Rasmussen JB. Effect of nutrient and species richness as drivers of fish productivity in Canadian Waters.  Dept. of Biological Sciences, Water Institute for Sustainable Ecosystems. University of Lethbridge. Lethbridge, Alberta.

This talk presents an overview of projects 1.2.1 Chemical drivers and 1.4.3 Biological drivers: Biodiversity.  Empirical models based on a review of published and grey literature show that the biomass and productivity of fish communities across Canada is strongly related to the nutrient regime which the supports the food base of the community.  The best predictor representing the nutrient regime is the total phosphorus (TP) concentration of the water. While TP can reflect a range of anthropogenic influences on trophic status, it can also reflect underlying geology and geographical nature of the watershed.  While rivers support higher fish biomass than lakes of similar nutrient richness, the highest fish biomass is present in fish communities from the littoral zone of lakes. TP concentrations in HydroNet Rivers fall within the oligotrophic to low mesotrophic range, and TP concentrations in regulated rivers are very similar to those of their corresponding reference systems, indicating that nutrient richness is not expected to be a confounding influence in fish community comparisons between regulated and unregulated systems.  Fish biomass and productivity for a given system type (e.g. river, lake, lake littoral) and level of nutrient richness, is several times higher in rivers and lakes from the interior basin where species richness is high (usually > 10 spp and many families present) than on the island of Newfoundland and in systems west of the rocky mountains where communities are generally species poor and salmonid dominated.