

Working for Sustainable Natural & Human Communities



Autumn Equinox 1996

Volume 5 No. 1

No Immediate Shortfall From Referendum, Study Shows

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LUOMA 96

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Maine Legislator: Forest Compact Damages Democracy

by Conrad Heeschen

It should not be surprising that someone elected on the promise to run government like a business would choose the private and secret over a public process, even when the public process was his own creation. But by dumping the Council on Sustainable Forest Management for the paper industry's "Forest Compact", Governor King has demonstrated an astounding lack of foresight.

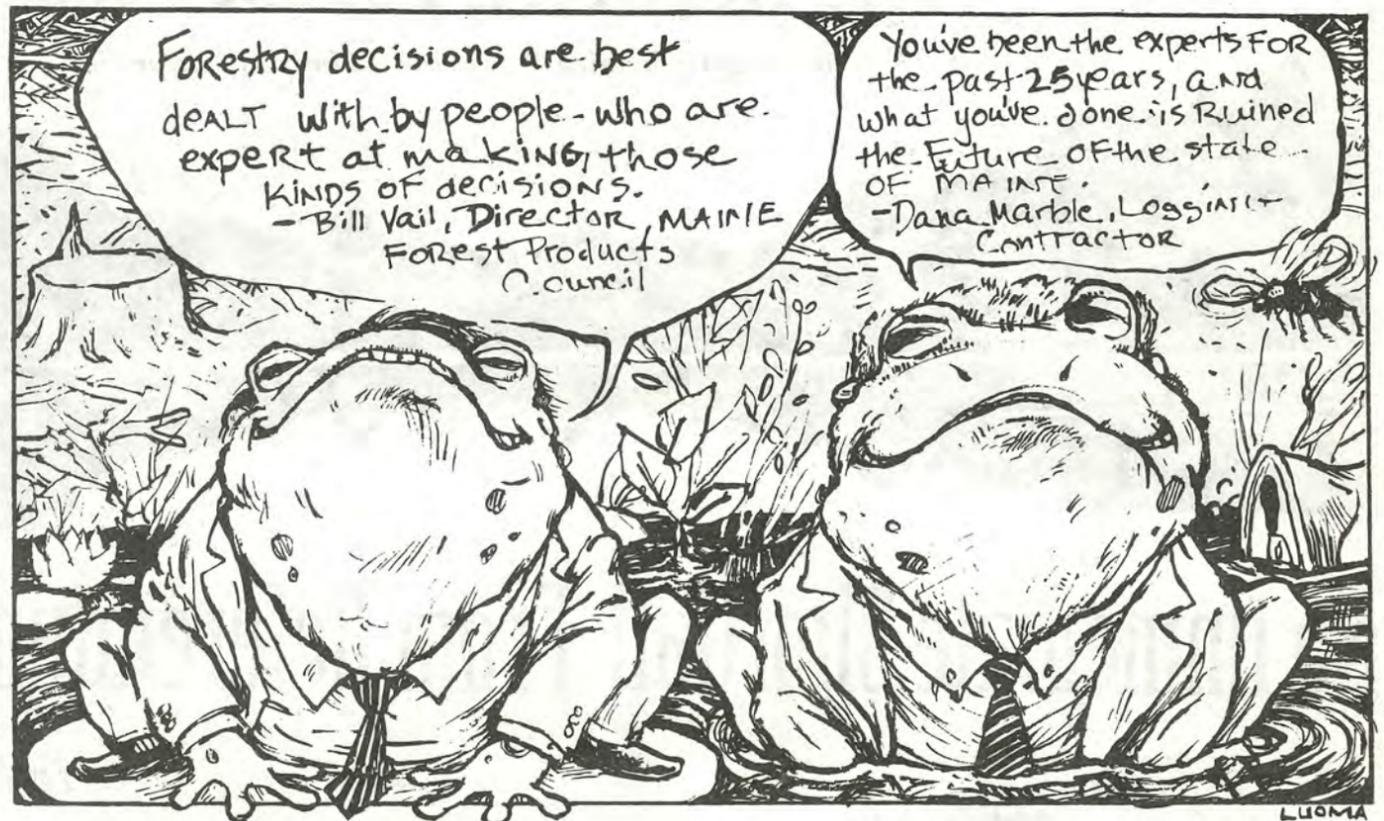
Instead of waiting for his own Council's recommendations, which could have provided a legitimate scientific basis for changes to forest practice laws, Governor King decided to accept and promote the paper industry's version.

And, by accepting and promoting the paper industry's "Forest Compact", he and the Legislature have also squandered the work and credibility of the Council, as well as the good will it developed by its very public process.

Governor King established the Maine Council on Sustainable Forest Management last year. It was intended to take the wind out of the sails of the forest debate in the Legislature at the time, and it succeeded. What we heard was, "There's no problem in the woods, but the Governor's Council will take care of it (the problem)."

Although I was initially skeptical about the Council, I attended several of its meetings and followed its work. I came to feel that it would probably come up with something that, though not perfect, would be good for the forests of Maine.

The Governor's forest sustainability Council used an open process. The pub-



lic could attend and interact with Council members at each meeting. You could observe the Council as it struggled with various issues. And this was where the public was encouraged to express its concerns about forest issues. The Governor and Commissioner of Conservation Lovaglio bragged about the openness of the Council process, as contrasted to that of the Referendum.

Early this year the Governor's office led the Council to believe it would be asked to develop an alternative to the citizen-initiated Referendum. It would have been a logical extension of its charge to determine how effective current regulations are in achieving forest sustainability.

The Governor's Chief of Staff, Chuck Hewett, spoke to the Council and asked it to speed up its work. The Council began to meet twice a month, and with the help of a facilitator, developed lists of high and low priority items.

But behind the scenes was the real action. A self-selected group of Maine's 15 largest landowners and a few environmental groups was making a secret deal. And Governor King never did ask his Council to come up with an alternative. Instead, he shelved the Council.

Maine Audubon was in on the deal from the start. The Natural Resources Council of Maine for some time resisted being drawn into the secret deal, and urged the Governor to use his Council to develop an alternative. But the Governor ultimately laid down the law; the deal was the only game in town—if NRCM wanted to have any input in forest policy, they had to join in.

Two members representing paper companies on the Governor's Council were active participants in the secret behind the scenes "stakeholders" deal. They, Commissioner Lovaglio, and Maine Forest Service Director Chuck Gadzik were the only ones who actually knew what was going on in both groups. Other Council members felt they were being kept in the dark.

The industry representatives were instrumental in getting "high-yield silviculture" moved at the last minute from the low-priority list. This was done to

give credibility to something the "stakeholder" group was to propose.

At the hearing on the Council's draft report in April, Commissioner of Conservation Ron Lovaglio suggested that any alternative would be "run by" the Council and conveyed the Governor's desire that the Council's work be used to evaluate alternatives.

That never happened either. The Governor even delayed the release of the Council's report for three weeks this summer, so it would not compete with the PR surrounding the secret deal. The Council was about to begin evaluating forest practices, and had intended to keep meeting to continue the discussions, but by mid-August all further meetings were canceled.

The 'Compact' was created with the express purpose of defeating the Referendum, not with long-term sustainable forestry in mind. . . . More than one source told me that the 'Compact' was essentially what the industry came in with in at the start.

Prior to the Legislative Special Session to consider the paper industry's compact, Council members were polled to ask if they would endorse it, but a majority declined. Some members feel they have been used. The paper industry's compact certainly does not reflect the Council's work.

The public hearings on the "Compact" were for show, rather than a real opportunity for the public to offer, or the Legislative committee or the Legislature as a whole to solicit, meaningful input and act upon it. A broad spectrum of the public testified in opposition to the compact, but no substantive changes were permitted.

Most people speaking for the Compact at the hearings were part of the secret deal or associated with entities in on the deal. The theme throughout the hearings and the Legislative debate was that since these people worked such a long time to come up with the agreement, it shouldn't be altered. A leader of an environmental group in on the deal said it was such a "finely-tuned piece of work it shouldn't be tinkered with," but claimed he didn't want to be in the posi-

tion of telling the Legislature what to do.

If you weren't part of the secret deal it was impossible to get details about what was being discussed, even after the initial announcement in mid-June. A draft of the "Compact" was not available to outsiders, even legislators, until less than three weeks before the Special Session. It wasn't just too late to make any changes, it was a done deal.

This is not unlike other deals the Legislature has adopted, with a major exception: this entire process was secret from the beginning, and entirely outside government. There was no public input. The public process—the Maine Council on Sustainable Forest Management—was abandoned.

The Governor and the forest indus-

try didn't want the Council around to remind the public of what could have been or to show up the shortcomings of the paper industry's compact. And since industry felt it was not in control of the Council, it wanted to move the ball into a court where it definitely had control—behind the scenes and in the Legislature.

The political expediency of the compact is apparent. It was created with the express purpose of defeating the Referendum, not with long-term sustainable forestry in mind. By joining the process, the major environmental groups effectively took themselves out of the public discourse. They have let the industry define the terms of the debate.

More than one source told me that the "Compact" was essentially what the industry came in with in at the start. Recent events only serve to reinforce the public view that "business as usual" prevails in Maine, which is why we ended up with the Referendum in the first place.

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The Northern Forest Forum is published six times a year by The Northern Appalachian Restoration Project A Non-Profit Organization

Referendum to Ban Aerial Pesticide Spray in Maine Planned

by Nancy Oden

Not ANOTHER Referendum!???

That's what the paper companies and other anti-democratic institutions would like people to say. They're spending \$5-10 million to defeat the Ban Clearcutting Referendum and make people sick and tired of hearing about referenda, but we're going to fight for the shreds of democracy we have left, and use them get more.

This proposed referendum for the State of Maine is intended to:

1. End all aerial spraying of pesticides;
2. End all introduction of pesticides into Maine's waters, including coastal;
3. Give people in affected areas the right to vote on all variances (exemptions) to laws regarding pesticides.

A copy of the complete language is contained in the box on this page.

To qualify for the November 1997 ballot, 56,000 signatures are needed on a petition before the end of January. Most of these signatures will be collected at the polls on Election Day—November 5. This will be a major effort requiring major help and major resources.

This referendum is a follow-on to last year's rulemaking petition to the Maine Pesticide Control Board (PCB) requesting a ban on all aerial pesticide spraying. After a great public hearing, lots of scientific data on why aerial spraying should be stopped, the PCB turned it down without comment. Although citizens had just submitted over 100 pages of reasons, one PCB member—in a fit of conscience—asked people to send in their reasons for wanting to ban aerial spraying. With a tiny, concerned frown on her face, she wanted people to know she "cared".

This referendum is likely to generate broad support; even people who don't mind the use of pesticides *per se* do not like the poisoning of all and sundry by airplanes and helicopters.

Who will oppose this ban on aerial spraying? We can certainly expect opposition from:

- pulp and paper companies and other timber interests;
- electric utilities;
- various state agencies;
- "wild" blueberry, potato, and apple



growers & the Farm Bureau; chemical companies.

This is a formidable list of opponents. But pesticide drift harming Earth's creatures is profoundly resented in Maine, and the proposal to ban aerial spraying enjoys wide popular support.

To thin the forests, clear the powerlines, and pull weeds from farm crops without aerial spraying would require the creation of many jobs. Thus, even though the corporations have been trying to get rid of human workers, this ban on aerial pesticide spraying will reverse the trend and force them to hire real people to do their work, while helping clean up our air and water.

Readers of the *Forum* are well aware of what's wrong with pesticides, especially aerial spraying. We need your help in mounting this citizen campaign against corporations with billions of dollars of assets.

As required by Maine law, we've formed a political action committee to promulgate this referendum. It's called CLEAN: Maine—Citizens for a Livable Environment in Alliance with Nature in Maine. We are starting with lots of support and almost no money to print forms, make countless phone calls, travel when necessary, pay for postage for large mailings, hire occasional clerical help, etc.

The office is in my house in Jonesboro, Maine, and there is no paid staff. This is a "real people" operation which, unfortunately, needs money immediately. We promise to practice extreme penny-pinching and to spend every cent carefully.

What You Can Do to Help: We all

have many demands on our incomes these days, but please send what you can so we can stop aerial spraying and pesticide contamination of Maine's waters.

Here is a list of our most pressing needs (in order of priority):

- money to print petition forms;
- signature collectors;
- money to send out a major mailing;
- office help;
- a 486 net-ready computer.

If you've done organizing before,

come stay a few days. We have an extra room, and you can help organize the signature-gathering, our most pressing task at this stage.

We absolutely can win this referendum—it's extremely popular—but we need serious help to get it done. Thanks for whatever you can do.

Contact: CLEAN: Maine, POB 186, Jonesboro, ME 04648; phone/fax. (207) 434-6228.

Complete Text of Proposed Referendum To Ban Aerial Pesticide Spraying in Maine

Be it enacted by the People of the State of Maine as follows:

SEC. 1. 7 MRSA §606, sub-§§3 and 4 are enacted to read:

3. Aerial spraying prohibited. A person may not apply pesticides, or cause pesticides to be applied, by means of aerial spraying.

4. Synthetic pesticides may not enter certain waters. A person may not cause, by any means, the introduction of synthetic pesticides into a well that supplies drinking water for a residence or school, ground water, as defined in Title 38, section 361-A, subsection 2-A, aquifer, as defined in Title 38, section 361-A, subsection 1-D, fresh surface waters, as defined in Title 38, section 361-A, subsection 2, or coastal waters, as defined in Title 12, section 591, subsection 2, of this State.

SEC. 2. 7 MRSA §606, as amended by PL 1989, c. 878, Pt. E, §§3 and 4, is further amended by adding at the end a new indented paragraph to read:

Notwithstanding any other provision of law, a person who violates subsection 3 or 4 commits a Class A crime.

SEC. 3. 7 MRSA §626 is enacted to read:

§626. Exemption from law or rule regulating pesticides

A state or local agency that receives an application for an exemption or variance from a law or rule regulating pesticides shall give notice to the public of this application and shall hold a public hearing in the municipalities affected by the application. The decision whether to grant the exemption or variance must be made by vote of the citizens in the municipalities affected by the application. Citizens will vote by secret ballot referendum at a municipal election to be held on the same day as the next statewide election in November that is not less than 60 days after the public hearing on the application for the exemption or variance. If the municipality affected or one of the municipalities affected is an unorganized township, the vote must include voters in the county in which the affected unorganized township is located.

NARP Incorporates as Tax Exempt Corporation

In June the Internal Revenue Service notified us that the Northern Appalachian Restoration Project is officially recognized as a non-profit corporation with the tax-exempt status of a 501(c)(3) organization. This means that contributions to NARP and The Northern Forest Forum are now tax-deductible.

To support the many projects of the Northern Appalachian Restoration Project and The Northern Forest Forum, please make checks payable to NARP, POB 6, Lancaster, NH 03584.

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Will there Really be an Immediate Shortfall if the Referendum Passes?

Evidence from the Preliminary Results of the '95 Inventory of Maine's Forests Says 'No'

by Mitch Lansky

Industry and Maine government representatives have successfully instilled fear into the public over the impacts of the "extreme" and "drastic" regulations proposed in the Ban Clearcut Referendum. David Manly, an International Paper Company economist predicted last spring that wood supply would drop 60% statewide. Citizens for a Healthy Forest and Economy were more moderate and predicted a drop of 50% or more. The Maine Forest Service was even more moderate and predicted in July that there would be just a 36% decline in spruce-fir and northern hardwood wood cut statewide (they did not look at pine, which grows more abundantly in the organized territories) leading to an immediate loss of 15,600 jobs.

Since 60% of the state's wood

comes from the unorganized territories (which would be regulated by LURC under the referendum) the first estimate would mean that no wood could be cut, and the second would mean an 80% decline in wood cut in these jurisdictions. The "moderate" MFS estimate would mean "only" a 60% loss in wood supply (of spruce-fir and northern hardwoods) in LURC jurisdictions in 1997.

Would the referendum really lead to a huge immediate shortfall as predicted? The USDA Forest Service recently released some preliminary data (still subject to change) on forest stocking by basal area class and timber type for the whole state for 1982 and 1995. This data may shed some light on the controversy of the impacts of the referendum.

Unfortunately, there are, as yet, no data for just the LURC jurisdictions. There have also, as yet, been no data released that can help us determine if the better-stocked stands are also harvestable (i.e., have adequate volume and size). Based on the available data, however, I have concluded that the predictions of immediate mill impacts are wrong by a good margin.

This does not mean that current levels of cut are sustainable over the

long run or that there will be no local shortfalls in the short run. There are serious problems in the woods that must be addressed regardless of whether the referendum passes or not.

Spruce-Fir

Despite a loss of more than 1.5 million acres, and despite an increase in seedling/sapling area by 0.5 million acres, there are still more than 3,568,000 acres of spruce-fir statewide that are stocked above 90 square feet of basal area per acre, minimum referendum standards. This represents about 59% of all the remaining spruce-fir acreage. Some of this acreage is pole-timber (5-9 inches in diameter), but it can still be commercially thinned for pulpwood. Assuming that a commercial cut (of around 9 cords per acre) can be made if stocking is 30 or more square feet of basal area more than the minimum stocking allowed by the referendum, there are around 2,547,500 acres of spruce-fir that are harvestable *right now*.

According to the Maine Forest Service, the annual cut of spruce-fir is around 2.155 million cords a year (81.4% of which is in the unorganized territories). Assuming an average cut of

14 cords to the acre (an average derived by the MFS for 1990-1994), this means that around 154,000 acres of spruce-fir get cut per year. The average percent removal per acre of spruce-fir 1991-1993 (derived from combining clearcuts with the average removals for partial cuts) was around 50% of basal area. Since the referendum allows up to 33% removal, an equivalent total volume would have to come from around 233,300 acres.

Thus, there is around an 11 year supply of spruce-fir acreage harvestable right now statewide under referendum standards. Assuming that most of the acres that are above minimum referendum standards now but not immediately harvestable will become harvestable in 11 or more years, there may be a 15-year supply of harvestable spruce-fir acres, long enough to start the cutting cycle over. Over the next cycle, even more harvestable acres will come on line from stands that are currently understocked. Thus, the allowable cut might even increase over time.

Caveats

Admittedly, spruce-fir stands, not being pure spruce-fir, will not supply all the spruce-fir volume needed from the acreage mentioned so far. But these estimates of harvestable acres are actually *underestimates* for several reasons. One is that a certain percentage of "spruce-fir" acres are actually mixed-wood stands that have an even lower minimum stocking standard (75 square feet, rather than 90 square feet for softwoods). Some of the "hardwood" stands are also mixedwood stands and have spruce and fir on them. There are also stands that are not adequately stocked with mature trees, but which have enough advanced regeneration so they can be cut by the $S + T = R$ formula of the referendum. The referendum also allows half-acre patch cuts. Finally, there may be some stands that landowners might cut through the variance (due to windthrow, insect, disease, or other "hardship" factors).

It is possible that a certain percentage of the "harvestable" spruce-fir is actually in heavily-stocked seedling/sapling stands. The acreage of such stands, however, is probably low as the "harvestable" level for softwoods¹ is above the A-line on the stocking charts—i.e., is more heavily stocked than one would usually find in a natural fully-stocked condition, (with full crown closure). Stocking beyond this level normally leads to self thinning of suppressed trees.

Hardwoods

Using the same admittedly simplistic assumptions, I determined that there is, statewide, a 14-year supply of northern hardwoods and a 13 year supply of aspen/birch that is harvestable *immediately* (i.e., has more than 30 square feet of basal area more than the minimum referendum stocking standards). One can conclude, therefore, that even with a wide margin of error, there need not be an immediate drop in cut, *assuming that stocking in the unorganized territories mirrors at all the statewide averages*.

More Caveats

Since industrial landowners cut

Area of Timberland by Forest Type and Basal Area

	0-49	50-99	100-149	150-199	200+	all classes
	(basal area in square feet)					
White/red pine	36.2	198.7	468.1	422.1	120.7	1,245.9
Spruce-fir	983.7	1,458.5	2,043.4	1,188.4	337.2	6,011.2
Loblolly/shortleaf	0.0	0.0	0.0	6.7	0.0	6.7
Total softwoods	1,019.9	1,657.2	2,511.5	1,617.2	457.9	7,263.8
Oak/pine	16.5	15.6	62.3	33.1	0.0	127.6
Oak/hickory	12.9	168.9	209.0	48.6	13.7	453.2
Elm/ash/red maple	136.8	200.2	71.3	26.4	0.0	434.7
Northern Hardwoods	779.0	1,829.6	2,896.2	876.6	27.3	6,408.8
Aspen/birch	604.7	658.2	659.4	308.0	19.2	2,249.6
Total hardwoods	1,549.9	2,872.5	3,898.2	1,292.7	60.2	9,673.9
Total Acres All Groups	2,569.9	4,529.8	6,409.8	2,910.0	518.1	16,937.7
Acres of Softwoods Above Referendum Standards			2,511.5	1,617.2	457.9	4,586.6
Acres of Hardwoods Above Referendum Standards		1,436.3	3,898.2	1,292.7	60.2	6,687.3
Total Acres Above Referendum Standards		1,436.3	6,409.8	2,910.0	518.1	16,937.7
Harvestable Softwood			1,255.8	1,617.2	457.9	3,330.9
Harvestable Hardwoods			3,898.2	1,292.7	60.2	5,251.1
Total Harvestable Acres			5,154.0	2,909.9	518.1	8,582.0

- Recent average acres cut per year 500,000
- Average Basal Area Removal per Acre 50.0%
- Allowable Removal under Referendum 33.3%
- Acres Needed for Same Volume Removal 757,576.0
- Years of Current Harvestable Acres 11.4
- Years of Acres Above Referendum Standard 14.9

Note: "Harvestable" is Referendum standard (65 square feet for hardwood and 90 square feet of basal area for softwood) plus 30 square feet (i.e. 95 and 120 square feet for hardwoods and softwoods respectively). For softwoods I estimated the acreage by dividing acreage for 100-149 by 2. To estimate acreage of hardwoods over referendum standards I divided acreage for 50-99 square feet by 2. If I err, it is on the side of caution.

—Mitch Lansky

Loggers Needs Rarely Considered in Forestry Debates

by Mitch Lansky

Something is missing in the debate over sustainable forest practices. Environmental groups make demands, industry representatives make promises, and government officials make assurances that forestry will improve, but they are not the ones who cut the trees. Loggers do, and their needs have not always been considered.

To the extent that improved forest management requires better stocking (distribution of trees), better quality, and less damage to residual trees, this could mean that loggers make less money. Since loggers earn, on average, half the wage of paper-mill workers, this hardly seems fair.

The reason that improved management can lead to decreased income for loggers is that, in general, the income for loggers comes from a payment for quantity of wood removed, rather than the quality of the forest left. To the extent that loggers have to take more time to take more care this means less income.

The current logging system in Maine is geared more toward minimizing short-term costs than maximizing long-term benefits. To reduce costs for wood, for example, industrial landowners have hired loggers as contractors rather than employees. This has saved these landowners from paying insurance, benefits, or workers' compensation.

To further reduce costs, most logging is done with systems that require minimal forester supervision. Loggers are told to remove all trees (depending on species) above a certain diameter, and sometimes they are told to leave a minimum stocking. These are more logging rules rather than management methods and do not usually lead to best quality or productivity of the forest.

The current system is neither good

for the forest nor the logger. When loggers are paid by the cord, they have an incentive to highgrade (cut the best and leave the rest) and ignore stand damage. They are pressured to cut corners to save time. This often results in cutting arms and legs as well. Accident rates for loggers have been unacceptably high, leading to high workers' compensation rates.

To save money on insurance, contractors sometimes cheat their employees. They overpay for equipment and transportation but underpay for wages. The logger may get the same weekly paycheck, but he loses out when it comes to Social Security, workers' compensation, or unemployment benefits.

Contractors also avoid labor by mechanizing. Due to mechanization, nearly half the full-time logging jobs in

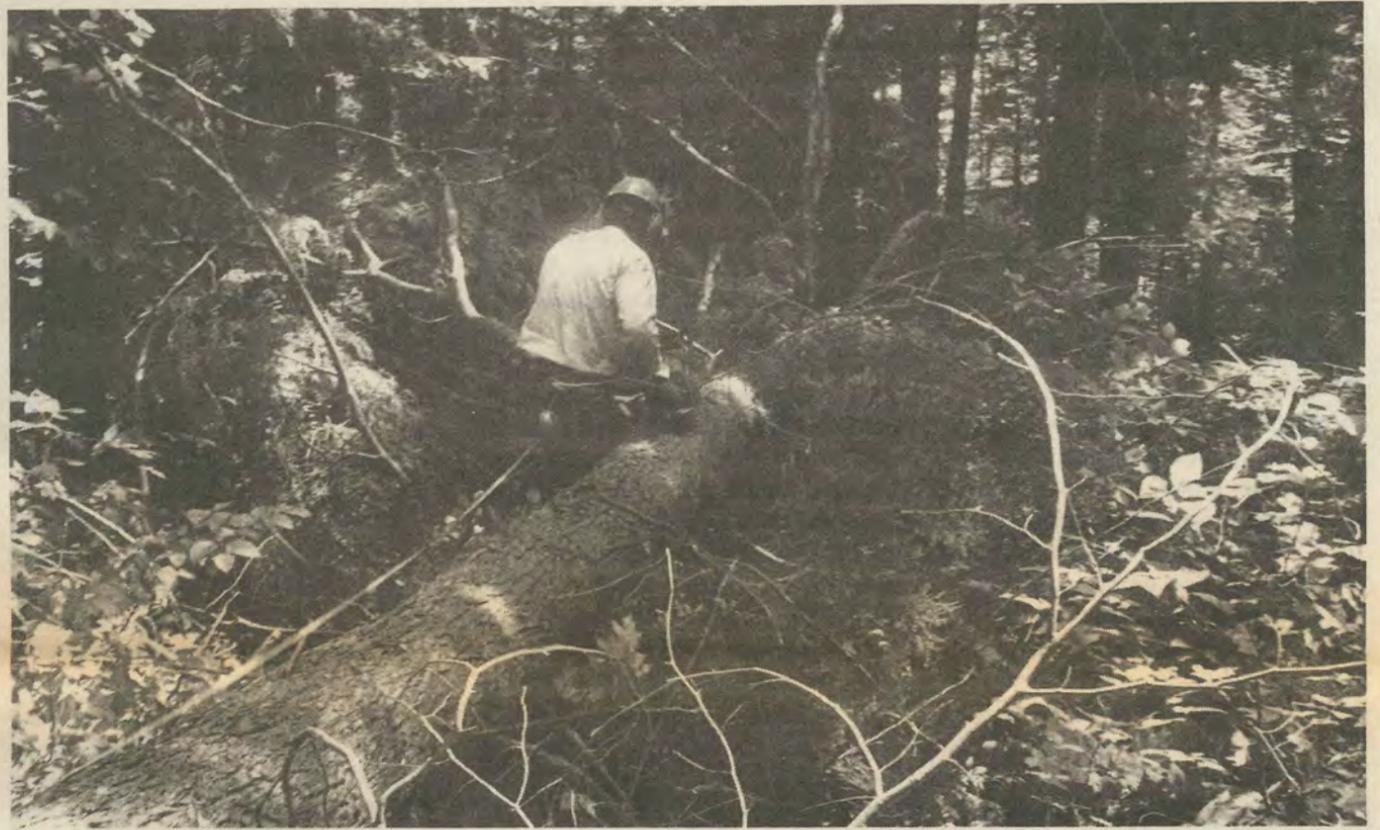
Maine disappeared from 1984 to 1994. Spending more money on equipment and less on workers means more money leaving local communities. The work may be safer for the remaining loggers, but it is debatable if feller bunchers, grapple skidders, or delimiters have been safer for the forest.

Logging has become a low-status job in Maine. Woodcutters have to commute hours from home, sometimes staying away for days at a time. They work in extremes of heat and cold, in deep snow and through clouds of biting black flies. They have a dangerous job that requires knowledge of the woods, of machinery, and of silviculture. It is a job with few benefits and an uncertain future.

One Canadian logger in Maine told the *Bangor Daily News* a few years

ago, "People always believed that wood choppers aren't very intelligent. Well, I've been intelligent enough to make sure that none of my seven children make a living chopping wood."

Keeping logger wages low is being penny wise and dollar foolish. Training and compensating loggers to better manage the forest will have an insignificant impact on the price of making paper, but it will have long-term benefits on the forest and society. If we do not have full cost accounting, incorporating the value of the wood and labor into the price of the finished product, the forest and the people who work in them will suffer. Better forest management is not going to happen simply because people demand it. Someone has to pay for it. It is time we figured out how best to do that.



No Immediate Shortfall

twice as much as the net growth on their land (most of which is in the unorganized territories) and since the biggest volume declines happened in LURC-dominated counties, it is possible that there might be fewer years of allowable cut in LURC jurisdictions than one might assume from statewide figures. Based on evidence from some counties (such as Washington), we can expect to have regional shortfalls even if

there is no referendum. If these counties are too poorly stocked to support current levels of cutting under the referendum, however, it is not the fault of the referendum, but of those who previously cut at non-sustainable levels. Some landownerships may also suffer for the same reason.

Conclusion

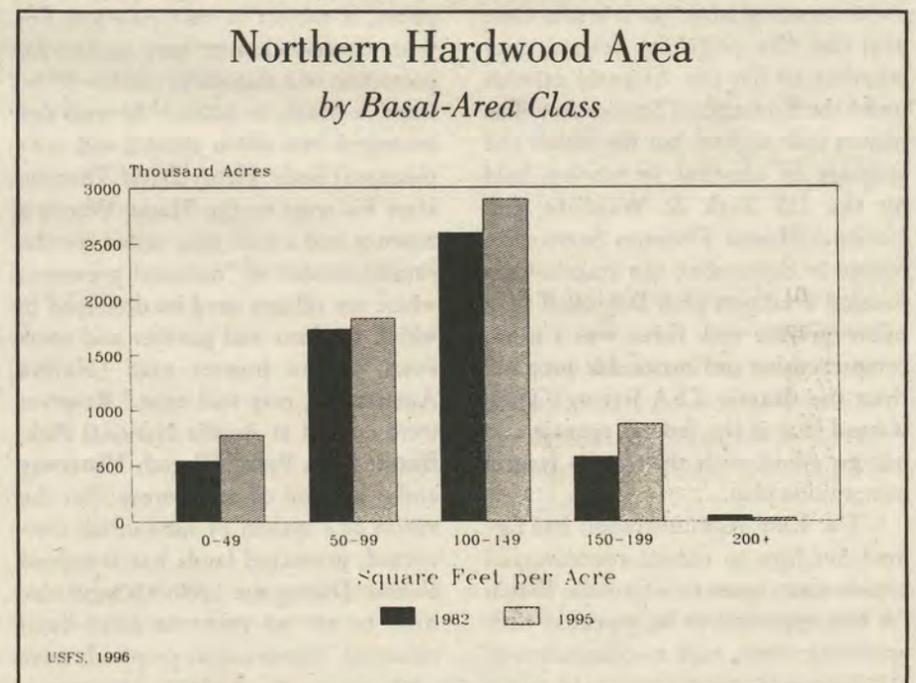
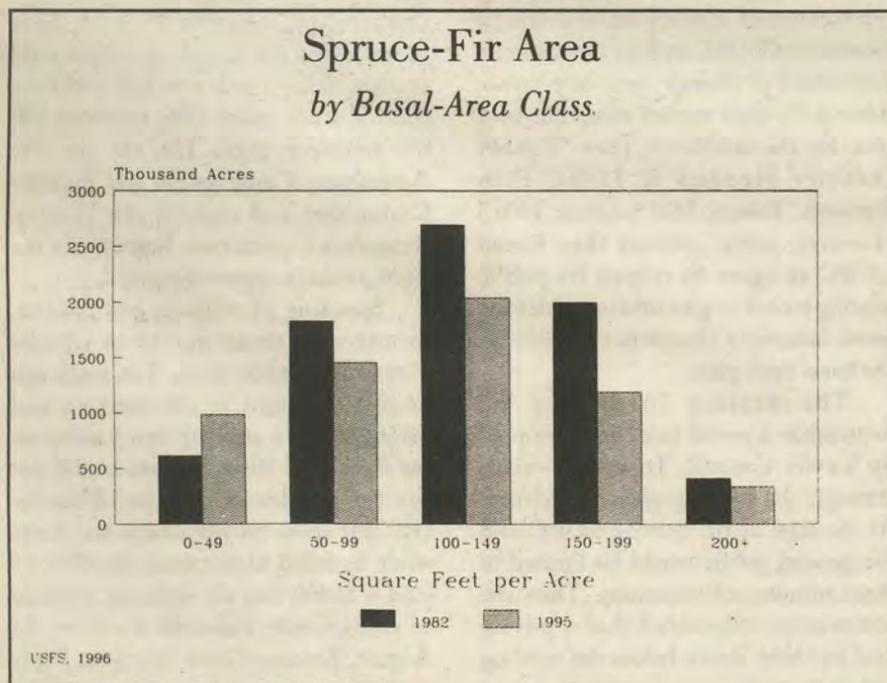
While the preliminary data from the 1995 inventory indicate no immediate shortfall, if certain trends continue

there would be an eventual shortfall with or without the referendum. The average annual cut 1982-1995 was 6.2 million cords. The average annual net growth was 5.1 million cords. The cut per acre per year was 0.4 cords. The net growth per acre per year, however, was 0.3 cords (and less than 0.2 cords for industrial landowners). The spruce-fir type is in decline in both acreage and volume, and what is coming back is predominantly fir. We will have another budworm outbreak. The big "success"

species in Maine is red maple, much of which is poor quality.

Allowing continued overcutting and unwanted species shifts is surely no solution to the problems caused by previous overcutting. The data suggest, however, that if the referendum passes, there will be no immediate shutdown of mills unless companies want that to happen. This would give us time for a reasoned change in forest policy.

¹ 120 square feet of basal area.



Maine Woods Watch

by Jym St. Pierre



The Maine Woods is the greatest remaining wildland east of the Rockies. However, today this region is under siege. Maine Woods Watch is devoted to documenting the good, the bad, and the ugly affecting the Maine Woods, with an emphasis on opportunities for citizen action to protect and restore the essence of the region, its wildness.

A Novel Idea: Here is the plot outline. (1) Activist environmental groups and citizens, frustrated by years of ineffective actions by the state, propose an obvious legal solution to a major conservation problem. The power players (politicians, industry, big labor, hunting/fishing interests) circle the wagons. (2) To fend off the proposed solution, the governor assembles the power players into a "public-private collaborative stakeholders group" to fashion a "more comprehensive and reasonable" proposal than the "drastic" action proposed by the public interest groups and citizens. "Moderate" conservation groups are brought into the negotiations to provide legitimacy while the original groups are labeled "extremist" and excluded from all discussions. (3) The governor and his people wire the backroom deal so that it will appear to address the problem, while in truth it will require few real changes so that it is not threatening to the prevailing power structure. (4) During public hearings, the governor and stakeholders sternly warn the decision making body that if they don't go along with the "delicate compromise" without major change the stakeholders will fall apart and the industrial partners will refuse to cooperate. (5) The political compromise wins. The environment loses.

You thought this was the clearcutting storyline? Right and wrong. It is the clearcutting story, but it is also same plot for the ongoing debate over whether to list the Atlantic salmon under the Endangered Species Act. The players shift slightly, but the tactics and language are identical. At hearings held by the US Fish & Wildlife and National Marine Fisheries Services in Maine in September, the stakeholders insisted a salmon plan fashioned by a public-private task force was a more comprehensive and reasonable proposal than the drastic ESA listing. They warned that if the federal agencies do not go along with the state's fragile compromise plan. . .

The King Administration has figured out how to reduce controversial conservation issues to a formula. Watch for this approach to be repeated with upcoming issues, such as elimination of

dioxin from paper mill discharges, banning of aerial spraying of pesticides, creation of large ecological reserves, etc. The trouble with this novel approach is that people forget that the solutions which novels offer are fictitious. Meanwhile, the real world problems remain.

By the way, to support listing of the salmon under the Endangered Species Act, write by October 11, 1996, to the US Fish & Wildlife Service, 300 Westgate Center Drive, Hadley, MA 01035. Send copies to Gov. Angus King, 1 State House Station, Augusta, ME 04333, and to your congressional representatives.

Ecoscram: The Ban Clearcutting initiative is not perfect; however, every part of the proposed Forest Compact poses grave concerns. The forest practices section fails to meaningfully control clearcutting and ensure that well-stocked, diverse stands remain after logging. The audit program exempts small woodland owners and is voluntary, thus unenforceable, for large landowners. The "right to practice forestry" section undermines the home rule authority of communities by mandating that towns involve professional foresters and state employees and follow extensive notice requirements when drafting local harvesting ordinances. The cut-and-run liquidation section consists only of a promise that the governor will submit a bill to the legislature by next April Fool's Day. The public land acquisition section is only a promise that the governor will propose another Land for Maine's Future bond issue.

Yet it is the ecological reserve section of the Forest Compact that, in some ways, is most troubling. Today 99% of Maine's landscape, private and public, is subject to manipulation. For years conservationists have pushed for protection of a reasonable portion of the lands in Maine to balance the used and managed (too often abused and mismanaged) lands. Henry David Thoreau, after his trips to the Maine Woods a century and a half ago, called for the establishment of "national preserves where no villages need be destroyed in which the bear and panther and some even of the hunter race [Native Americans], may still exist." Reserves were created at Acadia National Park, Baxter State Park, Allagash Waterway and a handful of other areas. But the vision of a system of substantial, connected, protected lands has remained elusive. During the 1980-90s legislative bills to set up reserves have been neutered, conservation proposals have

been ridiculed, tension has been raised as hopes have been repeatedly dashed.

Over the past two and a half years the Maine Forest Biodiversity Project has been inching toward endorsement of a new network of ecoreserves. However, the ecological reserves contemplated in the Forest Compact fall far short for a number of reasons. First, there is no assurance any will be created since the Compact only says they "may" be established. Second, if created, they will be too small to be ecologically defensible for many species. They cannot total more than 10,000 acres and if several are set-up none will be large. Third, they can only be on existing public lands when the greatest need is to redress the imbalance of private (94%) to public (6%) lands in Maine by expanding the base of permanently protected public lands. Fourth, "hunting, trapping and fishing, must be allowed" on the reserves. The Sportsman's Alliance of Maine insisted that not even 0.05% of the state could be a safe haven for wildlife. Some sanctuary. The sum of these is that a horrific precedent will be set. At a time when there is growing public support for landscape scale reserves, this will send a signal that instead tiny, isolated areas where wild animals can be killed is supposed to help preserve the biodiversity of the Maine Woods. Your letters of concern will be welcomed by the governor, no doubt.

Some Are More Equal than Others: For a generation, the Land Use Regulation Commission has prided itself on being the protector of the fabled Maine Woods mystique. The Maine Woods mystique is being transformed into the Maine Woods mistake.

Immediately after forest industry representatives illegally lobbied several members of LURC in July, the commission voted to change some key provisions in its draft revised comprehensive plan for the wildlands. [See "Timber Industry Meddles in LURC Plan Revision," *Forum*, Mid Summer, 1996.] However, public pressure then forced LURC to agree to reopen its public hearing record to give others besides the forest industry a chance to comment on the latest draft plan.

The hearing in Bangor on September 4 could have been scripted by Lewis Carroll. It was a weird, through-the-looking-glass experience. At the start of the hearing LURC said the general public would be limited to three minutes of testimony. Then the commission announced that a private deal had been struck before the meeting

to allow one speaker for the large landowners extra time. At first this almost sounded reasonable, since the big landowners promised to consolidate their comments, with many not speaking at all and others promising to talk for no more than a minute. The problem is nine more industry people spoke during the hearing at length for a total time of nearly three-quarters of an hour. When advocates from conservation groups asked for three minutes for each of the members they were representing, the request was denied. The double standard was stunning, especially when the major point of the hearing was supposed to be to hear from the public, not the paper companies again.

The deadline for comments on the LURC draft plan has passed, but letters about how the agency's credibility is on the line as never before are still appropriate. (Contact Land Use Regulation Commission, 22 State House Station, Augusta, ME 04333.)

Political Theology: Its autumn, election season. The trees are changing color. So are many of the politicians. It can be tough to distinguish the candidates who claim to be environmentalists from those who really vote for the environment. Voters who want to assess the actual records of all Maine legislators can get a free copy of the *Environmental Voting Record of the 117th Maine Legislature* by contacting the Maine League of Conservation Voters. (Write MLCV, PO Box 5271, Augusta, ME 04332, or call 207-761-5616.)

Sadly the average environmental score for legislators is down again. In fact, 27 state lawmakers earned a perfect zero. Yet there are a few bright spots. A dozen legislators scored 100% and a number of promising newcomers are challenging incumbents with poor records. One particularly notorious state senator, Willis Lord, who had a lifetime MLCV score under 18%, narrowly lost his primary race. He sat on the Agriculture, Conservation and Forestry Committee and chaired the Natural Resources Committee. Sometimes the Lord works in mysterious ways.

Speaking of religion and politics, former state senate president Charlie Pray is in trouble again. Ten years ago he lost the right to sell hunting and fishing licenses at his sporting camp on the Penobscot River because he did not pay for the documents. In 1991, the IRS put liens on his camp buildings when he failed to pay taxes. In 1994, he paid a \$6000 fine for allowing gasoline to contaminate soil near his store. In August, Bowater/Great Northern Paper

Clearcut Referendum: The Soap Opera of the North Woods Continues

by Jym St. Pierre

After being ignored for years, serious public debate over regulation of logging activities in the Maine Woods has become front page news, even in the *Boston Globe* and *The New York Times*. For those who just tuned in: Last fall citizens organized by the Maine Greens collected more than enough petition signatures to get a statewide vote this November on a referendum that would ban clearcutting and set other forestry standards in the unorganized areas of Maine. Opposition to the citizen initiative coalesced during the winter and spring. Gov. Angus King first asked his Council on Sustainable Forest Management to come up with a "moderate" alternative to the ban clearcutting referendum. When it became clear the council could not fulfill the assignment, King suspended the group.

Meanwhile, representatives of the Maine Audubon Society and Natural Resource Council of Maine had begun meeting with forest industry leaders to explore fashioning their own alternative to the referendum. Just as those negotiations were unraveling, King called the "stakeholders" group in for a stern talking-to. He persuaded them to go back to the bargaining table. King also convinced two friends—Kent Wommack, executive director of the Maine Chapter of The Nature Conservancy, and Jay Espy, president of Maine Coast Heritage Trust—to do what does not come naturally, namely to get involved in politics by helping to mediate the environmental-industrial discussions.

By June nearly all bets were off. Environmentalists say they were ready to walk. Among the 15 large landowners involved, those who do little clearcutting were having shouting matches with their clearcut-loving colleagues. Only after a 15 hour marathon session at the governor's house was a "fragile compromise" finally worked out—on paper. On June 14, Gov. King announced that a compact had been reached in principle. However, there was still deep disagreement about implementation. NRCM insisted the deal be taken to the Legislature and put on the autumn ballot. Industry and labor wanted to hold off to see if they could beat the ban clearcutting referendum in a head-on fight.

In early August, King decided to call the Legislature into special session to approve putting the agreement (by then called the "Forest Compact") as a competing measure on the ballot. As legislative consideration loomed other stakeholders who had been left out of the negotiations began to make noise. Small woodlot owners got loopholes inserted into the deal for those who own less than 100 acres. The Maine Municipal Association balked at proposed new stipula-

tions for adopting local timber harvesting ordinances but was persuaded to go along. The Sportsman's Alliance of Maine got the ecological reserves provision watered down. *Only groups supporting the ban clearcutting referendum were excluded from all negotiations.*

Despite the broad coalition assembled to push the Forest Compact, many members of the public remained skeptical. Skepticism turned into widespread public antagonism toward the Compact at legislative hearings across the state in late August. Nevertheless, King and his stakeholders coalition convinced a majority of the legislature in early September to send the proposal to the electorate on November 5. So voters will face three choices on referendum question number 2: 2A is the original referendum to ban clearcutting and set other new logging standards; 2B is the Compact for Maine's Forests; and 2C rejects both the citizens' initiative and the competing measure.

The three camps have staked out widely divergent territory. Ban Clearcutting proponents, running an all

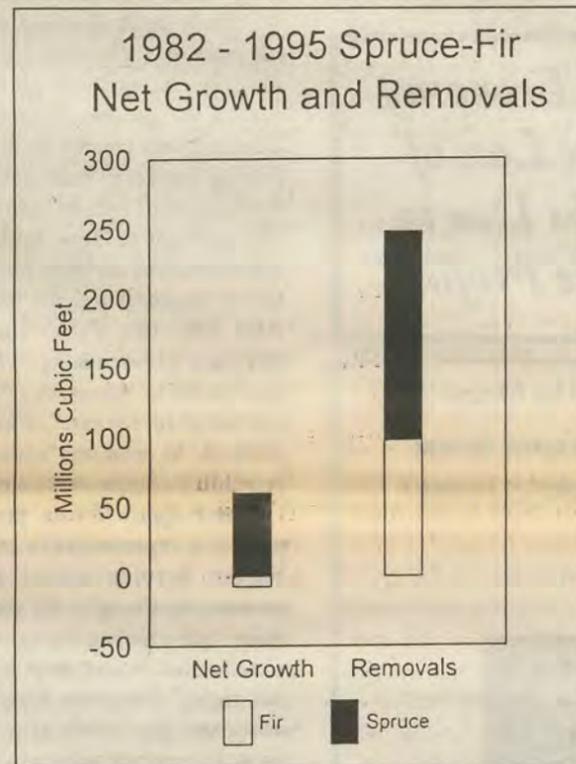
volunteer campaign, have generated a remarkable amount of attention and news coverage in support of 2A. They are distributing a tabloid called *Maine Forest Times* and a documentary video called *The Paper Colony*. Still, in the age of sound bite politics, their message needs to reach a lot of swing voters through TV spots and full-page newspaper ads highlighting the problems of clearcutting and the shortcomings of the Compact. That takes big bucks. (Contact Ban Clearcutting, PO Box 2218, Augusta, ME 04338; 207-623-7140.)

Forest Compact advocates, with the backing of millions of dollars from the forest industry, are saturating nearly every medium in the state with their message to vote for 2B. In one slight miscalculation, before the Compact was passed by the Legislature they printed 40,000 bumper stickers urging a no vote on the referendum. (If you want one of the obsolete stickers as a collector's item contact Citizens for a Healthy Forest & Economy, PO Box 4690, Portland, ME 04112; 207-780-0199.)

While late to jump into the game, private property rights extremists and other ultra right-wingers have taken up the banner for 2C. Many claim both of the other choices are part of a socialistic conspiracy to cede the freedoms of US citizens to a global government run, mostly covertly, by the United Nations. They suggest that landowners should be able to clearcut and overcut their land if they want. Several ad hoc groups are fighting to lead the none-of-the-above movement. They could probably arrange a good buy on 40,000 obsolete just-vote-no bumper stickers, except there is no "no" option. (Contact Unorganized Territories United, Maine Freedom Fighters, Family Forestry Coalition, Maine Conservation Rights Institute, or Mouseketeers for Clearcuts.)

By late September, polls showed half to two-thirds of the voters favored 2B, the Forest Compact. However, the polls did not show how many people understand the Compact. If any option wins a majority, it prevails. If 2A or 2B wins more than one-third but less than one-half of the votes cast, the higher scoring proposal will go to another vote by itself in the next statewide election. Even if one of the options wins a majority, the debate is far from over. If the citizens' initiative (2A) passes, the legislature will quickly start retooling it. If it does not pass, Ban Clearcutting backers are threatening to again push for a prohibition on clearcutting. If the Forest Compact (2B) passes many of its provisions will go through drawn-out rulemaking and dealmaking. If none-of-the-above wins (2C) all heck will break loose.

Industry Has Cut Spruce & Fir Four Times Faster Than They Grow Back



Maine Woods Watch

filed an eviction notice because Pray has not complied with the terms of his lease.

At the national level congressional ratings for 1995-96 have just been released by the League of Conservation Voters. Maine's delegation: Sen. William Cohen 70%, Sen. Olympia Snowe 59%, Rep. James Longley 31%, Rep. John Baldacci 88%. (Contact LCV, 1707 L Street, NW, Washington, DC 20036.)

One lobbying group that rates itself at the top is the Sportsman's Alliance of Maine. In a recent fundraising letter the group said, "Without question, SAM is the most powerful special interest group in the state." They finally admitted they represent a special interest, not the public interest.

Just My Opinion: There is endless talk lately about moving away from command-and-control regulation to collaborative approaches to conservation and environmental protection. Do the new ways work or are we just getting fooled more often? Conservationists

and other citizens are seeking trust everywhere these days in Maine. And coming up empty most of the time. There is widespread distrust of the forest industry. Elected officials, from the governor to the congressional delegation to legislators, appear to be tight with industry on virtually every environmental issue touching the Maine Woods. The Department of Conservation and Maine Forest Service seem to remain captives of the forest industry. LURC had a reputation for some independence, but that has been badly corroded.

How many times can we stand to be fooled? Conservation groups that negotiated the Forest Compact with the industry have said it was grounded in trust. But the industry showed it cannot be trusted when it fought to keep the Compact off the ballot so it could try to defeat the referendum thus removing all pressure for reform. The industry showed that it cannot be trusted when it broke the rules and lobbied LURC to weaken the plan for the Maine wildlands. The industry showed that its trust is suspect when it claimed to support salmon preservation, but worked to

stop Endangered Species Act listing on Maine rivers where the fish are obviously in serious jeopardy. The industry showed that its trust is suspect when it withdrew its support for the Northern Forest Stewardship Act in September.

There is indeed a crisis of confidence in conservation in Maine today. Public officials need to remember they are supposed to represent and safeguard the public interest. Industry folks need to gain an appreciation of the depth of distrust they have earned. Conservation representatives need to think hard about the trustworthiness of those with whom they are partnering. Citizens need to ask critical questions before jumping on the latest "moderate solution".

We sometimes speak of planning for the seventh generation. Henry David Thoreau first visited the Maine Woods precisely 150 years ago this fall. That is about seven generations ago. What have we done to the woods in that time? What are we doing to preserve and restore the wild in the remaining wildlands?

Passing Thoughts: It is not over yet, but 1996 may be a landmark year

for the passing of notable people who left their mark on conservation in Maine. Edmund Muskie wrote the original Clean Water and Clean Air Acts and helped engineer creation of the Allagash Wilderness Waterway. Peggy Rockefeller established the Maine Coast Heritage Trust. Bessie Phillips quietly protected thousands of acres in the Rangeley Lakes region. Roger Tory Peterson spent years at Camp Chewonki in Wiscasset learning to teach the love of birds and nature. Tom Cabot personally protected dozens of islands by donating them to conservation agencies and groups and by helping start Maine Coast Heritage Trust and the Island Institute. Betty Noyce supported the Island Institute and other conservation efforts.

They made mistakes, but they tried and they made a difference. A generation of environmental leaders is passing. What are you doing to demonstrate conservation leadership for your generation?

Jym St. Pierre, *RESTORE: The North Woods*, 7 North Chestnut Street, Augusta, ME 04330, (207) 626-5635.

The Forest Compact: A Happy Day for Cynics

by Mitch Lansky

Part I Similarities to the Forest Practices Act

One of the more depressing things I sometimes do is read documents I wrote years ago. What depresses me is that too often I sounded cynical, and too often I was right. And worse, too often the writing still applies to today.

Pages 361 to 365 (which I wrote five or six years ago) of my book *Beyond the Beauty Strip* describes how the Forest Practices Act (FPA) of 1989 was created. The FPA was a collaborative effort, stemming from the Environmental/Industrial Forum initiated by Maine Audubon Society in 1986. The Maine public was just becoming aware of the massive clearcutting and herbicide spraying programs of the time, and a number of towns had passed forest practices ordinances. The

forest products industry feared that this trend would continue and that stricter state-wide regulations would be sure to follow.

My book describes the industry strategy of first trying to ward off regulations through denial, then, when it was clear that the public didn't believe industry's happy news, joining with MAS to help control the process. Once in control, industry representatives found numerous ways to weaken the final product. When the process was over, representatives of both the forest products industry and environmental groups congratulated themselves on finally "regulating" forest practices. The forestry Compact was created in a similar manner by some of the same groups using the same strategies.

De Nile is in Africa: In response to the referendum, forest industry groups, such as Citizens for a Healthy Forest and Economy (CHFE), declared that there is no problem in the woods. CHFE director, Bill Vail, declared in an

editorial about the latest US Forest Service inventory of the Maine woods that, "no matter how you slice the figures, the conclusion is clear. Our forests are healthy and flourishing." In contrast, Vail claimed that the referendum is a drastic solution to a non-existent problem. If the referendum passes, Vail asserted, there will be mill shutdowns, job losses, and even destruction of wildlife.

If it ain't broke: In a recent video, Chuck Gadzik the director of the Bureau of Forestry, stated that the public "perceives that there is a problem, and that's a problem." Apparently, if the public perceives that there is a solution, that is a solution. Despite claims that there are no real problems in the industrial forest, and despite claims that the referendum is "overly complex" leading to a "bureaucratic nightmare," CHFE has embraced the "more moderate" Compact which offers 27 pages of apparently acceptably complex "solutions" to the non-problems.

Early polls showing strong public support of a clearcut ban convinced industry strategists to go into phase 2: control the process. Like the FPA, the Compact was created by a collaborative process between "reasonable" environmental groups (which have been reasonable enough to have timber-industry representatives on their boards of directors or trustees) and the forest industry. And like the FPA, the Compact promises great results. The FPA was advertised to promote a "healthy and sustainable forest." The Compact promises to promote "sustainable forest practices throughout the state."

Just right: When the FPA rules passed, a representative of the Maine Forest Service noted that forest landowners thought the rules were too strict and environmentalists felt they were too lax, "so we must have got them just right." Governor King has already observed that with Mary Adams (a property-rights advocate) against on one side and Jonathan Carter on the other, "we must have gotten it just right." I can imagine King Solomon using the same argument. If he had cut a disputed baby in two he could have claimed that he got it "just right" when both of the women claiming to be the baby's mother became hysterical. A compromise is not proven "good" simply because some people from opposing sides do not like it.

Model of what? In 1990, Roger Milliken, writing in Maine Audubon Society's journal *Habitat*, proclaimed that the FPA "provides a model of what can happen when we decide as a society to move beyond simplistic divisive rhetoric and address environmental questions as complex, interrelated issues driven by economic forces and social values." Similar claims are being made about the collaborative effort surrounding the Compact.

Ironically, at the time of the FPA, Milliken was on the board of directors of both the Natural Resources Council of Maine and the Maine Forest Products Council. During the Compact negotiations Milliken was no longer on the board of NRCM, but he was on the board of directors for The Nature Conservancy, another group engaged in the negotiations.

For all this lofty talk, less than five years after its implementation, there are few knowledgeable observers of Maine's forest who would defend the FPA as having achieved its goals. The fact that the same groups who framed the FPA have now "crafted" a new forestry bill is a tacit admission of past failure.

Compromising compromise: When Maine Audubon Society submit-

In a recent video, Chuck Gadzik the director of the Bureau of Forestry, stated that the public "perceives that there is a problem, and that's a problem." Apparently, if the public perceives that there is a solution, that is a solution.

ted the FPA after years of collaboration with forest industry representatives, forest industry lobbyists promptly submitted a competing bill that was uncompromisingly favorable to industry. The legislature combined the two competing bills to create a thoroughly compromised bill.

After the negotiations were completed for the Compact, the Natural Resources Council of Maine informed referendum supporters that they should now declare victory, because referendum pressure had allowed responsible groups to force significant improvements to forest policy. When referendum supporters and myself were informed of these improvements, we were concerned about serious flaws and deficiencies and asked if it was too late to renegotiate on some points. No, we were informed, that was not possible because of the fragility of the agreement.

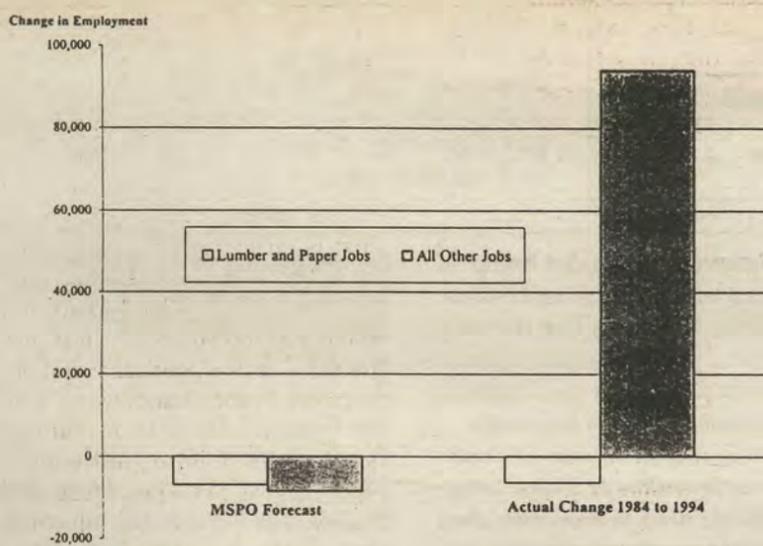
A short time after the Small Woodlands Owners of Maine (SWOAM) and the Sportsmen's Alliance of Maine (SAM) got involved in the negotiations, changes were made to further weaken the bill. Establishment environmental groups displayed a sensitivity to the concerns of industry and these other groups, but were incredibly insensitive to a group that had gotten 56,000 signatures to stop abusive forestry practices. And then the legislature got a hold of the Compact...

Strange bedfellows: Because there were competing bills for the FPA, the political alignments were not quite the same as they have been for the Compact, although the split between establishment environmental groups and environmental activists was the same. The public hearings on the Compact, however, displayed some of the most bizarre alliances in recent memory. On the one hand there was Brownie Carson of NRCM and Thomas Urquhart of Maine Audubon Society in fellowship with Doug Denico of SAPPi and Si Balch of Boise Cascade. On the other hand was Jonathan Carter of Ban Clearcut on the same side of the aisle with Michael Coffman of MECRI (a property-rights group), and timber-liquidation contractors such as Trott, McPherson, and Haynes.

Justified: Just because there are similarities in the creation of the two

From 1984 to 1994 Maine's Economy Gained 87,000 Jobs Despite Loss of 6,400 Mill and Logging Jobs Due to Quest for Greater Corporate Profits

Comparison of Employment Changes Projected by Maine State Planning Office as a Result of Referendum Versus Actual Employment Changes in Maine Between 1984 and 1994



Comparison of Employment Changes Projected by Maine State Planning Office as a Result of Referendum Versus Actual Employment Changes in Maine Between 1984 and 1994

MSPO Projection	Maine Employment by Industry				
	Lumber	Paper	Lumber/Paper	All Other	Total
1997	15,000	15,000	30,000	695,000	725,000
Post-referendum	11,200	11,800	23,000	686,400	709,400
Net Change	(3,800)	(3,200)	(7,000)	(8,600)	(15,600)
ACTUAL					
1984	14,180	18,310	32,490	413,090	445,580
1994	10,540	15,530	26,070	507,340	533,410
Net Change	(3,640)	(2,780)	(6,420)	94,250	87,830

Note: MSPO estimates there would be about 15,000 lumber jobs in 1997. This seems unrealistically high. In 1994 employment in the lumber industry was only 10,540.

Source: Maine Department of Labor, *Non-Farm Wage and Salary Employment (1984 to 1994)* and Maine State Planning Office, *Economic Impact of the Citizens' Initiative to Promote Forest Rehabilitation and Eliminate Clearcutting (1996)*.

bills, does not mean that there will be similarities in results. Here, therefore, is a section by section summary indicating why I feel my cynical attitude is justified:

Part II Insignificant Changes

1. Something Fishy

There were six sections to the Compact when submitted, but seven when passed. Representative Paul Jacques (D-Waterville) moved the legislature to add a section calling for a study on the impacts of logging on cold-water fisheries with a stirring speech. "I remember the first brook trout I caught, where it was, and when." In contrast he couldn't remember his first date. "I don't remember who she was, where we went, or what we did." I wonder if Representative Jacques has considered dating a trout?

Studying a problem is hardly an alternative to actually implementing solutions. I can remember the legislature studying forestry issues a number of times (by setting up "balanced" committees with industry representation). I remember when it was, where it was, and what they promised. After the studies were completed, I can't remember the legislature actually *solving* any of the problems they identified. There is no when, where, or how. They didn't do it, and the forest is my witness.

2. Teach Your Children Well

The Maine Forest Service is directed to employ a "natural resource educator to inform the public, including school children, about forestry issues. Further, there will be a "balanced" advisory committee, packed with timber industry representatives, to help figure out what the educator should be saying.

With such a committee, and with Department of Conservation commissioners coming directly out of the timber industry, do you think this educator will be telling little children about the deficiencies of industrial management? Do you think that large industrial clearcuts and heavy highgrading by timber contractors will be corrected by better "education"?

3. Damming Liquidators

The Compact members could not agree on what to do with cut-and-run speculators. They got hung up on definitions of the problem and discomfort over solutions. Instead of offering a provision to stop such practices, the Compact offers to study the issue next year. We might even get to vote on further restrictions if the study determines that the Compact doesn't fully address the problem.

The problem of liquidation cutting and forest conversion has already been "solved" numerous times in Maine. The Tree Growth Tax Law was supposed to stop such practices, but did not. LURC zoning was supposed to stop such practices, but did not. The Forest Practices Act was supposed to lead to a "healthy and sustainable forest," but did not. The Northern Forest Lands Council had such practices as their *primary focus*. This was a multi-year, multi-million dollar effort. Somehow their attention strayed away from the most direct solutions (such as regulation, zoning, or tax penalties) because there was no "com-

mon ground." Instead they recommended current-use taxation, which we already have under Tree Growth. And now the Compact, having failed to resolve this issue, will have the experts study it again. Later.

4. Maybe Just a Little Ecological Reserve?

The Compact originally suggested setting up a system of ecological reserves of 12-15,000 acres on public lands. The legislature was aghast that 7/100 of 1% of the State of Maine might have trees that would, as former legislator and now LURC commissioner Malachi Anderson put it, "grow old and die and then fall over and rot unused." So the reserve size was cut back to 8-10,000 acres, 5/100 of 1% of the state.

The Compact stipulates that the state can add no more acres to a reserve system until 1998. And further, to placate SAM, traditional recreation, including hunting, fishing, and trapping, will be allowed on the "reserves." Any life forms but trees are game.

Why environmental groups would have to negotiate with industry to recommend that a minuscule proportion of our public lands can be used as we see fit is beyond me. Why sportsmen can not live with the possibility of restrictions of their activities on a tiny fragment of Maine is also beyond me. Although such practices may be appropriate in some ecological reserves, they might not be in others. This bill, therefore, sets a bad precedent.

The Maine Forest Biodiversity Project has been preparing to recommend a system of reserves anyway. As member of that Project (just barely hanging on), I can tell you that I was not consulted on this trivialization of conservation biology. The public has not been well informed of the purposes and justifications for reserves, which explains why the legislature so easily cut the reserve system down to size.

Compact supporters have used ecological reserves as a political football, violating the years of consensus building and negotiations. The token reserves were put in to sweeten a sour deal. Those who see a need for larger reserves view the Compact as a serious insult. The public may be lulled to think these token reserves are sufficient to protect biodiversity, stalling more serious efforts.

Ironically, Compact supporters are trying to create reserves through regulation. Almost all Biodiversity Project

We are told to have faith in people who were wrong about the FPA and who, during the debate over the referendum, have consistently misled the public.

members (with a couple of dissenting votes, mine being one) opposed using regulations to create reserves. Is this what is called "situation ethics."

5. Timber Harvest Rules

The compact tinkers with the same clearcut variables that made up the core of the FPA—the definition and maximum size of clearcuts, and the configuration of separation zones around the clearcuts. This is one of the few sections of the Compact that impacts cutting (rather than just studies the problem).

Environmentally-Minded Pilots Needed



Mitch Lansky, Rudy Engholm, president of Northern Wings, and John Cooper in front of a Cessna plane.

Northern Wings, Inc.—a non-profit organization headquartered in Maine and formerly known as the New England chapter of the *Environmental Air Force*—provides aviation services to non-profit environmental and conservation groups throughout New England and upstate New York. Since 1992, FAA-certified NWI volunteer pilots have maintained a flawless safety record while donating more than 400 flights to over 50 organizations. In addition to monitoring land trust easements, conducting wildlife counts, transporting injured animals, and providing overflights for photographers, scientists, and potential conservation donors, NWI overflights have also helped to illuminate land use issues for media representatives and policymakers at

both state and local levels.

Are you a pilot who is interested in volunteering flights in New England or New York using your own or a rented aircraft? If so, consider joining NWI's 60 existing pilot members. Prospective pilots must meet all applicable FAA currency requirements, and must possess either an instrument rating, a commercial license, or at least 500 hours logged as a private pilot. Interested pilots and environmental organizations wishing to take advantage of these aviation services may contact: C. Rudy Engholm, President, Northern Wings, Inc., RR2, 2084A Gurnet Road, Brunswick, ME 0401. Tel. (207) 721-0228; Fax (207) 729-9678; E-mail: rengholm@biddeford.com

Current restrictions under the FPA create hurdles that are subterranean. The Compact raises some of these standards to be deep enough below the surface of the earth so that almost all landowners (except those severely dragging their feet) can clear them with no effort.

The Compact would allow clearcutting only by permit, but there are numerous exemptions (for salvage, for example) and a variance to boot. Although the standards sound restrictive, just how restrictive they might be is up to forester interpretation and forester integrity. In this regard, based on years of observance, I have concluded that industrial foresters have more cellulose, than moral, fiber.

Gone with the wind: For example, clearcuts would be allowed in stands where partial cuts would lead to a high risk of windthrow. To Forester Gordon Mott, who engaged in some of the negotiations for NRCM, this is not an open invitation to clearcut spruce-dominated softwood stands. Such stands can be windfirm if cutting is light and restricted mostly to suppressed trees. This is confirmed in accepted silvicultural literature. But Si Balch, forester for Boise Cascade (or is it Mead?) and president of the Maine chapter of the Society of American Foresters, has told public gatherings that his company tried partial cutting in spruce-fir stands, but the trees blew over. So now they just use even-age management. Whose concept do you think would prevail?

Clearcut cut-off: The cut-off point

for a "clearcut" changes from 30 square feet of basal area of trees 6 inches in diameter to 45 square feet of basal area of trees 4 and 1/2 inches in diameter. In some circumstances, a clearcut under the FPA definition would not be a clearcut under the Compact definition if there is an abundance of small-diameter trees. This is the only stocking standard limit to cutting on hardwoods, mixedwoods and softwoods (i.e., it is one size fits all). This is a political definition, not a scientific one. Landowners who do not want to clearcut by permit can cut down to this limit, regardless of forest type. Leaving 45 square feet of basal area per acre on vast areas of softwoods is hardly "sustainable" forestry. One can end up with an understocked stand of poor quality trees that are not windfirm.

More excuses: The Compact allows landowners to clearcut to remove "poor-quality, intolerant, understocked, short lived or mature overstories where the retention of the residual overstory trees is not justified..." Since there are no restrictions for creating such stands (by cutting down to 45 square feet of basal area), landowners need never run out of qualifying stands to flatten.

Diversity of clearcut configurations: The Compact changes the maximum size of clearcuts from 250 acres to 75 acres. This sounds significant, but it isn't. Over 90% of all recent clearcuts have been under 75 acres. Those who want to clearcut large areas have discovered that it is easier to do so with clusters of 35 acre clearcuts, due to minimal

sizes and restrictions for separation zones for clearcuts of this size (or smaller).

The Compact addresses this "loop-hole" by requiring that all separation zones (except on parcels smaller than 100 acres) be at least equal to the size of the clearcuts. On the ground, this would make little difference to smaller clearcuts, and would actually require smaller separation zones for clearcuts over 35 acres. (See illustrations on this page.) The FPA now requires separation zones 1.5 times the size of clearcuts larger than 35 acres.

Incredibly, Maine Audbon's Rob Bryan argues that the Compact would increase the diversity of sizes of clearcuts and that this is good for biodiversity. Even though he cites bird researcher John Hagan in this regard, Hagan has written that the Compact's separation zone requirements could lead to increased forest fragmentation.

Upper limits: A Maine Forest Service survey of forest practices 1991-1993 found that 91% of all clearcuts in the state were on industrial and large non-industrial lands. Statewide, 0.37% of the forest was being clearcut per year on average. The Compact would restrict large landowners from clearcutting more than 0.25% of their land per year. With plantations and thinnings, however, landowners could increase clearcutting to 1% of their landownership per year. This latter figure is just about what the most aggressive clearcutters are doing now—and they are the ones who do the most planting and thinning.

Landowners with less than 100,000 acres can clearcut up to 10% of their land (or 100 acres, whichever is greater) in one year. However, no more than 10% of their land (or 100 acres) can be in a clearcut condition at one time on a rolling basis. According to the Compact, a clearcut is no longer a clearcut when adequate regeneration of any commercial species is more than 5 feet high. Poplar sprouts can grow 5 feet high in one or two seasons.

Overstory story: If a landowner removes all the merchantable timber from a stand but there are enough saplings (of any species) more than 5 feet high, this is not a clearcut; it is an "overstory removal." There are no restrictions to overstory removals. There are also no immediate restrictions (there might be later under the audit program for the biggest landowners) for doing heavy cuts that encourage advanced regeneration. Those landowners who want to liquidate mature timber can thus create ample opportunities despite the clearcut limitation.

6. Voluntary Audit Program

The 15 largest forest landowners agreed to abide by Compact restrictions and audit programs voluntarily regardless of whether the Compact is approved by the public. Therefore, it doesn't matter that much if the Compact passes or not. Since the provisions are voluntary, there is nothing to stop these companies from doing the Compact's concept of "sustainable management" right now. In fact, all of the paper companies who are signatories to the Sustainable Forestry Initiative of the American Forest and Paper Association would insist that they already are doing "sustainable management."

The timber industry is enamored of "voluntary" regulations. Just recently the timber industry convinced the Land

Compact supporters have used ecological reserves as a political football, violating the years of consensus building and negotiations. The token reserves were put in to sweeten a sour deal. Those who see a need for larger reserves view the Compact as a serious insult. The public may be lulled to think these token reserves are sufficient to protect biodiversity, stalling more serious efforts.

Use Regulation Commission that zoning to restrict development in more remote regions should be voluntary. As Doug Rooks, editor of the *Maine Times* so eloquently responded, "LURC, and Gov. Angus King, through his selection of new board members, don't seem to understand that the paper industry could already do what it wanted to if LURC didn't exist."

The Compact would set up a "balanced" (with landowner representatives) audit committee to set benchmarks for "third party" auditors to follow. The committee would make decisions through "unanimous consensus." This means that any member has veto power

over any recommendation.

Sustaining what we don't want: The compact has a weak spot for plantations, and pesticides—aspects of forestry that the public does not like. The audit committee must set benchmarks that "ensure the appropriate establishment and distribution of plantations," and that "assure the prudent use of forest insecticides and herbicides..." items that come right out of industry's Sustainable Forestry Initiative. There is talk of "integrated pest management." Fifteen years ago, the state and industry got away with spraying millions of acres of forest with chemical insecticides for spruce bud-

Mead Acquires Boise Cascade's Northern Forest Holdings

by Jym St. Pierre

It's autumn. Time for another major paper company sale. I remember other falls and other sales in the past decade, such as 1987 when 800,000 acres formerly owned by Diamond International were put on the market, and 1989 when Georgia-Pacific announced it was buying Great Northern Paper in a hostile takeover, and 1991 when Bowater said it would pick up Great Northern for cheap because G-P wanted to dump it, and 1994 when Sappi Ltd. of South Africa trumpeted it was acquiring S.D. Warren in a heavily leveraged buyout.

Each time Maine has been caught unprepared to take advantage of the sale as an opportunity to acquire some of the lands most important to the public. Sometimes we lucked out and the ownership remained intact. Sometimes the lands were simply fragmented and sold to the highest bidder.

This year it is Boise Cascade. On September 30, Boise announced that it intends to sell its Rumford mill and 667,000 of timberland in Maine, New Hampshire, and Vermont to The Mead Corp. for \$650 million. Rumors had been circulating for some time that Boise wanted to sell its New England holdings. The company has been trying for years to crawl out from under a crushing debt. The Rumford mill is a good fit for Mead, the largest maker of school and home-office paper supplies in the world, which wants to expand in the coated paper market.

Mead, a \$5 billion company based in the mid-West, said it intends to make no major changes. That is good news and bad news. It is good news for the 1,450 employees who are getting a new boss. It is not so good news for conservationists who have

been alarmed at the way Boise has been intensifying both its industrial forest practices in Maine, New Hampshire, and Vermont and its anti-environmental political activities.

The sale raises plenty of important questions. For instance, what will be the forest practices of the new owner? Boise has run into a buzzsaw of controversy lately over clearcutting and aerial spraying of herbicides. Mead already controls nearly 1.4 million acres of forests in the US and has a reputation for not being shy about throwing its weight around to get its way on logging matters.

Will Mead support ongoing efforts in the northern New England states to expand public conservation lands? Mead is acquiring some of the most spectacular shoreland, mountain, and natural areas in Maine. It is disconcerting that the company recently led the charge to derail legislation that would have protected the 4,500 acre Mohican State Forest in Ohio from commercial logging.

How well will Mead run the mill? Under Boise the Rumford mill has had its share of water and air problems. So has Mead. Between 1988-1991 Mead had five accidents, leaks, or spills of chlorine gas which injured a total of 48 employees. In 1989, the company was named by the National Wildlife Federation as one of the 500 worst polluters in the United States. In 1994, Mead paid \$300,000 to settle EPA air, solid waste, and water violations at its Ohio and Michigan mills.

Will Mead continue to fund the Pulp and Paperworkers' Resource Council? During the past couple of years Boise employees from the Rumford mill have worked overtime to thwart a number of conservation initiatives in Maine and the Northeast. Boise has provided encouragement and major financial and other support for the group.

worms and called that "integrated pest management."

Knotty issues: The audit board will have to tackle three items that stumped the Council on Sustainable Forest Management—sustained yield, silvicultural guidelines, and landscape goals. Once again, if the audit board members had integrity, it is possible that the result of such benchmarks could be a true improvement in forest policy in the state. But note my previous comment on cellulose.

Unlike the Council, the audit board will give industry members veto power to prevent unwanted results. The Compact advises that the benchmarks be "practical, yet sufficiently flexible to encourage participation in the program by landowners representing a range of ownership sizes..." Since the program is voluntary, the question is how low must they go to get everyone to participate?

Goodies: There are rewards for those on the audit program (which for the first five years will be mostly the big landowners). For one, there will be "regulatory flexibility." All the timber harvest rules could be waived. For two, there may be "marketing opportunities." The landowners might be able to claim that they are certified "sustainable" and thus get more money or sell to more exclusive markets. And finally, there is the promise of some kind of tax benefits (yet to be spelled out).

7. Ordinance Hurdles

In case there are towns that feel that they need more protection than what the Compact promises, there is still the option of passing local ordinances. The Compact, which sets low hurdles for forest practices, sets higher hurdles for those who would restrict forest practices. The Compact does not prevent local ordinances, it just makes passing them much harder.

It ensures active involvement of all landowners who individually must be notified of any hearing. If a landowner feels he was materially harmed by lack of knowledge of an ordinance or amendment he can challenge the ordinance in court. Towns must use state definitions, even if they do not like these definitions. They must revise their ordinances to fit the language of the Compact. Town officials must also listen while Department of Conservation representatives lecture them or deluge them with "any reports, articles, treatises or similar materials published by acknowledged experts in the field of sound forestry or silvicultural management...that might apply to the proposed ordinance..." I wonder if the DOC officials will recommend that town officials read *Beyond the Beauty Strip*?

Conclusion

The major purpose of the Compact is not to make all forestry in the state "sustainable." It is to stop the referendum. There are aspects of the Compact that have the potential to incrementally improve forestry, but these aspects depend on the integrity of industrial foresters.

We are left to vote on a series of unknowns. We do not know who will be on the audit board. We don't know who will be the resource educator and what that person's agenda will be. We don't know much about the forest liquidation "study" or what form any subsequent legislation will take. We are told to have faith in people who were wrong

What Kind of Landscape Does the Compact Protect?

Supporters of the paper industry compact are promoting the impression that the proposed changes in clearcut size limits and separation zones are big improvements. But what would the future clearcut landscape actually look like under the compact? The clearcuts in this photograph range from about 14 to 24 acres, and many are separated by more than 250 feet.

Present Law

Currently (and under the compact), up to 5 acres is not a clearcut. Clearcuts up to 35 acres must be separated from other clearcuts by at least 250 feet. Clearcuts from 35 to 125 acres must have a separation zone of at least 1.5 times the area of the clearcut, and this separation zone must be at least 250 feet wide (a minimum of 500 feet between such clearcuts). Clearcuts from 125 to 250 acres require a 2 to 1 uncut area, with a minimum width of 500 feet. See A.

Paper Industry Compact

The proposed law stipulates a 1 to 1 uncut to cut

ratio regardless of size of clearcut. Although clearcuts between 8 1/3 to 35 acres would have *more* of a separation zone than they do today, clearcuts from 5 to 8 1/3 acres and from 35 to 75 acres would actually have *less* of a separation zone than under present regulations.¹ See B.

Comparing Clearcuts Today with Clearcuts Post-Compact

The difference in separation zones for approximately similar sized clearcuts will not be readily apparent, either in an individual clearcut or on a landscape level. See C. But since the proposed law eliminates the arbitrary 35 acre barrier that has resulted in most clearcuts now being under that size, we might actually expect to see larger clearcuts become more common, especially since the separation zone can be smaller than at present. See D.

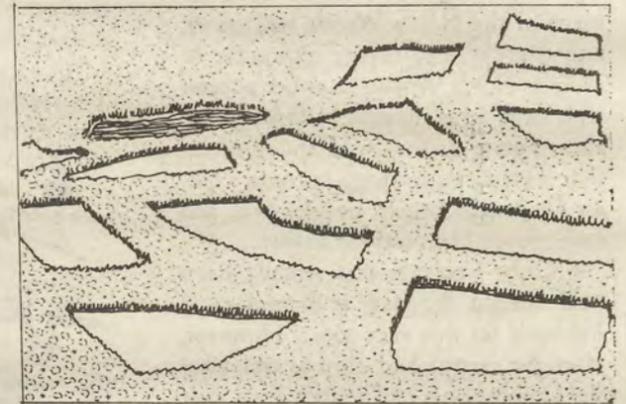
It is hard to predict the extent and size of clearcuts

and separation zones since there are numerous exemptions to all the standards regarding clearcut size, separation zone, and overall limits. The compact allows exemptions for participating in the audit program and for actual or anticipated "natural disturbance," as well as a provision for variances.

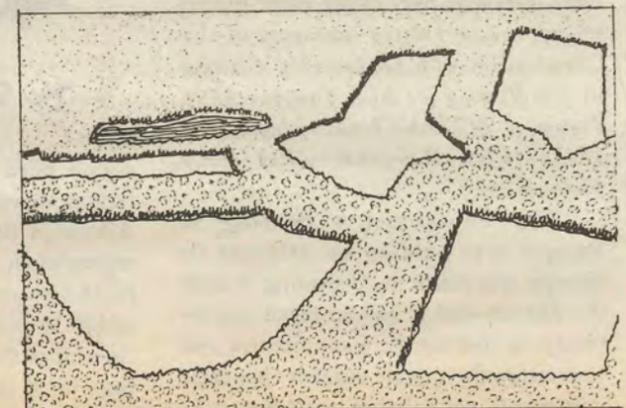
When faced with this kind of landscape, however, you do have to ask just what the separation zones are separating. If you accept the premise of clearcutting at this scale, it isn't obvious that one approach is necessarily better or worse than the other.



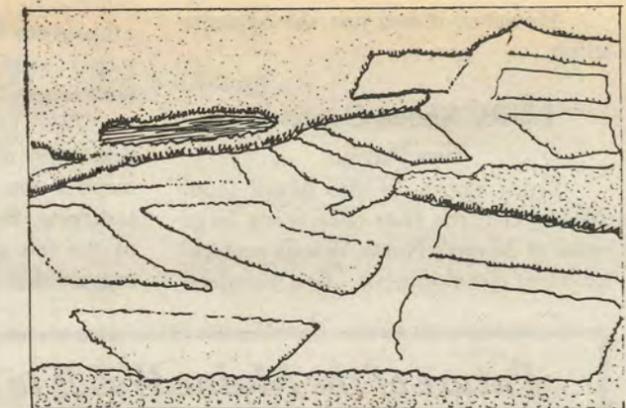
This photo of clearcuts near Bill Morris Pond was taken in August 1996. Images C, D, E, & F (at right) are based on this photograph.



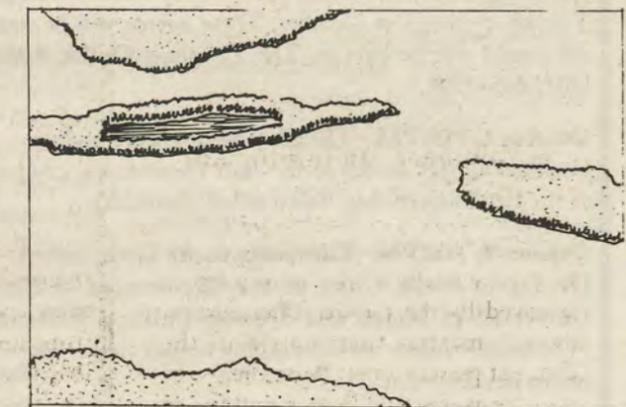
C. Post-Compact landscape closely resembles photo of current forest practices



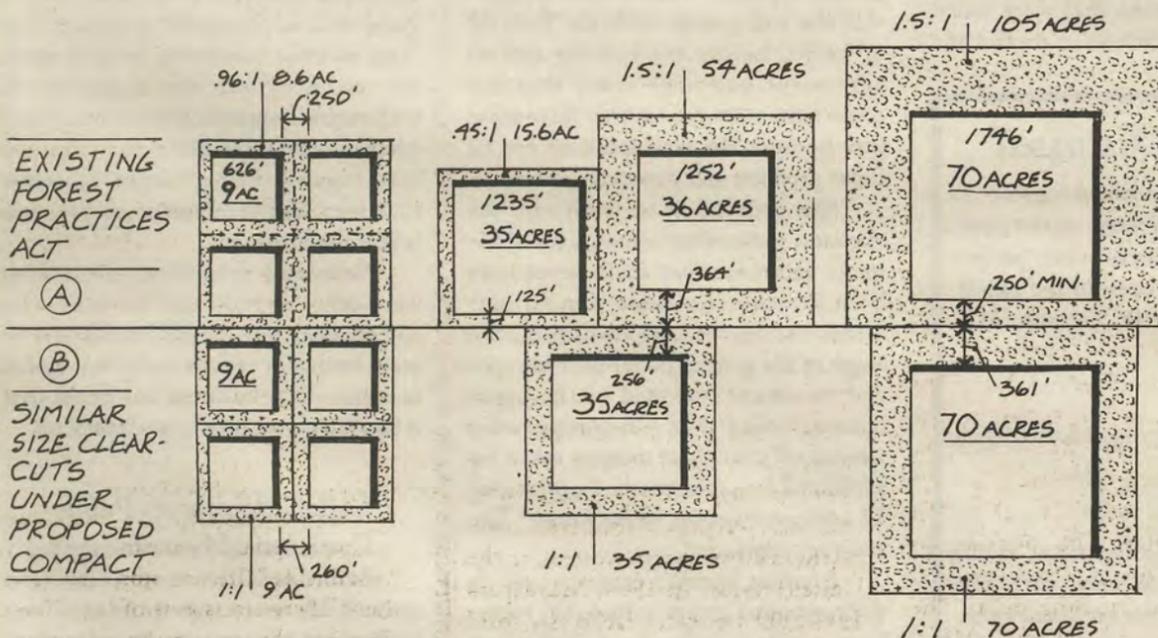
D. Compact may encourage larger clearcuts.



E. A Few Years Later—Clearcuts no longer called clearcuts. Separation zones are cleared.



F. Exempted landscape after 10 years



A (above the horizontal mid-line; and B (below) compare separation zones under the existing Forest Practices Act (A) and under the proposed Compact (B)

about the FPA and who, during the debate over the referendum, have consistently misled the public.

If the Compact passes, the legislature will not be interested in any new forestry legislation for at least 5 years when the Compact comes up for review. Until then, we will be told to "give it

time to work," just as we were admonished over the last five years with the FPA. With the FPA, clearcutting did decline, in spite of, not because of, the regulations. And the average size of clearcuts declined as well. Of course FPA supporters took full credit for these trends. But they ignored the fact that

most of the "partial" cuts failed to leave behind well-stocked stands with good quality and low stand damage. And they ignored the fact that some landowners are combining the "small" clearcuts into big clearcut clusters. It took a major effort to turn public opinion around. Investment in the Compact is an invest-

ment in time.

I've got good reason to be cynical. If the biggest clearcutters in the state, such as the South African corporation SAPPi are enthusiastic supporters of the Compact, one can bet that it will not lead to significant change. In other words, if SAPPi is happy, it's crappy.

LURC Rolls Over to Timber Industry Pressure - Again

by Jamie Sayen

On September 4 the Land Use Regulation Commission (LURC) held yet another public hearing in Bangor on its proposed Land Use Comprehensive Plan, the document that will guide the Commission's zoning decisions for the next decade.

The policies adopted in this Plan will determine where future development in the North Woods will occur, and thereby, the future character of Maine's North Woods: as either a forest with large areas devoted to forest-related activities such as wildlands protection, recreation, and logging, or as a forest filled with houses, people, pets, and cars—much like southern Maine.

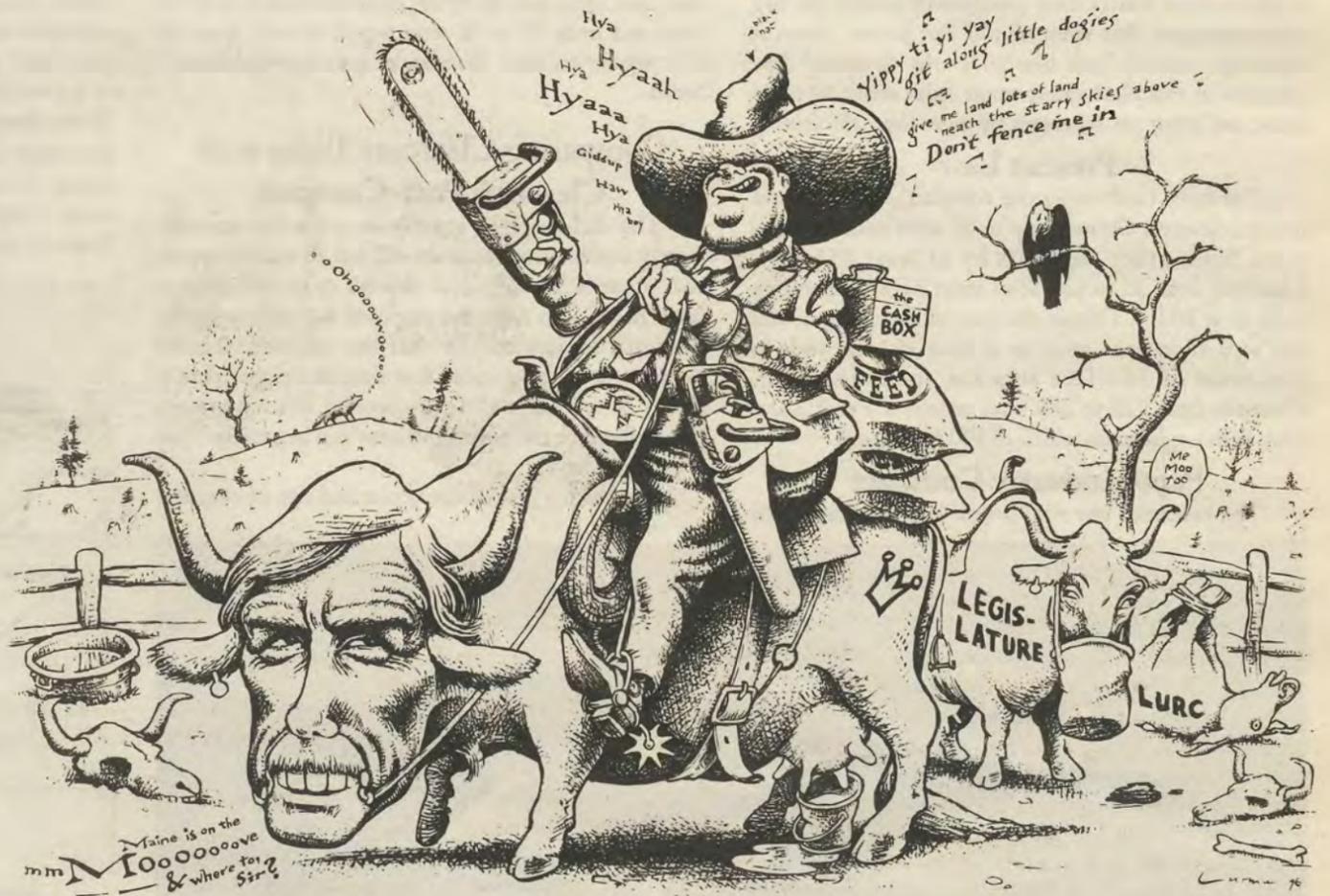
Eight hearings had already been held around the state in January and February on this very topic. However, after the record had closed, and after the Commission had indicated to staff what changes it wanted to make in the plan—in response to the public comments it had heard at the hearings—three representatives of the paper industry approached three members of the Commission with requests for changes in the Plan. (See *Mid Summer 1996 Forum*, p. 7 "Timber Industry Meddles in LURC Plan Revision—May Have Violated Law".)

The September 4 hearing in Bangor was held in an attempt to appease the public by providing it with the illusion that it had an equal opportunity to address the Commission and to reassure the private citizens that their comments were being considered as seriously as those of the paper industry executives.

However, it had just the opposite effect.

LURC Shows Contempt For Public

Once again, LURC heard from Maine citizens that they want large areas of Maine's North Woods protected from development. Two hundred



people filled the room in Bangor, some having driven three hours to be there. Although the paper industry was well represented, the vast majority of people in the room wanted LURC to take action to protect the North Woods. By the end of the five and a half hour hearing, 45 of the 66 people who testified supported stronger limits on development. Of the 20 people who testified in opposition to stronger limits, ten were employees or representatives of the paper companies or other large landowners.

The LURC Commission was noticeably unresponsive to the, by now, familiar concerns of citizens who were testifying. Body language and the tenor of the few questions that were asked suggest that little action to protect the

North Woods from development is likely to be taken.

Industry Again Subverts LURC Process

Unfortunately, the *Bangor Daily News* and *Portland Press Herald* failed to report on an incident that occurred at the hearing which has implications far beyond the future of the North Woods.

At the beginning of the hearing, the Chairman set the rules: given the over 200 people in the audience, people were told they must limit their testimony to three minutes.

That worked fine until the first forest industry representative came up to the microphone. Then it was revealed that she had spoken with the Director of LURC before the hearing and an agreement had been made that she could have more the allotted three minutes because she was speaking for 12 forest products and paper companies.

She proceeded to testify for 15 minutes, presenting complicated testimony and maps that could never have been presented in three minute segments. As the hearing continued, the anger of the general public over the special treatment provided to the paper industry boiled over. One speaker who was cut off after three minutes asked for additional time because he "represented 12 additional species in the forest." The audience applauded.

Another speaker representing an environmental group with 6,000 members asked, in vain, for 6,000 times three minutes. As speaker after speaker was told the three minutes were up, they argued back, trying to finish their testimony.

Given the three-minute time limit, there was no way that the information presented by members of the general public could be as detailed as that provided by the industry.

To make matters worse, following the 15 minute testimony of the industry representative, the Chair announced

that if any of the other paper companies wished to provide additional testimony they would be limited to one-and-a-half minutes each. Yet each of nine additional representatives of the same companies received the same three minutes as everyone else.

Ho-hum.

Timber Industry Strong-Arms Recreation Businesses

Some of the new testimony offered was quite remarkable: a sporting camp owner and a representative of the Maine Guides Association had both previously expressed significant concerns about increasing development in the forest. However, both are dependent on the good will of the paper companies to carry on their businesses. In both cases, the testimony was very supportive of landowners' interests and voluntary and cooperative conservation measures and very negative to regulation. It's clear that they had received some pressure before the hearing.

Noticeably absent from the hearing were other recreational business who had spoken out clearly in support of more stringent regulation in the earlier hearings. One business confirmed that it had been pressured not to speak up.

LURC Reinforces Public Cynicism of Government

Public confidence in LURC has again been shattered—ironically in a hearing intended to restore public confidence that LURC listens to private citizens with just as much respect as it listens to industry. Every member of the general public at that hearing left knowing that the paper industry does, indeed, receive special attention and that the voice of the paper industry is more important than that of the general public—in the eyes of LURC.

Is it any wonder that public cynicism in government is at an all-time high?

Future of the Maine Woods to be Discussed

The Patagonia Outlet and The Wilderness Society have joined together to give Maine citizens an opportunity to educate themselves on some of the issues appearing on the November ballot. They will be hosting a series of events on four Tuesday evenings in October. These events will be free and open to the public. All events will be held at: The Patagonia Outlet, 9 Bow Street, Freeport, ME, (207) 865-0506.

October 1, 7:00 PM - The Clearcutting Referendum

Jonathan Carter, leader of the Ban Clearcutting campaign, presented the details of the Ban Clearcutting Referendum (item 2A).

October 8, 7:00 PM - Economics & the Environment

Dr. David Field, Chair of the Department of Forest Management at the University of Maine and Spencer Phillips, Resource Economist with The Wilderness Society will discuss the impact timber harvesting has on Maine's economic development.

October 15, 7:00 PM - The Compact

Everett "Brownie" Carson, Executive Director of The Natural Resources Council of Maine, will present the details of the Forest Compact, the competing measure to the Ban Clearcutting Referendum (item 2B).

October 22, 7:00 PM - Your Turn to Speak

Join Maine citizens, poets, local musicians, conservationists, and others in love with the Maine woods for an evening exploration of our connection to the natural world. The Wilderness Society Northeast Regional Director Bob Perschel will lead a lively discussion of our unique land ethic. Join your neighbors in telling stories of how the Maine woods have touched your life.

The Song of the Dodo: Island Biogeography in an Age of Extinctions

The Song of the Dodo, by David Quammen, Scribner, New York, 1996, \$32.50.

Reviewed by Jamie Sayen

I gave this book to a friend to read while we were paddling down the St. John's River, Maine's wildest free-flowing river, this spring. About halfway through the book he said to me, "Now I understand why you are so insistent about the need for large ecological reserves."

Exactly. And this is why I urge everyone involved in discussions about the creation and design of ecological reserves to read this superb book. It makes the case to the intelligent, non-specialist, reader why large ecological reserves and Big Wilderness are essential to stave off further species extinctions, to protect viable natural systems, and to assure the evolutionary integrity of regions, continents, and the planet.

Quammen manages to pull off an extraordinary feat—mesmerizing the reader for over 600 pages while instructing her about the not always easy to understand tenets of conservation biology and island biogeography. Quammen, who writes for *Outside* magazine, is a gifted writer; he has traveled the world over to visit some of the most important island habitats; he regales the reader with a truly wild adventure story, including his near-miss as an item on the menu of a nine-foot long kimodo dragon.

He takes us on an historical tour of the evolution of ideas about evolution and island biogeography, so that we understand both the biological and historical context of evolving conservation biology that is so central to all conservation struggles today. In the process he rescues the other discoverer of evolution



theory, Alfred Russel Wallace, from obscurity. Quammen also introduces us to the founders of the discipline of conservation biology—E.O. Wilson, Michael Soulé, Jared Diamond, Thomas Lovejoy, and many others.

The book is fun to read; it is highly instructive, yet never overwhelming. Here are a few notes I took on Island Biogeography while reading this wonderful book.

- Insular evolution "tends to be a one-way tunnel toward doom." (p. 147)

- In 1943 Philip Darlington wrote: "Limitation of area often limits both number and kind of species of animals in isolated faunas." (p. 204)

- "The larger Galápagos islands. . . support more different species than the small islands. . . . Large areas harbor more diversity of finches than small areas." (p. 224)

- "An island generally contains less than its share of species diversity, relative to a nearby continent. That is, the island harbors fewer species than does

an equal area of mainland habitat." (p. 255)

- "Small islands gain fewer species by colonization than large islands do. And small islands lose more species by extinction." (p. 256)

- "Islands are where species go to die." (p. 258)

- In the past 400 years human-caused "extinctions of species has been largely an island phenomenon. Recognizing and understanding that phenomenon is the best route toward understanding our present crisis of extinctions on the mainlands." (p. 263)

- An ecosystem is "an intricate network of relationships, including those between predators and their prey, between flowering plants and their pollinators, between fruiting plants and the animals that disperse their seeds. Each such relationship constitutes a link between trophic levels. . . . [Ecologist Jared Diamond has written]: 'Since species abundances depend on each other in numerous ways, disappearance of one species is likely to produce cascading effects in abundances of species that use it as prey, pollinator, or fruit disperser.' At the low extreme of abundance, of course, a species faces rarity unto extinction." (p. 342)

- "If what we have said is correct, it is not possible to preserve in a State or National Park, a complete replica on a

small scale of the fauna and flora of a much larger area." (Frank Preston, 1962)

- Quammen summarizes conclusions reached by Jared Diamond in "The Island Dilemma: Lessons of Modern Biogeographic Studies for the Design of Natural Reserves" in 1975:

- ↳ A reserve newly isolated will temporarily hold more species than its equilibrium number—but that surplus of species will eventually disappear, as relaxation to equilibrium occurs.

- ↳ The rate at which relaxation occurs will be faster for small reserves than for large ones.

- ↳ Different species require different minimum areas to support an enduring population.

- ↳ At the end of the paper he offered a set of 'design principles' for a system of nature reserves, including:

- ↳ A large reserve can hold more species at equilibrium than a small reserve.

- ↳ A reserve located close to other reserves can hold more species than a remote reserve.

- ↳ A group of reserves that are tenuously connected to—or at least clustered near—each other will support more species than a group of reserves that are disjunct or arrayed in a line.

- ↳ A round reserve will hold more species than an elongated one. (p. 445)

NH Biodiversity Assessment Now Available

"As part of the biological community, humanity depends on natural systems for survival."

—New Hampshire's Living Legacy: The Biodiversity of the Granite State, p. 4

The New Hampshire Fish and Game Department Nongame and Endangered Wildlife Program has just published an important book: *New Hampshire's Living Legacy: The Biodiversity of the Granite State*, edited by James Taylor, Thomas D. Lee, and Laura Falk McCarthy. This attractive 98-page publication was a collaborative effort of scientists from the US Fish & Wildlife Service, the USDA Forest Service, the NH Fish & Game Department, the Society of American Foresters, the University of New Hampshire, and the NH Department of Economic Resources and Development.

New Hampshire's Living Legacy has chapters on: Biodiversity; Factors Affecting Biodiversity in NH; Natural Communities; Species Diversity (with sections on: mammals, birds, reptiles, amphibians, fish, insects & spiders, freshwater mussels & clams, marine

invertebrates, vascular plants, bryophytes, lichens, and marine algae); and Genetic Diversity.

Here's a quote from the back cover:

Aldo Leopold made one of the most compelling cases for the conservation of nature's diversity when he noted, 'To keep every cog and wheel is the first precaution of intelligent tinkering.' In New Hampshire, scientists are still discovering and naming the 'cogs and wheels' of our state's biodiversity. And, as educators, they are trying to create public awareness of the concept and its importance to all living things.

In New Hampshire's Living Legacy, scientists share their knowledge of this fascinating subject with people interested in the Granite State. Using this book as a foundation, citizens will be able to participate in decisions about how to conserve and enhance New Hampshire's biodiversity, and help ensure that future generations will inherit a world with all the necessary 'cogs and wheels.'

To get a copy of this essential publication, send \$9.95 to: Business Department, NH Fish & Game Department, 2 Hazen Drive, Concord, NH 03301.

Biodiversity & Ecological Reserves—The Meaning and Potential for NH

A November 9 Workshop
Sponsored by the Harris
Center and co-sponsored by
The Nature Conservancy &
University of New Hampshire
Cooperative Extension

Ellen Snyder, Wildlife Specialist for UNH Cooperative Extension will present her new slide show on biodiversity in New Hampshire. Next, Dr. Dave Capen of the University of Vermont will explain GAP analysis research in northern New England which systematically identifies keys to protecting biodiversity at the landscape level. Patrick McCarthy of the New Hampshire Chapter of The Nature Conservancy will outline the process by which New Hampshire is

working toward an ecological reserve system. And Jamie Sayen will discuss the potential for "Private Lands in an Ecological Reserve System" presented in his article in *Wild Earth*, a publication of the Cenozoic Society (Summer 1996). Rick Van de Poll of the Antioch Graduate School will be on hand to update us on the Forest Society manual he is developing for landowners interested in ascertaining their lands' biodiversity.

Note: For licensed foresters, participants will receive 3 CEUs toward recertification.

The workshop will be held on Saturday, November 9, 1996 from 8:30-12:30 at the Harris Center for Conservation Education, 341 King's Highway, Hancock, NH 03449. Tel. (603) 525-3394.

Wilderness Values: Egonomics or Ecological Capital?

by Bob Koch

Wilderness defenders ... should remember that economists are sometimes accused of knowing the price of everything and the value of nothing.
—Roderick Nash

By and large, land lovers have copped out, arguing for the protection of the land on every socio-economic basis they can think of. . . , save the ethical one.
—Charles E. Little

There are a few remaining remnants of intact wild lands scattered throughout the northeast large enough to be considered for wilderness designation and protection. Davis¹ identified three large roadless areas in the Adirondack Park that should be considered for such designation, and Sayen (Forum, Vol 3 #5)² proposed a network of 16 potential wilderness reserves in northern Maine, Vermont and New Hampshire as the core of the Headwaters Regional Wilderness Reserve System (RWRS). Both proposals are long-term strategies that show respect and sensitivity for established uses of private lands. Although public land acquisition would be necessary to fulfill the wilderness potential, both recommendations emphasize obtaining lands from willing sellers and recognize that some important private tracts may not be available for purchase until well into the next century.

The defining character of wilderness is large, unroaded natural ecosystems where "the earth and its community of life are untrammelled by man." Often perceived as "idle resources," designated wilderness is actually an evolving system that provides numerous benefits and valuable environmental services. As we continue to fragment and chip away at the remaining wild lands in the northeast the scarcity value of ecologically intact wild lands should continue to increase. Given several cen-

turies, nature could likely reclaim a degraded landscape as wilderness once again; but, we can not make wilderness. We can only destroy it or decide to preserve and protect what little remains. This quality of irreplicability should also enhance the value of wilderness. Should we, therefore, rely upon these and other traditional calculations of wilderness values for the designation of wilderness areas in the great northern forests?

Although wilderness provides an array of ecological goods, the decision to preserve wilderness is an inherently ethical choice. Because of this ethical component, and the complexity of interconnected biological functions, economic analyses of wilderness will consistently, and profoundly, underestimate the true value of wilderness.

Wilderness was originally set aside as a public good for instrumental purposes such as watershed protection, recreation, and scenic beauty (See "Wilderness As A Public Good"). For example, the Adirondack Forest Preserve (later redesignated the Adirondack Park) was established in 1885 to protect watersheds that would ensure an adequate supply of water for New York City and the state's canal system. Since land prices do not efficiently incorporate the societal functions of ecological capital and other external social values, left to the private market the wilderness "resource" will be under-allocated. What if the Adirondack Forest Preserve had not been constitutionally protected as "forever wild"? Imagine a resort on the summit of Gothics, or condos lining the shores of Lake Lila. Wetlands would be shopping malls. There would be more dams, more reservoirs, more floods. *More noise and less silence.*

Economists have long recognized the public good aspect of wilderness and have developed a number of advanced methodologies to better estimate the inherent values of wildness. However, deriving estimates of wilderness values contains a serious paradox. When we

discuss wilderness values, we confuse the concept of *monetary value* with our *value systems*. Unfortunately, such an approach forces us to put our value system on a scale of monetary relativity. When we ask "what is the value of wilderness?" we might also want to ask what are the dollar values of honesty, compassion, friendship, and our religious beliefs. Then, we could more rationally decide our value system based upon the expenditures of instilling those beliefs versus the benefits we gain from the resultant behaviors.

The major drawback with defending wilderness preservation on the economic mat is that all the inherent and non-consumptive values economists attempt to account for are strictly anthropocentric. What is the scenic value of unscathed mountains, *to us*? What are the recreational values, or option and vicarious values, *to us*? How much are the ecological services worth that we would otherwise have to substitute with alternative (and expensive) technology?

A second problem with economic (*egonomic*?) valuation of wilderness is the propensity for misunderstanding or misinformation. For instance, in deriving an estimate for the scenic and recreational value of eastern wilderness, acid rain could be considered beneficial, a sort of short-term quasi-public good that would add to the value of the wilderness resource. Because dead, crystal clear, lakes appear more scenic, they may temporarily attract additional tourism dollars which are then calculated into the valuation estimates. Furthermore, the tangible costs of preservation are much easier to estimate than the intangible, and often unknown, benefits of protecting wild places.

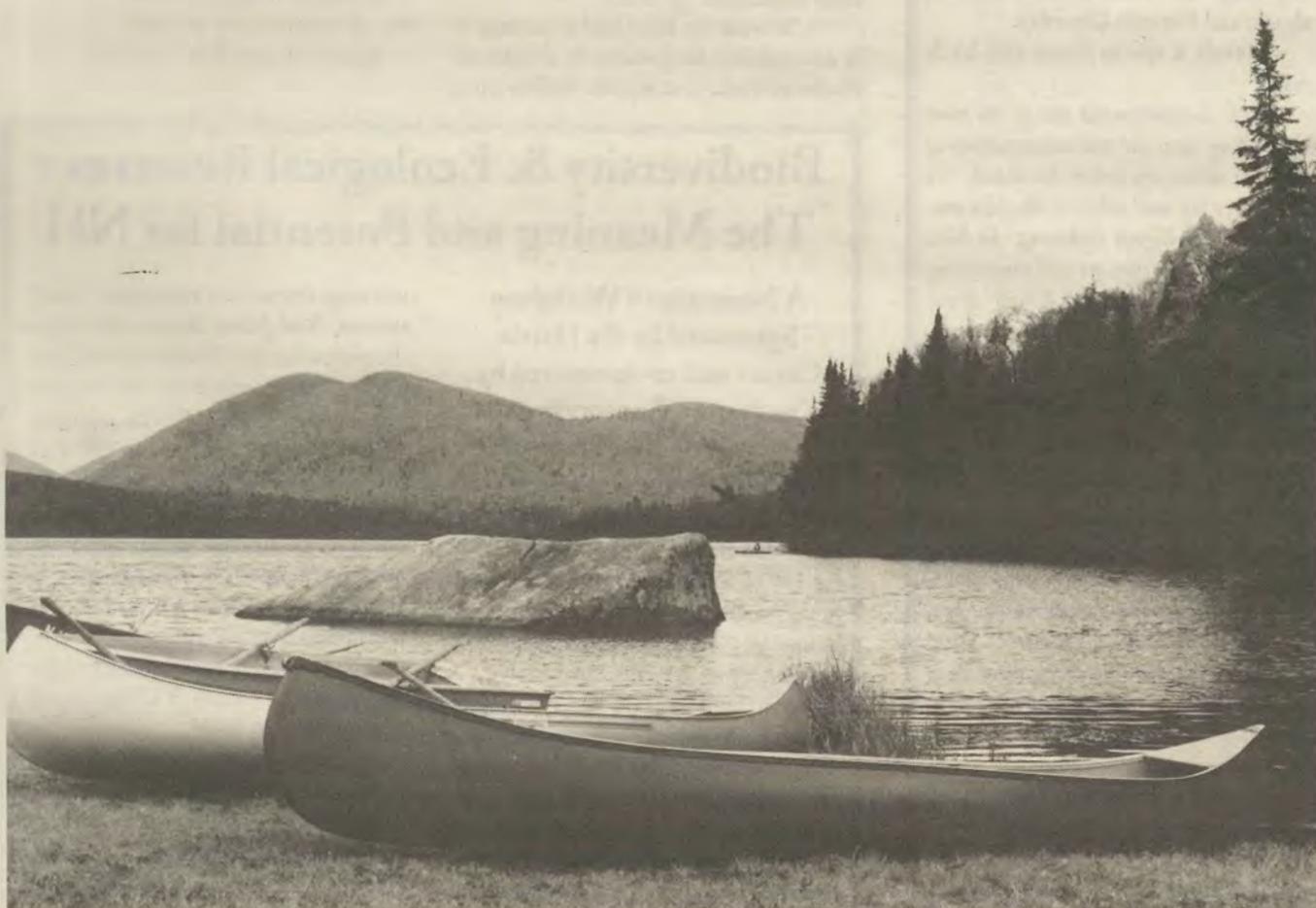
We have, however, acquired a better understanding of the role of wilderness in maintaining biological diversity, cultural heritage, and ecological services over the past few decades. More importantly, we have recognized that many of

the questions regarding ecosystem dynamics have not yet been answered, and that most of the questions may not yet have even been asked. If we concede that wild land systems are not only more complex than we think, but more complex that we are capable of thinking, then how can we even consider the validity of estimating their monetary worth? The answer may simply be that we need to extend the concept of wilderness value to encompass the notions of *moral* and *biotic* goods.

Mark Sagoff used E.B. White's *Charlotte's Web* as a parable to introduce the concept of the moral value associated with natural landscapes.³ When we regard an object with appreciation and respect, we value the object itself rather than the benefits it confers to us; the object of our respect has an intrinsic value. Sagoff contended that there are two forms of intrinsic value—aesthetic and moral. Whereas the aesthetic value has to do with perception, moral value arises in the context of action. This concept of moral value is an extension of Aldo Leopold's Land Ethic. "We abuse land," Leopold commented "because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect."⁴ Leopold was, in essence, asserting that once we respect the land we would appreciate it for its moral value.

The benefits of a public good are shared by everyone; similarly, the services of a biotic good are distributed across the entire biotic community. The notion of biotic goods acknowledges an understanding and compassion that we are not the only species dependent upon the health and diversity of the natural environment. Preserving wilderness epitomizes this recognition and is a testimony of our ability to exercise restraint for the greater community good.

The worth of moral and biological goods can not be estimated by rational economic models, not only because of the complexity of the interactions in natural systems but because the notions go beyond the realm of a monetary system. We don't value a child's manners in



King's Flow surrounded by the Siamese Ponds Wilderness Area. Photo © Bob Koch

'How To Design An Ecological Reserve System'

"How To Design An Ecological Reserve System", the first in a series of special papers to be published by Wild Earth, is now available. Written by Stephen C. Trombulak, Ph.D., professor of biology and environmental studies at Middlebury College in Vermont, this monograph provides detailed guidance for non-scientists on how to design science-based ecological reserves. Copies are available from Wild Earth for \$5 (POB 455, Richmond, VT 05477). Bulk discounts available for organizations.

Note from Forum Editor: This is the clearest, most reader-friendly manual for people interested in the design of ecological reserve systems available. Highly Recommended!

terms of their worth to us in dollars, but to the development of the individual's morals and his or her future contribution to the larger society.

What would loons consider the value of a pristine lake with a fish supply sufficient for the rearing of their chicks? Would they consider the opportunity cost of a "dead" lake caused by acidic precipitation? We can not put a value on these biotic goods and interactions any more than we could determine the value of an undisturbed boreal wetland to a moose or the appropriate transaction cost of carrion to a coyote.

Wilderness is both a tangible and intangible good; a natural state and a human construct. Only a part—and I would argue only a small part—of the true value can be accounted for in a homocentric monetary system. Wilderness is the last refuge where nature is allowed to take its own course and abide by its own laws. Its value is comprised of public, moral, and biotic goods and services. But it may hold an even greater value. Wilderness is a place where, when we decide—or, are forced to accept that we need—to live more in harmony with nature, we will still have these remnants to examine how we may best change our actions to do so. Once we've paved all our roads, manicured all our lawns, and fouled all of our waters, then we might still have some place instructive to turn back to.

A unique opportunity exists in the Adirondack Park to complete the Adirondack Wilderness System by designating three additional wilderness areas comprised of some 554,000 acres of backcountry habitat that would expand the AWS from 1.04 to 1.42 million acres. Most of the acreage would result from the consolidation of existing wilderness areas and the reclassification of other state-owned lands. Only some 277,000 acres—less than 5% of the Park land base—would need to eventually be acquired through acquisition.⁵ Although the 8 million acre Headwaters RWRS is grander in scale, painstaking efforts were made to choose only wild lands owned by industrial and large non-industrial landholders, most of which are headquartered out of the region. No year-round human settlements are located within the proposed Headwaters RWRS boundaries.⁶

We should continue to emphasize the economic merits—and there are many—associated with wilderness designation. But we should not rely on these economic justifications as the



Birch tree on island, Tupper Lake, Photo © John McKeith

foundation for such protection. The economic estimates should be emphasized as the absolute minimum benefit of preservation and the virtues of moral and biotic goods should be promoted. We must not be leery of expounding the ethical values associated with establishing a "wilderness bank," for as Sagoff contended, advances in technology that decrease our economic dependence upon natural ecosystems will continue to undermine instrumental reasons for preservation.⁷

As we approach the end of this century, we must decide how we want to measure our wealth. Henry Thoreau, in the mid-19th century, professed that "a man is rich in proportion to the number of things he can afford to let alone." Will we learn to appreciate this insight as we prepare to enter into the 21st century? Or, will we continue to measure our standard of living, and the inheritance we can bequest, only in dollar amounts while we continue to

squander our ecological capital?

I am discouraged, though not particularly surprised, that regional mainstream environmental groups have not formed a coalition to advance the preservation of remaining large, unbroken ecosystems as protected wilderness. In the mid-1940s, a proposal to build two dams that would flood thousands of acres in the wild Moose River Plains of the Adirondack Park were near ready to begin construction. To preserve a 700-acre natural meadow and important

deer wintering ground, Paul Schaefer made a plea that helped form the greatest coalition of conservationists to ever join in a battle for the preservation Adirondack wild lands. That same appeal is worthy of repetition to environmental organizations today regarding the preservation of wilderness in the northern forests:

To date, however, no united action by these or other groups has occurred. Immediate action by the leaders of existing organizations to form a statewide [*region wide*] committee, which could spotlight the issues involved, may be the only course of action that can save the Moose River region [*northern forest wilderness*] from destruction.⁸ (my suggested replacements shown in italics)

If we perceive wilderness to have the qualities of moral and biotic goods, then let those values be the catalyst, and the basis, for action and education. To do otherwise, and rely mostly upon the monetary measurements of our remaining wild lands to justify their preservation, would reduce wilderness to a tradable commodity. Such actions will devalue the continued existence of the wilderness resource and perpetuate the perception that land is a commodity belonging exclusively to us.

References

- Davis, George D. "Volume II: Completing the Adirondack Wilderness System in 2020 Vision: Fulfilling the Promise of the Adirondack Park." The Adirondack Council. 1990. pp. 7-18.
- Sayen, Jamie. "A Proposal to Establish a Headwaters Regional Wilderness Reserve System." The Northern Forest Forum, Vol 3 #5, Headwaters Restoration 1995, pp 4-6.
- Sagoff, Mark. "Zuckerman's Dilemma: A Plea for Environmental Ethics." Hastings Center Report. September-October 1991. pp. 32-40.
- Leopold, Aldo. "Forward." A Sand County Almanac. 1949. Oxford University Press, Inc. (p. vii in Commemorative 1989 paperback edition).
- Davis, op. cit.
- Sayen, op. cit., p. 4.
- Sagoff, op. cit., pp. 33-34.
- Schaefer, Paul. "The Impending Tragedy of the Moose River Region." Friends of the Forest Preserve brochure (1945) reprinted in *Defending the Wilderness: The Adirondack Writings of Paul Schaefer*. Syracuse University Press. 1989. pp. 77-80.

WILDERNESS AS A PUBLIC GOOD

The following extract from the 1964 National Wilderness Act is illustrative of the Act's intent to preserve wilderness as a public good. The Adirondack Park State Land Master Plan, which governs wilderness designation in the Adirondack Park, adopted similar language regarding the values for protecting for wilderness areas.

"... it is hereby declared to be the policy of Congress to secure for the American people of present and future generations the benefits of an enduring resource of wilderness ... and these areas shall be administered for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and enjoyment as wilderness."

"A wilderness ... is protected and managed so as to preserve its natural conditions and which ... may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value."

(Italics are mine to emphasize the public good precept of wilderness preservation. The term "ecological value" seems to be interpreted to denote only those ecological processes that have instrumental values.)

LANDS, GOODS, AND VALUE

Private Good: Land, and the resources thereon, is a tradable commodity exchanged between a willing seller and a willing buyer at a mutually agreed upon price. As a private commodity the owners are free to use their land as they see fit so long as such use does not negatively impact surrounding property values or cause harm to others.

Public Good: The benefits of a public good are shared by everyone and one person's use of the good does not prevent others for enjoying its benefits. Left to market operations, the provision of public goods will be under-allocated. Individual property owners would not preserve wilderness for the sake of providing dispersed ecological benefits. Not only does the market fail in the provision of public goods, but sometimes it can fail miserably. Restrictions are placed upon designated wilderness resources to ensure continued supply of the associated services.

Moral Good: Moral goods are associated with objects of our respect and affection, such as our "love of country." These objects are a good of their own. When we regard natural landscapes with appreciation and respect, we value the system itself rather than the benefits it confers to us. Moral value implies obligations we have towards wilderness insofar as we regard wild places with reverence, affection, and respect. Moral value arises in the context of action rather from the notion of worth.

Biotic Good: Whereas the benefits of a public good are shared by everyone, the concept of a biotic good acknowledges that benefits are shared by the larger biotic community. The notion of biotic goods is an acceptance that we are not the only species dependent upon the health of the regional environment. The private market has no incentive to preserve land for goods that benefit other species or that do not generate positive economic returns (unless motivated by moral values).

EVERY PERSON'S NEED

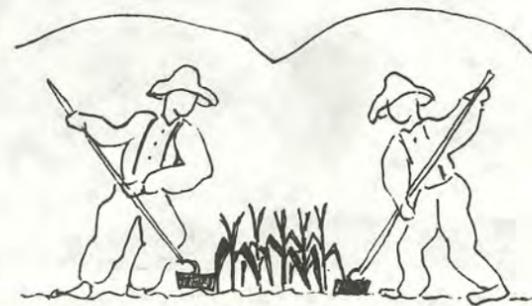
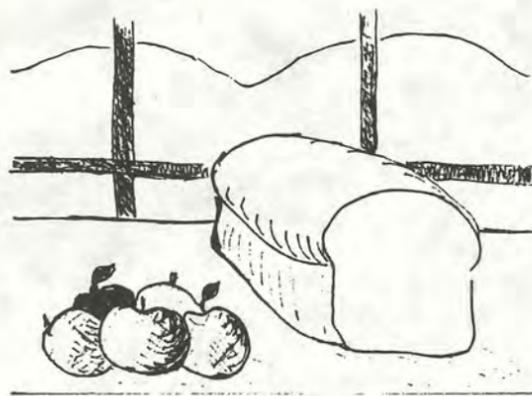
The Time Has Come: North Woods Dollars

by Michael Phillips

Money confuses most of us. We know how to earn it, how to spend it, and wish we had more of it. But what we forget is that money is only a paper expression of our time and talents. It's more convenient to carry around a few bills than it is to haul around our wares, and to know that wherever we go it's an accepted form of exchange. We get befuddled when we start thinking about *money* as having an inherent worth of its own.

Such confusion plays havoc with local economy. All goods and services are reduced to the lowest common denominator of monetary value. We forget greater values like living in balance with the earth, sharing the creativity of our time and talents, and mutually supporting the livelihoods of one another. The wage curve is incredibly skewed to the point that one person's hour of work may be rewarded twenty or more times over another's hour of honest labor. Most people believe in a system where money is used to make money, thus further eroding the value of resources and skills upon which it was initially based. Money is merely a means of exchange, not an end unto itself.

Use of a local currency goes a long



way in helping people once again understand the place of money. A local means of exchange stays in the immediate area, and in the process, helps strengthen a fragile local economy.

"There is enough for every man's need, but not enough for every man's greed."

—Gandhi

Currencies like Ithaca Hours (see below) and Berkshire Valley Dollars are valueless outside their respective communities. But what incredible value they have within in getting people to exchange goods and services they may not have with traditional federal money.

The time has come for us in the Northern Forest region to embrace our own local currencies. The region is too big for just one. The Adirondack economy could feature Forest Preserve Notes, the Lake Champlain area the Ticonderoga Ten Spot. Vermont's Northeast Kingdom and the New Hampshire North Country might reach economic consensus with North Woods Hours. Maine folks have always been a little too independent for us to take a stab at naming their money, but should the clearcut referendum go through, Trees Forever Bonds certainly seem in order.

Names aside, a local currency is a vital tool to put our concept of money in its place and help revive local economies. If you're intrigued and wanting to get involved, write us here at *Every Person's Need* and we'll try to connect you with aspiring eco-bankers in your region.

Local Money for a Non-Global Economy

by Donella Meadows

Ed. Note: This column first appeared a couple of years ago. It is reprinted by permission of the author.

I just got a thick envelope in the mail, and when I opened it, money fell out.

Four bills to be exact, along with four newsletters. The bills are denominated in "Ithaca Hours." The other side reads, "This note entitles the bearer to receive one [two, one-half, or whatever] hour labor or its negotiated value in goods and services."

The newsletter, which comes out six times a year, contains listings of 1,200 individuals and businesses in Ithaca, N.Y., that will accept Ithaca Hours (called Hours in Ithaca and henceforth here). Here are just a few of the things you can buy with Hours: bookkeeping, bowling, bricklaying, building materials, bushhogging, business consulting, cake decorating, calligraphy lessons, camera repair, carpentry, childcare—and that's just a few of the Bs and Cs.

One Hour is worth \$10. That's roughly the average wage in Tompkins County, New York. The idea is that one person's time is as valuable as anyone else's, so an Hour can be exchanged for an hour's work, whether that work is farm labor or dentistry. There is nothing to prevent professionals from charging several Hours per hour, of course, and a babysitter might accept a quarter-Hour per hour. But Hours are a leveling force, raising the minimum wage, allowing people to buy things they couldn't afford before, and stimulating everyone's business. "Hours help us hire each other to get what we need," says the newsletter.

Anyone who is willing to accept Ithaca Money in exchange for goods or services is paid two Hours and a listing in the newsletter. An additional two Hours can be

earned every eight months, by sending in a coupon affirming that the phone number is current. That keeps the list accurate and gradually expands the money supply. Decisions about the management of the system (how much money to print, how much to donate to community organizations) are made by the "Municipal Reserve Board," which consists of anyone who shows up at bimonthly Barter Potlucks.

The newsletter is full of stories about how people get and use Hours. The Sciencenter sells memberships and admissions for Hours and uses them to hire a book cataloguer. The cataloguer spends them on Spanish lessons. The Spanish teacher uses them at the farmer's market. A craftsman who makes fine paper out of cattails earns Hours by providing the paper for the two-Hour note.

The system's founder, Paul Glover, explains that "we printed our own money because we watched federal dollars come to town, shake a few hands, then leave to buy rainforest lumber and fight wars." Ithaca Money encourages local spending, it supports neighborhood entrepreneurs, and it creates a web of friendships.

One of the most impressive results of the Ithaca Money System is the bimonthly list of local goods and services. The community can see how rich it is in human resources, and how many of its own needs it can meet—something that too few towns, valuing themselves in terms defined by federal money and multinational corporations, appreciate about themselves.

It is perfectly legal to create a local money system, but it takes work and responsibility. Ithaca Money sells a Hometown Money Starter kit that explains how to do it. Send 2.5 Ithaca Dollars or \$25 to Ithaca Money, Box 65678, Ithaca, NY 14851.

Donella Meadows was featured in a Forum interview in the Winter Solstice 1995 issue.

Inspiring Local Economy

Local economy doesn't end at the edge of your town ... still seek out those Mom & Pop shops and restaurants when traveling if you believe in keeping small town America afloat.

Secondhand goods—clothes, books, building materials—make up an uncontested part of today's local economy. It's great the corporations won't sell anything but new stuff. Creating a thriving business with used inventory requires some qualitative discernment as to what to offer. The best of such stores offer an eclectic mix of old and new books, or entirely focus on kid's clothes, or natural fabrics for adults.

Salvaged building materials save cash money but often at the cost of greater labor. Antique shops work in towns with tourist traffic able to meet upscale prices. If you're thinking of starting a small business, "second-time-around" might be an excellent choice.

Note to our Readers: What are your ideas for inspiring local economy? Your suggestions, thoughts and outlandish opinions are what make this feature of the Forum work. Write us today! *Every Person's Need*, RFD 1 Box 275, Groveton, NH 03582.

Money & True Wealth

"Riches consist not in the extent of possessions but in the fewness of wants."

—Anonymous, *Proverbs for Daily Living* undated

"Good people, hark ye: A few rules well observed, will contribute much to your happiness and independence. Never buy what you do not really want. Never purchase on credit what you can possibly do without. Take pride in being able to say, I owe no man."

—Poor Robert, *Essays* 1796

"The business of the year is done by barter, without the intervention of scarcely a dollar; and thus also we live with a plenty of everything except money."

—Thomas Jefferson, *Letter* March 28, 1811

"No man in this world, however high may be his rank, great his wealth, powerful his genius, or extensive his requirements, can ever attain more than health, enjoyment and respect."

—J.C. Loudon, *The Suburban Gardener* 1838

"For a man to pride himself on this kind of wealth, as if it enriched him, is as ridiculous as if one struggling in the ocean with a bag of gold on his back should gasp out, 'I am worth a hundred thousand dollars!' I see his ineffectual struggles just as plainly, and what it is that sinks him."

—Henry David Thoreau, *Journal* November 5, 1857

"The art of becoming rich, in the common sense, is not absolutely nor finally the art of accumulating much money for ourselves, but also of contriving that our neighbors shall have less. In accurate terms, it is 'the art of establishing the maximum inequality in our own favour'... Perhaps the final outcome and consummation of all wealth is in producing as many as possible full-breathed, bright-eyed, and happy-hearted human creatures. Our modern wealth, I think, has rather a tendency the other way."

—John Ruskin, *Unto This Last* 1862

"If there are people at once rich and content, be assured that they are content because they know how to be so, not because they are rich."

—Charles Wagner, *The Simple Life* 1901

Pricing a Local Product

by Michael Phillips

The price we pay for any product is determined competitively by the going market rate. That price should cover the costs of production and allow a reasonable wage for the producer. A retail mark-up raises the final price of goods to allow a reasonable profit to the retailer after store costs are accounted. Retailers use a percentage increase based on commodity averages to determine this mark-up. Economy of scale, both on the production and purchasing end, favors big corporations.

That's why WalMart can always outsell the local corner store. That's why produce trucked in from a chemical cloud 1500 miles away always undermines local agriculture.

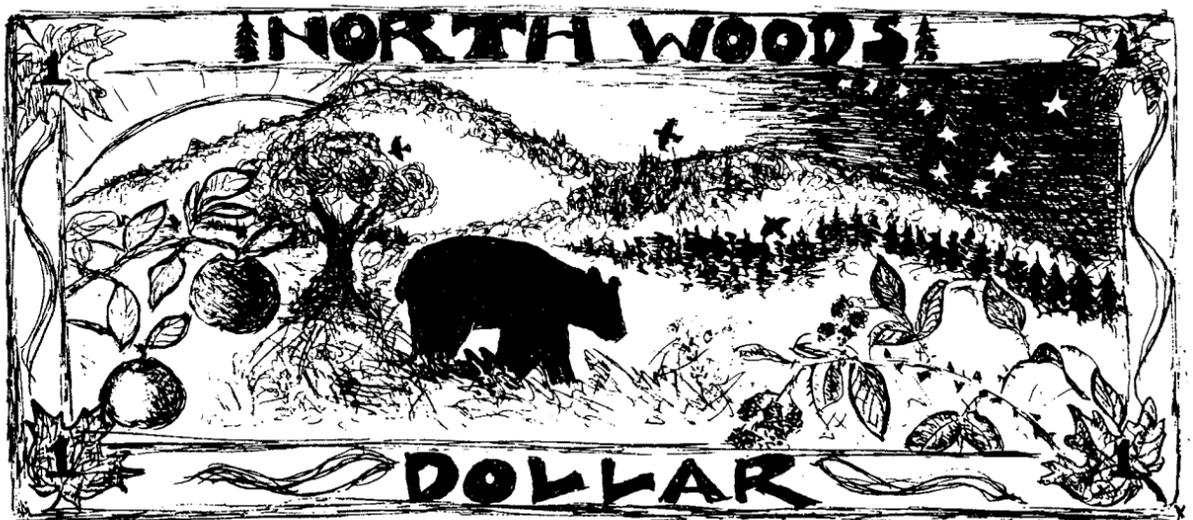
People generally need to pay more than the going market rate if they want local economy to succeed.

It's a leap of understanding to realize that that local economy premium comes round again and again to ultimately provide a livelihood for everyone participating. The same cannot be said of dollars shipped to Wall Street or AgriCorp USA. Such understanding goes against our consumerist upbringing. We were brought up to go with the lowest price, right? A higher quality product may succeed in a specialized market but there are no assurances given our inherent nature to shop for bargains. Greater values like keeping our neighbors employed, or good taste and nutrition in our produce, or a global environment untainted by pesticide residues, are often not thought about when we decide to buy.

It may help to imagine yourself in a local producer's shoes. Let's say you sell fresh bouquets of flowers and herbs to the natural foods store in town. Your state's commodity bulletin lists cut flowers as sell-

ing anywhere from \$2.95 to 4.95 on the retail level. Folks in your area aren't as wealthy as downstate, so you determine to sell your bouquets at the lowest market rate. The store has a 50% markup, so your wholesale price needs to be \$2.00 a bunch. Twice a week three bouquets are delivered, along with organic produce that hopefully makes the delivery trip worthwhile. Gathering the flowers and herbs takes 15 minutes, arranging the bouquets another ten minutes. Throw in another five minutes for delivery time and set-up. Farm expenses and growing labor account for half the selling price, leaving you a wage of \$6 an hour without any benefits. Not great but you enjoy sharing your flowers. The store folks are good at display, so local economy is abetted rather than the carnation market in Central America.

Savvy producers base their price on going market rate and a full understanding of their costs. Who's to say what's an appropriate wage, so let's assume a goal of \$10 an hour. Medical insurance and half the Social Security payment aren't included when you work for yourself, so this seems reasonable. Some crops and products have greater local cost than the going market rate. Thus, if people don't support broader values, local production must succumb to corporate offerings. It's implicit that we trust local producers to do the best they can price-wise in offering their goods and services. Such trust is integral in a working economy. The same standard would apply to local retailers who ask us to put our faith in them. Feel free to ask local producers and retailers the basis of their prices, if you like, and lend your best understanding when there's no conceivable way for them to get below or even match going market rates. Here's where a local currency can help equate local prices to the reality of our own working lives.



Citizens Group Gagged at NH Pesticide Control Board Appeal

PCB Refuses to Hear Critical Testimony on Appeal of Boise Cascade Aerial Herbicide Spraying

by Daisy Goodman
The Herbicide Project

At a hearing on an appeal of a Boise Cascade herbicide spray permit before the Pesticide Control Board in Concord on August 22, testimony from herbicide opponents was repeatedly interrupted by objections from Boise Cascade lawyers and the Attorney General's office. Several witnesses for the northern New Hampshire-based Herbicide Project were not allowed to present evidence supporting public concerns about health and environmental effects of aerial application of herbicides. On August 23, the Pesticide Control Board issued a decision denying the appeal and affirming the corporation's permit for aerial application of herbicides.

Boise Cascade was granted a permit by the Division of Pesticide Control in July to spray over 2,000 acres in Dummer, Millsfield, Dix's Grant, Dixville and West Stewartstown with a mixture of three herbicides and a surfactant listed as a hazardous chemical by the EPA. The Herbicide Project appealed this decision in August, obtaining a restraining order which prevented the company from spraying until the appeal was heard.

As reported in the *Forum*, (vol. 4 #5 & 6) the Herbicide Project first approached the Pesticide Control Board in May, 1996, requesting that the permit applications for aerial spraying be denied. At the time we cited recent research showing that the human and environmental implications of aerial herbicide use were far greater than originally thought at the time of EPA registration. We included a bibliography with our request, offering to make the references cited available to those involved in the application review process. One agency did respond—the Risk Assessment division of the Department of Health. The Director of the Division of Pesticide Control, Murray McKay, did not respond. In fact, he did not communicate with the Herbicide Project at all, including when he granted the two permits for aerial spraying requested by Boise Cascade and Champion International.

The Herbicide Project appealed the permit on August 6. The same day, Champion International notified the Division of Pesticide Control that they wished to withdraw their permit due to the "discovery" that they had accidentally sprayed ten acres belonging to International Paper Company with herbicides during their 1995 aerial spray program. Although Champion officials claimed that the error had been discovered in July, 1996, a Champion representative had previously made reference to it in testimony to a Vermont Forest Resources Advisory Council hearing panel in June.

Local attempts to halt aerial herbicide spraying on forest industry lands have met with no support from New Hampshire State government in the past. In 1993, the town of North



Mali Keating, an elder of the Abenakis, testifying at the Herbicide Hearings held in Island Pond, Vermont on June 27, 1996. At the conclusion of the August 22 appeal before the NH Pesticide Control Board, she made an eloquent appeal to the PCB to respect all the life forms in the forest, and she rebuked them for conducting an illegal and unfair hearing. Photo © Gustav W. Verderber.

Stratford tried to prevent Boise Cascade from spraying regenerating clearcut land near a residential area in Stratford Hollow. Although a special town meeting was held and the selectboard was unanimously opposed, town officials were told that state regulatory power pre-empts local community control over pesticides use. Decisions on pesticide use applications are made only by the Division of Pesticide Control in Concord. True to form, Boise Cascade refused to meet with town representatives and did spray in Stratford in 1993.

In 1993, northern New Hampshire communities were told that if they had problems with a proposed herbicide application, they should "take them up with Concord" (the N.H. State Capitol). When Herbicide Project representatives met with the Pesticide Control Board in May, 1996, they were told that the Division of Pesticide Control would go ahead with the usual process for issuing aerial spray permits, which includes agency reviews, and that after a decision was made on the administrative level, the Project would have the right to appeal that decision within thirty days.

When attorney Richard de Séve, representing the Herbicide Project, filed that timely appeal, the Pesticide Control Board re-stated the issues raised, instructing the Project to provide evidence to prove eight specific points. However, at the appeal hearing, the Assistant Attorney General sustained objections by Boise attorneys, disqualified key witnesses, and did not allow that evidence to be presented, even though the Chairman of the NH Pesticide Control Board, Agriculture Commissioner Steven Taylor, had told the Herbicide Project coordinator that the formal rules of evidence would not apply during this hearing.

However, at the hearing the Assistant Attorney General ruled that documentation submitted by the project

on toxicity, human health risks and environmental effects, all of which had been peer reviewed and published by recognized scientific journals, was "double hearsay", and that the Project's members did not have the qualifications to understand what they read. Caroline Cox, one of the project's key witnesses, holds a masters degree in entomology and edits *The Journal of Pesticide Reform*, but she was also disqualified. Unfortunately, a community-based group does not have the money to bring in numerous expert witnesses, especially on short notice. Boise Cascade's witnesses on toxicology were all allowed to testify. As all were either Boise employees or employees of the chemical manufacturers, each had a clear conflict of interest—not one was an independent researcher. By preventing the Herbicide Project from presenting its evidence, the Pesticide Control Board will be able to continue to make decisions based only on manufacturer claims of product safety. No information on the products in question, other than manufacturer product information, is on file at the Division of Pesticide Control.

Although the legal purpose of the Pesticide Control Division, according to RSA 430:28, is to safeguard the public health and welfare and to protect the public resources in water, soil, forests and wildlife, the Assistant Attorney General ruled that testimony on product toxicology or environmental impacts was not admissible because the U.S. EPA had already registered the products in question. The point was made during the hearing that registration of Pesticides and other hazardous materials by the EPA does not necessarily mean they are approved for use or safe. For example, DDT, was registered with EPA and widely used, and was later de-registered and banned after additional research indicated that it posed a serious risk to human health. However, the Division of Pesticide Control does not

appear to feel that its mandate requires evaluating anything which has been registered by the EPA.

The Assistant Attorney General also refused to accept as supporting documents letters from concerned people and organizations unable to attend the hearing, although these included statements from highly qualified chemists, ecologists, toxicologists, a local conservation committee, and the Ammonoosuc Chapter of Trout Unlimited.

Boise Cascade has consistently shown contempt for the public process as well as public opinion and public and environmental health. As soon as the Herbicide Project's appeal of their permit had been filed, the company filed the required 48 hour notice before spraying. Project Attorney Richard de Séve had to obtain a restraining order to keep them from spraying before the appeal was heard. Although allowing Boise to spray immediately would have made a mockery of the appeal process, Division of Pesticide Control Director Murray McKay stated that it was important to be "fair" and not to interfere with the company's schedule.

At the appeal hearing, Boise attorneys initially tried to get the appeal dismissed, claiming that the Herbicide Project has no standing to appeal since its members did not own land next to Boise's holdings or rent from them. Although the Findings issued by the PCB stated that the Project did have standing this year, it was grudgingly conceded, with the ominous addition that this was not to be taken as a precedent for appeals in following years. New Hampshire Pesticide law, however, states that any individual who is aggrieved by a Division of Pesticide Control decision has the right to appeal.

Although much of the Herbicide Project's testimony was ruled "irrelevant", some of the testimony Boise Cascade witnesses were allowed to present can only be termed insulting. For example, the Project raised the issue of possible enhanced effects, known as synergism, or other unexpected chemical behavior resulting from mixing three herbicides and a hazardous surfactant together and applying them in field conditions. In fact, use of any pesticide in a manner not specified on the product label is a federal offense. Letters of support from several scientists well qualified to discuss potential problems from such a mixture were submitted by the Herbicide Project, but were ruled inadmissible by the Assistant Attorney General. An employee of American Cyanamid (which manufactures one of the herbicides Boise uses), however, was able to testify that *although no studies of the proposed mixture have been done, they would be unnecessary because mixture of these toxins was "similar to mixing pork chops, mashed potatoes, butter beans and gravy"*.

The restraining order which prevented spraying expired on August 23. The Pesticide Control Board's decision was issued on August 23, and Boise Cascade sprayed 1,200 acres on Labor Day weekend. Meanwhile, opposition to the spraying is growing in local communities and opponents are not giving up. Because the Pesticide Control Board's decision was not made on the merits of the case, the Herbicide Project

Opposition to Herbicide Spraying in Vermont Intensifies

by Andrew Whittaker

As we go to press, Vermont's Forest Resource Advisory Council is studying three options developed by its six-member panel on aerial spraying of clearcuts. Two of the policy options tightened regulatory oversight and one established a moratorium on the practice pending further findings. The full FRAC will discuss its response to the recommendations of the smaller panel at meetings on September 26 and October 24. The fruits of these discussions will be brought to the newly convened legislature in January.

Four members of the panel, meeting September 13, spoke in favor of "Option Two" which grants the Secretary of Natural Resources authority over any permit approval process, with input from the public and the several departments of ANR. While agreeing on the merits of Option Two were spraying to go forward, FRAC chair Darby Bradley and FRAC member Hub Vogelmann spoke in favor of Option Three, establishing a five year moratorium on spraying.

The panel heard testimony in June from Monsanto and Champion International in support of spraying. Barbara Alexander of Craftsbury, VT and the Vermont Citizen's Forest Roundtable organized opposition testimony. Witnesses included Caroline Cox of the Northwest Coalition for Alternatives to Pesticides and others marshaled by Alexander to address issues of biodiversity, general ecology, silviculture and toxicology.

The full FRAC and the 1997-1998 Legislature



Richard & Barb Alexander, Vermont grassroots organizers extraordinaire. Photo © Gustav W. Verderber
now become the arena for discussion of a moratorium, tightened permit approval procedures or other mea-

asures. A key question for opponents to spraying, which includes a probable majority of Vermont voters, is, were arguments against spraying fully considered on their merits by the entire herbicide panel? Readers of the Forum will recall that testimony against spraying was a citizen effort, sustained by citizen researchers who started from an ethical opposition to spraying. Their industry counterparts, Monsanto and Champion, hired professional researchers and based their arguments on economic motive.

The Vermont Citizens Forest Roundtable, coordinator of opposition testimony, will soon be issuing its response to the FRAC herbicide report, which concluded that toxicological risks from glyphosate—the herbicide proposed for use—are low. However, the report also noted that spraying a forest ecosystem carries an inherent risk of subtle impact to forest health.

NOTE: As we headed to press, the full FRAC did meet on September 26th in Montpelier. Discussion of herbicides was interrupted, however, by a contingent of anti-spray demonstrators, some dressed as trees, who moved from the Statehouse lawn into the Pavilion auditorium. FRAC members attempted to move the meeting to the Statehouse but were followed by the demonstrators, many of them puppeteers from Glover's *Bread and Puppet* troupe. Chairman Darby Bradley and other FRAC members discussed the aerial spray issue with participants in the demonstration who expressed frustration with the Herbicide Hearing Panel's 4-2 approval of a pro-spray option and what they perceive to be the panel's ignoring public will on the issue.

is asking for a re-hearing, including the admission of excluded witnesses and testimony. To assure the defeat of the Herbicide Project, the State of New Hampshire and several billion dollar multinational corporations were forced to conduct a hearing that was in clear violation of the law. A fair and honest hearing would have heard evidence that would have stopped the spraying.

Although the recent appeal process showed that the public is clearly an unwelcome intruder in State Government business, it also shows that well-directed action by community-based groups is critical to bring agency and corporate collusion into the light of day. The Herbicide Project has received consistently favorable coverage in local and statewide media, and Project members have had a lot of support from community members, especially the fishing and hunting community. The mainstream environmental community has been very supportive of the appeal.

Because of citizen activism in both New Hampshire and Vermont, aerial herbicide spraying on forest land is no longer a dirty secret revealed only to those who run into warning signs in the woods. Breaking the issue into the open has successfully blocked spraying in Vermont in 1995 and 1996, and significantly curtailed the number of acres

poisoned in New Hampshire in 1996—from a proposed 4,000 to 1,200 actually sprayed. Although these victories are temporary, they indicate the power that community activists do have and can build on to permanently free the northern forests from continuing chemical poisoning.

On September 20, 1996 the Herbicide Project filed a "Motion for Rehearing" of the August 22 Appeal. Both the original appeal and the Motion for Rehearing require services of a lawyer. They are extremely expensive for small citizens' groups with limited budgets. We have received several generous donations from concerned citizens in the region, and late in September the Herbicide Project received a generous grant from the New England Grassroots Environment Fund to help us pay for the Rehearing and any subsequent appeals. (See box on this page.) But, we are fighting corporations with billions of dollars of assets.

How You Can Help: Please consider making a generous gift to: The Herbicide Project of the Northern Appalachian Restoration Project, POB 6, Lancaster, NH 03584. Please make checks payable to: Northern Appalachian Restoration Project. The salamanders, soil microbes, and blackberries will thank you.

New Funding Opportunity for Grassroots Groups

The New England Grassroots Environment Fund is a private grant program designed to foster local New England grassroots conservation and environmental initiatives in Maine, New Hampshire, Vermont, and Massachusetts. It provides small grants of up to \$2,500 to fuel local activism that results in broader community involvement in projects that address a wide range of environmental issues and opportunities. Local groups may be tackling an environmental health problem related to poor air quality or water pollution, or advocates may be urging citizen participation in wildlife habitat protection. Whatever the issue, the Fund wants to move these efforts forward with its support. The New England Grassroots Environment Fund is located at 27 Bailey Avenue in Montpelier, Vermont. For more information send a letter to that address, or contact Fund Coordinator Cheryl King Fischer at 802-223-4622 or cfischer@plainfield.bypass.com.

Statement From Abenaki of Manipskewik & Related Bands

by Soaring Eagle,
Charles Delaney

Ed. Note: These remarks were originally made to the Vermont Forest Resource Advisory Council's hearing panel on aerial herbicide spraying during an interactive television hearing of August 1.

The following comments are directed to the Environmental Board, FRAC and the Vermont State Legislature.

Economically, our legislature should consider how revenue is collected from the paper companies. Between \$240-260,000 is collected based upon the land area and use involved. This works out to be less than two dollars per acre. Given what these wood products generate in revenue, perhaps our economically strapped budget could change to reflect the monies that are not left here.

Many associated health risks have been brought to question at these forums. Perhaps what should be addressed is the larger precedent-setting agreements between such industries and state government. Once this large-scale spraying is done through the permit process this opens the door to many more chemical attempts to manage our nature, our environment.

Act 273 is very specific under Vermont statute, curtailing and not allowing such spraying. Will the government consider state law? FRAC has assured us of penalties for environmental damage. When chemical fertilizers, heavy metals contaminated *Petabowk*—Lake Champlain—and

made fish a risk to eat, who was fined? Who cleaned this up? The last time Abenakis held a civil rights demonstration to uphold our rights the conclusion of our fish-in after one and a half years of litigation and \$300,000 in public monies spent to prosecute us was that the case was dismissed because the fish caught were consumed and the people became ill. Who is watching public health?

Further, I remind our state elected officials of their oath to uphold the Vermont Constitution. Under Article I, "Enjoying and defending life and liberty of our citizens", it does not state "private business." Article II and IX, "Private property used publicly. . . is compensated. . ." Our environment is public; should not the industrial taxation apply here? Under the Council of Safety, Abenakis were never compensated for "used" lands—is this to be true for all Vermont?

Article IV, "Sole right, exclusive inherent right to govern and regulate police." Who is policing government to adhere to their own standards?

Article VI, "Government is common benefit, protection, security of people. . . ." We remind our legislature of its duty. Article XVI, "Adherence to justice, moderation, temperance, industry, frugality. . . making and enacting laws for good government. . ." The intention here is clear for the governance of industry.

Let us speak as one for the environment that we all share, as well as the rights and liberty we all have and desire to maintain. Freedom and Unity.

Testimony the NH Pesticide Control Board Suppressed

Testimony Prepared for the Pesticide Control Division of the New Hampshire Department of Agriculture, Markets and Food

By Caroline Cox

Northwest Coalition for Alternatives to Pesticides

Ed. Note: The following is the testimony Caroline Cox, editor of the Journal of Pesticide Reform, prepared for the August 22, 1996 Appeal brought by the Herbicide Project of the Northern Appalachian Restoration Project before the NH Pesticide Control Board. The PCB's staff attorney, Douglas Jones, from the NH Attorney General's office rudely interrupted the Herbicide Project's lawyer, Richard de Séve whenever he attempted to elicit the information contained in this document. The PCB sat silently while their attorney abused Ms. Cox and, in clear violation of the rules for administrative hearings, ruled that she could not offer the testimony printed below. Attorney Jones and his counterparts representing Boise-Cascade understood just how damaging such testimony would be to their claim that herbicides are safe.

The Northwest Coalition for Alternatives to Pesticides welcomes this opportunity to testify regarding the proposed aerial applications of the herbicides Accord, Oust, and Arsenal with the surfactant Entry II on about 2,000 acres of Boise Cascade's timber land in New Hampshire. We will present a summary of the research we have done on glyphosate, sulfometuron methyl, imazapyr, and ethoxylated tallowamine, the ingredients identified on the labels of Accord®, Oust®, Arsenal®, and Entry II® respectively.

Our testimony will show that glyphosate, sulfometuron methyl, and imazapyr with a surfactant or alone, can significantly impact a long list of resources important to New Hampshire. These include human health, the health of crop plants and plants growing in the wild, wildlife health, and bird and small mammal habitat. Our concern about these impacts increases because the herbicides can be persistent and can drift away from their target site. Like all pesticides used in this country, Accord, Oust, and Arsenal have been registered with the U.S. Environmental Protection Agency (EPA), but this is not a guarantee of their safety. In fact, federal regulations prohibit the use of "safe" or other similar terms in the sale or marketing of a pesticide. Many adverse effects caused by pesticide use are effects that are not considered in the federal registration process. My testimony today will focus on the potential for this kind of adverse effects with the pesticides proposed for use by Boise Cascade.

The national pesticide law specifically gives states the authority to "regulate the sale or use of any federally registered pesticide." New Hampshire now has the opportunity to use that authority to protect its citizens, its wildlife, and its forest ecosystems.

New Hampshire's forest resources are an enormous asset to the state, the businesses who sell forest-related products, and the citizens of New Hampshire. It's time now to build a foundation of sustainability into the management of these resources so that New Hampshire can continue to enjoy their benefits for generations to come.

NCAP supports the appeal by the Northern Appalachian Restoration Project of permit SP-075. The reasons for our support are as follows:

1. The ability of pesticides to cause acute and chronic human health problems is a widespread concern. EPA requires no health effects testing of these pesticides as they are proposed for use by Boise Cascade, as a mixture of three pesticides with a surfactant. Therefore, we have no information about the potential health effects.

While there is no data regarding health effects of the mixture of pesticides being considered today, combinations of some of the ingredients proposed for use by Boise Cascade have shown unexpected toxicological problems. For example, while many tests of

glyphosate's ability to cause genetic damage have been negative, when glyphosate was tested in combination with ethoxylated tallow amines, the frequency of lethal mutations in fruit flies increased three- to six-fold.¹ In another example, two recent (1990 and 1991) studies compared the amount of glyphosate plus ethoxylated tallowamines required to cause death in rats with the amount of either glyphosate alone or tallowamines alone. The studies found that in combination, the amount of glyphosate and tallowamines required to kill was about one-third of a lethal dose of either compound separately.^{2,3}

Conclusion: The human health effects of the herbicides proposed for use by Boise Cascade are untested and unknown.

2. Herbicides can drift away from the application site and therefore have the potential to damage neighboring plants, wildlife, and humans. There is no publicly-available information about how far the combination of herbicides proposed for use by Boise Cascade can drift, nor is any such testing required for EPA registration.

Glyphosate is the only one of the pesticides proposed for use by Boise Cascade for which there is any publicly available information about drift distances. Between 41 and 82 percent of glyphosate applied from helicopters moved off the target site in a Canadian study.⁴ Two studies done in Canada⁵ measured glyphosate residues 200 meters (656 feet) from target areas following helicopter applications to forest sites. In both studies, 200 meters was the farthest distance at which samples were taken, so the longest distance glyphosate traveled is not known.⁶ A third study (from California) found glyphosate 800 meters (2,624 feet) downwind following a helicopter application. Again, this was the farthest distance at which measurements were made. Plant injury was recorded 400 meters (1,312 feet) downwind.⁷

Measuring drift of Oust is complicated by the difficulties that have arisen with laboratory analysis because "damage from sulfonylurea herbicides can occur at levels that cannot be detected" in plants. This means that it is very difficult to determine when damage from drifting sulfonylureas has occurred. EPA's Region 10 (Oregon, Washington, Idaho, and Alaska) has asked that EPA set a national policy requiring that "herbicides be analytically detectable at any level that

might result in damage." Their memo continues that EPA currently has no good answer to the problem of herbicide damage caused by undetectable residues.⁸

Conclusion: There is not adequate information about the distance that the pesticides proposed for use by Boise Cascade will drift. However, the little publicly available data suggests distances of several hundred meters are not uncommon.

3. The herbicides proposed for use by Boise Cascade are persistent in the environment.

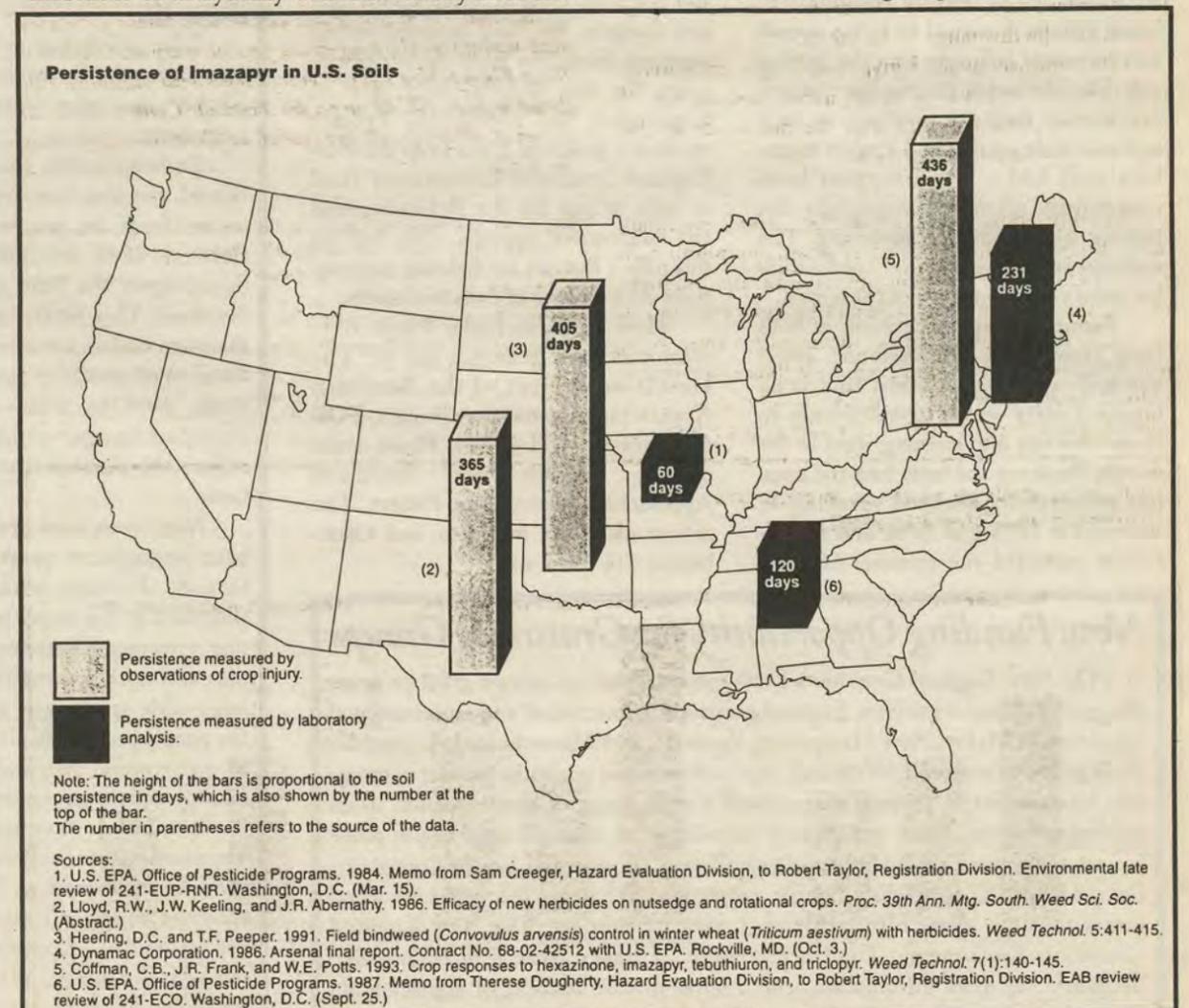
EPA reports that the average half-life of glyphosate in forestry situations is 100 days.⁹ Long persistence has been measured in the following studies: 249 days on Finnish agricultural soils¹⁰; between 259 and 296 days on eight Finnish forestry sites¹¹; 335 days on an Ontario (Canada) forestry site¹²; 360 days on 3 British Columbia forestry sites¹³; and, from one to three years on eleven Swedish forestry sites.¹⁴ These are minimum estimates because, in all but two of these studies, glyphosate was detected on the last date samples were analyzed.

A study of soils in Delaware, North Carolina, Oregon, Colorado, and Saskatchewan found that some sulfometuron methyl persisted in each soil for a year. In the Colorado soil, 18 percent of the sulfometuron applied was still present after one year.¹⁵ On sandy soils in Franklin County, Washington, sulfometuron methyl persisted at levels high enough to damage plants for over a year following a roadside application of Oust.¹⁶ In New Brunswick forests, enough Oust persisted to kill spruce seedlings ten months after sulfonylurea treatment.¹⁷ In Texas grain fields, sorghum was injured by residual sulfometuron methyl 11 months after treatment.¹⁸

Imazapyr is also a persistent herbicide. Persistence in field studies varies from 60¹⁹ to 436 days,²⁰ with many studies reporting persistence of over a year.²¹ A common measure of persistence is half-life, the length of time required for half of the amount of a pesticide originally applied to break down or move away. EPA reports that imazapyr's half-life is 17 months in laboratory tests.²² Half-lives up to 49 months have been reported in field studies.²³

Conclusion: All three of the herbicides proposed for use by Boise Cascade can persist for a year or more.

4. Routine monitoring for potential water conta-



Imazapyr in soil damaged plants for longer than it is detectable through laboratory analysis. This difference is much greater than geographical differences in persistence.

mination following pesticide applications is not required as part of the registration process. However, the limited monitoring that has been done of forestry applications of sulfometuron methyl, imazapyr, and glyphosate shows that contamination does occur.

In the southeastern U.S., imazapyr was found in surface water following aerial application at both of the two forestry sites for which data are publicly available even though management practices to reduce water contamination were employed at one of the sites.²⁴ Imazapyr was also found in groundwater following a forestry application using ground equipment in the only published study.²⁵ In the Pacific Northwest, imazapyr was found in surface water in one out of the two sites monitored and glyphosate was found in three of the three sites monitored by the Washington Dept. of Ecology following aerial forestry applications. Again, management practices were used to reduce water contamination.²⁶ Sulfometuron methyl was found in a forest stream in the one publicly available study of a ground application of sulfometuron methyl.²⁷

Conclusion: Water contamination occurs frequently following forestry applications of herbicides.

5. The registration process does not look at how pesticide application can cause changes in habitat and food resources and thus impact wildlife. However, the herbicides proposed for use by Boise Cascade can cause these kinds of problems.

Birds: Glyphosate has indirect impacts on birds. Because glyphosate kills plants, its use creates a dramatic change in the structure of the plant community. This affects bird populations, since the birds depend on the plants for food, shelter, and nest support.

For example, a study of four glyphosate-treated clearcuts (and an unsprayed control plot) in Nova Scotia found that the densities of the two most common species of birds (white-throated sparrow and common yellowthroat) decreased for two years after glyphosate treatment. By the fourth year post-spray, densities had returned to normal for these two species. However, the unsprayed plot had by then been colonized by new species of birds (other warblers, vireos, and a hummingbird). These species did not appear on the sprayed plots.²⁸

An earlier three year study of songbird abundance following glyphosate treatment of clearcuts in Maine forests showed similar results. Abundances of the total number of birds and three common species decreased. The decrease in bird abundance was correlated with decrease in the diversity of the habitat.²⁹

Black grouse avoided glyphosate-treated clearcuts in Norway for several years after treatment.³⁰ Researchers recommended that the herbicide not be used near grouse courtship areas.

Small mammals: In field studies, small mammals have also been indirectly affected when glyphosate kills the vegetation they (or their prey) use for food or shelter. This was first shown in studies of clearcuts in Maine.³¹ Insect-eating shrews declined for three years post-treatment; plant-eating voles declined for two. A second study in Maine³² found similar results for voles, but not shrews. A British Columbia study found

that deer mice populations were dramatically (83 percent) lower following glyphosate treatment.³³

In Norway, there was a "strong reduction" in use of sprayed clearcuts by mountain hare.³²

Moose: In Norwegian forests, moose utilized glyphosate-treated areas less than untreated areas for three years following treatment. This was due to a decrease in the amount of browse (food) available to the moose.³⁴

Wildlife Food Resources: In a recent study (published in 1993)³⁵ EPA researchers showed that spring applications of the sulfonylurea herbicide chlorsulfuron, in amounts equivalent to 0.001 times the concentration used in agriculture could reduce the amount of fruit produced by cherry trees if the applications were made at the time that the fruit had reached half of its full size. The reduction in cherry production was caused by concentrations of chlorsulfuron that caused almost no damage to the vegetative parts of the trees. At slightly higher concentrations, applications at a wider range of times caused fruit yields to drop. Fall applications at the lowest concentrations caused decreases in fruit production the following year.

The researchers conclude, "If the effect of chlorsulfuron on cherry trees is characteristic of other sulfonylurea herbicides and the cherry tree's response is characteristic of other plant species, drifting sulfonylureas may severely reduce both crop yields and fruit development on native plants, an important component of the habitat and foodweb for wildlife." They discuss the "devastating impact" expanded use of sulfonylureas could have on crop productivity, natural plant communities, and wildlife food chains. In other words, use of Oust and other sulfonylureas could affect entire ecosystems, while leaving few signs to identify what is causing the problem. Further research has shown similar impacts on garden peas, canola, smartweed, soybean, and sunflower.³⁶

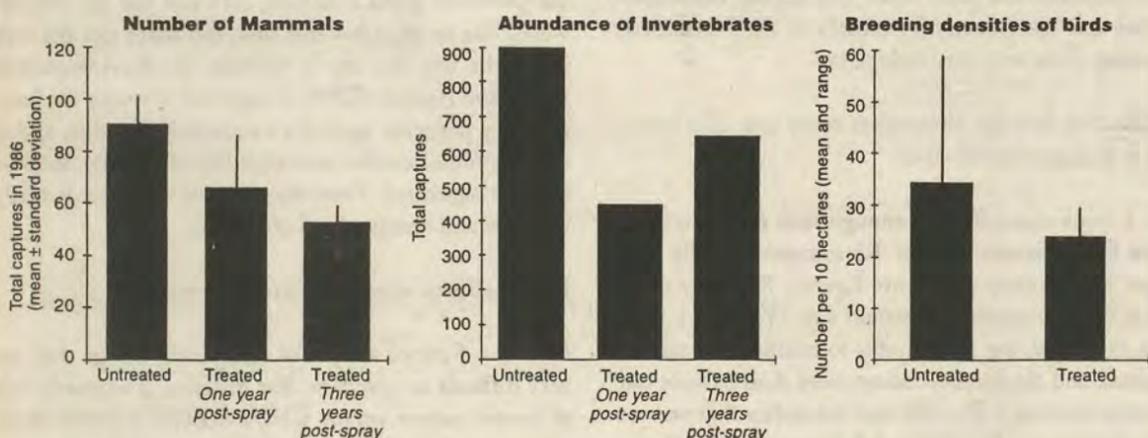
Conclusion: The herbicides proposed for use by Boise Cascade can negatively impact wildlife by disrupting their habitat and food resources.

New Hampshire now has the opportunity to determine what kind of forest management will be practiced in the state as it moves into the twenty-first century. New Hampshire can choose a forestry management system that is dependent on high-cost chemical inputs that are toxic to people and wildlife, damage wildlife habitat, persist in forest soils, and move uncontrollably away from the site of application. Or it can choose sustainable forestry, forestry that maintains the long-term productivity and health of New Hampshire's forest ecosystems and citizens. The choice is clear. NCAP urges the Pesticide Control Division to reject all proposals for aerial applications of forestry herbicides.

1 Kale, P.G. et al. 1995. Mutagenicity testing of nine herbicides and pesticides currently used in agriculture. *Environ. Mol. Mutagen.* 25:148-153.
2 Martinez, T.T., W.C. Long, and R. Hiller. 1990. Comparison of the toxicology of the herbicide Roundup by oral and pulmonary routes of exposure. *Proc. West. Pharmacol. Soc.* 33:193-197.
3 Martinez, T.T. and K. Brown. 1991. Oral and pulmonary toxicology of the surfactant used in Roundup herbicide. *Proc. West. Pharmacol. Soc.* 34:43-46.
4 Freedman, B. 1990-1991. Controversy over the use of herbicides in forestry, with particular reference to glyphosate usage. *J. Environ. Sci. Health.* C8(2):277-286.

5 Riley, C.M., C.J. Weisner, and W.A. Sexsmith. 1991. Estimating off-target spray deposition on the ground following the aerial application of glyphosate for conifer release in New Brunswick. *J. Environ. Sci. Health B26(2):185-208.*
6 Payne, N.J., J.C. Feng, and P.E. Reynolds. 1990. Off-target depositions and buffer zones required around water for aerial glyphosate applications. *Pestic. Sci.* 30:183-198.
7 Riley, C.M., C.J. Weisner, and W.A. Sexsmith. 1991. Estimating off-target spray deposition on the ground following the aerial application of glyphosate for conifer release in New Brunswick. *J. Environ. Sci. Health B26(2):185-208.*
8 Payne, N.J., J.C. Feng, and P.E. Reynolds. 1990. Off-target depositions and buffer zones required around water for aerial glyphosate applications. *Pestic. Sci.* 30:183-198.
9 Yates, W.E., N.B. Akesson, and D.E. Bayer. 1978. Drift of glyphosate sprays applied with aerial and ground equipment. *Weed Sci.* 26(6):597-604.
10 U.S. EPA. Region 10. 1989. The problem of undetectable residues of drifted herbicide causing non-target crop damage. Memo from Gary O'Neal, Region 10 Air and Toxics Division to Anne Lindsay, Office of Pesticide Programs Registration Division. (April 28.)
11 U.S. EPA. Office of Pesticide Programs. Special Review and Reregistration Division. 1993. *Reregistration eligibility decision (RED): Glyphosate.* Washington, D.C. (September.)
12 Müller, M. et al. 1981. Fate of glyphosate and its influence on nitrogen-cycling in two Finnish agricultural soils. *Bull. Environ. Contam. Toxicol.* 27:724-730.
13 Torstenson, L. and Stark, J. 1979. Persistence of glyphosate in forest soils. In *Weeds and weed control. 20th Swedish Weed Conference.* Uppsala. 31 January - 2 February 1979. Uppsala, Sweden: Swedish University of Agricultural Sciences.
14 Feng, J.C. and D.G. Thompson. 1990. Fate of glyphosate in a Canadian forest watershed. 2. Persistence in foliage and soils. *J. Agric. Food Chem.* 38: 1118-1125.
15 Roy, D.N. et al. 1989. Persistence, movement, and degradation of glyphosate in selected Canadian boreal forest soils. *J. Agric. Food Chem.* 37:437-440.
16 Torstenson, N.T.L., L.N. Lundgren, and J. Stenström. 1989. Influence of climate and edaphic factors on persistence of glyphosate and 2,4-D in forest soils. *Ecotoxicol. Environ. Safety* 18:230-239.
17 Anderson, J.J. and J.J. Dulka. 1985. Environmental fate of sulfometuron methyl in aerobic soils. *J. Agric. Food Chem.* 33(4):596-602.
18 Turner, S.A. 1987. Post-application movement of sulfometuron methyl from treated rights-of-way areas via wind (soil) erosion. *Proceedings. Fourth Symposium on Environmental Concerns in Rights-of-Way Management, Indianapolis, IN, October 25 - 28, 1987.* West Lafayette, IN: Purdue University. Department of Forestry and Natural Resources.
19 Reynolds, P.E. and M.J. Roden. 1991. Black spruce mortality three to four years after site prep with sulfometuron, metsulfuron, and hexazinone. *Northeastern Weed Science Society. 44th Annual Meeting. Supplement.* Pp. 230-236.
20 Wiese, A.F., M.L. Wood, and E. W. Chenault. 1988. Persistence of sulfonylureas in Pullman clay loam. *Weed Technol.* 2:251-256.
21 U.S. EPA. Office of Pesticide Programs. 1984. Memo from Sam Creeger, Hazard Evaluation Division, to Robert Taylor, Registration Division. Environmental fate review of 241-EUP-RNR. Washington, D.C. (Mar. 15).
22 Coffman, C.B., J.R. Frank, and W.E. Potts. 1993. Crop responses to hexazinone, imazapyr, tebuthiuron, and triclopyr. *Weed Technol.* 7(1):140-145.
23 Coffman, C.B., J.R. Frank, and W.E. Potts. 1993. Crop responses to hexazinone, imazapyr, tebuthiuron, and triclopyr. *Weed Technol.* 7(1):140-145.
24 Lloyd, R.W., J.W. Keeling, and J.R. Abernathy. 1986. Efficacy of new herbicides on nutsedge and rotational crops. *Proc. 39th Ann. Mtg. South. Weed Sci. Soc.* (Abstract.)
25 Heering, D.C. and T.F. Peeper. 1991. Field bindweed (*Convolvulus arvensis*) control in winter wheat (*Triticum aestivum*) with herbicides. *Weed Technol.* 5:411-415.
26 U.S. EPA. Office of Pesticide Programs. 1984. Memo from Samuel Creeger, Hazard Evaluation Division, to Robert Taylor, Registration Division. Environmental fate review of 241-ETG. Washington, D.C. (Mar. 21).
27 Vizantinopoulos, S. and P. Lolos. 1994. Persistence and leaching of the herbicide imazapyr in soil. *Bull. Environ. Contam. Toxicol.* 52:404-410.
28 Michael, J.L. and D.G. Neary. 1993. Herbicide dissipation studies in southern forest ecosystems. *Environ. Toxicol. Chem.* 12:405-410.
29 Berisford, Y.C. et al. 1995. Operational monitoring of forest site preparation herbicides in the coastal plain: Assessment of residues in perched water table. 1995 *Proc. South. Weed Sci. Soc.* 115-120.
30 Rashin, E. and C. Graber. 1993. Effectiveness of best management practices for aerial application of forest pesticides. Olympia, WA: Washington Dept. of Ecology. Environmental Investigations and Laboratory Services Program. Watershed Assessments Section. (October.)
31 Michael, J.L. and D.G. Neary. 1993. Herbicide dissipation studies in southern forest ecosystems. *Environ. Toxicol. Chem.* 12:405-410.
32 MacKinnon, D.S. and B. Freedman. 1993. Effects of silvicultural use of the herbicide glyphosate on breeding birds of regenerating clearcuts in Nova Scotia, Canada. *J. Appl. Ecol.* 30(3):395-406.
33 Santillo, D., P. Brown, and D. Leslie. 1989. Responses of songbirds to glyphosate-induced habitat changes on clearcuts. *J. Wildl. Manage.* 53(1):64-71.
34 D'Anieri, P., D.M. Leslie, and M.L. McCormack. 1987. Small mammals in glyphosate-treated clearcuts in northern Maine. *Can. Field-Nat.* 101(4):547-550.
35 Santillo, D.J., D.M. Leslie, and P.W. Brown. 1989. Responses of small mammals and habitat to glyphosate application on clearcuts. *J. Wildl. Manage.* 53(1):164-172.
36 D'Anieri, P., D.M. Leslie, and M.L. McCormack. 1987. Small mammals in glyphosate-treated clearcuts in northern Maine. *Can. Field-Nat.* 101(4):547-550.
37 Ritchie, C., A.S. Harestad, and R. Archibald. 1987. Glyphosate treatment and deer mice in clearcut and forest. *Northw. Sci.* 6(3):199-202.
38 Hjeljord, O. and S. Gronvold. 1987. Glyphosate application in forest-ecological aspects. VI. Browsing by moose (*Alces alces*) in relation to chemical and mechanical brush control. *Scand. J. For. Res.* #115-121
39 Fletcher, J.S., T.G. Pfeeger, and H.C. Ratsch. 1993. Potential environmental risks associated with the new sulfonylurea herbicides. *Environ. Sci. Technol.* 27(10):2250-2252. (October.)
40 Fletcher, J.S., T.G. Pfeeger, and H.C. Ratsch. 1995. Chlorsulfuron influence on garden pea reproduction. *Physiol. Plant.* 94:261-267.
41 Fletcher, J.S. et al. 1996. Potential impact of low levels of chlorsulfuron and other herbicides on growth and yield of nontarget plants. *Environ. Toxicol. Chem.* 15:1189-1196.

Impacts of Glyphosate on Nontarget Animals on Maine Clearcuts



Sources:
Santillo, D.J., D.M. Leslie, and P.W. Brown. 1989. Responses of small mammals and habitat to glyphosate application on clearcuts. *J. Wildl. Manage.* 53(1):164-172.
Santillo, D., P. Brown, and D. Leslie. 1989. Responses of songbirds to glyphosate-induced habitat changes on clearcuts. *J. Wildl. Manage.* 53(1):64-71.

The Best Pest Management Strategy is One that Prevents Pest Problems

An Interview with Caroline Cox of the Journal of Pesticide Reform

Caroline Cox works for the Northwest Coalition for Alternatives to Pesticides (NCAP), a five-state regional pesticide reform group in the Pacific Northwest. She edits its publication, the invaluable *Journal of Pesticide Reform*. The basic mission of NCAP is to promote alternatives to pesticide use.

Caroline has a masters degree in entomology from Oregon State University. She participated in the June 26-27 hearings before the Vermont Forest Resources Advisory Council (FRAC). Her expert testimony on pesticides and pesticide testing effectively challenged the contention of Champion International and Monsanto Corporation that proposed aerial herbicide spraying in Vermont's Northeast Kingdom would pose no health or safety risk to the public or to Vermont's forest ecosystems. Following the FRAC hearings she spoke with *The Northern Forest Forum* about pesticide issues. NCAP's address is: PO Box 1393, Eugene, OR 97440. E-mail: ncap@icg.apc.org

Jamie Sayen (JS): What is the rationale for using pesticides, and what is your message about alternatives to pesticide use?

Caroline Cox (CC): I'm not very good at rationalizing pesticide use. (Laughs)

Probably everybody who uses pesticides has a different rationale. The most common one, I think, is it seems to be an inexpensive way to deal with a pesticide problem, and you can see a quick response to using a pesticide that you might not see through other kinds of pest management.

Our rationale for promoting alternatives is that all pesticides are poison. They're chemicals that are designed to kill. There's no way around that. They don't function unless that's what they do. Therefore, they're bound to have impacts on the environment, and in almost every case where someone has tried, they've been able to find alternatives that accomplish the necessary pest management objectives without having the same kind of impacts on the environment.

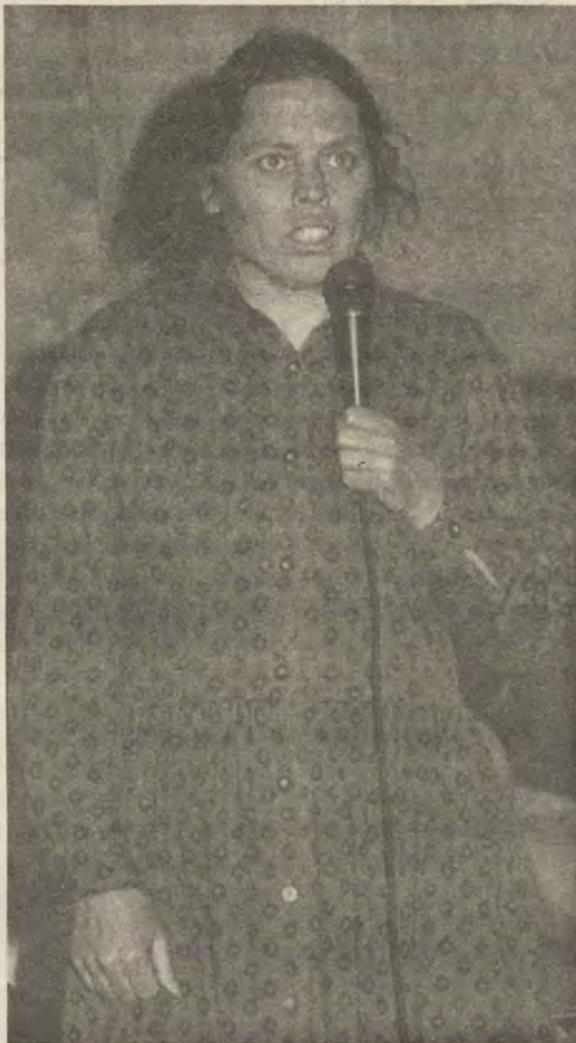
NCAP believes that most people use pesticides because they don't know that there are alternatives. When people are educated about hazards posed by a particular pesticide that they're thinking about using, and given alternative ways of managing pests, they almost always choose the alternatives. Usually people are using pesticides just because they don't have information about alternatives.

JS: Much of your work, then, is basic education, showing people that there are, indeed, alternatives?

CC: We do a lot of what we call information services, which is just responding to people's questions. They'll call, or E-Mail, or write and ask for information about a particular pesticide, or information about how to deal with a particular pest. We also have pro-active program work in a number of different areas. We have a forestry program which is trying to reduce the use of pesticides in forestry in the Pacific Northwest. We also have a school pesticide use reduction program, trying to encourage schools to use fewer pesticides. We have an agriculture program that's working with farmers and consumers to try to increase the supply and demand of organic produce.

JS: In 1984 you got an injunction in the Pacific Northwest prohibiting national forests from using herbicides. Could you tell that story?

CC: The forestry herbicide issue was where NCAP started. Back in the late 1970s there were local grass-roots groups working all over the Pacific Northwest trying to stop the use of herbicides. Foresters had just begun using herbicides to kill the vegetation growing around their crop trees. In those days it was mostly the two herbicides which made up Agent Orange that were brought home from Vietnam and were being



Caroline Cox, editor of *The Journal of Pesticide Reform*, testified at Island Pond, VT. on June 26-27 before the Forest Resources Advisory Council Herbicide Committee. This interview was conducted a couple of days later.

sprayed on Northwest forests. Agent Orange is notorious because of its contamination with dioxin.

At the time [focusing on] the Forest Service and the Bureau of Land Management (BLM), both of which are federal agencies that manage forest land in the Northwest, seemed like a good approach to try to change the way herbicides were used in forestry. There were some legal tools that applied to government agencies that didn't apply to a private timber owner who used herbicides. There was also a feeling that the Forest Service and the BLM could set some examples for private forestry in terms of pest management.

There was a series of lawsuits based on the National Environmental Policy Act. At one point during those lawsuits, the Forest Service and the BLM were being bureaucratic and rather pokey in responding to the court's request. The judge got mad, and said, "I've had it. You can't use herbicides until your environmental impact statements are completed and have been approved by the court."

The injunction forced the Forest Service into looking at alternatives. They had lost their herbicide tool. It took six or seven years for them to go through the whole process of revising their environmental impact statement and bringing it up to acceptable standards for the court, and during that time, they learned a lot about how to manage regenerating clearcuts without using herbicides. And so, even though at this point the injunction has been lifted and legally the Forest Service can use forestry herbicides in the Northwest, they have done very very little of it.

JS: Do they find the alternatives to be cost effective as well as biologically effective?

CC: I think cost effective enough that they can work in the Forest Service budget. It's sometimes really hard to get firm dollars and cents figures. Probably most Forest Service employees would say, "Yes, it's a little more expensive, but the benefits to wildlife, recreational values, and the local economy more than balance out the extra expense." The EIS and the policy that was set up to implement it don't make it easy for the Forest Service to use herbicides. There's a number of hoops

that they need to jump through.

One of NCAP's goals in working with the Forest Service to write that EIS was to make almost as many hoops for the non-chemical techniques as the chemical techniques because our most important goal was that the Forest Service set up a system of timber management that stressed prevention of pest problems in the first place. We wanted them to take a look at the whole cycle of timber production and figure out how they could set that up to avoid creating pest problems. In the Northwest that's primarily the associated vegetation; we don't have a whole lot of insect pest problems on the west side of the Cascades.

We have always felt that, like the old cliché "an ounce of prevention is worth a pound of cure", the best pest management strategy is one that prevents pest problems. For that reason we really didn't want to encourage the Forest Service to go hog-wild over non-chemical techniques because that wouldn't be accomplishing our basic goal.

After a clearcut has been harvested, they do a lot of silvicultural burning in the Northwest for site preparation. What they found was that by doing the right kind of silvicultural burn and by re-planting trees promptly, they could get the Douglas fir—which is the crop tree in the Northwest—started and get it ahead of the associated vegetation, and then when they do need to do vegetation management, they were able to use "manual release"—cutting the associated vegetation with chainsaws or weed whackers.

They were able to develop techniques of doing that that were very efficient and didn't require coming back in more than once. It had to do with what they call a "cutting window". We have a very dry summer in the Pacific Northwest. It turns out that if you cut a species like alder during that dry season, it's not able to resprout. In fact you get a better "kill" with manual release than with herbicide treatment.

I'm sure that's not going to apply to this ecosystem [in the Northern Appalachians], but I do think that if people went out and researched how best to do manual release in this climate and with the species that are here, they would find out how to do it well.

JS: The argument we're offering is that if you don't do the clearcuts, if you don't create the unnaturally large openings, if you do more selection cutting and leave representative forests behind, you never have to do the planting, you never have to do the spraying, and you never have to do the releasing, and that you continually have a forest from which to grow and extract fiber.

CC: And the Forest Service has moved in that direction in the Pacific Northwest, although not completely. They're doing less clearcutting, and more of various kinds of selection logging techniques.

JS: You do a lot of work studying the testing of pesticides. The EPA requires tests of pesticides to keep them registered, to show that they are allegedly safe. What are some of the problems with these studies that you encounter?

CC: There is a fundamental problem with the way that pesticides are regulated in the United States. The way our national pesticide law is written, it doesn't say: "If the pesticide poses a hazard, let's not use it." NCAP would like to see a law like that, but that's not the way it is. The way the law is written, the Environmental Protection Agency (EPA) is required to weigh the hazards of a pesticide against its economic benefits, and if the economic benefits outweigh the risks, then the pesticide is registered. From my point of view, this is really an apple and oranges kind of analysis. . .

JS: Benefits to whom? And costs to whom?

CC: Yes. First of all, you're comparing things that are very difficult to compare. For instance, a woman's risk of breast cancer versus CIBA-GEIGY's profit from selling atrazine. How is a person supposed to do that? It's the kind of thing that even Solomon didn't want to

have to deal with. In most cases the people bearing risks are not the people receiving economic benefits. So, there again, it makes that kind of process very difficult.

Another problem with the way that the law is written is that EPA did not want to be in the position of having to test pesticides. They didn't feel like they had the resources to do that, so the law is written to require the pesticide manufacturers to provide the test data to EPA who will review it and make an evaluation.

There's essentially a built-in conflict of interest. Why would a pesticide company provide information to EPA showing that there's a problem with their profitable product? It's set up in a way that is bound to lead to conflicts of interest. However I also don't believe the government should be in the business of testing pesticides; and certainly taxpayers shouldn't have to foot that bill.

A third kind of basic problem is that EPA doesn't even have the resources to do the evaluation once the test results are given to them. In fact, they mostly don't have the resources to ask for the test results.

Pesticides were first regulated in this country by the Department of Agriculture which thought its mission was to look out for farmers who might be taken in by unscrupulous pesticide manufacturers. They basically looked for two things in order to register a pesticide: (1) Would it kill the farmer? and (2) Did it do what it was advertised to do? And they registered pesticides on that basis through 1972.

In 1972, in large part because of the problem associated with DDT and other organochlorines, the national pesticide law was rewritten so that there were requirements for what you would call health and safety testing of pesticides: acute effects on laboratory animals; chronic effects on laboratory animals; effects on non-target species; persistence in the environment; that kind of thing.

Also Congress asked EPA to take a look at all the pesticides that had been registered prior to 1972 and bring them up to current standards. But they didn't want to put a new pesticide manufacturer at a competitive disadvantage to any other company. The law was written so that any company that was already making a pesticide could continue to manufacture and sell it while they were in the process of meeting these updated requirements. And any new pesticide couldn't be kept off the market just because it hadn't met all the requirements because its competitors were selling their products without having met the requirements.

The EPA started working in 1972. They would take a pesticide, and they would try to evaluate all the tests and figure out what was missing, what was there, and they would publish a document that let the manufacturer know what tests were needed.

By 1988 they had gotten through about 180 of the 600 or so pesticides that were registered. But none of those chemicals had come back with a complete testing and been reevaluated. All there was was just a list of what was missing. Congress kind of threw up its hands and said, "Look, it's 1988; you've been working on this for 16 years, and we don't have a single pesticide yet that's actually been completely evaluated. So we're going to get hard-nosed, and we're going to lay down some deadlines."

And so they laid down a series of mileposts and set dates: by this date you have to have done this, and by that date you have to have done that. Of course, EPA has missed all of those deadlines.

Some pesticides are no longer manufactured, and at this point there's about 400 of those old pesticides first regulated before 1972 that need to be brought up to current standards. EPA has actually reevaluated about 30 percent of those—about 125—and the rest are still in process. Every time the EPA's budget comes up for reauthorization in Congress, they get up there and say, "Well, if you cut our budget, it's going to prolong the date at which we're actually going to finish reevaluating these chemicals." Right now, I think they're talking about trying to get done by about 2006 or 2007. In the meantime, of course, there are also new pesticides which they are registering. So there's a total of about 880 pesticide chemicals that are registered for use by the agency.

JS: And these new ones are still basically, for competitive reasons, not being required to jump through all these hoops in advance?

CC: The vast majority of the tests required are "conditionally required" which means that EPA decides on a case by case basis whether they're required. So EPA is able to waive many of the tests, and my experience is that they waive quite a few of them, particularly the more expensive ones like long-term tests and field studies and that kind of thing. They're much more likely to require short-term laboratory tests.

JS: These tests basically are done in a laboratory and in isolation; they're not conducted to assess the way you or I or an animal in a wild setting would actually encounter the pesticide. There are cumulative impacts over the years. There are multiple toxins that we are encountering. And, in the case of wildlife, something like Roundup or glyphosate may not be toxic to the animal, but if it removes the animal's habitat and food base, it is going to have an impact on that animal's survivability. These studies are not being done; is that correct?

CC: There are very few field studies that are required. They use what's called a "tiered" approach to the ecological effects of testing which means that they start out with a very simple test. In the case of say fish, they'll look at what's the dose it takes to kill a fish. Then they try to calculate what they expect the concentrations of the pesticide to be in the environment after use, and they compare that to the amount it takes to kill the fish. Unless those two amounts are relatively similar, they'll say, "OK, you don't need to do any more testing."

A pesticide that might have an impact on a particular life stage, or might have more of a chronic-type effect, those things won't show up in this Tier I testing, and it's very unlikely that they'll get to them because they won't go up through the tiers that are more complex testing.

EPA tests what they refer to as "active ingredients" of pesticide chemicals, singly, one at a time. They very rarely look at what might be the impacts of, say, a combination of chemicals. This is important because there

may be more than one pesticide used at a time, or wildlife might be exposed to more than one pesticide.

And then, there's a whole other issue of the "inert" ingredients. Most pesticide products are not just a single ingredient; they actually contain a list of ingredients. The way the national pesticide law is written, the ingredients in a pesticide product are divided into two categories. One is what they call the "active ingredient", the legal definition is: "the chemical that kills, repels, or mitigates the pest." It's the chemical that's supposed to do the killing.

All the other ingredients in the pesticide are legally called "inert ingredients." Most people think of inert as benign, or inactive, or something like that. In this case, it's really a legal use of the word, and it just means that it is not the active ingredient.

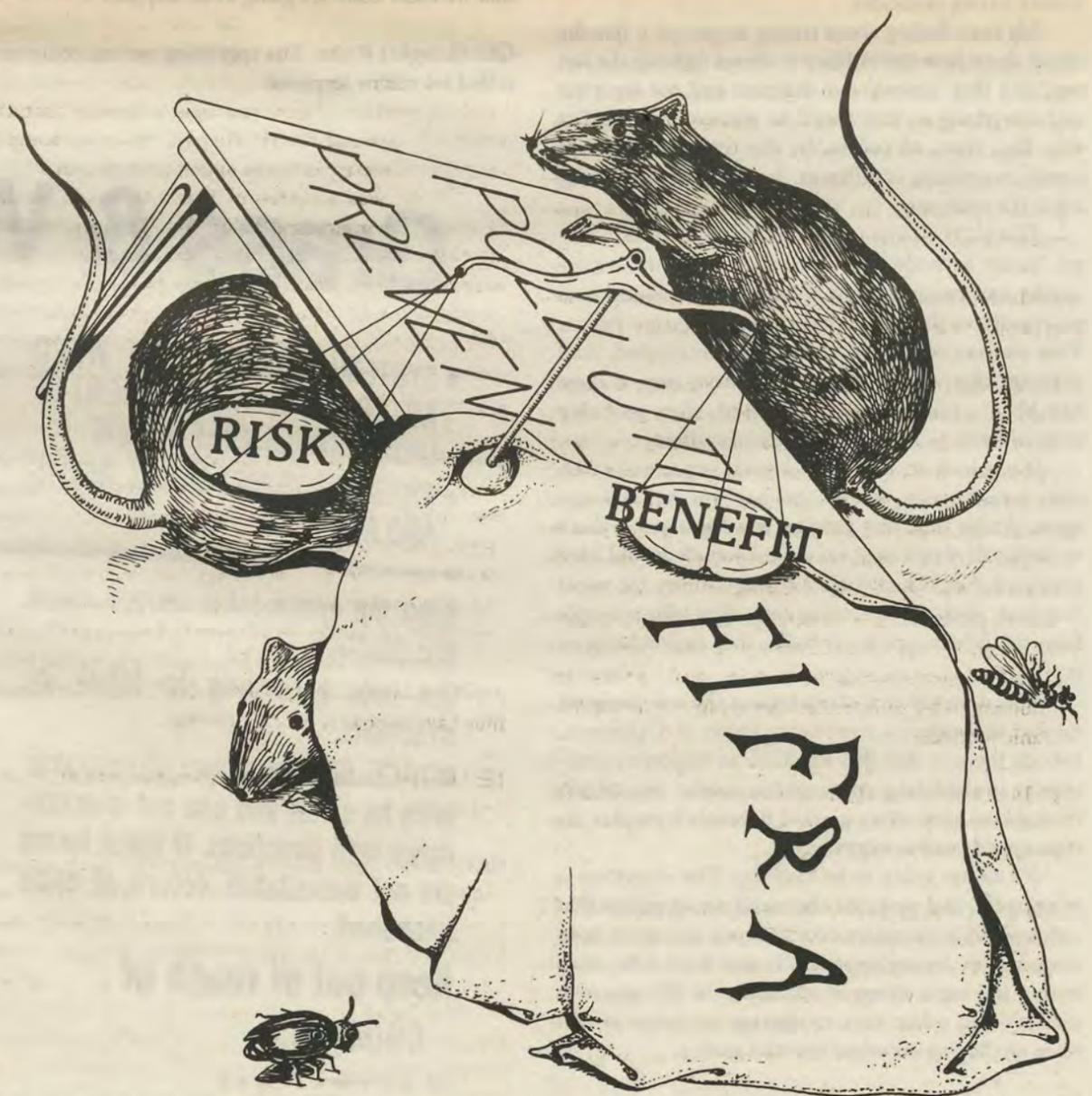
"Inert" ingredients in pesticides are things that are added to the pesticide to make it easier to use or better at killing whatever it is designed to kill. A lot of them are solvents to dissolve the pesticide product, or what are called "surfactants". Those are detergent-type things that help a pesticide spread out on the surface of leaves.

JS: Do they test the inert ingredients?

CC: The inert ingredients themselves are not tested very much. There's practically no testing requirements for something that's going to be used as an inert ingredient. Some of the tests that are required to register a pesticide must be done on the formulated product—as it's sold. Those tests would test the combination of the active ingredients and the inerts as it is sold. But the tests that are required to be done with the fully formulated product are primarily the acute toxicity tests, so they look at: How much does it take to kill a rat? Does it cause skin irritation? Does it cause eye irritation?

They're not the tests that most people are most concerned about: Does it cause cancer? Does it cause genetic damage? Does it cause birth defects? Those kinds of tests are all done on just the active ingredient alone. There's no requirement for testing of the pesticide product with all of its ingredients.

JS: As part of the American public, should I feel safe?



CC: Well, it's actually written into the national pesticide law that pesticide manufacturers are not allowed to say in advertising or on the label that their product is safe, or that their product is approved by EPA. EPA registration is not meant to really assess the safety of a product. It goes back to what we talked about earlier that it's really a balancing act between the risks of the pesticide and the benefits of the pesticide. So, if the benefits are perceived to be very great, the pesticide can have very great risks. So, it's actually illegal for a pesticide manufacturer to say that their pesticide is safe. For that reason, I don't go around saying "pesticides are safe" either.

JS: But I'm looking at this from a non-technical viewpoint, from the perspective of the average citizen who has kids and wants to know: "Am I being adequately protected by my government's oversight of these pesticides?"

CC: Speaking for myself, I would say the answer is no. All of us are being exposed to combinations of pesticides and their "inert" ingredients for which there really isn't good information about what the impacts of those chemicals are. I don't advise people to run screaming out of the room and try to go hide somewhere. But I think that it's a really important thing for everyone to try to reduce whatever personal use of pesticides they might have, and whatever use of pesticides there might be in their community, and the wider environment. There's a lot of very simple things that we can do to reduce overall use of pesticides, and clearly, if you have a pesticide, it's a poison; it's designed to kill. I think just on a simple intuitive level the less of them that get used, the better off we all are.

JS: Would you like the EPA to do more field tests—tests the impact of a pesticide on an organism in its natural habitat? And, should EPA do more tests on the synergistic effects of pesticides—where more than one pesticide is present?

CC: I guess the EPA feels that it's doing a balancing act between its mandate to protect the environment and the complaints of pesticide manufacturers that they're having to spend too much time and too much money testing pesticides.

My basic feeling about testing in general is like the cliché about how the military is always fighting the last war, and they develop our defenses and our weapons and everything so that they'd be successful in the last war. But, then, of course, by the time the next war comes, everything is different. In a way, pesticide testing is the same way.

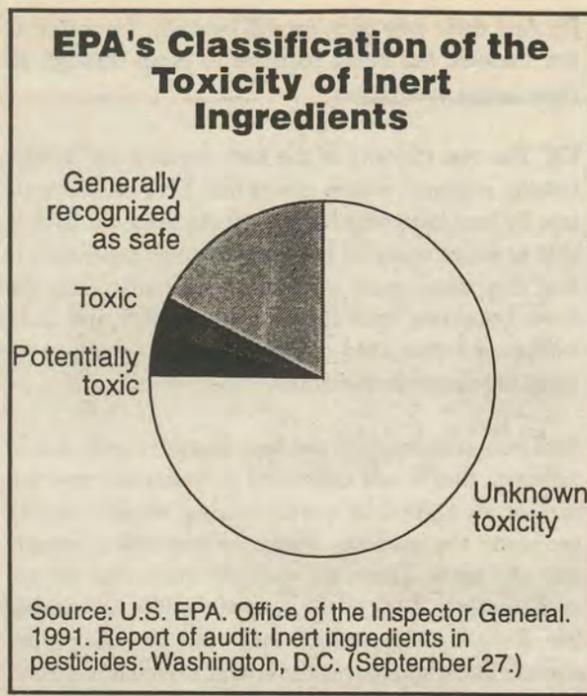
When DDT first started to be used in this country, hardly anybody had a clue that it might bioaccumulate and cause eggshell thinning in birds and lead practically to the extinction of the peregrine falcon. That was not something that people anticipated. And although that was in the pre-EPA days, even if there had been a series of tests required, they probably wouldn't have picked up that particular effect.

If you look at the environmental impacts of pesticides over the years, you see that happens over and over again. At the time that atrazine was registered,—that's an herbicide that's used on corn—nobody would have predicted that it had such a strong affinity for water that now, in the 1990s, every time they take a sample from the Mississippi River basin, they find atrazine in it.

When people first started using the soil fumigant methyl bromide on strawberry fields in California, nobody thought that this would be an important component in depleting stratospheric ozone. So nobody thought to test what methyl bromide's impact on stratospheric ozone might be.

It's always going to be that way. The ecosystem is so complex, and pesticide chemicals are so potent that unfortunately surprises like that are going to keep cropping up. So my approach is not: Let's have more testing and more stringent requirements. My approach is: Let's find other ways to manage our pests so that we're not boxing ourselves into this corner.

JS: In other words, the EPA and perhaps some of the



The toxicity of three-quarters of the chemicals used as "inert" ingredients of pesticides is unknown.

mainstream environmental groups would be looking to "control" the problems and dangers of pesticides, and you're saying, "Let's prevent them by doing it another way."

CC: Yes. The first thing in NCAP's mission statement is "prevention of pest problems". We firmly believe that an ounce of prevention is worth a pound of cure. Any pest management technique that you use, be it a pesticide, or some non-chemical method, is always going to have an impact. So anything that we can do to prevent pest problems is going to leave us that much further ahead. That always puts us in a better position than writing another regulation which is always fighting the last war.

There's no way to write a regulation that's going to anticipate these incredibly surprising things that pesticides have brought to the environment.

JS: In other words, the only thing that isn't a surprise is that we know there are going to be surprises?

CC: (Laughs) Right. The only thing we can count on is that we will be surprised.

JS: You've just been here in Vermont for the last few days attending the June 26-27 FRAC hearings in Island Pond (see Forum, Mid Summer 1996, volume 4 # 6, page 4) dealing with the issue of aerial herbicide spraying for paper companies who want to spray glyphosate and other herbicides following clearcuts that they've done as part of their forest management program. What is your response to these hearings and your thoughts on where concerned citizens might focus their work and energy in the coming months and years.

CC: I guess I have a couple of responses. It was such a heartening thing to see the wide diversity of perspectives opposing the aerial herbicide applications. Every person who testified that morning (June 27) [against herbicide spraying], brought a different perspective, and when you combine all those different perspectives, the combination is so strong that I think it really can do battle against a multi-million dollar corporation like Monsanto. So everything that the Vermont Forest Roundtable can do to keep bringing in all those perspectives is absolutely terrific, and I think it's going to be a cornerstone to making real changes in how the forests are managed.

The other thing that really was a delight to me personally was to see the panel's obvious interest in the ecological effects of these aerial glyphosate applications. I have spent a lot of time in the last ten years reviewing toxicological studies about pesticides. I do it because people always want to know: "What's it going to do to me personally? My health and my children's health?" And I also do it because it makes me really angry to see pesticide manufacturers representing their product as practically non-toxic. But still, I firmly believe both on an academic, intellectual level, and on an emotional level that the most serious impacts of pesticides are ecological. We should be most concerned about the way that they disrupt our environment. It was so good to see the FRAC panel focusing in their (June 27) afternoon questions on that aspect. I was really heartened.

Hub Vogelmann, [FRAC-member and University of Vermont Professor of Botany] wanted to know more about the boreal forest species that might be at risk. That just made me feel really good to see that those issues are being seriously considered.

JS: One of the things I found most heartening about the hearings in Island Pond was that instead of having a policy made by government bureaucrats and industry lobbyists essentially behind closed doors, or out of the

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Photo of a pesticide label. Inert ingredients constitute more than 99% of product.

public arena, policy, at least in Vermont on aerial herbicide spraying as a forest management tool, has been brought out in the open. The public has educated itself, talked with each other about it, and talked within the community about it. I'm a firm believer that issues such as stopping herbicide use, or achieving Wilderness protection, or any reform—when these issues are discussed in the free market of ideas, and within the community, that's when change becomes possible. When it's a closed door deal between bureaucrats and lobbyists, that's when democracy doesn't work, and we're left out.

CC: Yes. I think Vermont deserves a lot of applause. I don't know of another state with as open a process. These Vermont hearings felt very very democratic to me. That's a great opportunity for ordinary people to have some input into forest pest management problems.

JS: In the short-term we are working to stop the spraying proposed in Vermont and New Hampshire. What are some of the longer-term strategies that we need to focus on to change society's values and policies toward pest management and pesticides?

CC: I wish I had a long-term's worth of wisdom. (Laughs) I've thought a lot about two examples. One is recycling, which, when I was a kid in college, was seen as some kind of communist plot that hippies did behind the barn. It's been amazing to me to see my kids come home from their very ordinary public school, having had a lesson in how to recycle, and giving me grief if I'm not doing it right. To them it's just an accepted part of everyday life. They don't even think twice about it. Really, that transformation has taken place in 20 years, which isn't really a terribly long time. And so, I would hope we could go through the same kind of change with pesticide use.

The other example I've thought about recently is smoking. Twenty years ago, most smokers didn't even feel obliged to excuse themselves when they lit up a cigarette. And now, virtually always, they'll go outside, out away from where other people are, and smoke their cigarette in the company of other people who smoke. Also, I think the attitude toward the tobacco companies has really done a shift in the last few years. Now there's a significant portion of the American public that feels like the tobacco companies are involved in a business that is really not something that should be happening.

I would love to see those sorts of transformations in the pesticide arena as well. Given the kind of change of public opinion that's occurred about smoking and tobacco, it doesn't seem impossible. With tobacco too, you're dealing with the same kind of very profitable industry and the same kind of really huge corporation. So I think there are probably some lessons from the anti-smoking movement that might be applicable to the pesticide reform agenda.



Caroline Cox cross-examines Monsanto scientist at June 26 Forest Resource Advisory Council hearing at Island Pond, Vermont. Photo © Gustav W. Verderber

JS: One of the claims that the pesticide companies always make is that these products are safe if applied properly—if you follow the label directions. What are your thoughts on that? Also, in the realm of human fallibility—accidents do happen.

CC: I mentioned this before, but that phrase "safe when used as directed" is one of those phrases which EPA has said pesticide manufacturers cannot legally use in advertising or on the product label. So, if you actually hear a pesticide manufacturer saying something like that. . .

JS: Didn't they say that at the Island Pond hearings? Or words to that effect?

CC: Champion did. You notice that Monsanto didn't. That's the difference between a pesticide user who's not bound by the requirements of FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act) and the pesticide manufacturer. I feel that if it's not a claim that should legally be made by a manufacturer, then no one should be making it. Monsanto was pretty careful about that, if you were paying attention to that kind of thing.

We talked before about how there are always these surprises, and you never can predict what's going to happen. I think accidents are inevitable and unpredictable. There's a certain amount of effort gone into creating worst case scenarios so we can somehow plan for them or assure ourselves of adequate margins of safety, but somehow accidents seem to happen. . .

Certainly nobody had any way of predicting that a pesticide plant was going to blow up in Bhopal and kill

thousands and injure many times that many. There have certainly been enough cases where even when used according to label directions or best management practices, pesticides still cause problems.

There's an interesting report that the State of Washington did monitoring forestry herbicide applications. The purpose of the study was to assess what they call their best management practices (BMPs)—sort of like what you call AMPs around here. They took water samples from streams coming off treated clearcuts, and in every case they found pesticides in the water. So, if your goal is to protect water quality, the best management practices were failing. Even by their own standards, they said, "Our Best Management Practices" aren't working."

When you know that there are agency personnel on site taking samples, you're probably going to do your very best at following the BMPs. So, if they're still finding pesticides in the water under those circumstances, it gives you a little pause about what you might be finding under more ordinary situations.

I don't know what the state of Vermont has set up, if anything, but in most states, there's very very little monitoring of pesticide applications. In Oregon, the Department of Forestry reluctantly agreed that they would try to take 50 samples every two years—this is in a state where private timber companies are treating several hundred thousand acres of timberland with pesticides a year. Then the Department of Forestry announced there wasn't money in the budget even to do those samples. Even under the best case, when we have the resources to go out and look, we're finding contamination. I hope the worst case doesn't ever happen.

Generations at Risk: How Environmental Toxins May Affect Reproductive Health

Generations at Risk: How Environmental Toxins May Affect Reproductive Health in Massachusetts, by Greater Boston Physicians for Social Responsibility (GBPSR) and the Massachusetts Public Interest Research Group (MASSPIRG) Education Fund. 140-8.5x11 pages, self-published July 1996, \$11.50. Order from GBPSR, 11 Garden St., Cambridge, MA 02138.

Reviewed by Nancy Oden

Attention, Toxins Activists: You need this book! You have been saying some of these things for years, but here are New England statistics and charts and lists written by people with letters like M.D., M.P.H., and J.D. after their names. As we know well, facts become "truer" when people with letters and numbers after their names say them. That counts in the game of "Who has

the best science?"

This book is a great tool because it has lots of immediately useful material. It is actually written in plain English, so we can quote from it directly at public hearings and in writing up fact sheets.

There are sections on heavy metals, solvents, pesticides, endocrine disruptors, cross-reference health effects tables, risk assessment, right-to-know, etc. Great stuff.

Mind you, these are doctors and lawyers speaking, so their statements are more cautions than, say, Lois Gibbs, the Love Canal organizer whose recent book, *Dying from Dioxin* written with Beverly Paigen, Ph.D., senior scientist at Jackson Labs, Bar Harbor, has even more charts, tables, and bold statements about environmental toxins.

But, you need this book, too. They complement one another nicely. Also

quite important are two other books recently out: *Our Stolen Future*, by Theo Colborn, Ph.D., and *The Making of a Conservative Environmentalist*, by Gordon Durnil, Esq. All very useful.

In *Generations at Risk*, the section on pesticides was written by Ted Schlettler, M.D. of Physicians for Social Responsibility. In Table 1, "Studies on Maternal Agricultural Occupation Involving Potential Pesticide Exposure," one line states that "Agricultural occupation at any time of pregnancy" makes a woman 5.7-times more likely to bear a dead child.

The latest agricultural fad—fake cranberry bogs into which pesticides are poured then released back into streams or rivers—shows up in Table 3. The use of Organophosphates (nerve gases which attack the central nervous system) shows, in animal studies, DNA

damage, abnormal and dead sperm, decreased testosterone levels, birth defects, resorption of fetuses, and more.

Then there are the organochlorine pesticides, Table 4, which contain the dioxin-forming chlorine chemicals, showing effects on animals of testicular degeneration, loss of fetuses, reduced sperm count, imitating estrogen (female hormone), birth defects, etc., etc. In chemicals contaminated with dioxins, we're exposed not only to the virulent effects of pesticides, but the long-lasting, dangerous dioxin and its relatives.

Scary stuff. Enough to make us DO SOMETHING!

To help stop aerial spraying and keep pesticides out of Maine's waters, contact us at: CLEAN: Maine, POB 186, Jonesboro, ME 04648, (207) 434-6228 (phone/fax).

Read, Think, Plan, ACT.

Maine Dioxin Update: Eagles, Humans & Other Critters Still At Risk

Several months ago The Northern Forest Forum reported on the problem of dioxin contamination in Maine's rivers and estuaries from bleach kraft pulp mills (Mud Season 1996, Vol.4, No.4, pp.17-19.) Since then, the struggle to eliminate dioxin emissions from Maine's mills has continued. At the time, a diverse range of concerned groups and individuals made a public appeal for the industry to meet Governor Angus King's edict to "...get rid of the dioxin and the chlorine."

Several days later, Governor King announced that Maine's bleached kraft mills had indeed "agreed" to eliminate dioxin. The mills released a statement which said "We share a long term vision... of eliminating the discharge of pollutants, including dioxin..." There was a good deal of hope, along with a healthy dose of skepticism, that this announcement signaled that these dangerous, endocrine disrupting chemicals would finally be eliminated from a major in-state source. So far, the skepticism seems to have been justified. We must keep up the pressure on the Governor, the mills, and through the marketplace to have zero dioxin paper-making become a reality.

To date there has been no movement by any of the mills to implement technologies that will eliminate dioxin production in the bleaching process. Nor has any plan been put forward that specifies how and when zero dioxin emissions from Maine's mills will be achieved. The mills continue to talk about switching to chlorine dioxide (ClO₂) as a solution, but this is not enough. Although ClO₂ does reduce dioxin formation, it does not eliminate it, and chlorine dioxide poses significant worker and public safety hazards of its own.

Also, the continued use of ClO₂ presents a huge roadblock to conversion to Totally Effluent Free (TEF), or closed loop, mills. This conversion is relatively easy when all chlorine based bleaching chemicals have been eliminated, and has the additional benefit of enabling mills to recycle all of their wastewater. With a chemical as dangerous and persistent in nature as dioxin, we must eliminate it wherever possible. Besides, this is the public commitment made by the mills.

Meanwhile, evidence of the damage done by dioxin continues to grow. Just last month, the US Fish & Wildlife Service issued a "biological opinion" stating that dioxin and dioxin-like chemicals from the Lincoln

Pulp and Paper Mill on the Penobscot River in Maine are likely to cause reduced reproductive success and other behavioral and physiological harm that may reduce bald eagle survival. The Service estimates that up to six fewer eagles would be produced over the next five years under Lincoln's proposed permit. This is a strong indictment of the hazards of dioxin from bleach kraft mills.

Also, Maine's report on dioxin monitoring for 1995 has been issued and shows that levels of dioxin in fish below mills are essentially unchanged since 1991. The levels of dioxin in fish and lobster tomalley continue to require consumption warnings downstream from many mills, despite changes to chlorine dioxide



bleaching. It is important to note that these warnings do not take into account the accumulated levels of dioxin we all carry as a "body burden" from a lifetime's worth of exposure to a chemical that our bodies cannot break down.

To honor their "agreement", the Maine pulp and paper industry must develop and implement specific plans for how and when they will totally eliminate dioxin discharges. Currently the only way to do that is to switch to bleaching processes that have no potential to create dioxin, because they use no chlorine. Dozens of mills around the world are successfully using Totally Chlorine Free (TCF) bleaching right now. They use no chlorine, or chlorine dioxide (ClO₂). They are

making most grades of paper with strength, brightness, and quality equal to that of chlorine based bleaching methods. Best of all, TCF mills represent the best technology for moving to closed loop operations. There is a role for all concerned people in pushing for dioxin elimination from the pulp and paper industry. Please see the ideas below for actions you can take.

What You Can Do

- Write to Governor King (State House Station #1, Augusta, ME 04333), to the mill managers, and to your local newspapers to demand that a plan be developed to totally eliminate dioxin discharges and that it be implemented immediately. The plan must contain proof that it will lead to zero dioxin being produced by the mills, and it must have a realistic, yet ambitious timeline.

- Join concerned groups like the Coalition for a Dioxin Free ME, who are meeting regularly to work on building public awareness and creating strategies to address the threats of dioxin. This group is writing letters to decision-makers, making slideshow presentations, posting rivers with fish consumption advisories, talking to paper suppliers, and planning policy directions.

- Look for and request chlorine-free paper in your stores (for example, Marcal toilet paper). Use chlorine-free printing and copying paper at home, and urge your school or place of business to adopt purchasing policies that prefer TCF¹ or PCF² papers. AVOID ECF³ papers! In Europe and Scandinavia, consumer demand has prompted many pulp producers to switch to TCF bleaching at a rapid pace. Call the number below for a list of available papers and suppliers.

- Call Jay Ritchlin at the Natural Resources Council of Maine, 207-622-3101, for more information, including information about how to join the Coalition for a Dioxin Free ME.

¹ TCF = Totally Chlorine Free. These papers are made with virgin wood pulp (unless specified "tree free") and bleached with no chlorine or chlorine dioxide.

² PCF = Process Chlorine Free. These are recycled paper products which are made with a process that uses no chlorine or chlorine dioxide. The original paper is usually mixed recyclables and some portion may have been originally bleached with chlorine compounds. These papers combine the environmental benefits of recycling and non-chlorine bleaching.

³ ECF = Elemental Chlorine Free. Chlorine Dioxide was used to bleach these products. They are not chlorine free.

Their Ages Were in Four Digits

by William Butler

Back in the '70's Olyn McKay, of Bradley, Maine, told me of some large cedar he had seen in northern Maine, while he was welding on my truck. Olyn and his sons rammed around through the North Woods a lot in their home-made camper, trout fishing. When I was not visibly impressed, he began to tell me how big these trees were—five foot through on the butt. Still skeptical from years of chasing "big" trees that someone had told me about, I said, first, they must be short-bodied, to which he responded they "went right to the moon." Well, I said, a tree that size would have over 3000 board feet of lumber in it. He said yes, they did. I tried one more time, saying that they must be hollow, big cedar often are. He said they were sound at the butt and at the top, to which I replied, "How do you know?" He said he had seen one broken off by a bulldozer making road, and it was as sound as a lead pencil. Olyn was given to understatement. I asked him about the location of these trees and he gave me a pretty good idea of several sites. They were on the land Seven Islands manages for the Pingree heirs. Hay Brook and Snake Brook were two places he named, not far from Reed Pond.

Nothing happened until I read a

paper by Harold Young, then a professor at the forestry school, about the "virgin" forest around Reed Pond, where Harold and his students had measured stocking levels in what they took to be an undisturbed forest. The numbers for hardwood were of interest to me, so I made an appointment to talk with him at his place of work, the James Sewall Co. in Old Town. Harold entered the small room where I was waiting, sat down, and announced that he was not going to talk with me, he knew my reputation. Well, nothing to lose, I started telling him why I was there, and stated my views on Maine forestry in general and particular. Harold responded, and things went along briskly, but, by no means, unpleasantly.

He spoke freely of this forest, at one point telling me of the prevalence of "blowdown" spruce which made following a compass course or cruise line exceedingly difficult. He mentioned, in passing, some big cedar. He clearly said that their ages were in "four digits." When I asked where exactly I might see these (they were not located in his report), he drew up in a huff and told me he would not assist me in trespassing on another's land. My wife and I spent two days walking around Reed Mountain, but did not locate sizable cedar, anything out of the ordinary.

Later, in Bangor, I asked Al Leighton, a Seven Islands executive, which of the multitude of roads around Reed Mountain went into the "untouched" forest. He told me the road was one or two roads back from Munsungan Stream, off the Pinkham road, but when I asked for locations with the big cedar he said, "So you know about those" and clammed up.

In the late '80's I tried some more. Olyn McKay had died, so I asked one of his sons, Philip, how to find these cedar. He confirmed what his father had told me. He said a 7-foot trout pole they put aluminum foil on the ends of (so it would show on a picture) would just span the width of one they camped near. He mentioned Snake Brook, Haymock, Fourth Lake, and Carpenter Pond as sites. He told me these big cedar are not down in the swampy land, but up on the ridges. They stick up on the skyline like the old pine do. Philip lives in Lincoln. His brother is Gilbert lives in Macwahoc.

Philip told me of his uncle Donald, who cut some of these for his shingle mill. Donald McKay is in Wytovitlock. In 1989, Donald told me he had sawed some big cedar; there were two kinds, "red and white, and they had some pencil rot." These came from near where the American Realty Road crosses the

Machias River. (The Realty Road went west from Ashland, before the road-building frenzy that we paid for.) Donald said the cedar were up to three feet diameter, but that they are now all cut.

Even if Seven Islands have sent all their cedar to their Canadian shingle mill, we could still count the annual rings in the stumps and mourn the passing of what most likely were the oldest living things in Maine, comparable to anything but the Sequoias. We might find that they are a species different than our *arbor vitae*.

In 1990, Ron Joseph, a game biologist from Shirley, wrote to the Bangor Daily News about his permitting the destruction of a stand of 300-year-old cedars at Elm Pond, 12 miles north of Moosehead. He said these trees were "living monuments, testimony to a more primitive era."

Sally Rooney, of Houlton, was a student of Harold Young's and knows something of the Reed Pond area, including the land bought by Nature Conservancy. She mentioned George (Pete) Sawyer, manager for the Dunn heirs as having to do with a "registered critical area" possibly near the Bald Mountain mining site, with cedar "36 inches dbh and up."

Imagine, ages "in four digits."

Electric Restructuring Presents More Questions Than Answers

by Pamela Prodan

"The future won't turn out as we currently predict."

—David Moskovitz, Principal, The Regulatory Assistance Project, and former Maine Public Utility Commissioner, Address to the Maine Consumers' Energy Conference, June 28, 1996.

End of A Monopoly Era

Today, electric utilities are regulated monopolies with an obligation to serve all customers, even those in small, isolated rural Northern Forest communities. Over the next few years, each state will determine the extent to which retail sales of electricity will be deregulated in that state. The closer the electric industry comes to being totally deregulated, the more the market will shape the future for electricity consumers.

Economists say that access to service and benefits of industry efficiency brought about by deregulation (also called "restructuring") will accrue to customers in proportion to their market power. In regular language, this means that concepts that we now take for granted, such as a utility's obligation to serve all customers, could soon be a thing of the past. All of the other limited social and environmental protections built in to our current system are at risk as well. Advocates of deregulation have faith that the free market will create overall benefits. Advocates for a comprehensive regional energy policy that is environmentally sustainable, economically fair, meets local needs, and promotes socially-appropriate values are skeptical.

Experts agree that no one knows what the consequences of deregulation will be. Advocates for consumers and the environment are only starting to understand what questions they should ask. About the only thing we know for certain is that deregulation threatens to undo protections, while offering uncertain benefits. Other than raise concerns about pitfalls to avoid and the likelihood of unintended consequences, it is hard to make specific recommendations. After all, how do we make specific what is now unknown? How can we make allowances for the fact that there are huge gaps in our knowledge? It will be years before we can step back and see what restructuring has created.

Why Is Deregulation Occurring?

While most New England states and New York are poised to allow retail consumers to choose an electric supplier as of January 1998, the Maine target date is January 2000. New Hampshire is already conducting a pilot program involving several thousand customers.

Restructuring is taking place because technology has developed to the point where it is now obvious that small, decentralized power supplies make more economic sense than large centralized ones. This in itself is progress. Industrial customers, realizing that self-generated power would cost significantly less than staying on the grid, have been able to negotiate lower electric rates with utilities. Even home-

owners not immediately adjacent to the grid may now find that photovoltaics or wind power is an attractive option. The generation of electricity is no longer a natural monopoly, if it ever was.

The transition to decentralized generation will be difficult and contentious. Because large numbers of customers leaving the grid would create proportionately higher costs for those remaining, last year Central Maine Power Company (CMP) proposed slapping on exit fees to discourage leaving and to recover some "stranded costs." At a recent hearing on restructuring I attended, a major ski area testified that its exit fee would be \$6 million. A large hardwood sawmill and wood pallet manufacturer said it would have to pay \$800,000 if it wanted to generate its own power. Apparently there was similar testimony at earlier hearings. The day after the hearing, CMP dropped the exit fee idea.

Environmental Consequences of Deregulation

While many consumer advocates put economic and social impacts at the top of the list of concerns, the potential environmental impacts of restructuring

are enormous. Unlike the telecommunications industry or the airlines industry, both of which already have been deregulated, energy production and use have tremendous implications for the environment and in particular the Northern Forest. Studies have consistently shown a link between energy consumption and environmental problems.

The protection of the environment is a high priority in Northern Forest communities. The clean, rural character of the region, with its many small, isolated communities, is valued by residents and attracts not only new residents, but visitors from afar. Yet, in order to insure that the character of the region remains consistent with those ideals, state policies must support local economies and ensure that existing mechanisms of safeguarding the environment are not simply deleted.

The U.S.A. is still one of the world's least energy efficient countries. In addition to greater overall environmental benefits, lowering consumption though energy efficiency and avoiding frivolous use is the only choice that can lead to dramatic customer savings and lower bills, especially for small consumers and those with a low and fixed

income.

Lowering consumption of all forms of energy results in money staying in consumers' pockets instead of pouring out of local economies. Although we hear a lot about the importance of the global economy today, the only realistic way of helping small towns to regain their economies is through keeping money in those local economies.

In Maine, least cost planning and the Maine Energy Policy Act (MEPA) currently provide some assurance to the public that the policy of the state is to encourage conservation and demand management over all other alternatives. It is the burden of the utility to show compliance. MEPA requires a comparative analysis of the alternatives and requires the Commission to give preference first to conservation and demand management and then to power purchased from cogeneration and small power producers. The effect has been to encourage reduced use, renewables and cogeneration. Since competitive generation companies under deregulation are proposed not to be regulated as public utilities, the environmental protections offered by MEPA will disappear.

Natural Gas Pipeline Threatens Nash Stream State Forest



Less than a year has passed since the Nash Stream Watershed management plan was adopted and already it is under siege with a proposal to run a 21-inch natural gas pipeline across 4,300 feet of the southeast corner in Stark. The proposed pipeline route crosses the Canadian border at Beecher Falls, VT, travels down Route 3 from Stewartstown to Groveton to service the Wausau paper mill (pictured above), then through the Nash Stream along Route 110 to Berlin, Gorham and thence to Portland, ME and Haverhill, Massachusetts. While the conservation easement with the U.S. Forest Service allows for utility rights of way, Public Service of NH is the only entity with claim to the 4,300 foot corridor.

The state of NH acquired the Nash Stream in 1988 with funds from the Land Conservation Investment Program. The legislation creating the LCIP specifically forbids any rights, including an easement from being divested.

Senator Fred King of Colebrook, an opponent of public acquisition, has promised legislative action to allow the right of way for Portland Natural Gas Transmission Systems plan. This proposed pipeline route will test whether any land in New Hampshire can ever be protected. The Percy Peaks at top of photograph are in the Nash Stream State Forest, north of the proposed pipeline route. Photo © Alex S. MacLean—Landslides.

Renewable Energy

One significant thing about Maine is that a large component of the state's electricity supply is already derived from renewable sources and cogeneration. Clearly, the present system is working for some things. Will that continue? The Commission proposes that all generation providers be subject to an as yet undetermined minimum renewable requirement, otherwise known as a renewable requirement portfolio. It would be implemented through a system of credits that can be traded among market participants. This requirement alone will not necessarily result in locally produced renewables, however. For example, a large midwestern producer burning coal could join with Hydro-Quebec to meet its renewable portfolio.

Also a problem is that minimums tend to become maximums. In order to ensure that Maine does not end up utilizing a smaller proportion of renewable energy than it currently does, the minimum would have to be no lower than what currently is in the mix.

Obviously, there is a public interest in smaller scale renewable facilities which are easier to permit, less risky and more acceptable, socially and environmentally. A minimum renewable supply requirement sounds good on paper, but fails to address one longstanding and valid obstacle to the implementation of renewables: utilities and independent suppliers have consistently favored big, centralized generating facilities, whether the fuel source is renewable or not. Because large facilities are difficult to site, focusing just on a minimum

renewable component without addressing issues of scale and proximity to load amounts to reductionist thinking that is likely to lead to failure.

Pitfalls To Avoid

It would be disastrous for rural and remote areas of New England and Canada to become de facto energy colonies, serving more populated and urban areas with so-called "green power" produced by large centralized biomass, hydroelectric and wind plants. With nothing stopping energy suppliers from framing the choice as "global warming from burning dirty fossil fuels" versus "green power," urban New Englanders might "choose" to sacrifice a significant proportion of the remote mountains, rivers and forests in the Northern Forest that conservationists continue to struggle to safeguard. Indeed, some urban-based environmental groups are even talking about the need for "siting reform" to allow the construction of centralized renewable energy projects like wind farms.¹ In other words, they propose weakening existing environmental standards so these supposedly environmentally benign sources of energy can be exploited.

If we are not careful, we could see other environmental consequences for the region. Consumers, seeing the opportunity to shave a dollar or two off their electric bills, might choose to buy from those midwest producers who burn cheap and dirty coal, causing increased air pollution in the Northern Forest. Perhaps the most serious problem that needs to be dealt with before deregulation is the fact that the competitive model simply does not work for nuclear power. No one wants the next story on nuclear plants to be about the "Valujet Syndrome": trying to keep costs so low that they cut corners on safety.² Since typical savings to the average residential customer brought by deregulation may only be 10% off a total bill³, the public may well ask why the environment should be compromised in light of the minimal savings.

New Power Lines

I also have some concerns about transmission facilities. Large generation facilities, by their very nature, are usually sited some distance from the ultimate users and require significant transmission capability. With our regulated monopoly, we now have a more or less optimized generation, transmission and distribution system for the present location of generation and load. But with open markets, generation can originate anywhere and shift the demand for transmission capacity. Transmission facilities should be minimized because of human and animal health risks posed by electromagnetic fields and herbicide use, cost and use of nonrenewable materials, reliability concerns, conversion and fragmentation of Northern Forest landscapes by power line corridors, and aesthetics. How transmission construction can be minimized given the pressures of an open market would seem to be an extremely important issue. But is it being addressed?

I believe the Maine Public Utilities Commission (PUC) is mistaken in its recommendation that prices for trans-

mission should "encourage the efficient use and expansion, if necessary, of the regional bulk power system." Instead, I believe expansion should be discouraged. Logically, the most compact transmission system should be the least costly system to build and operate, and thus, in the long run, the most efficient. Therefore, prices for transmission should be set to discourage expansion and increased use of the regional bulk power system. Overall, suppliers should be encouraged to locate power supply near the load to be served. Reduction in electrical usage should also be actively promoted as an alternative to increasing transmission capacity.

On the individual customer level, a supplier could install a stand alone energy system, preferably renewable, for a customer in a remote area it cannot otherwise serve because of transmission constraints, paying for the system through the rates it charges the customer. Similarly, photovoltaics or other small power supplies can be located on the grid near load as an alternative to building additional transmission capacity. Transmission capacity can also be freed up by installing load management or efficiency measures. As prices for renewable systems decrease, decentralized renewable options should continue to become more attractive economically, but these options may be realized only if the transmission infrastructure is not already overbuilt. If regulators encourage the further expansion of the transmission system under restructuring, environmentally preferable alternatives like reduced usage and decentralized renewables may never see the light of day.

Customer Choice & Consumer Protection

The aspect of deregulation that will probably be most apparent to the average retail consumer is the ability of suppliers of electricity to have direct access to customers.

- Will customers know the price of electricity being sold to them? We take for granted that our bills tell us how much electricity we consumed the past month and the cost, but would that information be supplied to customers under deregulation?
- Will residential customers even see lower prices or will only customers with market power? It is worth noting that when the natural gas industry was deregulated, although wellhead prices went down 25%, industrial customers saw prices go down 33%, commercial customers saw a 7% price decrease and residential customers gas bills increased one-half percent.⁴
- Since customer choice is supposedly a rationale for deregulation, shouldn't customers know suppliers' sources of generation? Customers who believe in the self-determination of indigenous cultures will want to know if their provider is reaching into distant northern lands for energy resources. Customers opposed to nuclear power will want to know if it is part of their mix. Presently, utilities disclose their generation mix, but in an unregulated market there may be no requirement for providers to do so.

Without such information, customer choice is a hollow promise.

Friends of Boundary Mtns. Release Photo Of Abandoned Wind Monitoring Station



Photo of abandoned Kenetech Monitoring Station © William Richards

In August, Friends of The Boundary Mountains released photographs of an abandoned and collapsed monitoring station on top of Caribou Mountain in the Boundary Mountains of western Maine. The monitoring station was constructed by Kenetech Windpower, Inc., of California as part of its plan to erect more than 600 giant windmills in western Maine.

Apparently, the monitoring station was unable to withstand the force of winter weather. Nearby are the remains of an earlier monitoring station, also destroyed. The remains of both towers, along with abandoned propane tanks and batteries, create the impression of a growing junkyard in the area proposed by Kenetech to be developed into a windmill farm.

Friends of the Boundary Mountains also submitted the photographs in the appeal of a decision by the Maine Department of Environmental Protection (DEP) to grant Kenetech Windpower, Inc., a time extension of its DEP permits. The photos and other documents are part of the presentation Friends of the

Boundary Mountains will make in the appeal, which has been pending since February 1996. The appeal has been postponed twice.

In other filings with the DEP, the grassroots environmental group has raised the issue of Kenetech's present technical and financial inability to build and maintain the project. Kenetech voluntarily declared bankruptcy on May 29 in Oakland, California. According to documents obtained by the group, Kenetech's turbines have not withstood winds in severe climates, and have seen technical failures in Spain, Texas, and California. Friends of the Boundary Mountains also submitted evidence of the potential for widespread bird kills during spring and fall migration of songbirds.

In an August 30 article in the *Lewiston Sun-Journal*, a Kenetech attorney was quoted as saying the company plans to sell the development rights to another windpower company and has several interested parties at this point. "It's a very challenging site for a wind project," he admitted.

CARIBOUDDHISM

The iceberg has come
to speak with Nanao.
She is just beyond the win-
dow
waiting beyond the light.
She has come a long way.
She has a message for us.
She is very shy.
If we look directly at her
she begins to melt away,
all that she
has to say, lost
to the light of
day, the wind, the
rocks, our eyes—
She begins to speak.

We must listen
very carefully.

Tonight she comes as a
moose, no longer iceberg,
tiptoeing clumsily
between the tents.
She is happy in darkness.
She is looking for Nanao.
She wants to enter
his dreams.



Today she is standing
beside the road
in a patch of bog and
dirty snow.
She is the color of glacier,
iceberg, snow and
light.
She turns and

disappears,
into the woods.
She is caribou,
she is iceberg,
she is message,
and dream.

— Gary Lawless

Beth Leonard, Nanao Sakaki, and I traveled to northern Newfoundland in early June 1995 to see moose, caribou, and icebergs. Nanao had just given a poetry reading at a gathering of Tibetan Buddhists in Halifax, Nova Scotia. We were talking about how every place has its own messages, visions, teachers, practices. I suggested that we wander as caribou, listening to their stories, and following their quest for enlightenment. This poem comes from listening.

Customers are entitled to know what contracts a provider has, where the provider normally purchases its power, what its preferences for fuel mix are, and what the history of purchases for that provider has been. In the New Hampshire pilot project, consumers have found it difficult to compare price and resources for the different companies because of "obfuscation marketing."⁵ If a provider cannot document its sources, its customers are entitled to know that. Providers should be required to file a prospectus or give customers a history of fuel mix used to produce power, preferably for the last year. Every state should have a system that requires providers periodically to supply documentation that allows easy customer verification of claims. Penalties should be assessed for misleading claims.

It is not yet known if a couple of companies could dominate the region and set prices. Particularly vulnerable areas such as remote Northern Forest towns, where it costs more to deliver power because of the inevitable line losses caused by long distance transmission, may be redlined, just as minority neighborhoods sometimes are. Or, a provider might obtain such a customer only to then raise rates. The availability of a backup offer will be critical for fairness.

The Process of Deregulation

It will take an enormous effort by decision-makers to avoid public cynicism as this process unfolds. If there is

any condition that can contribute to the likelihood that the public will approve of restructuring, it is openness. A guarantee that the process will continue to be open to all, and not just to a select group of "stakeholders," will go a long way to ensuring not only that the process is fair, but that it is perceived as fair. Regulators should not delegate their responsibilities to stakeholder groups because the stakeholder process automatically eliminates the input of people who may have valuable contributions to make, but who are not included in that process. Recent experience (e.g. The Maine Forest "Compact") shows that stakeholder groups may not be able to resolve all issues satisfactorily because public interests are inevitably underrepresented on such panels, leading to an unbalanced process. While every utility will insist on being represented on the panel, at the same time, much of the diversity of the public interest will be underrepresented or missing entirely.

Some stakeholders have a financial self-interest in the outcome and some stakeholders get paid to hold the stakes. On the other hand, there are many public interests that simply have no representative group capable of sending someone to sit with the stakeholders. For example, would there be anyone to represent the public interest in minimizing expansion of transmission facilities, especially in Northern Forest areas?

Whenever a large generating or transmission facility is proposed to be sited, the most important stakeholders are the people in the affected communi-

ties. These people naturally would advocate most strongly in the public interest against the siting of the large facility and in favor of the alternatives: small and localized production near the ultimate consumers, or reduced consumption. Because of the nature of our legal framework for permitting and siting facilities, and the fact that specific proposals are made only in response to a perceived need, it may be that no one knows at this point in time who those stakeholders will be.

The Public Good

Clearly, the public good has an important role to play in shaping decisions about energy production, transmission and use. Market forces can, under some circumstances, encourage economic efficiency and stimulate entrepreneurial creativity. But not all things of value can be bought and sold, and we cannot rely on the miraculous forces of competition to support and reinforce the human values that lead to the development of thinking, caring and understanding human beings.⁶

An open process that identifies the issues that may *not* be addressed by stakeholders is far more important than putting a group of stakeholders together in a room to make policy recommendations. The question we continually must ask is where do we want to be on the other side of deregulation? Are consumers benefiting and does deregulation complement efforts to safeguard the Northern Forest? Are decisions about energy made locally? It is not progress-

that there are available, and used, large amounts of electrical energy. Real progress for Northern Forest communities would be conserving and reducing energy use and making the most efficient use of our energy and energy transportation systems. Unless deregulation can get us there, we should rightly question the direction we are taking.

Pamela Prodan is an attorney living in Wilton, Maine, with an interest in energy and Northern Forest issues. She has participated in energy-related cases before the Maine Public Utilities Commission, the Maine Department of Environmental Protection and the Maine Land Use Regulation Commission.

Endnotes

- ¹ Comments of Joseph Chaisson, Conservation Law Foundation, at Maine PUC, June 28, 1996.
- ² David Moskovitz, Principal, The Regulatory Assistance Project, Address to Consumers' Energy Conference, June 28, 1996.
- ³ Richard Crabtree, Central Maine Power, at Consumers' Energy Conference, June 28, 1996.
- ⁴ Nancy Brockway, "Deregulation of the Electric Utility Retail Market: Implications for Captive Customers, and Options for Mitigation," at 4, paper for National Consumer Law Center, June 4, 1995 (quoting Jan Hamrin, et al. *Affected with The Public Interest*, NARUC 1994 at 90).
- ⁵ Comments of Edward A. Holt, Maine PUC hearing, September 24, 1996.
- ⁶ "The market is not a cure-all, not a religion, not endowed with wisdom or a conscience or a soul. It's just a social tool, good for limited purposes—choosing in the short term the most efficient way of doing some things, stimulating entrepreneurial creativity in certain directions, rewarding those who do what people with money are willing to pay for. It is not good for—it is, I submit, actively bad for—ensuring fairness, transmitting culture, maintaining community, reinforcing values, protecting the environment, or making long term choices." Meadows, Donella H., "Beware the rush to privatize for the public good," *Topsham Times Record*, 1/19/96.

Subject Index

(Volume Four of The Northern Forest Forum)

This index to the six issues of Volume Four of The Northern Forest Forum is by no means systematic or comprehensive. It should be useful, however, in locating what you need. The numbers preceding an entry (i.e., 1:29), refer to Issue # and Page #, respectively. A condensed title and author's name follow. Indexes to the preceding volumes of the Forum can be found in volume 4, #1, volume 3, #1 and volume 2, #1.

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- 3:29 *Review of Bill McKibben's Hope, Human and Wild*
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- 1:10 *Concerns Raised About Boundary Mtn. Avian Study*; Pamela Prodan
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- 5:7 *ME Referendum Challenges NH to End Liquidation Cutting*; J. Sayen
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- 4:17 *Background on ME's Dioxin Problem & Opportunities for Solution*; ME NRCM
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- Ober's The Northern Forest
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- 1:16 *Protecting Traditions of Northern Forest*; Senator Patrick Leahy
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- 1:24 *ME Sustainable Forestry Council Dominated by Large Landowners*; Wm. Butler
- 1:25 *Canadian Companies Race to Sustainable Certification*; Charles Restino
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- 2:26 *Age Structure Crucial for Sustainable Forest Management*; Mitch Lansky
- 3:8 *ME Council Avoids Current Conditions*; Wm. Butler
- 4:28 *Growing Older Stands—Does It Result in Loss of Productivity?*; M. Lansky
- 4:30 *ME SFMC Accelerates to Meet (& Defeat) Referendum*; Wm. Butler
- 5:12 *What is So Sustainable About Fiber Farming?*; M. Lansky
- 5:14 *Sustaining Dystopia—ME's Council on Sustainable Forest Mgt.*; Wm. Butler

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- 5:3 *Northern Forest Loses A Friend—Syd Howe*; J. Sayen

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- 5:32 *ME Forest & Paper Industry Tax Index*; M. Lansky

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- 1:20 *A Critique of Headwaters Reserves Proposal*; Stephen Blackmer
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- 3:3 *A Letter from Alaska—Large Wildlands Work*; Brad Meiklejohn
- 5:19 *Statewide Effort to Establish Ecological Reserve System*
- 5:27 *ME Woods National Park—Seductive Idea*; Kathleen Fitzgerald
- 6:29 *Adirondacks to Algonquin—A Bi-National Vision*; K. Fitzgerald

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- 2:28 *Maine Wolf Coalition President Responds to SAM*; John Glowa

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- 5:13 *Barnet Wooden Things—A Future in Wood*; A. Whittaker

Assessment Verifies Clearcutting Increasing in Vermont

by Andrew Whittaker

The numbers are coming in and beginning to confirm the word of the off-the-wall citizenry which has been alerting policymakers to the widening phenomenon of clearcutting in Vermont. Until now, official response from Montpelier has attempted to characterize clearcuts as being confined to the extreme Northeast Kingdom.

What the results from a summer aerial survey indicate is that while the pace of cutting has slowed where heavy cuts first stirred the public (Essex County), it is gathering speed in adjacent counties (Orleans, Lamoille, Orange).

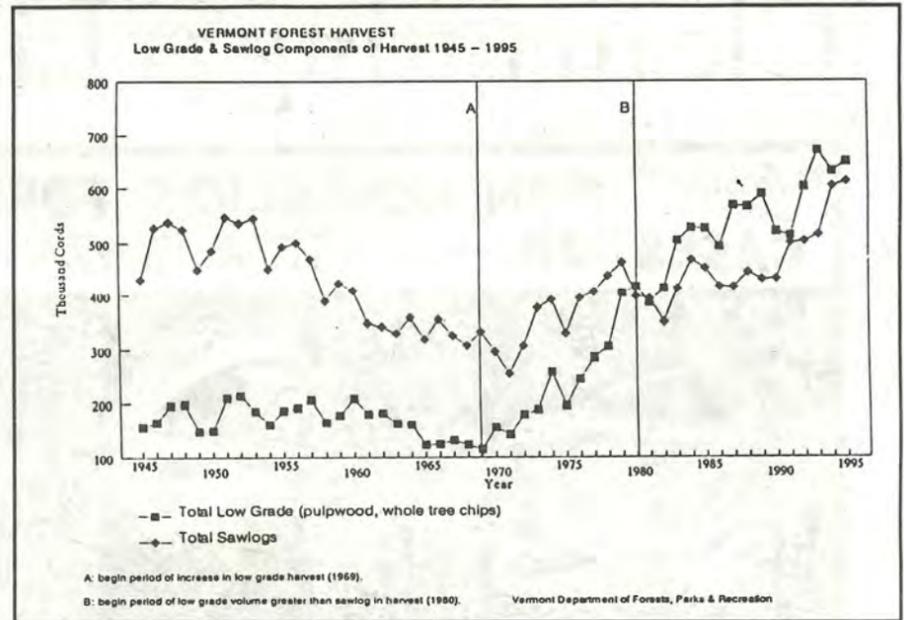
With numbers to go on, members of the FRAC Assessment committee are growing more assertive in their statements, hovering just shy of articulating what actual policy should be but leaving less and less doubt that the goal of maintaining a productive forest base is challenged by the level of cutting. Commissioner of Forests and Parks, Conrad Motyka, in remarks addressed to Associated Industries of Vermont's representative on the committee, Kerrick Johnson, surmised that, given world demand, cutting in Vermont "will explode" over the next twenty years.

Are these numbers sustainable?

asked Johnson of Carl Newton, UVM's School of Natural Resources committee representative. Newton replied that the scenario outlined by Motyka is a "foregone conclusion" and that, with respect to the Essex/Caledonia/Orleans numbers, the actual situation is probably worse than it appears with less land in production than the survey assumed and cuts more likely to have been overlooked than over-counted. Newton observed that at its current pace this region is harvesting its wood on a rotation of slightly over 100 years (17% clearcut in a 19 year period).

Committee Chair Frederick Pratt expressed the goal of maintaining a productive base of forest lands for Vermont while reiterating a desire to avoid regulations that fail to hit the target. "How do we avoid these [cutting] practices?" he asked, likening the timber boom-to-bust cycle to that of the Atlantic fishery. While giving the nod to property taxes as one pressure on landowners, Pratt insisted it wasn't the only motivation to cutting: so too is profit, he said.

Commissioner Motyka cautioned that clearcutting regulations may only force harvesters into evasive actions. He did outline the merits of some form of intent-to-harvest filing on the part of industry while lamenting that an under-funded department would be hard-put



to keep atop the paper. It was not lost on the committee that if harvest plan information was at their disposal, their discussion of harvesting geography, method and motive would be that much more precise, informed, and timely.

Retiring legislator David Clarkson (Newfane) stated his concern that the public might take false comfort in the slowing pace of cutting in the Essex/Caledonia region. He also noted that high-grading liquidation cuts not falling into the category of clearcuts (which were not surveyed), may be of equal or greater import as clearcuts and

are more of a statewide problem.

Survey data did show accelerating clearcutting in Windham, Windsor, Chittenden, Franklin, Lamoille, Washington, Orange, and Orleans over the 19 year period with the pace showing "no sign of leveling off" in some counties. Since 1977, the survey indicates that Vermont has witnessed clearcutting of 200,562 acres of its 4,422,000 acres of timberland. 144,641 of those clearcut acres are in Essex/Caledonia/Orleans, which together have a timber base of 991,000 acres.

Dartmouth Student Group Gives Alumnus Senator Slade Gorton Award for Destruction of Forests

HANOVER, NH. A student group presented its "Golden Stump" award on May 16 to Senator Slade Gorton (R-WA) for introducing legislation which has suspended environmental laws on public lands and allowed logging of protected old-growth forests and endangered species' habitat. The group, Dartmouth is B.R.O.W.N. (Building Real Options for Wrecking Nature), praised the Senator's efforts to roll back popular environmental laws.

"For years, the only thing that stood between us and these forests was the American people, who supported laws to protect them. But Senator Gorton's Salvage Logging rider suspended the environmental laws and eliminated citizen input, and did it without the American people finding

out. Now that's statesmanship," said Josh Mooney, a spokesperson for the group.

Senator Gorton, who graduated from Dartmouth in 1949, introduced the Salvage Logging rider last year to address a "forest health crisis" on our public lands. The students hope that by presenting Senator Gorton as an example, they can inspire others to follow in his path. "Lesser alumni like Robert Frost would probably tell us to see the forest for the trees," said Ann Melander, a member of Dartmouth is B.R.O.W.N., "But only a visionary like Senator Gorton could show us how to see the forest without the trees."

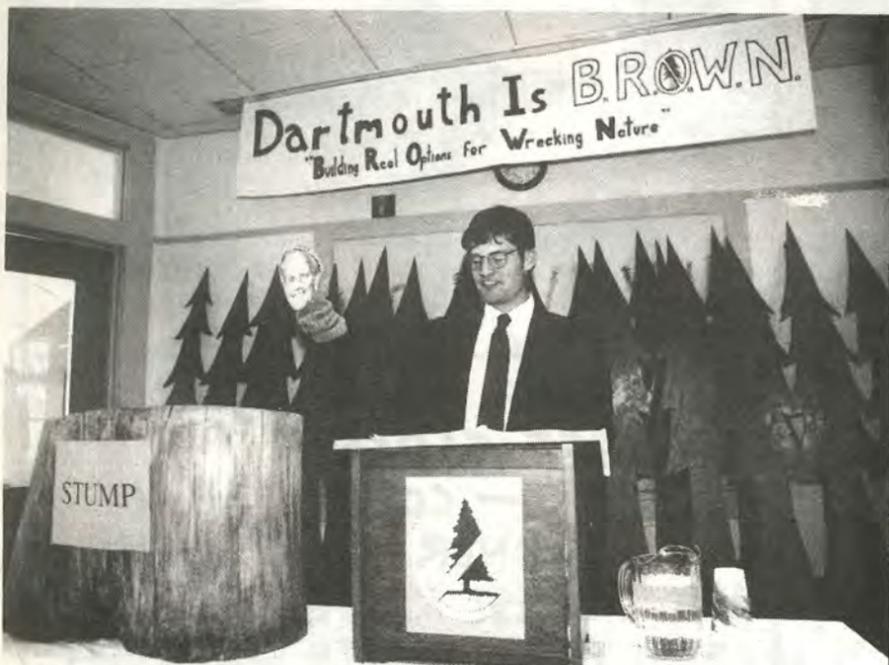
The students also hope that they can counter Dartmouth's image as an environmentally progressive school with

a time-honored connection to the north woods. "All we hear for four years is Green Green Green. What about brown? What about pavement?" said Justin Ruben, another student.

According to Mooney, the group decided to give the award now because Environmentalists have declared this week "National Salvage Logging Action Week." "Right now, with efforts in Congress to repeal the rider and reinstate our environmental laws, it is crucial to act before the public finds out what's going on in our national forests," he said.

Senator Gorton was unable to attend the ceremony, but Mr. Ant E. Flowers, a lobbyist from the Timber industry firm of Dewey, Cuttem and Howe, was on hand to accept it for him. "Of course, the Timber industry has already handsomely awarded the Senator for his efforts, but I know that he appreciates being recognized at his Alma Mater," said Flowers. As of 1993, the Senator was third in the Senate in contributions from timber industry PAC's.

The students closed the ceremony with a 21 stump salute to Gorton.



Jim Hourdequin holds a puppet of Washington Senator Slade Gorton. Photo © All Manny—Rutland Herald

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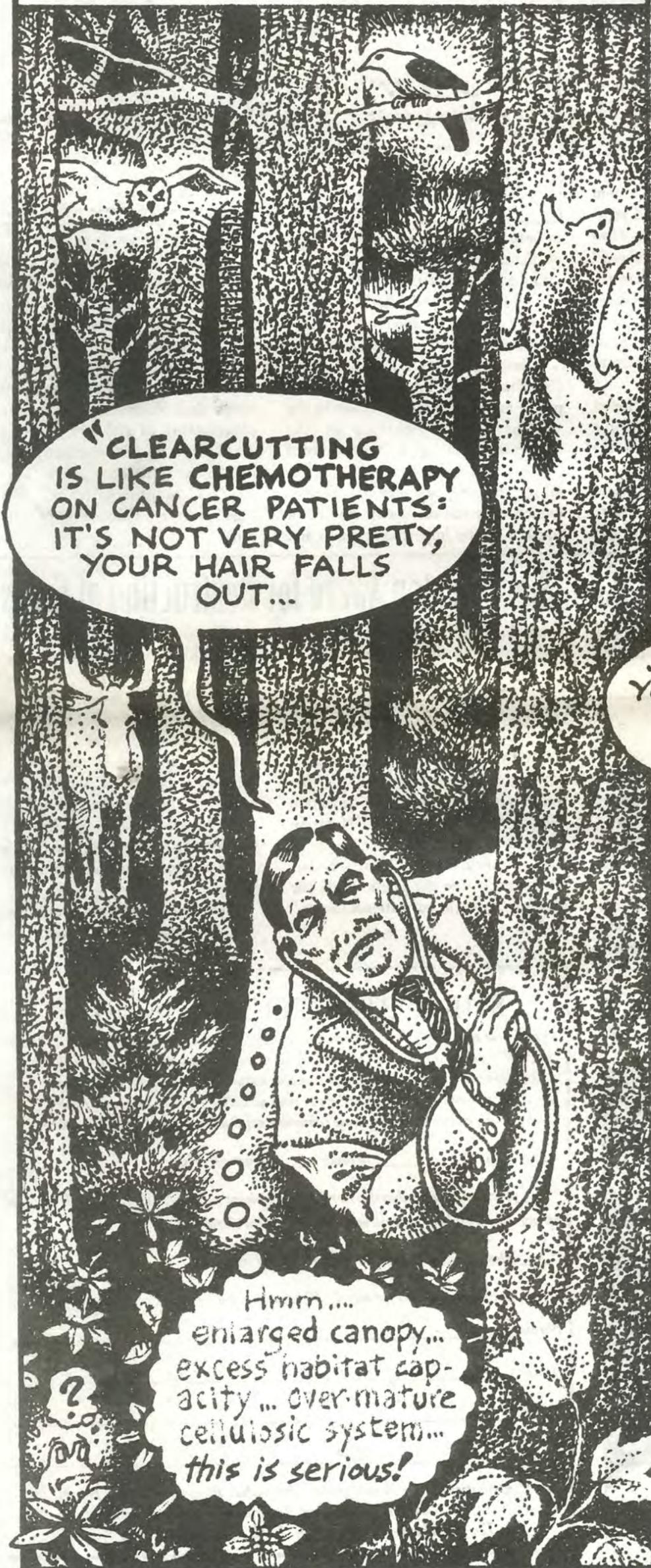
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