

**PRIME LAND CLASSIFICATION AND INVENTORY
FOR TIMBER PRODUCTION FOR NORTHWESTERN ONTARIO:
The Present And The Future**

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ABSTRACT.—In order to facilitate strategic forest land use planning at both a broad regional and individual forest landscape scale, a mapped prime land classification (a.k.a. timber capability) for northwestern Ontario has been developed. The classification will assist forest managers in:

- understanding and recognising broad patterns of soil/site variation at a forest landscape level;
- selecting sites most suitable for growth of a particular species or group of species; and
- area valuation.

Matching tree species to site conditions to achieve optimum growth is a critical cornerstone of forest management and intensification of silvicultural activity. Survival and potential growth of a species is greatly limited when it is grown on inappropriate sites (Taylor and Jones 1986).

The prime land classification presented was developed using species - soil/site productivity data for northwestern Ontario. This information was then used to interpret mapped soil/site features as described and captured by the Ontario Land Inventory (OLI) - Land Type Units (1:250 000). Each mapped OLI land type unit was assigned a primeland class for individual species (i.e., Jack pine, black spruce and trembling aspen). While small areas of northwestern Ontario (approximately 610,000 ha in total) have soil/site information which has been mapped and interpreted at a finer resolution down to 1:50 000 scale (i.e., Agriculture Canada soils series mapping and Ontario Geological Survey surficial geology mapping), the OLI represents the only digitally available soil-site map coverage available for all of northwestern Ontario.

The species - soil/site productivity data is presented in the form of individual species-productivity "look-up" tables. These look-up tables relate site index for a species to diagnostic soil-site features which are described for each map unit in the OLI. Certain soil conditions are considered not suitable for some species (i.e., the soil/site conditions do not allow a species to establish and assume a reasonable level of growth and development or the soil/site predisposes the species to a high incidence of cull and defect). These conditions are defined as 'nonproductive' for one or more species.

Data for species growth and performance on shallow (<60 cm) and very shallow (< 25 cm) soils with exposed bedrock was lacking for jack pine, black spruce and trembling aspen. Site productivity estimates for these species were derived from expert opinion (photo-interpreters working for the forest industry), cruising data, OMNR Science and Technology staff and project data, and from the deliberations of the Wabakimi Park Boundary Committee (1993/94).

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