Fifty Years of Forestry on Private Lands in New England

By Vincent Pizzano

New England, to most people in the United States, means a section of the country rich in the early history of our country and an area that is heavily populated, with many industrial cities. Little thought is given to its forests. They may be surprised to find that the major portion of New England land area is forest (Table 1). Seventy-seven per cent is forest land compared to 33 per cent in the United States as a whole.

The forests are characterized by complex and diverse conditions of tree cover, soil and topography. Four major forest types are found in New England. In the southern part is found the central hardwoods, the oak-hickory type mostly second growth, and used chiefly for ties and fuelwood. White pine is the chief saw timber in the central region, interspersed with the spruce-fir, and the northern hardwoods, the birch, beech, maple. Northern New England is largely spruce-balsam fir, used in the main for the vast paper and pulp industry.

Ninety-five per cent of the forest land is privately owned, compared to 75 per cent in the rest of the country. The ownership of these forests is characterized chiefly by a large number of small owners and residents of the smaller communities. Twenty-two per cent of the forest lands is in farm woodlots, 38 per cent is owned by non-farmer owners, and 40 per cent by industrial holders. (Tables 2 and 3).

At the turn of the century timber was still being "mined." With the exception of land clearing, cuttings were more or less "selective" with the removal of the large sawlogs of the species desired. As the demand for lumber increased the forests were cut over and over again utilizing smaller trees and more species so that logging operations tended to become clear cuttings. The peak of lumber production was reached in 1907. There was practically no fire protection and forest fires were almost uncontrolled. Disease was on the rampage. There was a large exodus from the sub-marginal farms and pastures, resulting in a reversion back to forest land. A large share of the land was springing up into weeds or undesirable species. Taxes in most cases were excessive so that the forest land was stripped and let go for taxes.

There were no public or private agencies to bring the serious

forest problem "out of the woods" and into the light of public scrutiny.

Assistance in the management of private forest land dates well back to the beginning of the century in New England.

The Massachusetts Forest and Park Association, founded in 1898, was among the first important private organizations formed to attempt to give the forests better care. This organization was instrumental in getting an office of State Forester in Massachusetts in 1904, and in re-establishing control work on gypsy moth control.

As more and more public-spirited people began to see the immediate need for pressing forestry reforms, public and quasi-public agencies were established. They attempted to assure a continuous and ample supply of forest products, promote sustained yield management, stabilize communities, forest industries, employment and taxable wealth. To make the "neglected acres" productive acres was their common goal.

Now each New England state maintains a forestry department which is charged with administration of the state-owned forest lands and forest fire protection. There is an extension forester in each state to give advice to farm woodlot owners. However, in recent years a large number of county or farm foresters have been employed to closer and more detailed service to all woodlot owners. New Hampshire and Vermont are both fortunate in having a forester in each county of the state. The most important service rendered by these county foresters is in presenting an intensive educational program with the purpose of attempting to get progressive thinking among the many forest woodlot owners. Several of the states have associations of timberland owners whose primary aim is fire protection.

A number of agencies cover all of New England as a whole. Among these is the U. S. Forest Service, Northeastern Forest Experiment Station. Its staff is available for advice to larger land owners who are usually beyond the scope of county foresters. Its Wood Utilization Service has been invaluable in acquainting operators and timberland owners in the latest techniques in harvesting and market of timber.

The U. S. Bureau of Entomology and Plant Quarantine maintains a forest insect laboratory and its agents enter into co-operative research and control projects with the several states and individual land owners.

The Office of Forest Pathology, U. S. Bureau of Plant Industry makes similar studies of forest diseases.

Among the more important semi-public and private organiza-

tions is the New England Forestry Foundation. This is a non-profit organization formed to provide complete forestry service to woodland owners at cost. The foundation operates through Forest Management Centers, each with a resident forester. The forester prepares a management plan for the forest, marks the timber, arranges the sale, and the cutting contracts, and supervises the operation. The work of this organization is highly commendable, and more and more woodlot owners are taking advantage of its services.

The American Forest Products Industries, Inc., is a national non-profit organization financed by America's forest industries to encourage public awareness of the importance of our forest resources. Its more important national movements are: Keep America Green, Trees for America, and American Tree Farm System.

The Northeastern Wood Utilization Council, a non-profit agency, was organized in the main to overcome the problem of markets for low grade wood. Other important organizations include: New England Lumbermen's Association, Northeastern Lumber Manufacturer's Association, Northeast Pulpwood Research Center, American Plant Pest Committee, Northeastern Forest Disease and Insect Pest Control Committee, Federal Reserve Bank of Boston, Springfield Land Bank and Bank for Cooperatives, Forest Fire Wardens Association, Forest Products Industries Information Committee, and The New England Council.

While the sustained yield idea has appealed to small woodlot owners, they as a group show little progress towards timber management. The old method of "cut out and get out" is still prevalent. This method results in a condition where the forest property brings no further return for at least a generation, and many of the trees replacing the former stand are frequently of inferior quality.

A good percentage of large timber owners have management plans in operation on their lands. The number of foresters they employ is also increasing. Many of the companies are engaged in reforesting operations and research in order to decrease or utilize waste which is so prevalent.

In the New England forests the rate of growth is very favorable. It is estimated that the total annual growth exceeds the total drain by 18%.

Net Annual Growth (+) or Drain (−)		
	Million Bd. Ft.	Million Cu. Ft.
Softwood	−528	+ 44
Hardwood	+123	+ 92
Total	−405	+136

A study of these figures would indicate that softwood saw timber is being depleted at an alarming rate, while hardwood saw timber is growing faster than it is being utilized. At the current rate of removal of lumber, pulp and paper, veneer and plywood, fuel wood and other products, our timber will theoretically last about forty years. This does not account for the loss from fire, insects, disease, wind, and other destructive agents, which amounts to more than 20% of the quantity being cut. Yet such a view is not realistic; a sort of creeping paralysis would set in long before the last tree was cut, and tree growth is constantly taking place.

The gain is in cubic feet. This is only a measure of cellulous growth. Too much of this growth is in undesirable specie or in inaccessible areas. The timber stands are deteriorating in quality and in size (Tables 4 and 5).

The New England states have some of the best fire protective organization in the country with very good records for keeping losses to a minimum. One hundred per cent of the land area is under protection. Records have been kept for the past thirty-five years, and losses have not been excessive.

Losses from the large number of insect and disease pests are much higher than those resulting from fire. These losses are harder to estimate, since in many cases trees are not killed, but deformed (as by white pine weevil) and rendered worthless or less valuable for lumber. However, huge quantities of timber have been killed at various times. The greatest destruction was caused by the chestnut blight which killed all the chestnut, one of the major species in New England. Birch and beech are dying in a large scale in northern New England due to the Bronzed birch borer, beech scale-nectria, and a complex of other causes. The spruce budworm is causing havoc with the spruce and balsam fir.

According to the United States Forest Service the total losses may be roundly summarized as follows: fire, 50,000 cords; insects and disease, 1,100,000 cords; wind, 350 000 cords; for a total of 1,500,000 cords per year, or about one-sixth the total drain.

Logging waste, while less in New England than in other regions of the country, is considerable. About 35% of the material cut or destroyed in the utilization of forest products is unused. In other words, the total drain on forests due to cutting is about

one-third greater than the utilization. About one-half of the total waste occurs in logging operations and one-half in manufacturing. Logging and manufacturing waste together amount to about 3,000,000 cords, 1,750,000 cords of which is not used in any way.

The taxation of forest land in New England does not contribute to the encouragement of sustained-yield forests. A special study of general property tax was made in Maine.[1] The eight million acres of forest land in organized towns was adjudged the critical tax problem, with tax rates of 4.5 to 7.5 per cent. It was concluded that, where annual tax exceeds 15 cents per acre, the land is usually either disposed of or stripped of timber and let go for taxes. Cut-over land cannot bear 5 cents per acre per year; carefully or selectively cut forest land may possibly bear 8 to 10 cents.

In the other states taxes vary with the communities. Inequality in assessment and timber rates make some timber lands subject to excessive taxation.

Most of the New England states have one or more kinds of preferential tax laws by which an owner may apply for special classification of forest land for purposes of taxation. Applying to special conditions only, and placing an additional burden of red tape on owners and assessors alike these laws never attained their purpose, and the area registered under these laws is negligible.

Only two states in New England have laws governing forest cutting practices. Both are ineffective. New Hampshire laws require a notification of intention to cut on pine lands. A requirement that one pine seed tree be left per acre is not effective. The Massachusetts law requires notice of cutting. Cutting plans are made, but owners are not required to execute them.

SUMMARY

New England has ideal conditions suitable for the application of scientific forestry. With almost no virgin forests, it is a problem of conservative handling of second growth timber and reclaiming sub-marginal land.

Any sound forestry program must have as its foundation a program of intensive education to spur woodlot owners to a program of managing their holdings properly. It must prove to them that it will be of financial gain in the end.

Integrated logging is an answer to better forestry. Each tree and each part of the tree is used for the product it is best suited.

More permanent type sawmills are needed, equipped with dry kilns where better lumber grades can be given their full value. These mills are usually operated by better-informed operators who

[1] Sewall, J. W., "Tax Situation in Forest Lands, Organized Town and Plantation, Maine." Report to State Tax Assessor, Augusta, Maine, 1945.

must take future supply of timber into consideration in order to be in business permanently.

The average growth of New England forests is 3.6%. This is a fair average, but only a fraction of what could be attained on well-stocked stands. It is claimed by many well-informed sources that three times as much could be produced. This objective can be reached by improving forest protection and decreasing the losses caused by fire, insects, disease, and other destructive agents.

Sustained yield practice should be used whenever possible, and clear cutting should be confined to only mature even-aged stands. Whether or not our forestry will ever pass into a transition stage to parallel European forestry is problematical and doubtful. Our economy is such that forestry is centered around our logging operations, while in Europe it centers around timber production.

With some justification the wood-using industries have been accused of wastefulness, though much of this so-called wastage in the past has consisted of discarding materials for which no economic use has been developed, or which could not pay its way to the market. Much progress in waste reduction has been made and is continuing as new uses and new methods are discovered. But the waste problem still stands in the forefront of conditions needing correction if the potential economic benefits of New England's forest resources are to be fully realized in the future.

The inequality of tax assessment tends to discourage sustained-yield management and proper reforms must be introduced.

There must be improved markets for such products derived from forest cultivation, such as thinnings, weeding, and improvement cutting.

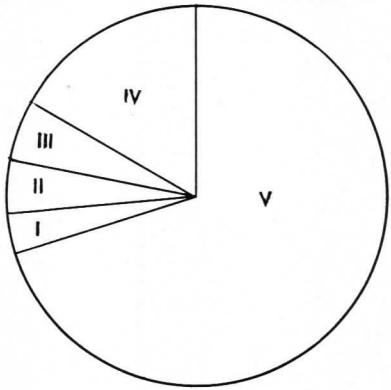
With improved credit facilities forest enterprises could be placed in such a level so that the small owner could afford to grow trees.

It is the responsibility of the states to set up regulations of forest practices, clearly expressed, thoroughly explained, and intelligently enforced.

Above all New England needs more forest owners who consider their forest lands as a public trust and it is their duty to manage it with that aim in view.

TABLE I

LAND USE IN NEW ENGLAND



		ACRES	PERCENT LAND AREA
I	BARREN	929,082	2.3
II	DEVELOPED AREAS	1,596,450	3.9
IV	AGRICULTURAL	6,834,308	16.9
V	FOREST	31,092,000	76.9
	TOTAL LAND AREA	40,451,840	100.0
III	INLAND WATER	1,609,632	
	GROSS AREA	42,061,472	

Derived from "Wooden Dollars" by Henry I. Baldwin and Edgar L. Heermance; published by Federal Reserve Bank of Boston, 1949.

TABLE II

OWNERSHIP OF SAW TIMBER IN COMMERCIAL FORESTS IN NEW ENGLAND

Million Board Feet

State	Publicly owned or managed				Private			Total all Ownerships
	Nat'l. Forest	Other Federal	State, County or Municipal	Total	Farm Woodlots	Industrial and other	Total	
Maine	91	64	116	271	5056	31460	36516	36787
New Hampshire	1305	8	63	1376	1844	4390	6234	7610
Vermont	497	22	194	713	3197	3425	6622	7335
Rhode Island			8	8	38	107	145	153
Connecticut			145	145	655	842	1497	1642
Massachusetts	1	26	316	343	1424	2903	4327	4670
New England	1894	120	842	2856	12214	43127	55341	58197

Adapted from Table 6 "Basic Forest Statistics for the United States" United States Forest Service, 1946.

TABLE III
DISTRIBUTION OF PRIVATE COMMERCIAL FOREST LAND BY SIZE OF HOLDING

Size of Holding	By Owners		By Area		Ave. Area of Individual Ownerships Acres
	Number	Percent	Thousand Acres	Percent	
SMALL (Under 5000 A.)	243719	99.90	17661	60.3	72
MEDIUM (5000 to 50000 A.)	194	.08	2150	7.3	11082
LARGE (Over 50000 A.)	45	.02	9483	32.4	210733
Total	243958	100.00	29294	100.00	120

Adapted from Table 11, "Management Status of Forest Lands in the U. S.," United States Forest Service, 1946. Includes farm and non-farm forests.

TABLE IV
OWNERSHIP OF COMMERCIAL FOREST LAND IN NEW ENGLAND CLASSIFIED BY CONDITION
Thousand Acres

Condition	Publicly owned or managed				Private			Total all Ownerships
	Nat'l. Forest	Other Federal	State, County or Municipal	Total	Farm Woodlots	Industrial and other	Total	
Saw timber	401	28	180	609	2937	10349	13286	13895
Pole timber	245	18	205	468	1854	5794	7648	8116
Seedling and Sapling	163	12	203	378	1099	4026	5125	5503
Poorly stocked seedling and sapling or denuded	13	11	78	102	587	2648	3235	3337
Total	822	69	666	1557	6477	22817	29294	30851

Adapted from "Basic Forest Statistics for the United States" United States Forest Service, 1946.

TABLE V
CHARACTER OF FARM WOODLAND IN NEW ENGLAND
Thousand Acres

State	Saw Timber	Pole Timber	Seedling & Saplings	Poorly Stocked	Total
Maine	1283	543	217	130	2173
New Hampshire	380	359	206	141	1086
Vermont	738	408	199	149	1494
Massachusetts	290	299	199	118	906
Rhode Island	6	24	62	15	107
Connecticut	240	221	216	34	711
New England	2937	1854	1099	587	6477

Table 5, Forest Reappraisal, "Basic Forest Statistics for the U. S.," United States Forest Service, 1946.

BIBLIOGRAPHY

Baldwin, Henry and Heermance, Edgar, "Wooden Dollars" Federal Reserve Bank of Boston, 1949

Gill, Tom and Dowling, Ellen C., "The Forestry Directory" The American Tree Association, 1949

ABOUT THE AUTHOR

Vincent Pizzano graduated in forestry at Iowa State College in 1941. He was commissioned immediately in the field artillery in which he served throughout the war, in the latter part of the war with the rank of major.

In the early part of 1946 he worked for Amos-Thompson Corporation as a walnut veneer buyer, in the territory of Iowa, Minnesota, and Wisconsin.

Late in 1946 he established Northeast Wood Products, Inc., in Pownal, Vermont. This is a permanent type, all electric sawmill, planing mill and dry kilns, employing three professional foresters. It is the largest sawmill in southern Vermont, and cuts both hard and soft woods, but specializes in oak. Present capacity of author is president.