

### **Effectiveness of debris barriers against livestock impacts to small streams following timber harvest:**

Water quality and quantity and other resource values such as fish and fish habitat can be impacted by our management near small headwater streams. Current legislation allows timber harvest to occur up to the edge of small streams without leaving any reserve zone. The removal of the reserve zone leaves small streams susceptible to livestock impacts. Livestock are attracted to riparian areas due to the presence of water and available forage. Livestock trampling and compaction of the soils can affect water quality and the lands ability to store and release water later in the season. Overgrazing of the plant community removes the filter which traps sediments and pollutants. Using coarse woody debris as a barrier to livestock to minimize the trailing and over use of riparian areas is believed to be an effective but unproven practice. In my project, small streams in newly harvested cutblocks will be protected with debris and compared against a control with no protection. Measurements will include plant productivity and composition, soil compaction, soil moisture, browse use, pellet counts and amount of bare ground. By reducing access and minimizing trailing along stream channels I expect plant productivity to be improved and compaction to be reduced. This will allow the system to better trap sediments and pollutants and store and release water. Reduced use and access to livestock should allow for a riparian thicket of shrubs to establish in a timelier manner through less browse use. The risk to water quality should be reduced by restricting access to livestock as it will reduce the amount of defecation within the riparian zone. Results are hoped to provide operational guidance in protecting small streams from the cumulative impacts of timber harvest and livestock use.