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PRACTICAL SMALL WOODLAND MANAGEMENT

by

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Good Forestry and High Wages

A demonstration held in October, 1958, at the Ford Forestry Center showed that a small forest owner could realize net earnings as high as \$2.75 per hour while practicing good forestry. Depreciation on tractor and power saw, as well as taxes and other costs, were deducted in figuring this hourly return, even though few small operators take such expenses into account. If these costs had been ignored, the hourly wage would have been \$3.32 per hour. All of the logging involved in the demonstration was performed by a part-time jobber who lives near L'Anse. In calculating earnings per hour, it was assumed that he owned the timber and chose to harvest it himself, a practice common among owners of small woodlands.

Why Be Interested in Good Forestry?

Small landowners generally are unaware that good forestry can be very profitable for them. One often hears that good forest practice is fine for the government and the big company, but that it is not "practical" for the "little fellow." Seller and buyer alike seem to feel that a satisfactory profit can be made on the small woodlot only if the better trees are cut. Most woodlots, therefore, become "high graded." Eventually the forest is clearcut or contains

only defective and low value trees.

No farmer would consider it good business to sell his better stock and keep the scrubs. Neither is it good business, therefore, for a woodlot owner to harvest his better trees, leaving the culls to grow. In neither case would it be possible to realize the highest profit over the years for the time and money spent. Good forestry practices are as important to the production of valuable trees as good farming practices are to the production of valuable crops and stock.

Good forestry requires markets for a variety of products, of course. Almost everyone, however, is becoming aware of the fact that markets are changing in northern Michigan and Wisconsin. Once only sawlogs and conifer pulpwood found ready sale. Although these products still are the most important, a demand for other kinds of material now exists or is developing. Two nearby chemical plants provide markets for hardwood pulpwood and chemical wood. New plants such as the Huss Ontonagon Company and the Celotex Corporation may furnish other outlets which never existed before. It certainly is true that few areas are better able than the Upper Peninsula of Michigan and northern Wisconsin to stress good forestry, particularly for the small landowner.

The Ford Forestry Center's Demonstration Area

Realizing this situation, the Ford Forestry Center set aside 55-acres to demonstrate a method which any resident forest land owner could practice. It happens that 55-acres is close to the size of the average small forest. The area chosen represents poor timber similar to the forests which many small owners possess. All of the pine had been cut more than 60 years ago. A fire had burned there, too, scarring the butts of most of the trees. Twenty years ago the area was logged for the second time. After this cutting, less than 10% of the value of the stand was left and very few sawlog-sized trees were of good quality. Many of them actually were culls.

In planning the demonstration, it was assumed that the owner chose to work in the forest himself during his slack time in order to supplement his income. It was assumed, also, that the owner wanted an annual income from the property. Many farmers, especially, fall into this category. Consequently, the 55-acres was divided into seven portions, called compartments, ranging in size from 6.1 to 9.8 acres. This was done so that the year's work could be concentrated in a smaller area. The size of these compartments was determined partly by the amount of timber each contained and partly by the location of old logging roads.

The plan calls for one compartment to be cut each year. The first one, therefore, was cut in 1958. By 1964, all seven will have been harvested and the first one will be ready for cutting again. The amount of logs, chemical wood, and cordwood removed from a compartment in each cutting is planned so that it nearly equals the growth of timber in all seven compartments. Less than the total growth is harvested so that the forest can be built up. In a similar fashion a dairy man raises some of his calves in order to build up his herd. But only the poorest and least healthy trees of all sizes are removed first, since they represent the least desirable investment and are likely to yield the least interest if left to grow. It is for the same reason that a dairy man sells his least productive cows and keeps the better milk producers. Thus, with each cut (1) the quality of the timber on the area improves and (2) the value of the whole stand, as well as the forest products produced, increases. Yet the healthier trees which remain grow faster, allowing more timber to be cut in the future. Therefore, the investment increases in value while providing a supplementary income.

Anyone who wishes to plan and harvest a small forest in the way described can get help from several sources. Both his County Agricultural Agent and the State Extension Forester can help him. The services of several consulting foresters also are available for a fee (the Ford Forestry Center will supply the names of consulting foresters). Finally, a timber owner may visit the Ford

Forestry Center where the work he must do will be demonstrated.

Results of the 1958 Cut at the Ford Forestry Center

Seeing is believing, as everyone agrees. It would be futile to claim that a small land owner could practice good forestry unless a demonstration were planned involving a person who actually tries to earn a living from the forest. The jobber who performed the work is such a person. He owns a small farm, but supplements his income with woods work. He owns a pulpwood truck and power saw, but rents a small John Deere crawler tractor for skidding and loading. On bigger jobs his brother or a friend work with him.

Before he began work, the jobber doubted that he would "come out" on the operation, but he was willing to try it. All of the chemical wood, hardwood cordwood, and sawlogs he cut from marked trees were piled by him on road adjacent to the area logged so visitors could see what had been produced. All of the forest products were measured and their roadside value computed. A careful record of the jobbers time was kept so that it was easy to figure wages for hours worked.

The results are shown in tables 1 through 5. The compartment cut in 1958 totalled 9.8 acres (see compartment 7 on map). As shown in Table 1, it contained an estimated gross volume of 6,387 board feet per acre of saw timber; however, the trees were so defective that the estimated net volume per acre was only 3,322 board feet. Table 2 shows that though there were 193 trees per acre before cutting, most of them were of small size.

As can be seen from Table 3, 4,141 board feet of sawlogs were actually harvested, of which 2,761 board feet were of #3 log grade. If these #3 logs had been sold for chemical wood, the operator would have realized approximately as much money. In addition to sawlogs, 13.62 cords of 50-inch hardwood cordwood and 23.0 cords of 100-inch chemical wood also were produced. The gross value of all these products was \$534.73. The value would have been greater

except that the price of #3 logs recently had dropped to \$26.00 per thousand board feet, whereas logs of this grade commonly sell for at least \$35.00 per thousand board feet. Table 4 shows the grades of forest products produced.

In computing the operators wages the cost of loading and hauling was first deducted. So was the cost of depreciation, gasoline, and taxes. By making these deductions, net roadside value of the sawlogs, cordwood, and the chemical wood could be computed. This net value turned out to be \$304.33. Dividing it by the 110.5 hours worked by the operator yielded the \$2.75 hourly earnings.

Conclusion

Although the operator earned \$2.75 per hour for the 110.5 hours he worked, the area he cut is in better condition than it has ever been before. Only the poorest trees of all sizes were cut. The trees left now have more room to grow; and since they are the better trees, they eventually will yield better quality and more valuable logs. In seven years it will be possible to return to the same area, cut at least as much timber, make even more money (because the trees cut will be better next time), yet still maintain a forest with more and better timber growing on it than there is now. A land owner literally can have his cake and eat it if he practices good forestry.

Table 1. Estimated per acre volume of forest products in Compartment #7 of 55-acre Small Management Tract A.

(Compartment #7 contains 9.8 acres)

Sawtimber Volume in Board Feet for Trees 9.5", and larger			Cordwood Volume for Trees 4.5" to 9.4"
	Scribner Dec. "C" Rule	Cull Percent	
Gross Scale	6,387.6		6.023
Net Scale	3,322.2	47.9	--

Table 2. Number of trees per acre in Compartment #7 of 55-acre Small Management Tract A.

(Compartment #7 contains 9.8 acres)

	Diameter Class	Number of Trees
Before Cutting	4.5" to 9.4"	126
	9.5" +	67
	TOTAL	193
After Cutting	4.5" to 9.4"	117
	9.5" +	52
	TOTAL	169

Table 3. Net Volume of Forest Products Harvested from Compartment #7, Small Management Tract A.

	Sawlogs (1) (Scribner Dec. "C" Rule)	Chemical Wood (2) (100" bolts)	Hardwood (3) Cordwood (50" bolts)
Total	4,141 board feet	23.0 cords	13.60 cords
Per Acre Average	422 board feet	2.35 cords	1.39 cords

- (1) Gross scale (Scribner Decimal "C" Log Rule) was 11,590 board feet. Cull percent of trees cut was 64% in comparison with 47% estimate for the entire stand.
- (2) Chemical wood cut from large tops and from cull portions of main stem.
- (3) Cordwood cut from pole-sized trees and from smaller portions (not over 8" diameter) of tops of trees.

Table 4. Gross Roadside Value, F.O.B. L'Anse, of Products Harvested in 1958 from Compartment #7, Small Management Tract A.

Class of Product	Quantity (1)	Unit Price (2)	Gross Value
Grade #1 logs (all yellow birch)	270 board feet	\$165/M.b.f.	\$ 44.50
Grade #2 logs (yellow birch and sugar maple)	1110 board feet	50/M.b.f.	55.50
Grade #3 logs (all species)	2761 board feet	26/M.b.f.	71.79
50" hardwood cordwood	13.62 cords	11.50/cord	156.63
100" chemical wood	23.0 cords	3.90/ton	206.31
TOTAL			\$534.73

- (1) A conversion factor of 2.3 tons to the cord was used. The Scribner Decimal "C" Log Rule was used to measure board feet.
- (2) All log prices are representative of those prevailing in Houghton-Baraga County area in October, 1958. M.b.f. means thousand board feet.

Table 5. Earnings per Hour of Time Invested in 1958 Harvest of Compartment #7, Small Management Tract A.

Man hours worked	Gross value of products, F.O.B. L'Anse (1)	Gross roadside value of products, Alberta (2)	Gross earnings per man-hour worked	Net roadside value of products, Alberta (3)	Net earnings per man-hour worked
110.5	\$534.73	\$367.08	\$3.32	\$304.33	\$2.75

(1) Prices used to calculate value of products represent the current market prices in October, 1958. The computation of gross value of products is given in Table 4.

(2) To obtain gross roadside value of products, the following loading and hauling costs were deducted from gross value, F.O.B. L'Anse:

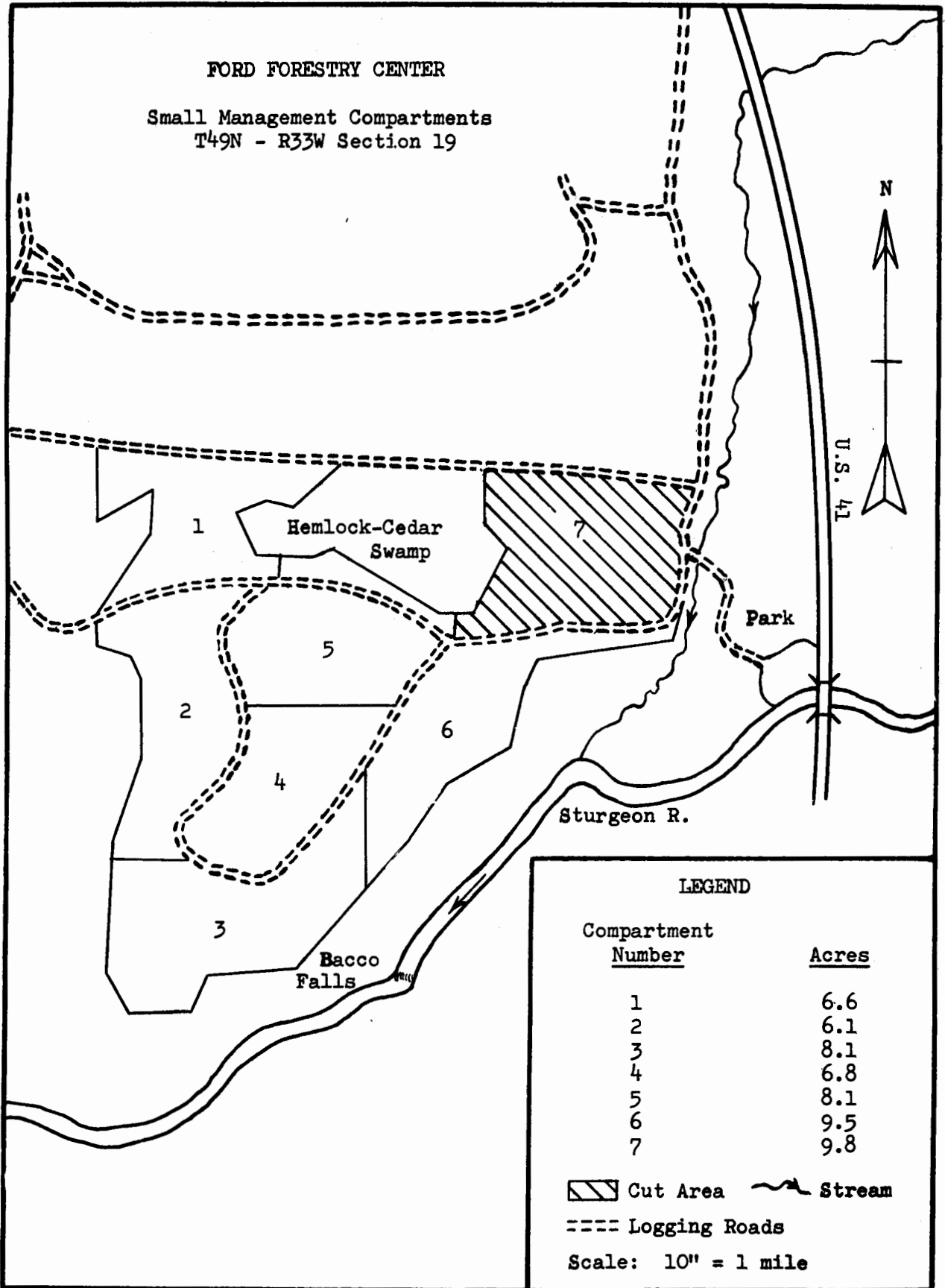
- a) Hauling 4,141 board feet of logs @ \$6/M.b.f. \$ 24.84
 - b) Hauling 36.62 cords of chemical and cordwood @ \$3/cord 109.86
 - c) Loading 36.62 cords of chemical and cordwood @ \$0.90/cord 32.92
- TOTAL \$167.65

(3) Miscellaneous direct and indirect costs deducted from gross roadside value of products to obtain net roadside value:

- a) Gasoline for tractor and power saw, 20 gal. @ \$0.34/gal. \$ 6.80
 - b) Depreciation on tractor (using \$4,000 as replacement price and 10,000 hours as useful life), 32.5 hours skidding time @ \$0.40/hr. 13.00
 - c) Depreciation on power saw, 45.5 hours felling and bucking time @ \$0.40/hr. 18.20
 - d) Taxes on entire 55 acres of Small Management Tract A @ \$0.45/acre 24.75
- TOTAL \$ 62.75



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
Small Management Compartments
T49N - R33W Section 19



LEGEND

Compartment Number	Acres
1	6.6
2	6.1
3	8.1
4	6.8
5	8.1
6	9.5
7	9.8

 Cut Area  Stream

 Logging Roads

Scale: 10" = 1 mile