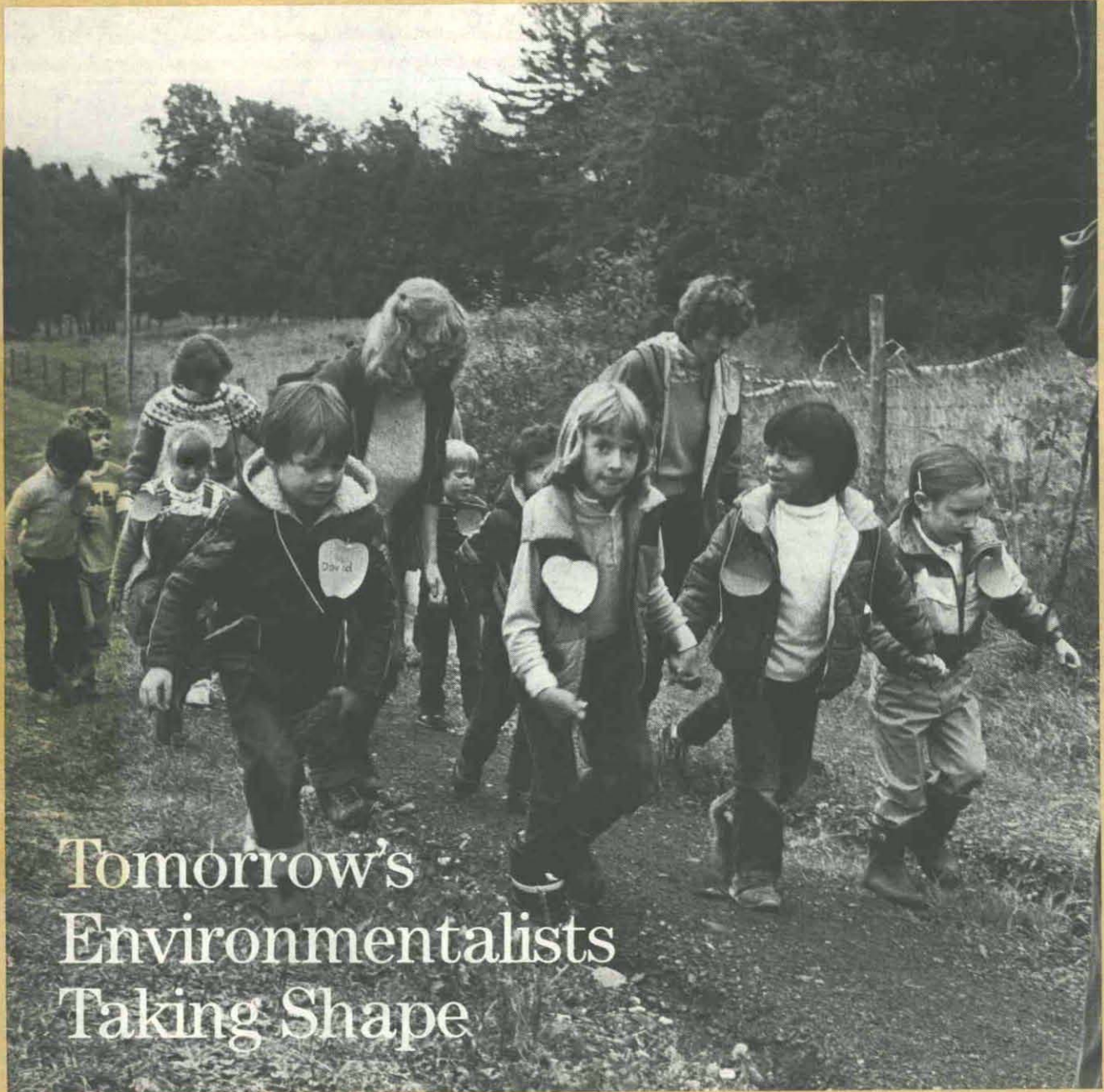


# Vermont Environmental REPORT

Vermont Natural Resources Council

Fall 1985



Tomorrow's  
Environmentalists  
Taking Shape



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# Vermont Environmental REPORT

Fall, 1985

*Published by the Vermont Natural Resources Council*

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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 ASSOCIATE DIRECTOR

On July 6, 1985, the Council, along with two other environmental organizations, filed a lawsuit in Federal District Court against two developers in the Killington area. The lawsuit was filed to prevent a violation of the United States Clean Water Act by the developers, Killington Ltd. (formerly Sherburne Corporation) and the Sunrise Group, through the use of land spray systems to dispose of sewage effluent on three sites in the Killington area.

VNRC, the Connecticut River Watershed Council, and the Natural Resources Defense Council took this action only after the most serious consideration and consultation with experts in the fields of geology, hydrology, engineering, and soil science. The consensus of these experts is that spray disposal of treated sewage effluent *on the three sites in question* will result in a violation of the federal Clean Water Act by polluting the Ottauquechee River and its tributaries.

I want to emphasize the *site specific* nature of this lawsuit. VNRC is not challenging the effectiveness of land spray systems to dispose of treated sewage effluent as a general disposal technique. In fact, the Council approves of this method—*when it is performed at adequate sites*, under climatic conditions suitable to achieving proper renovation of the effluent.

Spray disposal has been proven to be an environmentally-sound alternative to direct discharge of treated effluent into streams. The technology, originally developed in Pennsylvania, has been applied to farm and forest sites throughout the country, including several small areas in Vermont. The proper functioning of spray disposal systems depends on sites with slope and soil characteristics that will complete the treatment process as the effluent passes through the ground.

Our contention in the suit is that the three sites proposed for spray disposal do not meet the soil and slope criteria that are absolutely essential for the proper performance of this type of system. According to the experts we have engaged to study these sites, the steep slopes and relatively thin soils on these sites will allow the effluent to reach tributaries of the Ottauquechee River *before* the effluent has been safely treated by natural processes in the ground. The consequence will be excessive nutrient loading into streams that could over-stimulate plant growth, remove oxygen for fish and other aquatic life, and diminish the recreational opportunities that Vermont streams and rivers are known for.

The filing of a federal lawsuit is a serious step for the Council to take, but one which we think is necessary to protect the headwaters of the Ottauquechee. As VNRC has expressed in earlier communications and as you have seen in the pages of this magazine, the Council is committed to protecting Vermont's rivers from undue pollution, as well as enhancing those qualities that make our rivers among the most popular of Vermont's attractions. Vermont's rivers can be used for a variety of purposes, but they can't be all things to all people. If our waterways are to remain healthy, clean, fishable, and swimmable, we must make choices *now*—on behalf of future generations.

Eric Palola  
VNRC Associate Director



## An Acid Response

Dear VNRC:

I see the new *Vermont Environmental Report* has another story about acid rain. Ho hum...

Personally, I am sick of reading about the subject, and I believe that most of your members know more than they want to know about it already, and feel as I do.

So here is my suggestion. It can be a sequel to your fabulous coup, the Watt Roast/Mess of Wattage dinner, and we'll get miles and miles of publicity about it.

And all we have to do is set a date and announce the most gala event in the State's history. The uniform will be gas masks and brush hooks and we'll all gather on the slopes of Camel's Hump and rededicate the area as:

The Ronald W. Reagan  
National Disaster Forest.

The makers of Tums, Bisodol, Alka Seltzer, Digel, Gas-X, Roloids, etc. will fight each other to be co-sponsors, and each can have a beaker of their product to add to a beaker of acid rain, to see which solution stops pine needles from dissolving the fastest.

Maybe then we can get that Potomac Bonzo to listen to all those articles none of us wants to see any more of, and get his "studying" done, once and for all.

Sincerely,  
Frank H. Teagle, Jr.

P.S. Be sure to invite those lads in the morning news, who can see at Camel's Hump what they saw ten years ago in the Black ("Bleck!") Forest.

*It's wonderful to hear from a concerned environmentalist who not only worries about the problems, but also suggests some concrete solutions! Let us know when you call the first organizational meeting.*

*Meanwhile, I'm sure you were glad to hear that over 150 people turned out for E.P.A. Administrator Lee Thomas' hike up Camel's Hump*



*this August. Thomas' trip up the mountain was arranged by Senator Patrick Leahy and led by UVM Botany Professor Hub Vogelmann; it included a look at damaged red spruce stands and other sites seriously affected by acid deposition.*

*At the end of the hike, Thomas was still calling for "more certainty" on the cause of the damage; (perhaps this could have been helped if we had been able to take Thomas aside and demonstrate the pine needle test mentioned above). Thomas did conclude, however, that he had been impressed by his visit to the mountain. "The one thing that's not a question—that is, we've got a problem," he said. Whew! At least we've got that clear.* SC

## Act 250 Actions

The Council had another busy summer with statewide appearances at Act 250 hearings. While last year's efforts centered primarily on growth issues in the Sherburne region, VNRC's attention this year has been spread among several other resort areas. The Council continues, in the absence of coordinated state and regional growth policies, to advocate environmentally-sound water, wildlife, farmland, and growth management decisions.

Earlier in the year VNRC was admitted to an Act 250 proceeding on the Lang Farm in Essex Junction. Some 255 acres of primary agricultural soils there are threa-

tened by a proposed four-phase, 425-acre retail-residential-hotel complex. Both VNRC and the Agriculture Department argued that the impact to these soils must be addressed with respect to the entire project, rather than piecemeal at each construction phase. Later this fall VNRC will propose conditions to the Act 250 Commission for minimizing the loss of these valuable farmlands.

VNRC has participated in several Act 250 hearings thus far in central Vermont, covering proposals by the Sunrise group to expand their high-elevation resort village, one application by Killington Ltd. to build more ski trails, and the first phase of major expansion plans from Pico ski area. VNRC also advocated protection of a critical deeryard in a proposed development at Stratton.

An unusual and flawed agreement between the state and the developers at Mt. Ascutney prompted VNRC and the Connecticut River Watershed Council to appear before an Act 250 Commission to help resolve sewage disposal and growth management issues from a proposed 72-unit condominium project. While several questions remain unanswered, it should be noted that the developers here have encouraged the role of VNRC and CRWC as players at the bargaining table.

Most recently, the Council questioned the use of state land for private sewage disposal at the Smugglers' Notch ski resort. Typically, such use of state land is prohibited by law. The resort has been plagued with existing pollution problems and, as an alternative, proposed the use of a spray irrigation system on public property. Due to VNRC intervention, this system can now be used only to correct the existing problem, not to accommodate growth. EP

## Bethel Does It!

Congratulations are in order for the residents of Bethel. A vote on August 15 confirmed the town's environmental commitment to upgrade their archaic sewage system and improve the quality of the White River. Thank you!



# High-Level Nuclear Waste— “Not in Anybody’s Back Yard”

“Contrary to prior scientific opinion, the world is not flat; we can’t just shove this stuff off the edge. Perhaps the people in Washington think this *is* the edge—but I’m from Canada, and I can assure you that it’s not.”

—Dr. Gordon Edwards, Mathematics Professor and Chair of Canadian Citizens for Nuclear Responsibility

Energy ran high at the August 19th statewide meeting on nuclear waste. Over 900 people filled the Montpelier High School auditorium, and citizens listening to the meeting through the five attending radio stations called in support from all over the state. The theme of the meeting was clear: Vermonters are overwhelmingly opposed to the U.S. Department of Energy’s listing of nine Vermont communities among the 236 potential sites for an underground high-level nuclear waste repository. (See “Nuclear Waste Dump—High Level Controversy,” Summer 1985 *Vermont Environmental Report*.)

The audience, mostly from Vermont and some from neighboring states and Canada, listened appreciatively while a panel of experts and decision-makers—including Governor Madeleine Kunin, Representative James Jeffords, Senator Patrick Leahy, and a representative from Senator Robert Stafford’s office—took turns explaining why they were firmly against siting a dump in Vermont.

State Geologist Charles Ratte raised the now-familiar criticisms of Vermont’s brittle, fractured, and potentially water-ridden bedrock. And Governor Kunin echoed the sentiments of the panel experts, pointing out that the problem of where to put the waste has not yet been resolved. The waste should remain in monitored, above-ground storage for now—“while it’s not the ideal solution, it’s the evil we know”—until an acceptable alternative is

“How we dispose of our nuclear waste is an unsolved problem, because human beings have never, in the history of the human race, ‘disposed of’ anything.”

## Dr. Gordon Edwards

found, she said. “We’re not just saying, ‘not in my back yard,’” she concluded. “We’re saying, ‘not in anybody’s back yard.’”

Vermont has taken a lead role in protesting DOE’s waste repository plan. Kunin’s efforts have included strongly-worded correspondence with DOE, and she has urged leaders in other states on DOE’s potential dump site list to coordinate

efforts to block the project. The Vermont House of Representatives has passed a protest resolution, which is now pending in the Senate. And Vermont’s Attorney General Jeffrey Amestoy has pledged to use “every litigation window available to the state of Vermont” to protest the dumps, including making Vermont the first state to litigate DOE’s site selection standards.

At press time, rumors were already flying about whether or not Vermont was among DOE’s top fifteen site choices—a decision that is not actually scheduled for release until November. Vermont activists plan to remain involved regardless of the November decision, however, emphasizing that a nuclear waste dump would not only have local significance, but would affect the entire region and nation.

In addition to organizing the August statewide meeting, then, citizen committees have organized to take action in their towns, elevate public awareness in Vermont and

## For More Information

### Background:

*VNRC is glad to supply information, including back issues of the Vermont Environmental Report which address the nuclear waste dump controversy.*

VNRC, 7 Main St., Montpelier, VT 05602 (802) 223-2328

*The Vermont Public Interest Research Group (VPIRG) has organized extensively around this issue; the Nuclear Waste Update newsletter and other literature is available from their offices.*

VPIRG, 43 State St., Montpelier, VT 05602 (802) 223-5221

U.S. Dept. of Energy, Crystalline Repository Project Office, Attn: Sally Mann, Manager, Chicago Operation Office, 9800 South Cass Ave., Argonne, IL 60439 (312) 972-2257

Vermont State Geologists Office, Attn: Charles Ratte, Agency of Environmental Conservation, Montpelier, VT 05602 (802) 828-3365

Sierra Club Radioactive Waste Campaign, 78 Elmwood Ave., Buffalo, NY 14201 (716) 884-1000

### Taking action in your town:

Vermont Natural Resources Council (see above)

Joseph Gainza, RD 2, Plainfield, VT 05667 w (802) 479-1053; h (802) 454-8550

### Outreach to other states:

Ann Ruthier, RFD Box 93 A, North Troy, VT 05859; (802) 744-2400

### Information distribution within Vermont:

Avram Patt, RD 1, Box 3140, Plainfield, VT 05667; (802) 454-7832

### Vermont Yankee Committee:

George Longenecker, c/o VT Yankee Decommissioning Alliance, Box 53, Montpelier, VT 05602; (802) 426-3874



other states, and raise concerns about Vermont's own source of high-level nuclear waste, the Vermont Yankee nuclear power plant.

Norman Etkind of Woodbury was the first in Vermont to introduce a town ordinance prohibiting the creation, testing, or operation of a nuclear waste repository within town limits. Etkind presented his selectmen with the ordinance in August, along with 144 signatures—more than the number of people who usually attend Woodbury's town meeting. After mulling the ordinance over with their attorney and holding a town-wide hearing, the selectmen adopted the ordinance in September. Boards in other Vermont municipalities are studying similar ordinances.

"The point is not necessarily the enforceability of the ordinance," says Etkind. "But as political statement, it has value—it's the strongest statement a town can make."

Etkind worked in cooperation with an ad-hoc citizen group focusing on actions that can be taken at the local level; coordinating their efforts with VNRC, the group has also produced a leaflet on how to get an ordinance passed in any Vermont town. VNRC will distribute this information to all interested citizens.

According to Avram Patt, a Plainfield selectman who is involved in several of the ad-hoc citizen groups, Vermonters are comparatively well-informed on the nuclear dump issue. "In some of the other states, awareness is practically nil. We spoke to reporters in Massachusetts who weren't even aware that (some of DOE's potential dump sites) were located in their state!"

Patt is on an outreach committee that is working to coordinate efforts among the seventeen eastern states on DOE's list; the group is studying funding options for an interstate information and organizational newsletter. Meanwhile, another group will be preparing presentations on the nuclear waste repository issue for interested Vermont groups.

VNRC has been monitoring the dump site selection process since DOE was charged with the task in the 1982 Nuclear Waste Policy Act. (See *Vermont Environmental*

*Report*, Sept./Oct. 1983.) The issue is of particular importance to Vermont environmentalists, with several thousand acres of Vermont's National Forests, State Forests and Parks, and State Natural Areas located adjacent to, nearby, or within proposed sites.

Considering DOE's acknowledged lack of technology for subsurface disposal of high-level radioactive waste, admitted lack of information on Vermont's deep crystalline rock formations, and an unreasonable bias toward rural states, VNRC's Board of Directors passed a resolution this summer against siting such a dump in Vermont.

"VNRC recognizes the responsibility of all Vermonters to share their burden of nuclear waste generated for public utility needs," the resolution reads. But the Council "strongly protests further consideration of Vermont as a high-level nuclear waste site...until all safety and technological factors are met with assurance and with the provision that such a site is proven to be in the best interest of the people and welfare of Vermont." SC

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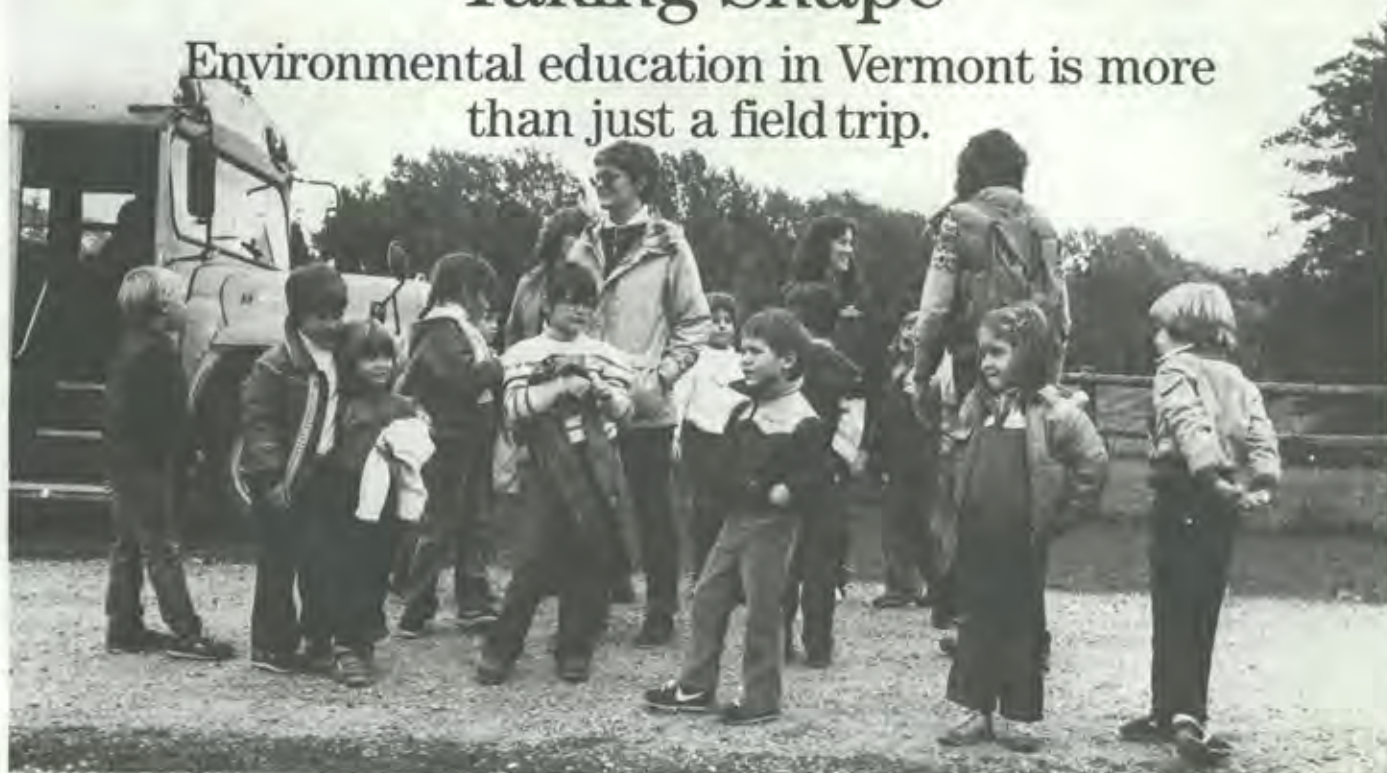
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# Tomorrow's Environmentalists Taking Shape

Environmental education in Vermont is more than just a field trip.



By Susan Clark

*What made you subscribe to, or pick up, this magazine? Somewhere at the root of your answer, an environmental educator probably lurks. Whether a classroom teacher or a camp counselor, a community lecturer or a park naturalist, environmental educators work particularly hard in Vermont to raise our awareness about natural systems and ecological problems.*

*Trying to cover every aspect of environmental education in Vermont in a single VER article is, of course, an impossible feat. Even narrowing the scope to efforts at the elementary and junior high school level left many more pages than could be squeezed in. Future VER articles will continue to cover this fundamental and multi-faceted topic.*

George Tanner is the Vermont Department of Education's Environmental Education Consultant—as well as their Science Education Consultant and Energy Education Consultant. Until recently, his spe-

cialties included Health and Safety Education (including Drivers' Training) as well.

If Tanner is spread thin it's not because Vermont's education department pays less attention to environmental studies than other state governments do. In New England, most states have science education consultants with multiple responsibilities—and many don't even list environmental education among their duties.

"It's true all over the country: many of my counterparts in other states used to have "Environmental Education" as part of their titles, but I see that less and less now," says Tanner.

Simply because Tanner himself is dedicated to the subject, he has tried to keep environmental studies as a piece of Vermont's science education framework. "You generally see science ed. for grades K-8 divided up into Life Science, Physical Science, and Earth/Space Science. I'm trying to make sure that Envir-

onmental Studies doesn't get absorbed into Life Science, but that it gets addressed on its own—as a fourth category. Believe me, I can be a pretty lonely voice."

Natural resource education at the state level comes in many shapes and forms—not all of them originating with the Department of Education. Teachers have access, thanks to the state, to supplementary curricula material and activities such as the forestry-oriented Project Learning Tree distributed by Tanner, and Fish and Wildlife's Project Wild. In the case of the controversial Project Wild, some citizen groups complain that because such material is funded by vested-interest groups and is distributed by task-oriented government departments, it is biased. Project Wild's originators have made several changes in deference to the complaints, however, and most educators seem glad that they will have access to the supplementary material—even to present it as one side of a many-sided issue.



In addition to these materials, Fish and Wildlife also offers fact sheets, slides and films, speakers, a hunter education/natural resource summer camp, and a graduate-level course for educators on wildlife management. And the Department of Forest, Parks and Recreation is to be commended for maintaining naturalist/interpreters in Vermont's parks for the general public.

Meanwhile, although each department may address its own specialty with expertise, the study of the relationships among these different areas may fall between the cracks. This is unfortunate; as any ecologist will tell you, interconnections are what environmental education is all about.

### Defining the Field

Vermont's environmental educators will enthusiastically describe the activities and materials they use to bring the environment home to their students. It's quite a chore, however, to get any one of them to come up with a *general* definition of the field that goes much farther than "we get people involved—give them a hands-on experience," or, "we try to tie things together, to demonstrate interconnections in the ecosystem."

Given its history, the group may rightfully be wary of defining itself. All too often, environmental educators will stand up to be counted, only to find that they have either been pigeonholed as "tree-huggers," or, equally as bad, pegged as "field trips" and absorbed unrecognizably into an earth science program.

It was Thomas Hudspeth, Assistant Director of the Environmental Program at the University of Vermont (where he teaches, among other things, environmental education and interpretation) who finally offered me the definitive description of his field. The goals of an environmental educator are three-fold, Hudspeth explains.

"First, we aim to raise people's appreciation for, and awareness, sensitivity, and understanding of, their environment," says Hudspeth.

*Photo above left, school group readies for a day at Shelburne Farms Resources; photo by Theo Barash.*

This is the familiar "hands-on" stage; and indeed, for many of us, it has taken the gentle prodding of an environmental interpreter before we have *really* examined a quaking bog, a fallen log, or, for that matter, a cityscape, for its inner merits.

It isn't enough just to care, of course. The educator also wants us to see our own connections with our environment, and, via this second step, to give us the problem-solving skills to make some positive changes.

Third, people need the motivation to *do* something with their new-found knowledge. "And here's where you get radical," smiles Hudspeth. Although the goal is not to impart any values or opinions, Hudspeth emphasizes, "it is radical enough just to ask people to get off dead-center" on issues, he says.

Going beyond earth science and encouraging students to clarify their own values about their environment is a tall order. "On their meager salaries, teachers today are asked to take the place of parents for discipline, the church for morality, plus incorporate the latest technological information into their classes," says Hudspeth. Any ecological study that exists in the classroom on top of all of this, he says, is only there thanks to an extremely dedicated teacher.

Still, environmental education in Vermont surges on. "What strikes me is not the lack of funding for environmental education at the state level and in the schools," says Hudspeth, "but rather, the fact that Vermont is such a small state, and yet has so many well-run environmental education programs in the private and non-profit sectors."

The array of these small, independent, and thriving organizations is indeed striking. Like any natural system that might be the topic of an ecology lecture, Vermont's system of environmental educators has found strength in its diversity; and, appropriately enough, each program has found its own "niche" in the state's varied education scene.

### Letting Them See For Themselves

Starting sometimes as a summer camp, or perhaps as a piece of land that was willed to remain as a natural area, an environmental educa-

tion center seems to be tucked away next to every one of Vermont's hills. Without full-fledged environmental education programs of their own, many schools are glad to take advantage of the day or week-long programs that get students out to explore the environment for themselves.

Rupert's 2,700-acre Merck Forest, for example, was set up as a land education and experimentation foundation upon the death of George Merck some forty years ago. Run now by a small staff and volunteer board of trustees, Merck offers camping and conservation programs, and welcomes approximately fifty school groups per year from all over southern Vermont to their fields, forests, and small alternative farm operation.

The Hulbert Outdoor Center in Fairlee finds its special niche through its emphasis on "personal challenge" for grades 3-9. With sensory awareness and adventure sessions that can include a tour through a 35-foot-high ropes course, a trip to Hulbert tends to bring classes together by stressing group cooperation, trust, and communication. "Wilderness is a wonderful medium for these skills," points out managing director Rowe Williams.

Being close to Burlington, Huntington's 230-acre Audubon Nature Center has nearly 4000 children and teachers per year using their school and summer educational programs. A winter "living history" program demonstrates how 1820 Huntington residents eked their existence from Vermont's landscape, and the Center's "Fall Discovery" and maple sugaring operations bring more requests from schools than staff and volunteers can meet.

Like many of Vermont's outdoor centers, Huntington also offers adult and family programs including a summer solstice "enchanted forest" tour, and the inevitable sugar-on-snow party.

As numerous as the programs are, the supply does not seem to exceed the demand; Merck Forest plans to add a full-time environmental educator to its staff in the near future, in fact. And at Salisbury's Keewaydin Environmental Education Center (KEEC), a successful fall and spring program has



recently expanded to include a winter operation in Groton.

Like several other nature education programs, Keewaydin's began as a way to use summer camp facilities during Vermont's numerous non-summer months. Directors Abbott Fenn and Alfred "Waboos" Hare were intrigued by a Forest Service environmental education workshop in 1972, and within a year, their own program had begun.

In the fall, spring, and now winter, Keewaydin offers one-day and week-long programs for grades 4-8, with investigations ranging from pond study to local history. Teachers particularly appreciate the residential aspect of the program, which encourages interaction with other schools and gives students a new chance to shine.

Although Keewaydin's summer camp—the oldest private summer camp in the nation—does not limit its programs to ecologically-oriented pursuits, a tradition of respect for nature runs through all of Keewaydin's efforts. According to the directors, many of the children that have visited the camp or environmental education programs over the years have gone on to pursue environmental or naturalist endeavors.

---

**"I'm trying to make sure that Environmental Studies doesn't get absorbed into Life Science, but that it gets addressed on its own... Believe me, I can be a pretty lonely voice."**

**George Tanner, Vermont Department of Education**

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Indeed, when a Keewaydin veteran writes back decades later to say that "much of the work I do derives from interests developed at Keewaydin...and is rooted in attitudes acquired there," something more than "summer camps" and "field trips" is going on—especially if the letter-writer is John McPhee, the prize-winning author of such outdoor works as *The Pine Barrens* and *Coming into the Country*.

Funding for the trips to these outdoor centers is not always easy



to find. According to Barry Schultz, assistant director of KEEC, most teachers have to spearhead a fundraising drive—selling chocolate bars or washing cars—to finance the trips. Most municipalities only budget for the use of the school busses.

There are advantages to the system, Schultz points out. Rather than hinging on an ever-shrinking school budget, trips to programs like Keewaydin's are directly dependent on what actually counts the most: how enthusiastic students and teachers are about the content.

### **Volunteering the Information**

Not all environmental education takes place at an outdoor center. One of the best known and widespread of Vermont's environmental education programs is the Vermont Institute of Natural Science's (VINS) program—designed to take advantage of the environment surrounding the schoolyard.

Founded in 1972 to further environmental research and natural history education in Vermont, VINS is well-known for its bird research; an extensive raptor rehabilitation center is now in the works, in fact, at their headquarters on the 77-acre

Bragdon Nature Preserve in Woodstock.

VINS also offers residential teacher workshops, which school districts are usually generous in funding; according to VINS education director Jenepher Lingelbach, about two-thirds of the teachers they see get half of their training paid for by the schools. And like many Vermont nature centers, VINS offers myriad natural science programs for adults, families, and school groups (only a small portion of which we can fit onto the VER calendar page!).

Unique to its environmental education program, however, is VINS' 12-year-old ELF program. ELF (Environmental Learning for the Future) is based on the idea that it doesn't take a specially-trained expert to raise a child's awareness about his or her environment. VINS staff goes to a municipality for one day per month at most, works with teachers and citizen volunteers on an ELF unit that might cover animal habitats or natural cycles, and drops off activity descriptions with the group. Teachers and volunteers are then left to teach the information on their own.

Teachers welcome the new material and a fresh infusion of energy, says Lingelbach. But probably the greatest advantage of ELF, she says, is the way it brings together the children, teachers, and adults of a community. "We're not only bringing science into the schools; we're also encouraging parental involvement," smiles Lingelbach, "and people are screaming for both."

ELF emphasizes the advantages of immediately available resources, whether they be physical, such as a pine tree in the schoolyard, or human—any interested volunteers in the community. Lingelbach points out, "If your attitude toward your setting and your fellow human beings isn't positive, how can you act constructively in your environment—*wherever* you are?"

### **Beyond the Field Trip**

Encouraging students to study and appreciate the workings of their surroundings—wherever they are—is key to any environmental education program. That's why, like most environmental educators, David



Barash balks at the use of the term "field trip." "It conjures up the idea that somehow, students' awareness of their environment is going to begin and end at the bus door," he says.

Barash also cringes, for that matter, at being called an environmental educator. "I don't know if that accurately describes what we do here. It's closer to say, maybe, agricultural education?" "How about natural resources education?" offers Megan Camp. "I like that—or maybe just education."

For six years, Barash was the director—a position that Camp took over late this summer—of Shelburne Farms Resources education program. A lush, sprawling site with an equally expansive history, Shelburne Farms began in the late 1800's as the estate and model farm of Dr. William Webb; later Webb generations devoted a large part of the estate to furthering New England's agricultural independence and good husbandry practices.

The education program started simply, using the remarkable farm site for K-6 school visits. Expanding gradually, the program now has many facets: the Farm sees some 2,500 school children per year, plus an additional 6,000 adults on interpretive tours of the estate; a "work and learn" program is offered to interns, volunteers and students; and the Farm's large archive library holds documents and photos dating back over a century.

Perhaps most important is the newly-developed Classroom Enrichment Institute (CEI), an educational program designed to help teachers integrate ecological and agricultural study into their curricula.

Within the topical framework of the seasons, CEI has a hands-on format worthy of an "environmental education" label. And because it "starts where the kid is at," says Barash, the program can be used to teach any subject matter. Students are likely to grasp a natural resource concept, he says, and even to see the connec-

*Photos: Above left, pond study keeps students busy at the Vermont Institute of Natural Science. Photos at right and on following page by Theo Barash, courtesy of Shelburne Farms Resources.*



tions between it and themselves, whether it be through a science, English, social studies or mathematics medium.

"After all, where are human beings more 'connected to' their environment than in agriculture?" asks Barash. "And where else are the interconnections so clear—with natural systems so manipulated, and yet so depended on?"

Most environmental educators would enthusiastically agree that it makes sense to integrate the topic into all study areas. "It works," says Barash. And besides, the alternative is to lump environmental education onto the end of a long list of topics to teach, he smiles—"and you know which lump will be cut first."

### Environmentalists for Hire

On the east side of the Green Mountains, from the Canadian border down to White River Junction, education money is as tight as it can get in our rural state. Luckily for students there, environmental and natural resource education is available from an institution that has some ninety years of practice at the job.

Situated in a large stone building on St. Johnsbury's Main Street, the

Fairbanks Museum and Planetarium houses the natural history artifacts collected over a lifetime by businessman and world traveller Franklin Fairbanks. The museum began early with a science education program—at the turn of the century, the curator of the museum was taking her carriage full of stuffed birds around to schools—and continued to involve the community in science through the 1950's.

### Going beyond earth science and encouraging students to clarify their own values about their environment is a tall order.

It was in the 1960's, however, with the availability of federal grants for science education development, that Fairbanks' education programs really took hold. Now able to hire teachers as well as curators, purchase modern science education equipment, and develop classroom space, the museum could offer centralized education resources to an area where they had previously been few and far between.

The federal grant money ran out at about the same time that environmental issues were starting to take hold of the public interest, and school districts assumed the funding of Fairbanks' education programs in the early 70's.

Charles Browne, who co-directs the museum with Howard Reed, is quick to point out that the Museum's programs are strongly science and history oriented, and can not only focus on ecological study. Insofar as environmental education is a method rather than a subject matter, however, Fairbanks can count itself among Vermont's environmental educators. "We are teaching human history, biology, chemistry, climatology, and astronomy," says Browne, "but through it all, we are trying to instill a sense of humility—a sense of wonder."

With a membership of over 350 families, Fairbanks does not have to limit its educational efforts to the school-aged set. Field trips, shows at the planetarium, as well as special



displays of the museum's vast collection of artifacts bring together Fairbanks enthusiasts from all over the northeast.

Publicity could be a problem for a museum in such a sparsely populated area, but according to Browne, Fairbanks has two aces in the hole. "One is Joanne Adams, who has built a strong information network for us—she really gets the word out."

And any listener of Vermont Public Radio already knows what Fairbanks' second "ace in the hole" is—or will guess it in the time it takes to say "This is Steve Maleski (or Mark Breen) with An Eye On The Sky."

If the "Eye On The Sky" weather report is one of the most popular "programs" that VPR carries, Browne believes it is because "Mark and Steve really serve as environmental interpreters. They don't only tell you whether it will rain or not; they explain the causes of the weather we see—and they talk about its impact on people's lives." These are the very factors, Browne points out, that make any environmental education program successful.

### Getting into the Classroom

In a state brim-filled with municipalities that have no money to spend on environmental education, our capital city is one of those proverbial rule-proving exceptions. Montpelier is one of Vermont's few school districts that has embraced environmental education as a free-standing course of study.

Since its inception in 1974, the program has been hotly debated in annual budget-cutting battles. Its acronym MEEP (Montpelier Environmental Education Program) became such a buzzword, in fact, that the program's name (but none of its content) has been changed; this year, parents will vote on whether to fund the Montpelier Science and Social Studies Resource Center. Still, student enthusiasm and thus, parental support, has been too strong to let the program be axed.

Ironically, Montpelier's program originated as a way to occupy students while teachers were attending professional workshops. According to program director Douglas Sherry, environmental studies topics were



chosen for the sessions because "some of us had a keen interest in the subject—and it was the mid-seventies, so the time was right."

The program initially began with federal funds, with the design that local funding would take over fully after four years. Although student

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**"If your attitude toward your setting and your fellow human beings isn't positive, how can you act constructively in your environment?"**

**Jenepher Lingelbach, VINS**

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and parental support was very high, the school board's money worries slowly cut into the program; the original MEEP team consisted of a director and four instructors for grades 1-6, but since 1983 Sherry and instructor Dona Koenemann have run the program (now for K-4) alone. Sherry and Koenemann multiply their efforts by working with many of the Montpelier teachers, however, and judging by student enthusiasm, the program continues to be a success.

Students delve into diverse topics

ranging from plant and animal needs, animal tracking, and weather patterns to Vermont's natural resources and our natural and built community. But the success of the program lies not so much in the topics, says Sherry, as in the environmental studies methodology of raising students' awareness and encouraging interaction with their environment.

"We're starting, even in kindergarten, to show the kids that their 'classroom' is wherever they are," says Sherry, "so that they can always take that learning behavior with them wherever they go."

### Looking Down the Road

As strenuously as Vermont's environmental educators teach "interconnections," their own teachers' network is surprisingly feeble. Their informal association SWEEP (Vermont's State-Wide Environmental Education People) has no dues, no newsletter, and for that matter, no official membership.

"I'd like to see SWEEP strengthened, but I'd like to see it go even farther than that," says UVM's Hudspeth. Looking down the road, Hudspeth envisions a broad network of concerned environmentalists planning Vermont's environmental education future. In a state with as strong an environmental stance as Vermont's, it's possible.

But if environmental education programs continue to flourish in Vermont, it will not only be due to our state's commitment to an environmental ethic or philosophy. As a subject area and as a methodology, environmental education simply strikes a resonant chord with kids.

"Environmental philosophy? Listen, I don't know how many hundreds of teachers I've talked to, but I can count on one hand how many I've talked philosophy with," grins Shelburne's Barash. "Teachers don't come to our program to learn about environmental philosophy. They come to learn to be better teachers."

Montpelier's Sherry agrees. "When parents support our program, they're not reacting to environmental education as such. They are reacting because—well—their kids are enthusiastic."



# What's That You're Breathing?

## Vermont's Hazardous Air Contaminant Regulations Under Review

By Peter Ewing

This coming November, the Vermont Legislature's Joint Committee on Administrative Rules will be finalizing changes to state regulations that control releases of hazardous air contaminants. Written to reflect a large body of new research on toxic chemical substances, the proposed changes are designed to bring older plants into compliance, and curb potentially dangerous emissions from such industries as resource-recovery, wood chip plants and other new air pollution sources.

Vermont's first air pollution control program was established in 1967. This program was subsequently amended to coincide with the federal Clean Air Act in 1971, and most recently in 1981 to include the regulation of "hazardous air contaminants."

Although the program has provided a good starting point for analyzing new industrial emissions, several air quality experts have said that Vermont's regulations are not comprehensive enough. "The present regulations focus on proposed or new-source facilities, but do not deal effectively with old-source emitters," says Richard Valentinetti, Director of Vermont's new Department of Waste Management.

According to John Perrault, an Environmental Technician with the Air Pollution Control Program, unregulated old-source emitters are widespread in Vermont. The list, says Perrault, includes such common businesses as "furniture makers, which release different types of hydrocarbons like toluene and xylene, as well as alcohols and ketones during the ventilation process. Another common emitter is your local gas station, which emits benzene, a known carcinogen, during



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### More stringent review of hazardous air contaminant regulations has been necessary in many states to fill the void created by the E.P.A.'s lackluster enforcement of the Clean Air Act.

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the pumping procedure."

More stringent review of hazardous air contaminant regulations has been necessary in many states to fill the void created by the federal Environmental Protection Agency's lackluster enforcement of the Clean Air Act. Only four contaminants, asbestos, beryllium, mercury and vinyl chloride, have had national emissions standards set under the Clean Air Act, while ambient air quality standards have been agreed on for only six toxic substances.

The latest draft of the new Vermont regulations explains, "In a society which uses over 100,000 different substances with toxic properties, [federally] regulating less than one tenth of one percent of these substances does not provide adequate control over exposure to potentially hazardous air contami-

nants." Examples of these chemical substances include widely dispersed, large-volume air contaminants such as sulphur dioxide and carbon monoxide, as well as highly toxic or carcinogenic substances like asbestos.

Vermont's proposed regulations are more specific in the definition of a "hazardous air contaminant" and they have added new language such as "acceptable ambient level" which defines the maximum allowable concentration of a toxic air pollutant at a certain distance from the polluting source.

The new state regulations also include a safety-levels guideline similar to the EPA's. Based on levels of risk, the guideline will be expanded to reclassify over 250 potentially hazardous chemical substances according to their acute and chronic effects. (Those with chronic effects are typically measured by their cancer-causing potential.)

Although most recent statutory changes have, by default, been occurring at the state level, not everyone in Washington is oblivious to potential air toxics problems. U.S. Representative Henry Waxman (D-CA) recently introduced a bill to the U.S. House Subcommittee on Public Health and the Environment that would repeal Section 112 of the Clean Air Act, which authorizes EPA to control hazardous air pollutants.

Written in reaction to the Union Carbide spill which killed over 2,000 people in Bhopal, India, Waxman's bill expands to 85 the list of chemical substances that pose a threat to public health. Waxman's bill would also require the EPA to begin a monitoring and licensing program as well as dispense information to safety officials and the public for emergencies.

The bill has, unfortunately, met



resistance from John Dingell (D-MI), Chair of the House Energy & Commerce Committee. Dingell argues that the bill would require excessive funding and staff to implement. Legislation at the federal level is sorely needed, however, to guide state regulations and to safeguard the overloading of hazardous pollutants into air streams, which result in interstate problems such as acid rain.

Like Waxman's proposed bill, Vermont's new regulations establish a guideline based on risks to public health and a specific process for controlling hazardous releases.

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Unlike Waxman's bill, however, there is no formal public notification procedure; but it is anticipated that Vermont's recently enacted Community Right-to-Know law will ensure that adequate information on air toxics is available to the public.

According to Waste Management's Valentinetti, the new regulations will be easier to implement because the new guideline will provide a basis for evaluation. And with the use of the new safety levels guideline, he adds, "there will be sizeable reductions in hazardous air emissions to Vermont's atmosphere."

Dr. Edward Calabrese, a toxicologist at the University of Massachusetts who was contracted by Associated Industries of Vermont to review Vermont's new regulations, agrees with Valentinetti. He cautions, however, that there is "a lack of coordination on a regional basis. The further each state goes in its own analysis, the less chance there will be of eventually unifying air quality standards for New England." Calabrese is currently working to consolidate state programs through the formation of a regional health center.

Reaction from Vermont industries to the proposed regulations is generally supportive. Andy Crossman of the Associated Industries of Vermont believes the proposed changes are "completely new" with respect to the use of a guideline for establishing air toxic safety levels. Crucial to the new regulations, Crossman emphasized, is "the recognition of the important differences in chemicals and the effects they have on public health."

According to an AIV survey, the estimated cost of compliance for the eighteen Vermont industries affected by the draft regulations is six million dollars. Alternatives to expensive pollution control technology do exist for some industries, however, and Valentinetti points out, "The new system will provide industry with incentives to substitute less toxic chemicals during the industrial process."

Some sticking points remain in the draft regulations. Central to VNRC's concerns is the ability of the Department to enforce new regulatory provisions. In addition, the new regulations give little regard to offsite effects where human health is not immediately a factor—such as forests and water bodies.

Industry would like to single out some chemicals for their "acute," short-term effects rather than have all substances evaluated for potential long-range impacts. AIV has also suggested that industry determine when they qualify for regulation.

As toxicologists conduct more research, it is expected that the guidelines will continue to be refined to reflect appropriate safety levels. Dangerous and unknown air contaminants must be consistently monitored in the interim, however; if safety levels for air contaminants are ever in error, it is important that they err on the side of caution.

*Peter Ewing, a UVM graduate, researched and wrote this article during a VNRC internship. A hearty thank-you to Peter for wading through mounds of regulations and red tape to bring VNRC members a "people's version" of Vermont's air regulation situation. Peter gathered more information than could be presented here; write to VNRC for his extensive fact sheet on this important subject.*

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# Planning Vermont's Forests It's Time To Speak

By Keith Ross and Susan Clark

Two different planning processes are now nearing completion for the forests of Vermont. The first, an inventory and management plan for the lands administered by the state, was already released this summer; this plan was the topic of the Governor's Special Conference on Forest Resources this September. The second, however, is a long-term plan for the Green Mountain National Forest; the National Forest Service will be looking for citizen input on this plan in the immediate future.

According to Jim Northrup, who heads up the planning process at the GMNF offices in Rutland, the plan is due out "in November, we hope." Once it is released, a 90-day public comment period will follow. The plan will be publicized and made available to all interested citizens—along with a condensed, readable version of the lengthy and complicated document.

"We've tried to get as much citizen input into the process as we could, and now we're saying, Here's what we've come up with. Did we hear you correctly, and does our analysis

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**"We've tried to get as much citizen input into the process as we could... Now we're looking forward to getting some great suggestions on ways to improve the plan."**

**Jim Northrup, GMNF Planner**

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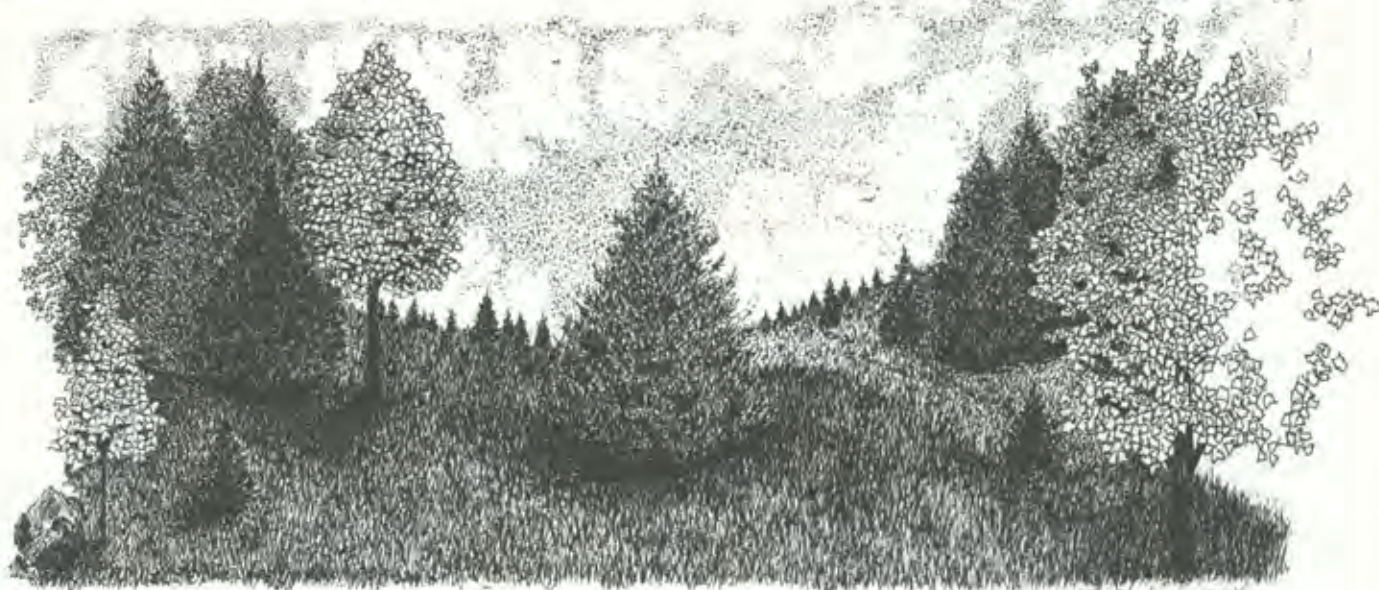
hold up to your scrutiny?" says Northrup. "We're looking forward to getting some great suggestions on ways to improve the plan."

The Resources Protection Act (RPA), amended by the National Forests Management Act, requires that the planning process be completed in the 155 U.S. National Forests this year. With National Forest land representing half of the public land in Vermont, the multiple

use plan will have profound implications on Vermont's forest future.

The planning process has included drafting an Environmental Impact Statement with six alternative scenarios for the GMNF. The Forest Service's "preferred alternative" will be outlined in detail, with a 10-year plan of action, a 50-year economic analysis of the forest (including projected demands for timber, roads, trails, wildlife habitat improvements, etc.), and a timber schedule that looks 150 years down the road. The forest will be mapped and "zoned" to reflect the use objectives of different areas.

A multiple-use plan is created through a series of compromises and so, almost by definition, will get a mixed reception. Environmentalists are pleased, however, with the open process through which the plan was put together, and expectations for the plan are running high.



Tom Chapin 7-1985



Frank Reed, adjunct professor at the Vermont Law School and instructor of an interdisciplinary seminar on the GMNF plan last spring, feels that Vermont's plan will probably be one of the better of those proposed in the country. He adds, however, "Unfortunately, this isn't saying much. Nearly every plan in the country is now under appeal."

Controversy in most National Forest Plans has revolved around the amount of timber to be harvested—plans in some western states call for quadrupling the cut—and the roads that will be built in

order to do so. The timber-cutting and road-building debate ties in with a variety of issues. Since the Forest Service represents one of the few landowners able to provide stable, long-term ownership, old-growth timber production is a contested topic. Environmentalists also complain that watersheds are not adequately protected from the effects of intensive timber cuts. Backcountry recreation enthusiasts fear that increased road building will diminish the opportunities to "get away from it all" in national forests. And questions about the Forest Service's traditional emphasis on managing for commercially-harvestable wildlife species may also be raised.

Whether these issues will come up around Vermont's plan remains to be seen. Northrup points out that much of Vermont's forest land was clear-cut by the turn of the century, and in order to convert the forests now to uneven-aged stands, lighter cuts will be necessary. Although the six alternative plans for Vermont will vary in their timber-harvesting and road-building specifications,

Northrup says that the Forest Service "can not significantly increase the timber cut" in any plan. It may not be the amount of timber cut, then, but the type and intensity of the forest management, that will be debated in Vermont.

Meanwhile, no matter how popular a forest plan is, its funding from the U.S. Congress is a question mark. Congress rarely appropriates enough money to put entire forest plans into action; and rather than receiving a reduced sum for the integrated plan, states may be frustrated to find that little except timber harvesting has actually been funded. Under the Reagan administration, in fact, timber harvesting and mineral development have gone on entirely irrespective of RPA target plans.

Long-range forest planning is worlds apart from the extremely political appropriations process; but an effective GMNF plan is, nonetheless, well worth striving for. Once adopted, the plan will have the force of law, thus protecting our forests from flagrant violation of their intended use.

When the GMNF plan has been agreed upon, "anyone who supports the plan—especially if it departs from a more traditional timber-oriented design—should lobby for it," says Northrup. The upcoming 90-day comment period will be an excellent opportunity to help create a GMNF plan that is worth lobbying for.

*Keith Ross is a consulting forester and a recent graduate of the Environmental Law Center's Master's Program at Vermont Law School.*

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# The Great Woodchip Gamble

**Burlington's McNeil wood-burning electric plant had its first anniversary this summer—but not everyone was celebrating.**

**By Peter Letzelter-Smith**

"We're guinea pigs—and it's been hell," says Burlington Alderwoman Zoe Breiner, whose neighborhood sits next to Burlington's wood-powered McNeil generating plant. "Problems are cropping up that they didn't know about. I opposed it from the beginning—I always thought it was a stupid idea to put the state's largest pollution source in the state's most densely-populated area."

"It still looks like a good investment to me—on a long-term basis. You have to plan energy needs thirty years in advance," says Cley Tewksbury, Assistant Supervisor of the McNeil plant. "By building when we did we saved a lot of money—we're still \$15 million under budget. I admit that this summer's problems were worse than any other, but we know why and will be able to keep it from happening again."

These two attitudes on the McNeil plant are nothing new. Ever since Burlington officials began planning what was nationally hailed as a bold experiment in electrical generation—the first municipal wood-burning plant in the nation—there have been strong arguments both for and against the plant.

Burlington's experiments began in October of 1977 when it converted sections of the Moran power station on the shores of Lake Champlain from fossil fuels to wood. Few are calling that experiment a success,



*Above: The McNeil plant on Burlington's intervalle. Photo by Kathy Bond.*

although it did serve as a test balloon for the McNeil plant.

Wood burning finally ceased at Moran in 1984 after loud protests from residents near the plant, who complained about the smell of fermenting wood chips and the destruction of car paint by the emissions of the plant. The federal EPA also showed concern about the air quality of the plant's emissions. The Moran plant is now scheduled to shut down completely in 1987.

But the expectations for the 50-megawatt McNeil plant were much higher than those for Moran. The 32-year-old Moran plant was not originally designed for wood burning, while the McNeil plant—which would become the largest municipal wood-burning plant in the nation—was a state-of-the-art, \$66 million project. Gaining national attention, plans for the McNeil project caused *Mother Jones* magazine to call the Burlington Electric Department (BED) "the yardstick with which to measure all other utilities." (See the *Vermont Environmental Report*, July/August 1980.)

Proponents of the plant argued that wood burning would let Burlington depend on Vermont forests for their energy—an appealing argument in the aftermath of the 1973 Arab oil embargo. Proponents also contended that using woodchips from Vermont forests

would help our economy and lead to better forest management, as suppliers would be able to depend on McNeil business to finance long-term forestry programs.

## No Champagne at McNeil

In July of 1985, the one-year anniversary of the operation of the McNeil plant, there weren't any champagne corks flying in celebration of the plant's success. Problems of noise and foul-smelling woodchips have dogged the plant, and developments in the New England power situation have made some of the arguments for the plant recede, at least for now.

The McNeil plant is costing Burlington \$8 million a year in interest, according to Burlington Electric Commission Chair Jan Schultz. "The cost of running the plant and whether it came in under budget has nothing to do with whether it was a good investment. It still means \$8 million a year in interest expense."

Schultz lays much of the blame for McNeil's rocky first year on the New England Power Pool, a consortium which tells McNeil when its power is needed.

"We were using their numbers—they predicted a shortage—and that's why we thought we'd be running full-out all summer," says Schultz. "All the McNeil power is



going into the pool, you see; we use it [for Burlington's electrical needs] very infrequently. We just get factored into the power pool, so if there are cheaper sources available, we simply don't run."

Cheaper sources of power are at the root of McNeil's problems. When the plant was being planned, oil prices were expected to keep going up and cheap hydropower from New York state was thought to be dwindling. Neither prediction has come true, however; and when Quebec hydropower starts flowing into Vermont, McNeil's economic competitiveness will be even further undercut.

"It's hard to know what's really going on. Within five years, I think it will become a viable source of power for the city," says Schultz. "Meanwhile, of course, if McNeil becomes a better source, it will mean that oil prices will have gone up—which isn't really good for anyone."

### Less Is Worse

The irony of the McNeil pollution problems is that the less the plant runs, the worse things get. Since the plant was expected to run continuously this summer, woodchips have been stockpiled next to the plant since April. But since the plant has been shut down so much, the chips began to ferment, causing odor problems. Old North End residents had been complaining about the smell for months, and by September the chips actually had begun to smolder, spreading their odor over much of the city.

"The odor problem was due to some unusual occurrences in April—we're taking some extreme actions to solve the problem," says BED's Tewksbury. "If we can keep the pile down to where we planned, we're sure the problem will be solved."

Meanwhile, noise problems, caused primarily by repeated shut-downs and start-ups at the plant, have been bad enough that BED has had to install air conditioners in some residents' homes.

"It's pretty horrendous when they start and stop, usually at three to six in the morning," says Breiner. "The air-conditioners have become a necessity, although people don't want them. You can't get any sleep

without them."

In an attempt to solve these two problems, BED decided to run the McNeil plant around the clock in order to consume the excess woodchips, whether the Pool needs the power or not. When this energy can be sold, BED will not take a loss; but if none of the energy were to be sold, the decision could conceivably cost \$24,000 per day.

The situation will probably improve for BED when cold weather sets in. And Vermont Yankee begins its two-year maintenance shut-down this fall, which may also put BED in greater demand.

### Wood From Whose Woods?

Norm Hudson, a wood energy specialist with the Conservation and Renewable Energy Unit of the Public Service Department, still agrees with

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### The irony of the McNeil pollution problems is that the less the plant runs, the worse things get.

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the early projections that a woodchip plant will help improve Vermont's forests.

"A forest is like a garden—the better you manage it, the better it produces," says Hudson. Given the large number of consulting foresters in the state, he says, along with Vermont's Current Use Program encouraging good forest management, Vermont's forests are better run, now—and have plenty of wood. "Now what we like to see, in fact, are good markets for our wood—like the BED plant."

At this point, however, "It's a buyers market for woodchips," says Hudson. BED can set the price it will pay for the chips; within the confines of specific harvesting standards that cover erosion control, wildlife habitat, and silvicultural and aesthetic consideration, suppliers that stand to make the most from the sale will deliver the fuel.

As per Public Service Board regulations, only 25% of BED's woodchips can come into Burlington by truck; the rest comes by rail, via

Swanton. These northwestern delivery points, in combination with a 30% exchange rate, have kept Canadian and New York state suppliers in a competitive position. Depending on whether one considers where the wood itself comes from, or whether one is interested in where the supplier lives (Vermont suppliers may get their wood from out of state), BED buys somewhere between 30% and upwards of 50% of its wood from Vermont sources.

The McNeil plant's current problems will mean smaller woodchip purchases for the present; and because many of McNeil's suppliers went into business for the sole purpose of feeding the plant, some will be put out of business.

According to BED's Chief Forester Bill Kropelin, however, most Vermont suppliers should not be permanently harmed by the cut-backs. "We may not be getting any more tons, but we'll start getting a higher percentage of chips from Vermont." BED has primarily tried to turn away non-local suppliers, and those who have other markets for their wood, says Kropelin. "We hope not to cut off Vermont suppliers; in fact, we intend to concentrate our purchases from Vermonters."

### The Gamble Continues

What is clear is that the McNeil plant is in Burlington's intervalle to stay, and that its volatile relationship with the city will continue.

"We're at a crisis point. We're pretty fed up and a lawsuit is being considered. We've been putting pressure on them for two years now," says Breiner. "I'm worried the neighborhood will lose its character with people moving out to get away from the plant."

"Looking at it now, I'd say that going out on a limb to build extra capacity is not being rewarded," says Schultz. "I think we could have waited a few years. But we're getting a handle on the problem and changing policy so that it will run better."

"There will be a day when we can say that this is as good as we can do," Schultz adds. "But we're not there yet."

*Peter Letzelter-Smith is a freelance writer living in Burlington.*





# Conservation and Agriculture A Travelogue

By Eric Palola

Not often are VNRC staffers called on to catalogue their experiences beyond the realm of sweaty hearings and cramped committee rooms. The Conference on Conservation and Agriculture held by the Atlantic Center for the Environment at Sterling College in Craftsbury promised a welcome respite from the summer heat in Montpelier—that is, until the *V.E.R.* editor stuck a notebook in my hand with marching orders. What follows, then, are excerpts and summaries from my journal of conference activities.

A diverse group of about forty attended, including representatives from Great Britain, India, the Caribbean, four Canadian provinces and the majority of the New England states. The conference took place primarily over three sunny days in August; but the program also included trips, throughout the week, to New England and Canadian model farms.

Although the conference included its share of sore fannies and lukewarm coffee, we were given plenty of opportunity to witness various agricultural operations, from dairying to raspberry-growing. Workshops focused on programs and policies that inhibit or enhance the difficult marriage of conservation and agriculture.

Sunday night kicked off the conference appropriately with a dinner of Vermont produce and a welcome by Ed Houston, Dean of Sterling College. Sterling had its start in the mid-seventies, and prides itself on combining natural resource education with hands-on experience at local farm and forestry operations.

Following dinner, an enthusiastic address on Local and Global Perspectives on New England Agriculture was delivered by Gus Schumacher, currently Massachusetts' Commissioner of Agriculture, whose family has direct-marketed vegetables to New York City for over 130 years. "My great-grandfather had a farm on West 78th and Broadway," chuckled Schumacher.

"Massachusetts lost 45 dairy farms last year, yet there are nowhere near enough farms to meet the demand for fresh vegetables in the Boston area," Schumacher lamented. He referred to a recent survey known as the "Gutensohn Thesis" which reports that 90% of New Englanders want to see active farming as part of the landscape. The survey recommended that northeastern states adopt a park system to keep fallow farmlands open for future use, as well as a leasing program for new, small farms. "People want to see cows in Vermont. How about a 2% increase in hotel room taxes for agricultural

conservation?"

Looking into the future, Schumacher predicted that New England agriculture would be "technology-driven, with major investments in bio-pesticides and bio-technology." But in order to make it happen, chided Schumacher, environmentalists would have to "spend some of their money" on venture-capitalists.

Monday's activities began with three workshop sessions charged with blending conservation and agricultural issues into educational and policy directives. These groups provided lively discussion; but with the layers of issues facing us, it quickly became apparent that we weren't going to formulate any comprehensive policies to easily merge the two major themes in the time allotted to us! The "Developing Sound Policies" workshop that I participated in did determine that building sustainable agricultural systems was the first step to achieving increased conservation on the farm. A compendium from the Atlantic Center highlighting workshop proceedings will be coming out soon.

Monday afternoon we enjoyed a trip to the Nelson farm north of Craftsbury. We were greeted by Morris Nelson who, well into his seventies, looked like he could easily toss hay bales all afternoon. He bought his 330 acre farm—now one of the few remaining "hill" farms in Vermont—in the 1930's, for \$1400.

Morris started out sheep farming and later switched to dairying with



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about twenty milkers. In the winter he hauled milk out to the main road three miles away, and cut ice on nearby lakes to store and cool the milk during the summer months.

"Did you cool that milk?" Morris drawled in imitation of a milk inspector who visited the farm late one summer. "Why yes!" exclaimed Morris, "I put in a whole cake of ice!"

Don and Shirley Nelson bought the place in 1968 from Morris. Don has built the herd of registered Holsteins up to eighty-five, and cleared sixty acres to improve the pasture which he relies on from mid-May to mid-November. Feeding mostly on hay in the winter, his cows average around fifty pounds of milk per day.

Don sells some hay and has planted Christmas trees recently. Don and Shirley have also done extensive ditching to maximize drainage and are considering a forest management plan under Vermont's Current Use program. "We had a guy from New Zealand explain some of the pasturing techniques they use," he said but added, "open grazing has, for the most part, worked here."

Responding to questions about the future of the farm Don quipped, "If you believe everything you read, there is no future." Don emphasized that a "terribly efficient operation is necessary in today's dairy business." Shirley added "We've had three days of vacation in seventeen years, but there is a lot we can do around here with our own free time." She talked about the trout ponds they had built and their love of photography. "We like taking pictures of moose...we haven't snapped a bobcat or bear yet but we've seen them."




Adrian Phillips is a spry and pensive man of forty who commandeers a \$20-million-per-year budget and a staff of over one hundred to "promote conservation of the natural beauty and increase the opportunities to enjoy it." He is the director of the Countryside Commission, a non-executive branch of the English government.

The Countryside Commission is composed of four separate park systems. National Parks represent the best of the countryside; "In England, most of the landscape is man-made;

there is no wilderness as you know it," said Phillips. Areas of Outstanding Natural Beauty are mainly privately-owned and represent roughly 11% of England and Wales. About 38% of the English shoreline makes up England's Heritage Coasts; and Forests Parks, used for grazing and timber growing, have been acquired in connection with extensive reforestation programs.

Similar to Vermont's Extension Agency, the Countryside Commission, as well as the more recently-developed Farming and Wildlife Advisory Groups, circulate "Conservation Advisors" to assist farmers and developers in making environmentally-sound decisions.

"The relationship between agriculture and the environment is the biggest resource issue in Great Britain," said Phillips. "55% of our wetlands have been drained, trees have been lost and the traditional hedgerows which serve as windbreaks, wildlife cover, and scenic area borders have been lost to make way for more cultivation."




Tuesday afternoon, conference-goers piled into three vans and headed north to the boundary lands of southern Quebec.

"Ecological farming—not just running an 'animal factory'—is possible. We are farming ecologically because that is what makes sense," according to Bart Hall-Beyer, a farmer from Scotstown and part-time teacher at Sterling College. Hall-Beyer is a member of a unique cooperative known as the "Farmer-Environmentalists of the Eastern Townships." The cooperative is comprised of ten farms that adhere to strict conservation practices; the farms work over 2,000 acres and produce roughly 2½ million pounds of milk annually. Five to six hundred acres are devoted to cereal grains, about seventy acres to vegetables and thirty to fruits. Farmers must make their living solely from farming to be in the co-op.

"If we can get an organic price for our food, then all the better, but we do not demand a premium price," said Hall-Beyer. The farms are currently applying for a special seal from the government, he said, and are now acquiring some market

clout. But just as important, stressed Hall-Beyer, was the appreciation for the social interaction and shared labor that co-op members enjoyed.




The farm visits continued, each more interesting than the last, and all reminding me how important each unique farm is to a healthy, diverse agricultural system.

At our final stop we met an energetic German woman who had moved to Canada with her husband; her last farm was located in the heart of Bavaria. "We had no rocks in Germany and were spoiled by the European markets," she said.

She and her husband used to dairy and raise asparagus on their Canada farm but, tired of being locked into Canadian quota systems, decided to try something new. The couple now farm 830 acres of spring wheat and other grains, and are also starting to raise beef cattle.

Considerable time was spent explaining the biodynamic process they use: to my untrained eye, it was a veritable witches' brew made of, among other things, manure, egg shells, and basil—all mixed in a whiskey barrel in the back yard. The concoction is stirred periodically and ready to use in six weeks. According to the proprietors, 6-8 buckets of the stuff will fertilize up to 200 acres when diluted and sprayed properly. Judging from the height of the wheat that surrounds the farmhouse, it works.

Our host also referred to the agricultural principles of Rudolph Steiner and the importance of astrological factors in their farming operations. Her enthusiasm and conviction for their work were infectious, and well complemented by the acres of waving wheat and late afternoon sunlight.



For me, the conference served as a strong reminder of the revolutionary new capabilities of agriculture—techniques such as biodynamic composting, "voisin" pasturing, and embryo transplants. But even more impressive was the visible importance of farm families to the rural community—and their respect for the land they worked.



## Dick Mixer VNRC's Money Man

No, Dick Mixer wasn't one of the founders of VNRC. But if you could take all of the energy that he has devoted to the Council in the last nine years, and somehow lay it all end-to-end—well, it might just stretch all the way back to our beginning days.

Dick first got involved with the Council in 1976 as a consultant on the Lake Champlain Basin Study's contracted report to VNRC on soil erosion. When he went from there to a volunteer position on our Planning Committee, he may not have realized what a serious step he was taking: now, having gone on to chair that committee, serve on our Executive and Finance Committees as well as our Board of Directors, and fill in twice as Acting Executive Director during director searches, Dick has worked his way up to SuperMember status at VNRC.

A glance at Dick's resume shatters any stereotypes one may have held about Vermont environmentalists, however. With a B.S. in engineering and an M.B.A. from the University of Michigan, Dick has worked in New Jersey as a planner, an engineer, a realtor, and now runs "R.A. Mixer and Associates, Professional Engineers and Planners" out of Hanksville. In short, he's a developer.

Part of the reason Dick came to Vermont in the first place was, in fact, because of his firm belief in *environmentally-sound* development. "Development practices were abhorrent in New Jersey—particularly concerning soil erosion and sewage treatment," he says. "And I just couldn't sell them the *right* way to do it; people saw it as too expensive or too time consuming."

Dick did not confine his career only to the herculean task of developing land "the right way." Once he reached Vermont, he was also able to put his planning and engineering



experience to work as an adjunct professor, and later as the director, at the Environmental Studies program at Johnson State College. And his managerial and financial skills have led him to supplement his engineering and planning work with a private practice in money management.

In recent years, it is these managerial talents that have been most appreciated by the Council. Members had a chance to see a tell-tale sign of Dick's work in the new income and expenditure pie charts that grace our 1984 annual report. The charts represent, in a small way, the hours of time that Dick has spent, along with Administrative Assistant Cherie Langer, sitting before the computer and revamping our internal accounting system.

"We had been using an accounting system that hadn't been changed much in twenty years, and had gone back to hand bookkeeping—out-of-office—after a couple of brief encounters with computerization," Dick explains. "We needed a system that would more accurately reflect where our money was going—to *which* information project, to *which* issue. And we didn't want to have to depend on someone else's schedule."

While a Certified Public Accountant would continue to check all of our accounting, a computer that could handle our bookkeeping as well as keep up our membership lists would pay for itself in 1½ years, he argued. Now, having had the computer in the office since last November, the staff is convinced as well.

Like any new computer system, our IBM XT is not without its problems—Membership and Development Coordinator Nancy Miller will attest to that. With all but a few bugs worked out of it, however, the system's advantages are clear. Monitoring our cash flow, budgeting, and keeping our membership lists current are all more efficient with the new system.

Where does Dick find the energy to run two businesses, volunteer on four VNRC committees, and reorganize our accounting system too? The answer may lie in his son-in-law's toast at a recent birthday party—"Dick, you're sixty going on twenty." VNRC staff tends to agree; but if this is true, the Council might be hard-pressed to find enough committees and financial puzzles to fill Dick's time before he retires—in forty years. SC



## THE COUNCIL

### Welcome Monty! and Other Comings and Goings at the Council

A face that's very familiar to VNRC will become even more so, as **R. Montgomery Fischer** takes the reins this October as the Council's new Executive Director.

Monty's environmental work in Vermont is by no means limited to the six years he served on our Board of Directors, or the contractual issue work he did for the Council. He has been the Vermont Chair of the Lake Champlain Committee, and co-organizer of the Lake Champlain Islands Trust, the Vermont Geological Society, and the Champlain Maritime Society.

Monty has also had faculty appointments at the University of Vermont, and has served as both a private and government consultant. With the wealth of experience and dedication he brings to the position, we are very glad—and fortunate—to have him on board!

Monty fills the shoes of C. Louis Borie, who left the Executive Directorship this summer. In the short time Lou was with us, he helped pull together and guide a new staff team, and was instrumental in a major grantsmanship effort. We bid him a fond farewell, and know he will put his enthusiasm and skills to good use in his freelance photography and writing work.

Meanwhile, the Council was pleased to officially hire **Eric Palola** as Associate Director this summer. Eric fills the Operations Director



**R. Montgomery Fischer**

position that was vacated when Don Hooper was elected to the Vermont House of Representatives.

Eric is no stranger to the Council; the last position he held was that of VNRC's Acting Operations Director. Eric had also worked previously with the Council and the Current Use Tax Coalition on a contractual basis. Eric's strong background in conservation issues and his lobbying experience have been valuable assets to the Council, and we are pleased that he will be heading up the Council's lobbying and other advocacy efforts on a permanent basis.

### Where were you on September 7th?

If you weren't at VNRC's annual meeting, you were missing a fine time!

Excellent field trips kept members busy up until the festive lakeside picnic buffet. After lunch, members were treated to Governor Madeleine Kunin's ideas on Vermont's environment. It's not enough to simply react to our "emergency room" environmental problems, Kunin told the crowd of nearly 200; Vermonters must come up with a vision of what we would like Vermont to be like ten, twenty, or fifty years from now.

Members also approved two VNRC by-laws changes at the meeting. One raises the maximum number of Board members from twenty-two to thirty-one, to allow for better geographical and committee representation of the Board. The second change shifts the responsibility of establishing membership dues from the membership to the Board; Board members feel that this will



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Several special people were honored at the meeting as well. Recently-hired *Vermont Life* editor **Tom Slayton**, who covered environmental issues for several Vermont newspapers, was lauded for never hesitating to "promote a point of view of the greatest good for Vermont's environment;" Slayton was presented with VNRC's Achievement Award.

**Peg Garland**, an early supporter

of VNRC, is best known for her 12 years as Vermont Environmental Board member and Chair; Garland has the Council's deepest thanks for her extraordinary commitment to Vermont's environment, and received the VNRC Service Award.

And although it's difficult to slip anything by outgoing Board Chair **Carl Reidel**, we managed to surprise him with a special Service Award. As busy as he has been as a forestry professor and head of the Environmental Studies Program at

UVM, Carl has devoted an enormous amount of time to VNRC's Board and committees for the last twelve years; it's the least we could do to thank him for his dedicated service.

### New On Board

Elected by Council membership at our annual meeting, seven directors will begin new terms on January 1 of next year.

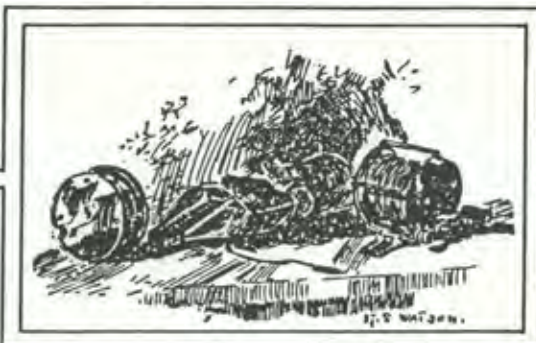
We are pleased to welcome new Board Members **Joy Green** and **Alan Turner**, both at-large nominations. Joy comes to us from Dorset, and manages the Northshire Bookstore in Manchester Center. Her life-long interest in environmental concerns is evidenced by her work with the Merck Forest Foundation; she has been a trustee there since 1976, and president of its Board since 1979.

Alan lives in Waterbury and is owner/president of J.P.R. Associates in Stowe, a forest management consulting firm. He serves on VNRC's Forest Policy Task Force, the Executive Committee of the Vermont Current Use Tax Coalition, and the State Forest Resource Advisory Council.

Returning to the Board are experienced and dedicated members **David Brook, John Nutting, Gail Osherenko, Mark Schroeder, and Peter B. Smith.**

### Correction

The photo caption accompanying "Reflections on the Citizen's Lobby for the Environment" on page 17 of the Summer 1985 *Vermont Environmental Report* was in error; Rep. Tim Burke, D-Putney, was incorrectly identified as Rep. Curt McCormack, D-Rutland. Our apologies!



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## Send Us A Postcard, Jean!

Getting a grant to travel to China and England this summer, and then to New Zealand, Russia, India, Africa and Europe over the course of the coming three years? If anyone could dream up—and pull off—a scheme like that, it's VNRC's own Board member, Dr. Jean Flack.

As a grant recipient of the W.K. Kellogg Fellowship Program, Jean will be released from 25% of her duties as assistant professor in the University of Vermont's Environmental Studies Program, and will be taking a look at land use planning for agricultural land preservation, as well as environmental law, at an international level.

Jean will spend any time that she is not world-travelling here in Vermont, where she lives with her husband and two daughters on their Fairfield sheep farm. Check future issues of the *V.E.R.*; we will be printing Jean's impressions of her travels, and their relationship to Vermont's land use planning questions—if we can catch her between flights.

## The Ultimate Environmental Threat

"At stake is nothing less than the primary life support systems of the ecosphere. In the event of a nuclear war, essential processes upon which the entire biological food chain

depends, such as the carbon and hydrologic cycles and photosynthesis, would be threatened. As with other major threats to the environment, the multiple effects of a nuclear war would interact synergistically to cause a series of immediate and long-term impacts to the entire planet."

So begins the forcefully-worded "Policy Statement of the VNRC on the Threat of Nuclear War." The subject of the environmental consequences of a nuclear war has been raised by members at several past VNRC annual meetings; the policy statement addressing this concern was adopted by our Board of Directors this summer and presented at VNRC's annual meeting in September.

"In the past few years, research into phenomena such as nuclear winter has revealed a dramatic link between nuclear issues and our more traditional conservation interests," said VNRC Board Chair Carl Reidel. "Putting politics aside, it is clear that the issues of nuclear war and environmental conservation are simply inseparable."

Under Reidel's supervision, University of Vermont environmental studies student Michael Usen researched and drafted the statement. The final version is now available from VNRC.

The seven-page statement outlines the enormous impact that a nuclear blast would have on Ver-

mont's natural resources including our forests, watersheds, air, groundwater, and land. The Council's policy and responsibility, however, lie in preventing such a blast. Through conservation, education, legislation, and action, the statement pledges the Council to "do everything within its power to prevent the desecration of Vermont's environment and natural resources by the use of nuclear weaponry."

"As individuals, we can set an example for our communities by leading lives which emphasize recognition of resource limitations," it states. "As an organization, we can extend this example to the state level. As a state, we can lead this nation toward global stability by following sound environmental principles in all aspects of our economic and political endeavors."

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## New Members

VNRC is pleased to welcome the following new members, who joined us between mid-May and September: Joseph Adams, George Babcock, Robert and Sue Barasch, Mr. and Mrs. Brian Bauer, Tom Beck, Berkeley and Susan Bennett, Kelley Benoit, Jean Boardman, Larry Bohlen, Mr. and Mrs. Charles L. Borie, Charles Bridges, Deb Brighton, Ken Buchesky, Henry Burnham, Mr. and Mrs. Burnham, Mrs. Duncan Campbell, Elizabeth Carlhian, Bigelow Carris, Jenny Carter, Carol Chapman, Harry and Virginia Clark, Francis Clark, Malvine Cole, Eric Covey, John W. Davidge III, Julie Davis, Whitney Debevoise, Mary Del Piero, Irwin Douglass, Jean Dutton, Kevin Eaton, Leon Edgerton, Nicholas C. Edsall, Richard English, The Clattenburg Family, Mr. and Mrs. Lachlan Field, Isabel Fox, Paul Gale, Elizabeth Gilbert, Frederick Greene, Wendy Sue Harper, Anne Hoover, James O. Howland, William and Ella Hulse, Solon Kemon, Nancy Knox, Larry Lewack, Robert Lincoln, Donald Liptack, Marianne Lust, Dennis Macelroy, Marion Manning, Randy and Mary Martin, Buff McLaughry, George Michaelides, Lawrence Moffatt, Barbara Monti, Thomas Morse, Jr., Sean Mullen, Robert Naylor, Peter Orgain, Peter Otto, Loren and Marjorie Palmer, Graham Parsons, Mr. and Mrs. William Peck, Faith L. Pepe, John T.R. Pierson, Donald Regan, Peter Renes, Mr. and Mrs. Thomas T. Richmond, Larry Rockfeller, Red Ryder, Dutton Smith, Jane Sommers, Paul Stone, Peter Stuart, Mr. and Mrs. Gordon A. Thomas, Sue Thomas, Mrs. Ellen C. Tillinghast, Delia Clark and Tim Traver, The Hills of Vermont, John Vihinen, League of Conservation Voters, Dayton and Sarah Wakefield, Henry and Sophie Walsh, Lauraine Warfield, Richard Warren, Jack Watts, C.D. Willey, Mary and William Stevenson, Marguerite Wolf, Steve and Susan Wright, Dr. and Mrs. Alan Wright.

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October 17-20

"Celebrating New England: Enjoying and Developing Our Sense of Community" is this year's theme for the **New England Environmental Education Alliance Annual Conference** in Colebrook, CT. Call (203) 684-5926 for details.

October 17-20

"Gatherings" celebrates and works to preserve the quality of life on earth through the arts. Sponsored by the Central VT Task Force Against Hunger, and Artists, Physicians, Parents and Teachers for Social Responsibility, this year's "Gatherings" will include a "40 Years After" WWII Memorial Concert; a lecture by Frances Moore Lappe on "Food, Politics, and Hope"; "Mozart Requiem" by the Bread and Puppet Theater and chorus; a children's musical; and poetry readings. Look for posters, or call 223-3012 for more information.

November 9 & 10

Take a close look at ice formation, pond turn-over, plant dormancy, and other pre-winter miracles in the Center for Northern Studies weekend course **Before the Snows Come: A Natural History of November**. Limited to 12 students; \$35 fee (\$30 for CNS members). Call 888-4331 for more information.

November 14, 7:00 pm

Governor Kunin, two state senators, an energy analyst, the Commissioner of the VT Public Service Department, and a Central VT Public Service Corporation vice president will make up the speaker panel on **Vermont's Energy Sources and Future**. Call the Vermont Institute of Natural Science in Woodstock, 457-2779, for more information.

The Conservation Society of Southern Vermont continues their **Acid Precipitation Monitoring Program** and is seeking volunteers in southern VT to run additional monitoring stations. Volunteers will be trained in the simple procedure of testing water after every rain or snowfall. Call or write CSSV, RR1 Box 1540, Newfane, VT 05345; 348-6334.





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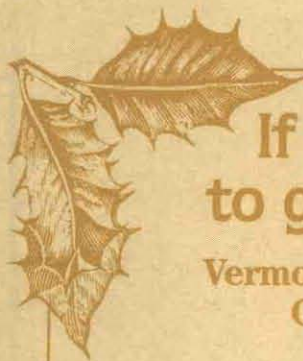


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