

Biodiversity in Ontario's Great Lakes region may be greater than we thought

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Branched *Bartonia* (*Bartonia paniculata*), a threatened species, is a spindly annual plant that grows to 40 cm tall and has tiny white flowers. Researchers at Trent University compared genetic data from the two geographically distinct populations of this small wetland plant, and found that the Muskoka, Ontario ones are genetically very different from a core population found in New York State, 600 km away. This discovery suggests that the Branched *Bartonia* in Ontario is genetically unique, and therefore under a much greater threat – which impacts conservation management decisions. The findings suggest that the genetic diversity, and hence biodiversity, in the Great Lakes region of Ontario may be much greater than previously realized. This research was published today in the journal *Botany*.

Populations of a species are commonly separated by relatively short distances, yet sometimes there is a leap of several hundred kilometres between a species' core set of populations and a subset of populations that are known as disjuncts. In Ontario, Canada, numerous species at risk occur as disjunct populations, most commonly around the Great Lakes region.

"Though many of these populations are considered regionally threatened because they harbour a relatively small number of individuals, they may not be considered globally threatened because individuals in the core set of populations (usually further south) are often abundant," explains Claudia Ciotir, a co-author of the study and researcher in the Department of Environmental and Life Sciences at Trent University in

Peterborough, Ontario. "This means that the core populations can downgrade the conservation status of the disjunct populations, but this downgrading assumes that the disjunct and core populations are closely related to one another."

"Our findings provide evidence that the accumulated genetic novelty between disjuncts and their central populations is important and we recommend that genetic novelty should be factored into future conservation policies of Canadian disjunct populations. We show that comparative genetic assessments of disjunct and central populations can provide information that is critical to decisions about [conservation management](#)."

This divergent evolutionary history may be relevant to a suite of 62 species of disjunct populations residing along the Great Lakes shores. The study "Evolutionary history and conservation value of disjunct *Bartonia paniculata* subsp. *paniculata* (Branched *Bartonia*) populations in Canada" was published today in the journal *Botany*. DOI: [dx.doi.org/10.1139/cjb-2013-0063](https://doi.org/10.1139/cjb-2013-0063)

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