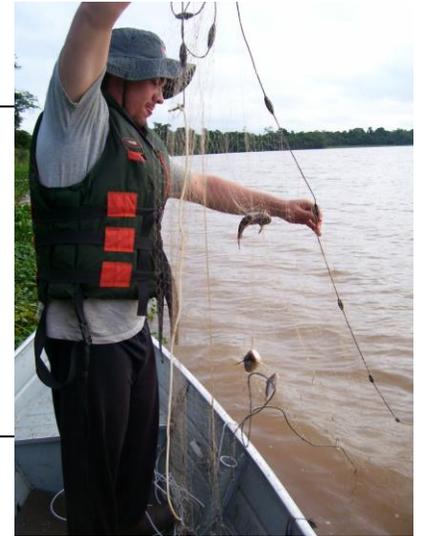# Size spectra of fish assemblages: longitudinal and temporal variation in neotropical reservoirs

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Abstract

Considering that the various types of reservoirs produce changes of different magnitudes in the aquatic environment, the use of the size distribution models will allow a better understanding of the ecological aspects of these developments and how their construction affects the structure size of the aquatic communities. The aim of this study is to estimate the size spectrum slopes of fish assemblages at different type of reservoirs in Southeastern Brazil. The comparative analysis of this information in several sites and period will allow evaluating the effect of different type of reservoirs in the structuring of the size of fish communities. To reach this goal, twelve samplings were carried out quarterly over three years. Six reservoirs of different sizes were selected. Samples were obtained in three different compartments of each reservoir (lotic, intermediate, and lentic). Large fish were collected with gill nets, whereas small fish were sampled with trawl nets. Concomitantly to the fish sampling, data of 16 limnological variables were taken. To test the project hypotheses and whether there is any association between the abiotic components with the patterns obtained, a size spectrum gradient estimated by maximum likelihood estimator (EMV) of the Pareto distribution type 1will be used.

Keywords: Allometry, size diversity, environmental assessment, Dams, Upper Paraná Basin, Brazil.

Geographic Location: Hydroelectric Reservoirs of São Paulo State, Brazil.

How does your project link to Canadian aquatic ecosystem services?

This research is scientifically significant because it will provide a new understanding of the ecological functioning of different types of hydroelectric reservoirs. This understanding will serve to improve concepts of reservoir projects, becoming a new and powerful tool for the assessment of its viability.

This research will also provide new insights for supporting decisions in energy policy, allowing proper management of multiple types of hydroelectric reservoirs.