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The Assault on Our Water Resources:  
STANDING UP FOR 
VERMONT’S LIFEBLOOD  
JANE A. DIFLEY, EXECUTIVE DIRECTOR

Coursing through the state, literally shaping the landscape, Vermont’s waterways connect mountain and valley, forest and field, wildland and village, people and wildlife. Our rivers, streams, and wetlands are the lifeblood of Vermont. But these vital resources have suffered from agricultural and forestry practices, harnessing for hydroelectric power, industrial and municipal discharges, water withdrawals for snowmaking, industrial use and public water supply, detrimental land use, and mining.

Many of the streams and rivers of Vermont are legendary for their historic fisheries — the Battenkill, the Clyde, the Dog, and the White come to mind. But the hypnotic music of flowing water, the rush of spring freshets, the quiet of a marsh, and the unrestrained beauty of tumbling water belie the trouble that is brewing.

As I write this, the Clean Water Act — which since its passage in 1972 has been the foundation for effective protection of Vermont’s water quality — is under attack in Congress. The purpose of the Act has been to restore, protect, and maintain the chemical, physical, and biological integrity of rivers, streams, and wetlands throughout the nation. It creates regulatory standards for water pollution, it fosters watershed planning, and it protects high-quality waters. Federal legislation was necessary to assure that all citizens would be protected, and to level the playing field among states — in large part, to prevent polluters from locating in states with less stringent laws.

The campaign to relax water quality standards should alarm every American! Clean water not only provides for recreational and aesthetic enjoyment — it is literally the essence of life. Human health is at stake, as well as the protection of wildlife habitat. The Clean Water Act has been tremendously successful; gutting it now would roll back 23 years of progress. And if the Act is weakened, Vermont’s water resources will be left open to exploitation, abuse, and contamination.

COLLABORATION IN VERMONT

While the drama in Washington, D.C., unfolds, VNRC is working to protect and restore Vermont’s rivers and streams statewide. Two major initiatives are the Vermont River Action Network (VRAN) and the Vermont Water Resources Project.

VRAN is a joint initiative with the River Watch Network to stimulate, guide, and help organize community-level support and action on behalf of the state’s rivers, in particular for the Winooski, the Clyde, the Black, the Missiquoi, the Deerfield, and the Lamoille.

The Vermont Water Resources Project is also a collaborative effort, this time with the Conservation Law Foundation and the Northeast Natural Resource Center of the National Wildlife Federation. Our responsibilities in this effort build on our staff expertise with the addition of a fisheries biologist, who will document and rank major threats to river and stream water quality in the state. Education of citizens and policy makers is also an important component of this work.

The future of Vermont’s waters is as much a matter of politics as of wise conservation practices. And as always in matters of politics, citizen involvement is the critical ingredient in achieving protection of the resource.

The network of VNRC members, collaborators, volunteers, and other supporters will ultimately determine the fate of Vermont’s waterways and the connections they symbolize. If you would like to get involved, call Christopher Kilian or Tom Gilbert at 802-223-2328.
A Fish by Any Other Name

You are doing such great work on river advocacy, especially on championing the cause of the Clyde and its legendary Lake Memphremagog landlocked Atlantic salmon, that I have to give you a hard time. But I just can’t resist!

The cover kid-with-big-salmon photo and its page 19 report and caption in the Fall 1994 Vermont Environmental Report brought to mind an old story about President Calvin Coolidge. It seems that the President was being honored at a gathering. The speaker, in presenting the President with a wooden cane, waxed eloquently about the attributes shared by Mr. Coolidge and hickory, the material of which the cane was supposedly made. Silent Cal’s characteristically terse response upon examining the tribute?

“Ash.”

“Lake trout.”

On the subject of the Clyde, the Newport #11 diversion dam, canal and powerhouse have been the main focus of vilification, as perhaps they should. Their callous and illegal construction was certainly the last nail in the coffin for self-sustaining runs of Clyde River salmon. The runs were, however, already in serious decline by 1955 when the Citizens Utilities Company (CUC) began building the #11 project virtually under the cover of darkness. CUC has tried to tag the Vermont Fish and Wildlife Department’s 1930s salmon egg collection program with responsibility. This ignores some easily overlooked history of hydroelectric power expansion on the river. I have learned this history from CUC’s Frank Thomas. Frank should be able to correct anything I have gotten wrong, omitted, or misrepresented.

Mill development on the lower Clyde dates back to the 1830s. Two remnant structures can be found in the so-called Upper Bypass: One, immediately upstream of what is now known as the #1,2,3 powerhouse; the other the Arnold Falls mill, about half way between #1,2,3 and Clyde Pond. The Arnold Falls site was the first to be converted for hydroelectricity. In the early 1900s a pipe ran from the Arnold Falls dam to what we now call the #3 turbine at the #1,2,3 station. Unit #3 was a small capacity turbine. The present #3 unit discharges a maximum of only 63 cfs. This is less than below this flow level. Behold the birth of hydroelectric peaking on the Clyde, and the attendant channel de-watering in the Upper Bypass and below the #1,2,3 powerhouse! Unit #2, another 150+ cfs turbine, was added in 1940. The current #3 unit replaced the original in 1944. With over 380 cfs hydraulic capacity at the #1,2,3 powerhouse, the lower river was finally under CUC’s complete control except in the spring and after major storms.

Little wonder that salmon runs were in decline by the mid 1940s. Adult salmon, juveniles and embryos in the historic spawning and nursery habitat below #1,2,3 were being challenged by the disastrous effects of the now all-too-familiar pond-and-release cycle associated with peaking facilities. Finally, between 1955 and 1957 the 1,000 feet of habitat immediately below #1,2,3 was turned into a pond by the #11 dam and the life blood of the next 3,000 feet of salmon home was drained through a canal and turbine. And that was that!

This should illustrate that the assault on Clyde River salmon was well under way before that damned heinous crime against Vermont and nature was perpetrated in the mid-50s. It also underscores that removal of the now breached #11 carcass is only part of what the Clyde needs from FERC and the State to be made whole and restored to a vital salmon producer. VNRC, Trout Unlimited, citizens of the Northeast Kingdom and others must continue their efforts to assure that the Clyde River, its salmon and the Vermonters who care about them get what they need and deserve.

Leonard J. Gerardi, St. Johnsbury

Middlesex Gorge, ca. 1890.

Vermont Environmental Report • Spring/Summer 1995
WHERE'S THE ACT 250 PARTY?

I was shocked and dismayed by the recent anti-environmental actions of the Vermont Environmental Board. I find it hard to accept that the Board could, as The Burlington Free Press article (5/14/95) noted, ignore the law and carry out a set of decisions that apparently violate the law (re. Local Boards, Regional Boards, Acts 200 and 250). The approval for over 240 units in South Burlington and the Wal-Mart Williston decision both suggest collusion with profit-incentive development interests.

I would like the VNRC and The Nature Conservancy to take a stand on such anti-environmental actions. I would even suggest that a citizens’ lobby should pursue actions (dismissal or legal) against the Board and its individual members if, in fact, law was violated by the Board’s decisions. What help will your organization offer to such a public movement? Are you planning to respond to these outrageous decisions?

Anthony R. Quintillianni,
North Ferrisburg

Editor’s note: VNRC will continue to defend and strengthen Acts 250 and 200. Please see News and Notes in this issue for hearing dates on proposed rule changes—your participation is crucial.

NO RIOTING REPORTED

Brendan Whittaker was a great hit with the garden club ladies and a motley group of loggers and foresters from the Merck Forest and the Green Mountain station.

Nobody rioted, slashed tires, or threw paint. In fact, the crowd (we had a good turn-out) seemed to like what he said.

Thanks for sending him down to us. We all enjoyed the program and the ladies learned a lot of new stuff.

Gayle Gell, Manchester

THANKS FOR YOUR ENCOURAGEMENT!

VNRC remains an outstanding organization. Thanks for your dedication and proving once again that you don’t have to be mean or cruel or rude to get to your goal.

Ginny McGrath, Montpelier

VERMONTERS LINK TO THE GLOBAL POPULATION

At the end of the 1995 Vermont legislative session, the House and Senate jointly adopted a resolution which “urges the Vermont Congressional delegation to bring before the United States Congress legislation that requires the United States to adopt a national population policy aimed at stabilizing the United States’ population considering its patterns of consumption.” This resolution has gone unheralded, but it marks another significant contribution by the State of Vermont as a leader in its concern for the environment and for future generations.

According to Representative David Dean of Westminster, who took the lead in sponsoring the resolution, “We can no longer ignore human overpopulation for it looms as the largest single threat to life as we know it. The quality of life will vary inversely to the number of people living on the earth and the intensity of the population’s use of natural resources.” Credit for this resolution also goes to Senator Cheryl Rivers who introduced it in the Senate and to Dick McCormack, the Reporter of the Resolution.

This resolution brings the resolve of the 182 nations who met and agreed to a Program at the Conference on Population and Development in 1994 in Cairo to Vermont, and it takes from Vermont to Washington the mission to think globally and act both locally and globally.

Vermont Citizens for Sustainable Population asks you to do your part in curbing consumption and in considering the world as a support system for your children. Individually your family may be able to support many children, but how many children can the world support?

Barbara Duncan, President
Vermont Citizens for Sustainable Population, East Montpelier

I declined to renew earlier due to the increasing timidity of VNRC in the face of corporate and political attacks on Vermont’s environment. Polluters are no longer interested in compromise. I hope VNRC will help us all work more aggressively to stop them and protect our land and forests. The editorial [The Burlington Free Press, (3/5/95)] enclosed with this mailing is a good beginning. Keep it up.

Brian Tokar, Calais
A great deal of progress has been made in the control of water pollution in the United States in recent decades. No longer is disease spread by means of filthy urban waterways. More and more of our rivers and streams meet the lofty “fishable, swimmable” goal of the 1972 Clean Water Act. We should be pleased with this progress, but by no means complacent about the condition of our waters.

Progress to date has been achieved primarily by addressing the most conspicuous and egregious sources of water pollution. In the 1970’s, when the first substantial investments in water pollution control were made, great water quality improvement was realized through the construction and improvement of wastewater treatment systems. At the same time, the federal government began implementing the hopefully titled National Pollutant Discharge Elimination System (NPDES), to control industrial sources of effluent.

Today, discharges from wastewater treatment plants and industrial sources are not allowed to exceed specified levels of pollutants. There are still some significant problems with compliance and enforcement, but there is no doubt that an effective system of regulation has been established.

**A New “Point” in the Campaign**

We are now at a very important place in our struggle to improve the health of our waters. We are realizing the need to shift our focus from the control of “point” sources of water pollution to “non-point” sources, because investments in the control of non-point source, or NPS, pollution will produce relatively more significant water quality benefits than will additional, increasingly expensive technological point-source controls.

Wastewater treatment plants and industrial facilities are typical point sources, which are defined in the Clean Water Act as “any discernible, confined discrete conveyance ... from which pollutants are or may be discharged.” Non-point sources of water pollution are any sources that do not meet the definition above — that do not discharge pollution from a single point.

Non-point sources of pollution include farms, construction sites, and urban areas, and they account for more than half of the remaining water quality problems in the United States. Non-point sources are an important problem in Vermont, where water pollution from agriculture alone is responsible for the impairment of nearly 900 miles of rivers and streams and more than 180,000 acres of lakes, including much of Lake Champlain.

**Vermont’s Variety of Sources**

“The nature of the beast is such that it is a multi-headed monster,” said Rick Hopkins, Water Resources Planner at the Vermont Agency of Natural Resources. NPS pollution in Vermont can come from a wide variety of sources, including
forestry operations, failed septic systems, leaking underground storage tanks, unlined landfills, and improper waste disposal as well as urban areas, construction sites, and farms. The pollutants contributed by non-point sources may include nutrients, bacteria and other pathogens, organic matter, sediment, and toxins.

NPS pollution in Vermont is generated by a variety of sources and, though there are impacts throughout the state, the nature and magnitude of impacts vary between river basins.

Agriculture has been identified as a major source of NPS pollution in Vermont, especially in the Lake Champlain basin. Damaging farm sources include runoff from the spreading of manure and fertilizers on fields, soil erosion from fields, and effluent from milk houses, among others. The agricultural pollutants of greatest concern are nutrients, particularly nitrogen and phosphorus. Although these are essential to almost all living organisms, excessive levels can lead to uncontrolled growth of algae and disastrous results for marine and aquatic ecosystems.

**CONTROLLING NON-POINT SOURCE POLLUTION**

The task of controlling NPS pollution is much more difficult than controlling well-defined discharges from single points. Point sources are, almost by definition, easy to sample and regulate: One can identify the point of discharge and measure the concentration of pollutants right there. In contrast, non-point sources are diffuse by nature. Directly sampling their contribution of pollutants is very difficult.

Non-point sources are usually controlled by regulating land use practices rather than by measuring pollutant concentrations. While it may be impractical or impossible to measure pollutant concentrations in runoff from farmland, it is relatively easy to assess the agricultural practices in use on the land that is contributing that runoff.

The state of Vermont is in the process of developing rules to define management practices that are intended to decrease agricultural non-point pollution. Certain practices will be required of all farmers; additional practices will be required in situations where related water quality problems are evident.

Effective management practices for decreasing NPS pollution on farms include, among others, storing manure during the winter rather than spreading it on frozen fields from which it travels into streams in the spring; limiting fertilizer use to only as much as is actually required for optimal crop growth; and limiting pesticide use. Both VNRC and the Conservation Law Foundation have been involved in the development of these rules. Although they are not as strong as the environmental community might have hoped, their implementation will, it is widely felt, result in notable water quality improvement.
The Dirty Water Act

BY WILL LINDNER

U.S. House Aims to End Pollution Protection

Never was a simple pie graph lovelier to behold. With three quarters of its circle colored a deep blue and the remaining fourth a lighter aqua, the graph reveals the chief impact of the 1972 Clean Water Act upon Vermont: every municipal sewage treatment plant in the state — plants that inevitably discharge their effluent into our rivers and lakes — now operates at least at the secondary level of treatment, biologically cleansing its wastes. The lighter-blue quadrant stands for the plants that perform the higher, tertiary treatment.

It was not always so. As an accompanying graph in Environment 1995 reveals — the booklet is an assessment of Vermont’s environment published by the state Agency of Natural Resources — it was a different story 25 years ago. In dismally suggestive
the stream,” he added.

In order to achieve these visions on the horizon, however, much work and involvement is still needed. Kilian said that there will be several hydroelectric projects going through the review process in the next few years, and “these need greater attention from the public.”

There are many ways citizens can participate in breaking down the barriers that dams pose to water quality in our rivers, Kilian proposed. They can gather information on the operations of unlicensed projects; let regulators know when dams cause water quality problems; help do studies of various rivers; and attend public hearings.

VNRC members and the public in general, said Kilian, “need to get out to the FERC hearings and state water quality hearings.” He commented that the reason why the Newport dam on the Clyde River is being considered for removal is that “so many people came out to the hearings. That’s the reason things change — people made themselves heard.”

**POLITICIANS PUSH TO REVERSE LANDMARK RULING**

Under the new Republican-dominated Congress, there is considerable pressure to gut the Clean Water Act [see “The Dirty Water Act” in this issue] and to legislatively reverse a 1994 U.S. Supreme Court decision that interpreted the Act as allowing states to regulate the quantity of water that dams release.

In that landmark 1994 Tacoma, Washington case, the high court ruled that states could require a utility to keep enough water flowing from a dam to protect fish populations. The City of Tacoma, which lost the case, argued that the federal government had sole authority to decide on river flows, and that the Clean Water Act gives states the power only to regulate water quality, not quantity. The high court added, however, that this was an “artificial distinction” — and that, “in many cases, water quantity is closely related to water quality.”

As early as November 1994, legislation was introduced in the U.S. Senate specifically to overturn the Tacoma decision. “We would fight that one to the death,” said Senator James Jeffords’ legislative assistant, Ken Connelly, about this attempt.

Connelly said Jeffords has been working for years to give states more say in hydropower relicensing for reasons of water quality, but that the Tacoma decision “negated the need for legislative provisions. Now, however, it may be even more of an uphill battle to hold onto the gains made in the Supreme Court decision. Connelly said that Anne Moler, the head of the Federal Energy Regulatory Commission (FERC) has testified before the Senate Energy and Natural Resources Committee that one of FERC’s priorities is to overturn the Tacoma decision.

As a preemptive measure against attempts to dismantle the Tacoma decision, said Connelly, Jeffords has drafted legislation “to further codify the Tacoma case.” He said Senator Jeffords believes that “states should have the ultimate say over relicensing” of dams.

Matthew Witten is a freelance writer who specializes in environmental issues.

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block the passage of fish that come back to spawn. In the Connecticut River Basin, salmon historically have swum hundreds of miles from the Atlantic Ocean (by way of Long Island Sound) to spawn in the White, West, Passumpsic, and other rivers and streams.

The Lake Champlain Basin's land-locked salmon, which originally came from the Atlantic, attempt to swim up Otter Creek and the Winooski, Lamoille, and Missisquoi rivers. The same is true of salmon from Lake Memphremagog, which long spawned in the Clyde River.

In the Clyde River before the 1950s, “The salmon largely reproduced themselves, which was unusual,” said Warren Drown of Newport. Drown remembers that during spawning season, fishermen crowding onto the railroad bridge over the Clyde would each be able to hold up a salmon trophy to passing train travelers.

But when Citizens Utilities’ #11 power station and dam were built in 1957, the water was diverted from the original riverbed into a canal, “and that was the beginning of the end,” Drown said. “At times, river conditions were so bad” that it went dry, he said, and “the fish died by the hundreds,” sometimes causing public health concerns.

The Newport #11 dam washed out last spring, opening the river channel for the first time since 1957, but Citizens Utilities hopes to divert the river again through a penstock (a large pipe) rather than a canal. VNRC is countering that proposal; in addition, VNRC is arguing that fish passage be restored in all of the rivers where fish historically had access.

REACHING WHERE NO REVIEW EVER HAS

There are many dams in Vermont that have never been obligated to meet any water quality standards or undergo state review. These unlicensed projects were constructed before the Federal Power Act was passed in the 1920s. Under its broad powers of assuring the water quality of Vermont, however, the DEC is planning on targeting the worst offenders among these 26 dams for improvement.

“There’s a lot we don’t know” about the unlicensed projects in Vermont, said Willard of the Water Quality Division. “Some are peaking and some are run-of-the-river,” but there is much speculation as to the effect of these projects, since, he said, “it’s hard to get to all sites at their low flow.” “Run-of-the-river” means that the project does not store water (e.g., for peaking power), and so its outflow is roughly equal to inflow.

Over the next five or more years, the Agency of Natural Resources plans on tackling the problem of the unlicensed hydroelectric dams. “The burden of proof is on us,” Willard commented.

He said the Agency plans to prioritize the projects, design studies, meet with dam owners, do the studies, analyze information and make recommendations, and, finally, implement the recommendations. “It will be a long time before there will be any action” on these projects, cautioned Willard, because the Water Quality Division’s staff is tied up with dam relicensing and preparing for appeals before the Water Resources Board.

Among the projects that the Agency hopes to target first are four dams on East Creek in Rutland County owned by CVPS: Lefterts Pond, Chittenden Reservoir, and Glen and Patch dams. According to the hydropower report, the dam at the Chittenden Reservoir bypasses four miles of East Creek, where almost no flow is maintained. Glen Dam also dries up the creek at times, and Patch Dam allows “extremely low flows below the project,” despite the fact that CVPS reported it is operated as a run-of-the-river facility.

Also on the state’s priority list are the Lake Dunmore and Salisbury dams, two other CVPS dams on the Leicester River.

As of 1988, little was known about flow releases from either of the dams, but the Hydropower in Vermont report states that the Vermont Fish and Wildlife Department had concerns about low flows due to the considerable fisheries in Lake Dunmore and the river itself.

NEW LICENSES MAY BRING NEW SUCCESSES

Willard said that major restorative measures have been included in some new licenses that have been issued or are being negotiated. Cueto said that, in all cases, new licenses include “substantial changes to flows.”

The several licenses that FERC has issued include provisions to enhance the natural ecosystem and recreation. For example, said Cueto, at the Essex #19 dam on the Winooski River, flow management, fish passage, and greater access for recreation, as well as increased flows, are required. The new licenses that CVPS received on its projects on the Passumpsic River require the projects be converted to run-of-the-river. This could have a tremendously beneficial effect on fisheries and the river ecosystem in general.

Willard said that a few improvements at dams will be dramatic, such as the restoration of salmon passage on the Clyde River in Newport. “By far, the biggest success has been getting FERC to recommend the removal of the #11 dam in Newport, and getting the state to deny the water quality certification,” said Kilian of the VNRC.

Willard said the Atlantic salmon restoration on the Connecticut River will also be dramatic, once fish passage is fully implemented. Other “flagship” improvements, he said, will be on the large tributaries to Lake Champlain: the Missisquoi, Lamoille, and Winooski rivers. On the Winooski River, fish passage facilities have been required for the landlocked salmon coming back to spawn. VNRC is seeking similar improvements on the Lamoille River and other Lake Champlain tributaries.

When fish passage is provided on these rivers, fishing “will dramatically increase,” Willard predicts. Improvements at dams on other rivers will be less dramatic, but “will be just as important for the health of
valiantly leap the low dams erected for mills in the 19th century, the construction of hydropower facilities in the first half of the 20th century brought a halt to fish passage on the river. The VNRC is currently seeking to require CVPS to provide up- and downstream passage for spawning fish on the Lamoille.

DAMMING THE AQUATIC ECOSYSTEM

It is nearly impossible to count the myriad ways in which dams alter or damage the aquatic ecosystem, but the effects are profound. The effects are typically split into two categories: those above and those below the dam (or, upstream impoundment and flow regulation).

The creation of an upstream impoundment changes a river into a pond or lake, which has many implications for wildlife; similarly, the regulation of water flow below the dam changes the stream ecosystem in subtle as well as obvious ways.

Upstream impoundments, meaning the creation of bodies of water behind dams, cause unnatural warming or cooling of water, the buildup of sediment, and the disturbance of fish and wildlife habitats. Often impoundments create reservoirs that are operated in a store-and-release mode, impounding water during periods of low demand and discharging during periods of generation.

The release of water causes a "drawdown" in the level of the impounded water, or reservoir. Drawdowns generate electricity for "peaking" power, for the periods of the day or week when it is most in demand, and they have damaging effects both upstream and downstream.

Upstream, drawdowns can kill or leave vulnerable several varieties of wildlife. Both the Somerset and Harriman reservoirs of flooding when there is more water in the river than can be used to generate electricity; at all other times the river is dry. The severity of diversions is exemplified by the diversion of the Harriman Dam on the Deerfield River, which approaches five miles.

Downstream from the dam, store-and-release operations can be just as damaging. Sometimes these completely de-water downstream riverbeds. When the dam then releases a huge volume of water to generate peaking power, the scouring effect of the discharge is devastating to the habitat.

THE BEAUTY LOST TO POWER

Both upstream and downstream of dams, the natural beauty of a stream is often marred or eliminated by the operation of the hydropower facility. Many dams in Vermont are built at the top of a cascade or waterfall to maximize the "head," or the water's vertical drop. During storage times, these once-magnificent spectacles become sad trickles splashing from shelf to bare rock shelf.

Only one large main-stem river waterfall in Vermont remains undammed — Big Falls on the Missiquoi River.

The most prominent example of a waterfall whose beauty has been compromised for decades by a dam is Carver Falls Dam in West Haven, owned by CVPS. The falls below the dam are the largest and highest in Vermont and discharge into a gorge that is one of the best examples of a limestone gorge in the state, according to the state hydropower report. But "the lack of adequate flow releases ... impairs the recreational and aesthetic value of the stream," the report states. "It's one of the greatest waterfalls in Vermont," said Jeff Cueto, a hydrologist at the Vermont Water Quality Division.

BLOCKING THE SPAWNING PASSAGE

Another effect that hydropower projects can have both upstream and downstream is to
first time. The current expiration of a number of Federal Energy Regulatory Commission (FERC) hydroelectric dam licenses gives the state a once-in-50-year chance at recovering the values in many miles of rivers.

“Right now we have a window of opportunity to affect hundreds of miles of rivers that have been impacted for 80 years,” said Christopher Kilian of VNRC.

In a sense, this opportunity dares us to remember how full of life Vermont’s streams once were, and to demand that utilities make the effort to revive our rivers.

LOOKING (AT LAST) AT WATER QUANTITY

Although hydropower facilities have become accepted parts of the landscape, their effect is marked. There are many dams in Vermont that severely damage fish habitat in our streams and rivers, and several that erased some of the most beautiful cascades and waterfalls that our state once had to offer.

Until recently, the Clean Water Act, enacted by Congress in 1972, did little to help mitigate the ill effects of the dams on our rivers. The Act established the states’ review of dam licenses through water quality certifications, but for too long the certification process received little attention. Finally, a variety of factors has triggered states’ review of hydroelectric dams.

The Clean Water Act originally looked at improving the chemistry of waters, said Tom Willard, chief of the planning section of the Vermont Water Quality Division. At the time, he said, “no one looked at the environmental problems of quantity.”

“In Vermont,” Willard added, “when we did take a look, we found [that quantity] was a very significant issue, with no regulatory framework to deal with.”

The new look at the effects of hydropower on rivers was influenced by the 1978 enactment of the Public Utility Regulatory Policy Act (PURPA), which encouraged the development of small hydropower projects. Due largely to the passage of PURPA, about 40 new hydropower projects were proposed in Vermont after 1980. The review of these proposals included greater scrutiny of the effects of hydropower on the environment.

The awareness that dams were having a significant impact on stream ecosystems prompted a six-year Agency of Natural Resources study completed in 1988 called Hydropower in Vermont: An Assessment of Environmental Problems and Opportunities. Because the report made recommendations for solving problems caused by hydropower projects, it serves as an important reference in the current relicensing of a number of dams in Vermont.

Sixteen dams in various parts of the state are in (or have just completed) a relicensing process carried out by the FERC and the Vermont Department of Environmental Conservation. During this relicensing process, Vermonters have a brief and pivotal period of time to realize many of the opportunities outlined in the 1988 report.

HOW GREAT IS THE IMPACT OF DAMS?

Two state documents attest to the immense impact that hydroelectric dams have had in Vermont. According to the 1994 report Water Quality Assessment, hydroelectric dams adversely affect more miles of rivers and streams than any other human use or cause.

Whereas the report ranks agriculture as impacting the highest number of stream miles (474 mi.), the combined uses of “upstream impoundment” (ranked fourth at 291 mi.) and “flow regulation” (ranked fifth at 249 mi.), both of which are caused by dams, affects a total of 540 miles.

Says the 1988 report Hydropower in Vermont: “For centuries, hydropower development has dramatically changed the character of Vermont’s streams. Water quality has been degraded. The usefulness of the resource for purposes other than power production has been reduced and, in some cases, virtually eliminated. Aquatic communities have changed in composition or been lost entirely.”

Hydropower in Vermont estimated that of the 62 hydroelectric projects which existed when the report was begun in 1982, 47 had a “significant” impact on streams, 10 had “some” impact, and only five had a “minor” impact. Tom Willard said that in the last few years, the Water Quality Division’s experience has shown that even more of these projects would fit in the “significant” column.

Other reports show that once-renowned fisheries were nearly destroyed by the advent of large hydropower dams on a number of rivers in Vermont. In the 1870s, the Lamoille River was considered to be the best salmon spawning stream in the Lake Champlain Basin, according to research recently completed by Robert Daniels, a VNRC expert witness in the review of four Central Vermont Public Service (CVPS) dams on the Lamoille River. The Lamoille also supported spawning runs for many other fish, including lake sturgeon, and walleye.

Although spawning salmon could
Starting about 80 years ago, Vermont rivers underwent a radical change. For the reasons of flood control and local energy supply, huge hydroelectric dams were erected on dozens of rivers and streams. Hundreds of miles of some types of fisheries were suddenly lost, and whole aquatic ecosystems were debilitated. Fisheries and ecosystems were considered secondary, if they were considered at all.

Why We Have a Once-in-50-Year Opportunity

The creation of a reservoir, the release of only a trickle of water below the dam — these became a part of the landscape that was taken for granted, or hidden from public view. Despite the movement in the 1970s and 80s to clean up our waters, the problems created by dams were left untouched. Government targeted industrial and municipal polluters while hydroelectric dams received a strangely silent amnesty. In the meantime, the gains made in the past 20 years to reduce pollution in surface waters hit a concrete wall. The cleanup of pollution can only benefit a river so much when hydroelectric dams block fish from their spawning grounds and disrupt entire stream ecosystems.

Finally, decades later, the water quality impacts of many hydroelectric dams are being reviewed for the very
FLOWING WATER is the lifeblood of a river. The flow sustains a myriad of fish, insects, and plants, and it shapes and reshapes the river channel, creating the river’s character — whether roaring or rushing, laughing or meandering. Changes in natural flow can cause significant negative effects in river life.

Streams and rivers are changing environments. When allowed to flow unhindered, a river undergoes significant changes over time as its bends slowly move, pools fill in, and new channels are created. The amount of flow in a river at any given time — and over time — has an effect on the size of the stream (both its depth and width), and on the speed of the water. The amount of flow also determines the total amount of usable habitat within the smaller, variable habitat “compartments” that each species in a river needs to survive. These natural variations in river flow assure that necessary habitat will be available to support the natural species diversity that is important to maintaining stream health.

Stream flows naturally rise and fall during the seasons. In the Northeast, spring rains and snowmelt add water to streams and rivers until they rage. The lowest flows occur during the dry, late-summer months. In the fall, rivers and streams fill again as autumn rains combine with reduced water needs by trees and the loss of other vegetative cover. Winter’s cold “locks up” flowing water as snow and ice, and river flows decrease once again.

The biologic community of rivers is well-adapted to these natural, seasonal fluctuations. As an intricate, efficient system of plants and animals that interact with each other and their surroundings, streams are resilient and can, in time, recover from short-term environmental alteration of natural river flows represents one of Vermont’s most significant surface-water quality problems. Uses such as municipal and snowmaking withdrawals and hydroelectric power generation are widespread and often reduce our streams to a trickle — even completely dry them up. These artificially lowered flows sacrifice the ecological integrity of our streams, and the Clean Water Act considers them a form of pollution.

The minimum stream flows normally recommended by Vermont regulatory agencies for development projects are significantly less than natural flows. Currently, minimum water level standards used by the Vermont Agency of Natural Resources are based on one of two flow statistics, either seasonal median flows or the “7Q10.” The seasonal median flows use the middle flow for February, April/May, and August for the fall/winter, spring, and summer seasons, respectively.

These seasonal medians are intended to coarsely mimic the natural seasonal fluctuations that occur in rivers. However, since these flows are based on the driest months for each season (for example, August and February are the months of lowest annual flow) the natural flows of the river are significantly altered when medians are required.

Applying the August median flow throughout the summer is stressful for a river’s living organisms. Summer is when the biologic community is most active; it’s also the season when temperatures are the highest and oxygen levels the lowest. Similarly, the February water flows are the lowest during the winter. February is also a stressful month because ice buildup is greatest, due to the low flows and shallow water, and it is the period of lowest productivity for stream life.

The “7Q10” is different from the seasonal median flows: It is the lowest flow in a 10-year period over a seven-day duration. From the perspective of aquatic life, this is the worst condition that has occurred in a decade — or, more accurately, the worst drought extended indefinitely. The 7Q10 also does not account for the river’s natural fluctuations in flow.

The aquatic community cannot withstand these destructive low flows. Unfortunately, the 7Q10 is a widely used criteria for recommending minimum flows; often, in fact, flows much lower than even 7Q10 levels are required by regulatory decision-makers.

Because flow regulation is so widespread and the standards used by regulatory agencies are often so inadequate, VNRC has been fighting hard for improved regulatory policies and for better flows in specific cases. VNRC has supported the use of February median flow as a safe minimum standard for protecting the health of Vermont rivers.

“The debate over minimum flows is often very frustrating because the problem is so large and the base flows are so low,” said Christopher Kilian, VNRC’s Water Program Director. “Often, even achieving a bare minimum of protection is extremely difficult. VNRC will continue to fight hard for flows that truly protect Vermont’s rivers.”

Christopher Kilian is the Water Program Director and Staff Attorney at VNRC.
worth of fish caught in a manner that jeopardizes long-term fish stocks, and $1 million of fish harvested sustainably.

**The Rising Importance of "Non-Market" Values**

The economics of specific places, on the other hand, requires that the value of a resource be considered across all types of uses. This includes market and non-market values. Information on the economic importance of market-based uses of a river, such as its value to commercial fishing or hydroelectric generation, is often readily available. For example, the Federal Energy Regulatory Commission’s February draft environmental impact statement on the Clyde River Hydroelectric Project, recommending the removal of Citizens Utilities Company’s Newport 11 Dam, estimates that the removal would mean a loss of approximately $882,000 in annual energy sales.

It is more difficult to determine the value of non-market uses, such as the high-quality fishing or canoeing experience, since many of those are virtually free of charge or lack specific market transactions. In an unprecedented move, FERC identified recreation and fish and wildlife habitat as two of three principal resource values (power generation was the third), and concluded that "the benefits of dam removal outweigh the costs" in its environmental impact statement on the Clyde project. The fact that FERC gave strong legitimacy to the two non-market uses demonstrates the rising importance of this class of economic values.

**Giving a Value to Resource Improvement**

Using new and existing data on non-market values, the NWF project will study tourist and recreational activities at specific sites. A current collaboration between NWF and the University of Vermont will survey users of the White River — recreationists, tourists, and local residents — as well as citizens at large who benefit from simply knowing that this resource exists, regardless of whether they have actually visited the river. The intent is to estimate the dollar value that the river provides in its current state, as well as economic opportunities that could be provided if the river's quality or accessibility is enhanced.

For example, in a recent study of the Columbia River in Oregon, anglers and non-anglers alike said they would be willing to pay as much as $30 per year for the doubling of fish populations. Another study of the Penobscot River in Maine found that anglers were willing to pay nearly $100 apiece to avoid the elimination of current fishing conditions.

Eric Palola, a resource economist for NWF observes: "Where the type and quality of certain recreational experiences and the associated costs to enjoy them are well understood — such as the guarantee that a $300 dollar-a-day fishing guide will net the client a trophy steelhead — economic techniques offer more certainty about actual market values. Considerable controversy exists, however, about whether such techniques can be construed to measure the dollar values of fisheries over time, given their inevitable role in providing recreational benefits and ecological services to future generations."

Some river protection advocates argue that natural systems like rivers and streams have intrinsic worth, making it unnecessary and even ethically reprehensible to express their value in monetary terms. Nevertheless, economic valuation of the resource can provide decision-makers, politicians, and the general public with a baseline estimate, from which discussions about other non-market values (e.g., ecological, cultural, and aesthetic) can begin.

"The point is not to dispute the status of ecosystems as having values outside the marketplace, to require economic proof that ecosystems are valuable to people, or to calculate their total worth like an asset that can be traded on a commodity exchange," explains Michael Toman of Resources for the Future, a Washington D.C.-based research group. "Instead, the point is to calculate the incremental value or cost of changes in the conditions of ecosystems to guide public decisions" (emphasis added).

Economic valuation used carefully and strategically can help Vermonters make decisions about the future of our lakes and rivers. By focusing on the tradeoffs associated with a proposed development project, economic valuation can help river protection advocates advance their efforts to protect the resource, mitigate impacts, and enhance water quality.

Kari Dolan is the Water Resources Project Manager for the NWF's Northeast Natural Resource Center.
Northeast Natural Resource Center of the National Wildlife Federation (NWF) recently began a study of the economic benefits of Vermont’s water-based recreation resources. The project is one of three components of the Vermont Water Resources Project, a collaborative effort with the Vermont Natural Resources Council and the Conservation Law Foundation.

NWF’s project will focus on the significance of individual rivers and river segments to the local and state economies. The project will also survey Vermont water-based businesses to tap their knowledge about how a public investment in natural resource quality may attract new business, and whether resource quality can be viewed as a type of “competitive advantage.”

“This project should help demonstrate how investing in river and lake protection affects the Vermont economy,” said Monty Fischer, Director of the NWF’s Northeast Natural Resource Center in Montpelier. “We suspect that certain types of water resource-based recreation, such as wild trout sport fishing or canoeing, are important but under-utilized market niches in the Vermont tourism economy. We need to better understand this niche, particularly as the state considers future economic, rural, and tourism development policies.”

**HOW TO VALUE NATURAL RESOURCES?**

Efforts to evaluate the economic benefits of water resource conservation fall into two fields. The first involves large-scale questions about economic policy, and about the usefulness of productivity (per gross state product), per capita, and other measures for guiding decisions about natural resource management. The second concerns the economic valuation of specific river segments or watersheds. The difference can be thought of as the economics of scale compared to the economics of place.

It is fair to say that economists’ tools in the latter field — determining the value of specific rivers or places — are more refined than their tools for understanding that portion of the total economy which is most directly dependent on natural resource quality.

And as the techniques for investigating the benefits and costs of water resource conservation evolve, difficult analytic questions emerge. One obstacle in looking at the role of nature-based “ecotourism” in the economy is determining what, in fact, constitutes a natural resource-based activity.

For example, one widely-used study, *The Green Index*, finds that Vermont ranks only 25th in its percentage of gross state product (6%) that is dependent on natural resources. However, according to the same report, Vermont ranks *third* in terms of per capita spending on tourism. Part of this discrepancy results from the fact that tourism is simply not counted as a natural resource-based activity, and thus falls out of productivity measures like gross state product.

Part of the problem also stems from the difficult task of apportioning economic activity to natural resources. It is easier to count fish netted, trees harvested, or tons of rock mined than to figure out how resource quality affects a person’s decision to drive to Vermont.

Conventional economic accounting methods also make little, if any, distinction between sustainable uses of natural resources and activities with significant environmental costs. For example, there is no distinction made between $1 million
Many farmers are finding that controlling NPS pollution is wise economically, as well as environmentally.

Changes Can Make Economic Sense
Successfully addressing the problem of agricultural NPS pollution will require a change in the way we think about land use. Most farmers are committed to wise land management; many of them are very interested in updating their practices to reflect the current state of knowledge about what can be done to decrease NPS pollution. These farmers are finding that controlling NPS pollution is wise economically, as well as environmentally.

"To be quite honest," Paul Saenger of Cream Hill Farm in Addison County recently wrote, "the primary focus has not been one of pollution, but rather whole-farm economics. Manure contains nutrients which can be used to replace commercial fertilizer."

In some cases, however, the initial costs of implementing the best possible management practices — especially of constructing pits for manure storage — are very high. When farmers cannot bear these costs, public funds should be made available to them. There are federal and state programs that provide farmers with financial help, along with technical assistance; but there are still cases where farmers must wait long periods of time to secure funds, or where funds are inadequate.

Both CLF and VNRC support efforts to increase the state funding that is available to help farmers implement these practices, and both organizations were pleased when the Vermont Legislature recently appropriated $350,000 to the Department of Agriculture for this purpose.

Non-point source water pollution is a very serious problem in Vermont — one which we must approach both aggressively and cooperatively. The issue of agricultural NPS pollution provides a valuable opportunity for the environmental and agricultural communities to work together, to improve the quality of water and to ensure the success of sustainable farming in the state of Vermont.

Kimberly Davis is Staff Scientist at the Conservation Law Foundation in Vermont.

Valuing Vermont’s Rivers
How Economic Analysis Can Contribute

By Kari Dolan,
Northeast Natural Resource Center,
National Wildlife Federation

Although the Green Mountains symbolize Vermont, the lakes, rivers, and streams that define these mountains are among the strongest examples we have of both environmental health and economic opportunity. Many aspects of the Vermont economy rely on the state’s water resources. Despite the publicized problems of mercury-contaminated fish or possible impacts from snowmaking water withdrawals, little is known about how changes in the character and quality of our water resources affect businesses or, conversely, provide new sources of income to Vermont.

How important to the Vermont economy is the conservation of rivers and streams? Given our reliance on tourism, where are our strategic opportunities to improve water quality and gain economic returns without sacrificing the intrinsic values of free-flowing rivers, quiet lakes, and the state’s overall aquatic health?

To answer some of these questions, the
shades of brown, that second graph depicts a time when 60 percent of Vermont’s municipalities discharged raw sewage into our waterways, 29 percent performed only primary treatment (skimming away solids), and a mere 11 percent had invested in secondary technology.

The subject isn’t a pretty one, but neither were many of the state’s waterways in those days not long past, when sewage and industrial effluent ran uncleaned into the stream flow.

Nor is it pretty to contemplate what would happen to Vermont’s and the nation’s rivers, lakes, and coastlines if changes to the Clean Water Act proposed by the U.S. House of Representatives should take effect.

“If the House bill is adopted into law, the condition of our water quality in Vermont and around the country will go back to the era before World War II,” said Christopher Kilian, Water Program Director for VNRC. “This is a Clean Water Act repeal. I don’t know how else to say it.”

A NATIONALWIDE SYSTEM OF PROTECTION

The achievements that states have made with the assistance of the Act, or under pressure to meet its precepts, are not irreversible. Municipalities need money for periodic upgrades and overhauls of their treatment plants. The Clean Water Act also sets goals for states to meet — deadlines to make their waters “swimmable and fishable,” which Vermont has yet to achieve in 20 percent of its rivers — and it carries nationwide expectations of a common level of water purity, so that no state can establish itself as a “pollution haven” to attract industries.

Other water concerns that can be addressed via the 23-year-old law are no less important than sewage treatment. The Act helps protect wetlands from development; it protects America’s coastlines; it enables states and localities to address the increasingly important issue of non-point source pollution (the diffuse runoff of contaminants — see this issue’s article “Getting to the Non-Point”); it funds special projects like Vermont’s and New York’s critical study of the Lake Champlain basin; and it provides power to the states in the permit process for federally approved hydroelectric projects.

Conceptually, its provisions extend beyond riverbeds and lake basins.

“Basically the Clean Water Act tried to take a broad-based look at the entire aquatic environment from a watershed basis,” said Kilian. “With the changes the House bill would bring, that approach would be completely out the window.”

VERMONT’S INVESTMENT IN CLEANUP

Though some states were dragged kicking and screaming in 1972 toward the responsibility to clean up their public waters, Vermont was not one of them.

“Vermont was already issuing permits for waste treatment plants through the Water Resources Board,” said David Clough, director of the ANR’s Water Quality Division, “and there was a stream classification system in place. The most significant thing it [the Act] did was to pump money into programs for sewage treatment plants in particular, and for program grants so we could apply more personnel and fiscal resources to getting those wastewaters cleaned up.”

In fact, Clough said, Vermont has spent some $80 billion of federal, state, and local funds in that effort since 1972. Typically, the federal share for constructing sewage treatment plants was 50 percent, while the state contributed around 35 percent and localities 10-15 percent.

In addition, the federal law made management and compliance rules simpler and more clear.

“Everybody had to build these plants, so [the agency] didn’t have to spin our wheels with recalcitrants. That was a real accelerator, getting away from the pipe-by-pipe arguments we had had.”

While Vermont has used federal matching funds to capitalize a revolving loan fund for municipal plant construction, that doesn’t mean the state will go unscathed if the Clean Water Act is gutted. Agency personnel who issue permits, monitor programs and bring enforcement actions are paid with federal assistance.

“We’d be lucky to hang on to what we’ve got, in my opinion, and it could well be worse than that,” said Clough. “If that happens, in a department as heavily subsidized as we are, there are going to be program and personnel cuts — and some big-time ones.”

Former Environmental Conservation Commissioner (1987 to 1989) Patrick Parenteau, now dean of Vermont Law School’s Environmental Law Center, said the impact of such cuts would be far-reaching.

“It’s critically important that the agency has ongoing support,” he said.

“Without that baseline monitoring of the waters of Vermont, the agency wouldn’t have any idea whether programs are working or not. If the EPA money dries up, it’s going to mean we don’t have the capability to determine what’s going on, and when to intervene, and what action is needed.”

CURRENT BILL CO-WRITTEN BY INDUSTRY

The threat to the Clean Water Act comes in the form of H.R. 961, which emerged from the House Transportation and Infrastructure Committee on April 6. The Sierra Club, the National Wildlife Federation, VNRC, and the U.S. Environmental Protection Agency have all complained that Committee Chairman Bud Shuster, R-Pa., brought industry representatives into the back rooms to draft the bill’s provisions in secret, while excluding the EPA and conservation groups.

Main provisions of what has been

“This is a Clean Water Act repeal. I don’t know how else to say it.”

CHRISTOPHER KILIAN, VNRC WATER PROGRAM DIRECTOR
“Our basic conclusion is that [passage of the House bill] probably would end the sport of duck hunting.”

DONALD MCKENZIE, CONSERVATION POLICY COORDINATOR FOR THE WILDLIFE MANAGEMENT INSTITUTE

The removal of clean water quality standards could pit states against one another to attract development or to avoid the costs of maintaining shared waterways. And requiring EPA to redefine all the nation’s wetlands within 18 months would, observers predict, lead to unscientific results and reap a bonanza for lawyers.

But it might be the effect on wetlands that most concerns conservationists. “Hundreds of thousands of acres of wetlands would be defined out of existence,” said VNRC’s Christopher Kilian.

They note the importance wetlands play in cleansing surface waters, mitigating flooding, and preserving habitat.

The National Wildlife Federation writes: “The lower 48 states have already lost over half of their original 220 million wetland acres, with devastating results. Floods occur more frequently and cause more damage. Polluted water flows unfiltered into lakes, streams, rivers, and groundwater. Fish and shellfish popula-

able. By most estimates, H.R. 961 would eliminate protection for half the wetlands remaining in the U.S., with small patches of wetlands the most vulnerable.

“Our basic conclusion,” Donald McKenzie, conservation policy coordinator for the institute, said in an interview, “is that passage of the House bill would probably end the sport of duck hunting.”

RESTARTING THE “ENDLESS ARGUMENTS”

Finally, the imposition of cost/benefit analyses for waste water treatment projects stands established policy on its ear.

“The cost-benefit provisions of your bill explicitly change the fundamental precepts of the Clean Water Act,” Robert Perciasape, EPA assistant administrator, wrote to Shuster on April 4. “The strength of the original (Act) was that it set aside endless arguments over exactly who should cut back exactly how much pollution ... Under this bill, EPA must affirmatively prove in court that rules and guidance ‘maximize net benefits to society.’”

He continued: “It is difficult to quantify all the benefits of keeping sewage off the streets, or keeping mercury, lead, and dioxin out of fish eaten by recreational and subsistence fishers.”

Yet the bill pretends to include significant benefits. Along with sweeping rule changes, it increases funding for a variety of Clean Water Act programs. (The funding provisions of the 1972 Act expired last
Sept. 30, and are due for reauthorization.)

Elizabeth Mundinger, of U.S. Rep. Bernard Sanders' Washington staff, noted that H.R. 961 actually increases President Clinton's $2 billion budget request for the federal loan fund for states to $2.5 billion and extends the fund to the year 2000. In Vermont, Clough, of the Water Quality Division, said that increase could reap an extra $10 million for the state agency.

The bill also creates a $500 million fund to help states deal with non-point source pollution. That, said Clough, "would beef up the state's ability to throw some resources at this thing."

But after patiently itemizing the funding benefits of the bill, Clough said: "Now, you gotta take all that with a big grain of salt."

Mundinger explained there are three steps in the budget process. First is the budget request; next is the authorization, which puts caps on the fund's spending capacity. Then there's the appropriation, where the money is actually allocated and sent to its intended recipients.

Given the budget-cutting mood in Congress, its demonstrable hostility toward environmental regulation, and the Unfunded Mandates bill - the first element of the Contract with America to make it into law - no one expects the funding provisions of H.R. 961 to see the light of day.

"They're able to claim they're increasing funding, but this is not true," said Mundinger, "because ultimately the funding comes from the Appropriations Committee. So, in terms of the Clean Water Act, one committee reduces regulations and ups funding, and another reduces the funding. The total is less funding and less regulation."

LOOKING TO THE SENATE FOR SANITY

If there is salvation from H.R. 961, it may lie in the U.S. Senate. By no means is the Senate a haven for conservationists (Sen. Larry Pressler, R-S.D., wrote a wetlands-assault bill himself last year). But Vermont's Republican Sen. James Jeffords has received a 100-percent rating from the League of Conservation Voters. And it was Sen. Patrick Leahy, D-Vt., who secured federal funding for the study of pollution sources into Lake Champlain.

"They've both been strong on water quality issues, and we're going to be urging them to be leaders in assuring that the Clean Water Act not be repealed, as the House has proposed," said VNRC's Kilian. "Instead, the Act should be strengthened to assure continued progress in restoring and protecting water quality."

Jeffords is said to be critical of several pieces of the legislation. He considers it weak on funding for non-point source pollution prevention, and he worries about giving states more flexibility to set their own standards.

"This would seriously modify, and in some people's opinions dramatically weaken, protection standards," said Jeffords staffer Ken Connelly.


Clough, who follows developments on the Act for Vermont's DEC, said the National Wetlands Management Association will submit a strike-all proposal to the Senate committee. Then the association will ask the Senate to consider a more supportive wetlands bill based on legislation authored in 1994 by Chafee himself.

Even if that fails, said Clough, the tactic might give Chafee the opportunity to bring his bill back as a kind of compromise. "They're hoping that one way or the other, maybe the House will listen to reason or that such a bill might see the light of day in the Senate."

Kilian isn't optimistic about the House listening to reason, and is concerned that House Senate bargaining would cripple an Act that ended an era when Americans swam unwittingly downstream of untreated municipal and industrial discharges.

"This is a big-business wish list for avoiding the costs of protecting the environment at the expense of the public," Kilian said. "Where do you start with negotiations like that?"

This summer will tell. Observers expect the Senate to delve into the matter during Washington's warmest months — just when citizens are flocking to the beaches, rivers, and ponds for a cool swim, casting their lines into Vermont's rivers and streams in search of a trout, or taking long drinks of the pure, refreshing water safeguarded, 'til now, by 1972's Clean Water Act.

Editor's update:

A POLLUTER’S GOLD MINE

What “Takings” Legislation Would Cost

BY WILL LINDNER

These are the findings of a study released in February that examines the potential effects of takings legislation introduced in the New Hampshire Legislature. Focusing on three communities in that state, the study forecast dire results: increases in annual town expenditures ranging from 21 to 118 percent; state agencies spending up to $2.7 million a year in compensations and in responding to claims.

The study’s methodology was conservative. RKG Associates Inc. assumed “takings” claims on only 2 percent of the vacant, developable land. And it considered just a few of the laws and ordinances that could generate takings claims. It did not factor in the potential costs of lawsuits brought by would-be developers seeking more than the municipality agreed to pay.

But its findings were disturbing enough — and on March 9, New Hampshire’s chastened State Senate defeated the bill by a resounding voice vote.

PAYING BUSINESS TO FOLLOW THE LAW

Yet takings proposals are cropping up all over the country, and Vermont is not immune. Since 1990, takings bills have been introduced in 43 states, with various versions passing in six. Government agencies in Idaho, Missouri, Tennessee, Utah, and West Virginia now must study their land-use regulations to determine whether they will result in legally defined “takings.” In Mississippi, the effect of a new law will be to require the state to pay timber harvesters for obeying established forestry regulations.

“It’s really a way, basically, to stymie towns from passing zoning laws, and federal and state agencies from enforcing laws that protect natural resources,” said Jim Shallow, VNRC’s Program Director for Forests, Wildlife, and Public Lands.

“In point of fact, this is largely a lawyers’ relief act.”

VERMONT ATTORNEY GENERAL
JEFFREY AMESTOT

If the costs to government agencies and taxpayers were not enough to discredit takings laws, the reversal of established legal doctrine should be. The Fifth Amendment to the U.S. Constitution dictates that “private property shall (not) be taken for public use without just compensation.” Historically, observers note, that has meant either a literal, physical taking of property by the government (for example, to build a highway), or regulatory impediments that reduce its value virtually to zero.

The Fifth Amendment has been the subject of interpretation by the U.S. Supreme Court at least since 1830, when Chief Justice John Marshall explicitly recognized the right of government to regulate private property in the public interest. Some 50 years later, Chief Justice Morrison Waite observed: “The government regulates the conduct of its citizens...
one towards another, and the manner in which each shall use his own property, when such regulation becomes necessary for the public good." The traditional setting in which to determine whether a government regulation operates for the public good has been the courtroom.

Yet that principle is cast aside by the Private Property Protection Act, as well as by laws proposed in state assemblies. It is replaced by a simple mathematical formula: Government must reimburse landowners if an agency action results in at least a 20 percent reduction in the speculative value of any portion of the land. No mention is made of public interest — nor is speculative value defined, leaving it open to the wildest fantasies of the landowner.

And corporations are invited to participate. Not coincidentally, Exxon, Du Pont, Boise Cascade, the National Cattlemen's Association, and the American Mining Congress are among those that lobbied the House of Representatives on behalf of the Act.

**AMESTOY SPEAKS OUT IN OPPOSITION**

The economic and legal ramifications of the Private Property Protection Act are reasons why Vermont's Republican attorney general, Jeffrey Amestoy, has been in the forefront of a bipartisan national movement to head off such legislation. Noting the unbounded potential for litigation inherent in takings legislation, Amestoy says, "In point of fact, this is largely a lawyers' relief act."

Amestoy has addressed the National Association of Attorneys General on the subject and has served on panels, written articles, and argued court cases against takings legislation for half a dozen years. "One can understand the level of frustration by a private property owner who feels he's been unfairly burdened by regulations," said Vermont's attorney general, "but it doesn't follow that we ought to jettison a century and a half of constitutional law."

Amestoy also anticipates an onerous burden on attorneys general. Generally, how much, the regulation would impact private property.

"What would we have to do, hire economists?" wondered John Hasen, an assistant attorney general in Amestoy's office. "I'm schooled in the law, (not) economic evaluation. I don't know where the money would come to pay for these kinds of things."

He adds: "I think the ultimate goal is to stop such regulations from ever taking effect."

For in fact, takings legislation would present government bodies — from the federal EPA to local zoning boards — with two unattractive alternatives: They could invest enormous amounts of time and money to evaluate takings claims on a case-by-case basis, possibly to the detriment of their own economic viability, or they could back off entirely from enforcement of environmental and other regulations.

**LOOKING TO LEAHY AND JEFFORDS**

In Vermont, takings bills have been filed with the Senate Judiciary and Government Operations committees, and with the House Judiciary and Natural Resources committees, said Stephen Holmes, VNRC Deputy Director for Policy. They received no attention during the 1995 session; but, Holmes said, "Next year we could find ourselves dealing with these issues, depending on the workload of the committees and the mood of the Legislature."

However, the important action on takings is expected to be in the U.S. Senate, which will consider the House bill this summer. Both Sens. Robert Dole (R-Kan.) and Phil Gramm (R-Tex.) have proposed takings legislation of their own. VNRC is looking to Vermont's Sens. James Jeffords and Patrick Leahy to provide wisdom to the Senate.

"They've both been opposed to this approach," said VNRC's Shallow. "We find Sen. Jeffords' consistent position very encouraging, given his role as a former attorney general in Vermont."

"The reasoning behind these takings regulations is immensely flawed," Shallow said, "because you're basically telling polluters you'll pay them not to pollute."

And you'll pay them with "the little guy's" money.

Will Lindner of Barre is a freelance writer and columnist for the Barre-Montpelier Times Argus. He writes frequently on environmental issues.
THE E-BOARD DID NOT ERR ON WAL-MART

BY DR. RICHARD O. BROOKS

This article was originally printed in the Vermont Business Magazine of March 1995. It is reprinted here by permission of the author, who is a professor at the Environmental Law Center of the Vermont Law School.

In December of last year, Vermont’s Environmental Board overturned a permit issued to Wal-Mart stores. The Board found that the applicant had failed to meet its burden of producing information necessary to make a decision under Criterion 9(A) (impact of growth) and 9(H) (scattered development). In addition, the applicant failed to supply sufficient information under Criterion 6 (impact on schools) and Criterion 7 (local government services). The Board explicitly invited the applicant to submit the necessary information to bolster its application.

The well-researched and well-documented Board decision has recently been criticized by David White, a real estate consultant (Vermont Business Magazine, January 1995). His critique has been distributed by the St. Albans Town Select Board.

The Select Board, in its cover letter, misleadingly states that the Board “refused to consider the town plan.” In fact, the Board could not consider the town plan under Act 250 (Criterion 10) as interpreted by the Supreme Court (Smith v. Winhall Planning Commission, 140 Vt. 178 [1981]), because no town plan was in effect on the date that the application was filed. Mr. White’s critique sought to make the following points:

1. The Wal-Mart decision has “sweeping impacts”;

2. The Board decision improperly invoked the 1973 findings of the Capability and Development Plan;
3. The decision erroneously interpreted “growth” in Act 250 to include not only population growth, but other types of growth;
4. The Board improperly defined “existing settlement” and “contiguous”;
5. The decision refused to face the existing reality of scattered commercial development.

Speaking bluntly, Mr. White is wrong in his summary of the law and seriously mistaken in his understanding of the policies lying behind Act 250. But his article raises issues which Vermont has refused to face — the issues of strip development and new scattered concentrations of commercial development, especially at highway exits.

DECISION HAD CLEAR PRECEDENTS

The Wal-Mart decision follows a series of decisions pertaining to shopping malls. Anyone who has read the Pyramid Mall (1978), the Waterbury Shopping Center (1991), Finard-Zamias (1990), and Wildlife Wonderland (1974) cases could hardly be surprised by the Wal-Mart decision. Unless we wish our Environmental Board to ignore its own precedents, we could not have expected a different decision.


In 1973, the Legislature was concerned about employing the broad findings of the Capability and Development Plan as criteria to be directly applied to evaluate specific proposals. The Environmental Board has been careful not to directly apply these findings. On the other hand, the Vermont Supreme Court has clearly established the importance of determining the meaning of statures in terms of their intent. The Board has properly construed the meaning of Act 250’s Criteria 9 by looking at these legislative findings, which were adopted by the Legislature along with the language of Criterion 9. Hence, Mr. White’s criticism about the Board’s mention of the Capability and Development Plan is incorrect.

Criterion 9(A) refers to “growth” and “rate of growth.” In 1973, both in Vermont and nationally, there was deep concern about ugly sprawl and the costs of that sprawl. Those costs are partly related to population growth, but added costs of fire, police, and maintenance referred to in Criterion 9(A) clearly refer to more than simply added numbers of people. Mr. White’s interpretation of growth as “population growth” would interpret Act 250 land development law as a “population control” law, a very controversial and mistaken interpretation! The entire field of land use control “growth management” is concerned not merely about population growth but growth in residential and commercial development.

Mr. White also mistakenly interprets Criterion 9(H) to be solely concerned about the costs of scattered development and not about sprawl. Criterion 9(H) is clearly directed at both preventing sprawl and preventing the costs of sprawl.
Vermonters are deeply concerned about sprawl and strip development and the many costs of that form of land use.

**Valuing Vermont's Mixed-Use Town Cores**

Mr. White seeks to justify sprawl by claiming that a gradual and desirable separation of residential and commercial use is taking place in Vermont. Such a claim is bad planning which ignores the tradition and reality of mixed-use villages in Vermont. While working for the Rouse Company in the new town of Columbia, Md., in the 1970's, we sought to create new mixed-use villages, and were regarded as leaders in the land-use planning field.

Norwich, where I live, has fostered a mixed-use village, expanding commercial development in the core and keeping its post office from "separating itself" to the periphery of town. The result is a vibrant, healthy, and attractive village.

Mr. White also suggests that the Board mistakenly interprets the term "contiguous" in 9(H) to include "continuous in size and use." I refer Mr. White to the Standard College Dictionary, which defines "contiguity" as "continuous series or mass." Behind this quibble over the definition of "contiguity" there is the important policy of having developments proportionately related to their surrounding context. I refer Mr. White and other readers to our Center's publication, *Vermont Townscape* (Norman Williams, et al.), which demonstrates the importance of proper scale in and near Vermont villages. Moreover, as the Vermont court in the Pyramid case has noted, size and use is relevant to the relative cost of the development to the existing community.

I was more than a little surprised that Mr. White, given his claimed background in conducting a "comprehensive strategy including historic preservation," would be so insensitive to protecting our village towns; I was astounded when I read that he believes that it would be horrible to call the Barre-Montpelier Road "scattered development." It is difficult to take seriously the statements of anyone who seeks to promote development like the Barre-Montpelier Road in Vermont.

**Effective Anti-Strip Controls Are Needed**

Although Mr. White has misinterpreted the language and policies of Act 250, his letter and the Wal-Mart decision call our attention to serious unresolved problems in Vermont. Strip and scattered development continues in Vermont, and neither local or regional zoning or planning with the careful environmental constraints of these areas.

A special problem is the presence of highway exits — a natural mode for growth. Many of these exits, such as Randolph, South Royalton, Colchester, St. Johnsbury, White River, and elsewhere, have prompted both strip developments or mall proposals as well as local rezoning for development. These natural growth areas are often planned and zoned for commercial development and represent an important past and future land tax resource for the towns.

Even if the state reforms the local property tax, commercial developments will take place near these exits. There is little evidence to date that towns are willing to carefully, proactively plan for these exit developments. Yet these exits present Vermont’s future face to the world. (Think about the New Jersey Turnpike and the face it presents to the world.) We Vermonters must find a way to plan for growth at these exits. These exits may well be important town centers in the next century!

I suggest that the state and towns join together in a program to intensively plan the exit lands of the turnpike. Sweden has accomplished this and attractive, properly scaled mixed-use communities have been built in proximity to the principal stops on its rail lines. This has been done practices nor Act 250 has been able to stop it. Unfortunately, the jurisdictional limitations of Act 250 limit the extent to which this law can control such development. Although our Center has proposed ways in which towns might control such development (see Niemczyk's "Managing Strip Development"), we can see how unsuccessful many Vermont towns have been. A systematic and focused state/local program is needed to foster proper land use controls for strip developments.

In his article, David White expresses love for Vermont villages, but somehow believes that Act 250 has nothing to do with protection of these villages or the creation of new ones. Act 250 can and does protect against selected land use abuses of existing villages. But new initiatives can help to create a new generation of well-planned villages.
The 1995 Legislature will probably be best remembered for its earliest adjournment in 10 years (April 21st), which contrasted starkly to 1994’s June 12th departure. Unfortunately, the session failed once again to yield a property tax reform bill.

As in 1994, VNRC prepared this session to defend Vermont’s environmental laws in an economy that still shows signs of sluggishness, and in a climate that favors job growth over protecting the environment. The new Legislature reflected this climate, as several incumbents with strong environmental voting records had failed to retain their seats.

Key committee assignments, particularly in the House, did not go well for the environment, noted Stephen Holmes, VNRC’s Deputy Director for Policy.

“We knew things were going to be tough this year, but they got a lot worse when the House Natural Resources and Energy Committee was split up and water resource issues were given to Fish and Wildlife,” Holmes said. “What was left of the environmental vote was now diluted between the two committees, and we had twice as much turf to cover.”

These factors — and heavy lobbying by anti-environmental forces — produced two bills that do not bode well for Vermont’s environment. “Although we fought hard against the snowmaking water withdrawal bill, and were able to beat it back to a rulemaking bill, it sets bad policy,” Holmes said. “At least we’ll have another shot at it this summer during Agency of Natural Resources rulemaking. The exemption of certain silt quarries operations from Act 250 was also difficult to swallow, and will add more pressure for similar changes to the law next year.”

On a more positive note, VNRC was pleased with the passage of the forest resources bill and the Governor’s veto of a bill that would have weakened Act 200. “Jim Shallow did a great job in helping to bring the forest bill along. We got a lot of what we were looking for,” Holmes said. “The Governor and the House hung tough on the Act 200 veto and sustaining it. That was a hard-fought victory.”

**WATER WITHDRAWALS FOR SNOWMAKING: A Dangerous Precedent**

One of the biggest disappointments of the 1995 session was the passage of a bill that directs the Secretary of the Agency of Natural Resources (ANR) to adopt rules governing the withdrawal of water for snowmaking at ski areas. The language in the final bill was derived from a draft prepared by the Dean Administration, which was accompanied by a damaging proposal for altering the ANR’s Flow Procedure. Both were negotiated in a closed-door deal with the Vermont Ski Areas Association, and were presented to the Legislature as a package to substitute for an even worse bill sponsored by the ski industry.

The bill that was passed, H. 509, establishes special treatment for the ski industry when the state evaluates private taking of the public’s waters. Granting this one industry a higher priority in statute sets a dangerous precedent: Snowmaking is the smallest of the several commercial water users, which also include hydroelectric power, industry, municipal water supply, and agriculture. Next year and beyond, the Legislature will have to contend with these other users’ demands for special treatment.

Another problem with the bill is that ski areas will be allowed to continue to draw down water from fragile upland streams to severe levels indefinitely, with no assurances that the impacts comply with water quality standards. This is a
dramatic policy shift, which essentially means that ski areas can now sit back and relax when it comes to improving stream flows, even when water quality is already degraded because of excessive withdrawals. Taken together with the proposed changes in ANR flow procedure, the bill creates a strong likelihood that there won’t be any deadlines for compliance with our water laws.

VNRC was joined in opposition to this bill by Vermont Trout Unlimited, the Vermont Sierra Club, the Conservation Law Foundation, the Vermont Federation of Sportsmen’s Clubs, the Connecticut River Watershed Council, and several other local angling associations. We intend to continue working together in the fight to protect the public’s waters this summer in the ANR rulemaking process.

**ACT 250:**
**Weakening Efforts Still Alive**

There were several attempts to weaken Act 250 this year. A bill that exempts most aspects of slate quarry operations passed. The legislation will allow slate quarries that existed before 1970 to continue operating with virtually no Act 250 regulation. “Ancillary activities” that involve crushing may be regulated if there are significant impacts under any of the 10 Act 250 criteria.

Some legislators wanted to see other dimensional stone quarries, such as granite and marble, exempted from Act 250 as well. This idea was rejected. However, a granite study committee was established as part of an economic development bill, so there may be new attempts next year to exempt granite and other industries.

A bill introduced in the House that would have removed aesthetics as an Act 250 criterion never made it out of committee. Also, bills weakening Act 250’s energy conservation criterion and exempting certain municipal road projects from the law were shelved until next year by the House Natural Resources Committee.

A host of other bills aimed at gutting Act 250 did not receive much attention. However, all of these bills are still alive and may be taken up in 1996.

One Act 250 bill that VNRC supported did pass. S. 200 encourages donations of conservation lands to the state by exempting them from Act 250 review. In the past, some small-scale developers and landowners were discouraged from donating conservation lands because the creation of additional lots for this purpose might have triggered Act 250.

**ACT 200:**
**Governor and House Hang Tough**

Act 200, Vermont’s growth management law that integrates municipal, regional, and state agency planning, this year survived another attempt to weaken it. Just as in 1994, the Legislature passed the same bill weakening the role of regional planning commissions in approving municipal plans, and Governor Dean once again vetoed it. This year the House sustained the Governor’s veto.

However, funding for planning is still a serious problem. Regional planning commissions will receive only $1 million next year, compared to $1.5 million in 1989; and planning money for communities has been completely eliminated.

One bright spot for planning was the Legislature’s decision to rededicate the property transfer tax to local and regional planning and the Housing and Conservation Trust Fund (H&CTF), beginning in 1997. The 1994 Legislature had “decoupled” the tax, which was first dedicated to planning and the H&CTF in 1988; it had used the money for the state’s General Fund, appropriating only a portion of the tax proceeds to those two programs.

**HOUSING AND CONSERVATION TRUST FUND:**
**Funding Cut**

The Housing & Conservation Trust Fund receives revenues from two sources: the Capital Construction Bill and a portion of the property transfer tax that is set aside for it. The Legislature cut the H&CTF’s appropriation in the Capital Construction Bill from $9 million in 1994 to $7 million this year, and allotted it $1.28 million from the property transfer tax — which is less than its share under the enabling legislation. However, the Fund should benefit by the rededication of the tax for planning, housing, and land conservation in 1997.

**PROPERTY TAX REFORM:**
**Opportunity Lost**

Property tax reform was derailed in the Senate Finance Committee, and with it went the opportunity to remove one of the major pressures causing the liquidation and fragmentation of Vermont’s forests and farms, as well as encouraging sprawl development. Four members of the committee — Senators Thomas Bahre, Fred Ehrlich, Jr., Sara Gear, and Matt Krauss, who were supported by Lt. Governor Barbara Snelling — refused to take up H. 351, thus denying the opportunity for the full Senate to debate the issue.

However, final negotiations over the budget kept property tax reform on the life support, as the legislators agreed to fund the Payment in Lieu of Taxes program (PIL) in exchange for a promise by the Senate to take up H. 351 next year.
exempted timber profits. Profits from timber harvested on parcels over 300 acres that are bought and sold within six years will now be subject to the land gains tax. Exempted are timber sales from land that is enrolled in the current use program or has an approved management plan.

The Forest Resources Advisory Council will be meeting throughout the summer and fall, and will submit a preliminary report to the Legislature next January.

**SUSTAINABLE JOBS FUND:**
*Linking Jobs & Ecology*

A Sustainable Jobs Fund was created this year as part of H. 508, an economic development bill. The fund will leverage federal and private foundation dollars; it will be available to businesses and nonprofit organizations, for projects that aim at the dual goals of creating quality jobs and protecting and conserving our natural and social environments. For example, companies that want to convert their industrial processes to use less toxic materials, or to establish a new market for recyclables, would be eligible.

**FOREST RESOURCES:**
*Some Positive Action*

The Legislature took a modest step forward in addressing forest harvesting practices in Vermont by passing S. 114, a bill that reactivates and expands the dormant Forest Resources Advisory Council (FRAC). The legislation charges FRAC with developing benchmarks for assessing forest sustainability using principles from the Northern Forest Lands Council.

A key ingredient of the bill recognizes the need to immediately address the issue of liquidation of timber from large forested parcels. Legislators turned to Vermont’s land gains tax, which has slowed the rate of land speculation, and they closed a loophole in the tax that had

It should give banks and prospective property owners more incentive to proceed with clean-up and redevelopment if they submit and follow plans approved by the Agency of Natural Resources.

A bill to review the process of reviewing and installing land-based septic systems, and to close the 10-acre loophole in the state subdivision regulations, received some attention, but action was postponed until next year.

**ENDANGERED SPECIES:**
*Assault Stays in Committee*

There was an attempt again this year to gut the Vermont Endangered Species Law. Many groups united to fight this ill-advised proposal, and it stayed in the Senate Natural Resources and Energy Committee. It is expected to receive more scrutiny next year.

**“TAKINGS” BILLS:**
*No Merit, No Progress*

The Legislature gave only cursory attention to several bills that would force either the state or municipalities to compensate landowners for reductions in property values through state regulatory actions or municipal land use regulations. Referred to as “takings” bills (property rights extremists argue that the government is “taking” their property through regulations) or “pay me not to pollute” bills, these are similar to parts of the Contract With America that would gut or severely hamper many of our federal environmental laws.

If adopted, these bills would create enormous new costs for the taxpayer and would add mountains of red tape to the regulatory process. For more on this issue, see the article “A Polluter’s Gold Mine” in this Vermont Environmental Report.

**WASTE MANAGEMENT:**
*Creating an Incentive*

One of the last bills that passed the 1995 Legislature will create a program to encourage the redevelopment of contaminated properties. The measure is designed to limit the liability of investors who want to revitalize old industrial sites that have been contaminated with hazardous wastes.

**FEES FOR WATER USE:**
*Action Postponed*

Action on a bill that would have imposed a tax on withdrawal of waters of the state and on hydroelectric diversions of water was postponed until next year.
Vermonters Celebrate the 25th Anniversary of Earth Day and Act 250

On April 21st, more than 250 citizens braved a brisk, early-spring rain shower to pay tribute to Act 250, Vermont's uniquely democratic tool for development planning and environmental protection.

A number of citizens and leaders — among them Senator Dick McCormack (who was master of ceremonies), Art Gibb, Senator Elizabeth Ready, Nancy Bell, Richard Brooks, Jane Campbell, and Mathew Rubin — were on hand to provide insights into what has worked so well with the law and where challenges remain. Children danced with their umbrellas to the rhythms of Banjo Dan and the Mid-Nite Plowboys while many others huddled inside the tents, learning about state conservation activities from a variety of groups and enjoying snacks offered by Vermont businesses.

By implementing Act 250, Vermont has taken and held a leadership role in environmental care for 25 years. You need not look far outside the state to see the negative effects of poorly planned developments and resource use. Indeed, we live in a special place.

We thank everyone who joined together to celebrate Act 250; Patrick Berry and Tom Gilbert, who organized the event; cosponsors Vermont Businesses for Social Responsibility and Ben & Jerry's Homemade; and a number of Vermonters who helped, and who are listed above.

Thank you for Contributing to Our Act 250 and Earth Day Celebration!

Nancy Bell
Patrick Berry
Prof. Dick Brooks
Robert & Dorothy Burbank
Art Gibb
Elisabeth Holmes
Heidemarie Heiss Holmes
Andy Johnson
Zanny Klein
Sen. Dick McCormack
Brendan & Kyle McNary
Sen. Elizabeth Ready
Mathew Rubin
Emily Sloan
Abby Suskin
Butternut Mountain Farm
Cold Hollow Cider Mill
Pink Shutter Flower Shop
Shelburne Farms
The Pork Schop of Vermont
Vermont Butter and Cheese

Heads Up on Act 250 Changes

The Vermont Environmental Board has proposed rule changes that will make it more difficult for individuals and citizen groups to participate in Act 250 hearings and will limit citizen appeal rights. Other changes would give more power to the Agency of Natural Resources and take away review authority from the Act 250 process, weakening substantive review of some Act 250 criteria, as well as public input.

These are serious proposed changes. Please find out more about them, and attend one of four hearings scheduled for:

- **June 28: Montpelier**, Capital Plaza, 7-9 p.m.
- **July 12: Manchester**, Manchester Elementary School Multipurpose Room, 2nd floor, 4-6 p.m.
- **July 26: Burlington**, Health Dept., Cherry Street, Bldg. 108, Room 2B, 1-3 p.m.

Written comment will be received until August 4. You can get a complete copy of the rule changes by writing the Vermont Environmental Board, 58 State St., Drawer 20, Montpelier 05620-3201; or call 828-3309.

For more information and updates, contact Steve Holmes at VNRC.

"Fathers" of Act 250 Art Gibb and Andrew Johnson (Gibb Commission chair and commission member, respectively), reunite to slice cakes at the Act's 25th anniversary party.
SNOWMAKING WATER WITHDRAWAL RULES

Late this summer (tentatively in mid-August), the Agency of Natural Resources will convene hearings on the very controversial rules governing water withdrawal for snowmaking by ski areas from rivers and streams. VNRC opposed the legislation passed this year that set the stage for the rule making; please see this issue's article "The 1995 Legislature and the Environment."

Our staff will closely monitor and participate in the hearings. Please contact Christopher Kilian or Steve Holmes for more information and details.

VERMONT LAGS ON DATA AND FISH WARNING

Concern over mercury contamination of freshwater fish continues to grow across our country. How much mercury is too much?

In the coming months, the U.S. EPA and the federal Food and Drug Administration are expected to lower the mercury reference dose, which is the amount of a substance that people can safely consume in their lifetime without risk. New York state health officials recommend that women of childbearing age and children under the age of 15 eat no fish from Lake Champlain. Still, Vermont health officials have only issued a warning on Walleye consumption, and have recommended limits on lake trout longer than 25 inches because of contamination by PCBs.

This summer Vermont will attempt to conduct a broad survey of fish in lakes and ponds, to determine mercury "hot spots."

LEGISLATURE BACKS COMMUTER TRAIN; A CRITICAL HEARING SET FOR JUNE 21

The Vermont Legislature has given a crucial green light to a proposed new passenger rail service between Charlotte and Burlington, with its approval of $4.65 million in capital expenditures for the project for fiscal 1996. These funds, which are 80 percent federal and 20 percent state dollars, are specifically devoted to infrastructure improvements along the Vermont railway, as a first stage in the development of a passenger service for the line.

The proposed passenger train has been the subject of some debate, both within the Legislature and in Chittenden County. Communities along the line have had mixed reaction to the project. While the Burlington City Council and the Charlotte Selectboard both unanimously endorsed it, Shelburne and South Burlington are awaiting more information before they take a stance.

A critical public hearing on the new train service will be held by the Chittenden County Metropolitan Planning Organization (MPO) on Wednesday, June 21, at 3 p.m. in the MPO's office at 66 Pearl Street, Essex Junction. Project supporters in the county are encouraged to attend this hearing, as the MPO must approve the project to receive federal funding.

The project also needs a line item within the federal budget and supporters are urging to contact representatives in congress, especially Senators Leahy and Jeffords, who are on the Senate Appropriations Committee. Federal appropriations will be debated in Congress this summer.

For more information, or to become involved in the project, please contact Tom Gilbert at VNRC or Sue Minter at 223-3305.

CONGRATULATIONS TO ALL!

Brendan Whittaker, VNRC's Northern Forest Project Director, has been named a 1995 Fellow at the Franklin Fairbanks Museum and Planetarium in St. Johnsbury.

Whittaker also received New England-wide accolades for his conservation achievements when he received the 1994 Joe Yerka Award from the New England Outdoor Writers Association.

Vermont Senator Patrick J. Leahy was recently honored by the Vermont Audubon Council for his environmental leadership with the Art Gibb award.

Jill and Christopher Kilian (Christopher is VNRC's Water Program Director and Staff Attorney) welcomed their first child, Rebecca Elizabeth, born on March 11.

Paul Bruhm, Executive Director of the Preservation Trust of Vermont and Board member of VNRC, has received the 1995 Nathan Harris Award for his work on the economic vitality of the Burlington central business district.
Carole Gaudet, VNRC legislative intern from the Environmental Law Center of the Vermont Law School, survived the rigors of VNRC and the Vermont Bar exam.

Patrick Berry, VNRC intern, has been accepted at the University of Montana, where he will pursue a graduate program in environmental studies (and enjoy legendary trout streams).

We extend our gratitude to:

Morgan Gooden, legal intern from the Vermont Law School;
Charlotte Karr, data-entry volunteer for the Conservation Network; and
Anne Humes Perceau, volunteer writer for this issue of the VER.
Any VNRC members interested in volunteering should call Tom Gilbert, our outreach coordinator.

Welcome to VNRC, Stacie

VNRC extends a warm welcome to Stacie McNary, who joined the staff on February 1, 1995, as the new office manager. Stacie’s lifetime experiences as an office manager in the U.S. Army (stationed in Germany), a detective, and a world-class mom for two lively boys, Brendan and Kyle, have provided her with the skills (and courage) to take over the helm of VNRC’s office management needs. Many people have come to know Stacie as “the smiling voice” who greets you when you call our offices. Please stop by to welcome her in person.

Book Reviews

New & Recommended on the Northern Forest

Two new books on the Northern Forest, both by long-time friends and colleagues of VNRC, come together as excellent complements to one another.

Christopher Klyza and Stephen Trombulak (a VNRC Board member), both faculty at Middlebury College, are editors of (and writers in) The Future of the Northern Forest (Hanover, N.H.: University Press of New England, 1994, paperback).

The book is a compendium of 16 different writers’ viewpoints on the forest, ranging through forestry, ecology, economy, history and futures. Most contributors will be known to many VNRC members; Northern Forest Project Director Brendan Whittaker, for example, writes of forest human communities from his standpoint as chair of the Selectboard of Brunswick, Vermont (population 100, one-half of the town owned by Champion International Paper Corporation).


In this volume the writers take long, in-depth looks at people of the forest. In Vermont, for example, it’s the Moffatt family of the Northeast Kingdom — loggers, farmers, Christmas Tree growers. Through their eyes, the reader can see the complexity, frustration, and rugged beauty of life in the Northern Forest.

Read together, both books will bring a good knowledge and feel for a unique region and a way of life whose continuation has many unknowns and challenges ahead. (See also Vermont Environmental Report, Fall 1994.)

Speaking directly to those challenges and opportunities, the timing of these two books coincides with completion of the 37 Final Recommendations to Congress and four governors by the Northern Forest Lands Council (NFLC) — which has since ceased to exist, having sunsetting last fall by federal law. Now that the job of implementation and follow-through is at hand, VNRC members and supporters need to be involved.

The recognition is dawning on the public, forest industry, land speculators, and some large-scale investors that what we really have in these 26 million acres of forest, waters, and mountains, which stretch east-west from northern Maine to the Lake Ontario region, is a world-class natural resource that is unique on earth today (see the Atlantic Monthly, April 1995). But we must be vigilant and active.
Here in Vermont, after much legislative struggle, we have the beginning of a forest practices act, and the start of our Forest Roundtable effort — this only after a significant part of southern Essex County’s northern forest area has been destroyed for years to come.

But a corner has certainly been turned, and one of the milestones marking this is the awareness that these two valuable new books on the Great Northern Forest will bring.

**Wetlands — Share the Environment With Your Family**

The harmonic notes of the marshes and ponds in our neighborhoods play like a fine piece of music in the children’s book *Wetlands*, by Ronald Rood (New York: HarperCollins Publishers, 1994, hard cover). You and your children will newly appreciate the intricately connected lives that dance together in the depths and shallows of your favorite pond and in the sky just above the shimmering, mysterious waters. Backyard natural science is rarely so much fun.

Vermont resident and former teacher Rood was honored for *Wetlands* by the American Museum of Natural History on April 3, which included the new book among 10 on The John Burroughs List of Nature Books for Young Readers for 1994.

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BARBARA AND RICHARD ALEXANDER

After living in the Northeast Kingdom for many years, Barbara and Richard Alexander thought they were sufficiently informed about issues affecting the Northern Forest. Then in 1993, after attending a Conservation Commission workshop on the topic, they realized, to their dismay, their lack of knowledge about the complexity of forest issues.

Instead of being overwhelmed by the enormity of the problems, the Alexanders have been galvanized into action. Both are motivated by a deep sense of responsibility for the forest’s health and a respect for its intrinsic value.

Any conversation with Barbara will eventually turn to forest issues; her car is stocked with literature about the forest, which she often passes out as these discussions come to an end. She believes that educating the public is one of the most effective ways to help the future of the forest, and that if she is not well-informed her ability to affect others will be compromised.

In addition to attending workshops and public hearings, the Alexanders constantly read about forest issues to provide a solid grasp of facts to back up their positions. Barbara has analyzed testimony for the Northern Forest Lands Council, and helped put together its citizen’s agenda. This summer she is developing a Northern Forest curriculum for the Girl Scouts.

According to Barbara, an effective activist can recognize a good opportunity to promote one’s cause and can seize the moment. Recently while testifying before the House Natural Resources Committee on clear-cutting in Vermont, she had the idea of taking the legislators up in the air and showing them the extent of the problem. Within days she had five legislators in a plane flying over the Northern Forest.

“All were overwhelmed by the forest’s fragmentation, and not prepared for what they saw,” Barbara said. A photographer and journalist were also invited to cover the flight for a local paper and to document the clear-cutting.

Unfortunately, these tactics do not always work. Richard spoke of his frustration after discovering that the flyover was not enough to sway legislators in the face of timber industry lobbyists. Yet for Barbara, it is the people she meets as a result of her conservation efforts that keep her going, renewing her spirit and connection with the Earth. She stressed that all levels of activism are important, and that individuals can make a difference.

KAREN COFFEY

Karen Coffey, another environmentalist from the Northeast Kingdom, spent most of her childhood outdoors and remembers fishing in Lake Ontario when she could see through the clear water. Her activist career began later, as an adult on Long Island, when she protested against nuclear energy; but she has witnessed the degradation of Lake Ontario’s water and fish population, and she points to her childhood experiences as a motivation for her activism.

Karen worked in business for many years, volunteering for environmental causes in her spare time before realizing that she wanted to devote all of her energy to conservation efforts. She went back to school, got a degree in Environmental Science, and has been a full-time activist ever since.

She feels you can’t push anyone into activism. “People will find their own issues to get angry enough to do something about — it’s a process they must go through,” she said.

A year ago January, Karen started the Lake Memphremagog Watershed Association in response to a Vermont Quebec Working Group study. Most of the watershed is contained in Vermont, but
the greater part of the lake is in Canada, creating a need for international cooperation in its management. Karen enjoys working with watershed issues because they incorporate those of a larger ecosystem, and they reinforce the idea that everything is connected.

Karen continues to be involved in other issues as well. She has hosted living room meetings for VNRC’s Northern Forest Project, and has been involved with the Northern Forest Lands Council. She is the only female board member of Northeast Kingdom Trout Unlimited, and she has worked extensively with the state on designating the Clyde River as an Outstanding Water Resource. She has been an environmental educator at the Montshire Science Museum and enjoys the opportunity to affect people of all ages, opening their eyes to the world of nature.

She finds it a continuing challenge to get people to understand the issues, but stays involved because she knows she is doing something beneficial for the Earth, especially in her own backyard.

“You need to focus on the moment, the day,” she said, “and not be overwhelmed.”

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**LINK UP WITH THE CONSERVATION NETWORK!**

Join a team of informed individuals who make a difference for environmental protection.

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- [ ] Water Resources
- [ ] Act 250/Project Regulation
- [ ] Wildlife
- [ ] Property Tax
- [ ] Land Protection
- [ ] Land Use Planning
- [ ] Other __________________________

- [ ] Yes, I would call my legislator or participate in a phone tree.
- [ ] Yes, I would write letters to editors and to decision-makers.
- [ ] Yes, I would testify at public hearings, meet with legislators, or talk with the press.
- [ ] Yes, I would organize other members of my community to become active on these issues.

Please return this form to:

The Conservation Network, VNRC, 9 Bailey Avenue, Montpelier, VT 05602.

For more information, call Tom Gilbert at (802) 223-2328.

E-mail: VNRC@together.org

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Taking Back Our Forests
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The Evolution of the Property Rights Movement: Have the Green Mountain Boys Been Supplanted by Regulars in Suits?
The Rights and Responsibilities of Land Ownership
The Lucas Decision: Lion or Mouse?

GROWTH CENTERS: CAN WE MAKE THEM WORK FOR VERMONT? WINTER, 1992

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Cleaning Up the Clean Water Act: Prevent, Protect, and Enforce
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ACT 250 SPRING, 1993

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A Look Back at the Genesis Of Vermont's Premier Environmental Law
Vermont Environmentalism

ALLOCATING VERMONT'S NATURAL RESOURCES FALL, 1993

Resource Allocation: Environmental Success Breeds Difficult Challenges
A Community Divided: Human Faces behind the Sugarbush Dispute

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Business and the Environment: A Partnership that Makes Sense
Redefining the Debate: What Preserves and Protects, Enriches
We Seem To Be at a Crossroads in this State: Roundtable Discussion Finds Business and the Environment Have Much in Common

THE NORTHEAST KINGDOM FALL, 1994

The Northeast Kingdom (Reconsidered)
The Clyde: A River of the Kingdom
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RESOURCES AVAILABLE FROM VNRC

MADE IN VERMONT: THE DIVIDENDS OF ACT 250
(VNRC, 1993)

VNRC presents a 20 minute video-tape showing Act 250's impact, in the words of Vermonters who have experiences with the law. A diverse range of business people, including Jerry Greenfield of Ben & Jerry's Homemade, former Vermont Development Secretary Elbert Moulton, and banker Zoe Erdman present their views on Act 250's importance to Vermont's economy. In addition, citizens who have protected their homes and businesses through Act 250 speak about the importance of public participation. Available on a 2-week loan basis with $2.90 for postage.

ACT 250: A POSITIVE ECONOMIC FORCE FOR VERMONT
(VNRC, 1992)

This paper sets out the relevant evidence to support the claim Act 250 is a valuable economic asset. It explores the fallacy of the "negative impact theory" and the nature and extent of the positive relationship between Act 250 and Vermont's economy. $3.00 plus $1.50 postage and handling.