

History of Muskoka's Landforms and Resulting Patterns & Functions of our Ecosystems

Muskoka Stewardship Conference

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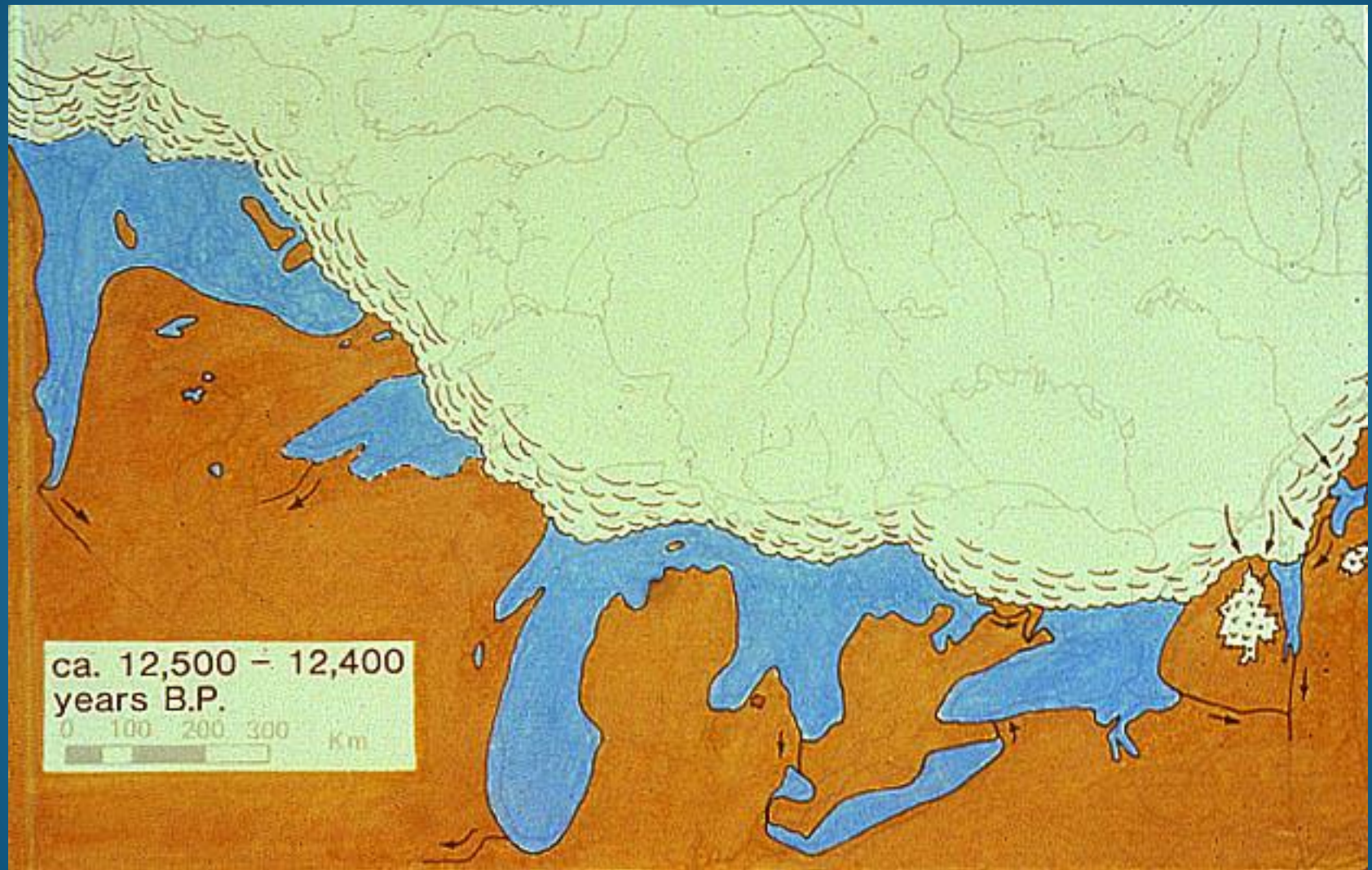
Presentation Outline

- The Glacial History of Muskoka
- Glacial Lake Algonquin - Landform Patterns
- Ecosystems and Species Distribution
- Glacial Melt Waters

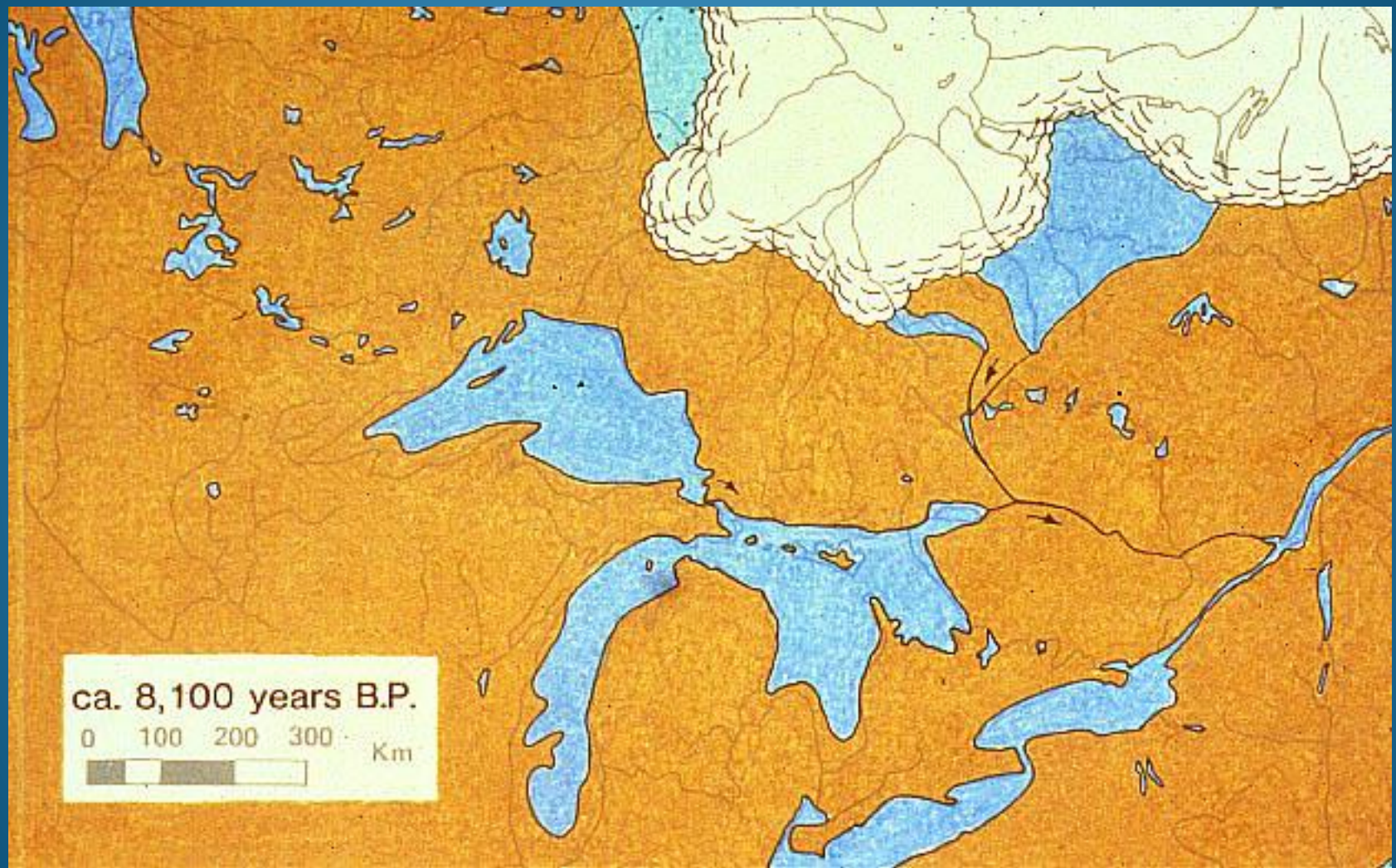


Glacial History of Muskoka

- Wisconsin Glaciation
 - -Most recent glaciation period – 75,000 to 11,000 years B.P.
 - -Glaciers 2 to 3 km thick loaded with landform material
 - -covered all of Ontario
- Post-glacial Development / Glacial Geology
 - -deglaciation of landscape with mass release of material with melt water during recession of glacier face
 - -glacial streams deposit sands and gravels
 - -glacial lakes deposits silts and clays
- Resulting Patterns and Physical Features
 - -morainal till, eskers, kames, glacial lake shorelines and spillways
 - -events form the origin of the complex Muskoka landscape

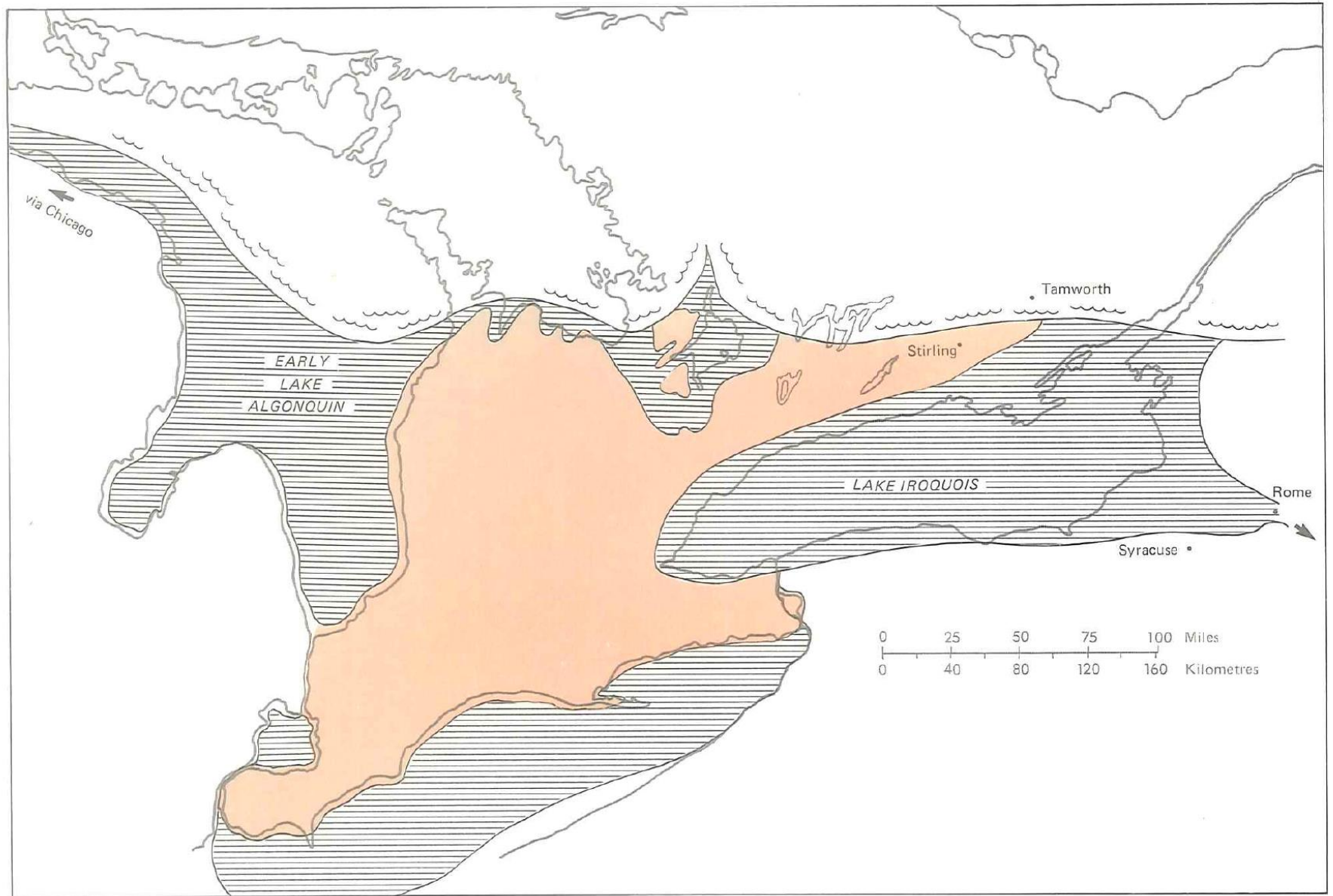




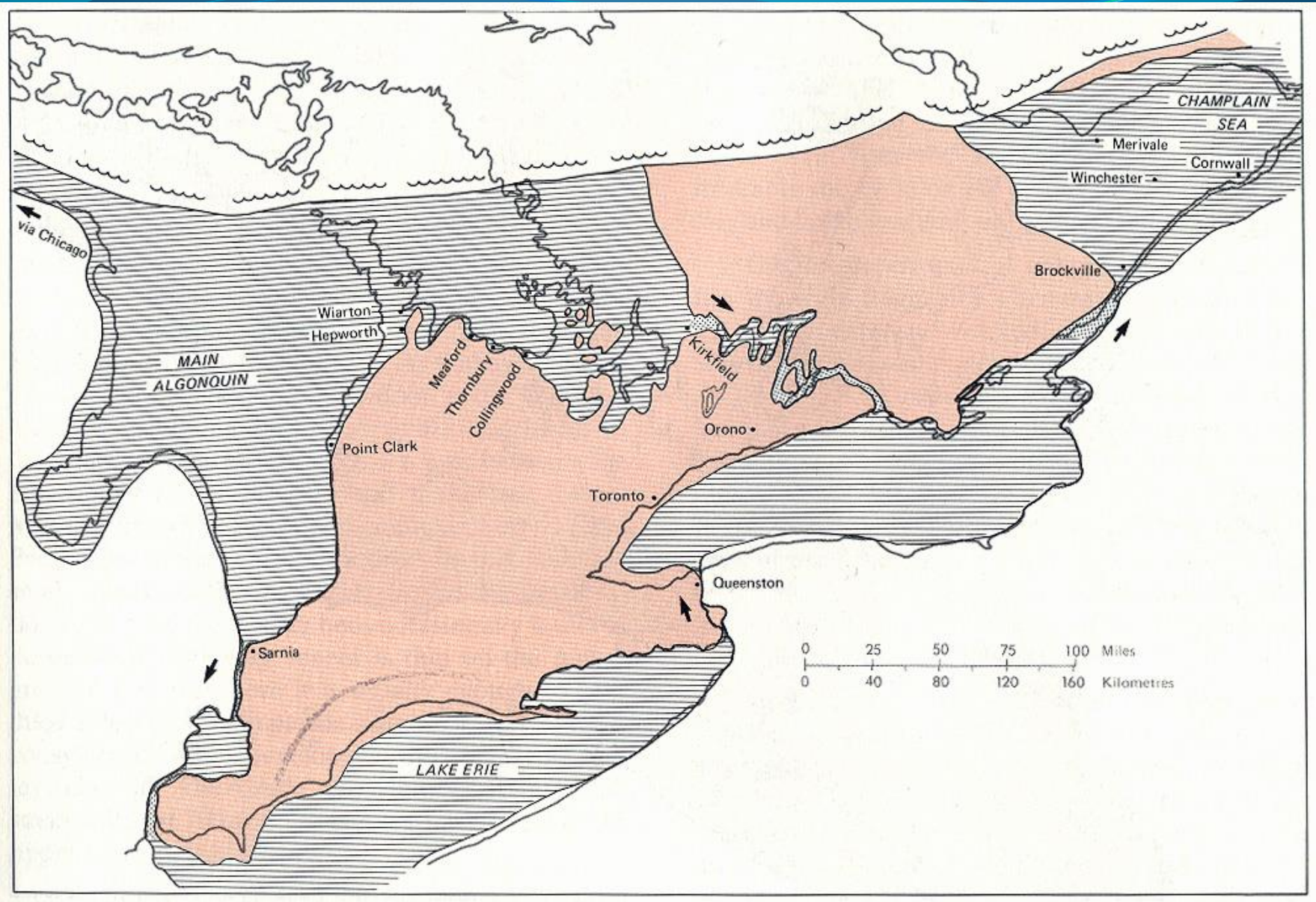


Glacial Lakes - Landform Patterns

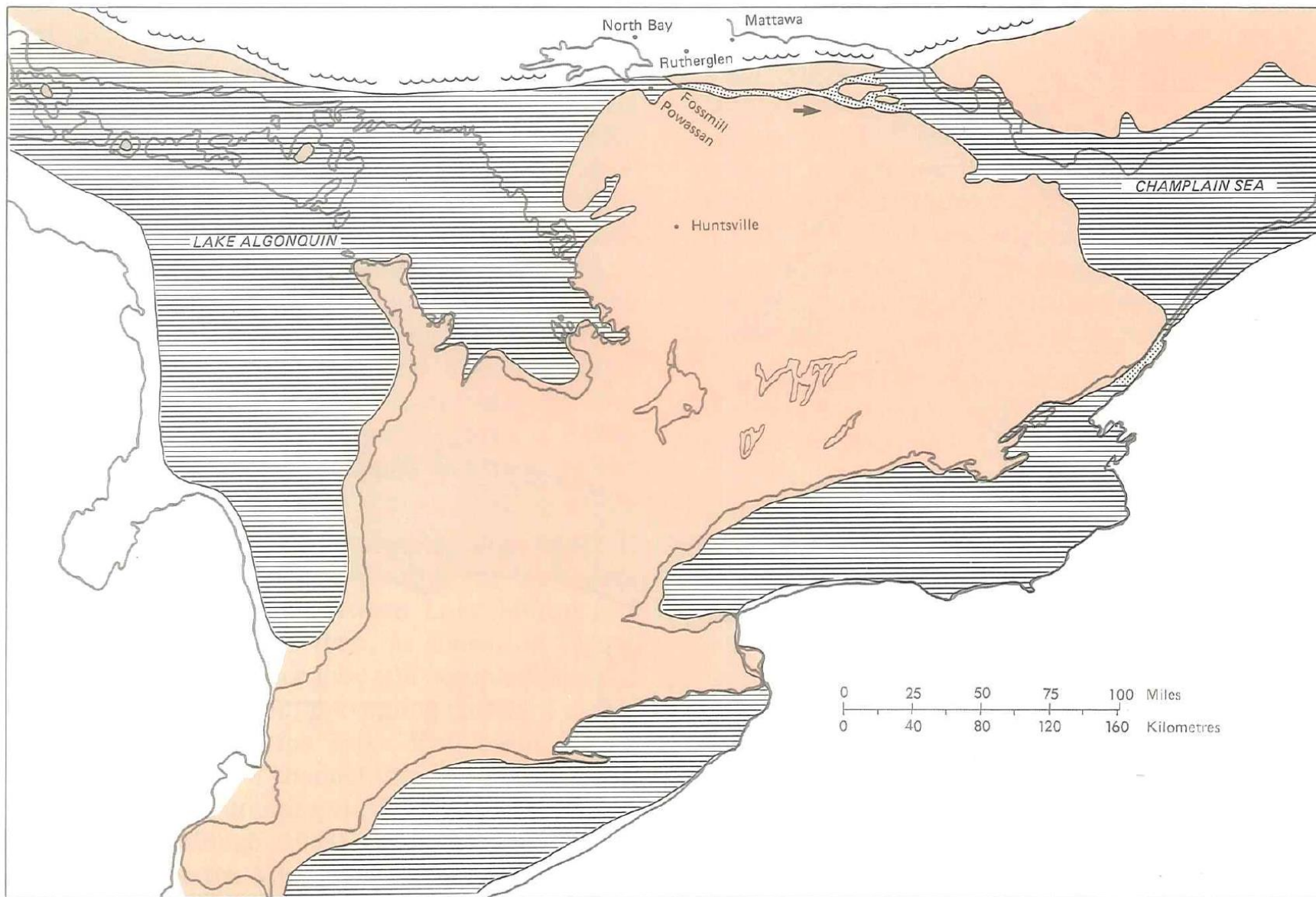
- Glacial Lake Algonquin
 - -succession of ancient lakes influenced by the rate of melt and outflows – significant influence on Muskoka
 - -early lake occupied Lake Huron and into Lake Simcoe basin
 - -increased to all of Georgian Bay - outflow to Champlain Sea
 - -ancient shoreline along Hwy 11 corridor
- Kirkfield Outlet
 - -eventual outlet through Kirkfield (Carden Plain area), Trent River, Lake Ontario
 - -significant event in release of water resulted 100 ft water level drop
- Physiographic (Landform) Regions
 - Georgian Bay Stipe, Number 11 Strip, Algonquin Highlands (dome)



Source: Chapman and Putnam, 1984



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54

**Georgian Bay
Fringe**

53

**Algonquin
Highlands**

**Number 11
Strip**

37

37



Huntsville

Bracebridge

Gravenhurst

Kirkfield



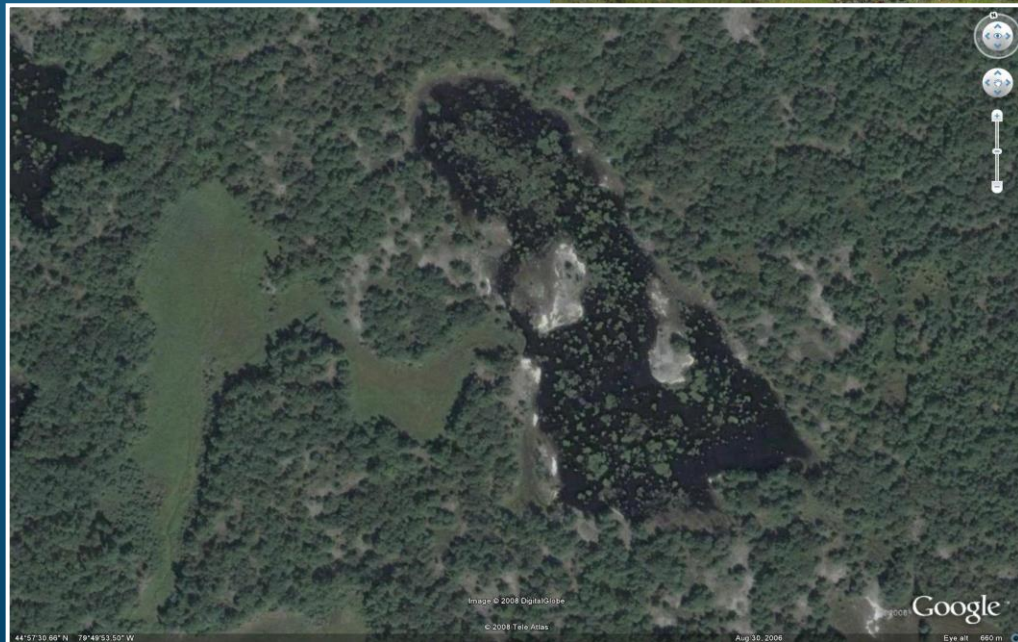
Habitat Diversity and Mosaics

Habitat Diversity: wide representation of forest types, swamp types, marsh types, fens, and rock barren

Provides a wide range of habitat opportunities for plants and wildlife including many Species at Risk

Habitat Mosaic: High ecological values with connected natural cover and a diversity and interspersion of habitat types.

Mosaic that includes open and treed wetlands, with ridges supporting granite rock barrens (open, shrub and treed barrens) and many lakes and rivers in a forested landscape



Rock Barrens – Massasauga Habitat

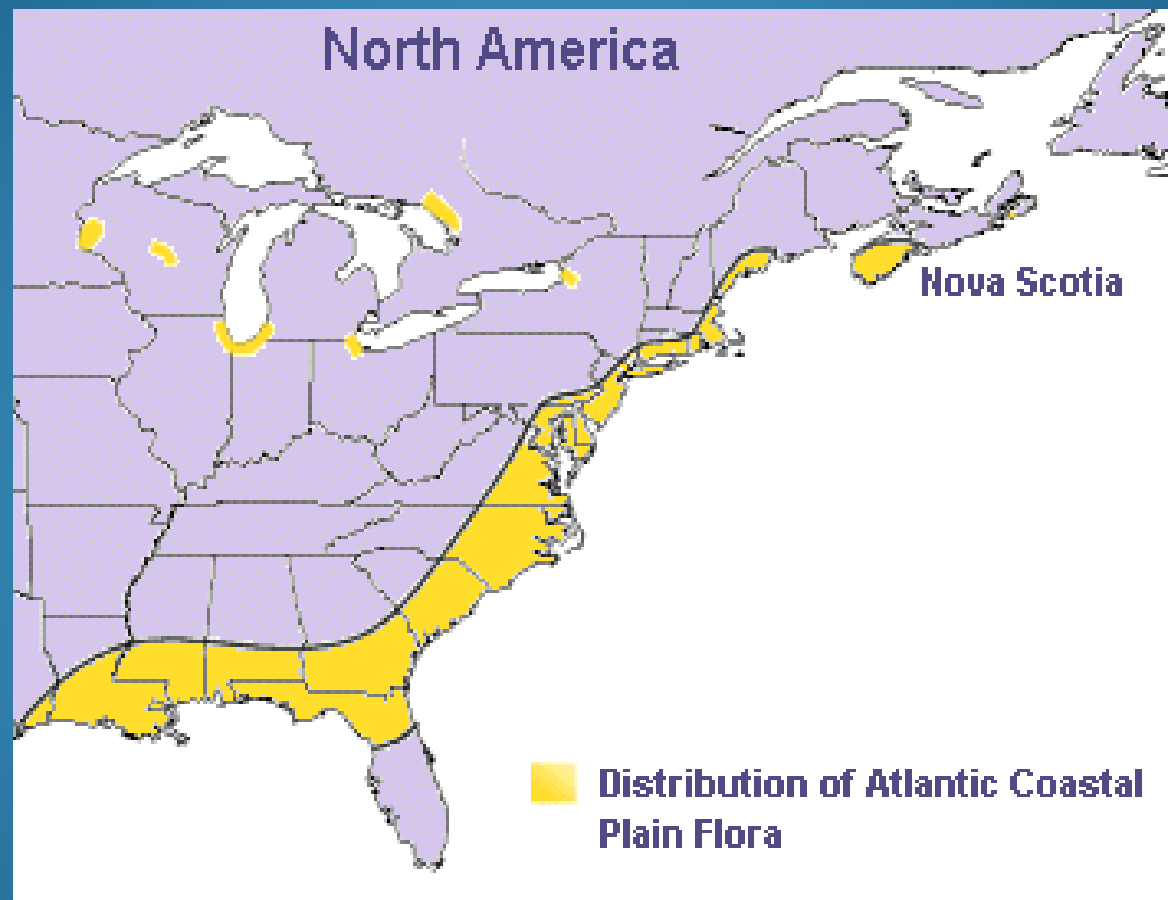


Atlantic Coastal Plain Flora

- ACP flora of the Great Lakes Basin is a group of plants separated or “disjunct” from their primary habitat range
- The biogeographical area known as the Atlantic Coastal Plain is from Cape Cod to Florida and along the coast of the Gulf of Mexico to Texas
- Limited distribution inland from the Atlantic and gulf coasts with occurrences of some species

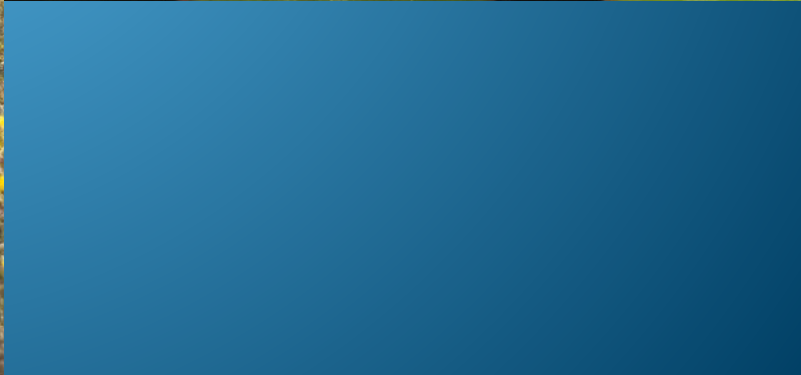
How did ACP plants get to Muskoka Watershed

- Disjunct populations in the Great Lake Basin are remarkable as the distribution is some 500 to 1000 kilometers from their primary range
- Story of the dispersal of the ACP flora begins about 12,000 years ago with the slow retreat of Wisconsin glacier
- Continuous waterway route from Lake Algonquin to Atlantic Coast through Champlain Sea and Kirkfield Outlet
- Dispersal by various means; wind, shoreline colonization, birds or other motility (passive vs. active dispersal);





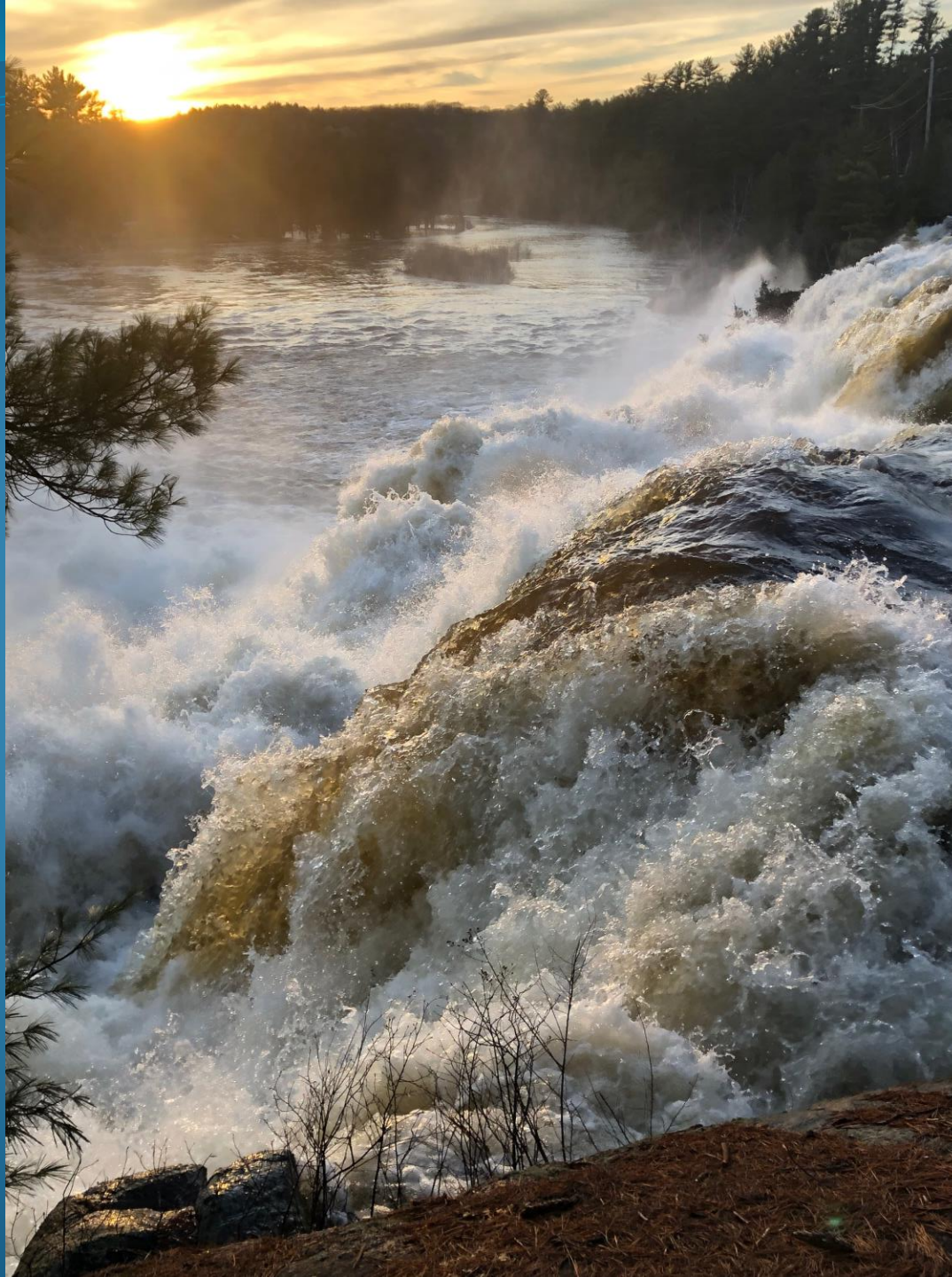




Glacial Melt Water









Thank You!

Explore Muskoka on Google Earth or
Flash Earth