

## Timber Conditions in the Yukon Territory

The following is a brief summary of what has been learned regarding forest conditions in the Yukon Territory, as a result of a forest reconnaissance survey undertaken during the summer of 1943 along the Alaskan Highway and also along the river route between Whitehorse and Dawson.

The Territory as a whole, although forested in greater or less degree over practically its whole area, is not rich in timber values. The effect of latitude is such as to limit tree growth to comparatively low elevations and, since most of the Yukon is mountainous or plateau-like, there are large areas of tundra above timber line as well as other large areas supporting a growth so stunted that it has no value whatever except as cover for fur and game animals. Merchantable stands, except in the extreme south, are for the most part confined to the river and stream valleys where the combination of good soils, sheltered conditions and low elevation make possible the development of the stand to a size suitable for saw timber or other commercial use.

Such areas are not widespread, in spite of the fact that timber conditions along the immediate vicinity of the Highway might lead one to that conclusion. It must be pointed out in this connection that the Highway is not only located in the most southerly part of the Territory over the greater part of its length, but also follows the low elevation and easy terrain of the river and stream valleys. As a consequence, it traverses the very locations where the best of the forest may be expected to be found. Especially is this true of that section of the road east of Whitehorse, through the Liard watershed and the lake country.

Between latitude 60 degrees (the southern boundary) and latitude 61 degrees there is a strip of country extending from the St. Elias Mountains in the west to the eastern boundary of the Territory in the east, which may be considered to be fairly heavily and satisfactorily timbered. Within this area occurs the larger portion of the timber reserves of the Yukon Territory and from it must come the bulk of the forest products which may be required in connection with development projects undertaken in the less favourable northern parts of the Territory. It alone, of the whole area, can furnish an exportable surplus of products for use elsewhere.

North of latitude 61 degrees merchantable stands are for the most part confined to the immediate valleys of the larger river such as the Lewes, Yukon, Pelly and the Stewart. Such timber as occurs within this area is barely sufficient to supply local need under present conditions, and would be quickly depleted were the present demand increased to any appreciable extent. It is doubtful if much merchantable timber occurs north of latitude 64 degrees because of the generally high elevations which obtain, but stands suitable for fuelwood might be found on good sites at low elevation on the river bottoms. This area was not examined during the summer

### The Liard Watershed

As might be expected, due to its generally low elevation and southerly location, the Liard watershed contains by far the best timber to be found in the Yukon. Speaking generally, this part of the Territory is as heavily forested as any part of Alberta or British Columbia east of the mountains and the growth rate is equally as good. The best stands are, of course, to be found in the immediate valleys of the larger rivers but merchantable stands are by no means confined to such locations. The uplands also support timber of very good quality up to an elevation of, roughly, 3500 feet above sea level and much of the country, in the southern portion of the watershed at least, lies well below the 3500 foot

contour. Our knowledge of the upper, or northern end, of the watershed is rather meagre but it is probable that it is rather more lightly timbered. Some of it must be above timber line which, in this latitude, is around 5000 feet above sea level. However, one would expect good stands of spruce to extend up the larger rivers well to their source and this seems to be confirmed by information obtained locally.

Along the river flats and benches of the Liard and its larger tributaries occur some quite remarkable spruce and cottonwood stands. A stand of spruce was measured on the Liard River just west of Watson Lake which was found to be between 125 and 135 years old. It ran better than 30,000 board feet per acre, with the majority of the trees between 110 and 120 feet in height and between 18 and 28 inches in diameter at breast height. Such stands of spruce occur quite frequently along the larger rivers and, while most of them would cover no more than a few hundred acres of river bottom land, the sum of them all must constitute quite a considerable and valuable reserve of saw timber.

The higher land away from the rivers is fairly well drained for the most part and supports a good, rapidly-growing and healthy forest. Forest fires have not been extensive nor frequent in this area for more than 70 years. The last wide-spread fire occurred between 1870 and 1873 and the area covered by it is now covered with a thrifty 75 year old stand which on the better sites is already approaching merchantable size. There are also remnants of an older stand, about 125 to 130 years, which is of merchantable size on good sites. Some stands of spruce were measured, on upland near the Rancheria River, which went better than 15,000 board feet per acre with dominants up to 84 feet in height and diameters up to 17 inches at breast height. Most of the upland area, however, supports the 75 year old pole-sized stand. As its rate of growth is generally fairly good, it may be expected that a large proportion of this stand will reach saw timber size in from 40 to 50 years.

To sum up, it may be said that the Liard watershed contains sufficient reserves of timber to furnish an exportable surplus to northern areas in the event that transportation facilities are improved to the point where this becomes feasible. Further, the general growth rate throughout the area is such that, taken into consideration with its present rather considerable reserves, it will not easily be depleted as the result of cutting.

This area is well worth the expense of a stock-taking survey and the inauguration of a fire protection organization.

#### Teslin Lake and Nisutlin River Watershed

From observations made from the road and information gathered from other sources, it appears that there are fairly large stocks of merchantable spruce timber in the vicinity of Teslin Lake and along the Nisutlin and Teslin River valleys. These extend well up the Nisutlin toward its source and down the Teslin to where it is joined by the Boswell River. Near Teslin Lake the merchantable forest is found not only close to the lake itself but also on the uplands to elevations of 3500 feet or more above sea level and this is true generally of the strip of country between latitudes 60 and 61 degrees.

Although the bottomland stands of spruce in the Teslin Lake area and along the Nisutlin River cannot approach in quality similarly located stands in the Liard watershed, they are, nevertheless, of very good quality. Yields up to 15,000 feet per acre on river bottom land are not unusual. One stand which was measured near the mouth of the Nisutlin River ran 16,000 board feet per acre with dominant trees reaching a height of 90 feet and a diameter of 20 inches at breast height. Upland timber is of course not so good

but even on these sites many stands run up to 10,000 board feet per acre with dominants ranging between 70 and 80 feet in height and up to 14 inches in diameter at breast height.

Because its climate is drier, this has suffered more from fire than the Liard watershed. The fire of 1870-73 burned even more territory within this watershed than it did on the Liard and in addition a fire in 1917 took a heavy toll of timber stocks. Of the forested land below an elevation of 3500 feet, which would include all stands of merchantable quality, it is estimated that approximately 25% bears timber 25 years old, 60% bears timber 75 years old and 15% bears timber of older age classes, the most important of which would be the 125 to 130 year class. About half of the latter class is of saw timber quality.

Lodgepole pine in pure, or nearly pure, stands occur quite extensively throughout this watershed and there is much of it of a suitable size for the manufacture of railroad ties - a fact which is worth noting in view of projected plans for a railroad through the area.

#### The Lewes - Takhini Watershed

This unit is bounded on the east by Teslin Lake and River on the south by the southern boundary of the Territory, on the west by Kusawa Lake and on the north by the Takhini Valley. Its general appearance is strikingly like that of the east-slope country of southern and central Alberta. They have much in common - both are dry as to climate; both have warm "chinook" winds; they have the same species of trees and, to a surprising degree, the same kind of ground vegetation; and, finally, both have been badly ravaged by forest fire and therefore present the same variety or multiplicity of age groups.

The river bottoms and low-lying lands around the lake shores support some very good spruce stands but none of them are very extensive as to area and they have been, or are being, heavily drawn upon for lumber and other products to be used in connection with present local development. This is especially true of the valley of the Takhini in the vicinity of Whitehorse. Upland timber is mostly lodgepole pine although there are also some very good spruce-pine mixtures in sheltered locations. A few of these stands are of tie size and it is quite possible that quite a large cut of ties could be made in this area although most of the stands from which they would come are very small in area and rather patchy.

The rate of growth in this area is only fair, so far as anything but river bottomland is concerned, and reserves are being heavily drawn upon at present. Moreover, there is the ever present danger of forest fire which unless some action is taken in connection with it, is likely to further deplete the reserve supply of timber in this area. In the vicinity of Whitehorse and Carcross there is a local scarcity which does not greatly affect the general picture which is that of a fairly well timbered country which could under normal conditions take care of local demand with ease.

#### The Alsek - Dezadeash Watershed

This area lies just to the east of the St. Elias Range and is drained to the Pacific Ocean by means of the Alsek River. It is generally rough and mountainous to the west with many of the hills rising above timber line. In this part of the area there is little or no merchantable timber. To the east, however, along the Dezadeash River there are quite large areas which are at a much lower elevation and some of this area supports merchantable spruce stands, of rather inferior quality but of sufficiently large size to make saw logs. South of the Dezadeash there is an insect infestation which is causing quite serious damage to a merchantable spruce stand and which has spread over several square miles. No pine occurs in this area.

Kluane Lake - White River Watershed

While a few pockets of merchantable spruce may be found in this area on the best and most sheltered sites, they are very small in extent and of inferior quality. The larger part of this watershed is mountainous and is above timber line. Much of the balance is scrubby growth of widely spaced trees, both white and black spruce. No lodgepole pine occurs and there are few poplar or other broad-leaved trees. Much of the ground is permanently frozen.

Central Yukon

That part of the Yukon Territory lying south of the 64th parallel of latitude, which has not already been described, is being called the Central Yukon for present purposes. It is largely forested but with a short, shrubby growth of spruce, pine and poplar which has little, if any, merchantable value except for fuelwood. The only merchantable timber which occurs is found in the valleys of the large rivers. This is spruce of rather inferior quality in most instances but there are no doubt many stands along the rivers which are capable of being manufactured into lumber of fair quality. At any rate there are two mills on the Stewart River one or two on the Pelly and at least one on the Lewes, all manufacturing for local consumption.

Stands of spruce along the larger rivers are important as a source of fuelwood for the river steamers. These use quite large quantities during the season of navigation but there appears to be a fairly adequate supply provided such traffic is not greatly increased. The growth rate is very slow throughout the whole area with the exception of that portion of the valley of the Yukon River between Dawson and the Alaska boundary.

There was a great drain upon local timber supplies during the early 1900's in the vicinity of Dawson and all reserves in this area have completely disappeared. Dawson now draws its supply of fuelwood and lumber from the Stewart River.

Northern Yukon

For present purposes it is considered that the Northern Yukon consists of all that part of the Territory north of latitude 64 degrees.

This area is for the most part barren or supports growth of such stunted character that it has no merchantable value except as fuelwood for local supply and, fortunately, very little is required for this purpose. There is permanent frost under practically the whole area.

(Sgd) H. L. Holman

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