**Establishing the link between fish biodiversity, species richness and biomass production in freshwater ecosystems**

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The generation of fish biomass is an integral function of freshwater aquatic ecosystems and is largely influenced by both the diversity of organisms as well as their functional organization within a food web. As such, species diversity has been a recent focal point of ecological research with respect to its influence on food chain characteristics (length and width) and subsequent effects on ecological functions. Much of this research, however, has been limited to theoretical studies based on complex models, with the emphasis of most being allocated to the examination of species diversity in relation to functionally significant groups. While this research has provided valuable insight as to how the addition or subtraction (or lengthening) of entire trophic pathways affect ecosystem function, it fails to address functional group species richness, which likely plays an important underlying role. To address this gap in our knowledge, we have designed a comparative study to examine the relationship between fish diversity, species richness and fish biomass production in both lentic and lotic ecosystems across Canada. A component of this research will also involve the examination of this relationship across hydro-regulated and non-regulated lotic systems where regulation has led to a shift in fish community composition.