Applications of airborne remote sensing :
*Assessing physical and ecological impacts of dams along the Kananaskis River, Alberta*

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An understanding of the impacts of dams on river systems requires knowledge of the feedbacks between hydrology, geomorphology, and vegetation dynamics. However, because knowledge of the ways these interactions related to dam induced river change is limited further research is needed. This study will therefore focus on the geomorphic and ecologic response of the Kananaskis River to the 1955 damming and consequent hydrologic alteration. In order to address this question, the predam conditions will be determined based upon historic flow records and aerial photos which will be compared to field and remotely sensed data of the modern state of the system. The pre and post dam data will then be used as input values for the UBC Regime model. This model appears to be representative of similar systems by identifying the equilibrium channel geometry. Using this model calibrated to the historic Kananaskis system, the various input values can be adjusted to determine how the channel should respond to various perturbations, such as shifts in riparian vegetation density. Additionally, techniques will be developed to assess the status of riparian vegetation using airborne remotely sensed imagery. These methods were designed to allow characterization of the geomorphic and ecologic conditions associated with the historic and dam influenced system and provide a tool to predict and assess changes associated with dam induced hydrologic changes.