

Prescribing for a Healthy Forest; Forest Tour April 24, 2019



Unthinned 3500 stems per hectare



Thinned to 150 stem/hectare

Biology of site. This is a mesic Douglas fir forest (IDFdm2) that historically was burnt by light impact fires every 2 to 20 years with an average of 7.8 years (McLeary Park adjacent stand reconstruction story). The forest historically consisted of 48 trees per hectare mostly Ponderosa Pine and Western Larch with trees about 50 to 70 centimetres in diameter and thick cover of high value grasses. The current forest has not been burnt since 1910 and consists of 3500 stems per hectare of Douglas fir about 5 to 20 centimetres in diameter and light moss-covered forest floor. A previous spacing project has left felled trees piled on site, with no increase in grass and a crown density that can still carry a crown fire.

This over crowded small diameter forest seldom grows a commercial sized tree. Plots established in the Cranbrook Community Forest show trees that are only 6 centimetres in diameter after 132 years of growth not the 45 cm that they should be. Dendrochronology studies shows that the trees growth decreased in the 1940s and has not grown at all since the 1980s.



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During the course of a research project in 2011 a fire scarred Ponderosa Pine was found near the shore of Koocanusa reservoir and 500 metres from the Tobacco Plains Indian Reserve. The Tree died in 1895 but the rings date back to 1485 and it shows scars from 58 separate fires, a record for Canada. Closer examination showed the fires scars occurred in late September to late October, so that they would not be considered as lightning origin. The Confederated Salish and Kootenai tribe website (<http://www.csktribes.org/>) does record a report that traditional tobacco cultivation required a late fall burn when native tobacco seed was scattered on the fertile ashes to scarify over winter for a spring crop.

Notes on the Project:

- First proposed in 2008 by the City of the Cranbrook but not actioned until 2017.
- The City of Cranbrook is on three sides of the unit and up to ten nuisance fires a year are occur here. Homeless camps and graduation party bonfires are common ignition sources.
- Tree size was too large to utilise hand felling crews, machinery was needed.
- Unit did not fit into Ecosystem Restoration or wildlife habitat funding criteria.

Project involved:

- 18.2 hectares of thinning on Crown land; four retention targets (what works best)
- 17.6 hectares of thinning on College of the Rockies property
- Feller buncher and grapple skidder used for treatment with on site grinding of non-merchantable material
- 1134 m³ of sawlogs, 2062m³ pulpwood and 2,358,280 kilograms green weight or equivalent 1,637.58 bone dry tons of hogfuel recovered from this entire project
- 2 hectares of hand thinning post treatment
- Ten long term monitoring plots for research and education
- Post harvest signage and education curriculum