

# Vermont Environmental Report

## Champlain Choking on Chestnut

by Leigh Seddon

Joe Complacent owns a pond on which a water lily has started to grow. Noticing that the lily is doubling in size every day, he consults a knowledgeable friend who advises him that the lily will completely cover his pond in 30 days, choking off all other life. Not being overly concerned about the expanding lily, Complacent waits until the pond is half covered before taking any action.

Question: How much time does Joe have left to save his pond?

Answer: One day

This riddle is an illustration of a phenomenon called exponential growth. An animal or plant population that grows exponentially may appear insignificant one day and overrun its environment the next.

While the lily pond riddle may seem amusing, it is in fact what is happening to Lake Champlain. And biologists in Vermont and New York are not amused.

Eurasian milfoil and water chestnut are species of aquatic plants covering thousands of acres in Lake Champlain. Their ability to multiply ten-fold in a single season has biologists and citizens worried that the "twenty-ninth day" for Lake Champlain may be fast approaching.

Eurasian milfoil occurs throughout Lake Champlain. Paul Vachon, Assistant Study Manager - Water Quality for the Lake Champlain Basin Study (LCBS), says, "While there's been no complete inventory of the current infestation of eurasian milfoil, information gathered by fisheries people and biologists shows it to be present in almost every shoreland town around the Lake." In the report *Nuisance Aquatics in Lake Champlain*, commissioned last year by the LCBS, biologist William Countryman estimates the infestation of eurasian milfoil to be "several thousand acres."

But Vachon cautions that the mere presence of eurasian milfoil in an area does not mean there is a problem. He explains that "in some areas like the Missisquoi Bay the plant provides a good habitat for warm water fish like perch and smelt, but in other areas like St. Albans Bay the plant hampers navigation and reduces the recreational quality of the Bay."

The water chestnut is a different story.

According to Vachon the infestation of water chestnut stretches for more than 15 miles in the southern end of the lake -- from Ticonderoga (New York) and East Creek (Vermont) south to Dresden Station (New York). Countryman estimates "approximately 100 acres of the Lake are covered with dense monospecific [pure] stands of water chestnut. At least an additional 100 acres are infested with small colonies or scattered plants."

While the total amount of acreage infested with water chestnut is less than that infested with eurasian milfoil, water chestnut is considered the more serious and immediate threat to the ecology and recreational value of the Lake.

Unlike eurasian milfoil, the water chestnut has no redeeming qualities. The plant spreads quickly and forms dense floating masses of vegetation forcing out more desirable plants that provide food and shelter to fish and wildfowl. Thick, wiry stands of water chestnut tangle in boat propellers and snare the keels of sailboats making navigation and fishing nearly impossible. And the plant's sharply barbed chestnuts cause painful wounds to swimmers who happen to step on them.

State officials in Vermont have been concerned about the problem of nuisance aquatics in Lake Champlain for some time. There have been efforts in the past to control the spread of the plants. In 1967 the Vermont Fish and Game Department hand-pulled 8 bushels of water chestnut from Lake Champlain. In 1968 the hand-pulling program was temporarily halted. According to the Countryman report, the program was discontinued because of personnel problems and the failure to transfer the control program from the Fish and Game Department to the Water Resources Department. When the program resumed in 1969 a ton and a half of the weed was pulled from the Lake -- a ten-fold increase in water chestnut in a single growing season.

In 1971 the Fish and Game Department permanently halted the water chestnut program -- again for administrative not biologic reasons. And today we can see the costly consequence of this decision -- more than 200 acres of water chestnut that can no longer be controlled by hand-pulling alone.

What are the choices we now have for controlling nuisance aquatics in Lake Champlain? Countryman's report identifies two principle means of control.

One method is mechanical harvesting. This consists of a boat equipped with cutting bars that mows the weeds and collects them for land disposal. The other method recommended by Countryman is spraying with a chemical herbicide -- 2,4-D (short for 2,4-dichlorophenoxyacetic acid). The herbicide would be applied to 100 acres of the densest infestation of water chestnut by spraying from boats or aircraft.

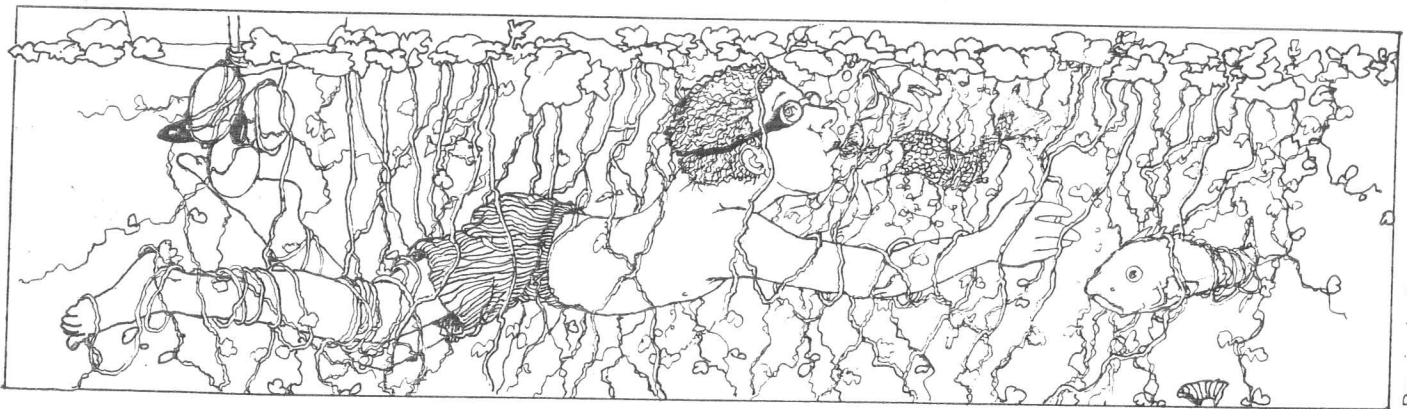
Countryman's recommendations cite the use of the herbicide 2,4-D as one of the two alternatives for nuisance aquatic control. In the minds of many environmentalists, biologists, and citizens this does not appear to be a sound choice -- either economically or environmentally.

Countryman roughly estimates that a program for spraying 100 acres of the densest stands of water chestnut would cost

The amount of money spent on each of the two methods of control, however, is the weakest part of the argument against using herbicides. Environmental concerns -- both in terms of natural systems and public health -- become paramount in any consideration of herbicide usage in Lake Champlain.

"Spraying the Lake with 2,4-D," observes Jim Morse, "is just environmentally unsound." He goes on to explain, "Because the dosage stated on the label must be doubled in order to be effective, the destruction of other plants and of fish and wildlife is very likely."

The Environmental Defense Fund (EDF), a nationwide, public membership organization, adds some fuel to Morse's argument against herbicides. In a letter to the U.S. Office of Pesticide Programs, William Butler, an EDF lawyer, argues against using 2,4-D on water-hyacinths in the St. Johns River in Florida. Butler writes: "We [EDF] are concerned that the Corps has so lightly dismissed the admitted environmental



Drawing by Barbara Carter

\$3,000 annually. But this still leaves over 100 acres of scattered stands of water chestnut and other nuisance aquatic plants that would require either hand-pulling, which is very expensive, or machine harvesting. Furthermore, herbicides would not help clear bays and inlets where eurasian milfoil is a problem. According to Countryman's report, "Floating plants [like the water chestnut] are more effectively controlled by herbicides than are submerged plants [like eurasian milfoil]. Because herbicides are quickly diluted in the lake water, it is necessary to apply heavy dosages in order to successfully treat submerged plants." Again machine harvesting would be needed.

The initial cost of machine harvesting, according to Jim Morse, aquatic biologist with the Vermont Department of Water Resources, is high -- approximately \$80,000 for the harvesting equipment and another \$20,000 for the first year of operation. Morse points out, however, the yearly costs will decrease as the infested areas decrease each season. He estimates that if the harvesting program is used consistently "the costs should come down below \$3,000 a year after five or six harvest seasons." Total eradication of nuisance aquatic plants is not possible -- perhaps not even desirable. Morse comments "we can only hope to keep the situation under control and machine harvesting seems like the most practical way to do this since we can use it for all the problem aquatic plants."

hazards of spray application of 2,4-D ... quite apart from the debatable health hazards. It leaves the dead vegetation to rot in the water depleting the oxygen supply, releasing the nutrients and setting the stage for growth. This will obviously start an endless cycle of treatments year after years."

Finally, the question of whether 2,4-D should be used in a control program for nuisance aquatics must be placed against the knowledge that this chemical is not listed with the Environmental Protection Agency as safe for use in or near intake sources of public drinking water. Lake Champlain is a source of drinking water for almost one-third of Vermont's citizens. How close spraying of 2,4-D would come to drinking water intake points and what the likelihood is of its reaching those points is unknown. And until these facts are known it would appear that use of 2,4-D in Lake Champlain is taking unnecessary risks with people's health and safety.

While these arguments against using 2,4-D are persuasive, there is no assurance that a mechanical harvesting program will take place. The crunch, as always, is money.

The Department of Water Resources needs to receive funds from the Army Corps of Engineers if they are going to use mechanical harvesting in a nuisance aquatics control program. The Department has begun the formal application process for receiving a \$100,000 grant for purchase of two mechanical harvesters and operation expenses for one year. The state of



Vermont would be expected to assume 30% of the total cost of the project.

The long delays and red tape associated with federal grants and the tax-conscious mood of the state legislature, leave the question open as to when, if ever, Vermont will receive the necessary funds for a mechanical harvesting program.

The urgency of the nuisance aquatics problem in Lake Champlain is moving citizens into action. Anne Reigleman, Executive Director for the Lake Champlain Committee, one of the most active grassroots organizations involved in Lake issues, is mounting a public awareness campaign. The Committee has come out against the use of herbicides. Reigleman says that "the Committee is very worried about the nuisance aquatic plant problem, but we also feel it is important to weigh the urgency of the situation against any possible danger to public health." She adds, "People just don't know enough about the effects of putting 2,4-D into a public water supply for us to feel it is safe." Because of this situation Reigleman feels,

"public pressure needs to be applied to help expedite the grant from the Corps."

In the coming months the Corps will make its assessment of Lake Champlain's nuisance aquatics problem. If the Corps chooses not to give funding to Vermont or if the state cannot come up with its portion of the grant, two options will be left: do nothing or use herbicides.

Given these unenviable options, it is imperative that Vermont officials vigorously pursue funding through the Corps of Engineers. Long the damnation of free flowing rivers and natural lakes, the Corps may just turn out to be Lake Champlain's only salvation in the battle with nuisance aquatics. □

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*Leigh Seddon is the former Assistant Director of the Vermont Public Interest Research Group and is presently on the Lake Champlain Committee's board of directors.*

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### To the Editor:

Once again we have finished a hunting season here in Vermont, and once again we are hearing tales of careless hunters and the havoc they can wreak through a basic lack of concern for the rest of the occupants of our state.

For years now, there have been cries of, "Ban hunting. There is no need for it in today's society." We have also heard the counter argument, "That it is every citizen's right to keep and bear arms."

At the same time we have seen a dramatic increase in the amount of land which is being posted against hunting and shooting, with a corresponding increase in the number of "angry" hunters who blame "environmentalists."

It seems that people on both sides have tried and failed to come up with solutions to the problem because most of their suggestions are one-sided and consequently only add fuel to the fire.

I would like to offer what I think could be a satisfactory solution to the problem for both sides.

I think, first, that we must admit that hunting will not be banned. Nor do I think it should be. It is too much a part of the independent heritage of this country to just cast it aside as simply as that.

It must be controlled, however, to make the woods relatively safe for hunters and non-hunters alike. The means we choose to control it with should also not involve an increase in bureaucratic bungling either, or we will create another monster which will have to be dealt with.

My thought is to establish a testing procedure and a series of courses connected with the present hunter safety program. (Many experienced hunters taking these tests would qualify immediately.) Under the program I am suggesting, certificates of competency would be awarded in such subjects as firearms knowledge, survival in the woods, tracking, and other areas which a properly skilled hunter should understand.

Upon reaching a certain competency level in these skills,

the hunter would be designated as a certified "master hunter" or "ranger" and could be licensed as such. (Hopefully, at a reduced rate.)

In turn, hunters who do not possess these skills would be allowed to hunt only in a party led by a qualified "master hunter." The master hunter could set a charge for his services. (The non-skilled hunter would pay a higher licensing fee which would help pay the costs of the master hunter program.)

The size of the hunting party should be limited, say, to no more than five novice hunters to each master, and the master hunter would be responsible for the actions of the members of his party.

In actuality this would not change the system for the present serious hunter who has probably hunted for years, was taught by his father, will teach his children, and will already possess the skills necessary to pass the tests and qualify as a master hunter.

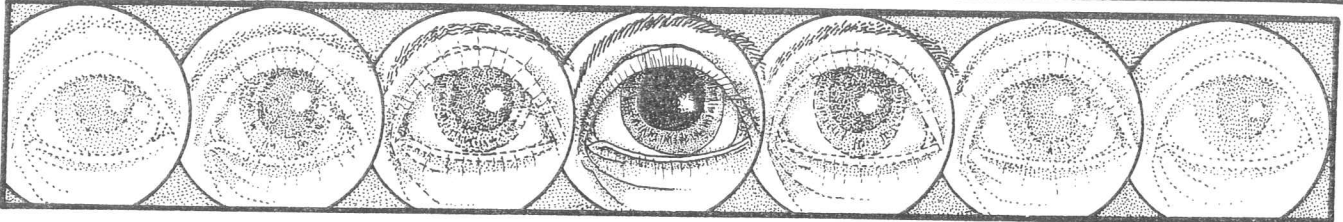
Who this program would affect are the number of "not-so-serious, let's-go-to-camp-and-whoop-it-up," accident-causing hunters who enter our woods every year and undoubtedly are the cause of the majority of careless hunting accidents.

I am sure there are those who will be able to find fault in these ideas. But the good thing about ideas is that they can be presented to those whom they will affect. Then they can be discussed and revised before taking final form.

It is time for the serious hunter to protect his sport before someone else takes it away from him. It is time for the serious hunter to gain control of a sport that is being discredited by those who are out in the woods with a gun but who really don't care that much about hunting.

Very truly yours,

Maynard Nelson  
Bethel, Vermont



## • A PERSONAL DIMENSION •

Nat Frothingham was the editor of this publication for almost four years. In December, Nat left the Council to begin working with a rural theater company, the Two Penny Circus.

Nat leaves behind a great many accomplishments. He has given the Council a rich legacy of language, thought, and style. Nat is an exuberant man. He gives enormous amounts of time and intelligence to his work. Where others might be willing to accept a fact, a piece of writing, a statement on face value, Nat questions, probes, explores the assumptions, the facts, the opinions relentlessly. He never seems to tire of checking for the truth. Where others might be willing to be easily satisfied with language or form, Nat will not settle for anything less than that which is alive, vibrant, beautiful, and meaningful.

The Personal Dimension column is an example of Nat's talent, energy, and imagination. He perceived that Vermont held within its borders many articulate people, people who have important and vital ideas to share about our society. He created a space for these voices. He sought out people and worked with them to produce a kind of writing that is not normally found in an organizational newsletter - writing that is original and provocative.

This Personal Dimension is special. It is Nat's own personal statement. Perhaps the best way to describe the writing here and Nat's tenure at the Council is through the words of William Gass, an American writer and philosopher, as he writes about the poet Paul Valery, "He created in himself, opinions -- often fragile, momentary blooms, often ones tough and as continuous as ivy. He dared to write on his subjects as if the world had been silent..."

Thank you, Nat, for pushing our limits, our imaginations, a little further, for opening our minds to all of the possibilities of excellence and beauty.

There is, it seems to me, a great and a small tradition in the environmental movement.

The great tradition is radical, comprehensive, and alive.

It begins with the struggle we are making to see ourselves differently, not as conquerors of nature, but as part of nature.

It begins with a wholly new way of seeing the earth. For the first time we have gone out into the universe and looked back. We did not see countries. We did not see spheres of influence. We did not see blacks or whites, rich or poor. We did not even see continents. We saw something breathtakingly beautiful, almost magical -- a small, blue planet swimming in the void of space, the earth as the home of life.

The great tradition is about the struggle to see ourselves differently in this new context. It is about a race between education and catastrophe. It is about the work of restoring, husbanding, and living with the natural world. It is about the chance for human survival on this planet. And because human survival is at stake, it is about the need for fundamental change.

The small tradition draws from the excitement and strength of this new vision of the world.

But it promises little in the way of lasting results. It fails to describe a future that men and women can work for. It is about superficial change, cosmetics, tinkering with details. It is about preserving views seen through picture windows. It attacks the symptoms of the disease but does little about the causes and the cures. It is about building more and more highways to relieve traffic congestion when there are too many cars on the road already.

In the past few years, much of the fire and the faith have gone out of the environmental movement.

I remember a time when we were willing to roll-up our sleeves and go to work -- cleaning up rivers, recycling waste materials, starting community gardens. It was a grassroots movement.

Today it is different. Where are the voices of our prophets and inspired teachers? We have lost our zeal for change. Instead we have handed over the responsibilities to professionals and specialists. And the essential problem facing us is not so much environmental, as it is moral and spiritual.

It is as if we have accepted the coming disaster and the despair that is producing it as a fact of life. We seem to be saying that because the world is so absurd, because the complexity of our problems is so great, because the institutions we have established are so vast in size and so remote, nothing matters anymore except our own personal survival in the present.

I believe that the human qualities most needed in public affairs today are imagination and courage. Imagination to form a vision of the future -- one that reaches beyond ourselves. And courage as social energy, love raised to its highest level of expression, to give this vision life.

The fevered search for energy is just one example of where we have failed to state our problems honestly, and failed to challenge and redirect public discussion creatively.

We need new sources of energy. Yes. But we consume too much energy already, produce too much waste, build too many

roads, drive too many cars, live too far from where we work, and mine too much of the earth's resources.

We know about limits. And yet every sinew of government and private enterprise seems to have been gathered to develop new sources of power.

Shall we strip the West for coal? Shall we grind up our forests for energy? Shall we throw a dam across every free-flowing river for hydro-power? Shall we drill for oil in the Atlantic Ocean and endanger our great fisheries? Shall we push ahead with nuclear power when the lethal wastes, radioactive for thousands of years, cannot be safely contained or stored?

President Carter has called the energy crisis facing America "the moral equivalent of war." Yet on every side we are neglecting opportunities to conserve, wasting resources, and mortgaging the future.

The Highway Trust endures. Rail passenger service is in disarray. Our forests are badly managed or undermanaged or simply neglected. We have substituted petroleum-based, machine-intensive agriculture for the employment of human labor. We are driving the small family farmer out of business. We are depleting our soil resources. We are eating high on the food chain. We are sterilizing the land with sprawling developments and shopping centers.

There are advanced industrial counties in Europe that consume far less energy than we do while maintaining an acceptable standard of living. But here in Vermont, and in the nation-at-large, we are consuming more imported oil today than before the Arab Oil embargo of 1973-1974.

I would like to offer two examples of our failure to define our problems honestly and to set-forth real choices.

I find it hard to believe that a federal Interagency Review Group reporting to the President in October 1978 on the management of nuclear wastes, should have described the problems so intelligently and should have reached so barren a conclusion.

This Interagency panel, after admitting that nuclear wastes are lethal, that they are radioactive for thousands of years, that the safe containment of such wastes is beyond our present understanding, came up with the surprising conclusion that it would remain neutral on the only question really worth asking, whether such wastes should continue to be produced and whether nuclear power should continue to be developed.

I find it hard to believe that Governor Snelling facing the visible decline of agriculture in Vermont should have told a State Farm Bureau audience just last November, "I'm not saying there aren't some problems with farming, or that there isn't more to be done. But overall, we have good reason to think of farming, especially dairy farming, as thriving in Vermont."

In my work for VNRC over the past few years I have travelled throughout the state. I have talked to farmers and have seen what is happening to the land. In every part of the state, in one valley after another, there is a farm going out, or a farm that has gone out recently, or an older farmer whose farm will go out when he leaves farming, or whole communities where farming is a thin shadow of what it was, five, ten, twenty years ago.

Three years ago I did a series in this publication about the problems facing young farmers. Jean and Albert Conklin of Woodstock spoke, it seemed to me, for a whole generation of Vermont farmers who have been forced off the land. The

Conklins said this about farming, "I think the heart has been cut out of it. The whole structure of our world is changing. It's a terrible thing to have happen. The saddest part of the whole thing is that it has changed the social structure. We are thinking of the old Vermont values."

Farming has been dying in Vermont for years. Most Vermonters know this. And most Vermonters know, instinctively, that the rising cost of food, the rising cost of transportation, both caused by the rising cost of energy, these realities, argue that we need to make a greater effort for agricultural self-sufficiency.

In stating that farming is thriving in Vermont today, Governor Snelling quotes statistics about the rise in the production of pounds of milk for the average Vermont dairy farm and about the concentration of agriculture in Vermont in fewer and fewer but more efficient farms. Do these figures really describe what has happened to the thousands of farm families that have been forced off the land, the thousands of acres that have been withdrawn from active production. It seems frankly incredible to me that we still cannot identify prime agricultural land in Vermont, and that we still have devised no formula for permitting the transfer of farms from one generation to another.

In discussing the future, the American writer Lewis Mumford says, "If you force me to talk about *probabilities*, not about possibilities, still less about hopes, I would say that man's future is black..."

But Mumford goes on to explain that the future is open; it cannot be predicted by the present trends. He reminds us that in human nature there are "many elements that are hidden, unmeasured, irrational."

We seem incapable of imagining a future without more houses, more cars, more consumption, more waste. We are digging deeper and deeper into the earth, exploiting narrower and narrower veins, processing poorer and poorer grades of ore, and burying our wastes in the earth or dumping them into the sea. It is as if the economic system has become an end in itself. And we have lost the gift of thinking and acting adventurously.

And what of this capacity for adventure?

Last summer I listened to a reading at Middlebury College by the American poet, Archibald MacLeish.

MacLeish compared the America of today to the 1930's -- another period of national confusion and despair. In discussing the 1930's, MacLeish spoke about the absence of courage, which is nothing more than the absence of hope, an inclination to look backwards in time to better days of the past instead of forward to the unknown.

The present moment is a time of national retreat. We are holding on to the past. We are afraid of change, and afraid to take the risk of change. But change will come. MacLeish in his remarks employed a phrase from Homer's *Odyssey* in urging us to renounce the dead hand of the past and go forward. MacLeish reminded us of Odysseus, the hero of Homer's epic poem. Odysseus had fought at Troy, many of his comrades had perished, he longed for his native country. He was shipwrecked and held captive, and in launching himself upon the sea, Odysseus was sustained by this truth - a perception we could take to heart, "The sea roads have no way back, but on."

# A Legislative Review

## And the Bills Come Tumbling Down

Rumor and intent are still the prevalent by-words heard in the halls of the State House as the 1979 General Assembly begins to take shape.

Wetlands protection, deer herd management, endangered species are among the legislative proposals the Vermont Natural Resources Council is watching closely.

The following is a summary of drafted legislation, resolutions, and bills that have been introduced. In the coming months the **Vermont Environmental Report** will focus on these pieces of legislation as well as other bills and actions of the General Assembly.

We would like to offer the pages of the **VER** as a forum for public discussion of environmental issues and they emerge from the legislature.

We welcome your opinions and perceptions.

### Deer Herd

The low deer kill during the 1978 hunting season kicked open the old controversy of who should control the management of the deer herd in Vermont: the General Assembly or the Department of Fish and Game.

Legislation placing the deer herd within the jurisdiction of the Department of Fish and Game is expected to be introduced this session of the General Assembly by Representative Alexander (Bud) Keefe, D-Rutland, and Senator Harry Lawrence, R-Lyndonville. The bill would amend the present law by deleting phrases that now give the legislature authority over the deer herd.

In anticipation of discussions in the legislature and at public meetings, the Department of Fish and Game has drawn up a 23-page document detailing their procedures for a management program of the deer herd. The program is based on monitoring the size of deer populations and evaluating the conditions of designated deer habitat zones throughout the state. Only when a population of deer exceeds the carrying capacity of a particular zone, would permits for hunting antlerless deer be issued; such a season would probably coincide with the current buck season.

Judging from the response of people who attended the recent information meetings on the deer herd, it appears that some public sentiment is swinging toward giving the Department of Fish and Game control of the herd. There are many legislators and citizens, however, who remain skeptical--if not vehemently opposed -- to any shift in control of the deer herd.

Since 1971, the legislature has been staunchly against giving the management of the herd over to the Department of Fish and Game. The reason for this opposition stems primarily from the view of some legislators that the Department's previous management program was ineffective and detrimental to the deer herd.

Stub Earle, R-Lamoille, Chairman of the House Fish and Game Committee, intends to hold public hearings to survey public opinion on the proposed legislation and on the Department's new management program. Earle has charged that many of the meetings held so far have been engineered by the Department of Fish and Game...an assertion that is flatly denied by the Department.

In addition to the House Fish and Game Committee, the House Natural Resources and the House Agriculture Committees are expected to review the bill, as well as the Energy and Natural Resources Committee in the Senate.

The Vermont Natural Resources Council feels that the condition of Vermont's deer herd has reached a critical point in many areas throughout the state. Because of the decline of the deer herd in some areas, VNRC is supporting efforts to establish a management program for the deer herd that is based on sound scientific information and proven conservation methods.

If you wish a copy of VNRC's "Briefing Paper on the Deer Herd", please send a self-addressed stamped envelope to: VNRC - Deer Herd, 26 State Street, Montpelier, Vermont.

### Town Zoning

A number of legal challenges and a study involving Vermont town governments, conducted last summer by VNRC, confirm evidence that changes are needed in the state law that governs the procedures for adoption of town plans and zoning ordinances.

Besides clarifying a number of ambiguities in the existing law, proposed legislation would set up a method for certifying the adoption procedures for town plans and zoning ordinances. The method is this. A town files a certification with the Commissioner of Housing and Community Affairs that says the town has followed the required procedures for adopting the town's plan and zoning ordinances. If no one challenges the town certification within 120 days, the town is safe from all future lawsuits challenging the validity of their zoning ordinances on the basis of procedural errors.

This legislation represents a substantial improvement over the current legal situation, where towns are often uncertain about the legality of a local regulatory program until a court rules on the issue in a lawsuit brought by a developer.

The adoption procedures bill, H-204, has been introduced and assigned to the House Natural Resources Committee.



## Endangered Species

Vermont's present endangered species law does not meet federal standards, and until it does, the state will not be eligible for federal funds.

In a letter to Commissioner Edward Kehoe of the state Department of Fish and Game, Howard Larsen, Regional Director for the U.S. Department of Interior, points out "several shortcomings" in Vermont's existing law. Among its deficiencies are:

- failure to provide the Secretary of the environmental agency with a broad conservation capability. This would include among other things: the ability to conduct research, take census, use law enforcement protection, trap live animals, transplant species from one habitat to another;
- failure to provide for public participation when an animal or plant is being considered for the endangered species list;
- and failure to provide the State with the authority to acquire land and aquatic habitat for endangered or threatened species.

A bill that would meet federal standards for endangered species, and go a little further, is expected to be introduced in the House Natural Resources Committee. Not only will the proposed legislation strengthen Vermont's existing endangered species law, but it would protect and conserve non-game species as well. The term non-game refers to any animal that is not considered domesticated or used for hunting.

Jim Stewart, biologist with the Department of Fish and Game, feels that the non-game provision of the bill is crucial because the state is currently limited in its capacity to study these animals. The result has been a significant lack of information about non-game animals in Vermont.

Stewart sees many areas where money for programs is badly needed: the state needs either a full-time field biologist or the ability to contract with private organizations or universities to do field work; there is a need for more conservation programs similar to Cornell University's re-establishment of the Peregrine falcon; and there is a need for more programs that protect non-game animals in Vermont like the Indiana bat.

By bringing the Vermont endangered species statute into line with federal standards, the state would be able to receive grants from the federal government for up to 75% of the costs of whatever programs are created. The remaining 25% would be taken up by a state agency or assumed by private organizations or state universities.

Bill H-251 has been introduced and will be reviewed by the House Natural Resources Committee. A public hearing will be held on February 14, at 1:30 p.m. in the State House.

## On-Site Sewage

Vermont's state standards for on-site sewage systems (systems serving individual buildings) presently do not recognize many of the new and innovative approaches to sewage treatment. New technologies -- waterless toilets, cluster septic systems, and water conservation measures -- need to be studied to determine if they work. And the State needs to approve and set standards for those alternatives that can provide adequate

sewage treatment.

A bill is expected to be introduced in the Senate Committee on Energy and Natural Resources that would improve the present state programs regulating on-site sewage treatment and, more importantly, pave the way for revisions to the state on-site sewage treatment regulations.

The legislation would require the Secretary of the Agency of Environmental Conservation to continually investigate innovative sewage treatment systems and to approve those systems that work adequately. To help in this task, the bill would establish a Sewage Disposal Advisory Committee. Members of the Committee would review current research and advise the Secretary on specific systems.

Another important provision of the bill is the transfer of authority for adopting state subdivision, public building, and private on-site system regulations from the Health Department to the Protection Division of the Agency of Environmental Conservation. The present bureaucratic tangle has the Health Department adopting regulations while the Protection Division is responsible for enforcing them.

The initiative for this legislation comes from the efforts of an ad hoc sewage advisory committee formed by the Agency of Environmental Conservation. Some members of that committee now fear, however, that potential amendments to their legislative proposal may do more harm than good to the state's on-site sewage programs.

## Conservation Restrictions

Conservation restrictions, commonly called "open space easements" or "development rights," is a legal device often used to conserve or protect land that is privately owned. Conservation restrictions limit future development of property while allowing private landowners to continue using the land for farming, forestry, and other compatible land uses.

Under the existing Vermont law only municipal and state governments have the authority to acquire legally binding conservation restrictions. (The federal government has a similar law.) Legislation has been introduced in the State Senate that will, if passed, extend this authority to private, non-profit organizations like the Ottauquechee Regional Land Trust, The Nature Conservancy, and the Lake Champlain Islands Trust. The legislation will not only be beneficial to landowners who do not want to negotiate with a government agency, but will assist organizations concerned with conserving open space and natural areas.

The controversy over the Appalachian Trail this year has stirred up interest in getting this legislation passed. The federal government is currently engaged in a three-year program to protect the entire Appalachian Trail corridor from Maine to Georgia. (See the November issue of the VER.) Landowners along the Vermont segment of the Trail have indicated they would prefer to negotiate with local organizations like the Ottauquechee Regional Land Trust. Many of the landowners feel that an organization like the Trust might better represent their concerns and have more flexibility than an agency of the federal government.

H.204 has been introduced in the Vermont Senate by Senators Robert Gannett and Arthur Gibb and will be reviewed by the House Natural Resources Committee.

## Wetlands

Why should anyone want to protect a swamp? There are some very good reasons. Swamps, along with other types of wetlands like marshes, flooded flats, bogs, wet meadows, and slangs help control flood waters, act as water purifiers, control erosion and runoff, and provide feeding and breeding habitats for wildlife...among other things. The VNRC Wetlands Project has identified over 4,300 wetlands of varying significance in Vermont. And with the exception of publicly owned wetlands, there is no Vermont statute that specifically protects this natural resource.

The primary purpose of legislation HB.213 just introduced in the General Assembly is to provide a state program that will protect the *significant* wetlands in Vermont. These would be wetlands that contribute to public health and well-being. This still leaves, however, some wetlands unprotected.

To aid in the protection of as many wetlands as possible, Bill H.213 also provides for towns to develop wetland zoning and/or take over administration of the state wetlands program. This provision would allow towns to protect wetlands that lie within their boundaries -- both those wetlands that are designated by the state as significant and those that towns see as a benefit to their citizens.

This law is unique among laws of its kind in other states. Rather than designating wetlands according to some physical criteria -- size, location, or type of vegetation, the Vermont law would designate wetlands according to their value. A wetland would be protected because it possesses social benefits. For example, an acre of cattails that directly contributed to water quality would be seen under the Vermont law as more valuable than several acres of cattails that do not have any direct environmental benefit.

The restrictions of the permit process included in the bill only pertain to "earth moving" activities -- filling, dredging or damming -- that would result in wetland loss or degradation. There are, however, compatible uses that would be allowed. These would be activities that allow the wetland to sustain its natural functions. For example, mowing grasses in a wet meadow is not restricted; a farmer could harvest the hay and the wetland would remain undisturbed.

The sponsors of the bill are: Rep. Henry Carse, R-Hinesburg, Sam Lloyd, D-Weston, and Rep. Ray Poquette, R-Alburg. The bill is being reviewed by the House Natural Resources Committee. Public hearings are expected to be held in February. □

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