

# Vermont Environmental Report

PUBLISHED MONTHLY BY THE VERMONT NATURAL RESOURCES COUNCIL, A NON-PROFIT CITIZENS' CONSERVATION ORGANIZATION SUPPORTED BY MEMBERSHIP DUES AND CONTRIBUTIONS. VNRC, 26 STATE STREET, MONTPELIER, VERMONT, 05602; (802) 223-2328. CHAIRMAN: DAVID R. MARVIN; EXECUTIVE DIRECTOR: SEWARD WEBER; EDITOR: NATHANIEL FROTHINGHAM.

## Council Projects

IN AUGUST AND SEPTEMBER THE VNRC HAS CONCLUDED ITS TWO-YEAR INVOLVEMENT WITH THE HARTLAND PROJECT AND IN LATE AUGUST THE COUNCIL LAUNCHED PHASE III OF THE NATURAL AREAS PROJECT.

### BRADLEY AND JACOBS FILE REPORT ON HARTLAND OPEN SPACE PROJECT

The 56-page **Technical Report** of the Hartland Open Space Project, written by Planner, Harvey Jacobs, and VNRC Assistant Director, Darby Bradley, and illustrated by Constance F. D. Ince, has now been published and is available from VNRC.

The Hartland Open Space Project was a major undertaking of the VNRC, beginning in November, 1974. The Open Space Project was conducted in collaboration between the VNRC, the Ottauquechee Planning and Development Commission and the Hartland Board of Selectmen. The basic objective of the Open Space Project was to offer citizens of Hartland an opportunity to stabilize taxes in order to encourage property owners to maintain land in farm or forest uses. The open space proposals were defeated by Hartland voters on May 25, 1976.

"The **Technical Report** will be helpful to those towns that are considering problems of rising land taxes and open space preservation," according to co-author Darby Bradley. It describes the

reasons why the Project was undertaken, it discusses the several open space programs, and it offers a comprehensive analysis as to why the vote eventually failed.

The **Technical Report** is illustrated with maps, graphs, charts and tables. In the Appendix are materials that will be of interest to other towns contemplating tax stabilization programs. There is a "Chronology of Events," a "Warning for the Special Town Meeting," a sample of the "Special Town Meeting" ballot, examples of sample contracts that might have been drawn up had Program 2 or 3 been passed by Hartland voters. The authors have also included those sections of Vermont Law that deal with tax stabilization and open space lands.

(Supplies of the **Technical Report** are limited. VNRC members and others who would like a copy are invited to write the Council. There will be a 50-cent charge per copy to cover handling and postage.)

### NATURAL AREAS PROJECT III LAUNCHED

The Vermont Natural Resources Council has announced the beginning of Phase III of the Natural Areas Project. Robert Klein, who completed



work on Phase II of the Natural Areas Project in December, 1974, has been engaged to carry on as Director of Phase III. Klein started work on Phase III in late August. Phase III will take a year to complete and will cost an estimated \$20,000.

In Phase I of the Natural Areas Project, nearly 1,000 natural areas in Vermont were identified. In Phase II, Klein, working with a committee of naturalists, culled the original list of 1,000 natural areas and pinpointed the 64 most important or primary natural areas sites in Vermont.

Now in Phase III, Klein wants to take the effort to its logical conclusion. He has set forth three goals. First, he wants to find ways to protect as many of the 64 primary sites as possible. Second, he wants to build up experience in exploring all the legal means available for protecting natural areas. Some of these legal tools are: easements, covenants, land trusts, and zoning. Klein

feels that by working with individual landowners and governmental bodies a valuable fund of experience in applying land conservation techniques can be accumulated. In this way land conservation techniques can be made more widely understood. A result of this year's work will be the publication of a booklet describing the legal tools that are available to landowners, planners and others who may wish to protect natural areas. This booklet will take the form of a series of "case studies" describing the successful application of the law to protect natural areas.

A third important goal of Phase III of the Project is public education. Klein has already begun assembling materials for an 8-10 minute slide-tape presentation. "We want to keep natural areas before the public during this year," says Klein. He will use this slide presentation to raise consciousness about natural areas with landowners, planners, Boards of Selectmen, and citizens' groups of all kinds.

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## New England Hydropower: What is the Potential?

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### A REVIEW

Once in a while out of the endless stream of paper, -- manilla envelopes, newsletters, studies, and documents --, comes something that is provocative and therefore worthy of attention. The **Report on Potential Hydropower Facilities in New England**, prepared by the New England Federal Regional Council for the Federal Energy Administration, fits this description.

It is not a long report, as reports go, some 70 pages. It is not without flaws. (In one section of the paper, the writer substitutes the Mississippi River for Vermont's Missisquoi River.) It does not claim that water power is without complications, environmental or otherwise, or that water power can amount to a total solution to our energy problems. What it does do convincingly is to address the New England and therefore the Vermont energy predicament,

and it discusses ways in which we could look at the power that might be generated from the water that runs in our rivers and streams and tides.

The New England, and therefore the Vermont energy predicament, is easily described. We are dependent on oil; much of that oil (44 percent) is imported; and it is rising in cost. We are becoming dependent on nuclear power, and nuclear power, to say the least, has not turned out to be the panacea that was promised.

In examining the hydropower potential of Vermont and New England it may be useful to cite a few facts.

**Item:** Vermont's peak demand for power, that is, the greatest call on power on the heaviest day of consumer use last winter, was 756 megawatts. (There are 1000 kilowatts in a megawatt.)

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## HYDROPOWER POTENTIAL continued

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**Item:** New England's peak demand for power is many times greater than Vermont's: 13,000 megawatts.

**Item:** Of the **major** waterpower sites that could conceivably be developed, the "Hydropower Report" indicates that there are 10 in Maine, 6 in New Hampshire, and one each in Massachusetts and Connecticut. There are no **major** waterpower sites available for potential development in Vermont.

**Item:** Aside from the **major** sites, there are an estimated 800 small dams throughout New England that have been previously used for power generation, but which are now out of service.

**Item:** There may be as many as 2000 **very small** waterpower sites scattered throughout New England, sites that could contribute little toward meeting the total demand for power in the region, but which might be pressed into service by local communities to supply power for street lights, or small industries, or schools.

What is seminal about the **Report on Hydropower Facilities in New England** is the range of choices open to us. We could choose to develop power from the 18 **major** hydro sites identified in the **Report**, all-told 1,805 megawatts of power, at a total construction cost of an estimated \$1.43 billion. Then there is the much-debated tidal power project at Passamaquoddy near Eastport, Maine. Passamaquoddy could generate 500 megawatts, about two-thirds of the "Vermont load" at a cost of approximately \$1 billion. There are the various schemes for pumped storage power, and the **Report** narrows the list down to 14 sites, one of which is in Middlebury, Vermont. And finally there is that whole universe of untapped potential in the small dams that have been abandoned, and in the scores of hydro sites throughout New England, that have been seen until only very recently as being too small, too marginal, to be developed.

According to Gordon Stensrud, Chief Engineer at the Public Service Board in Montpelier, Ver-

mont has 50 hydro sites that are currently producing power. These sites produce annually about 12% of the State's power requirements. Stensrud estimates that at least 26 dams have been abandoned that once were producing power and none of these sites has been reactivated since the "Energy Crunch" of 1973.

The fact that none of these small dams has been reactivated since 1973 is a finding that may perhaps be misleading, Stensrud cautions. There has been activity. At least three **new** hydro sites have been put forward for development in petitions filed with the Federal Power Commission: in Springfield, in East Georgia, in Swanton, and four Vermont utility companies are taking a hard look at certain older sites and measuring their potential.

Under the surface of things, and **this** is what is significant in the "Hydropower Report" -- there are changes in basic thinking. The palmy days of the 1960's are behind us. We are beginning to understand that all power has a price. A few years ago, federal officials, state officials, (and most of the rest of us), would have scoffed at the notion of paying serious attention to the potential of small hydro sites, to say nothing of very small hydro sites. But the times have changed and thinking has changed with the times. The "Hydropower Report" refers to a letter from the Vermont Department of Water Resources. In that letter the Vermont Department describes the intense interest in water power throughout Vermont in "scores of towns (that) are actively forming citizens' committees to look into the feasibility of public power, especially from hydro facilities."

The message seems to be getting through. We seem ready to re-evaluate the potential of the modest site that could run the street lights of a town, or meet the needs of a small manufacturing outfit, or supply power to a school. It is encouraging to note in the "Hydropower Report" the signs of a new federal energy policy that recognizes the potential value in all water alternatives: major sites, pumped storage, the reactivation of small dams and the real possibilities in the very small sites where the flows of water could work for us. (N. Frothingham)

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# Andrew Shapiro Discusses the Wood Energy Institute

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Andrew Shapiro, 41, President of the newly-formed Wood Energy Institute, is an intense, hard-driving, individual. On the morning of our interview, he was grabbing a quick breakfast of a 'Danish' and a cup of coffee in his second-floor office at Fiddlers Green in Waitsfield, Vermont.

Take a good, long, hard look at the green forests of Vermont and northern New England. You will find yourself in the company of folks such as Andy Shapiro and the numerous charter members of the Wood Energy Institute. These people, representing organizations, businesses, utilities, from Vermont, New Hampshire, and Maine, have looked at the rising cost of domestic and imported oil, of coal, of nuclear power; they have looked out on the woodlands of northern New England; and they are determined to employ a valuable, raw potential that is currently going to waste.

The Wood Energy Institute sprang into life in March, 1976. It was the special project of Andy Shapiro. It counts among its charter members such well-respected and long-standing groups as the Maine Audubon Society, the Society for the Protection of New Hampshire Forests, and the VNRC. Its formation followed hard on the heels of an August, 1975 Report of the (Vermont) Governor's Task Force on Wood as a Source of Energy. According to this Report, as much as 25% of Vermont's power and home-heating fuel requirements could be supplied by wood as early as 1985.

Despite the optimism of the Task Force Report, despite the emergence of "whole tree harvesting" which is capable of taking a full-size tree (branches, bark and leaves) and converting it into chips in thirty seconds, despite the availability of logging residues, mill residues, and as much as 600,000 cords of "junk wood" on Vermont's State-owned land alone, --despite all these incentives, the federal government has

made only a glancing reference to wood in its energy planning, and has set aside less than 3/10 of one percent of its entire Energy Research and Development Administration (ERDA) budget for the employment of this resource.

The purpose of the Wood Energy Institute is to change all this. Shapiro and the charter members have set ambitious goals. One of these goals is admittedly political: to promote larger funding programs for wood energy at all levels of government. Another feature of the Institute's work will be the gathering and exchange of information. The Institute will be gathering statistical information to assess the extent to which wood energy is presently being employed or could be developed. The Institute will keep abreast of a rapidly-changing technology. The Institute will coordinate wood energy activity. Shapiro discussed the contribution that the use of wood energy could make to forest stand improvement. He emphasized the Institute's crucial role in raising money and sponsoring demonstration projects that will move beyond rarified discussion and research to show how wood energy can be developed successfully.

The desire to move ahead with a specific project is the spur behind Shapiro's efforts in Vermont's Lamoille County in the north central section of the State. Here, in an area within a 50-mile radius of Morrisville, Shapiro hopes to place under contract the 130,000 acres of forestland and the 500,000 green tons of cull wood per year that will be needed to supply the needs of a proposed \$55 million, 50 megawatt wood-fired electrical generating plant over a twenty-year period.

This is a large project. Shapiro is discussing the details with an un-named multi-national corporation. This corporation would put up the \$55 million, would be the developer, owner and operator of the generating plant. Shapiro noted

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the 15 years of "lead-time" that it takes to bring a nuclear power plant on line. He is working on a different schedule. He is looking for a solid decision on whether or not to go ahead by the first of the year, and he figures that a wood energy facility could go on line as early as 1980.

Right now, Shapiro is working under a grant from the Lamoille County Development Council. Under the terms of this grant, he is seeking non-binding letters of agreement from woodlot owners in Lamoille County. The owners of woodland would agree to have the "weed trees" and non-marketable wood taken from their land. In return, they would be guaranteed a payment of \$1 to \$2 per cord at today's market prices, with an escalator clause written in to the contract. Shapiro explains how this would be done. The generating plant will license a team of subcontractors. These subcontractors will follow the most advanced silviculture methods. Their work will be carefully supervised and inspected. It is these subcontractors who will go out on the land and convert the cull wood into chips. This process will lead to an improved timber stand growth. "Every forester," Shapiro reports, "has agreed that as we pull these weeds out, the growth will increase between 100 and 200 percent on the remaining merchantable timber."

Shapiro sees a long list of other advantages accruing from a wood-fired electrical generating facility. He talks of the \$4 or \$5 million of State revenue. Some of that will come from the payroll tax and some of it will come from a 3 percent tax on the purchase price of chips. Shapiro talks of the roughly \$15 million worth of circulating capital that will be released each year into the economy of the Morrisville area. Some of this, \$6 million, will be the amount that is paid annually for chips or fibre; another slab of this money, \$5 million, will be the salaries from the approximately 450 local jobs that will be created; and another chunk of cash, \$2 million, will be spent on what Shapiro calls "support facilities" -- the equipment, fuel, and new construction that the generating plant will set in motion. The most satisfying feature of a wood-fired generating plant, according to Shapiro, is the demand it will create for skills that Vermonters already possess. Here, for a change, is a new plant that will put Vermonters back to work.

For the skeptic who may be asking why a "demonstration project" has to be so large, Shapiro has a logical response. He is the first to admit that a 50 megawatt plant is large. After all, 50 megawatts is one-eighth of the current electrical demand of Vermont. But it has to be that large, Shapiro argues. "We have to be able to sell electricity that is going to be competitive." Wood energy won't be cheaper than conventional fuels. And a 40 or 50 megawatt facility is the smallest you can build and still get competitively-priced electrical power.

Right now, Shapiro has lined up commitments for 100,000 acres of woodland. He needs another 30,000 to 50,000 acres. He is still soliciting letters of participation from additional woodlot owners. When he gets these letters and assurances that the power generated will be purchased the first demonstration project of the Wood Energy Institute will be off and flying. Shapiro sees the wood-fired plant as an opportunity to develop a native alternative energy resource, something that he sees fill will fill the gap between what is currently available and the more sophisticated alternatives, --solar, wind, and tide--, that promise to come on line at a further point in the future.

#### RESOURCE GUIDE SEEKING INFORMATION

Information for a new book, **A Resource Guide to Outdoor Education in New England**, is being gathered for Fall publication. This edition is being made possible by grants from the Kendall and Blanchard Foundations. The **Guide** will include a thorough survey of outdoor education resources for all New England. It will primarily serve teachers and youth leaders who are operating or planning to operate an Outdoor Education program. Another audience includes individuals of all ages who are interested in Outdoor Education.

To make the **Guide** a success and useful as an all-New England resource, the editors are soliciting as many sources as possible for inclusion. Anyone wishing to be listed, can obtain a form and/or information by contacting: **A Resource Guide to Outdoor Education in New England**, Will Phillips, Editor, 346 Concord Avenue, Belmont, Mass., 02178, Telephone, (617) 489-0497.



# 1976 Annual Meeting

## 1. Program

The 1976 VNRC Annual Meeting will be held on Saturday, October 9th, at Camp Keewaydin on the shores of Lake Dunmore in Salisbury, Vermont. The morning session will be devoted to "VNRC Business" and will start at 9.30 a.m. **Registration and Coffee will begin at 9.00 a.m.** The morning session of the Annual Meeting will adjourn for lunch at 12 noon. The afternoon session will feature an **Open Public Forum** for candidates for Governor, U.S. House of Representatives, and the U.S. Senate. The Candidates' Forum will conclude about 3.00 p.m. so that VNRC members and the public may depart with time to enjoy the fall colors.

## 2. Elections: At-Large Nominations

### William Eddy (Sutton)

(Nominated by the VNRC Nominating Committee) President of Environmental Concerns International; Environmental educator, filmmaker and communication specialist. Extensive involvement in international wildlife protection efforts. Consultant to U.S. Park Service.

### David R. Marvin (Johnson)

(Nominated by the VNRC Nominating Committee) Incumbent eligible for re-election to a 2nd term, maple syrup producer, maple industry consultant, and Christmas tree grower. B.S. in Forestry from the University of Vermont. Member of the Society of American Foresters and Director of the Vermont Maple Sugarmakers' Association. Present Chairman of the VNRC and member of the Board of Directors since 1974.

### Milton Potash (Burlington)

(Nominated by the VNRC Nominating Committee) Incumbent appointed by the VNRC Board in 1976 to fill vacancy. Professor of Zoology and Acting Chairman of the Zoology Department, University of Vermont. Educated at University of Louisville, Indiana University, and Cornell University. Primary research interest is the ecology of Lake Champlain. Member of the Lake Champlain Committee's "Technical Advisory Committee," Member of the Board of Directors of the American Water Resources Association.

### John M. Shuell (Peru)

(Nominated by the VNRC Nominating Committee) Incumbent eligible for re-election to a 2nd term. Businessman and former hotel owner and manager. Educated at the University of Virginia. Founder of the Peru Outdoor Recreation Association. Active in several environmental organizations, locally and nationally. Member, Advisory Board, Catamount National Bank. Chairman, VNRC Finance Committee.

### Johannes von Trapp (Stowe)

(Nominated by the VNRC Nominating Committee) Incumbent appointed by the VNRC Board in 1976 to fill vacancy. President and manager of the Trapp Family Lodge. Forester. Educated at Dartmouth College and Yale School of Forestry. Member of Forests and Parks Board. Environmental Chairman, Vermont Hotel and Motel Association. Active in the Stowe Association.

### James Wallace (Randolph)

(Nominated by Nathaniel Frothingham) Free lance writer and editor. Educated at Williams College. Former Editor at McGraw-Hill Book Company. Active outdoorsman, conservationist and hiker. Member of the Appalachian Trail Conference, Sierra Club, and Green Mountain Club. Has deep concerns about the future of Vermont's forest resource.



### 3. Member Organization Nominations

#### Jean Davies (Pittsford)

(Nominated by Vermont Camping Association) Director of Camp Betsy Cox, Editor of **RUCK-SACK**, the newsletter of the VCA. Director of the Vermont Ecology Course, a week-long course for camp counselors specializing in environmental education. Past President, Pittsford Historical Society and Vice-Chairman of the Pittsford Planning Commission.

#### Shirley Holmes (Canaan)

(Nominated by the Vermont Association of Snow Travelers) Retired businessman. Past activities include: Town Selectman, Town Con-

stable, County Deputy Sheriff, Director, Northeastern Vermont Development Corporation, Founder and past President of the Border Riders Snowmobile Club. Presently Republican Party Town Chairman, Lister, and Justice of the Peace for Canaan.

#### Paul L. Nergaard (Putney)

(Nominated by the Southern Vermont Sierra Club) Environmental Protection Coordinator for Southeastern Vermont. B.S. from Columbia University and M.A. from the University of Rochester. Has taught Geography at Temple University and Syracuse University. Chairman, Putney Town Planning Commission. Vice-Chairman, Southern Vermont Sierra Club.

Out of the "At-Large" Nominations, Five (5) will be elected; out of the "Membership Organizations" Nominations, Two (2) will be elected.

### 4. Open Public Candidates' Forum

The 1:30 p.m. afternoon event of the Saturday, October 9th VNRC Annual Meeting at Camp Keewaydin on Lake Dunmore in Salisbury, Vermont, will be an Open Public Candidates' Forum. Candidates for Governor, U.S. House and U.S. Senate who survive their respective September 14th primary races will be invited to present their views on the environmental issues. Time will be set aside for a full round of questions and answers between members of the audience and the candidates. The Open Public Forum will conclude at around 3:00 p.m.

### 5. Registration Form

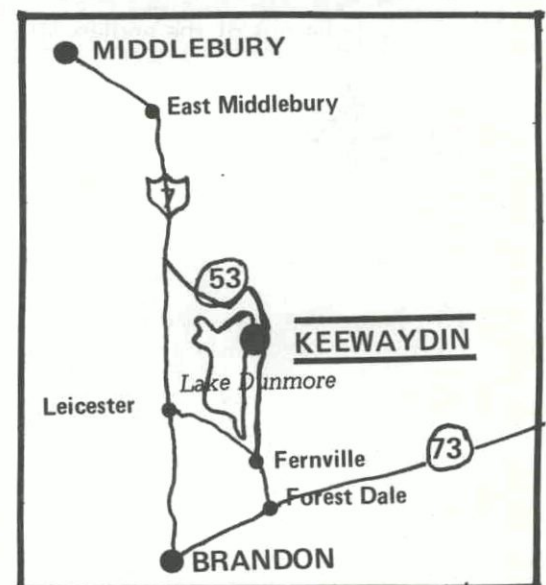
- ☐ I/We shall attend the 1976 VNRC ANNUAL MEETING.
- ☐ My check, payable to VNRC, for \_\_\_\_\_ luncheons @ \$5.00 each is enclosed.

NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_ ZIP \_\_\_\_\_

Directions: Camp Keewaydin, now called the Keewaydin Environmental Education Center is located on the northeast shore of Lake Dunmore on Route 53, which connects with Route 7 to the north and with Route 73 to the south. Lake Dunmore lies between Middlebury and Brandon. The parking lot for Keewaydin is located across the road from the camp. VNRC members and others will find the parking lot by watching for a pedestrian overpass.

N. B. The 1976 VNRC ANNUAL MEETING will be held on SATURDAY, OCTOBER 9TH, at Camp Keewaydin on Lake Dunmore in Salisbury, Vt. Please register in advance because VNRC must give a guarantee for lunch to the camp.





# Letters

## To the Editor:

I wish to commend your informative series, "Farming & Youth." Many of us who have experienced the misfortunes of uncontrolled development elsewhere prize especially qualities of life still existing in Vermont. We must quickly realize that various interests are at play.

My own attempts at intervention had been silenced by the claim of a developer that land, as a commodity, is not subject to any general concerns. To the advantage of most of us, this is not true. You inform us of efforts which are now being made.

It is unfortunate that the bitterness which Mr. Hawkins mentions does often exist. Resentment and fear are excited as members of a community

begin to express their various ideologies; yet it is only through such expression that the concerns of a community can be clarified and acted upon. Silence is golden for someone else.

Sincerely yours,

Betty Magbie  
Calais, Vermont

## Forest Workshops

The Fall Series of the Forest Management Workshops continues in October: in **Jericho**, Saturday, October 2, led by forester, Paul Harwood, a General Session with an emphasis on softwood management; in the **Manchester Area**, (still tentative) October 16 or 23, led by foresters, James White and Charles Stewart. For further information, please contact VNRC.

# VNRC

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ADDRESS CORRECTION REQUESTED

VERMONT NATURAL RESOURCES COUNCIL, 26 STATE STREET, MONTPELIER, VERMONT.