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FROM FOREST TO FARM

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Nationally, there is Crop Land Contraction. Regionally, in the upper Lake States the reverse occurs, as distressed city populations seek security on the land. Converting forest to farm land requires: policy, program, system. For reclamation is part of the capital cost of the land. Four objectives obtain: establish a home; do this at minimum cost; secure early continuous returns; make every acre work, growing wood, grass, food. These objects constitute POLICY. The supporting PROGRAM has four parts: brushing, stumping, breaking, stoning. These processes are four steps in the reclamation SYSTEM.

Brushing

Brushing involves cutting, piling, burning of all standing material up to about four inches in diameter, and extending these operations to include small windfalls and debris covering the ground. It often includes the removal of heavy fallen trees and logs. Generally removal of standing and down timber is listed under the special head "Logging."

Brush is removed in four ways: (1) manual, using hand tools such as axe, scythe, brush hook; (2) fire; (3) ruminant animals, cattle and sheep; (4) mechanical, the brush mower and plow. Capitalize firm footing, leafless brush, cool weather, idle hours and brush in fall, spring, open winters. Brushing (including logging) usually precedes stumping by several years, particularly if there is green timber present. Grass seed is sown in early spring between the stumps and worked in crudely with one-horse equipment. Good sod and regular pasture should follow the next year. The land is now working, producing butterfat, meat, wool. We are applying "Delayed Clearing" principles. Push brushing on both permanent grass (stony or wet land) and future tilled acres as well as realize speedy land income. On 66 farms, involving 194 acres, it took three days to brush the average acre. The cost is more when logging is involved but the salvage offsets the added cost.

Stumping

This comprehensive term includes all operations between the brushing and breaking stage. We list four specific jobs under it: blasting, pulling, piling, burning. Blasting is sometimes omitted with small or decayed stumps. Stump pullers, still

used occasionally, are most effective when the stump is first split and loosened with dynamite. Stumping may or may not directly follow brushing. It rarely does when green timber has been logged. The intervening pasture years are valuable. Root material and debris decay; the sod improves and packs; eventually stumping costs fall; better breaking is done. Stumping is not synonymous with land clearing. It is just the largest of four jobs. The new settler should brush and stump his easiest acre of upland, productive soil in his initial effort. He learns the business and avoids expensive errors in later, heavier work. We have stumping costs for a half section of land, 104 farms. The average acre required about 4½ days to stump. Blasting took one-fourth the time; pulling took one-third; piling came between the two; burning six hours, took about one-seventh of the 44 hours involved. It took 7½ days to brush and stump the average acre ready for the plow, and 151 sticks of dynamite, 92 caps, 114 feet of fuse.

Breaking

Brush and stumps have disappeared. Breaking time has come. We include under this term plowing, disking, seed-bed preparation. Land is not cleared until it is ready for crop; and until land is plowed and disked, stoning and root picking can not be finished. We like to use a tractor for breaking when we can, for it does save the horses. But horse power must still do this job on the great majority of northern farms. Small breaking jobs come between the peak of labor loads of planting and harvest, that require horses, and when harvest is complete. Break when you can and forget the calendar. We have breaking information on 221 acres from 76 farmers. Breaking took three times as many man hours and twice as many horse hours as disking. Sand broke easiest of course, and clay loam, usually stony, took most time. It took just about two days for a man and team to break a northern acre, all types considered. Breaking is a job that can be quite definitely standardized. There is a certain definite volume of soil to turn, whereas the number of stumps and stones and the amount of brush is always variable.

Stoning (and Root Picking)

All of glaciated Minnesota, timber and prairie, contains stone. But they are most numerous north, the glacial head-quarters. Jack pine sand and red clay, both probably water laid, are relatively stone free. We have a stone history of eighty acres of land. The average acre required one day's labor of man and team to clean it. Picking stone ahead of the plow is good practice; right after plowing and following disking. Stone clean and save machinery. When possible use low-wheeled wagons and discard stone-boats. Two men should work together. Anything too heavy for them to roll on the wagon should be blasted.

Breaking brings up a quantity of wood material, stump remnants and roots. As with stone, the biggest job was on clay loam soil, taking a half day for two men and a team, just half that required for stoning. The average acre took just half this time, a quarter day. Save this wood for fuel. Indeed, ten to seventeen cords of wood per acre stump salvage is not uncommon. At fuel prices this wood will often pay all cash expenses of reclamation.

Summary

We have covered the four main steps in putting stump and stone land into cultivation. There are incidental, miscellaneous jobs added on many farms. The biggest one is filling stump holes, with man labor. We prefer to plow over these and disk around them. Gradually they fill up, and at less cost. The nineteen men who reported this work spent a day per acre on it, and six hours of horse work.

To summarize, it took about two weeks of man labor and ten days of horse work to stump the mythical average northern acre. The operator would spend three days brushing; four and one-half days stumping; break for two days; pick stones and roots one and one-half days; do odd jobs one day; total twelve days. Horse work divided thus: three and three-fourths days breaking; stumping just under this; stoning and root picking about half of stumping time. It took in addition 151 sticks of explosive. Running three per pound, fifty pounds would do the job. We have given costs in labor and material units which are constant, and can fit any changing price scale.