

Roadless Areas (RAs) in Algonquin Park: A Comparison with the Georgian Bay-Lake Nipissing Region

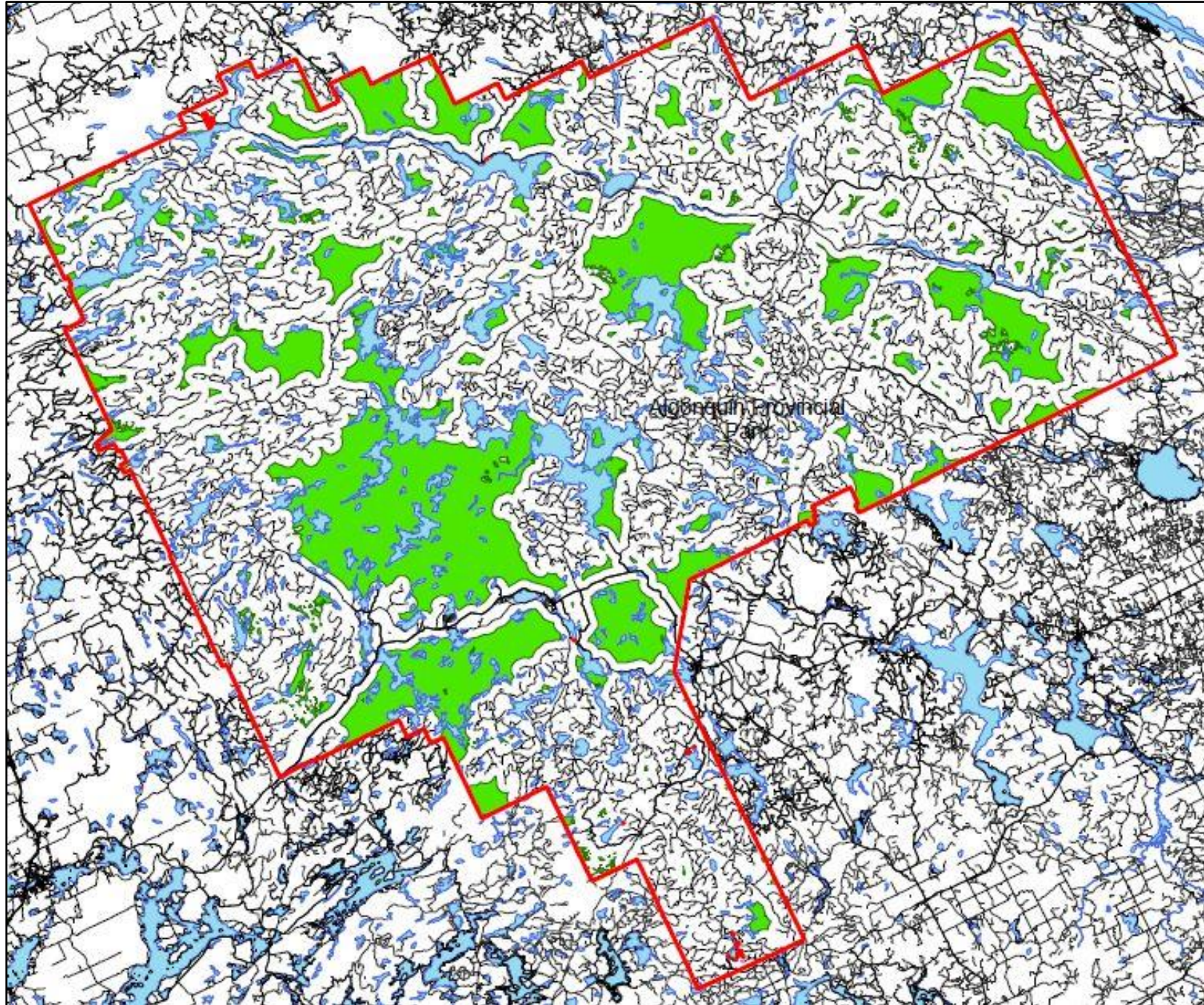
P. Quinby, Ancient Forest Exploration & Research, June 2021

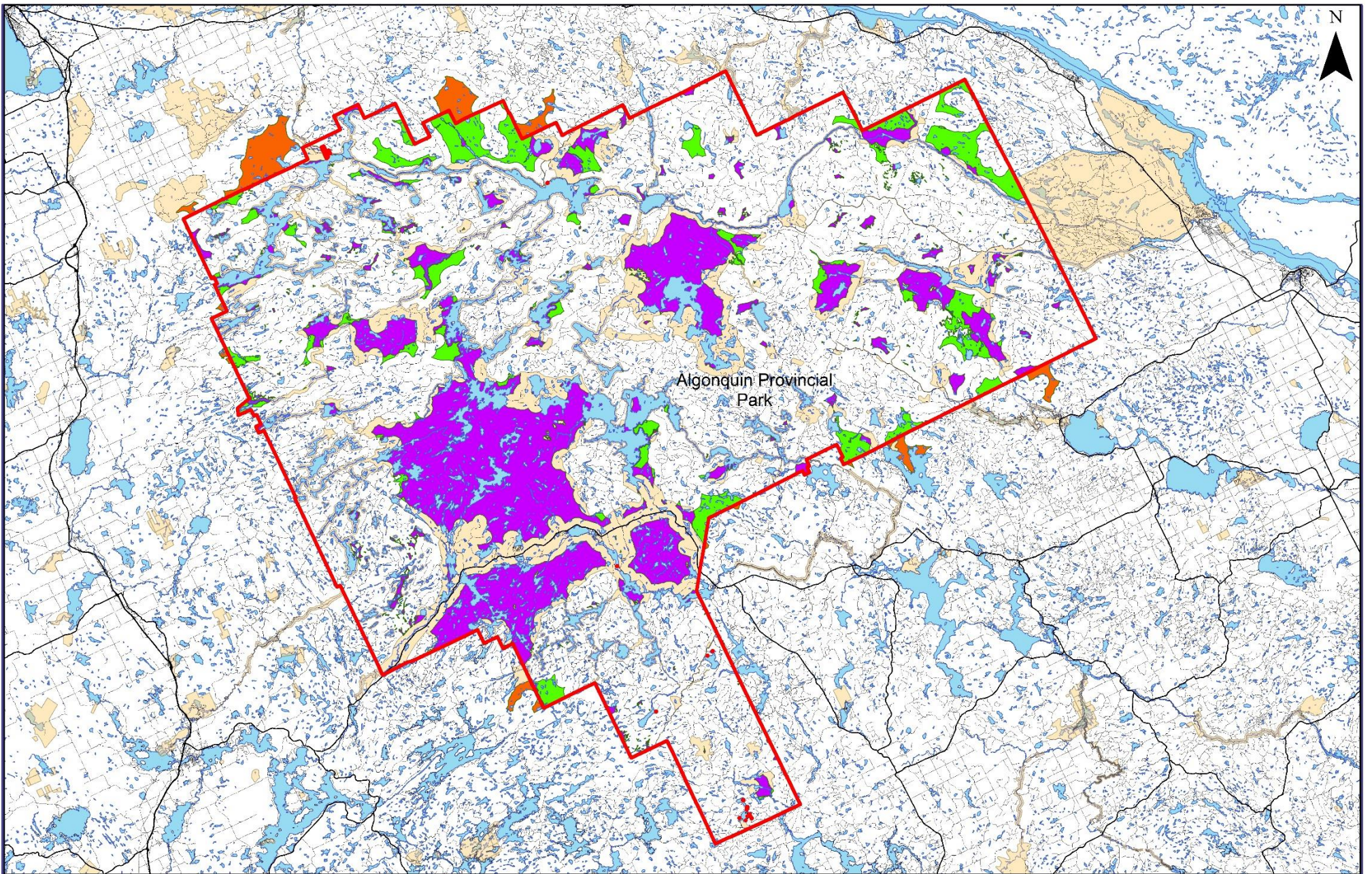
(Thanks to Ted Elliott for GIS Analyses)

What is a “roadless area”? A geographical area devoid of both roads (primary, secondary and tertiary) and disturbance from logging, mining and hydroelectric development. The distance between a road and an RA is determined by the individuals doing the analyses but often ranges between 500 m and 5 km. Minimum RA sizes are often used to avoid massive data sets and small areas of little relative ecological value. For this study of Algonquin Park, we used a 1 km buffer with no size limitation in order to provide the most accurate comparison possible. Very little previous work has been done on RAs in Ontario. Our broader work shows that RAs in Ontario decreased by 3.1 million ha between 2005 and 2020, which is an annual loss of roughly 207,000 ha/year.

Why focus on roadless areas? Ibisch et al. (*Science Magazine* 2016) stated that: *“Roads fragment landscapes and trigger human colonization and degradation of ecosystems, to the detriment of biodiversity and ecosystem functions. The planet’s remaining large and ecologically important tracts of roadless areas sustain key refugia for biodiversity and provide globally relevant ecosystem services. Earth’s terrestrial surface... is fragmented into ~600,000 patches (1 km buffer), more than half of which are <1 square kilometer and only 7% of which are larger than [10,000 ha]. Global protection of ecologically valuable roadless areas [at 9.3%] is inadequate. International recognition and protection of roadless areas is urgently needed to halt their continued loss... limiting road expansion into roadless areas may prove to be the most cost effective way of achieving strategically important global biodiversity and sustainability goals.”*

All Roads and Roadless Areas (1 km buffer) in Algonquin Park





Legend

- Algonquin Provincial Park
- Lake
- Road
- Contiguous Roadless Outside APP
- Railway
- Roadless Areas Protected
- Protected Areas
- Roadless Area Unprotected

Notes:

1. Base Map: Land Information Ontario (base map from Composite File Geodatabase, crown land from Crown land: ministry unpatented land and FRI data from Forest Resources Inventory Packaged Products - Version 2)
2. Datum: Projection: NAD83 CCRS Lambert Conformal Conic
3. References: G.A. Hills 1959, G.A. Hills 1961

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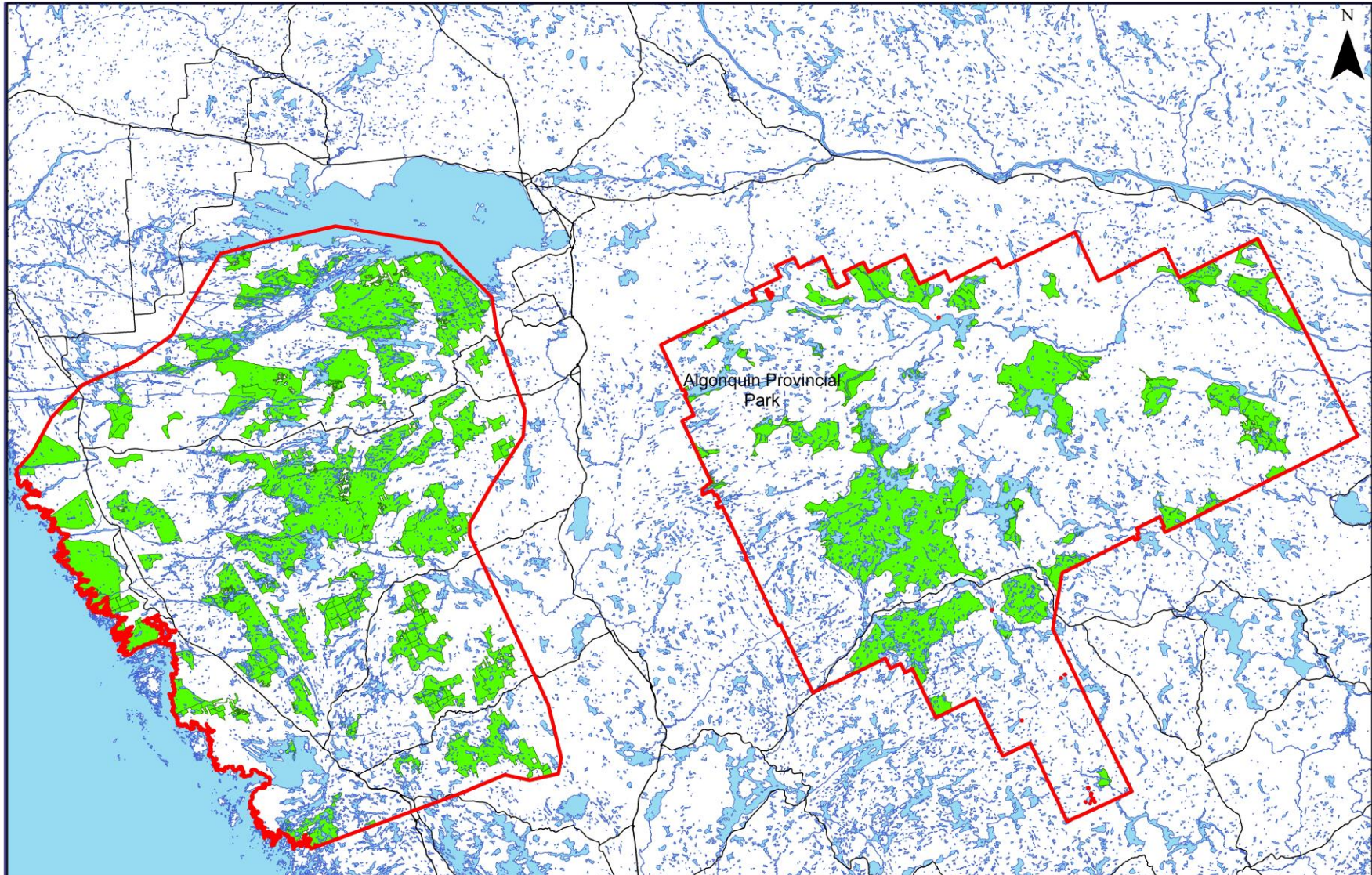


Roadless areas >1 km from roads,
no harvest, crown land





Algonquin Park

Ontario, Canada

Roadless Areas in Algonquin Park (east) and in the Georgian Bay-Lake Nipissing Region (west)

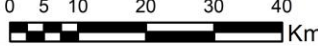


Legend

-  Algonquin Provincial Park/Georgian Bay AOI
-  Lake
-  Roadless Area
-  Major Highway

Notes:

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Scale  Km

Roadless Areas \geq 400 Hectares

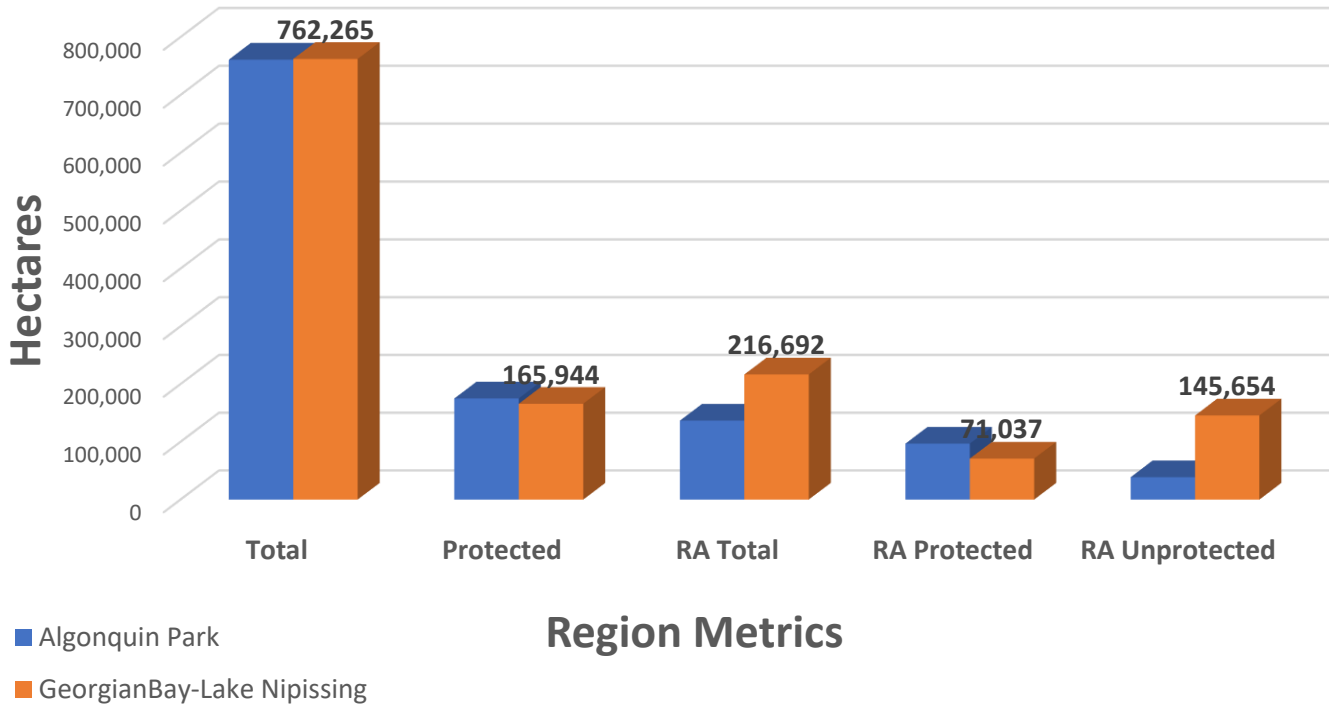
Algonquin Park/Georgian Bay AOI

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Roadless Areas (RA) - Comparing Algonquin Park with the Georgian Bay-Lake Nipissing Region



| Region | Total Area (ha) | Total Area Protected (ha) | Total RA* (ha) | RA Protected (ha) | RA Unprotected (ha) |
|------------------------------------|------------------|---------------------------|---------------------------------|-------------------|---------------------|
| Algonquin Park | 761,046 | 175,150 (23%) | 136,704 (18%) | 96,848 (13%) | 39,854 (5%) |
| Georgian Bay-Lake Nipissing | 762,265 | 165,944 (22%) | 216,692 (28%) | 71,037 (9%) | 145,654 (19%) |
| Difference | 1,219 (+GBLN) | 9,206 (+AP) | 79,988 (+GBLN) | 25,811 (+AP) | 105,800 (+GBLN) |

* RA=roadless area defined as all areas 1 km from a road (primary, secondary, tertiary) with no minimum size for this table

Conclusions

- In Algonquin Park, only 18% of the area is composed of roadless areas, which many define as “true wilderness”, and almost 40,000 ha are unprotected from logging.
- Whereas, in the Georgina Bay-Lake Nipissing region (not a park), an area roughly equal to the size of Algonquin Park, roadless areas compose 28% of the area representing 80,000 ha more than in Algonquin.
- Thus, although it is a park, Algonquin has much lower ecological integrity and wilderness character at the landscape level compared to an adjacent region lacking “park” designation.