

From Lake-effect to Logs: The Diversity of Bryophytes around Lake Superior

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Introduction

- Habitat heterogeneity is the most important component for diverse communities
- Bryophytes excel in moist environments
- Superior's lake effect spans over 80km inland

Objective

- Identify gradient in bryophyte species diversity
- Evaluate impact of climate, forest, and substrate variables on bryophyte species distribution

Methodology

- 8 transects containing 10 plots selected from 0 to 100km inland on Lake Superior's north-east shore
- Sampled stand age, canopy cover, density, understory cover, and soil characteristics
- Bryophytes sampled from:



Logs



Rocks



Birch



Spruce

Examples of threatened bryophyte species found



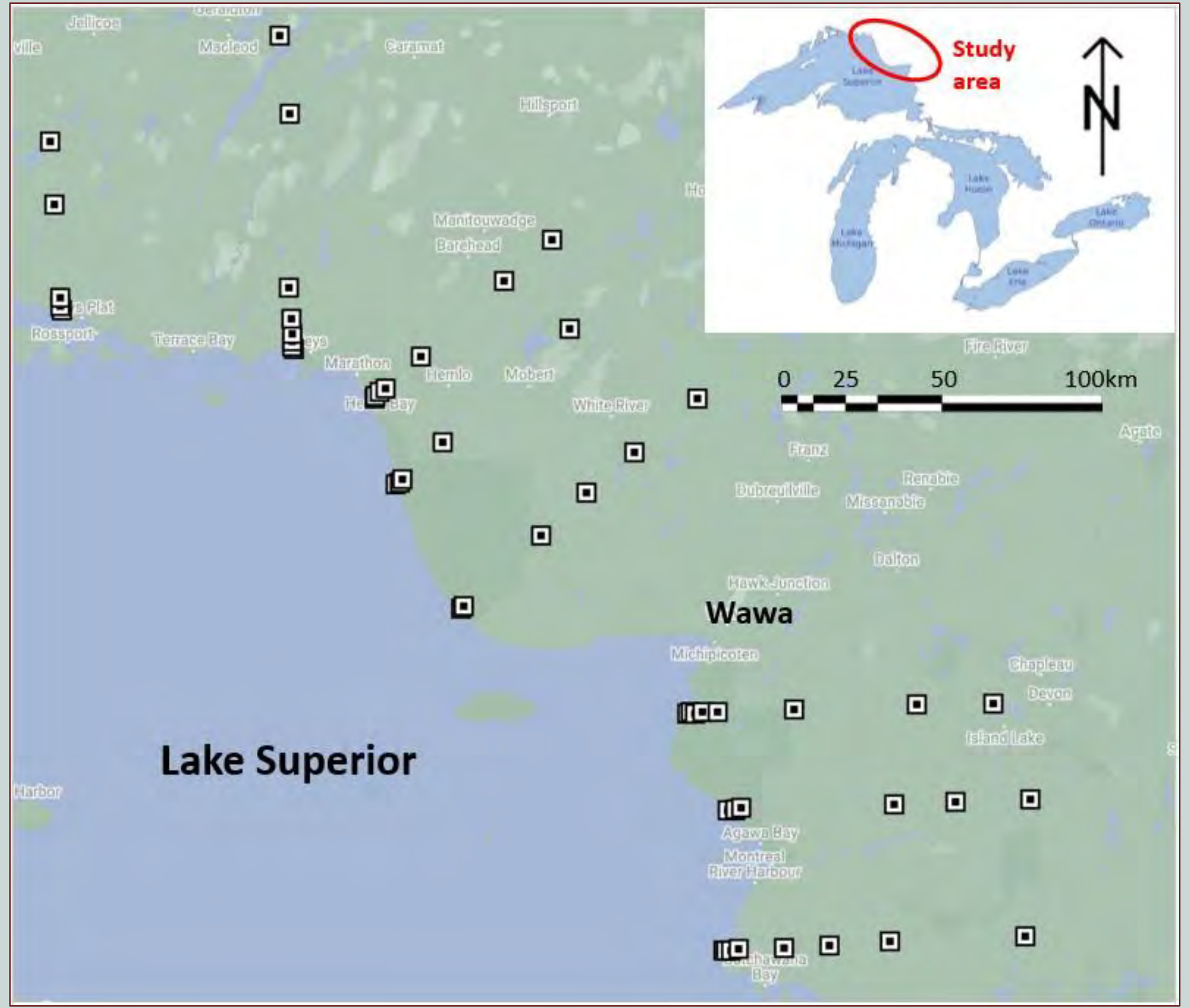
Frullania asagrayana



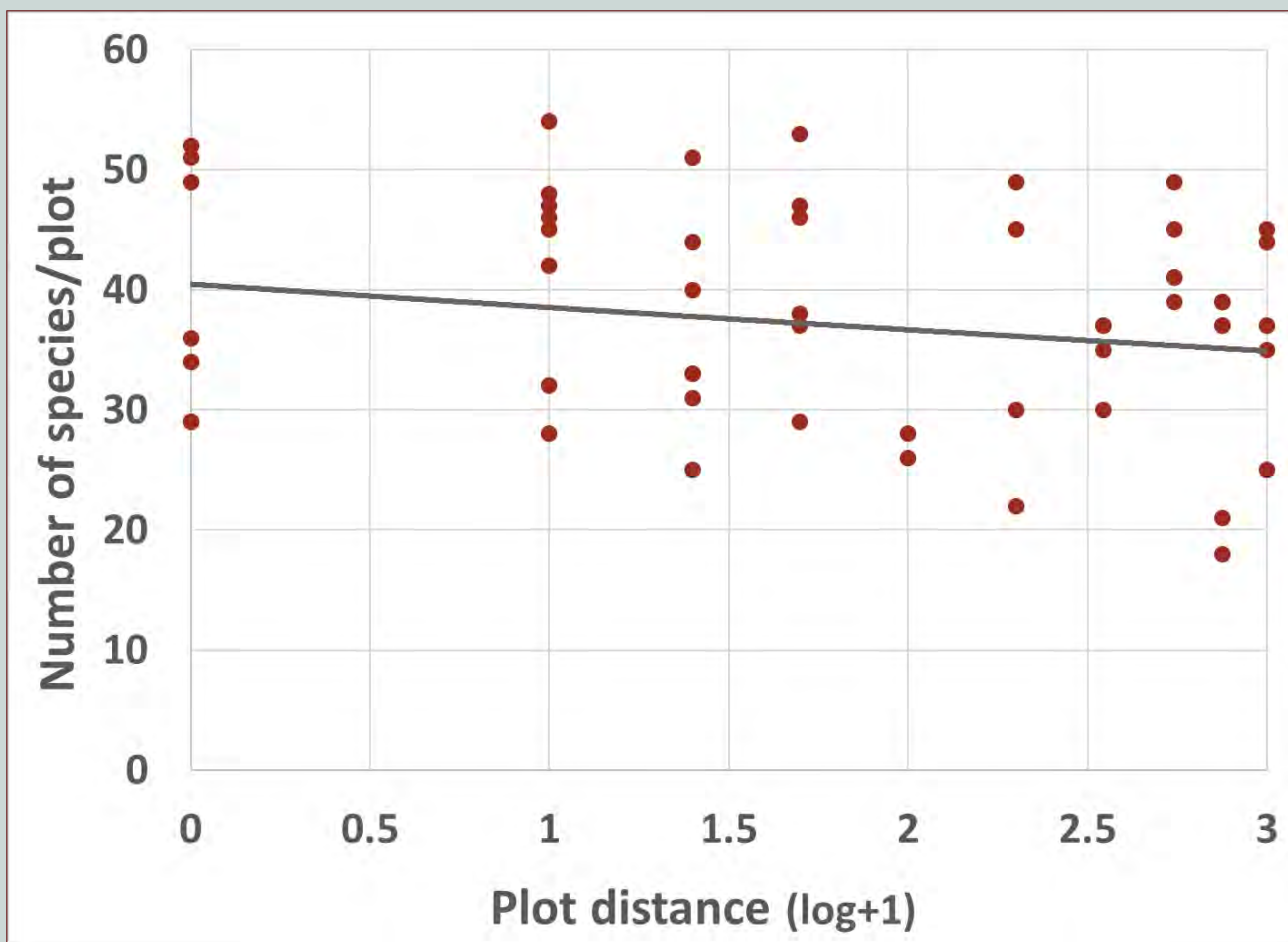
Cololejeunea biddlecomiae



Tritomaria exsecta



Map of study area including 8 transects containing plots sampled on the north-east shore of Lake Superior, Ontario, Canada



Number of bryophyte species per plot at the log+1 of each plot distance.

Initial results

- 145 species identified on 54 plots
- 22 rare species identified (Ranked no status to vulnerable in Ontario)
- Decrease in number of bryophyte species with increasing distance from shore
- Lake effect may be greater than 80km

Conservation value

- Bryophytes contribute to primary productivity, carbon storing, and forest succession
- Protecting the forest humidity, continuity, and substrate availability will help to maintain high numbers of bryophyte species



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