Assessing the tree diversity and structure of neighbourhoods across the island of Montreal

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Why Urban Trees?

- Urban trees provide essential **ecosystem services** to people[1]
- Diverse urban forests are resilient[2]
- Tree distribution is inequitable[3]
- **Private trees represent more than 50% of the urban forest**[4]
- It is hard to sample private trees[6], so current research excludes crucial information

Different green space types

Street trees

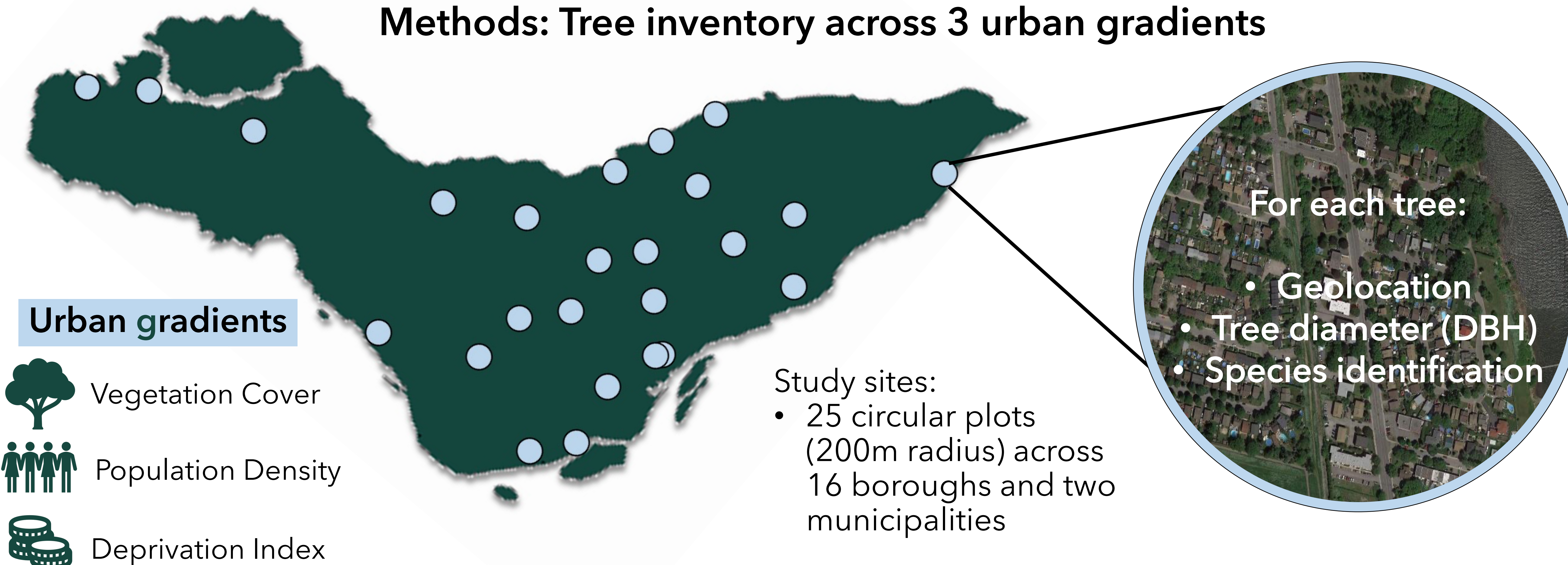Institutions

Alleyways

Residential

Public parks

Accurate urban forest diversity = data from all trees

Research questions

1. How does tree composition and structure (species richness, evenness, abundance, functional diversity) differ across different green space types?

2. How are tree composition and structure affected by neighbourhood sociodemographic factors and urban form?

Methods: Tree inventory across 3 urban gradients

Urban gradients

- Vegetation Cover
- Population Density
- Deprivation Index

Study sites:
- 25 circular plots (200m radius) across 16 boroughs and two municipalities

For each tree:
- Geolocation
- Tree diameter (DBH)
- Species identification

Preliminary Results

- Total individual **trees**: 34 531
- Number of **genus**: 103
- Number of **species**: 321

Next steps

- Map green space types using land-use layers
- Compile census data to determine sociodemographic gradients
- Calculate biodiversity metrics and create models for research questions

Implications

- Better understand the **drivers of urban forest composition** and structure
- **Inform management practices** that maintain and increase city-wide biodiversity
- Encourage the **equitable distribution of ecosystem services**

Literature Cited
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