HydroNet Project Title: Aquatic community structure-productivity based on acoustic size and frequency

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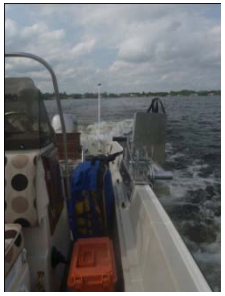

Rationale: *To assess the spatial relationship between habitat characteristics and fish productivity in a Manitoba lake and reservoir using hydroacoustic technology. Developing protocols for non-invasive assessment of fish productivity in lakes and reservoirs.*

Description*: One lake and one reservoir in central Manitoba will each be surveyed repeatedly using hydroacoustic systems in order to obtain high-resolution spatial data regarding game fish productivity. Habitat characteristics, including information about prey items such as planktivorous fish and plankton will be overlain on top of fish productivity data to quantify habitat quality and variability within the reservoir. Size-frequency spectra will then be analysed in order to assess how materials and energy flow through the ecosystem from primary producers through multiple trophic levels to large fish.*

Outcomes:

- Geostatistical model to assess spatial relationships between fish productivity and production at lower trophic levels.
- Quantification of the role of phytoplankton, zooplankton, and small planktivorous fish in transferring energy through the food web.

Benefits from this research:

- Providing industry partners with a set of protocols to assess the fish productivity in lakes and reservoirs using non-invasive hydroacoustics.

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