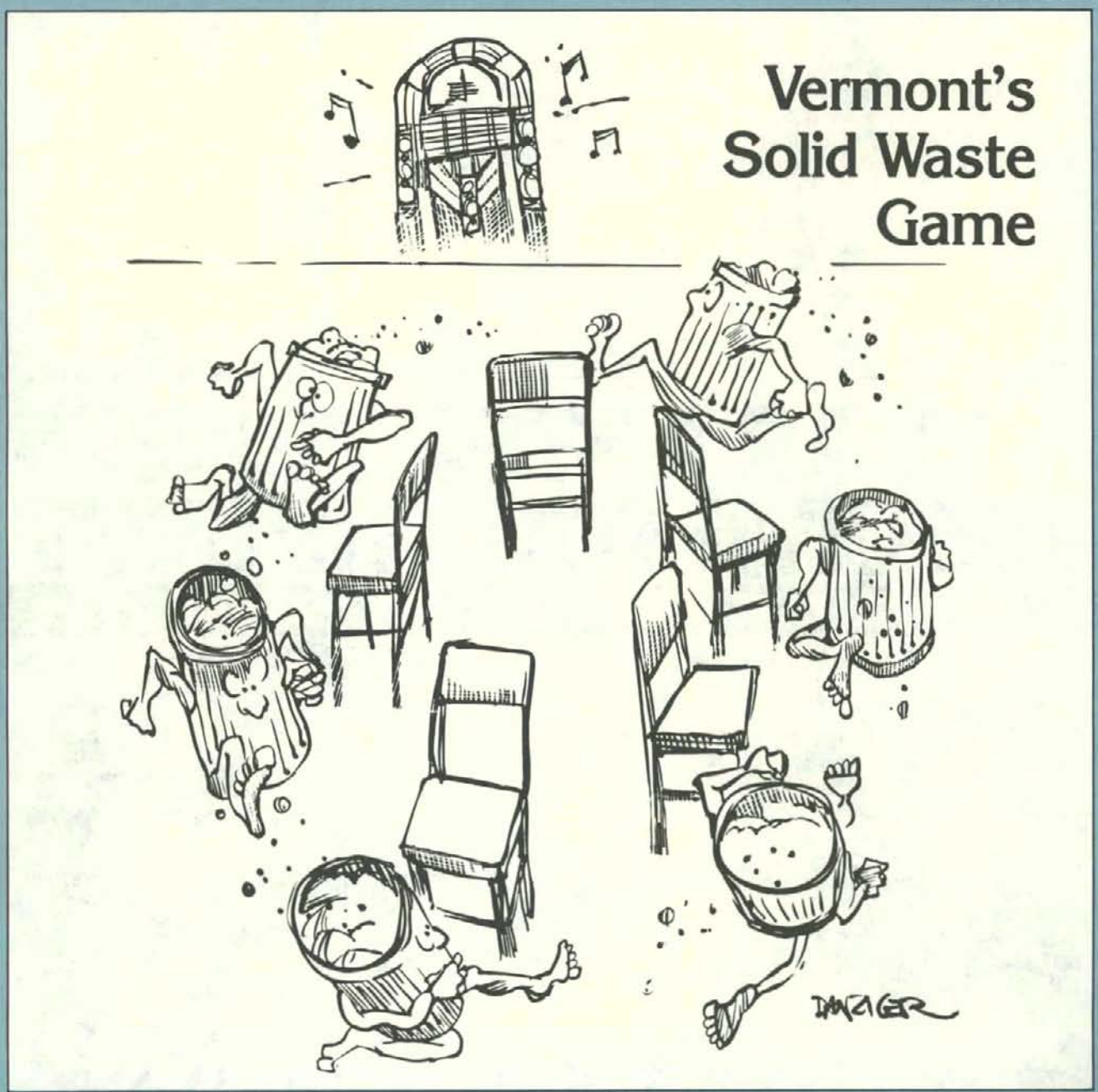
Vermont Environmental REPORT

Vermont Natural Resources Council

Winter 1986

Vermont's Solid Waste Game



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Winter, 1986

Published by the Vermont Natural Resources Council

Special Section on Solid Waste:
Vermont's Solid Waste Game—Do We Have to Have Losers?

Credits

Cover illustration by Jeff Danziger. This illustration first appeared in the *Sunday Rutland Herald/ Times Argus.*

Illustration page 3 by Sherry Frazer. No one appreciates winter—in a chair by the woodstove—quite as visibly as a warm cat.

Illustration page 12 by Ed Jalbert.

Masthead design by Laughing Bear Associates.

The Vermont Natural Resources Council is a non-profit environmental organization working to promote the wise use of Vermont's natural resources. The Council does legislative lobbying, research, and educational work on a variety of issues including forestry, agriculture, water, energy, hazardous wastes, and growth management.

VNRC is the Vermont affiliate of the National Wildlife Federation.

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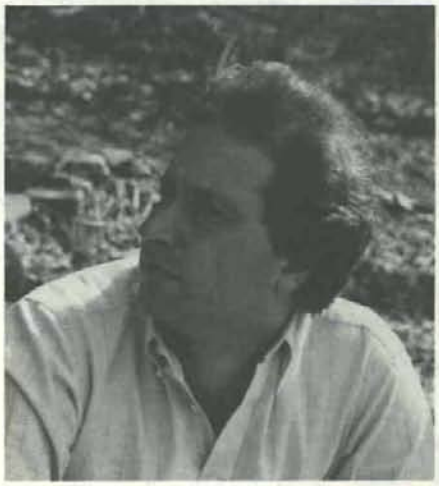
FROM THE FRONT OFFICE



In a way these are the best of times at the Council: the largest membership in our 23 year history; clear possibilities to enhance Vermont's basic environmental laws and regulations; and immediate opportunity for wide-ranging environmental education programs. Yet it could also be the worst of times: we often struggle to meet our basic annual budget; constantly we are challenging those who could take advantage of, or weaken, legislative pronouncements; and only a fraction of those living in Vermont can be reached by our educational efforts.

As the recently appointed Executive Director, I am proud to be associated with the Council in these times of difficult choices and complex issues. We are equipped as a staff to deal with a broad range of initiatives, and support from the Board of Directors is strong and consistent.

One of my first public events was at the Environmental Law Conference held in late 1985 in Manchester. I quoted from a remarkable 1909 speech made in Burlington by British Ambassador Bryce on the occasion of the 300th anniversary of the discovery of Lake Champlain. Let me share with you the remarks made then, which to me are just as relevant today—77 years later!

"No other part of eastern America can compare with Vermont for the varied charms of a wild and romantic nature. And as wealth increases in other parts of the country, as the gigantic cities of the eastern States grow still vaster, as population thickens in the agricultural and manufacturing parts of Ohio and Pennsylvania, and Indiana and Illinois, one may foresee a time when the love of nature and the love of recreation and health will draw more and more of the population of those over-crowded cities and States to seek the delights of nature in these spots where nature shows at her loveliest. I would need the imagination of a poet or the pen of a real estate agent to figure out what the value of property will become...here half a century hence; but this I can say, that I do believe that all eastern America will come more and more to value this region of mountains and lakes, as the place in which relief will have to be sought from the constantly growing strain and stress of our modern life. And anyone who values nature and loves nature, and who foresees such a future as that for this part of America, cannot refrain from taking this opportunity of begging you to do all you can to safeguard and preserve those beauties and charms of nature with which you have been endowed in such liberal measure. Do not suffer any of those charms to be lost by any want of foresight on your part now!"

So it is with this resolve that I begin my stay with the Council. I look forward to a solid and prosperous organization in the years ahead.

Monty Fischer

R. Montgomery Fischer
Executive Director

VERMONT PERSPECTIVE

Nuclear Waste Dump—Not Here, But Maybe Next Door

Most Vermonters breathed a sigh of relief when the U.S. Department of Energy announced in early January that Vermont was not among the twelve eastern sites chosen for further study as a potential high-level nuclear waste repository. Vermont's active citizens, organizers and state and congressional leadership deserve much credit for raising important geological, safety and social questions about the Vermont sites.

Although the dump will not be sited in "our backyard," one site in New Hampshire and two in Maine chosen for further study are still well within "the neighborhood." VNRC, VPIRG, the Connecticut River Watershed Council and many concerned citizens and leaders will remain active in supporting our New England neighbors, as the sites undergo evaluation in the next five years. Transportation of the high-level waste on Vermont's interstate highways or railways will undoubtedly be an issue, and municipal ordinances and resolutions against such transport will be organized. Information will be available from VPIRG (43 State St., Montpelier, VT 05602) or from VNRC. SC

Underground Tank Regulations Being Written

Last year's successful passage of state legislation to inventory and monitor underground petrochemical storage tanks has required some comprehensive regulatory drafting by Agency of Environmental Conservation officials. VNRC and industry representatives were included in an advisory committee formed to assist the Department of Waste Management on regulatory language before the final rulemaking process

begins.

"We have completed work on a preliminary draft to be submitted to the Advisory Committee in January," said Paul VanHollebecke, Underground Storage Tank Coordinator for the AEC. "The legislation calls for the regulations to be in effect by July 1, 1986, and we hope to start the rulemaking process by March." The Committee has addressed specific regulatory issues including the format of notification forms, leak detection and inventory monitoring techniques, and new permitting procedures. EP

VNRC/Killington Lawsuit Gets Preliminary Hearing

In November, VNRC, the Connecticut River Watershed Council, and the Natural Resources Defense Council of Washington D.C. appeared in federal District Court in Burlington against the Sunrise Group and Killington Ltd. for preliminary motions on violations of the federal Clean Water Act.

The issue—whether the developers can dispose of treated sewage effluent at three spray irrigation sites without a discharge permit—is virtually the same issue that VNRC and CRWC *successfully* appealed before the Water Resources Board last fall. The Board's decision, which prompted a landslide of controversy in the development community, has heightened the call for changes in Vermont's water pollution control regulations.

The federal lawsuit is currently in the tedium of legal procedure. In attempting to obtain information from the developers in the "discovery" process, conservationists have been met with motions to have the case dismissed on the grounds that it is irrelevant. So far, the court has rejected the developer's procedural manueverings and required them to furnish our attorneys with requests for evidence. EP

Mini-Superfund Sees Action

Unlike the underground tanks law, the mini-superfund legislation—enacted last year to respond to emergency spills of hazardous wastes—requires little regulatory rule making. The fund is, in fact, already being utilized, such as in the recent referral to the Attorney General's office over pollution problems at the Lyndonville landfill.

According to Steve Maier, Assistant Director of the Department of Waste Management, "The only regulation the Superfund bill calls for is compensation for third-party claims against the fund—such as the costs of locating a new water supply—and a more precise definition of what constitutes an emergency situation."

Emergency powers for the fund must be spelled out so as to draw the line between an "emergency" clean up versus a more protracted one. "Generally we use the fund to clean up real emergencies, or for investigations of uncontrolled hazardous waste sites to determine responsibility for remedial action," said Maier. The Department could easily exhaust its fund, were it forced to handle long-term clean ups, which are legally the polluters' responsibility.

The Department of Waste Management has recently begun to receive monies under the new waste-end tax, and expects that the first quarter of fiscal year '85-'86 will generate approximately $40,000 for the fund. EP

Good News for Town Planning

Two publications and a video cassette from the Vermont Department of Housing and Community Affairs will bring much needed help to anyone interested in planning at the local level.

Capital Budget and Programming, a color video cassette program with an accompanying workbook, was written by Elizabeth Humstone and Jeffrey Squires. Designed for municipal officials and distributed through regional planning commissions, the program gives towns step-by-step instructions for anticipating major expenses and planning budgets accordingly.

Besides encouraging fiscal responsibility and facilities planning, the capital budget process helps municipalities look ahead to, and plan for, growth management issues.

The Act 250 Handbook for Local Officials will be welcomed by all towns that are not aware of the clout they hold in the Act 250 process, or are not sure where they can step in.

Written by Peg Garland, former Chair of Vermont's Environmental Board, the handbook is aimed at municipal officials and other interested citizens, and explains, in layperson's language, the Act 250 process at the local level.

An Annotated List of Planning and Zoning Materials by Cheryl K. Fischer lists books, publications, and even audio visual resources available to Vermonters interested in land use planning and growth management. Covering many subjects from agriculture and water supply to recreation, this listing will be of interest to volunteers on local planning commissions and Boards of Adjustment, and any citizens seeking more information on planning and zoning.

Both publications, as well as the video program, are available by contacting Mary McKearin at the Department of Housing and Community Affairs, 109 State Street, Montpelier, Vermont 05602. SC

Hazardous Air Regulations Get Extension

Over the past year and a half, Vermont's Department of Air Pollution Control has been working to update and improve the state's regulatory program for controlling emittants of dangerous pollutants into our airstream and our lungs. These regulations were detailed in "What's That You're Breathing?" (*V.E.R.*, Fall 1985) in anticipation that the final rulemaking process would begin in late 1985. Since then, as a result of a comprehensive review and critique from toxicologist Dr. Edward Calabrese at the University of Massachusetts, the state has requested an independent team of consultants to review the regulations and respond to points raised by Calabrese. According to Agency officials, there is no fixed time schedule for adoption of the hazardous air regulations and inquiries and comments are still welcome. EP

OWL TV is for Whooo? For Kids

Have your kids noticed what's new on public television? OWL TV, a weekly show designed to encourage interest and delight in the natural sciences, made its debut in November. The ten-week series aired this fall is being repeated this winter.

OWL TV is based on Canada's 10-year old, widely popular *OWL* monthly magazine, which has over one million 8 to 14-year-old readers worldwide. Produced by the Young Naturalist Foundation and the National Audubon Society, the program is designed to develop environmental awareness with a fast-moving, activity-oriented approach. Check your paper for PBS listings. SC

Beauty and the Queech

Vermont's Environmental Board is taking another look at what is beautiful or beastly at the Quechee Lakes Corporation development in Hartford.

The Board agreed in December to reconsider its early November ruling—a decision that allowed construction to go forward on several Quechee Lakes projects that had been challenged under the aesthetics criterion of Act 250.

The November ruling had come under heavy criticism from original opponents of the projects, from the Agency of Environmental Conservation, and from others, for what many considered to be a "two wrongs make a right" rule for interpreting aesthetic impact. According to the November decision, the Quechee Lakes Corporation could go ahead with the development of a new hotel, conference center, and condominiums at the 6000-acre resort—on the grounds that the area has already seen much development, and the additional building there would have an adverse, but not undue impact.

Under Criterion 8 of Act 250, a permit may not be granted if the project is determined to "have an undue adverse impact on the scenic or natural beauty of the area, aesthetics, historic sites or rare and irreplaceable natural areas." Two years ago, the Board had interpreted the term "undue" to mean "exceeding what is appropriate or normal" and "adverse" to mean "unfavorable, opposed, hostile." The November Quechee ruling went far beyond this interpretation, however, stating that a project, when viewed as a whole, must be "offensive or shocking to the sensibilities of the average person" in the absence of a clearly defined community standard such as a town plan or historic district.

According to Robert O'Donnell of Woodstock, the attorney for the Quechee landowners who opposed the projects, the November ruling set up aesthetics standards that would be too difficult to violate. The ruling also seemed to be in direct conflict with the original Quechee Lakes concept that "the view you have today will be the view you have tomorrow."

At least two bills now before the legislature also seek to address aesthetic protection in Vermont. S. 69, introduced last February by Senators Hoff and Carter, would give towns explicit statutory authority to protect historic, aesthetic, and scenic resources; legal tools available to towns include municipal and regional planning, the use of rights less than fee, and conservation and preservation rights and interests.

H. 449, recently introduced by Representatives Fortna and Kimack, would directly amend Criterion 8 to include a list of factors which would "constitute some evidence that the development or subdivision in question will not have an undue adverse impact" on scenic or natural beauty or aesthetics. Although the likelihood of action on H. 449 is unclear, S. 69 is expected to receive action in the Senate Energy and Natural Resources Committee early in the 1986 session.

P. Lavigne

Peter Lavigne is a former VNRC Red Arnold intern, and now directs Massachusetts' Westport River Defense Fund.

Time to Talk Forests

Opinions are starting to come in on the Green Mountain National Forest Service's Proposed Plan, released in December. (See "Planning Vermont's Forests—It's Time to Speak," *V.E.R.* Fall 1985.) With the public comment period lasting only until March 31, the time to voice your opinions on the long-term future of Vermont's national forest land is *now*.

Highlights of the plan include: continuation of present timber harvesting levels, with less emphasis on pulp and woodchip production; conversion to more uneven-aged stands, with increased production of "old growth" timber and larger, higher quality saw logs; and less emphasis on improved roads and clearcutting, with more on public access, backcountry recreation and non-game wildlife species. Also of note is the Proposed Plan's warning against the effects of acid rain.

No new ski areas will be allowed in the GMNF, according to the plan. Existing ski areas may be expanded on the property, however.

Unabridged copies of the lengthy proposal and the accompanying Draft Environmental Impact Statement, as well as the more readable "Highlights of the Proposed Plan," are available in many libraries and town offices. They may also be obtained by writing to the GMNF, PO Box 519, Rutland, VT 05701. SC

What's A Visibility Plan?

In July of 1985, with little fanfare, air quality planners at the Department of Air Pollution Control unveiled a significant new strategy for confronting Vermont's acid rain crisis. Billed as the "Implementation Plan for the Protection of Visibility in the State of Vermont," the plan focuses on a new, yet-untested section of the Clean Air Act to enforce reductions of airborne sulfates and particulates which create acid rain and affect visibility in sensitive wilderness areas. Under section 169A of the Act, a national goal is established for "the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas [such as the Lye Brook Wilderness area in Vermont] in which impairment results from manmade air pollution." The section also requires that "reasonable progress" be made in achieving this goal although no specific time frame is required.

Visibility impairment would, under section 169A, be addressed in two phases. The first would deal with "plume blight," or those sources easily traced to a specific point. The second phase, dealing with "regional haze," is of greater concern to Vermont.

The Visibility Plan focuses on the regional haze problem by identifying all areas above 2500' in elevation as "sensitive areas." The plan also calls for an air quality standard of two milligrams per cubic meter to meet the national goal—which translates into an approximate 50% reduction of Vermont sulfate pollution over a ten year period.

But there is a catch. The EPA has to *accept* the plan before it can be implemented. Air Quality planners at Vermont's AEC are currently revising the plan for final submission; the latest word is that chances for the plan's approval are 50-50. At a hearing last fall, VNRC applauded the plan and noted, "This plan is a single, cohesive document for controlling visibility impairment and air quality in Vermont, and it could give us new legal powers for enforcement in the acid rain problem." EP

Solid Waste: A Time for State Leadership

By Leigh Seddon

When I first moved to Vermont in 1970, the town dump was still a statewide institution. Our town dump, where I spent Saturday mornings scavenging bathtubs and related accessories to refit our old house, was perched high on a bank overlooking a small stream that flowed through town. Looking down the bank, through the smoldering haze, you could see old tires, washing machines and other unidentifiable artifacts lying in the stream. I often wondered what incredible things I might find down there at the bottom of the dump, but the thought of descending the steep bank of recently bulldozed garbage kept my curiosity in check.

The town dump was a venerable and important social institution, but also a decidedly dirty and hazardous one. In 1972, the state banned open dumping and instituted the new era of sanitary landfills. Regional landfills were seen as the only way to halt the gross air and water pollution being caused by open dumping and burning. For us that meant a 30-mile trip to the nearest landfill, so we promptly turned to composting our organic garbage, burning paper products, and taking the leftover "indigestibles" up to the landfill once a month. Vermont had embarked on a new path that promised to solve our solid waste problems and had awakened Vermonters to the true costs of solid waste disposal.

A New Crisis In Solid Waste

Now, over a decade into the sanitary landfill era, we see those same problems of air and water pollution coming back to haunt us. The Burlington landfill is sending an estimated 50,000 gallons a day of contaminated water into the soils around it and will have to be closed eventually. The Highgate landfill was closed in June of this year for the same reasons, and now the solid waste from that region is trucked halfway across the state to a landfill in Moretown. Attempts to open a new landfill in the area have failed because of the difficulty of finding a site that is both environmentally sound and politically feasible.

Now the [solid waste] problem is a little less visible, but no less real, and the consequences of our actions much more far reaching.

As space at our landfills runs out and others are closed because of groundwater contamination, municipalities have turned to waste incineration as the only feasible solution. The Rutland Solid Waste District is now trying to build a $20 million waste incinerator that will burn the solid waste from surrounding communities and generate electricity. Unfortunately, the plant will also generate air pollution, toxic ash and wastewater. Because the air pollutants include dioxins, one of the most deadly chemical families known, the status of the air quality permit and the plant's construction is currently in question. (See the article on the following pages addressing Rutland's Vicon plant.)

Looking for Long-Term Solutions

There are three essential questions that we must ask when considering solutions to the solid waste problem: (1) Is the solution we are proposing **sustainable** over the long-run, or are we just dumping our problems on our children and grandchildren as we have done in the past? (2) Is the solution the **least costly** alternative for society as a whole when we consider the monetary, environmental and social costs involved? (3) Does the solution provide for future **flexibility** to meet our changing needs and the requirements of our economic system?

When we examine landfills and waste incineration in light of these questions, we see that these two methods of disposal are not ultimate solutions. Because suitable landfill space is so hard to find, it has not been a sustainable solution even in the short run. Environmentally-sound landfills are almost prohibitively expensive by today's standards and will become more expensive each year as land becomes more valuable and environmental controls are enforced. It is not a flexible solution either, since it is a single response to a very complex problem. We need a variety of

paths for dealing with a waste stream that is composed of valuable materials for recycling as well as hazardous waste.

Waste incineration comes a step closer to meeting our three criteria, but again falls far short on two important points. Incineration might be part of a long-term solution if we could guarantee that it would not cause environmental problems. Because our unseparated waste stream contains plastics that would be burned, it appears certain that plants such as the Rutland incinerator will produce dioxins. These chemicals, in doses of parts per billion, are known to cause cancer and birth defects in laboratory animals. There is now a grim debate about how much dioxin is acceptable—whether we should be willing to accept 1 death per 100,000 population or 1 death per million. A deadly chemical lottery is being played so we can continue to drink out of plastic bottles and enjoy our foam-wrapped fast food.

Because of the large expense involved in building a waste incinerator, long-term contracts guaranteeing certain volumes of solid waste are required. Rutland has signed a 26-year contract with the company building the plant that not only requires a minimum volume of solid waste, but also allows the company unilaterally to pick the haulers and set tipping fees. Such contracts clearly limit future options for solid waste management and may well interfere with any future attempts at solid waste reduction and recycling.

Fortunately, waste incineration is not the only option we currently have. Many states, including Vermont, have looked into the concept of resource recovery. A comprehensive resource recovery program looks at the solid waste problem from all perspectives and tailors its actions accordingly. In general, a resource recovery program targets four main methods to reduce, process and finally dispose of solid waste.

When you buy two apples that sit on a plastic tray encased in plastic wrap, you are probably paying as much for the packaging as you are for the apples... Source reduction is truly the one method that can save us money both in our purchases and disposal of products.

First, and most important, is **source reduction.** This means preventing our resources from becoming solid waste in the first place. We are all familiar with the excessive packaging that goes on in food stores. When you buy two apples that sit on a plastic tray encased in plastic wrap, you are probably paying as much for the packaging as you are for the apples.

Vermont's bottle bill is an excellent example of a source reduction measure that has dramatically affected beverage packaging in the state. Now most soft drink bottles are routinely refilled rather than dumped. This has meant lower prices for consumers, less litter and lower solid waste disposal costs. Source reduction is truly the one method that can save us money both in our purchases and disposal of products.

The second method employed in resource recovery is **recycling.** Up to 35 percent of our solid waste could be recycled right now, providing raw materials for the paper, plastic, glass and metal fabricating industries. In the future, as unrecyclables are removed from our waste stream by source reduction, the percentage of recyclables could be as high as 70 percent. The markets for recycled products are currently poor because of the inflated value of the U.S. dollar, as well as the wave of bottle bills that has suddenly produced a leap in the amount of glass culled for sale. But these markets will stabilize and then grow as industries see a reliable source of recycled materials and the price of virgin resources escalates.

Recycling has the potential to reclaim a much higher fraction of the energy inherent in our waste stream than direct incineration, and can do it at a substantially lower cost. For example, making cans from recycled aluminum only requires one-tenth of the energy that is required to make them from virgin materials. Thus the use of recyclables in our production processes can save much more energy than they could by simply being burned. This is true for metals, glass, paper and plastics.

The third step of resource recovery is to **extract the energy or nutrients** from the unrecyclable fraction of our solid waste stream. This can be done by a waste incinerator or through composting of the material. Because this waste would not contain plastics or metals, these processes can be made non-polluting. The availability of these processes also lends flexibility to the whole program. If there is a sudden glut of newsprint and the price drops, it could be shipped to the incinerator for energy extraction.

The final step is the **ultimate disposal** for what we cannot eliminate, recycle, burn, compost or otherwise reuse. For this we will still need landfills. But through a comprehensive program we could reduce the volume of solid waste to 1 percent of its original size and eliminate many of the hazardous substances originally present.

The Necessity of State Leadership

A statewide resource recovery program holds the promise of getting us out of our present solid waste dilemma, but there are several impediments that must be overcome first.

The implementation of a comprehensive resource recovery program

will require state leadership and participation. Traditionally, the state has only regulated the environmental and health impacts of disposal, placing the responsibility for disposing of solid waste on municipalities. But solid waste is a statewide, if not a national, problem. Only state government can address the two key initiatives of source reduction and recycling.

Municipalities and even solid waste districts cannot by themselves achieve significant source reduction of solid waste. They do not have the size or authority to demand changes in consumer packaging from national suppliers. Can you imagine the chaos and confusion, if each region of the state had its own bottle bill?

Municipalities are also too small to reach and influence the major recycling markets. Recycling has failed in the past because it was carried out on a small, usually volunteer, basis. Major industries cannot afford to change their production processes to take advantage of recycled materials until they are certain that materials will be consistently available at a competitive price. Only a statewide effort will generate enough properly-prepared recyclables to convince industry to sign long-term contracts and begin to alter their processes to accept more of these materials. The glass industry, for example, currently only uses about 30 percent recycled glass, but it could use up to 90 percent if it felt sure of the market. A state presence in recycling could also attract new industry to Vermont that processes and uses recycled material.

The absence of state leadership in promoting a more comprehensive program of resource recovery has left municipalities little choice but to select incineration as their main method of disposal. It is ironic that the state was more active in recycling in the early 1970's, with the passage of the bottle bill and the development of a plan for statewide resource recovery facilities, than it is today. If state leadership had not faltered after the open dumps were closed and the garbage was out-of-sight and out-of-mind, we might not be staring down the barrel of the waste incinerators being built today.

Legislative Initiatives

Because we once again face a crisis in solid waste disposal, it is a topic of debate in the state legislature this year. I am optimistic that both the Kunin administration and the legislature will see the necessity for a strong state role in promoting resource recovery before a de facto policy of waste incineration develops.

Legislative action must address several key issues in implementing a statewide resource recovery program. First, a resource recovery plan must be developed that spells out the specifics of recovery plant siting, transfer stations, final landfills and the coordinated operation of the entire system. This would logically be done by the Agency of Environmental Conservation in cooperation with the Agency of Development and Community Affairs.

Only a statewide effort will generate enough properly-prepared recyclables to convince industry to sign long-term contracts and begin to alter their processes to accept more of these materials.

Secondly, the Legislature must provide funds to finance the development of a statewide resource recovery system. These funds could come from bonding that is paid off by landfill fees or taxes on solid waste. The revenues from the sale of recycled materials and municipal user fees would pay for the operation of the system.

The state must also work with municipalities to pass source separation ordinances. Recycling is only possible if solid waste is separated into three different categories.

Finally, the state must look to specific pieces of legislation that will enhance source reduction and recycling. A ban on composite plastic packaging that cannot be recycled, a state paper-purchasing policy that favors recycled paper and an education program in our schools are all small actions that when put together will make resource recovery work in Vermont.

Certain Vermont legislators have taken the lead this year by introducing bills that address many of these very issues. (An article on these recycling bills appears later in this issue.) It is imperative that these bills be given immediate and serious attention.

Vermont is at another crossroads in its management of solid waste, similar to that of the early 1970's. Now the problem is a little less visible, but no less real, and the consequences of our actions much more far reaching. A state resource recovery program has the potential for solving the problems of solid waste pollution, lack of landfill space and the escalating cost of waste disposal that are now faced by all communities. But it can only do so if action is taken promptly, before more communities are forced to commit themselves to waste incineration. Our options are open, but not for long.

Leigh Seddon's commentary on natural resource issues has appeared frequently on the pages of the Vermont Environmental Report. *Leigh chairs VNRC's Energy Committee, and is the president of Solar Works of Vermont.*

The bulk of this commentary, as well as Jeff Danziger's illustrations, first appeared in the Sunday Rutland Herald/Times Argus.

Vicon:

Rutland's Burning Question

The *Rutland Herald* called it "the burning question": where should Rutland County's and indeed, Vermont's, solid waste end up? Is incineration the answer? The Rutland County Solid Waste District (RCSWD) was formed in the spring of 1980 to look at this very question. Six years later, their answer continues to add fuel to Vermont's already-heated solid waste debate.

Clearly, something has to be done. Vermont's sanitary landfills—many of questionable "sanitation" to begin with—are rapidly filling up (see graph in following article). Local governments, run primarily by volunteers, are now attempting to find the money, expertise, and creative energy to solve our solid waste problems. Rutland is not alone in its study of the incineration solution; other communities, including Barre, Montpelier and Burlington, are also looking at the potential of waste incineration.

At the time that RCSWD and its predecessors recommended a waste-to-energy facility, the idea was overwhelmingly approved by the community. Indeed, a system that would convert garbage into useable energy sounded like an ideal solution. Eager to improve their tax base, Rutland worked to get the plant sited in the city; and a contract with Vicon Inc. of Butler, New Jersey and Pittsfield, Mass. was signed on September 19, 1982.

Twenty-five towns in the District agreed to provide Vicon with a minimum of 30,000 tons of waste per year, paying a tipping fee of $16.50 per ton (subject to increase). If the District falls short of supplying the amount of waste called for, they have agreed to pay Vicon for the cost of the lost energy.

"We can't lose sight of the fact that right now—today—we are facing a crisis in solid waste that needs a solution."

James Dohrman, RCSWD

Burning this refuse plus that of some two dozen surrounding towns that have since shown interest, the plant would produce upwards of seven megawatts of electricity hourly. Vicon purchased landfills in Sunderland and Bristol for disposal of the ash; the Sunderland site has been certified for this use, and certification of the Bristol facility is pending.

Hot Health Questions

It wasn't until early 1984 that citizens in southern Vermont began to hear—and ask questions—about the potential health hazards of waste-to-energy incinerators.

Public reaction soon warmed, however, as questions continued to be raised about the plant site (near a school, and in a valley that has already been shown to have air pollution problems), and about the health risks of potential emissions and products of the incineration process, which include ash, acid gas, metals, and a list of chemicals generally referred to as dioxins and furans.

While citizens and municipal officials examined the practical and economic issues of incineration, they left health and environmental issues largely up to the state. Municipalities are unequipped to address many of the tough technical health questions surrounding the plants; but as it turns out, Vermont's state agencies have been frustrated by similar problems.

As an electrical generating facility, a resource recovery plant such as Vicon's is exempt from Vermont's Act 250 review. But the controversy around Rutland's plant has revealed severe problems with alternate state environmental and health review systems. Vermont's Agency of Environmental Conservation (AEC),

Above: Experts field questions from an animated audience at the Forum on Resource Recovery Facilities, sponsored in November by the Rutland Board of Aldermen and Vermont Law School. Speakers from left to right are: Dr. Paul Connett, St. Lawrence U.; Dr. David Lipsky, Dynamic Corp.; Dr. Llewellyn Clark, Vicon Recovery Systems; Dr. Kay H. Jones, Roy F. Weston Co.; and Dr. Barry Commoner, Queens College. At far right is moderator Geoffrey Peters, Esq., New England Law School. Photo by Peter Lavigne.

Department of Health, Public Service Board and others have struggled with a lack of interdepartmental coordination, as well as with a lack of expertise in the newly-emerging research on incinerator pollutants.

According to the panel of experts at Rutland's Forum on Resource Recovery Facilities in November, research on dioxins is emerging very rapidly—too rapidly, according to some, to make a favorable judgment on waste incinerators. At this point, scientists are not even certain how dioxins in plastics are released, or whether they are synthesized, during incineration.

Dioxins are extremely poisonous synthetic chemicals capable of producing chronic health effects even in the small quantities emitted from most incineration processes. Quoting several recent studies, chemist Dr. Paul Connett told the forum that dioxin builds up in human fatty tissues and can even be transmitted through mothers' milk. According to Connett, dioxin has *already* accumulated to the acceptable safety limit in most of the general population.

Dr. Barry Commoner, a prominent conservationist, also spoke against the incinerators at the Rutland forum. Dioxins are primarily prevalent when plastics are burned, Commoner said, and added that recent evidence shows that controlling the quality of combustion may not eliminate dioxins. Without source separation and strict input controls, Commoner said that eliminating dioxins from incinerator output is unlikely.

At the same forum, however, other experts presented new evidence supportive of incineration. Dr. Kay H. Jones of Roy F. Weston Co. presented his recent study, yet to be reviewed, showing that the Vicon plant now operating in Pittsfield Mass. had the lowest dioxin emissions of any facility tested in the country.

Strengthening Standards

Alarmed by new and conflicting reports on potential health hazards of incineration, but also acutely aware of the problems with their overburdened landfill system, Rutland area residents have argued the incineration issue heatedly.

Actions by opponents of the plant included the Rutland Board of Aldermen's unsuccessful attempt to revoke the company's building permit, and finally culminated in a special November election on whether the city should remain in the RCSWD. By a 1208 to 794 margin, Rutland voted to remain in the District—an outcome viewed by some as a "vote of confidence" in the plant or in the state's ability to monitor its health effects.

The state's intention to keep tabs on those effects in the future was formalized with the announcement of a report on the potential health effects of resource recovery plants. Ordered by Governor Madeleine Kunin, the report was released in early December by the Departments of Health and Water Resources.

While citizens and municipal officials examined the practical and economic issues of incineration, they left health and environmental issues largely up to the state.

Although the state issued the Rutland plant an air quality permit in March of 1984 (amended this winter to reduce acid gas emissions), that permit will now be toughened further. As a result of the report, the state will establish new standards for total dioxin, furan and acid gas emissions, based on their probability of causing additional cancers and other health risks. The state's new standards are now under peer review and are expected to be released this spring.

Vicon's sister plant in Pittsfield, Mass. is currently being tested in a joint effort of several states and the American Society of Mechanical Engineers. Their study is scheduled for completion by mid-March, and if results show that the Pittsfield plant cannot meet Vermont's new standards, the state will assume that the yet-unfinished Rutland plant will also fail; the state has said that under these circumstances, Rutland's air quality permit would be revoked and the plant would not be allowed to operate.

All sides of the Vicon controversy do not agree on the likelihood of the plant's meeting the emission standards. According to RCSWD's engineer and manager James Dohrman, however, industry officials are "confident that we will meet the standards." With the foundation already in place, Rutland plant construction goes on; much to the RCSWD's and Vicon's frustration, however, construction continues at the company's own risk.

Questions Still Smolder

Even with Vicon's health questions temporarily on the back burner, waste-to-energy plants continue to cause some warm exchanges. Senator Flossie Robillard (D-Rutland) has introduced a bill to set up an environmental health determination process for certain permitting cases such as Vicon's; her bill, S.250, would "strengthen state accountability and credibility, which were diminished," she said, by state handling of the Vicon case.

Many environmentalists still question whether waste-to-energy plants, which demand high amounts of waste in order to be economical, will rule out future recycling efforts. According to Dr. Llewellyn Clark, Vicon Vice President, industry officials are willing to cooperate with municipalities' recycling projects. Clark is skeptical that a recycling effort would be successful enough to significantly affect waste flow; but if municipalities could not meet the facility's demand for waste, Clark told the Rutland forum audience, "We'd just find [the waste] somewhere else."

Dr. Paul Connett was quick to point out, however, that this aspect of resource recovery still assumes, even necessitates, high volumes of waste—an assumption that conservationists are working to dissolve.

"If I could climb into a time machine and go maybe twenty years into the future," says RCSWD's Dohrman, "I'd like to see most of these plants shut down. Recycling *is* our ultimate answer," he continues. "But we can't lose sight of the fact that right now—today—we are facing a crisis in solid waste that needs a solution." SC

Steps to Recycling

State Leaders Are Proposing Moves Toward Statewide Recycling

Our extremely successful bottle bill, now over ten years old and a veritable way of life with Vermonters, is proof that there is a "will" to recycle in Vermont. With our small, scattered population and poor financial support, however, Vermonters have had a tough time finding the "way" to full-scale household solid waste recycling.

Many commercial businesses in Vermont have seen the advantages of recycling for years: retail outlets will source-separate their paper and boxes, not only because they can sell the recyclables, but also to avoid the cost of rubbish removal. Large-scale scrap metal businesses also thrive.

A handful of municipalities are starting to incorporate recycling efforts into their solid waste plans. Castleton has a receptacle for newspapers and cardboard at their waste drop-off site, and a special Recycling Task Force in Burlington is now considering a city-run program.

Many active citizens around the state have organized volunteer household waste recycling efforts, some very successfully. But all across Vermont, recycling groups are frustrated with small-scale, volunteer-run recycling realities.

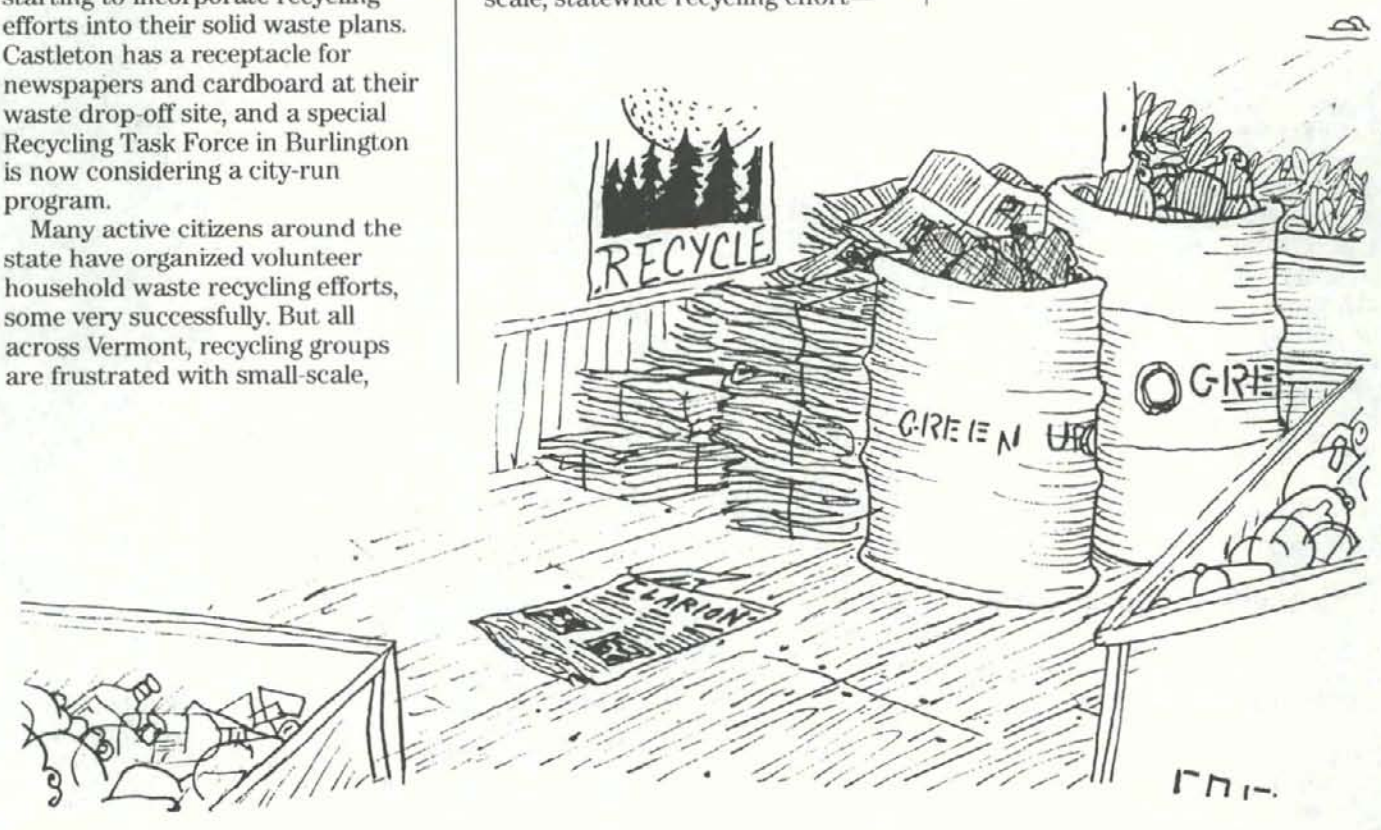
Recycling enthusiasts argue that recycling makes a tremendous energy and resource savings. Advocates complain that while landfills and waste-to-energy incinerators take their toll on both our wallets and our environment, we unfairly insist that recycling efforts turn a quick proft before we consider them. Meanwhile, most recycling experts agree that having a consistent, well-supported recycling program would increase the feasibility of ensuring properly-sorted, high quality recyclable waste—thus greatly increasing marketability of the recyclables.

One possible answer lies in a full-scale, statewide recycling effort—such as the one that would be encouraged by this year's proposed recycling legislation.

New Life for Old Laws

Sponsored by Representative Curt McCormack (D-Rutland) and several others, legislation proposed in the House would breathe new life into existing, but dormant, solid waste statutes. An Agency of Environmental Conservation (AEC) solid waste management plan that is currently mandated would, under the bill, be revised every five years. The plan would consider source reduction, recycling, composting, and other alternatives.

Questionable packaging practices would be taken to task under the new solid waste plan. With an eye toward non-biodegradable, non-recyclable, voluminous, and potentially toxic solid waste, the AEC would set up a packaging evaluation system. Whether disposed of in a



landfill or in an incineration system, the packaging would be analyzed with the health and environmental criteria outlined in the bill. The AEC would then recommend legislative action—possibly including an outright Vermont ban on some packaging materials.

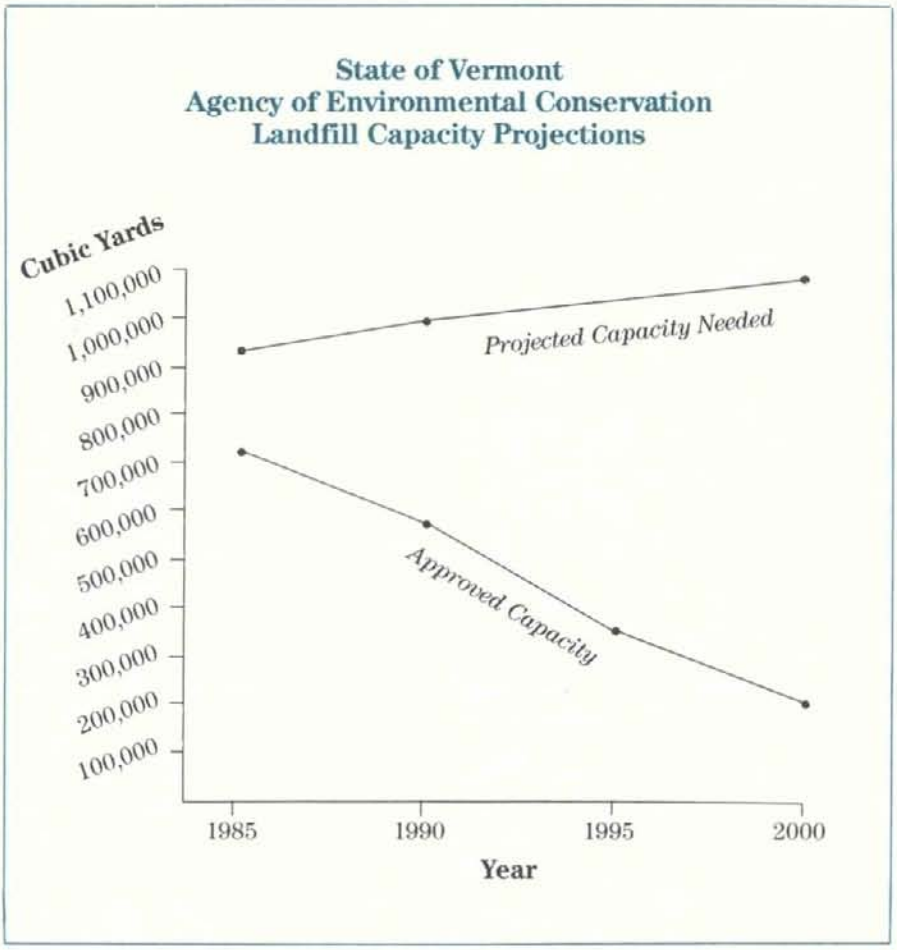
Also key to the bill is a mandate for 20-year municipal solid waste management plans, which would give due consideration to recycling alternatives. Technical assistance for many solid waste procedures would be provided by the AEC. Along these same lines, no solid waste treatment or disposal facility would be certified by the AEC until applicants had also considered recycling alternatives.

According to sponsor McCormack, the bill's major contribution is in these *assurances* that recycling options will be considered. "The true costs of safely disposing of waste are not reflected in the prices we are currently paying," he emphasizes. As our landfills fill up, and if municipalities are mandated to study *all* of the alternatives, says McCormack, they will probably be convinced of the advantages of recycling. Major recycling efforts and recycling facilities would, he hopes, be soon to follow.

Bans and Credits

The bill does include one ban of its own: that of the sale of non-recyclable "brick pack" packaging (small containers now commonly used for juices). Additionally, the bill sets up state procurement policies and a government recycling plan, to ensure that the state makes every effort to recycle its waste and purchase recycled goods. Also included in the bill is a tax credit for certain recycling equipment.

Early drafts of the bill carried potentially cumbersome price tags ($1 million bonding authority for a pilot recycling facility, and a tax on landfills to fund a $1 million municipal recycling grant program); but at press time, the bill's appropriation remained small: $35,000, primarily for one new AEC staff position. If legislative, agency and citizen support for new solid waste initiatives is strong, however, these or other innovative changes may appear in the bill.



Graph adapted from an August 5, 1985 memorandum to the Vermont Commissioner of Water Resources from the Division of Waste Management. The memo also noted, "Planning and the implementation of alternatives is essential...it is important that the public be aware that contaminants are leaching from municipal solid waste disposal facilities, including certified facilities, and are impacting surface and groundwater."

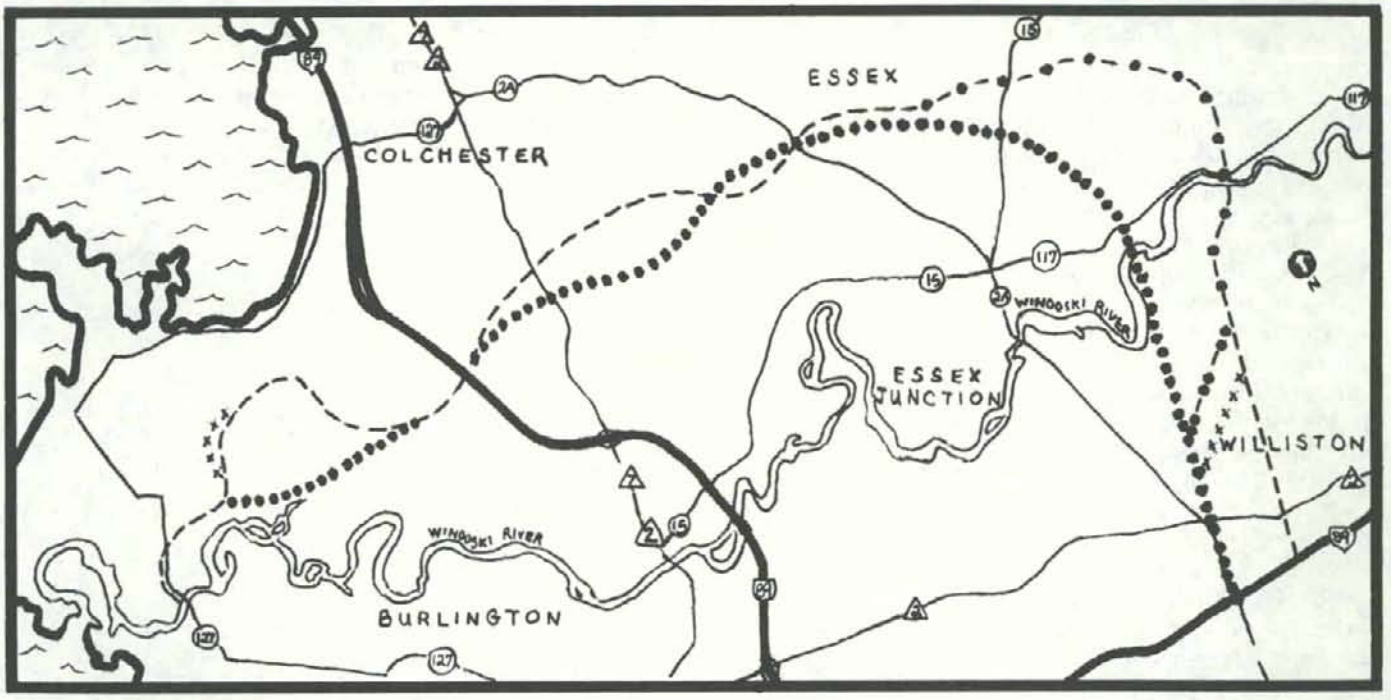
Senate and State Ideas

S.250, introduced by Senator Flossie Robillard (D-Rutland) and several others, addresses some recycling questions from a different angle. The Senate bill proposes, among other things, to establish a state solid waste management authority that would develop and administer a solid waste plan for Vermont. The new authority would establish recycling facilities, and set up a system for taxing products, including packaging, to reflect their disposal costs. Although the AEC has begun assessing Vermont's landfills, S.250 sets up a priority schedule for this process, and calls for a completion date of one year from bill enactment.

The House and Senate recycling bills were not written in tandem and do not specifically overlap, but they have similar recycling aims; they will undoubtedly be revised, and could eventually be joined.

State agency officials are also moving positively, but much more cautiously, on the solid waste issue. According to Water Resources Commissioner Jonathan Lash, the state is pushing for a comprehensive study of all solid waste alternatives, including recycling. No specific action would be recommended to the legislature, however, until next year.

Many legislators are now warming to the idea of strong action on our solid waste problems. Direct state leadership and coordination is much needed, if Vermont's struggling recycling efforts are to flourish. SC



Chittenden County Circumferential Highway

An Automobile Solution to an Automobile Problem?

By Shelly McSweeney

6:45 A.M. Colchester. The cool morning mist is just beginning to rise from the hollow as the bumper to bumper traffic inches along Severence Road.

7:00 A.M. The red and purple hues of early morning send a foggy blanket across the Winooski River floodplain. The traffic in Essex is at its peak.

7:15 A.M. As the sun begins to rise over the Champlain Valley, even the hastiest of commuters notices its beauty through the mist of idling engines. Most people are probably unaware that it is their *fossil fuel consumption that contributes to the colorful awakening.*

Racing engines sit idle in a long line of cars at a Winooski stop light. In Burlington, traffic seems even heavier than it did yesterday.

Given Vermont's current increase in growth, Burlington's traffic problems are by no means unique. The Bennington Route 7 expansion, the new Bolton interchange, the proposed southeast Rutland by-pass, and suggested by-passes around Stowe and Woodstock are just some of the signs that Vermont has joined the ranks of the more urban states—looking for quick solutions to traffic problems.

Studies as early as 1965 called for a by-pass arterial highway to relieve congestion at Five Corners in the Village of Essex Junction. Between 1970 and 1980, Essex was the most rapidly growing town in the state; Colchester was a close second; and pressure for a Colchester-Williston transportation facility became stronger. Finally, the possibility of a highway circumventing the urban area south of the Winooski River and connecting the towns of Colchester, Essex, Williston and the Village of Essex Junction was identified by area planners.

In 1980 these three municipalities, Essex Town, and the Chittenden County Regional Planning Commission approached Senator Robert Stafford with an idea that led to the demonstration grant for the Chittenden County Circumferential Highway (CCCH). Forming the CCCH District in 1982, the group developed a Draft Environmental Impact Statement (EIS), released in August, 1985.

Map, above: *adapted by Linda McKone from the* CCCH Draft EIS, *US Dept. of Transportation, VT Agency of Transportation, CCCH District. The five alternative alignments examined in the study are differentiated here by dots, dashes, x's, etc; the "preferred route" is marked by a dashed line.*

Figures at right, *also from the* Draft EIS, *depict a "before" and "after" effect of one route from the Winooski Valley Park District McCrea Farm. This route is not the preferred alternative, but is similar in environmental and aesthetic effect to an option under study by Colchester.*

U.S. Car Fixation

In the early 1960's, when the bypass plans were first emerging, highways seemed to be the ultimate answer to transportation problems. Interstate construction was included in military security plans, and federal legislative and economic incentives encouraged highway development.

Meanwhile, in contrast with the U.S. highway boom, European planners were exploring and implementing a wide variety of viable alternatives to auto routes, including light rail, inner city metros, trollies, busses and bicycle routes.

Unlike any other nation, our transportation system is uniquely dependent on highways. The 1980's have brought little change in the highway development attitude. While federal funds for rail and bus systems dwindle, highway funds abound.

Interests Compete

The stormy public hearings in the fall of 1985 on the Draft EIS for the CCCH revealed many competing interests in the proposal. While agreeing that traffic solutions must be found, residents, developers, farmers and planners disagree on several aspects of the highway.

The proposed four-lane by-pass is an automobile solution to an automobile problem: Wide, flat and fast, the expanse of tar *would* solve the congestion problem by circumventing towns and facilitating commuter flow. But many conservationists and residents feel that what is gained in speed could be lost through the highway's secondary impacts on local communities, and would render Chittenden County's remaining countryside a sprawling suburb.

Wendy Ross, a member of Essex West Residential Association, a neighborhood group questioning the preferred route in the Draft EIS, feels that neighborhoods within the highway corridor have not been adequately considered. Addressing the Highway District at a September public hearing, Ross said, "Historical and archeological data are given more consideration than the residents of Essex West. Cost is considered as the only important variable."

"My neighbors are sensitive, intelligent and aware," Ross said, "but their understanding of the proposed highway is unclear. Town selectmen and district officials have not clearly communicated with us."

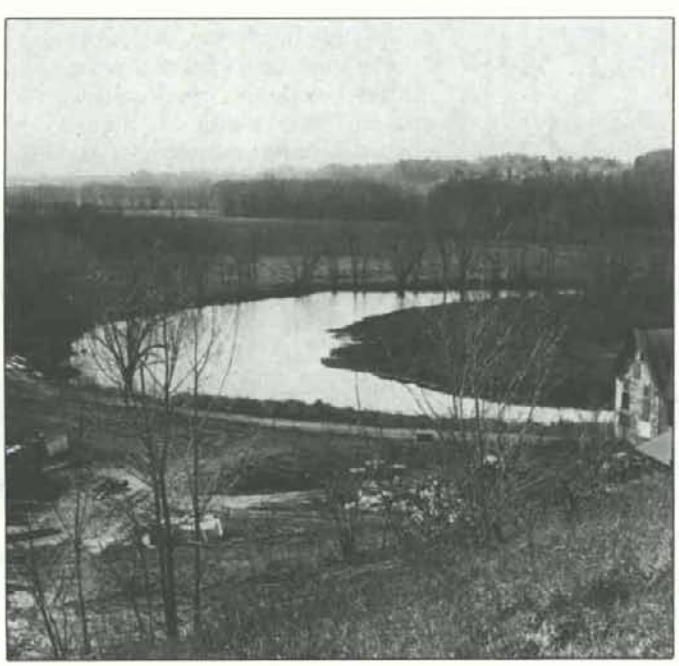
Agricultural interests also express concern over highway construction. In a letter to CCCH engineering consultants, Raymond Godfrey, Vermont Soil Conservation Service Resource Conservationist, wrote "I do not believe that there is any kind of development that can be more detrimental to farmland than is highway construction." Godfrey warned that it can "cause drainage and access problems, directly remove acres from production and encourage development pressure on lands near highway interchanges."

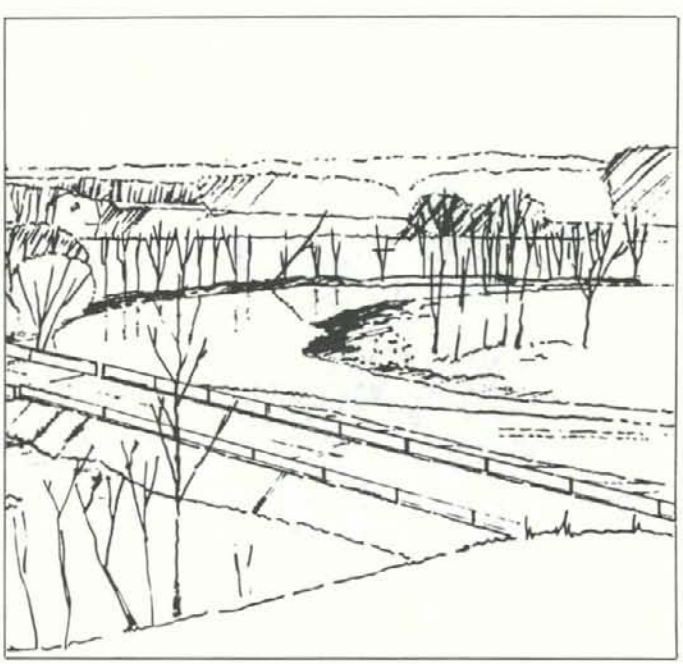
Land that is level, well drained and accessible to transportation—excellent agricultural land—is, ironically, also especially prime for highway development, particularly when the land is also near an urban core such as Burlington.

Alternatives Available?

Highway construction is land-intensive. Devouring up to 48 acres per mile, highway construction tends to promote sprawling land use patterns such as shopping centers and residential areas; these in turn require *more* roads, more services—and more natural resources.

Dave Sellars, a Warren architect and director of the Burlington Urban Design Study (BUDS), questions the need for the highway when "obvious alternatives are already in place." BUDS was a grant-funded futures study project of Burlington's Community and Economic Development Office (CEDO). Sellars noted the old railroad bed along Route 15—salvagable for public use—and sketched a commuter-rail around the Burlington area. A commuter-rail would provide fast commuting service, he pointed out, and would not require the burden of land conversion. The final June BUDS report included a preliminary





proposal for a similar rail system.

VNRC agrees that alternative transportation modes were not adequately discussed in the Draft EIS. In a letter to the Vermont Agency of Transportation, VNRC expressed concern that construction of the CCCH would serve as a disincentive to alternative forms of transportation. VNRC recommended that only the two originally-proposed lanes be built initially, with a separate EIS done for the additional two lanes if and when they actually became necessary.

A limited-access highway prohibits the use of bicycles or other alternatives. In light of the ecological advantages and present popularity of bicycling, however, VNRC proposed a separate bicycle route for the CCCH. In some European cities, 70% of all commuting trips are made on bicycles; and under U.S. federal law, bikeways are considered highways, thus qualifying states for 70% to 90% of their costs.

Changes Possible

It is unlikely that the final highway plan will address alternatives to automobile transportation unless more pressure to do so is generated. Highway District officials are currently drafting the final EIS, due out sometime this year. According to federal guidelines, the final EIS will take into consideration the suggestions offered during the comment period, such as those offered by VNRC and residents at local hearings. Although residents still express interest in alternatives, the comment period on the Draft EIS is now closed, and no further hearings are mandated by law.

The Winooski Valley Park District is currently negotiating with highway officials about the preferred alignment through its natural areas. The choice is either the division of a neighborhood or placing the highway within the Winooski intervale, one of the last vestiges of open space within this urban area.

While Park officials object to the destruction of critical natural areas and historic sites, residents decry the division of their neighborhoods, and formed associations to express their concern at public hearings. Colchester is using its position as a district member to present opposition to the plan; but the alternative route—through the Winooski River intervale—is equally controversial. District members are now studying the Colchester proposal.

New Approaches Needed

In a recent New York Times article, Robert Lindsey wrote, "...there is an emerging perception that no matter how many freeways a community builds, traffic will almost always expand to meet and exceed their capacity."

Vermont communities are beginning a new era of road building—one which will have a profound effect on land use and on land valuation, and further discourage thoughtful and efficient alternatives for our transportation needs.

New approaches to transportation will have to be implemented if we are to conserve our natural resources, farmland and open space. Vermonters are starting to realize that when we address automobile problems with automobile solutions, we may cause as many problems as we solve.

What's in the Hopper?

With this year's legislative session, we're seeing some new environmental bills—and some old familiar ones, too.

Vermont's legislative session officially opened on January 7th this year, and VNRC staff and interns are once again walking the statehouse halls, working on Vermont's top environmental issues. Significant legislative gains were made last year, but this year's list of environmental bills is still surprisingly long. Considering the magnitude of the subjects addressed, the 1986 session could rival the successes of last year.

More About Growth

Growth management issues continue as a top VNRC priority. The top two growth management bills, Senate Bill 80 and House Bill 295, were introduced early last year (see "A Tale of Two Bills" *VER* Summer 1985). Both bills will continue to be passed around, poked at, and reshaped this session—and with your support, may pass in one form or another by spring.

H. 295, sponsored by House Natural Resources Committee Chair Stephen Reynes (D-Pomfret), would take the important first step of gathering information on the state's most quickly developing areas. Under this bill, Vermont's Environmental Board would have the authority to designate Rapid Growth Areas (RGAs). In these areas, developers could be required to submit a "master plan" revealing long-term intentions for multi-phased development projects. District Commissions would be empowered to consider the cumulative impacts that several developments can have on an area's natural resources and municipal services. VNRC has worked to strengthen the information-gathering powers of H. 295, by suggesting that "capacity studies" be created and used in local or regional planning processes, and that District Commissions reconcile resource limitations when issuing Act 250 permits.

Considering the magnitude of the subjects addressed, the 1986 session could rival the successes of last year.

The House and Senate committees have held many hearings around Vermont on their respective bills; both bills have undergone major changes, and there is even talk of merging the two at some point. With both committees at or near completion of their respective bills, VNRC expects at least one bill to emerge from committee early in the session.

VNRC strongly supports the equitable, decentralized planning approach of S. 80, and particularly applauds several points:

- As revised, S. 80 provides funds for municipal planning and conservation in any areas identified by regional planning commissions or union municipal districts as "Rapid Growth Areas." These funds are collected under the property transfer tax (an increase of .01% in RGAs only, and .005% statewide).

VNRC supports the use of the property transfer tax approach as an accurate index of *all* development activity, and as a logical funding source to pay for conservation efforts and the impacts of growth in rapidly-developing areas. The money collected could be used for purchase of development rights for open space, farmland, natural areas, or drinking aquifers.

- While 75% of the funds collected from the property transfer tax would go to local programs, the remaining 25% is designated for regional planning commissions, to be used for researching the capacities of regional resources such as highway networks or river basin uses. This would be combined with a modernized capital budgeting plan to coordinate regional road, utility, sewer, and conservation needs. S. 80 also requires that regional plans be accompanied by a statement of planning goals and objectives separate from the Act 250 process; in this way, more formal guidance can be provided to District Environmental Commissions for their use in reviewing Act 250 applications.
- The majority of planning activity remains decentralized under S. 80; local planning and permitting are still the determinants in most cases. Only large-scale development which has a substantial regional impact is subject to the provisions of a regional plan.

Vermont's Clean Water

10 VSA Chapter 47, which contains Vermont's **water pollution** laws, gives the state the authority to carry out a pollution control program under the auspices of the EPA and the Federal Clean Water Act. With the Kunin administration's well-publicized commitment to reworking Vermont's water pollution laws, new ideas for revamping Chapter 47 are coming from all sides.

Specific questions up for debate include:

• Is the existing water classification system (A,B,C) still an accurate index of water quality objectives? VNRC will work to incorporate a more refined measure of pollution risk assessment into the classification system.

• Should we open Class B waterways to discharges? Under particular scrutiny are new discharges from on-site waste disposal systems such as spray irrigation and septic leach fields. Under ideal circumstances, these systems do not threaten water quality as much as direct pipes into rivers, but they can have a significant impact, especially on a cumulative basis, on the integrity of a stream.

• What level of protection should we assign to Vermont's highest quality pristine streams—those that are currently exposed to little or no pollution? VNRC strongly advocates pristine stream protection, and has insisted that a distinction be drawn between the minimum standards that the federal government has set up for drinking water, and the high quality of water that runs in our purest upland streams.

• Should Vermont extend a *permit* program for "indirect" or "non-point source" discharges, or is another option such as a non-point source *management* program more advisable?

VNRC is backing the onsite indirect discharge permit program as the strongest option. Such a program would evaluate discharges under a five-year permit and would stipulate monitoring requirements and enforcement provisions similar to the direct discharge requirements of the federal Clean Water Act. Such permits give the public better access to the regulatory process. Working directly with the legislature and with Water Commissioner Jonathan Lash, VNRC will work to ensure that conservationists' concerns can be weighed by legislative study committees and against the administration's initiative.

The Kunin administration released its legislative proposal in December, calling for a combination permit/management program for non-point source pollution, and a new definition and reclassification procedure for Class A areas. While supporting the basic intentions of the bill, VNRC and other environmental groups are concerned by some procedural sections of the proposal.

VNRC will suggest strengthening provisions to the Kunin proposal and carefully monitor other proposals, notably from the Water Resources Board and the Vermont Ski Areas Association, that have also been presented to the legislature.

Current Use Questions

Vermont's **Current Use** program, which allows participating agricultural and forest land owners to be taxed on the use value (not market value) of their property, will once again be under examination in this year's tax reform atmosphere.

Although the Current Use Advisory Board feels there is a need for fine-tuning of the program, such as in the penalty provisions, they will not be advocating any changes at this time. Meanwhile, at least a dozen bills that could affect Current Use—most of which are related to altering Vermont's property tax system—have been proposed.

Many of the proposals to revamp the property tax system include provisions for taxing farm and forest land at a certain percentage of its fair market value. Conservationists fear that such an across-the-state percentage would still keep tax rates in rapidly-developing areas too high for non-development uses. VNRC will monitor the myriad tax proposals, for their potential effects on Vermont's valuable farm and forest resources.

...And Many, Many More

• S. 86 would create a quasi-independent **Energy Efficiency Agency**, to combine the leadership and information functions of the Home Energy Audit Team and the now-defunct Residential Conservation Corporation. Skeptical about whether utilities now responsible for conservation always act in the best public interest, VNRC's Energy Committee makes S. 86 their top priority.

• The **non-game wildlife check-off** bill (H. 91) would create a space on Vermont's tax form for taxpayers' voluntary contributions, to be put toward wildlife programs including research and education.

• The newest draft of Rep. Carse's H. 55 would allow for the declaration of Vermont's new **endangered species** list, and make Vermont eligible for federal funds.

• Rep. Fortna's H. 453 would have the state develop a plan to **treat petroleum-contaminated soils.**

• **Nuclear issues** are addressed in many bills this session, including:

Several bills by Rep. Youngbaer, Sen. Welch and others to protect Vermont and New England in the event of high-level nuclear waste dump problems.

Sen. Conrad's bill to require identifying labelling on all irradiated foods sold at the retail level.

• In the company of other **recycling** moves discussed earlier in this issue, H. 315 was introduced by Rep. Curt McCormack to exempt recyclables from flow control restrictions.

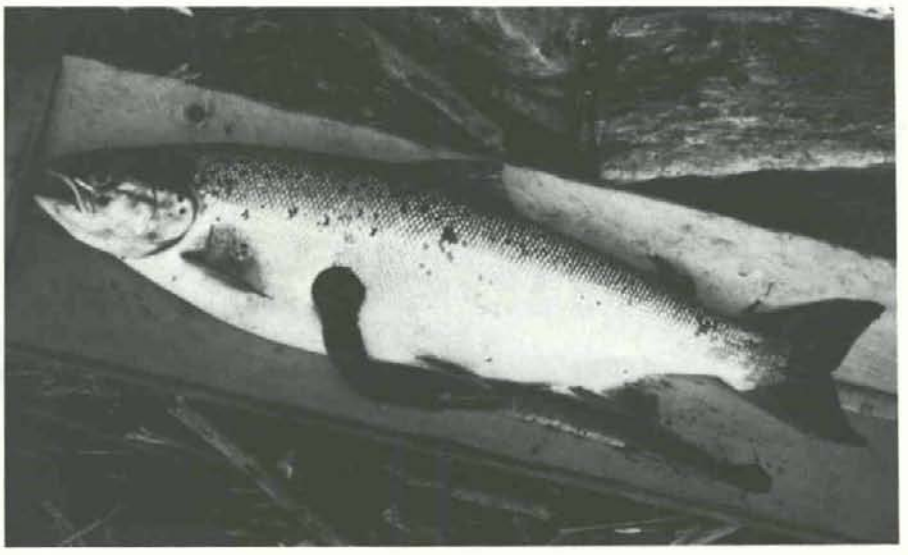
• Sen. Gibb's S. 177 and S. 200 would amend **Act 250,** respectively, by narrowing the definition of prime agricultural soils and newly defining open land.

Many more environmentally-related bills face the legislature this session—more than can be listed here. Many are mentioned elsewhere in this issue, and VNRC will continue to keep members updated throughout the session with our periodic bulletins and alerts. SC/EP

The Sea Lamprey—

A Little Fish Causing Big Problems

By David Engels



Although sea lamprey have been a link in Lake Champlain's aquatic food chain for decades, never has their voracious appetite for sports fish been as much of a problem as in the last five years. Sportsfishing enthusiasts are calling for immediate relief, and fish and wildlife managers have proposed an experimental eight-year, $3.4 million program involving the use of chemical lampricides over 86 miles of Vermont and New York streams. With a Draft Environmental Impact Statement (EIS) due out within a year, the program has been called quick, cost-effective—and controversial.

Sixteen to eighteen inches long in the adult stage, the lamprey has a complex life cycle. After spending between three and seventeen years buried in stream beds or deltas in the larval stage, lamprey emerge and migrate to large lakes. There the lamprey make their living parasitically—attaching themselves to fish and, with a toothed tongue, rasping through the skin and sucking out the fishes' bodily fluids and tissue. After this twelve to twenty-month predatory phase, the lamprey swim back to the stream from which they emerged, spawn, and die.

The increase in the sea lamprey population in Lake Champlain is relatively new, and has been seen primarily since the lake's vigorous sportsfish stocking programs have been underway. Although large salmonid populations were present in the Lake during the early 1800's, they subsequently disappeared—primarily because of overharvesting, extensive Lake siltation due to forest clearcutting, and damming of tributary streams. Sea lamprey were not reported in the Lake until 1929, however, and so were probably not a factor in the original reduction in fish population.

All parties involved agree that the lamprey now presents a real problem for fish in the Lake. Substantial numbers of fish are attacked each year, and the wounds left by lamprey—on any fish that survive the attacks—can be debilitating. According to Paul Neth, fisheries expert with the New York Department of Environmental Conservation (DEC), lamprey attack a wide variety of fish including salmon, trout, northern pike, bass, catfish, suckers and carp; and one lamprey can destroy as much as forty pounds of fish while in the Lake.

The lamprey control program was proposed by the Lake Champlain Fish and Wildlife Management Cooperative, a twelve-year-old joint effort of the New York DEC, the Vermont Fish and Wildlife Department, and the U.S. Fish and Wildlife Service. Established with the aim of protecting and managing Lake Champlain's interstate fish and wildlife resource, the Cooperative is now developing a new salmonid fishery on the Lake. Members argue that the proposed fishery will only reach 20% of its potential if the sea lamprey is not checked.

Methods in Question

The proposed lamprey control method involves using two chemicals, TFM and Bayer-73, on nine Vermont, one Quebec, and nine New York feeder streams. The chemicals would be distributed both by airplane and by direct application.

TFM (3-trifluoromethyl-4-nitrophenol) was first selected for trials in 1958. According to Neth, TFM has a half-life of eight to ten days, with minor, temporary effects on non-targeted species when applied as prescribed (one to ten parts

Photo above: Atlantic salmon attacked by sea lamprey. Photo courtesy of John Gersmehl, U.S. Fish and Wildlife Service.

per million).

Bayer-73, developed in the late 1960's, is sprayed by plane over delta areas. It is more toxic than TFM to non-targeted organisms including certain sensitive fish, frogs, mayflies and earthworms. According to Neth, there is substantial degradation within several days, but non-targeted areas could take as long as four months to recover.

Several alternative methods of lamprey control exist or are under study, including treating the lampreys themselves as sportsfish (see inset). **Barrier dams** have been considered; these devices physically prevent lamprey from migrating far upstream to spawn, but can be prohibitively expensive and can also effect the ecology of the surrounding area.

Another alternative method, according to the U.S. Fish and Wildlife Service's "Lake Champlain Sea Lamprey Assessment Report," involves **Portable Assessment Traps.** Used in tandem with a dam or natural barrier, the traps can capture a sizeable percentage of lamprey returning to spawn; but since lamprey are so prolific, even the few that escape could rebuild the population.

Sterilization and release of male lampreys is still an experimental technique. Tests in Michigan show that it can have an impact on the lamprey population, but drawbacks have been reported: the technique requires an initial reduction in population by other methods in order to be effective; and according to the report, the lamprey-sterilizing chemical (Biszar) has carcinogenic properties.

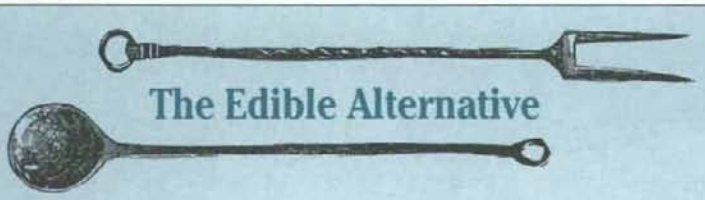
Pointing to twenty years of documented use in the Great Lakes region, the Cooperative argues that a lampricide program is still the fastest and most cost-effective option. In a 1985 report entitled "Salmonid-Sea Lamprey Management Alternatives for Lake Champlain," the Cooperative reaffirms their hope for "integrated management" or combining lampricides with other, less radical techniques; but, citing problems with other methods, the report concludes that "lampricides are still the most effective means of eliminating lamprey over a short period of time."

What Are the Effects?

The Cooperative's urgent message to sportspeople and environmental groups comes at a time when trends of attacks, nest counts, and Ammocoete (burrowing-stage lamprey) counts have shown either stabilization or downward trends over the past three years. But according to Bill Jacobus, chair of the Vermont Sportsfishing Alliance, "the mortality rates, stabilized or not, are intolerably high, and the situation won't get any better until lamprey are eliminated."

The sportsfishing community echoes Jacobus' sentiments; the Vermont Sportsfishing Alliance recently polled its 7,500 members and found that 80% felt that the lamprey was the Lake's biggest problem. And at an October scoping session aimed at developing a Draft EIS, leaders in the Lake's sportsfishing community rose to express their full support for immediate application of the lampricide program.

Not everyone on the Lake is this enthusiastic about the use of lampricides, however. Mrs. Richard Hopp, another scoping session par-



The Edible Alternative

In the *Ithaca Journal*, Marilyn Greene writes of environmentalist Dooley Kiefer's innovative lampricide alternative—namely, commercial fishing and food preparation of "the villified sea lamprey."

"The lamprey," Kiefer says, "is a resource worth finding uses for." Adapting gourmet recipes for a fish that the French consider a delicacy —the eel—Kiefer came up with a taste-tempting list of delights including "Lamproie a l'Orly," "Lamprey Kabobs," "Lampreda alla Fiorentina," and even "Lamprey Quiche." One of her entree recipes is reprinted below.

Local seafood chefs showed interest in the idea. Mary Ellen Fitz-Patrick, head chef at the Dockside Cafe, had never heard of lamprey recipes, but imagined that they could be prepared like eels and added, "I've been surprised before." And according to Jack Ovid, head chef at Winooski's Sea Sage Restaurant, "It wouldn't bother me a bit to think of eating them if they can be prepared right. I think lamprey definitely have to be controlled," he added, "and it's exciting to think of the possibilities of a new resource— and that we might not have to use chemicals in the Lake."

Lamproie Bordelaise

- 6 lamprey
- Carrot, thinly sliced
- Onion, thinly sliced
- 1 clove garlic • 1 tsp. salt
- 1 tsp. black pepper
- red wine to cover
- pinch thyme • 1 stalk celery
- 1 bay leaf
- 6 to 8 pieces of the white of leek
- 1/3 cup diced raw ham
- 3 tbs. butter • 4 tbs. flour

Skin and clean the lamprey and cut into 4-inch pieces. Line a skillet with sliced carrot and onion and put the pieces of lamprey on top. Add garlic, thyme, celery, parsley, bay leaf, salt, pepper, and red wine to cover. Cover the skillet, bring to a boil, and simmer for 10 minutes. Meanwhile, in another skillet, brown the pieces of leek in butter. Add the ham and the cooked lamprey.

Melt the butter in a saucepan and add the flour. Cook over low heat, stirring constantly with a wooden spoon, for 5 minutes. Add to it the broth in which the lamprey were cooked, and simmer for 20 minutes. Pour the sauce over the leeks, lamprey and ham (or strain it through a sieve) and simmer this all together for 15 or 20 minutes, stirring occasionally. Taste for seasoning.

ticipant, noted that "the environmental costs of control over lamprey can be greater than any economic benefits realized." A Charlotte resident whose property borders one of the affected steams, she added "any time you interfere with nature, there is a price to be paid... We need to know what it is."

The Lake Champlain Committee (LCC), a New York/Vermont conservation group formed in 1963, still has serious reservations about lampricide use. Lampricide-related litigation is under way in New York state, they point out, with legal action being taken against the New York DEC by a citizens' action group in the Finger Lakes district where lampricides have been in use.

According to Dr. James C. Dawson, chair of LCC's lamprey subcommittee and member of the executive council, the Committee does not question the seriousness of the lamprey problem; but LCC is concerned about the possible effects of the lampricides on Lake Champlain's water quality.

The Committee has submitted a list of 47 questions to the Cooperative for use in the Draft EIS. Question topics include the impacts of lampricides on lamprey and on nontarget species, the monitoring of the chemical impacts of the lampricides, the economic impacts of the program, and possible effects of lampricides on human health. The Committee has declined to take a stand on lampricide use until these questions are addressed.

The Committee's questions, Dawson says, were "based on the assessment reports by the Cooperative, our own assessments, and largely on a recent report by the Natural Resources Council of Canada. [The Canadian report] raises questions of real concern about the impact of Bayer-73 on other forms of wildlife, invertebrates as sources of food, and basically tries to summarize all of the knowledge available to date about the chemical." Many of LCC's questions, adds Dawson, "came right out of the text."

The Lake Champlain Committee's questions, along with the many comments received at the Cooperative's scoping sessions, will be addressed in the Draft EIS, which is due out within the next year. With hearings, a comment period, and a final EIS necessary after that, the earliest possible date for experimental application of the lampricide is in 1987. Until that time, the sportsfishing community will continue to call for an immediate solution to the lamprey problem; and environmental groups will continue to hold judgment on the plan until all the questions are addressed.

David Engels is a second-year journalism student at St. Michael's College.

Vermonters Speak for the Earth

By Tom McKone

I Speak for the Earth, A Collection of Poems. Published by Parents and Teachers for Social Responsibility, Vermont Natural Resources Council, and Vermont-NEA, November 1985.

Anthology is particularly appropriate to describe this eclectic collection of verse, for it comes down to us from the Greek word, *anthophorous*, meaning "flower-gathering," and in this attractive, ninety-page book, we find a bouquet.

As the title suggests, *I Speak for the Earth* is united by the broad theme of the state and fate of our planet. Within that panorama, we find everything from "Nuclear Daydreams," pollution and Third World issues, to "early morning miracles," pussy willows and childhood fantasies.

The variety of concerns, styles, ages and experiences of the poets is one of the strengths of this collection. Optimism and pessimism meet, and the simplicity of a child's view of the world balances the sophistication and sometimes frustration of the adult. Just a few pages after "Whimsical," an environmentalist's response to being called "whimsical" for protesting the use of pesticides by a power company, we read five-year-old Eben Markova-Gold's charming three liner:

I am the earth
I went up into the sky
and I hugged a star.

The book includes some fine poems by junior and senior high school students. Michelle Dominique brings us a refreshing look at spring in "Pussy Willows":

Close your eyes
And do not peek
And I'll run spring
Across your cheek.

Smooth as satin.
Soft and sleek—
Close your eyes
And do not peek.

In "A World Gone Mad," fourteen-year-old Julie Larkin describes a world red with blood, but ends with the optimism of turning around to a rainbow. Kris Hulphers writes of "The River":

Twisting, curving into the earth
She goes forward
Never turning back
Yet
At the same time,
She always leaves
A part of herself
Behind.

While not all of the youthful poetry is optimistic, neither is all of the adult poetry somber. In "Equinox," tami cope joyfully celebrates the birth of spring and our own rebirth that accompanies it. Normal Schiffman has fun with climbing trees and with words in "Children Trees," a poem echoing e.e. cummings' style.

Francette Cerulli's "Mother's Day Television" brings the other world home. The blood of Nicaraguan children, the dying mothers of El Salvador, and the skulls of Cambodia all surface here, as she effectively develops her theme that "my town is not just this town." "A Death in the Underbrush" takes us deer hunting, but poet Paul Laffal's aim is to keep us from pulling the trigger.

An outgrowth of the Family Poetry Festival held in the spring of 1985, *I Speak for the Earth* contains 125 poems, some reproduced in the original hand of the poets, and accompanying drawings. The contributors, all of whom are listed with their towns given, are from Vermont.

This bouquet of flowers is one to get you thinking—and perhaps to acting. It can help us make the discovery which ends Lance Pustin's poem:

The closer to the earth we are
The closer to ourselves we can be.

Tom McKone teaches English at Union 32 High School in East Montpelier.

I Speak for the Earth is available from VNRC for $5.00 plus $1.00 postage and handling.

Voice of the Wilderness

By Sarah B. Laughlin

The Loon—Voice of the Wilderness, written and illustrated by Joan Dunning. (Yankee Books, Dublin, NH; hardback, 15.95.)

Joan Dunning has written a charming book about the uncommon Common Loon—technically *Gavia immer*, and spiritually the incarnate spirit of northern waters. Joan's text includes extensive factual information on this ancient species—life history, migration, evolution—but this is far more than an information book. Her sensitive, delicate and truly wonderful watercolor plates convey the essence of the species; her story format describing a pair of loons' lives through the seasons makes for captivating reading; and her extensive detailed black and white drawings add beauty and interest to every page.

The first section of the book, entitled "The Year," follows the Common Loon through its wintering on the ocean; on to its spring migration back to the northern lakes where it breeds, and to the ritual of courtship; into the summer's nesting and chick rearing; and finally to autumn, when the chicks mature and the loons individually migrate from their soon to be ice-bound lakes back to their Atlantic Ocean wintering grounds. In a second section, called "The History," we take a walk through the loons' 60 million year stay on earth—a stay that has made the loon the oldest bird in North America.

Joan Dunning lives on a hill farm in Springfield, Vermont with her husband and two children, raising sheep and vegetables. Both artist and author, Dunning is a remarkable woman as well. She spent eight years preparing the book and finding ways to publish it, motivated solely by her dedication to the loon. As Robert J. Lurtsema says in the foreword, she brings three dynamic talents to her book: that of a careful and perceptive observer, that of a good storyteller, and that of a sensitive, committed artist.

He continues: "In a world where everyone professes to be an environmentalist, even those most guilty of exploitation, there are relatively few who do much more than talk about their involvement." Joan Dunning certainly has done a good deal more than that.

The Common Loon is a species in need of concern. All across the southern limits of its range (the northern tier of the United States) the loon is a declining species and in some states is listed as threatened

Illustrations on this page are by Joan Dunning and appear in The Loon—Voice of the Wilderness.

or endangered. The reasons for drastic decline in the breeding population are many. Human-caused disturbances on the breeding lakes are a major factor, and range from human population pressure and traffic to shoreline development, from racoon-attracting human garbage ('coons eat loon eggs) to harrassment by motorboats. Acid rain is also implicated in their disappearance from many lakes, since dead lakes without fish can hardly support a fish-eating loon family. Toxic contaminants and oil spills kill many loons, often on their wintering grounds.

Nationwide, a strong effort to preserve the Common Loon is spearheaded by the North American Loon Fund, founded in 1976. The North American Loon Fund promotes and funds loon management and research across North America. The New Hampshire Loon Preservation Committee was the first state loon group and runs an exemplary program, proving that with education and careful planning, human beings and loons can live side by (lake) side.

Certainly loon-lovers are not without literary back-up. The management and recovery efforts ongoing in North America for the Common Loon are detailed in another excellent new book entitled *Loon Magic* by Tom Klein (Paper Birch Press, Ashland, Wisconsin). This handsome book is lavishly illustrated with photographs and provides another complete look at loons, their life histories, and details on the state groups working on recovery efforts.

Here in Vermont, the Vermont Institute of Natural Science has been monitoring the status of our declining Common Loon population since 1977 and coordinating efforts to check its decline. Since then, breeding pairs of loons have disappeared from eight Vermont lakes. According to data in the newly published *Atlas of Breeding Birds of Vermont*, Vermont's Common Loon population averages between 25 and 50 loons, of which between 7 and 19 pairs attempt to nest. These pairs have produced only between 6 and 15 chicks per year of the past eight years. An active corps of volunteers works with VINS to protect and monitor the species, and the Vermont Department of Fish and Wildlife participates as well. In 1985, nesting produced 13 chicks hatched by 8 pairs loons—somewhat better than average. Some 24 Vermont lakes are used for nesting, scattered the length of Vermont but concentrating in the northeastern and northcentral portions of the state. Because of its continuing disappearance from lakes where it has traditionally nested, the Common Loon is proposed for endangered species status here in Vermont. May increased public consciousness of this handsome species and its nesting needs result from fine books such as Joan Dunning's!

Sarah B. Laughlin has been Executive Director of the Vermont Institute of Natural Science in Woodstock for thirteen years and serves as a trustee of the North American Loon Fund. She is the senior editor for the recently published book The Atlas of Breeding Birds of Vermont.

The Loon—Voice of the Wilderness is one of the books included in VNRC's 1986 membership renewal offer. See page 26 for details.

VNRC INTERNS

Shelly McSweeney

Shelly McSweeney began a part-time internship with the Council this fall, doing issues research. She quickly became instrumental in organizing the 1985 Vermont Environmental Law Conference, however, and also found time to research and write an article on transportation for this issue of the *V.E.R.*

Shelly has since been hired for this year's legislative session, thanks to VNRC's Red Arnold Memorial Internship Fund, to track environmental legislation and assist with lobbying efforts.

An active skier and bicyclist, Shelly graduated last year from UVM with a degree in French and Environmental Studies. Her work experience has included legal research, an internship with the Chittenden County Regional Planning Committee, and a recent two-month grant-funded trip to study environmental issues in India.

Michael Usen

As a VNRC volunteer this summer and as an intern with the Council from September through December, **Mike Usen** has displayed an unusual—and extremely useful—blend of talents.

Mike's strong background in environmental studies helped him to research the issue of nuclear winter for VNRC's Policy Statement on the Threat of Nuclear War this summer, and also lead him to an internship with the Council. Meanwhile, having had two summers of intensive sales experience with the University of Vermont's staff/student yellow pages, Mike has an excellent nose for ad prospecting, and has been very helpful in promoting ad sales for the *V.E.R.*

Mike will graduate from the University of Vermont this spring with a self-designed major in Enviromental Studies.

Ah, But How To Choose?

Four new books—all by Vermonters, and each signed by its author—will be a part of VNRC's 1986 membership upgrade renewal offer.

The Loon—Voice of the Wilderness by Joan Dunning is a hardcover, beautifully illustrated narration of the Common Loon's life cycle, and is reviewed under "Books" earlier in this issue.

Also offered is **Working With Your Woodland**, by Charles Thompson, Lynn Levine, and Vermont Commissioner of Forest, Parks and Recreation and former VNRC Board Chair Mollie Beattie. Reviewed in the Summer, 1985 *V.E.R.*, **Working With Your Woodland** offers practical information to help forestland owners find and interpret the advice of forestry professionals—and to make their own forest management decision.

No Place To Hide, by David Bradley, was written in 1946 in response to the first peacetime testing of nuclear weapons, and reprinted in 1984 with Bradley's updating epilogue. "Bradley's warning of the universal danger of radiation is even more compelling today," writes Senator Alan Cranston.

Vermont State Naturalist Charles Johnson's second book, **Bogs of the Northeast**, explores the peatlands of New England, Pennsylvania, New York, and New Jersey. With Johnson's enthusiasm and engaging style, all facets of these oft-neglected areas come alive—from orchids to carnivorous plants, from insects and mammals to myths and folklore.

Members who upgrade their membership levels by at least one level (for example, from "Individual" to "Family") will have their choice of any of the four books. Says VNRC's Membership and Development Coordinator Nancy Miller, "This is our way of thanking members for their continuing, generous support of the Council's work."

New Members

VNRC is pleased to welcome the following new members, who joined us between September and mid-December:

Lola P. Aiken, Tina Akin, Joyce Allgaier-Ohlson, Scott H. Almdale, F. Emerson Andrews, Richard Atkinson and Nancy Thomas, Mildred Baird, Marilyn Barbato-Sullivan, Dick Bareuther, Joanne Barrows, Stephen L. Bartholomew, Marion Bayrer, Francis Bean, J. Howard Beck, Robert Beiswinger, Jane Belcher, C.S.W. Bissell, Judy Blackmer, Elmer C. Bohlen, Robert E. Bossardt, Robert A. Bradel, Patricia Brammer, Amy C. Bromley, Jan Brough, Thornton Brown, Theresa Brungardt, Frances S. Bruyn, Peter Buchheit, Alfred Burrows, Raymond Campbell, John B. Carpenter, Jr., D.C. Carroll, Tim Carter, Cathaleen Cary, Jack Cassidy, Ruth E. Cavanaugh, Margaret Cawley, Jean R. Ceglowski, DVM, Ruth Chaskel, Claire Chevalier, Thomas Cholnoky, Douglas Christie, Ingrid Christman, Robert W. Christy, Winston Churchill, Patricia Clark, Dr. & Mrs. Robert E. Clark, Logan & Kay Clarke, Esther Cohen, K.C. Colt, Elizabeth Comolli, G. Cooper, Fred Coriell, Robert G. Cornwell, John C. Corskie, Margaret R. Cotanch, Patience Crowley, Piret Cruger, James A. Dearborn, Oneal Demars, Peter Dietrich and Family, James Dodge, Berton L. Dow, Robert Duncan, Morris Earle, Doug Elliott, Fred & Veronica Evering, Virginia Farley, William W. Fitzhugh, Reginald Fleer, Mr. & Mrs. Benjamin T. Foster, Ruth G. Fowler, J.B. Franklin, Robert B. Fraser, P. Frassica, Nathaniel Frothingham, Howard K. Fuguet, Ralph Gamo, Paul & Pia Garrett, Walter Gaskill, Jr., G.G. Gianetti, Linda A. Gillet, Linda D. Gionti, Jeffrey Gould, Ian Grant-Suttie, James S. Grow, Penny Guest, Velma Hall, Jonathan Harrington, Mr. & Mrs. Roby Harrington III, William Hart, Frances L. Hays, Robert Hedden, Fritz Henry, Donald H. Hill, Todd Hobson, Stanley Holt, Genevieve Hook, Roberta Hopkins, E.E. Houghton, Bruce Howlett, K. Hubenet, Holly F. Hungerford, Robert Hunziter, Anne L. Jackman, Dorothy Jones, Bruce Keller, Grace A. Kellogg, Joan H. Kersey, George Kidder, Chris Kimball, Mr. & Mrs. J.H. Kinghorn, Katherine M. Kirkham, Otto Kleppner, George H. Knox, Linda Krasner, Barry Laffan, Constance A. Laird, Charles J. Lang IV, A.E. Larson and L.J. Knutson, Mildred K. Lee, John D. Liberator, Martin V. Liegel, Jr., Robert Linck and Jean Klyza Linck, Gladys Lodge, Mr. & Mrs. Hans Loeser, Steven & Nancie Lorenz, James J. Lowe, Mr. & Mrs. David Lull, Mr. & Mrs. S.M. Lund, Jr., Alexander MacDonald, Jr., Janet P. Macleod, Sue & Greg MacMartin and Andy Hooper, Hazen Mathewson, James F. Matott, Nichole May, Peter & Harriet Maynard, James T. McCabe, Dorothy E. McCauley, Michele A. McHugh, Mary Lee McIsaac, Steve McLeod Esq., Larry Meier, Keniston P. Merrill, J.J. Meuller, Diane Millham, Polly L. Moog, Berl M. Morrill, Keven & Donna Murphy, Dr. & Mrs. Sidney S. Narrett, Dorothy Neidlinger, Dorothy D. Nelson, Eugene L. Nemeth, Marti Newell, Barbara C. Noyes, M.D., June L. Nygren, James Osborn, Mr. & Mrs. N.R. Osmer, Robert G. Parker, Debbie Parrella, Cynthia Parsons, Dick Pellissier, Joseph Perella, Lotte Perutz, A. Picard, Lauren E. Pickett, Maj. Gen. & Mrs. J.M. Platt, George E. Plumb, Harvey I. Pofcher, Patricia P. Polk, Mildred Preston, Rona Pulling, George Ray, Mr. & Mrs. Henry H. Retter, S. Richards, T. Duane Roddy, Helen Rogers, Roger Rosenkrantz, John Rosenthal, Mr. & Mrs. Edward D. Rowley, William E. Rudge, William Rumph, William Ryerson, Janet Sable, Laura Sadler, Mary Ann Samuels, Donald W. Sansom, August E. Sapega, W.A. Sargent, David Saurman, Robert K. Schryer, Joanne B. Schwartz, Enid & Melivin Shapiro, Andrew D. Shaw, Steven Shea, Rosamond Sheldon, Mr. & Mrs. N. Sherman, Florence G. Simpson, Patricia Smith, Robert A. Snyder, Wendy Soliday, Susan M. Spengler, W.H. Starr, Richard Staudt, Robert Stengel, F.M. Taylor, Jacquelin C. Tefft, Cindy Thomas, Laurice Thorsen, Jacob A. Toby, Ed & Claire Tortolano and Family, Roger Trachier, John Trepanier, George R. Trimm, James Truesdall, Bennett S. Truman, Robert & Susan Tucker, Wayne F. Twombly, Mr. & Mrs. Lawrence Vaughan, Ron Vezzi, Rick Wackernagle, Ruth Waldman, Miles & Barbara Walsh, Elbridge Webster, Marjorie Weil, Elizabeth Welch, Teno A. West, James G. Whaley, Richard D. Whitehead, Keith B. Wilcox, Corinna Wildman, Edward Wilkins, Tammie Williams, Lewis & Mary Willmuth, Lois B. Wilson, Kitsy Winthrop, Allen Wood and Family, Valery Yandow, George & Tillie Zingus

Successful Meetings of Minds

With excellent speakers and spirited audiences of record size, VNRC's winter events this year were both interesting and successful.

Over three hundred people met in Manchester in early December for the **8th Annual Environmental Law Conference.** Co-sponsored by VNRC and the Vermont Law School, the conference featured workshops by state leaders and experts on topics from transportation and municipal demands to agriculture, aesthetics and Act 250.

Planning professor and well-known author Ian McHarg kept conference-goers on their toes with his opening remarks; asked to address the topic of planning and growth, McHarg had a comment on everything from municipal sewers to the Army Corps of Engineers. With specific examples of planning successes from all over the U.S., McHarg's advice on understanding our environment and our great collective power to maintain its integrity was to be taken seriously.

In his keynote address, urban studies expert Dr. David Brower outlined the myriad processes of urban growth planning, and warned that success lies not in "new tools" for planning—only in new techniques for, and attitudes about, using the tools we have.

Two key conservationists were taken by surprise at the conference, with special awards for their remarkable contributions to Vermont's environmental community. Arthur Gibb, Chair of the Senate Energy and Natural Resources Committee, was praised for his work as "not only the father of Act 250, but the grandfather"; and Dr. Norman Williams was noted for his work as an environmental law professor and author of many volumes on land use law.

Many Vermont conservationists started the day out early on January 16 at the **Fourth Annual Environmental Breakfast,** co-sponsored by VNRC and a number of other Vermont environmental groups. With addresses from Governor Madeleine Kunin, Senator Arthur Gibb, and House Natural Resources Committee Chair Stephen Reynes, the breakfast was an excellent opportunity to put forth and discuss the environmental agenda for this legislative session.

Speakers agreed that growth management, water resource protection, and solid waste disposal were the state's top three issues, and that they could only be addressed successfully with all parties working together.

"Looking around this room," noted Kunin, "we can see that the environment is bi-partisan." Cooperation was at the root of environmental successes last year, she said, and added, "I think we can do it again."

Here's Sarabelle!

Two-term VNRC Board Chair Dr. Carl Reidel handed over the gavel this winter to Sarabelle Hitchner. An instructor and administrator at Sterling College in Craftsbury, Sarabelle has served on the Board since 1982. We welcome her leadership and fresh ideas!

A Heart-felt Gift

From you—to Vermont

A VNRC gift membership for family or friends is also a gift toward the protection of Vermont's precious natural resources. And don't forget that membership benefits include a year's subscription to the *Vermont Environmental Report*!

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All contributions are tax-deductible.

CALENDAR/BULLETIN BOARD

Mid-February through April

Northern and Arctic Issues regarding health, education, welfare and the environment will be addressed weekly, on Thursday evenings and Friday mornings, in a Center for Northern Studies lecture series this winter. Call the Center at 888-4331 for details.

March 16-22

National Wildlife Week plans are cooking, and wildlife lovers and K-12 environmental educators will be pleased to learn that education packets are being distributed again this year by the Department of Education and VNRC. This year's "Discover Wildlife In Your World" packets are filled with activity ideas, posters, and more; and VNRC is also offering a wildlife speaker/resource list. Teachers who have not received their packets yet should contact their superintendents.

March 22-23

Looking ahead to your spring calendar, be sure to mark off the 8th Annual **New England Environmental Conference** at Tufts University in Lowell, Massachusetts. With over 40 workshops and a host of exhibits planned, and 1,000 participants expected, the Conference has become New England's annual "environmental fair." Call (617) 381-3451 for more information.

The Conservation Society of Southern Vermont needs your help in compiling **Project Amateur Naturalist,** a directory of people interested in sharing their nature hobbies with school children. If you have a field trip to lead, a collection to show, or other hobbies to share, contact CSSV at RR1 Box 1540, Newfane VT 05345, 348-6334.

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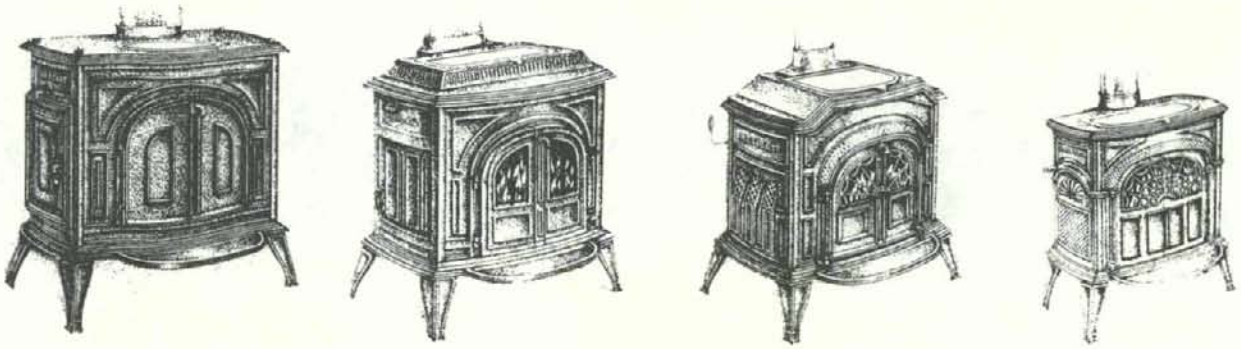

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