

## Applying fish length-frequency spectra as an indicator of habitat use and ecosystem status in an area impacted by hydropower



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**Rationale:** This research aims to use hydroacoustic techniques to address some of the questions that arise when fish populations and habitat are impacted by the creation of a reservoir. There is a need for improved methods for assessing the ecological condition of areas utilized for hydropower, and for the development of standard metrics to monitor changes in these aquatic communities.

**Description:** Hydroacoustics and physical sampling are used in Lac du Bonnet and Lake Manigotagan, Manitoba, to develop methods for ecological monitoring in lakes and reservoirs. This project places emphasis on the application of fish length-frequency spectra derived from hydroacoustic surveys as a potential indicator of productivity and ecosystem status within aquatic environments.

### Outcomes:

- Contribute to the development of shallow-water hydroacoustic methods
- Examination of the variation in fish length-frequency spectra between habitats at both a broad and meso-scale.

### Benefits from this research:

Provide recommendations in terms of survey design for future hydroacoustics work. Gain an understanding of the variation in fish length-frequency spectra characteristics as a potential tool for routine monitoring programs in areas impacted by hydropower.



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