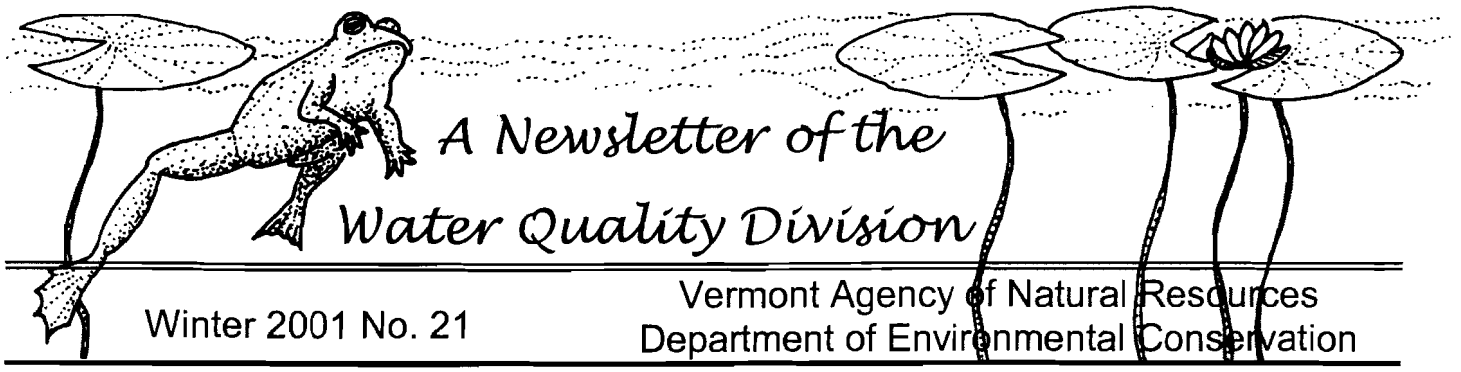
Out of the Blue



A Newsletter of the Water Quality Division

Winter 2001 No. 21

Vermont Agency of Natural Resources
Department of Environmental Conservation

Why are Adams Reservoir and Other Lakes Brown in Color?

Adams Reservoir, located in Woodford, Vermont, was created in 1948. Remnants of the flooded forest are still visible near the southern end of the lake. The eerie standing snags and stumps provide habitat for nesting birds and other aquatic life. The area is remarkably scenic, however visitors to the shores of the reservoir's 21 flooded acres in Woodford State Park may wonder why the water color is dark brown.

Adams Reservoir, like many other waters in southern Vermont, is surrounded by forest and underlain by bedrock comprised largely of gneiss and quartzite. The reservoir sits at the fairly high elevation of 2,317 feet above sea level. The initial flooding of the reservoir combined with the forested land cover, bedrock type, and high elevation have had a profound effect on the chemistry of the water.

Tannic colored waters are associated with watersheds and areas with limited warm-weather seasons, such as those found at higher elevations in Vermont. Forested watersheds carry downed leaves and needles from the forest floor into receiving waters. This organic 'litter,' acidic in nature (needles from spruce and fir trees are particularly so), washes into receiving waters. Decomposition, a natural process by which microorganisms such as bacteria break down organic matter, occurs incompletely in an acidic environment. Tannins and other organic acids are therefore released and discolor the waters.

Bedrock geology often dictates the chemical composition of lake waters. The bedrock under Adams Reservoir contains only minimal quantities

See "Adams Reservoir" page 9

The Watershed Initiative and the First Basin Plan: White River

The Agency of Natural Resources has hired three of the proposed five new positions of Regional Watershed Coordinators. These people may be familiar to you; Karen Bates worked recently in the Wetlands Program, Ethan Swift has worked with the Lakes and Ponds Section for three field seasons, and Jim Ryan has worked for Conservation Districts in both Lamoille and Franklin counties. Their job is to assist local watershed and lake associations in locating technical and financial assistance to carry out pollution clean-up, resource protection, or recreation enhancement programs in their respective watersheds.

In addition, the regional watershed managers are responsible for writing basin plans that seek to coordinate and coalesce water issues throughout a river or lake basin that are of most concern to the public. This work includes water quality, fish and wildlife habitat, industrial and municipal water use, and recreation issues. Just as all the waters in a basin are interrelated (streams, wetlands, lakes and the land that connects them), the solutions and water protection projects also must

See "Watersheds" page 2

In This Issue...

OUT OF THE BLUE

is produced semi-annually by the Lakes and Ponds Section. Our purpose is to share information on lake 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) —— **Watersheds** ——

take into account this interconnectedness. With this new basin planning process, the Agency recognizes that the residents of a watershed must be intimately involved to understand the issues and problems, and develop and implement the solutions.

For planning purposes, Vermont has been divided into 17 basins as shown on the map on the next page. A plan for each of the 17 basins will be developed by 2006 with updates every five years after that. Lake associations concentrating on issues at their particular lake will find they are part of a larger basin. For instance, the Lake Carmi watershed in Franklin is part of the Missisquoi River basin, so Carmi lake issues will be addressed in that basin plan. Lake associations benefit from being involved in the basin planning process because their concerns will receive focused attention and potential project funding.

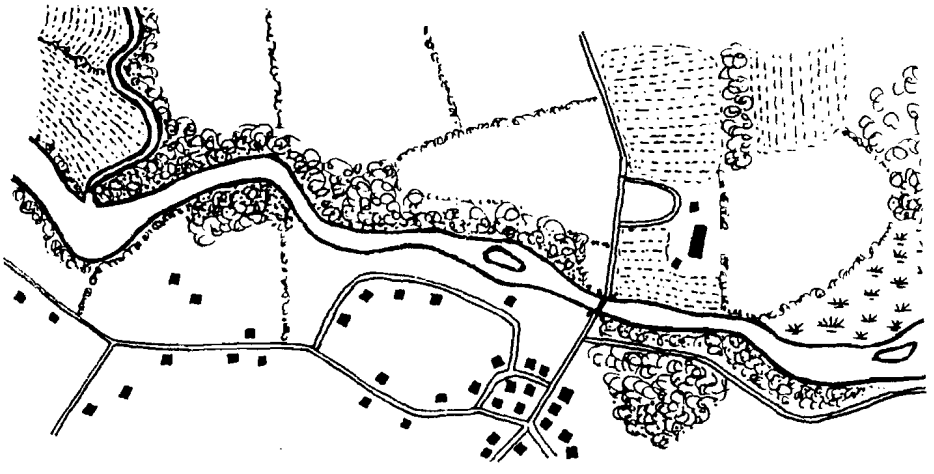
The White River basin is the very first basin for which a new plan is being written. Few lakes and ponds occur in this basin with Silver Lake in Barnard being the largest. There is a basin-wide citizen's group, the White River Partnership, and working with this dedicated group has given the Agency a head start in understanding the local issues and communicating with residents. Through a series of public forums, questionnaires, and meetings with a variety of local groups, the Agency is identifying relevant issues and helping to direct technical assistance and funding where it is needed. The following three priority areas are currently receiving resources:

Public access- The Agency is assisting the White River Partnership with identifying access sites and needs, and hopes to eventually secure formal and protected river access.

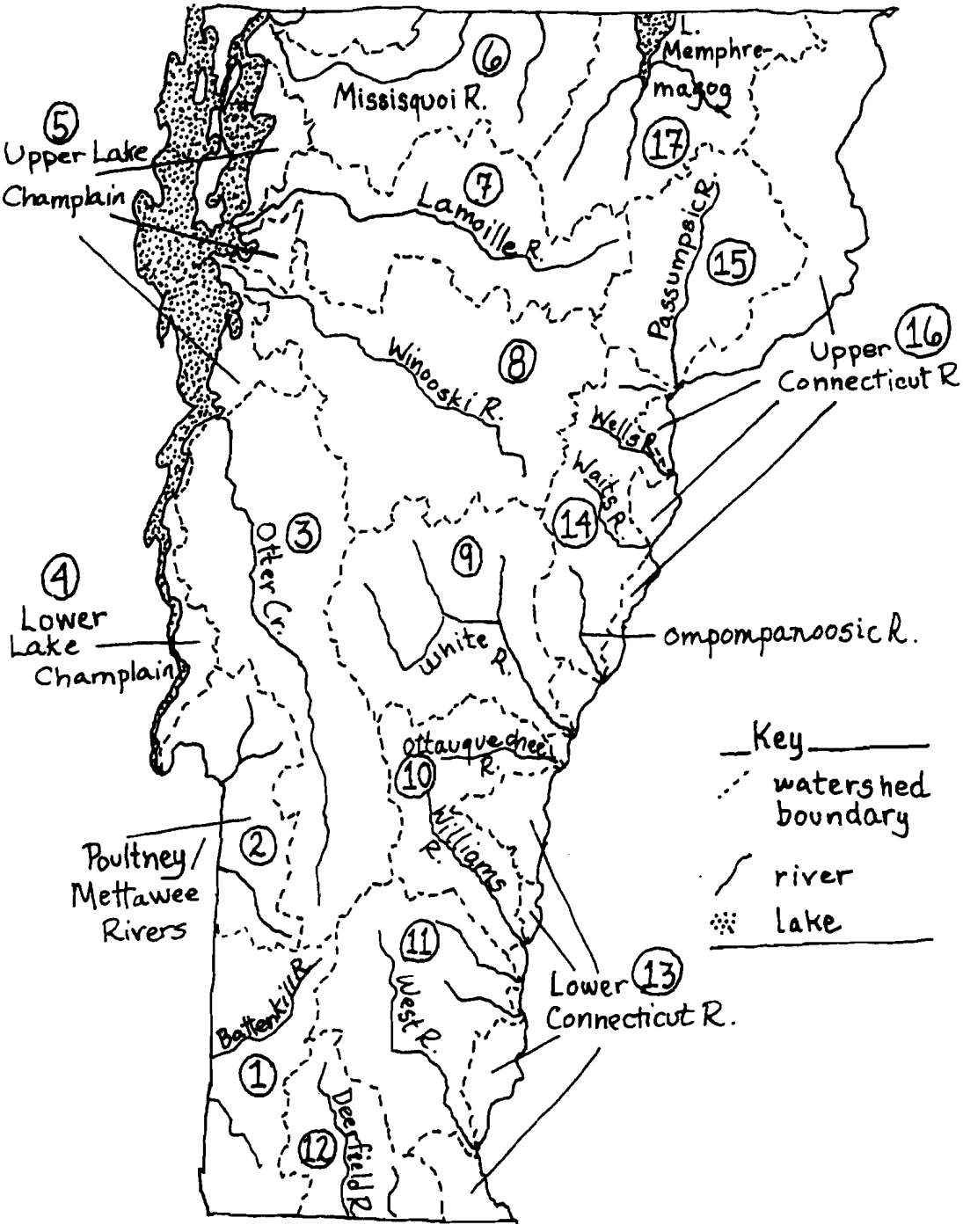
Volunteer monitoring- Through the White River Partnership, the Agency is assisting with development of a volunteer river monitoring program to help pinpoint river issues, monitor river quality throughout time, and increase the public's understanding of the river.

River Corridor Restoration- The Agency has worked with the Partnership since 1996 on river channel restoration projects along the White River.

For more information on the basin planning process, please contact Karen Bates at 802-241-3773.



Vermont's Major Watersheds
~17 Basins for Planning ~



Aquatic Nuisance Species

HIGHLIGHTS

- **Purple Loosestrife Biological Control Program.** During 2000 the VTDEC reared and released more than 50,000 *Galerucella* beetles to control purple loosestrife. For the first time stem boring weevils were also released. In a wetland at the Rutland Airport where 2,000 *Galerucella* beetles were released in 1997, the effect on purple loosestrife has been very noticeable. Purple loosestrife growth rates have been reduced by 95% and inflorescence (flower) length has been reduced by 88%. Cattails are already starting to rebound there with a 197% increase in cover.

- **Eurasian Watermilfoil Chemical Treatment.** Burr Pond in Sudbury and Lake Hortonia in Hubbardton/Sudbury were treated with the aquatic herbicide, Sonar®, to control Eurasian watermilfoil. Preliminary results look good - the milfoil was significantly reduced and native plants remained in high numbers. Final results of the treatment will not be known until late summer 2001.

- **New Eurasian Watermilfoil Lakes.** During the summer of 2000 the VTDEC confirmed Eurasian watermilfoil in four more Vermont waterbodies: Beaver Pond in Proctor, Lake Ninevah in Mt. Holly, and Derby Pond and Clyde Pond in Derby. Currently there are 53 waterbodies in Vermont in which milfoil has been found.

- **Zebra Mussels.** Zebra mussels continue to thrive in Lake Champlain. In addition, adult zebra mussels were found in several new locations in Lake Bomoseen during summer 2000. Adult zebra mussels were not reported in any other Vermont inland lake. Plankton samples were collected from Lake Carmi, Cedar Lake, Chittenden Reservoir, Curtis Pond, Lake Dunmore, Fairfield Pond, Glen Lake, Lake Hortonia, Lake Iroquois, Shelburne Pond, Lake St. Catherine and Woodbury Lake, but no zebra mussel veligers (larvae) were detected. (Monitoring in 1999 had found veligers in Lake Hortonia and Lake Dunmore.)

- **Water Chestnut - Lake Champlain.** The Lake Champlain Water Chestnut Control Program harvested nearly 900 harvester loads, or approximately 3,600,000 pounds, of invasive water chestnut from the southern end of Lake Champlain in 2000. The harvesting, which begins each year at the northern end of the Lake's water chestnut range, was able to proceed to the furthest point south since 1989 (1½ miles south of Benson, VT). Additionally, six sites that required mechanical harvesting in 1999 were manageable by hand-pulling in 2000.

- **Water Chestnut - Quebec.** A population of water chestnut discovered in August 1998 in the South River, a tributary of the Richelieu River in Quebec, exploded in 2000. The quantity of water chestnut increased an estimated five times over that of last year. VTDEC assisted the Centre d'Interprétation du Milieu Écologique Mont Saint-Grégoire (CIME) with several days of surveying and handpulling. At its closest point the South River infestation is just three to four miles northwest of Missisquoi Bay in Lake Champlain. VTDEC biologists have periodically surveyed the Bay and no water chestnut has been discovered there.

The Water Quality Division Supports Education to Help Protect Vermont's Waters

What's the biggest magnet for kids? WATER! The Vermont Project WET program, a K-12th grade educational program, easily engages students with water issues, because part of the learning involves "getting WET!" Well, at least getting your feet or hands wet.

The Project WET program, sponsored by the Water Quality Division in 1995, has truly carved a niche for itself in Vermont's long-standing environmental education offerings. Not only are more educators asking for the Project WET program, but during this last year, five out of six workshops held, were hosted, facilitated, and integrated into other environmental education programs, such as the Lake Champlain Basin Science Center's EcoPeers Course, the Girl Scout Leadership Training, and the Fish and Wildlife Management Course for Educators. Project WET has become a terrific supplemental curriculum for teachers as well as for established educational centers and programs throughout the state.

Results from a statewide survey conducted by a University of Vermont student show that 91% of teachers trained in Project WET and who responded really use the program materials. Forty-four percent of these teachers integrate the Project WET curriculum in varied subject areas and 56% said they use the program only in units centered around water.

"(Project WET) is the single most effective water curriculum collection that we have found!"
Gary LaShure,
Missisquoi Valley Union High School

The Water Quality Division will continue to promote the Project WET program because it teaches children and adults how everyone's actions make a difference in helping to keep Vermont's waters clean and safe.

PROJECT WET
Water Education for Teachers

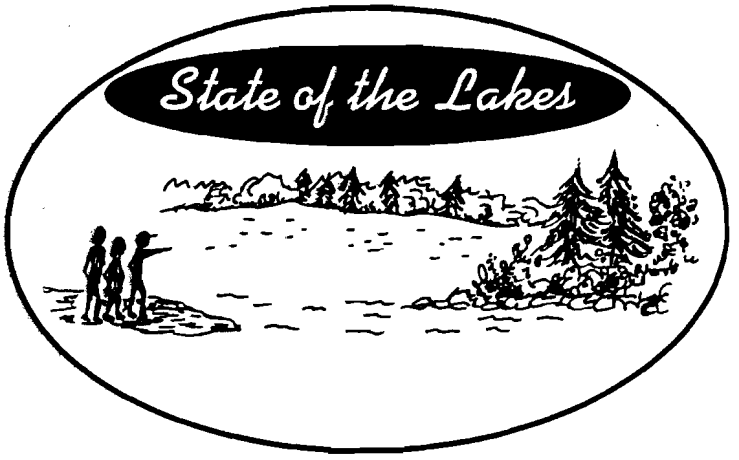
Two New Environmental Standards

Two newly revised standards are in print at the start of 2001! Vermont educational standards serve as statewide learning targets for what ALL STUDENTS are expected to know and be able to do. The two new changes were proposed by the Education for Sustainability Project, a collaborative group of non-profits, state government, and higher education, in which Project WET played a lead role.

Many of the Project WET activities help educators teach concepts about water quality while providing their students with the skills to achieve these two new as well as existing standards from the Vermont Framework of Standards and Learning Opportunities.

Standard 3.9 -"Sustainability" states:
"Students make decisions that demonstrate understanding of human and natural communities, the ecological, economic, political, or social systems within them, and awareness of how their personal collective actions affect the sustainability of these interrelated systems."

Standard 4.6 -"Understanding Place" states:
"Students demonstrate understanding of the relationship between their local environment and community heritage and how each shapes their lives."



Plan Now for Summer 2001!

The Lakes and Ponds Section and the Lake Protection Advisory Committee present this list of summer 2001 notices and activities to assist you in planning summer events at your lake.

LakeFEST 2001

LakeFEST was held for the third year in 2000. The purpose of LakeFEST is to hold community celebrations that will help build a lake community and enhance communication with town officials and residents. In 2001 there will not be a designated date for LakeFEST; any community event held during the summer can be a LakeFEST event. Since the associations participating in past LakeFESTs have considered the events successful and valuable, LakeFEST assistance will continue to be offered in 2001.

The LakeFEST Planning Handbook, as well as posters and T-shirts featuring a LakeFEST logo, will be offered through the Lakes and Ponds Section. Also, there may be a new LakeFEST logo design for 2001! Other options also are under consideration, such as a large LakeFEST banner suitable for outdoor display.

The motivation of LakeFEST is to bring your lake and town community together for a relaxing and fun celebration introducing neighbors across distant shores and throughout the watershed. Please contact the Lakes and Ponds Section for assistance with your LakeFEST plans.

The Great American Secchi Dip-In

Each year in early July, thousands of water sampling volunteers across the nation have participated in the Great American Secchi Dip-In. The Dip-In calls attention to North American waters and recognizes the many volunteers who significantly strengthen the understanding of these waters through sampling. As part of Vermont's LakeFEST each year, the Lakes and Ponds Section holds a volunteer recognition ceremony, coinciding with the Great American Secchi Dip-In. On this day, outstanding volunteers or associations are honored. For example, the Bob Arnold Lake Protection Award (an award to a long time dedicated lake volunteer in honor of Bob Arnold from Lake Seymour) has been awarded to the following individuals:

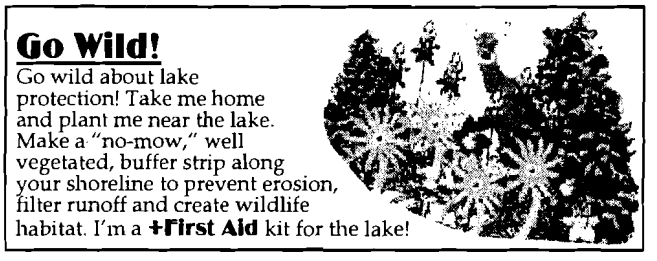
1998 - Tom Benoure from Fairfield Pond in Fairfield, Vermont;
1999 - James Leamy from Lake Bomoseen in Castleton, Vermont;
2000 - Richard Allen from Lake Morey in Fairlee, Vermont.

The intention of the Vermont Lake Dip-In event is to publicly thank those who have worked on lake and watershed protection projects. Plans for the 2001 Dip-In and potential lake sites for hosting the event are currently being evaluated. Watch for Dip-In details in the next *Out of the Blue* issue, and join us for this fun event.

Improving Buffer Strips

To encourage revegetation of lakeshores, the Lakes and Ponds Section is offering small grants to lake associations to help purchase plants for interested shoreland owners. Lake Carmi (Franklin, VT) and Lake Parker (Glover, VT) coordinated revegetation projects last summer through this grant program.

A shoreline vegetated with a mix of native trees, shrubs and ground cover is a critical element in any lake protection plan. Even camps located near the lake have planting options that will help stabilize the bank, provide privacy and scenic values, and treat uphill runoff. For information on receiving such a grant, contact Susan Warren at 802-241-3794. Grants will be offered on a first-come first-served basis.



The Lake Parker Association in Glover used these labels with free cedar seedlings.

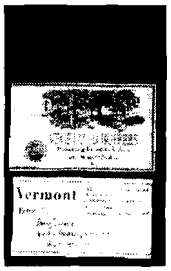
Pamphlets, Videos and Displays

Consider using some of the Lakes and Ponds support materials at your lake meeting next summer. See the listing on the next page.

SUPPORT MATERIALS FOR LOCAL WATER QUALITY PROTECTION EFFORTS

Available through the Agency of Natural Resources' Water Quality Division

AUDIOVISUALS



•**New! *Vegetated Buffers***: This video from the state of Maine explains why lake shoreland vegetation is important and offers suggestions on how to go about replanting.

•***For Your Lake's Sake***: A 20 minute video produced by the state of Maine on land uses around a lake and their potential impact on the water conditions.

•***Vermont Wetlands: A Natural Resource***: A 25 minute video produced by the Vermont Water Quality Division on Vermont wetlands.

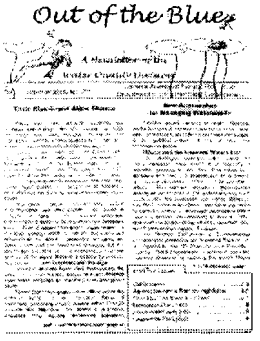
•**New! *When Rivers Become Unstable: How Streamside Woodlands Can Help Protect Land***: A 23 minute video produced in 2000 by the Vermont Water Quality Division.

•**Lay Monitoring Program Slide Show**: A 20 minute slide show describing how the Lay Monitoring Program is designed, with emphasis on the importance of citizen involvement in lake protection.

•**New! Aquatic Nuisance Species Spread Prevention Training Video**: From the Vermont Water Quality Division, this video assists groups with developing and implementing spread prevention programs (available spring 2001).

NEWSLETTER

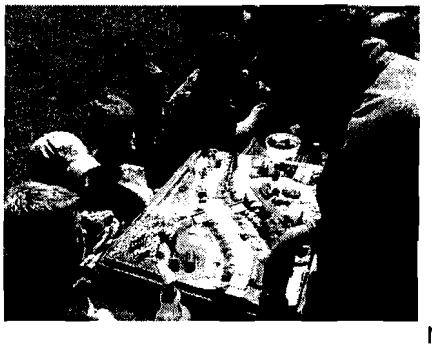
•***Out of the Blue***: the semiannual newsletter of the Water Quality Division. This newsletter shares information on watersheds and water quality through articles on lake, river and wetland ecology, and Division programs.



DISPLAYS

•**Portable Lay Monitoring Program Display**: Display describing the Lay Monitoring Program including the latest action shots of monitors.

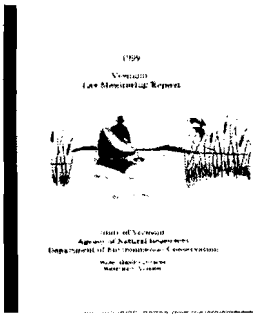
•**Interactive Watershed Model, The Enviroscape**: A three-dimensional exhibit shows a watershed and its many land uses: urban, commercial, farm, highway, forest, stream bank and lakeshore. This interactive model illustrates non-point and point source pollution and the best management practices to control the problems. Easy instructions and all the materials needed accompany the model.



•**New! Exotic Aquatic Species Watershed Protection Display**: A table top display featuring several exotic species of concern in Vermont. Handouts included.

REPORTS

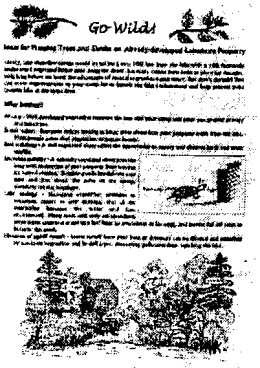
•**Vermont Lay Monitoring Program Reports**: Two annual reports, Lake Champlain and Vermont "inland" lakes, show the results of present and past years of sampling data. The reports use graphs to give a perspective on the range of water conditions in Vermont lakes, ponds and bays.



1979 – present

•**Individual Lake Information Reports**: Upon request, the Water Quality Division will print out a summary sheet of the physical, chemical and biological water conditions "filed" on any Vermont lake or pond.

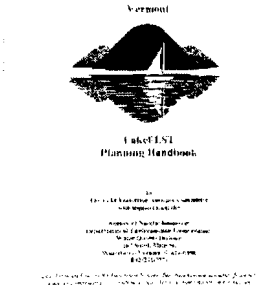
PAMPHLETS AND HANDBOOKS



•***Only You Can Save Your Lake***: Everything a lakeshore resident needs to know about protecting a lake on one page. Available in quantity to distribute at meetings.

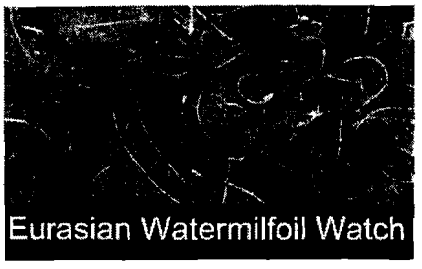
•**New! *Go Wild***: A new handout that shows some simple revegetation plans for already developed lakeshore properties.

•**LakeFEST Handbook**:



A Handbook written by the Water Quality Division which describes LakeFEST and gives suggestions for how to put on LakeFEST activities. This guide also includes examples of how to partner with the local community and gives useful local and statewide contact information.

•**Eurasian Watermilfoil Watchers Packet**: includes information on milfoil identification, lake search methods and spread prevention activities. Packets on other aquatic nuisance species are also available.



•***For Your Lake's Sake***: A pamphlet describing a lake's interaction with its watershed and how land uses affect lake quality. Also includes "Do's and Don'ts" for property owners.

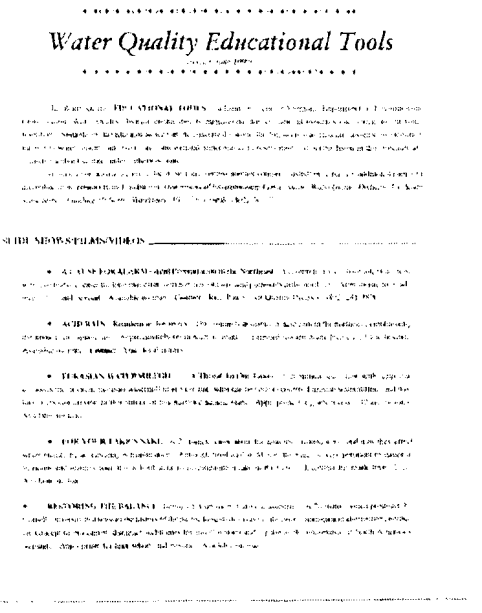
OTHER EDUCATIONAL TOOLS

•**Project WET (Water Education for Teachers)**: The Water Quality Division sponsors this interdisciplinary water education program intended to supplement a school's existing curriculum. Project WET offers the educator: activity guides and modules designed for K-12th grade; computer simulations; water history publications; a series of children's story and action books; and a water resources information network. All materials are available by attending a workshop.

PROJECT WET® Water Education for Teachers

AND MANY OTHERS!

For a complete listing of all the educational materials available, request the Water Quality Division's ***Water Quality Educational Tools*** *publication.*


Water Quality Educational Tools

(continued from page 1) —— **Why is Adams Reservoir Brown in Color?** ——

of calcium. The calcium content in the bedrock controls the ability of the water to buffer, or neutralize, acidity. Adams Reservoir is naturally acidic because of its basin conditions and naturally acidic waters are nearly always brown or 'tannic' in color. Waters which can adequately neutralize acids often exhibit complete decomposition of the organic material which results in no tannic color.

Tannic ponds exist in central and northern Vermont as well. In these areas, tannic waters are often associated with beaver ponds and ponds with extensive adjacent wetlands.

In Adams Reservoir, the combination of low calcium levels and poor buffering capacity slows the process of decomposition. Decomposition is further slowed by the early onset of cold weather. The amount of organic material entering the reservoir every year exceeds the water's ability to decompose it. As a result, the tannins remain from one year to the next, giving the reservoir its naturally occurring brown color.

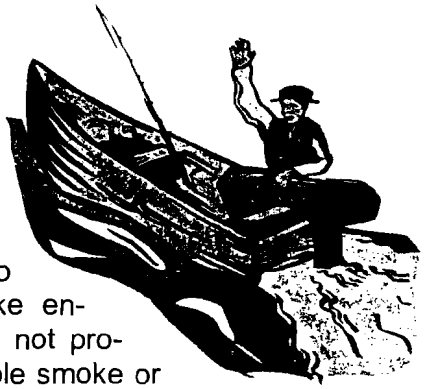
Additionally, since Adams Reservoir was created by damming a stream, all of the organic litter which was on the forest floor surrounding the stream was suspended into the water as the reservoir was filled. Such a load of organic matter would never have been decomposed easily by the basin's waters during the reservoir's first full warm weather season. Therefore, due to its origin Adams Reservoir was predisposed to being tannic.

There is no reason to be concerned about swimming in lakes with a tannic color. The brown color you observe is the expectation for most naturally acidic lakes, including Adams Reservoir.

...And, what about that smell?

Tannic waters occasionally smell peculiar. This odor, commonly known as 'swamp gas,' is a result of incomplete decomposition of organic woody debris. The released gas is actually hydrogen sulfide, a natural by-product of normal bacterial decornposition.

Switching to 4 Stroke Outboards



Near the end of the 2000 Vermont legislative session, $50,000 from petroleum cleanup money was appropriated to the Agency of Natural Resources for the first of a three year program to replace state agency and department two-stroke motorboat, outboard engines. Cleaner, quieter, and more fuel-efficient four-stroke and direct injection two-stroke outboard engines will replace existing two-stroke outboard engines.

Two-stroke carbureted marine engines are highly inefficient in their use of gasoline and oil, and lose approximately 20 to 30 percent of their fuel as it passes through the combustion chamber unburned. For every 10 gallons of gasoline used, two to three end up in the air and water! An estimated 500,000 to 750,000 gallons of fuel is emitted unburned into Vermont's lakes and ponds every year!

During the last decade, four-stroke engines have become more popular in low and mid-horsepower (hp) outboard engines (under 130 hp), and new direct-injection two-stroke outboards are now available in the higher horsepower range. While the four-stroke engines typically cost more to purchase, they are quieter, have less vibration, require no fuel/oil mixture, and use about 30 percent less fuel compared to carbureted two-stroke engines. They also do not produce the objectionable smoke or odor associated with carbureted two-stroke engines. Since the four-stroke engines are more efficient, they release typically 75 to 90 percent less emission into the air than conventional carbureted two-stroke engines. Direct injection two-strokes still require a fuel/oil mixture. However, they use 50 percent less oil than the carbureted two-stroke engines and are almost as efficient as the four-stroke outboard engines.

Approximately 110 outboard engines, ranging in size from 3 hp to 200 hp, are operated by the state Departments of Public Safety; Fish and Wildlife; Forests and Parks, and Recreation; and Environmental Conservation. Although these departments already had begun to replace their polluting two-stroke outboards with the new four-stroke engines, the additional special funds will help speed up the replacement process.

Paleolimnology and Stable Isotope Geochemistry: Technical Tools For Understanding Water Quality

What is paleolimnology?

Examining lake bottom sediments is useful for understanding the current and past water quality of a lake. The study of lake sediments, or paleolimnology, has been used in Vermont to learn about past nutrient enrichment rates and status of lakes, and about historical trends of contamination by mercury and other trace metals.

As material settles from the water into the sediments of a lake, it leaves a record of conditions existing in the water at that time. Sediment cores can be extracted from the lake bottom and analyzed for their chemical makeup, remains of living things, and even pollen grains to learn about a lake's past conditions. The Lakes and Ponds Section uses this historical information to answer questions such as "what is the likely natural condition of this lake?" and "how much can the lake be expected to improve through environmental management programs?" The answers to these questions help make lake protection and restoration programs as effective as possible.

What is a stable isotope?

Many elements have isotopes. Elements such as carbon (C) and nitrogen (N) are the building blocks of all matter, and are made of protons, neutrons, and electrons. Elements in their "normal" state have an equal number of neutrons and protons. Isotopes are "variants" of elements with at least one more neutron than the number of protons. Because of this, isotopes are slightly heavier in mass than elements in their "normal" state. Some isotopes are radioactive, like carbon-14 or lead-210, and are subject to decay through time. Stable isotopes are not radioactive and do not decay.

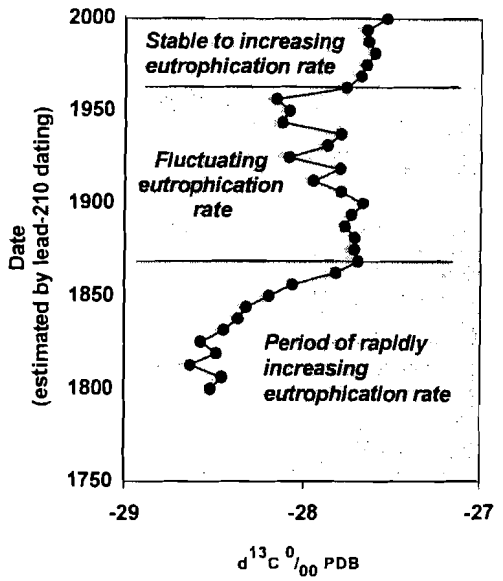
What story can stable isotopes tell?

Stable isotopes are analyzed to understand how carbon-13 is used by plants during photosynthesis. Ninety-nine percent of carbon in the world is the "normal" carbon-12. About one percent of carbon is carbon-13, a slightly heavier isotope. During photosynthesis, plants use sunlight as energy to take carbon in from the air, and convert it to biomass. When they do this, plants preferentially take in carbon-12 over carbon-13. This occurrence is because carbon-12 is lighter in mass, and thus requires less energy to metabolize. Since green plants use more of the lighter carbon-12, their tissues end up with less carbon-13 than is actually available to them from the air or water, and the plants are said to be isotopically "lighter." This process happens throughout all biological and chemical reactions. When material decomposes, is consumed, or reacts chemically, there is a predictable and calculable change in the isotopic composition of the material. In northeastern lakes, sediments comprised mostly of algal remains, which would be expected in a lake with little watershed disturbance, are typically "lighter" than those comprised of land plants or eroded soils.

Stable isotopes have also been used to locate oil reserves, map groundwater movement, predict historical air and oceanic temperature trends over geologic timescales, and even to document the link between recent global warming and greenhouse gas emissions.

Recently, the VTDEC has been working with the University of Vermont to analyze the stable isotope of carbon-13 in order to learn more about past and present lake conditions. Some results of the VTDEC's collaboration with UVM for Lake Carmi are shown on the graph on the next page. This information provides insight into the history of the lake's water quality during the past 200 years and helps focus current lake protection efforts.

Neil Kamman, Environmental Scientist with the Lakes and Ponds Section, is shown using the equipment that takes a sediment core.



Changes in carbon-13 concentration in Lake Carmi sediments through time

Increases in isotopic Carbon-13 values between 1800 and 1850 show a period of enhanced eutrophication and a period of fluctuating eutrophication rate for the next 50 years. From approximately 1900 to 1960, water quality in Lake Carmi may actually have improved as evidenced by a slight decrease in Carbon-13 values. From approximately 1960 to present, Carbon-13 values continue to increase, indicating a renewed eutrophication phase.

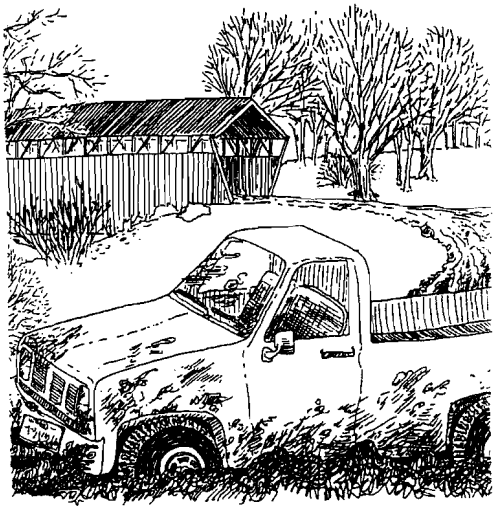
The Lake Carmi Campers' Association and the Franklin Watershed Committee are presently working to reduce watershed-level inputs of phosphorus to reverse the recent eutrophication.

A Reminder:
Proper Back Road Maintenance Helps Keep Surface Waters Clean

There was an old man
who lived in the wood
As far from town
as he possibly could.

When mud season came,
he was stuck way out there.
He could not get to work,
but what did he care?

Poem from *Nature Rhymes* published by the Vermont Forest and Parks Department, Illustration by Libby Davidson



VERMONT LOCAL ROADS

The Vermont Better Backroads Program works with landowners and town road crews to apply common sense techniques to maintain gravel roads that protect the environment at the same time. Information and assistance is available through: publications such as the Vermont Better Backroads Manual; grants to inventory and/or correct road erosion problems; on-site technical assistance; and workshops and informational meetings.

Lakeshore residents take note! The grants and assistance are available for work on private roads as well as town roads.

The Vermont Better Backroads Program is a partnership between the VT Local Roads Program, Vermont's Resource Conservation and Development Councils, and the VT Department of Environmental Conservation. For more information, contact Susan Warren at the Lakes and Ponds Section.

NEC-NALMS 2001 Comes To Vermont!

A terrific New England Lakes Conference right in our own backyard!

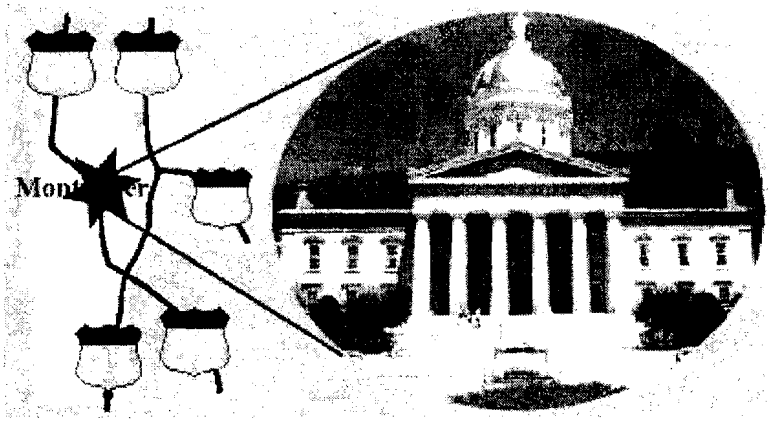
The 2001 annual conference of the New England Chapter of the North American Lake Management Society will be held in **Montpelier, Vermont** on **June 1-2, 2001**. The Lakes and Ponds Section and the Lake Protection Advisory Committee, are pleased to be hosting this year's event, and are working hard to ensure it is relevant to Vermont lake issues and lake association concerns. The audience at this event is primarily lake associations from across New England. Please join us! Field trips and conference sessions are planned on the following topics:

- Aquatic plants and exotic species
- Education, working with schools and communities
- Motivation, reaching all lake residents
- Water quality, sampling and surveys
- Shoreland buffers, landscaping
- Mercury in fish and lakes
- Economic value of clean lakes, and others!

Call For Papers: *If you have a lake project you would like to present, please contact the NEC-NALMS Conference Committee at the Lakes and Ponds Section.* For more information, check out the web site:

Friday, June 1, 2001
Field Trips/ Workshops
Held throughout the State at different sites.

Saturday, June 2, 2001
Conference Sessions
Held from 9:00AM to 4:00PM at the State Capitol building in Montpelier.



http://www.tec-i.com/2001-nec-nalms/conference.htm

Vermont Agency of Natural Resources
Department of Environmental Conservation
Water Quality Division
Lakes and Ponds Section
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