

Land-uses cause for significant reduction in water quality in Ghost Watershed

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A comprehensive study of the impacts of different land uses in the Ghost River watershed west of Calgary has revealed serious threats to the region's water, forest, wildlife, fish and recreational resources in that region. The study investigated the combined effects of land-uses such as forestry, recreation, and energy development on the natural resources of the region.

Current levels of off-highway recreational vehicle use, forest harvesting, and a high density of linear features such as roads, trails and seismic lines, were found to have the greatest potential negative effects on indicators studied.

Water quality in the Ghost-Waiparous area, for example, has been significantly negatively affected by current land-uses already, said the just-released scientific assessment by ALCES Landscape and Land-use Ltd, commissioned by the Ghost Watershed Alliance Society with funding from Alberta Ecotrust.

Without concerted efforts to improve area management, degraded water quality could further reduce populations of already threatened cutthroat and bull trout and diminish recreational fishing opportunities. There is also potential of reduced water quality for downstream communities such as Cochrane and Calgary which could lead to increased cost for water treatment. An estimated 10 per cent of the Bow River's flow volume upstream of Calgary originates from the Ghost-Waiparous watershed.

If current forestry harvest practices continue, the study projects the future landscape will contain a younger, more fragmented forest with clear-cuts, leading to a potential loss of biodiversity and effective wildlife habitat for some species.

"The transformation of the forest landscape towards younger forests stands may adversely affect wildlife species that require old-growth forests and may potentially erode the recreational value of the region for hikers, equestrian users, motorized off-highway enthusiasts, and others," the study noted.

Non-timber values for forests have been estimated to be up to ten times the value of timber revenues. Outdoor recreationalists generally prefer older forests and avoid clearcuts for recreational activities.

The key point here is that forest harvest practices should be conducted in a fashion that does not erode important potentially higher value recreational opportunity.

During field assessments by ALCES in 2010, 93 per cent of linear features showed recent off-highway vehicle use. However only 7% of them are actually officially designated off-highway vehicle trails. Rampant, unenforced use of non-designated trails in the Ghost has further fragmented wildlife habitat, reduced habitat quality for threatened species such as grizzly bears, contributed to increased erosion, negatively impacted non-motorized recreationalists and reduced water quality through the region.

Effective enforcement of current access legislation is a necessity to protect recreational and water resources in the Ghost-Waiparous.

The South Saskatchewan Regional Advisory Council recommends that: “Motorized activities should not be permitted in riparian areas or wetlands, mud bogging should be prohibited on public land, and motorized activity should not be permitted off of designated trails, routes or areas.”

Some recommendations of the report are:

- Staging areas for both non-motorized and motorized users should have toilet facilities and bear proof garbage containers. Otherwise uncontained human feces might end up in Cochrane’s and Calgary’s water supply and uncontained garbage could result in high mortality rates of threatened grizzly bears in the area.
- Excessive noise has been identified as a source of conflict with non-motorized users and may negatively affect wildlife. Noise regulations should be enforced to minimize user conflicts and disturbance of wildlife.
- Forestry operations should avoid both fish bearing and non-fish bearing streams and wetlands to minimize potential increases in sedimentation, which has a negative impact on fish survival and spawning habitat. Significant levels of both living and dead residual trees at a retention level ranging from 10 to 50%, based on pre-industrial condition, should be maintained.

GWAS, a group seeking to preserve and enhance the integrity of the Ghost watershed ecosystem, is looking forward to a second phase study by ALCES to assess future impacts of best management practices and different policies on the region.

“We now know that the status quo is not acceptable into the future, but there is also potential for a lot of improvement and that’s what we will explore with the help of ALCES in the second phase of the study. It will look at all kinds of Best Management Practices for the different land uses, which could potentially decrease downstream water treatment costs as well as benefit fish, wildlife, and recreational users “ says Marina Krainer, Executive Director of the Ghost Watershed Alliance Society.

ALCES is an Alberta company using computer simulation programs, field visits and a review of available data to estimate the impact on landscapes of various human activities.

The ALCES study is one of three major studies initiated by the Ghost Watershed Alliance during the past year to encourage better management practices for the watershed region. A 2010 riparian health inventory project was undertaken in partnership with the Alberta Riparian Habitat Management Society. The Alliance also commissioned Silva Ecosystems Consultants Ltd. of B.C. to prepare an Ecosystem-based Management Plan for the area, which fits people into ecosystems, such as the Ghost watershed, in ways that protect the land, water, plants, animals, soil and all the other parts and processes of a fully functioning ecosystem while providing for diverse, community-based economies. All three studies may be viewed at GWAS website, www.ghostwatershed.ca.