Communication, Partnerships and Community Forestry

The Canadian Urban Forest Strategy: Challenges and Successes

Forestry Serving Urban Societies in the North Atlantic Region

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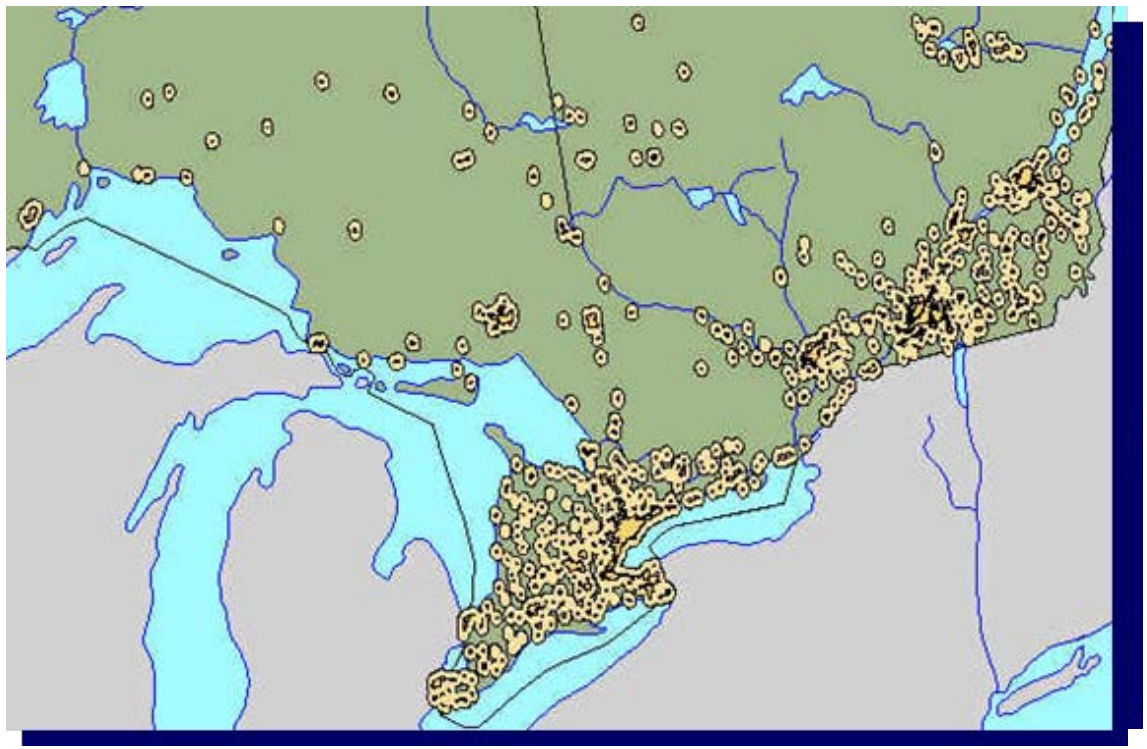
The Extent of Canada's Urban Forests

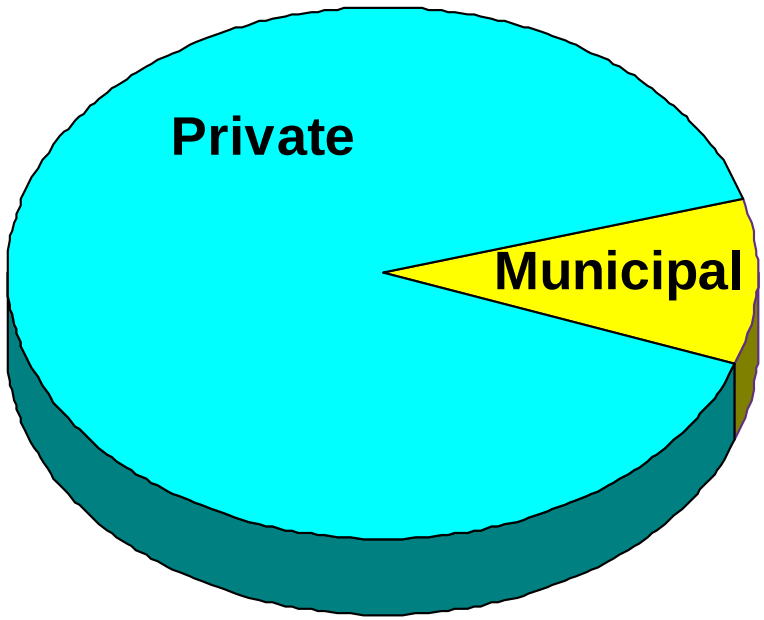
- 80% of Canadians live in urban areas
- What is urban?
  - Population ≥ 1,000 and ≥ 400 per km^2
  - Urban Area plus 10 km buffer



The Extent of Canada's Urban Forests

Urban forestry in Canada is strictly in the domain of municipalities; the Federal and Provincial governments have NO sustained involvement.

Urban Forest Ownership



Canadian Urban Forest Network

April 2004

– Inaugural meeting of the Canadian Urban Forest Network in Winnipeg

• Developed vision and mission statements

• Established working groups

• Launched the CUFN

“The Winnipeg 15”

Canadian Urban Forest Network

- Each of 5 working group will have a group leader
- WG will identify specific tasks
- WG members will participate in tasks
- Tasks will seek funding
- Progress reports every two years at the CUFC

Canadian Urban Forest Strategy

The Canadian Urban Forest Strategy (CUFS) was drafted with **Themes** and **Tasks** based on these five working groups.

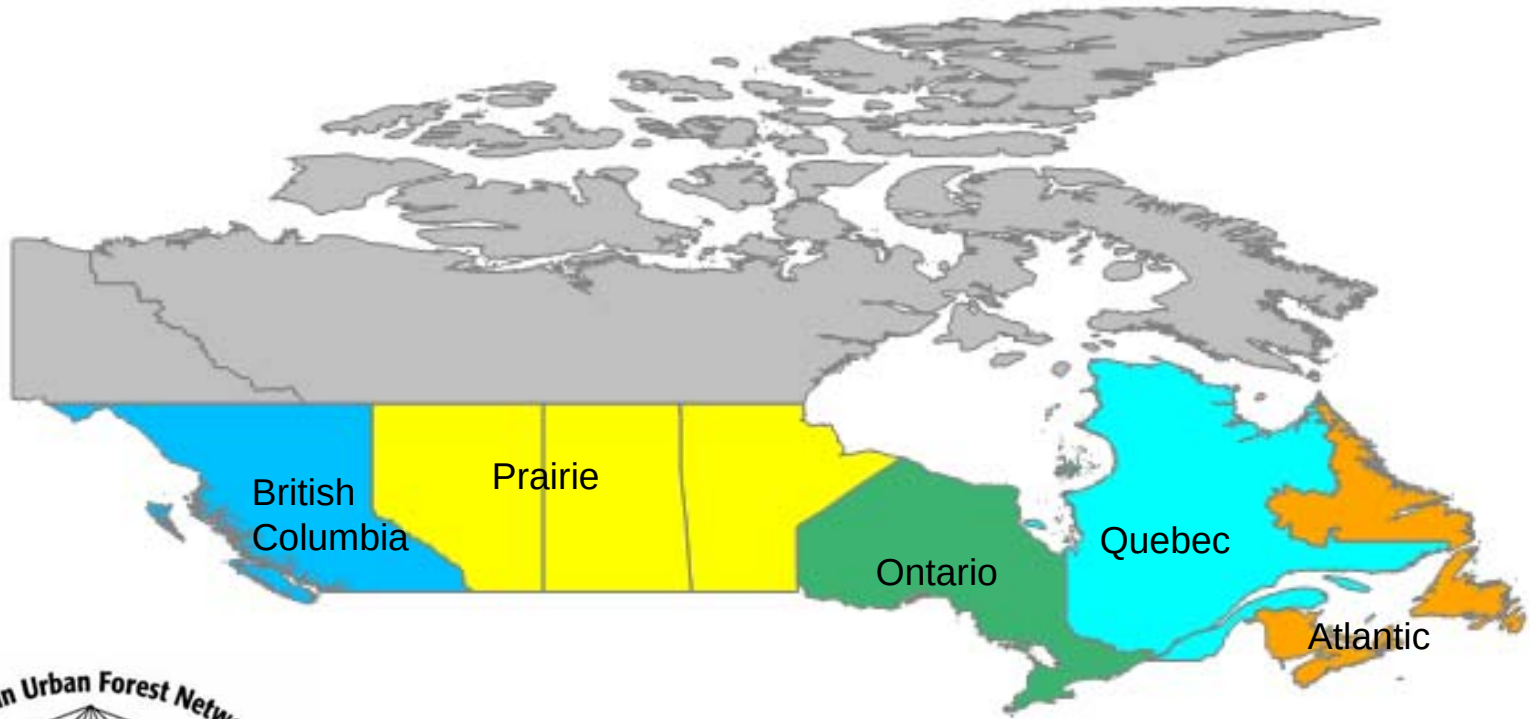
CUFS Themes

1. National Urban Forestry Infrastructure

National Urban Forestry Infrastructure

1.1 Develop a national urban forestry organization

Five CUFN Regional Sections



Canadian Urban Forest Network
Réseau canadien de la forêt urbaine

National Urban Forestry Infrastructure

1.1 Develop a national urban forestry organization

1.2 Develop a strong financial commitment to develop and maintain urban forests

1.3 Identify stakeholder groups

1.4 Conduct a national survey of urban forestry programmes

The State of Canada’s Municipal Forests

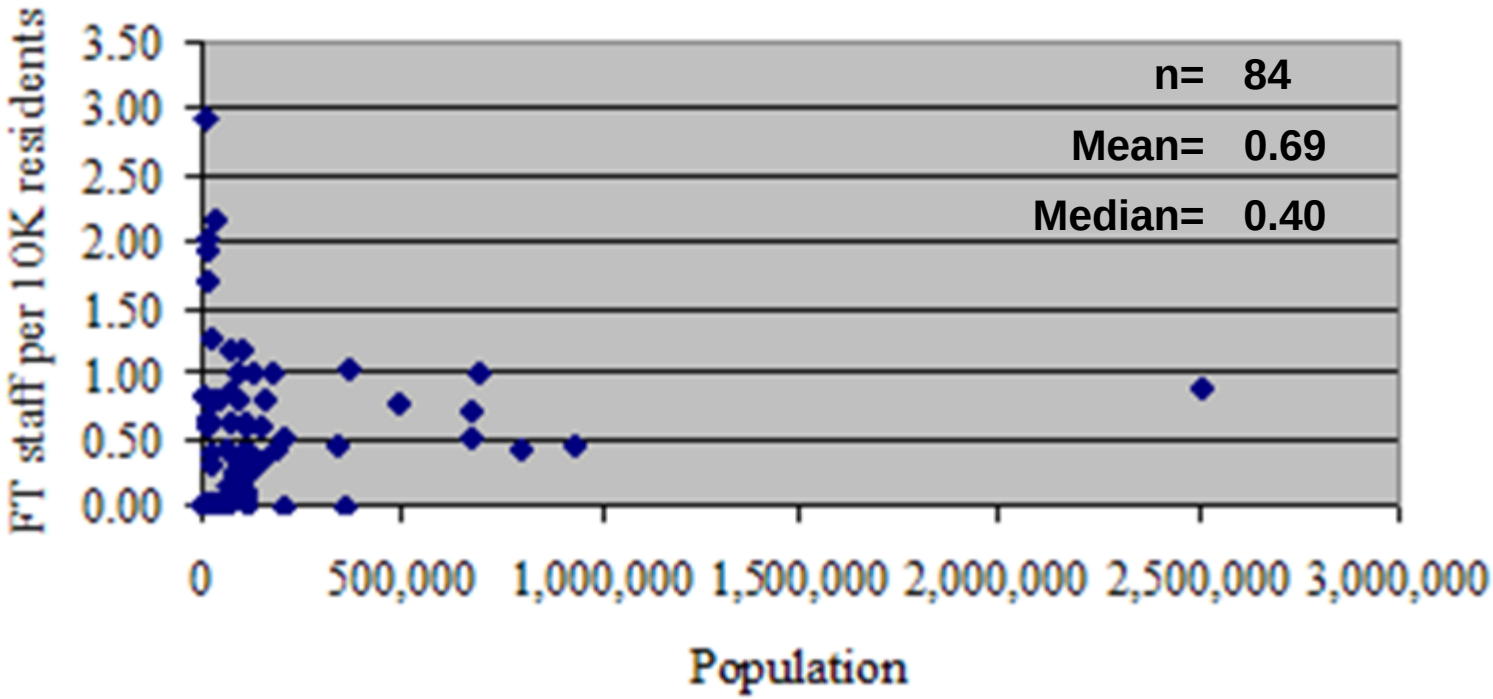
1.4 Conduct a national survey of urban forestry programmes

- 581 municipalities with a population >5,000
- 84 (15% of total) completed surveys

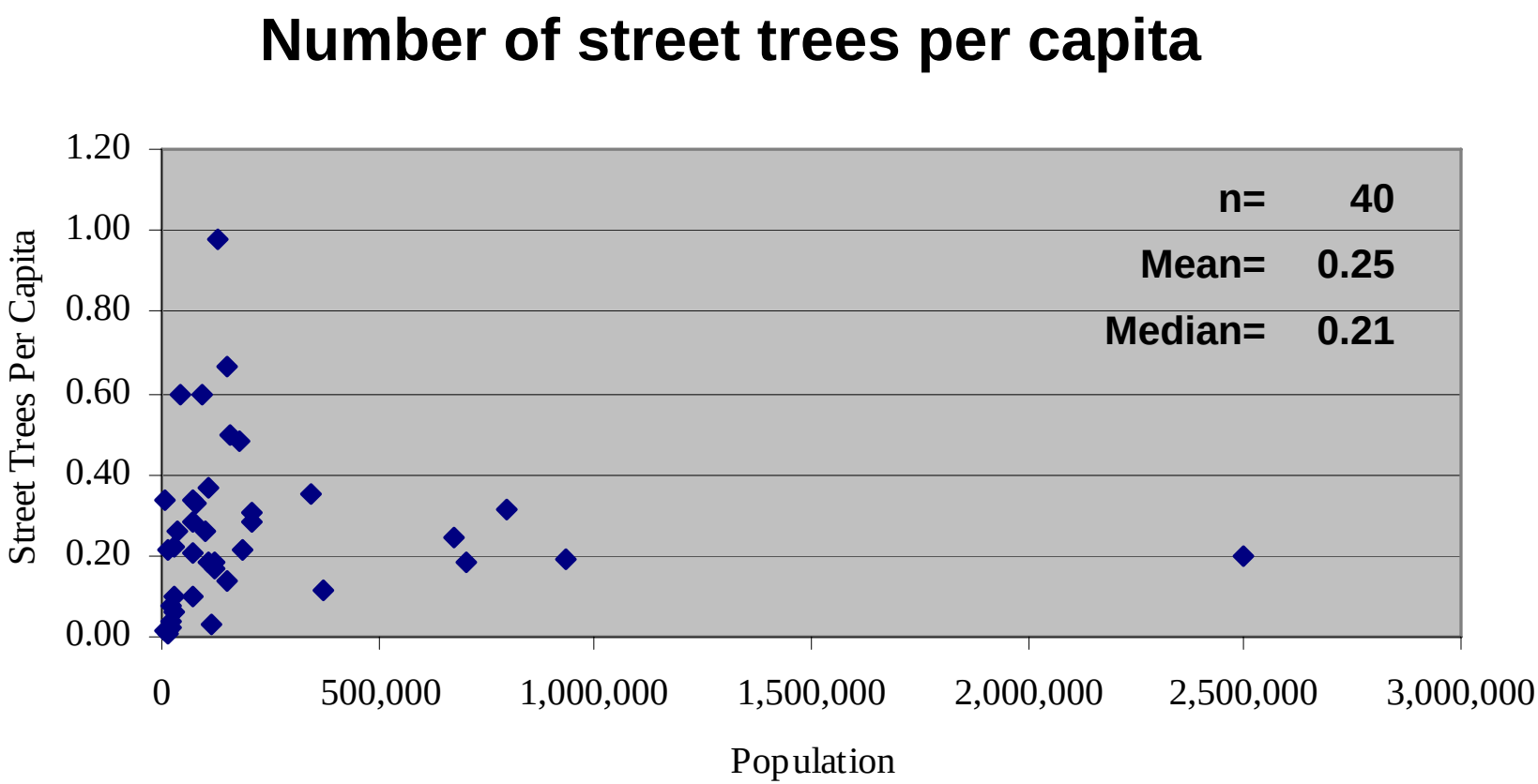
Represented 47% of Canada's urban population

1.4 Conduct a national survey of urban forestry programmes

Number of FT staff per 10,000 residents



1.4 Conduct a national survey of urban forestry programmes



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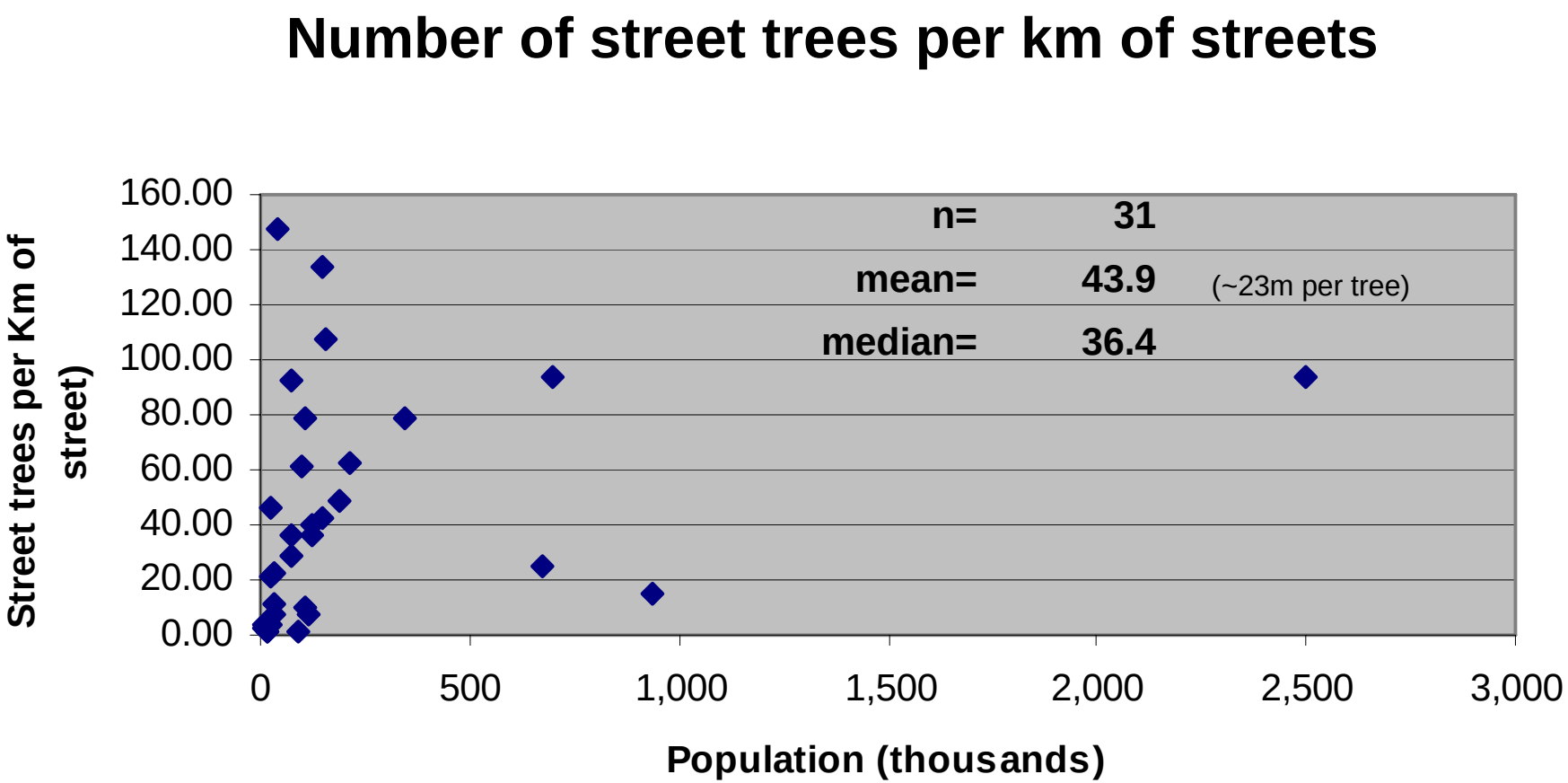

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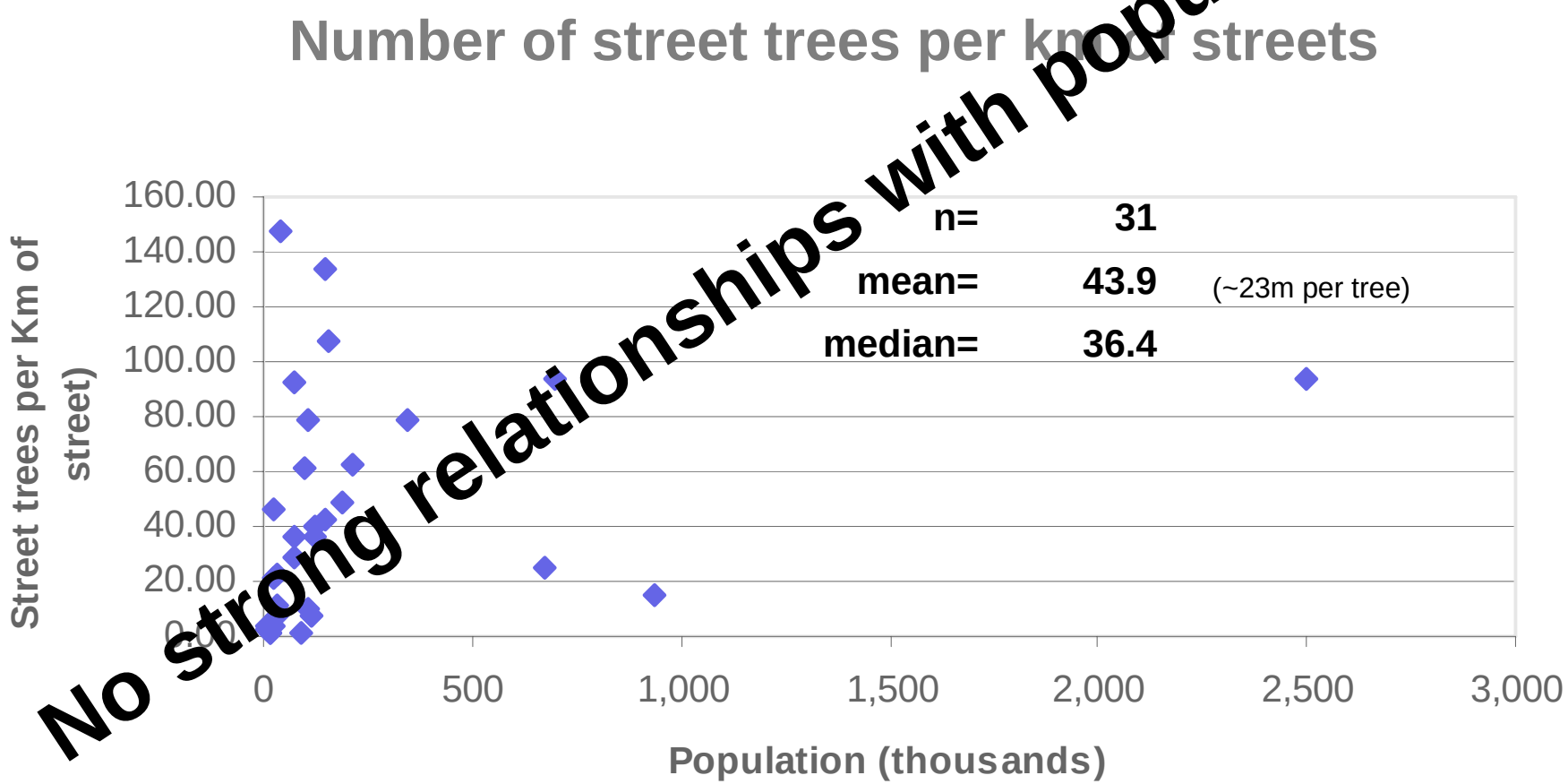
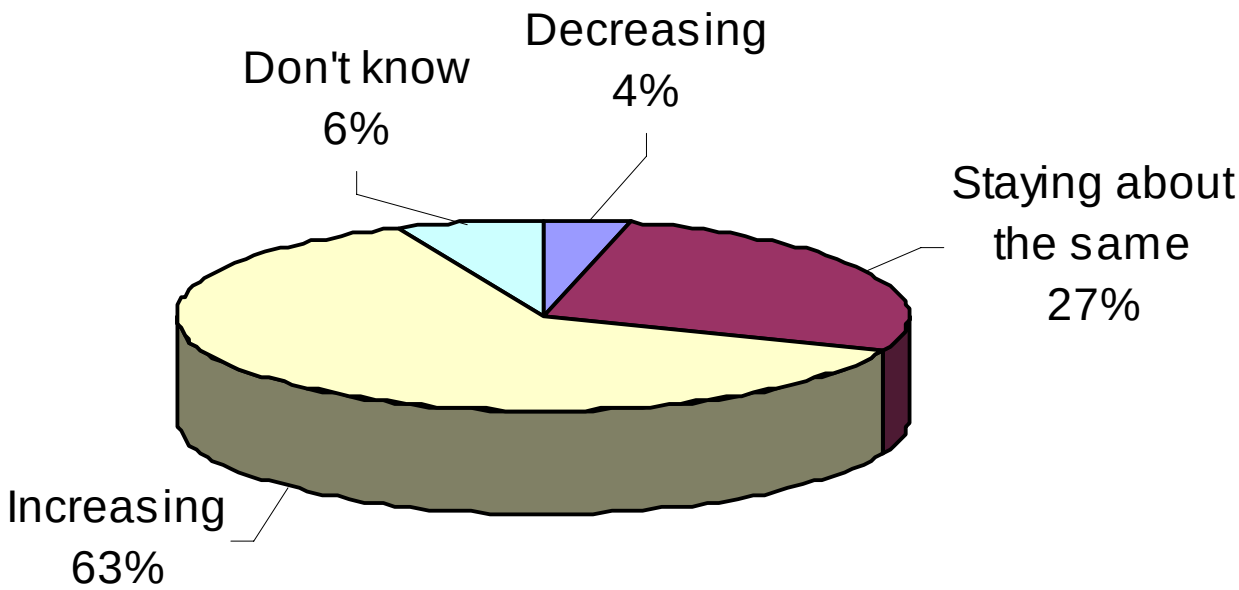


No strong relationships with population size

1.4 Conduct a national survey of urban forestry programmes

How do you think the number of street trees changed in the past 3 years?



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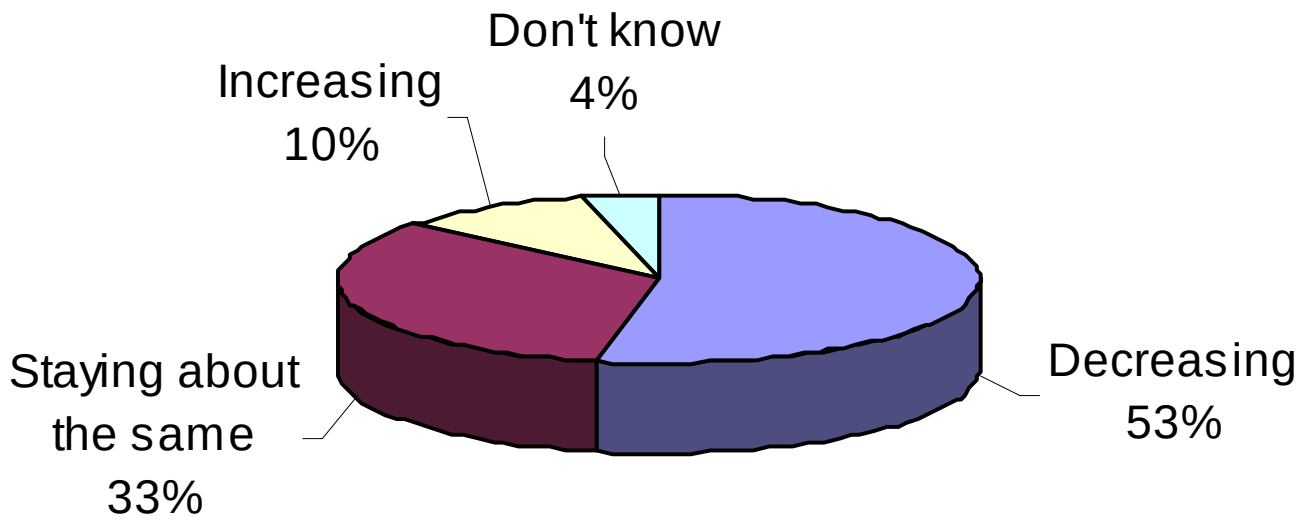
1.4 Conduct a national survey of urban forestry programmes

How do you think the amount of natural area changed in the past 3 years?



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National Urban Forestry Infrastructure

1.5 Develop a strategy for effective communications among groups

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CANUFNET

- Email discussion group focusing on Canadian urban forestry issues
- Over 400 subscribers coast to coast

National Urban Forestry Infrastructure

1.5 Develop a strategy for effective communications among groups

1.6 Develop a common vision

Canadian Urban Forest Network

Vision:

Canadian towns and cities will have a canopy of trees, sheltering and protecting our communities; part of a **green infrastructure** that promotes habitat, healthy air, clean water, quality of life and economic prosperity.

Mission:

to increase awareness of the urgent issues facing Canada's urban forests and to stimulate action to address those issues.

National Urban Forestry Infrastructure

1.5 Develop a strategy for effective communications among groups

1.6 Develop a common vision

1.7 Increase the involvement of the provincial and federal governments in urban forestry

1.8 Encourage other organizations to include urban forestry in their agendas

1.9 Encourage FCM to become involved in urban forestry

1.9 Encourage FCM to become involved in urban forestry

FCM passed an urban forestry resolution at their 2004 Annual Conference

BE IT RESOLVED that the Federation of Canadian Municipalities urge the federal government to take a leadership role in promoting urban forestry, protecting urban forests, and conducting research into the urban forest.

CUFS Themes

1. National Urban Forestry Infrastructure
2. Communications and Public Education

2.2 Develop a communications plan

Awareness campaign will highlight urban forests…

… and human health

… as critical infrastructure

… as a valuable asset

… are under threat

2.2 Develop a communications plan

Mobilizing Natural Allies:

The Urban Forest Network is not in competition with existing well-known environmental groups. Rather, it is imperative to enlist their support and assistance.

CUFS Themes

1. National Urban Forestry Infrastructure
2. Communications and Public Education
3. Research

Research

3.1 Conduct a survey and develop an inventory of research capacity

3.2 Assess long and short-term research needs and priorities

3.3 Establish a network of people involved in urban forestry research

Research

3.4 Develop a repository of urban forestry research knowledge

3.5 Establish a national centre for urban forestry research, tech transfer and international cooperation

CUFS Themes

1. National Urban Forestry Infrastructure
2. Communications and Public Education
3. Research
4. Techniques and Technology for urban forestry planning and management

Techniques and Technology for urban forestry planning and management

4.1 Develop a standard set of criteria and indicators to track changes

- Criteria and Indicators first promoted as a tool for successful urban forest management by Clark *et al* (1997).

- Developed a list of C&I that considers:

Journal of Arboriculture 23(1): January 1997

A MODEL OF URBAN FOREST SUSTAINABILITY

by James R. Clark, Nelda P. Matheny, Genni Cross and Victoria Wake

Abstract. We present a model for the development of sustainable urban forests. The model applies general principles of sustainability to urban trees and forests. The central tenet of the model is that sustainable urban forests require a healthy tree and forest resource, community-wide support and a comprehensive management approach. For each of these components, we provide criteria and indicators for assessing their status at a given point in time. The most significant outcome of a sustainable urban forest is to maintain a maximum level of net environmental, ecological, social, and economic benefits over time.

Creation and management of urban forests to achieve sustainability is the long-term goal of urban foresters. The notion of sustainability in urban forests is poorly defined in both scope and application. Indeed, the question of how to define sustainability, and even whether it can be defined, is an open one (9, 17). At a simple level, "a sustainable system is one which survives or persists" (5). In the context of urban forests, such a system would have continuity over time in a way that provides maximum benefits from the functioning of that forest.

Since there is no defined end point for sustainability, we assess sustainability by looking backwards, in a comparative manner (6). In urban forests, we measure the number of trees removed against those replanted or regenerated naturally. In so doing, we assess progress towards a system that "survives or persists." Therefore, our ideas of sustainability are "really predictions about the future or about systems . . . (5)."

This paper presents a working model of sustainability for urban forests. We describe specific criteria that can be used to evaluate sustainability, as well as measurable indicators that allow assessment of those criteria. In so doing, we accept sustainability as a process rather than a goal. As suggested by Kaufmann and Cleveland (12) and Goodland (5), we consider social and economic factors as well as natural science. Goodland believed that "general sustainability will come to be based on all three aspects" (social, economic and environmental). Maser (14) described sustainability as the "overlap between what is ecologically possible and what is societally desired by the current generation", recognizing that both will change over time.

Therefore, our approach integrates the resource (forests and their component trees) with the people who benefit from them. In so doing, we acknowledge the complexity of both the resource itself and the management programs that influence it. We also recognize that communities will vary in both the ecological possibilities and societal desires.

Defining Sustainability

In developing a model of sustainable urban forests, we first examined how other sustainable systems were defined and described. Although we have concentrated on forest systems, other examples were considered. While some principles of sustainable systems were directly applicable to urban forests, others require modification or were in conflict with the nature of urban forests and foresters.

The Brundtland Commission Report (21) has generally served as the starting point for discussion about sustainable systems. It defined sustainable forestry as:

"Sustainable forestry means managing our forests to meet the needs of the present without compromising the ability of future generations to meet their own needs by practicing a land stewardship ethic which integrates the growing, nurturing and harvesting of trees for useful products with the conservation of soil, air, and water quality, and wildlife and fish habitat."

Both Webster (22) and Wiersum (23) examined this definition from the perspective of forest management. They recognized that issues of what is to be sustained and how sustainability is to be implemented are unresolved. Wiersum (23)

- the *Vegetation Resource*
- the *Community Framework*
- the *Resource Management Approach*

Clark et al. (1997). A Model of Urban Forest Sustainability. Journal of Arboriculture 23(1).

Each criterion is assessed by **low, moderate, good and optimal indicators** of urban forest management success, and is described by **a key objective**.

The original C&I of Clarke et al 1997 were refined and expanded by Kenney and van Wassenaer in 2008

From Clark et al. (1997). A Model of Urban Forest Sustainability. Journal of Arboriculture 23(1).

Management Approach

Criteria	Performance Indicators				Key Objective
	Low	Moderate	Good	Optimal	
Tree Inventory	No inventory	Complete or sample-based inventory of publicly-owned trees	Complete inventory of publicly-owned trees AND sample-based inventory of privately-owned trees.	Complete inventory of publicly-owned trees AND sample-based inventory of privately-owned trees included in city-wide GIS	Complete inventory of the tree resource to direct its management. This includes: age distribution, species mix, tree condition, risk assessment.
Canopy Cover Inventory	No inventory	Visual assessment	Sampling of tree cover using aerial photographs or satellite imagery.	Sampling of tree cover using aerial photographs or satellite imagery included in city-wide GIS	High resolution assessments of the existing and potential canopy cover for the entire community.
City-wide management plan	No plan	Existing plan limited in scope and implementation	Comprehensive plan for publicly-owned trees accepted and implemented	Comprehensive plan for ALL components of the urban forest (private and public assets) accepted and implemented.	Develop and implement an urban forest management plan for private and public property.
Municipality-wide funding	Funding for reactive management	Funding to optimize *existing* urban forest.	Funding to provide for net increase in urban forest benefits.	Adequate private and public funding to sustain maximum urban forest benefits.	Develop and maintain adequate funding to implement a city-wide urban forest management plan
City staffing	No staff.	No training of existing staff.	Certified arborists and professional foresters on staff with regular professional development.	Multi-disciplinary team within the urban forestry unit.	Employ and train adequate staff to implement city-wide urban forestry plan
Tree establishment planning and implementation	Tree establishment is *ad hoc*	Tree establishment occurs on an annual basis	Tree establishment is directed by needs derived from a tree inventory	Tree establishment is directed by needs derived from a tree inventory and is sufficient to meet canopy cover objectives	Urban Forest renewal is ensured through a comprehensive tree establishment program driven by canopy cover, species diversity, and species distribution objectives
Pruning of publicly-owned, intensively managed trees	No pruning of publicly-owned trees	Publicly-owned trees are pruned on a request/reactive basis. No systematic (block) pruning.	All publicly-owned trees are systematically pruned on a cycle longer than five years.	All mature publicly-owned trees are pruned on a 5-year cycle. All immature trees are structurally pruned.	All publicly-owned trees are pruned to maximize current and future benefits. Tree health and condition ensure maximum longevity.

The complete set of C&I will provide:

1. A common set of indicators to assess SWOT;
2. A guideline for UF strategic planning;
3. A snapshot of urban forestry goals (key objectives) to communicate the comprehensive nature of UF stewardship;
4. Measurable performance indicators to track and communicate progress; and
5. A common set of indicators to compare programs.

Techniques and Technology for urban forestry planning and management

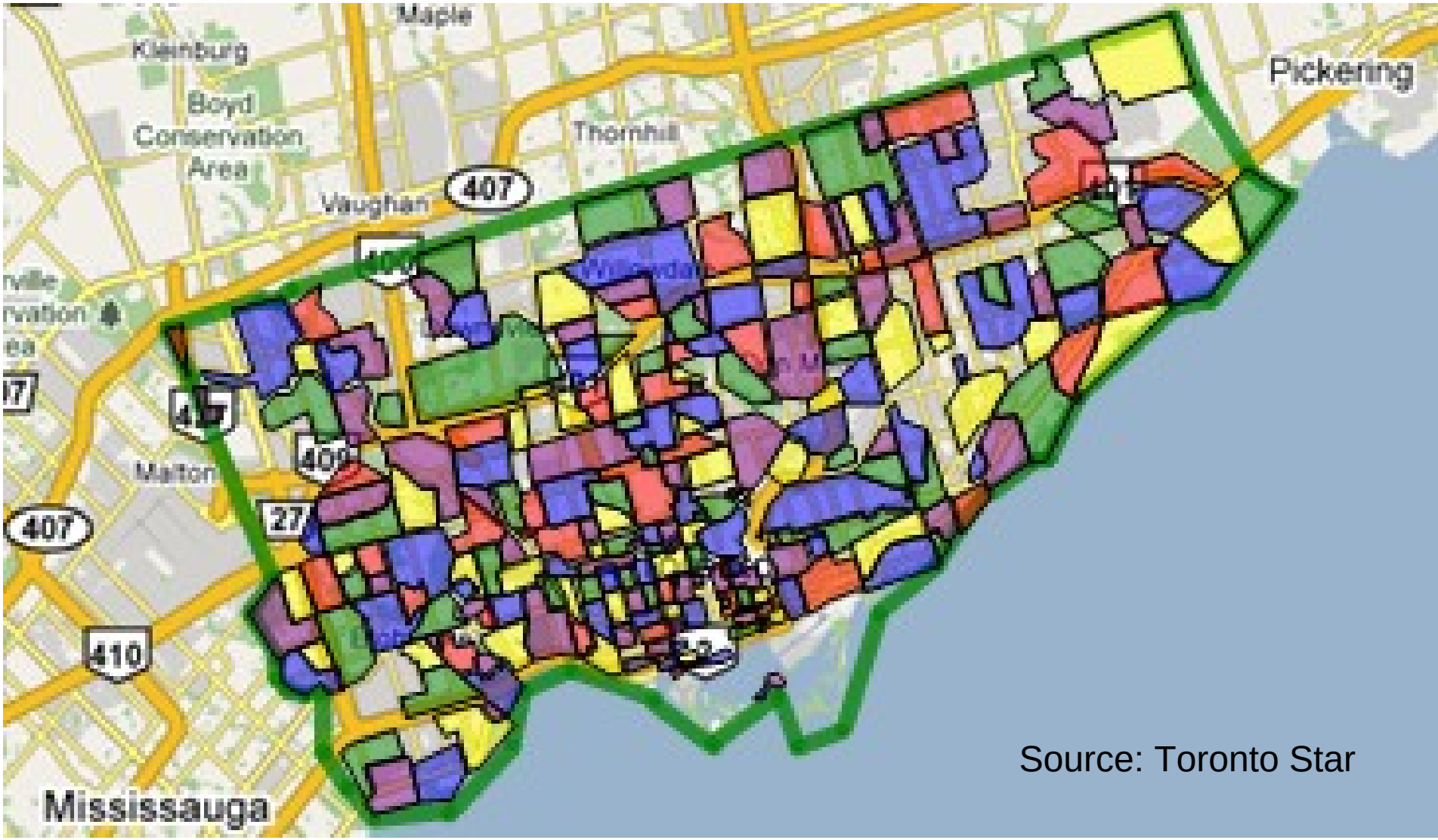
4.1 Develop a standard set of criteria and indicators to track changes

4.2 Develop a gap analysis of Best Urban Forest Management Practices

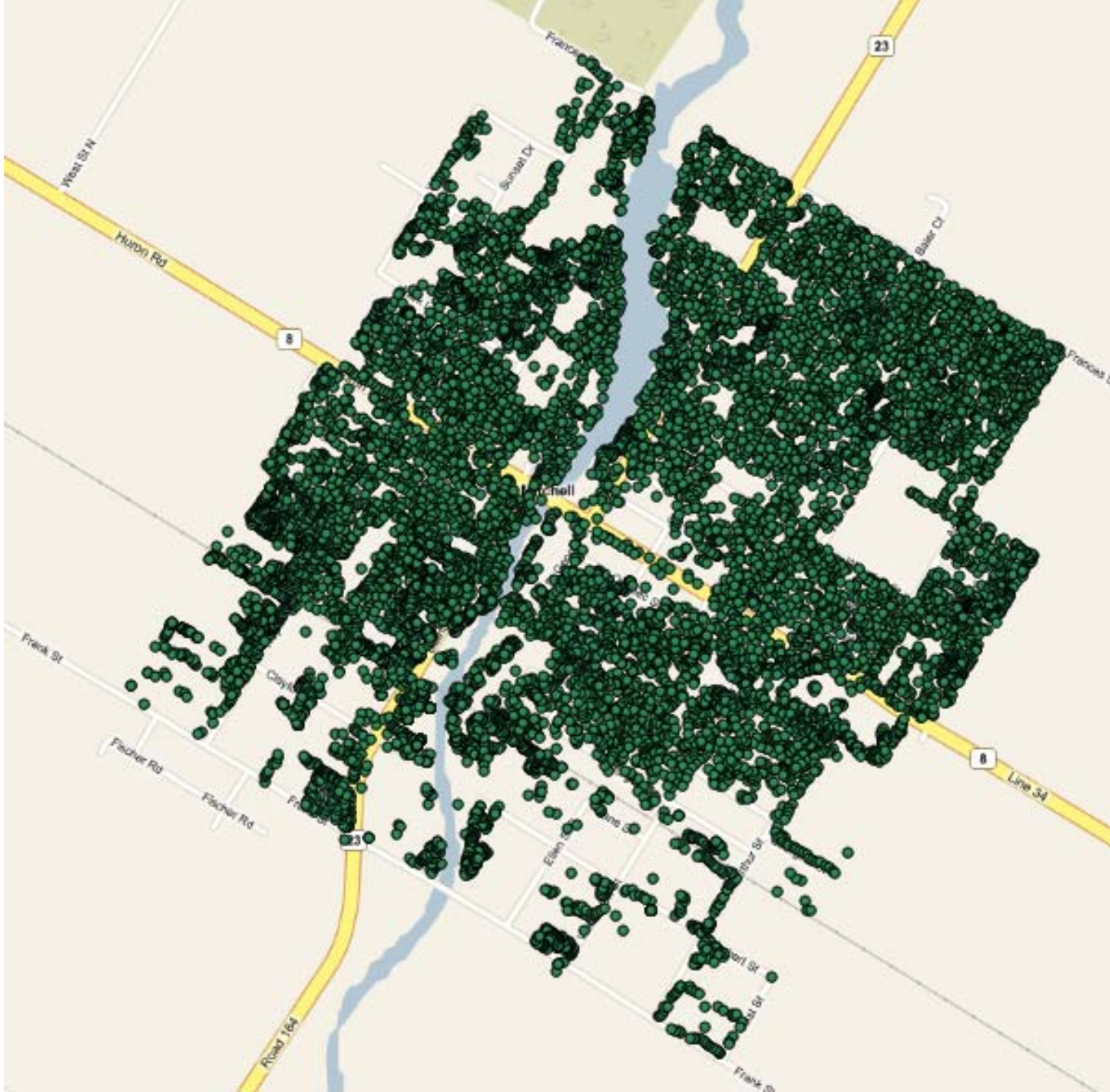
4.3 Develop a collection of Best Urban Forest Management Practices

4.4 Develop a process to involve community groups in urban forest planning and management

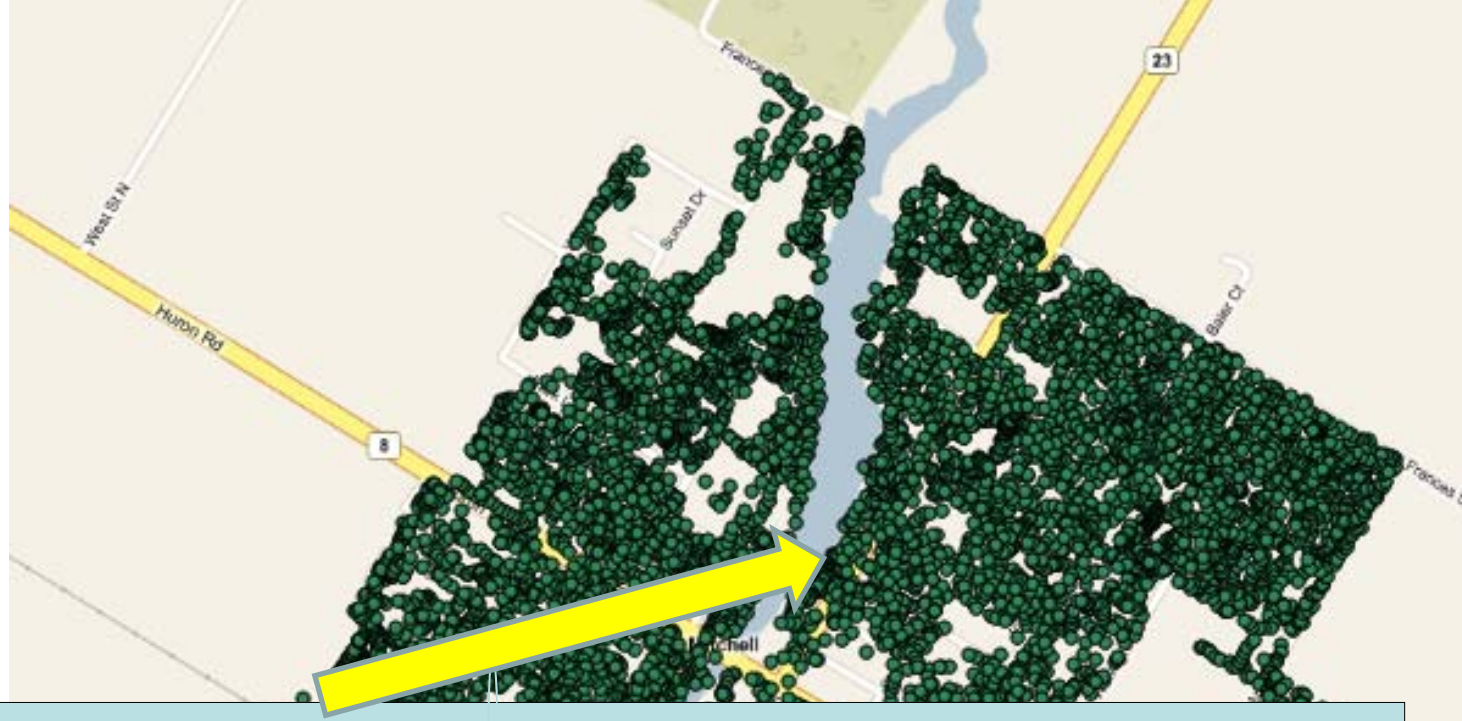
City of Toronto Neighbourhoods



All Trees


West St N
Huron Rd
8
23
Frank St
Fischer Rd
Fischer Rd
Road 164
Line 34
Blair Ct

All Trees



Tree number BT75 is a Willow sp. at 144 George St. It has a DBH of 102cm and an ESTIMATED crown width of 20 metres. None of the area under the crown is hard surface. The tree is in very poor condition. Its crown is severely asymmetrical to the point where it clearly places damaging stress on the main stem and/or the root system. More than 1/2 of the crown volume has been removed. The tree has one or more large dead or broken branches or stubs originating from the main stem or a scaffold branch. There is a V-shaped union between a major branch and the main stem with evidence of included bark and/or the union is showing signs of failure. The tree has a serious lean (>15° from vertical) with some evidence of root mounding or soil cracking on the side of the tree away from the lean. One or more major scars (with a combined width greater than 1/2 the circumference or a significant scar longer than 50 cm) are present on the stem. One or more major branches have scars with a combined width between 1/4 and 1/2 the circumference of the branch. An area of rot or an open cavity which is greater than 1/2 the diameter of the stem is present. An area of rot or an open cavity which is 1/8 to 1/4 the diameter of one or more major branches is present. One major crack (extending more than 1/2 the diameter of the stem) is present or one or more major cracks is in contact with another defect. An obstruction exists which would eliminate root development in an area more than 1/2 of the area within the dripline of the tree.

CUFS Themes

1. National Urban Forestry Infrastructure
2. Communications and Public Education
3. Research
4. Techniques and Technology for urban forestry planning and management
5. Professional Development

Professional Development

4.1 Assess current levels of formal and informal training across the country

4.2 Develop and implement a curriculum for post secondary urban forestry education

4.3 Encourage, promote and link continuing education programs in urban forestry

Thanks for your time

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