

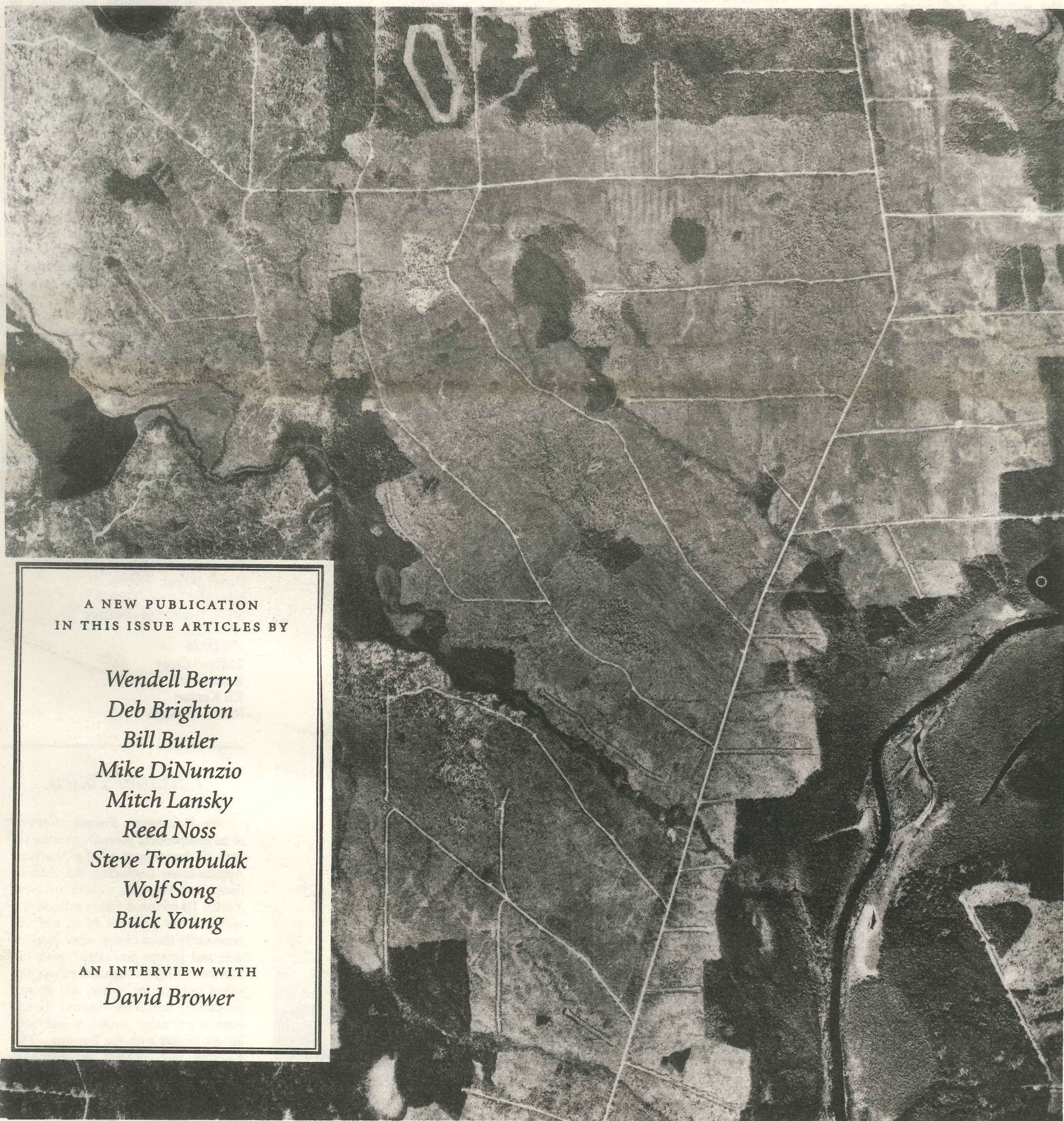
The Northern Forest Forum

Working for Sustainable Natural and Human Communities

Autumn Equinox 1992

Volume I No. 1

The Working Forest?



A NEW PUBLICATION
IN THIS ISSUE ARTICLES BY

Wendell Berry
Deb Brighton
Bill Butler
Mike DiNunzio
Mitch Lansky
Reed Noss
Steve Trombulak
Wolf Song
Buck Young

AN INTERVIEW WITH
David Brower

Printed on Chlorine-Free Paper

The Search For Sustainable Natural & Human Communities

"We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect."

Aldo Leopold, *Sand County Almanac*

Working to help restore sustainable natural and human communities in the Northern Forests is a labor of love. We invite you to join us, whether you are a Tree Cutter or a Tree Hugger, a Resident or a Non-Resident, a Native or non-Native American.

The Northern Forests are more than a place of beauty, a source of instruction, and an evolving, dynamic community of unimaginable potential, intricacy and fragility. They are our life support system.

And they are a region in crisis. But, with this crisis comes a once-in-a-lifetime opportunity for our species to rediscover a relationship with the natural world that is respectful, sustainable and spiritually fulfilling. The **Northern Forest Forum** is an expression of faith that we can work together to protect the natural and human communities of the Northern Forests.

The Northern Forests are not a homogeneous region. Each state is quite different, and there are different regions within each of the four states. And each community in the region has its own concerns. These differences must never be overlooked, but they must not blind us to the realization that the communities of the four states have much in common and face many of the same threats.

Although much has been made of the differences that divide our communities, something very powerful has been overlooked. Despite all our real or perceived differences, residents and non-residents alike share a common bond that transcends any differences—our deep and abiding love for these forests of the Northern Appalachians. United by respect and love for this region, we can and will find the difficult resolution to the region's current crisis.

Different regions face different threats. The Adirondack Park, where 42 per cent of the Park is publicly-owned as "forever wild" state forests, is most seriously threatened by land speculation, subdivision and second-home development on private lands. Development also threatens shorelines and other critical tracts of land in northern New England, but the gravest threat to the health of the privately owned forests of northern New England comes from unsustainable forestry practiced by largely absentee corporations.

Cover Photo

The Amazon? Pacific Northwest? No, it's approximately 25 square miles in Township T4R14 in Maine, west of Chesuncook Lake. The West Branch of the Penobscot is in lower right.

A century ago much of the Adirondacks resembled this scene. Today, 42% of the Adirondack Park is protected as "Forever Wild."

How will Northern New England look a century hence?

This high altitude photo was taken by the National Aerial Photography Program. It will appear in *Beyond the Beauty Strip: Saving What's Left of Our Forests*, by Mitch Lansky, published by Tilbury House in October.

Today, the forests of northern New England are, by and large, in the worst condition they have been in since the retreat of the ice more than ten millennia ago.

And now the region's economy, dominated by transnational paper companies and uncontrolled speculation and second home development, is in crisis.

Our communities, too, are in crisis. There is a sense of powerlessness, a loss of hope, a feeling that we are divided against ourselves.

A Vision of the Future

Proposing a vision of the desired future the Northern Forests is a daunting task because, as Wendell Berry has written, "We have never known what we were doing because we have never known what we were undoing. We cannot know what we are doing until we know what nature would be doing if we were doing nothing." Fortunately, we do have a model: the Adirondack Park, which despite many problems, is eloquent testimony to the healing powers of nature and the value of public ownership.

To live sustainably, we need to recognize that protecting the forest means protecting the human communities that the forest sustains. Sound economics means protecting your capital. Our "capital" is the soil, air, water, forests, wildlife and residents of these Northern Forests.

How can we assure sustainable natural and human communities?

1) The habitat needs of all species native to this region (including species

that have been extirpated) must be assured.

2) Human populations and consumption patterns must not exceed the ability of the region to meet our needs and desires. Human settlement must complement, not conflict with, the habitat needs of non-human species.

3) Human economies must be ecologically benign and sustainable, provide for basic human needs in a socially responsible manner, and rely on renewable resources that are managed on a sustainable basis.

A Transition Strategy

A vision is essential, but without a realistic transition strategy to get us from here to there, it is meaningless. How do we get from here to there? Some of the most important elements of this strategy include:

***Community Empowerment** of those who have been disenfranchised in the past. People and communities must recover power over their future that today is in the hands of largely absentee corporations, speculators and others who represent them;

***Developing Alternative Economic Strategies** that promote local-control, economic diversity and are based on ecologically-benign, value-added manufacturing, and sustainable community agriculture;

***The Ecological Restoration of the Northern Forests** to assure the ecological and evolutionary integrity of the region (the Northern Forests are resilient due to abundant precipitation and adequate soils, but, we should not

be fooled; these forests are under siege, and we cannot count indefinitely upon their resiliency).

An important mechanism for achieving these goals is land acquisition from willing sellers. A hundred years ago, the privately-owned Adirondacks resembled today's industrial forest of Maine. Public acquisition of over two million acres in the Adirondack Park has helped protect the region's ecological integrity and water quality, as well as assure public access to these wildlands. With millions of acres of industry-owned land for sale today, northern New England has a unique opportunity to protect these critical public values and begin healing our natural and human communities.

Today, people in the northern forest mill towns have a sense of hopelessness. As long as the region's destiny is controlled by outsiders, community despair is likely to continue. If defenders of ecological integrity work with their neighbors to develop a locally controlled economy that is ecologically sustainable, our communities will recover control over their future. Given fair choices people in these communities will demand a healthy, vibrant environment to live in.

We are ever-so-briefly visitors in this unimaginably beautiful pageant of rocks and ice and fire and water and dancing sunlight. We have been blessed beyond fathoming. We have a once-in-a-lifetime opportunity to begin healing the natural and human communities of the Northern Forests. Please join the search.

--Jamie Sayen

Editorial Staff This Issue

Jamie Sayen - Preserve Appalachian Wilderness

Tom Butler - Wild Earth

Andi Colnes - Appalachian Mountain Club

Michael DiNunzio - Adirondack Council

Lowell Krassner - Sierra Club

Jym St. Pierre - The Wilderness Society

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Deborah Brighton - Economics

Mitch Lansky - Forestry

Gary Lawless - Poetry

John McCarthy - Dioxin

Steve Trombulak - Biology

Artists

Michael Carey

Kahionhes

Kit Kuntze

Rachel O'Meara

Editorial Policy

The **Northern Forest Forum** is an independent journal covering issues of importance to the Northern Appalachians (including the Adirondacks and Tug Hill regions of New York). Its editorial policy reflects the views of the Editorial Staff, and not necessarily those of any other individuals and groups associated with the **Forum**. Signed articles reflect the views only of the writer, and do not necessarily reflect the views of the editors or any other groups or individuals associated with the **Forum**. The **Forum** will publish articles that stimulate the search for sustainable natural and human communities in the region.



Lake Lila - Photo by Gary Randorf, Adirondack Council

Northern Forest Forum Statement of Purpose

The Purpose of the Northern Forest Forum is: To Promote Sustainable Natural and Human Communities in and beyond the Northern Forest Region.

The Forum will focus on:

*The Ecological Integrity of the region and strategies we need to adopt to restore and preserve it;

*The need for Economic Reform into an economy that is ecologically sustainable, equitable, and locally and regionally controlled;

*Community Empowerment; and

*Monitoring the Northern Forest Lands Council.

The Forum is the only publication devoted to exploring the Northern Forest as an area of local, state, regional, national and global significance. It will seek to involve all citizens and groups concerned about the future of the Northern Forests, especially groups working for economic and community revitalization, religious and cultural interests, local officials, planners, foresters, and citizens of the Northern Forest communities.

We believe we can find the common ground that unites the diverse elements of the Northern Forest communities--our love for the region. The Forum will provide an empowering forum for the unheard voices of the human and non-human communities of the region.

We hope to stimulate a healthy debate that will assist our search to find common ground. We hope the Forum will promote a sense of regional and cultural identity and celebrate the integrity, beauty and resiliency of the biotic community and the cultural diversity of the human communities of the region.

The Forum will seek to assure that political, economic, social and cultural strategies for the region's future be ecologically sustainable. In particular, we will promote forestry practices and wood products manufacturing that are ecologically sound, socially responsible and economically viable.

Publication Schedule

The Northern Forest Forum is published six times a year. It will be printed in the middle of the odd-numbered months (January, March, May, July, September, & November). Deadlines for submission will be the First of those months. If possible, please submit articles on Macintosh-compatible disc. Send articles to: Forum, POB 6, Lancaster, NH 03584.

Financial Supporters

We wish to thank the following organizations whose generous support enabled us to produce this inaugural issue of the Forum:

Adirondack Council
Anonymous
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National Audubon Society
REI
Sierra Club
The Wilderness Society

What are the Northern Forests?

In 1988 Congress authorized a US Forest Service study of a 26 million acre region that encompasses Tug Hill and the Adirondack Park in New York, Northern Vermont and New Hampshire, and the Northern two-thirds of Maine. It named the study the "Northern Forest Lands Study" (NFLS). Although this name is a misnomer, as residents of Canada, the Midwestern and Pacific Northwestern states will attest, we will refer to the 26 million acre area as the "Northern Forests" because of the NFLS and the Northern Forest Lands Council, which is an outgrowth of the Study.

The Northern Forest Lands Council has 17 members, four from each of the four states in the study region and a representative of the US Forest Service. It meets bi-monthly.

The Editorial Staff of the Forum believes that Congress unwisely excised important sections of what constitutes the Northern Forests in an ecological

sense. Specifically, we believe that the White Mountain National Forest and the Green Mountain National Forest should have been included in the study region. We also believe that the Taconics and Berkshires in southern Vermont, western Massachusetts and eastern New York should be included. The Northern Forests extend into the Maritimes of Canada. If we are to find ecologically sustainable solutions to our region's problems, we must not be circumscribed by artificial lines (boundaries) drawn for political reasons. Accordingly, the Forum will include articles on the Maritimes, the region's National Forests, the Berkshires and the Taconics.

However, due to the nature of international and national politics, we recognize that many political solutions to our region's problems will refer exclusively to the Congressionally-designated 26 million acre Northern Forest Lands Study area.

The Northern Forests are very diverse, ecologically, culturally and politically. The industrial forest of Maine is

unlike any other part of the region, including the rest of Maine. Vermont is different from New Hampshire. The Adirondacks and Tug Hill, although in the same state, face some very different problems. Therefore, when addressing problems of the region, we must be very careful to make sure that a proposed solution is relevant to the region's problem.

For instance, an area that is relatively unthreatened by second home development will not be protected by strategies that primarily are designed to thwart second home development.

Some proposals will be useful for the entire region. Others will not.

But, if there are differences, there are important similarities. The region is dominated by relatively unbroken forested lands. It is generally mountainous. Rural communities throughout the region face similar economic and social problems.

What is most important is that this region has a unique opportunity to work together to solve regional and local problems.



The Choppers by Seneca Ray Stoddard, Courtesy of the Adirondack Museum

Letters to the Forum

To the Northern Forest Forum:

As I read through the outline of your new publication, I think of the words of a Micmac man from Mattawamkeag, Maine, unnamed when quoted in *The Wabanakis of Maine and the Maritimes*:

"You need the time to go back to the real things, to know in your own mind that even though you have to have this education or this job to survive in the world today, there are other things that you have to have, too, and you can't let it get out of balance. You have to be able to understand that there's a living, breathing world out there that you have to have a relationship with too, because if you don't, then you're only half a person, you're not going to survive. You're not going to survive in that world, the real world. There's an unreal world out here that's a lot of concrete and computers and set rules and

things that you have to do, but there's a real world over here of animals and rivers and skies, things that you can't control, you can only live with and participate in, but you have to give a lot to that world in order to be able to participate in it. You have to gain a lot of knowledge from it. You have to give a lot of yourself to it in serious study and understanding."

I hope that the Forum will reflect this serious study and understanding, but in a way which will speak with the voices of the living, breathing world. I hope that it will be a forum of voices for the bioregions through which the northern forests move. I hope that we can try to speak for the great diversity of life within these regions. A deep sense of place, of connectedness, of relationship, moves through us and gives voice to place through local cultures, through the arts, through daily work and conversation.

I hope that the Forum will be a forum of these voices, that we will hear the local cultures, the local wisdom, the deep sense of place and connectedness

expressed through many forms of language, from the scientific article to poetry, from interviews to artwork, all of it being part of the deep song of place. I look forward to listening to the voices of this forum.

--Gary Lawless

Gary Lawless is a poet of the Gulf of Maine Bioregion. He is co-proprietor of a wonderful bookstore Gulf of Maine Books in Brunswick, Maine. He is author of numerous books of poetry, including *First Sight of Land*, published by Blackberry Press.

Illustration Credits: p. 4 Rachel O'Meara (ROM); 6 Kahionhes (*The Faithful Hunter*); 7 Abenaki Research Project; 9 Gary Lawless & Stephen Petroff; 10-11 ROM; 12 Lawless & Petroff; 13 Northern Forest Lands Study p. 35; 14 Ad Hoc Associates; 15 ROM; 16-17 Laura Tessier, Courtesy Appalachian Mountain Club; 18 ROM; 19 (bird) Tessier-AMC; (map) US Fish & Wildlife Service; (chart) Preserve Appalachian Wilderness; 20 (ducks) Michael Carey; (greenpeace) New Catalyst; 21-22 New Catalyst; 26 Adirondack Council

Amphibians of the Northern Forests

by Steve Trombulak
Department of Biology
Middlebury College

Abstract: Amphibians are common throughout the Northern Forest, although they are less commonly seen than other animals. They are fascinating to observe, however, in part because of the incredible range of life styles shown by individual species in this group. They are also extremely important for the ecological integrity and evolutionary potential of the forests and wetlands. As insect predators and aquatic grazers, they play central roles for nutrient and energy cycling in forested ecosystems. They also demonstrate adaptations for living on land that are parallel to those independently evolved in reptiles, birds, and mammals. The amphibians in this region, as in many other regions, are threatened with extinction in a number of ways, including acid precipitation, drying of soil due to changing land use patterns, and reduced water quality. The consequences to ecosystem integrity of disruption of amphibian communities are unknown, but may be severe due to their importance in forest food webs.

Wherever you go in the Northern Forest, they are there. Spend some time walking through the woods, turning over rocks and old logs, and you're likely to see one. Walk along the edge of a pond or marsh and one will leap into the water away from your step. Hike along a trail on a rainy night in spring and hundreds will cross your path. But despite their abundance, many people never see them. They are the amphibians of the north woods. They have been here since the glaciers receded from this region 10,000 years ago, working the soil, shaping the communities of wetlands, and giving voice to spring nights, an intimate part of the land.

Amphibians are fascinating animals. Vertebrates, like us, they are the least appreciated and understood member of this group. Not as colorful and obvious as birds, not as economically important as fish, not as familiar as mammals, not as frightening as reptiles, they generally go unnoticed except for a brief period when the courtship calls of some species signal the arrival of spring.

Living amphibians, as a group, have several characteristics that separate them from all other vertebrates. They generally need a wet environment for reproduction because, unlike reptiles and birds, their eggs do not have protective shells to help keep the embryos from drying out. However, unlike fish, the adults are usually more at home on land than in water. Unlike mammals, they are considered "cold-blooded," a misnomer meant to indicate that their body temperature is strongly influenced by the temperature of the environment, whether warm or cold.

There are three rather distinct groups of living amphibians, two of which are common in northern New England and New York. The first is the salamanders. These four-legged crawlers are secretive, silent, and rarely seen unless you happen to observe a spring migration to a breeding pond or are turning over rocks or logs. The second group is the frogs and toads, strong leapers and swimmers, whose male courtship calls signal that warm weather and longer days are on the way. A third group, the caecilians, are found only in tropical regions of Central and South America. Resembling large earthworms with jaws, these creatures spend most of their time burrowing

underground and are rarely seen even by people who live in these areas.

Amphibians of the Northern Forests

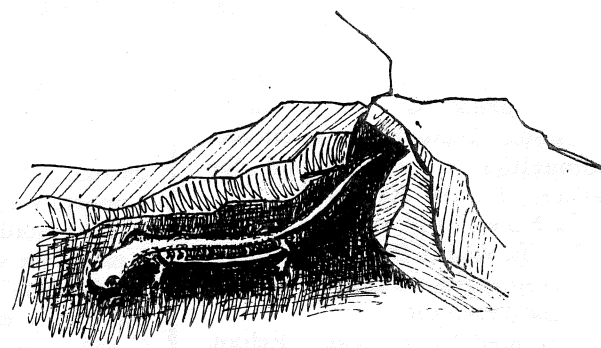
Twenty-two different species of salamanders, frogs, and toads are found in the Northern Forest in almost every possible habitat. The redback salamander (*Plethodon cinereus*), for example, is thought to be more common in the forests of this region than any other terrestrial vertebrate species, including white-tailed deer and robins. Generally dark with a red stripe running down the middle of its back, this secretive animal gets to be only 8 to 10 cm long. It lives under logs, rocks, bark, and leaf litter wherever the temperature of the forest soil is cool. Like many other salamanders, it has no lungs and gets all of its oxygen by diffusion across its moist skin. It lays its eggs in clusters under rotten logs rather than directly in standing water, and the young hatch out as miniature adults, ready to begin their life as forest predators. It feeds almost exclusively on insects and other invertebrates that live in the soil, and spends the winter in a hibernation-like sleep deep underground.

Not all salamanders are like the redback, however. The red-spotted newt (*Notophthalmus viridescens*) has a three-stage life history that involves a switch from water to land and back to water again. The eggs are laid individually on plants in ponds, where the free-swimming larvae hatch and eventually metamorphose into an "eft," the newt's terrestrial juvenile phase. These efts are bright red and are commonly seen wandering around on the forest floor in broad daylight. They avoid being eaten because their bright color signals to potential predators, like birds and snakes, that they are toxic, their skin containing an extremely effective poison. After living on the land for 2 to 7 years, an eft returns to water, turns olive green, and lives out the rest of its life as an aquatic adult.



At the other end of the ecological spectrum is the mudpuppy (*Necturus maculosus*), which spends its entire life in the water. The aquatic larvae never metamorphose into terrestrial adults but instead develop functional reproductive organs while retaining their larval gills. Among the largest of all salamanders, this species reaches 30 cm or more in length. Although native to rivers and streams in the Champlain Basin of New York and Vermont, it was introduced to northern Maine earlier in this century.

Each of the other 8 salamanders that live in this region shows unique natural histories, including the mole salamanders (*Ambystoma* spp.), which may spend 50 weeks each year deep underground, and the two-lined salamander (*Eurycea bislineata*), which may never travel more than 10 meters from a stream.



The frogs and toads of this region show an equally broad range of natural histories. The most common species is the green frog (*Rana clamitans*). The patterns of green and brown on its body are quite variable, but it is regularly seen along the sides of ponds, streams, drainage ditches, and vernal pools. It lays its eggs in the water where they hatch into fully aquatic tadpoles, which may not metamorphose into the semi-terrestrial adult for up to 2 years.

The spring peeper (*Pseudacris crucifer*) is also fond of the water, coming to ponds to breed as soon as the ice melts from them. Theirs is the single note "peep" call, in which the males advertise to the females their presence and their possession of a piece of real estate for laying eggs. An entire pond of calling males can transform the night into a deafening roar of high-pitched shrieks. Despite their obvious calls, however, peepers are rarely seen. After the breeding season, they leave their ponds and live a secretive life in the nearby forests.

The American toad (*Bufo americanus*), on the other hand, much prefers land to water. Only occasionally seen in the water itself, its skin is thicker and better able to withstand drying by the sun and air.

Perhaps the most remarkable of all the frogs in this region, however, is the wood frog (*Rana sylvatica*). It is among the first of all the frogs to breed in the spring, indeed sometimes calling from atop ice that has yet to melt off of the ponds. Characterized by a brown body and a dark "robber's-mask" across its eyes, this species has a remarkable ability to withstand cold. If cooled gradually, such as what it naturally experiences as autumn becomes winter, a wood frog's body can actually freeze solid like an ice cube. They spend the winter in this frozen state buried close to the surface in the forest, to thaw out and become active again as soon as the first warming comes in the spring.

Role of Amphibians in Northern Forests

Beyond their obvious diversity and fascinating ecology, however, why should we pay any attention to amphibians as we focus on the future of the Northern Forests? Are amphibians anything more than pleasant voices for warm summer nights? The truth is that amphibians are important to the forests and our use of them for several reasons. The first is that amphibians, by virtue of their abundance in both aquatic and terrestrial habitats, are important to the structure and function of natural ecosystems. Remember that the redback salamander is the most abundant terrestrial vertebrate in New England and lives on insects, mites, and other invertebrates that live in the soil. A tremendous

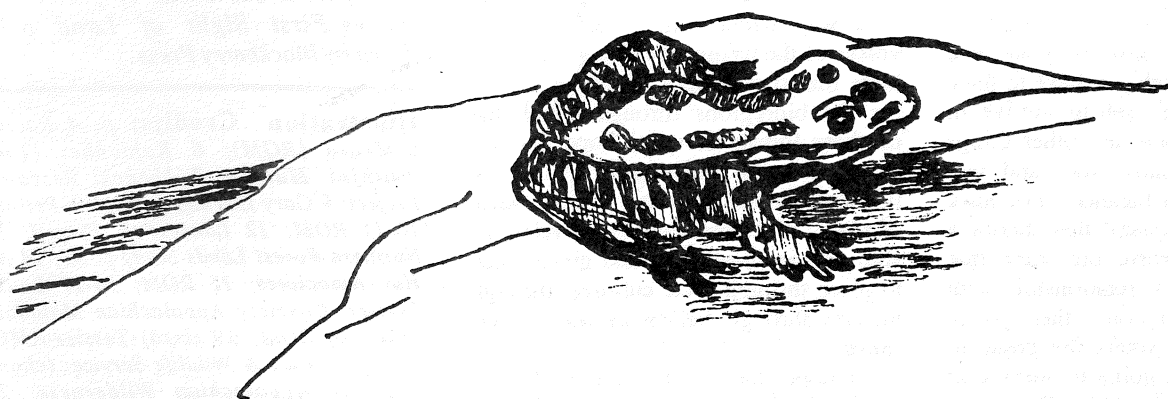
Calendar

*October 10-12: Harvard School of Public Health presents **Human Health and the Environment: a symposium on The Medical Consequences of Environmental Degradation** at Kresge Auditorium, Massachusetts Institute of Technology, Cambridge, MA. For information call: (617) 432-1171. Registration fee is \$200 for non-students and \$50 for students.

*Northern Forest Lands Council, October 21, Burke Mountain Ski Area, East Burke, VT. For more information call (603) 224-6590. Meeting begins at 8:30 AM.

*November 4-6 Northeast Nongame Technical Committee and the Northeast Neotropical Migratory Bird Committee in Norwalk, CT. For information call (203) 584-9830. On Nov. 4 there will be reports on Invertebrate issues. Single day registration is \$20, but must be made before October 23.

*November 5-6 Dioxin Hearings in Augusta, ME. See page 20 in this issue of the Forum for further information.



amount of forest energy and nutrients pass through the digestive tracts of these salamanders, aiding in the cycling of nutrients, shaping the invertebrate communities associated with forest plants, and influencing the dynamics of soil production.

Similarly, tadpoles are among the chief grazers of aquatic plants. Their presence influences the balance between different species of algae, which in turn affects levels of oxygen and nutrients, and species composition in the ponds. The aquatic larvae of some salamanders are also the major predators in many ponds, determining species composition and other aspects of a pond's ecology.

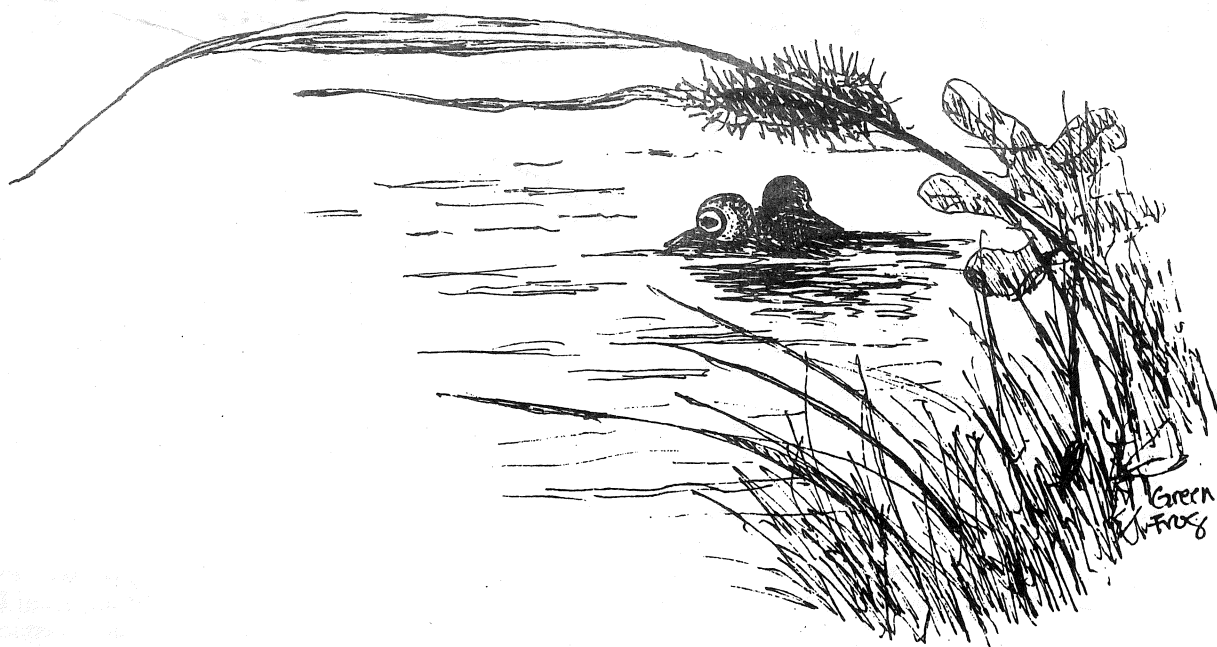
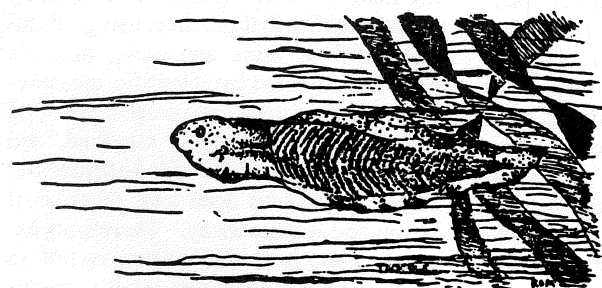
Without a focus on the amphibians of these ecosystems, we have only an incomplete picture of what keeps them in a healthy balance: how energy and nutrients cycle through the system, how they regenerate themselves in the face of disturbance, and how other species in the ecosystem persist. Amphibians are an important part of the whole.

Amphibians & Ecosystem Health

A second, more applied, value of a focus on amphibians is their use as biological indicators of the health of an ecosystem. Because of their unique characteristics, amphibians are extremely sensitive to changes in environmental conditions and respond to changes quickly. Their need for water, either in standing pools or moist environments, makes them sensitive to changes in water availability. Drought, changing land use patterns, and water diversions or impoundments all affect amphibian populations, and may be observed long before the trees and other plants in the forest show any response. Similarly, the moist skin of amphibians, used by some species even for respiration, makes them sensitive to changes in water quality. Changes in water and soil pH can severely reduce the populations of some species. For example, redback salamanders are almost never found in soil with a pH less than 3.7. Careful monitoring of redback salamander populations can provide straightforward and rapid assessment of soil conditions, long before they affect the growth of trees or related soil fungi.

Interestingly, the different ecologies of different amphibians makes their use as bioindicators of forest health even better. For example, redback salamanders appear to be more sensitive to soil pH and less sensitive to forest clearing than are other salamander species. Similarly, green frogs are more sensitive to pesticides than are other frogs. Comparisons of year-to-year distributions and abundances among species may help identify not only whether environmental change is occurring, but what factor is responsible.

But a special interest in amphibians is not restricted to just the Northern Forests. In the last few years, ecologists around the world have documented serious decreases in amphibians in virtually all habitats and from all continents. The golden toad (*Bufo periglenes*) from the montane forests of Costa Rica, the western toad (*Bufo boreas*) from the subalpine meadows of the Sierra Nevada Mountains of California, the gastric brooding frog (*Rheobatrachus silus*) of the rain forests of southeastern Australia; these and many more species have declined or gone extinct, leading biologists to wonder whether one or more events are selectively wiping out this group of animals on a global scale. Several factors have been suggested to play a role in the decline, including increased acid precipitation, drought, habitat destruction, and human predation. It is most likely that there is no single cause for these declines, with each species responding separately to agents of change. But the regularity of amphibian declines strongly indicates that this group responds more quickly and severely to environmental disturbance, and in the face of increased human impact on the land is at extreme risk of global extinction.



The status of amphibians in the Northern Forest is unfortunately not well known. Until quite recently, information on their distributions and abundances was restricted to only a few places and a few species; therefore, we don't yet know enough to say for sure whether the kind of decline seen elsewhere around the world is happening here as well. We do know that, as yet, no amphibian has gone extinct in the Northern Forest although populations of some species, such as the western chorus frog (*Pseudacris triseriata*) in Vermont and southern Quebec, appear to be less common in recent years.

The concern about amphibians in this region is a concern for the future. The environmental stresses that have been linked to declines elsewhere, including changes in forest structure, water quality, and soil pH, are occurring in the Northern Forest and have a great potential to become more severe in the future. If this were to happen, then it is highly likely that we will begin to see major losses of amphibian populations and species throughout this area. The impact of this on ecosystem integrity is unknown, but the role that amphibians play in the food webs of forested ecosystems suggests that the consequences would not be trivial.

Evolutionary Potential

We cannot afford to be complacent about the potential loss of amphibians from the Earth. Clearly they play an important role in the operation of present-day natural ecosystems and should be protected for that reason alone. But there exists a deeper philosophical argument for the importance of amphibians: their evolutionary potential.

Popular wisdom paints amphibians as our distant ancestors, the first vertebrates to climb up out of the water and begin the colonization of the land. Although advanced for their time, about 350 million years ago, their cold-bloodedness and lack of a shelled egg made them unsuitable for land compared to their more advanced descendants, the reptiles, which in turn gave rise to birds and mammals. Amphibians, therefore, are evolutionary "also-rans," pretty good for their time, but of little importance for the future.

However, popular wisdom is wrong.

This scenario may be true for ancient amphibians, those that actually did crawl up out of the swamps and did eventually go extinct with the rise of the first reptiles, but it is decidedly untrue about the living amphibians, the modern relatives of those ancient forms. The first amphibians actually gave rise to two separate lineages that colonized the land: the reptiles and the living amphibians. Nothing like a redback salamander or a wood frog or a spring peeper crawled up out of a swamp. These species, and all living amphibians, are every bit as modern and evolutionarily successful as their more heavily modified cousins. They represent a completely different approach to living on the land. Although ancient amphibians were probably irrevocably tied to standing water, many modern amphibians have evolved other strategies for making their way in the world. Redbacks and many other salamanders seek out moist soil and completely shy away from water. Some, like the spadefoot toad of southwestern North America, have colonized the deserts. Some frogs and salamanders have evolved the ability to keep their developing eggs inside their bodies and give birth to their young alive, similar to mammals, yet having arrived at this behavior by an independent evolutionary path.

Living amphibians, therefore, like all living organisms, have an intrinsic evolutionary potential. By virtue of the fact that they are alive today, they have demonstrated the ability to survive and reproduce. They have unique strategies for life, and involve themselves in the operation of Earth's ecosystems in ways that may differ from any other organism. We would do well to respect this potential, and conserve it. The future of the forests, and all other ecosystems, may depend on it.

Additional Reading

Richard M. DeGraaf and Deborah D. Rudis. *Amphibians and Reptiles of New England: Habitats and Natural History*. University of Massachusetts Press. 1983.

James D. Lazell, Jr. *This Broken Archipelago: Cape Cod and the Islands, Amphibians and Reptiles*. Demeter Press. 1976.

Kathryn Phillips. "Where have all the frogs and toads gone?" *BioScience* 40 (6): 422-424. June 1990.

NIGHT AND DAY

for Antler

*The grouse gives me
less than a glimpse
as it explodes
from the tangle of
low hemlock branches.
Tiny dry cones whisper
in the silence
sifting to the ground.*

*The drumming is continual,
sounding through the bones
and bedrock of the woods,
seeping through
walls and foundations.*

*Horned owl breaks
the winter night
with a cry that
slips deep into
my dreams.
After the sound
a vast silence
hangs above the woods,
floating and listening.*

*Waking up, I feel
my life which has gone out
into the night
returns and
settles back
to drum again.*

Steve Lewandowski
Canandaigua, New York

Honoring Wabanaki: Land of the Dawn

For a proposed "Walk Honoring Wabanaki", the Land of the Dawn, in the summer of 1992, Robin Lloyd, a member of the Burlington, Vermont 1992 Committee interviewed Wolf Song, a storyteller who is a descendent of the Western Abenaki peoples of Vermont and the Mohawk Peoples. The Forum is pleased to be able to present Wolf Song's statement. If you would like Wolf Song to share his Native American stories with your school or group, contact him at: RD #1 Box 375, Huntington, VT 05462.

As an Abenaki person, to honor Wabanaki means to think about how we live on the land and relate to it, to the creatures, the air, the very stones themselves. To honor this land we must learn to be appreciative of every day that we have. I personally see every day as a gift, and I am thankful for the gift of life; I am thankful for my relatives that make my food and my clothing.

Wabanaki means Land of the Dawn, and it is the original land and the home of the People of the Dawn. This is a land which goes from the East Coast of Maine and Nova Scotia-the Canadian Maritimes, all the way to Lake Champlain in the west; and from the southern shore of the St. Lawrence River into North Central Massachusetts. It's a large piece of land.

What is called Vermont, we call *Ndakina*, our land. But giving land these names on some level is kind of arbitrary, because there are no lines. There are natural things, like the Lake between us and the Haudenosaunee to the west, or, the Iroquois, as they are called. There is the St. Lawrence River, mountain ranges--but there are no artificial lines. The boundary lines are in our heads. They are very useful to define and confine you as a human being, such as Vermonters versus Massachusetts people.

But we live in all these places and we are all related; the Abenakis of Vermont and Penobscot and Micmacs of Maine--we are all part of the Wabanaki family; different, and yet related. People have made a great deal of historical note of how the Abenaki and the Mohawks, who live on both sides of this great lake that is called Champlain, which our people call *Bitowbagok*: The Waters Between, that we and the Mohawks were enemies. Well, a lot of that happened in a warring time that the Europeans brought here. It's hard to talk about it from a western point of view, where you say that there was a war or that there were enemies and it implies a total sense of otherness and a willingness to destroy each other utterly, as western civilization does.

In fact, this lake was not a hard and fast boundary. The Mohawks came over here to hunt and gather, and some of the time we would go over there, and there was a great deal of intermarriage: I myself am an example of that, I am Abenaki and Mohawk (and Cherokee, English, Scotch/Irish, and French) and you will find people over there that are Mohawk and Abenaki. So the boundaries are more fluid and flexible; and when you cross the line into Massachusetts, the mountains are the same. The line is something that is there for the purpose of controlling and taxation and basically to dominate the land and the people.

To honor the Abenaki and the land of the dawn, in my understanding, is to really look at how you live here and

how life has been lived here for thousands of years, 10, 12, 20,000 years people have lived here in harmony with the land. And we need to be willing to change the way that we live now. That is the scary part.

To honor and respect means to think of the land and the water and plants and the animals who live here as having a right as equal to our own to be here. We are not the supreme and all-knowing beings, living at the top of the pinnacle of evolution, but in fact we are members of the sacred hoop of life along with the trees and rocks, the coyotes and the eagles and fish and toads, that each fulfills its purpose. They each perform their given task in the sacred hoop and we have one too.

For example, I heard on the news that they are working on a law in the state legislature to allow night hunting

ral way. And our dominant culture cannot accept the natural flowing cycle. They try to artificially maintain a high level of output, whether its in a factory or if its a deer herd.

The coyote came here to Vermont--I was a young boy when they came, because there was a need for them here. There were no live predators at the time, with the forest growing in, a large deer herd, and turkeys being introduced, and there was plenty of rabbits. The coyotes live on many things: they eat plants, carrion, rabbits, mice, and many, many things.

That's just one example. This summer a [Burlington] Free Press article stated that Vermont is the third cleanest state in the union, with a big headline. Smaller subtitle: so many millions of pounds of toxins are put into the air every year. If we really

live a long time after I am gone. And it's that land, with creation, that has taken care of me and fed me, and that without care and reverence, we are creating our own doom, our own death. We are bringing sadness and hardship to our children and our grandchildren and our great grandchildren with the continued rates of consumption and pollution.

One of the things that marks the traditional people is that when they thought about a course of action they didn't consider just their own profit or gain from it, they would consider what are the long term implications; if we do this, what will be the effect on future generations?

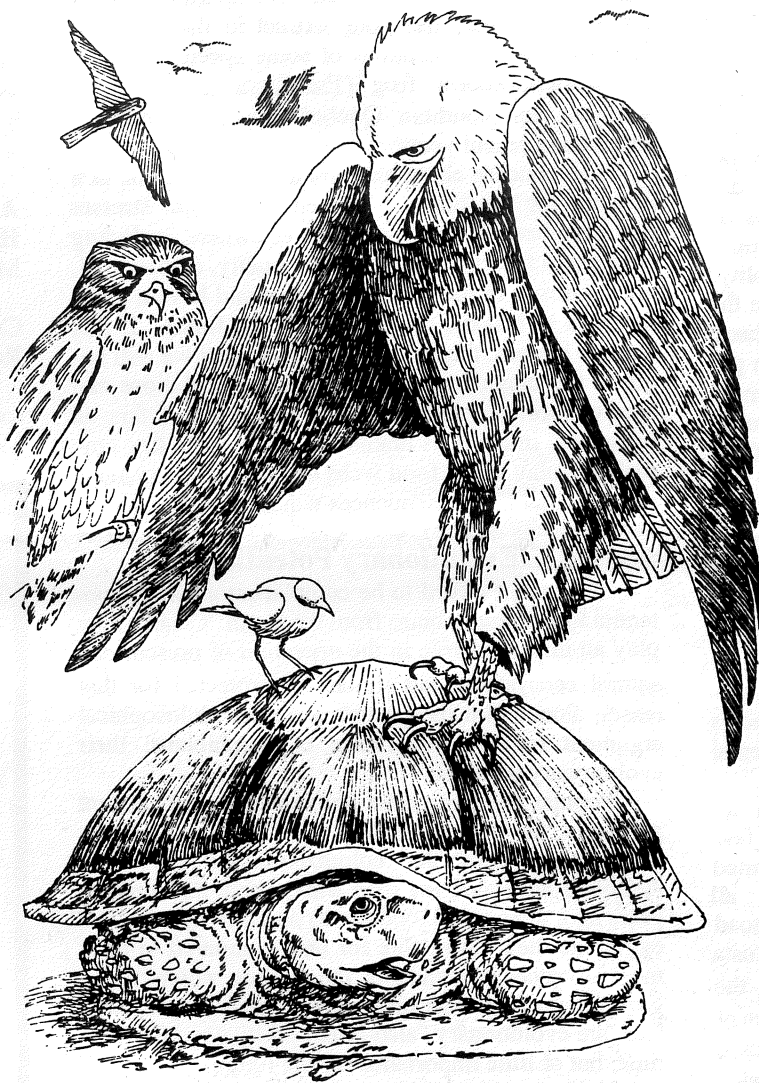
For example, today in Vermont there is more talk of drawing more water from the streams for snow-making. Without that, we'll lose so many jobs, so many millions a year, we'll have to raise taxes; what'll we do? Well, what will happen if we deplete those streams? What will be the long-term effect on the habitat surrounding those streams? What will we do with the sewage from the increase in skiers attracted here, and the mountains cleared for condominiums and ski trails? What is the effect of increased industry, of increased boating on the lake?

To our people this was home. When our people came here there weren't all the cleared fields; we lived here for thousands of years and when the first Europeans arrived, most of the land here was covered in old growth forest. The mountains and the lakes and the sky--this was, and still is--a very beautiful place.

And it saddens me a lot to know that the lake is not as clean as it could be. There are always conflicting reports of how much pollution there is, but some say the dioxin level at the International Paper mill's discharge pipe is only so many parts per million, only one tenth of the FDA acceptable standard. My question is: why does there have to be an acceptable standard? Dioxin is considered by some to be the most toxic substance created by human beings. Should there be any of it in our lake? Why should there be PCBs? If we have the intelligence to create all this technology to make snowy white paper, super highways, and sleek, fancy cars, and to do brain surgeries, and triple bypass heart surgeries, and to send spaceships out there and have them come back; if we can do all these things--we even have bombs called smart bombs--how come we don't have smart enough people to keep the land in which we live clean and healthy?

People say, Well, that's the price of development. Well, that's not a price I want to pay or want my children or grandchildren to pay.

The modern culture has a sense of superiority as though it's above the natural laws. I know a little bit about the natural world and you have to have a circle and replenish. Old farmers used to know that, if you had more land than you could nourish, then you had too much land and were basically robbing the land. We now have basic farming techniques for that practice, using chemicals to draw more and more, and it's been documented by scientific measurements and simply by crop yield that soils have been severely depleted, and lost, because when the soil becomes depleted it becomes dead and, dustlike, it blows and washes away. There's an example again how this culture is not in balance and has forgotten what it means to honor the lands that feed it.



of coyotes using lights and calls, so that anyone can go out and play this animal call to lure the coyote in and then shine a light in its eyes to blind and shoot it. [Ed. Note: This bill did not pass in 1992.] The rationale that was given on the radio was that to give relief to homeowners and farmers whose pets and livestock are at risk from coyote predation.

Maybe we should give the coyotes a hunting permit to shoot human beings who are walking in their place of living and threatening their children and their food supply. It sounds kind of crazy from the dominant way, but the coyote has a job, the coyote is a natural predator. The fish and game people and hunters say that the coyotes are killing all the deer and they are terrible and a couple of guys got chased out of the woods. The fact is, if there wasn't enough deer and rabbits and mice, the coyotes would die off. That is the natu-

loved this land and really want to honor it, and we want it to be a land that our children and great grandchildren can live in, we need to stop putting millions of pounds of toxins into the air every year. It's kind of ridiculous to talk about how clean this state is, when if you look on any map of all the landfills and waste dumps in the state of Vermont; the state is peppered with them, and most of them are sitting close to streams.

If we are going to honor this land we really need to heighten the level of appreciation and awareness so that people come to love the land as a living being, so that the land is not seen as something dead, and without feelings, as something that can be shaped and used for profit with no thought of its own needs, its own rights. I am not speaking here in a sense of worshipping the land, I am not a pantheist. I am simply a man who knows that the land has lived a long time before I came, and will

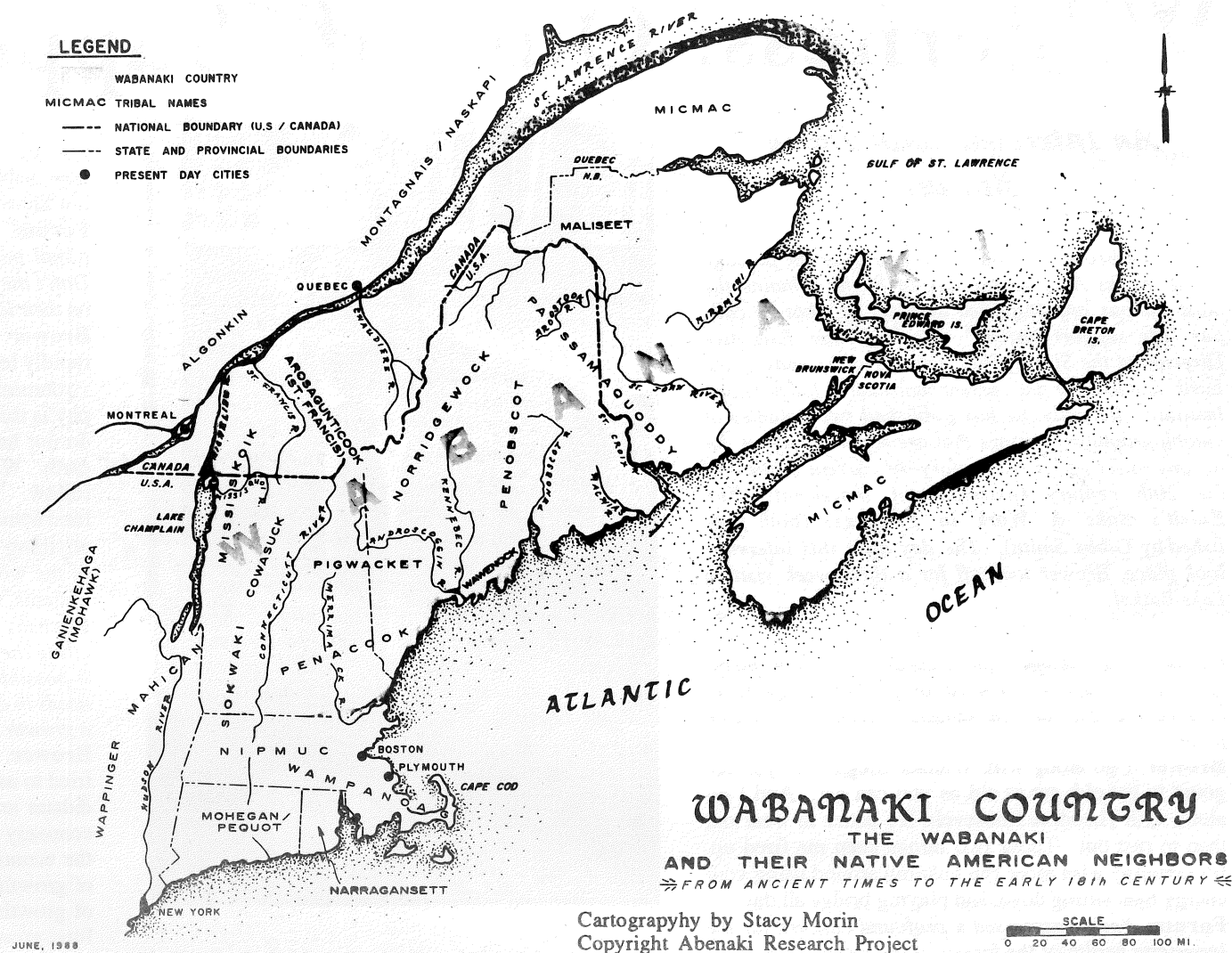
It is important to me that our ancestors' bones were in the process of returning to the earth from which they came. The cells in our bodies were once living animals and plants, since humans feed on the plants and animals that are fed by the ground. Humans, having completed their lives in the old days, would be put back into the ground, and their flesh and bones would feed the earth. This is the natural way of things to happen.

So the bones of our ancestors, our parents and great grandparents, are, some of them, thousands of years old. It's very disrespectful to take someone who has been put back into the earth, who is in the process of becoming one with the earth again on that cellular level, to go and dig them up and disturb them.

The fact is that they were at rest. They were continuing the process of re-joining the earth from which they came. Their spirits have been disturbed. These people have been disrespected. It is an example of the dominant culture's attitude that our ways are the right ways and we can do what we want.

As a native person, the very thought that my relatives and my ancestors have been dug up and been studied and drilled and cut, and had all this technical and scientific stuff done to them, and are sitting in boxes on a shelf someplace, is an extreme statement of disrespect, of oppression, that our people are seen as something to analyze, while to me these are my relatives, and they should never have been disrespected in this way to begin with. When they were put in the ground, it was done with prayer and ceremony, offerings, great respect, and now a great disrespect has been done.

There's been a great disruption in



the spiritual fabric of the culture of our people. It will take prayers and ceremonies and clear intentions to bring back that harmony, and that harmony can't happen until those old peoples' bones and gravegoods are returned to the earth. It will feel as though a beginning has been made. Those people's remains are currently in limbo.

In my mind, if you can't respect the earth that's under your feet, that feeds, clothes and shelters you, if you can't respect and keep it clean and live well with it, if you can't respect the bones of people who lived a long time ago, then it's really fruitless to dream and talk about ending racism, sexism, all the isms and strifes that separate us as peo-

ple. Because if you can't respect the earth and the ancestors, I don't believe you are going to be capable of respecting another human being. That's just another person to manipulate, to control, to make a profit from. It's not what honor and respect and cooperation are all about.

This is Abenaki Land

by Tomas Obomsawin
Diplomatic Ambassador
Sovereign Republic of the Abenaki
Nation of Missisquoi

The Court will use the term "aboriginal title" to refer to Native Americans' rights to occupy and use their homeland based on their possession of the land from time immemorial.

--Judge Joseph Wolchik, 1989

The Abenaki Nation is an indigenous nation of what is now known as the northeastern U.S. and southeastern Canada. Our tribal headquarters are in what is called northwestern Vermont. Western Abenaki territory extends into what is called New Hampshire and western Maine. Although Abenaki land has been under occupation by European colonists since the 1600s, we never ceded title to it by treaty, sale, or any other means, in fact Missisquoi Abenakis leased a small portion of our land to settlers for 91 years. That lease encompassed most of what's known as Swanton and Highgate, Vermont. The Abenaki Nation has had original exclusive sovereign jurisdiction in our land for tens of thousands of years, a relationship referred to in legal terminology as holding aboriginal title.

U.S. federal and international laws recognize the rights of a sovereign Indian Nation to self government, to hunt, fish, and travel on ancestral land without State regulation, licensing or taxes. During the last four hundred years the forces of occupation have tried

to wipe out the Abenaki people, polluted and misused Abenaki land, destroyed many sacred areas, and systematically denied us Abenaki survivors our aboriginal rights. Persecution has forced us to either give up our identity and way of life or fight to protect it.

U.S. federal law guarantees the aboriginal title and rights of Indian people from interference by State government. There is a large body of Federal Indian Law to prohibit a State from exercising jurisdiction over Indian people on Indian land because such cases present a federal question involving the United States Constitution, its statutes and/or treaties.¹ To avoid the application of federal law, the State of Vermont claims that the Abenaki Nation and especially Abenaki aboriginal title do not legally exist.

In a June, 1992 decision involving aboriginal rights, the Vermont Supreme Court ruled that extinguishment of Abenaki aboriginal title had occurred by 1791 because of an "intent to extinguish by assertion of dominion over the area" (emphasis added) by the occupiers. "Assertion of dominion" is a polite description indeed for the cruelty of military occupation.² In this political decision the Vermont Supreme Court asserts jurisdiction it does not have to protect fraudulent title to stolen Abenaki land.

The decision is an alibi for more state repression of people engaging in such threatening pursuits as fishing, hunting and travelling.³ Many of our people who stood up to defend our abo-

original rights are now defendants before the Vermont courts. Abenaki people are being prosecuted for exercising our aboriginal rights to fish and to travel; our land is being illegally taxed; our religious freedom is violated and our sacred sites desecrated by hydro and other development. We aren't in these courts of limited jurisdiction because we recognize the jurisdiction of the State of Vermont we are there because we recognize the force of the Vermont, local and military police. The State has given us a choice between showing up or being dragged in or worse.

The Abenaki people will not disappear; legally or otherwise. Nor will we ever surrender or sell our land. The Vermont Supreme Court can not eliminate the troublesome issue of aboriginal title, and therefore the possibility of a land claim by the Nation. The State threatens our community's survival by trying to erase our claim to our land. Self determination for our people depends on our right as a Sovereign Nation to both economic self sufficiency and self government.

People who are involved with the environmental movement in our area often rely on conservation easements and other State regulation of land use to protect sensitive areas. This has a very limited effect because State government is most strongly influenced by companies and individuals making large profits from misuse of the land. It is also a very shortsighted strategy with no historical background or understanding. This is Indian land, and the Abenaki People hold aboriginal title to it. The

Abenaki Nation, not the State of Vermont or any alleged landowner, should decide what happens on our land. We love and want to protect our land and would be grateful to have allies who will oppose the destruction of our land with us. But this alliance can only be built on the foundation of recognition and respect for Abenaki aboriginal title and rights.

Footnotes

¹According to the U.S. Constitution and the Trade and Intercourse Acts of 1790 and 1793 (et al.), the Federal government alone has empowered itself to make treaties or otherwise negotiate with a sovereign Indian Nation concerning aboriginal title and rights. The Northwest Ordinance of 1789, the declaration of the principles used to add new states to the federal union, spells out the relationship to be had between the new States and Indian Nations: "the utmost good faith shall always be observed towards the Indians; their land and property shall never be taken from them without their consent...". When Vermont entered the Union of the United States in 1791, it agreed to abide by all existing federal laws. Vermont violates the constitutionally defined relationship between Indian Nations and the State and federal governments by prosecuting members of the Abenaki Nation on our own land.

²According to Federal Law, extinguishment, the legal word for the termination of a Native Nation's aboriginal title

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Wilderness: Our Life Support System

An Interview with David Brower

David Brower was born one year after the passage of the Weeks Act. At the age of 80 he remains the most famous and respected defender of what he calls our "life support system." He is former Executive Director of the Sierra Club, founder of Friends of the Earth, and founder and current chairman of Earth Island Institute. Recently, he has published two volumes of autobiographical writings that are required reading for anyone interested in the history--or current battles--of the 20th century environmental movement: *For Earth's Sake & Work in Progress* (both published by Gibbs Smith). The day after this interview took place, Brower took off for a three-week visit to Lake Baikal.

Forum: This summer you celebrated your 80th birthday. At an age when most of your contemporaries have retired, why do you maintain such a breakneck pace?

Brower: I go along with Wallace Stegner: If you are going to get old, get as old as you can get. And I go along with Theodore Roosevelt: It's better to wear out than to rust out. Those two things keep me fired up. It's certainly a lot more fun bustling around using your energy than sitting down and playing bridge all day.

Forum: You've expressed a profound concern for the long-term health of the forests of the world. Why?

Brower: The most important thing we have in our life support system is the biological diversity of the forest ecosystems of the world--the little ones and the big ones. Interconnected life on the planet. That is the most important thing we've got. The industrial revolution started taking it apart in a way that we've never done before. Non-industrial countries still have some of the examples of what the industrial countries had, but those are being lost too, because of the industrial raids on the ecosystems of everybody else.

We don't hear much about the greatest loss we have going on today in biological diversity. We hear a lot about endangered species, but we don't hear enough about what I consider to be the most endangered species--those that we have not yet discovered. You hear all sorts of estimates on how fast we are losing species, and I think we are losing them faster than most of those experts are saying, because they are not estimating generously enough the number of species actually there. We have now discovered and identified 1.5 million species of plants and animals. The estimates of those that exist range from 4.5 million to 80 million, and 20-30 million you hear fairly often.

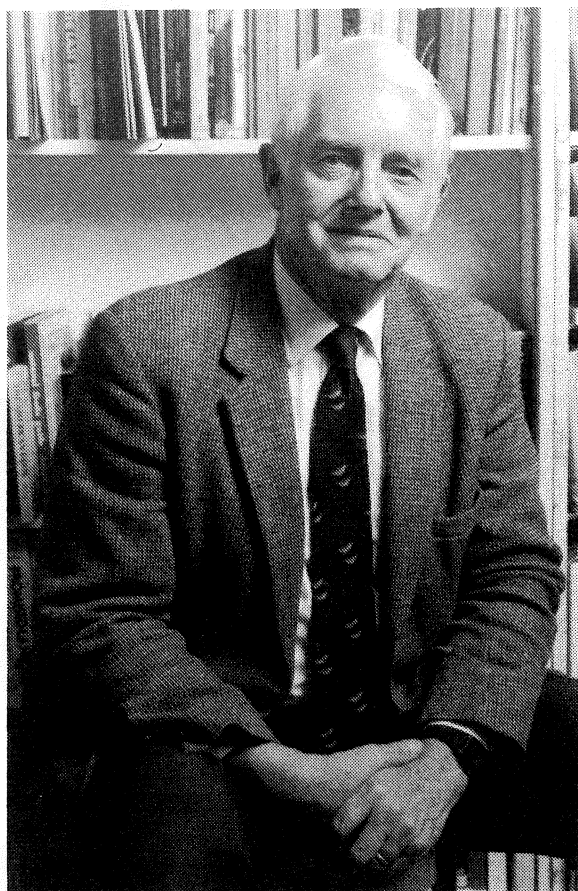
In any event, we have a great many species on this earth that we have not yet learned about, and we are getting rid of them before we have found out where they are. This is an unmeasured loss. We don't know how important some of these are to ourselves--to the system itself. We are trashing it without a second thought. This has got to stop. Biological diversity is the thing that we need above all to protect, to continue to try to understand, and to leave enough around so that we can look for what's there instead of just wondering what was there in places we've trashed.

Forum: Researchers in the Tropics and the Pacific Northwest are discovering that much of the diversity of these Ancient Forests is contained in the forest canopy. I wonder what biological diversity we've lost from the canopies of the Appalachian forests which were cut down long before we knew what to look for.

Brower: What scientists who are studying the forest canopy of the tropics by direct observation--working on a rubber mat suspended from a dirigible--are finding is pretty exciting stuff. What we'd find in the canopy of the Appalachians could have been pretty exciting stuff if we had any old growth canopy left.

Forum: In light of the fact that over 99 per cent of Appalachian old growth has been cut down, how can we begin to restore wild and healthy places to this region?

Brower: I would seek advice from the restoration biologists to make as few mistakes as possible. What we are trying to do is help nature heal. We must make a good study of what was there in the first place. There, of course, we only have partial knowledge. That will always be true, and we can certainly always



improve that knowledge of what was there by looking at some little samples of what may be left, if there are any. It's a lot easier if you've left a lot of the original and merely have to fill in between, rather than to leave nothing of the original and just try to guess what was there.

Forum: If we don't know what we had and what we've lost, it's very hard to do restoration work; that sounds like a strong argument for protecting existing wild places.

Brower: Yes. It's not so hard to plant trees, but it's hard to grow forests. And that's what restorationists have to try to do. You're trying to reconstitute an ecosystem. And that includes what goes into the soil before you've cleared it, and very few people know what was there because it's hard to tell.

Forum: What have you learned about soils over the years?

Brower: What I know about soils is simply what I've learned from people who know about soils. Bernard Frank, who used to be head of the Division of Forest Influences at the Forest Service Office in Washington told me 35 years ago that we know next to nothing about forest soils. At the first restoration conference, the Restoring the Earth Conference in Berkeley in January 1988, we had some experts on forest soils do a workshop on mycorrhizal fungi. They told how little they knew. During the question period I repeated Bernie Frank's remark and said, in view of what you've told us, what would you say now is known by the forest industry, the Forest Service, and the forestry schools about soils. They answered, "We know even less."

With that vast sea of ignorance around us, we've got to be very careful to hang on to what we've got and to look very hard for any evidence that can be found in the fragments of the biota we've scattered. It's not easy, and it's just an argument for hanging on to any samples we have of places where nature's work has been uninterrupted by us and our technology. Those are just incredibly important sources of information.

Forum: We have a lot of logging in this region, a lot of it is done as clearcuts. What's the impact of large scale clearcutting on soils? And why are soils important?

Brower: You don't have forests without forest soils. And if you don't know very much about forest soils, you aren't going to know very much about forests. Trees and other forest plants are soil's methods of defending itself against erosion. Soil is the all important thing. A line in my credo is: "The miracle of soil, alive and giving life, lying thin on the only earth." It is one of the most important resources we have, and we've got to find a way to dramatize this. Paul Sears once devised a sign for the Soils Conservation Service--an arrow point down directly be-

low the sign saying: "Desert--Six Inches." Right now, nature is helping subsidize an industry that does not know how to sustain itself.

Forum: Much of this region is dominated by transnational paper companies that own millions of acres. Don't they have the right to do what they want to do on their land?

Brower: This has been the assumption. This is very rapidly leading Earth to destruction, in spite of the environmental movement. The only acceptable philosophy is that we are brief tenants on this planet; that we do not have the right to do whatever we want to the earth. We've got to consider those who are going to follow. We are grateful that our predecessors--or at least some of them--considered us, or we wouldn't have anything left. Right now, with the rapid deterioration of the world's ecosystems and the world's life support systems, we've got to reverse this.

Forum: These companies justify their practices by citing the need for growth in this global economy. Is it possible to have an economy that takes care of our needs in an ecologically sustainable manner that is not a growth economy?

Brower: It is. And it has got to be. We have not yet tried to analyze the true costs of growth. All our candidates are calling for economic growth to get the economy back in action. They have never yet--because the economists have not tried to analyze the problem of growth. We are finally beginning to see the costs of growth. It takes an enormous amount of capital to fund growth. And it takes an enormous amount of irreplaceable environmental capital to sustain the kind of growth we've had in this country, and indeed, globally. Growth costs money; growth costs environmental capital. We are drawing upon the resources that should sustain humanity over the time that humanity would like to be around, and we're not doing that. We are not calculating the cost to the future or the cost to the earth. We can blame most of the economists for failing to have done that. Hazel Henderson says that economics is a form of brain damage.

Forum: How can we create and provide jobs, yet still protect ecological values?

Brower: We certainly need people working, but we do not need to maintain or create jobs that destroy the life support system. We don't need to create jobs to make weapons and nuclear arms and nuclear power plants. These things are too damaging. There is plenty of work to be done, and I would say that if we want to keep people busy then let's try undoing the damage we've done. We should not be doing more. We want jobs in restoration, not jobs in destruction.

Forum: If our society were to divert funding away from the military and nuclear weapons and power plants, how would you like to spend this so-called "Peace Dividend"?

Brower: Training people for those jobs in restoration, catching up on deferred maintenance of society itself, and helping Nature heal our life support system. This is an investment that could produce revenue and prosperity and end our present habit of creating a few hundred billionaires and millions of unemployed and legions of poor. Think, for example, what would happen, if, instead of spending billions on new jails, we had restoration teams to work on clean-up, recycling, the restoration of America and themselves!

We should also buy some of that paper company forest land that's for sale.

Forum: Do you feel the American public supports large public acquisition?

Brower: Yes, but right now there's a big threat to that support and that's the wise use movement which is very heavily funded by the abusers. They call it the wise use movement, but it's the "Wild Abusers" system that they're advocating. This threat is pretty scary because they are getting a helluva lot of money from the people who want to continue--or accelerate--the abuse of the Earth. Some of their money is coming from abroad from the corporations making ORVs.

Forum: It is currently estimated that 3-5 million acres (or perhaps even more) is for sale in the 26 million acre Northern Forest Lands Study region. If the public buys some of that land as part of the "Peace Dividend", much of it will probably be managed by the US Forest Service. Do you feel the Forest Service today is a responsible steward of the land entrusted to it? What reforms would you suggest for public land management?

Brower: I think public ownership is probably the best thing in the long run, but even if you have the public owning land, you still have to fight to make sure the public land managers are managing the land well, and that's not easy. Today's Forest Service doesn't know how to take care of land. The least we should do is to get it to rewrite its job description. I'm still hoping that we can have greater public involvement because the public has helped purchase the land: to make sure that the land is managed correctly and that the bad forest practices of the US Forest Service be fully exposed and corrected.

What we really need to do is abolish the Forest Service and set up a new agency. We must set up a national land service that is concerned with what happens to biological diversity, whoever the owner may be. This service should try to put boundaries around civilization so that it operates better within its limits and is not so scattered. Natural systems must be given respect throughout the Earth, whether the land is agriculture, or forest land, or land just to be looked at and admired, whether public or private.

Forum: How much wilderness should we save? Should we make a list of places we want to protect?

Brower: We don't want a list of places to save; we've got to come up with a short list: a list of places we are willing to trash. That will be one of the shortest lists we've ever come up with. A very easy shopping list; there would be nothing on that piece of paper. But, don't ask a developer. (He laughs)

Forum: Why should we save wilderness?

Brower: I'm just anxious now to save it because it's

the ultimate teacher. It has material on how the life support system works, what the interactions are that we've messed up almost everywhere else. This is the last sample of the way the world works. Wilderness is all we had while we were becoming people and for a long time afterward when we had become people. This is what gives us all our capabilities, our immunities, or whatever we've got going. We've got to remember that and respect it and hang on to the rich samples that we have around us. They are not nearly enough. But they are all that's left.

Wilderness is the thing that stimulated me in wanting to do anything at all about the environmental movement. It's my medicine, my goal.

Just to look at it with our own interests and no other interests in mind, our own direct medical interests; it is stupid to get rid of something that could be as valuable as penicillin has been. We may have already destroyed the cure for AIDS. We almost destroyed the last chance to have perennial corn. It was saved by accident in Mexico.

Wilderness contains the answer to all kinds of questions we have yet to answer. How do we devise a way of taking carbon, hydrogen and oxygen and stimulating them in the way the green leaf does so that they will rearrange themselves and store energy? We don't know how to do this. How do we build cement at the temperature of sea-water, the way a clam builds it? These are natural systems we'd better understand. All these little things are exciting things to learn. And we are not going to learn them because we've burned the book.

Land Acquisition Quiz

Land Acquisition, like Savings & Loan Bailouts can be expensive. But, how expensive? This quiz tests your grasp of economic reality.

Some observers believe that as much as 10 million or more acres of Northern Forest Land may be offered for sale in the next two decades. The price of 10 million acres of Northern Forest Land is _____ per cent of the current estimate for the Savings & Loan Bailout.

(a) 0.5% (b) 5.0% (c) 50% (d) 500%

Loon Mtn. Surprise: "Alternative 6"

7 Groups Call for Supplement to Revised Draft EIS

by David Carle

At a June 16, 1992 news conference, the U.S. Forest Service announced that after six years of consideration and a number of draft environmental statements, a new preferred alternative, "Alternative 6," had been developed for the proposed Loon Mountain Ski Area Expansion project final environmental impact statement (FEIS). The FEIS was to be issued in early August 1992. [Ed. Note: It is now mid-September and the FEIS has not yet been released.]

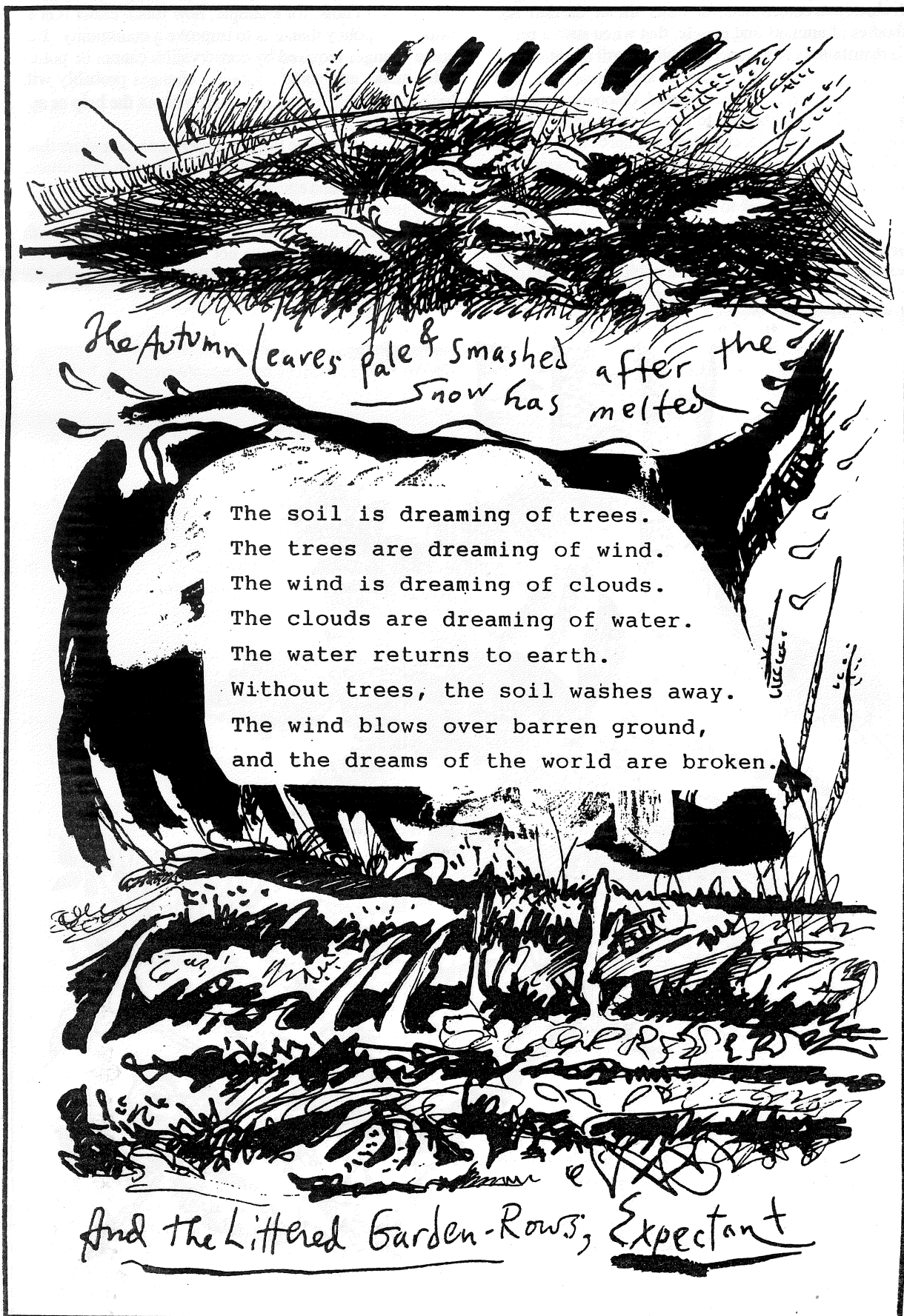
A coalition of six conservation organizations, the Lincoln Coalition of Concerned Citizens, National Audubon Society, Preserve Appalachian Wilderness, RESTORE: The North Woods, Wilderness Outlook Legal Foundation, and The Wilderness Society requested that Rick Cables, Supervisor of the White Mountain National Forest, issue a supplement to the Revised Draft Environmental Impact Statement. In a separate letter, the Sierra Club also requested a supplement. The supplement would document the impacts of the new preferred alternative, Alternative 6. Mr. Cables denied both requests upon which all seven organizations asked Floyd Marita, Region 9 Forester to reconsider Mr. Cables decision. The decision from the Regional Office is pending.

One of the issues raised in the request by the conservation organizations is the lack of public participation and review of the new preferred alternative. According to the June 16 press release issued by the Forest Service, Alternative 6 was "written after lengthy review of public comments, suggestions by the Joint Review Committee, and working with Loon Mountain Corporation." Yet, according to an August 11 letter from Richard Pierce, Staff Officer at the WMNF Supervisor's Office, Alternative 6 was "developed through discussions between us [US Forest Service] and LMRC [Loon Mountain Recreation Corporation] personnel. Full public disclosure of the alternative will appear in the FEIS for the project." Other than the press release dated June 16, 1992, no other information has been released concerning the new preferred alternative.

A broader problem appears to be that as the process winds toward conclusion, weariness and apathy appear to be wearing down some conservation groups that have struggled with this issue for six years. Also, it appears that the Forest Service is taking shortcuts, thus putting the integrity of the whole process in jeopardy.

Although the WMNF does not have actual figures, it estimates that it will have spent about \$340,000 of public money to assess Loon Mountain's expansion proposal. Some skeptics suggest this figure is low. To place this in perspective, the WMNF spent \$619,000 in FY 1991 on "Wildlife." The WMNF has not itemized this, but all expenditures pertaining to staff biologist salaries, endangered species protection, monitoring, and research are presumably included in this figure. Perhaps many clearcuts disguised as "wildlife management" cuts are also included.

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Conservation Is Good Work

by Wendell Berry

There are three kinds of conservation currently operating: the first is the preservation of places that are grandly wild or "scenic" or in some other way spectacular. The second is what is called "conservation of natural resources"—that is, of the things of nature that we intend to use: soil, water, timber, and minerals. The third is what you might call industrial trouble-shooting: the attempt to limit or stop or remedy the most flagrant abuses of the industrial system. All three kinds of conservation are inadequate, separately and together.

Saving The Spectacles

Right at the heart of American conservation, from the beginning, has been the preservation of spectacular places. The typical American park is in a place that is "breath-takingly" beautiful, and of little apparent economic value. Mountains, canyons, spectacular land-forms, geysers, waterfalls—these are the stuff of parks. There is, significantly, no prairie national park. Wilderness preserves, as Dave Foreman points out in his article "The New Conservation Movement" (*Wild Earth*, Summer 1991), tend to include much "rock and ice" and little marketable timber. Farmable land, in general, has tempted nobody to make a park. Wes Jackson has commented with some anxiety on the people who charge blindly across Kansas and eastern Colorado, headed for the mountains west of Denver. These are nature lovers and sight-seers, but they are utterly oblivious of, or bored by, the rich natural and human history of the plains. The point of Wes Jackson's anxiety is that the love of nature that limits itself to the love of places that are "scenic" is implicitly dangerous, because it tends to exclude unscenic places from nature and from the respect that we sometimes accord to nature. This is why so much of the landscape that is used is also abused; it is used solely according to standards dictated by the financial system, not at all according to standards dictated by the nature of the place. Moreover, as we are beginning to see, it will be extremely difficult to make enough parks to preserve vulnerable species and the health of ecosystems or large watersheds.

Conserving Resources

"Natural resources," the parts of nature that we use, are the parts outside the parks and preserves (which, of course, we also use). But "conservation of natural resources" is now in confusion because it has been much lip-served but not much thought about or practiced. Part of the confusion is caused by thinking of "natural resources" as belonging to one category when, in fact, they belong to two: surface resources, like soils and forests, that can be preserved in use; and underground resources, like iron or oil, that cannot be. The one way to conserve the mineable fuels and materials that can only be exhausted by use is to limit use. At present, we have no intention of limiting such use, and so we cannot say that we are interested in the conservation of exhaustible resources. Surface or renewable resources, on the other hand, can be preserved in use so that their yield is indefinitely sustainable. Sustainability is a hopeful concept, not only because it is a present necessity, but because it has a history. We know, for example, that some agricultural soils have been preserved in continuous use for several thousand years. We know, moreover, that it is possible to improve soil in use. And it is clear that a forest can be used in such a way that it remains a forest, its biological communities intact, and its soil undamaged, while producing a yield of timber. But the methods by which exhaustible resources are extracted and used have set the pattern also for the use of renewable resources, with the result that, now, soils and forests are not merely being used, but are being used up, exactly as coal seams are used up. Since the sustainable use of renewable resources probably depends upon the existence of settled, small local economies and communities capable of preserving the local knowledge necessary for good farming and forestry, there is no easy or quick answer to the problem of the exhaustion of renewable resources. It's unlikely that we can conserve natural resources so long as our extraction and use of the goods of nature are wasteful and improperly scaled, or so long as these resources are owned or controlled by absentees, or so long as the standard of extraction and use is profitability rather than the health of natural and human communities.

Reacting To Outrages

Because we are living in an era of ecological crisis, it is understandable that much of our anxiety and energy is

focused on exceptional cases, the outrages and extreme abuses of the industrial economy: global warming, the global assault on the last remnants of wilderness, the extinction of species, oil spills, chemical spills, Love Canal, Bhopal, Chernobyl, the burning oil fields of Kuwait. But a conservation effort that concentrates only on the extremes of industrial abuse tends to suggest to the suggestible that the only abuses are the extreme ones, when, in fact, the earth is probably suffering more from many small abuses than from a few large ones. By treating the spectacular abuses as exceptional, the powers that be would like to keep us from seeing that the industrial system (capitalist or communist or socialist) is in itself, and by necessity of all of its assumptions, extremely dangerous, and that it exists to support an extremely damaging way of life. The large abuses exist within, and because of, a pattern of smaller abuses. Much of the Sacramento River is dead now because a carload of agricultural poison was spilled into it. The powers that be would like us to believe that this colossal "accident" was an exception in the general pattern of safe use. Diluted and used according to the instructions on the label, they will tell us, this product is harmless. They neglect to acknowledge any part of the pattern of implications that surrounds the accident: that if this product is to be used in dilution almost everywhere, it will have to be manufactured, stored and transported in concentration somewhere; that even in "harmless" dilution such chemicals contaminate the water, the air, the rain, and the bodies of animals and people; that when such a product is distributed to the general public, it will inevitably be spilled in concentration in large or small quantities, and that such "accidents" are anticipated, discounted as "acceptable risk," and charged to nature and society by the powers that be; that such chemicals are needed, in the first place, because the scale, the methods, and the economy of American agriculture are all monstrously out of kilter; that such chemicals are used to replace the work and intelligence of people forced out of farming by free-market economies; and that such a deformed agriculture is made necessary in the first place, by the public's demand for a

diet that is at once cheap and luxurious—too cheap to support adequate agricultural communities or good agricultural methods or good maintenance of agricultural land, and yet so goofily self-indulgent as to demand, in every season, out-of-season food produced by earth-destroying machines and chemicals. We tend to forget, too, in our understandable and necessary outrage at the government-led attack on the public lands and the last large tracts of wilderness, that for the very same reasons and to the profit of the very same people, thousands of woodlots are being abusively and wastefully logged.

Here, then, are three kinds of conservation, all of them urgently necessary, and all of them failing. Conservationists have won enough victories to give them heart and hope and a kind of accreditation, but despite all their efforts, our soils and waters, forests and grasslands are being used up. Kinds of creatures, kinds of human life, good, natural and human possibilities are being destroyed. Nothing now exists anywhere on earth that is not under threat of human destruction. Poisons are everywhere. Junk is everywhere.

Reviving Small Economies

These dangers are large and public, and they inevitably cause us to think of changing public policy. This is good, so far as it goes. There should be no relenting in our efforts to influence politics and politicians, but in the name of honesty and sanity we must recognize the limits of politics. Think, for example, how much easier it is to improve a policy than it is to improve a community. But some changes required by conservation cannot be politically made, and some necessary changes probably will have to be made by the governed without the help or approval of the government.

I must admit here that my experience over more than twenty years as part of an effort to influence agricultural policy has not been encouraging. Our arguments directed at the government and the universities by now remind me of the ant crawling up the buttocks of the elephant with love on his mind. We have not made much impression. My conclusion, I imagine, is the same as the ant's, for



these great projects, once undertaken, are hard to abandon: we have got to get more radical.

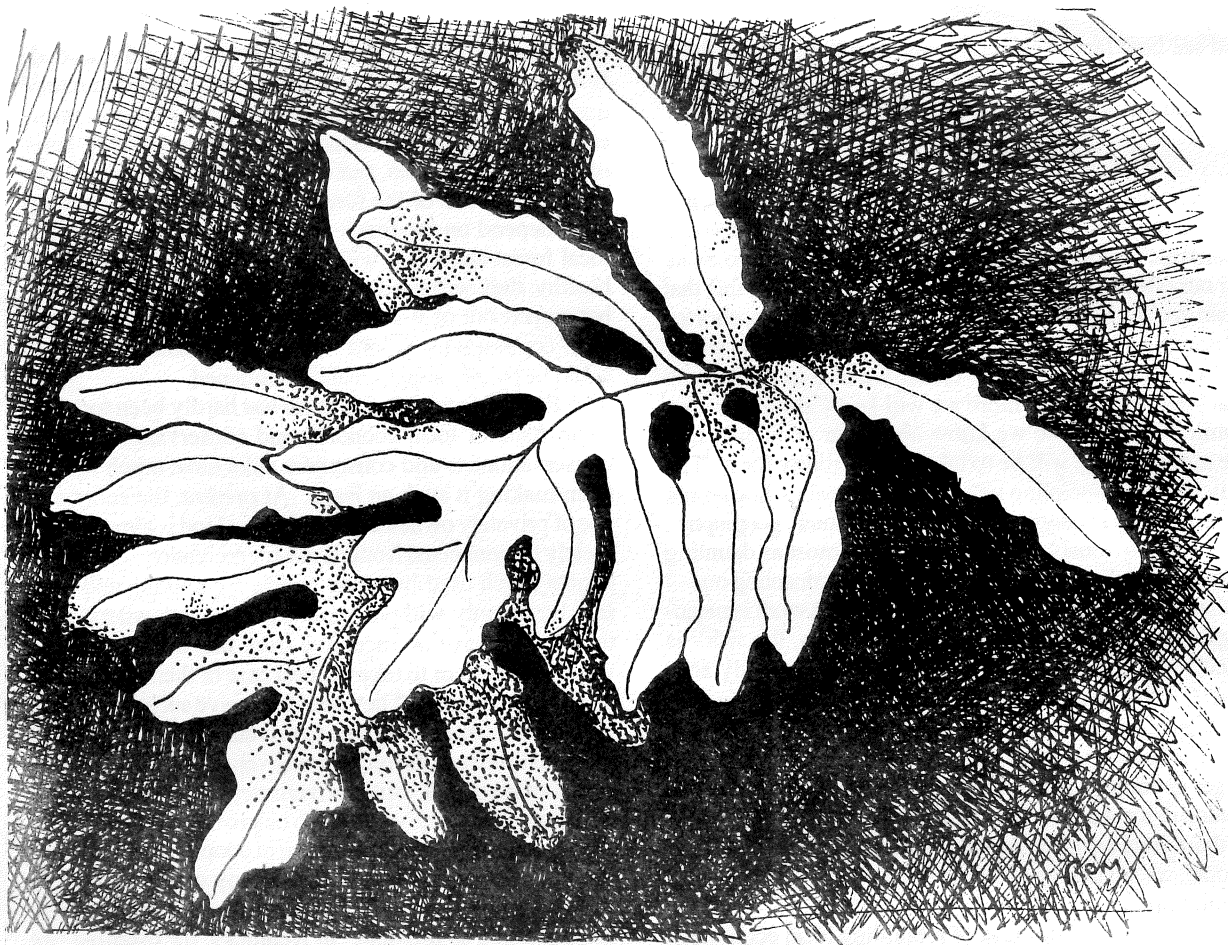
However destructive may be the policies of the government and the methods and products of the corporations, the root of the problem is always to be found in private life. We must learn to see that every problem that concerns us as conservationists always leads straight to the question of how we live. The world is being destroyed—no doubt about it—by the greed of the rich and powerful. It is also being destroyed by popular demand. There are not enough rich and powerful people to consume the whole world; for that, the rich and powerful need the help of countless ordinary people. We acquiesce in the wastefulness and destructiveness of the national and global economies by acquiescing in the wastefulness and destructiveness of our own households and communities. If conservation is to have a hope of succeeding, then conservationists, while continuing their effort to change public life, are going to have to begin the effort also to change private life.

The problems are caused, not just by other people, but by ourselves. And this realization should lead directly to two more. The first is that solving these problems is not work merely for so-called environmental organizations and agencies, but also for individuals, families, and local communities. We are used to hearing about turning off unused lights, putting a brick in the toilet tank, using water-saving shower heads, setting the thermostat low, sharing rides, and so forth—pretty dull stuff. But I'm talking about actual jobs of work, that are interesting because they require intelligence, and because they are accomplished in response to interesting questions: What are the principles of household economy, and how can they be applied under present circumstances? What are the principles of a neighborhood or a local economy, and how can they be applied now? What do people already possess in their minds and bodies, in their families and neighborhoods, in their dwellings and in their local landscape, that can replace what is now being supplied by our consumptive and predatory so-called economy? What that we are now paying dearly for can we supply to ourselves cheaply or for nothing? To answer such questions requires more intelligence and involves more pleasure than all the technological breakthroughs of the last two hundred years.

Second, the realization that we ourselves, in our daily economic lives, are causing the problems we are trying to solve ought to show us the inadequacy of the language we are using to talk about our connection to the world. The idea that we live in something called "the environment," for instance, is utterly preposterous. This word came into use because of the pretentiousness of learned experts who were embarrassed by the religious associations of "creation" and who thought "world" too mundane. But "environment" means that which surrounds or encircles us; it means a world separate from ourselves, outside us. The real state of things, of course, is far more complex and intimate and interesting than that. The world that environs us, that is around us, is also within us. We are made of it; we eat, drink, and breathe it; it is bone of our bone and flesh of our flesh. It is also a Creation, a holy mystery, made for and to some extent by creatures, some of whom are humans. This world, this Creation, belongs in a limited sense to us, for we may rightfully require certain things of it—the things necessary to keep us fully alive as human beings; we also belong to it, and it makes certain rightful claims upon us: that we care properly for it, that we leave it undiminished, not just to our children, but to all the creatures who will live in it after us.

None of this intimacy and responsibility is conveyed by the word "environment." That word is a typical product of the old dualism that is at the root of most of our ecological destructiveness. So, of course, is "biocentrism." If life is at the center, what is at the periphery? And, for that matter, *where* is the periphery? "Deep ecology," another bifurcating term, implies that there is, a couple of layers up, a shallow ecology that is not so good, or that an ecosystem is a sort of layer cake with the icing on the bottom. Not only is this language incapable of giving a true description or suggestion of our relation to the world; it is also academic, artificial, and pretentious. It is the sort of language used by a visiting expert who does not want the local people to ask any questions. (I am myself an anthropobioidiointerpenetrant and a gastrointeroenvironmentalist, but I am careful to say so only in the company of other experts.)

No settled family or community has ever called its home place an "environment." None has ever called its feeling for its home place "biocentric" or "anthropocentric." None has ever thought of its connection to its home place as "ecological," deep or shallow. The concepts and insights of the ecologists are of great usefulness in our predicament, and we can hardly escape the need to speak of "ecology" and "ecosystems." But the terms themselves



are culturally sterile. They come from the juiceless, abstract intellectuality of the universities that was invented to disconnect, displace, and disembodify the mind. The real names of the environment are the names of rivers and river valleys, creeks, ridges and mountains, towns and cities, lakes, woodlands, lanes, roads, creatures, and people. The real name of our connection to this everywhere different and differently named earth is "work." We are connected by work even to the places where we don't work, for all places are connected; it is clear by now that we cannot exempt one place from our ruin of another.

The name of our *proper* connection to the earth is "good work," for good work involves much giving of honor. It honors the source of its materials; it honors the place where it is done; it honors the art by which it is done; it honors the thing that it makes, and the user of the made thing. Good work is always modestly scaled, for it cannot ignore either the nature of individual places or the differences between places; and it always involves a sort of religious humility, for not everything is known. Good work can be defined only in particularity, for it must be defined a little differently for every one of the places and every one of the workers on the earth.

The name of our present society's connection to the earth is "bad work"—work that is only generally and crudely defined, that enacts a dependence that is ill understood, that enacts no affection and gives no honor. Every one of us is to some extent guilty of this bad work. This guilt does not mean that we must indulge in a lot of breast-beating and confession; it means only that there is much good work to be done by every one of us, and that we must begin to do it. All of us are responsible for bad work, and not so much because we do it ourselves (though we all do it) as because we have it done for us by other people. And here we are bound to see our difficulty as almost overwhelming. How, in this global economy, are we to render anything like an accurate geographic account of our personal economies? How do we take our lives from this earth that we are so anxious to protect and restore to health? What proxies have we issued, and to whom, to use the earth in our behalf?

Most of us get almost all the things we need by buying them; most of us know only vaguely, if at all, where those things come from; and most of us know not at all what damage is involved in their production. We are almost entirely dependent upon an economy of which we are almost entirely ignorant. The provenance, for example, not only of the food we buy at the store, but of the fertilizers, fuels, and other materials necessary to grow, harvest, transport, process, and package it, is almost necessarily a mystery to us. To know the full economic history of a head of supermarket cauliflower would require an immense job of research. To be so completely and so ignorantly dependent on the present abusive food economy certainly defines us as earth abusers. It also defines us as potential victims.

Living as we now do in almost complete dependence on a global economy, we are put inevitably into a position of ignorance and irresponsibility. No one can know the whole globe. We can connect ourselves to the globe as a

whole only by means of a global economy which, without knowing the earth, plunders it for us. The global economy (like the national economy before it) operates on the superstition that the deficiencies or needs or wishes of one place may be safely met by the ruination of another place. To build houses here, we clear-cut forests there. To have heat and air-conditioning here, we strip-mine the mountains there. To drive our cars here, we sink our oil wells there. It is an absentee economy. Most people aren't using or destroying what they can see. If we cannot see our garbage, or the grave we have dug with our energy proxies, then we assume that all is well. The issues of carrying capacity and population control remain abstract and distant to most people for the same reason. If this nation or region cannot feed its population, then food can be imported from other nations or regions. An economy without limits is an economy without discipline. All the critical questions affecting our use of the earth are left to be answered by "the market" or the law of supply and demand, which proposes no limit upon either supply or demand.

Conservationists of all kinds would agree, I think, that no discipline, public or private, is implied by the industrial economy, and that none is practiced by it. The implicit wish of the industrial economy is that producers might be wasteful, shoddy, and irresponsible, and that consumers might be extravagant, gullible, and irresponsible. To fulfill this wish, the industrial economy employs an immense corps of hiring politicians, publicists, lobbyists, admen, and adwomen. The consequent ruin is notorious; we have been talking about it for generations; it brought conservation into being. And conservationists have learned very well how to address this ruin as a public problem. There is now no end of meetings and publications in which the horrifying statistics are recited, usually to the end that pressure should be put on the government to do something. Often, the pressure has been put on and the government has done something. The government, however, has not done enough, and may never do enough. It may be that the government cannot do enough. The government's disinclination to do more is explained, of course, by the government's bought-and-paid-for servitude to interests that do not want it to do more. But there may also be a limit of another kind: a government that could do enough, assuming it had the will, would almost certainly be a government radically and unpleasantly different from the one prescribed by our constitution. A government undertaking to protect all of nature that is now abused or threatened would have to take total control of the country. Police and bureaucrats—and opportunities for malfeasance—would be everywhere. To wish only for a public or a political solution to the problem of conservation may be to wish for a solution as bad as the problem and still unable to solve it.

The way out of this dilemma is to understand the ruin of nature as a problem that is both public and private. The failure of public discipline in matters of economy is only the other face of the failure of private discipline. If we have worked at the issues of public policy so long and exclusively as to bring political limits into sight, then let us turn, not instead but also, to issues of private economy

and see how far we can go in that direction. It is a direction that may take us farther, and produce more satisfactory and lasting results, than the direction of policy.

Reviving Good Work

The dilemma of private economic responsibility, as I said, is that we have allowed our suppliers to enlarge our economic boundaries so far that we cannot be responsible for our effects on the world. The only remedy for this that I can see is to draw in our economic boundaries, shorten our supply lines, so as to permit us literally to know where we are economically. The closer we live to the ground that we live from, the more we will know about our economic life; the more we know about our economic life, the more able we will be to take responsibility for it. The way to bring discipline into one's personal or household or community economy is limit one's economic geography.

This obviously sets up an agenda almost as daunting as the political agenda. The difference—a consoling one—is that, in influencing policy, only large-scale work is meaningful, but in reforming private economies, the work is necessarily modest and can be started by anybody anywhere. What is required is the formation of local economic strategies, and eventually of local economies, by which to resist abuses of natural and human communities by the larger economy. And, of course, in talking about the formation of local economies capable of using an earthly place without ruining it, we are talking about the reformation of people; we are talking about reviving good work as an economic force.

If we think of this task of rebuilding local economies as one large task that must be done in a hurry, then we will again be overwhelmed and will want the government to do it. If, on the other hand, we define the task as beginning the reformation of our private or household economies, then the way is plain. What we must do is use well the considerable power we have as consumers: the power of choice. We can choose to buy or not to buy, and we can choose what to buy. The standard by which we choose must be the health of the community—and by that we must mean the *whole* community: ourselves, the place where we live, and all the humans and other creatures who live there with us. In a healthy community, people would be richer in their neighbors, in neighborhood, in the health and pleasure of neighborhood, than in their bank accounts. And so it is better, even if the cost is greater, to buy near at hand than to buy at a distance. It is better to buy from a small, privately owned local store than from a chain store. It is better to buy a good product than a bad one. Do not buy anything you don't need. Do as much as you can for yourself. If you cannot do something for yourself, see if you have a neighbor who can do it for you. Do everything you can to see that your money stays as long as possible in the local community. If you have money to invest, invest it locally, both to help the local community and to keep from helping the industrial economy that is destroying local communities. Ask yourself how your money could be put at minimal interest into the hands of a young person who wants to start a farm, a store, a shop, or a small business that the community needs. This agenda can be followed by individuals and single families. If it is followed by people in groups—churches, conservation organizations, neighborhood associations, and the like—the possibilities multiply and the effects will be larger.

The economic system that most affects the health of the world, and that may be most subject to consumer influence, is that of food. And the issue of food provides an excellent example of private change with public implications. You can start to reform your own food economy without anybody's permission or help. If you have a place to do it, grow some food for yourself. Growing some of your own food gives you pleasure, exercise, knowledge, sales resistance, and standards. Your own food, if you grow it the right way, will taste good, and so will cause you to wish to buy food that tastes good. Buy locally grown food. Tell your grocer that you want locally grown food. If you can't find locally grown food in stores, then see if you can deal directly with a local farmer. The value of this, for conservationists, is that when consumers are acquainted and friendly with their producers, they can influence production. They can know the land on which their food is produced. They can refuse to buy food produced with dangerous chemicals, or by other destructive practices. As these connections develop, local agriculture will diversify, become more healthy and more stable, employ more people. As local demand increases and becomes more knowledgeable, value-adding small food-processing industries will enter the local economy. Everything that is done by the standard of community health will make new possibilities for good work, the responsible use of the world.

The forest economy is not so obviously subject to

consumer influence, but such influence is sorely needed. Both the forests themselves and their human communities suffer for the want of local forest economies—properly scaled wood products industries that would be the basis of stable communities, and would provide local incentives for the good use of the forest. People who see that they must depend on the forest for generations, in a complex local forest economy, will want the forest to last and be healthy, they will not want to see all the marketable timber ripped out of it as fast as possible. Both forest and farm communities would benefit from technologies that could be locally supplied and maintained.

The economy of recreation has hardly been touched as an issue of local economy and conservation, though conservationists and consumers alike have much to gain from making it such an issue. At present, the economic use of privately owned farm and forest land is almost completely disconnected from its use for recreation. Such land is now much used by urban people for hunting and fishing, but mainly without benefit to the landowners, who therefore receive no incentive from this use to preserve wildlife habitat or to take the best care of their woodlands and stream margins. They need to receive such incentives. Public funds might be given to private landowners to preserve and enhance the recreational value—that is, the wildness—of their land. Since governments are unlikely to do this soon, the incentives need to be provided by consumer and conservation groups working in cooperation with farm groups. The rule of the food economy ought to apply to the recreation economy: find your pleasure and your rest as near home as possible. In Kentucky, for example, we have hundreds of miles of woodland stretching continu-

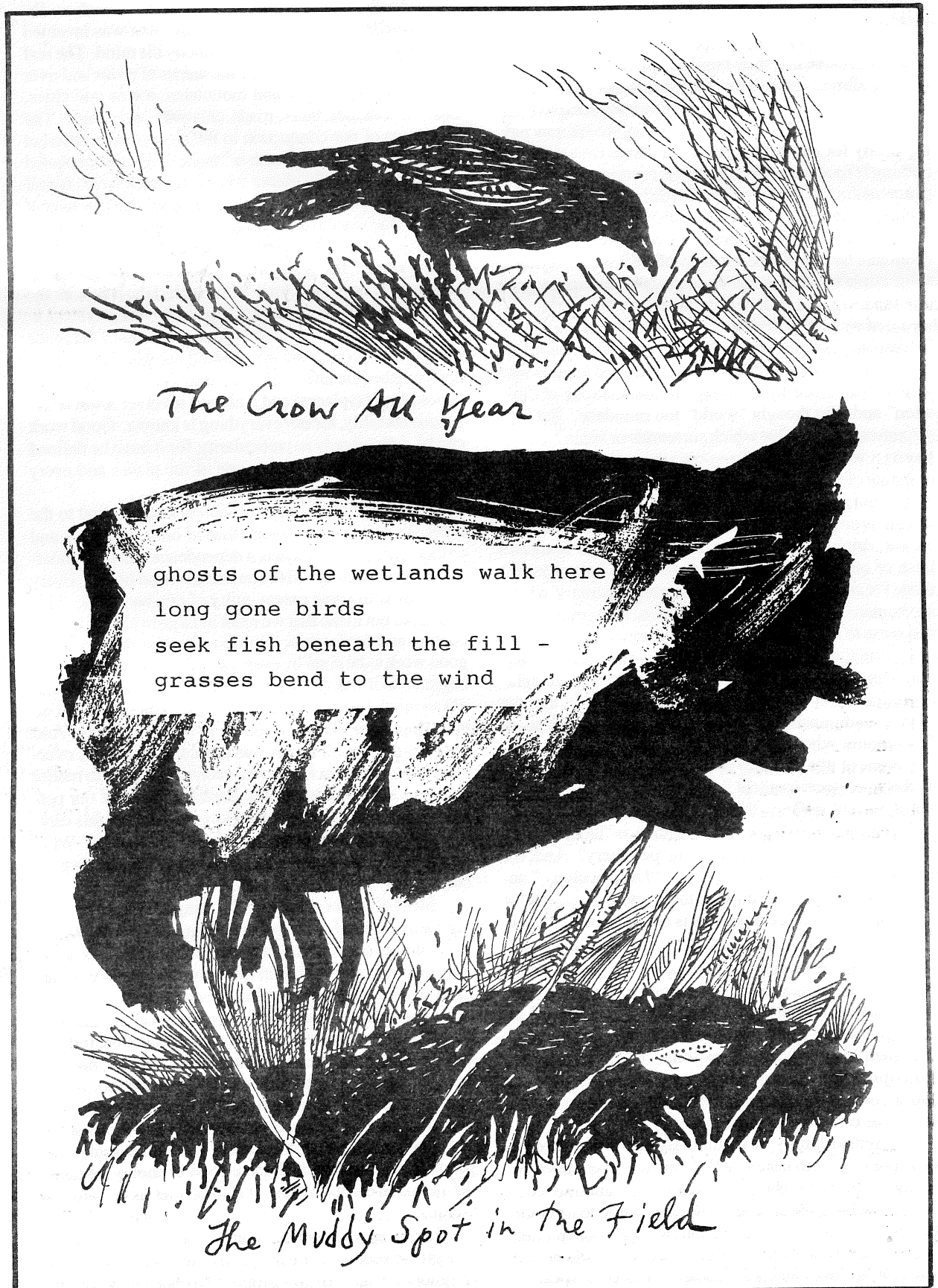
ously along the sides of our creek and river valleys. Why should conservation and outdoor groups not pay an appropriate price to farmers to maintain hiking trails and camp sites and preserve the forests in such places. The money that would carry a family to a vacation in a distant national park could thus be kept at home, and partly used (for there would be a saving) to help the local economy and protect the local countryside.

The point of all this is the use of local buying power, local gumption, and local affection to see that the best care is taken of the local land. This sort of effort would bridge the gap, now so destructive, between the conservationists and the small farmers and ranchers, and that would be one of its great political benefits. But the fundamental benefit would be to the world and ourselves. We would begin to protect the world, not just by conserving it, but also by living in it.

c. by Wendell Berry, 1992. From a forthcoming collection of essays to be published in the Fall of 1993 by Pantheon Books. Reprinted by permission of the author.

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Wendell Berry is a farmer and a writer. His literary works include *The Unsettling of America*, *The Gift of Good Land*, *Home Economics*, and *What Are People For?*. His farming works include the successful restoration of an eroded hillside farm near the Kentucky River.



Timber Industry Shortchanges Rural Communities

Cui Bono? Who Benefits?

by William Butler

The first draft of Northern Forest Lands funding legislation of 1991 proposed: "...to promote forest land conservation and rural economic development..." Later, the Maine representatives to the Northern Forest Lands Council deleted the word "rural" from the version that they supported at the Bangor hearing in July 1991.

To those of us who live and work in Maine's rural, timber-based economy, the loss of this one word in the statement of purpose removed any real hope that the NFL Council would begin to address the economic depression of communities across the study area. The 1990 Northern Forest Lands Study is priceless in that it formally recognized the strong correlation between low per-capita income and a timber-based economy. Hancock County, where I have lived and worked in the woods for forty years was the lowest of the low.

The NFL Study was prompted by the threat of "development" fragmenting the large holdings in the region. The reaction to this perceived threat was a study of means of preventing such subdivision. A goal emerged of preserving existing ownership patterns and traditional uses which have served the region well. This is an unexamined premise, probably written by people owning, each, 100,000 acres or more.

My neighbors in eastern Maine aren't as fearful of shorefront development as the Council is. We see shorefront now owned by Georgia-Pacific, Diamond-Oxy, or Champion as parked under Maine's tree-growth tax reduction, while a town half or more owned by these landowners has failed to meet inflating costs of community. Local assessors actually say they'd like to have some camps in town to spread the tax base. Don't offer them a rebate for the reduced tax from other taxes that we pay, mostly the sales and income tax. They know it's not free money.

What's so great about large owner-ships? Before Georgia-Pacific bought Great Northern, our 17 largest owners had 10.5 million acres; 100,000 acres were held by the least of these.

Did an ownership pattern that Henry Magnusson of the Paper Industry Information Office described with relish as "the largest contiguous industrial holding in the United States" guarantee sound forestry? Not in Maine.

Did we have a lot of good jobs in the North Woods? No, commuting Quebecers cut almost half the wood each year. They aren't paid well, but their skidders and trucks are subsidized by their governments. Big woods employ-

ers (the same large landowners) love workers with this kind of subsidy; even more they love the medical protection in lieu of workers' comp that Canadians bring with them.

Don't large ownerships assure us of good jobs in paper and lumber mills? Paper mill jobs were the best-paying in the state, but are now in decline, both in numbers and in union membership. But in sawmills? Sorry, most of them are in Canada, just over the Maine border, where they are subsidized in construction, operation, log cost, and cheap power, as long as the workers are Canadian. A typical export number is 500 million board feet of logs a year. Much is cut by the commuters described above. A 1981 Maine Forest Service study quotes a Quebec authority as showing 2000 direct jobs from these logs, with a total of direct and indirect employment of 30,000.

I once goaded Robert Hintze, of International Paper, into admitting publicly that his sawmill was in Quebec because of the subsidies, and would be in Maine when he got a good deal.

Well, they must pay a lot of taxes, right? It's sad, but they have rigged this, too. We have about seven of the big ones in Maine, and they own half the state--what was the better half if you like the woods. On their mills, they pay only local taxes in the town, which may be a large part of the town budget, but is very small in absolute amount, relative to the mill's earnings. The mill is not taxed to support the state General Fund. People are.

Don't the lands support the State? No, most of the land is in the unsettled or unorganized territory (regulated by LURC--the Land Use Regulatory Commission), where the only tax-supported services are plowing snow on a few roads, support of two schools, and, until 1993, "their" fire department--the Maine Forest Service. Nothing goes to the General Fund.

How about corporation tax? Maine's is piggy-backed on the federal tax. Three quarters of our \$1.5 billion state budget is paid by sales tax and individual income tax--75%. Corporate income tax contributes 3.5%. People who bet or use alcohol or tobacco pay 10% of state revenues. The twelve million acres under the jurisdiction of LURC pay in 0.7%, dedicated to the few local services.

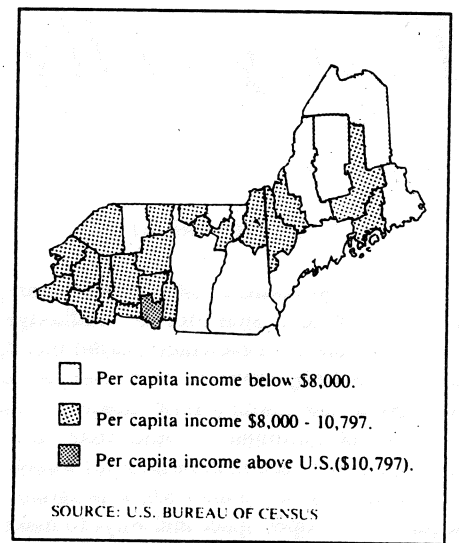
Don't they buy a lot of wood from small landowners? The answer is: more and more (neglecting the current Depression), but do they pay a good price? Hardly. When seven of them controlled most of the woodland in Maine, they had a buyer's market. The premise of our School of Forestry at Orono, and of the U.S. Forest Service, was that you give away your worthless pulpwood and make some money growing sawlogs. This giveaway is the predicate for what passes for forest management. It says that most of what you grow in Maine is suited only as fiber, and you must sell it cheap. Fortunately for my argument, Dwight Hair, chief economist of the USFS told us in Orono that "Pulpwood is the highest and best use of a tree. Given any degree of shortage, paper makers can outbid all other users--lumber, plywood, toothpicks." Some of us at the Down East RC&D forestry committee are working on a landowners' marketing association whose purpose is to get that higher value for pulpwood.

I submit we'd be a lot better off today if the forest ownership were as fragmented as in the South. We might have more wood left than we do. Certainly we small growers would get a better price for pulpwood, as in the South.

Will we miss them when they're gone? Would you? Don't get me wrong--we need paper mills. Remember what Hair said? That's where the money is. Most of what comes out of a steady-state forest is fiber, and, as a grower, you want this high-value market. The mills have to be of a sustainable size, not the go-for-broke monsters that had little Maine out-producing big Wisconsin for a while. We will have to re-invent paper making on a human scale.

Ecologists, environmentalists, recreationists, preservationists, whatever category you like, all should take another look at the Faustian bargain you are now offered by the NFL Council and the large landowners. Stephen Schley, whose family, the Pingree Heirs, has a million acres and supplies sawmills in Quebec, is crying that death duties raise the problem of having to sell land to pay the inheritance tax. The Pingrees are a big family, and they have had the land for over a hundred years. They have taken a lot of money off the land, selecting which township to strip. We haven't seen them sell off much in that time. They did sacrifice a few thousand acres around Big Reed Mountain for \$400 an acre. They cut the top off Big Reed Mountain before they sold it.

Capital gains is the only other tax shelter that these people don't have today. They did have what IRS called the finest tax shelter extant until the Reagan Administration. Capital gains, as the timber people had it construed, was not just the difference between what you paid for property and what you sold it for, but included the value of standing timber, called stumpage. Nothing



Per Capita Income, 1985.

wrong with that, except that stumpage came, with IRS approval, to subsume ordinary corporate taxable profits. [Ed. Note: Through creative accounting, stumpage values were inflated to include far more of corporate profits in vertically integrated companies than just stumpage-value.] This effectively immunized wood-based industry from tax.

Finally, look at the proposed deal--we excuse them from having to support the community through taxes, and they will keep the woods just as it is. Further, they will keep the local economies just as they are. I suppose some younger people think the Maine forest is still the North Woods. Even when I first got into it, in 1948, it was long past being untouched. If you want to bargain, get something better than the status quo for giving away our money. Get some real silviculture. You will be asking for a real forest, not a farm, real jobs for local people, and tax support for community--in all, a productive natural resource that is a pleasure for all to enjoy.

William Butler has worked in the Maine Woods for over 40 years. He is a member of the Maine Citizens Advisory Committee to the Northern Forest Lands Council, Chairman of the Aurora Planning Board and founder of Friends of the Maine Woods.

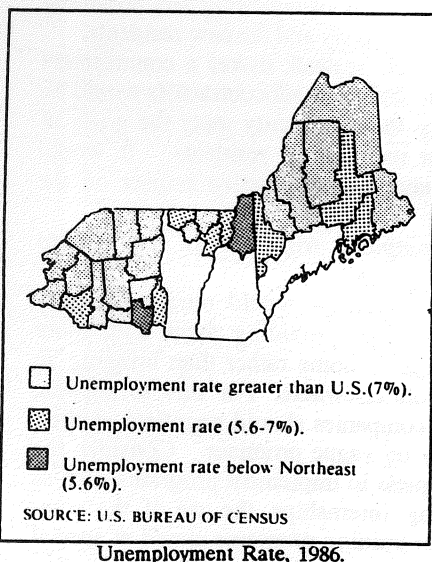
Who Got the Tax Breaks?

Astute observers of the Paper Industry have noticed that the same companies that claim they need tax breaks to survive already enjoy unimaginably huge tax breaks. Can you match the paper company with the size of its tax break? Did you notice that many of these same companies also paid fines for pollution (see Paper Industry Quiz I)? How big are the tax breaks? How big were the fines? This quiz is based on information contained in Mitch Lansky's forthcoming *Beyond the Beauty Strip*.

Choose your answers from these 5 Paper Companies:

Champion International, Great Northern Nekoosa, International Paper, Scott Paper, St. Regis

- (1) For the years 1982-85, _____ reported profits totaling \$427.8 million, yet it received refunds from the U.S. Treasury of \$47.2 million for a tax rate of minus 11%.
- (2) _____ reported profits of \$481 million during the same period but received refunds totaling nearly \$60 million, for a tax rate of minus 10.3%.
- (3) _____ reported profits of \$877.8 million for 1982-85 and paid \$45 million in taxes for a tax rate of 6.6%.
- (4) _____ reported profits of \$366.5 million for the 4-year period and paid \$30.5 million in taxes for a rate of 8.3%. Its merger with _____ resulted in huge write-offs in 1982. The company received more in tax rebates from the government than it reported in profits: \$300,000 in profits and \$1.6 million in refunds, for a tax rate of minus 533.3%.



Unemployment Rate, 1986.

Ecologically Sustainable Community Economics

Questions for Citizens to Consider

by Deborah Brighton

Across the country, citizens are meeting to discuss the future of their small towns. Although each community is unique, somewhere toward the top of the list of goals and objectives in each town are usually concerns about maintaining rural character, quality of life and sense of community. Other items on many small town wish lists are maintaining affordable housing, a school addition, a summer swim program, greenways, acquisition of open space and ways to make a good living.

In many communities, questions concerning economic growth have polarized the public. Some citizens believe any commercial industrial growth is vitally needed in order to broaden the tax base and create jobs. Often, organizations are set up to chase smokestacks--that is, to court new business and bring it to town. Other citizens, envisioning air pollution and traffic jams, react by opposing all growth. Underneath it all, most people have a similar motivation--they want their community to continue to be a nice place to live and work.

Just as all towns are not created equal, all types of economic endeavors are not created equal. The list of questions which follows was designed to help citizens think about which types of economic activities are consistent with their town's characteristics and goals. The general philosophy behind the questions is that the best businesses are those which are environmentally sound, those which contribute to the economic security of the community and do not strain community services, those which create a useful product or service, and those committed to the well-being of both the community and company's employees. These are the businesses which help, rather than hinder, a community's ability to achieve its goals.

No business can score a perfect ten on each question, but even if a company is perfect, it's not wise for a community to be a one-company town. "Diversity is terribly important in a small state such as Vermont," according to Paul Bohne, community development director in Bennington, Vermont. "IBM, while being a tremendous boon to Chittenden County, has an equal potential to devastate the area should it become obsolete or move for other reasons. Solid smaller companies covering a variety of sectors of the economy provide some protection from vagaries of the regional, national or world economy." The same type of economic devastation can occur anywhere if communities become dependent on single factories.

The questions that follow do not prescribe answers. It is my hope that, instead, they will stimulate discussion and help citizens clarify their ideas so that they can formulate a common vision that will result in a local economy which is sustainable, which contributes to residents' other goals for their community and which helps make their community a nice place to live. Use these questions to help formulate appropriate

goals, policies and incentives for attracting appropriate businesses, establishing thoughtful zoning regulations, formulating criteria for granting conditional use permits and for considering the conditions town officials may want to include in such permits.

I: The Benefits & Commitment of the Industry to the Community

(1) How will it impact local taxes?

People seem to have a general perception that commercial and industrial growth will lower taxes. The theory goes like this: commercial property pays school taxes yet does not put children in the school--resulting in a boon to the town. Many local officials, therefore, have looked for developments to increase the tax base without filling the classrooms. However, the approach has not found uniform success. Although communities show a great deal of variation, the general pattern in Vermont, and in other states as well, is that tax bills end up higher--not lower--in towns with the most commercial and industrial development.

Several reasons partially explain the higher tax bills in these towns. First, commercial and industrial developments often put heavy demands on the municipal side of the budget, requiring road maintenance, police and fire protection and sewer and water capacity. Second, in many states the state government reduces aid to education because the town is "richer." Third, commercial and industrial property does not appreciate as rapidly as other types of property; so, in relative terms, the tax benefits accrued from industry decline each year.

Probably the most important reason why towns with the most commercial property have higher tax bills is that these communities have more people. The combination of the demands of the job-generating developments and the needs of the new residents who move in to fill the new jobs drives the tax bills up.

In analyzing the fiscal impacts of a town's various economic developments, it's important to consider the full picture. That picture includes costs, as well as revenues, the secondary impacts, such as employees moving to town and the related costs--as well as the direct impacts.

The businesses most likely to have a positive effect on local taxes are those which employ local people rather than those that bring in a work force from another place, those not requiring the town to expand its police force, sewer, water or road systems, those not generating much traffic--especially truck traffic--and those providing a community service.

(2) Will the jobs be satisfying and pay reasonably well?

Many citizens have expressed concern over the importance of providing "good jobs" so their children will not have to leave the area for employment opportunities. Traditionally, this has meant jobs which pay well. However, more and more people are redefining the term, good job. They have started talking about jobs which, in addition to paying well, are viewed as

satisfying, worthwhile, give opportunities for personal growth and advancement, and enable employees to live comfortably. This is not meant to justify minimum wage, but, instead, to broaden the definition of a good job to include many more social elements.

Towns should consider the effects of the types of jobs which the business will bring, the business's employee policies and benefits, whether or not employees have a financial stake in the company through profit sharing or employee ownership plans, the work environment, day care availability, training opportunities, parental leave policies--and then pay. More satisfied employees means less turnover and an increased corporate commitment to the town.

(3) Will the company invest in the community?

Many companies have policies written explicitly in their corporate bylaws, that commit them to making contributions to the community. These may include sponsoring community groups and activities, allowing their land to be used for community gardens or parks, opening buildings after business hours for community meetings, supporting a day care center, building affordable housing, or providing contributions to local agencies or nonprofit organizations. The possibilities for socially responsible giving are almost endless.

In addition, some companies set up local credit unions for their employees, or participate in the local credit union rather than using a state or interstate bank. This strengthens the economy by recirculating money locally.

(4) Will the service or product benefit the community?

One company may produce Gatling guns, or electric cookie cutters, or gaskets used only in boat engines in Japan. Another may provide recycling services, produce wood stoves, or have other services or products which will directly benefit the community. Newspaper publishers, colleges, health clinics, agriculture, food processing plants, energy producers and recreation facilities can be looked at as more than just employers--they also meet community needs.

(5) Will the company be owned by local people?

In theory, at least, a locally owned company would be more committed to the community. It would also be more likely to hire local people rather than transferring a work force from outside the area. It would be less vulnerable to outside economic forces and less likely to be used as a pawn in a larger deal. Because it is difficult to find the technology, management and financing locally for establishing a significant-sized company, locally owned new companies tend to be small. But, large numbers of small locally owned companies in a community will create a stable economic base.

Often small local companies create new companies which may share facilities, philosophy, board members or stockholders. A local company is more likely to spin off more local companies than is a national one.

(6) Will the company employ local people and local subcontractors?

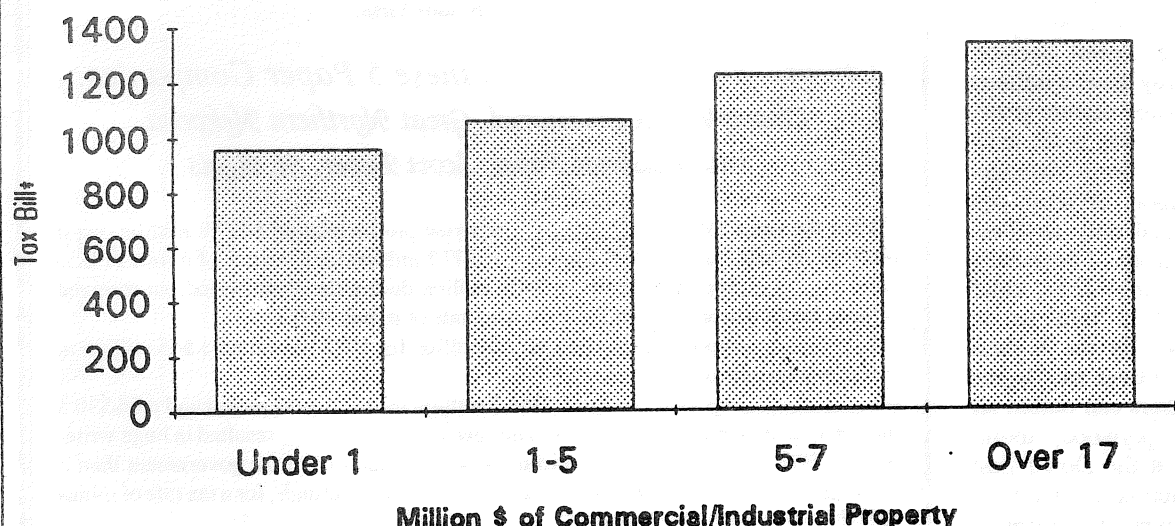
A company which brings in its workforce from outside or hires out-of-state subcontractors may not solve a community's problems unless the community is looking for population growth, more traffic or more general activity. Also, any gain in taxes would probably be offset by the costs of educating and providing services to the new company and the new residents.

A company which, instead, makes a commitment to hire local people and local subcontractors would be more likely to help the community meet the goals of providing jobs for its existing residents. It would also, in general, have a more positive impact on the town's tax bills.

(7) Will the company train local people to offer them a step up?

Ideally, new companies would retrain presently underemployed residents, providing them with more satisfying jobs close to home rather than bringing in skilled workers from elsewhere. For this to happen, communities and companies should negotiate explicit plans and not rely on vague promises. Consider the company's willingness to implement programs such as on-site job training, internships, the use of the company's facilities for training programs aimed at special populations, and cooperative training courses offered in

Residential Tax Bills* & the Value of Commercial/Industrial Property. Vermont, 1989.



*Bill on average-value house with less than 6 acres

conjunction with local colleges and schools. Consider setting up programs in conjunction with the local schools to explain the skills needed for future employment and which exploit ways in which the school and company can work together to educate the future work force.

II: Environmentally Sound Corporate Policy

(1) Is the company's operation environmentally sustainable? Is it dependent on selling off parts of the town?

Some companies use renewable resources and take advantage of natural systems. Examples in Vermont include a cooperative creamery which markets dairy products made from local milk, a company which produces baby food from local organically grown fruits and vegetables, and several wood manufacturing plants which make furniture from the state's trees. Because milk, vegetables, fruit and trees are renewable, these companies can, with careful planning and thoughtful management, succeed without depleting the area's resources.

Several reasons explain why companies may not be environmentally sustainable. Some may heavily depend on non-renewable resources--such as minerals, oil and gas. Some may produce wastes which the environment cannot assimilate. Others may use renewable resources faster than they can be replenished: an example is a manufacturing plant using wood which devours all the region's trees in ten years. Others, such as ski areas, may require continual expansion to stay competitive. This might involve land clearing, new restaurants, hotels, commercial establishments and water for making snow.

(2) Will any negative or positive environmental impacts occur?

It might be easier to list the negative environmental impacts which might result from commercial or industrial growth. These include air pollution, water pollution, smells, noise, solid waste and toxic materials in the soil. Growth may also, however, positively impact the environment. For example, consider the many new companies which help citizens or businesses reduce energy consumption, or the companies which recycle something once destined for the landfill or river. There are also companies which produce equipment to help farmers reduce their chemical use, or factories which produce electricity and fertilizer from manure--solving a formerly intractable waste management problem, as well as providing useful by-products.

(3) Is the company committed to reducing negative environmental impacts?

Many companies are very conscientious about reducing their environmental impacts. Examples of positive programs include ones for recycling their wastes reducing environmentally unsound packaging, using rail transportation, providing van pooling, conserving energy and using greenhouses to process sewage.

(4) What effect will the industry have on traffic?

Companies may increase traffic in several ways. Numerous trucks (which cause significantly greater highway deterioration than cars) may bring raw materials and remove waste and finished products. Extra traffic is also added as workers commute to work out of town and when local customers visit the industry.

Companies can reduce their traffic impacts by staggering employee work hours, locating in areas already well-suited to handle increased traffic, paying for road improvements and maintenance, offering incentives for car-pooling or ride sharing, supporting the construction of bike or pedestrian paths, or by providing van service or subsidized public transportation. Some localities have established transportation management associations which work with developers and businesses to find concrete solutions for potential transportation problems before they are created. Local governments can mandate that following these specifications will be a condition for approving a new development.

Some companies may actually reduce traffic problems. A company which employs local people or which meets local needs by providing something closer to home at a community scale could eliminate out-of-town shopping trips taken by residents. A regional shopping mall, on the other hand, would have



view from
Laraway Mt
8-11-91

the opposite effect by attracting out-of-town customers.

Companies which locate near railroad tracks (or another mass transit route) and ship by rail might even help to revitalize railroads and other shipping industries. The company may also make mass transit profitable in areas which did not previously have enough ridership to make this option financially viable.

III: Determining Economically Sound Practices

(1) Does the company add value to a local renewable resource or product?

If the community has found its special economic niche, it probably is taking advantage of a local renewable resource and adding value to it. Rather than just selling the resource in its raw form, it could benefit the community to process the resource locally and then sell a product which is more valuable. As examples, consider the difference between selling raw milk and selling cheese or ice cream; or the difference between selling logs and selling fine furniture.

Perhaps the community's most important resources are less tangible--things such as ingenuity, artistic ability, hard work, and intelligence. It is equally important to take advantage of these. Publishing companies, art galleries, recording studios, magazines and companies which market local products all help add value to the work of talented citizens.

(2) Will the company help keep money circulating in the community?

A popular economic theory is that the best way to strengthen a local economy is to pull in outside money, either by bringing in outside companies or outside customers. While that is valid, there is also much to be gained by keeping money in the community longer. This will be done by companies that have a policy to hire local people and by companies which provide a service or product used by local people--especially if it substitutes for something normally imported.

(3) Is the company dependent on discretionary income or a high growth rate?

A company with a trendy or frivolous product may be subject to economic downturns more than a company which provides a time-proven and essential product.

Companies dependent on a growth economy may, in the long run, be particularly devastating to a community. They may fail when economic growth slows for reasons completely unrelated to the local economy

or community. Or, they may require continued growth at a time when the community has reached its desired limits.

(4) Will the company and its products or services have a positive effect on the town image and on other companies in town?

Some companies can help establish a town's image by creating community pride and by benefiting other companies. The actions of the firms of Ben & Jerry's and the Cabot Cooperative Creamery are far more important than any marketing program in establishing a reputation for quality Vermont foods. This reputation then extends to other products. Often, towns are put on the map and their good reputations established by the success of a unique, local enterprise. Factory outlets, chain stores or franchises often fail to benefit a town's image in the same way.

(5) Is the company dependent on cheap energy or other scarce resources?

The company's fuel or resource dependence must be carefully considered. A firm which remains very dependent on cheap oil, gas, water or electricity may look economically viable today, but may be extremely vulnerable to rising energy prices or resource depletion.

(6) Will the company strengthen and preserve the community's assets, particularly those identified by the town plan as important?

Most town plans, especially in Vermont, call for the protection of agriculture and forestry along with the preservation of a working landscape. But, for preservation of the landscape to succeed, it must remain economically viable. While some economic developments increase the pressure on landowners to sell, other companies may help farmers make a living with their land. Examples would be companies which process and sell high quality food, ensuring farmers a good market for top quality milk and produce, or a local wood product manufacturing plant which provides a local market for logs.

(7) Does the company add diversity to the economic base?

It often seems like the ultimate economic success story occurs when, after years of local effort, a large company finally decides to locate in a small town. However, town planners must keep in mind the chance that the company may later decide to move--devastating the town because it has become overly dependent on the company for jobs and tax revenue. A safer eco-

Continued on Page 18

Wilderness Recovery: Thinking Big in Restoration Ecology

by Reed F. Noss

I: INTRODUCTION

No big conservation project is adequate in today's world without a major restoration component. There is simply too little land left in near-pristine condition; human influences are everywhere, and some ecosystem types are virtually gone.

Landscape restoration need not be prohibitively expensive. It can rely largely on the natural recovery processes of ecosystems, aided by human labor. Road closures alone can work wonders. The billions of dollars that federal agencies spend annually degrading natural ecosystems through such exorbitant programs as below-cost timber sales, subsidized grazing, dams, and road construction can be diverted to restoration projects. Labor-intensive restoration, in turn, can employ many former timber workers, road engineers, and ranchers, whose prior activities have created the need for restoration in the first place. The net benefit to biodiversity and human society will be tremendous.

In the following essay, I outline a strategy and recipe for wilderness recovery based on a land ethic espoused by Aldo Leopold more than four decades ago. The reestablishment of huge, wild, functional ecosystems replete with large carnivores and their prey is the pinnacle of restoration ecology and human reharmonization with nature.

II: A WILDERNESS VISION

Ecological Values of Wilderness

Wilderness has ecological values. It is no accident that the only ecosystems that include all native carnivores are very large roadless areas. In the lower 48 states, the only ecosystem that still regularly contains

Postage-stamp nature reserves have protected some important elements of biodiversity, but they are not whole. They fail to maintain populations of area-dependent animals, do not represent complete biological communities, do not perpetuate the ecological processes necessary to assure landscape-level diversity, and are influenced heavily by phenomena beyond their borders.

both grizzly bears and wolves is the Northern Continental Divide complex in northern Montana and adjacent Canada. The presence of large carnivore populations indicates a relatively healthy ecosystem; the predators themselves may play a fundamental role in maintaining the diversity of the system through indirect effects on the food web.

Roadlessness defines wilderness and is the key to its ecological health. Probably no single feature of human-dominated landscapes is more threatening to biodiversity (aquatic and terrestrial) than roads. Direct effects of roads include fragmentation and isolation of populations, roadkill, pollution and sedimentation of streams and wetlands, and exotic species invasions. Many species of small vertebrates and invertebrates rarely or never cross roads, even two-lane roads closed to public traffic. Roads, therefore, reduce effective population sizes and gene flow, and will be significant dispersal barriers during climate change. A network of roads fragments populations into smaller units, each more vulnerable to extinction. Another set of species—largely weeds and pests—uses roadsides as dispersal corridors.

Indirect effects of roads are many, but the most important to consider here are those related to human access. Roads bring people with guns, snares, and traps.

Roadless areas offer refugia to those species, from wild runs of anadromous fish to large carnivores and ungulates, sensitive to the impacts of roads. Because large mammals require enormous amounts of habitat to maintain viable populations, roadless areas must be large to offer sufficient security. Hence the need for Big Wilderness.

Postage-stamp nature reserves have protected some important elements of biodiversity, but they are not

whole. They fail to maintain populations of area-dependent animals, do not represent complete biological communities, do not perpetuate the ecological processes necessary to assure landscape-level diversity, and are influenced heavily by phenomena beyond their borders. Furthermore, because small reserves usually require a considerable amount of manipulative management in order to maintain what diversity they have, they fail the naturalness test and do little to promote humility.

Many argue that, by applying ecological principles, we can manage landscapes to maintain biodiversity and still build roads, harvest timber, drill for oil, mine ore, graze cows and sheep, and roar around in off-road vehicles. Lawmakers have put this multiple-use philosophy on the books. Federal laws, most notably the National Forest Management Act (NFMA) of 1976, tell land-managing agencies to provide for many human uses, while at the same time maintaining diversity and viable populations. But the record of multiple-use management is a sorry one; common and weedy species have prospered at the expense of rare and sensitive species, and entire ecosystems are being degraded. Much of the damage is connected with road-building and other forms of habitat fragmentation.

Intrinsic Value

Besides its ecological values, besides even the amenity values of inspiring humility and contemplation, Big Wilderness is essential. It has intrinsic value.

Some people, for reasons quite beyond the rational, believe that huge, wild areas are valuable for their own sake. These areas should be as free as possible from human influence in order to satisfy the criterion of sacred otherness. Science cannot prove or disprove intrinsic value in wilderness or any other entity. But if we accept that humans have intrinsic value, as do almost all ethical traditions, then only anthropocentric prejudice would keep us from recognizing such value in others. In the final analysis, intrinsic values are the only values that stand on their own, unfettered by tenuous links to utility. What good is wilderness? One might as well ask the rocks in the canyon. "Wilderness," Ed Abbey wrote, "needs no defense, only more defenders."

Balance

Implicit in conservation strategy is that a balance should be achieved between land devoted to primarily natural values and land developed for human purposes. How balanced is the ratio of wild to developed land in the United States? Conservationists often look to the tropics with greatest alarm, but many North American ecosystems are in equally critical condition and stand to lose as great a proportion of their biota. By 1920, the northeastern and central states already had lost 96 per cent of their virgin forests. Today, the Pacific

Northwest holds most of the old-growth forests in the lower 48 states, yet less than 13 per cent remains of the ancient forest in western Washington, western Oregon, and northwestern California. The longleaf pine forests of the Southeastern Coastal Plain, once the dominant regional ecosystem, have declined by at least 98 per cent. Very little of our land is protected strictly, despite the claims of commodity interests. Designated wilderness represents only 1.8 per cent of the 48 states, or four per cent of the U.S. including Alaska, and many of these areas are open to grazing, mining, and other disruptive uses.

To set aside only three per cent of the 48 states in reserves, and only 1.8 per cent as wilderness, does not seem very balanced. No one can say how much land is "needed" to maintain biodiversity; where we draw the line is a reflection of our values. My values tell me that an order of magnitude increase—to 50 per cent—is a reasonable compromise, and that large-scale wilderness recovery is needed to restore that balance. Many people

By 1920, the northeastern and central states already had lost 96 per cent of their virgin forests.

will think that asking for 50 per cent of our land as wilderness is either utopian or insane (or worse). But then again, most people (and nearly all elected officials) believe in infinite economic growth. Few accept the inevitability of catastrophe if we stay on our present course. I rest my case.

III: RECOVERY PRINCIPLES

Wherever we draw the line between wilderness and development, the degraded condition of most ecosystems means that preservation, strictly speaking, is seldom a tenable option. Clearcuts and abandoned fields must be reforested, cows and fences removed, roads obliterated, natural fire and hydrological regimes restored, native carnivores and other species returned to their former range. Wilderness must be allowed to recover.

If we accept that some level of wilderness recovery is a worthy conservation goal, where do we begin? First, it must be recognized that preservation and restoration are complementary elements of any regional conservation strategy. Using "no net loss" of habitat or biodiversity as a guiding principle, all existing, relatively unaltered natural areas must be protected, in addition to restoring habitats critical to regional biodiversity. The following are some general principles to consider in designing a wilderness recovery project.

Ecosystem Representation

Habitat destruction, like biodiversity, is not distributed uniformly or randomly over the land. The most productive and often most diverse habitats were



the first to be settled and converted to intensive production. Today, of 261 major terrestrial ecosystems in the United States and Puerto Rico, defined by a combination of Bailey's ecoregions and Kuchler's potential natural vegetation, 104 (40 per cent) are not protected in designated wilderness areas. Wilderness boundaries often coincide with timberline: the "rock and ice" phenomenon.

Representation of all ecosystem types in wilderness and other protected areas is one of the most important and widely accepted goals of conservation. Because any major ecosystem type will vary across its geographic range in such attributes as species composition, vegetation structure, and natural disturbance regime, multiple examples of each major ecosystem should be protected or restored. Restoration priorities can be established by determining which ecosystem types in the region have declined most markedly from presettlement condition.

Bigness

The desirability of large reserves, "bigness," is one of the few generally accepted principles of conservation. Protected examples of ecosystem types must

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be large enough to maintain viable populations of all native species and to persist in concert with natural disturbances. Large reserves are easier to defend against encroachment from outside, suffer less intensive edge or boundary effects, and require less management per unit area.

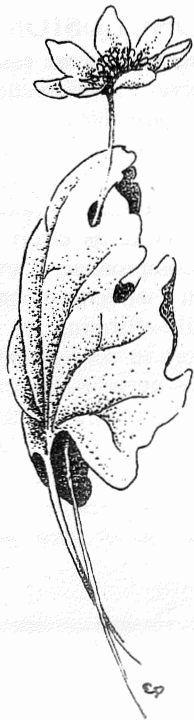
How large must a wilderness area or other reserve be to maintain native biodiversity? Estimates by conservation biologists of minimum viable populations and corresponding reserve sizes are alarmingly high. A recent study concluded that an average population of 1,000 individuals may be adequate for species of normal population variability, but 10,000 individuals may be needed for long-term persistence of highly variable birds and mammals. How these minimum population estimates translate into area requirements depends on factors, such as habitat quality and social behavior that determine population density and dispersion. C. M. Schonewald-Cox estimated that reserves of 10,000 to 100,000 ha (25,000 to 250,000 acres) [Ed. note: one hectare equals 2.5 acres] might maintain viable populations of small herbivorous and omnivorous mammals, but reserves of one to ten million ha are needed for long-term viable populations of large carnivores and ungulates.

Natural disturbances also must be taken into consideration, as reserves that are small relative to the scale of natural disturbance may experience radical fluctuations in the proportions of different seral stages, which in turn will endanger populations dependent on particular stages. Some researchers have estimated that landscapes 50-100 times the largest disturbance patch may approach a steady state in habitat diversity. Because boreal forests experience natural fires covering up to one million ha, reserves of 50 to 100 million ha might be necessary to achieve a steady state in boreal regions. For ecosystems that experience smaller disturbances, such as eastern deciduous forests characterized by treefall gaps and occasional watershed-sized fires, existing national parks and forests (at 100,000 ha or so) may be in approximate steady state. The current system of protected areas in this region fails to represent most ecosystem types, however. Furthermore, the more space-demanding species in these forests, eastern cougar and wolves, would require larger reserves, again on the order of one million ha.

How well do existing reserves meet these ambitious size criteria? Research Natural Areas (RNAs), designated for their ecological and scientific values, are far too small by any criterion. None of the 213 Forest Service RNAs (as of 1990) is larger than 5,000 ha. Only ten of the 320 units in the National Park system (as of 1983) are larger than one million ha. Only six of the 474 units in the National Wilderness Preservation System (as of 1989) are larger than one

million ha. Thus, few protected areas approach the approximately one million ha needed to maintain natural disturbance regimes (for some ecosystem types) and viable populations of large mammals. Society has to face the fact that its existing protected areas are too small.

Hence the need for wilderness recovery. In almost all cases, representing ecosystems in protected areas of sufficient size to assure viability is possible today only through restoration. For future parks or wilderness areas to represent the diversity that greeted the first European visitors, they will, in the words of restoration ecologist Daniel Janzen, have to be "grown rather than decreed." To be complete, restoration needs to be considered at a scale of millions of hectares.



IV: IMPLEMENTATION

Spatial Context

Spatial Context is a key to determining where to locate landscape-scale restoration projects. The goal is a regional landbase where protected areas representing all ecosystem types are enclosed or otherwise linked by continuous natural habitat. Such a system of interconnected reserves can form a whole greater than the sum of its parts. Although each reserve individually might be too small to assure viability of a carnivore population, for example, the network as a whole might suffice. Small satellite reserves protecting local biodiversity hotspots, such as a rock outcrop with an endemic plant, complement the regional network, but cannot be allowed to substitute for it.

A map of all public and private managed areas in the region of interest is a good place to start. Parcels can be rated in terms of the degree of protection given to them, as is done for all managed areas by The Nature Conservancy. Such a map portrays the skeleton to which you add flesh: designate critical areas on public land in protected status, fill in gaps (such as inholdings) in public ownership, acquire surrounding lands to increase reserve size, identify restoration priorities, and establish linkages between reserves.

Next, consult the best available vegetation maps or remote sensing information to determine the current distribution of ecosystem types in the region. The land ownership and protection map then can be overlaid on the vegetation map, ideally using a Geographic Information System (GIS), to determine how well existing protected areas and other public lands represent ecosystem types. The "gap analysis" project is suited ideally to this type of analysis. [Ed Note: Gap Analysis for the Northern Forest Region is being conducted at the Vermont Cooperative Fish & Wildlife Research Unit at the U. of Vermont in Burlington.] At a state to regional scale, this project is mapping the distribution of current vegetation and associated species (based on habitat suitability), determining centers of species richness and endemism, and identifying gaps in the coverage of ecosystems and species ranges in protected areas. Unprotected vegetation types and hot spots of high species richness become priorities for protection.

Once one has identified the ecosystems most in need of representation in the wilderness recovery system, proposed reserve boundaries must be delineated on

a map. Boundaries should be drawn to encompass areas of adequate size; conform to topography, watersheds, and natural geomorphic features; and take advantage of existing undeveloped areas with low road density. Linkages or broad habitat corridors between reserves and clusters of reserves must be drawn to allow for seasonal wildlife migrations, dispersal of plants and animals, and long-range movements in response to climate change.

At this stage, one has mapped a prospective wilderness recovery system. It covers perhaps 50 per cent of the region, more or less, depending on the extent of landscape modification and the existing public land base. Now the reserves should be buffered from surrounding, intensive-use land (clearcuts, corn fields, cities, etc.). A gradation of buffer zones, with intensity of use increasing outwards, can surround each core wilderness reserve and comprise a "multiple-use module" (MUM) patterned after the UNESCO biosphere reserve model. Wide, wild corridors can be zoned in a similar fashion. Such zoning can indeed provide for multiple human uses, but its primary function must be to insulate core areas from adverse human influences. The core area must provide sufficient roadless acreage to protect the most sensitive species (generally, large carnivores) that live or will be reintroduced there.

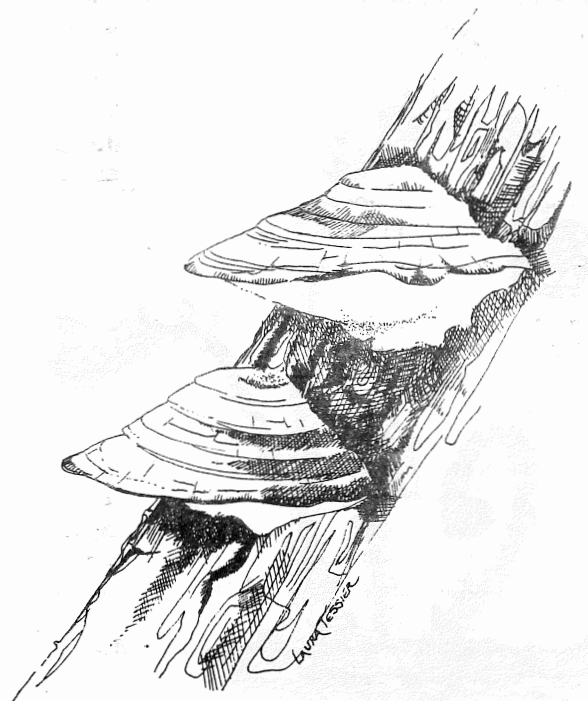
A wilderness recovery proposal is obviously idealistic. It is not something one takes to his/her friendly public lands managers and legislators, expecting to be greeted with enthusiasm. Many will balk at its apparent unreasonableness, but nothing is more unreasonable than the willful destruction of biodiversity. For conservationists to put forth something less than what is really needed, to compromise nature, is foolhardy.

Putting It On The Ground

On-the-ground implementation of a wilderness recovery strategy is contingent on factors specific to each regional landscape. Some general guidelines apply: (1) close and revegetate roads; (2) remove fences and other human structures; (3) eradicate exotic species whenever feasible; (4) reintroduce populations of extirpated native species, including large predators; (5) restore hydrological regimes and soils; and (6) reintroduce or mimic natural disturbance regimes.

Because any major ecosystem type will vary across its geographic range in such attributes as species composition, vegetation structure, and natural disturbance regime, multiple examples of each major ecosystem should be protected or restored. Restoration priorities can be established by determining which ecosystem types in the region have declined most markedly from presettlement condition.

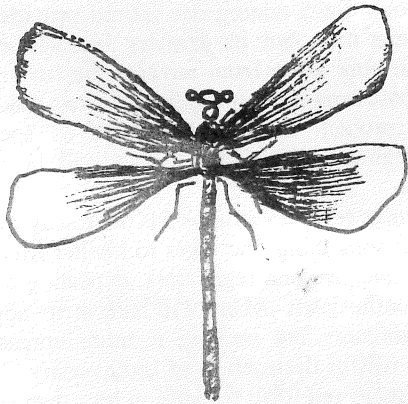
Much of the restoration of ecosystems at a landscape scale can rely on natural revegetation; the exceptions are mostly sites with severe soil destruction or dominance by exotic species, which must be dealt with case by case. In most human-modified landscapes be-



Wilderness Recovery

ing considered for wilderness recovery, fragments of remnant natural habitat are embedded in a matrix of agriculture, clearcuts, or tree farms. Restoration, then, is, in Daniel Janzen's words, primarily "the initiation and coalescence of growing habitat fragments" (emphasis in original). The degraded habitat between fragments must be returned to a physical condition where it can be reseeded by native plant propagules. This often will require clearing sites of foreign vegetation (including tree plantations) and manual planting of native species, if seed sources are too distant or seed dispersal too slow to overcome the invasion of exotics.

One of the most challenging tasks in restoration is determining the target, the natural patterns and processes you are trying to replicate. Reconstruction of presettlement vegetation and disturbance regimes and



DAMSEL FLY

Conservationists must insist that every wild and natural area be saved, and that many degraded areas be restored to viability by closing roads and reintroducing missing species and processes. Wilderness recovery must not be compromised in an effort to appear reasonable; the time for compromise, if ever, was when North America was still a wilderness continent.

comparison with existing wilderness baselines, though not perfect, are all there is to work from. The target, of course, is always moving; any point in time specified as "natural" is just one frame in a very long movie. Furthermore, because of long-range transport of pollutants, enhanced UV-B levels due to ozone depletion, and global warming, an ecosystem never can be restored fully, as long as industrial humans dominate the planet.

V: CONCLUSION

Preservation and restoration are essential partners in a comprehensive conservation strategy. Conservationists must insist that every wild and natural area be saved, and that many degraded areas be restored to viability by closing roads and reintroducing missing species and processes. Wilderness recovery must not be compromised in an effort to appear reasonable; the time for compromise, if ever, was when North America was still a wilderness continent.

Restoration is a life-affirming art. It offers the only hope of true victory in conservation. Normally, conservation battles are never won; defeat simply is postponed. Designation under the Wilderness Act creates no new wilderness; for every acre officially designated, many more acres of wilderness are destroyed. Wilderness recovery seeks simply to bring back ecosystems that contain all of their parts and keep them healthy.

Dr. Reed Noss is a private consultant in ecology and conservation biology, an editor of *Conservation Biology and Wild Earth*, and a part time research scientist for the University of Idaho. He specializes in applications of community and landscape ecology to conservation problems, and has 20 years experience in the conservation field.

A longer version of this article appeared in *The Environmental Professional* Volume 13, pp. 225-234, 1991. Readers wishing a copy of the full article, including footnotes and extensive bibliography can send \$1.50 to the Forum.

Contest

What Places Should Be Trashed?

In response to the question "Should we make a list of places we want to protect?" David Brower told the Forum (p. 9), "We don't want a list of places to save; we've got to come up with a short list: a list of places we are willing to trash."

Send the Forum the list of places in the Northern Forests you are willing to trash. Please explain why you chose this place(s). The winner will receive a handwritten letter critiquing her/his choice(s) from David Brower.

Deadline: November 1, 1992

Community Economics

Continued from Page 15

nomic development strategy is to have multiple employers in town. If one of the numerous small companies folds because the raw materials are no longer available, or for whatever reason, the town may still recover.

Similarly, it is better to have a diversity of kinds of economic activity rather than concentrating on only one. The potato capital of the nation would seriously suffer in a bad potato year, no matter how many different potato processing companies are located in town. And, when looking at additional growth, the town might find that obtaining yet another potato processing plant would actually hurt the town's economy because the new firm would compete with, rather than complement, the existing plants.

Some towns have found it helpful to analyze their distribution of businesses in comparison with other communities of the same size. This gives them an idea of whether the town might be able to support growth in a certain sector. Can towns of 4,000 people, for example, support a community health center?

The most resilient local economy is made up of many small businesses distributed among several economic sectors. Even though the individual economic impact of each might be minimal, the cumulative impact could be substantial. Be advised, however, that

this certainly makes the job of smokestack chasers harder.

Other questions to consider when looking for companies that would increase the economic diversity include: Would this company compete with or complement existing companies? Would this company represent an economic sector now underrepresented in the community? Is the size and scale of this company consistent with the community's goal of providing a diversified economy?

(8) What secondary impacts are likely?

Development often begets development. Are other companies, housing developments, gas stations, stores or houses likely to spring up in town because of this company? If so, town planners must consider whether these developments fit in with their town's plan.

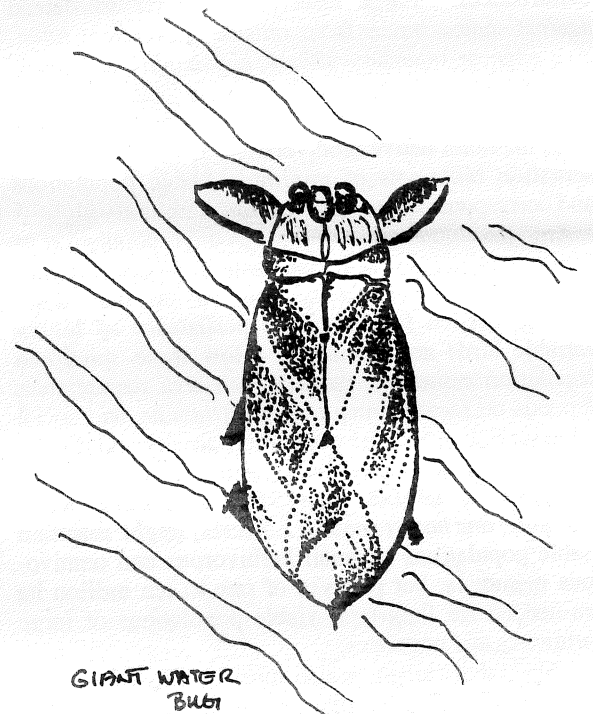
IV: Conclusion

In a recent issue of the *Wall Street Journal*, a large help-wanted advertisement announced an available speech writing position for a major company. Before it made any mention of the job, the requirements or the salary range, the ad boasted that the location was in a small community nationally recognized for its livability.

Often local officials, concentrating on the need for commercial growth to preserve their town's economic vitality, fail to recognize how important a community's livability is to that very economic growth. We designed these preceding questions in order to encourage residents to undertake a thinking and planning process which links economic health to the other vital signs of community health. There is no way to determine how much weight to give each question or the score which would make a project appropriate or not. However, asking the questions, analyzing the possibilities and then using the results to negotiate with developers will focus the town's planning process on the importance of improving the town's economic climate while making sure it remains a great place to live.

This article is copyrighted and is reprinted by permission. It first appeared in *Small Town*, Third & Poplar, POB 517, Ellensburg, WA 98926 in the May-June 1991 issue.

Deborah Brighton is an associate with Ad Hoc Associates, a consulting firm specializing in planning, as well as fiscal and environmental analysis. She may be contacted at Ad Hoc Associates, RD 1, Box 319, Salisbury, VT 05769.



GIANT WATER BUG

Abenaki Land

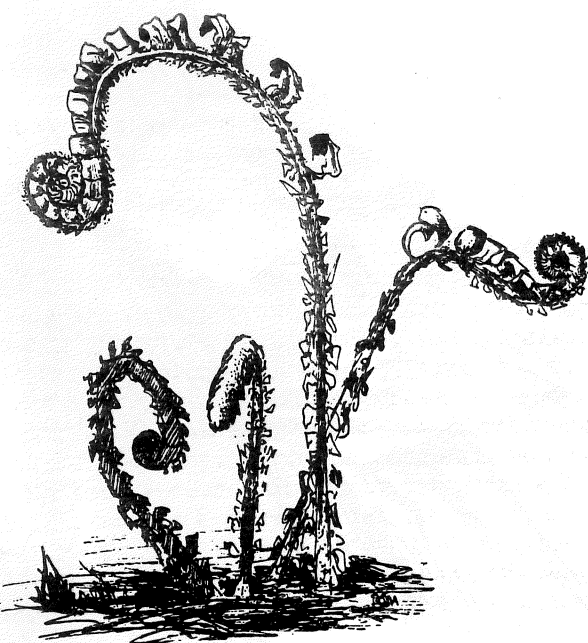
Continued from Page 7

and the rights that flow from that title, can only occur through negotiation between the Nation's government and the Federal government. There has never been any Abenaki or Federal Government action to extinguish Abenaki aboriginal title, therefore it remains.

3 Shortly after the Supreme Court's decision, the lower court denied the Abenaki Nation's Motion to Dismiss for Lack of Jurisdiction in every case in which it was filed. The order grants the State jurisdiction to prosecute based on the Supreme Court's ruling that Abenaki aboriginal title no longer exists. Yet the Supreme Court was not empowered to rule in the first place, since aboriginal title involves a federal question of law.

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[Ed. Note: To make contributions for legal expenses, or for more information, please contact: Sovereign Republic of the Abenaki Nation of Missisquoi, POB 276, Missisquoi 05488. Phone 802-868-7146.]



SILENT SPRING II

Public Lands and The Decline of Neotropical Migratory Songbirds in New England.

by Buck Young

"It was a spring without voices. On the mornings that had once throbbed with the dawn chorus of robins, catbirds, doves, jays, wrens, and scores of other bird voices there was no new sound; only silence lay over the fields and wood and marsh."

Rachel Carson, *Silent Spring*, 1962

"Exactly 30 years ago, Rachel Carson warned of the silent spring that would follow the widespread use of DDT and other chemicals. Science and government worked together to ban DDT and control other pesticides, thus preventing a silent spring. Now science is again telling government that we face an increasingly silent spring. This time the culprit is deforestation -- right here in the USA."

David E. Blockstein, American Ornithologists Union, Congressional Testimony, 1992

According to the US Fish and Wildlife Service in "Recent Declines in Neotropical Migratory Birds:" "long-term observations suggest that many species of birds that nest in North America, and winter in Mexico, the Caribbean and Central and South America are declining. Recent declines followed a period of stability or in some cases increasing abundance. These conclusions are based on data collected from the Eastern Region of the North American Breeding Bird Survey....

"In eastern North America, where the best information is available, long-term surveys indicate that populations of 71% of the species classified as neotropical migrants declined between 1978 and 1987."

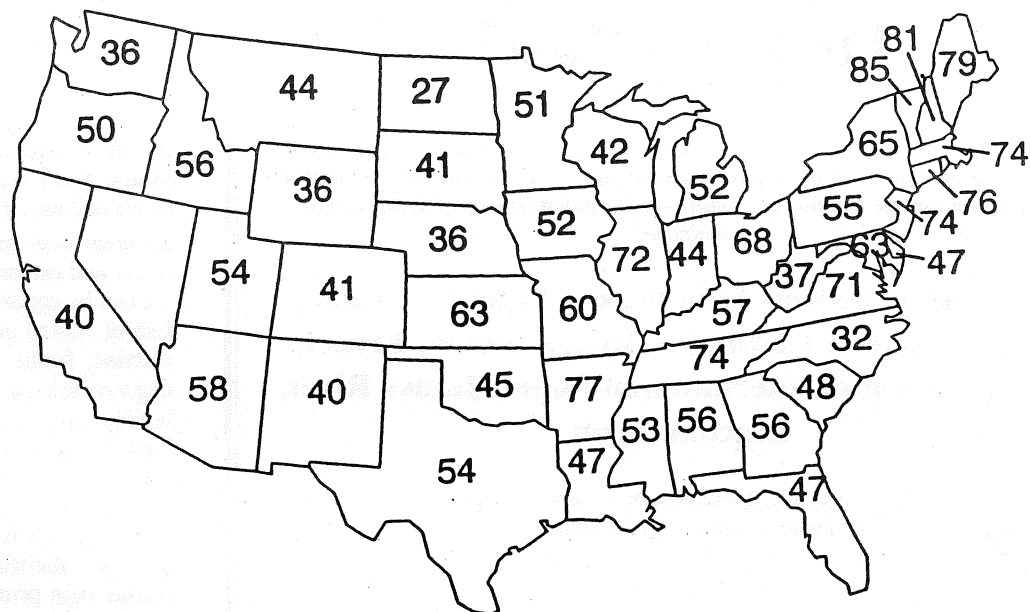
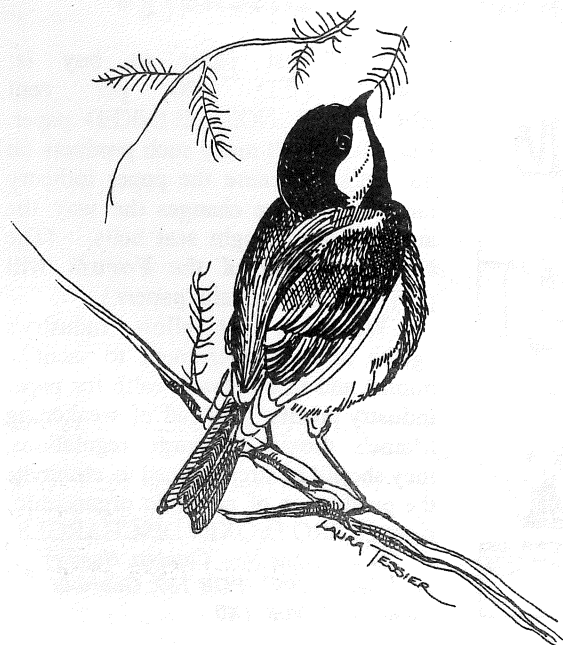
The largest decline documented by the U.S. Fish and Wildlife Service was in Northern New England, where between 74 and 85 per cent of the neotropical migrants are in decline. (See Fig #1)

According to the paper, "In eastern North America, forest composition has changed since historical times. Large blocks of mature forest have been reduced to smaller patches or replaced with younger forests that differ vegetatively. Habitat fragmentation results in increased pressure from competitors, predators and nest parasites like the brown headed cowbird."

Songbirds need large unfragmented forests with large trees free from the edge created by logging, road building, and development; songbirds are dependent on large blocks of undisturbed forest.

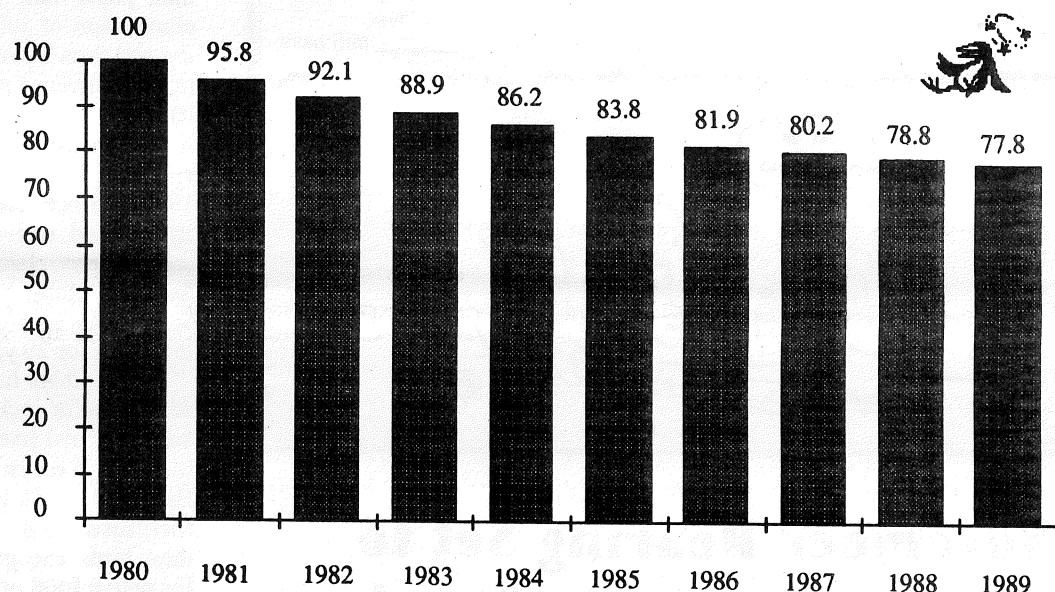
According to the American Ornithologists Union, songbirds are among the animals most dependent on National Forest Lands. The U.S. Forest Service holds the largest amount of breeding habitat for Neotropical migratory songbirds under one ownership in the United States.

John Terborgh, Professor of Environmental Science, Duke University writes: "Some of the threats to bird life here in the United States seem more intractable than others. Probably little can be done to reduce the hordes of blue jays, raccoons, opossums, and cowbirds that have degraded the habitat of rural and



Declines in neotropical migratory bird populations are widespread. Numbers on map represent the percentages of neotropical migratory bird species with population declines in individual States between 1980 and 1989, based on data from the Breeding Bird Survey. Courtesy Sam Droege, Office of Migratory Bird Management, US Fish & Wildlife Service.

Population Changes in Interior Dependent Songbird Migratory Species in Vermont, 1980-1989



Data Source: US Fish & Wildlife Office of Migratory Birds

suburban areas. It thus seems inevitable that long-distance migrants are going to continue to decline in neighborhood parks and woodlots. Conservation efforts should therefore be directed towards consolidating and expanding the largest tracts of forests... It would be useful to prohibit the subsidized clearcutting of our national forests." (*"Why American Songbirds Are Vanishing," Scientific American; May, 1992*)

What is Causing Songbird Declines ?

Neotropical Migratory songbirds are threatened by the deforestation of the tropics, and by the creation of edge in North America.

Representatives from the U.S. Forest Service like to say that the problem lies only in the tropics, but scientists disagree:

"We're not saying the destruction in the tropics isn't important. It may be at some point," said Richard Holmes, an ecologist from Dartmouth College who has been studying birds in Hubbard Brook since 1969. "But at the moment the root of the problem seems to lie in North America."

Why is this Problem Worse Now Than In The Past ?

Songbird's nests are suffering from increased predation and parasitism because of an increase in edge.

***Nest Predation:** Animals like blue jays, raccoons, possum, and house cats like to eat songbird eggs.

***Nest Parasitism:** Certain bird species, like the Brown Headed Cowbird lay their eggs in the nests of neotropical songbirds. The parasites typically hatch

before the songbird eggs, and out-compete the songbird's own young for food.

***Edge** is the place in a forest where areas with trees touch areas without trees. Edge is created by timber harvesting, road building, and development. Nest predators and parasites thrive in edge. Songbirds need to be far away from edge in order to escape predators and parasites and successfully rear their young.

From 1966 until the late seventies, when our forests were recovering from the abusive logging of the turn of the century, songbird numbers were recovering rapidly. Since the late seventies however, development, logging, and road building have increased dramatically, and songbirds have suffered.

Land managers like to tell us that edge is good for wildlife, and that there are more species of wildlife in edge than anywhere else. Unfortunately, the species that thrive in edge are the same species that live everywhere else in the state, because most of the state is edge. Other species, like songbirds, need large undisturbed forests, and they are also in great danger. It doesn't make sense to disturb the only remaining large blocks of forests for the same species that thrive in our backyards. Increasing the number of species on every single acre without paying attention to which species they are causes extinctions on the regional scale. We don't need to wipe out songbirds so that we can have more raccoons or possum or deer.

Buck Young coordinates the Preserve Appalachian Wilderness Neotropical Migratory Songbird Task Force. His address is: POB 52A, Bondville, VT 05340.

Who Paid the Biggest Pollution Fine?

Every major paper company in Maine has paid large fines for violations of pollution or health & safety regulations in the past couple of years. Can you identify the company (and sometimes the location of its mill) with the dollar amount of its fine and its violation?

Choose your answers from these 8 Paper Companies:
Boise-Cascade, Champion International, Fraser, Georgia-Pacific, International Paper, James River, Lincoln, Scott

- (1) _____ pled guilty to a \$2.2 million federal felony charge (five counts) for the illegal storage of hazardous materials and for lying about the hazardous materials; they have also paid a pollution fine to Maine of almost \$1 million.
- (2) _____ the 21st worst emitter of carcinogens in the US, paid a \$637,000 fine for air and water pollution violations in its _____ mill in 1990; these violations had been chronic for several years.
- (3) _____ paid the US Labor Dept. \$875,000 for health and safety violations in 1990; it paid the Maine DEP \$252,816 for air and water violations in 1989-1990.
- (4) _____ paid \$1,025,000, the largest DEP fine yet.
- (5) _____ paid a \$3.9 million penalty to OSHA for 313 alleged violations of health and safety; they recently reached a \$19 million tax settlement with the State of Maine.
- (6) _____ paid a \$280,000 fine for air and water pollution violations in Maine in 1990; it is the responsible party in as many as 40 superfund sites.
- (7) _____ paid \$134,900 for water and hazardous materials violations in 1986-1989; in 1990 it also reached consent agreements for \$250,000 in fines for air violations and \$150,000 for water violations.
- (8) _____ has paid no big fines, but 60 workers at the _____ mill have developed health problems; two died in the period 1988-1990.



November Hearing Set to Weaken Maine Dioxin Standard

There will be a two day hearing in Augusta on November 5-6 on a proposal advanced by Maine's governor John McKernan to relax restrictions on the discharge of dioxin into the state's waterways. The State Board of Environmental Protection supports the Governor's proposal. One day of hearings will be for supporters of the proposed rule change, the other day will be for opponents to present their case.

The existing standard, 0.013 parts per quadrillion, was mandated by the US Environmental Protection Agency for states such as Maine that have not yet set their own standards. The Governor's proposal would relax the standard to 0.5 parts per quadrillion, nearly 40 times less stringent. It should be noted that the Governor's brother is a lobbyist for the paper industry in Washington, D.C.

Opponents of the proposed change include Dr. Lani Graham, director of the Maine Bureau of Health and Robert Frakes, state toxicologist. They want to retain the current standard until the US EPA completes its study of dioxin.

"We are completely unclear as to why it is necessary to utilize state resources at this time to discuss a new standard when, in only a few months the whole matter will have to be revisited [once the US EPA studies have been completed]," Graham wrote acting Human Services Commissioner Jane Sheehan in August.

Ron Kreisman, attorney for the Natural Resources Council of Maine says the proposed standard will free industry from cleaning up its act. "This standard was not selected to protect public health," he said.

The paper industry is also unhappy with Governor McKernan's proposed standard. It has called for an even less stringent standard. Expect the industry to trot out studies done by or for Monsanto in the 1980s that "prove" dioxin is safe for humans. These studies have been exposed time and again as fraudulent.

The State of New Hampshire is even more generous in its dioxin regulations, allowing 1.0 part per quadrillion, double McKernan's proposal.

What You Can Do: Educate yourself and your neighbors and community about the dangers of all organochlorines. Organize to fight this assault on the health of the natural and human communities of Maine. Attend both days of the hearings. And

*Contact Natural Resources Council of Maine, 271 State St., Augusta, ME 04330, tel. (207) 622-3101. Evelyn deFrees is coordinating grassroots efforts for NRCM. Peter Washburn is the staff scientist working on the Dioxin hearings.

How Much Dioxin Is In Maine's Lobsters?

by Jamie Sayen

This is a question the paper industry, the lobster industry and the State of Maine don't want to ask. Unless the rivers and estuaries of Maine operate on different ecological principles than the rivers and estuaries of British Columbia, we can be certain that the fish and shellfish of Maine are seriously tainted with dioxins, furans, and hundreds of other organochlorines that have been dumped—legally—into the rivers of Maine and New Hampshire for decades by paper mills.

The Department of Marine Resources for the State of Maine refuses to test shellfish for dioxin levels. Rather than protect lobster fishermen by preventing organochlorine poisoning, the DRC prefers to "protect" the lobstermen by covering up the truth, and risking the health of the tourists who dine on Maine lobster.

The paper industry excuse for poisoning the environment is always "Jobs, Jobs and more Jobs." But, if the jobs provided at the mills cause the poisoning of shellfish and fish and the humans and non-humans that eat them, then paper mill jobs are causing the elimination of jobs in recreation, fishing and even license plate manufacturing (Maine's license plate has a lobster on it).

In British Columbia, Howe Sound was closed to crab and prawn fishing in 1988. Since then commercial, recreational and native food harvesting of crab, oysters, clams, prawn, and shrimp has been closed in Georgia Strait (see accompanying map). Don't expect them to reopen for 20 years.

Also, there have been consumption advisories for rockcod, lingcod, salmon, and waterfowl liver. Waterfowl affected include: Western Grebe, Surf Scoter, Barrow's Goldeneye, Common Merganser, and Greater Scaup. All these birds, except the Grebe, are hunted for native food or recreation. Most of these birds disperse and breed over northern and western Canada.

The Federal Government of Canada has declared 2,3,7,8 TCDD (Dioxin) to be a "toxic contaminant."

Maine and New Hampshire warned fishermen not to eat more than one or two eight ounce servings of fish caught below paper mills per year. Pregnant and nursing women were advised to refrain from consuming tainted fish altogether. If the fish are tainted, it stands to reason that the bottom-feeding shellfish are also tainted. Crabs concentrate especially high levels of dioxin in their tissues in British Columbia.

Chlorine Dioxide No Solution

Recently, many paper mills have converted their bleaching process from chlorine gas to chlorine dioxide. It is cheaper and produces a stronger pulp, and it has reduced the levels of 2,3,7,8 TCDD discharged by the mills. But, it will never totally eliminate dioxins and furans. In addition, there are several reasons why chlorine dioxide is no solution.

***Organochlorine contamination continues**, and, in fact, overall organochlorine creation remains about the same as with the chlorine gas bleaching process.

***Hundreds of Organochlorines in the effluent are still unidentified.** Although over 200 organochlorines from pulp mill effluent have been identified, scientists realize that probably 70% of the organochlorines in mill effluent are still unidentified. What you don't know won't hurt you, right?

***The effect of chlorate on algae is unknown.** Chlorate is one of the major by-products from chlorine dioxide bleaching. It is a non-specific herbicide proven to destroy rockweed beds in the Baltic Sea.

***Chlorine dioxide is much worse for workers.** It is a highly explosive, toxic gas, and is ten times more dangerous to workers than chlorine gas. Highly corrosive, it is very susceptible to leaks. There have been several documented leaks in the past couple of years in the paper mills of New Hampshire and Maine.

Alternatives to Chlorine Gas and Chlorine Dioxide Bleaching

*Unbleached paper may not be as lily-white as bleached paper, but its much more ecologically safe. Can't we see the beauty of unbleached paper and clean rivers?

*Non-chlorine final bleaching agents include: Ozone, Hydrogen peroxide, and sodium hydrosulfite. Most non-chlorine bleached papers are whitened with hydrogen peroxide bleaching and oxygen bleaching (or oxygen delignification). These processes do not produce organochlorines, but they are not environmentally benign either. More research must be done on these processes.

Our Goal: Zero Organochlorine Discharge

*The best paper to buy is: UNBLEACHED, 100 per cent RECYCLED, NON-DE-INKED paper. But, there aren't many such products on the market because the paper industry has fought these changes the way the auto industry fought seat belts. (The November issue of the Forum will provide a guide to safer papers.)

We must not allow industry's agents in the government to sacrifice human and non-human health for paper industry profits. Instead of weakening Maine's dioxin discharge regulations, they should be strengthened to eliminate the production of all toxic organochlorines. ZERO DIOXIN DISCHARGES.

Source: The New Catalyst, Number 21, Summer 1991, POB 189, Gabriola Island, B.C. V0R 1X0



Dioxin Detoxification Campaign Exposed

[Ed. Note: The following article is reprinted from Rachel's Hazardous Waste News #275, March 4, 1992. This important newsletter is published by Environmental Research Foundation, POB 73700, Washington, DC 20056-3700. Subscription rates are: \$40 per year for individuals and citizen groups, \$80 for government agencies; \$15 for students and seniors with ID; and \$400 for businesses and professionals.]

A remarkable front-page story in the *Wall Street Journal* February 20 confirmed that the paper and chlorine industries have waged a successful two-year campaign to bamboozle the nation's media about the toxicity of dioxin, and that U.S. Environmental Protection Agency (EPA) fell for it too.

The point of the campaign was to salvage the paper industry, which uses 15% of all the chemical industry's chlorine output, and which is facing billions of dollars in lawsuits brought by citizens claiming damages from dioxin released from paper mills.

The *Journal's* story ("How Two Industries Created a Fresh Spin on the Dioxin Debate") by Chicago-based staffer Jeff Bailey, describes a bald-faced campaign by the American Paper Institute (API) and the Chlorine Institute (CI) to "revisit" the scientific evidence that dioxin is a potent carcinogen.

The *Journal* says, "The paper industry scored its first major public-relations success in 1990, when paper companies arranged to challenge the findings of the most influential dioxin study ever done. That study, reported in 1978 by Richard Kociba, a Dow Chemical Co. pathologist, was done on 485 white rats, whose food was spiked with dioxin. Dr. Kociba found a strong link to cancer: a daily dose of billionths of a gram led to tumors."

To counteract the Kociba study, API hired five pathologists and brought them to a Maryland Lab in March, 1990, where for two days they reviewed Dr. Kociba's rat slides under a microscope. The pathologists voted on each slide--were they looking at a cancer tumor or at a "benign" tumor? At the end of the two days, they had voted for 50% fewer cancer tumors than Dr. Kociba had observed 12 years earlier. Robert A. Squire, the pathologist who oversaw the recount, told the *Journal*, "There wasn't much unanimity. This was an uncertain finding."

Nevertheless, API managed to ignore the uncertainties. Based on its "new evidence" that dioxin is less potent than previously believed, API wrote stern letters to the Food and Drug Administration (FDA), to President Bush's science advisor, and to William Reilly, chief of EPA. API told EPA, "All of the Agency's analyses are now out of date in light of the significant new evidence showing that the risks of dioxin has (sic) been overstated."

The *Journal* does not say so, but almost immediately the API's publicity machine began cranking out the "news" that dioxin was no longer considered very dangerous. May 31, 1990 the *Washington Post* (p. A3) surprised the world with the headline, "Scientists Temper Views on Cancer-Causing Potential of Dioxin." The story, by Malcolm Gladwell, said, "Dioxin--the chemical that forced the evacuation of Love Canal, sparked a wave of lawsuits over Agent Orange and became notori-

ous as the most potent carcinogen ever tested--may be far less dangerous than previously imagined, according to new scientific evidence." Gladwell went on, "Enough experts have joined the revisionist chorus that some scientists consider a softening of the government's stance toward the chemical inevitable. Gladwell's 'chorus' consisted of quotations from four scientists. Gladwell neglected to mention that three of them were consultants paid by the paper industry."

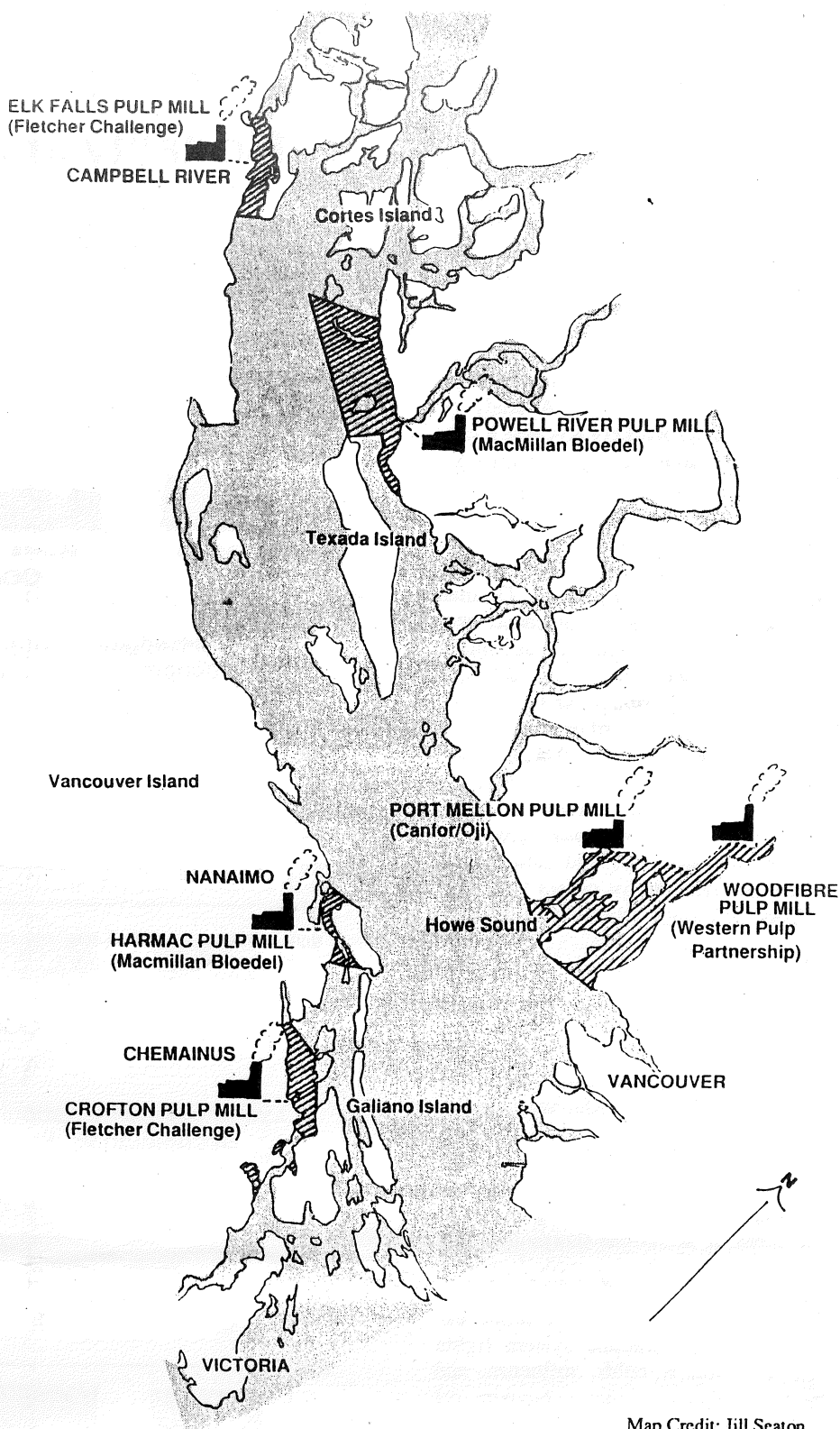
With the *Washington Post* on board, the "detoxify dioxin" campaign was rolling.

The *Journal* goes on: "Next the Chlorine Institute... arranged to bring three dozen of the world's foremost experts on dioxin to a conference at the Banbury Center [on Long Island in October, 1990]." The *Journal* continues, "Also present was George L. Carlo, a scientist but not widely regarded as a dioxin expert..." "Carlo is not a scientist with a long history of dioxin credentials," Dr. George Lucier of the National Institutes of Environmental Health Sciences told the *Journal*. The *Journal* goes on: "Why was Carlo there? Though described as a 'conference participant' by the Chlorine Institute, he was actually the industry's \$150-an-hour observer. Based on his account, the institute would later circulate reports that the scientists had reached an important consensus...."

Carlo's account, which the Chlorine Institute immediately circulated widely to journalists and to state regulatory officials, said that the scientists at Banbury had reached consensus that dioxin does no harm until a certain threshold of exposure is reached. In other words, Carlo claimed--and the Chlorine Institute sent out press statements claiming--that the Banbury meeting had reached agreement that there is some amount of dioxin that is safe. The *Journal* continues, "The institute's statement, however, didn't accurately reflect what had happened at the conference...A Chlorine Institute official concedes its representations about the conference were a 'botched publicity effort.' The Institute now agrees there was no conference consensus on whether a dioxin threshold exists."

However, before the world had a chance to learn that the Chlorine Institute was playing fast and loose with the facts, the Institute's disinformation about Banbury was fed to William Reilly, chief of EPA, who fell for it. Citing the Banbury "consensus," in early 1991 Reilly ordered his scientific staff to officially "reassess" the toxicity of dioxin.

The paper industry got help from other friends in high places. In May, 1991, a highly-placed federal health official just three years shy of retirement announced that dioxin was much less toxic than previously believed. Dr. Vernon Houk, Director of the Center for Environmental Health and Injury Control, announced that he believed dioxin was only "a weak carcinogen." Houk's statements formed the "news hook" that allowed the *New York Times* to climb on board with its own page-one story August 15, 1991: "U.S. Officials Say Dangers of Dioxin Were Exaggerated." With the *Post*, the *Times*, Houk and Reilly all speaking with one voice, the "detoxify dioxin" campaign was clearly succeeding.



Map Credit: Jill Seaton

Dioxin & Furan Closures in Georgia Strait - August 1991

Note: This map indicates Dioxin and Furan closures only, as dictated by Health and Welfare Canada Risk Assessment Analysis. There are no measurements or standards for overall organochlorine contamination. Sewage and red tide closures are NOT included.

Source: The New Catalyst, Number 21, Summer 1991, POB 189, Gabriola Island, B.C. VOR 1X0

But with the publication of the *Wall Street Journal's* story Feb. 20, the campaign has come unraveled. The scientist in charge of EPA's reassessment, Peter Preuss, is quoted in the *Journal* saying that Vernon Houk's statements "misled" the public about the dangers of dioxin. Other scientists on EPA's reassessment team say dioxin seems to be just the tip of a nasty iceberg--that other chemicals in the environment seem to share dioxin's ability to interfere with the human reproductive and immune systems. If we all carry dioxin in our bodies at an average of 7ppt [parts per trillion], when you add furans and PCBs [polychlorinated biphenyls], our average body burden of "dioxin equivalents" may be as high as 100 ppt. This is not good news. And it means that any additional dioxins or furans added to the environment would worsen a situation that is already unacceptable from a public health perspective. Knowing this, anyone who intentionally emits dioxins into the environment seems like a logical target for a barrage of lawsuits.

It is now clear that dioxin lawsuits can devastate an industry. For example, the *Wall Street Journal* reported

February 7, 1992 (p. A5), that the Georgia-Pacific Co.--a major paper producer--recently lost two dioxin lawsuits in which juries awarded \$4.2 million to residents living downstream of its paper mill on the Leaf River in New Augusta, Mississippi. GP has been named in 159 additional lawsuits filed by 8209 plaintiffs who claim they suffered emotional harm after eating fish contaminated with dioxins from the GP plant. Furthermore, according to the *Journal*, GP's insurance carriers say their policies don't cover damages in lawsuits like these. GP has now sued Aetna Life & Casualty and seven other insurance companies in Mississippi federal court asking a judge to force the insurance carriers to pay. No matter how that lawsuit comes out, someone is likely to have to pay tens, or perhaps hundreds, of millions of dollars--and this represents the problems of only one mill owned by one company.

As the *Journal* commented, "Other paper companies are likely taking note of GP's setbacks. International Paper Co. and Champion International Corp. are among those who faced similar suits." Likely they are....

Dioxin Attacks Immune System

[From Rachel's Hazardous Waste News #270 (January 29, 1992)]

EPA chief William Reilly was right--there is new information about dioxin. But it won't be reassuring to the paper industry. On the contrary, two studies of workers exposed to dioxin, published during the past year, have shown unmistakable increases in cancers of several types. A study of 5172 American workers revealed a cancer rate 46% above the norm. Likewise, a study of 1583 German workers revealed a cancer rate 39% above the norm; among German workers 20 years on the job, the rate was three times the norm. Notably, among female German workers, the risk of breast cancer was doubled. Whereas a year ago one might have argued whether dioxin had ever been shown to cause cancer in humans, now such arguments are only voiced by the kind of people who say it still isn't proven that cigarettes cause lung cancer.

Linda Birnbaum, one of the scientists conducting EPA's reassessment of dioxin, says these two studies have convinced her that dioxin causes cancer in humans, at least at relatively high exposures. But, she told *Science News* (January 11, 1992, pgs. 24-27), she has an even greater concern about dioxin: "I'm very concerned that much lower exposure to dioxin may result in adverse health effects that are very subtle and difficult to detect." She was talking about dioxin's impact on the immune system.

The immune system is an exceedingly complex network of organs, cells, and chemical secretions (hormones) that react to preserve health in the face of a vast array of hostile microorganisms and toxicants that our bodies encounter every day. The immune system fights against common colds, influenza, and the body's own cells that go haywire and start to multiply uncontrollably (a definition of cancer).

A degraded immune system leaves the body less able to defend itself against hostile forces in the natural environment. Dioxin attacks the immune system....

To study TCDD's [dioxin] toxicity to the immune system, researchers use mice, whose immune systems model those of humans. For example, EPA researchers have measured how well TCDD-treated mice withstand the influenza virus. Mice pre-treated with TCDD readily die after exposure to a quantity of virus that rarely kills healthy mice.

Naturally, it would be very difficult to detect such effects in people. If people exposed to unusually high levels of dioxin, say from a solid waste incinerator, had damaged immune systems and consequently experienced various illnesses, no one might ever suspect dioxin as a cause.

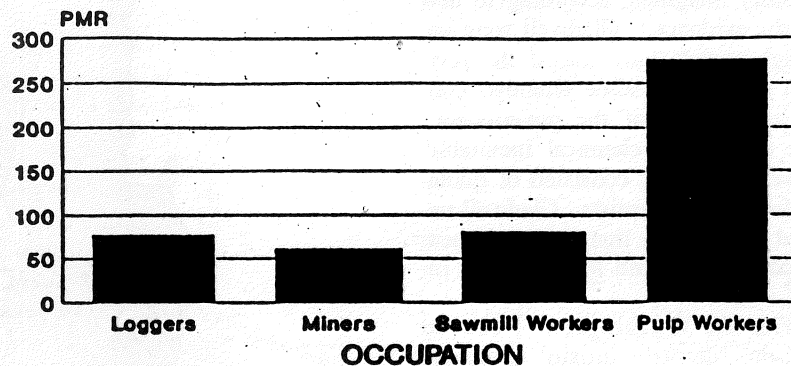
People might question whether some of dioxin's low-level effects represent real harm to people, but "...few people will contend that suppression of the immune system is not an adverse health effect," Birnbaum told *Science News*.

Unlike hormones, which remain in the body only a few hours, dioxin has a half-life in the body of seven years. At the end of one half-life, half the initial dioxin remains. What this means is that dioxin has, relatively, a very long half-life in the body, unlike the hormones that it mimics, so it stays around

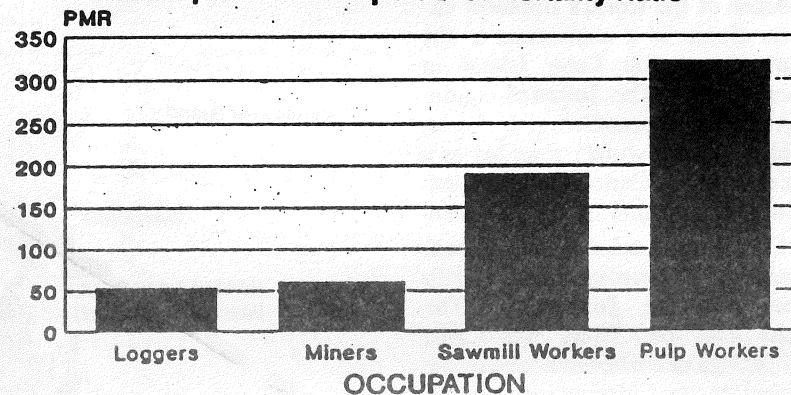
Pulping The People

Mortality and Mills in B.C.

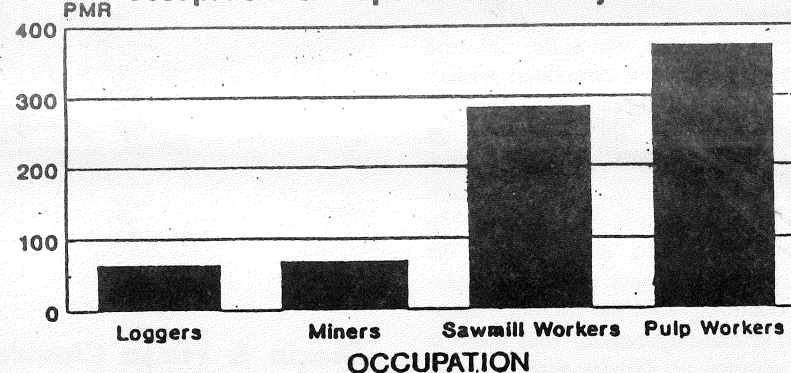
Prostate Cancer Mortality in B.C.:
Occupation vs. Proportional Mortality Ratio



Non-Hodgkins Lymphoma Mortality in B.C.:
Occupation vs. Proportional Mortality Ratio



Lymphosarcoma/Reticulosarcoma Mortality in B.C.:
Occupation vs. Proportional Mortality Ratio



Source: Occupational Mortality in British Columbia, 1950-1984, Cancer Control Agency of B.C., 1989.

to play havoc with the body's chemical systems year after year. "Thus one TCDD molecule can continuously disrupt normal cell physiology," says *Science News*, citing work by well-known dioxin researcher Thomas A. Gasiewicz at the University of Rochester (NY) Medical School.

No Safe Level of Dioxin

[From Rachel's Hazardous Waste News #270 (January 29, 1992)]

Is there a threshold for dioxin's damage to the human body? Is there a level of dioxin below which no effects can be observed? George Lucier of the National Institute of Environmental Health Sciences in Research Triangle, North Carolina, has been asking this question in his laboratory. His data show no evidence of any threshold. "My data might not prove that a threshold doesn't exist," he told *Science News*, "but there's also no evidence of any thresholds." In other words, any amount of dioxin does some damage, according to Lucier's findings. This means the only safe amount is zero.

Chlorine Free by '93

The Northern Forest Forum is printed on chlorine free paper produced by Lyons Falls Pulp & Paper Inc. What this means is that the paper was bleached by a process that did not use chlorine, either as chlorine gas or as chlorine dioxide.

Lyons Falls bleaches its pulp using a sodium sulfite instead of a sodium sulfate kraft pulp cooking process. This allows the mill to bleach its pulp with a combination of hydrogen peroxide and sodium hydrosulfite.

Although some mills produce chlorine-free newsprint and coated groundwood, Lyons Falls is the only U.S. mill that produces 100% chlorine-free printing and writing papers.

We are grateful to Lyons Falls for its helpfulness in supplying chlorine-free paper for the Forum. We hope that some day they will produce a recycled paper (post-consumer waste) that is chlorine-free and un-de-inked. If the nation's (or even this region's) environmental groups banded together to purchase in bulk, we could create sufficient demand to influence the production of paper that minimizes environmental damage.

Contact Lyons Falls' Customer Service at: 1-800-648-4458, or Larry Cannon at 815-455-0981.

More Dangerous Than Ever

[From: "Puzzling Over a Poison," U.S. News & World Report, April 6, 1992]

Perhaps most important to the regulatory battle is what researchers have learned about how dioxin triggers cancer, since the findings can explain the perplexing results of human epidemiological studies. Dioxin does not damage DNA, as most carcinogens do. Instead, it works with a protein, called a receptor, that resides in the interior of most cells. Dioxin hooks to the receptor and rides into the nucleus to switch on genes that control cell growth and proliferation. If the cell harbors DNA already damaged by other carcinogens, dioxin can promote cancer by triggering these abnormal cells to rapidly divide, explains George Lucier of the National Institute of Environmental Health Sciences (NIEHS).... Thus, dioxin can cause a wide variety of cancers rather than a single hallmark type, which epidemiologists usually expect to find.

But dioxin's cancer threat pales next to newly discovered risks. In studies of mice, of instance, scientists have discovered that minuscule doses of dioxin may deal a stunning blow to the immune system. It takes far smaller quantities of dioxin to suppress immunity than it does to unleash any of its other measurable effects, says Linda Birnbaum, EPA's director of environmental toxicology at Research Triangle Park....

Equally worrisome, the poison whips up widespread chaos in the body's hormonal messenger system, thus affecting every organ in the body. Lucier says dioxin appears to boost the potency of some hormones, like epidermal growth factor, which can lead to skin eruptions and perhaps to various cancers. But it also seems to quash others, including sex hormones: Some male chemical workers chronically exposed to dioxin show reduced levels of the male sex hormone testosterone. And if it proves to work like its chemical cousins, dioxin may also affect insulin, the hormone that regulates blood sugar. Indeed, Lucier says, studies show that Vietnam veterans exposed to dioxin-tainted Agent Orange have a higher incidence of diabetes.

By causing hormonal havoc, dioxin could also create permanent health problems for children exposed in the womb....

Further Reading

*The Other Side of the Canadian Pulp and Paper Industry: The Urgent Need for Environmental Reform, by Barry Reiter, May 1990, Pulp, Paper, and Woodworkers of Canada, 1184 West Sixth Avenue, Vancouver, BC, Canada V6H 1A4

*Pulp and Paper Primer: Nova Scotia & Pulp and Paper Mill Pollution: Some Information Sources, The Green Web, RR#3, Saltsprings, Pictou County, Nova Scotia, B0K 1P0, Canada.

Contacts

Natural Resources Council of Maine, 271 State St., Augusta, ME 04330. Tel (207) 622-3101.

Greenpeace, contact Mark Vogel, (202) 319-2480.

Reach for Unbleached! Box 3333, Manson's Landing, British Columbia, V0P 1K0, Canada. Tel. 604 935-6992.

Faulty Assumptions of Northern Forest Lands Council

by Mitch Lansky

I: Introduction

"The Happy Coincidence"

Much of the debate within the Northern Forest Lands Council has been structured around the following set of assumptions:

- *the large land ownerships have served the region well;
- *the goal of the Council is to support and enhance the "traditional" land ownership patterns and uses;
- *the major threat to the Northern Forest is "land conversion";
- *"land conversion" means subdivision of land, especially for uses other than timber management;
- *the main impetus for land conversion has been excessive regulations and taxes.

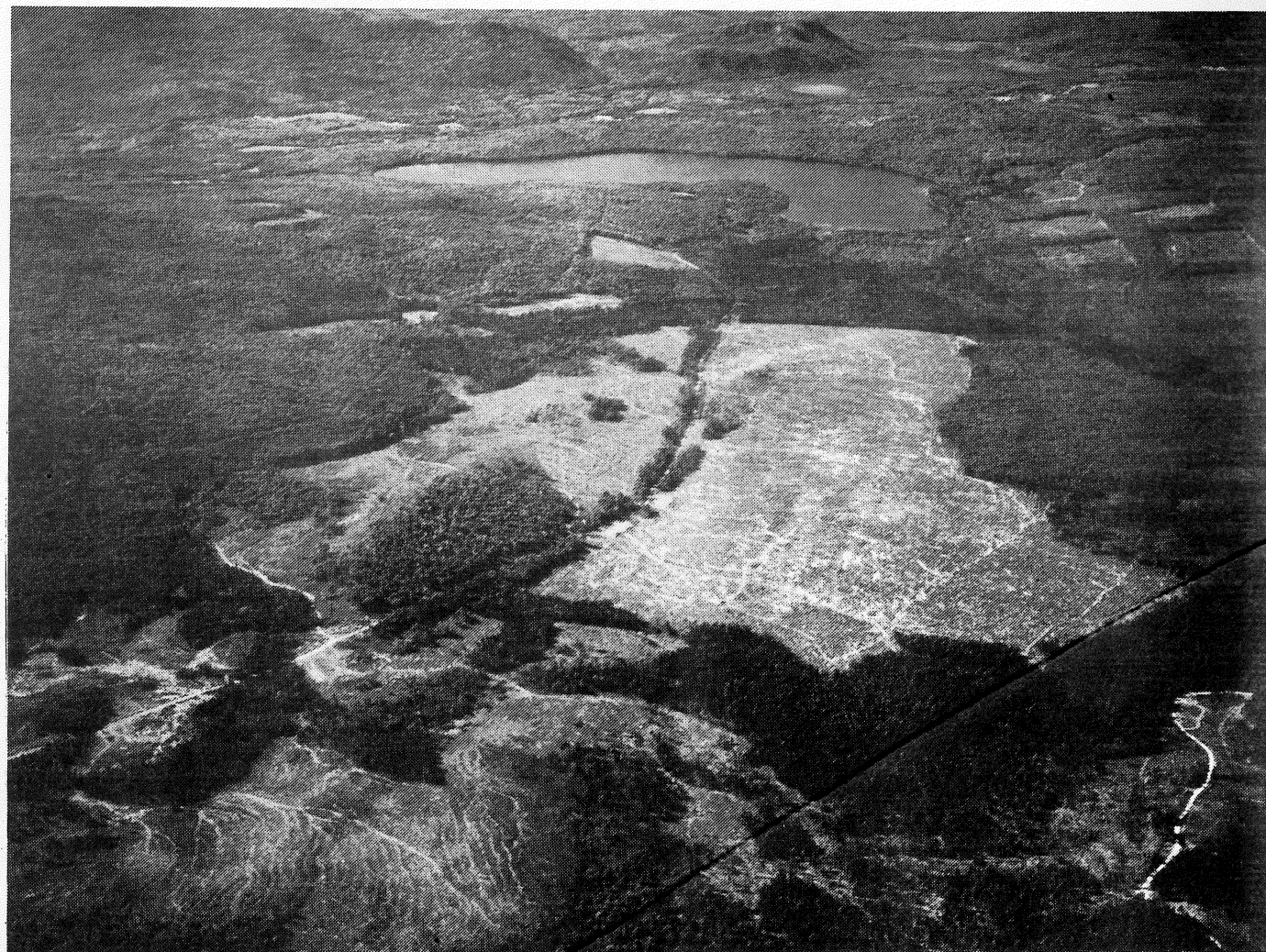
These assumptions are an assertion of a myth of the "happy coincidence" that what the industrial landowners of Maine have done in pursuit of cheap fiber and higher revenues has been universally beneficial to the forest, forest wildlife, local communities, and the state's economy. "Saving" the forest means, simply, to reinforce this beneficial status quo. The way to reinforce the status quo is to:

- *reduce property taxes;
- *reinstate a federal capital gains deduction;
- *reduce the burden of inheritance taxes;
- *purchase "conservation" easements that consist of development rights but allow continued "traditional" timber management.

II: Flaws in the Argument

These assumptions are not accurate reflections of reality for the corporate forests of Maine (I cannot speak, however, for other regions of the Northern Forest)

(1) The large land ownerships have not always served the region well. In 1974, for example, when this "happy"



Sturtevant Pond (top center) located in Maine, just north of Lake Umbagog, is 650 acres. The clearcut area is at least as large. Photo courtesy Alex S. MacLean - Landslides.

past was supposedly occurring, William Osborne, in his book *The Paper Plantation*, documented how the companies were:

- *degrading their forests;
- *exploiting their workers;
- *using leverage over timber prices to the detriment of woodlot owners and pulpwood cutters;
- *contributing minimal revenues to the tax base (considering the size and value of their land);

- *polluting the state's air and water;
- *and discouraging local economic diversification.

The result has been that the corporations have been enriched by the valuable resources of the state, while the local inhabitants have stayed relatively impoverished. The Northern Forest Lands Study documented that this impoverishment still persists in forest-dominated communities nearly two decades later. [Ed. Note: See pp. 33-37 of the Study which is available from the Northern Forest Lands Council, 54 Portsmouth St, Concord, NH 03301.]

(2) Some of the "traditional" land ownership patterns and uses, such as those listed above, are not worth maintaining. Reference to "tradition" also masks the fact that forest practices and other forest uses are continually evolving. One can hardly call the recent reliance on mechanized harvesters, whole-tree logging, or herbicides "traditional" when they have expanded to their current status in only the last decade.

(3) Property subdivision for development, while a problem in some areas, has only occurred on around one per cent of Maine's unorganized territories. While some individuals and groups have raised the fear that millions of acres of paper company lands will be sold for development lots, the reality so far has been that most sales of paper company lands have gone to other timber management companies (but many of these companies, which are lobbying for taxation relief, do have their own real estate divisions and have sold a portion of their most valuable development properties). Most of the development activity is focused around shorelands and scenic areas. Well over 90 per cent of the unorganized territories of Maine are unlikely targets for development, due to poor access or unsuitable surroundings. Who would want to build a condo in an industrial clearcut?

While the development of certain sensitive areas around the beauty strips desired by recreationists has been a prob-

lem that needs to be addressed, the impact of such problems to the forest and forest wildlife has been minor over the last decade compared to the impact of industrial management on the millions of acres that lie beyond the beauty strips.

(4) Focusing on land sales and subdivision as being the major source of land "conversion" and assuming that such conversions ought to be prevented because they are undesirable can lead to policies irrelevant to forest or community health. Subdividing land is not necessarily bad for the forest, nor is consolidating land necessarily good. It depends on how the land is used. A consolidated ownership can, through abusive management, more severely "convert" the land (by changing the ecosystem from a mature, diverse forest to a simplified, fragmented, young forest) than a responsibly-managed subdivision. Fragmentation of ownerships and fragmentation of forests are not necessarily the same thing.

The relative poverty of the area, the decline in forest jobs, the high accident rates, the high percentage of exported raw logs, the high percentage of foreign workers, the decline in spruce volumes, the threat to biodiversity, and even the degradation of forest beauty are not, primarily due to land subdivision and development. They are more due to the status quo that the Council may end up protecting to prevent "conversion."

(5) The boom in subdivisions was not, primarily, a result of excessive taxation and regulation of timberlands. It had more to do with changes in the economy that led to a frenzy in speculative investments:

Taxation: The decision to subdivide and sell both the Coburn and Diamond lands, for example, occurred before the changes in capital gains in 1986. The boom in subdivisions in the unorganized territories began in 1985--also before the changes in the tax laws--and ended in the 1990s, despite those changes.

Who Owns the Maine Woods?

The Ten Largest Landowners in Maine are:

Company	Acres Owned
Bowater, Inc.	2,088,432
Seven Islands Land Co.*	1,011,000
International Paper	980,891
Prentiss & Carlisle Mgt. Co.*	970,000
S.D. Warren Co. (Scott Paper)	930,000
Champion International Corp.	730,000
Boise Cascade Corp.	670,000
Irving Pulp & Paper	561,000
Diamond Occidental Forest Inc. & James River Corp.	526,000
Georgia-Pacific Corp.	488,035
TOTAL	8,953,358

*Management Companies for Family Ownerships

According to the Northern Forest Lands Study, there were 14,200,000 acres of private land in Maine's portion of the Study region. The largest 18 landowners in Maine own over 75% of the Maine woods. **Less than 0.1% of the landowners more than 75% of the Maine Woods.**

Source: Bangor Daily News, July 11-12, 1992

Maine, with its Tree Growth Tax Law, has the lowest property taxes in the northern forest region. Taxes under Tree Growth are so low that towns dominated by commercial forest lands can get compensation from the General Fund for their lost revenues. This constitutes a subsidy to the landowners.

If low property taxes are an incentive for better forest management, then Maine should have the premier forests of the region. Yet, despite both low property taxes and low taxation of capital gains, some companies abusively managed their lands on a massive scale in Maine during the 1980s. While lower tax rates may lead to higher profits, there is no guarantee that they will lead to better management.

Regulations: To call the forest regulations that existed during the 1980s "excessive" is somewhat of an exaggeration. The only regulations of timber harvesting were for the fraction of the forest (5%) near shorelands or deeryards. Even in these areas landowners could cut up to 40% of timber volume in a 10 year period if they so desired. In the "management zone" landowners could, (and did, in some cases) cut as intensely and as extensively as the landscape allowed (i. e., until they came to a shoreland zone). The results of this lack of regulation during the 1980s are readily observable from satellite photos.

There are some individuals who have argued before the NFLC that any regulations at all represent an excess. They maintain that landowners should have the right to do as they please on their own property, and to restrict that right constitutes an unlawful taking without due compensation.

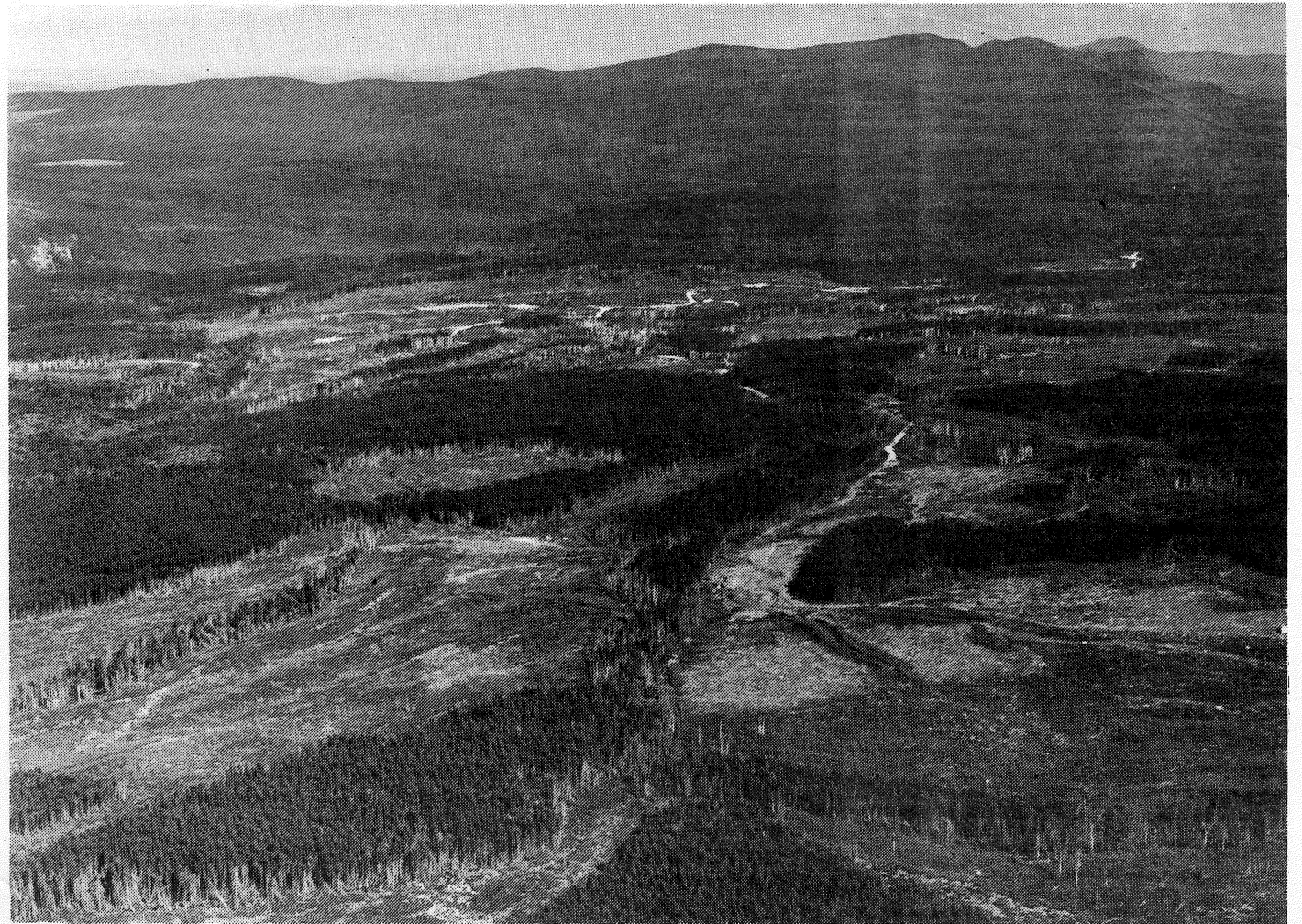
Unfortunately, some of those so vociferously defending the "rights" of private property owners have trouble distinguishing between rights and privileges. There are, however, legal limits to what one can do with one's land. The Maine Supreme Court declared in 1908 that "We think it a settled principle, growing out of the nature of a well-ordered society, that every holder of property however absolute and unqualified may be his title, holds it under the implied liability that his use shall be so regulated that it shall not be injurious to the rights of the community."

Using regulations to prevent destructive practices should hardly be considered "taking" land from a landowner, but rather preventing the landowner from taking the values of the land from the community or from future generations. Since past and current forest regulations do not or barely address intensity of cut, shortness of rotation, forest simplification, forest fragmentation, conversion of species, degradation of quality, depletion of soil organic matter or nutrients, etc. etc., one can hardly call them excessive.

III: Inappropriate Policy

The tax breaks and purchase of development rights through "conservation easements" are based on the idea of the "happy coincidence"--that making forest management more profitable, by reducing certain costs, will assure the protection of the forest and local communities. Historically it has already been demonstrated that there is no guarantee that such a coincidence will occur. Unless there are strings attached to any such benefits, landowners are just as likely to use the incentives to take more profits as to invest in bettering the land or improving local communities.

The NFLC appears to assume that the tax breaks and easements will help "conserve" the forest (i.e., prevent "conversion"), but, while these benefits apply to all the acreage, the "threats" are



Clearcuts in Township D in western Maine. The Appalachian Trail runs along the ridge to the west. Mooselookmuntic Lake lies to the north. Photo courtesy Alex S. MacLean - Landslides.

only to the fraction of the acreage in areas desired for development. If there are particular sensitive areas that ought to be protected from development, this would appear to be more of a zoning problem than a taxation problem.

Members of the Council have, in the face of accusations from private-ownership-rights groups fearing government takeover of their lands, denied that the NFLC is a government agency with the power to take lands, or even to set policy. But the NFLC is helping to recommend policy, and is thus, to some extent, a government financed lobbyist group.

To the extent that the NFLC focuses primarily in protecting the status quo, as if this protected the forest or local communities, it is using public

funds to lobby for the benefit of private forest landowners. There are voting members on the NFLC who would get (or their clients would get) a direct financial benefit from proposed tax changes or easements. This creates the appearance of a conflict of interest. While the forest industry may argue that they need such benefits due to some hardships, many other industries could argue the same--such hardships are all-too-common in the 1990s.

There are limits, however, to how much taxation relief the government can grant to all such industries. To the extent that tax revenues do not come from forest landowners, they come from other tax payers. The public itself feels that it is already overburdened with taxes--it also wants relief.

The tax-paying public that makes up for these lost revenues (or that pays for financing purchase of easements) must be assured that they are getting more for their increased burden than the maintenance of large, hereditary ownerships, or the maintenance of adequate profit levels of absentee ownerships, or the maintenance of adequate profit levels of absentee multinational industrial landowners. They need to be assured that they are getting some tangible public benefit or they will balk at supporting the recommended policy changes.

Since taxation is an unreliable inducement to responsible forest management unless there are substantial "strings" attached to any benefits, the major taxation issue should be equity. The NFLC policy emphasis for "saving" the northern forests, therefore, should go elsewhere.

IV: Appropriate Policy

The criteria for appropriate forest policy should be that practices qualify as ecologically sound, socially responsible, economically viable, and sustainable.

*Ecological soundness is primary in importance because all other criteria depend on it. "Ecologically sound" implies practices that maintain native biological diversity at all levels of organization over the landscape, and it implies practices that maintain forest health or stability--i.e., resistance to and resilience maintaining, when possible, mature, diverse forests that contain the full array of predator/prey complexes and nutrient cycles.

*Social responsibility implies practices that do not increase social inequity either between groups in this generation or between this generation and those to come. It implies safe work conditions and fair wages for workers. It implies also that practices benefit, rather than harm, the communities where they take place, and that communities have a say over what goes on in their jurisdictions. Because practices that are ecologically unsound create inequities between generations and harm local communities, they are not socially responsible.

*Economic viability implies practices that incorporate ecological and so-

Local Control Quiz

Supporters of the Paper Industry and Property Rights Advocates have often objected to public ownership of forest lands (especially by the citizens of the United States via federal ownership). They have piously called for a retention of "local ownership." Eight multinational paper corporations own about 7 million acres in Maine.

Can you match the corporation (column A) with the location of its corporate headquarters (column B)?

Column A

Boise Cascade
Bowater
Champion International
Fraser
Georgia-Pacific
International Paper
James River
Scott Paper

Column B

Toronto, Ontario
Darien, Connecticut
Stamford, Connecticut
Atlanta, Georgia
Boise, Idaho
Purchase, New York
Philadelphia, Pennsylvania
Richmond, Virginia

cial concerns and still bring in positive revenues. If it is not viable to incorporate ecological and social costs, these concerns most likely will not be incorporated.

*Sustainability implies not just fiber supplies for the expected life of a mill, but ecological and social values at a local level for centuries to come.

The role of the NFLC should be to assess all government tools--such as planning, research, education, taxation, regulation, and reserves and demonstration areas on public lands--to see if they harmonize with the above criteria and with each other. The NFLC should determine to what extent regional cooperation will further these goals.

We already have examples where these government tools have been incompatible with sound forestry policy or have been used in an incomplete manner. Policies that address economic viability through tax incentives, for example, but neglect ecological or social implications have not "saved" the forest in the past and can not be expected to do so in the future.

V: Economic Viability-- Two Approaches

There are two basic approaches to making an enterprise more economically viable--cutting costs and increasing revenues. The NFLC seems to be focusing primarily on cutting costs for landowners, at public expense, by lowering taxes. But there are other reasons why a landowner might not be getting acceptable returns on forest management, such as: not growing for highest-paying markets, not having local high-paying markets, or having local markets that undervalue the wood.

When an industrial land manager complains that he or she can not get acceptable returns from timber management, the fault may lie more in the mill division of the company not paying what the wood is worth in an internal corporate transaction, that in excessive taxation or regulation.

For most of these companies, the major source of profit is in making pa-

per, not in growing trees. Because the companies are vertically integrated and exist in an oligopsony (where only a few companies dominate buying markets) they can have influence over the economy to keep purchase prices low.

The NFLC by concentrating on keeping forestry costs low through tax reductions or easements--whether on industrial or nonindustrial lands--is, in effect, lobbying for either a direct, or indirect, subsidy to the mills, so that they can have an artificially cheap supply of fiber.

Having wood devalued in such a

way contradicts appropriate policy goals in many ways:

*it creates taxation inequity by having wealthy corporations, which can afford to pay, pay less--thereby forcing others to pay more;

*it means there is less money to pay for management costs--especially for labor;

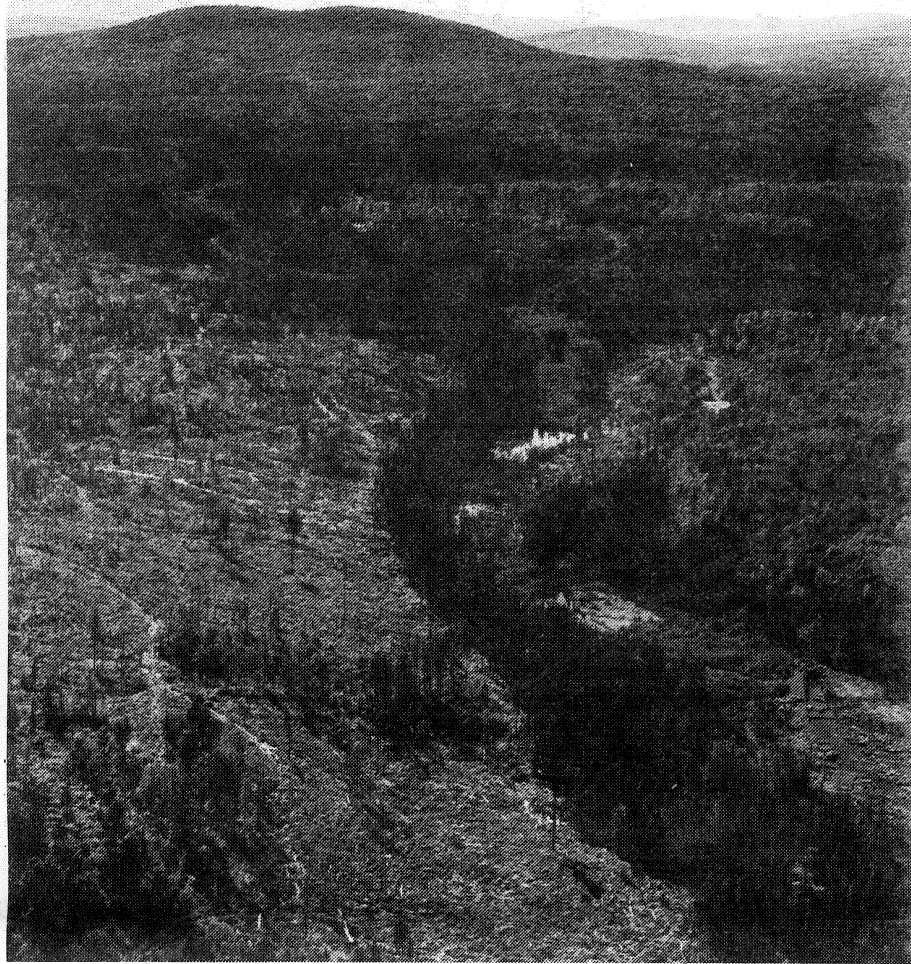
*it means that there is less incentive for society to conserve a precious resource, or to intensify recycling--currently virgin fiber is cheaper than recycled fiber.

Incorporating ecological costs into the value of wood would have major benefits for society and the forest. Of

course, some people will argue that this is not practical in a global market dominated by regions where timber management is highly subsidized. I would respond to this argument, that the problem must at least be addressed, and the NFLC could be a forum to discuss how the situation could be reformed.

I agreed to be part of the Citizens' Advisory Committee because I hoped that the Northern Forest Lands Council was going to work for the best interest of the forest and the communities of this region in which I live. Based on current emphases, I am not convinced that this is presently the case. I welcome further dialogue, and hope that the NFLC can address these important ecological, social, and economic issues in the near future.

Mitch Lansky, a Selectman in Wypitlock, Maine, in the heart of the industrial forest of Maine, is a member of the Maine Citizens' Advisory Committee for Maine. This was originally addressed to Charles Levesque, Executive Director of the NFLC. Mitch is also the author of the forthcoming *Beyond the Beauty Strip: Saving What's Left of our Forests*, which will be published in October by Tilbury House, 132 Water St., Gardiner, ME 04345. Tel. 207 582-1899. Price: \$26.95 (Cloth) & \$16.95 (Paper).



Note the "Beauty Strip" along the stream just south of Lake Umbagog.

Photo courtesy Alex S. MacLean - Landslides.

Northern Forest Conference November 12-13, 1992

Sustaining Ecosystems, Economies, and a Way of Life in the Northern Forest, co-sponsored by the George D. Aiken Lecture Series of UVM and The Wilderness Society at the University of Vermont, Burlington. Free & Open to the Public. For information, call Debra Livramento (The Wilderness Society) 202-833-2300.

Revised Mission Statement of Northern Forest Lands Council

*Submitted to the NFLC on September 1, 1992 by 14 Groups
That Belong to the Northern Forest Alliance*

The Mission of the Northern Forest Lands Council is to critically examine current trends in forest land ownership, uses and practices, and to reinforce the continued existence of large forest areas which promote sustainable natural and human communities in the Northern Forests of Maine, New Hampshire, Vermont and New York. The mission is to be achieved by:

- *Protecting the ecological integrity of the region;
- *Enhancing the quality of life for local residents by promoting a diverse, sustainable regional economy, and by providing the opportunity for the people of the region to determine the future of their communities;
- *Encouraging an ecologically and economically sustainable forest-based economy;
- *Protecting the recreational, wildlife, scenic, and wildland resources of the region.

Operating Principles

The Northern Forest Lands Council finds:

The Northern Forests are of national significance and are facing a number of ever-increasing pressures from land fragmentation, development, recreational use, unsustainable forest and mill practices, misdirected land taxes, global market forces, and air and water pollution. These have significant adverse impacts upon the ecological and economic integrity of the region; on attempts to manage forest lands in a sustainable manner; and on the quality of life of local residents.

In the past land conservation efforts have tended to focus on planning, zoning and acquisition. The Northern Forest Lands Council presents an opportunity to explore additional ideas for land and resources conservation that can help local people.

The Northern Forest Lands Council will be guided in its work by the following Operating Principles:

(1) The Council will be advisory only. States shall retain all of their existing authorities. The Council will have no regulatory power. Responsibility for land use

planning and regulation will remain with state and local governments.

(2) There is a need to gather natural and economic resource information that can contribute to decision making to conserve the ecological integrity of the region and to enhance the social and economic condition of the region's communities. Specifically, the Council will assess the impact of traditional, current and alternative future land uses and land management practices on the long-term health of the natural and human communities of the region.

(3) The Council cannot and will not acquire land. The Council recognizes that public acquisition, from willing landowners, is only one of many tools with which to protect critical lands within the Northern Forest area. The Council realizes that wholesale public land acquisition is not the total solution to the problems of the Northern Forest, but that fee acquisition remains an effective way to protect public values. Acquisitions of fee title and conservation easements are appropriate to:

- *Protect the ecological integrity of the region;
- *Protect water quality;
- *Assure public access;
- *Prevent inappropriate development; and to
- *Assure the longterm integrity of working forests and farms.

(4) To encourage the conservation of important tracts of timber and recreation lands, the states and federal government should support tax policies, regulations and zoning that promote ecologically sustainable economies. Encouragement should also be given to a variety of public-private partnerships that exchange incentives for long-term commitments by landowners to manage their lands in a sustainable manner while keeping them open for appropriate public use.

(5) In all of the work of the Council, landowners, residents of the region, and other citizens concerned about the future of the Northern Forest will be consulted and treated openly and fairly.

(6) The Council will build upon the work of the Northern Forest Lands Study, the Report of the Governors' Task Force on the Northern Forest Lands, and the work of others who are working to promote sustainable natural and human communities.

(7) The Council will seek public input at all stages of its process.

The Adirondack Park: An Unfulfilled Dream

by Michael G. DiNunzio

Birthdays--of people and parks-- are a time for celebration. They are also a time for taking stock of where we've been and where we're headed. A review of the hundred-year history of the Adirondack Park reveals a shocking lack of shared purpose and vision regarding the Park's ultimate form and function. But history also reveals the serendipitous evolution of a land protection strategy that has been a model for the conservation of lived-in landscapes throughout the world.

The Adirondacks were the world's first countryside park. In this setting, public and private holdings form an intricate pattern of natural and human communities. Working farms and forests that underpin the regional economy surround the largest wilderness complex in the Eastern United States. Yet all is not well.

Homes and businesses sprawl along many road corridors, blocking vistas and blurring the distinction between settled and wild lands. But subdividers and speculators pose a more insidious threat to the Park's backcountry, where vacation homes account for about 60% of the dwellings. "No trespassing" signs prevent access to many sections of lakes, rivers and public Forest Preserve. And crushing tax burdens promote the breakup of large private holdings, where a tradition of good stewardship has stabilized the flow of forest products from the working landscape.

We must act now, if we are to reverse this decline and fulfill the dream of creating a true park in the Adirondacks. To assist us in this task, we need to review some events of the past and consider some options for the future.

* * *

In 1890, the New York State Legislature appropriated \$25,000 for the purchase of lands in the Adirondack and Catskill regions, "as shall be available for the purpose of a State Park." Apparently, the legislators were planning ahead, but they didn't elaborate on their choice of words. Later that year, in an attempt to focus future state acquisitions, the newly-formed Forest Commission published a map on which it proposed an Adirondack Park that was outlined in blue. When the Park was officially formed two years later, its "Blue Line" encompassed 2.8 million acres, 80% of which was private land. The remainder was publicly-owned State Forest Preserve. Since that time, the Park has more than doubled in size, and public ownership has grown to roughly 40%.

The Forest Commission originally intended to buy all the private property within the Blue Line as it became available, and add it to the Preserve. But that soon proved to be fiscally impractical and politically unthinkable. Wealthy individuals and clubs secured vast tracts of Adirondack backcountry and became ensconced in their domains. Escalating land prices quickly outpaced state appraisals and depleted meager coffers. At this critical juncture, the state failed to consider how it could design a park comprised largely of private land, including tens of thousands of residents in scores of communities.

Except for the passage of a law limiting the placement of advertising signs, activities on the Park's private lands were virtually ignored for the next eight decades. In contrast, a heavy coat of le-

gal armor was forged to protect the Preserve from all foreseeable onslaughts. Disgusted by the performance of the scandal-plagued Forest Commission, the people passed an 1894 amendment to the state constitution, which stated that the lands of the Forest Preserve "shall be forever kept as wild forest lands. They shall not be leased, sold, or exchanged, or be taken by any corporation, public or private, nor shall

the timber thereon be sold, removed, or destroyed." These words defined a covenant between New Yorkers and their Preserve that remains the world's strongest legal commitment to the protection of our natural heritage.

Thus shielded against the types of environmental abuses that characterized the exploitative mentality of the last century, the Preserve has largely recovered its ecological integrity. But the

Wild Island in a Civilized Sea

Created in 1892, the Adirondack Park was the first "countryside" park in the world. Its founders specifically incorporated a complex pattern of public and private lands, including thriving communities, within its boundary. It contains six million acres, covers one-fifth of New York State, and is equal in size to neighboring Vermont.

Some 58 per cent of the Adirondack Park is private land, devoted principally to forestry, agriculture, and open-space recreation. The park is home to 130,000 permanent and 210,000 seasonal residents, and hosts an estimated nine million visitors annually.

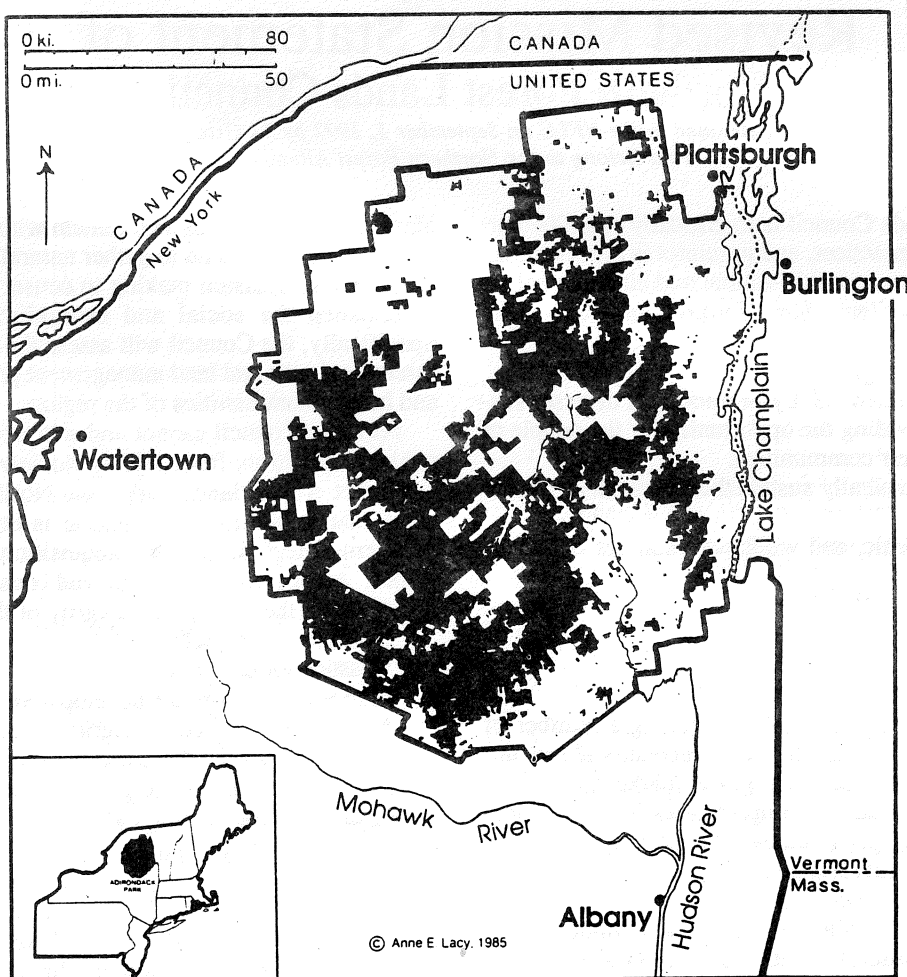
The remaining 42 per cent of the Adirondack Park is publicly owned Forest Preserve, protected as "forever wild" by the State Constitution since 1894. One million acres of these public lands, representing one-sixth of the entire park, are designated as Wilderness, where a wide range of recreational activities may be enjoyed in an incomparable natural setting. Sixteen separate wilderness units, ranging in size from about 7,000 to over 220,000 acres, are scattered throughout the park. Motorized vehicles and equipment are banned from Wilderness areas to preserve quiet and solitude, to protect sensitive wildlife and to help prevent overuse. The majority of public land (more than 1.3 million acres) is classified as Wild Forest, in which motorized uses are permitted on designated waters, roads, and trails.

Plants and wildlife abound in the Adirondack Park, including many found nowhere else in New York State. Uncut ancient forests cover tens of thousands of acres. Ironically, much of the park is more wild and natural today than it was a century ago, when irresponsible logging practices and forest fires ravaged much of the region. Someday, all native wildlife, including those species totally eliminated from the Adirondacks during the last century, such as the wolf, lynx, and moose, may live and breed in the park once more.

The western and southern Adirondacks are a gentle landscape of hills, lakes, ponds, and streams. In the northeast are High Peaks, 46 of them 4,000 feet or higher, eleven with alpine summits that rise above timberline.

The Adirondacks include the headwaters of five major drainage systems: the Hudson, Black, St. Lawrence, and Mohawk Rivers, and the New York portion of the Lake Champlain basin. Within the park are 2,800 lakes and ponds and more than 1,500 miles of rivers fed by an estimated 30,000 miles of brooks and streams.

--M.G.D.



The Adirondack Park is a patchwork of public (black) and private lands. What happens to the private holdings in the way of incompatible development will degrade the adjoining public lands and affect the natural character of the entire region.

People of New York have a "park on the cheap" and they continue to pay the price of assuming that the good stewards of large private holdings can hold on forever. Gradually, almost imperceptibly, the character of the Park is eroded as bit-by-bit, subdivision and development gnaw at the fabric of open space.

Lacking a clear vision of what the Adirondack Park could, or should become, the state adopted an opportunistic, cartographic approach to acquisitions that dominated the past century. An obvious result of this approach is the hodge-podge, patchwork pattern of public and private ownership that now characterizes the region. More importantly, the Park is a jig-saw puzzle that lacks some critical pieces.

By fitting these missing ecological "pieces" together, we can form an Adirondack Park that will serve as a global model for integrated land use and conservation. But first we must view the Park as an integrated whole and respect its special attributes.

* * *

Until the late 1960s, most Adirondackers--including sportsmen, residents, legislators, and even conservationists-- were preoccupied with the management of the Forest Preserve. Bills designed to undermine its constitutional safeguards were proposed and defeated, as were massive impoundment schemes reminiscent of the Hetch Hetchy project in Yosemite. At times, the courts were called upon to interpret fine points of law. During this period, many lost sight of the fact that the Park is not synonymous with the Preserve. Some people, however, had a greater vision.

Laurence Rockefeller recognized that the Adirondacks were a national treasure and, in 1967, he proposed the creation of an Adirondack Mountains National Park. His trial balloon was peppered with shot from all quarters and quickly fell to earth with a resounding thud. After that, things were never quite the same in the North Country. It was as though everyone who had been in denial for the past seventy-five years was now ready to face up to reality.

In fact, the scattered lands of the Forest Preserve did not, and never will, add up to a true park. Private and public holdings are inextricably intertwined and interrelated. This is a unique pattern for a park, and one that Americans still have a hard time reconciling with their stereotypical image of parks as public reserves.

Near-unanimous distaste for the federal park idea made New Yorkers more willing to discuss alternate ways to proceed. Following the demise of his brother's ill-fated proposal, Governor Nelson Rockefeller appointed a Commission on the Future of the Adirondacks. After two years, the Commission delivered its report. It was the first time the state had officially tackled the complex issue of integrating public lands with the Forest Preserve to form a true park in the Adirondacks. The next year, in 1971, the Legislature created the Adirondack Park Agency (APA) to devise a master plan for the Forest Preserve and to control some of the development on private lands within the Blue Line.

Comprehensive zoning plans were virtually unknown in the 105 Adirondack towns and villages in the early 1970s. As a consequence, the first years of the APA were tumultuous at

best. Twenty years later, many Park residents still view the Private Land Use Plan as the most restrictive zoning statute in the nation, if not the world. In fact, suburban communities throughout the state commonly function under zoning and permit requirements that are more restrictive. The Park Plan only regulates about one-half of the development in the region and is so flawed in its approach that the Agency now presides over what some have called the rational destruction of the Park.

* * *

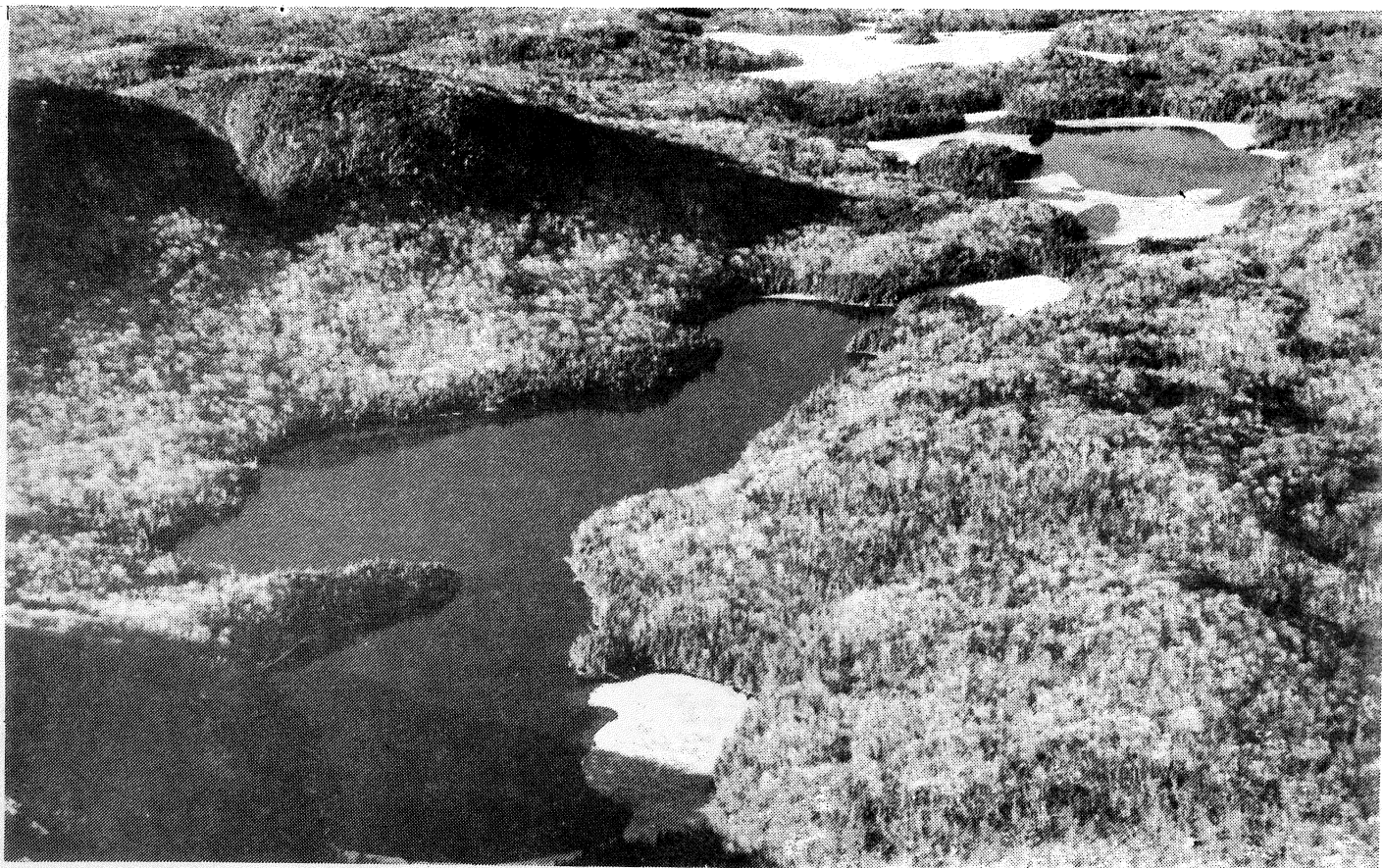
When Diamond International unexpectedly dumped almost one million acres of Northeastern forest lands on the market in 1988, New York was hit hard. Ninety-six thousand Adirondack acres went to a Georgia-based land speculator. It took the intervention of the governor to work out a deal to protect several critical parcels, mostly through the state's purchase of conservation easements. Shock waves of concern reverberated through the environmental community and many concluded it was time to officially revive the Great Adirondack Debate. Governor Cuomo agreed, and appointed a Commission on the Adirondacks in the Twenty-First Century.

After a year of fact-finding and deliberation, the Commission submitted its report in the spring of 1990. It was a comprehensive document, making 245 recommendations on topics ranging from zoning changes to health care and bureaucratic reorganization. And it was complicated, perhaps too much so. It addressed scores of knotty issues and was intended to serve as a vision for the distant future, not as a short-term quick fix. Unfortunately, most Adirondackers never took the time to sift through the details before they judged its merits. The Commission Report became a rallying point for anti-park, property rights, and development interests that continue to draw strength from the feeding frenzy of opposition that was spawned in its wake.

Celebration of the Adirondack Park Centennial in 1992 focused statewide attention on the region and provided another opportunity to balance environmental protection with the needs of residents and landowners. Comprehensive legislation was supported by the Governor and passed overwhelmingly by the State Assembly. But the Senate majority leader opted to treat the Park as a local issue and his colleagues refused to act.

Curiously, forces fighting for the status quo offered no positive agenda. The opportunity to make needed changes in tax codes, school aid formulas, infrastructure funding, and economic development programs was never seized upon. Instead, they trotted out time-worn clichés about "outside elitists" and "no problem here." And they overlooked important facts that would have told them quite a different tale.

Over the last two decades, roughly the tenure of the APA, the Adirondack Park has steadily lost environmental ground. On average, 1,000 new homes have been built in each of the past twenty years. This may not seem like much on Long Island, but there are only about 80,000 homes in the entire Park. And the choicest sites--the first to go--have been around shorelines, in vistas, and along roadsides. During this period, sixty-five miles of shoreline and 135 miles of roadfront have been lost to development. These are the very places with sensitive resources that help define the essential character of the Park.



Preston Ponds - Photo by Gary Randorf, Adirondack Council

The claim is sometimes made that current restrictions leave no room for growth. But 500,000 houses could be shoe-horned into the hamlets and hinterlands of the Park, without exceeding today's zoning density guidelines. Under current regulations, the Park's population could increase to 1.5 million people, compared to the 250,000 year-round and summer residents who live there today. The question, then, is not whether growth will take place, but where it should occur.

A basic premise of the APA Act, and one of its major flaws, holds that virtually any kind of development is allowable anywhere. Protection of sensitive resources takes place mainly through requiring larger lots in certain areas, and not through the prohibition of incompatible uses. The net effect of this strategy is to encourage large-lot subdivision of the backcountry and the segmentation of unbroken forests into wilderness "ranchettes." In this respect, the Act reflects an archaic and counter-productive approach to land use planning. Changes in the Act are clearly necessary. But laws alone will not make a true park.

* * *

There are essentially two alternate futures for the Adirondack Park. One results from an extension of the status quo, the other from changes in policies, procedures, and attitudes. The choice is ours. If we wish to control our destiny, we must take positive action. Otherwise, the inertia of the present will carry us forward into a future we may not desire.

Many Adirondackers have already expressed their opinion on which alter-

native they prefer. In survey after survey, Adirondack residents have indicated they like things pretty much as they are. They do not want to see all private land in the Park fully developed, and they do not like having traditional hunting and fishing areas posted against trespass. They enjoy the Park's open spaces, its scenic vistas, its wildlife and its distinctive way of life. Unfortunately, these are the very qualities that will be lost if positive action is not taken. As we have seen from the vantage point of history, under the status quo alternative, the Park as we know it is slowly, but surely, being lost.

Park residents also realize that young adults can't stay in their home towns to raise a family unless communities thrive in harmony with surrounding wild lands. State policies must change so that people are given the economic opportunities they need to prosper. The alternate future which most would choose is a countryside park. To be such a place in the next century and beyond, the Adirondack Park must retain its vast areas of undisturbed open space. It must remain a sanctuary for native plant and animal species, and serve as a natural haven for human beings in need of spiritual and physical renewal. It must also provide for sustainable, resource-based local economies and for the protection of community character and countryside values.

The destiny of the Adirondacks lies with our generation and the choices we make together. For together, we will determine the future of this special place.

Michael G. DiNunzio is the Adirondack Council's Director of Research and Education.

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Answer to Land Acquisition Quiz: (a). Yes, the cost of 10 million acres of Northern Forest Lands would be less than one half of one per cent of the current estimate of the cost of the S&L Bailout--\$500 billion! And we can count on it going higher and higher. Maybe land acquisition is a steal (certainly the S&L debacle was).

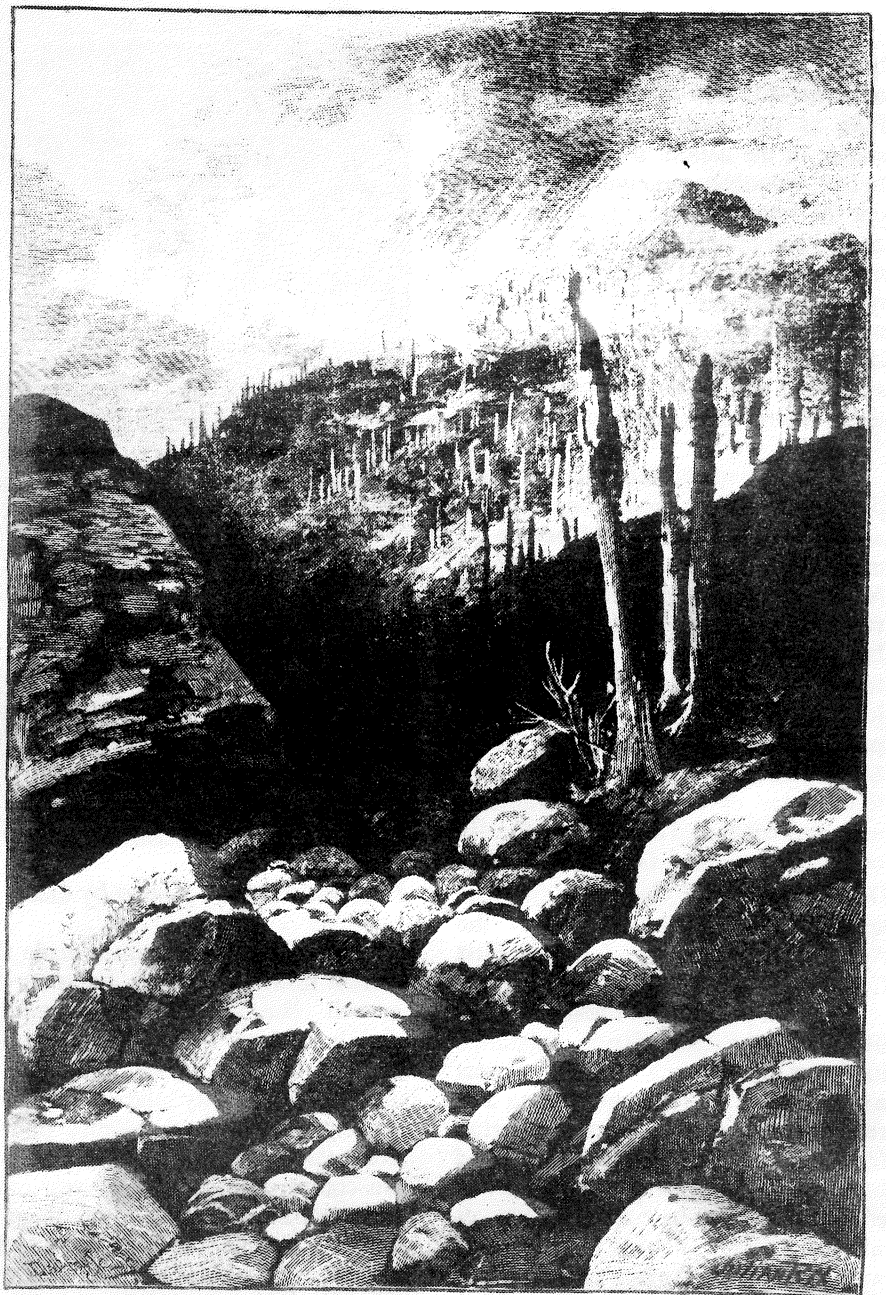
Answers to Local Control Quiz: Boise-Cascade (Boise, ID); Bowater (Darien, CT); Champion (Stamford, CT); Fraser (Toronto, Ontario); Georgia-Pacific (Atlanta, GA); International Paper (Purchase, NY); James River (Richmond, VA); Scott Paper (Philadelphia, PA)

Answers to Pollution Fine Quiz: (1) International Paper; (2) Georgia-Pacific; Woodville; (3) Boise-Cascade; (4) Lincoln; (5) Fraser; (6) James-River; (7) Scott; (8) Champion International; Bucksport

Answers to Tax Break Quiz: (1) Great Northern Nekoosa (which ceased to exist when Georgia-Pacific swallowed it in a hostile takeover in 1990. In October 1991 GP sold the GNN mills, hydroelectric rights on the West Branch of the Penobscot, and 2.1 million acres to Bowater for a little more than \$300 million.) (2) International Paper; (3) Scott Paper; (4) Champion International; St. Regis



A Feeder of the Hudson As It Was
Forest Destruction in the Adirondacks - The Effects of Logging & Burning Timber - Drawn by Julian Rix



These drawings, which first appeared in Harpers' Weekly on January 24, 1885, were part of the public outcry against the abusive logging of the late Nineteenth Century in the Adirondacks. As a result of this outcry, the Adirondack Park was created in 1892. Today nearly two and a half million acres of Adirondack forest land again resembles the condition of the scene portrayed on the left ("as it was"). Courtesy of the Adirondack Museum.

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