

Do Weeds Hinder the Development of Native Plants on a Reclaimed Boreal Mine Site?¹

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Abstract: Weedy non-native plants can be a major impediment to the establishment, growth and survival of native plant communities on mine reclamation sites. For oil sands mines in the boreal forest of northern Alberta, one of the main reclamation targets is to have a natural plant community similar to the surrounding forests. In this region, the weedy plants are almost exclusively short-lived non-native forbs common in agricultural areas such as sow-thistle (*Sonchus arvensis*), scentless chamomile (*Matricaria perforata*), and sweetclover (*Melilotus officinalis*); weedy shrub and tree species are not present. The goal of this project is to better understand the role of weeds on reclaimed oil sands mine sites and determine if weeds hinder the establishment of native plants or if they are simply utilizing available resources with no long-term impacts on plant community development. Past work has shown contrasting results as to the impact of weeds. For example, reclamation practices that increase weeds, such as fertilization, decrease native tree establishment, while actively controlling weeds increases highly competitive grasses but not native forbs. For this study, we will examine the impact of weeds on native plant communities on two different reclamation soil types after one and four growing seasons. The reclamation soils are forest floor mineral mix, an upland forest based soil rich in native plant propagules, and peat mineral mix, a lowland based soil high in organic matter but low in native uplands plant propagules.³

Keywords: oil sands, mine reclamation, boreal forest, non-native plants, native forbs.

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3. This work took place in the mineable oil sands region of northern Alberta near 57.2°N 111.6°W.