

# Buried Wood in Reclamation Soils: Impacts on Soil Nutrients and Tree Growth <sup>1</sup>

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**Abstract:** Buried wood is an important component of forest soils in both natural and anthropogenic environments, such as reclaimed mine sites, by providing a long-term store of carbon and nutrients, habitat for various organisms, and increasing soil water holding capacity. However, buried wood may also reduce site productivity due to nutrient immobilization during wood decomposition. In a greenhouse study, we evaluated the effects of buried wood on soil nutrients and trembling aspen seedling growth in four different reclamation soils from the mineable oil sands region of northern Alberta, Canada. Buried wood decreased nitrogen and phosphorus availability with the greatest impact on the most fertile soils. Most other nutrients were controlled more by soil type than buried wood. Aspen seedling growth was also reduced by buried wood addition with the greatest reduction occurring in the most productive soils. Operationally, although buried wood may reduce site productivity, subsequent field measurements indicated that most reclamation field sites in the region have lower buried wood amounts than tested in our experiment and are unlikely to be negatively impacted.

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