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CONNECTICUT AGRICULTURAL EXPERIMENT STATION

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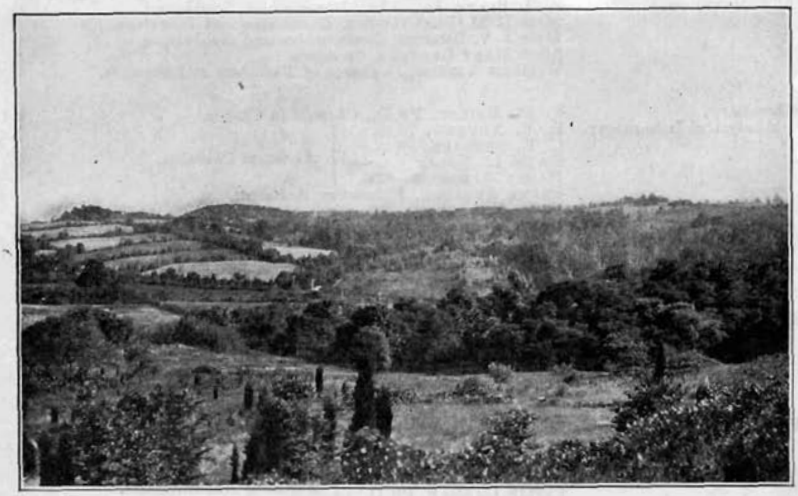
Better Forests for Connecticut

HENRY W. HICOCK



The Woodlot is a Farm Problem

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PRACTICAL SUGGESTIONS TO THE WOODLOT OWNER.

Plant idle or waste land with fast growing coniferous or soft-wood trees.

Improve inferior stands of young hardwoods by planting 300 to 500 coniferous trees per acre.

Improve the better hardwood stands by thinnings, so that cord-wood and other low grade material may be by-products of the forest and the more valuable species may be left to grow to saw-log size.

Develop better methods for selling and utilizing woodlot products.

Change the present inequitable method of forest taxation which forces the forest crop to bear an annual tax thus lowering the net returns so that growing timber is often unprofitable.

Work for better protection from fire and other enemies of the forest.

Harvest the minor products of the forest, thus getting several crops from the same area.

THE FORESTRY SITUATION IN CONNECTICUT.

Use of Forest Products.

*Annual consumption of sawed lumber	350,000,000 Bd. Ft.
*Annual production of sawed lumber	65,000,000 Bd. Ft.
Ratio of consumption to production	5 to 1

The Forests of the State.

†Total land area of the state	3,085,000 acres.
Land in forest or suitable only for forest (estimated) at least	1,500,000 acres.
*Present annual production	65,000,000 Bd. Ft.
Annual per acre production on a basis of 1,500,000 acres	40 Bd. Ft.
Minimum yield per acre per year to be expected under reasonable management and protection	300 Bd. Ft.
Minimum annual yield to be expected on 1,500,000 acres	450,000,000 Bd. Ft.
Possible maximum yield per acre per year	1,000 Bd. Ft.
Possible maximum annual yield on 1,500,000 acres	1,500,000,000 Bd. Ft.

Annual Freight Bill

on lumber from other states	$3,000,000

*As reported by the U. S. Forest Service.

†As reported in the 1920 Census.

The Need for Forestry in Connecticut.

New England was one of the first forest regions in the United States to be exploited for lumber and at present is probably suffering more acutely from timber scarcity with resulting high prices than any other region. This condition has come about in a very natural manner. As timber becomes scarce in any section the bulk of the lumbermen move to some new region. When the supply in New England ran low the movement was to western New York, Pennsylvania and the Lake States. Later it was to the forests of the Southeastern States and more recently to the Pacific Coast.

Long Hauls Make Lumber Costly.

Each successive move has taken the major part of the industry farther from New England. *The result is that this region has been obliged not only to pay an increasingly higher freight rate due to a longer haul but also to compete for the products needed with regions which lie between it and the source of supply.*

The Pacific Coast timber which is the only large remaining virgin stand in the country will, at the present rate of cut, last about 50 years. *When it is gone this country will be dependent chiefly on the current growth from lands that have been cut over.* Logging methods in virgin stands have been very wasteful with practically no effort to provide in any way for a new crop to replace the one removed. In addition much of the area already logged has been burned over one or more times. The result is that there are in the United States some 80,000,000 acres of barren waste which is producing nothing and a much larger area on which the productivity is not over 20% of what the land is capable of growing.

CLASSIFICATION OF FARM LAND BY COUNTIES.*

	Connecticut	Counties							
		Fairfield	Hartford	Litchfield	Middlesex	New Haven	New London	Tolland	Windham
Total land area, acres	3,085,000	404,000	466,000	592,000	236,000	386,000	422,000	259,000	320,000
Area in farms, acres	1,898,000	225,000	295,000	377,000	122,000	188,000	288,000	183,000	220,000
Per cent. of total area in farms	62	56	63	64	52	49	68	71	69
Area improved land in farms, acres	701,000	108,000	143,000	136,000	35,000	76,000	80,000	53,000	70,000
Area unimproved land in farms, acres	1,197,000	117,000	152,000	241,000	87,000	112,000	208,000	130,000	150,000
Area average farm, acres	84	58	62	124	87	70	105	93	99
Area improved land on average farm, acres	31	28	30	45	25	28	29	27	32
Area unimproved land on average farm, acres	53	30	32	79	62	42	76	66	67
Per cent. of unimproved land on average farm	63	52	52	64	71	60	72	71	68
Number of farms	22,600	3,900	4,700	3,000	1,400	2,700	2,700	2,000	2,200

*From the 1920 census.

If the United States must ultimately depend for timber on current growth rather than on the accumulated growth of centuries (virgin timber) the aim should be to divide up the country into several units, each practically self supporting with regard to timber. The result of such a division would be to lower transportation costs and stabilize prices. New England should form such a unit. There is enough non-agricultural land within its borders to produce timber in sufficient amounts and of suitable kinds for its industries. Northern New England is a forest region.

Conifers Increase the Yield on Hardwood Land.

It can produce much more timber than is needed locally and will probably always have a surplus to export to other districts. Its products are chiefly soft wood. Southern New England is an industrial region and consequently a big market for forest products. *It has enough non-agricultural land to produce a quantity of lumber sufficient for its needs but it cannot grow all the kinds required.* It must therefore import lumber but to offset this it should have an equal quantity to export in order to preserve the balance.

Connecticut is a part of southern New England and the remainder of this report will be devoted to its forest problems, with suggestions for the improvement of the forests, particularly the farmers' woodlots.

THE FORESTS OF CONNECTICUT.

The annual consumption of sawed lumber in Connecticut is approximately 350 million board feet and of this amount only 65 million board feet or *about one-fifth is produced within the state.*

The total land area of the state is 3,085,000 acres and of this at least one half, or 1,500,000 acres, may be classed as non-agricultural or forest land. On the assumption that the forest land area is 1,500,000 acres, *the present annual production per acre is only 40 board feet.* This is very low. *With reasonable care and protection 300 board feet per acre per year is the minimum that ought to be expected and the possible maximum might run as high as 1,000 board feet per acre annually.* On the basis of 1,500,000 acres, the total annual yield should be between 450 million and 1,500 million board feet.

These figures indicate a two-fold problem.—

1. **A land problem.** By better treatment and protection to make the poorer non-agricultural lands produce a reasonable crop, thereby raising their status from that of a doubtful asset or even a liability to that of a profit producing asset.

2. **A timber problem.** To produce annually within the state at least 450 million board feet of sawed products. This would make the state practically self supporting. Some timber would, of course, be imported to supply the need for kinds that cannot be grown here but to offset this there would be some native timber for export.

It may be noted from the table (page 134) that there are 1,187,000 acres, or 38% of the land area of the state, not in farms. It is not possible to determine definitely the present status of the land not in farms but it may be reasonably assumed that not less than 25% of it, or 300,000 acres, is forest land. This added to the 1,200,000 acres on farms makes 1,500,000 acres which is a conservative figure and agrees closely with the figure of 1,483,000 acres abtained by the forest survey of Connecticut in 1914.* It is quite possible that this estimate could be increased by including with the forest land, all pastures reverting to forest. This may or may not be correct. Furthermore it involves the question of proper utilization of land which beyond the scope of this report.

This table shows that 63% of the farm land of the state is unimproved. This figure varies with the several counties but in no case is it under 50%. Improved land is given in the census as "land regularly tilled or mowed, land in pasture which has been cleared or tilled, land lying fallow, land in gardens, orchards, vineyards, and nurseries and land occupied by buildings." Unimproved land constitutes the remainder of the farm and is chiefly woodland, brush land, waste land and swamp. This unimproved land is usually too poor to till and of a doubtful value for pasture.

*A Forest Survey of Connecticut by Albert E. Moss.

In general it is fit only to grow trees because they are not exacting in their soil requirements.

Obviously the forest problem is largely a farmers' problem since farmers as a class own the most woodland. For most of them the situation is an acute one because their woodlots, averaging in area more than one-half the farm, are in a very low state of productivity due to fire, ravages of various diseases and insects, indiscriminate cutting and general misuse. In fact, it is a question whether or not many woodlots are paying expenses (i.e., interest and taxes) to say nothing of showing a profit. *An industrial*

Thinning in a Young Hardwood Stand.

organization either improves a poor paying line or abandons it. The farmer must do likewise for he cannot continue indefinitely to make his tilled land support itself and the woodlot also. If the woodlot cannot be made to pay it should be abandoned, but in most cases this will not be necessary because with reasonable handling it will improve to a point where it will pay.

In improving the forest there should be three main objectives:—

1. To handle the present deciduous or hardwood forest for better quantity and quality production. Quantity may be increased by favoring fast growing species and by reducing the competition which is always so keen in natural stands. Quality may be improved by favoring the most valuable species and the best individuals. Both objects can be attained through systematic thinning.

2. To gradually introduce conifers into the hardwood stands. Most conifers grow faster and yield more per acre than hardwoods. Moreover 80% of all lumber used is softwood from coniferous trees.

3. To treat the forest as a source of repeated crops of timber capable of improvement, rather than a non-renewable resource to be exploited to its fullest extent and then abandoned. Field crops require weeding, thinning, protection from enemies and suitable treatment to assure reproduction. Forest crops require similar care, though not as intensively applied, to secure comparable results.

Some Suggestions to the Woodlot Owner.

1. Thin the young woodlot systematically thereby getting rid of the poorer species and unhealthy individuals, allowing the best specimens to develop without excessive competition. The final yield will be as large and of better quality than in an unthinned stand and the material taken out will more than pay for the operation.

2. Plant at least 1,000 conifers each year for timber production. The cost will be not over $15.00 and the area covered from one to two acres depending on whether the planting is in the open or in brush. The attention required by a plantation is relatively small.

3. Grow Christmas trees on old pastures on a ten year rotation. This is a better use of land than allowing it to grow up to grey birches and is far more profitable. Up to three thousand trees per acre can be used for this purpose.

4. Avoid selling timber by the lot. In most cases the buyer reaps an excessive profit, a part of which rightfully belongs to the owner.

5. Make use of the present forest tax law. The law is not ideal but it favors the forest owner far more than the town assessors. Work for a better tax law.

6. Keep domestic animals out of woodland as a general rule. A limited amount of grazing may do no harm but over-grazing is detrimental to the woodlot. The better plan is to fence off the amount needed for grazing and use it only.

7. Grow saw timber. Cordwood should be obtained from thinnings and not by skinning immature stands. This latter process puts the lowest value on all species whereas such species as hickory, ash, whitewood, and red oak will bring high prices if grown to saw-log size.

8. Market more of the minor products of the forest, as ferns, mountain laurel and maple sugar.

9. Look upon the woodlot as one of the resources of the farm and not as something to pay taxes on. Figure out just how profit-

able the woodlot is. If it is not paying taxes and other overhead charges and allowing the owner a fair return for his investment in land, try to find out where the trouble is and remedy it.

10. Cooperate with the Connecticut Forestry Association, an organization which is working to advance forestry in the state.

11. Consult the Foresters of the Connecticut Agricultural Experiment Stations, New Haven, and the Connecticut Agricultural College, Storrs.

Thinned Pine Plantation, 28 years old.

Benefits to be expected from the improvement of the forest.

1. To the owner.
   a. Winter employment for farm labor and teams.
   b. Full utilization of land, no unprofitable acres.
   c. Income more evenly distributed throughout the year.
   d. Greater farm value if the owner wishes to sell.
   e. Larger loans from the Federal Land Bank.
2. To the community.
   a. Plentiful domestic lumber with low freight rates.
   b. More woodworking plants resulting from an assured supply of materials. This means closer utilization and better prices for woodlot products.
   c. Better protection of water supplies.
   d. Increased value of the forests for recreation.

CONCLUSION.

There have been *three major causes* for the present low productivity of the forests of Connecticut and of the United States as a whole. These must be corrected before any real progress can take place. They are:—

1. **Forest Fires.** It is a reasonably safe statement that fire has been the greatest single factor in lowering the yield of our forests. At least two-thirds of all forest fires are caused by negligence or carelessness. This condition can best be handled by building up a strong public sentiment against the persons responsible.

2. **Inequitable taxation.** A woodland owner must carry his forest for several decades before he gets any returns. During the growing period the town assessors may and usually do raise his valuation several times. *This often forces the owner to cut sooner than he otherwise would.* This method of taxing woodland may be likened to taxing a corn crop four or five times during a season and at a higher valuation each time.

3. **Poor cultural practice,** both *in caring for the current crop and in failing to provide for future crops* as well as unnecessary waste in logging and milling.

The forest owner cannot be blamed directly for the evils resulting from fire and taxes except that he has endured the losses therefrom without attempting to relieve the situation. Better legislation and stricter enforcement of existing statutes are needed. Forest owners can get these things only by going after them and pulling together.

The evils arising from not using practical forestry methods in growing and harvesting the timber crop can be charged directly to the owner and can be corrected only by him. It is true that the financial inducements to use better methods have not been great but the same may be said of many other things that we undertake with the conviction that they are worth while. If our grandfathers had adopted reasonable methods in handling their woodlots we would not now be obliged to pay a dollar for the material for a pantry shelf. If we are content to continue to use their methods it will probably cost the next generation two dollars. Is this fair?