

## *Proposed Method of Operating and Regenerating the Black Swamp Spruce Type of Forest*

The Black Spruce in a swamp grows under very different conditions to the Black Spruce on dry soil, which is dealt with later, and yet it is one of the easiest types to handle.

The minimum diameter which the Quebec Government permit the lumberman to cut in Black Swamp Spruce is seven inches on the stump, yet I have seen many patches of swamp spruce remaining after the cut has been made where none of the trees reached the Government Minimum, hence, the lumberman was compelled to leave them to die.

This class of wood grows extremely slowly, and many trees one hundred and twenty-five years old will be found of only four and five inches diameter, while this type of tree will commence to wither and decay at about one hundred and fifty years.

The ground, of course, is marshy, and covered with moss. The development of this

type of tree is very slow, as above pointed out, and the growth and decay are occurring simultaneously, that is, the forest is reproducing and dying at the same time, young trees just coming up and old trees of one hundred and fifty years commencing to wither and die.

The Black Swamp Spruce is practically the only type where one finds a fairly even distribution of trees of all ages, and I advise the removal of trees on the age basis, as hereinafter outlined as the surest means towards actual regeneration.

I propose that this type of tree be treated by simply cutting trees over the average size of trees of fifty years of age in each stand, also that all trees which are sickly or damaged be removed.

One would thus minimize the loss of large quantities of timber, and aid the regenerative process.

## *Proposed Method of Operating and Regenerating Black Spruce in Dry Areas*

This type of Black Spruce occurs mixed with Jack-Pine or even alone on dry moss covered areas. Black Spruce grows both in swamp as well as in dry places due to its power of existing on water containing very little oxygen, which condition is found both in the swamp and in dry areas where the moss or raw humus absorbs practically all the oxygen out of the rain water. Jack-pine thrives also in the dry areas.

One finds a certain amount of Jack-pine growing with the Black Spruce, but this Jack-pine dies at a much younger age than the Black Spruce which is slow in developing and is still relatively healthy even fifty

years after the Jack-pine has ceased an active asset in the timber stand.

The dry area covered by the Black Spruce is comparatively small. For the time being I would propose a cut to remove mature and decaying trees, leaving a fair number of healthy trees per acre, mostly Jack-pine, which will be found growing among this Black Spruce, and which will be the following crop, and through which in its turn the Black Spruce will again propagate.

It has been noticed that after a fire this class of forest reproduces more rapidly and it may be found advisable at a later date to even go as far as applying light and controlled burning to these areas.

## *Regeneration of Old Burn. — (Mixed Woods)*

At a first glance at these stands one would think that they were made up of nothing but Poplar and Birch. Upon looking more closely into them, one finds masses of young Spruce and Balsam coming up under this hardwood.

In the course of approximately forty years the softwood will force its way up through the Poplar and Birch.

Poplar has been used as pulpwood for a number of years and there is no doubt that Birch will be used for this same purpose where it can be done at a profit.