## Abstract

This work focuses on glacier-fed stream ecosystems, with the centre of attention being on the community composition and characterization of their food web structure. Glacier-fed streams are harsh environments in terms of their physicochemical characteristics. These streams exhibit low temperatures and specific flow regimes, with the peak of meltwater generation, and thus discharge, in the summer. In turn, streamwater nutrient concentrations, light availability, and turbidity all vary seasonally according to the flow regime. Compositionally, glacier-fed stream habitats host chemolithotrophic bacteria along with photoautotrophic producers, such as diatoms, *Chrysophyceae,* and Cyanobacteria, which together serve at the bottom of food webs as primary producers. These streams also host some fungal taxa, that together with heterotrophic bacteria, represent the primary decomposers. Macroinvertebrates, including the water larvae of species *Diamesa* and *Pseudodiamesa,* or from the Ephemeroptera or Plecoptera groups, are important secondary producers with high feeding plasticity; that is, they are mainly grazing biofilm or collecting/filtering organic matter, with the possibility of predation. Other than that, in glacier-fed streams, there is usually no presence of higher trophic levels with large-bodied organisms. With global glacier retreat, glacier-fed streams are changing, with alterations to their flow regime and rising temperatures. Shifts in habitat conditions and composition structures will lead to more diverse food webs, with more trophic levels as colonisation of new species will occur. These alterations will be further elaborated in this thesis.