

New England Forestry Round the Bend^{1]}

I hate to admit it but I've been coming to these meetings intermittently for the last forty years. Most of that time someone has been talking about private forest land use in New England, generally bemoaning the lack of positive forest management and usually predicting that things wouldn't get better until -- landowner information was improved, or markets went up, or more foresters were hired, or you name it, someone proposed it. With this background it's easy to understand why I find it hard to say anything new. However, something really new is happening and our long neglected forest resource is suddenly the focus of beady-eyed interest from all sorts of unlikely folks.

Just last week I spent several hours with a man from a power company who was intently assessing the forest's potential for generating electricity. Such a venture was undreamed of just a few years ago, but meanwhile the country and the world have gone round a major bend in the road. We all know that cheap energy is gone, probably forever, and that inflation in very large doses is likely to persist for some years to come. The shift in world power and finances represented by rising oil prices, and the life style changes that will inevitably result from adjustments to these facts are almost impossible to calculate. Reactions to inflation that will be piled on top of this, include a real yearning for stability, a preference for present spending over saving, a tendency to plan less for the future, and an assortment of other psychological trauma that make conjectures about the long-term future seem like an exercise in unscrewing the inscrutable.

1] By E.M. Gould, Jr., Harvard Forest, Petersham, MA. New England Section, Society of American Foresters, March 13, 1980.

Of course, one doesn't want to get carried away with the difficulties of looking ahead, because there are a few things in the world that are fairly stable. First of all, New England is likely to remain a region for the foreseeable future. The land itself is changing so slowly with geologic time that to most of us it's permanent. However, experts in such matters note that glaciers have covered us with a mile of ice at least four times in the last million or so years, and that we are now clearly in an interglacial period, so the iceman is sure to return. (Kick that thought around in some of your spare moments and see what it does to your ideas about permanance.)

In more practical terms New England is a region because people think it is. Its physical geography is firmly bound by a human geography of family and financial ties; transportation, telephone and trade; a sense of shared history; and a concern for town-meeting democracy, independence and a faith in the value of individuals. These factors are not about to change, any more than the trees and forest types will themselves really change. Anyone who realizes that most of the land outside of northern Maine and the higher mountains, was once cleared, farmed, let go back to trees and then clear cut once or twice knows that you can't really kill the New England forest. After all that, the forests today are probably much like those that Roger Williams saw when he walked here from Massachusetts. Most of the same species grow in the same niches they did then, hurricanes still blow and the indians probably burned as much or more than we do today. Thus history affirms that, luckily for us, you have to work hard to stamp out trees in the northeast.

The places where people live also haven't changed much for a hundred years. In fact, since settlement was finished, one of the continuing truths has been that population growth takes place near where people already live. Rhode Island is more crowded than Japan and has been so for a long time, while vast stretches of Maine remain essentially empty. It is no accident that the major forest industries and their big land holdings are in the north while most of the people are in southern New England. And this pattern is not likely to change even if so many people emigrate to the sun belt that population growth in the region slows.

So these are the threads of continuity, the warp on which the pattern of a new regional future is woven. Trees will continue to invade each untended space, the north will remain a sparsely settled hinterland, the south a populous urban forest area, and in between will be a fringe zone with a mix of small towns, farms, woods, and outdoor recreation. The region will stay heavily forested with an essentially stable forest ownership that is about two-thirds non-industrial private, roughly one-third forest industry and about 5 percent public. Individuals will continue to hold land for mixed motives; amenity, investment and living space will all rank high, but the cost of holding land will rise rapidly with taxes and interest rates. Environmental concern will not decline, although new legislation will be slow in coming, and people will remain litigious about goals and procedures.

One thing is clear, however, New England forests are more than ever

before closely tied to what happens in the rest of the world, especially doings in the Middle East. Sometimes the train of causation is complex: as when the United States pays so much for oil imports that it creates an unfavorable balance of trade, which contributes substantially to inflation so that confidence in the dollar declines enough to lower the international exchange rate, allowing European industrialists to see that New England red oak is a very good buy so that stumpage prices rise substantially and sales increase, which leads to extensive high-grading of stands that have been maturing since the end of the white pine era. In other instances it's a simple matter of my cutting fuelwood from my own woodlot, to burn in a stove and save myself the price of 1500 gallons of oil.

I have no way of knowing how accelerated sawlog and fuelwood harvest is affecting New England, but if Massachusetts is any guide there has been a drastic change, at least in southern New England. People who are knowledgeable about the Bay State tell me that the hardwood sawlog cut is up 60 percent over the last 1971 Forest Service estimate. We also have an estimate of wood burning from a just-completed R.C.& D. telephone survey. This suggests that fuelwood burned this winter is about one million cords, up over 20 percent from the previous year. Practically all the fuelwood was hardwood, most of it was produced in the state, exports may have almost balanced imports, and over half the wood was cut on their own land by the people who burned it.

Where does this leave Massachusetts' long-run supplies? In 1971 the

Forest Service estimated that hardwood removals for all purposes totaled about 25 percent of net growth. Consequently, inventories were building up each year. A little simple arithmetic shows that today, however, cut is about 110 percent of growth so that this year inventories were depleted about 8 million cubic feet and next year they are likely to be overdrawn about 24 million cubic feet. Significantly, most of this shift into the spendthrift column has taken place in the last year or two. Even if a drain at this level were to continue it would be nearly 90 years before we used up all our present inventory, so it's hard to say that we have a major emergency, but there is some cause for serious consideration.

Actually we don't know what the real situation is in the state because the growth figures are old, probably don't fully reflect current utilization standards, and the consumption data aren't as accurate as we would like. None-the-less, we can say that we are in a period of very rapid increase in hardwood harvesting, and that the rise is still going on. It is also clear that this is a good time to gather new data that will clarify the situation while there is still time to cope with any maladjustments between supply and demand before they get completely out of hand. It's always possible that using up a lot of our standing timber may be the best temporary way out of an ^{energy} emergency crunch, even considering future problems, but to decide we should know more about the situation than we do now.

For some time now a good many people have called for redoing the forest survey more frequently and for more intensive sampling designed to give

accurate county inventories and growth estimates. Personally, I am not at all sure that this would be the best way to use scarce talent and money. We might better give the whole problem of information use another careful look to see what questions we really want answered. If the situation is as fluid and fast moving as it seems, then we want to assess it as the future unfolds rather than at widely spaced intervals. For that we need some sort of yearly or even monthly sampling of major supply, demand and price factors to closely track developments. With such fresh data it would be possible to pinpoint problem areas as they develop, find new solutions, and develop positive short-term programs that can cope. With a finger firmly on the pulse of forestry in the region we could also monitor the results of new management ventures, encourage those that really make a difference and damp-off those that have no detectable impact. If this is what we want, the old forest survey approach will have to be totally rethought.

An additional reason for curiosity about the rapid increase in forest activity is the fact that there is no evidence that the quality of management has increased in any significant way. Casual, down-the-road surveying strongly suggests that special care is rather spotty and most cutters take no steps to provide for regeneration or to protect residual trees. In fact, sawlog harvesting seems to include a very large amount of high-grading which leaves the land in possession of long-suppressed, damaged, or crippled trees best suited for fuel or fiber uses. There is also a considerable amount of unnecessary damage to residual trees which will increase future losses and degrade. Road and skid trail layouts too often seem poorly done

so that soil compaction is increased, erosion excessive, and water quality degraded. In addition, there is little if any effort to preserve buffer strips along highways and filter strips along streams. Thus a low level or lack of management care is narrowing future options. Even though total volume growth may not be seriously impaired, quality production is being substantially reduced.

More important in the short-run may be the impact of poor logging on forest amenity values. Foresters and responsible mill owners and loggers have been trying for many years to promote the idea that wood production and amenity can be melded together to satisfy private owners interested in multiple use. Now that high stumpage prices are opening up many previously closed properties, it is important that the first experience with an operator be a satisfying one. Otherwise, we may see owners returning to their old preservationist ways. An additional spin-off is the impact on the public of unkempt roadside logging. Citizen disappointment with the appearance of our forests is already sparking a move to set up town and city ordinances to control forest cutting in Massachusetts, New York and perhaps elsewhere. This could lead to total confusion.

It has been traditional to blame bad management on the landowner and his greed or ignorance of forestry. However, if you think about the whole forest picture a different idea emerges. Let's look at forestry as a system and try to visualize a series of interacting black boxes. Up in the northeast quadrant we have "wood-using industries" supplying materials to another group in the northwest corner called "consumers". Way in the south

we can visualize a globe of "forest land" completely surrounded by a protective layer of "forest owners", each firmly attached to his own small domaine. In the center of this triangle is the "logger" who has to get through the landowner, to get stumpage off the land that he can carry to the mill to start forest products on their way to consumers. For forest amenity values, consumers themselves go directly to the landowner and the forest without the benefit of any intermediary, except for the supplier of ancillary goods and services. But for products, the logger is definitely the actor in center stage and inevitably he affects consumer satisfaction with forest amenity values.

A realistic look shows the logger directly responsible for changes in the woods, and the significance of his role in the system has probably not been fully ^{appreciated} ~~recognized~~. No matter what is planned the logger is the one who actually cuts the trees carefully or carelessly, lays out the roads and skid trails or just lets them evolve, operates in good or in bad weather, leaves a messy or a clean yard, drives heavy loads over public roads sedately or so as to endanger, and takes all the other steps that get things done in the woods. In addition, loggers probably buy over half the trees that are sold. Then alone, or with the owner or a friend, he selects the trees that will actually be cut on about three-quarters of the land worked over each year. For about two-thirds of the owners who cut each year, the logger is the sole contact with the market, and the only source of information about technical logging design or silvicultural options, legal responsibilities or any other forest management question.

For most owners of small woodlots the logger is the forestry expert of record.

If loggers are^{often} the operating arm of our profession how well are they equipped to represent us? If we look carefully at how work in the woods is typically done we see that the majority of loggers work alone or in partnership, and that those who do hire help generally employ less than five. So we are dealing with truly small business units. Some of this is due to the peculiarities of the tax and compensation laws but a good deal is due to a personal preference for independence. Except for the myriad of pickup truck fuelwood cutters, most loggers have upwards of \$100,000 worth of equipment and a good deal of it is bought on credit so making the weekly payment is a major worry. Especially, when few of them have an adequate supply of operating capital. The vast majority of loggers have learned their trade on the job and a New York survey shows that most feel the need for training in at least some of the skills needed in logging. Furthermore, logging is a dangerous business if we judge from the fact that 25 to 30 percent of the payroll is necessary for workmans' compensation. This also argues for more training to reduce accidents.

Typically the logger is pressed for money to pay debts, buy timber, maintain equipment and hopefully have something left over to live on. Income is directly proportional to deliveries at the mill each week so he can ill afford to slow down when it's necessary to do a careful job, knock off work in muddy going or do most of the other niceties that spell the

difference between good logging and poor. The system is rigged to reward the fast, and penalize the worker who slows down to take more care.

Those outstanding loggers we all know who take pride in doing a workmanlike job and leaving a lot in good shape to grow with unrutted roads and neat log yards, do so at considerable financial sacrifice. To be sure they are always busy even in hard times because of their reputation as reliable operators -- but when times are good everyone is busy and sloppy operators can outbid them for the best lots.

These institutional arrangements all need a thorough overhaul if we are serious about better forestry. Most of the mill men and loggers I know that do a good job believe that there should be minimum standards to which everyone must conform, but there has been a very uneven effort to do this in New England. Massachusetts has a cutting law which allows standards to be set, but because of some flaws in the act it has been ineffective. Several states have given protection to wet lands or high country and some have set buffer strips along roads and streams. But there has been no consistent effort to coordinate state efforts as is needed in a tightly knit region, ^{like New England} or to develop volunteer standards as was tried in New York. It seems obvious that some institutional changes are needed, however, to give all loggers adequate incentives for doing the good job that they would like to do if they were free to choose.

State or regional logging performance standards would be immeasurably more effective if forest industries would cooperate by setting wood payments

that reinforce the rules. There are a good many optional purchase systems that should be explored: bonuses for quality work, deductions for poor jobs, contract preference for good operators, closer logging supervision, payment advances when logging must be shut down for bad weather, and the like. These financial incentives could also be extended if bankers and other creditors made repayment schedules more flexible and geared them to income rather than time. There has been a good deal of study, development and trial of appropriate credit arrangements for ^{similar situations in} agriculture, and this experience could be drawn on for inspiration in forest business credit.

It would also help to have the states license loggers on some uniform basis. Then there would be a mechanism for insuring that each one is aware of state and local regulations and realizes his responsibility to landowners and the public before he gets into the woods. In addition, annual licensing would be a good opportunity for feeding new job-improving information to loggers and, if coupled with training programs, could become an effective tool for up-grading skills and individual earning power as well as reducing accidents.

A set of integrated changes such as these to make the legal framework more favorable, control entrants into the field, give better training and financial incentives could make a significant difference in the way forestry works in New England. Because there are only two or three thousand loggers in the whole region such changes need not be expensive. Most states have only a few hundred loggers and it is hard to think of making public forestry expenditures that promise a more cost effective impact.

If we are successful in designing this package of institutional charges to make loggers better equipment operators, engineers and businessmen we will need to draw foresters, educators, businessmen, financiers, equipment dealers, state and federal ^{administrators} regulators into a mutually supportive set of new relationships. And while we are at it, such a group should work on the climate and capabilities of the small mill operators and manufacturers who make up a good deal of the wood market in much of New England. They too need better market information, trained employees, appropriate credit and grading specifications geared to the capabilities of small scale operators. Improving present businesses first, is probably more cost effective than luring entirely new industries into the region.

If we try to make loggers more effective operators and buyers then a major effort should be made to make landowners more effective sellers and managers. In the past foresters have often given a high priority to management plans, I suppose because the idea of sustained yield is so central ^{in the} forestry liturgy. However, most small tract owners cut only infrequently and continuity of returns is nowhere near as important as insuring that a good job is done when there is an operation.

Consulting foresters know this and a substantial part of their business is from preparing and supervising sales. They have solved the problem of setting standards for loggers by carefully designed contracts complete with performance bonds and appropriate penalties for failure to meet specified conditions. As more and more owners call on consultants before rather than after cutting many of our worst management problems may be alleviated.

However, there is an interesting discontinuity in the forestry system that allows loggers to make money on a purchase as small as 10 to 20 M.b.f. A forester, however, has to run a sale of about 100 M.b.f. in order to make a reasonable return. Apparently, the economics of scale are such that we can carry tons of trees out of the woods more efficiently than we can carry technical aid into the forest. If this is so then we need some innovative new ways to furnish needed technical aid more cheaply, or some serious thought about whether the right people are being reached with appropriate information, or to develop a new role for public assistance in the technical area.

One simple thing that is important for landowners to learn is the fact that when they sell a stand of trees they simultaneously buy a set of roads, trails and a replacement stand. These can be an asset or a liability in the future depending on the quality of logging. Some good cases should be assembled to show how much the damage from careless logging costs the landowner who has to live with the resulting situation. These costs should be considered when comparing stumpage offers.

Finally, what, if anything, needs to be done to improve the lot of consumers? Hopefully the changes discussed so far will help keep prices within bounds. But what about some of the amenity values like hunting, fishing, wildlife, clean water, landscape beauty and outdoor recreation? Most of these don't pass through a market system and none are automatically spun off from timber management. Fortunately many landowners themselves place a high value on these returns and their care often produces benefits that are equally valuable to the public.

Various attempts have been made to insure adequate attention to these public values on private lands. Some like wetland protection, buffer strips, slash disposal ~~and the like~~ have already been mentioned. Others such as special tax treatment for management aimed at timber, or wildlife, or recreation have been tried in some states. And of course there are programs of cost-sharing for practices to produce these values, together with some special credit arrangements for such things as outdoor recreation facilities open to the public. But on the whole insuring that the multiple use values of land are readily available to the public from private land has not received the attention it deserves.

As most of you know there is now a formal process for considering federal plans for forestry as public participation is solicited in developing the Program mandated periodically by the Resource Planning Act. As part of the process to insure that the new Program addresses local concerns, the National Association of State Foresters accepted a contract for a study of regional problems. Last summer they held symposia and workshops in the south, northeast, north central and western regions. The resulting recommendations were presented to the administration and Congressmen at a meeting in Washington D.C. last fall.

Most of the ideas I've presented here today were developed by a meeting of fifty leaders in northeastern forestry in Waterville, New Hampshire last June. The report of this group and of the other regional conferences will be published this spring and distributed by the Forest Service. This first attempt to develop distinctive needs and concerns for separate regions should

proposal for the year it's actually submitted. This is the first Program to be proposed in a year of grave budgetary stringency, and we should look carefully to make sure that reasonable needs can be met over the full five years.

Whatever direction the national Program sets, it is unlikely to be the main factor affecting New England forestry. The realities of local urban needs, rampant inflation, gearing down to high cost energy, small scale businesses and land holdings of resilient forests, all reacting in a matrix of private markets and state aids and constraints will continue to dominate the New England scene. Our basic strengths, however, are the three facts that forests will continue to efficiently capture solar energy with less owner effort than other crops, and to store it until its needed in a way that creates a rich and felicitous landscape, and then when the trees are cut the forests can be readily renewed. New England foresters are, therefore, fortunate because their resource will continue no matter what happens, and with reasonably nimble wits they can become the main connection between people and this important part of their natural world.