



Urban Forest

What is an Urban Forest?

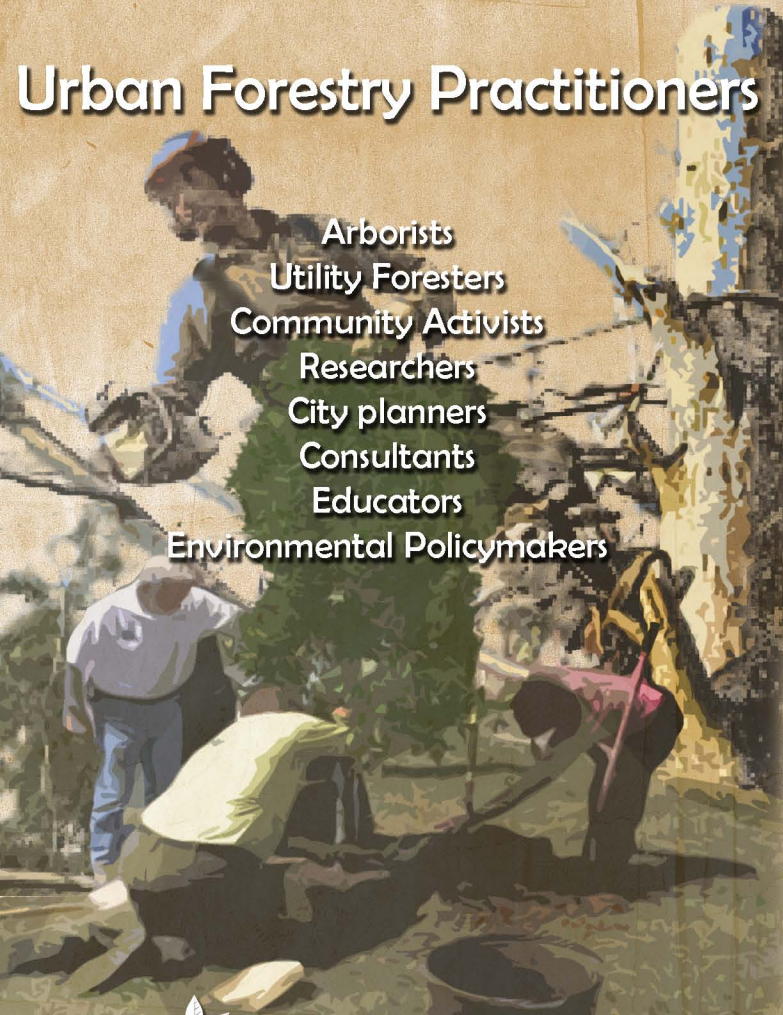
An **urban forest** can be defined by any and all woody plant vegetation growing in and around a city, town, suburb, or any other urban area. This includes the trees in parks, along a major boulevard, and in people's backyards. The management of these trees is known as **urban forestry**. Urban forestry faces entirely different challenges, most of which are directly related to human activities, including pollution, architecture, and vegetative aesthetics.

Which Canadian city has the largest urban forest?

Toronto	Vancouver
Montreal	Winnipeg
Calgary	Ottawa
Edmonton	Regina

Answer on the last page

Urban Forestry Practitioners



- Arborists
- Utility Foresters
- Community Activists
- Researchers
- City planners
- Consultants
- Educators
- Environmental Policymakers

Importance of Trees in the Urban Environment

Vegetation, specifically trees, play an important part in the environment. Through processes like photosynthesis and transpiration, trees provide oxygen, remove and store carbon, and filter air pollution, water and sunlight. Trees as part of a larger unit, such as an urban forest, can reduce air pollution, remove volatile organic compounds (VOCs), and lower temperatures. Each of these has some sort of environmental, economic and/or social benefit to urban areas.

Air Pollution Reduction

Urban areas continue to struggle with meeting air quality standards. The continuous expansion of urban areas substantially increases the release of air pollutants into the atmosphere (ex. increased vehicles, new industrial sectors, etc.). The most serious air pollutants are ozone (O₃), sulfuric oxides (SO_x), and nitrogen oxides (NO_x), all of which can be absorbed by trees to improve air quality.

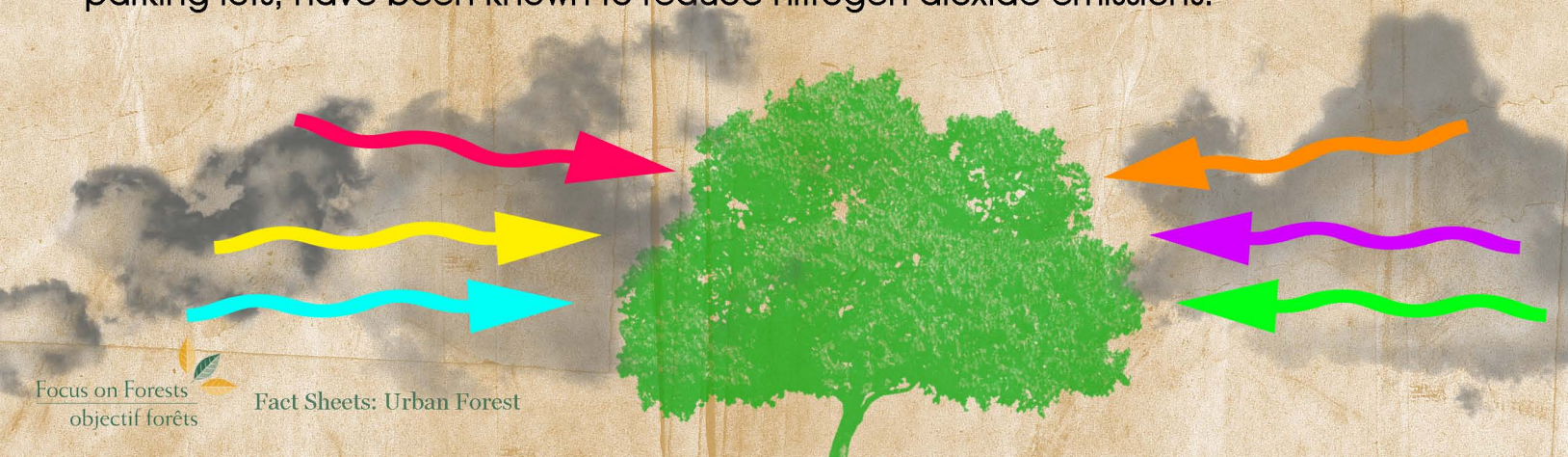


Trees can lower atmospheric temperatures through shade and transpiration. This can, directly or indirectly, reduce the formation and emission of pollution in urban areas. With correct tree placement, enough shade can reduce the amount of energy used during warmer seasons. Shade not only reduces energy usage, but it also provides comfort and reduces thermal stress on people outdoors.



Removal of Volatile Organic Compounds (VOCs)

With the clearing of forests to make way for development, comes the increase of volatile organic compounds (VOCs) in the atmosphere. Although trees release VOCs into the atmosphere as well (ex. deciduous trees release isoprene during hot days and coniferous trees release pinene year-round), they have been known to reduce ozone formation and other VOCs. For example, trees in automobile dense areas, such as busy streets or parking lots, have been known to reduce nitrogen dioxide emissions.





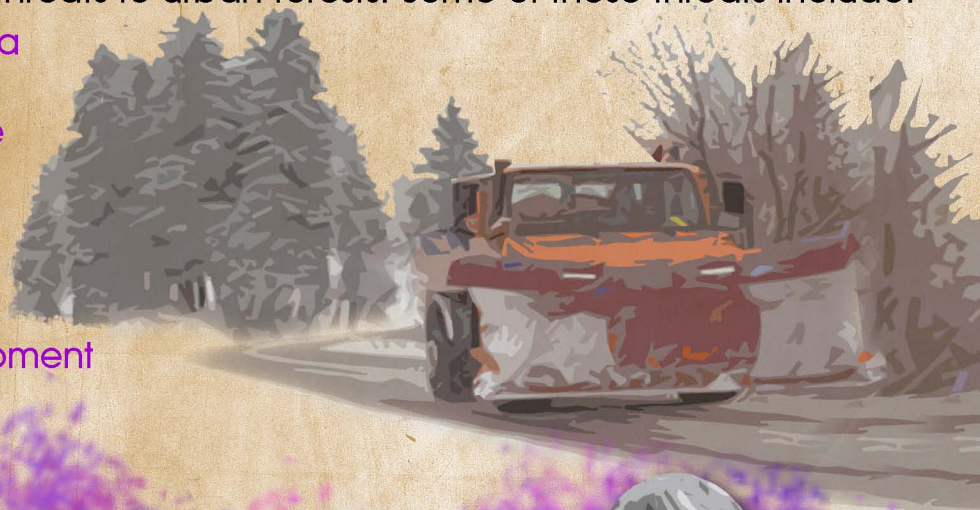
What are the Benefits?

<i>Environmental Benefits</i>	<i>Economical Benefits</i>	<i>Social Benefits</i>
• Actively remove air pollutants from the atmosphere • Reduction of smog formation • Absorb and store atmospheric carbon inside the tree • Actively remove harmful VOCs from the atmosphere • Storm water attenuation • Provision of wildlife habitat	• Improve human health and reduce medical costs • Reduces costs and efforts in improving air quality by other means • Reduce energy costs in the summer by shading buildings • Reduce energy costs in the winter by creating a wind barrier • Increase property value	• Improve human health • Reduction of smoggy days • Provide shade and comfort • Increase recreational activity • Provide cleaner air • Reduces the risk of children developing respiratory, immune, or allergic symptoms • Improved aesthetics • Psychological well-being

What are the Threats?

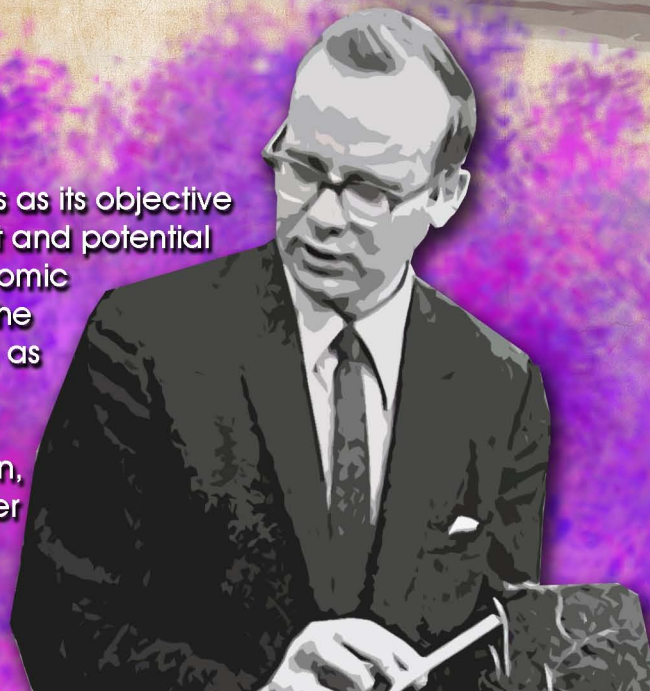
Urban forests were created for the public, however, it is the persistence of human activities that poses the greatest threats to urban forests. Some of these threats include:

- Conversion of wooded areas to a non-wooded or single tree area
- Expansion of urban infrastructure
- Exotic invasive species and disease introduction
- Negative impacts from urban activities (ex. street salt in winter)
- Loss of topsoil from land development
- Recreational impacts



"Urban forestry is a specialized branch of forestry and has as its objective the cultivation and management of trees for their present and potential contribution to the physiological, sociological, and economic well being of urban society. These contributions include the over-all ameliorating effect of trees on their environment, as well as their recreational and general amenity value."

Erik Jorgensen,
Canada's First Urban Forester



Urban Forest Practices

Tree Inventory

Most municipalities with trees on public property should have a tree inventory. Inventories are usually computer-based for quicker access and updating. Criteria for tree inventories may differ by region, however, every inventory should include:

- Tree species
- Tree condition class
- Tree stem size (usually referred to as diameter breast height or DBH)
- Tree location

Aside from this data being collected, each tree location should have a graphic representation, preferably using geographic information systems (GIS).



Street Tree Planting

Appropriate tree planting is very important in developing a healthy urban forest. Things to take into consideration when planting street trees are:

- Sufficient and suitable soil
- Sufficient overhead space for canopy development and no unusual pruning
- Level of expected maintenance from adjacent neighbours
- Root restrictions
- Maintenance schedule
- Potential conflicts with other maintenance operations



Answer: Winnipeg

Focus on Forests
objectif forêts

 **FORESTS**
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