**Studying the geomorphic aspects of changes to fish habitat below hydro dams: changes to bed substrate characteristics as well as changes to size and morphology of channels.**

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Rivers are dynamic systems where changes constantly occur on the channel bed due to sediment transport and flow variations. Human interventions on rivers, such as dam construction for flood control, electricity generation and irrigation are known to modify the natural flow regime and sediment throughput to the system. Depending on the type and operation of the dam, the resulting hydrograph may largely differ from the natural state in terms of high flow intensities, durations and magnitudes. Consequently, the sediment transport capacity below dam may increase or decrease. Geomorphic theory shows that changes to these drivers can entrain long term adjustments in channel geometry, back channel size, bed material grain size, river bed level with respect to floodplain level, etc.

In fluvial geomorphology, fish habitats are often characterised by the substrate composition and mobility as well as water depth, wetted area and flow speed. Channel modifications post damming can thus lead to habitat alterations, affecting reproduction success, benthic community composition, invertebrate drift regime, refugia characteristics, etc.

Our work investigates river bed channels evolution below hydro dams. Remote sensing techniques as well as field surveys will help us to describe the evolution by looking for indices of morpho-sedimentologic changes. Our databases will be useful for the Hydronet project by linking the impacts of habitat modifications to fish population data. Surveys across Canada on about twenty regulated sites and their non-regulated references will provide a general trend of the impact of hydro dams on fish habitats.

**Key words**: River channel geomorphology; hydro dam; flow regulation; sediment transport; long-term response; fish habitat.