

To Save Ontario's Pine Supply

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To a large extent these wood lots have been severely culled and opened to grazing, so that the character of the growth is very inferior.

We have throughout this agricultural region large areas of sandy soil, which were unwisely cleared in the early days. Many of these areas are not only lying waste, but through sand dune formations, are becoming a menace to surrounding country. In many of these sand formations futile attempts are still being made to carry on farming.

The reforestation problem of Ontario divides itself into two outstanding questions, namely:

1. *The problem of improving private woodlands and replanting the waste areas of Southern Ontario.*

2. *Reforestation on the cut over Crown lands of the Laurentian Plateau.*

The Farmer's Part in Forestry.

The private wood lots of Southern Ontario aggregating three million acres present a difficult problem. Legislation has been provided for the remittance of taxes. Educational propaganda through bulletins, farmers' institutes and clubs, has been undertaken; free planting material is being supplied, and yet the farmer's wood lot is not seriously considered by the majority of owners. The influence of this class of woodland on local wood supplies, on the question of protection to crops and buildings from wind and on the provision of shelter for bird life combine to make a solution of the problem imperative for the welfare of agricultural Ontario.

In Southern Ontario where diversified soil conditions exist there are few farms which could not advantageously support some forest crop. The writer believes that no education or propaganda equals the actual demonstration of forest plantations. Through the distribution of forest nursery stock during the past few years plantations have been established in every county of older Ontario. Some five million plants have gone out and these demonstrations are just beginning to have their educational effect. The plantations are usually upon the poorer soils. Some of the more important ones are upon city watersheds, and upon blow sand areas along main highways where sand was continually encroaching upon the road.

The larger waste land areas, situated in the agricultural portions of older Ontario, present a problem, the solution of which depends upon municipal and provincial enterprises.

In 1909 a forest station, now comprising 1,800 acres, was established in one of these areas in Norfolk County in the Lake Erie district. This Norfolk sand formation, originally covered with pine and oak, was particularly cleared for farming and then abandoned. Forest nurseries were established which provide planting material for distribution to other parts of the Province as well as supplying the local needs.

Five hundred acres of plantations have been made at this station on blow sand ridges, abandoned fields and in scrub oak lands. Tree species used in this work have been white pine, red pine, Scotch pine, jack pine, European larch, red oak, chestnut and Carolina poplar. Some plantations where soil conditions warrant have been made with mixtures of the more valuable hardwoods.

Time will not permit a detailed description of the plantations, but the following shows the results on some of the oldest:

How Plantations Grow.

The Scotch pine and jack pine plantations are on bare sandy ridges; the red and white pine on sandy fields.

Species.	Age in years.	Average Height in feet.	Average Diameter in inches.
Jack pine----	12	21.15	3.50
Scotch pine--	12	19.61	2.72
White pine---	11	12.	----
Red Pine----	8	9.42	----

The results have been very gratifying, and investigation of the work by prominent Government officials and municipal officers from other regions, has assisted greatly in placing reforestation beyond the realm of academic discussion. The local effect is interesting as considerable skepticism existed regarding the initial plantings upon the blowing sand. At present our greatest demand from farmers for planting material is from the region about this forest station, proving that actual demonstration is the best form of education.

The nurseries at this station have been enlarged to a capacity of several million plants per year. We now have five acres in seed beds with an overhead, automatic watering system supplied from a 20,000 gallon tank with a four inch main. At present these seed beds contain about seven million, one year old seedlings, com-

prised chiefly of white pine, Scotch pine, jack pine and spruce.

Believing that demonstration forest stations in Southern Ontario will greatly assist in solving our problem in this region, the Government is now arranging for the establishment of several stations at strategic points in the Province. During the last season a forest station was started in Prince Edward County on Lake Ontario, where the Province owns about 500 acres of sand dune formation. In this area experimental plantings with willow and poplar were carried out on 100 acres. These dunes are moving badly and the above plantings were made for protection, preparatory to the introduction of coniferous species.

Municipal Forests.

In addition to the provincial projects numerous municipalities have become interested in reforestation. Last year, legislation was enacted whereby co-operative arrangements can be entered into between municipalities and the Province for the reforestation of municipal areas. The municipality purchases the land and the province undertakes the planting and management. These projects will embrace small ten acre demonstrations along main highways as well as the larger problems of municipal waste areas. This coming spring, work will be commenced in Simcoe County where 1,000 acres of cut over pine lands have been secured by the County.

Provincial and municipal forest stations in Southern Ontario will assist in securing a future wood supply; will provide forest planting demonstrations and will prevent futile attempts at agriculture on worthless soils.

I come to the problem of reforestation on the cut over Crown lands in the Laurentian Plateau with a certain hesitancy, knowing the prevalent belief that nature will provide regrowth in this region if we give her a chance and protect her from forest fire. As estimated earlier in this paper, I am convinced that our annual regrowth or increment is far below the present annual cut. With regulated logging and perfect fire protection we cannot hope for adequate crops of pine timber unless natural regeneration is supplemented by artificial planting.

The long time element in producing a forest crop makes calculations and estimates speculative, but I propose a plan which I feel is possible of attainment and which should insure our future needs.

Ontario's Replanting Plan.

Forest stations should be established at suitable locations in the older portions of our cut over regions, where the factors of fire protection could be most easily solved.