DEPARTMENT OF FORESTRY · CANADA

Timber Talks

Prepared by V. H. Phelps, Forest Research Laboratory, 506 W. Burnside Road, Victoria, B.C.

IS YOUR LOGGING SLASH A FIRE HAZARD? No. 7

Combustible materials that create a danger from fire in a forest include needles, twigs and other debris on the ground and the living crowns of trees. Logging further increases danger by the accumulation of large quantities of logging slash. A reduction in the potential hazard may be accomplished by controlled burning. This requires an understanding of the quantity and composition of the slash and its relationship to fire behaviour.

Measurements were made on over 400 lodgepole pine trees in central British Columbia to investigate the amount and kind of slash that accumulates after logging to different utilization standards.

The crown weight, defined as the weight of all dead and living components of the tree crowns except the bole, is directly related to tree diameter. Logging (4" d.b.h. and over) in stands where average diameters are 5" and 10" creates 15 lbs. and 10 lbs. respectively of logging slash for each cubic foot of merchantable wood.

The fuel components of logging slash are tops, needles and branches. The proportion of each in the total fuel complex and their respective surface area are important to fire behaviour. The percentage of each component within the complex varies with average diameter of the stand. The surface area is 37 sq. ft. for one pound of dry needles and 5 sq. ft. for one pound of branchwood that is less than one inch in diameter; surface area of the bole of a crown is similar to that of a cone. Thus, although the total weight of slash in stands cut to the same utilization standard may be the same, the percentage of each fuel component may differ. These differences will affect the rate of fire spread on cut-over areas. Lopping and exposure to sunlight increases the rate at which logging slash dries. In full sunlight, lopped slash dries approximately 30 days faster than that which is unlopped. Sixty days after cutting, the moisture content was 25 per cent in needles and large branches and 18 per cent in fine branches.

REPORT: Lodgepole Pine Logging Slash. S. J. Muraro, Forest Research Laboratory, Victoria, B. C.