

Bringing back Kootenay's original dry grasslands and open forests

Using mechanical harvesters and prescribed fire, the Redstreak Restoration Project in south Kootenay National Park restores habitat integrity for native species

Kootenay National Park of Canada in the southwest Canadian Rocky Mountains is home to diverse landscapes and ecology, from the high peaks of the Continental Divide to the semi-arid Rocky Mountain Trench. The southwestern corner of the park—home of the Columbia Valley and Radium Hot Springs—is a dry, low-elevation valley that supports rich biodiversity and critical wildlife habitat. This area contains the only example of dry Douglas-fir/Ponderosa pine/wheatgrass vegetation in Canada's national parks and provides important winter range for wildlife, including the Rocky Mountain Bighorn sheep (*Ovis canadensis canadensis*). It is also the site where most of the human activity in the region occurs.

For thousands of years, natural fires maintained a variety of habitats in the Columbia Valley, creating a healthy mixture of young, middle-aged and old forests, shrublands, open meadows and dry grassy slopes. But now, after almost a century of successful fire suppression efforts in the region, the ecology has dramatically changed. Without the regenerative benefits of periodic, low-intensity surface fires, the Columbia Valley has been transformed into an even-aged blanket of mature forests that is encroaching on and dominating the original mosaic of species and habitats. Moreover, the dense forest now overtaking the area sets the stage for catastrophic wildfires, such as those seen in the summer of 2003.

To return ecological integrity to the valley and reduce wildfire risk, Parks Canada is restoring the rare and beautiful grasslands and open forest biodiversity of the South Kootenays through the Redstreak Restoration Project. The Redstreak Campground area near Radium Hot Springs was chosen as the site for the most ecologically appropriate tool to restore fire-maintained ecosystems—the mechanical harvesting of trees followed by carefully planned and managed burns.

The first phase of the project (2002-2003) focused on tree harvesting and removal in and around the campground in order to decrease the amount of fuel available for the prescribed fires. Hundreds of hectares have already been restored, using mechanical harvesting as a preparatory step for controlled fires. While mechanical tree harvesting is an odd sight to witness in a national park, it is an essential component of ecosystem restoration efforts. Periodic low-intensity fires are scheduled to begin in spring 2005, provided the right conditions are present.

Just as the forests that burned in the 2001 Mount Shanks fire are now full of wildflowers, and the 1968 Vermilion Pass burn



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provides prime habitat for lynx and moose, the dry grassy slopes of the Columbia Valley will once again provide a fertile habitat for Bighorn sheep and other native species.

Results

- Because tree removal requires heavy equipment that can damage soils, small plants and shrubs, Phase 1 of the project took place during winter, when the ground was frozen and covered with snow. This minimized the damage to the land and to small flora. The harvested trees were then sold, and the revenues returned to support the project.
- Controlled, low-intensity fires reduce both dangerous forest fuel loads and the risk of catastrophic fires. Trees were cut and removed from three areas totalling about 100 hectares. This form of “fuel reduction” allows low-intensity fires to be safely introduced.
- Managed fires will burn out young trees from among large, fire-resistant Douglas firs, and will also recycle nutrients and restore open forest.
- Between 350 and 400 hectares of fire-maintained open forests and grasslands will be restored in the Columbia Valley.
- Ten local adult Bighorn sheep have been radio-collared so that detailed location data can be obtained and used to monitor habitat selection and seasonal movement routes. Knowledge gained from monitoring will allow the Radium-Stoddart Bighorn Sheep Working Group to evaluate progress and refine restoration efforts as needed.

