formation of other regional chapters, including a



**Waterchestnut Plant**

New England EPPC Chapter, to create a strong collective voice to deal with these issues. The VTDEC Lakes and Ponds staff in the Aquatic Nuisance Control Program are hoping there will be enough interest in Vermont and neighboring states to create a New England EPPC Chapter, not only to help address the goals established by NAEPPC as they relate to our own region, but to help improve communication and coordination amongst people already working on exotic pest plant issues in the New England area. If you are interested in helping to start a New England Chapter of EPPC or just want to be added to a mailing list to receive updates, contact Holly Crosson at the Lakes and Ponds Section.

## Re-developing Shoreland Property

Since many of Vermont's lakes have shoreland lots already developed, ideas that address "re-developing" these properties for privacy, water quality protection, aesthetics, and wildlife enjoyment become important. As you think about summer projects and what you would like for your lakeshore land, consider the following suggestions for re-developing your land.

**Re-establish shoreline vegetation.** A buffer strip of mixed native trees, shrubs, and groundcover filters pollutants from runoff, stabilizes the shoreline, and enhances your wildlife viewing opportunities. A maintained buffer can allow views of the lake, and help screen noises from the lake.

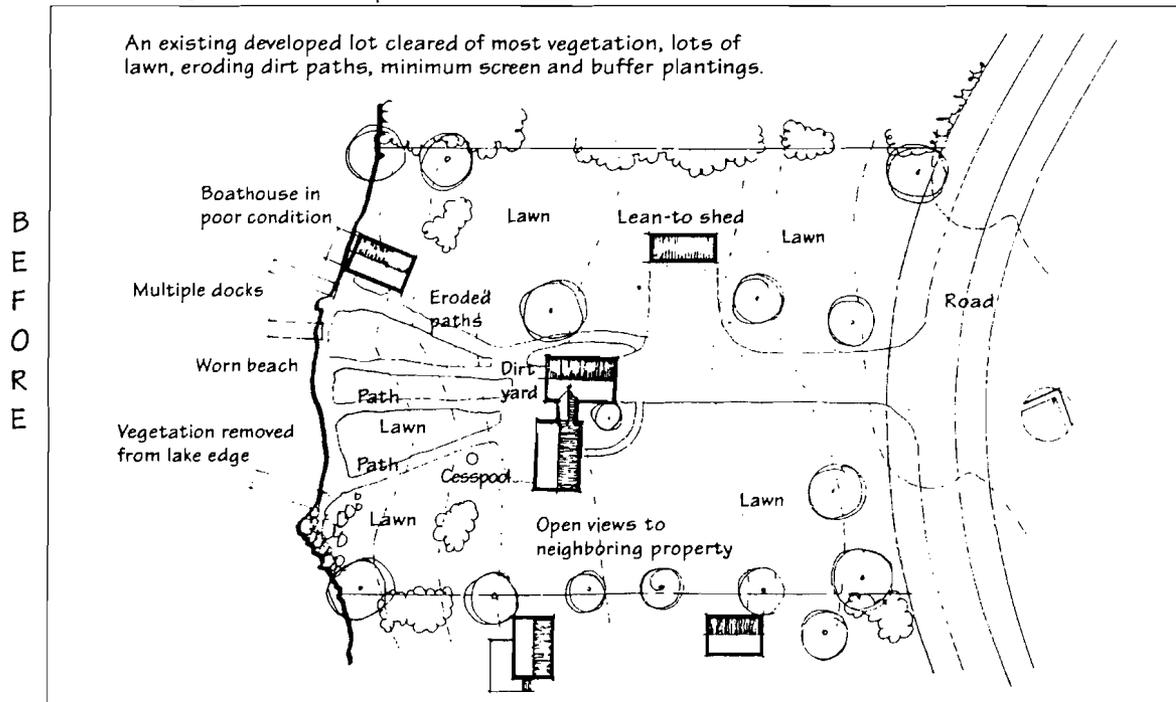
**Eliminate as much lawn area as possible.** Mown lawns are inefficient at filtering pollutants from runoff; mixed or

shoreline stretches to support a mixture of vegetation and reduce eroded areas, while still providing access to the lake.

**Do not add sand to the lake.** Most Vermont shorelines do not have natural sand beaches. Added sand is likely to get quickly washed away, suffocates fish habitat, and accelerates the filling-in of a lake. A permit is required from the VTDEC to place sand in a lake. (See "Trading Old Walls for New Banks.")

**Replace shoreline walls with a natural shoreline.** Stone or concrete walls need continued repair and maintenance and offer no natural benefits. Consider redesigning your shoreline with careful sloping and planting of native vegetation, a cheaper and more effective way to control erosion. If possible, move boat houses and other buildings back from the shoreline area. (See "Trading Old Walls for

An Existing Poorly Developed Lot



unmown vegetation, with a duff layer (decaying leaves and other organic materials) is much more effective. Consider limiting lawn area within 100 feet of the lake and replacing it with a buffer strip, or a tall grass or wildflower area.

**Consolidate shoreline access.** One well-planned path and cleared spot allow other

New Banks.")

**Inspect driveways and paths for erosion.** Look for gullying or other signs of eroding soils that necessitate constant and expensive maintenance. Crown driveways so runoff flows evenly off the sides, and allow runoff to spread out into vegetated areas where it will

be absorbed. Eliminate channelized flow of runoff into the lake.

**Relocate or upgrade septic systems.**

A failing septic system adds nutrients to the lake and is a health hazard. Find out where your septic system is. If you are converting from seasonal to year-round use, adding bedrooms, having problems with your septic system, or have a system that is less than 50 feet from the lake or four feet from groundwater, you may need to expand, repair, relocate or replace your system. Always pump the septic tank every three years and do not add chemicals that claim to eliminate the need for pumping.

Additional information is available from the following publications (all are available from the Lakes and Ponds Section unless otherwise noted):

◆ *Buying Lakeshore Property in Vermont.*

Environmental considerations when buying developed or undeveloped property. 12 page booklet.

◆ *For Your Lake's Sake.* Do's and Don'ts of shoreline property management. Pamphlet. (Large quantities are available for lake-wide distribution.)

◆ *A Guide to Developing and Re-Developing Shoreland Property in New Hampshire: A Blueprint to Help You Live By the Water.*

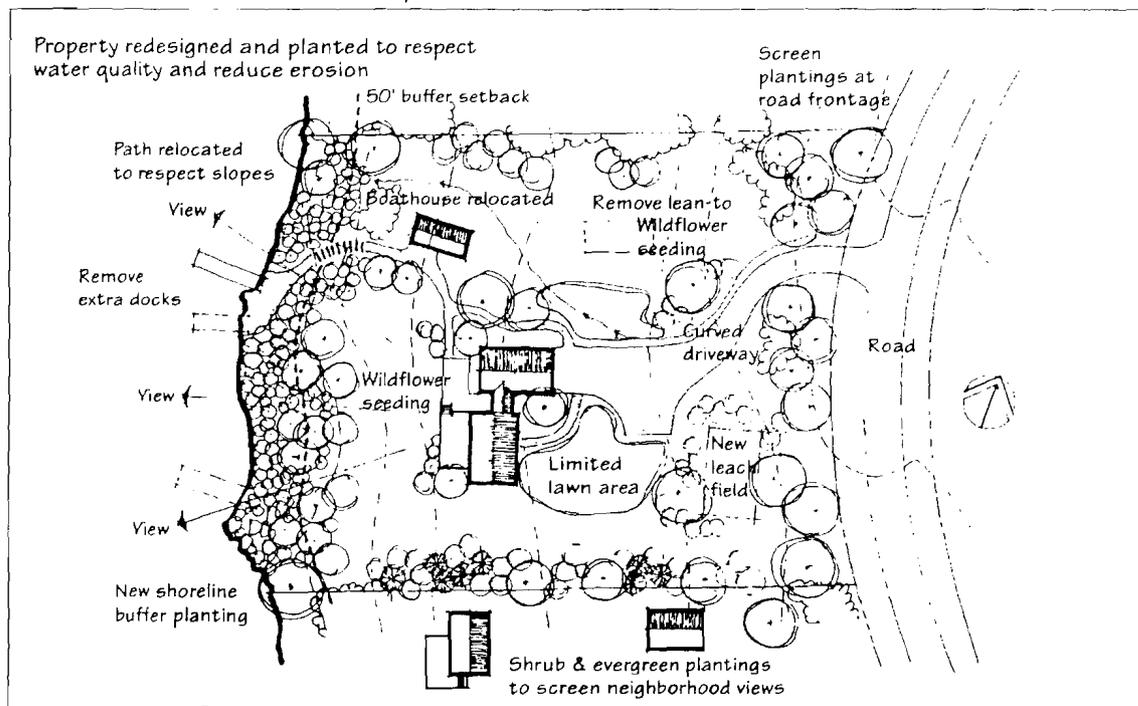
Published by the North Country Resource Conservation and Development Area, 103 Main Street-Suite #1, Meredith, NH 03253-9266. (603) 279-6546. 38 pages.

◆ *Native Vegetation for Lakeshores, Stream-sides, and Wetland Buffers.* Assistance in replanting a buffer strip, including descriptions of appropriate native vegetation. 43 pages.

◆ *Planning a Project on your Lakeshore? What You Need to Know.* Information on the Lakes and Ponds Encroachment Program, permits for work beyond mean water level. Pamphlet.

◆ *Sources of Native Plant Materials in Vermont.* A listing of nurseries that carry native vegetation. 13 pages.

The Same Lot After Re-Development



Reprinted with permission from "A Guide to Developing and Re-Developing shoreland Property in New Hampshire."

**Wanted: Unvegetated shorelines seeking improvement!**

The Vermont Lake and Watershed Protection Program has opportunities to receive funding for "implementation" projects - projects that will protect or improve water quality. Currently some money is available in the summer of 1996 for a buffer strip re-establishment project, and we are looking for a group or groups of interested lakeshore landowners. We would like the shoreline selected to include at least three adjacent lots or at least 300 feet. More lots or greater frontage is preferable. For more information on this project, call Cathy Kashanski at (802) 241-3770.

## Trading Old Walls for New Banks

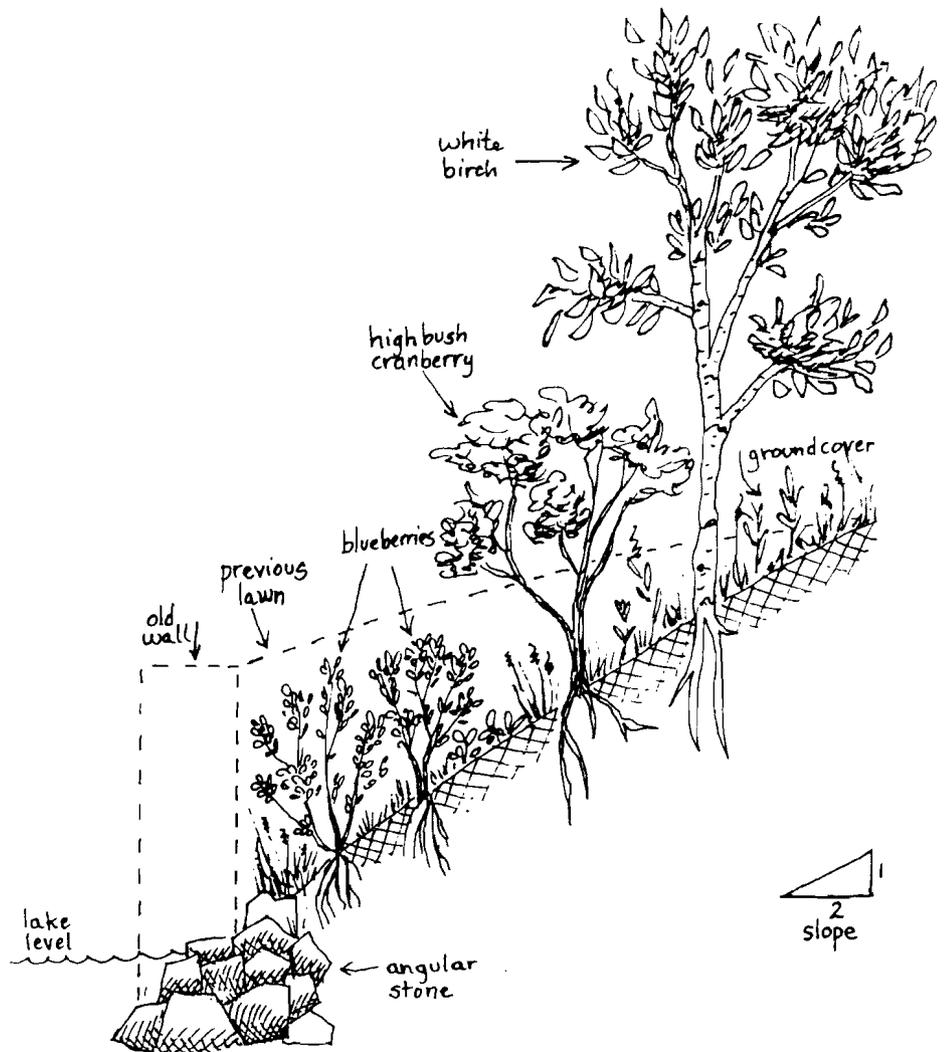
A lake's shoreline is a critical interface between the land and water, and human activities in this zone can have a big effect on water quality, fish and wildlife habitat, and scenic quality. If you have a retaining wall that needs repair work, consider replacing it with a more natural shoreline that will require little maintenance and better protect land and water values.

Many lakeshore residents have installed retaining walls in order to stem erosion of the shoreline, which is generally occurring because the stabilizing, natural vegetation has been removed. Retaining walls usually require regular, expensive repairs. Nature has taken centuries to create a stable lake shore and will work against artificial changes that are made. Often erosion occurs at the ends of a wall, and ice and wave action undermine or tilt the wall over time. A naturally sloped, slightly irregular bank is more stable than a vertical, straight one, as the energy of waves and ice is allowed to dissipate.

Restoring a shoreline with vegetation of different sizes (groundcover, shrubs and trees) will stabilize the shore and require little maintenance. Lake access can be provided with a path and a small clearing at the lake's edge, and shrubs and trees can be judiciously pruned to allow views from a camp (see "Re-developing Shoreland and Property"). The following suggestions can be used in many shoreline areas to restore a more natural shoreline:

1. Place angular stone rip rap (6-8 inch size) at the base of the bank. Angular rocks lock in place better than rounded stone, and larger rocks cause erosion by concentrating the wave or ice energy elsewhere. The stone should extend approximately six inches above the average summer water level so that most of the waves hit the stone.

2. Grade bank back to at least a 2:1 slope (two horizontal feet for every one vertical



- foot). An erosion control fabric might be needed to hold the soil in place until vegetation becomes established.

3. Plant a mixture of **native** groundcover, shrubs and trees and allow them to naturalize. Do not mow around the woody vegetation, as the unmowed plants help to filter pollutants from run-off. Annual pruning can keep viewscapes open.

Seek technical assistance to design shoreline restoration work as the above suggestions may not work for very steep slopes and all soil types. Work that occurs below the average summer water level requires a Shoreland Encroachment Permit, call Steven Hanna at (802) 241-3777 for information on permit requirements.

## Don't Feed The Ducks

Last summer, several cases of swimmer's itch were reported to the Water Quality Division. Although not a widespread problem in Vermont, you should be aware of its presence.

### What is it?

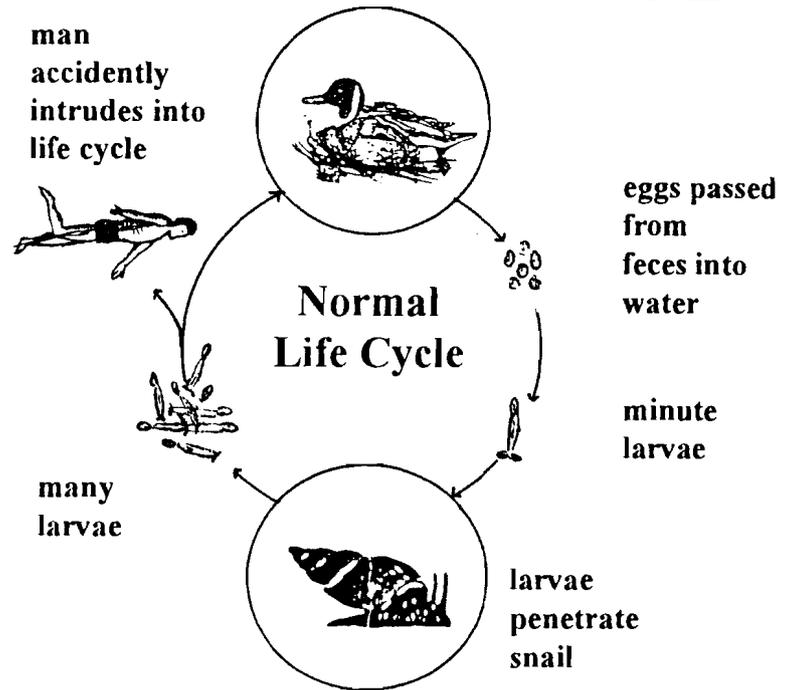
Swimmer's itch is caused by a nematode (a parasitic flatworm) which attempts to use a human as a host. The nematode has two natural hosts which it alternates between, a duck and a snail. When the parasite leaves the snail, it seeks out the duck host. Sometimes, the nematode accidentally contacts a human. Humans are unacceptable hosts, so the organism soon dies. However, if the parasite does come in contact with human skin, a tingling sensation, itching, and eventually red blotches may occur in the infected skin area.

In order to avoid swimmer's itch, you may want to consider these simple precautions:

(1) Avoid swimming in known areas of infection and in areas with large duck concentrations.

(2) Briskly towel off immediately after leaving the water. Showering immediately after swimming may also help, as the parasite usually will attempt to penetrate the skin right away.

(3) Swimming in the late afternoon in an area with waves may reduce the risk of infection, as the host snails tend to release the parasites



early in the morning in calm areas of dense vegetation.

The presence of swimmer's itch is not related to pollution or poor water quality. It is a natural biological cycle involving native species. However, since ducks are a host to the parasite, feeding them off docks or beaches encourages them to visit these areas longer, which potentially could cause an outbreak of swimmer's itch. To help prevent an infestation of swimmer's itch, don't feed the ducks!



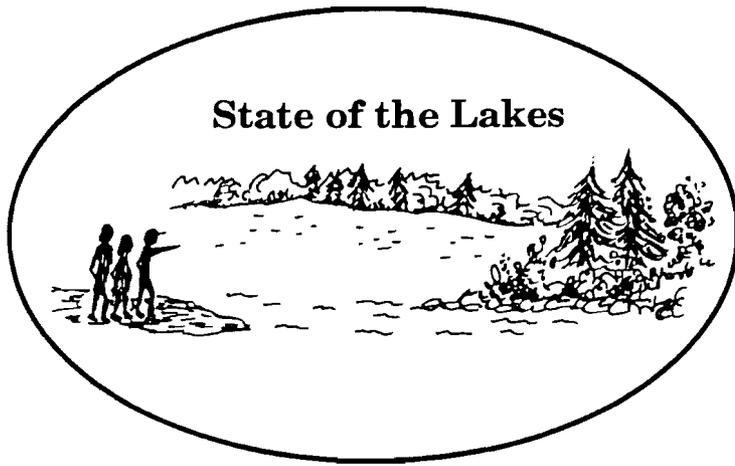
## Zebra Mussel Educational Workshops



Several public workshops are planned this summer to educate citizens throughout Vermont and the Lake Champlain basin of New York about a number of zebra mussel related issues. Contact Michael Häuser at the Lakes and Ponds Section for more information.

**The Zebra Mussel Citizen Action Program (ZMCAP):** Preventing the spread of zebra mussels to noninfested waterbodies is the best line of defense against the mussel's potentially far-reaching impacts. Citizens can help provide that line of defense by participating in *The Zebra Mussel Citizen Action Program*. Workshops will be conducted to train volunteer facilitators who will, in turn, hold workshops in their respective communities to organize and train volunteer task forces. Task forces will help to monitor for zebra mussels; distribute zebra mussel literature; conduct educational presentations; post and maintain "Boater Alert" signs at boat ramps; patrol boat accesses to educate water users about zebra mussels and proper spread prevention techniques; and to collect information necessary for determining the vulnerability of specific lakes to zebra mussel infestations. Volunteers are needed both to serve as facilitators and to participate on task forces!

**Control Options For Small Water Intake Systems:** Zebra mussels have the potential to foul water supply systems that draw directly from infested waterbodies such as Lake Champlain. Workshops will be conducted to educate camp owners, home owners, and small businesses, who draw water from a waterbody about the potential problems and how to effectively protect against them.



## A Collaborative Effort To Determine the Nature and Extent of Phosphorus Loading to Lake Carmi

Lake Carmi, located in northwestern Vermont, has a history of water quality problems caused by excessive nutrients. Algae blooms, a result of excessive phosphorus enrichment, are an annual late summer event on the lake. Since 1979, Lake Carmi has been sampled under the VTDEC's Lay Monitoring Program, which evaluates water quality in terms of nutrient enrichment. Lake Carmi's long-term water quality averages of 1.8 meters Secchi disk transparencies, 31 micrograms per liter of total phosphorus, and 10 micrograms per liter of chlorophyll-a (green pigment in plants and algae) indicate that the lake is highly nutrient enriched.

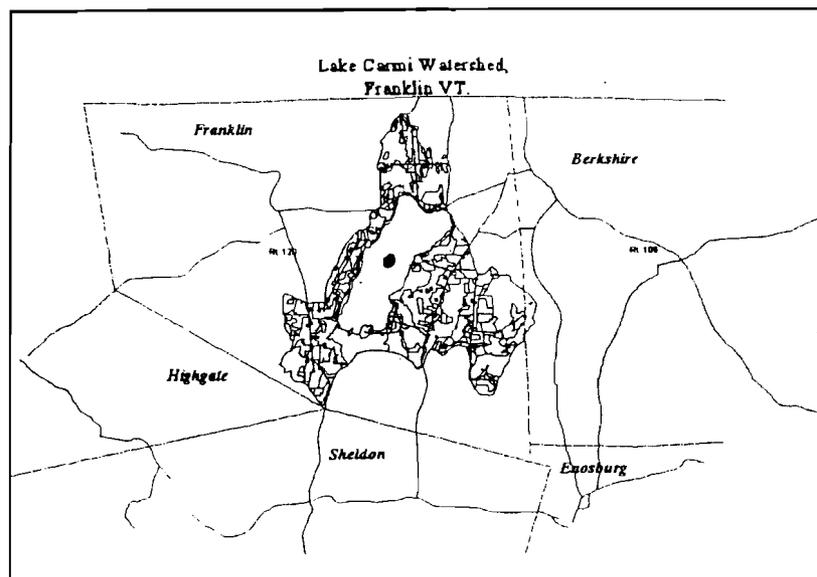
During the mid-1980s, several manure storage facilities were installed to control agricultural phosphorus run-off into Lake Carmi, but as of 1993, the water quality situation had not improved. The Lake Carmi Campers Association then asked the VTDEC for assistance in diagnosing the specific nature and extent of phosphorus loadings into Lake Carmi. During the summer of 1994, Richard Davis, long-time Lake Carmi Lay Monitor, participated in a VTDEC expanded

sampling project designed to study whether or not phosphorus was being released from the lake bottom sediments.

Phosphorus can enter a lake from either *external* sources such as tributaries, precipitation, or shoreland runoff, or *internally*, from the lake bottom sediments. Generally, *internal* loading of phosphorus is the result of reduced oxygen content in the deep waters of a lake; lakes with of a long history (decades) of excessive nutrient accumulation are more prone to this type of loading.

Results from the 1994 expanded sampling project indicated that *internal* phosphorus loading was not occurring in Lake Carmi to any measurable degree. This story, however, does not end here. The VTDEC was fortunate to have up-to-date land use information, generated by the Franklin/Grand Isle Regional Planning Commission (F/GIRPC) for the entire Lake Carmi watershed. As a result, the amount of phosphorus entering Lake Carmi from *external* sources could be estimated. In the final analysis, it was estimated that there could be sufficient phosphorus coming from *external* sources to cause the high phosphorus concentrations and low Secchi disk transparencies observed for so long in Lake Carmi.

To improve Lake Carmi water quality, phosphorus sources in the watershed must be clearly identified, and then controlled. The Lake



Lake Carmi watershed and vicinity showing major roads, town boundaries, and lake outline. Sampling station shown by a black dot.

Carmi Campers Association is now working with the VTDEC to map the location of non-agricultural phosphorus sources (such as eroding streambanks and roads), while the Natural Resources Conservation Service (NRCS, formally called the Soil Conservation Service) is trying to determine the status of agricultural best management practices within the Lake Carmi watershed.

The collaborative efforts of the Lake Carmi Campers Association, Lay Monitoring Program, the VTDEC, the NRCS, and the F/GIRPC have come together as a partnership to design and implement a watershed phosphorus reduction plan for Lake Carmi.

### It's True: How the Term Log Book Originated

Many of us keep log books to record our thoughts, activities, and observations, but few of us perhaps understand the origin of the term "log." During a trip at sea, early seafarers would throw a chunk of wood attached to a rope overboard at certain intervals to determine sailing speed. They would do this by measuring the amount of time it took for the log to move from the bow to the stern of the ship. This measurement was used to calculate the speed that the boat was traveling, and it was recorded in the "log" book. (This information is provided by Project WET, see front page.)



## Vermont Use of Public Waters

Last fall, after more than three years of public discussion, the Vermont Water Resources Board adopted the Vermont Use of Public Waters Rules. These rules will serve as a policy framework for the management of recreational use conflicts on public waters. They are intended to "provide a basis for both avoiding where possible, and resolving when necessary, conflicts in the use of public waters in a comprehensive and integrated manner so that the various uses may be enjoyed in a reasonable manner...."

These rules characterize most Vermont lakes based on what their normal use has been. Lakes are either internal combustion motor free lakes (mostly very small lakes), low speed motorized lakes (mostly fishing ponds) and high speed motorized lakes (where water skiing and other forms of relatively high speed motorized boating are common). These designations can be changed, but such a change would require a petition to the Board and a public hearing. It should be noted that these new rules do not restrict any recreational uses that have already been established on specific lakes or ponds with one **possible** exception. The use of personal watercraft (jetskis) would be prohibited on

bodies of water with a surface area of less than 300 acres as of May 1997 **unless** the Board is successfully petitioned to grant a waiver.

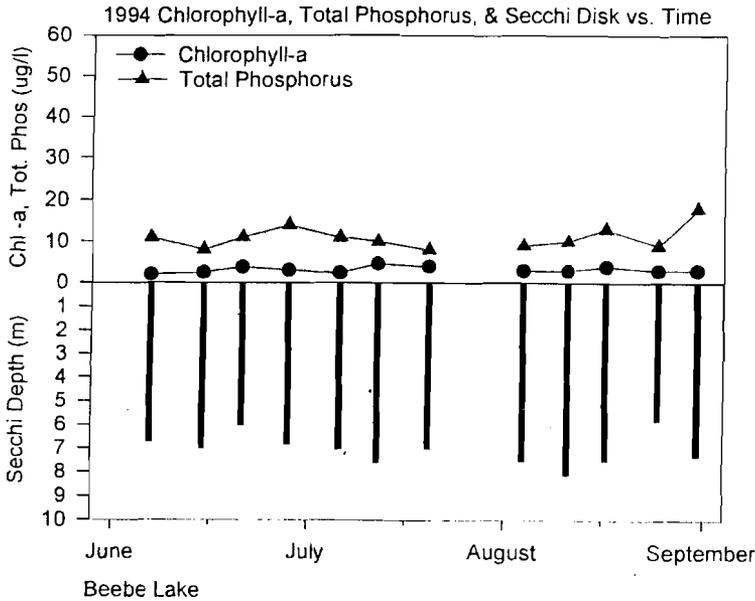
Copies of the Use of Public Waters Rules were sent to all lake associations by the Board last fall. Additional copies are available from the Water Resources Board (58 East State Street, Drawer 20, Montpelier, Vermont 05620-3201, telephone 802-828-2871).

Last fall, the Water Resources Board also adopted some new procedures that must be followed by people filing petitions seeking the adoption of lake-specific rules. These procedures are designed to insure that sufficient discussion of such petitions takes place at the local level before the Board considers any formal rulemaking. Any lake associations or other groups considering filing petitions for surface use rules are strongly encouraged to discuss these new procedures with the Board well in advance of any anticipated filing of a petition.

Finally, any lake association that would like to help with the posting of any rules applicable to the recreational use of a local lake at appropriate access areas is asked to contact the Board.

## What's The Point?

Data points, like those shown in the 1994 Beebe Lake graph below, resulted from a long extensive process. It begins in a boat, over the deepest spot of a lake, passes through laboratory analysis, appears on a computer screen, and ends in some type of public presentation.



During the past 15 summers, long-time Beebe Lake Lay Monitor Mary Sondergeld, as did more than 75 other Lay Monitors, gathered together the necessary sampling equipment and, rain or shine, collected the week's water quality

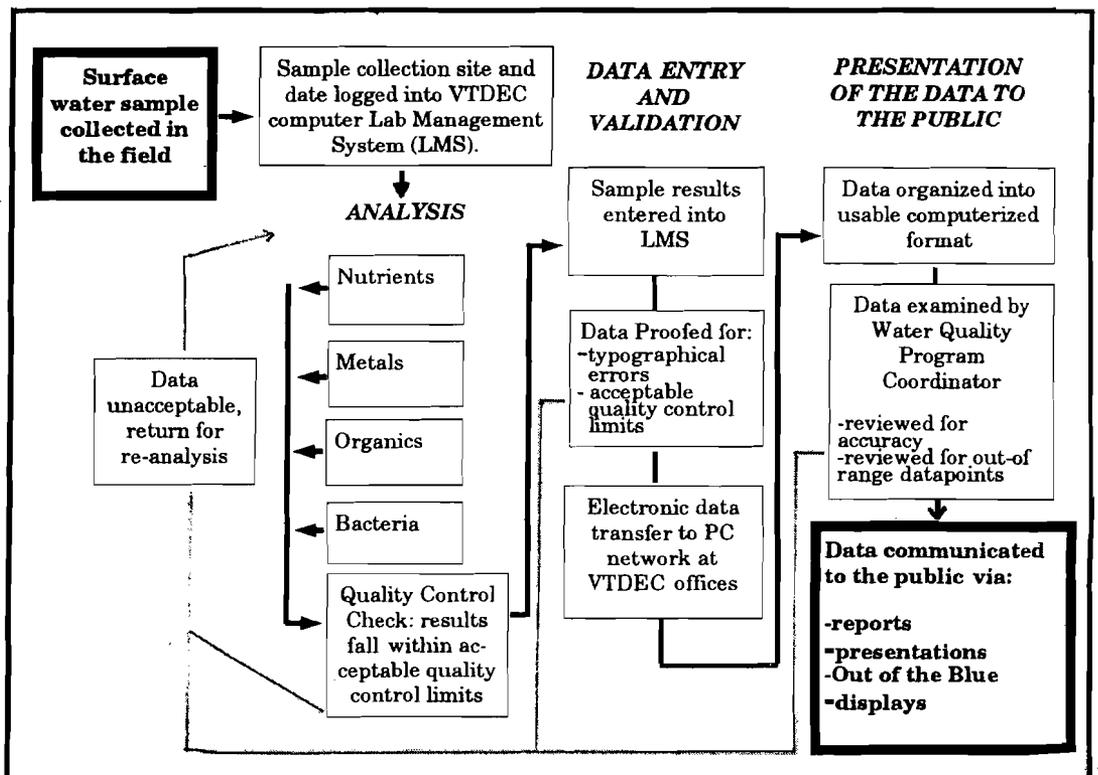
samples. These lake samples result in data points, which are used to describe the current water quality conditions, and are averaged together to give a summer mean. The more years of summer means, the more reliable the database is to use as a reference point from which to measure any future changes in water quality. Mary Sondergeld's 15 years of dedication and commitment to collecting the lake samples have helped build a strong water quality database for

Beebe Lake.

Under the VTDEC Lay Monitoring Program, Beebe Lake is sampled for total phosphorus, chlorophyll-a (green pigment in plants and algae), and Secchi water clarity readings; parameters used to evaluate nutrient enrichment. The average Secchi disk reading (7.0 meters) shows clear water and the average chlorophyll-a (3.1 micrograms/liter) and total phosphorus (11 micrograms/liter) indicate moderate nutrient enrichment.

How a water quality sample becomes a data point involves a longer process than perhaps realized. Once Lay Monitors or VTDEC staff collect a water quality sample, the sample needs to be preserved; logged into the lab management system; analyzed within a specific time period; results organized into workable tables; and finally communicated back to the public such as in the graph form used to explain Beebe Lake's data.

The flow chart below demonstrates the complete "data point" process, concluding with communication of the data via a visual presentation. Although sampling is an important part of the process to establish a data point, unless the information is explained to the public, nothing is learned.

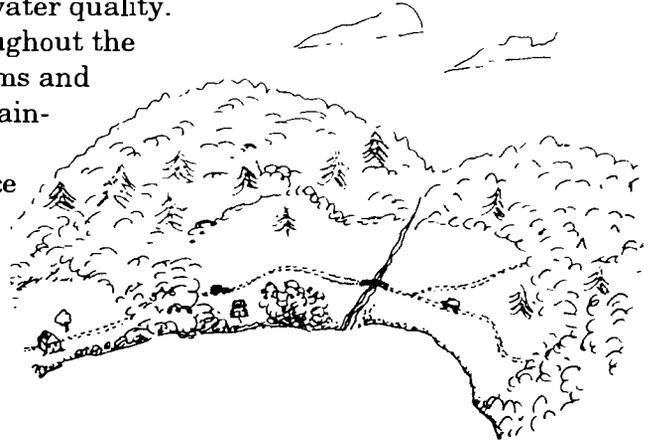


### Better Backroads - Clean Water You Can Afford!

The Better Backroads program is coming to a lake near you! This EPA-funded program will be offering workshops to private road owners (i.e., many lakeshore residents) on road maintenance techniques that will reduce erosion and therefore protect water quality.

At least three workshops will be offered this summer throughout the state to show road owners how to recognize erosion problems and what to ask for when hiring contractors to perform road maintenance. (A separate series of workshops will be offered to town road commissioners and crews.) In the spring a notice was sent to all lake association contacts to solicit ideas, suggestions and identify possible locations for workshops.

All lake associations will be sent the schedule of workshops. If you have any questions or suggestions, or want further information, please contact Susan Warren at the Lakes and Ponds Section.

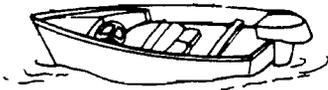


### Watersheds, Watersheds, Watersheds!

"Watersheds" is the buzz word used across the country when discussing water quality protection or restoration. The Lakes and Ponds Section will be available again this summer to assist lake or town residents interested in learning about how activities in a lake's watershed affect tributary stream and lake water quality. Section staff can present a slide show on watersheds and pollution prevention, conduct a workshop or lakeshore walk on the same topic, or come to a meeting to discuss lake residents' concerns and help form a plan of action. Just ask! Call Susan Warren at the Lakes and Ponds Section.

### Boaters...

As of May 1, 1995, new Coast Guard regulations require all boats less than 16 feet long, such as canoes, kayaks, and small motor boats, to carry a life vest for each person on board. (Previously only boats greater than 16 feet were required to carry life vests.) Also, under this stricter Coast Guard regulation, boat cushions are no longer considered adequate personal flotation devices. The regulations were revised because 85 percent of boating fatalities occurred from small-boat accidents.



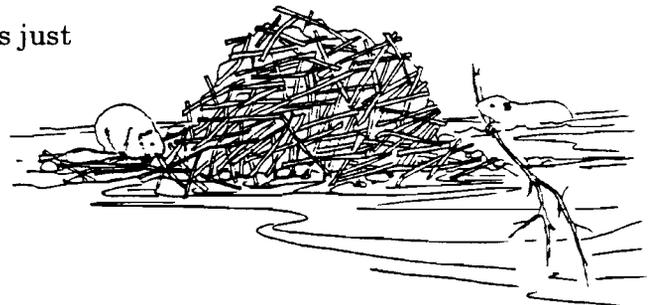
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## Recently Made Available:

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**Wetlands Video Just Released!** - This 26 minute video defines what a wetland is, covers wetlands functions and values, gives an overview of Vermont and federal regulations, and is endorsed by a message from Governor Howard Dean. Appropriate for all ages.

**Beaver Fact Sheet** - The VTDEC Wetlands Office has just finished a beaver fact sheet, which details the natural history and ecology, Wetland Rules, and gives suggestions on how to safeguard trees from beaver activity.



The video and fact sheet are available through the VTDEC Wetlands Office (802) 241-3771. The video is also available thorough all regional libraries.

## **BOATERS!** *Please Help Stop the Spread of Nuisance Aquatic Plants and Animals*

**Eurasian watermilfoil**, a prolific nonnative aquatic plant that interferes with boating, fishing and swimming, is easily spread from lake to lake when pieces of the plant are caught on boat trailers, propellers, anchors and other boating equipment, or in wet wells. If introduced to a noninfested lake, pieces of watermilfoil can initiate new plants and become established.



half scale

**Zebra mussel**, a small, D-shaped mollusk from eastern Europe was discovered in Lake Champlain in 1993. It clogs water intake pipes, damages boat engines, obscures historic shipwrecks, and alters native species populations. Adult zebra mussels can be transported overland to noninfested waterbodies by attaching to boat hulls, engines, anchors and other submerged equipment; while the microscopic larvae can be trapped in water of boat engine cooling systems, bilges, and live wells.



full scale

**Note: Transporting Eurasian Watermilfoil or Zebra Mussels is Illegal!** (pursuant to 10 V.S.A. § 1266)

Before moving boats between waterbodies, boaters are urged to:

- **Inspect** boat and trailer, remove any plant material and/or zebra mussels and discard in the trash.
- **Drain** all water from the boat, boat engine, and other equipment.
- **Rinse** all boat parts and equipment with hot tap water, or leave boat out of water and in the sun for at least two days.

For information on Eurasian watermilfoil and zebra mussels call the Department of Environmental Conservation at (802) 241-3777

### **Take Note...**

◆ All water enthusiasts should be aware that transporting Eurasian watermilfoil **and** zebra mussels in Vermont is against the law. The milfoil transport law, passed by the Vermont Legislature in 1988, was amended in 1994 to include the transport of zebra mussels. This law, 10 V.S.A. § 1266, carries heavy fines, imprisonment, or both.

**Vermont Agency of Natural Resources  
Department of Environmental Conservation  
Water Quality Division  
Lakes and Ponds Section  
103 S. Main Street, 10 North  
Waterbury, VT 05671-0408**

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