quick Notes
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Foothills Stream Crossing Program Quicknote #1

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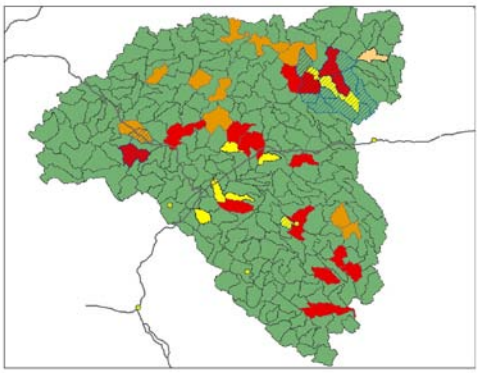
Aquatic resources are an important forest resource in Alberta. Many resource extraction based activities, especially roads and stream crossings, have detrimental effects on fish and on water quality. Due to the nature of streams and riparian areas, many stakeholders may be influencing one stream at numerous points. These influences often include the input of sediment and the fragmentation of habitat leading to isolated fish populations and barriers to habitat. Isolating fish populations leads to a decline in the overall population and diversity of fish species. Through cooperation from all involved stakeholders habitat barriers can be removed and sedimentation reduced, allowing for the sustainability of fish stocks and their habitat.

The Foothills Stream Crossing Program (FSCP) is a multi industry partnership with the main objective of improving the condition and performance of stream crossings on the landscape. To date, they have inventoried and prioritized over 500 crossings belonging to over 40 companies and government agencies since its inception in 2004. Nine of these companies are actively involved with FSCP and represent 85% of the inspected crossings. All of the original companies are still involved with the program. Although some have been amalgamated with other companies, the core group of members is strongly committed to the success of this program.

The inspected crossings are given a rating of high, medium, or low for concerns with fish passage, sedimentation and safety. These ratings form the basis of subsequent watershed prioritization, which is also based on several factors including road density, watershed size and existing or potential habitat or occurrence of fish. Remediation plans are then created for the watersheds found to have the highest environmental risk due to stream crossings and the most potential for habitat improvement. All FSCP companies representing crossings in these high risk watersheds participate in the design of remediation plans, outlining the strategies, timing and the justification for the order in which the crossings are mitigated. Sedimentation issues are commonly repaired within two years and major fish barriers requiring a full crossing replacement are scheduled for repair within three years. By working with other companies operating in the watershed, FSCP members are able to plan to fix fish barriers in a sequential order up the watershed, and sedimentation problems from the top of the watershed down. This greatly increases the efficacy of money and time spent while encouraging dialogue between stakeholders. This method is very different from the traditional government enforcement, where one crossing is selected for remediation with no thought of surrounding problems in the watershed or the priority of that crossing in particular.



A key stakeholder in the watershed remediation planning is Alberta Sustainable Resource Development (ASRD) and Fisheries and Oceans Canada (DFO). All completed plans are sent to ASRD and DFO and yearly updates track the FSCP progress with the local officials. This disclosure of non compliance stream crossings to a regulatory body is the first of its kind in Alberta and removes the confidentiality often surrounding problems on the landscape. Results from our 2009 field year have been very positive. 50 stream crossings with sedimentation issues have been mitigated, and 100 km of fish habitat, blocked due to faulty stream crossings, has been opened up as the direct result of the work of FSCP since its inception in 2005. More fish habitat and sedimentation mitigation is planned for 2010, 2011 and 2012.

ASRD, in collaboration with FSCP, is now working to solidify a pilot project in which FSCP will collect an entire stream crossing inventory for the Foothills Management District. FSCP will then create multi stakeholder remediation plans removing the need for direct regulatory enforcement and placing the responsibility with the land owner. This pilot project fits well with the long term vision of FSCP to expand across the head waters in the eastern slopes and is an important step to policy change within the three government agencies regulating stream crossing.

FSCP has also undertaken the monitoring of success of such an approach. Measurable success of this project can be determined using fish species distribution and composition, fish size distribution, and population estimates and comparing it to baseline data. Habitat assessments including measures for substrate embeddedness, instream debris, substrate composition, and discharge rates will indicate changes in sedimentation and its impacts on fish habitat quality. This is an enhanced form of management because this level of landscape monitoring is not an industry responsibility and is seldomly undertaken by the government. FSCP's Watershed Monitoring Project is an important step in ensuring that the best approach is being undertaken. Monitoring while continuing with stream crossing inspections contributes to an adaptive management plan directing best practices toward enhancing the forest resources of Alberta. The overall objective of this project is to provide sound scientifically based background information towards the creation of an integrated watershed level management tool available to all land managers.

1 MONITORING AND MAINTAINING CROSSINGS

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1.1 INTRODUCTION

Each stream crossing has an owner who is responsible for the initial design and construction, as well as monitoring, maintaining and de-activating the crossing as part of its stewardship commitments. This process requires a formal and timely inspection process that is based on agreed to protocols. This will help to ensure crossings are functioning effectively.

Properly installed culvert – photo courtesy of CulvertBC.com

Scope

The crossing inspection protocol is designed for situations where a **permanent road** crosses a **defined channel.** The inspection includes the crossing structure and the road and ditches on both approaches to the crossing. Inspections will also be performed on crossings of unmapped channels.

Crossings over intermittent streams with no channel and cross-drains through ephemeral draws are not normally inspected. Temporary roads often have snow bridges, drainage culverts or log fills that are removed before spring thaw, so they have little, if any, effect on stream siltation or fish migration, and thus do not normally require inspecting.

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