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**Electrofishing versus visual surveying methods for the estimation of fish community structure**

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**Abstract**

Studies designed to describe fish community structure in shallow riverine environments have used various sampling gears, namely electrofishing and visual or snorkelling surveying methods. While much work comparing sampling gear efficiency has been conducted for salmonid populations occupying cold freshwater habitats, few have addressed their respective efficacy at estimating relative fish density and biomass across a wide range of species and size-classes. Extensive paired electrofishing and visual surveys across 18 Canadian temperate rivers was conducted to obtain community-wide relative density and biomass estimates, for which partial canonical multivariate analyses of variance on each of the fish communities levels, family, species and size-classes, were performed to assess the effect of sampling method (electrofishing vs. visual). Comparison of similarity indices across a range of riverine habitats reveal an interesting trend, where electrofishing and visual surveys are more variable and dissimilar as specific species or size-classes are targeted. Furthermore, results show that while family and species richness scores are greater for electrofishing surveys, many salmonid and cyprinid species of larger size-classes (>10 cm total length) have higher relative density and biomass estimates for visual surveys. This would indicate that both electrofishing and visual surveying methods generate complementary types of information, which depending on the level at which the study is considered, can allow researchers to fine-tune their sampling protocols and gain better quality fish data for targeted species and size-classes.