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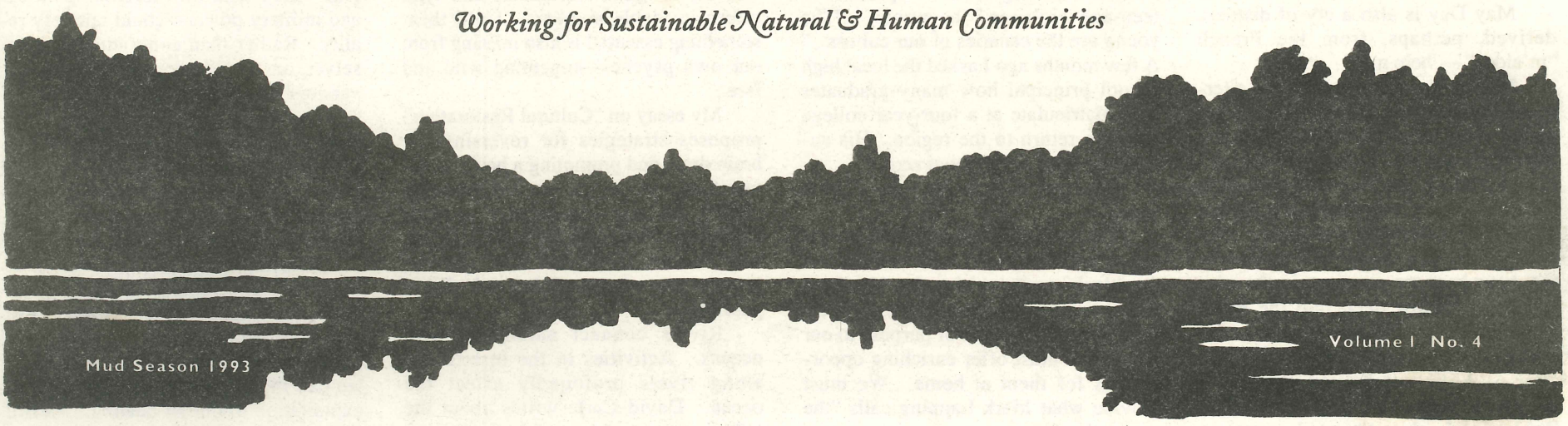
The Northern Forest Forum

Working for Sustainable Natural & Human Communities



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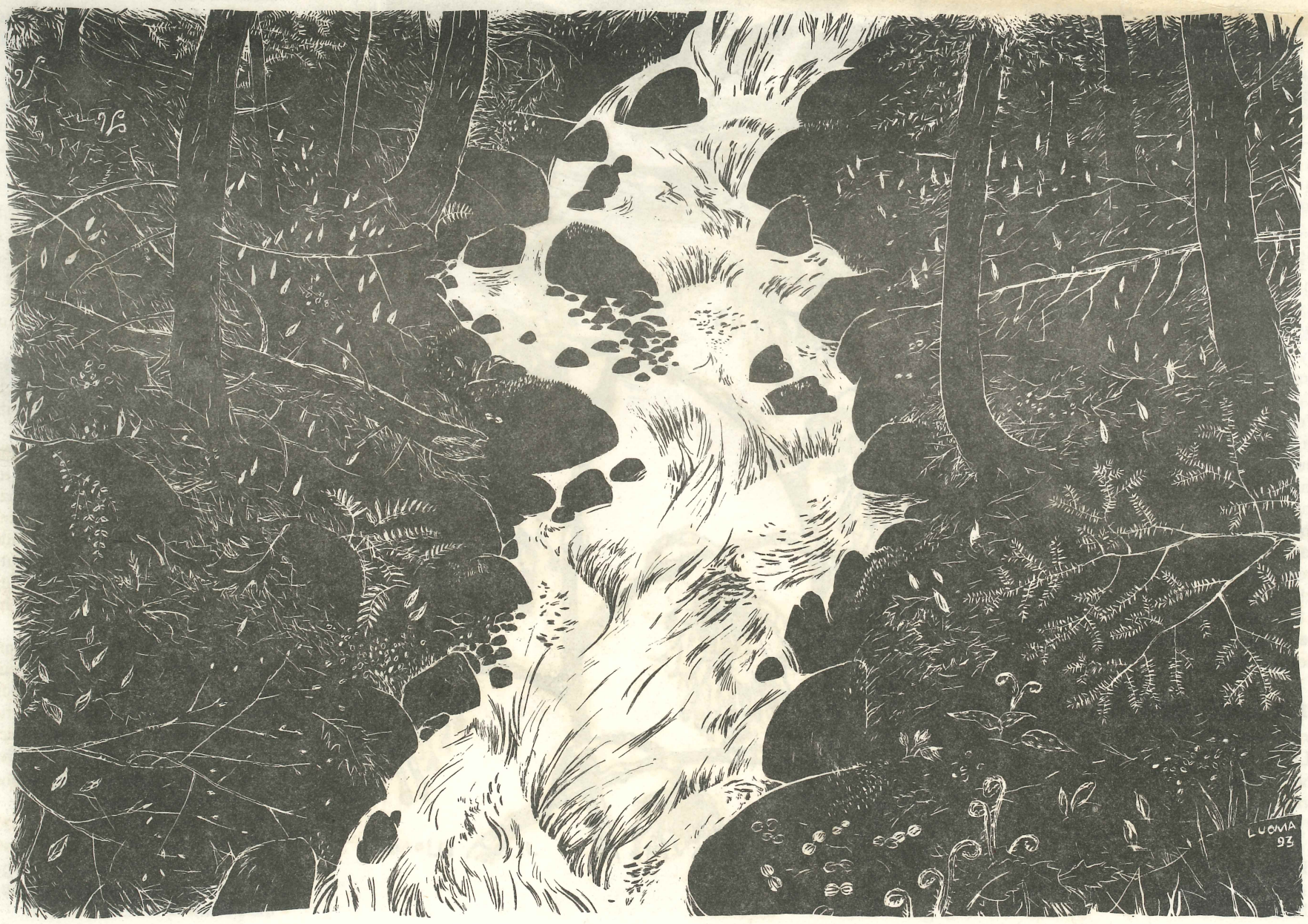

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Moving From Exploitation to an Ethic of Healing

Today is May Day, a pagan holiday celebrating the arrival of spring— the return, rebirth, restoration of Earth's life-giving powers after the long dormancy of winter.

May Day is also a cry of distress, derived, perhaps, from the French "m'aidez"—"help me!"

During the past week I have alternated between the task of piecing together this issue of ***The Northern Forest Forum*** and working in my garden. Kneeling, working with the soil in the early spring sunshine, is the perfect antidote to computer wooziness. My thoughts are free to soar with the ravens that have kept me company in the winter, or to burrow deep into the Earth with those invisible—to humans—soil microbes that make terrestrial life possible. A yellow-bellied sapsucker hammers on the siding of my garage. Robins and white-throated sparrows sing, and bees buzz nearby. In the evenings, large mosquitoes appear. "Too early," I think as I smack the back of my neck.

T.S Eliot wrote: "April is the cruelest month, mixing memory with desire." April surely is a tease, and this spring my thoughts have mingled healing with distress.

There is tragedy and unbearable suffering on this blue-green planet, and crises such as overpopulation, accelerating rates of species extinction, and atmospheric pollution that appear to be insurmountable. Yet, on this gorgeous spring morning, I am inspired to believe that here in the Northern Forests we have a once-in-a-lifetime opportunity to surmount the insurmountable.

When we think of the future, when we dream of a better life, we think, invariably, of our children. Recently a group of us were challenged to identify the one item in our local town budget that we would most defend from budget-cutters. In my group were three other environmentalists. One cited aid to the poor, and the other two named education. I puzzled over my response, seriously considering following suit. But two thoughts stopped me: I am unconvinced that the education our society currently offers its young is indispensable, and even if it is, there is something even more basic—protection of the ecological integrity of our region. Quality education is not possible in a degraded environment.

A couple of days ago I received a letter from an educator. "This morning I've been reading about the epidemic of teen-age violence," he wrote. "The young are the canaries of our culture..." A few months ago I asked the local high school principal how many graduates who matriculate at a four-year college program return to the region. His answer appalled me: "About zero."

We have a term for this—"brain drain."

The ecological degradation of this region's forests, rivers, soils and air, and the bleak opportunities for Northern Forest youth are related. If we are to restore hope and a sense of purpose to our young, we must offer enriching opportunities for them at home. We must provide what Mark Lapping calls "the stay option."

* * *

This Mud Season issue of the ***Forum*** offers a vision that can guide our efforts to address the ecological, economic, social, cultural and spiritual crises afflicting Northern Forest Communities. In "Beyond Beauty Strips" Mitch Lansky outlines how we might structure a regional economy that is ecologically sound, socially responsible, economically viable and sustainable.

Michael Kellett says its high time we undo a terrible ecological and spiritual wrong by working to return wolves to Maine—and beyond. Northern Forest ecosystems can never be whole until large, native predators such as wolves, cougars, wolverines and lynx return in viable numbers. Until then, something essential is also missing from our own psyche—something wild and free.

My essay on "Cultural Restoration" proposes strategies for reversing the brain drain and promoting a healing culture that replaces our society's current assault on our life-support system. Critiques of this essay by Mark Lapping and William Jordan III offer valuable insights into what is needed and what is possible.

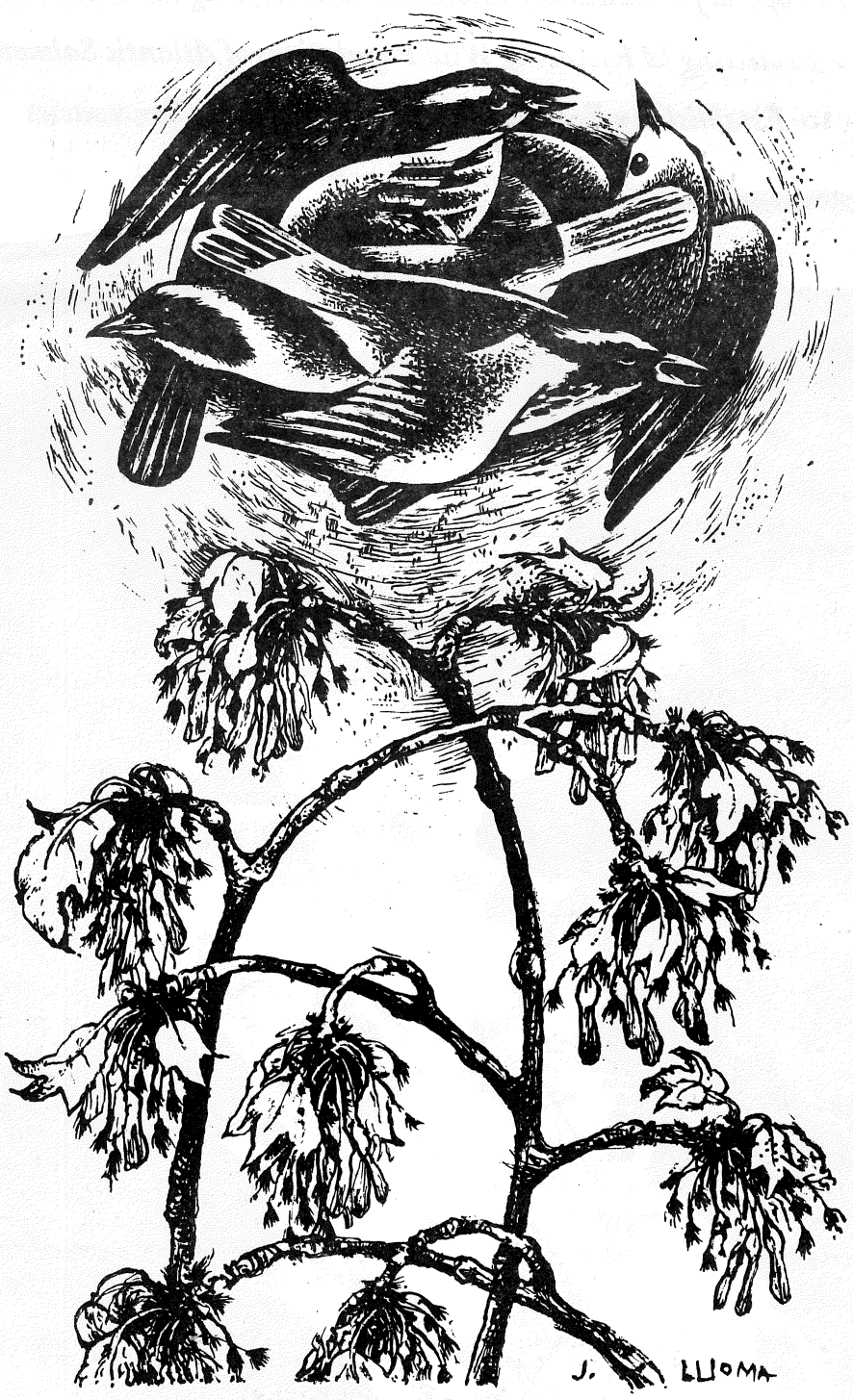
Rivers connect mountains with oceans. Activities in the forests and along rivers profoundly affect the ocean. David Carle writes about the failure of the expensive Atlantic Salmon restoration efforts and suggests a more ecologically appropriate strategy. Ron Huber writes that, just as we need terrestrial ecological reserves, we must designate marine sanctuaries to protect critical marine habitat, populations, and processes.

* * *

If it seems that we are proposing an unrealistic fantasy, let me remind you how unrealistic it would have been to suggest in 1988—the year the Northern Forest Lands Study was launched—that the Communist Party of the *former* Soviet Union and Eastern Europe would topple in a couple of years with very little blood shed. The Communist system—even with its enormous political and military power—could not defy reality. Rather than congratulating ourselves on the illusion that capitalism vanquished communism, we should be sobered by similarities between Eastern Europe and the Northern Forest region. I suggest that the current Northern Forest economic and political systems are just as unlikely to succeed in evading ecological and economic reality.

Recently, remarkable changes have occurred very rapidly in this region. Even more astonishing change is just ahead. If we model our values and actions on natural successional processes, we can move swiftly from an ethic of exploitation to one of healing. As Bill Jordan writes: "Onward and upward."

—Jamie Sayen



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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, not more polarization. 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.

Articles published by the ***Forum*** will represent the views of the authors only, and will not necessarily represent the views of all supporting members of the ***Forum*** or its editorial staff.

Letters From Our Readers

Long Time North Country Resident Appreciates Forum

Dear Jamie:

I first saw your fine paper at the recent Tufts Conference. (Yes, I have subscribed and would like to obtain the first two issues.) Having lived in and near the North Woods most of my life, I am a confirmed environmentalist. Lived in Passaconway over 70 years ago, North Conway before the onslaught. Dartmouth ('37) Franconia and Sugar Hill (I helped the latter become a town of its own).

Have attended seminars at Georgetown University and Vermont Law School and serve on the Board of the North Country Council. Am proud of having been on Selection Committee that chose Preston Gilbert.

Am glad to have met, heard, and talked with Lansky, Caldicott, Babbitt and Dave Brower. Dave at Vermont Law School on April 2—a debate with Ron Arnold (Wise Use) and I believe a real threat to what you and I believe in.

In reading [Harvard Professor E. O.] Wilson's ***Diversity of Life***, I especially appreciated your Vol. I, #3 coverage regarding ecological reserves.

We do have to become very aware of that which we have, of how easily it can be degraded—we can so easily destroy that which keeps us here and brings so many others.

Discussed with Michael Kellett (RESTORE: The North Woods) the old concern about "outsiders" telling us who live here what to do. Don't misunderstand me for I believe we need all the help we can get. I am concerned with the influence, often bad, of outside corporations and an ownership that doesn't care for much more than the bottom line.

To know our region, its nuances, and the appreciation of them: to make grassroots actions, to get to our schools—all will help.

Again, congratulations on what you are doing.

Best regards,
Philip Robertson
Sugar Hill, NH

What will it take to get them to wake up? *A few of the large clearcuts near the Route 3 turnoff to Stratford Hollow, New Hampshire. Numerous other clearcuts have been inflicted on this town in the past few years. And still, the NH Legislature says "No Problem." The Percy Peaks, part of the Nash Stream State Forest, are visible in the background. Photo by Alex MacLean—Landslides.*

Editorial Policy

The ***Northern Forest Forum*** is an independent journal covering issues of importance to the Northern Appa-lachians (including the Adirondacks and Tug Hill reigons of New York). 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.

If possible, please submit articles on Macintosh-compatible disc. Send articles to: ***Forum***, POB 52, Groveton, NH 03582.

Financial Supporters

We wish to thank the following organizations whose generous support has enabled us to produce this issue of the ***Forum***.

Ben & Jerry's Foundation
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EnTrust Fund
National Audubon Society
REI
Sierra Club
Sweet Water Trust
The Wilderness Society

Bill Butler Clarifies A Point On Maine Taxation

Dear Jamie,

You added a helpful note to my piece on Maine towns having land under the Tree-Growth shelter stating that towns are reimbursed for the taxes shifted to the other taxpayers in that town; this is an argument that we hear from Ted Johnson [Northern Forest Lands Council member and President of Maine Forest Products Council] now and again. What you missed is that the reimbursement is from the General Fund, to which the paper company lands do not contribute. Further, the reimbursement is partial and late, being at the fiscal whim of the Legislature. Anyhow, when we do get it, it is only our taxes coming back.

State aid to education funds go to every town, whether it has land under Tree-Growth or not. And this money is also General Fund money, not from the big cheapos.

Bill Butler
Aurora, Maine

Mandate Horse Logging Near Public Roads

To the Editor:

I have read the latest ***NFF*** from cover to cover. The interview with John Collins was great. I also especially liked the article on page 20 by Mitch Lansky. I am especially sensitive to the way logging is being done because of a butchering on the road into our camp. I have talked with another logger who is much more responsible than the first one but who is forced to do terrible things to the forest too because of the expense of his equipment. He at least has backed off from operating three huge skidders to just one.

Is it possible that legislation could demand that all logging within say a quarter of a mile of federal, state and county roads be done only by horse? The loggers would need a cooperative effort to get their logs to mills, I know from talking to this logger who used to use horses and enjoyed it. I also know from watching a horse work by voice command in Maine years ago that tourists would really like to see horses in action. And this would protect the scenic values of the highways and give more local people an income. There are plenty of loggers out there who love working with horses who would do it if they could get some sort of break where they would be most efficient—within a certain distance of roads. And if people saw the difference in the effects on the woods there would be more demand for horse work on small lots by people who love their land.

Anyhow, I wonder if Residents Committee to Protect the Adirondacks could reprint part of that article, possibly in **Voices**? We don't have the problem of total clearcutting here but it comes close, including on the land IP gave to the state recently on the Raquette River. And this is driven by the kind of things Lansky is talking about. We're not going to be able to go on forever using bigger and bigger skidders, cutting faster and faster and smaller and smaller. It's time to start turning things around and heading back in the other direction.

Sincerely,
Evelyn Green
North Creek, NY

Chlorine Free in '93

Dear Forum:

I am pleased to inform you that, as a result of my submitting a copy of one of your articles detailing the hazards associated with the paper bleaching process to one of the directors [of the food and travel division at the major New York financial institution where the writer is employed], along with a note requesting that the firm investigate possible alternatives to white paper products used in the company cafeteria, [the company] has decided to switch from bleached, white paper to non-bleached, recycled paper products in its food service areas.

One small victory for the forests! My only concern at this point is that the employees will object on aesthetic grounds. If I were running the show, I would have coordinated the introduction of the recycled products with this year's Earth Day and published something in the company newsletter explaining the rationale behind the switch.

At any rate, keep up the good work there in the North. You have allies down here in the Big Apple, and together we can work to assure the survival of the Northern Forests.

Sincerely,
Martin Maniak

"We can't let Nature run wild."

. . . Alaska Gov. Walter Hickel

Council Credibility Jeopardized by Refusal to Examine Forest Practices

[Ed. Note: The following letter was written to Robert Bendick, Chairman of the Northern Forest Lands Council (NFLC) by Mitch Lansky, a member of the Maine Citizens Advisory Committee (CAC). The reference to Bleiker relates to a training session Council members and some CAC members received from Hans Bleiker on April 20, the day before the regular Council meeting. Bleiker is an expert at assisting policy makers in developing and implementing difficult but important policy programs. The thrust of his message was: you must be able to demonstrate that the issue affects the quality of life of some people and that policy makers must deal openly, truthfully and respectfully with all segments of the affected public.]

Dear Bob,

During the Council meeting at Sugarloaf [on April 21], you gave an interesting presentation on your view of the Pacific Northwest (PNW) Timber Summit [Ed. Note: held on April 2 and attended by Chairman Bendick]. Although resolution of the problems there will be extremely difficult, you were impressed that President Clinton at least got the various stakeholders together to discuss the contentious issues of forest practices, jobs and biodiversity.

I found your presentation ironic in that the central issue in the PNW (forest practices) is one that the NFLC has avoided here.

I pointed out that from 1984 to 1992, there has been a 40% decline in logging jobs in the Maine woods. In the last few years, some industrial landowners, including Georgia-Pacific, Great Northern Paper (now Bowater-GNP), and Champion, have reduced their level of cut because their 1980s cutting levels were non-sustainable. I stated that these facts showed that forest practices here should be a concern of the Council—just as they are a concern in the PNW. You replied that my point was "well taken."

The impacts of changes in forest practices in Maine on both local communities and forest ecosystems far exceeds the impact of "development." During the 1980s, for example, Maine landowners reported clearcutting more than a million acres. Yet most of the thrust of the NFLC has been to treat "land conversion" from development as the major issue facing the region. I would not deny that in some circumstances such "development" can harm wildlife and cause a burden to local communities, but forest practices affect land and people on another scale of magnitude.

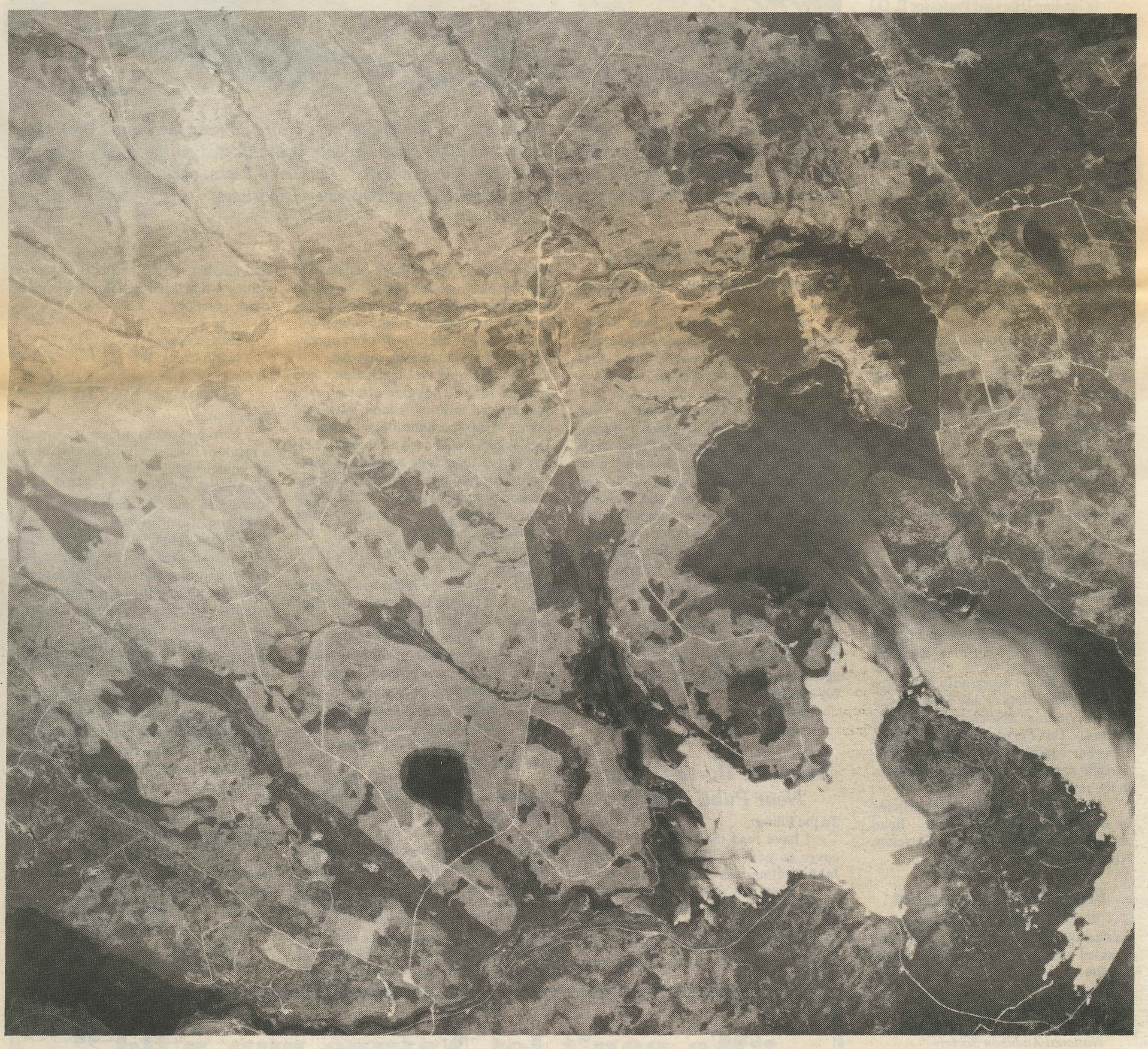
I have seen no studies issued by (or to) the Council discussing:
*the level of cut;
*the types of cutting;
*changing trends in forest practices;
*the impacts of these types of cutting on forest ecosystems or local communities;
*the factors that have influenced the type of cut (existing local markets, export markets, mill prices, vertical integration, workers' comp, mechanization, domestic labor pool, imported labor pool, etc.); or
*the sustainability of these cutting systems.

When we discuss taxation or land conversion issues we are supposed to believe logging, in general, is benign—if an area is under "forest management" rather than "developed" it is "conserved."

I wrote to the Council about similar concerns last year—I am not bringing up a new issue. [Ed. Note: See "Faulty Assumptions of Northern Forest Lands Council" by Mitch Lansky in Vol. 1 No. 1 of ***The Northern Forest Forum***, pages 23-25.] But, post-Bleiker, maybe I am addressing a new Council?

The issues I am raising meet Bleiker's basic criterion—they affect the quality of life of people in this region. What I am suggesting (and believe me, I am not the only one!) is that the Council failed on the technical side to adequately define the problem and to analyze how the system works. The Council has also failed to avoid Bleiker's credibility problems because it has avoided the "big, controversial, sensitive, painful, etc. issues...and then [gotten] defensive about them." Finally,

Continued on Page 7



Are forest practices an issue for the Northern Forest Lands Council? *This high altitude photo of Brassua Lake in Maine reveals that Scott Paper clearcut an <u>entire</u> township—Brassua Township which lies just west of Brassua Lake. Moosehead Lake lies a few miles to the east of this carnage. Brassua Township is located on Map 40 of the Delorme Atlas of Maine.*

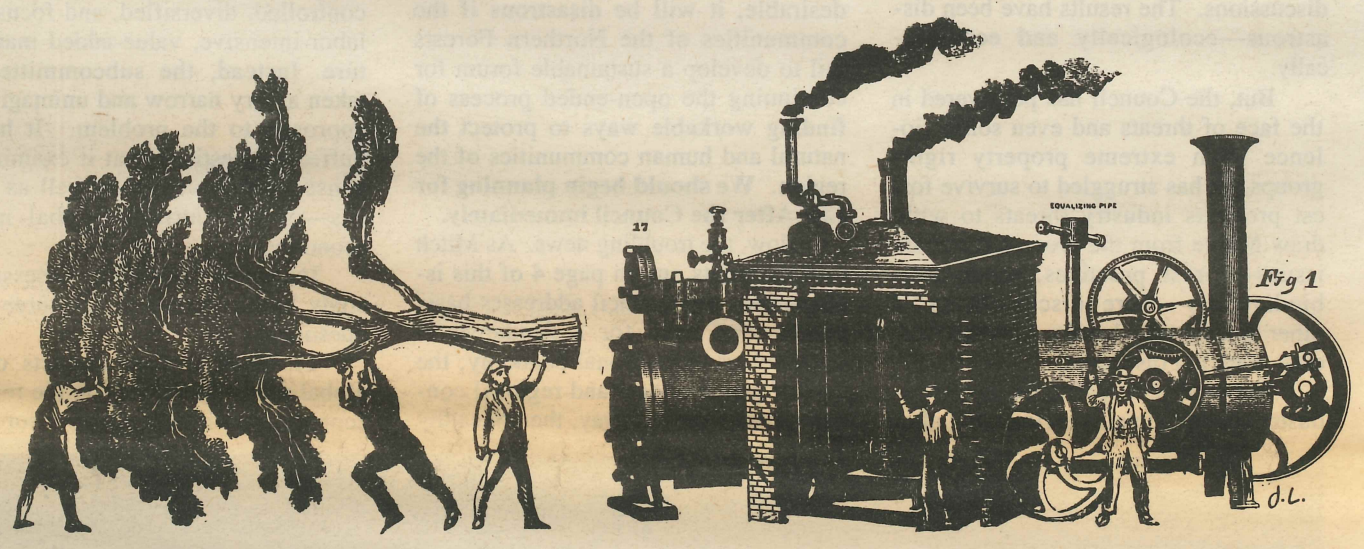
Beyond Beauty Strips

Criteria for Ecologically Sound, Socially Responsible, Economically Viable, and Sustainable Forestry

A. *Ecologically Sound*

Maintains or improves biological diversity and ecological stability

1. biological diversity--towards whole forests, with all essential biological components on site and landscape basis
   - a) site
     - (1) more important to maintain or improve habitats for less common species than for more common species
     - (2) maintain or improve vertical and structural diversity--i.e., large old trees, dead standing trees, dead downed trees, and forest interior habitat.
     - (3) avoid severe degradation of soil structure, microlife, nutrients, and organic matter
   - b) landscape
     - (1) maintain viability of forest interior habitat
     - (2) avoid fragmentation
     - (3) maintain or improve wildlife migration corridors
     - (4) maintain or encourage presence of old growth in landscape complex
2. stability--resistance to disturbances and resilience from disturbances
   - a) resistance
     - (1) encourage healthy, vigorous trees (avoid highgrading)
     - (2) maintain or restore natural diversity of stand and landscape
     - (3) decrease abnormal dominance of susceptible species
     - (4) increase, where appropriate to site, dominance of less susceptible species
     - (5) maintain or improve habitats for essential predator/parasite complexes
   - b) resilience
     - (1) maintain or improve ability of stand to rebuild soil nutrient and organic matter after a disturbance
       - (a) maintains integrity of rotting wood in shade and of pioneer soil builders in gaps
         - *encourage, rather than fight, natural succession
         - *encourage distribution of old growth characteristics throughout landscape to serve as repository for species and genetic types to recolonize disturbed areas.



B. *Socially Responsible*

Does not increase inequities between members of this generation, or between this generation and the next

1. local communities
   - a) should benefit, rather than be harmed by, forestry activities in area
     - (1) forestry activities should not be done for benefit of a corporation or a consuming region at expense of local, producing region
       - *emphasis on meeting local subsistence needs for firewood, lumber, etc. before exporting
       - *emphasis on local value added industries over export of raw materials
       - *emphasis on local employment over imported labor
       - *emphasis on local ownership versus absentee ownership
       - *revenues from management should be reinvested locally rather than exported to other regions
     - (2) certain areas in landscape need special protection (either requirements for greater care, or restrictions on use)
       - *protect culturally significant areas
       - *protect ecologically significant areas (such as old growth)
       - *protect places of special beauty
       - *protect places used for recreation
       - *protect water bodies from siltation, heating, excess nutrients, and chemical pollution
     - (3) need for local input on management plans that affect integrity of large areas of local landscape
       - *need for regional and/or local committees (representing a diversity of stakeholders) to identify special areas and communicate local needs to landowners
   - b) community stability
     - (1) need to ensure community stability by sustaining or improving stocking, volume, and quality of forest so that future generations have the same or better resource base as this
2. labor
   - a) should have safe, secure, working conditions that encourage a sense of pride in craftsmanship
     - (1) training
       - *professional workers should have training in safe, ecologically-sound management
     - (2) pay
       - *workers should be paid a wage to manage to improve the quality of the forest, rather than on piece-rate to remove as many trees in as short a time as possible
       - *workers on corporate lands should be corporate employees subject to corporate benefits
     - (3) technology
       - *logging technology should be chosen only if it increases ability for sensitive forestry and worker safety, but not to replace or intimidate workers

C. *Economically Viable*

Forestry activity, after incorporating long-term ecological and social costs, should lead to net economic benefit

Corollary--If it does not pay to incorporate ecological and social costs, people will not do so.

1. possible reasons for not being viable:
   - a) non productive, costly roads, or added management expenses in special areas--management not justified
   - b) poor management practices
   - c) not managing for best paying markets
   - d) good paying markets not available
   - e) mills not paying what wood is worth
2. It is preferable for economic viability to come through market (full cost accounting) rather than through government subsidies to landowners
   - a) subsidies encourage corruption and inefficiency
     - (1) creates inequities as large corporations that can afford to pay do not, putting added costs on taxpayers
   - b) subsidies avoid confrontation with reasons for artificially low prices
     - (1) vertical integration
       - (a) corporate landowners flood market at appropriate time to keep purchase prices low
     - (2) oligopsony
       - (a) dominating mills act as "price takers" and avoid serious competition for purchased wood
     - (3) global market forces
       - (a) "competition" with other regions where land and people are exploited
   - c) full cost accounting leads to long-term social/ecological benefits
     - (1) encourages less waste and more conservation
     - (2) encourages recycling
     - (3) encourages substitution of more ecologically and socially benign products and practices

D. *Sustainable*

1. Sustainable forestry meets the needs of the present generation without compromising the ability of future generations to meet their own needs.
2. Sustainable forestry does not use up the forests or the people who work in, live in, or depend on the forests.
3. Sustainable forestry maintains or improves the ecological, social, and economic values outlined above, not for the life cycle of a mill, but for centuries.
   - a) If it is impractical in the present system to have forestry policy that is ecologically and socially sustainable, then it makes more sense to change the system to make it practical, rather than to continue degrading the forest and forest communities.

*This proposal was developed by Mitch Lansky, author of the indespensible study of the forest products industry of Maine and environs--**Beyond the Beauty Strip: Saving What's Left of Our Forests**, Tilbury House, 132 Water St., Gardiner, ME 04345. Price $19.95.*

Northern Forest Lands Council Promotes Regional Dialogue

by Jamie Sayen

There is good news, and there is troubling news about the Northern Forest Lands Council (NFLC).

First, the good news. The most important contribution made by the Northern Forest Lands Study (NFLS)—the precursor to the NFLC which operated from 1988-1990—was its recognition that the fate of the Adirondack and Tug Hill regions of New York and the relatively contiguous forests of northern New England is a matter of regional and national concern. If we are to resolve our local problems, we must eschew the parochialism of the past for a new spirit of regional cooperation.

The Council has developed this perspective in constructive ways. Most significantly, the Council has sought to involve all interested parties in the discussion of the future of the Northern Forest region. The importance of this cannot be overstated. In the past, the various states have been unable to work together. Communities have been divided against themselves; false dichotomies such as "jobs vs. the environment" have often poisoned policy discussions. The results have been disastrous—ecologically and economically.

But, the Council has persevered in the face of threats and even some violence from extreme property rights groups. It has struggled to survive forest products industry threats to withdraw Maine from the process if certain issues—forest practices, wilderness, biodiversity—were discussed, or if other issues—tax breaks for landowners—were not discussed.

The spectre of polarization and industry threats remains serious, but after nearly three years, the Council deserves our gratitude for providing the warring elements a forum to state their various platforms—and, most significantly—an opportunity to get to know each other as real human beings who belong to real communities with real problems. In the past, polarization was easy—the warring factions hardly knew each other, and this made it easy to caricature the opposition as Satan. Now, as we have gotten to know one another through the Council process, we've often discovered that the other folks aren't entirely evil, and they often have some thoughtful and legitimate platforms. In some cases, we've even found we like the opposition. Most important of all, many of us have discovered unsuspected areas of agreement with groups and individuals we once viewed as "the enemy".

When the Council is working best, it serves as an excellent forum for a mature, respectful discussion about how to safeguard our regional natural and human communities.

The Council members have given the public only one guarantee—that the Council will cease operations on September 30, 1994. While this *may* be desirable, it will be disastrous if the communities of the Northern Forests fail to develop a sustainable forum for continuing the open-ended process of finding workable ways to protect the natural and human communities of the region. **We should begin planning for Life After the Council immediately.**

Now, the troubling news. As Mitch Lansky points out on page 4 of this issue, unless the Council addresses basic issues—the need for a fundamental overhaul of the regional economy; the lack of genuine local and regional control (or, put another way, the unhealthy dominance of the region's economy and land ownership by absentee corporations and trusts); and the need to address the regional ecological crisis in the context of the global ecological crisis—its work will be irrelevant, or worse, counterproductive.

The bulk of the work the Council does is in its seven subcommittees. Four of these subcommittees—Local Forest Based Economy (LFBE), Land Conversion, Property Taxes, and State and Local Taxes—have been in operation for a year and a half. They reflect the biases of the NFLS and the timber industry that second-home development and taxation policies are the primary threat to the future of the region. Three other subcommittees were established in the past year: Biological Resources, Conservation Strategies, and Recreation & Tourism.

Local Forest Based Economy Subcommittee

The LFBE Subcommittee could have been a very constructive force searching for ways to develop a diversified regional economy that is ecologically benign, locally and regionally controlled, diversified, and focused on labor-intensive, value-added manufacture. Instead, the subcommittee has taken a very narrow and unimaginative approach to the problem. It has rebuffed suggestions that it examine the consequences—costs as well as benefits—of our current "global market economy."

Its current "Global Assessment" study had a chance to ask three basic questions:

1) What are the impacts of the global market economy on the regional economy, environment, labor force and land ownership patterns?

2) What are the opportunities for the Northern Forest region to develop independence from the adverse impacts? (For example, the paper industry successfully argued in November and March that if Maine adopted an environmentally responsible limit on dioxin discharges by paper mills, Maine mills would be at a "competitive disadvantage", and in the name of global competitiveness, we must continue to permit absentee transnationals to poison our rivers, wildlife, and children,)

3) What are the niches for global trade that we might wish to develop?

The LFBE subcommittee is only really examining question three, and only very narrowly. It wants to know which niches are available, but it is not looking very hard to find out the downside of certain niches (is an activity ecologically harmful? does it lead to a net loss of local jobs? does it promote local economic diversification?)

At the LFBE's last meeting, on April 20, it was gratifying to hear representatives of the timber industry echo some of the concerns I have been raising before this subcommittee for six months. One hopes that something positive may yet come out of this group.

Land Conversion Subcommittee

The Land Conversion Subcommittee (LCS) got the fastest start of any subcommittee, and has nearly completed its work. On the whole, it has been the most productive subcommittee. Its only major shortcoming lies in its biased definition of "land conversion" as land withdrawn from timber production, usually for second home development. The LCS refused to address the issue of "stand conversion" in which a forest is liquidated or a softwood stand is converted to hardwoods. In most of the Northern Forest region, stand conversion has had a far more destructive impact on forest ecosystem health than have most second home development projects (which are bad enough).

Recently, the LCS released a report prepared for it by James W. Sewall Company and Market Decisions, Inc. titled "Land Conversion Study." The report is well worth reading. It has two basic components: (1) an inventory of land sales greater than 500 acres from 1980-1991 in the region; and (2) a survey of attitudes of sellers of these parcels, allied professionals and major forest owners, and landowners with lands currently for sale.

On page 41-42 we learn that the three most cited reasons for selling large tracts of Northern Forest land were:

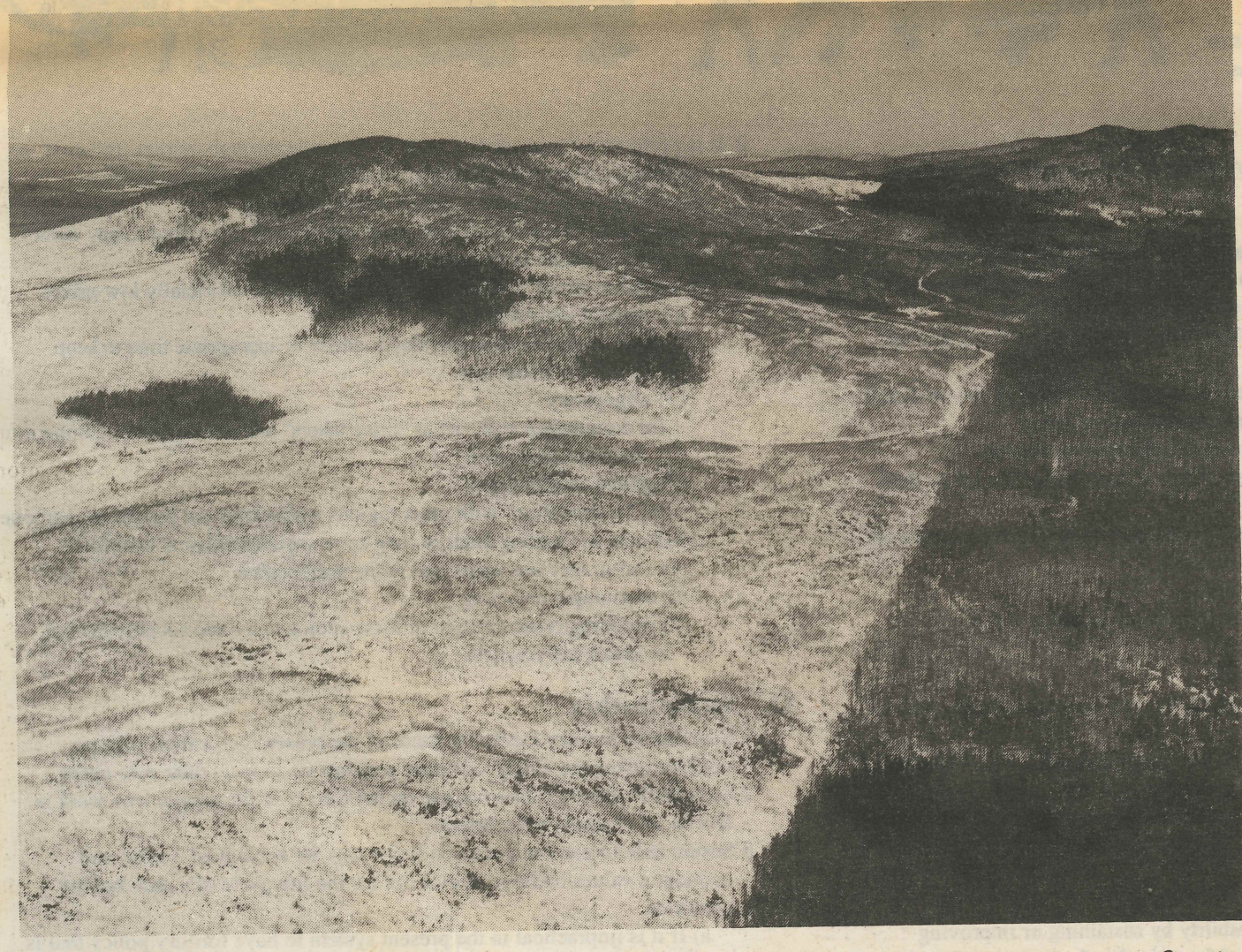
1) A desire to sell the land to raise cash for other non-forest land use (over 33% of the respondents);

2) Estate tax considerations and/or the age of the owner (almost all large family holdings cited this reason; industrial owners did not);

3) Lack of suitable return on investment (over 20% of respondents).

There is a significant drop to the next five factors most often mentioned: opportunity to sell at a higher price, change in company policy or strategy, desire to consolidate forest land holdings, increased property taxes, and conservation purposes. These five factors were mentioned by 9-12% of the respondents.

The most surprising finding was what these sellers did <u>not</u> mention. Given the amount of time the Council and NFLS have devoted to returning favorable treatment of capital gains tax to



On October 4, 1988, at the commencement of the Northern Forest Lands Study, its co-sponsors, Senator Patrick Leahy of Vermont and then-Senator Warren Rudman of New Hampshire wrote to US Forest Service Chief F. Dale Robertson, "The current land ownership and management patterns have served the people and forests of the region well." We hardly think they had this scene in mind. This clearcut, which may exceed 1000 acres, is but one of many huge clearcuts in the Victory Bog-Miles Pond area of the Northeast Kingdom of Vermont. We urge Senator Leahy to join the fight to save the forests of the Northeast Kingdom while some are still standing. Photo by Alex S. MacLean—Landslides.

timber lands, and complaints about onerous environmental regulations, it came as a shock to discover that actual sales were barely affected by these issues. "Concern about federal income tax policies" (which includes capital gains) was cited by only two percent. Only three percent cited "a lack of predictable land use regulations." Another two percent cited "the potential impact of land use and environmental regulations on the value of the parcel or timber resource." And two percent cited "changes in government regulations."

It is amusing to note that after this question was asked, the interviewer specifically inquired about environmental regulations. In almost every case, sellers who had not cited regulations as a reason for selling went ballistic on the subject. This confirms the hypothesis that regulations are despised, but are not forcing land sales.

The finding that lack of suitable return on investment was a major factor driving sales should hardly surprise. Industry spin doctors say "that means taxes, especially capital gains." Those with less vested economic interests in the issue suggest that low stumpage prices are a more likely culprit. Thus far, the NFLC has shown no interest in examining charges that mills engage in price-fixing (See **Beyond the Beauty Strip**, by Mitch Lansky, pages 28-33).

Thus far, the Council (and its predecessor the NFLS) has expended enormous energy over an issue that rated only two percent mention. The Council has done very little, if anything, to examine why forest owners are receiving a lack of suitable return on investment. Addressing the industry wish list instead of the real problems is a prescription for failure.

Biological Resources Subcommittee

The Spring Equinox 1993 issue of the **Forum** carried extensive excerpts of the December 9 Biological Resources Diversity Forum sponsored by this subcommittee. At that forum, consensus was reached among the assembled scientists that we need to create a system of ecological reserves. As a follow-up, Professor Malcolm Hunter of the University of Maine-Orono and Dr. Sharon Haines of International Paper were commissioned to write a brief paper for the Council detailing what the creation of a system of ecological reserves would entail. *(Copies of this paper are available from the NFLC, 54 Portsmouth St., Concord, NH 03301.)*

The Hunter-Haines paper represents a very positive, preliminary step for the Council.

The most important message in the Hunter-Haines paper (HH) is the charge that we must protect a representative array of ecosystems. It is imperative that we think in terms of ecosystems, communities and ecological processes, and not get mired down in reactionary struggles to protect only species that have been pushed to the brink of extinction. HH write: "A reserve system would significantly help to stem the tide of species that are declining to the point where they require special protection."

HH state that a proper reserve system "should contain multiple examples of each different type of ecosystem well-distributed across the region." This is very important.

Regarding size of reserves, Hunter and Haines state that "individual reserves would ideally be very large..." This is absolutely critical. If we design a series of reserves that are not adequately large, we will do very little to achieve our goal. Half measures will not protect ecological integrity. We must be prepared to do whatever is necessary.

Reserves must be large enough, and representative enough to protect ecological integrity (and this includes the restoration of extirpated predators such as cougars, lynx, wolves and wolverines). At this point it is premature to speculate on size. What matters is that we commit ourselves to doing what is necessary to protect the systemic integrity.

There are a number of omissions in the Hunter-Haines paper that must not be overlooked.

*HH do not mention the importance of facilitating the restoration of extirpated native species such as wolf, wolverine, cougar, and lynx. It is imperative that any strategy that proposes to assure ecological integrity includes strategies for restoring a critical element of the food web—large predators.

*The natural areas classification system they cite is based on plant communities. While this is a necessary, it is not a sufficient component in a reserve design strategy. The needs of large, wide-ranging animals must also be met.

*Ecological Restoration will play a key role, not only in the reintroduction of extirpated species, but in healing damaged systems or sites. HH state: "The most important goal of an ecological reserve system would be to maintain the region's biological diversity." Currently, the region's biodiversity is much diminished from presettlement times. The industrial forests of northern Maine, especially, are in dreadful condition from an ecological point of view. We need to do more than to maintain the current level of diversity in these abused landscapes. We must facilitate the natural restoration of lost or compromised ecosystem integrity.

*Private lands outside the reserve system must be responsibly managed. Mismanagement of private lands will undermine the goals of the reserve system. The Subcommittee must examine the impact of forest practices on regional ecosystem integrity. If society continues to permit corporate and private land owners to manage their lands in an ecologically irresponsible manner, reserve areas will have to be significantly larger than if the private lands are managed in an ecologically responsible manner that compliments the goals of the reserve system.

*It is imperative that we not just focus on endangered species. We need to identify regions of biological richness, migrational patterns, and other seasonal or life stage needs of species. In addition, we need to identify habitat needs of extirpated species and wide-ranging animals as well as other keystone or indicator species. Ecosystem processes, including disturbance regimes must be factored into this work. Important as the protection of endangered species is, it is essential that we not focus most of our attention on them.

The four most important considerations for designing and managing ecological reserves that will maintain the native biological diversity of a region in perpetuity are:

1. Represent, in a system of protected areas, all native ecosystem types and seral stages across their natural range of variation.

2. Maintain viable populations of all native species in natural patterns of abundance and distribution.

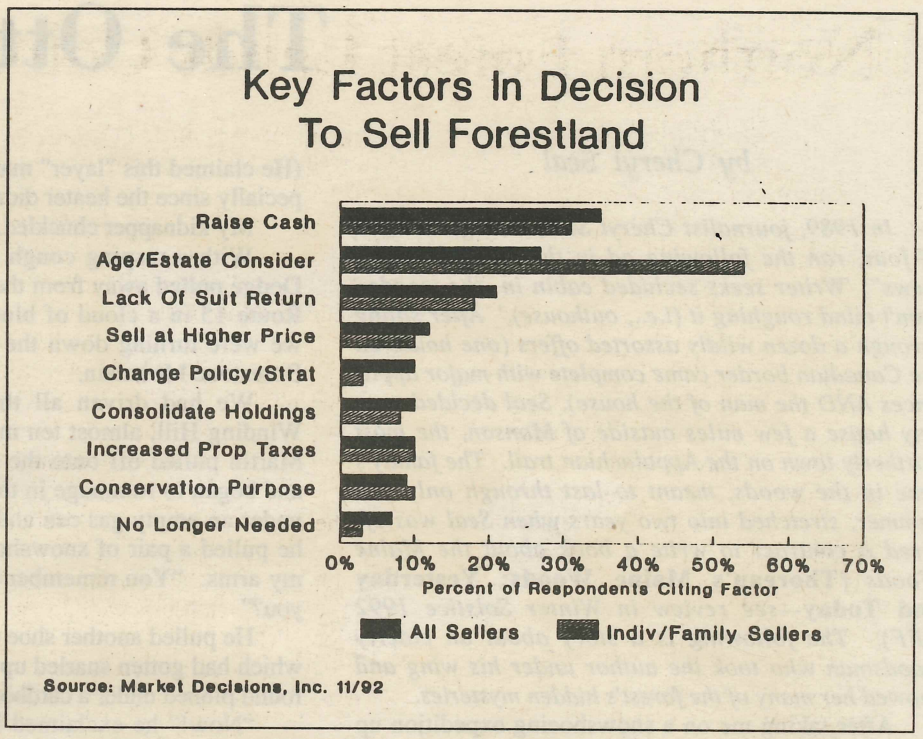
3. Maintain ecological and evolutionary processes, such as disturbance regimes, hydrological processes, nutrient cycles, and biotic interactions, including predation.

4. Design and manage the system to be responsive to short-term and long-term environmental change and to maintain the evolutionary potential of lineages.

The Council should take the necessary steps to assure that a system of ecological reserves satisfactorily addresses these concerns.

Interested readers are urged to get a copy of the "Wildlands Project Special Issue" of ***Wild Earth*** *to read Reed Noss's "The Wildlands Project: Land Conservation Strategy." It is the most comprehensive discussion of the factors that must be considered when designing ecological reserves. (Copies are available from The Wildlands Project, 2721 W. Calle Canyon, Tucson, AZ 85745. A donation would be appreciated.)*

Although I feel the Biological Resources Subcommittee has performed some of the most important work done by the Council, I am deeply worried that time is running short and that the subcommittee does not have adequate focus. Clearly, it must focus its attention on developing strategies to establish a system of ecological reserves that truly protects native biological diversity in the region and that promotes an environment of ecologically responsible private land management practices. A tall order, but long overdue.



Source: "Land Conversion Study," page 62, prepared by James W. Sewall Company & Market Decisions, Inc., April 9, 1993 for the Land Conversion Subcommittee of the Northern Forest Lands Council.

Buy Land

They Don't Make It Anymore

***3-5 Million Acres Are For Sale Today**
***10% of Maine Was Sold in 1991 for About $80 per Acre**
***The Public Supports Land Acquisition in the Northern Forests**
***To Assure the Ecological Integrity of the Region, We Must Create Ecological Reserves**
***The Price of Ten Million Acres is Approximately Equal to the Price of Three Stealth Bombers**

Council Credibility

Continued from Page 4

the Council has a problem with fairness—it will address tax breaks that will benefit large landowners (with little proof of direct, predictable public benefits), but it will not address issues of concern to workers losing their jobs, or communities losing mature forests...or their tax base.

I am not in a position to get self-righteous and quit the Citizens' Advisory Committee in a huff. We are joined together out of both mutual concerns and mutual mistrust. Representatives of the various interest groups fear that without vigilance on their part other interest groups will push agendas with dreaded consequences. If this "balance" is maintained, then maybe little of consequence will happen.

Despite this bleak "scenario" (Bleiker's word), I was serious when I stated there is a great benefit in getting the stakeholders together to discuss issues of mutual concern. Who knows, maybe something beneficial *will* come out of it. But the benefits will be minimal if major issues are avoided.

Either the Council should set up a separate subcommittee on forest practices (I am aware that this may be too late) or each subcommittee should cease to avoid this topic which is so central to all of them. In either case, each state does have timber harvest and inventory data (albeit of dubious merit) that can be used to look at trends across the region and over time. Each state has a department of labor that tracks employment statistics. All the states in the region are close enough to Quebec to have the import/export activities of some concern—these too should be checked.

To the extent that the Council does not address the most basic issues of forestry when it addresses the Northern Forest, it loses credibility. Perhaps this is why the media and the general public have paid the issue so little attention—they are not convinced that a serious issue is being seriously dealt with.

If my point is well taken, I hope you and the Council will take it.

Best Regards,
Mitch Lansky

The Otter Slide

by Cheryl Seal

*In 1989, journalist Cheryl Seal, a single mother of four, ran the following ad in the "Bangor Daily News": 'Writer seeks secluded cabin in the woods . Don't mind roughing it (i.e.., outhouse).' After sifting through a dozen wildly assorted offers (one house on the Canadian border came complete with major appliances AND the man of the house), Seal decided on a tiny house a few miles outside of Monson, the most northerly town on the Appalachian trail. The family's time in the woods, meant to last through only one summer, stretched into two years when Seal was offered a contract to write a book about the Maine Woods (***Thoreau's Maine Woods: Yesterday and Today***—see review in Winter Solstice 1992 NFF). The following is a story about an elderly woodsman who took the author under his wing and showed her many of the forest's hidden mysteries.*

After taking me on a snowshoeing expedition up to the Pleasant River area, where he showed me one of the last stands of old growth white pine left in the state, Martin and I became more than passing acquaintances. I could sense I had passed some kind of subtle "test" and been accepted into the well-guarded inner circle of people he believed were worthy of investing with his most treasured commodity: his time.

On mornings I saw his old truck parked out in front of the Appalachian Station café on Main Street, I'd stop in for a cup of coffee. I'd always find him in the booth by the front window, peering at the pages of the ***Bangor Daily News*** through ancient spectacles perched on the end of his long thin nose. I'd slide into the seat across from him and we'd nurse a cup of coffee for an hour while we talked.

Whenever he saw my car parked out in front of my little temporary "office", he dropped by. First, he'd tap softly on the door, then open it a crack and poke his grizzled head in with a shy smile, his cap in his hands. I'd grin and ask him in. He'd take a seat in the rocking chair in the corner between my desk and the bookshelves and glance around the still-unfamiliar environment, a mix of curiosity and uncertainty glimmering in his pale, keen eyes, like a fox testing the air for unfamiliar scents. Then he'd launch without preamble into whatever happened to be on his mind.

Sometimes he'd open the conversation by announcing the name of a person, place or thing he had tried to recall the last time we'd talked; sometime during the intervening week, it had come to him. Sometimes, he'd start off with the answer to a question I'd asked him days, or even weeks, before. On other occasions, he'd just open the conversation where—almost precisely—we'd left off.

"Neil Patterson's brother's name is Paul," he might summarily announce as soon as he sat down. Or, "The old rail cars at the Northeast Carry were drawn by oxen, not horses." Or, "As I was saying, you need to cut some of the old growth because it is rotten at the core."

The fact that life, with all its little divisions and progressions, had gone forward in the interim did not matter. As with many of the north country folk, time was to Martin an amorphous thing.

One January afternoon, when the sky was sagging, dark and pendulous with unfallen snow, Martin popped into the office. I was hunched over the third draft of a story I was writing for ***The Bangor Daily News***, feeling irritable and stiff. He leaned over my desk with a strange little smile.

"Get your coat and come with me. I've got a surprise for you!"

"Now?" I said, somewhat tartly. "I'm already two days behind on this story."

"It will wait. This is more important."

I paused for a moment, torn between the drudgery of the duty and the hint of adventure I saw beaming from the furrowed face above my desk.

I got my coat.

"Where are we going?" I asked as I climbed into his pickup and kicked the ankle-deep accumulation of newspapers and styrofoam coffee cups out of my way. (He claimed this "layer" made excellent insulation, especially since the heater didn't work too well.)

My kidnapper chuckled. "You'll see!"

With a rasping cough and arthritic jerk, the old Dodge pulled away from the curb and began to roll up Route 15 in a cloud of blue smoke. A minute later, we were turning down the Elliottsville Road toward Borestone Mountain.

We had driven all the way to the bottom of Winding Hill, almost ten miles outside of town when Martin pulled off onto the shoulder. He jumped out and began to rummage in the back of the truck. From under an empty gas can and a pile of old newspapers, he pulled a pair of snowshoes, which he pressed into my arms. "You remember how to put these on, don't you?"

He pulled another shoe out from under a chainsaw which had gotten snarled up in a blanket. Its mate was found pinned under a cardboard box full of bolts.

"Now!" he exclaimed in triumph. Still mysterious, he buckled his shoes onto his green rubber boots and helped me secure mine. A few nickel-sized snowflakes had begun to drift down when he led me over the shoulder-high snowbank made by the state plow and onto a trail leading to the Wilson Stream, a small river that wove through Elliottsville north to south.

In the smoky stillness of late afternoon, the snowclouds dense as wool overhead, the woods felt supernaturally still. The shush-crunch of our snowshoes over the powdery crust was loud in our ears. In a few minutes, we came to a root-gnarled bank that dropped to the frozen river twenty feet below. Martin grabbed an overhanging tree branch and began to lower himself down like a mountain climber.

I was aghast. "You may be a cross between a snowshoe rabbit and a mountain goat, but I'm not!"

"I'll help you!" he assured me as he worked his way down another few feet, gripping branches as he found small shelves of ice or rock beneath the snow with the toe of his snowshoes.

A few feet from the bottom, he paused and beckoned to me. I cautiously imitated his descent, using branches as a "banister" and small outcroppings of rock as "steps." Halfway down, I slipped with a shriek and toppled down the bank, arms and legs flailing. Martin grabbed my wrist as I fell past him and for a few seconds, I dangled, suspended from his grip. Despite my pounding heart, I was impressed: for all his gray hair and hunching posture, Martin was still strong as an ox.

I found a new footing, grabbed a branch and carefully lowered myself onto the river's snow-frosted surface. As Martin followed, one of the roots he was gripping broke and he fell the last four feet, snowshoes first. With a sickening creak, then snap, the ice gave way and he plunged waist deep into the water. Before I could make the three steps to his side, he pulled himself up and shinnied out onto the solid ice like an eel. His green wool pants were soaked. I made a lunge to help him.

"Don't move!" he shouted. "You'll crack it even more!"

I froze and he slithered on his stomach across the ice to where I was standing. I was alarmed. "Let me go back to the truck and get you a blanket! You're going to catch pneumonia!"

"Nonsense!" he said gruffly. "A little water hasn't hurt me yet!"

He pulled off his boots, the snowshoes still strapped to them. He was wearing only a thin pair of wool socks. After emptying about a pint of ice water from each boot, he pulled them back on and scrambled to his feet. "Now then," he said dryly, "where were we?"

Before I could protest, he was striding off across the river. "Don't worry! The ice out nearer the center will be solid," he called over his shoulder (knowing full well the thickness of the ice did not worry me near as much as the wetness of his trousers at that moment). "It's just along the very edge where the trees come right to the water you have to be careful. I should have known better!"

I just shook my head and shuffled after him. "You're impossible!"

We headed south down the river. The shadowy shape of the trees crowded the shore and leaned over the banks with an expectant curiosity. Beneath them, the frozen river curled, still, yet somehow poised as if ready at any moment to slither off into the forest like the "Snowsnake" of the Abenaki's tales. It was strange—to be walking down the middle of a waterway closed most of the year to all "traffic" but fish, birds, and people in canoes (and there weren't many of the latter because of the narrow, rock-choked falls that climbed for several miles in a natural staircase just to the north). Seeing the forest from the top of the water looking into the woods, rather than the other way around, gave me an odd delight.

A few hundred yards down the river, Martin paused next to a rock and motioned to me with a smile.

"You remember telling me how you'd someday like to see an otter slide? Well, now—look here!"

In a hollow in the snow at the base of the rock was a hole in the ice about eight inches in diameter, so round it looked as if it had been melted through with a hot metal tube. "That is where the otters come up," he announced with quiet triumph.

I stared at the little tube—round as a manhole in a city street. "But how do they do it?"

"They find a natural opening in the ice made by the currents and keep it open," Martin explained. "They've probably been using this hole for generations."

He pointed to the tracks that led away from the opening. They were round, with clearly separated clawed toes that looked like the points of a star. I was amazed at the size of the print—almost as large as a springer spaniel's. The otter, Martin explained, has very large webbed feet with thick nails similar to those of a dog. But this had been an exceptionally large otter—"Twenty pounds or more and at least two feet from his snout to his tail."

A few feet from the hole, the tracks became side-by-side, with a wide space between each pair. "They pull themselves through the snow in little leaps," Martin observed. A few yards down, the snow dipped in a little bank over a small frozen fall. All the way down this slope, which was about six feet in length, a smooth, semi-circular little furrow had been run, ending in a little mound of snow, with another set of side-by-side prints beginning after it.

"There's your otter slide!" Martin chuckled. "He just slid down that little hill on his belly like one of your kids on a Flexible Flyer!"

We followed the trail further down and found another slide, then another. Martin told me that although otters used alternate slides and leaps as a practical means to move through the snow, a good part of the time, it was done purely for fun. "They do love to play!"

"This otter probably comes from over to Greenwood Pond," Martin observed.

"But that's over a mile away!" I exclaimed, "and the Wilson doesn't connect to Greenwood anywhere I know of."

Martin gave me the sage, somewhat smug smile he always does when he is about to share a particularly prized piece of woods lore with me. "Otters do not have to have water to travel," he told me. "I've found their tracks and scat deep in the woods over two miles from any water."

As we stood gazing at the tale left in the snow, Martin told me how many years before he had stalked and trapped otters for their pelts each winter, using his intimate knowledge of their habits. "I'd sink a trap under the water just where one was likely to pop up from under the ice. If he was caught, he'd be pulled down and drowned. One time when I came back to check my traps, I found where the otter had chewed his own leg off to get away and then swum back to another hole to get out. He was that determined to be free."

"Then what happened?" I asked, a lump springing involuntarily to my throat.

"He got caught in my other trap and drowned."

Before I could express any feelings, he quietly added, "That was the last time I ever set a trap." Then he turned away and began to follow the trail once more.

"Look over here!" he called a few minutes later when he came upon a boulder protruding from the snow like a volcanic island. Coming up behind the boulder was a new set of tracks, all set in a neat row, one right after the other.

"A fox," Martin observed. He pointed in the direction from which they had come. "See—he was watching from the river's edge, then decided to follow along at a distance."

"To stalk the otter?"

"No, the otter is too large for the fox to take. No, he was just curious. All foxes are: they will investigate everything."

The fox's neat tracks showed he had climbed for a moment to the top of the boulder to get a better view, then followed along a few feet to the side of the otter's trail. I was entranced, trying to envision this intimate little adventure of fox and otter and would have followed the trail for miles if Martin had not tugged at my sleeve. "It's getting dark. We'd best be heading back."

As we trudged back up the river, the snow began to fall, thick and silent. Soon the small hollows left by the fox and otter would be filled, all trace of their tale erased, like the memory of a dream. In a few minutes, we would be back on the scraped and sanded road, where we would pause and shake the last snowy traces of our walk from our shoes like fairy dust.

In Memorium

Robert E. Seal

The following poem was taken from a letter written on April 5 by Robert E. Seal to his wife, Cheryl, the day before he embarked on a solo kayak journey off the coast of Texas. Seal, a former resident of Maine, had just become the first man to complete the 350 mile journey in a solo kayak down the Texas Colorado River from Austin to Matagorda Bay. Two days after the letter arrived in Maine, it was learned that Seal was missing and presumed drowned in Matagorda Bay. The death was confirmed on April 21.

"My River"

My love for the Colorado is part of my soul now
Every inch is etched in my spirit's memory, lit with gold.
No one, no event, can ever take that away.
I have learned the trees, flowers, moods, colors, currents, winds, rains, cattle, birds and most of all
Its sublime peaceful beauty.
A wedding of sounds, sights and colors that float, swell, echo, and thunder in a symphony that brings tears to my eyes
Over and over.
She and I have together flowed to the Sea, in body and spirit
And will always be a part of each other
More than this I will not ask,
And if I die tonight.
Indeed, I die replete.

Robert E. Seal — January 23, 1950-April 8, 1993

Wolves in Maine—Time for the Return of the Native

by Michael J. Kellett

The Maine Department of Inland Fisheries and Wildlife classifies the wolf as one of several "species of wildlife that were once indigenous to Maine but have not been documented as indigenous for the past 50 years." The last wolf was probably killed in Maine during the late 1800s.

In its Recovery Plan for the Eastern Timber Wolf, the US Fish and Wildlife Service (FWS) has identified northern Maine as having potential for wolf restoration. Instead of working toward this goal, the State of Maine has opposed such a program.

The time has come to change this situation. The people must speak out and demand action.

Maine: The Best Chance for Restoration

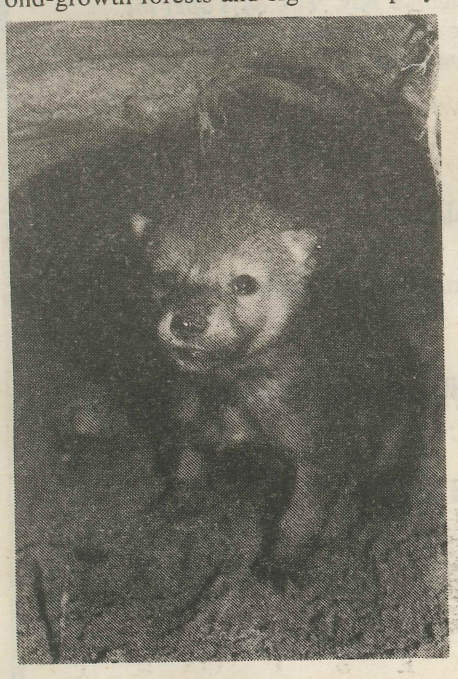
Despite significant progress over the last two decades, the long-term survival of the eastern timber wolf is far from assured. According to the *Recovery Plan*:

> *The FWS recognizes the desirability of establishing and maintaining separate, viable population centers of the eastern timber wolf. Such a distribution gives greatest protection against catastrophic loss of the last remaining population segments and best assures the perpetuation of this (or any) endangered species.*

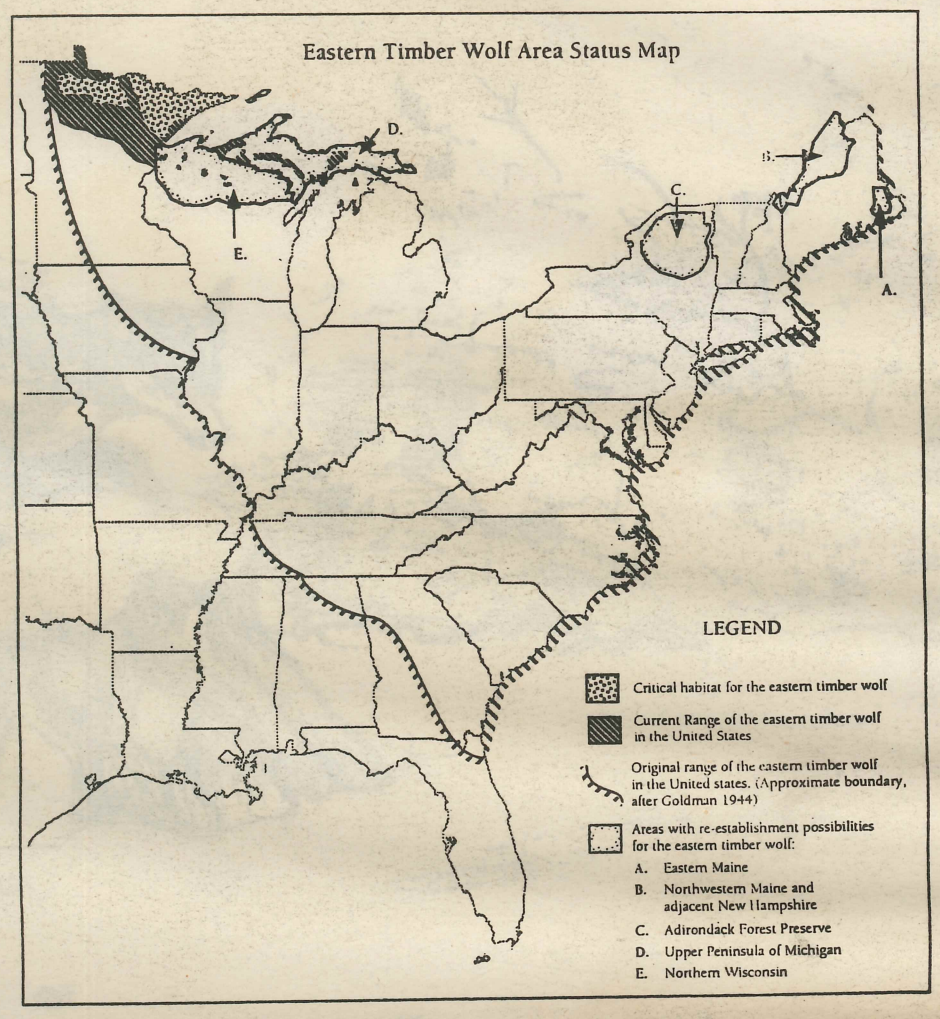
The *Recovery Plan* identified several areas that "deserve serious investigation as potential [wolf] reintroduction sites." These included northern Wisconsin, the Upper Peninsula of Michigan, the Adirondacks of New York, and northern Maine and New Hampshire.

Northern Maine and New Hampshire appear to have the optimal combination of vast tracts of habitat, ample food supply, and minimal human-wolf conflicts. The *Recovery Plan* identified 13,800 square miles (8.8 million acres) of potential habitat in this area, most of which is within the region of Maine called the "Wildlands."

The ten-million-acre Maine Wildlands is the largest contiguous expanse of undeveloped forest land remaining in the eastern United States. The region is mostly owned by large paper and timber companies, and has no local governments, virtually no public roads, and few permanent residents. Despite intensive logging, there are still large second-growth forests and significant prey populations.



Two and a half week old wolf pup in den. Photo © Scot Stewart



According to the FWS, "the primary objective of the *Recovery Plan for the Eastern Timber Wolf* is to maintain and reestablish viable populations of the eastern timber wolf in as much of its former range as is feasible." The Maine Wildlands seem to offer an outstanding opportunity to expand the range of the eastern timber wolf. Yet the agency has failed to study the feasibility of a Maine recovery program. The time has come to initiate such a study.

Needed: A Maine Wolf Recovery Study

When the first *Recovery Plan* was drafted in 1976, the Commissioner of the Maine Department of Inland Fisheries and Game (now Wildlife) wrote to the FWS wolf recovery team:

> *Considering the current financial picture, the potential detrimental effect upon established native wildlife populations, and prevailing attitudes among our hunters and trappers which would make a wolf introduction socially unacceptable, I do not feel we can support the implementation of your proposed program in Maine.*

Based on subsequent correspondence, the department has not changed its views since that time.

The people of Maine have never been given the opportunity to make their own decision on wolf recovery. Instead of eliciting public comment on the *Recovery Plan*, Maine state agency officials assumed that people were opposed to wolf recovery and that no additional funds would be available. Media coverage was minimal, and most focused on negative reactions of the agency and a few individuals.

An open public debate is long overdue. The US Fish and Wildlife Service should prepare an Environmental Impact Statement (EIS) on the feasibility of restoring the eastern timber wolf to Maine, as it is doing for Yellowstone National Park. This study should assess a wide range of alternatives and recommend actions to be taken. It should be done in cooperation with the State of Maine, and with the involvement of private landowners, colleges, and universities. And it should ensure full public involvement through mailings, public meetings, and media alerts.

The Benefits of Maine Wolf Restoration

The restoration of the wolf to Maine would provide many benefits. These include:

**Restoring Healthy Ecosystems*

Human exploitation has severely degraded the ecological integrity of the Maine Wildlands. Most major predator species, including the eastern timber wolf, cougar, bobcat, and lynx have been exterminated or greatly reduced in numbers. This, along with continuing forest fragmentation, has resulted in exploding populations of deer, moose, beaver and other prey species.

Moose populations have been rising steadily. In Maine, four people and over 600 moose lost their lives in moose-car accidents during 1991. That same year, at least 192 moose were hit by cars in New Hampshire. The state has printed bumper stickers saying "Brake for Moose: It May Save Your Life."

Beaver have also been increasing in numbers. New beaver dams and ponds have caused flooding of woods roads and hampered logging operations. Some Maine forest industry landowners have reportedly begun an extermination program.

The Maine deer herd is larger than it was before European settlement. Particularly in southern Maine, deer are damaging forests and farm crops, and causing 3,400 deer-car collisions per year. In northern Maine, where deer populations exceed the availability of winter shelter, there are major die-offs during severe winters.

The restoration of wolves to Maine would help address these problems. Wolf predation would help keep prey populations in check and remove unfit individuals, improving the overall health of the population. As they did for thousands of years, wolves and their prey would co-exist, to the benefit of the entire ecosystem.

**Benefits to the Local Economy*

The economic value of wolves and other endangered species is becoming increasingly evident. In northern Minnesota, wolves help create a mystique of wild, untamed nature that draws large numbers of recreationists to the region. For example, over one million people visit the Boundary Waters Canoe Area Wilderness in the Superior National Forest, which is the heart of wolf country. This and other backcountry tourism has allowed for the development of a significant "eco-tourism" economy.

A 1992 National Park Service study predicted that wolf recovery would provide a net benefit of $43 million per year to the Greater Yellowstone region of Idaho, Montana, and Wyoming, largely from increased tourism revenues. With 50 million people living within easy reach of Maine, a significant number would probably be more likely to visit the Wildlands if they knew they might hear the howl of the wolf.

A healthy "eco-tourism" industry would help offset the "booms and busts" of the current resource extraction-dominated economy. The people of northern Maine could benefit economically, while protecting the natural health and beauty of the region and preserving their way of life.

**A Focal Point for Maine Wildlands Restoration*

In a February 9, 1990 editorial, the *Maine Times* observed that:

> *In the long run, the wolf and countless other species of wildlife will survive only if the habitats on which they depend are restored and protected. The return of the wolf to its rightful ecological place in the Maine Wildlands could be the beginning of the long process of restoring other extirpated and endangered species, and the region as a whole, to ecological health.*

Shattering Myths and Informing the Public

Despite increasingly positive attitudes toward the wolf, the general public still has many misconceptions. Government agencies in many states are hesitant to support wolf recovery because they believe the people are against

Dead wolf shot by coyote bounty hunter, Upper Peninsula of Michigan, 1974. Photo © Scot Stewart

Wolf, 15 Ravens and deer carcass. Photo © Jim Brandenburg

it. This is particularly true in places like Maine, where there has been little public debate on the issues.

This problem can be overcome. In Wisconsin and Colorado, grassroots activists have had major success in building public and government support. They accomplished this by shattering myths, informing the public, and organizing wolf activists across the state.

Among the common concerns that must be addressed in Maine:

**Myth 1: The people of Maine would not support wolf recovery.*

Public support for wolf recovery is growing across the United States. Public opinion surveys have shown strong approval for recovery efforts in Minnesota, Wisconsin, Michigan, Yellowstone National Park, and elsewhere. The Michigan survey showed that "deer hunters revealed the greatest sympathy, concern, ecological appreciation and outdoor recreational interest in the wolf of any group examined. . . ." Even the Arizona Cattle Grower's Association has lent its support to the recovery of the Mexican wolf.

Based on positive attitudes elsewhere, Mainers would also be likely to approve of a wolf recovery study. But they have never been asked what they think.

**Myth 2: Maine does not have adequate wolf habitat.*

The Maine Wildlands appear to be well suited to wolf recovery. Wolf survival requires habitat with a road density of no more than 0.95 to 1.0 mile of roads per square mile; the Maine Wildlands have 0.5 miles per square mile or less. Wolves need an adequate prey base; Maine has a deer herd of about 300,000, and rapidly growing moose and beaver populations. Finally, wolves need room to roam; the Maine Wildlands comprise an area five times the size of Yellowstone National Park with a human population of only 15,000 people, mostly along the periphery.

**Myth 3: Wolves would decimate deer populations.*

There is ample documentation that this is not true. The US Fish and Wildlife Service has found that in Minnesota, where deer and wolf populations have lived together for a very long time, "with the possible exception of local areas where deer habitat is already in poor condition due to the aging of the forest, wolf populations are having little or no effect on deer numbers and hunter success rates."

**Myth 4: Wolves would threaten humans.*

There is no authenticated record of a healthy, wild wolf seriously injuring a human anywhere in North America. Dogs, raccoons, horses, and other animals that are commonly in contact with people present a much greater danger.

**Myth 5: A wolf recovery program would restrict private land use.*

Wolf recovery would have little or no impact on private lands. The federal government has virtually no control over private land management, except in the case of activities that use federal funding or require federal authorization (like filling wetlands). Landowners could not be forced to manage for wolf habitat, but they could be assisted if they wanted to do so.

**Myth 6: Wolves would kill large numbers of domestic animals.*

In Minnesota, which has both a large wolf population and a major livestock industry, wolf predation on livestock is very limited. An average of just 27 out of 7,200 farms in Minnesota wolf range are affected each year, with annual reimbursable damages averaging only $26,762. This would probably be even less of a problem in the Maine Wildlands, which have only minimal agriculture and sparse human settlements.

**Myth 7: Wolf recovery is not compatible with logging activities.*

The wolf is able to co-exist with ecologically sustainable logging operations, as long as road density and human disturbance are low, and the prey base is adequate. The US Fish and Wildlife Service argues that "properly designed timber harvest can increase local deer numbers and thus benefit wolves." Minnesota's Chippewa and Superior national forests sustain significant wolf populations, despite high levels of logging.

**Myth 8: In Maine, the wolf has been replaced by coyotes.*

Coyotes fill a different ecological niche than wolves, in terms of social structure and prey base. Where they come into contact, the wolf generally drives out, or even preys on the smaller coyote. In Minnesota, wolves and coyotes have lived for many years in quite well-defined, separate territories. If wolves recovered in Maine, there is a distinct possibility that they would drive coyotes out of some of their current range.

The Eastern Timber Wolf Needs Your Help

Growing numbers of citizens believe that the howl of the wolf has been gone from Maine for too long. But no action will be taken—no study, no public involvement, and no recovery program—unless wolf advocates speak out.

RESTORE: The North Woods has made Maine wolf recovery one of our highest priorities. We are advocating the preparation of a US Fish and Wildlife Service Environmental Impact Statement to assess the alternatives for recovery, followed by the implementation of a recovery program if it is found feasible. This will require broad public support. It is also likely to require authorizing legislation and an appropriation by the US Congress.

In the coming months, we will be informing people about the issue, and about the choices they face. We will shatter long-standing myths and promote a positive public attitude toward the wolf. Finally, we will work with wolf advocates and other groups, whatever their affiliation, to organize our fellow citizens for change.

We are still in the early stages of our campaign, but there are two important things concerned citizens can do now:

•Urge the US Fish and Wildlife Service to begin a Maine wolf recovery study as soon as possible. If you will really read it, get a copy of the Recovery *Plan for the Eastern Timber Wolf.*

US Fish and Wildlife Service
Division of Endangered Species
Bishop Henry Whipple Federal Building
1 Federal Drive
Fort Snelling, MN 55111-4056
(612) 725-3276

•Contact **RESTORE:The North Woods**, and get on our activist list. Better yet, become a member, as well—we need your financial support to make the vision a reality.

RESTORE: The North Woods
PO. Box 440
Concord, MA 01742
(508) 287-0320

Michael J. Kellett is the Executive Director of RESTORE: The North Woods.

The North Woods
R E S T O R E:
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Cultural Restoration: The Key to Ecological & Economic Sustainability

By Jamie Sayen

ABSTRACT: To restore the ecological and economic integrity of Northern Forest communities, we must restore the cultural integrity of the region. Creation of an Upper Connecticut River Valley Academy that teaches ecological restoration, socially and ecologically responsible business and economics, and provides vocational training in traditional arts and crafts is an important component of such a strategy. A natural history museum with small, satellite museums that celebrate the diverse aspects of regional culture must be aligned with the restoration academy.

I: Crisis in the Northern Forests

I live just outside a paper mill town in northern New Hampshire. The mill is old and can't compete with more modern southern mills. In the past year and a half approximately a quarter of the 600 mill jobs have been lost. Even if the mill survives under new owners, there will be further reductions in the labor force. And there is pitifully little economic diversity in the region to buffer the mill's decline.

One reason the absentee transnational owners allowed the mill to decline is that the forests of northern New England are, by and large, in their worst condition since the retreat of the glaciers more than 10,000 years ago. There is virtually no remaining old growth. A number of large native carnivores such as wolf, wolverine, cougar and lynx have been extirpated from the region. Clearcuts extending for hundreds and thousands of acres are common in Maine's industrial forest. Unsustainable forest practices in northern New Hampshire and northern Vermont have intensified during the past decade. Rivers are dammed and polluted with dioxins and other organochlorines discharged from the mills.

And, of course, this is not only a local problem. Global climate change and alarming declines in neotropical migratory songbirds, fungi, and amphibians, to name just a few examples, affect the local forest ecosystems and are exacerbated by local practices.

It should come as no surprise that in the midst of such ecological and economic problems, our Northern Appalachian human communities are afflicted by physical abuse, substance abuse, a brain drain, and a prevailing sense of hopelessness.

II: Paper Company Land For Sale

Whether one is an ecologist, an economist, a social worker, an artist, or merely a citizen, it has become clear that the restoration of nature in communities like ours will require restoration of community and its social, economic, and cultural order as well. Failure to address all these factors together will doom even the most well-meaning efforts to address any one of them in isolation.

While the paper industry will almost certainly remain a significant force in the region for years to come, its current dominant status is rapidly declining. Job loss due to automation and--most recently--the threat of mill closures, has forced the region to seek economic diversification. Millions of acres of forest land--much of it owned by paper companies--is for sale, and millions more are expected to be available in the next two decades, if not sooner.

This situation has created the potential for a peculiar alliance of paper companies and environmentalists. They want to sell; we want the public to buy large tracts to create a system of connected, well-buffered ecological reserves that would adequately protect the ecological and evolutionary integrity of the region.

Currently, less than 7 per cent of the northern forests of Vermont, New Hampshire and Maine are publicly owned. By contrast, 42 percent of the Adirondack Park is protected as "forever wild" land owned by the citizens of New York. Yet even this amount of designated "Wilderness" and "Wild Forest" is inadequate to protect all habitat types and species native to the Park. Very conservative estimates are that a minimum of 50 percent wilderness is needed in the Adirondacks. To achieve 50 percent wilderness in northern New England will require the acquisition of about 10 million acres.

Only the federal government possesses the financial resources that will be required to purchase this much forest land. But politics and the federal deficit will thwart large-scale acquisition efforts until our political leaders understand that wilderness restoration is both popular (which it is) and essential to economic recovery. At current prices, we could buy 10 million acres of forest land in the northern Appalachians for approximately $2 billion. We would need an additional $2 billion to promote an ecologically benign, economically sustainable, locally-controlled economy. The pricetag of about $4 billion (which could be appropriated over a five-to ten-year period) is just over half the amount spent--without much debate--to rebuild overdeveloped southern Florida after Hurricane Andrew, and less than one percent of the cost of the savings and loan bail out.

III: Economic Restoration

In order for this to work, however, we must simultaneously restore the human communities of the region. We need to create a regionally-controlled economy that meets the basic physical, cultural and spiritual needs of the community and provides adequate employment opportunities in an ecologically benign way.

The foundation of the economic restoration strategy must be community-supported agriculture, appropriate use of energy, proper recycling, diverse, high-value-added wood products--and ecological restoration.

Less than a century ago, local agriculture provided most of our region's nutritional needs. It must do so again. Energy conservation and efficiency are necessary, but not sufficient. We must abstain from inappropriate energy uses (such as snow-making for ski resorts), and we must wean ourselves away from reliance on environmentally destructive energy sources such as fossil fuels, nuclear power and large hydroelectric dams. Products that cannot be recycled should neither be manufactured nor imported. Paper manufacturers must use recycled fiber that has not been de-inked; inks must not contain toxic heavy metals, paper mills must stop bleaching paper with chlorine, and, perhaps most importantly, we must stop manufacturing such wasteful paper products as packaging, junk mail, and pampers.

The labor-intensive manufacture of items such as furniture, musical instruments, wooden toys, and boats can provide economic diversity and bring new meaning into the lives of workers. The "working forests" should be managed for quality saw logs, not waferboard, pulp, and wood chips destined for the biomass boiler. Timber harvesting must be done in an ecologically sustainable fashion in publicly-owned buffer zones and privately-owned woodlots. Large core reserves will be forever wild. These public lands should be managed regionally, not by a distant federal bureaucracy.

To realize this vision will require more than legislation and funding. It will require a transition strategy that can move us from crisis and decline to sustainability.

IV: Ecological Restoration

The heart and soul of this strategy is an ethic of healing actions with a strong emphasis on ecological restoration. Restoration is necessary from a purely ecological perspective because there is much human-caused damage that must be undone. But it is equally necessary from the economic and the spiritual perspectives. Restoration work will produce a healthier environment that will sustain healthy community economies for generations to come. In fact, the long-term ecological, spiritual, cultural and economic paybacks would justify investments in restoration today even if such work did not pay immediate economic dividends.

But ecological restoration <u>can</u> pay immediate economic benefits. Out-of-work loggers and mill workers can be retrained to perform restoration work. A few job opportunities include: energy-efficiency auditing and leak-plugging of homes, factories and businesses; river clean-up, erosion control, closing and reseeding unneeded logging roads, and the cleaning-up of dumps, toxic spills and other environmental and health hazards. Since these jobs are not as directly productive of income as logging is, some money from the government and foundations will be necessary to launch some of these projects and assist in the creation of a new economy that can sustain itself. This is money that

might otherwise be spent on welfare and unemployment compensation for laid-off millworkers--or nuclear weapons and Savings & Loan bailouts.

I believe that the northern Appalachians, because of the economic sea-change that has been forced on the region, is in a unique position to serve as a model for the restoration of large bioregions such as are envisioned by Preserve Appalachian Wilderness and the organizers of the Wildlands Project. Our remoteness, our low population density, the severity of our current economic and ecological problems, and the existence of large tracts of relatively undeveloped forests, lakes, rivers, and mountains might allow us to move ahead more rapidly than urban and suburban communities, which probably need ecological restoration even more urgently than our rural communities do.

V: Cultural Restoration

This winter I have met several times with 25-30 residents of the area to discuss economic diversification strategies. (See "NH Mill Community Searches for Economic Diversity" by Barbara Tetreault in Spring Equinox 1993 *Northern Forest Forum*, p. 26) Although we still face a very uncertain future, I have already detected a new sense of hopefulness, a budding confidence that we can regain control of our own destiny. I am confident that once we begin the healing work it will have a profoundly inspiring effect on community spirit. Healing breeds hope, and hope accomplishes the impossible.

This group is called Sta-North (named for the three communities involved: **Stark-Stratford-Northumberland**, which includes Groveton). We analyzed the strengths, weaknesses, opportunities and threats to the region. This process has proved to be cathartic, and has helped the disparate elements of the community begin to communicate more comfortably with each other. Although we listed 60-70 strengths, most were variations on our love for the rare physical and natural beauty of the upper Connecticut River Valley and a sense of deep affection for our community.

Our list of weaknesses was almost as long, but what struck most of us was the number of social and cultural problems we face. In no particular order, some of the weaknesses we identified are:

*lack of art and cultural events
*lack of diversity in economy and economic opportunities
*lack of post secondary opportunities and lack of access to post secondary education
*lack of local control over land and economy
*lack of control over most aspects of community destiny
*lack of control and input into land management
*high incidence of poverty
*poor job utilizing resource of senior citizens
*lack of positive social activities outside school for kids
*under-appreciation of natural environment
*young people see no future here
*high rate of alcoholism

Under threats to the community, one theme dominated: we have lost the spirit that we are a community that is successful and moving in a positive direction.

As a result of these meetings with my friends and neighbors, I began to wonder how we could integrate some of the cultural and spiritual concerns with the environmental and economic issues that have dominated discussions on the future of the Northern Forest region. It occurred to me that there is one essential ingredient missing in northern New England--a sense of community identity as an earth-based culture that celebrates tradition even as it enters a new era. We have too few schools of higher learning and too few cultural institutions such as the Adirondack Museum in Blue Mountain Lake, NY. Nearly all the high school graduates in rural North Country towns who enter a four-year college program leave the region permanently. This brain drain is demoralizing both for those who feel compelled to leave home and for those who remain. And it robs us of our most gifted, creative young people.

VI: Northern Connecticut River Valley Restoration Academy

I propose the creation of a Northern Connecticut River Valley Restoration Academy that teaches ecological restoration and natural history, socially-responsible, watershed-based economics, and a vocational school that teaches skills and crafts that add value to wood, agricultural and other natural resource products. Aligned with this "Academy" would be a network of museums. A natural history museum should be on the Academy campus. Smaller satellite museums

treating various aspects of our regional legacy could be built in many of the small towns of the region.

I have borrowed liberally from the ideas of others to develop this proposal. The idea for an ecological restoration academy is based on the Earthkeeping program and Earthkeeping Institute (EKI) being developed by the Society for Ecological Restoration (SER) and the University of Wisconsin-Madison Arboretum. Earthkeeping is a program to provide opportunities for students and the general public to participate in restoration work at selected sites. We need that to develop restoration as a new form of non-exploitative--in fact ecologically constructive--eco-tourism, to help rebuild our landscape and our economy. We also need EKI, which will be an educational institution to train people to become field managers to serve as leaders for Earthkeeping projects. We need that as one way to provide meaningful work for our young people, encouraging them to remain home to heal rather than to seek fame and fortune far away.

Overall, we must broaden the idea of restoration to include cultural restoration. Hence the need for a new kind of academic institution that will offer degrees in ecological restoration, ecology, and the natural history of the region. Allied with this new academy must be a vocational school that teaches the skills that will sustain our diversified, value-added economy. If we are to develop an economy that produces quality wood products such as furniture and musical instruments, we will need to train workers in skills that have largely been forgotten. The vocational component would teach traditional agricultural practices, crafts such as quilt-making, and small-scale logging, including logging with horses rather than skidders, as well as woodworking skills.

Recently Ben Cohen of Ben & Jerry's proposed the creation of a "socially responsible" business school. I propose that this excellent idea be integrated with the ecological and cultural restoration programs rather than stand alone.

A socially-responsible business school must produce graduates who are ecologically literate, so that all their endeavors are ecologically sustainable and appropriate. Graduates of such an academy must understand the limits of physical reality, including the laws of thermodynamics, the concept of carrying capacity (the population--and material demands--of a species cannot exceed the ability of a given ecosystem to meet those demands in perpetuity), and they must understand ecosystem processes such as natural disturbance and natural succession regimes.

Graduates must be socially responsible. They must understand the cost of producing a commodity or providing a service, not merely the price. They must respect the needs of future generations and the needs of non-human species with whom they share the ecosystem. And of course, there must be social equity.

Socially responsible business implies the production of necessities and ecologically benign luxuries. Non-essentials that are ecologically harmful cannot be produced, even if they are highly profitable.

Steady-state economics (Herman Daly/Donella Meadows), not mindless growth or the seductive siren call of "sustainable growth" (an oxymoron) must be the keynote.

We must study watershed economics rather than uncritically embrace the global market economy with its GATT and NAFTA nightmares (free-trade agreements that benefit transnational corporations at the expense of the ecological, economic, social, and cultural needs of local communities).

This means the development of genuine community-based and controlled economies, not absentee control of capital, land and destiny. The banking system must be locally-based. Shorter programs must be offered for local entrepreneurs, high school students and retired people.

I think it would be productive to require a certain number of courses for this business program from the natural history and restoration program. It's not enough to teach responsible business theory; students must acquire knowledge of natural processes and restoration. Socially responsible business school graduates will have dirty fingernails.

VII: A Network of Museums

We need to establish a museum, or museums, that preserve, restore and enrich our Native American and Euro-American cultural and natural legacy. In many respects, I find the notion of small satellite museums, rather than a single, large centralized museum, more appealing. A museum of regional natural history should be aligned with the Earthkeeping Institute. A wing of the museum dedicated to traditional crafts, furniture-making and related skills should be affiliated with the vocational institute. There could be satellite museums featuring past and present Native American culture; logging and river driving; a farmers' museum; a railroad museum; and a maple sugar museum, among others.

VIII: Local Healing

I believe the creation of a regional Earthkeeping Institute, a vocational school, and a museum system would do more to restore the morale of our region than any purely political or economic activity. Such a network of institutions could draw upon the knowledge, wisdom, experience, and skills of our senior citizens, one of our region's most shamefully underutilized resources.

Combining a North Country Museum with a restoration academy would create jobs, attract tourists, some of whom could engage in restoration much the way volunteers now participate in archaeological digs (and pay for the privilege!), reverse the brain drain and begin the ecological healing of the region. The forests, rivers, lakes and mountains of the northern Appalachians would provide an ideal "laboratory" for restoration work, including restoration of extirpated native species. As the EKI became established, it could help train restorationists from other regions to begin the task of restoring their own communities and environments.

One concern that I have about such an academy is that it not be too academic. It must not only provide a four- to six-year professional course, it must also provide shorter courses for non-professionals, summer programs, youth and senior programs, and a school for lifetime learning for working people. And, it must truly be sprung from the soil upon which it sits. It's first task is local healing.

Time to Try a Different Path—A Response to 'Cultural Restoration'

by Mark Lapping

Jamie Sayen's call for a comprehensive strategy to recreate northern New England is, at one and the same time, a call to recast the region into a new old-fashioned society as well as a vision of the first post-modern/post-industrial American region.

While there is something of the Callenbach/*Ecotopia* about Jamie's concepts, the larger point is that northern New England is now the quintessential end-of-the millennia on-the-periphery down-in-its-cups Appalachia.

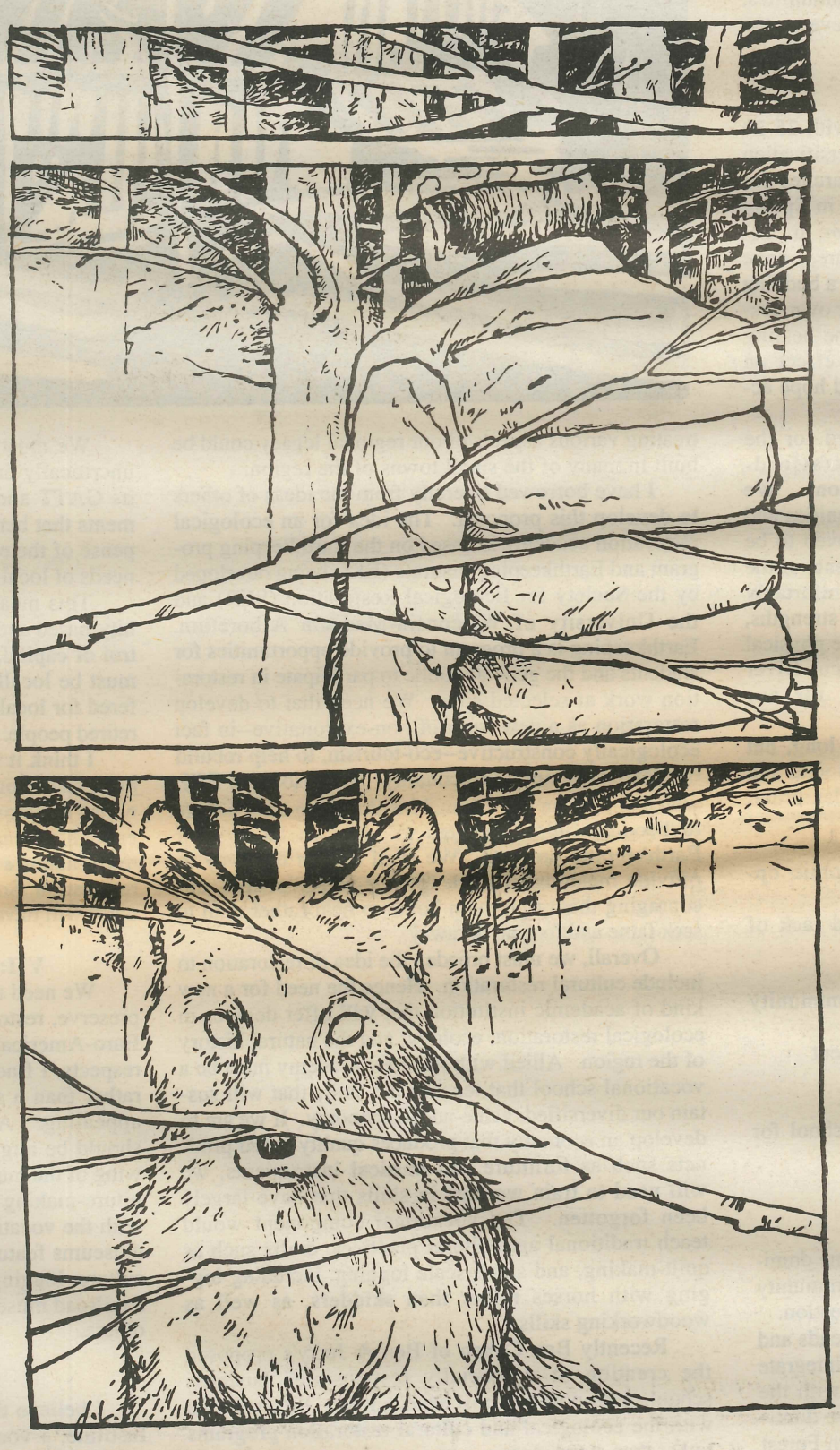
Like so much of rural America, northern New England is rapidly becoming the archetypical peripheral region, filled with dying towns, an aging population lacking the "necessary skills" to make it in the new world economic order and cultural despair. The natural context of this is an ecosystem far less resilient and diverse than in previous generations. Jamie provides us with a tantalizing set of ideas about how this might be turned around. Most of all he demonstrates that we cannot really address environmental problems without considering the social dimensions of community.

Some other things must also be said about his notion of a recreated New England. First, the more populous regions of the northern forest of today are, very largely, the farms of one hundred years ago. The hill farms were abandoned first, leaving only valleys with enough of a critical mass of farms and agricultural land to sustain an industry. This reflected as much a deteriorating agricultural economy as it did thin soils and a short growing season.

Those less than familiar with the region's agricultural history may be largely unaware of the vast array of products and animals grown and raised not that very long ago. We have, to some extent, accepted the cow hegemony as the natural and only form of farming which will work in the region. But making the transition to a more diverse agriculture, one of the most crucial elements of Jamie's plan, is not only a question of will and direction but also a matter of rediscovering the intelligence of agriculture which once existed throughout the region.

We will need to deal with issues of risk, credit, renewable energy resources, proper waste management and re-use, necessary agribusiness supports, among other important issues. We also need to create local markets which will support an economically viable and an environmentally sane agricultural system in northern New England. Such an agricultural system should not only emphasize family-farm models but also part-time farming which would be combined with other capital generating pursuits.

Second, Jamie talks about providing a new set of employment options for local people. Few things could be more important. But a transition to this kind of economy will require a substantial cultural transformation. We will have to come to value people who work with their hands, value products made from locally derived natural resources, and then often recycled. The goal is an economy which integrates environmental and social costs into the prices of goods and services, encourages modes of production and consumption which reflect an ethic of restoration and reclamation, and truly value the unique and idiosyncratic possibilities of different places and different people. Not very much of this now exists, either in the North Country or elsewhere in the United States.



Third, the idea of a Restoration Academy, a network of regional museums, and an Earthkeeping Institute, are but institutional manifestations of a community renewal imperative which must be cultivated across the region. This ethic must emphasize the power of individuals and communities to stimulate and create change, the wisdom of acting collaboratively and cooperatively, the necessity to raise up leaders at all levels, the requirement that civic culture be nurtured and participation broadened. Awareness of the environment as the source of life's very essence and renewal—as well as economic productivity and vitality—must be reinforced.

The struggle to bring all this about will require us to embrace politics rather than to reject it. Perhaps the time is propitious. Throughout the nation nearly all rural regions are undergoing the same trauma and dislocation. Be it the High Plains, the Delta, the Pacific Northwest, the Southwest, or the Upper Great Lakes, almost every rural place is getting to look and feel more and more like metaphoric Appalachia—chronically poor places which destroy the human spirit as well as the land, animals, plants, and water.

Maybe the Northern Forest ought to be what the bureaucrats call a "demonstration project," allowing various federal agencies—most especially the US Department of Agriculture—to reinvent themselves as organizations dedicated to rural community and family farm development. The States, foundations, unions and their pension funds, universities and businesses should come together in a new partnership under the guidance and direction of local individuals, families and communities.

I don't know if this is what it will take to bring to fruition some of Jamie's ideas, grand plan that it is. I do know, however, that time is running out, that the notion of a possibility recedes further, and that drift, hopelessness, violence against people and nature, dependency, and the erosion of civic culture are really the only "growth industries" in too many areas. The time must surely be right to try a different path, to try Jamie's way.

Mark Lapping, Dean, Faculty of Planning and Public Policy, Rutgers University, grew up on a dairy farm in northern Vermont.

Ecologic Restoration—The Work of Healing is a Way Back In

Dear Jamie,

Regarding your discussion of a possible Earthkeeping project, I must say I was delighted to see how you picked up on this idea and developed it in the context of northern New England.

It occurred to me that restoration has emerged in just the places—like the northern forests and the tallgrass prairies—that got beat up early on and now need help coming back. Especially the prairies. They are nearly gone, and they simply don't come back without help, as the forests do, given half a chance—and of course time. Thus restoration kind of got going on the prairies, and some of the most interesting work in this area, especially on the participation and education side, is going on in Chicago.

At the same time, we are now encountering ruined landscapes elsewhers—ecosystems that have more or less fallen apart so that human economies and communities that depend on them are failing. But for the first time we conservationists come to this with the idea of restoration firmly in mind, and we see these places as opportunities.

This is what is happening on the Great Plains, where the Rutgers University social scientists Frank and Deborah Popper have documented a steady, chronic decline in population and have suggested the return of the grass and the buffalo as the basis for a new/old economy for the Plains—what they have called the Buffalo Commons.

Now I see that something like this is happening in New England and in the forested regions around the Great Lakes, in places like northern Wisconsin and Michigan—and of course New Hampshire, Vermont and Maine.

Perhaps we can take advantage of this to begin putting together a whole complex of projects, a kind of fertile crescent reaching from West Texas through Illinois and Indiana all the way up to Lake Umbagog.

The beauty of this vision—and what gives it its vitality—is in my view the linking of the human spirit of enterprise with the equally human lust for the wild. What restorationists are finding in places like Chicago is that damaged landscapes can be inspiring places—if one takes on the task of healing. The work of healing is a *way back in*, and people undertake it not mulishly or even in a spirit of anxiety, but joyfully. Hence our faith in the idea behind Earthkeeping—the notion that people will pay to do restoration work (as they have always paid to support and participate in religious rituals), so that Earthkeeping projects can become inexorable forces for restoration—and for environmental education and community-creation—in project areas.

How to proceed? Keep in mind that there are two parts to the Earthkeeping program—the Earthkeeping program itself, and the Earthkeeping Institute that we are creating to train field managers for Earthkeeping projects.

These field managers are clearly going to be the key to making Earthkeeping work—and until we have EKI we're going to have to scrounge for field managers. But, as you know, we

Continued on Page 19

Northern Forest Real Estate Bargains

Nineteen organizations* have called for federal and state purchase of these three Northern Forest Jewels. These threatened tracts may never be available again and will probably never be cheaper. But they are just the tip of the iceberg. Today there are 3-5 million acres for sale in the 26 million acre Northern Forest Lands Study area. Even more land is likely to go on the market in the next decade.

[Ed. Note: I say buy it all. To protect the ecological integrity of the region, we will need to create ecological reserves that protect millions of acres. Let's get started!]

New York: Follensby Pond--$5.5 million

The pristine 1,000-acre Follensby Pond is among the largest undeveloped privately owned lakes in the Adirondacks. The present owner of the spectacular 14,600 acre tract that includes Follensby Pond wishes to place his land in public ownership for future generations. With the help of both the federal and state governments this critical parcel can be added to the New York State Forest Preserve.

The Follensby Pond Tract, with its bald eagles, and giant spruce and white pine, lies at the core of the Adirondack Park. The parcel also includes access to the Raquette River, much used and appreciated by boaters and anglers alike, as well as to other coldwater streams. In addition to its waterbodies, the parcel's uplands provide habitat for a variety of sensitive wildlife species and unmatched recreational opportunities for the general public.

Contacts:

Dan Plumley	David Miller	Chris Ballantyne
Adirondack Council	National Audubon Soc	Sierra Club
(518) 873-2240	(518) 869-9731	(518) 587-9166

Vermont: Big Jay--$800,000

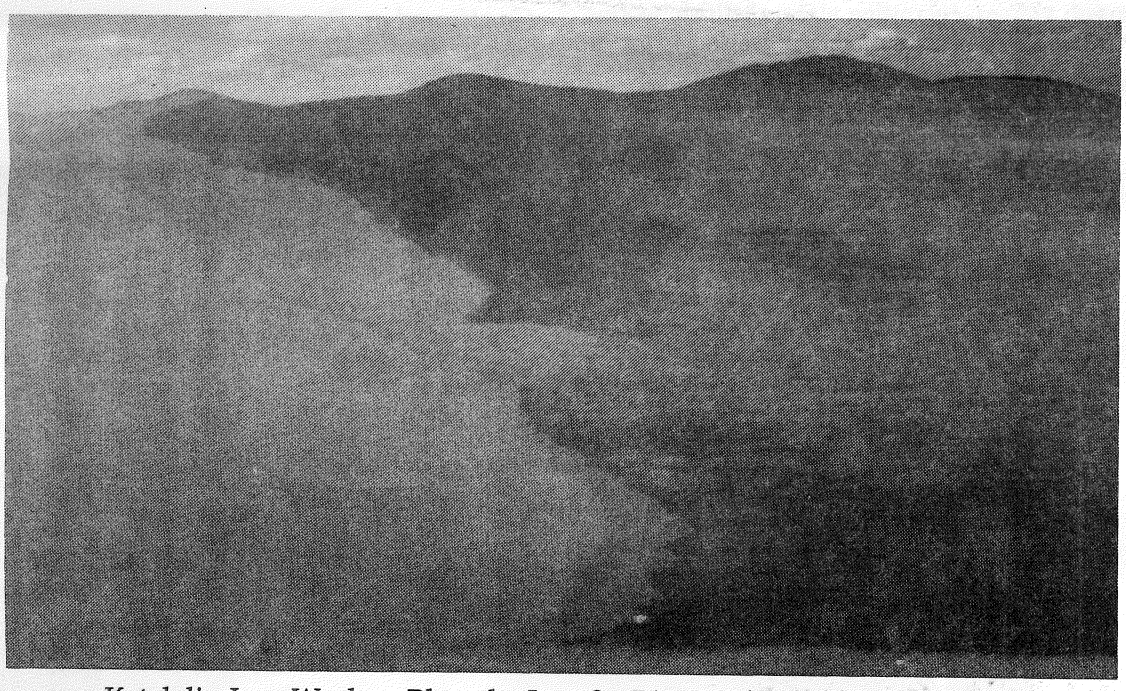
The 5,400-acre Big Jay property is a spectacular tract of undeveloped mountainous forest land adjacent to Jay State Forest and the Jay Peak Ski Area. Public ownership of this tract will conserve a magnificent recreational and wildlife corridor along the northern crest of Vermont's Green Mountains.

The property includes the summits of Big Jay, the highest undeveloped, privately owned peak in Vermont, and a unique glacial cirque between Big Jay and Jay Peak. Of importance to local hikers and visiting backpackers, 1.3 miles of Vermont's famous Long Trail and 1 mile of the Catamount Trail traverse the property. Bear, moose, beaver and deer are among the wildlife species that inhabit this ecologically important tract of land.

Acquisition of this parcel or a conservation easement on the land will best be achieved through the cooperative efforts of state and federal governments. The current owner is interested in selling the land to ensure its long term conservation.

Contacts:

Dennis Shaffer	Jim Shallow
Green Mountain Club	Vermont Natural Resources Council
(802) 244-7037	(802) 223-2328



Katahdin Iron Works—Photo by Jym St. Pierre, The Wilderness Society

***The 19 organizations are:** The Adirondack Council, Appalachian Mountain Club, Appalachian Trail Conference, Association for the Protection of the Adirondacks, Audubon Society of New Hampshire, Conservation Law Foundation, Green Mountain Club, Maine Audubon Society, National Audubon Society, National Wildlife Federation, Natural Resources Council of Maine, Natural Resources Defense Council, New Hampshire Wildlife Federation, RESTORE: The North Woods, Sierra Club, Society for the Protection of New Hampshire Forests, Student Environmental Action Coalition, Vermont Natural Resources Council, The Wilderness Society

Maine: Katahdin Iron Works--$8-8.5 million

The magnificent Katahdin Iron Works (KI) area encompasses remote ponds and mountain peaks and undeveloped river and stream shores. Maine residents and visitors have long treasured KI for the traditional backcountry recreational activities it provides. Of the entire 70,000 acres, 32,000 acres are now on the market, presenting an immediate opportunity to protect critical public values. At risk are views from the Appalachian National Scenic Trail and a significant portion of the upper watershed of one of northern New England's few free-flowing rivers.

Gulf Hagas, a registered National Natural Landmark, and the Appalachian Trail corridor abut the property, which is owned by Diamond Occidental Forest, Inc. Also adjacent to the parcel and in need of a buffer, is the Hermitage, a permanently protected old growth pine stand of national significance.

With the extensive lands at Katahdin Iron Works now available, there may never be a better chance to protect this significant area and the important mix of public uses and values it provides. Working to find the best possible solution for the land and the people of the region, a state and federal partnership will likely best ensure permanent conservation of Katahdin Iron works.

Contacts:

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The Wilderness Soc	Maine Audubon Soc	National Audubon Soc
(207) 626-5635	(207) 781-2330	(207) 564-7946

Katahdin Iron Works Petition Drive

The Maine Sierra Club and local chapters of National Audubon Society are launching a petition drive to urge the Maine Congressional delegation to work to appropriate funds for public purchase of the Katahdin Iron Works Forest.

"This is a chance for the people of Maine to ensure the future of their great northern forest heritage," said Dave Johnson, conservation chair for the Maine Sierra Club. "Time is running out. The people of Maine need to show support now for the pubic purchase of these lands. This land is threatened by sale for development and biomass/timber harvest," said Joe Spaulding, Maine representative for National Audubon Society.

James River/Diamond Occidental has had the 32,000 acre property on the market for two years now and wants to sell in the next year. The forest contains such features as: Saddleback mountain, trout streams and ponds, the watershed to Silver Lake and the West Branch of the Pleasant River. The K.I. forest borders the Appalachian Trail and Gulf Hagas,--the Grand Canyon of the East, it surrounds the Hermitage, one of the last stands of old growth forest in the East. It has provided a great recreation area for generations of Maine residents.

For further information and copies of the petition, contact the Sierra Club Portland Office:

Maine Sierra Club
192 State Street
Portland, ME 04107
207-761-5616

When a Forest Falls, the Ocean Listens

by Ron Huber

Logging of the Northern Forest may seem at first glance to have little effect on the distant Gulf of Maine and other coastal ecosystems. Not so! When a forest falls, the ocean listens. . .

Rivers are a direct and continuous link between oceanic and upland regions. The Gulf of Maine reaches far inland through its tributary waters, the most prominent being the Merrimack, Saco, Androscoggin, Kennebec, St. Croix and St. John's rivers. All of these have served as migratory routes and nutrient pathways for salmon, herring and a host of other species.

In a distorted echo of this natural process, the timber companies have used these rivers as log transportation routes, sources of electric power, and disposal sites for the waste products of their industry.

For example, Penobscot Bay's tributaries, the Penobscot River and its upper watershed, the Matawamkeag and Piscataquis Rivers and the Wassatoquoik Stream draining Katahdin, rise across a wide swath of the Northern Forest. Historically the site of immense migrations of Atlantic Salmon, the combination of dams, chlorinated pulp mill waste water and soil erosion have turned this migration into a tiny shadow of its former abundance.

The Connecticut River connects Vermont's Green Mountains with Long Island Sound.

The headwaters of the Chesapeake lie within the Appalachians across Virginia, West Virginia, Maryland, Pennsylvania and New York, including Monongahela and George Washington National Forests.

Croatan National Forest drains into Pamlico Sound in North Carolina, while Francis Marion National Forest drains into the Atlantic near Charleston, South Carolina.

Ocala National Forest connects with the Atlantic Ocean via Florida's St. John's River.

Extensive logging over the past three centuries has resulted in significant changes in the depth, chemistry, and biota of all our estuaries and their tributary rivers, changes that continue with current logging, road building and development practices.

For example, thousands of tons of sawdust dumped into the Penobscot River over the last few centuries have covered much of the river bottom and some areas of the upper Penobscot Bay with several feet of acidic, slowly putrefying sawdust. This mass of cellulose and lignin creates acidic and anaerobic zones in river and bay bottom habitat and has severely disrupted the lifecycles of many benthic creatures including worms, mussels, clams and other bottom sediment organisms.

Another of logging's impacts on coastal waters is silt pollution caused by erosion. Road building and forest clearing dramatically increase the release of silt into streams by breaking the protective surface membrane of plants, fungi, and decaying matter, exposing friable topsoils and subsoils to the mobilizing actions of wind and rain.

The loss of ground cover also allows a much larger volume of water to enter streams. The sheer bulk and velocity of storm water can force wood and leafy debris down from headwater streams as well as rapidly filling deeper holes and channels with sand and gravel.

Natural erosion from a mature forest typically averages 5 tons per square mile per year. Erosion from a clearcut forest can rise to 5 *thousand* tons/sq. mi./year, according to Save Our Streams, a stream protection organization.

Most of this eroded material is sand and other coarse mineral particles, settling within a few miles of the cutover area after scouring the stream bed. This abrasive action can strip away mosses, algae and invertebrates, such as isopods, from instream wood and rocks.

Other silts include much finer clay particles that may travel hundreds of miles to tidal waters. Along the way, various amounts settle to the bottom of streams and rivers of the Northern Forest and its coastal systems.

Both fine and coarse silt reduce spawning success of anadromous fish. Atlantic Salmon dig out redds, small depressions in gravelly streambeds, deposit their eggs, then cover the fertilized eggs with gravel. The embryos that develop within this gravel environment for the next six months have very exacting habitat and water quality requirements. Permeability of the gravel substrate, which maintains dissolved oxygen levels by allowing continual water flow is absolutely a limiting factor in their survival. If the stream bed contains more than 24% sand and/or silt, permeability becomes insufficient and the spawn will fail. Silt particles can also damage eggs by abrading their surface membranes, as well as clogging the gills of larvae and their prey species.

While there are presently no reliable estimates for the Gulf of Maine, three centuries of deforestation, mining and agriculture practiced by the European colonizers of Chesapeake Bay's watershed, from upstate New York to southern Virginia has resulted in an estimated fifty percent decrease in the overall depth of Chesapeake Bay.

With more than three million tons of silt reaching the tidal portions of rivers as well as the main stem of the Chesapeake Bay every year, many tributaries become too shallow or otherwise unsuitable to allow upstream migration of herring, shad, perch and striped bass. In addition, hard or rocky bottoms necessary for mussels, oysters, sponges and kelp to grow on have largely vanished under tons of sediment.

The muddy bottoms found in many of the Gulf of Maine's estuaries is a result of the same phenomenon. Mud bottoms are colonized by a different assemblage of organisms, including clams, worms and flatfish.

Clay sediments, which can contain particles so small that they may remain suspended for weeks, also decrease water clarity. Not only is less light available to seagrasses and other photosynthetic plants, but reduced warming of deeper waters may cause organisms hibernating in bottom sediments to miss the thermal trigger that activates their return from winter dormancy.

Nature is constantly adaptive. Transported silts produce large mudflats and tidal marshes in and around the mouths of rivers. Colonization of these areas by saltmarsh grasses, encrusting algae, shellfish, worms, burrowing crabs, birds and other organisms is part of the reason why these estuaries are among the most productive bioregions on earth, with up to ten tons of biomass per acre produced annually. But this is at the cost of depleted soils upstream.

Because of a lack of any organized monitoring by foresters in the three states and three provinces that make up the Gulf of Maine watershed, figures are unknown as to the exact amount of soil eroded from Northern Forest lands. The largest rivers of the region, the Merrimack, Saco, Androscoggin, Kennebec, Penobscot, St. Croix, and St. John, together pour roughly 250 billion gallons of water into the Gulf of Maine. The amount of silt transported by these waters must be considerable. Mandatory use of erosion control practices by loggers and road builders would significantly reduce silt transport. Current management plans rarely require silt control practices, relying instead on buffers and the natural regrowth of ground cover to protect streams. Without such controls, however, efforts to restore self-sustaining populations will in all likelihood be doomed to failure.

On a practical level, little can be done about the paving of the river and bay bottoms with a century of sawdust and silt deposition, beyond letting it become part of the fossil record. Future archaeologists will be able to guess at the time when industrial logging began in the region by taking core samples!

The best way to prevent silt pollution is to prohibit industrial road building and logging within the Northern Forests, both public and private. This would greatly reduce the silt load on Gulf of Maine estuaries, and as hydroelectric power would no longer be needed to drive paper and pulp mills, numerous dams in the Gulf of Maine watershed could be breached or removed, greatly expanding migratory fish habitat to near pre-industrial levels.

A cautionary note: the many tons of sediments typically backed up behind a New England dam must first be dredged up and restored to their place of origin,

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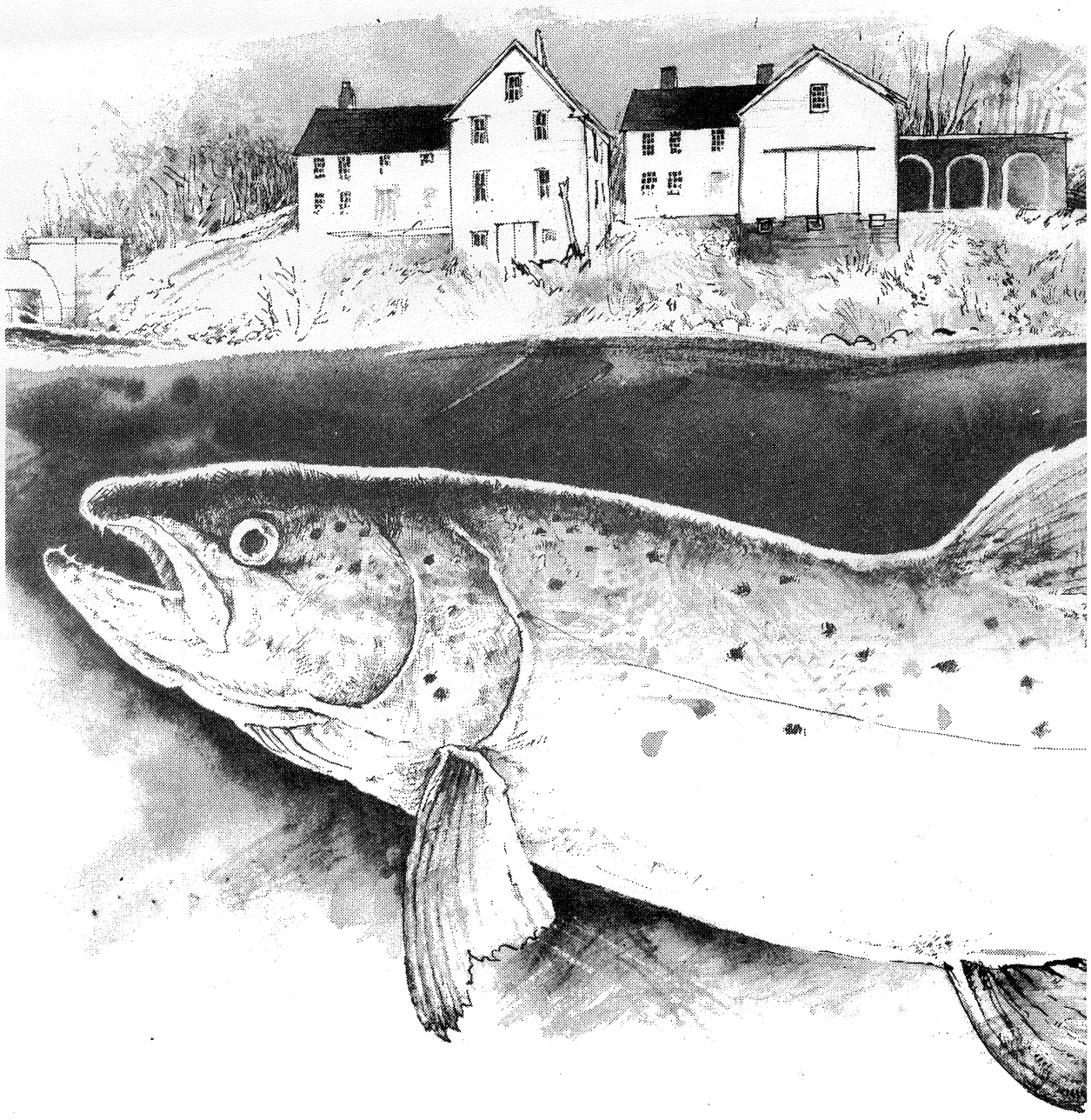


Atlantic Salmon—A Species on the Brink of Extinction

by David Carle

When the first settlers came to this country they found that in the spring virtually all of the rivers from New Jersey northward were alive with countless thousands of salmon that were making their way from the mysterious depths of the sea to their spawning grounds in the upper reaches of these various rivers. For a great many years they and their descendants enjoyed this harvest that a kind and thoughtful Providence had brought to their doors.

—Forward to the Report Of the Commission to Study the Atlantic Salmon
(January 1, 1947)

A Species on the Brink of Extinction

But these forbears of ours were unmindful of their blessings. With a thoughtlessness that seems shocking to us, they completely destroyed these fabulous spring runs of fish.

They did it by building dams that were insurmountable thus preventing the fish from reaching the spawning grounds and so procreating their kind. They did it by making the rivers the dumping grounds for all kinds of waste through which the fastidious salmon would not swim.

Gradually the Atlantic salmon, the most beautiful and one of the most desirable of all fish disappeared from the American scene. Today it is extinct in the United States except for a few small runs in some of our eastern Maine rivers.

—Forward to the Report Of the Commission to Study the Atlantic Salmon

The life of the Atlantic salmon begins in the clear, cool, headwaters of the rivers that empty into the North Atlantic. After reaching maturity, the fish makes its long journey to the Atlantic Ocean, returning after a few years to spawn in the waters of its birth. These beautiful creatures once numbered in the hundreds of thousands. Before European settlement, the rivers of Maine alone may have supported a salmon population of over 300,000.

Today, the Atlantic salmon is on the brink of extinction in the wild. The Atlantic salmon population in the United States is only 1.3 percent of its historical level. No more than 5,000 salmon return each year from the ocean to their spawning grounds in all of New England. Many rivers have been blocked by dams, which prevent or impede salmon passage. Even where the salmon are able to make it past the dams, their traditional spawning grounds have often been degraded by excessive logging, shoreline development, and pollution.

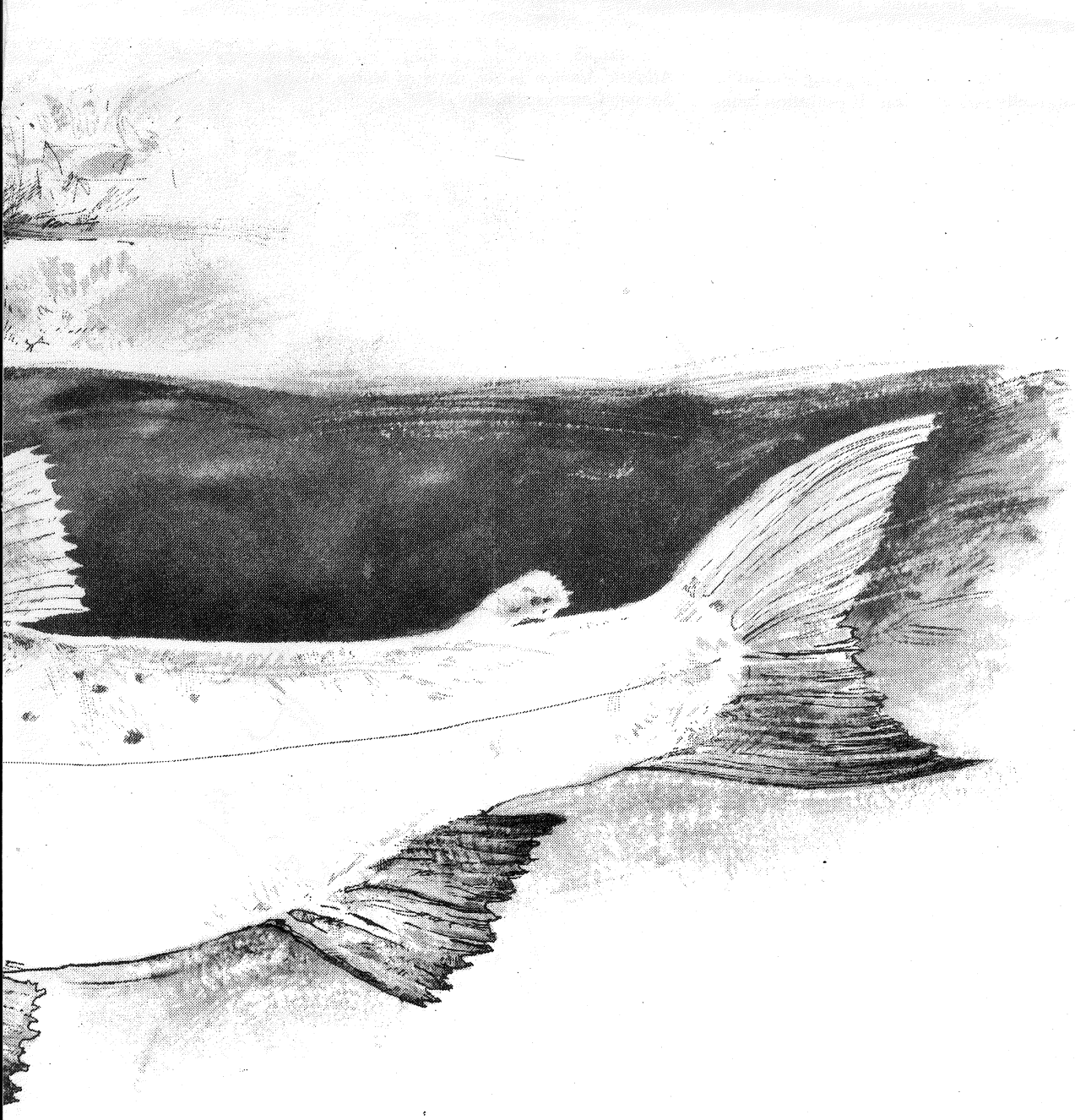
In January 1947, a specially created Commission to Study the Atlantic Salmon reported that the species had all but disappeared in Maine—by then, only 1,500 to 2,000 salmon were returning to the state's rivers each year. The Commission expressed outrage at this situation, and called for the institution of a major new program to save the species from extinction in its native habitat.

The State of Maine reacted by forming the Atlantic Sea-Run Salmon Commission, whose purpose is the restoration of Atlantic salmon to all rivers in Maine where the species were formerly found. The Commission was granted the authority to purchase or lease lands, dams, flowage rights, and to build water control structures for the purpose of conservation of the Atlantic salmon.

A Century of Failed Recovery Programs

This disappearance of the salmon is a shocking condemnation of man's stewardship over the bountiful riches of nature with which the Almighty has endowed US It belongs in the same category as the despoliation of our forests; as the man-created erosion that has ruined forever hundreds of thousands of acres of our land; as the extinction or near extinction of many of the birds, animals, and fishes that once populated our country.

—Forward to the Report Of the Commission to Study the Atlantic Salmon



Forty-five years after the creation of the Atlantic Sea-Run Salmon Commission, little progress has been made. There are just 2,000 more salmon returning to Maine than there were when the Commission was established. Of the 34 rivers that once had wild salmon populations, the species barely survives in only 13.

Instead of responding with increased support, the State of Maine has drastically reduced its support for the Atlantic Sea-Run Salmon Commission. In 1991 the Commission budget was slashed by sixty percent. Five of six state-funded biologist positions were eliminated and the scope of the restoration program has been drastically reduced. Efforts to abolish the Commission altogether were barely turned back. There is little likelihood that this situation will change anytime soon.

For a century, most efforts to protect and restore the salmon have focused on stocking hatchery fish. Even today, the US Fish and Wildlife Service and the Atlantic Sea-Run Salmon Commission are calling for an increase in hatchery production of young salmon in all of their management plans. They are calling for millions of dollars more to be spent on hatchery construction and operation.

The current strategy is clearly not working. On the Pacific Coast, the Fish and Wildlife Services' program for artificial propagation of Pacific salmon has been a failure. So it is with Atlantic salmon. After decades of stocking huge numbers of hatchery-raised fish—over 18,302,600 since 1970—a mere 900 salmon of wild* origin returned to all New England rivers in 1991. Years of stocking have failed to provide for a significant naturally reproducing Atlantic salmon population. Instead of protecting the ecosystems on which the Atlantic salmon is dependent, the agencies release millions of hatchery-produced salmon that face almost certain death from the spinning generator blades of hydro-electric dams, pollution, and disease.

Habitat: The Critical Factor

We of Maine are the sole arbiters of the Atlantic salmon's future in this country. We will restore our salmon runs to something approaching their former glory or we will allow the last salmon to die and thus bring to an end ignominiously the history of this magnificent fish in our nation.

If we decide upon the latter course we will be holding ourselves up to the contempt of all men from this time forward. We will be looked upon as being stupid, ignorant and totally irresponsible; as being persons God has trusted unwisely.

—Forward to the Report Of the Commission to Study the Atlantic Salmon

The potential size and distribution of Atlantic salmon populations in New England rivers is determined largely by the quality and accessibility of the spawning and nursery habitats. If the salmon cannot reach suitable spawning grounds, or if the water is polluted with chemicals, the eggs of the salmon will not hatch.

When salmon hatch from the egg, they are known as "fry." During this stage, salmon are extremely sensitive to low pH, or acidic water, which can cause egg mortality. In light of the acid rain problems facing the eastern United States, the acidification of river habitats is a serious threat to salmon survival.

Another factor that undermines salmon habitat is siltation from intensive logging. The forest products industry is virtually unregulated in how it operates in Maine and New Hampshire. Over the last few decades, millions of acres at the headwaters of major rivers have been clearcut, sprayed with deadly chemical pesticides, and eroded by logging roads and the stripping away of the forest. The impacts of these actions include the raising of the water temperature and a tremendous increase of siltation in the streams, burying salmon eggs and inhibiting the success of salmon reproduction.

The major barriers to salmon recovery, however, are the dams that block the natural flow of water to the ocean. Salmon require access to their natural spawning grounds in the headwaters of our New England rivers to reproduce—access that has been severely limited by the hundred or more dams that plug the region's rivers. As a result, only 35 percent of the potential spawning

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* "Wild" fish are defined by the US Fish and Wildlife Service as adults produced from natural reproduction and adults produced from fry releases.

Brink of Extinction

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habitat in Maine, and less than 48 percent in New England, is available to the Atlantic salmon.

At some dams, fish ladders have been built that allow some of the salmon and other anadromous fish access to the next section of the river. But many salmon die, flinging their bodies at the cement barrier, their instincts telling them to try to jump over the barrier. Some dam owners try to capture the fish, trucking them to the other side of the dam, a process that has been ineffective because of the trauma of being captured and handled by humans.

Some salmon do reach the headwaters and are able to spawn, but the trip back to the ocean can be even more perilous than the trip up the river. It once took less than two weeks for a salmon to reach the ocean from the spawning grounds. Today, with the huge reservoirs created by the dams, and the dams themselves, it can take over six weeks for a salmon to reach the ocean.

Salmon are used to clean, free-flowing rivers. Dams, by design, restrict that flow. The large, unnatural reservoirs that are created behind the dams warm the water, and collect pollutants and sediments. The salmon must work harder to swim through this standing, warm water, becoming susceptible to disease and predators. Once reaching the dam, most salmon are sucked through the turbine fins of the generators and are chopped to bits. At the West Enfield dam on the Penobscot River, downstream bypass weirs were installed, in hopes of diverting the fish away from the turbines. Despite these weirs, 86 percent of the salmon continued to be drawn through the turbines.

Although the destructive impacts of dams, pollution, and other factors that degrade salmon habitat have been acknowledged, few corrective measures have been taken. Efforts to remove the unnecessary Edwards Dam from the Kennebec have met with stiff resistance from selfish private interests. Many dam owners are refusing to install fish ladders and other aids to salmon passage. In some ways, the situation is getting worse. Bangor Hydro has proposed building a major new hydro-electric dam on the Penobscot River—the Basin Mills Dam—which would destroy over 60 percent of remaining salmon habitat. The forest products industry is lobbying the state legislature to raise allowable dioxin pollution levels in rivers. And, the State of Maine and New Hampshire's logging regulations remain ineffective. The salmon are as threatened today as they were in 1947.

Decisive Action is Needed

This report will point out the material advantages that will accrue to Maine if our salmon runs are increased. The evidence presented is incontrovertible. But even though not a single dollar was to be returned for the money spent to preserve the salmon for posterity we would have to do it or admit that in our dealings with God's creatures we are morally derelict. Our duty is self evident. We cannot evade it, we cannot temporize with it, we cannot pass it off as something that is insignificant. We will be known to historians as a people with the wisdom and foresight to preserve this magnificent fish or we will be known as barbarians who were unmindful of their blessings or too ignorant to preserve them for our children. There is no middle course in the matter.

—Forward to the Report of the Commission to Study the Atlantic Salmon

The Atlantic salmon is in grave danger. The continuing decline of the species is causing growing alarm among government agencies, sports groups, and conservation organizations. According to the 1992 Annual Report of the US Atlantic Salmon Assessment Committee, "Adult returns to most rivers declined or remained relatively unchanged when compared to 1991" (page 6). The 1991 returns were 40 percent less than the 1990 returns. This downward trend has continued for the last several years, yet government biologists have been unable to explain or reverse it.

Past strategies to restore the salmon have not worked. After over 45 years of focusing on hatchery programs, the Atlantic salmon recovery program has shown little progress. As is beginning to happen in the Pacific Northwest, the agencies must shift their emphasis away from hatcheries and toward the most important factor, habitat decline.

The best way to restore the Atlantic salmon is to restore salmon habitat. A full review must be done of all dams on historic salmon rivers. If either upstream or downstream passage is impeded, modifications must be made to allow successful fish passage. If the dam cannot be suitably modified, it should be removed. No new dams, including the Basin Mills Dam, should be built. If logging is causing siltation and increased water temperatures, then the logging should be reduced to ecologically sound levels. If pollution being dumped into the rivers is killing the salmon, the dumping should be stopped.

Our duty is self-evident. We must take whatever action is necessary to restore healthy, self-sustaining populations of the Atlantic salmon. We have no time to lose.

David Carle is the Associate Executive Director of RESTORE: The North Woods.

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Atlantic Salmon Sea-Run Salmon Com.
PO Box 1298
Bangor, ME 04401

New England Atlantic Salmon Assoc.
PO Box 484
Newburyport, MA 01950

Sources

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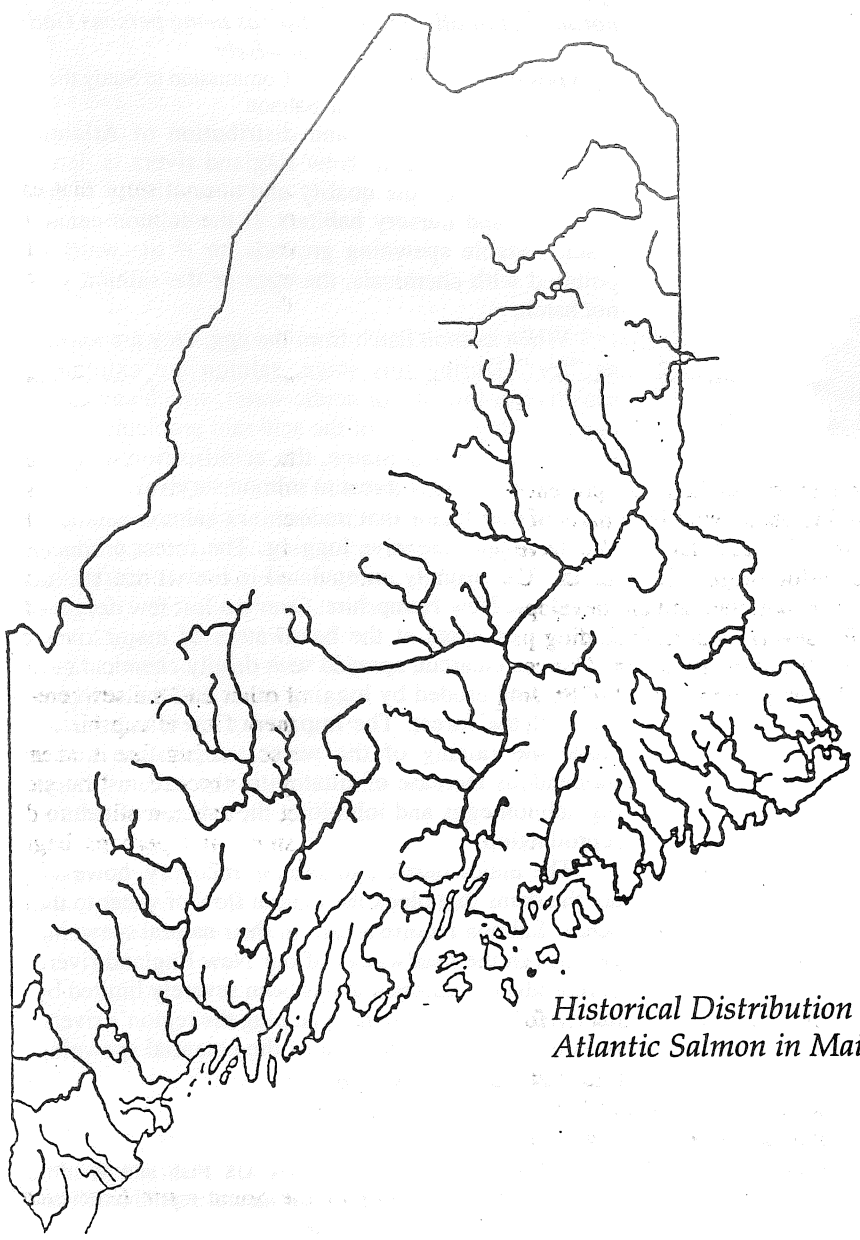
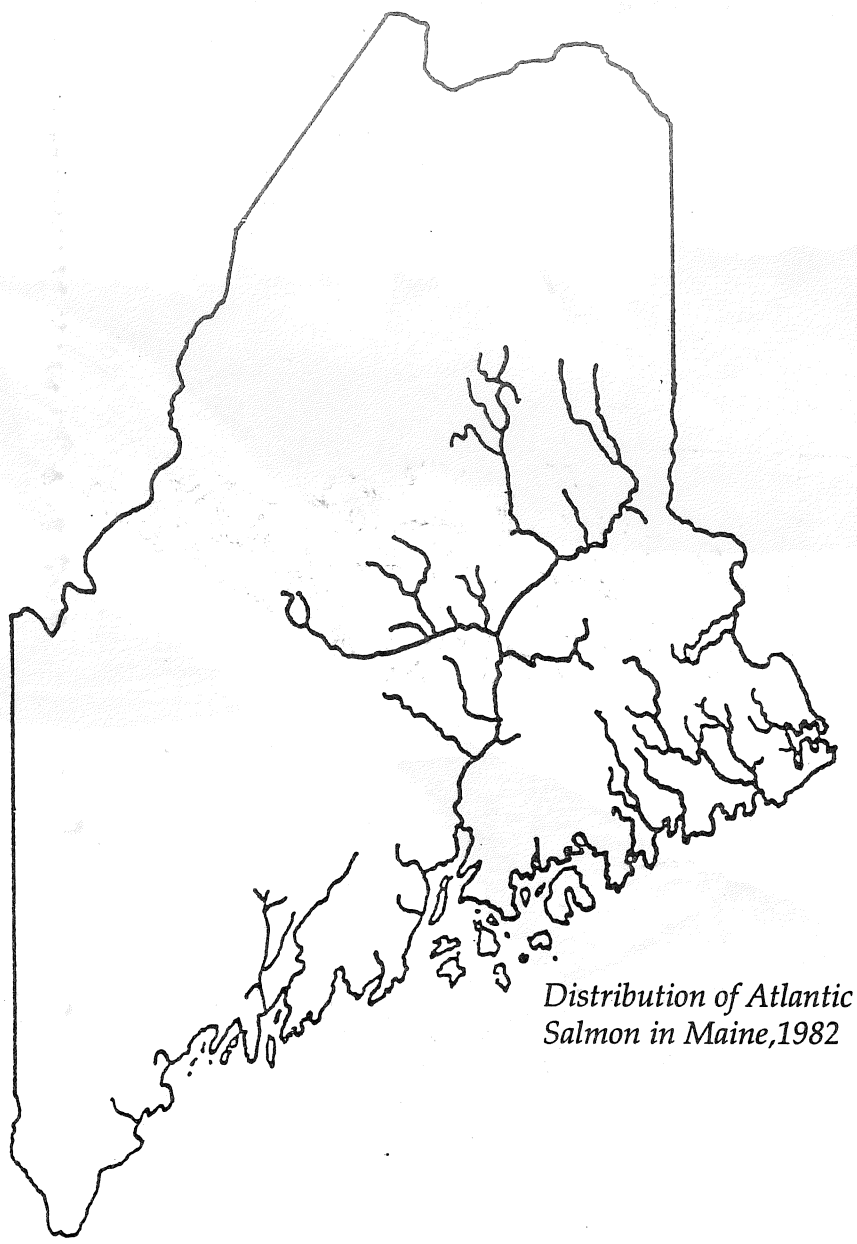


Historical Distribution of Atlantic Salmon in Maine



Distribution of Atlantic Salmon in Maine,1982

The Current of Life

by Steve Perrin

Where are your children right now? More to the point, where are *you* ? In what watershed? Your presence affects the flow of water through the land around you. Are you taking care not to spoil that flow more than you have to?

We live and we work in watersheds. Regions where skywater is held by porous soils so plants and animals can get at it. Where groundwater is stored. Where water seeps into wetlands, ponds, streams, and rivers, down to estuaries where it mixes with salt water, ending in the Gulf of Maine.

Our homeland is a watershed. A place where water brings life to the land. Where water is, there's life; where it isn't, there's none. If you want basic truth, that's it. Basic value, there it is. Water is the most precious stuff on earth. Divert it, waste it, contaminate it--what have you got? Nothing.

People are mostly water; almost seventy percent. Animals, too. So are plants. Earthlings are vessels, held up by stalks or boles, fins or wings, maybe legs. When sunlight hits a leaf, energy leaps from a molecule of water to one of glucose, the sugar that runs the world. No water: no photosynthesis. No food. No growth, no reproduction, no defense, no repair. No food chain. No wildlife. No forests. No economy. No community. Nothing, again.

Water makes everything work. It's the link between the Maine Woods, streams, lakes, estuaries, and the Gulf of Maine. Water on the go. Falling from clouds. Wetting soil. Bathing roots. Flowing through the land. Collecting in wetlands and aquifers. Seeping into headwaters. Cool, clear water. Bearing organic molecules, oxygen, carbon dioxide. Cascading in rills and rapids down to sea level. Bringing food. Bringing life.

Where do people fit in? Right here, in our local communities. Our native habitats. Between the Woods and the Gulf, we bob in the current of life, held up by our local watershed. By water flowing through the land.

Watershed? Waterhold is more like it. Land holds the water we need, delivering it on demand. Maybe. If we watch over the flow. Don't pollute it. Take only our share. Leave the rest for the larger community.

How? By caring where we build and change the land. On aquifer recharge areas? Steep slopes? Wetland fringes? Headwaters? Shorelands and estuaries? By clearing forests? Spraying poisons on the land? Digging erodible soils? Spewing waste? No, not in any case. Not if we're smart.

If we keep in mind every cell is bathed by water—every tissue, organ, and living being—we'll do fine. We'll fit into the flow around us. As others do.

Before Europeans came to Maine, the land did a great job distributing water to native species suited to the region. Have we improved that distribution system? Not in one single case. We've taken what we wanted, and let others mop up. And what we've touched—from Maine Woods to the Gulf—we have diminished.

The remedy? Never meddle with the water cycle, with the flow between Woods and Gulf (remembering that trees, crops, wildlife and fish are part of that flow). Or if we must have our way, then, too, we must pay for altering the natural distribution of water as it flows through the land. Pay for disturbing what nature does best. Pay for logging, road building, damming, spraying, killing, "harvesting," paving, building, or in any way disturbing the flow.

If we pay our way, and put good comprehensive plans in place to guide land use and development—plans putting proper value on water—then we have a chance of living on just and sustainable terms with our settings in nature.

Forest Falls

Continued from Page 16

or else the sediments will head downstream in a choking mass of muck, wreaking havoc on aquatic systems.

Given the existing political-economic complex, however, Northern Forest logging and road building will probably continue for some time. Experience elsewhere has shown that it is possible to minimize the destructive impact of erosion-liberated sediments on rivers and estuaries.

The amount of soils lost to erosion from deforestation can be reduced by up to *ninety-five percent* by following erosion control measures long enforced against forest-clearing developers and road contractors in the Chesapeake region. Developed by engineers and soil scientists, the following practices can easily be incorporated into any forest management plan:

*Silt fence emplacement around the entire perimeter of logging roads and logging sites prior to soil disturbance. Silt fences are strips of semi-permeable plastic trenched partly into the ground, blocking everything but water and the very smallest particles from passing.

*Stacked strawbale blockage of the heads of all drainage points exiting the site.

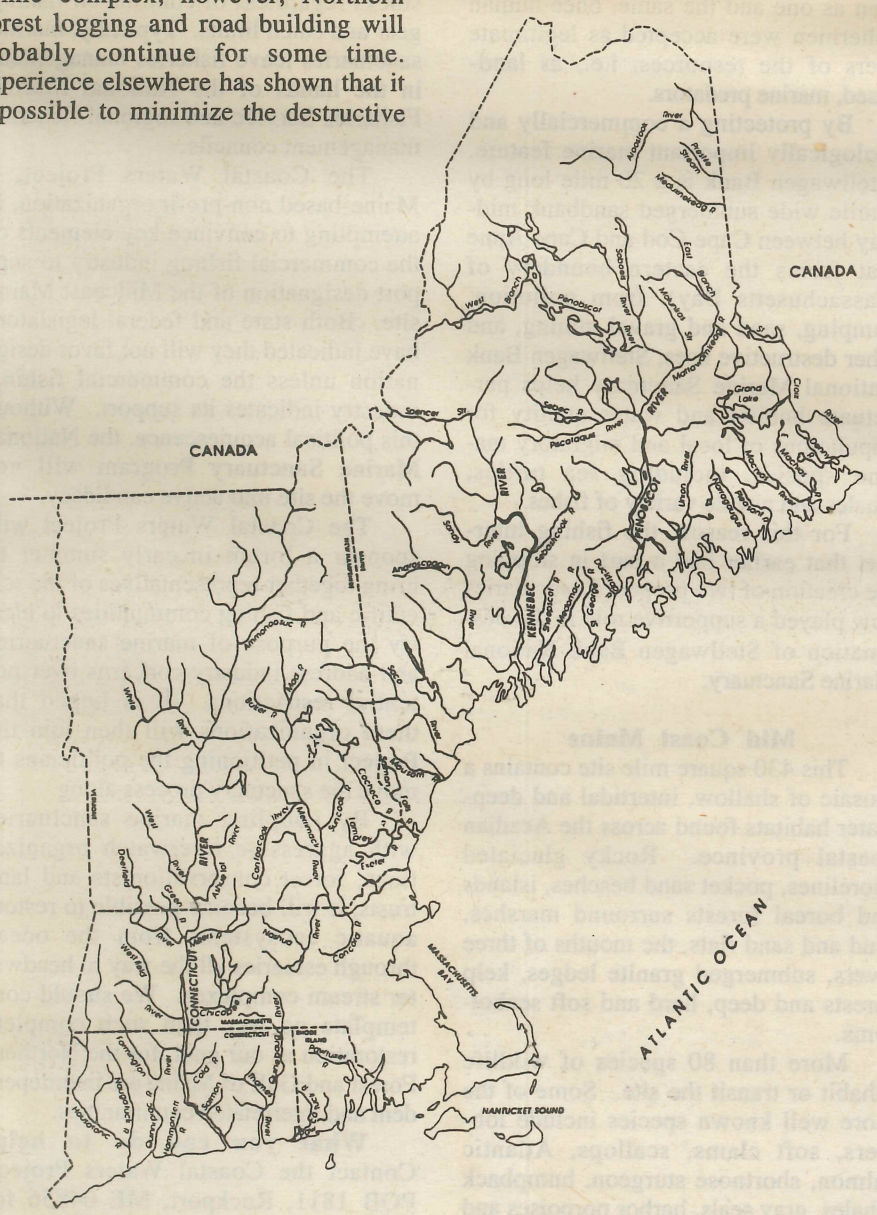
*Stabilization of exposed ground surfaces with straw within 48 hours of cessation of disturbance, followed by seeding of exposed soils with native groundcover vegetation within ten days of disturbance.

*Stabilization should occur over each area within a timber sale or road project as soon as the surface is no longer being disturbed, rather than waiting for completion of the entire project.

*Regular monitoring to prevent silt outflow from broken or washed-out siltfence or strawbales, and to verify ground stabilization.

*Removal of silt fences and strawbales following vegetative stabilization of ground surface.

There are additional steps that can be taken to reduce silt infiltration of streams or rivers. However, following the practices listed here will keep nearly all of the Northern Forest's soil where it belongs—in the Northern Forests.



Atlantic Salmon Distribution in New England Circa 1700

Way Back In

Continued from Page 14

have to start somewhere. At present we are moving ahead with both parts of the program—EK and EKI. We have a modest pilot project here at the UW Madison Arboretum and are developing plans for several others, including projects at Walden Pond in Concord, Massachusetts, on the island of St. John in the US Virgin Islands, and with an intertribal Indian group developing a site on the northern California Coast.

As proposals for these projects take shape, we will put them in the hands of SER's (Society for Ecological Restoration) new fund-raiser, who will attempt to raise start-up funding for them. In other words, we are in a position to move ahead on development of a project, once we have material for a well-conceived proposal.

This is an obvious place to start for a project for the Northern Appalachians.

Beyond that—EKI. It seems to me that's a second step. At present I'm working with a few interested SER people on a prospectus for the program. We envision the first center being set up in Chicago, for a number of reasons. That, however, could happen fairly soon, judging from the interest this idea has elicited—perhaps within the next year or so. That could at least help with training of staff for your project, and of course will be a trial run and model for the creation of other EKI's elsewhere—such as in northern New Hampshire.

If this, or something like it, seems a sensible way to proceed, a first step might be to get a small committee to do a feasibility study and perhaps begin work on a proposal. We're getting some experience with this stage of the process and the complications and frustrations involved, and so can provide advice and assistance as needed.

Onward and upward!

Best,

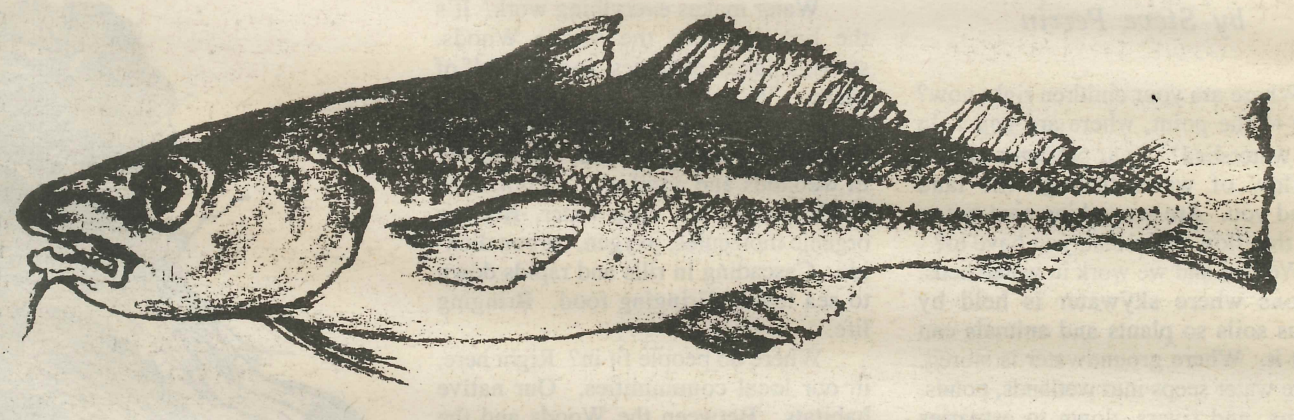
William R. Jordan III

William R. Jordan III is editor of Restoration & Management Notes and a founder of the Society for Ecological Restoration.

National Marine Sanctuaries—The New England Experience

by Ron Huber

Abstract:Pollution, dumping, sand and gravel mining and overfishing threaten the ecological integrity and economic viability of the Gulf of Maine waters. Cod and haddock populations have crashed in recent years. The establishment of a Mid-Coast Maine National Marine Sanctuary is an essential step in the protection and restoration of the Gulf of Maine marine ecosystem.



Sanctuaries

Since its creation in 1972, the National Marine Sanctuary Program has had the enthusiastic support of scientists and conservationists in its goal of protecting unique and ecologically important marine areas. As of January 1993, twelve national marine sanctuaries have been designated around the US; one, Stellwagen Bank, is in New England waters.

Varying in size from the one square mile Monitor National Shipwreck site to the 3,500 square mile sanctuary around the Florida Keys, National Marine Sanctuaries are designed to control human impacts on discrete hydrogeographic areas in ways consistent with the National Environmental Policy Act, the Endangered Species Act, the Marine Mammal Protection Act, and numerous regional, state and local regulations.

Two guiding principles espoused in the founding document, the Marine Protection, Research and Sanctuaries Act of 1972 (MPRSA) specify that marine sanctuaries will "contribute to maintaining a natural assemblage of living resources for future generations" (MPRSA 301(a)(6); and will "maintain, restore and enhance living resources by providing places for species that depend on these marine areas to survive and propagate" (MPRSA 301(b)(9).

As such, it is both a program for habitat protection and restoration and a multiple-use designation, permitting most forms of commercial and recreational fishing, whale watching and other activities as valid uses while prohibiting water pollution, waste dumping, oil and gas exploration or pipelines, undersea mining, and the damaging or removing of historic or archaeological artifacts from within the geographic boundaries of sanctuaries.

Designation involves a NEPA (National Environmental Policy Act) process, beginning with preliminary listing on the Site Evaluation List (SEL), the pool of potential sanctuaries from which active candidates are drawn. Once a site is selected for active candidacy, the 2-3 year NEPA process begins. Briefly, the process involves: scoping; preparation of a Draft EIS (Environmental Impact Statement)/ management plan; public hearings; preparation of the Final EIS/management plan; more hearings; legislative review and formal designation by the Secretary of Commerce. In some cases, when the process bogs down, a bill will be introduced that will legislate designation, prior to EIS and management plan preparation.

Sanctuary proponents and administrators have learned through sometimes bitter experience that strong "stewardship" links need to be forged between protected marine areas and local economies exploiting the organisms living there, including local recreational and commercial fishing fleets. Rather than weakening the management of sanctuaries, however, the fishing industry can sometimes play a restorative role.

For example, the decline in cod and haddock populations, coupled with heavy lobster fishing, has reduced predation pressures on sea urchins. The resultant sharp rise in urchin population is destroying thousands of acres of kelp forests, vital habitat for a wide host of marine organisms. A large-scale sea urchin fishery throughout the Gulf of Maine waters is slowly bringing back the kelp, an important step toward restoring cod and other large predator fish, as their juveniles require kelp forests to hide from predatory dogfish.

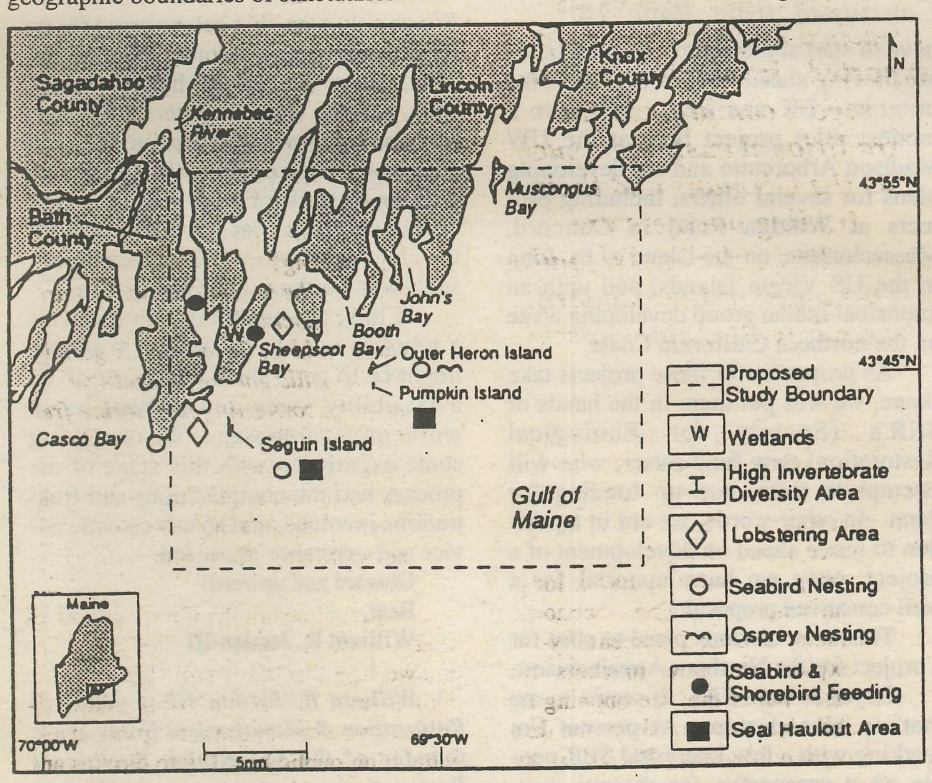
Out of seven proposed national marine sanctuaries in New England waters, only one, Stellwagen Bank in the waters north of Cape Cod, has been formally designated. The oil and gas industry blocked a sanctuary proposed for Georges Bank; Machias Bay and Frenchman's Bay in downeast Maine were withdrawn from consideration after supporters ran into opposition from fishing interests. Still at the inactive candidate stage are Midcoast Maine (the region between Casco and Penobscot Bays); Nantucket Sound/Shoals, and Oceanographer Canyon, the last two in state and federal waters east and south of Massachusetts.

The successful designation of Stellwagen Bank suggests that sanctuary proponents need to be able to convince regional communities that designation will go a long way toward maintaining productive fisheries by protecting major fish spawning and nursery grounds from water pollution, dumping, and other habitat damage.

During the creation of the Stellwagen Bank Sanctuary, representatives of commercial fishing organizations joined conservationists, biologists and planners in developing the sanctuary's management plan. Regional economic and ecologic necessity could be seen as one and the same, once human fishermen were accepted as legitimate users of the resources, i.e., as land-based, marine predators.

By protecting a commercially and ecologically important marine feature, (Stellwagen Bank is a 20 mile long by 7 mile wide submerged sandbank midway between Cape Cod and Cape Anne that forms the eastern boundary of Massachusetts Bay), from pollution, dumping, sand and gravel mining, and other destructive uses, Stellwagen Bank National Marine Sanctuary helps perpetuate habitat and water quality for populations of local and migratory marine species, including sea turtles, whales and a wide variety of fishes.

For this reason, the fishing interests that earlier had a part in stopping the creation of two proposed sanctuaries now played a supportive role in the designation of Stellwagen Bank National Marine Sanctuary.



Mid-Coast Maine National Marine Sanctuary Study Area

Mid Coast Maine

This 430 square mile site contains a mosaic of shallow, intertidal and deep-water habitats found across the Acadian coastal province. Rocky glaciated shorelines, pocket sand beaches, islands and boreal forests surround marshes, mud and sand flats, the mouths of three rivers, submerged granite ledges, kelp forests and deep, hard and soft seabottoms.

More than 80 species of wildlife inhabit or transit the site. Some of the more well known species include lobsters, soft clams, scallops, Atlantic salmon, shortnose sturgeon, humpback whales, gray seals, harbor porpoises and bald eagles (the northernmost breeding population in the lower 48 states). A major cod spawning site exists within the waters of the site, which is considered to possess biomes representative of the entire Gulf of Maine coastal ecosystem.

Commercial and recreational fisheries within the site include those for lobster, soft shell clams, Atlantic salmon, smelt, alewife, herring, cod, haddock and winter flounder.

After two previous Maine sites, Machias Bay and Frenchman's Bay, were withdrawn from consideration, the Maine Department of Marine Resources (DMR) nominated Midcoast Maine to the Site Evaluation List in 1980. Thirteen years later, the site remains on the Site Evaluation List. In the interim, growing evidence of the impact of pollution and habitat destruction on fish abundance has kindled interest in protecting habitat and water quality among fishing interests.

The overriding concern of the Midcoast Maine commercial fishing community—that the National Marine Sanctuary status would mean additional restrictions on their livelihood—has begun to give way as evidence mounts that destruction and pollution of marine habitat is resulting in failure of fish stocks regardless of controls on fishing gear and catch limits. Typically, marine sanctuaries leave fisheries management in the hands of the National Marine Fisheries Service and regional fisheries management councils.

The Coastal Waters Project, a Maine-based non-profit organization, is attempting to convince key elements of the commercial fishing industry to support designation of the Midcoast Maine site. Both state and federal legislators have indicated they will not favor designation unless the commercial fishing industry indicates its support. Without this political acquiescence, the National Marine Sanctuary Program will not move the site into active candidacy.

The Coastal Waters Project will sponsor a forum in early summer to bring together representatives of the scientific and fishing communities to clarify the purpose of marine sanctuaries and address industry concerns over potential restrictions. It is hoped that these organizations will then join the Project in petitioning the politicians to move the sanctuary process along.

By coupling marine sanctuaries with aggressive riverwatch organizations, forest conservationists and land trusts, it will become possible to restore aquatic ecosystems from the ocean through estuaries all the way to headwater stream complexes. We should contemplate no less than such complete restoration as our goal, for the Northern Forest and Gulf of Maine are interdependent and interrelated communities.

What you can do to help: Contact the Coastal Waters Project, POB 1811, Rockport, ME 04856 for more information.

Public Outcry Thwarts Efforts To Weaken Maine's Dioxin Standards

But Paper Mills Continue to Dump Dioxins & Other Organochlorines

by Jamie Sayen

On March 24, 1993 Maine's Board of Environmental Protection (BEP) voted not to adopt a dioxin standard of 0.5 parts per quadrillion (PPQ), as proposed by governor John McKernan and the paper industry last fall. The EPA standard of 0.013 ppq remains in effect. Overwhelming scientific evidence of dioxin's toxicity and public outcry at four days of BEP hearings in November defeated the governor and paper industry.

But, don't be fooled. It was not a victory for the natural and human communities of Maine. Dangerous levels of dioxin are still legally dumped into Maine's rivers. Lobsters, clams, fish and eagles—as well as humans—are still being poisoned. Even though industry didn't get all it wanted, it still got what it wanted most—state sanctioned protection from converting to chlorine-free paper bleaching.

The only standard that protects ecosystems and public health is **zero discharge** of dioxins and hundreds of other organochlorines that are a by-product of the chlorine bleaching process. We are still unprotected!

At the March 24 hearing, the BEP demonstrated:

*A fundamental lack of understanding of the ecological and social issues (see "What Chemical Neutralizes Dioxin?");

*Environmental racism as it sacrificed the treaty rights and the health of the Penobscot Nation to absentee paper company profits;

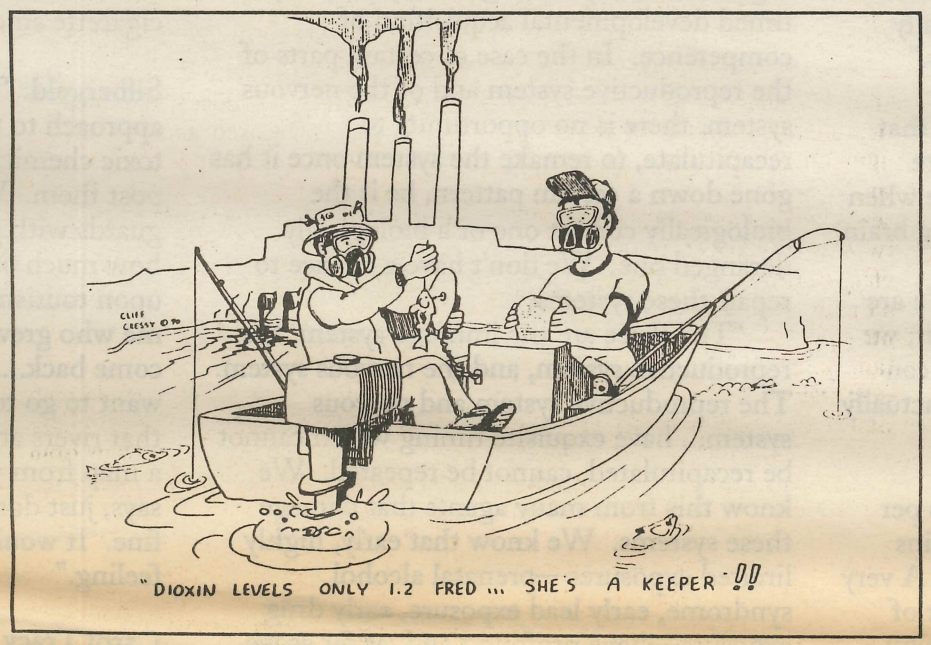
*An unwillingness to see through paper industry economic blackmail (see "Profits vs. Health: The Economic Consequences of Dioxin Pollution");

*A willingness to ignore the Attorney General office's warning that the non-action adopted by the BEP on March 24 was "unlawful" and the Attorney General would have difficulty developing a defense in case of lawsuits.

Of the ten members of the BEP, only five attended this important session. Only Gene Gendron voted his conscience. He stated, "The testimony [in November] scared the hell out of me." But he was unable to secure a second to his motion that the state adopt the EPA standard. Instead, the BEP voted 4-1 to do nothing.

At the March 24 hearing, the paper industry and Dean Marriott, Commissioner of the Department of Environmental Protection, pulled an about-face and argued against their November proposal to set a standard of 0.5 ppq. What's going on?

The public outcry in November persuaded the Governor, the industry and the BEP that adoption of the industry-friendly proposal of the Governor would spark rebellion from the public. Accordingly, they withdrew the proposal. One wonders why they spent so much time and money (the industry brought in several scientists for hire, sometimes known as "biostitutes") to claim that the paper mills in Maine could not survive without adoption of the 0.5 ppq, only to argue against it four months later. Could it be that the state and EPA assured industry that it could continue to poison Maine's rivers, wildlife and people without fear?



Despite the confusing collusion between the paper industry and the government of Maine, progress was made in the long-term struggle to abolish the chlorine-bleaching process. The November hearings:

*Shattered the myth that paper mill dioxin discharges are not harmful;

*Demonstrated that Mainers want to finish the job of cleaning up the rivers of Maine;

*Demonstrated that chlorine bleaching is bad and that there are alternatives;

*Demonstrated that the governor, the paper industry, and a majority of the BEP don't understand the real issues and don't care about the health of the natural and human communities of Maine.

Public turnout at the five days of hearings in November and March was astonishing. Special thanks are due to the leadership of Natural Resources Council of Maine, the Penobscot Nation, various fishing organizations and the Whistleblowers Brigade.

For further information on next steps in the abolition of dioxin and hundreds of other organochlorines in Maine, contact: Evelyn deFrees, Natural Resources Council of Maine, 271 State St., Augusta, ME 04330-6900. Tel. (207) 622-3101.

--Jamie Sayen

Profits vs. Health—The Economic Consequences of Dioxin Pollution

by Jamie Sayen

"For let us be completely candid.... If we didn't care about the economic consequences of this rulemaking we'd all agree—zero discharge of dioxin—do it tomorrow..."
-Dr. John Graham
Harvard University School of Public Health
Paid Witness for Paper Industry Lobby, November 5, 1992

On several occasions, Dr. Graham has lent Harvard's prestige to absentee industry's quest for profits. He assured the Maine Board of Environmental Protection (BEP) that those profits justified the "acceptable risk" to the health of native and human communities of Maine. He skillfully trivialized health risks and muddled science and economics, stating that during an economic recession, environmentalists should relax their demands on dioxin discharge standards: "I think it's only reasonable in times of recessionary economy that the environmental community of this country... be somewhat sensitive to the fact that families are in difficult circumstances, that businesses are in difficult circumstances..." One wonders if he could persuade dioxin to be less toxic during recessions.

Industry admits dioxin is harmful. But, it argues, it's not that harmful, and besides, economics matter more than public health. Unfortunately, the spectre of closed paper mills and unemployed mill workers carried more sway with the BEP than did environmental and public health arguments.

The Maine paper industry claimed that adopting an environmentally safe dioxin discharge standard would put it at a competitive disadvantage with mills in other states and countries that are willing to sacrifice environmental protection to corporate profits. While this argument succeeded in convincing most of the members of the BEP (many of whom were appointed by Governor McKernan, whose brother Bobby is a paper industry lobbyist in Washington, DC), it fails under closer scrutiny.

*Today, it is true, Maine paper mills are not competitive with more modern mills built in the Southeast in the 1980s. But this is not the fault of environmental regulations. It is due to industry investment strategies. Despite record profits to industry in the mid and late 1980s, industry seriously short-changed Maine mills and directed most of its investment to the Southeast. Today these brand new mills can produce the same amount of paper in four man-hours that Maine mills produce in six or seven man-hours. Maine mills can't compete because industry short-changed Maine, not because of regulations. The same companies own mills in both regions and are competing against themselves. Although there was some investment in Maine mills, Maine is not among the paper industry's top ten states in capital spending.

*Jobs are being lost in Maine mills, but not because of dioxin regulations. Job loss is due to obsolete mills, mill automation, degraded forests, and industry strategy to invest in Southeast rather than Maine and New Hampshire.

*Export of raw materials also exports jobs. Bowater-Great Northern states in its 1992 Annual Report that 75% of its bleached kraft market pulp is exported. Ironically, the same report complains that "traditional customers such as the Germans and their trading partners are demanding chlorine-free pulps that much of the industry, including Bowater, cannot supply.

Bowater-Great Northern states in its 1992 Annual Report that 75% of its bleached kraft market pulp is exported. Ironically, the same report complains that "traditional customers such as the Germans and their trading partners are demanding chlorine-free pulps that much of the industry, including Bowater, cannot supply.

*If the paper industry had a long-term commitment to Maine—economically, socially and environmentally—it would exploit the new markets for chlorine-free paper that are opening up as the public learns more about the dangers of organochlorines. Played by today's rules, the Maine paper industry is uncompetitive. But, if Maine mills are the first to convert to chlorine-free bleaching, they will get a head start in securing those markets.

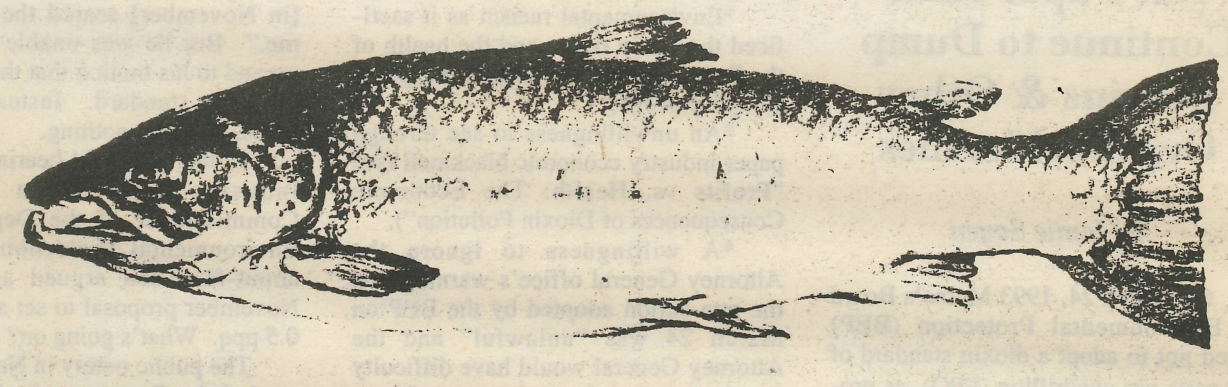
*One member of the BEP was not fooled by industry's economic arguments. Margaret Roy asked Dr. Graham: "I wonder if the economic impacts you are considering are broad enough?" An analysis of the full spectrum of economic issues, not just the narrow paper industry agenda, will conclusively demonstrate that it makes economic sense for Maine to adopt a zero discharge standard for dioxin. The questions the BEP should have asked are:

- *What are the costs of foregone opportunities such as fishing and tourism?*
- *What are the economic costs to shellfishing?*
- *What are the health and health care costs to society?*
- *What would be the economic gain if Maine mills got the competitive edge by converting to chlorine-free bleaching first, and claimed the new, expanding niche?*
- *What will be the economic cost if the uncompetitive mills remain uncompetitive? How many will close down?*

Whether or not the Governor agrees that dioxin is harmful, he must acknowledge that the public believes dioxin is harmful. It is a losing public reations game to continue to ignore overwhelming public hostility to dioxins and other organochlorines.

Medical Experts: "Dioxin is Clearly the Most Toxic Manmade Chemical Ever Studied..."

On November 6 Drs. Claude Hughes associate professor in obstetrics and gynecology at Duke University Medical Center and a participant in the EPA's re-assessment of dioxin and Ellen Silbergeld , Professor of epidemiology and toxicology at the University of Maryland Medical School and also a participant in the EPA dioxin reassessment testified before the Maine Board of Environmental Protection against weakening the dioxin standard. The following excerpts come from the official transcripts of that hearing.



Dr. Hughes: "Having gone through this exercise with EPA, I feel that the people of Maine do face a real health concern regarding current exposure, current body burdens, current intake of dioxin and related compounds. I have real concern that intake of contaminated fish would incrementally add to that exposure and those hazards."

"I have to say that I personally feel that several of these end-points may be more important than carcinogenesis, because when you talk about effects on the developing brain you are talking about the functional competency of the next generation. We are not talking about whether I get a cancer; we are talking about whether my children can perform up to snuff. That, I think, is actually more important."

"At a concentration of 1 ppq (parts per quadrillion), a teaspoon of water contains over 1.6 million molecules of dioxin.... A very dilute solution contains a large number of dioxin molecules that are plenty to occupy the active receptors for these kinds of effects."

"As a scientist in reproductive developmental toxicology, I believe that the available studies show the hazards from dioxin and related compounds can occur at levels that are very likely in the range of present human body burdens. As a physician, I can't think of a justification for any collective behaviors that serve to sustain a current hazard or permit it to worsen. In closing, I'd like to leave you with these two opinions: (1) Because existing levels of dioxin in people's bodies are of significant reproductive and developmental concern, regulatory efforts should be focused on severely reducing, if not eliminating, sources that create body burdens of this group of chemicals. (2) To the extent that the consumption of dioxin-contaminated fish in Maine rivers has an effect of either sustaining or increasing those levels, then I think that is a significant public health concern."

Dr. Owen Stevens (Chairman of the BEP): "Is it fair to say that your major concern is not so much risk assessment of the carcinogenic effect of this compound... but really what we should be more concerned about is the hormonal receptors located in our cell nuclei that may be taking up dioxin or its allied compounds, and thereby preventing proper hormonal contact within ourselves?"
Hughes: "Bingo! You've hit the nail on the head."

Dr. Ellen Silbergeld: "As Dr. Hughes mentioned, there are at least three systems where the biology of the system is such that very short-term interventions in its status have long-term, if not permanent, consequences. These are systems that are acutely attuned to developmental state of the organism. They undergo a very precisely timed developmental acquisition of competence. In the case of certain parts of the reproductive system and of the nervous system, there is no opportunity to recapitulate, to remake the system once it has gone down a certain pattern, be it the biologically correct one or a biologically deranged one. We don't have a chance to repair these systems.

"The three are the immune system, the reproductive system, and the nervous system. The reproductive system and nervous system... have exquisite timing which cannot be recapitulated, cannot be repeated. We know this from many agents that damage these systems. We know that early, highly limited exposures—prenatal alcohol syndrome, early lead exposure, early drug exposure—have profound and, as far as we know, persistent effects on the later acquisition of full developmental competence in both nervous system function and reproductive system function.

"The immune system is even more developmentally sensitive in that, at very precisely timed periods in the late prenatal and early postnatal periods, various parts of the immune system come into full function and, very importantly, communicate with each other in order to acquire that full functioning. Therefore, very limited perturbations in that system, depending upon the time that they occur, can have devastating effects on the acquisition and maintenance of immune competence..."

"Dioxin is clearly the most toxic manmade chemical that we have ever studied..."

"...Dioxin is a genotoxin; not in the sense that it mutates genes but in the sense that it profoundly alters the expression of genes....It interferes with the expression of specific target genes. As a result, it deprograms and reprograms cells."

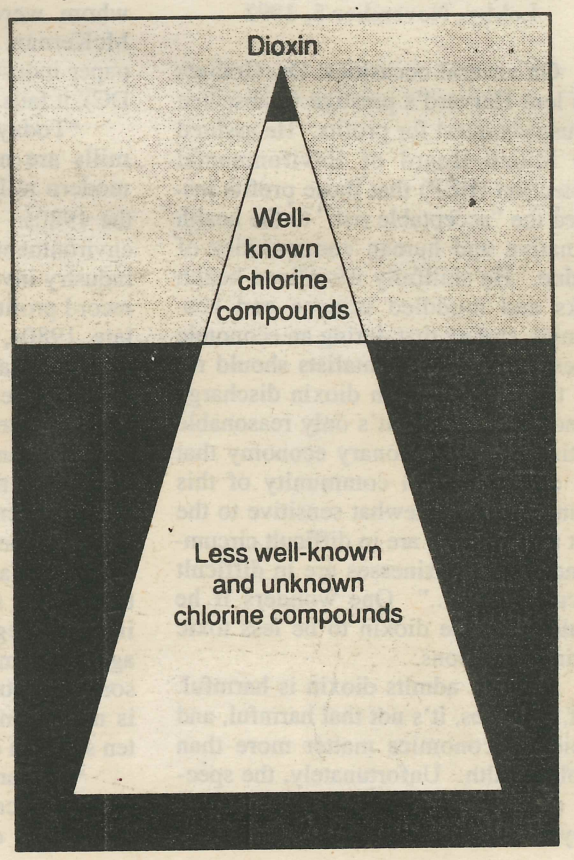
Margaret Roy (member of BEP): "You indicated at the outset of your testimony that yours was what you called a 'consensus opinion.' I am frankly having a very difficult time squaring that with industry's position. Are industry's arguments regarding the clinical effects of dioxin really on the fringe?..."

Silbergeld: "...I would only note that there are a lot of people who have opinions about dioxin, but there are very few of us who actually work with dioxin. I am speaking of the consensus opinion of researchers actually involved in the epidemologic and toxicologic studies of dioxin. There are scientists who work for the tobacco industry who say that cigarette smoking doesn't cause cancer..."

Silbergeld: "We can take a quarantine approach to the environment. We can dump toxic chemicals in certain areas and we can post them. We can fence them. We can put guards with guns around them. I don't know how much of Maine's economy depends upon tourism, upon the love of people like me who grew up in this region wanting to come back....I like to fly fish. I don't think I want to go to a state where I get the concept that rivers are being 'let go' and that I just get a map from your fish-and-game people that says, just don't go here and everything will be fine. It would give me a kind of uneasy feeling."

Carol Tracy (member of BEP): "...the argument is the economics of it—the fact that we are going to lose out in competition. Our competitors are not under the stringent regulations that our industries in Maine are..."
Silbergeld: "...What you've spoken to is a way in which the war between the private sector and government has led almost to quarantining of certain states in which they've bought off on allowing themselves to be degraded and placed in a terrible vise between economic development and public health, which is intolerable."

Only the Tip of the Toxic Iceberg



Penobscot Nation: "We Cannot Go to Another River for our Sustenance Fishing Rights"

Dr. John Graham Harvard University School of Public Health and paid witness for paper industry lobby told the BEP on November 4: "A basic principle of public health is that more stringent levels of protection should be provided as the size of the exposed population increases. When the size of an exposed population is small, a less stringent level of acceptable risk can be adequate to protect the public health. While this principle may seem inequitable... our nation's history of progress in public health reflects the fact that we have focused on hazards where lots of people were at stake and not gone overboard in situations where only small numbers of people are endangered."

The Penobscot Nation is one such "small population." Several representatives of the Penobscot People addressed the BEP on November 6.

Governor Jerry Pardilla: "The Penobscot people do consume fish. We cannot go to another river for our sustenance fishing rights. They are inherently tied to the river... They are directly negatively impacted by the discharge of dioxin."

"In this balance, what is the value of human life? You are being asked to weigh the short-term effects against the long-term health consequences. I submit to you that the Penobscot Nation is most directly affected by dioxin increases in the Penobscot River, and in fact the Lincoln Pulp and Paper effluent is only 300 feet from one of our islands."

Representative Priscilla Attean: "This interim standard, if promulgated, will have an adverse effect on a population which was not given due consideration in any of the studies which I heard presented to you yesterday [by paper industry] scientists.... None of the studies takes into consideration the amounts of fish that are eaten for subsistence."

"If this rule or regulation diminishes my people's rights to take fish for sustenance as we have done for millennia, then this rule infringes on the Penobscot Nation's sovereign rights."

"It is our lifeblood. It always has been. It is the center of our whole universe."

Nick Sapiel: "When I was growing up my father always told me 'The river will provide fish and wildlife for our needs.'"

Gary Tanguay (age 10): "I don't want to be the last of my tribe to fish in our river."

What Chemical Neutralizes Dioxin?

Charles Stickney, former President of Deering Ice Cream, was appointed by Maine Governor John McKernan to the Board of Environmental Protection (BEP) to protect public and environmental health. The questions and comments he made at the November 1992 dioxin hearings before the BEP reveal the measure of protection the public can expect to receive from the BEP.

CHARLES STICKNEY (CS): One thing I did ask yesterday, which I didn't get answered, is: what chemical neutralizes dioxin, so that it becomes innocuous to the system?...

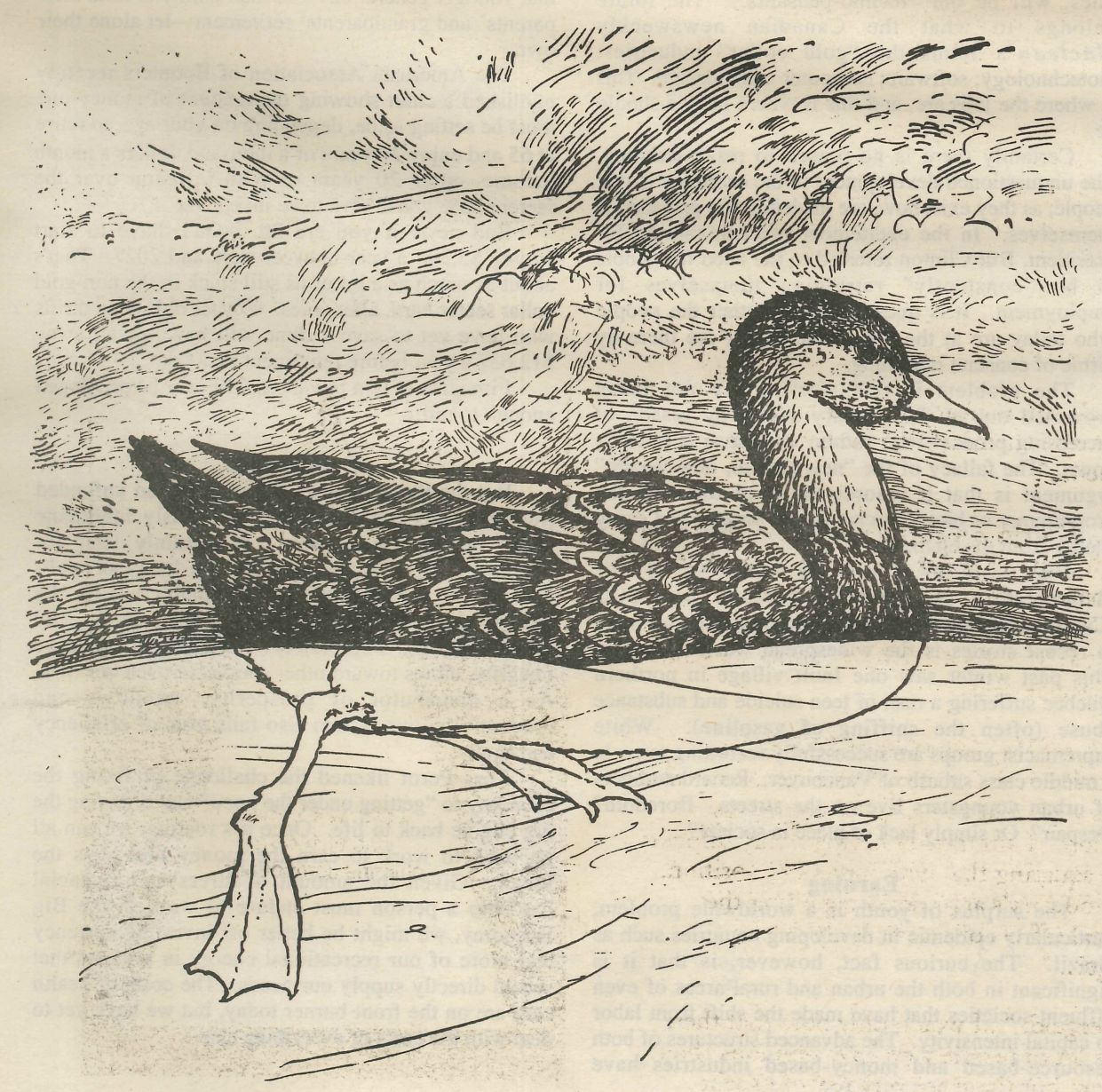
CS: Just a personal observation: I can't believe that anything that can be created cannot be destroyed. If putting paper together with chlorine creates this dioxin, obviously something else can reverse it. That would be my assumption....

CS: [I would like] to understand whether or not it [dioxin] does continually accumulate until it hits the ocean where, according to [Maine State Toxicologist] Dr. Frakes yesterday, he thinks the saltwater does neutralize it. But he didn't know.
PETER WASHBURN (Staff Scientist for Natural Resources Council of Maine): I won't speak for Bob Frakes, but I think what he was suggesting was that it may sink when it gets down and end up in the sediments in esturine areas....

CS: Where is Newark Bay? Is that in the Great Lakes?
Dr. PETER DEFUR (Senior Scientist with the Environmental Defense Fund): That is off the coast of New Jersey, off Newark, NJ.
CS: You say that the dioxin that was deposited there 30 years ago is still present today. So what you are saying is that salt water does not neutralize it?
DEFUR: Dioxin isn't neutralized.

CS (To Dr. Barbara Knuth): You are from New York... We learned in geography at an early age that we have 5000 rivers and streams in the State of Maine. Now there are only four rivers that have paper mills on them. So that leaves us 4996 rivers and streams that could have unpolluted fish...

Source: "Record of Proceedings [Volume III], State of Maine Department of Environmental Protection, Public Hearing re: Proposed chapter 584: Surface Waters Toxics Control Program: Interim Statewide Criterion for Dioxin, November 6, 1992.



State Toxicologist Resigns Over Dioxin Scandal

"This thing is being manipulated by the paper industry completely."
Dr. Robert Frakes, ***Maine Sunday Telegram***, April 11, 1993

On November 5, then Maine State Toxicologist Dr. Robert Frakes and Bureau of Health Director Dr. Loni Graham testified against Governor McKernan's proposal to weaken Maine's dioxin discharge standard. In early February 1993, weary of fighting the paper industry, Dr. Frakes accepted a job with the US Fish & Wildlife Service in New Jersey.

The April 11, 1993 ***Maine Sunday Telegram*** told the story of the Maine dioxin scandal.

In the spring of 1992 a health advisory urging that the public limit fish consumption from rivers below paper mills was watered down by a McKernan staff member at the request of the paper industry.

A few months later, when Frakes and Graham objected to industry's proposal to weaken the dioxin standard, discussions were moved from the Department of Environmental Protection to the Governor's office. Frakes and Graham were excluded. Instead of meeting with the state's health experts, McKernan's legal counsel Derick Langhauser secretly met with DEP Commissioner Dean Marriott, Daniel Boxer, a lawyer who represents the paper industry, and Robert A. Moore, a former McKernan counsel now working with Boxer. When another participant suggested including Frakes and Graham, Langhauser and the industry lobbiests said, "No, we don't want them."

After leaving the state, Frakes told ***Maine Sunday Telegram*** reporter Dieter Bradbury: "It's hard to be in the position where you're the state's expert and nobody listens to you."

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Destroying Resources to Create Capital Threatens Economy

by Andrew Whittaker

The System

Will Curtis on NPR's "Nature of Things" commentary recently illustrated the Japanese view toward the whale and whaling industry. If, said Curtis, a sustainable harvest of whale were thought to yield a five percent lower return on investment than would a rate of harvest sure to bring on extinction, the Japanese would opt for the greater monetary return. The pool of capital created would then spread like fire or virus to yet another resource and destroy *it.*

Westerners would not be wise to regard the Japanese as overeager students of capitalism who have carried the system to unparalleled heights of destruction. We applied the same logic in many places. The examples of American blindness are as numerous as George's Bank cod, Wisconsin pine or Plains buffalo . . .were. It is this blindness, in fact, that built our country and unified the world in the passion of destruction. (Note: The American television program *Dallas* supposedly figured highly in the culture of the Brazilians clearing the rainforest for cattle ranching.)

Canada lives somewhat closer to the bone than the US in its cultural recognition that wealth is created out of mines and forests and seas—not that this has led to greater regard for the ecology that yields these fruits. Serving a populace more urban and urbane than the US, Canadian news nevertheless is often focused on events in the fishery, mining or the prairies. However, as is the case in the United States, Canadians do not look to the primary sector for the next wave of jobs. Capital has burned its route through resources, depleting the opportunities for future generations to make their livings from the manufacture of wood or catching of fish.

In New York and Toronto, however, there is still hope. After sinking over $100 million (Canadian) into the Westray coal mine in Nova Scotia, the Canadian public is being asked—perhaps asked—to resuscitate the project which came to a halt last year in a disastrous explosion that killed 26. Private capital is insufficient to pursue a dangerously situated seam of low sulfur coal that attracted a maverick mining company that specializes in going where more established companies have given up. The chronically high unemployment in Pictou County, N.S. helped gain political support for what may be an unfeasible project. Traditional acceptance of death in mines or on the seas by Maritimers has strengthened local and corporate resolve to carry on—despite criminal charges now being laid against the company and rumors of complicity by both federal and provincial governments.

Meanwhile, the situation in the fishery is equally dubious, both north and south of the border. Canada's moratorium on cod, intended to rebuild stocks, has not entirely snuffed talk of its commercial extinction. The moratorium itself followed years of disagreement between fishermen, government and scientists, with the latter insisting that a large biomass of the stock existed, and the government encouraging its exploitation as an economic development tool. Now science is saying that the more skeptical fishermen were the more informed.

That Canada has taken the step of a moratorium suggests that its economy lacks the buffering effect of illusion. In the United States, we pretend that things like cod or grain bear little relation to our well-being. Indeed, private enterprise is cooking up wealth-creating schemes for a fishery out of balance and populated

mainly by the "trash" species of yesterday. Fish farming, if it succeeds as an industry, will rely on these species as its protein source (as commercial cultivation contaminates the wild populations even further—yet another example of man's ability to replace beneficial with negative feedback). In a parallel with the timber industry's fiber forest, private capital would as soon "harvest the resource" as allow nature to replenish itself.

Direction

For some, the increasing scarcity in the economy is no problem. CBC radio recently aired two diverging points of view on the direction in which the economy might or should go. One spoke of ecologic limits to growth, the earth's incapacity to sustain further development.

Nonsense, replied a critic, who reiterated the prevailing theme of new technology creating new work, new wealth, new avenues to fortune. Not for everybody, he boasted. Those who rely on "brawn" and are dumb enough to remain in manufactures or agriculture, or just drift along on the general economic tides, will be our "techno-peasants." The future belongs to what the Canadian newsweekly ***Maclean's*** terms the "gold collar" industries: biotechnology; software; computer aided design. This is where the jobs are, and this is where people should be.

Certainly there is no reason to resist learning. The unquestioned development in the economy is that people, as they exist now, are inadequate to provide for themselves. In the excitement of campaigning for President, Bill Clinton referred to the need for people to be "constantly" retraining themselves for employment. It is questionable whether the people who today are at the top of the ladder are there by virtue of constant retraining.

The problem is that workers are not being promoted out of the primary sector by reason of increasing productivity; rather, the house is burning down. The fallacy of the "new capital, new wealth" argument is that it ignores the need for even the programmer or biotechnician to eat, breathe and enjoy shelter from the elements.

One resulting social phenomenon of the disintegration of economic pursuits that CBC (Canadian Broadcasting Corporation) radio has covered in recent stories is the widespread waste of youth. This past winter saw one Inuit village in northern Quebec suffering a rash of teen suicide and substance abuse (often the sniffing of gasoline). White supremacist groups are successfully recruiting teens in a middle class suburb of Vancouver. Record numbers of urban youngsters live on the streets. Boredom? Despair? Or simply lack of place in society?

Earning

The surplus of youth is a worldwide problem, particularly epidemic in developing countries such as Brazil. The curious fact, however, is that it is significant in both the urban and rural areas of even affluent societies that have made the shift from labor to capital intensivity. The advanced structures of both resource-based and money-based industries have effectively frozen out swaths of people from productive lives. Here in New England, for instance, there is little prospect of wholesale employment in the future in logging, farming, fishing or manufacturing—while at the same time high technology trims, rather than adds, jobs. The middling alternative is the McJob—low wage service employment.

The particular problem of our era is that the natural resource pool is no longer so deep that it can create capital; or that capital creation must come at such environmental cost that society is brought face to face with its schizophrenia. Capital itself is scarce and the productive structures it raises are so meager that access to them must be rationed. Not so long ago in New England a young man with a $1000 worked his way into part ownership of a shoe factory. Farmers with a woodlot could send children to college to become doctors and lawyers. Now one must be a doctor or lawyer to own the woodlot.

Retiring

A major problem in an economy that favors the creation of capital over the diffusion of productivity is that younger generations lose their ability to fund their parents' and grandparents' retirement—let alone their own.

The American Association of Boomers recently published a chart showing the amount of money one must be setting aside, depending on your age, to retire at 65 and enjoy 20 years of a thousand dollars a month income—after 20 years or with inflation over the factored 5% you'll have to be inventive.

Bad news if you are 30: you'll have to start *saving* $5,394 a year between now and 2027. That's about as much as a lot of us still stuck in the non-gold collar sector earn, after taxes. 49 year old spend thrifts who have yet to save a dime will have to salt away $12,637 a year before retirement in 2008.

I imagine only a few of us will ever be privileged enough to retire.

Conclusion

But the threat of techno-peasantry and unfunded futures points out something grievously inhumane about our present system It certainly isn't for everyone. In fact, it's only for the lucky or well-placed. Unfortunately for the planet's health, the hurdles that one must clear in our games of social Darwinism are completely unrelated to ecologic integrity, ethics toward other species or even our own. As a distributor of prosperity, resources and productivity, our system also fails tests of efficiency and equity.

Ross Perot likened the challenge of fixing the economy to "getting under the hood" and tinkering the big engine back to life. Once it's roaring, we can all go back to work to earn the money that buys the bread. Given the amount of stress and financial hardship a person must endure to work in the Big Economy, we might be better off investing currency and more of our recreational energy in systems that would directly supply our needs. The costs of health care are on the front burner today, but we have yet to deal with the costs of everything else.

By the time the typical urbanite has reached work and the office coffeepot, they have utilized wasteful amounts of water, gasoline, and electricity; they have shunted onto the environment the costs of dirty air, water, and a wasteful agricultural system that brings them their coffee and banana. In order to repair a damaged sense of harmony, the person must go at noon or evening to the gym for a swim in the chlorine bath or session with a medieval system of torture. At home, after learning about the day's instances of violent crime, the worker must sit down with the checkbook to cover the bills; which may include that of tuition to an institution of higher learning—and the pricier the better, if one is to go far.

Our currency would be better spent raising structures of simpler living. It is easy to forget that our labor may directly procure our needs; or that, even in the city, one may live independent of the large grocery store, the automobile or two showers daily. We can even step away from the intoxicating myth that our labor should procure us goods and luxuries beyond food and shelter.

One advantage that an environmental approach to expanding participation in the economy has over *laissez-faire* job creation is a sense of work that aches to be done. A works project that sought to restore fragments of nature in Boston, for instance, could add great value to presently desolate stretches of waterfront along Chelsea Creek and Dorchester Bay—areas no longer valued much by capital. Greenspaces by the water would not only draw tourists to neglected yet historic portions of the city, but also provide local alternatives to expensive trips to beaches already overcrowded. Teenagers looking for something constructive to do could, with relatively small investment—minuscule by comparison with the four billion being spent to sink the Central Artery—demonstrate that common human beings are fully capable of creating wealth that can be enjoyed by all, enhances community, and carries economic benefit.

Such efforts would benefit the Northern Forest. Works projects involving rural youngsters could mend some of the damage wrought by industrial forestry or create infrastructure for a tourism based on the history and flavor of localities. At the same time, urban-based projects of ecologic restoration that re-created natural space would relieve pressure on northern areas as the modern Arcady.

The challenges in creating a widespread culture of simple living are rather large, and, when confronted individually, overwhelming. The lesson of working for greater social equity or even a better agriculture, is that the work is always present while the cash may not be. Considering, however, that the general economy is creating McJobs for the technopeasants, and that the technolords are increasingly divorced from reality, perhaps this possession of ourselves by our work is a great gift. And a better social organization might help spread that work around.

A Look at the Facts: Lumber Prices, Log Exports & Forestlands

***How Much Forestland Does the US Have?**

The United States has 565 million acres of forested land; 483 million of these acres are commercial forests suitable for logging and forest management. In the Pacific Northwest, National Forests and other federal forests contain 14 million acres of commercial timberland. Millions of additional commercial timberland acres are managed by the timber industry and other private landowners in the Northwest. (USDA-Forest Service) By contrast, current ancient forest protection has only recently affected 2 million acres of federal forests, about 0.4 percent of the nation's total timberland base.

***How Much Lumber Does Our Country Use?**

The US uses between 40 and 50 billion board feet of lumber—annually, nationwide—for home construction and other purposes. More than 90 percent of this lumber comes from forests that are unaffected by federal ancient-forest protection. Less than 9 percent of all dimensional lumber used to build new homes and buildings in the US comes from National Forests and only a portion of this total comes from the Pacific Northwest. Federal land logging levels have been reduced by about 2 billion board feet in the Pacific Northwest in order to meet environmental laws protecting our National Forests. This foregone timber equals less than 5 percent of the lumber consumed annually in the US.

***Log Exports Are Draining Our Nation's Lumber Supply**

In the last ten years, some 33 billion board feet of raw, unprocessed logs were exported to Japan and other foreign countries--an average of 3.3 billion board feet each year. Another 25 billion board feet of finished lumber was exported as well. (USDA-Forest Service; Commerce Department). In the past five years, 25 percent of all trees harvested in the Pacific Northwest were exported as raw logs. On average, over 50 percent more raw logs have been exported by the industry each year than have been foregone in just the last year to protect the ancient forests.

Each billion board feet of combined log and lumber exports diverts from our shores enough wood for over 85,000 new US houses—for a total of over 2 million home's-worth of lumber in the decade. In the first three quarters of 1992 alone, nearly 1.7 billion board feet of raw logs were shipped overseas from Oregon and Washington—diverting enough lumber for almost 150,000 new homes.

In addition, each billion board feet of raw log exports represents the loss of 6,000 domestic timber jobs. Japan and other countries have paid top dollar for our logs, driving log prices up. Domestic mills in the Northwest have struggled to buy logs to keep operating, while large timber-exporting corporations made huge profits. If a total log export ban was instituted, in conjunction with the permanent protection of spotted owl habitat and all remaining ancient forests, the region would still experience a net increase in timber jobs, according to research by The Wilderness Society.

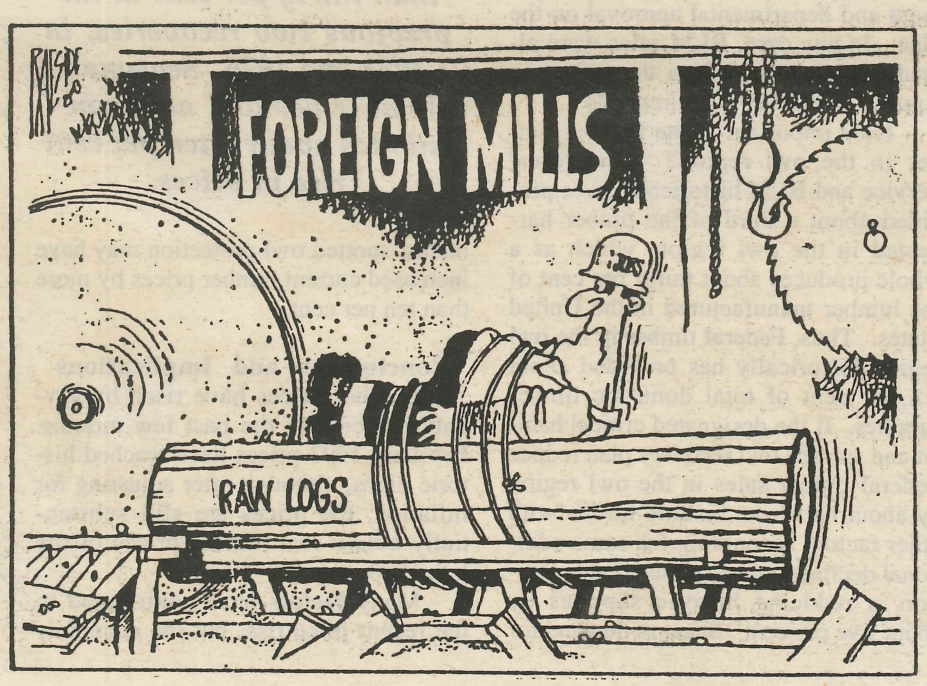
***The Northwest's Self-Shrinking Timber Industry**

The increased automation of Northwest mills has put thousands of people out of work. High speed, automated mills require fewer workers to function—it now takes only 3 workers to produce the same volume of lumber that required 4.5 workers a decade ago. Between 1980 and 1988, timber industry employment in the Northwest decreased by 14 percent, while the output of finished lumber increased by 19 percent. Oregon and Washington lost over 26,000 timber jobs during the 1980s to automation. As more mills automate, timber jobs will continue to decline—over 33,000 jobs will be lost to automation in the next two decades.

Unsuitable logging of industrial forests, state lands, and National Forests has severely depleted the Northwest timber base, prompting timber companies to pull out of the West and look elsewhere. For example, USDA-Forest Service data demonstrates that timber logged from industry lands in Oregon and Washington exceeded forest growth by 59 percent in 1986—the last year for which these figures are available. Logging on National Forests was also excessive. As a result, only 10 percent of the ancient forests remain, many Northwest forests now contain only trees that are too young to cut, and industry is heading to the South.

From 1978 to 1990, the seven largest lumber and plywood manufacturers decreased production capacity by 33.5 percent in the Northwest, while increasing capacity 121 percent in the Southern US, a trend that pre-dates ancient forest protection.

Compiled by the National Wildlife Federation



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The time has come for environmentally-responsible consumers and organizations to purchase only chlorine free paper. No commercially produced paper is environmentally harmless., however, unbleached or un-deinked papers introduce fewer harmful chemicals into the environment than paper made of virgin fiber and bleached with chlorine.

If environmental groups, schools and colleges, socially-responsible organizations and businesses and the state and federal governments took the chlorine-free pledge, huge new markets for chlorine-free paper would open. Paper companies, such as Lyons Falls Pulp & Paper, that produce chlorine-free paper, would have a tremendous advantage in filling the chlorine-free niche.

The old paper mills of northern New England cannot compete with the newer, more efficient mills of the Southeast. However, if the Maine and New Hampshire mills were to convert to chlorine-free bleaching (or better still, *un*-bleached) paper-making, their chances of survival will be far greater.

Lumber Price Jump—Don't Just Blame Spotted Owl

Congressional Research Service Says Economic Recovery & Seasonal Demand Are Principal Causes

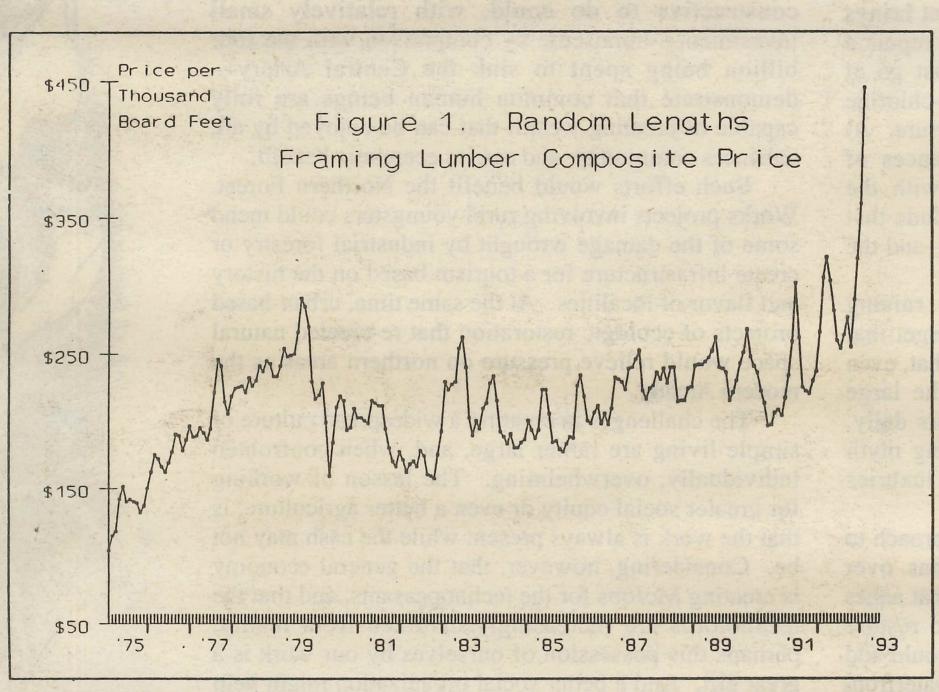


Figure 1. Random Lengths Framing Lumber Composite Price

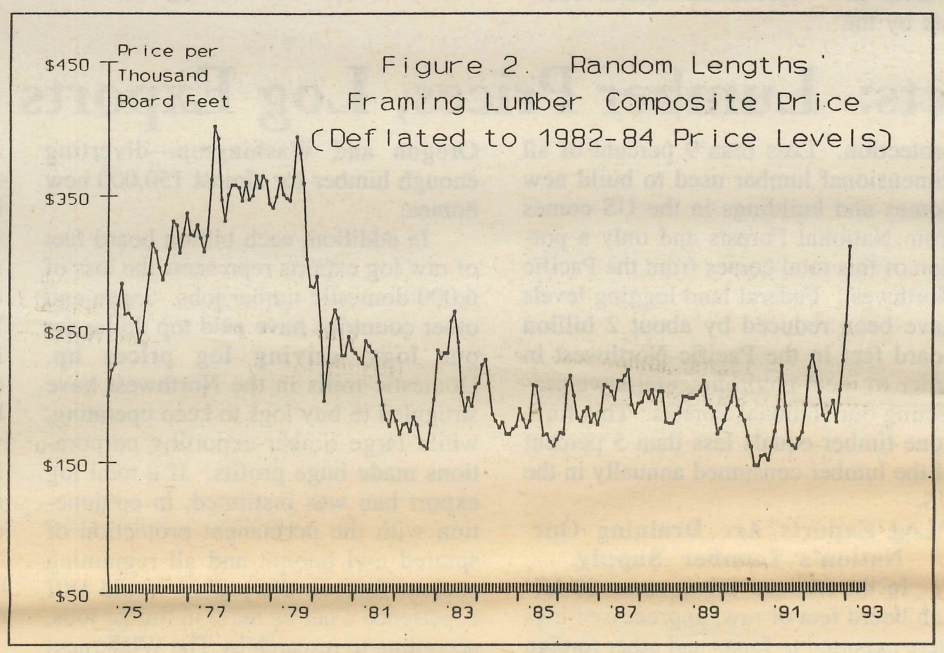


Figure 2. Random Lengths Framing Lumber Composite Price (Deflated to 1982-84 Price Levels)

Introduction

The recent rise in domestic lumber prices has attracted attention. The economic recovery is probably the major cause of the lumber price rise, but seasonal factors, the countervailing duty on Canadian lumber, and spotted owl protection on Federal lands have also contributed. Although the lumber price rise is substantial, existing evidence suggests that it will not significantly slow housing starts or the economic recovery.

Even if real lumber prices are below record high levels, [see graph] they have risen substantially over the past few months. Why? What has caused lumber prices to rise by more than 70 percent since October 1992? Some have suggested that spotted owl protection is to blame, but others assert that it is a normal response to renewed economic growth.

Spotted Owl Protection

Protection of the northern spotted owl has substantially reduced timber sales by the Forest Service and the Bureau of Land Management (BLM) in the Pacific Northwest over the past several years. For example, in May 1991, the Forest Service was enjoined from selling timber in much of the area inhabited by spotted owls (commonly called the "owl region") until it had prepared a management plan and environmental impact statement for the species. In February 1992, the BLM was similarly enjoined from selling timber because of its failure to prepare environmental impact statements. Contrary to conventional wisdom, the litigation and injunctions have generally not been based on protection under the Endangered Species Act (ESA) but rather on unfulfilled requirements of the National Forest Management Act of 1976 (NFMA), the National Environmental Policy Act of 1969 (NEPA), and other laws.

The impact of spotted owl protection on Federal timber sales is uncertain. Estimates following the designation of critical habitat by the US. Fish and Wildlife Service suggest that future Federal timber programs in the owl region are likely to be near 2 billion board feet (BBF). This is down from the record 5 BBF harvested annually from these Federal lands in the late 1980s; however about half of this decline (1.5 BBF) was proposed in new land and resource management plans for the national forests required by NFMA. Some of the decline in the NFMA management plans is likely due to owl protection, but such protection is only one of many factors affecting future Forest Service timber sale levels. That portion of the decline is not a result of protecting the spotted owl under the ESA; owl or no owl, Federal timber harvests in the owl region were likely to decline, and that decline had been predicted for decades.

Federal timber sales are currently less than is likely under the designated critical habitat and spotted owl recovery plan. Both the Forest Service and the BLM are under court injunctions severely restricting timber sales until they complete the environmental statements required by the National Environmental Policy Act of 1969 (NEPA). The Forest Service presented a management plan and environmental impact statement to the court in March of 1992, but the judge rejected the effort, arguing that the agency had failed to consider new data, indicating substantially faster owl population declines than had been assumed, and concurrent actions, such as the ESA exemption requested by and partially granted to the BLM. For the BLM, the partial exemption from ESA for certain FY 1991 timber sales was granted, but prohibited the agency from further timber sales until it had completed a new 10 year sale plan that was consistent with the recovery plan, and had received public comment and departmental approval on the plan. In any case, BLM sales were already enjoined based on the failure to comply with NEPA requirements.

How important is the Federal timber in the owl region? The Forest Service and BLM historically have provided about a third of the timber harvested in the owl region, which as a whole produces about thirty per cent of the lumber manufactured in the United States. Thus, Federal timber in the owl region historically has provided about ten per cent of total domestic timber supplies. If the designated critical habitat and spotted owl recovery plan reduce Federal timber sales in the owl region by about half from historic levels (with other factors accounting for some additional declines), then spotted owl protection is reducing historic supplies by about five per cent. Because demand for lumber is relatively inelastic, a five per cent decline in supplies could increase lumber prices by about ten per cent, other things being equal. In addition, because Federal timber sales currently are lower than is likely under the designated critical habitat and the spotted owl recovery plan, at least until the agencies complete adequate environmental statements, spotted owl protection may have increased current lumber prices by more than ten per cent.

Many factors have contributed to the recent price rise, but the economic recovery is probably the most significant cause, because lumber prices rose by more than thirty per cent in the previous two recoveries, in 1983 and 1976. Seasonal lumber demand also contributes about a ten per cent rise in prices.

Conclusions and Implications

Lumber prices have risen by seventy per cent in the past few months. February 1993 prices have reached historic highs, although after adjusting for inflation, the prices are still substantially below real lumber prices of the late 1970s.

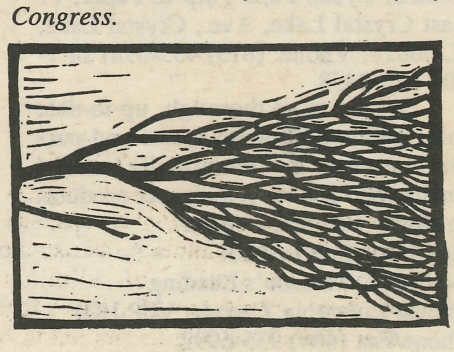
Many factors have contributed to the recent price rise, but the economic recovery is probably the most significant cause, because lumber prices rose by more than thirty per cent in the previous two recoveries, in 1983 and 1976. Seasonal lumber demand also contributes about a ten per cent rise in prices. The recent 6.51 per cent countervailing duty on Canadian lumber and the possible Japanese economic recovery may also be contributing to the recent rises in US lumber prices.

Finally, spotted owl protection on Federal lands is likely to raise prices by about ten per cent; this price rise could be considerably more in the short run, until the Forest Service and BLM have completed land management plans and environmental impact statements that the courts determine have adequately reflected the threatened status of spotted owls.

Some interests have warned that substantial lumber price rises might choke off the US economic recovery. They argue that homebuilding is typically a major factor in an economic recovery, and that price rises for homebuilding supplies could dampen the demand for housing, and thus cause a recovery to falter. However, examining this possibility from two different angles suggests that this result is unlikely. First, history suggests that rising lumber prices are unlikely to constrain housing starts. Lumber prices rose by 73 per cent (from 1.16 million starts in 1975 to 2.02 million in 1978). Similarly, lumber prices rose by 31 per cent between 1982 and 1983, while housing starts rose by 60 per cent (from 1.06 million starts in 1982 to 1.70 million in 1983). Thus, rising lumber prices appear not to have, historically, dampened homebuilding activity.

The second angle is the likely effect of rising lumber prices on housing prices. According to the National Association of Homebuilders, construction wood--lumber, plywood, trusses, interior trim, etc.--accounted for less than 5 per cent of the price of a house. Thus, doubling the price of lumber raises the price of a house by only 5 per cent--$5,000 on a $100,000 house. On a 30 year mortgage for a $100,000 house with a fixed interest rate of 9 per cent, doubling the price of lumber increases mortgage payments by less than $40 per month. This increase is less than the impact of a 1 percentage point increase in the interest rate; increasing the interest rate from 9 to 10 per cent, in this example, would increase the mortgage payments by slightly more than $40 per month. Since small changes in mortgage rates have a greater effect on home buyers than doubling lumber prices, it seems unlikely that changes in lumber prices can have a significant effect on housing demand.

Excerpted from a March 10, 1993 memorandum on "Lumber Prices" from Ross W. Gorte, an Economist and Natural Resource Specialist, Environment and Natural Resources Policy Division of the Congressional Research Service of the Library of Congress.

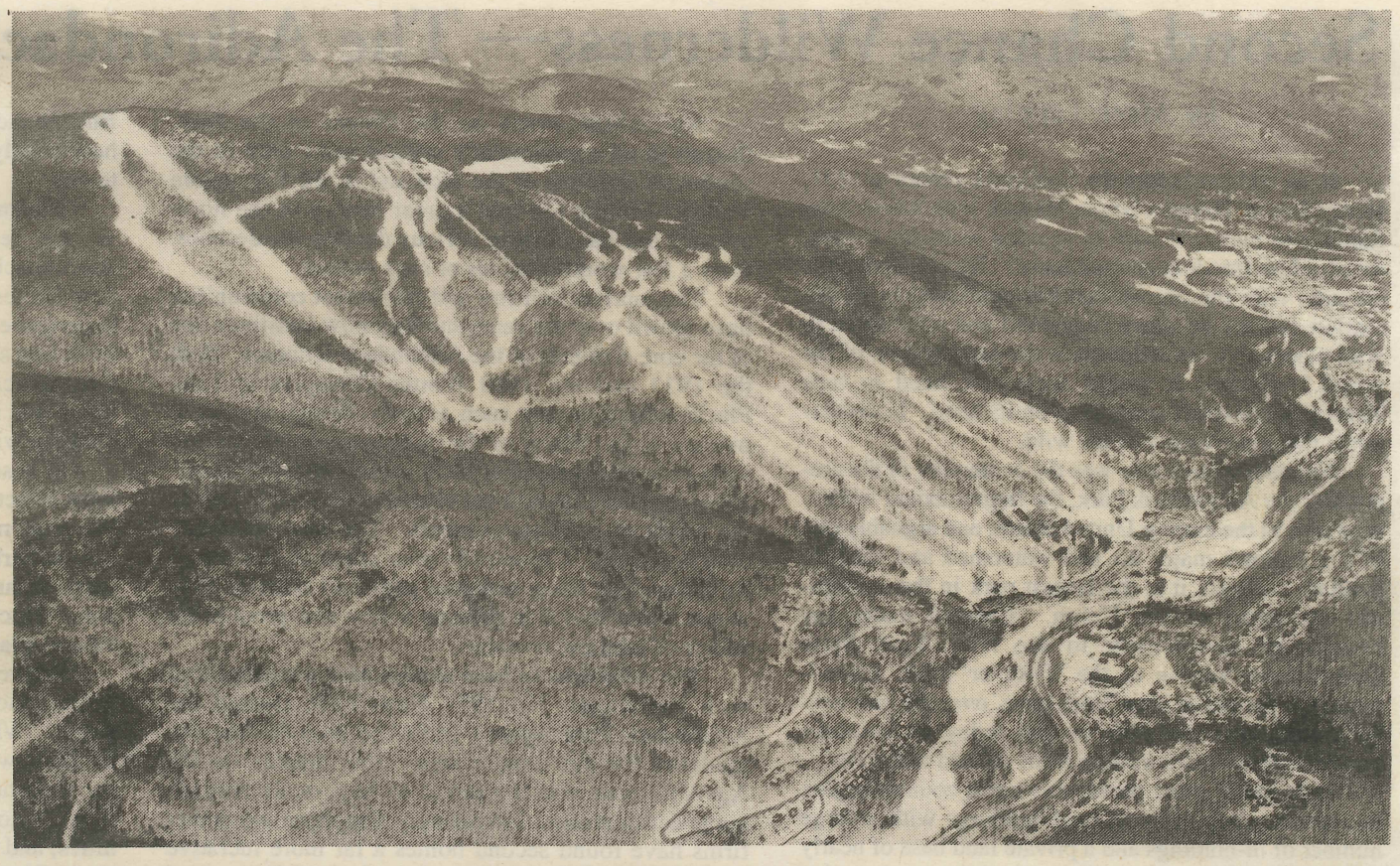


Forest Service Approves Loon Mountain Ski Area Expansion

White Mountain National Forest Supervisor Rick Cables announced on April 9, 1993 that he has selected Alternative 6 for the Loon Mountain Ski Area expansion proposal and released the Record of Decision (ROD).

The decision will allow Loon Mountain Corporation, a privately held company, to expand onto 581 acres of land owned by the public, making a total 1,366 acres of National Forest under permit for use by the ski area. Cables said "I believe we have come up with a decision that sets high standards for protecting the environment and provides downhill skiing opportunities consistent with our Forest Plan.

"We are extremely upset with this decision" said David Carle, Associate Executive Director of RESTORE: The North Woods. "Under the leadership of Rick Cables, the White Mountain National Forest (WMNF) has excluded the public from input to the management decisions. In the case of Loon Mountain, the public has been excluded for over two years. Alternative 6 was developed by Loon Mountain Corporation and WMNF personnel with no public involvement." According to Carle, the WMNF has failed to include the public by not releasing the annual monitoring and evaluation report, an annual report, and a five year management review, all required by the Forest Plan. "How can Cables call this a public process when he fails to include the public?"



South Mountain and Loon Pond are behind the existing Loon Mountain ski trails. Note condo development right up to the edge of National Forest land in lower right corner. Photo by Alex MacLean—Landslides.

Along with expanding onto an 581 acres, the expansion would allow an additional 3,200 skiers (bringing the total to 9000 skiers a day), two new lifts, the building of 43,500 square feet of new facilities and additions to existing structures, and the drawing of over 138 million gallons of water for snowmaking.

A 45-day appeal process begins on April 14 when concerned citizens and organizations may appeal Cables' decision to Region 9 Regional Forester, Floyd Marita. If the appeal is denied at that level, the next level of appeal is to the chief of the Forest Service in Washington, DC.

RESTORE: The North Woods, the Lincoln Coalition of Concerned Citizens, and other groups and individuals are reviewing the decision for a probable appeal.

For more information, contact:

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White Mountain National Forest
PO Box 638
Laconia, NH 03247

*RESTORE: The North Woods
PO Box 440
Concord, MA 01742

Former Green Mountain National Forest Planner Appeals Timber Sale

by Lowell Krassner

Jim Northup, former planner on the Green Mountain National Forest and principal author of its current plan, has filed an appeal of the recent GMNF decision to begin road reconstruction, snowmobile trail construction and relocation, and timber sales in the Lamb Brook Area, at the southeast corner of GMNF.

Northup's appeal claims that National Environmental Policy Act (NEPA) rules requiring consideration of alternatives have not been followed, and that public concerns raised during scoping were not adequately addressed. It also claims that the economic suitability and the full costs of the proposal, including roads, have not been taken into account, as required by the GMNF Plan. The appeal further cites the GMNF policy, contained in the Plan, that timber sales principally intended to meet timber demand should be deferred.

To back up his contentions, Northup has documented Forest Service data that the site index, a measurement of suitability for economically worthwhile timber harvest, is below the GMNF standards on 73 acres where shelterwood cuts are proposed. He further points out that timber program costs have increased since the plan was adopted, without comparable increases in prices paid for national forest timber, thereby probably reducing GMNF's allowable sale quantity (ASQ). Such below-cost timber sales have long been a target for environmental groups, and are contrary to the Clinton Administration's announced policy of eliminating wasteful subsidies. Northup suggests that GMNF logging be limited to only the most economically suitable lands until a re-analysis of the forest's timber economics is completed.

A 130 acre portion of the project includes lands purchased since the GMNF Plan was approved. These had not been classified for any particular management emphasis, but were in a "holding" category, MA 9.2, until the Lamb Brook proposal reclassified them. GMNF is supposed to conduct a public review when such lands are reclassified, and evidently believes that inclusion of the reclassification within the Lamb Brook Environmental Assessment was sufficient notice to the public.

The GMNF Plan was hailed by environmentalists when it was published, because it espoused a philosophy of devoting the national forest lands to public purposes and providing those values and resources that would least likely come from private forest ownerships. In the past several years, environmentalists have been dismayed that the implementation of the plan does not seem to meet those goals. Preserve Appalachian Wilderness (PAW) and others have appealed GMNF sales in recent years, and defects cited have won review of projects, and in instances, withdrawal. PAW has also filed an appeal in the Lamb Brook case.

Several environmental groups—among them the Sierra Club, the Wilderness Society, RESTORE:, and the Natural Resources Defense Council—have filed notice of intervention in the Lamb Brook appeal. Meanwhile, the Forest Service has published notice of a new attempt to curtail the appeals process. See related story.

Lowell Krassner monitors the Northern Forests for the Sierra Club.

Clinton Proposal Would End Money-Losing Timber Sales on National Forests

by Jamie Sayen

The announcement that the Clinton Administration is considering ending logging on National Forests that lose money on timber sales comes as welcome economic and ecological news, if true. Here in the northeastern states, there are only two national forests with a total acreage of a little over one million acres.

The economic question many of us have long been asking is: "Why should the public subsidize the destruction of the public lands for private benefit?"

But, for me, there is a more profound issue. We are in the midst of an ecological crisis, and we desperately need large tracts of publicly-owned and protected land designated as ecological reserves to assure the ecological integrity of the region. In northern New England, only about seven percent of the land is publicly owned, and much of that is not managed primarily for ecological values. By contrast, 42 percent of the Adirondack Park is "forever wild." Which region is likely to afford better protection for native species, communities, ecosystems and processes?

Until we establish many, large, connected core reserve areas throughout the Northern Forest Lands region, we have no choice but to view our existing public lands (unrepresentative though they may be of all the diverse natural communities of the region) as sanctuaries of biological diversity. Accordingly, there should be no further discussion of logging on the White & Green Mountain National Forests until the public has purchased and protected millions of acres in the Northeast Kingdom, Coös County and northern Maine. Once there is adequate protection of ecological diversity throughout the region, then we can return to the discussion of logging on national forests.

The GMNF plan is often held up as one of the best and most progressive in the nation. The GMNF lost $857,873 in FY 1992 in below cost timber sales.

Ironically, President Clinton's proposal supports—not contradicts— the very policies that earned the GMNF plan broad-based support and nationwide praise over five years ago. The GMNF plan: (1) requires careful analysis of all proposed timber cutting to determine if it would be below-cost, and (2) prohibits such cutting unless the resulting non-priced benefits would clearly justify the financial loss.

If the Forest Service was implementing these policies of the GMNF plan, the administration's proposal would have no effect on GMNF timber harvest levels. So what's the fuss? The GMNF's former planner, Jim Northup (see article on this page) has taken action to halt the Lamb Brook Timber Sale because the Forest Service ignored these policies. When planning this and other proposed timber sales, the agency did not determine if timber cutting would be below-cost, stating the "issue of below-cost timber sales is national in scope and is being addressed at that level."

The national-in-scope prohibition by Clinton may not be the way these Forest Service employees envisioned addressing the issue of below-cost timber sales. However, their repeated refusal to tackle this problem head-on each time timber cutting was proposed, and their unwillingness to accept responsibility forced the response.

Second Chance Wilderness— The Adirondacks As A Home

by Mark Lapping

In an address before the Concord Lyceum in 1851, Henry David Thoreau began his talk with words now familiar to many, "I wish to speak a word for Nature, for absolute freedom and wildness." He concluded his remarks with the phrase that has continued to be the clarion call for all those concerned and committed to wild places: ". . . in wildness is the preservation of the world." Today, it would seem, we need to turn Thoreau's construct somewhat on its head. In civilizing is the preservation of the wild.

Nineteen ninety-two was the centennial of the creation of the Adirondack Park, the largest extant wilderness area in the eastern United States, and arguably one of the region's major air and watershed and wildlife habitats. Indeed, it is the largest park in the contiguous 48 states of the Union. Created under the Fourteenth Amendment to the New York State Constitution, known as the "Forever Wild" amendment, the people of New York have, over the past century, expanded the park so that today its holdings comprise some 6 1/2 million acres of land and water.

Like many other parks, this north country region is a patch-work quilt of land holdings with a large number of in-holdings and a private land base of nearly 60% of the whole. But unlike other large-scale parks, it has people living in it. Spread unevenly throughout the park, and often clustered in hamlets and communities such as Saranac Lake, Ticonderoga, Lake Placid, Lake George, and Warrensburg, nearly 130,00 people make their year-round home in the Adirondack Park.

The Adirondacks are at once awesome and diverse. The region takes us back to a time when both the sublime and the pastoral defined the American landscape aesthetic. It continues to attract large numbers of hikers, canoeists, and campers, those who hunt and fish, nearly all of whom find in the region a balm and a release from the everyday. Indeed, much of the early development of the region was based upon its reputed therapeutic value--people journeyed to the Adirondacks for the "cure" to tuberculosis and other diseases and maladies. Today the Adirondacks remain a curative landscape--though perhaps now more as a tonic for the soul-- with an increasing number of people seeking to make of it a second home in the face of the functional demise of their first homes.

Economic growth and development in the region has been uneven and lacks articulation. Because of its heavy reliance upon natural resources, the economy has been subject to the booms and busts of commodity markets and traders. Forestry activity over a century ago was largely unregulated and led to the cutting of nearly the entirety of the park. Such over-harvesting was the initial impetus for public intervention and state protection.

Forestry still remains one of the major industries in the region. Along with huge corporate holdings there has emerged an economic culture of independent jobbers and loggers who move from cut to cut. Little of the timber they harvest remains in the region. It is shipped out to other areas where value is added and the bulk of paying jobs are found.

Agriculture exists on the fringes of the Park, though in an economically critical mass only in the southwest portions of the area and in the Champlain Valley. Mining has had a great history in the north country but has been in serious decline for decades. Only a few working mines or sites remain.

The tourism industry and retirement communities have grown over the years and they now constitute one of the core elements of the Adirondack economy. Both the 1932 and the 1980 Winter Olympics in Lake Placid helped to spur such activity, though always in modest ways. Many of the once great hotels and resorts have disappeared or lie in various states of decay. What economic growth has recently occurred is largely the result of state investments. The new economic crop is prisons. Chronically poor communities, heavily dependent upon seasonal jobs and transfer payments, have found in prisons a new and predictable source of jobs and revenues.

The Adirondacks have always been a region faced with challenges. In 1971 New York created the Adirondack Park Agency (APA) to provide land use guidance for this unique area. The impetus for the Agency's plan was the threat of large-scale second-home development. Increasingly, the paper and timber firms have found second homes a far more lucrative product than trees. Surprisingly, even with the spur of the 1980 Olympics, the economic demand for such large development never really materialized.

Smaller second-home development, which threatens to devour shorelines and lake resources, and to pollute thin soils and overwhelm local services, does continue. Development in the Adirondacks rarely occurs in the form of one or two massive assaults. Rather, the pattern is incremental and over time, it adds up to the "nickel and diming" of the region. A little here, a little there. Before you know it, it's another lakeshore all developed. That's how it still happens in many places, despite the APA's plan.

Such a process of lot-by-lot development also threatens the existence of large wilderness areas, so critical to the maintenance of this mountainous region's very integrity. Large and intact wild places are essential to the wilderness experience of the Adirondacks and to the critters who have increasingly come back to this once largely denuded forest in amazing variety and numbers. This is a "second-chance wilderness" as writer and park resident Bill McKibben has called it. Over the past century the Adirondack forest has renewed itself very largely as a result of the "Forever Wild" amendment's prohibition against timber harvesting on state-owned lands. But what a second chance gave us may all be lost because of the second home!

The hunger for the second home betrays and defines the failure of the first one. The desire for another home located among the forests, mountains and lakes shows just how bad and dangerous things have become in our first and primary homes. The Adirondacks will and should always attract people because we so genuinely need such open and wild places. The region appeals to our souls, aesthetic preferences, and desire to experience life in a radically different physical milieu. But the Adirondacks as a second home often reflects how poorly we live in our cities, suburbs, and small towns.

The answer to poorly conceived over-development in the region lies not only in protecting the Adirondack Park itself but in increased attention to our first homes. It is the lack of authentic and powerful experience in work, love and play which so compels us to find solace or "home" in a second place. If we do not take care of the one, we shall truly destroy the other; and in so doing, we will leave ourselves and our children without their rightful inheritance.

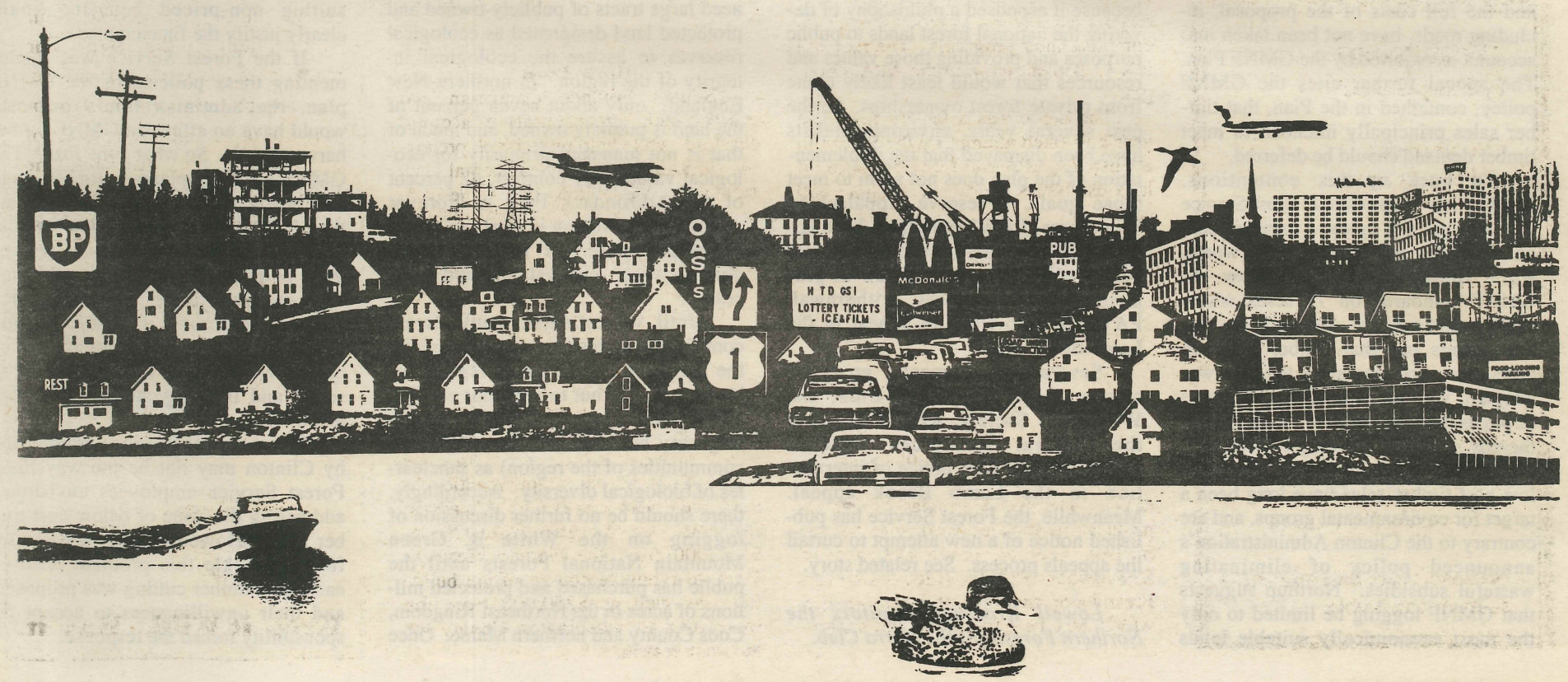
In essence, to save the wild, to preserve it, we must direct our resources to civilizing our first homes. We must make our communities, large and small, urban, suburban, and rural, places of family, work, enjoyment, and pleasure. We must re-create them in new ways which speak to still valid and entirely relevant values--place, home, and civic culture.

Further, we must take care to provide a genuine "stay option" for people in Adirondack hamlets and towns. What is most cherished and longed for is not so much wealth per se as it is the option, the possibility, that the generation may be able to stay home and to have work which will nurture families and communities, and offer the promise of a future. For too long the Adirondacks, like so much of rural America, has seen many of its young drift off to the cities and suburbs of the nation. That has been the sad historical pattern. What is most cruel is that this migration is seldom voluntary.

The desire to remain at home has forced Adirondackers to see state imposed land use controls as the essence of their impoverishment. So limited have their possibilities become that one of the only ways to remain in the region has been the very parcelization and sale of their own land. To survive at home has almost required the destruction of it, bit by bit, piece by piece, parcel by parcel. To keep what is most vital has required its monetarization and then its consumption. Such degradation and the lack of options had led to a basic vulnerability and a vacuum of political and ethical courage which has too easily been manipulated and exploited by those seeking to capture the economic development debate in the region by simplifying issues to a "jobs versus environment" trade-off. The truth is that a genuine "stay option" implies, in fact it requires, that there be no trade-off.

The Adirondacks must have quality jobs and a quality environment. To have only one at the cost of the other is to deny a vision of the Adirondacks as a true "home." In so doing, neither the first nor the second home will function or work. And then where will find ourselves? We will be without communities which are capable of sustaining individuals and families and a forest which no longer provides those wilderness qualities of the heart, mind and soul which Thoreau understood we so desperately need!

Mark Lapping is Professor and Dean, Bloustein School of Planning and Public Policy, Rutgers, the State University of New Jersey. *He wishes to thank Elinor G. Berger and Frank Popper for their useful comments and suggestions.*



1994 New York State Budget

Good and Bad News for Adirondack Park

by John Sheehan

Albany—There was both good and bad news for the Northern Forests in the $60 billion New York State budget adopted April 5 here.

For the third consecutive year, the Senate refused to create a dedicated environmental trust fund to pay for projects from open-space preservation to sewage systems to landfill closure. Instead, some Senate leaders appropriated money from the state's general fund to pay for pet projects in their home districts, leaving the rest of the state with no assistance.

However, there were some bright spots.

Canoe Carry West

The state is now able to fulfill its commitment to purchase a small piece of the 51,000 acre Whitney Estate in the Adirondack Park. By combining money collected by the state from the sale of timber and isolated lands outside the Adirondacks and Catskills ($750,000) with $175,000 paid to the state by the builders of the Iroquois gas pipeline, the state can now purchase Canoe Carry West.

The parcel is located at the southernmost corner of the Whitney Estate, between the northern end of the Pigeon Lakes Wilderness and the south end of Forked Lake. It will provide both camping and unbroken public access between Forked Lake and Raquette Lake. The parcel, like the rest of the Whitney Estate, lies at the center of the Adirondack Council's proposed Bob *Marshall Great Wilderness.*

150 Years of Solitude

Roughly $900,000 was appropriated for the Department of Transportation to establish and map the boundaries of lands within the Adirondack Park which had been set aside for watershed protection more than a century and a half ago, but have been used as exclusive, private retreats for decades.

When the Erie Canal and Barge Canal systems were created from the 1820s through the 1840s, half a dozen Adirondack Lakes were set aside and deeded to the DOT for use in controlling the water levels in the barge canal system. However, the DOT has been allowing people to build vacation homes on this land and now claims to have no baseline map showing where the state's lands begin and end. A spring 1992 trip to these lands by Adirondack Council staff members revealed that dozens of private homes had been built on the state-owned shorelines.

The NYS Court of Appeals rendered a unanimous decision 85 years ago declaring all canal lands inside the Adirondack Park to be Forest Preserve, ensuring them the same "Forever Wild" constitutional protection as other state lands in the Adirondacks and Catskills enjoy.

In the summer of 1992, the Adirondack Council revealed photographs of the illegally built homes during a public hearing on the future of the canal lands, prompting the $900,000 study. Lands shown to be set aside for the canals will be deeded to the Department of Environmental Conservation for inclusion in the Forest Preserve and will be available for free public use.

Lower Cascade, Photo by Gary Randorf—Adirondack Council

Adirondack Park Agency

The Legislature also took a major step toward easing delays by correcting workforce problems at the Adirondack Park Agency. At a time when other state agency's budgets were being cut or frozen, the APA received a $330,000 increase to hire six new staff people. Four will serve in the regulatory wing of the APA in Ray Brook and two others will be hired to work at the Visitor Interpretive Centers, which have been relying mainly on volunteer work to complete their programs. The increase is a 13 percent jump in the APA's budget.

The move was a far cry from last year's ill-fated attempt by the Senate to abolish the APA and turn control of all land-use issues over to the roughly 100 town governments within the Adirondack Park. Environmental and recreational organizations teamed up to deliver thousands of letters of opposition to Senators around the state. The Assembly refused to consider it.

Acid Rain

The Legislature also approved a $1.5 million allocation to complete facilities for federal studies on the effects of acid rain on the environment of the heavily-damaged Adirondacks. The appropriation meshes well with the $6 million federal grant awarded to Rensselaer Polytechnic Institute's Freshwater Institute at Lake George, which will be completing the studies. Such studies have helped raise awareness of acid rain and prompted legislative action in both New York and Washington, DC.

Wildlife Program

The Adirondack Wildlife Program, operated by the State University College of Environmental Sciences and Forestry in Syracuse received $100,000 to continue its work. The program has produced a number of science education programs for the state's high schools, focusing on native wildlife. It also handled the research needed to complete the reintroduction of lynx to the Adirondacks and continues its work in that and other reintroduction and ecosystem studies.

Pork

While the rest of the state is starving for open-space protection funds, residents of Senate Majority Leader Ralph Marino's home town of Oyster Bay are feasting on a $5 million pork-barrel appropriation from the state's general fund to preserve waterfront lands in town.

The project was the first to be funded on the state's citizen-approved Open Space Preservation Plan priority list. Meanwhile, forestland preservation projects on the same list, such as the Champlain Palisades (Heurich Estate) and Follensby Park, could be lost soon. Heurich is due to be auctioned off on May 25, while the state's purchase option for Follensby Park runs out in August.

More Pork

Senate Finance Chairman and Adirondack representative Ronald Stafford, while helping to block proposals for a dedicated environmental fund statewide, was able to pull some pork from the general fund barrel for certain communities in his district. Warrensburg will receive $450,000 for a new sewer project, but Indian Lake's sewer project and countless others were not funded. Warren County also received $250,000 for its recycling project, but all others were left out.

Stafford awarded the Olympic Regional Development Authority, which operates sports venues in Lake Placid, $172,500 for simply mentioning the Lake Placid area in ORDA's advertisements. He also gave Essex County $350,000 from the Natural Heritage Trust to renovate county office buildings, as well as $250,000 from the same fund to Washington County for the same reason.

Dumped

By refusing to create a dedicated environmental fund, the Senate also lost the chance to provide needed relief to Adirondack towns for their mandated landfill closures. Towns with a population of 3,500 or less with consent orders to close local dumps would have received 75 percent of the funds needed via a direct state grant offered under Governor Mario Cuomo's environmental fund plan. The remaining 25 percent would have been provided as well, through zero interest, long-term loans.

All of the 22 Adirondack towns in line to receive money under the governor's plan will have to wait at least another year for relief which would have amounted to more than $1,000 each for every man, woman and child in some of those towns. Another 17 small towns throughout the state would have benefited as well.

John Sheehan keeps tabs on the New York Legislature for the Adirondack Council.

Watershed

by Peter Gurnis

On clear-cut
soil clouds brook

and no fish spawn
without gravel

each year
I drive a pile of ash

the weight of the truck
floats to the sky

in a tawny fiddle whisper
stars plunked out gone

because bears and atlantic
salmon can't vote

The Ancestral Forest

by Charles V. Cogbill

What is the inherent nature of the forests in the Northeast? Are surviving remnants a representative of the original forest? Are naturally disturbed areas ecologically different from managed areas? Does a "natural" landscape remain in a "steady-state"? These all too current questions would be easily approached if one could observe, or even measure, the vegetation of the 18th century.

Unfortunately most of our ideas of the "forest primeval" have been based on little more than a two hundred year-old rumor. These beliefs, although well established, are unrealistic and unconfirmable. This ancestral forest was not a daunting, expansive spruce-fir forest, or even a scattering of majestic pine. Neither was it an unchanging forest composed of huge old trees, timelessly accumulating living and dead biomass. A less biased view of the "original" forests of the northeastern states can be derived from several lines of evidence: contemporary sources, extant remnants used as modern analogs, and applying an understanding of ecological theory to past circumstances.

Composition

Both early surveyors and anecdotal historical accounts consistently recognize four basic forest types in the northern forest: cedar swamps in lowlands, spruce-fir on rocky mountain slopes or damp flats, hardwoods on rich soils or ridges, and mixed woods on slopes. Numerical data (see figure 1) from actual presettlement surveys of trees blazed on town lines between 1780 and 1840 (witness trees) clearly document a mixed composition in the original forests. Although spruce was most abundant, it accounted for only roughly 30% of the total. The hardwoods, especially yellow birch and beech, were 40% and the other conifer, especially fir and cedar, were 30% of the witness trees. Composition varied across the region, but all species found in the original forest are still found in the same location today. The dominance of spruce and beech before human disturbance, however, has given way to fir, white birch, and maple.

The first Europeans to view northern Maine found a variety of vegetation types, but, except for pine, used few superlatives to describe the size or condition of the forests. For example, John Pierce, surveyor for Arnold's expedition to Quebec in 1775, found "timber . . .not very good . . .Land poor and Timber small" in the headwaters of the Dead River, Maine. Similarly, Park Holland surveying north of the Allagash in 1794 found a "mixture of timber" with only some "good pine timber."

More detailed surveys laying out the townships of northern and western Maine in the early 1800s found many young or "second growth" areas with only relatively few mentions of old forests. Significantly, most of the latter were recognized by their "fallen trees." For example, a description of Township 6 Range 19 W. E. L. S. in 1850 notes that the "old growth is mostly killed by fire or wind."

Significantly, white pine was less than 2% of all the trees in the presettlement surveys. Furthermore, inventories of the original timber on 115 towns in northern Maine (Land Survey Records, Maine State Archives) indicates an average of only 0.3 pine trees per acre. Even where pine was most common, in the northern part of the future Baxter State Park, it averaged less than 2.5 trees per acre, albeit large trees in clumps. Despite the intense interest in pine and extensive 19th century logging, pine never was a major component of the northern part of the "Pine Tree State."

Disturbance

The northern forests were always extensively disturbed. Compilation of Maine presettlement surveys by Craig Lorimer indicates that 9.3% of the town lines of northeastern Maine had been recently burned, mostly by fires which covered hundreds of thousands of acres in 1803 and 1825. My extension of these data throughout northern and western Maine, shows small burned areas covered an additional 4.3% of the area. Thus if one assumes that land is classified as a burn for a 20 year period (note: Lorimer uses an unrealistic 75 years), the average site in northern Maine used to burn every 215 years (or 465 years excluding the huge fires).

Similarly, Maine presettlement surveys mention windthrows, fallen timber, or "hurricane land" over 1.4% of northern and western Maine. This translates to a return time of 1400 years between large-scale wind disturbances, such as the hurricane of 1815. This disturbance cycle is in accord with Frelich and Lorimer's estimates of catastrophic disturbances every 1200 to 1900 years in mixed forests of the Lake States.

Catastrophic disturbances, however, are rare compared to the minor disturbances causing small gaps in the canopy and constant canopy degradation by ice, snow, and wind, which combine to limit the average age of trees in even uncut forests to only 145 to 175 years. The forests of northern Maine seem to have had both more burning and blowdown than the hemlock-hardwoods in the Upper Peninsula of Michigan. This is perhaps due to conifer flammability, mountainous terrain, and hurricane influence. In addition, insect infestations, such as periodic spruce budworm outbreaks since at least 1805, severely limit the survival of spruce-fir forests. Thus, survival of trees to more than 150 years old in the northeastern states was probably exceptional.

Age, Size and Density

Even today there are few data on age structure of northeastern forests. One of the most comprehensive studies in uncut forests was done by Austin Cary over western and northern Maine in the 1890s. Using 1050 spruce trees destined for mills (obviously highly selected trees cut over a wide area), he found a median age of 180 years with a maximum of just over 300 years old. These ages and the size of the largest diameter (20") are all very similar to extant uncut spruce stands (see figure 2). Similarly, in 1902, R.S. Hosmer found an average spruce size (14" diameter) and maximum (27" diameter) size of spruce and only an average of 80 trees per acre in the last original forest on Squaw Mountain Township, Maine.

Actual distance measurements to witness trees in presettlement forests, show a similar density with a calculated 50 to 135 trees per acre. These characteris-

Fig. 1: Original Forest Composition from Witness Tree Surveys

	Vermont		Maine	
Species	*Northeast 1783-87*	*Western 1796-1831*	*Northern 1826-50*	*East Central 1794-1811*
% by species				
Red Spruce	41.7	37.6	25.2	17.6
Fir	12.8	17.6	22.0	5.4
Birch	18.2	16.2	11.6	15.1
Beech	13.4	4.3	4.4	22.2
Maple	4.8	7.1	8.1	9.5
Cedar	1.6	6.1	16.3	9.8
Hemlock	2.1	1.4	0.4	8.9
Pine	0.5	1.9	1.8	1.9
Aspen	--	1.4	0.9	3.8
White Birch	?	2.4	5.7	1.1
Larch	1.1	---	1.2	0.8
Ash	0.5	2.0	1.0	1.9
Elm	1.1	--	0.2	--
# of trees	188	210	1892	369

data adapted from Siccama (1971), Lorimer (1977), and unpublished data of C.V. Cogbill from Maine State Archives and Vermont State Archives.

Fig. 2: Composition and Structure of Uncut Forests

Site		Dominant Species	Max. Diam. inches	Max. Age years	Canopy Height feet	Density Stems >8" #/acre	Basal Area Live ----sq. ft./acre----	Basal Area Dead
Yankeetuladi	ME	maple	26	233	56	116	94	?
Dry Town	ME	spruce	21	225	89	117	154	164
Big Reed	ME	spruce	20	300	75	211	216	101
N.Turner Bk.	ME	spruce	20	423	66	138	139	136
Basin Ponds	ME	spruce	18	380	52	170	178	167
Bernard Mt.	ME	spruce	21	242	49	138	183	?
Elephant Mt.	ME	fir-spruce	21	320	66	218	186	267
Norton Pool	NH	spruce-fir	18	303	?	89	96	137
Mountain Pond	NH	mpl-beech	35	273	85	97	157	90
Nancy Brook	NH	spruce-fir	23	415	80	111	124	145
The Bowl	NH	spruce-brch	19	260	69	85	126	105
East Mt.	VT	fir	20	258	52	130	149	210

tics of the original trees are still very modest by standards of other forests or in the southern Appalachians or the Pacific Northwest.

Although the tree composition, ages, sizes, and densities substantially differ from many cut (and younger) forests, the total forest biomass of natural forests is not distinctive. Computer simulations predict that 350 years after clearcutting, a forest will average 150 tons per acre in central New Hampshire. Unfortunately, predictions of biomass from the theory are both very crude and circular. Actual data collected by Harold Young from uncut forests in the Big Reed area of northern Maine indicate an average of about 115 tons per acre for the mixed or conifer woods and about 80 tons per acre for the hardwoods.

Also, theory predicts that the biomass will tend to overshoot during recovery from cutting; thus, previously cut areas can have as high, or higher, biomass than undisturbed areas. For example, in central Maine, various actual second-growth forests average 90 tons per acre. The one consistent characteristic of either original descriptions, actual extant old forest examples, or theoretical predictions, is the ragged structure, due to dead trees and downed wood (figure 2).

Remnants

The original northern forest is now totally disrupted. Only an estimated 0.6% of the total area has apparently escaped the pervasive cutting and clearing of the past 150 years. The "common land," at lower elevations, was even more affected. Remnant uncut areas are not only decidedly rare, but are biased by their history as unwanted by settlers or loggers. They were unproductive, inaccessible, or had an unusual composition, history, or setting and thus survive today. These remnants are also small and incomplete examples of either forest types or disturbance patterns formerly common in the region. Also, all areas are affected by atmospheric deposition of pollutants, changes in fire regimes, introduction of pathogens, or removal of influential animals, such as the passenger pigeon. Thus the remnant pockets are unreliable indicators of the range of original conditions.

Despite the imperfect analogy, the nature of the original landscape can perhaps best be seen in the Nature Conservancy's 5000 acre Big Reed Forest Preserve in northern Maine. This area has a documented history showing only spotty removal of scattered pine and cedar 110 to 70 years ago. The forest is a mosaic of four types, with 45% softwood, roughly 25% each of mixed woods and hardwoods, and about 5% cedar swamps. These communities, as well as the dominance of spruce and sugar maple, are amazingly similar to presettlement description of the same region.

Major disturbances have also played a role in this forest: much of the area was burned, albeit in 1816; growth has responded significantly to budworm infestation in 1916-21; and presently 1.2% of the area is in large blowdowns. The canopy is low with large openings and growth is rather poor. Average biomass (estimated as 25 cords or 107 tons per acre) is regionally representative of second-growth forests. Even at Big Reed Pond, the forest is regularly disturbed and only a small, possibly shifting, portion of the landscape is long undisturbed at any one time, as was probably the case in the original forest.

The results of massive natural disturbance of the early 1800s (fires in 1803 and 1825, insect devastation 1805-1810, hurricane in 1815, and short growing seasons culminating in 1816), resulted in presettlement forests seemingly young. Furthermore, the nature of virtually all uncut forests today was shaped by these same events. Thus they appear to average about 180 years old. Just as the vegetation has changed over the last 10,000 years, any view of "typical" conditions is tempered by the constantly and dramatically changing landscape.

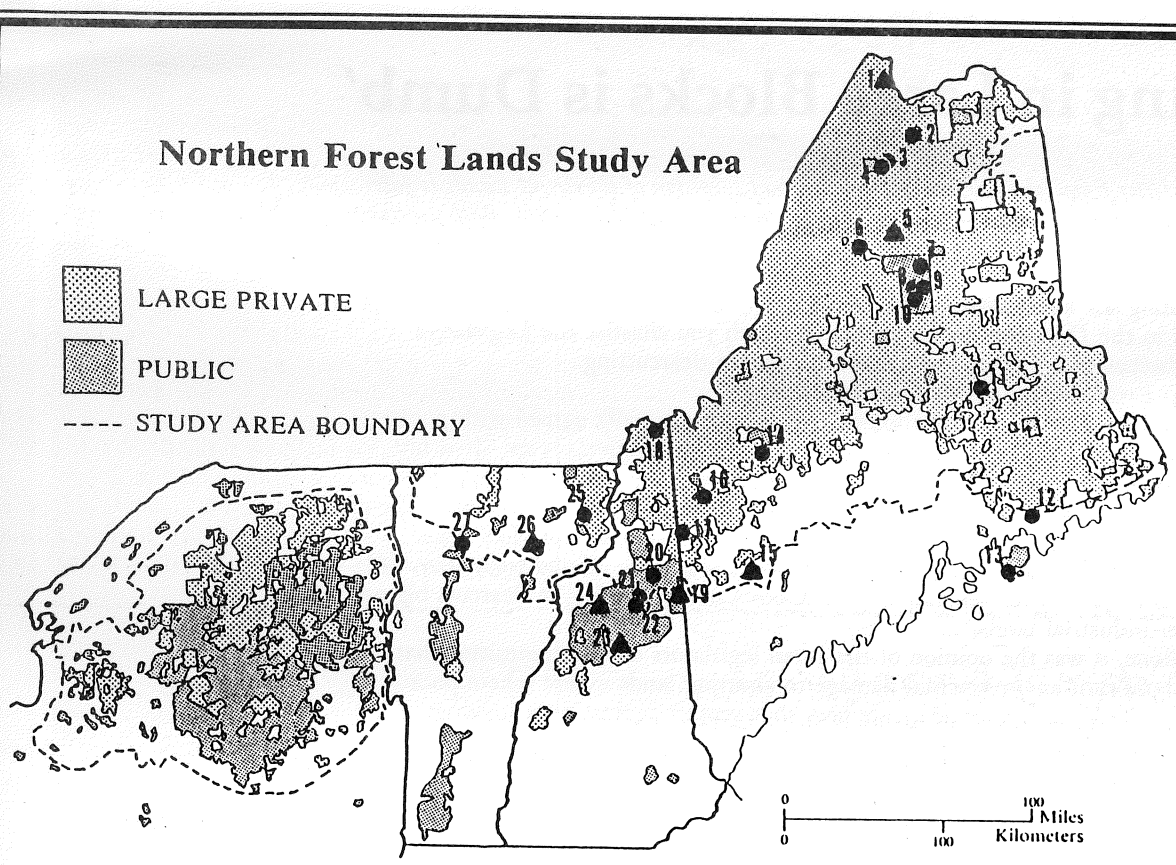
Mimicry

Despite the fact that the original landscape probably sustained relatively young forests and that cutting is a medium-level disturbance, logging is substantially different from the various processes in the original forest. In even lightly cut forests, the composition, growth rates, age structure, regeneration, and accumulation of dead wood are quantitatively different from uncut areas. While many of the natural processes are still functional in altered landscapes, as dramatically seen in the budworm damage, followed by blowdown and 3500 acre fire south of Katahdin in 1977, the resultant forests are profoundly different.

Even the best known regional examples of large "wilderness" areas, such as the Pemigewasset, New Hampshire, Baxter State Park, Maine, or Victory Bog, Vermont, are notable for their young, mostly fir-dominated forests, resulting from cutting followed by decades of preservation. Even if cutting superficially resembles wind or fire disturbance, the various intensities and scales of effects associated with hurricane windthrows and state-wide wildfires seem beyond imitation. Although restoration is theoretically possible, several generations (200 to 500 years) would be needed to re-establish the "native" condition of the vegetation of the region.

Several lines of evidence have been used to get a glimpse of the ancestral forests of the Northeast. Early descriptions are few and subjective, remnants are generally unrepresentative, and theory is a crude, if not circular predictor. The ancestral forests also defy easy description. They were apparently a mosaic of types, ages, with site-specific histories. Change, not predictability, was prominent, as disturbances dominated. The original forest is gone, but it has been replaced by an equally dynamic and functional forest, albeit characterized by the same species in novel circumstances.

Charles V. Cogbill is a forest ecologist living in Plainfield, Vermont. He teaches at various colleges in the region and is engaged in on-going research on the dynamics of old red spruce forests, bio-geography of Appalachian vegetation, historical ecology, and land use history of northern New England.



Location of Documented Natural Forests in Northern New England

1—Yankeetuladi
2—Gardner-Deboullie
3—Rocky Brook
4—Dry Town
5—Big Reed
6—Gero Island
7—Traveller Mtn.
8—Wassataquoik Lake
9—N. Turner Brook
10—Basin Pond
11—No. 3 Pond
12—Wizard Pond
13—Bernard Mtn.
14—Sugarloaf Mtn.
15—Ordway Grove
16—Elephant Mtn.
17—Mahoosuc Mtn.
18—Norton Pool
19—Mountain Pond
20—Great Gulf
21—Gibb's Brook
22—Nancy Brook
23—The Bowl
24—Eagle Cliff
25—East Mtn.
26—Lord's Hill
27—Mt. Mansfield

Compiled from unpublished data by Charles Cogbill

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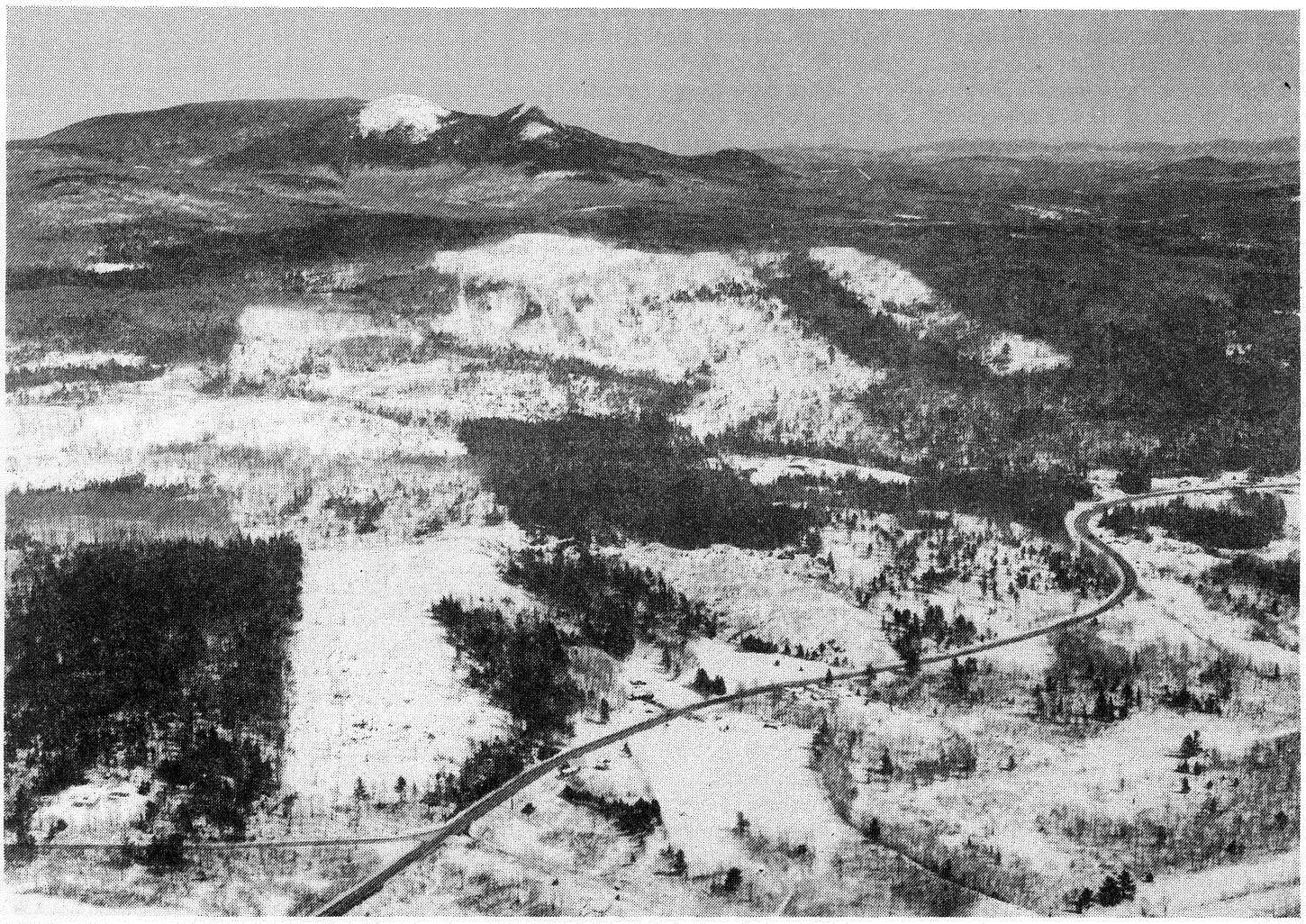
Forest Abuse—New Hampshire-Style



Who Are They Kidding? The New Hampshire State Forester and the NH Legislature say, "We already have adequate laws that protect against poor logging." Those laws aren't providing much protection for Northern Forest towns such as Stratford Hollow, NH. The Percy Peaks are visible in the background. Photo by Alex MacLean—Landslides

'Clearcutting in Large Blocks is Dumb'

Ed. Note: The following letter from John Sargent, Director of NH Division of Forests & Lands to John Harrigan, publisher of Coös County Democrat appeared in that newspaper on April 7, 1993. Both gentlemen serve on the Northern Forest Lands Council.

Dear John:

I have just finished reading the latest issue of the *Northern Forest Forum*, and found a reprint of an editorial that you published in the *Democrat* in December in which you chastise the Legislative Committeee that studied whether or not there was a need to regulate clearcutting.

I have to say, John, that I was amazed at what you had to say!

I have read your [NH] *Sunday News* columns for years and have generally agreed with your pragmatic and common sense positions on a myriad of outdoor and conservation topics. It is my opinion that you have strayed from your usual position on the clearcut issue.

It is true that our study committee did not have a lot of money to spend on a fancy study. We did, however, conduct a typical, pragmatic New Hampshire review of this emotional, complex issue.

We held three public hearings that 143 people attended, where 43 people offered testimony. We reviewed numerous articles and spent three separate days in Coös County looking at clearcuts big and small on industrial and non-industrial lands.

After all was said and done, it was the opinion of the seven legislators on the committee that clearcutting did not cause significant environmental damage to abutting lands except where poor logging techniques are used. We already have adequate laws that protect against poor logging; therefore the committee concluded that the practice of clearcutting should not be regulated. Incidentally, public testimony ran heavily against regulation.

Finally, John, I am surprised at the analogy that you use in your editorial—cigarettes and clearcutting. Smoking and being present where smoking is happening can be a health threat to non-smokers. Clearcutting does not threaten your health, and believe me, there is no conclusive evidence that clearcutting is a major threat to anything living in the forest. Our Northeastern forest is extremely resilient, and within a few years of the date of clearcutting, reproduction of desirable timber trees abounds.

I would use another analogy in this issue, Hunter or Blaze Orange. Being in the woods during hunting season without wearing Blaze Orange, is, in my opinion, not a smart thing to do, but should be left to each individual to decide, not to be mandated by our legislature. Clearcutting in large blocks is dumb and is something that I do not condone and understand that people do not "like to look at." However, our legislature should never regulate something simply because you and I do not like to look at it!

Sincerely,
John E. Sargent
Director of NH Dept. of Resources and Economic Development
Division of Forests and Lands

End Abusive Forestry in New Hampshire Now!

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