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*Comparing relative fish density estimates from electrofishing and visual surveying methods.* \*C. J. Macnaughton; S. Harvey-Lavoie; G. Lanthier; C. Senay, D. Boisclair, Université de Montréal.

Abstract

Electrofishing and visual sampling are two methods commonly used to estimate fish abundance in shallow areas and much effort has gone into setting sampling standards that increase the efficacy of both methods. For the purpose of comparing the efficiency of either sampling method, a single-pass electrofishing survey along with a snorkelling survey as part of the 2010 NSERC HydroNet’s objectives, were conducted over 161 sites, across 22 rivers in Canada. Mean estimated species densities from the electrofishing and visual samplings were significantly correlated (r=0.20, p<0.05), while species richness was greater while electrofishing versus visual sampling (34 vs. 30 species). Most of these discrepancies were due to the presence of more cryptic species observed while electrofishing. The discriminate analysis revealed a final model that included water temperature (correct classification rate= 0.70); indicating that higher estimates of fish abundance while snorkelling were characterized by sites with warmer water temperatures. This result may reflect the fish community sampled. In fact, cyprinids and centrarchids generally live in warmer waters and were generally more accurately estimated while snorkelling. Taken separately, either method fails at providing a complete description of the fish community sampled and to better evaluate the fish communities within our sites across a wide range of environmental conditions, both methods should be used in tandem.