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Abstract

Relationships between stand parameters and understorey light in boreal aspen stands

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Data from six aspen stands in northeastern British Columbia ranging in age from 12 to 40 years were used to examine relationships between understorey light levels and stand attributes (basal area, stand density, and age). Sample points were selected in each stand to characterize the observed range in tree density and size. Fractional transmittance of light (DIFN) was measured at each sample point using a LAI-2000 Plant Canopy Analyzer and a circular plot 3.99 m or 5.64 m in radius was established for density and basal area determination.

Results indicated that data from the six stands could be pooled into a single model describing the relationship between understorey light and basal area. Light levels below 40% are found when basal area of aspen in these stands exceeds 14 m²/ha and light levels below 60% are found when basal area of aspen exceeds 8 m²/ha. The potential implications of these light levels to growth of understorey spruce are discussed.

A diagrammatic representation of light-density–diameter relationships is presented that could provide a useful tool for management decisions in young mixedwood stands in northeastern British Columbia.

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