

Biodiversity Mapping Project (BMaP)



GEORGIAN BAY
BIOSPHERE
MNIDOO GAMII

Wildlife Ecohydrology
& Conservation Lab
UNIVERSITY OF WATERLOO

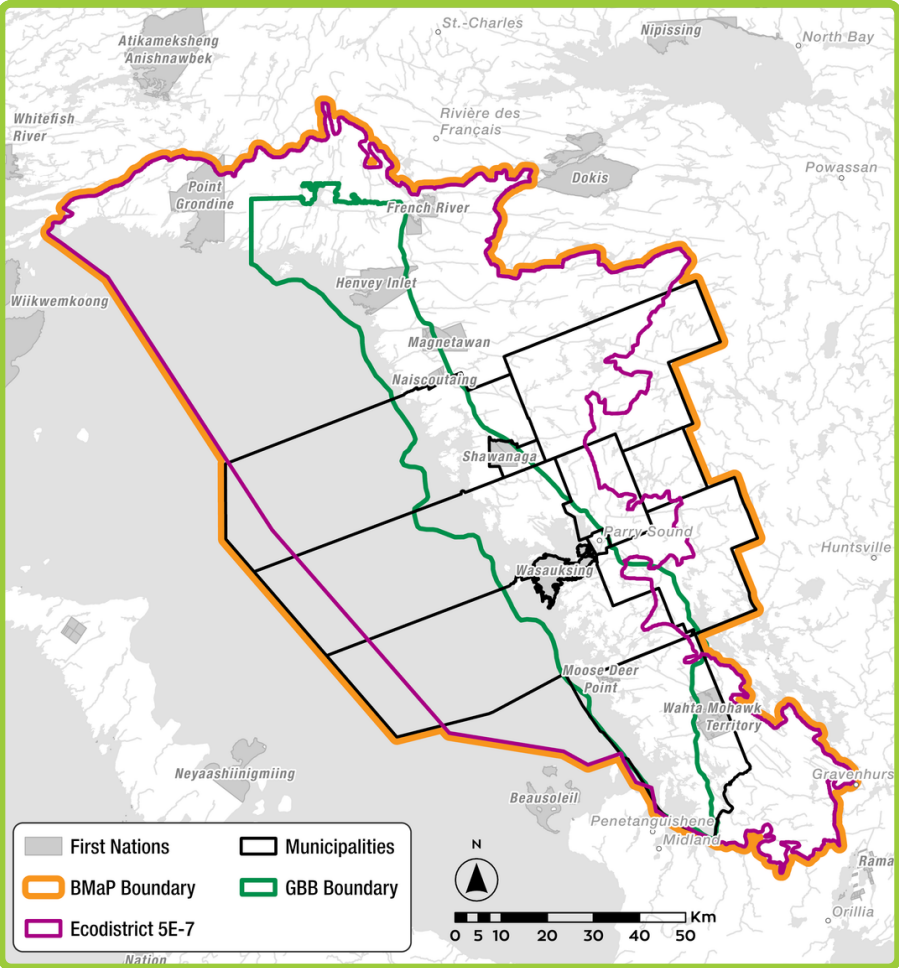
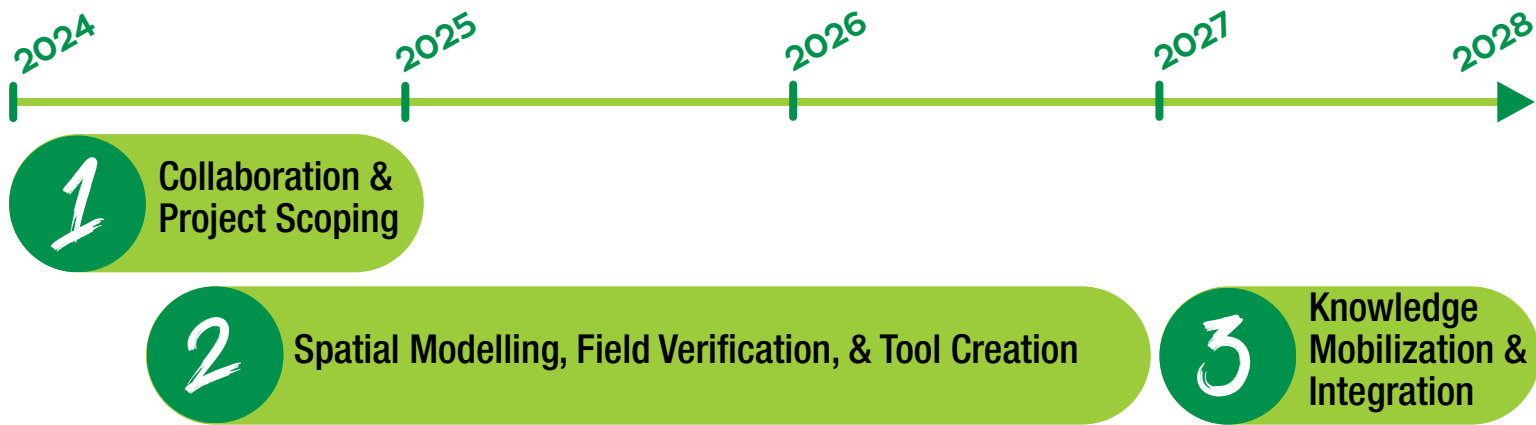


MAC
ecohydrology
McMaster Ecohydrology Lab

Purpose

Create a publicly accessible database of habitat and climate-risk mapping across eastern Georgian Bay to address existing data gaps and better support decision-making.

Timeline & Process



1 Understand regional needs through collaboration with First Nations, municipalities, conservation, and research partners.

2 Generate high-quality mapping and tools using field data to train and verify computer models. Respect principles of data sovereignty (next page).



3 Support evidence-based decision-making for land management, conservation, stewardship, research, and climate adaptation.

Applications & Uses

Natural Heritage Planning	Development Screening	Best Management Practices	Research & Monitoring	Emergency Management
E.g., Environmental Protection zones, identification of natural heritage features/areas.	E.g., pre-consultation support, constraints analysis, environmental impacts.	E.g., roadwork, culvert sizing, beaver pond management, forestry management.	E.g., species at risk, wildlife monitoring, ecohydrology, wildfire refugia, habitat restoration.	E.g., hazard mapping (flood & fire), infrastructure vulnerability assessment.

Indigenous Data Sovereignty



First Nations determine if and how data about their lands is collected, used, and shared. Preferences may differ between Nations.



Agreements are co-developed to clearly define Ownership, Control, Access, and Possession (OCAP®) of First Nations data.



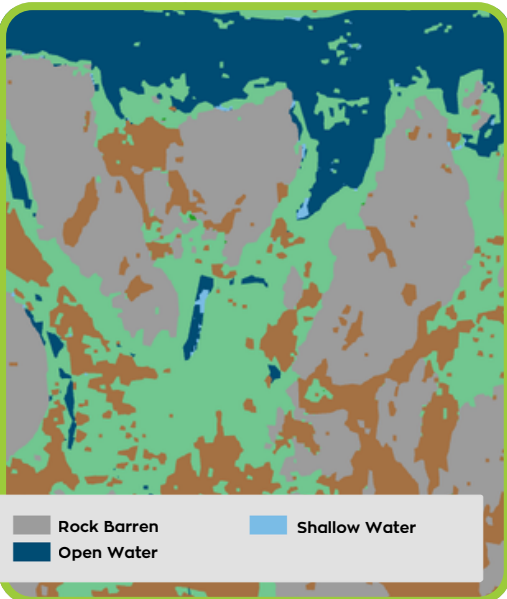
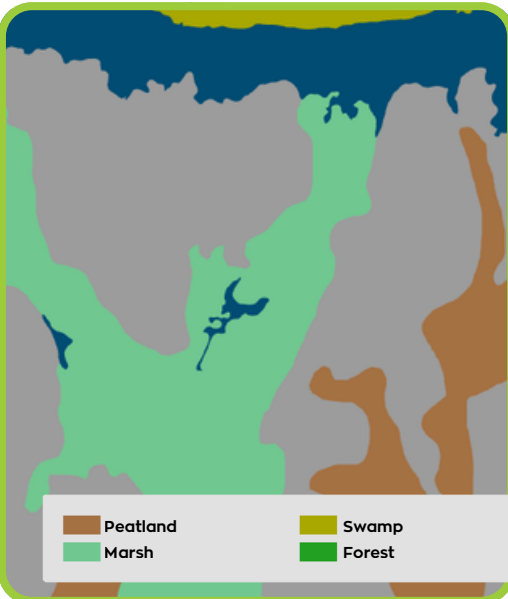
Appropriate compensation and acknowledgements are provided for the time, data, knowledges shared by each community.

Primary Output



Updated and refined habitat mapping

Habitat types and locations (forests, wetlands, rock barrens, vernal pools, & watercourses).



A comparison of aerial imagery (left) and Forest Resource Inventory (FRI) mapping (middle) highlights how existing coarse habitat classifications can misclassify or generalize important landscape features. BMAP's refined habitat mapping (right) addresses these gaps by capturing all habitat types at a finer scale and incorporating ground-truthed field data to help train and verify the model, resulting in more accurate habitat representation.

Other Potential Outputs



Wildlife connectivity mapping

Habitat suitability & connectivity analyses for priority species; & beaver activity modelling.



Fire risk mapping

Previous burn areas & high risk areas under a variety of climate scenarios.



Flood risk mapping

Coastal and inland flood lines under a variety of climate scenarios.

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mitacs

