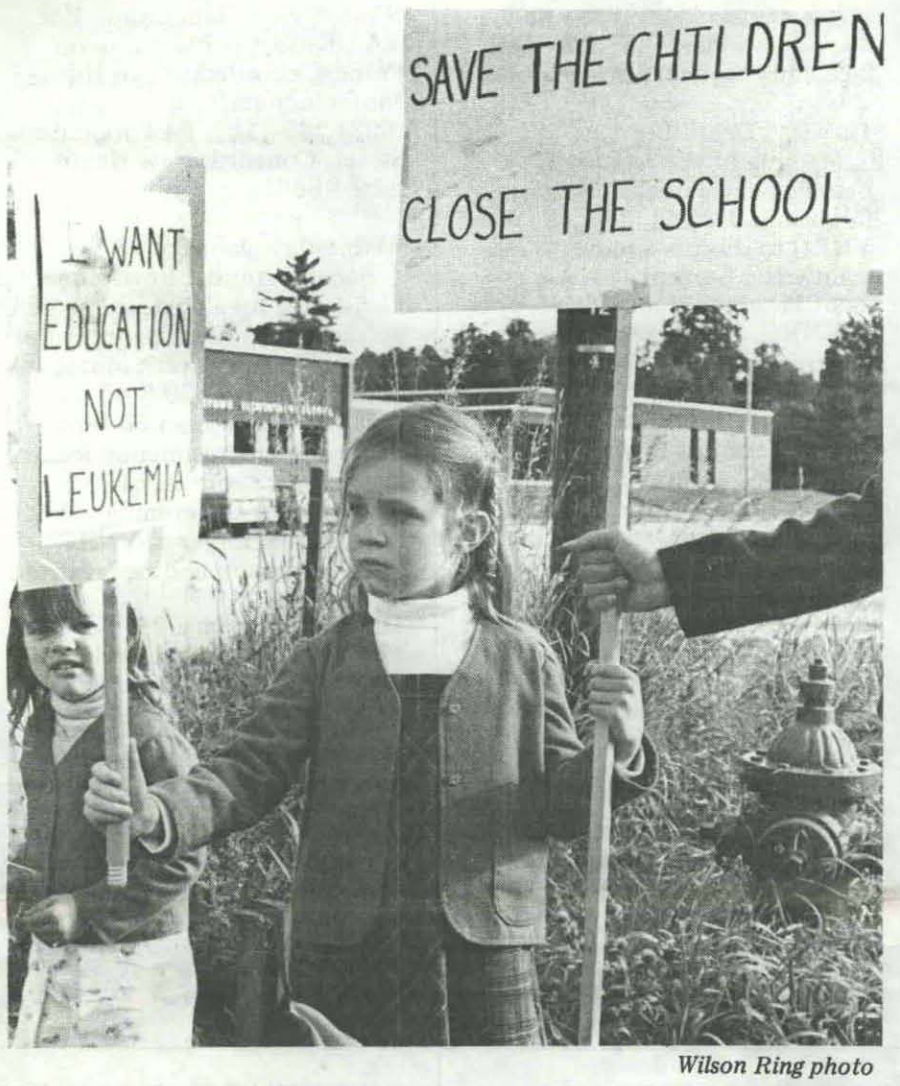
Vermont Environmental Report

November/December 1983 A Bimonthly Newsletter Published by the Vermont Natural Resources Council Vol. 4 No. 6



Wilson Ring photo

What Happened in Williamstown?

Sally Sweitzer

The town clerk's office in any Vermont town is a fine place for chance meetings. Williamstown's office is no exception.

On June 22, 1983, Peter McFarlin, a technician for the Vermont Health Department, was in Williamstown monitoring the municipal water supply system. He bumped into local resident Raymond Duff in the clerk's office, and the two men struck up a conversation. It turned out they had a lot in common. Duff was concerned about odors in his well water, and he'd written several State agencies asking that his well be tested. He received no replies. So he wondered if McFarlin could sample his water, so long as he was in town. McFarlin agreed, and the results of this chance meeting quickly became front-page news all over Vermont.

Within three weeks the Duffs' test results were back, indicating dangerously high levels of tetrachloroethylene (TCE), a suspected carcinogen, in their drinking water. After a second testing confirmed the original results, the Duffs were advised by the Health Department not to drink their water. Weeks later, Duff filed a lawsuit against Williamstown, the State of Vermont and Interstate Uniform Services, a dry-cleaning company directly above and adjacent to the Duffs' property and well.

Meanwhile, further testing by McFarlin found contamination of two more private wells in Williamstown. Health Department tests revealed TCE levels ranging from 200 to 934 parts per billion in wells owned by Eugene LaPerle and Pamela Fassett. No drinking water standards have been established for TCE or the other four chemicals found, but the Environmental Protection Agency's "health advisory" maximum level for TCE in drinking water is 20 parts per billion. All three families have since been connected to the town water system, which also has been found to contain traces of TCE.

Anxious about the health risks associated with the town well's contamination and frustrated by the apparent unresponsiveness of town and State officials, a group of Williamstown residents organized the Committee for Health and Safety. The Committee at once pointed its finger at Interstate Uniform Services, which uses TCE in its dry-cleaning process, as the source of the contamination. It demanded additional testing at the two local schools on either side of the IUS site.

These tests were conducted by EPA and State officials in the fall of 1983, under the watchful eye of the Committee for Health and Safety. TCE was found in the air and soil outside the elementary school as well as in the stream that runs through the school property. These findings led to a Health Department determination that IUS was indeed the source of the contamination at the schools, and the dry-cleaning operation was shut down.

But Committee members did not stop there. They have increased their numbers, applied for nonprofit status and received funding from the Hay-

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Low-Level Radioactive Waste Management

—The History -- The Problems -- The Options

Sonja Schuyler

Last August, in hearings before the Joint Energy Committee, Vermont State Geologist Charles Ratte remarked that if Vermont joins an interstate compact to handle low-level radioactive waste, it should expect that at some point, it will have to host a disposal facility. He also noted that if Vermont did not join a compact, the State would have to start looking for a site immediately. Those candid comments touched off an explosive debate over the proposed Northeast Low-Level Radioactive Waste Compact, which will be near the top of the agenda when the Vermont General Assembly reconvenes in January.

In order to understand why Vermont must consider this issue right now, a recap of some recent history is needed.

The Nuclear Regulatory Commission (NRC) has licensed six low-level nuclear waste disposal facilities. Three of those sites have been closed because of containment problems. Two additional sites -- in Beatty, Nevada, and Hanford, Washington -- were closed in 1979 after fires on incoming waste trucks and the discovery of leaky waste drums. The only other operating low-level waste site -- Chem Nuclear's dump in Barnwell, South Carolina -- remains open, but South Carolina Governor Richard Riley has ordered the operator to halve the volume of waste accepted.

Shaken by the closing of two out of three disposal sites, the nation's low-level waste generators, along with the states of Washington, Nevada and South Carolina, began pressuring Congress for new directives for low-level radioactive waste management. The result was the 1980 Low-Level Waste Policy Act (P.L. 96-573), which makes each state responsible for safe disposal of low-level waste generated within its borders. It also sets forth the policy that "low-level radioactive waste can be most safely and efficiently managed on a regional basis," and empowers states to form regional compacts to manage the waste. These compacts must be ratified by Congress. The bombshell in this legislation is the sentence: "After January 1, 1986, any such compact may restrict the use of the regional disposal facilities under the compact to the disposal of low-level radioactive waste generated within the region." The 1986 deadline, coupled with the swift formation of regional compacts around the existing disposal sites, has put the remaining states on notice that they must decide quickly how they are going to tackle low-level radioactive waste management.

The Low-Level Waste Policy Act defines low-level radioactive waste as radioactive material which is not classified as high-level waste, transuranic waste, spent fuel or by-product material. A radioactive waste is considered "low-level" if it contains less than 10 nanocuries of transuranic elements per gram of material (see DEFINITIONS, below).

Many critics begin their criticism of national low-level waste policy with this definition. They charge that it is irresponsible to define low-level waste by what it is *not* rather than characterizing the waste by specific standards.

The NRC classifies low-level waste according to the level of radioactivity: Class "A" material is the least radioactive and includes materials such as protective clothing worn by power plant workers; Class "B" waste, the middle range, includes resins used in the water purification systems of boiling water reactors, for example; Class "C" wastes, the most highly radioactive, includes irradiated reactor parts and other materials. The NRC and the Department of Transportation standards for packaging, handling and disposing of low-level wastes are based on these classifications. It is important to note that these classifications and standards are based on the radioactivity of the waste at the time of disposal, not on the half-life of the material.

Low-level radioactive waste is generated by nuclear power plants, nuclear and medical research laboratories, medical radioisotope diagnostic techniques, cancer treatments, and other research, development and manufacturing processes involving radioisotopes. Vermont annually generates

(Continued on page 4)

DEFINITIONS*

Curie: A measure of the rate of radioactive decay; it is equivalent to the radioactivity of one gram of radium or 37 billion disintegrations per second.

Isotopes: Different forms of the same chemical element, which are distinguished by having different numbers of neutrons (but the same number of protons) in the nucleus of their atoms.

Millirem: One thousandth of a rem.

Nanocurie: One billionth of a curie.

Radioisotope: An unstable isotope of an element that will eventually undergo radioactive decay.

Rem: The dosage of an ionizing radiation that will cause the same biological effect as one roentgen of X-ray or gamma-ray dosage.

Transuranic wastes: These wastes come mostly from the reprocessing of spent fuel and fabrication of plutonium to produce nuclear weapons. The transuranics are elements that have atomic numbers greater than that of uranium. They are are artificially produced by the bombardment of uranium and uranium products within the reactor. Though transuranics are less intensely radioactive and thus generate less heat than fission products, they take far longer to decay.

**From* A Nuclear Waste Primer, *League of Women Voters Education Fund, 1982. Copies of this publication (No. 391) are available for $5.95 apiece from: The League of Women Voters of Vermont, 2 Railroad Avenue, Essex Junction, Vermont 05452.*

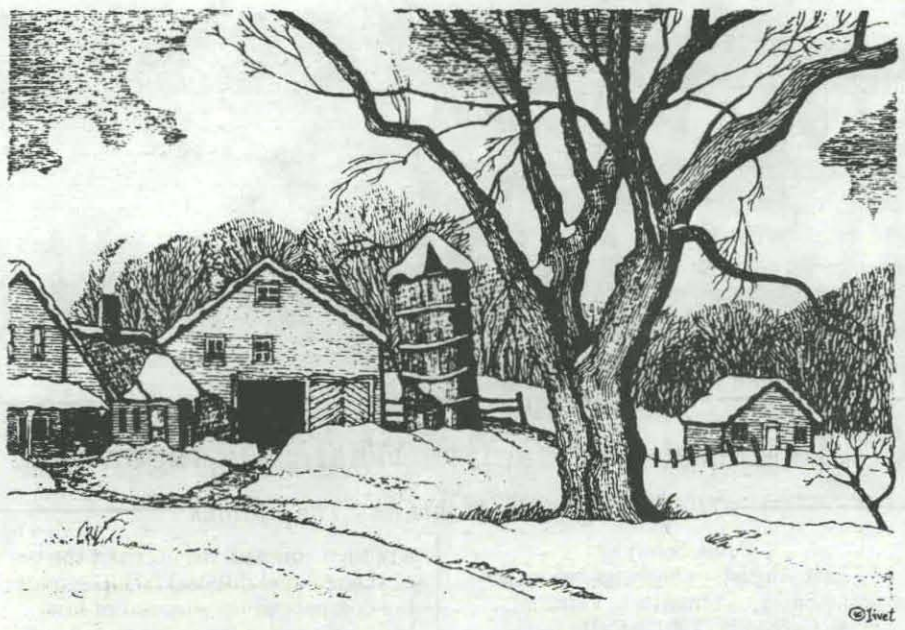


Illustration by William Olivet

The Word from Washington

OIL AND GAS LEASING

The U.S. Forest Service is reconsidering an earlier decision to open all of Vermont's Green Mountain National Forest to oil and gas exploration. A coalition of five environmental groups including VNRC, the Vermont Wilderness Association, the Sierra Club, the Wilderness Society and the Conservation Law Foundation appealed the June, 1982, decision of Acting Regional Forester Duane G. Breon, charging that Breon's Environmental Assessment was inadequate and demanding a full-fledged Environmental Impact Statement (EIS). A recent ruling by USFS Chief R. Max Peterson does not specifically require an EIS, but it does demand that the Regional Forester's Environmental Assessment

- spell out requirements for pre-lease review and clearly retain authority to deny or attach conditions to leases,
- consider no-lease alternatives for portions of the Forest, and
- re-evaluate roadless areas inventoried during RARE II for potential wilderness designation.

Any decision regarding oil and gas leasing in the roadless areas must be deferred until completion of an appropriate environmental analysis.

A NEW YEAR'S RESOLUTION FOR VERMONT WILDERNESS?

It was a great disappointment when Congress adjourned without completing action on the Vermont Wilderness Bill. After 10 years of suspense, both friends and foes of Vermont wilderness were ready to lay down their cudgels. But Congress went home on November 18, three days after a compromise bill passed the House.

Vermont Senators Leahy and Stafford and Representative Jeffords cosponsored a bill in March, 1983, to designate an additional 64,800 acres of wilderness. They spent the next six months holding public hearings and meeting with snowmobilers, naturalists, selectmen, loggers, biologists, foresters, fishermen, hunters, trappers, State officials -- anyone with an interest in the management of U.S. Forest Service lands. S.897, introduced in mid-October, was a careful compromise that would create four new wilderness areas totaling 39,000 acres plus a 34,000-acre national recreation area which would be managed primarily for wildlife habitat and "primitive and semi-primitive recreation" (see the September/October 1983 **Vermont Environmental Report** for details).

But almost before the ink was dry, some of the key actors took exception to specific provisions of the bill. The Washington-based Wilderness Society is concerned that the Vermont bill would set a precedent for "hybrid" national recreation areas as an alternative to wilderness designation; Vermont Environmental Secretary Brendan Whittaker still doesn't like the proposed George D. Aiken Wilderness Area in Woodford; GMNF Supervisor Steve Harper questions restrictions on vegetative management in the White Rocks National Recreation Area; wilderness opponent Roland Seward claims the language in the compromise bill is not what he agreed upon; and hard-core foe John McClaughry says he never agreed to anything.

While you're making the rounds this holiday season, you might call on your State representative(s) or drop a note to Senators Leahy and Stafford and Representative Jeffords. Let them know if you think S.897 is a reasonable compromise. It's time to settle the wilderness question once and for all so we can move on to other issues.

The Williamstown Committee for Health and Safety (see page 1 article) has produced a 16-page citizen's guide to seven toxic chemicals commonly found in Vermont's air, soil and water. Send $1.00 per copy for postage and handling to: Chris Allen, Box 38, Williamstown, Vermont.

Calendar

Monday, December 12

The Current Use Advisory Board meets from 1:00-4:00 p.m. at the Pink Lady Conference Room, 1 Baldwin Street, Montpelier. Topics for discussion include proposed legislative changes, standards for accepted forest management practices and forest management plans, and use values. Public invited. Call 241-3500 for more information.

Tuesday, December 13

Meeting of the reconstituted **Fair Tax and Equal Education Coalition,** 9:30-11:30 a.m., at VNRC to discuss a move to dismantle the Current Use Assessment Program. Call Don Hooper at VNRC, 223-2328, for more information.

Thursday, December 15

The Vermont Environmental Caucus will compare notes on the upcoming session of the Vermont General Assembly at a brown bag lunch in VNRC's Conference Room. Call Don Hooper, 223-2328, if you'd like to attend.

Friday-Sunday, January 6-8

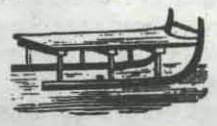
Concerned citizens from the northeastern U.S. and eastern Canada will meet at **Acid Rain '84,** a major conference sponsored by Friends of the Earth Foundation and the New Hampshire Citizen's Task Force on Acid Rain, to develop a citizen's platform and to send out a unified, national message on acid rain control. Senators Hart and Hollings and several other presidential candidates will attend the three-day conference at the Sheraton-Wayfarer in Manchester, New Hampshire. For information, contact Sharon Francis, coordinator, or the conference staff at (603) 225-4155, 54 Portsmouth Street, Concord, New Hampshire 03301.

Wednesday, January 18

Second Annual Environmental Legislative Breakfast, sponsored by the Vermont Environmental Caucus, at the Tavern Motor Inn in Montpelier, 7:30-8:45 a.m. Last year more than 50 legislators and environmental leaders met to talk about legislative priorities for the coming year. Call Cherie Langer at VNRC for information and reservations.

Thursday, January 26

Winter quarterly meeting of the **VNRC Board of Directors.** Call VNRC, 223-2328, for time and place.



Odds 'n Ends

CHRISTMAS GIFT IDEA

There's a new volume in Stan Allaben's series on Vermont cross-country ski trails. The *Central Vermont Region* covers most of Washington, Addison, Orange, Rutland and Windsor counties. Like Allaben's earlier guide to the *South Central Region*, this convenient, durable pocket guide contains descriptions of back-country and wilderness trails, Forest Service and old town roads, public trails, and commercial cross-country ski areas. "Nature Notes," a new feature, adds information about some of the wildlife in this part of Vermont. And finally, Stan Allaben, a former VNRC Board member, will donate $1.00 to the Council for each copy sold if you send him your order on the form below:

Please send me _____ copies of the *Vermont Ski Trail Guide -- Central Vermont Region.* I enclose $5.00 per copy plus 50¢ postage and handling. Total enclosed: $_____.

Name _____

Address _____

Town _____

State _____ Zip _____

Stanton Allaben Productions
RFD 1, 70 Little Pond Road
Londonderry, Vermont 05148

IT'S THAT TIME AGAIN!

Renewal time is coming up, and you'll be receiving your 1984 membership renewal notice soon after New Year's. Please watch for it and return it promptly. It will save us postage and staff time, and you'll be spared all those embarrassing reminders!

VNRC

VERMONT ENVIRONMENTAL REPORT

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The Vermont Environmental Report is published six times a year by the Vermont Natural Resources Council. The opinions expressed by VER contributors are not necessarily those of VNRC. Please address all correspondence regarding this publication to VER Editor, VNRC, 7 Main Street, Montpelier, Vermont 05602.

COMMENTARY

Recycling Versus Resource Recovery

Garbage. The cost of getting rid of it keeps going up. But some people think our trash is too valuable to throw away. In fact, they're arguing over the best use for it! Recyclers think we should recover and reuse as much paper, glass, metal and plastic as possible; resource recovery advocates think burning our trash for energy is the most economically and environmentally sound solution to the solid waste disposal problem.

In this article, Jim Dohrman, a solid waste engineer for Dufresne-Henry and a member of the Board of Directors of the Association of Vermont Recyclers, explains the issues in the waste "war" and makes a case for a Vermont solution combining recycling and energy recovery.

A "war" of words and economics has been brewing for the past decade between recyclers and the resource recovery industry. The dispute seems relatively simple: Why destroy (incinerate) materials and manufacture new goods when the same materials could be recycled and reused while using less energy than the energy recovered from incineration?

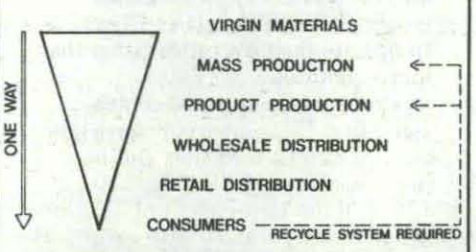
Like a major military conflict, the war has national as well as local issues, and both long-term and short-term consequences must be measured. We must weigh the utopian ideal of a waste-free society against the real-world economic and environmental costs of getting rid of our trash.

Glass, metal and other non-combustibles are not among the disputed territories in this "war." I doubt whether you will find any resource recovery facility operator who will object to the removal of glass or metal from the waste stream, since these materials don't burn very well. Most of the resource recovery projects in New England actively support the separation and recycling of non-combustibles, and at least one regional group has discussed paying a premium for source-separated trash in the form of a lower tipping (dumping) fee.

BURNING ISSUES

The real issue in the conflict is the combustible portion of the waste stream -- paper and plastic in particular. In general, markets for recyclable paper can be found throughout the country. Secondary fibers reclaimed from newsprint and cardboard have a wide range of applications, including the building trades, the automobile industry and export markets. Paper manufactured from recycled fibers versus paper produced from virgin materials uses one-third the energy, produces considerably less air and water pollution and obviously reduces the destruction of virgin timber. If we stop our analysis here, as some recycling proponents do, it appears that we have a clear victory for the recyclers. But the larger question remains: "If all these things are true, why isn't more paper being recycled?"

Let's take a look at some of the real issues of recycling. The production and consumer distribution of paper products can be simplified as shown in Figure 1. The inverted triangle represents the unit volume of material involved with each process. Large paper mills throughout the country produce paper stock in mass quantities. They, in turn, sell the stock to a relatively larger number of "product production" industries which form the stock into usable products. The production industries then distribute to an even larger network of retailers, who finally sell the product to millions of consumers throughout the country. This is an established system which involves large national and international companies, millions of jobs, and a multitude of political, economic and special interest groups.



PAPER PRODUCTS FLOW CHART
Figure 1

The established system is a one-way system reluctant to change. We cannot return our daily newspaper for a five-cent deposit, as we do with beverage containers. Successful paper recycling requires a separate system to get the product from the consumer back to the manufacturer. This is where we get down to the local level, where the real issues are debated and the decisions are made.

The system of returning materials to the manufacturer can be summarized in one word: "markets." If there is a market structure that will return a profit to the commercial sector, then recycling will occur. But the market structure for recycled paper in Vermont is minimal to non-existent. Some spot markets exist, but they are often unreliable and limited in the volume of paper they can accept. Transportation costs are prohibitive for the more established markets in major metropolitan areas. This is an issue that the Association of Vermont Recyclers has been struggling with since its formation in March of 1982. All of its efforts to locate new or better markets or to promote cooperative marketing have been negated by transportation distance and high costs.

The future does not look very bright. Historically, prices for waste paper remain constant or increase at a rate well below the general inflation figures. Conversely, the major component of transportation -- fuel -- increases at a rate greater than inflation. Paper prices appear to be headed upward due to the rebounding economy and increasing foreign markets, but these gains will probably be offset by fuel cost increases.

On the brighter side, the State of New Hampshire, through the New Hampshire Resource Recovery Association, has successfully negotiated a contract with a major paper market in the Boston area to purchase newsprint from all association members at $35 per ton. This is the type of system I was referring to: one that includes an established market, guaranteed volumes, and a reasonable transportation distance.

On the other side of the coin, let's consider the value of paper to a resource recovery facility. Assuming a conservative energy content of 6500 BTU/lb, a ton of paper contains 13 million BTUs. Compared to No. 6 fuel oil at 150,000 BTU/gal, a ton of paper is equivalent to 87 gallons of oil. Allowing for the differing thermal efficiencies between oil burners and resource recovery facilities, a ton of paper has a value of $50 to $60 per ton, compared to a recycled value of $20 to $35 per ton.

The idealistic recycler will immediately respond that we have not factored in the number of trees saved nor the energy conserved nor the reduced pollution by not producing that unit of paper from virgin materials. Again, the recycler is theoretically correct; but the savings are not reflected in the market value of the material because an efficient system to return the material to the manufacturer does not exist.

THE PROBLEM WITH PLASTICS

The present discussions concerning plastics seem to center more on environmental issues than on the economics of recycling. At the present time, there are very few markets for recycled plastic, even on the national level. Those few markets have strict contamination limits and require high volumes to be economically viable. These are significant obstacles to post-consumer recycling of household plastics, and only limited recycling is occurring in Vermont at present. Although plastic recycling is bound to increase as oil reserves decline, the same factors of markets and transportation will affect future recycling.

The environmental concerns about burning plastics are for the most part based on misconceptions and a lack of understanding of the combustion process. Most household consumer plastics are complex hydrocarbons or combinations of hydrogen and carbon atoms. Typical examples are styrene ($C_6H_5CH\ CH_2$) and polyethylene ($CH_2\ CH_2$). Complete combustion (oxidation) of these plastics produces only carbon dioxide (CO_2) and water (H_2O).

Most people have observed plastics burning in a backyard trash barrel or campfire, giving off black smoke and pungent odors. But this is not complete combustion; the hydrocarbon gasses produced from burning solid plastic are cooled by the open atmosphere before complete combustion can occur. In a properly-designed and operated closed incinerator, adequate temperature and resonance time ensure complete combustion.

Emission problems can arise in a municipal incinerator from burning chlorinated plastics such as polyvinyl chloride (PVC) or other organic compounds in the presence of free chlorine. Complete combustion of these materials produces hydrochloric acid (HCL) in addition to water and carbon dioxide, and incomplete combustion could produce a host of other organic compounds and by-products. Fortunately, only minimal amounts of these plastics and other chlorinated materials turn up in the normal domestic waste stream. These amounts normally result in HCL emissions well below accepted standards.

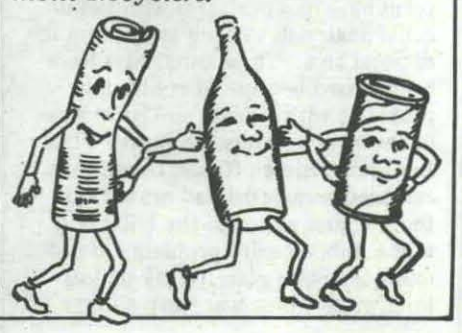
In summary, the plastics contained in normal domestic refuse have little, if any, recycling value and produce acceptable emissions when burned. The high BTU value of the plastics is an important factor in energy recovery from municipal refuse.

So where does all this put us in our evaluation of resource recovery versus recycling? The by-laws of the Association of Vermont Recyclers list two general goals: to "reduce the total amount of waste requiring disposal" and to "increase the percentage of the waste stream that is being recycled." I suggest that resource recovery fits those goals very well. The primary purpose of a resource recovery plant is to reduce the waste volume by 90% and to stabilize the material so that it can be safely landfilled. Energy recovery is a secondary goal, intended only to reduce disposal costs to a level competive with other disposal options.

Recycling is not incompatible with energy recovery. We should continue to promote recycling at all levels, especially the establishment of a "system" to return goods to the manufacturer and the creation of new markets. Removing non-combustibles such as glass and metal from the waste stream benefits both recycling and resource recovery, and resource recovery can fill the gaps in short-term markets for recycled plastic and paper.

If long-term markets for these materials improve and prices approach or exceed fuel value, resource recovery plants could either supplement the remaining waste with auxiliary fuel, or simply produce less energy for recovery and sale. In either case, higher waste disposal costs should be offset by higher recycling revenues.

Jim Dohrman is a solid waste engineer for Dufresne-Henry of Springfield, Vermont. This article also appeared in Out of the Dumps, *a newsletter published by the Association of Vermont Recyclers.*



"On one point, even the most optimistic nuclear waste manager and the harshest critic agree: Shallow land burial of low-level waste in a region with plentiful rainfall is a difficult proposition."

(Continued from page 1)
17,000 cubic feet of low-level wastes. Vermont Yankee produces about 80% of this waste, which includes used resin from the water purifying system, throwaway protective clothing, trash and contaminated parts and tools. The state's next largest generator is the University of Vermont, which produces approximately 10% of the waste. Hospitals also generate low-level waste, but most diagnostic isotopes have such short half-lives that hospitals store these wastes until the radioactivity drops to background levels and then dispose of the materials with regular trash. The remaining waste is generated by other colleges, research labs and manufacturing activities.

The volume of waste generated in Vermont is not projected to increase significantly between now and the end of this century. However, the anticipated decommissioning of Vermont Yankee after 2005 will cause a gigantic increase in the low-level waste volume during the decommissioning period. Vermont Public Service Department estimates range from a low of six times the present annual volume for entombment to a high of 60 times the current total for dismantlement.

HEALTH RISKS

The danger from low-level waste disposal is that radioactive elements will be transported away from the disposal site by rainwater run-off or ground water movement. This contaminated water could enter water supplies or be incorporated by plants in the food chain. Radiation entering a cell can disrupt cell reproduction in living organisms. Not all of these disruptions have a detrimental effect on cells. Some of these mutations cause cancer, however, and mutations in reproductive cells can cause inherited genetic defects.

Ideally, all unnecessary exposure to radiation from low-level waste should be avoided. Practically, federal regulations set limits on occupational exposure and radioactivity in drinking water and establish construction and operating standards for waste facilities. Exposure to the general public from nuclear facilities is not supposed to exceed 25 millirems per year.

HANDLING LOW-LEVEL WASTES

At the present time, shallow land burial is the only method of low-level radioactive waste disposal that has been licensed by the NRC. The minimal requirements are for a shallow trench in a well-drained area, free from flooding or significant erosion, which is designed to keep water away from the waste. The requirement to prevent ground water intrusion can be waived if the developer can show that ground water outside of the site will not be affected. Site operators must provide for maintaining the site after it is no longer receiving waste. Class "C" wastes must be buried so that they are isolated for 500 years.

The three existing commercial low-level waste sites in this country are shallow land burial sites, and none of them have had problems with radioactive materials moving away from the disposal area. Three other sites have been closed because of continuing problems with erosion and subsidence of the trench covers. In Maxey Flats, Kentucky, State officials found that radioactive material had moved off the site, and although the NRC said that a public health problem did not exist, the State placed a tax on low-level waste which was steep enough to force the site to close. The Sheffield, Illinois, site closed in 1977 when the State of Illinois refused to grant U.S. Ecology a license to expand. Tritium appears to have moved away from the site, but the seriousness of the problem depends on who is describing it. U.S. Ecology and the State of Illinois are involved in a court fight about financial liability for long-term maintenance. The State of New York closed a low-level waste disposal site in West Valley, New York, after the trenches filled with water and overflowed. At all three sites, water is continually pumped from the trenches and treated to remove contaminants.

Recent changes in low-level waste management regulations are the federal government's response to the problems at these three closed sites. Many critics feel that these changes have not gone far enough to solve the problems. On one point, even the most optimistic nuclear waste manager and the harshest critic agree: Shallow land burial of low-level waste in a region with plentiful rainfall is a difficult proposition.

Three other waste management techniques have been used: storage for decay, incineration and engineered long-term storage. Dartmouth Medical School and the University of Maryland use a combination of storage for decay and incineration to reduce considerably the amount of waste they must ship out. Maryland has reduced its waste volume from 400 30-gallon drums to only 63 cubic feet. New England Nuclear, a manufacturer of radio-pharmaceuticals, is now recycling tritium gas to reduce its disposal volume.

Engineered long-term storage is being used by Ontario, France, Sweden and West Germany. Ontario Hydro and France use concrete structures to isolate low-level waste, Sweden uses mined caverns under the Baltic Sea, and West Germany uses abandoned mines.

Incineration and storage for decay have been used successfully to reduce the volume of waste which must be disposed of. However, the physical characteristics and long half-lives of resins and irradiated reactor parts -- which make up more than half of a power plant's wastes -- make these techniques impractical for low-level wastes from nuclear facilities.

At present, Vermont has three options: go it alone, join the Northeast Compact, or join in another compact with Maine and New Hampshire or with a large producer such as Massachusetts or New York.

Legislators from three states, including Senators Mary Skinner and John Howland and Representative Mark Candon from Vermont, are discussing the possibility of a Maine-New Hampshire-Vermont compact. The State of Maine envisions three sites, with each state taking a turn, while New Hampshire favors a single regional site. Representatives from all three states will meet in early December and Senator Mary Skinner hopes some sort of draft compact will be ready for the 1984 legislative session.

Vermont could decide to go it alone by design, or be forced to act alone if it fails to join a regional group. Both California and Texas plan to operate their own sites rather than join a compact.

Critics of the regional compact claim that Vermont would have more control over its own site. But how much control is debatable. NRC, EPA and the Department of Transportation already regulate site design, disposal practices, waste packaging and transportation, although states have limited authority to enact stricter requirements so long as they do not expressly prohibit waste transportation or disposal.

One apparent disadvantage of "going it alone" is cost. A study by EG & G, consultants to the Department of Energy (DOE), estimates that disposal costs for an 11-state regional compact would be $4.50 per cubic foot versus $135 per cubic foot if Vermont were to build a single-state site. Vermont Yankee currently pays $47 per cubic foot. Both supporters and opponents of the Northeast Compact have questioned EG & G's figures, and Maine has been awarded a DOE grant to study small generator costs.

The 11-state Northeast Low-Level Radioactive Waste Management Compact is the most well-developed option. This document was drafted by a Policy Working Group made up of representatives from Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, New Jersey, Maryland and Delaware. They were advised by a Technical Working Group from each of the states. Vermont's Policy Working Group members are Representative Mark Candon (D-Rutland) and Dr. Lloyd Novick, Secretary of Human Services. Ray McCandless, Chief of Occupational and Radiological Health, was Vermont's technical representative.

The compact has been sent to all the state legislatures with a June, 1984, deadline for joining the compact. To date, four states have ratified the compact -- Maryland, Delaware, New Jersey and Connecticut. The New Hampshire legislature has rejected the compact.

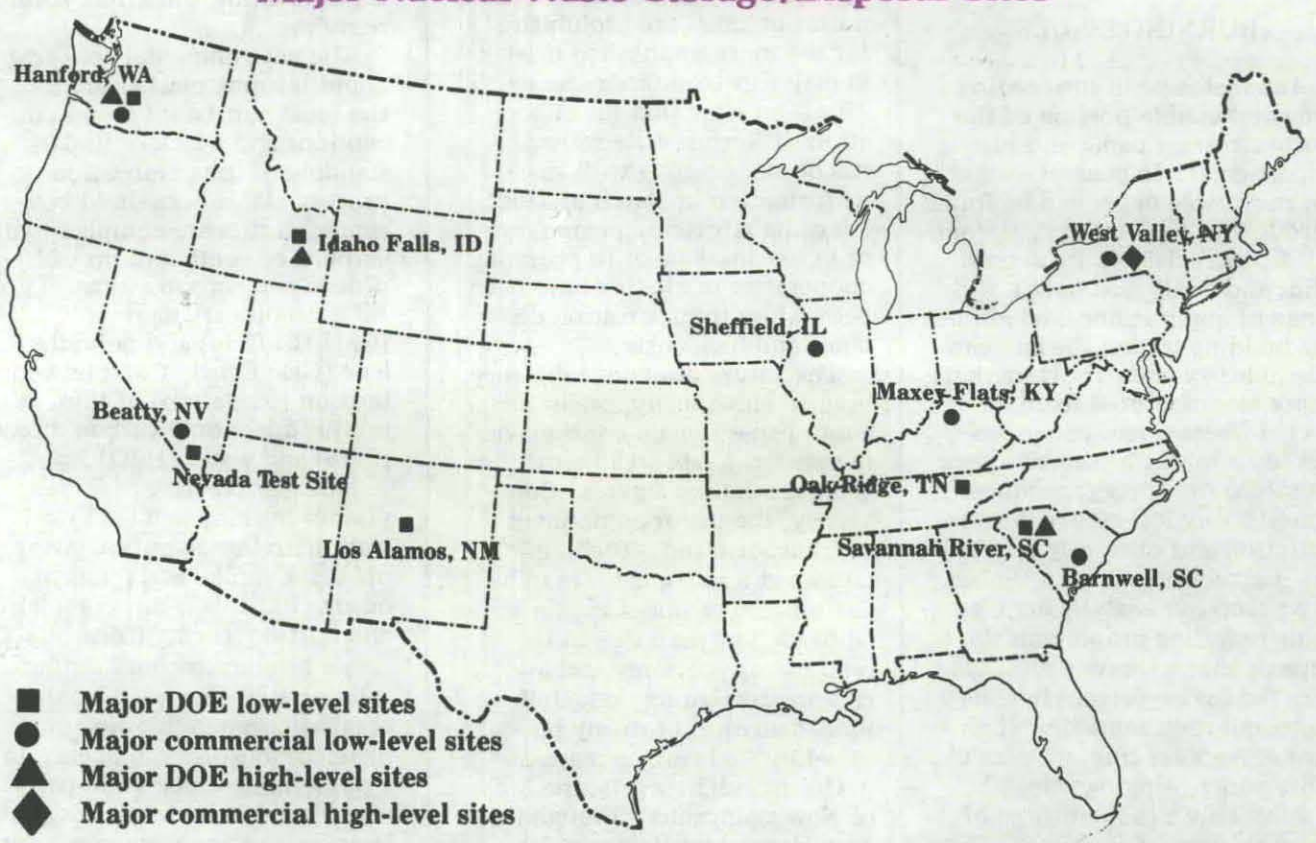
The 11-state compact sets up the Northeast Interstate Low-Level Radioactive Waste Commission, made up of one representative from each member state, plus one additional member for the state hosting the regional facility. The commission coordinates compact administration and is responsible for "timely development of a regional facility by a host state" and for ensuring a coordinated regional approach to low-level waste management. It does not have regulatory or operational authority over the waste facility itself. The compact also spells out the rights and responsibilities of "host states" and "party" states."

While few critics argue with the concept of regional low-level waste management, the Northeast Compact has been harshly criticized. Vermont legislators who have studied the compact are particularly worried about two aspects of the compact. First is the provision that compact ratification entails repeal of inconsistent state laws. Would compact ratification repeal Vermont's nuclear waste siting law, which requires legislative approval of any nuclear waste disposal site? The Vermont Attorney General has issued an opinion that it would not, but legislators are still uneasy about the compact's strong use of the word "repeal."

The second concern is the possibility that Vermont (which produces a mere 1.5% of the 11-state region's low-level waste) could host a site that would serve the nation's number one generator -- Massachusetts -- plus three other states in the top ten: Pennsyl-

(Continued on page 5)

Major Nuclear Waste Storage/Disposal Sites



Reprinted with permission from A Nuclear Waste Primer, © *1982, League of Women Voters Education Fund.*

Radwaste

(Continued from page 4)
vania, New York and Connecticut. However, since Vermont has no obvious advantages in terms of geology, climate, or location, its chances appear to be no greater than one in 10 to host the site. Population density is not one of the criteria for site selection under the compact, but some legislators fear that it would be used as a criterion anyway.

The compact gives states the power to regulate waste transportation and storage as long as the requirements are not "unreasonable." There is a general uneasiness over the definition of "unreasonable," and whether or nor the compact could override state regulations.

Some critics have suggested that the compact would strike down local zoning and state land use laws. Article VI of the compact and an NRC policy document on "The Role of the State in the Regulation of Low-Level Radioactive Waste" indicate that this would not be the case, but the wording in the compact is vague. The liability and public hearings provisions in the compact have also been criticized as weak and insufficient.

H.447 will be the subject of continuing debate in the second half of the 1983-1984 Biennium. The factions are already lining up on several different sides of the issue.

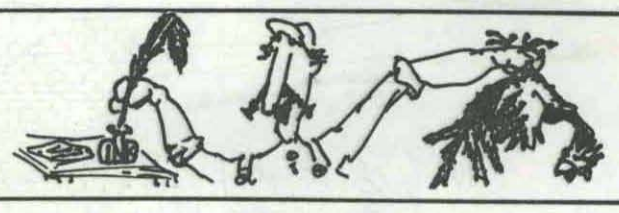
Governor Snelling supports the Northeast Compact. He has directed his administration to issue a study of the three-state option, but has not named an official representative to the three-state discussions. The Vermont League of Women Voters currently favors an amended Northeast Compact. It is particularly concerned about liability and public hearing provisions and the vagueness of the repeal provisions. The League would also like to amend H.447 to provide that Vermont's second commission member, if it hosted a site, would be a resident of the host community. NELRAD, a regional organization of low-level waste generators, supports the compact, although Director Janice Stilluto acknowledges that the repeal provisions should be clarified and that cost projections developed by the compact study group are flawed. The Sierra Club does not support the compact as written because it does not specifically address its criteria for waste classification, isolation periods, monitoring requirements and waste reduction. Sierra Club is also worried about liability provisions and public participation. The Vermont Natural Resources Council is studying the alternative compacts, but is reluctant to endorse an option until more reliable health, cost and legal information is developed. The Vermont Public Interest Research Group and the Vermont Yankee Decommissioning Alliance object to the 11-state compact as drafted, but are not opposed to a Northeast regional compact per se.

The Joint Energy Committee has been studying the Northeast Compact and low-level waste management over the summer, and hopes to have a report ready by the time the Legislature convenes in January. In arriving at a Vermont solution to the low-level radioactive waste management problem, the Legislature must answer the following questions:

- Do the advantages of membership in the Northeast Compact justify taking the one-in-ten chance of hosting a large regional site?
- Can a Maine-New Hampshire-Vermont compact provide enough environmental protection, state control and economic security to make it a better option than the Northeast Compact?
- Can Vermont provide adequate low-level waste management it it opts out of any regional compact?

Sonja Schuyler is Natural Resources Director for the Vermont League of Women Voters.

Farmink



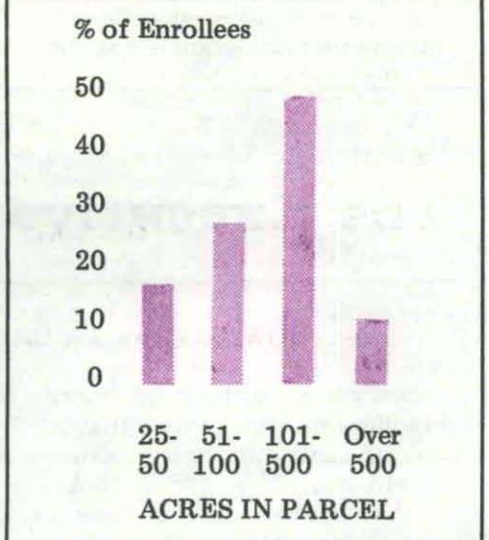
Current Use is Convenient Target

Don Hooper

Vermont legislators are in a feisty mood over finances. With a budget deficit in an election year, they may take it out on the State's $1.5 million Current Use Assessment Program. In mid-November, Senator George Coy (R-Grand Isle) introduced S.170, a bill to dismantle Current Use.

"Current Use" is shorthand for a modest and effective four-year-old program that allows Vermont farm and forestland to be taxed on its productive or "use" value rather than on its fair market value. By reducing the local property tax burden on farm and forestland, the State program encourages landowners to make a long-term commitment to keep their land undeveloped and productive -- for timber, hay and wildlife habitat.

Here's how it works. Landowners who enroll in the current use program are taxed according to the land's ability to produce crops rather than building sites. In return for the lower tax assessment, participants agree to keep the land in forestry or agriculture *forever*. If at some later date the landowner reconsiders and decides to develop the property, he or she must pay a 10% penalty on the fair market value of the developed portion.



Virtually every state in the union has some form of current use tax law to protect agricultural land and open space. When the General Assembly passed the Vermont version in 1978, it tailored the program to Vermont's needs in two innovative ways:

(1) Forestland owners are required to draft long-term management plans and to carry them out. This ensures that the land will be used productively -- it won't just sit idle.

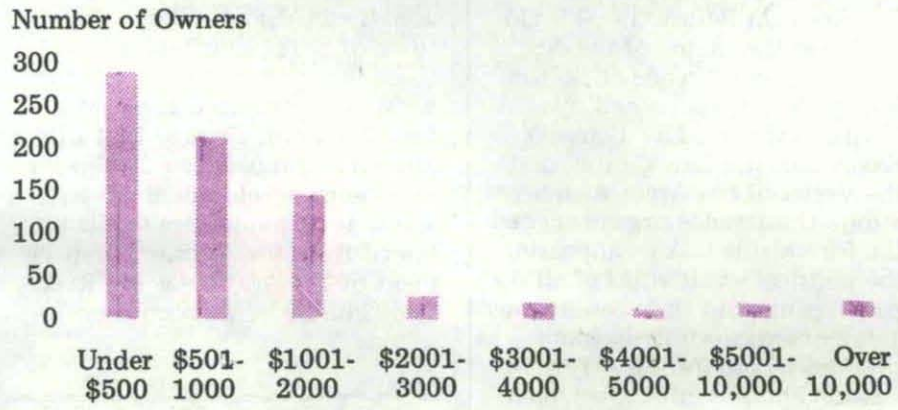
(2) The State reimburses the towns for lost tax revenues, so that they're not penalized for being "rural."

The program has grown gradually but steadily for four years. Today there are approximately 1800 participating landowners and 450,000 enrolled acres.

VNRC is a strong advocate of the Current Use Program because it encourages wise land use and long-term management of Vermont's forests and farms.

Most of Vermont's forestland consists of relatively small holdings, and under-management is chronic. Because of the Current Use Program, many of these parcels are being managed and harvested for the first time in years.

One prominent woodland owner who is enrolled in the current use program calls his former treatment of the land "resource abuse, something akin to "slash-and-burn agriculture. Basically, I mined my accessible land, cut very heavily, and then neglected it," he says. "No thinning, no new stock -- just rampant neglect."



In the 46 Vermont towns that have reappraised in the last two years, rural land values have soared as the old informal under-assessment system gives way to mandatory fair market appraisal. With nearly 200 additional Vermont towns scheduled in the next four years, we can expect substantial new pressure to sell, subdivide and develop farm and forest tracts. Current Use Assessment may be the only economic way to hold and manage much of that land.

One criticism of the program which surfaced during House Ways and Means Committee hearings in October was that only 10% of the enrolled acreage is farmland. But when one considers how little of Vermont land remains open (about 20%), 45,000 farm acres is substantial. And, at a time when agriculture, particularly dairying, is facing an excruciating cost/price squeeze, 10% enrollment is surprisingly high. If farmers are uncertain about *immediate* futures, it would defy Yankee business sense to attach any kind of long-term lien to a chunk of Vermont's most desirable real estate.

In addition, some 30 Vermont towns have local tax stabilization programs for farmland -- and to the farmer, they are usually more generous than the State program. But these few local tax programs are not a realistic alternative to Current Use; they work best in rich towns or in towns with little remaining farmland.

Some legislators have charged that Current Use is a windfall for a handful of large landowners. But the program enjoys broad-based participation. Nearly half the parcels in the program are smaller than 100 acres and 90% are smaller than 500 acres. The average landowner's tax reduction falls in the $500-$700 range, and 92% of the landowners receive less than $2000.

It is true that some large landowners and corporations are enrolled. It would be surprising indeed if those with the greatest stake in the productive use of their land weren't among the first to sign up.

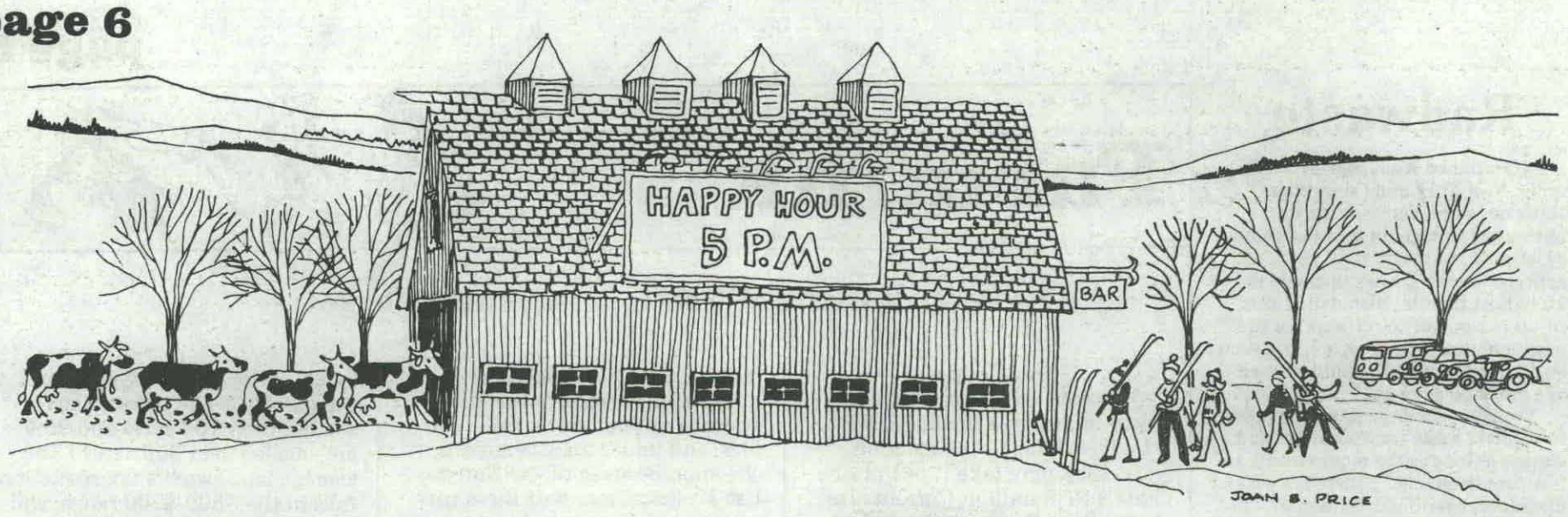
But wouldn't they keep it managed and undeveloped even without Current Use? Recent changes in the national economy and in forest industry ownership patterns suggest that the answer may be a resounding "no," which is exactly why some of Vermont's largest landowners are not participants.

"A long-term movement towards comprehensive forest land management could well add as much as a billion dollars to the market value of this resource," said Governor Snelling in his 1978 State of the State address. Current Use is the most effective incentive for conscientious cutting, planting and management of Vermont forestlands. Given that Vermont's second most important manufacturing industry is wood products, this is no small accomplishment.

If you're a present or would-be participant in Current Use, now is the time to let your legislator know how you feel about the program. This discussion may move very quickly come January.

Don Hooper is Director of Operations for the Vermont Natural Resources Council.

If you're curious about Current Use, you'll find interesting reading in a new publication entitled, *Use Value Appraisal of Agricultural and Forest Land: A Citizen's Guide.* The 16-page handbook is available free of charge from: The Current Use Advisory Board, 43 Randall Street, Waterbury, Vermont 05676.



The wolf shall dwell with the lamb, and the leopard shall lie down with the kid . . . .

Isaiah II:6

The identities of the "lamb" and the "wolf" are subject to continuing debate, but the Sixth Annual Environmental Law Conference proved that ski area developers and environmental leaders can sit down together to talk about their common problems.

"Ski Area Development: A Lot Goes On Before the Skis Go On," was the theme of the November 10 conference at Bolton Valley Resort, sponsored by VNRC, Vermont Law School's Environmental Law Center, and the Vermont Ski Areas Association. Conference organizers had the formidable task of appeasing the political sensitivities of all the participants, but their reward was a day of extraordinarily frank, productive and informative discussion about conflicts between ski area development and natural resource conservation.

The turnout -- over 200 people -- was the largest in years. There was standing room only in many of the workshops. It was also, as one wag noted, the "most well-introduced" conference in recent memory. Three speakers shared that honor: Don Hooper, VNRC Operations Director; Joe Parkinson, Executive Director of the Vermont Ski Areas Association; and Dick Brooks, Director of the Environmental Law Center.

Hooper began by responding to charges that VNRC had a "hidden agenda" in organizing a conference on ski area development: "VNRC has always prided itself on doing its homework and taking action -- in that order," he said. "This is part of that homework assignment."

A theme that emerged from the day's discussions concerned different *styles* in ski area development and their implications for the environment. The first panel focused on Sugarbush Valley, Inc. All hell broke loose two years ago when Sugarbush announced plans to more than double its skier capacity. Since then, however, the State of Vermont, the U.S. Forest Service, Mad River Valley towns and the developer have broken new ground with a "Memorandum of Agreement" that creates a monitoring procedure for step-by-step implementation of the ski area's "Master Plan."

Sugarbush attorney Steve Crampton lauded the agreement for establishing "a communications network by which things can be talked out rather than constantly going into hearings and procedures in a gun-slinging mode and seeing who comes out alive."

The contrast between the Sugarbush and Killington ski areas was accentuated by last-minute cancellations of two out of four speakers on the subsequent panel. Killington drew fire from several Shrewsbury residents who were in the audience.

"Their absence speaks more than their presence about the contrast between the two," said Jonathan Gibson. "We in the town of Shrewsbury have tried to establish communication, and we've been rebuffed at every turn." Gibson charged that Killington had refused to divulge its long-range development plans, and that planning documents obtained from the Vermont Department of Forests, Parks and Recreation contained numerous deletions.

Well, that exchange got everybody going, and the debate continued in the halls and restrooms and over the sandwiches and beer.

But there was more food for thought after lunch in Fred Bosselman's keynote address. Bosselman, a Chicago land use lawyer, has made a cross-cultural study of the environmental impact of the tourist industry in *The Quiet Revolution* and *In the Wake of the the Tourist.* Peppering his remarks with wry humor, Bosselman described several methods of environmental conflict resolution:

(1) **Fog it through.** "Get the project approved before people figure out what's going on." This is more difficult for projects with long development periods.

(2) **Stamp it out.** "Characterize the developer as the embodiment of evil -- the devil himself -- or worse, someone from New York."

(3) **Let us reason together.** Bosselman says submitting environmental conflicts to negotiation, mediation or arbitration is not terribly successful because the mediator's role is not clearly defined in American society. Also, this method presupposes that both sides have well-developed, clearly-articulated positions and can negotiate on a more or less equal basis.

(4) **Let the judge take the rap.** This often happens when no one is willing to make a decision, as in when a town is being pressured by citizens to deny permits to a developer. But environmental litigation, according to Bosselman, is "quite unsatisfactory as a way of resolving these disputes. There is very little correlation between who wins the litigation and what happens on the ground afterward," he said.

(5) **Let the people vote.** The referendum is "an extremely potent tool for people who oppose development" but it is "not very conducive to conflict resolution."

(6) **Let the scientists decide.** The "latest trend" in environmental conflict resolution involves a recognition that "maintaining the status quo is not always wise."

All six methods of environmental conflict resolution have serious liabilities, Bosselman concluded, but mediation and scientific methods hold the most promise.

Afternoon panel discussions covered water quality and forestry issues, growth management, and alternatives to destination resort development. Attendance was good and the level of discussion was high in all sessions. Conferees enjoyed the generous hospitality of Ralph DesLaurier's Bolton Valley Resort as well as the participation of more than 20 top-caliber panelists -- all of whom donated their time and expertise.

The larger questions -- "Is accelerated ski area development the right direction for Vermont?" and "Do Vermont's environmental regulations threaten the vitality of the resort industry?" -- were never directly discussed. Nevertheless, "A Lot Goes On Before the Skis Go On" clarified many of the issues and helped lay a foundation for peaceful, if uneasy, coexistence between traditional foes. MM

From: The Executive Director

HOW TO GIVE SECURITIES AND SAVE MONEY

Every year, without fail, more and more people discover that in making contributions they can benefit *twofold* by giving stocks that are worth more than they cost. For example, a share of stock which cost you $50 and is now worth $90 represents a taxable gain, if sold, of $40. The tax, if you owned the stocks for more than a year, may be $10 ($20 if the stock was owned less than a year).

By giving the stock to the Vermont Natural Resources Council in lieu of a cash contribution, you deduct $90 as a contribution on your income tax return. If you are in the 45% income tax bracket, you save $40. By avoiding the capital gains tax, you save an extra $10 (or $20). Total savings of as much as $50 equals your costs; thus a donation worth $90 to VNRC costs you nothing!

There are several ways to contribute securities, but the simplest and quickest way of giving stocks is to follow these steps:

(1) Send the stock certificate *without* endorsement (and therefore non-negotiable) by registered mail, return receipt requested, to: VNRC, 7 Main Street, Montpelier, Vermont 05602.

(2) At the same time, but in a separate envelope, send a Stock Power (i.e., Transfer) form by first class mail, executed in blank (no named transferee, to facilitate handling by the Council), dated, and indicating that your signature is guaranteed. Your broker or your bank will do this for you.

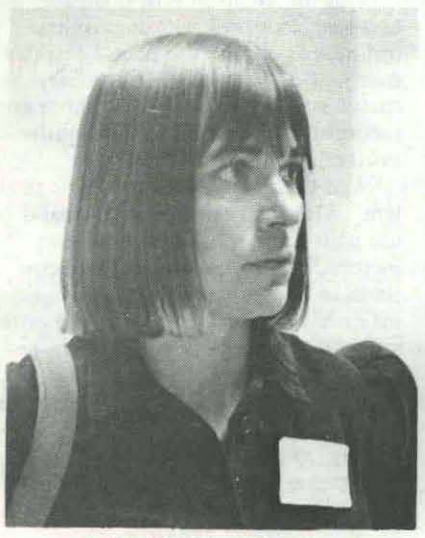
The certificate remains non-negotiable until joined with the Stock Power form at the Council.

The effective date for establishing the gift value of the stock is the day it passes from your control, which is the date on which you signed the Stock Power. The value would be the average between the high and low quotation on that day.

Do not give stocks that are worth less than they cost you; this is disadvantageous for tax purposes. If you wish to dispose of such stocks, sell them to establish a deductible tax loss, and then make your contribution by check, which will also be tax-deductible.

Giving securities to VNRC helps you and helps the Council.

The Council



Mollie Beattie

Sarabelle Hitchner

Beattie, Hitchner Chair VNRC Board

The Council's Board of Directors elected new officers for 1984 at its October 25 quarterly meeting. Mollie Beattie of Grafton is VNRC's new chairman. A forester for the Windham Foundation, Beattie served as vice-chairman of the VNRC Board in 1983. The new vice-chairman is Sarabelle Hitchner, a teacher at Sterling College in Craftsbury. Kenneth Gayer was re-elected as treasurer, and Seward Weber will continue to serve as the Council's secretary.

The board also elected two new directors to fill the unexpired terms of Bob Gillette and Red Arnold. The new directors are Peter B. Smith of Belmont, who is returning to the board after an absence of several years, and Mark Schroeder of Belvidere. Smith holds a PhD in mammalogy from the University of Vermont and heads the Vermont Wilderness Association. Schroeder is a part-time farmer and consultant to federal agencies involved in foreign aid.

Sarah Thorne presented a report on the need for a forest landowners' association in Vermont. The board authorized the solicitation of grant funds for a feasibility study to determine how and where such an association should be created.

In other action, the board discussed various legislative issues before the 1983-1984 Vermont General Assembly. Included were several nuclear waste issues, which stimulated a discussion of the threat to the environment from nuclear arms proliferation. Several members believe that the Council should publicly recognize the gravity of the threat to the environment. The chairman directed the Executive Committee to prepare a statement on the importance of nuclear disarmament to the environment for the board's consideration. The board welcomes VNRC members' opinions on this issue. Please send all comments to: Seward Weber, VNRC, 7 Main Street, Montpelier, Vermont 05602.

ANNUAL APPEAL TOPS GOAL

Returns from the Council's 1983 Annual Appeal have exceeded the goal by more than $3000, and gifts are still coming in. If you haven't contributed yet, please don't let this good news deter you. The Council's monthly expenses run about $14,000, so the $10,200 received so far will only cover about 70% of one month's operating costs.

We are grateful to each and every one of the 250 members who have responded so generously with support over and above their membership dues.

DEALING WITH THOSE YEAR-END BUDGET DEFICIT BLUES

At the Council's 1983 annual meeting, it was suggested that if the Council has a deficit at the end of this fiscal year, it should recoup that shortfall through an assessment which would be billed to each member. The assessment would be computed by dividing the deficit by the number of member households. Thus, if at the end of the fiscal year (which is the calendar year for VNRC), the Council had to borrow $7000 from its endowment in order to end the year in the black, that figure would be divided by the number of members and each household would be billed that amount. If VNRC's membership were about 2800 at the end of the year, the assessment would amount to $2.50.

A straw poll of members who attended the annual meeting showed support for this suggestion. The board is interested in getting the reaction of other members, and would appreciate your comments on the form below.

It should be noted that the suggestion as presented would not alter or eliminate the Council's regular fundraising activities.

- - - - - - - - - - - - - - - - - -

YOUR ASSESSMENT?

☐ Yes, I think year-end deficits should be recouped through an assessment of member households.

☐ No, year-end deficits should be recovered through budget-trimming or other fund-raising activities.

Comments: _____

_____

_____

_____

Name _____

Address _____

_____

Mail to: VNRC
7 Main Street
Montpelier, VT 05602

1984 BOARD OF DIRECTORS MEETING SCHEDULE

The VNRC Board of Directors will meet from 10:00 a.m. to 3:00 p.m. on the fourth Thursday of each quarter, as follows:

Quarter	Meeting Date
Winter	January 26, 1984
Spring	April 26, 1984
Summer	July 26, 1984
Fall	October 25, 1984

Board meetings are open to all Council members; however, a courtesy call beforehand to 223-2328 would be appreciated.

RED ARNOLD MEMORIAL LEGISLATIVE INTERNSHIP

At its fall meeting, the Board of Directors of the Vermont Natural Resources Council voted to raise $10,000 for an endowment to support an annual environmental internship. This special addition to VNRC's existing endowment would honor the late Maurice "Red" Arnold, who served for many years on the Council's Board of Directors.

The board specified that the money should be raised, if possible, before the conclusion of the 1984 session of the Vermont General Assembly. The internship would be established at that time, and would be filled each year at the beginning of the legislative session by a college student or graduate student who would assist the Council's lobbying activities.

VNRC members, friends of Red Arnold and others wishing to create a living memorial to a dedicated conservationist and conscientious legislator are invited to contribute to the fund for the Red Arnold Memorial Legislative Internship. Please make checks payable to: "VNRC -- Red Arnold Memorial." All contributions are tax-deductible.

NEW MEMBERS

VNRC is pleased to welcome the following new members, who joined us in September and October: Steve Wright; Jim Kellogg; Sierra Club New England Office; Mr. and Mrs. V. L. Schwenk; Lori Ruple; Maggi Shadroui; Debbie and Brian Roderer; Shephard S. Johnson; Mrs. R. W. Bradley; William Spang; Gerald Humiston; Geoffrey A. Commons; Jim and Penny Guest; Patricia Davies; James and Amanda Krieble; John Majoros; Annegret Pollard; William Shepardson; Louis Helmuth III; David and Dove Cogen; Robert Brown; Richard R. Lewis; Howard Manosh; Elvern Jones; Romeo Myott; Lloyd Phelps; Daniel B. Houston; Bruce Satterlee and Ellen Urman; Gerald W. Starr; Fred Mehlman; Mrs. William G. Post; Donald Meiklejohn; William C. Heidenreich; Stevens Law Office; John Proctor; Rockingham Community Development Office; Mr. and Mrs. John M. Burrall; Mr. and Mrs. George Latzky; Midge Lisle; Marti Walther; Glen Sproul; Jay and Jackie Hooper.

What Happened in Williamstown?

(Continued from page 1)
market People's Fund, a Boston-based support group, for a health survey in Williamstown. They remain in close contact with the Citizens' Clearinghouse for Hazardous Waste, another grassroots group made up of former residents of Love Canal. The residents of Williamstown are quickly becoming very well-informed on the subject of hazardous waste contamination. But despite all their efforts, the basic questions remain unanswered: "Is it safe to drink the water?" "Should I send my children to school?" and "How did this happen in Vermont?"

HOW SAFE IS SAFE?

Neither State nor town nor federal authorities have been able to offer much reassurance on the question of safety. The State has always relied on EPA to provide safety standards and related health information. However, under the Reagan administration, the flow of information from EPA to the states has slowed to a trickle.

"There is absolutely no leadership from the federal government on toxics," according to Dick Valentinetti, Director of Vermont's Air and Solid Waste Division. There are no EPA safety standards for TCE in ambient air, and many states are proceeding with their own testing. Vermont officials are gathering as much data as possible from other states as they struggle to determine appropriate health standards. Says Valentinetti, "The State is really on the firing line on these issues, and we can't wait for EPA."

The Williamstown incident has also revealed several weaknesses in Vermont's own regulatory structure. Up to the 1970's, the Vermont Department of Water Resources and Environmental Engineering (DWREE) concentrated primarily on cleaning up and protecting the quality of surface water. With the enactment of the federal Clean Water Act in 1972, the agency's focus slowly shifted to ground water protection. In 1973, the Vermont General Assembly established a ground water protection policy and directed the Agency of Environmental Conservation to develop a ground water protection program. The Commissioner of Water Resources presented the Vermont Ground Water Protection Strategy to the General Assembly in 1983, after 10 years of intensive study of Vermont's ground water resources. The goals of the Ground Water Protection Policy are to provide maximum protection and minimum degradation of Vermont's ground water resources, to be able to correct known or suspected cases of contamination, and to be flexible enough to respond to rapid developments in ground water science and technology.

Over at the Department of Health, the trend was similar. Prior to the federal Safe Drinking Water Act of 1974, Department studies looked only for bacteria and inorganic substances as the sources of pollution. After the federal act, the State began to study organic (chemical) substances as well.

Federal legislation was equally important in determining the policies of the State's Air and Solid Waste Division. Before 1980 and the Resource Conservation and Recovery Act (RCRA), companies like IUS could dump toxic wastes in local landfills with the full consent of State and town officials. RCRA not only put a lid on these practices, but required cradle-to-grave monitoring of the production, transportation, storage and disposal of hazardous substances.

All three departments -- DWREE, the Air and Solid Waste Division, the Vermont Health Department, and several others -- get involved when there's a chemical contamination problem like the one in Williamstown. Any incident that threatens public health or water supplies falls under the jurisdiction of the Health Department; the Department of Transportation gets involved if the pollution is due to road construction or salting; the Department of Public Safety and the Hazardous Materials Unit of the Air and Solid Waste Division responds to oil and chemical spills or leaks, and responsibility for pesticide disposal rests with the Department of Agriculture. At least six divisions of the Department of Water Resources and Environmental Engineering are involved with ground water analyses and investigations. No wonder information on potential chemical contamination problems sometimes slips through the cracks. State officials are aware of these flaws, and they're working to improve coordination. A newly-formed Hazardous Waste Task Force, composed of representatives from the Departments of Health, Water Resources and Agriculture, will attempt to minimize duplication and streamline interagency cooperation.

THE BOTTOM LINE

While State officials wrestle with the administrative aspects of chemical contamination, the residents of Williamstown must deal with a much more immediate problem: cleaning up the air, soil and water in their homes and schools.

The Agency of Environmental Conservation has tentatively proposed two possible clean-up methods. The first is an activated charcoal filtration system which would remove the organic contaminants in the town well or at least reduce them to "acceptable limits." The second method involves development of a new town well. The Committee for Health and Safety favors the latter option, because of the potential for as-yet-unidentified chemicals showing up later which would not be effectively removed by activated carbon. However, if the Agency discovers that the entire aquifer is contaminated, drilling a new well in the same recharge area would not solve the problem.

Cost estimates range from $112,000 for the charcoal filtration method to $450,000 for a new well. Additional costs per connection, passed on directly to the townspeople using the system, would range from $97 to $212 per year per family. Neither of these estimates includes the cost of purchasing additional land.

Who will pay these clean-up costs? Liability is the next regulatory tangle that State and town officials will have to unravel. Louis Gomez, Williamstown selectman, sums up the town's view: "Interstate created the problem and they'll have to come up with the money to solve it." Although to date no direct connection between the contamination found in the municipal well and IUS has been established and no charges of violations have been issued, the company has picked up the tab for all the testing done on its site.

The State has no fund for emergency clean-ups, and has been diverting allocated funds and personnel from the Municipal Water Supply Priority System and other areas to pay for its work. Vermont State Statutes say that the State will provide an interest-free loan to cover the planning costs; building costs are supposed to be split between the town and the State, with the State covering 35% and the town picking up the other 65%. The State's total FY84 budget for the Municipal Water Supply Priority List is only $1,300,000, however, and according to Ken Stone from the Vermont Health Department, clean-up costs for Williamstown could run close to $1,000,000, leaving little for other towns on that list.

Last year, the Water Resources Department asked the Vermont Legislature to set up a special fund for just such emergencies, but that request was denied. Stone and Water Resources Commissioner John Ponsetto hope that at the very least, the Williamstown problem will influence the Legislature to free up more funds for their respective programs. As Ponsetto says, "The chemical awareness of the Legislature and the general public has been raised by this situation."

And so it seems, as Vermonters from Brattleboro to Burlington begin to look around their towns for possible sources of contamination. There is every reason to believe that Williamstown is not an isolated situation.

The phrase, "we just didn't know" keeps cropping up in everyone's discussions. But was that really the case? Several towns with potential water supply problems -- including Williamstown -- were identified by the State as part of its Aquifer Protection Study. This study examined 136 municipal water supplies, mapping recharge areas which supply ground water to these town wells and identifying land use activities with pollution potential.

For example, the study notes that the town of Cavendish's water system is threatened by a salt storage site and a hazardous materials generator; Randolph's potential pollution sources include two petrochemical storage facilities, a sewage dumping station and a hazardous materials generator; Johnson's Water Department faces degradation of its water supply from two solid waste sites and two industrial lagoons. This information has been sent to town and regional planning commissions to be used in determining local land use practices.

This information is of little use, however, to towns without zoning ordinances or land use plans. Slightly over half of Vermont's towns have such laws, and only a few of those are incorporating data from the Aquifer Protection Study.

And there lies the heart of the problem. Without a comprehensive land use plan and a sense of the "bigger picture," problems like this will continue to occur. State and town officials will continue to react to crises rather than anticipating problems before they occur.

Towns must begin to shoulder more of the burden and learn to rely less heavily on the State, especially for financial assistance. Of course, most towns simply do not have the technical or administrative expertise, much less the fiscal wherewithal to accomplish the goal. But if the townspeople begin to demand more local involvement in planning for ground water protection, towns will have to respond.

As Pogo says, "We have met the enemy, and he is us." It is tempting to blame chemical contamination on irresponsible industries or inept State and local administrators. The truth is more complex and considerably more difficult to live with. Those who share the economic benefits of industries which produce toxic wastes also bear responsibility for guaranteeing safe disposal.

If any good comes out of Williamstown's difficulties, it may be a growing statewide appreciation of the need to consider aquifer protection in local and regional planning. It may also prod the Vermont Legislature to take action on H.30, a ground water protection bill lodged with the House Natural Resources Committee. The people of Williamstown have learned the hard way that the best way to handle chemical contamination problems is to stop them before they get started.

Sally Sweitzer, president of the Mad River Valley Audubon Society, is doing a special project on toxics for the Vermont Natural Resources Council.

AN OUNCE OF PREVENTION

Local authorities interested in improving and protecting ground water resources will find the help they need in a new publication from the Vermont Department of Water Resources. *An Ounce of Prevention* by Elizabeth Mullikin is a step-by-step guide to implementing an aquifer protection program. The new handbook will be available free of charge in early 1984 from: Water Quality Division, Agency of Environmental Conservation, State Office Building, Montpelier, Vermont 05602/(802) 828-2761.

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Montpelier, Vermont 05661

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November/December 1983