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: NAT FROTHINGHAM.

Whittaker to Lead State Energy Office

1. Mission

For those who may be curious to know how the Snelling Administration will attack the problem of energy, -- one clue may have been dropped with the appointment of Brendan J. Whittaker as Director of the newly-redefined State Energy Office.

The old State Energy Office under the leadership of Forrest Orr was hastily drawn together in the crisis-ridden days of the Arab Oil Embargo of 1973-1974. It was an Office charged with the then-urgent tasks of inventory and control. There was no statistical base for dealing with energy questions in the State, the Energy Office had to compile such a statistical base, and the operation took on that kind of flavor.

Now, dating from the appointment of Brendan Whittaker on May 1st, there is a new Office and a fresh, activist, mandate.

The new Energy Chief is a direct appointment of the Governor, not a classified civil service employee. He will report to the Governor and his actions will reflect the policies of the Snelling Administration. In a statement explaining the new role of the State Energy Office, Gov. Snelling said that the function of the Office will change from compiling information about conservation to "doing something about that information." Snelling went on to call for a tougher State Energy Policy and a "pragmatic, sound, viable program" of energy conservation.

This is how Bren Whittaker sees his mission. "Now that the energy situation is getting national attention," he says, "there are plenty of forums for the big questions like nuclear power and the (approach to) OPEC." The resolution of the big issues will take place at higher, at least different levels of Government. What Whittaker and his current staff of three people intend to do is to run programs that will give "tangible help and aid" to Vermonters.

"Courage" has been defined as "grace under pressure" and this is the human dimension that Whittaker appears to be bringing to his problem-fraught assignment.

Whittaker appeared relaxed at an early morning meeting several days ago. He had every reason to feel otherwise. June 15th was the deadline for completion of Vermont's State Energy Plan. June 31st was the due date for a major project proposal to the Energy Research & Development Agency in Washington

Whittaker...

And yet, as he spoke, facing all the gloomy predictions, and the signs of a largely indifferent public, his tone was even and resilient.

2. Federal Money

Whittaker talked about the money that was already on hand to run the State Energy Office, a $90,000 grant from the New England Regional Commission.

"What about other programs?"

"There will be more than adequate federal money," Whittaker responded reassuringly.

Central to the way that federal dollars will flow to the states is the Carter proposal to bring together under one, unified Department of Energy the host of agencies and separate departments that have responsibilities for addressing energy matters.

The Carter proposal is moving along in Congress. On June 20th it will be discussed by a (House-Senate) Conference Committee. But in the meantime the nation's attack on energy problems is fragmented.

There are the three big guns: the Federal Energy Administration (FEA), the Energy Research & Development Administration (ERDA), and the Federal Power Commission (FPC). And there are a host of other departments and agencies, like HUD, the Department of the Interior, the Bureau of Reclamation, the Department of Defense, to name a few, that have smaller slices of the pie.

As things stand now, one of the big guns, the Federal Energy Administration is charged with the responsibility of administering two recently passed pieces of legislation with look-alike, confusing titles. These federal laws will affect Vermont directly.

The first is the "Energy Policy & Conservation Act." Under this law, each State must submit a State Energy Plan. This Plan is a blueprint for action and implementation. In the Plan being drawn up by the State Energy Office, Whittaker and his staff with the approval of Gov. Snelling must say how the State proposes to make specific savings of energy. The target is a 5 percent savings of energy from the projected 145 trillion BTU's that FEA has projected Vermont will require by 1980. When the State Energy Plan has been received and approved by FEA, the State will get $139,000. And the Energy Office will get more money in a second year.

The second Act bears the title of the "Energy Conservation & Production Act." This Act calls for a supplemental program. It is as if Congress in passing the first Act quickly perceived its limitations, and passed a second. Under the supplemental plan, with a deadline for applications as early as July, the State will get a further $139,000. Again, there will be more money in the second year. The State Energy Office staff will eventually grow to some fourteen people.

3. Extension Service

There is even more money in the federal coffers. The Energy Research & Development Agency (ERDA) is sponsoring what amounts to a competition among the fifty states for the right to establish a pilot "Energy Extension Service." The prize is a grant that could range up to $1.1 million.

"What is an 'Energy Extension Service'?"

It is essentially a program of outreach, information and education designed to bring about a reduction in the use of energy on the part of individual consumers and small businesses. Gov. Snelling has given the green light for the State of Vermont to submit a formal application. If Vermont is chosen as one of the ten states in the nation that will receive a grant, an Energy Extension Service will open for business on October 1, 1977 and run for 19 months, until March 31, 1979. But regardless of what happens to Vermont's application, every State in the

Union will establish an Energy Extension Service, to begin operating throughout the nation no later than calendar year 1979.

4. Vermont Prospect

In all our conversations, Whittaker refused to be drawn into the trap of casual optimism or tired cynicism.

About the Vermont situation, Whittaker said flatly, "We are extremely vulnerable on petroleum." He quoted a high official in the federal Office of Management & Budget who described the typical person who would be hit hardest and hurt most by petroleum shortages. Such a person would have a low income, would live in a rural state, would live far away from his job, and would have no access to public transportation. "Take a look at it," says Whittaker. "You are reading about the typical Vermonter."

But neither is Whittaker discounting the positive attributes of the Vermont situation. He alludes to the Vermont tradition for making do. "We can grow our food and we are, and we can cut wood." He cites the figures. Fifty-five percent of Vermonters are using wood to heat their homes in **some** way. He calls attention to the number of Vermont town halls that are heated with wood. These could become points of refuge in a severe emergency. He discerns a resiliency in the fact that much of Vermont's electrical energy derives from water and nuclear power. He talks of Vermonters buying chain saws and remembers the eager public response to the offer of wood for the taking in State Forests at $3.00 a cord.

For all these positive signs, there are some things about the character of Vermonters that Bren Whittaker sees as almost fixed. He does not see Vermonters abandoning their homes in the country, or re-locating in towns and cities to save energy. The values of Yankee independence are too deeply entrenched. The Vermonter will insist on a person's right to live where he wants, to have animals, to do what he wants with his land.

Yet in all this resistance, there may be openings. Even if rural transportation continues to be oriented to the automobile there are options like "vanpools". "Part of the State Plan," Whittaker says, "will be jazzing up the vanpool program." He goes on to note that one vanpool vehicle takes seven cars off the road.

5. Perceptions

Looking at the whole problem, Whittaker sees a society in transition. "This is a pretty basic societal change, like turning an aircraft carrier around." Whittaker refers to a Stanford Energy Institute study that devoted an entire chapter to the perceptions of the public on the existence, or not, of a severe national energy problem. Some people said flatly: "There is no problem." Outright denial. A second group admitted the existence of a problem, but felt that things simply had to be put in place, -- rearranged. A third group looked at a more alarming possibility, and said that they were convinced that all life was in peril.

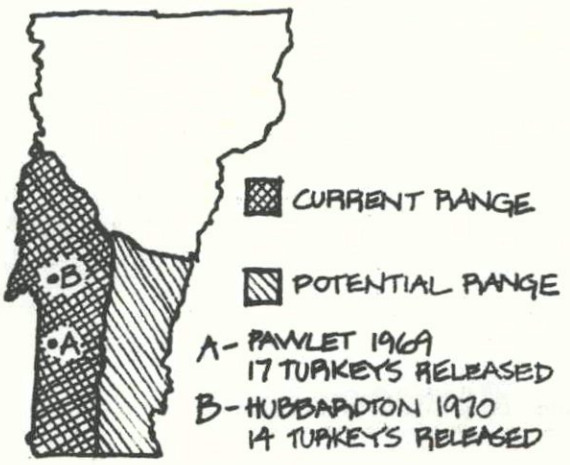
"Where was Brendan J. Whittaker on this continuum?" I asked.

"Between two and three," he replied, saying, steadily, "There's an awful lot of good will in number 2."

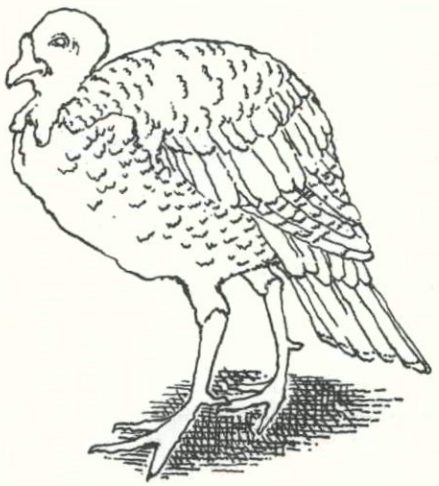
SOLAR HOT WATER:

The Vermont State Energy Office has received a grant of $77,500 from the U.S. Department of Housing & Urban Development. This money will be used to provide $400 grants to individual homeowners in the State who wish to install solar hot water systems. If you want your name on the list of those to be considered for this grant, write: Brendan Whittaker, State Energy Office, Montpelier, VT., 05602, and ask that he place your name on the list of interested persons.

WILD TURKEY MAKES A COMEBACK



Drawing by Betsy Cann



Drawing by Barbara Carter

WILD TURKEY MAKES A DRAMATIC COMEBACK IN VERMONT

The "Eastern Wild Turkey" (*Meleagris gallopavo silvestris)*, a bird that once existed in uncounted millions across America, a bird whose numbers were reduced to only 20 or 30,000 in the 1930's, is making a dramatic comeback.

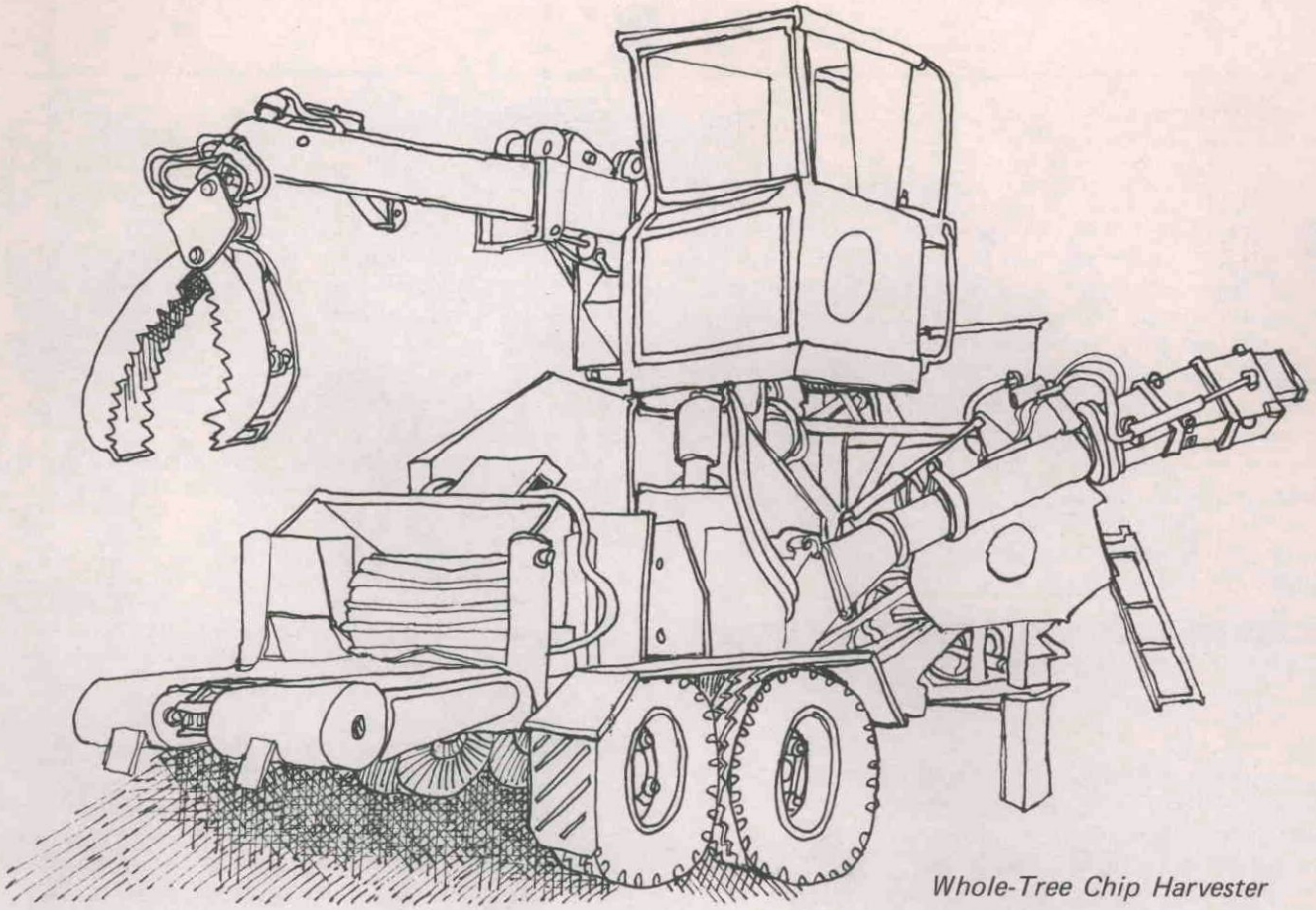
In Vermont, there were flocks of wild turkey in the woods when the settlers arrived in the 1700's. By the mid-1800's the last of this early population of wild turkeys had disappeared altogether. The problem was habitat, and the settler was the destroyer of turkey habitat. The settler was looking for land on which to farm. He cut down the forest. By the late 1800's, Vermont's settlement was complete and the forests were largely gone. Only 30 percent of the land remained in forest; the rest had been cleared for farming.

Now, almost a hundred years later, the situation has reversed itself. With the decline of small farm holdings, the consolidation to larger units, and the introduction of sophisticated machinery, about 75 percent of Vermont's land is covered with forest. Some of those forests are now mature, or almost mature. What the wild turkey wants for habitat is mature forest and plenty of "mast" --or nut-producing trees. By the 1960's the turkey habitat had returned and the time was ripe for the turkey's re-introduction.

It didn't happen all at once, but when it occurred, the re-introduction of the wild turkey into Vermont was something for the game biologists to strut and gobble about.

The first efforts at re-introduction were the release of hundreds of "game farm", domestic turkeys by well-meaning individuals and sportsmen's clubs. It was a flop in Vermont. And it was a flop all over the country. This is what R. Wayne Bailey, Wild Turkey Biologist with the North Carolina Wildlife Resources Commission says about these efforts.

> Beginning in the 1930's, attempts were made to restore the race by releasing "game farm" or pen-raised stock. With a few exceptions, those attempts were miserable failures. Subsequent research revealed that releasing such stock can lead to reduction or elimination of turkeys already established, presumably as a result of the introduction of diseases and



Whole-Tree Chip Harvester

Whole-Tree Harvesting:

The Machines Are Ready

With home heating oil at 50 cents a gallon, with gasoline at the pump at 62 cents, with new petitions being filed with the Vermont Public Service Board for electrical rate increases, -- it is hardly astonishing that Vermonters should be turning to the State's forest resource as a way of trimming the energy bill and as a means of creating work opportunities for the unemployed.

The opening gun in all of this was the (August, 1975) landmark report of the Governor's Task Force on Wood as a Source of Energy. This report revealed that the development of a large-scale wood industry for energy production was feasible, that a wood procurement technology exists to support such an industry, and that renewed activity in Vermont's forests would have the following positive effects. (1) It would provide substantial employment for Vermonters. (2) It would provide up to 25% of Vermont's power, industrial and home heating requirements. (3) It would increase financial returns to forest land owners. (4) It would increase tax revenues to the State. (5) It would reduce reliance on increasingly costly imported fuels. (6) It would contribute greatly to forest stand improvement by removing cull trees and giving potentially merchantable trees, room to grow.

This sixth point is particularly important. No less an authority than UVM's Dr. Carl Reidel observed in the (January 1977) **VER** that forest stand improvement was an urgent need that can no longer be ignored. Reidel stated that most of Vermont's forests are of poor quality, producing less than their potential, that net annual growth is 21 percent less than the average of New England forests, and that much of what is grown, some 2 million cords of low-quality cordwood, remains unused for lack of markets.

In the midst of this general neglect, the emergence over the past decade of technological advances in the field of whole tree harvesting may be a hopeful sign. Up until now there has never been any way to harvest poor quality wood economically. And there is a second, related problem: there has never been a market for such materials.

With whole tree harvesting equipment it is now possible to take the so-called "weed trees" and "cull" that were formerly discarded and turn these materials into wood chips for fiber and energy. No longer is it necessary to sweep through a forest stand, taking only the best-quality merchantable timber and leaving the rest. Using this new equipment, sites

that were once considered too marginal for harvesting operations are suddenly economic.

Brian Stone, Chief of Project Management at the Department of Forests & Parks, sees the need of markets for chips as a chief obstacle to the development of the new harvesting technology. But even this problem is now beginning to yield. One of the acts of the 1977 General Assembly was to appropriate money to convert the heating plant at the former State Hospital at Waterbury from oil to wood chips. Another market might conceivably be the 50-megawatt woodburning electrical generating plant that has been proposed by the Wheelabrator-Frye Corporation for Lamoille County. A third market would exist if the Burlington Electric Company goes ahead with a plan to convert a small oil generating station to wood chips as a pilot project.

(1) The New Technology

The new whole tree harvesting technology differs from older methods of wood procurement in these respects: it is even more machine intensive; it uses fewer men on the job site itself; and it supplies much greater yields.

Yields in the old horse-logging days were approximately a cord and a half per man per day. Chain saws and tractors increased this to approximately six to eight cords per man per day. The yield from advanced whole-tree harvesting techniques is between 15 and 18 cords per man per day.

a. Feller-Buncher

The feller-buncher looks somewhat like a tractor with the operator seated in a protected cab. Some feller-bunchers run on tracks; others run on large, inflated rubber tires. At the front of the machine is a shearing mechanism much like a pair of huge scissors. Trees are grabbed at chest height and snipped off at the base. They are then laid down in bunches to be picked up by a skidder or a forwarder.

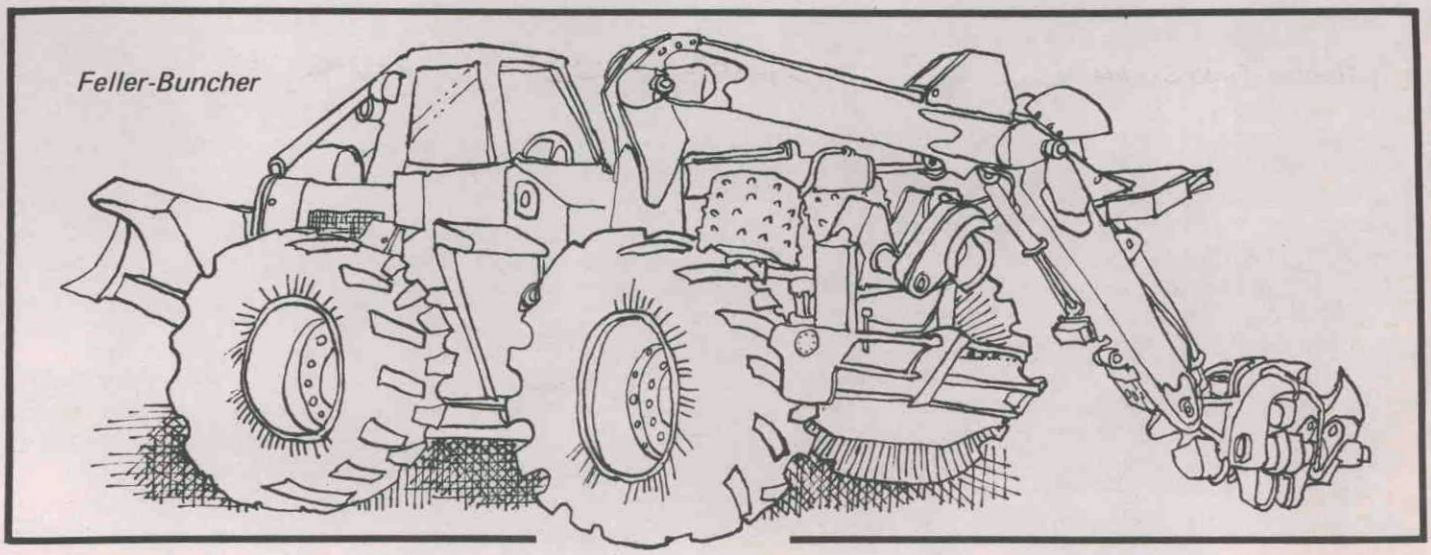
At least two types of feller-bunchers are on the market. The larger "Drott" feller-buncher has a mechanical arm which can reach up to 24 feet into the forest to pluck out a tree of 16 inches or greater diameter. This machine requires considerable maneuvering room which makes single tree selection throughout a forest stand unfeasible. The second type of feller-buncher is a smaller vehicle without an extension arm. Since it can operate in a path only six feet in width it can apparently do single tree selection. One unanswered question is its versatility on Vermont's hilly terrain.

b. Skidders & Forwarders

The function of a skidder or "forwarder" is to transport felled trees from the cutting site to a chipping and loading site some distance away. These vehicles usually use a cable to secure the trees. Some of the newer models are equipped with hydraulic loading arms and a grapple claw which seizes a stack of timber and drags the load to a chipping site. The forwarder is mounted on tracks and consequently does less damage than a rubber-tired skidder. The principal problem encountered by forwarder operators has been broken tracks. When operated efficiently two forwarders can deliver 80-100 cords per day to the chipper at a distance of 1/4 mile. Since forwarders cost approximately $90,000 each it is likely that the cheaper, rubber-tired skidders that cost $45,000 each will continue to be widely used in Vermont for many years.

c. Whole-Tree Chipper

The whole-tree chipper is simple to understand. Trees are fed into one end where they are rapidly chipped by a set of whirling knives and blown into waiting trailer trucks for shipment to market. The whole-tree chipper is the heart of



the new harvesting technology for it allows the use of tree tops, limbs and cull trees. Merchantable saw logs are usually set aside and sold separately.

There are at least four manufacturers of whole-tree chippers. Morbark Industries manufactures a "Model 12" and a "Model 22" chipper, costing between $40,000 and $125,000. The smaller "Model 12" handles material up to 12 inches in diameter and can be hauled behind a pick-up truck. The largest chipper is manufactured by Precision. It is a machine that can handle trees up to 24 inches in diameter.

(2) Environmental Considerations

Darby Bradley of VNRC is a member of the (State) Forest Resources Advisory Council (FRAC). Over the past year, Bradley has chaired a subcommittee on whole-tree harvesting. The purpose of the subcommittee has been to look into the opportunities and potential problems associated with the new whole tree harvesting technology. The "Subcommittee on Whole-Tree Harvesting" has made a series of on-site inspections, looking at chipping operations both outside the State and within Vermont. This subcommitte has identified a number of problems that need to be more thoroughly investigated.

a. Using the Chipper: Yields of Fiber & Sawlogs

The subcommittee is generally impressed by the productive capacity of the chipping machines on sites it has inspected. The District Forester in St. Johnsbury has kept detailed records of the Victory Forest experiments undertaken by the Department of Forests & Parks during the winters of 1975, 1976 and 1977. Darby Bradley states that during the clearcut (chipping) operations in the winter of 1975, loggers harvested an average of 37 cords per acre, plus an additional 6,000 board feet of saw logs. Since this was approximately twice the amount of wood inventoried for that site, it raises the possibility that wood inventories for the State of Vermont are too low. More experimentation is needed to determine how much wood is available in Vermont forests.

b. Size & Type of Cut

Bradley reports that the question of the size and type of cut needed for an economical chipping operation still needs more research. Some loggers have claimed that **only** clearcut operations can be maintained economically. During the Victory Forest experiments, some of the logging was done in small patchcuts and shelterwood cuts. These proved to be economically feasible tending to contradict the earlier claim. One question that needs to be addressed is whether single tree selection will be economically viable in Vermont's hilly terrain.

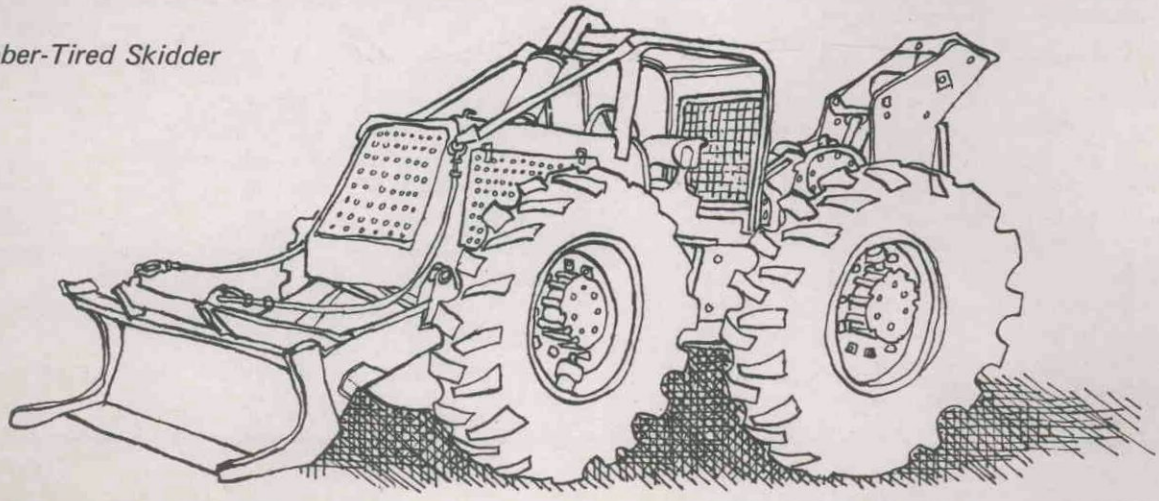
c. Minimum Acreage for an Economic Operation

There are differences of opinion about the minimum acreage needed to support an economical chipping operation. Morbark Industries representative, David White, has said that a "Morbark 22" chipper would need a minimum of 20 acres for a clearcut, or 25-30 acres for a selective cut in order to be economical. White felt that the "Model 12" might need only 10 acres for a selective cut. One of the problems that could occur with the employment of whole-tree chipping machines may be the inclination of landowners to clearcut in order to realize a maximum financial return. The question of minimum acreage needed to support a chipping operation is complicated and depends on many variables, including, access to the site, distance from the market, the kind of wood on a site, the number of sawlogs, and other considerations.

d. Regeneration of the Site After Chipping

There was extremely good regeneration at the Victory Forest site following both the 1975 and 1976 cuts. The Forest & Parks Department counted over 18,000 seedlings per acre, mostly sugar maple. In the area that had been clearcut in the winter of 1975, small saplings had already

Rubber-Tired Skidder



reached a height of 5 to 6 feet just two growing seasons later. Bradley explains this exceptional regeneration by the fact that logging at Victory Forest was carried out in the winter months when seedlings are protected by a cushion of snow.

On another site, logged by a private company in 1974, this time a summer operation, regeneration was found to be disappointing. After two full growing seasons, damage from the logging operation was still visible. In the immediate area of the landing site and on the principal skid roads, virtually no regeneration had taken place after two years.

The FRAC subcommittee concluded that the problems with regeneration at this site were the result of too many trees being dragged over the same ground. This problem might have been avoided had the chipper been moved more frequently and if skidding distances had been kept shorter. In Bradley's judgment more testing is needed to determine if this conclusion is accurate.

Bradley feels that unless the adverse impacts of summertime operations can be minimized, many forestland owners may be unwilling to permit chip harvesting on their land. But if these impacts can be minimized it is possible that owners will be receptive to whole-tree harvesting because it would allow them to realize a return on their investment, while improving their woodlots.

(3) This Summer's Experimental Project

In order to learn the answers to the questions raised by the "Subcommittee on Whole-Tree Harvesting" -- the Forest Resources Advisory Council, the Vermont Department of Forests & Parks, and the Vermont Natural Resources Council have been planning an experimental whole-tree harvesting operation this August in Washington County.

The experiment will be conducted in cooperation with Morbark Industries and Chadwick-BaRoss Inc. of East Montpelier. These companies will be supplying some of the logging equipment, and Ward Lumber Company of Waterbury will be providing the site.

The purpose of this experimental project is to test whole-tree harvesting in a summertime operation. A variety of cuts -- clearcuts, patchcuts, and selective cuts, including single tree selection if possible -- will be undertaken on the 100 acre site. Some of the equipment that will be field-tested will include a "Model 12" chipper, a small feller-buncher and two conventional skidders. (The new forwarders are too expensive to see much use in Vermont.) The chips, in all likelihood, will be sold to the State of Vermont for use in the new wood-fired heating system being set up in the former Waterbury State Hospital.

The experiment will be evaluated to determine the versatility of the equipment, the yields per acre, and the economics of the operation. VNRC will be responsible for the evaluation of environmental impacts. The Council has called on experts from UVM, Dartmouth College and the Northeast Experiment Station to assess the potentially adverse impacts such as soil erosion, compaction, damage to the forest stand that remains after the cutting and chipping operation are over, nutrient removal from the forest floor and its effects on regeneration, as well as the beneficial impacts such as increased growth in the trees that are left.

The Forest & Parks Department will also be documenting the entire operation with a 20-30 minute film. This film, together with a report on the findings of the project, will be made available to the public.

VNRC's Darby Bradley and Brian Stone of the Department of Forests & Parks summed up the possible meaning of the demonstration project.

Said Stone: "What we are planning to do is to show that a small woodlot can be managed economically without detriment to the environment while employing large equipment. There is a lot of concern that wood energy means that we will start and clearcut the country. We want to show that this does not need to be the case."

These were Bradley's remarks. "I believe that wood energy has considerable potential for the State in terms of providing employment and greater self-sufficiency. There will still be many other questions that need to be answered after we are done, but in my mind the question of whether the impact on the forests will be beneficial or adverse is the most crucial one to answer at this time. By doing an independent evaluation of the environmental impacts of this project, we will begin to learn the answer of not only whether wood energy is feasible, but whether it is desirable as well."

THIS "SPECIAL REPORT" IS FROM THE JUNE, 1977 VERMONT ENVIRONMENTAL REPORT OF THE VERMONT NATURAL RESOURCES COUNCIL. IT WAS WRITTEN BY NAT FROTHINGHAM. DRAWINGS ARE BY BARBARA CARTER.

Wild Turkey...

parasites and to genetic traits unfavorable to existence in the wild. True restoration progress began with the live-trapping and relocation of existent wild stock.

This is exactly what happened in Vermont. The "game farm" birds just couldn't "make it" in the wild.

In 1968, the Vermont Fish & Game Department investigated the possibility of re-introducing wild turkeys. The Department got permission from the New York State Conservation Department to trap 15 to 20 turkeys per year over two winters. in the southwestern portion of New York State. In the first winter (1968-1969) the Vermont wildlife biologists trapped 17 turkeys (4 adult gobblers, 1 juvenile gobbler, 8 adult hens, and 4 juvenile hens). These turkeys were released near Pawlet in the spring of 1969. Fourteen wild turkeys were trapped in the winter of 1969-1970 and were released the following spring near Castleton. The results have been phenomenal, as Fish & Game says about the program, "beyond the Department's fondest dreams for it." Today, there are between 4,000 and 6,000 wild turkeys in the State.

Will the population of wild turkeys increase even further? A May 25, 1977 bulletin from the Fish & Game Department says, "More and more authenticated sightings of turkeys in the central area of the State are being called into the department each week.... Perhaps last fall's abundant mast crop (fruit of the oak, beech and other forest trees) had something to do with the spreading out from concentrated populations in the south. The new birds may only last until a hard winter, but some of the interior valleys in the lower third of the State and along the plains at each side may be able to establish small flocks." Then the Department adds this note of caution, "People should not expect, however, to have local populations comparable with those in the south. Deep snow is one of the wild turkey's biggest limiting factors."

JOHNSON CALLS FOR CITIZEN INVOLVEMENT

The Agency of Environmental Conservation is making a new effort to get Vermonters more involved in State land management decisions. This new initiative is at least in part the result of VNRC efforts to encourage citizen participation in this area.

Agency Secretary, Martin Johnson, has announced a public meeting on June 23rd at 1:30 p.m. in the Pavilion Office Building Auditorium in Montpelier. The purpose of this public meeting is to invite Vermonters to review and comment on a number of summer projects being planned on State Forest lands by the Department of Forests, Parks and Recreation. Work plans for summer projects have already been submitted by State Lands Foresters. These projects include timber, piling, pulpwood and fuelwood sales; road, trail and parking area maintenance and construction; silvicultural operations such as thinning and timber stand improvement; and repair of structures, bridges, culverts and gates.

Interested citizens are invited to examine details of project work plans at each of the five Department of Forest and Parks offices in North Springfield, Rutland, Essex Junction, Morrisville, and St. Johnsbury. At the public meeting on June 23rd each District Forester will outline his summer plans and answer questions from the public.

For further information, please contact, Mr. E. Bradford Walker, Director of Forests, Department of Forests, Parks and Recreation, Agency of Environmental Conservation, 5 Court Street, Montpelier, Vt., 05602, telephone: 828-3375.

VER readers who are following the progress of pending environmental legislation in the General Assembly will wish to note that the Senate Natural Resources Committee is holding three meetings to discuss environmental matters. These are the meeting dates: Wednesday, June 29th; Wednesday, July 13th; and Thursday, July 28th. For further information, call Mr. Ed Miller at the Legislative Council in Montpelier, (802) 828-2231.

VNRC — ACTION ON MANY FRONTS...

Here is a brief report on current VNRC projects.

1. Natural Areas -3-

Part Three of the Natural Areas Project under the direction of Robert Klein is moving into its final phase. A 27-minute slide-tape presentation, entitled, **Natural Areas: Saving a Precious Resource**, has been shown to some thirty government agencies and private organizations across the State, as well as on Vermont ETV. Klein is continuing negotiations with owners of several of the 64 primary natural areas that were identified in last year's Natural Areas Project. These negotiations are leading to the protection of natural areas through management agreements, State acquisition and Nature Conservancy acquisition. Klein has assisted several regional and local planning commissions in assessing the need for natural area protection plans.

2. Water Workbook

In May, VNRC was awarded a contract by the State 208 Water Quality Planning Office to prepare a workbook for citizens and municipal officials. This workbook will explain the planning process involved in wastewater treatment plant construction and provide a catalog of sewage treatment alternatives. The object of the workbook is to help Vermont communities identify and develop the most efficient and economical solutions for their sewage treatment needs. Michele Frome is directing the project which will be completed next year.

3. Workshops

Thanks to a grant from the American Forest Institute to the Vermont Tree Farm Committee, --- VNRC, the Committee and the Green Mountain Chapter of the Society of American Foresters, will conduct a series of forest management workshops this year. Four workshops will be held in late June and July, and several more in September.

4. Lobbying

During the last (1977) Session of the General Assembly, -- VNRC was fortunate in being able to engage the services of a young man who had had experience working on legislative matters in Colorado. His services were available to the Council through a special grant, which, again, was a stroke of good fortune for us.

We are planning our lobbying activities for next year, and we realize that if they are to be effective, they must be the full-time responsibility of a staff member for at least five months, December through April.

5. Bottle Story

This summer, VNRC will prepare an up-to-date history of Vermont's container deposit law. The purpose of this booklet is to document Vermont's four-year experience with the law for the benefit of those in other states who are attempting to promote the passage of similar legislation. This booklet will have wide national distribution so that the facts about the Vermont law, -- its administration and enforcement, its successes and failures -- will be available to counter the distorted impressions that have been and are being circulated about Vermont's deposit law by opponents in other states.

6. Law Service

The Environmental Law Service continues to provide legal information and advice to individuals and organizations with questions or problems in environmental law. Special projects that are either currently underway or that have been undertaken by the Service include: the provision of assistance in the establishment of the Ottauquechee Regional Land Trust, assistance in the formation of a Champlain Islands protection program, research into legal problems on outdoor recreation for the Agency of Environmental Conservation, and publishing of the VNRC Environmental Law Manual. The Service also drafted a number of bills that were introduced in the 1977 General Assembly.

7. Tree Harvesting

Through its participation in the Vermont Forest Resources Advisory Council, -- VNRC has been instrumental in setting up an experimental, summertime logging operation using whole-tree harvesting equipment, including a whole-tree harvester. This experiment which will take place in Washington County will test the economics and yields of a summer chipping operation and assess the environmental impacts of whole-tree harvesting.

(For more detailed information on this experiment, see the "Special Report" in this issue of the **VER.**)

RESOURCES

For Sale

Pure Maple Syrup, packed in Vermont-made ceramic jugs commemorating the Bicentennial of Vermont's independence. This limited edition available filled with Grade A syrup: half-gallon $19.25 ppd., quart $12.50 ppd. (Please add $1.00 west of the Mississippi.) Write for complete mail order price list. **Butternut Mountain Farm, Johnson, Vermont, 05656.**

Gardening

Have A Better Garden — Enjoy It More. Patented, power cultivator gets out weeds, aerates the soil, easy to start and operate. Write: **Precision Valley Mfg. Co., Box No. 3, Springfield, Vermont, 05156.**

TROY-BILT ROTOTILLERS -- Off-Season Savings Plan now in effect. Savings to 20%!! For complete details, low direct-from-factory prices, write now. Ask for FREE BOOK **The Many Joys of Gardening The Troy-Bilt Way.** Troy-Bilt Tillers, Dept. 74494-E, Troy, New York, 12180.

Information

Backyard Livestock: How to Grow Meat for Your Family by Steven Thomas, the most comprehensive one-volume handbook on raising poultry, rabbits, pigs, sheep, goats and supplementing commercial feed, is available in a 264-page paperback at $6.45 postpaid from **The Countryman Press, Taftsville, Vermont, 05073.**

Professional Services

J.P.R. Associates Inc. Consulting Foresters, Registered Land Surveyors, & Environmental planners. **Box 1195, Stowe, Vermont. 05672 -- (802) 253 7220.**

Otter Creek Lumber Co. offering services of graduate forester for timber appraisal, management plans, marking and marketing services. **Days: 775-0063 -- Eve: 775-2796.**

Editor's Note: *The U.S. Postal Service has ruled on appeal that the* **VER** *may continue to accept paid advertisements. Contact: VNRC, 26 State St. Montpelier, VT., 05602.*

VNRC

woodland owners workshops

Registration Form free!

NAME: _____ **PHONE:** _____

ADDRESS: _____ **ZIP:** _____

(Please Check) **Workshops will be held in three separate locations on Saturday, July 9th, from 10 a.m. until 3 p.m. Bring your lunch.** ____ RANDOLPH AREA ____ MONTPELIER AREA ____ BRATTLEBORO AREA. **Write for detailed information and directions to individual workshop sites: VNRC, 26 State St., Montpelier, VT., 05602.**

Workshops sponsored by the Vt. Tree Farm Committee in cooperation with VNRC and the Green Mt. Chapter of the Soc. of American Foresters.

CASE STUDIES IN LAND CONSERVATION AVAILABLE

The New England Natural Resources Center of Boston, Mass., has developed a series of "Case Studies in Land Conservation." Case studies have been written on the following subjects:

Case No. 1, **Partial Development Finances Open Space Preservation in Lincoln, Massachusetts**, by Kenneth W. Bergen

Case No. 2, **The Preservation of Chocorua Lake, New Hampshire**, by Charles T. Gallagher

Case No. 3, **Bargain Purchase of Land by an Exempt Organization: A Vermont Case Study**, by Davis Cherington

Case No. 4, **Conservation Easements Preserve an Island on the Maine Coast**, by Benjamin R. Emory

Case No. 5, **Little Egg Harbor, New Jersey: A Non-Profit Organization, the United States Government and an Insurance Company Rescue a Marsh**, by Richard L. Erdmann

Case No. 6, **The Liberalized Lobbying Rules of the 1976 Tax Reform Act and Conservation Organizations**, by Kingsbury Browne

Individual copies of any of these Case Studies in Land Conservation can be obtained by writing the VNRC, 26 State Street, Montpelier, Vt., 05602, and enclosing $1.00 for each copy requested.

VNRC BOARD MEETING & 1977 VNRC ANNUAL MTG.

VNRC members are invited to attend the next meeting of the VNRC Board of Directors, on Thursday afternoon, July 14th, at 1.00 p.m., in the offices of the UVM Environmental Program, 153 South Prospect Street, Burlington. Please make a note of the Saturday, September 10th, 1977 VNRC Annual Meeting, at the Trapp Family Lodge in Stowe. Further details about this Meeting will appear in future issues of the **VER**.

The Conservation Society of Southern Vermont has announced the 11th season of its Summer Conservation School located on the West River Valley Greenway, near So. Londonderry, Vermont. The summer camping program is for youngsters 7 to 14, and the program runs through July & August. Contact: Mr. Bill Painter, CSSV, Box 256, Townshend, Vermont, 05353.

VNRC

Non-Profit Org.
U.S. Postage
PAID
Montpelier, VT.
Permit No. 285

THIS ISSUE • JUNE • 1977 • No. 64

Contents:

ADDRESS CORRECTION REQUESTED