

**Characterisation of growth in planted *Pinus flexilis* seedlings on restored rangelands in the Montane ecoregion of Alberta, Canada.**

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ORAL Sustainability

Limber Pine was listed as endangered in Alberta under the 2009 Alberta Wildlife Act, and the corresponding provincial Recovery Plan was approved in 2014. As part of a community-based restoration activity under this recovery plan, 561 three-year-old Limber Pine (*Pinus flexilis*) seedlings in the Montane ecoregion in Southern Alberta were planted in August 2013 along 6 transects in clusters of three. The seedlings were monitored for growth between August 2013 and October 2014 and controlled for grazing by enclosure from May to October 2014. Of the 187 plots of three seedlings each, data on plot productivity was collected for 25 enclosed and 42 open plots. Of the seedlings in these plots, 105 exhibited growth during the period May - October 2014 and were modeled for influence by transect, elevation, intensity of land use for ranching, exclusion of grazing, plot productivity (percentage low shrub cover, percentage grass cover), location on a cattle trail, and soil moisture (percentage mineral substrate). Backward elimination stepwise regression models at both plot and tree level resolutions were evaluated for significance. Further modeling by forward selection mixed models accounting for nesting within plots is recommended.