



## Baxter Creek Super Canopy Trees

LiDAR Derived Super Canopy Model

Map created by: Samuel Pethick. With contributions from Jordan Tishler and Kris Lebert. In a collaboration between the BCWA and Fleming College GIS GeoCommunity 2023.

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Data Sources: Road data from GeoGratis CanVec Database 2023, Municipal and Watershed Boundaries from Ontario's GeoHub 2023, Place names from OpenStreetMap (OSM) 2023; Waterbody and Watercourse data from GeoHub 2023; Tree Canopy Model derived from LiDAR data from 2016 ordered from Geohub.

Forests are a vital representation of the world's wildlife. An easy way to find and represent forests on a digital scale is to use LiDAR (Light detection and ranging). This is a method that uses lasers to determine the height of objects like trees. This map uses LiDAR to find wildlife-significant trees called Super Canopy Trees. Super Canopy trees are characterized by being at least 8m above surrounding trees. This makes them obvious indicators of watershed health and important features for the BCWA to track in our efforts.

The Super canopy trees were isolated by using a program called FUSION which can be used to get a point layer of all trees by using LiDAR files. We then used a hotspot tool to give us any trees that were at least 30m tall and on average at least 8m above the surrounding trees in a 15m radius. This method was derived from a study made in 2020 by undergraduate students in the University of North British Columbia. They found that the model achieved 95% accuracy when the model was tested in the field, with where the super canopy trees were located. (Jordan Tishler et al., 2020).

In the case of the BCWA (Baxter Creek Watershed Alliance), this analysis can be used to locate amphibian monitoring stations around Millbrook. Amphibian monitoring stations are used by the BCWA to make observations about amphibian health which indicates the health of the watershed, which in turn can indicate areas that are more in need of protection. By using this data the BCWA can better target their monitoring stations and easily set up projects in these areas to make sure they aren't harmed. Such sites would be most suitable where there are clusters of super canopy trees (shown in the map insets). It is likely that these areas will have a more significant wildlife presence than the other areas.

In ecology everything is connected, and so using super canopies as indicators allows us to preserve biodiversity and watershed health within Baxter Creek. Moving forwards the BCWA hopes to inspire this kind of local community action in partnership with Fleming College GeoCommunity within neighboring sub-watersheds, leading to a much healthier main-watershed overall.

### Legend

	Local - Streets
Boundaries	Water Features
<span style="color:red;">—</span> Baxter Creek Watershed	Waterbody
<span style="color:blue;">—</span> Neighbouring Watersheds	Watercourse
<span style="color:black;">—</span> Municipal Boundaries	
Rail	
<span style="color:orange;">—</span> Rail	
Roads	
<span style="color:darkred;">—</span> Expressway-Highway	
<span style="color:darkbrown;">—</span> Freeway	
<span style="color:darkbrown;">—</span> Ramp	
<span style="color:darkgrey;">—</span> Collector	
<span style="color:darkgrey;">—</span> Arterial	
<span style="color:darkgrey;">—</span> Local - Strata	
	Tree Height
	Shortest: 10.000000 - 13.820000
	Short: 13.820001 - 17.200000
	Medium: 17.200001 - 20.760000
	Tall: 20.760001 - 25.330000
	Tallest: 25.330001 - 121.970000
	Super Canopy Trees

1 0.5 0 1 2 3 4 Kilometres  
Scale: 1:25,000  
Projected in NAD1983, UTM 17

