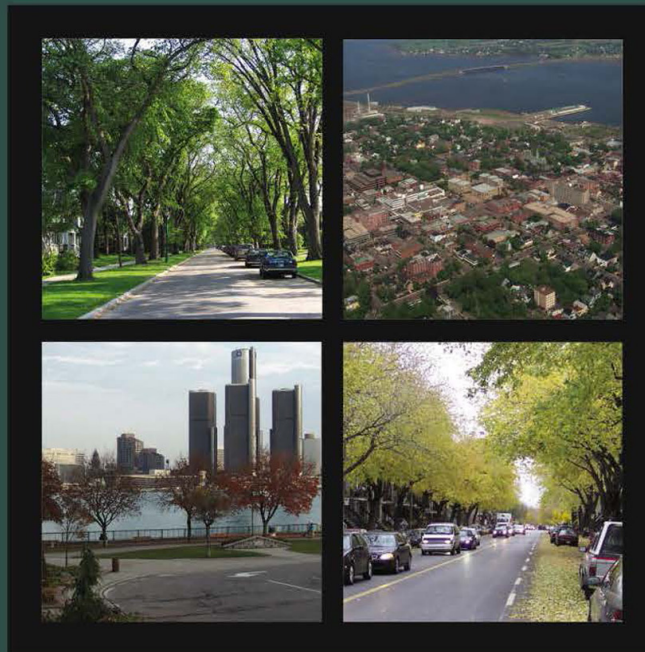


# Canadian Urban Forest Strategy

2013-2018



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# Canadian Urban Forest Strategy 2013-2018

## 1.0 Background

The Canadian Urban Forest Strategy was first articulated in 2006 as a strategic initiative of Canada's urban forest practitioners including: foresters, managers, arborists, planners, community workers and politicians. It coincided with Canada's National Forest Strategy (1988-2008) a government, NGO and private sector coalition whose aim was to move Canada towards forest sustainability. The last iteration (2003-2008) of the National Forest Strategy included a section on urban forests.

According to the 2011 census, 81.1% of Canadians live in urban areas<sup>1</sup>. The urban forest in and around these towns and cities provide many benefits including: sequestering of gaseous air pollutants and particulates; energy conservation; storm-water attenuation; noise buffering; provision of wildlife habitat; increased property value; improved aesthetics; psychological well being; and recreational and educational opportunities. These benefits accrue not only to the owners of the trees and forest but to the entire community. While the same can be said for the wildland forests of Canada, the connection in the urban forest is much more dramatic because the beneficiaries live within the urban forest.

## 2.0 Urban Forestry Defined

Jorgensen<sup>2</sup> defined the term urban forestry in 1974 as "... a specialized branch of forestry and has as its objectives 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."

Deneke<sup>3</sup> expanded on the term:

"Urban forestry is the sustained planning, planting, protection, maintenance, and care of trees, forests, greenspace and related resources in and around cities and communities for economic, environmental, social, and public health benefits for people. The definition includes retaining trees and forest cover as urban populations expand into surrounding rural areas and restoring critical parts of the urban environment after construction. Expansion at the urban/rural interface raises environmental and public health and safety concerns, as well as opportunities to create educational

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<sup>1</sup> According to Statistics Canada "An urban area (UA) has a minimum population concentration of 1,000 persons and a population density of at least 400 persons per square kilometer, based on the current census population count. All territory outside urban areas is classified as rural. Taken together, urban and rural areas cover all of Canada."

<sup>2</sup> Jorgensen, E. 1974. Towards an urban forestry concept. Proceedings of the 10th Commonwealth Forestry Conference. Ottawa, Canada; Forestry Service.

<sup>3</sup> Deneke, F. 1993. Urban Forestry in North America: Towards a Global Ecosystem Perspective. pp 4-8. IN Blouin, G. and Comeau, R. [eds.] Proceedings of the First Canadian Urban Forests Conference May 30- June 2, 1993. Winnipeg MB. 151 pp.

and environmental links between urban people and nature. In addition, urban community forestry includes the development of citizen involvement and support for investments in long-term on-going tree planting, protection, and care programs."

The latter definition, while consistent with Jorgensen's original, serves to highlight many of the broader aspects of the field that are fundamental to this strategy.

From this definition, this document considers the urban forest to be: *trees, forests, greenspace and related abiotic, biotic and cultural components in areas extending from the urban core to the urban-rural fringe.*

### **3.0 The Resource Under Pressure**

Urban trees exist in an inherently difficult environment. The lack of growing space above and below ground, contaminated and compacted soils, de-icing salt, and the physical damage caused by trenching, mowers, snow removal activities and cars, are but a few of the factors that prevent most urban trees from reaching their genetic potential. In addition to contributing directly to the decline of trees, these factors can predispose them to attack by insects and diseases.

Lack of genetic diversity and monoculture practices in our urban forests are also limiting factors in achieving their maximum benefits. Many urban forests have an over-representation of relatively few species, most of which are grown from genetically identical trees in landscape nurseries. Many regions in Canada, including the northern areas of most provinces, the prairie provinces and the territories experience harsh climatic conditions that place further limitations on the variety of tree species able to grow and thrive in urban environments. This narrow genetic base leaves our urban forests vulnerable to insect and disease infestations, particularly invasive pests. Dutch elm disease is a classic example.

Dutch elm disease was discovered in Eastern Canada in the 1940's and killed 80% of the elms in Toronto and 90% of the elms in Montreal<sup>4</sup>. As the disease continues to move west, the impact on the cities and towns in the prairie provinces is even greater than that experienced in communities in the east due to the prevalence of elms in these communities. It could be argued that the loss of elms in many North American cities starting in the 1960's was the crisis that first raised public awareness of the urban forest.

Throughout the 1980s, municipalities sought to replace the elm with other trees resistant to the urban condition, including ash and to a much lesser extent, hackberry. However, more recently the Emerald Ash Borer has crossed the Michigan border into Ontario gaining a foothold in many Ontario and Quebec communities. This proved once again the need for a national approach to urban forest stewardship.

Cities tend to be the "port of entry" for most introduced pests including Dutch elm disease, Asian long-horned beetle, brown spruce long-horn beetle, emerald ash borer, etc, mainly due to human

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<sup>4</sup> Rioux, D. 2003. Dutch elm disease in Canada: Distribution, impact on urban areas and research. Natural Resources Canada, Canadian Forest Service.

activity. Invasive plant species that threaten many forest ecosystems also find their way to “wild” forests through the urban parts of the country. Consequently, an effective program to educate the public, monitor for and control invasive pests in our urban forests will reduce their impact locally but will also help protect wildland forests. It is beneficial to develop partnerships with all levels of government, non-profit and community groups to increase the effectiveness of these programs, and to share the costs where provincial and federal programs often suffer from funding and staffing constraints.

Urban sprawl is common on the fringes of virtually all Canadian communities, large or small. As disposable income increases, many people choose to move to more “rural” settings. This exodus often erodes the very aspects that drew people there in the first place. While the impacts of many natural and anthropogenic disturbances to forests in the wildlands dissipate in a relatively short period of time, most aspects of urbanization are permanent, or will persist at least as long as humans occupy the landscape. Population densities are such that even recreation poses a threat to urban forests be they in a typical urban park, ravine, or in "natural areas" in the peri-urban landscape.

In recent years, forest fires in the urban/peri-urban interface of some communities have taken their toll. The impacts of these fires on the forests and communities have likely been a result of a combination of changing climate, fuel conditions and the movement of urban development into the wildlands.

Climate change is having an impact on urban forests, perhaps to a greater extent than on wildlands. Warmer temperatures, drier conditions and, perhaps most importantly, extreme weather events such as violent wind, heavy snow, and ice storms are taking a heavy toll on urban forests.

On the other hand, the urban forest has been seen by many as a possible vehicle through which to reduce some of the impacts of climate change. The impact of the urban heat island on human health is currently receiving considerable attention in larger Canadian centres. Night time mortality rates in humans have been shown to climb during extremely warm periods. The role of urban forests in reducing the effects of the urban heat island is well recognized. In its Climate Change Action Plan, the Québec Ministry of Health and Social Services recognized this role and announced a program of grants to help communities counter the heat island effect through re-vegetation. Furthermore, other illnesses, notably respiratory illness is more widespread than in the past. The Ontario Medical Association (2000) estimates that over 1,900 premature deaths, 9,800 hospital admissions and 13,000 emergency room visits per year can be directly attributable to air pollution. Trees are widely seen as a way to mitigate this pollution.

#### **4.0 Canadian Urban Forest Network (CUFN)**

The Canadian Urban Forest Network is a pan-Canadian action group who speaks for Canada’s urban forests. The Network seeks to build value by helping those who practice urban forestry; to build power and influence by helping those who are interested in urban forestry; to facilitate the exchange of information about urban forestry in Canada; and to increase awareness about the urgent issues facing Canada’s urban forests. The Network is guided by a Steering Committee and

reports to its members through a meeting held at the Canadian Urban Forest Conference. It is the Network that guides the creation and revision of this document and it is through this process that the Vision, Mission and Steering Committee are reviewed.

#### **4.1 A Working Vision**

*Our vision for Canadian towns and cities is 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.*

#### **4.2 A Working Mission**

*Our mission is to increase awareness of the urgent issues facing Canada's urban forests and to mobilize a comprehensive urban forest network of individuals and organizations across Canada to stimulate action to address those issues.*

#### **4.3 The Canadian Urban Forest Network Steering Committee**

At present, the members are:

- Atlantic Region: Amery Boyer; Annapolis Royal, Nova Scotia. Former Chief Administrative Officer, Annapolis Royal; Amery is highly specialized in human resources and business administration. She has had a long standing interest in urban forests from a municipal perspective.
- Québec Region: Pierre Jutras; Montréal. Research Scientist, Ville de Montréal and is an Adjunct Professor at McGill University. Pierre is conducting extensive research on urban trees. Pierre is a founding member of the CUFN.
- Ontario Region: Adrina Bardekjian; Toronto, PhD Candidate, Faculty of Environmental Studies, York University. Using a political ecology lens, Adrina's work examines under-represented narratives in urban forestry with respect to political, social and ecological injustices; her focus is communication and education in higher learning.
- Prairies/North Region: Martha Barwinsky; Winnipeg, Manitoba. City Forester, City of Winnipeg; Martha has been part of the CUFN since it was first established – she has a long history in urban forestry and in Dutch elm disease control.
- British Columbia Region: Greg Ward; Surrey. Manager of Urban Forestry and Environmental Programs, City of Surrey; Greg has been an advocate in the formation of the CUFN.
- Co-Chairs: Andy Kenney; Toronto, Ontario. Senior lecturer (retired), University of Toronto; Andy has conducted research and lectures in urban forests. Michael Rosen; Ottawa, Ontario. President, Tree Canada; Michael is an advocate for urban forests. Both Andy and Michael are founding members of the CUFN.

#### **4.4 The Steering Committee has four primary tasks:**

1. To review and update the Canadian Urban Forest Strategy
2. To facilitate the implementation of the tasks outlined in the Strategy
3. To implement a Community Award (loosely based on Tree City USA) in conjunction with Tree Canada
4. To improve dialogue with the Federation of Canadian Municipalities

#### **5.0 TOWARDS A CANADIAN URBAN FOREST STRATEGY**

This present version of the Canadian Urban Forest Strategy is for the period 2013-2018. Five working groups have been established to facilitate the implementation of tasks that have been identified (see appendix):

**5.1 *National Urban Forestry Infrastructure***

**5.2 *Communications and Public Education***

**5.3 *Research***

**5.4 *Techniques and Technology for Urban Forest Planning and Management***

**5.5 *Professional Development***

Each working group will have a leader who will provide direction to the broader team and will communicate with the Canadian Urban Forest Network steering committee. Additional working groups will be considered in the future if it is determined that the five presented here fail to address certain critical issues facing Canada's urban forests.

Each task has specific, measurable, and realistic objectives with clearly identified timelines. Performance indicators of success that will be used to measure the progress or successful completion of the task have been identified.

Working Groups will be responsible for raising the funds needed to accomplish their specific tasks. Communication among working groups will be essential to the success of this strategy.

Table 1 (appendix) summarizes each of the working groups, their associated tasks, performance indicators and term (short, medium, long). These Working Groups and their tasks are:

#### **5.1 National Urban Forestry Infrastructure**

With the exception of the emergency funding provided by the federal government and provincial agencies in response to specific crises in Canada's urban forests (such as Asian long-horned beetle), and a few minor provincial programs, all planning and operations for Canada's urban forests are implemented solely by municipalities. This working group will facilitate the development of an infrastructure that ensures urban forestry issues in Canada are addressed in a strategic and comprehensive manner at the national, provincial, municipal and community level.

#### **Tasks**

- 5.1.1 Implement the activities of the Canadian Urban Forest Networking in support of the Canadian Urban Forest Strategy. The CUFN will continue to be based on a series of regional chapters, supported by local funding, with a national steering committee.
- 5.1.2 Help secure strong and lasting financial commitment to develop and maintain urban forests.
- 5.1.3 Identify stakeholders including community groups, municipal foresters, and allied professionals.
- 5.1.4 Continue to conduct a national survey of urban forestry programs at the municipal level.
- 5.1.5 Develop a common vision for urban forestry with related goals and objectives.
- 5.1.6 Increase the involvement of the federal and provincial governments and their agencies in urban forestry.
- 5.1.7 Encourage existing organizations (including community groups, forestry organizations, professional organizations, etc.) to include urban forestry on their agendas.
- 5.1.8 Engage the Federation of Canadian Municipalities to approach municipal, provincial and federal agencies to become involved in urban forestry.

## **5.2 Communications and Public Education**

The community has a 100% interest stake in the urban forest. This includes trees in individual backyards, on boulevards (owned by the taxpayers), on local business properties, etc. Benefits from the urban forest accrue to the community, not just the owner of the tree. Consequently, an informed and motivated community will be essential to any effective urban forestry program. This working group will facilitate the exchange of information among members of the urban forestry community as well as to the general public, allied professions, organizations and policy makers.

### **Tasks**

- 5.2.1 Develop a Communication Plan that establishes coordinated approaches to promoting the concepts of urban forestry to industry, government, educational institutions, and the public.
- 5.2.2 Identify target audiences.
- 5.2.3 Develop communication “tools” to deliver the message.
- 5.2.4 Develop a funding strategy to support the public education program.
- 5.2.5 Produce educational kits for politicians, media, schools and community groups.

5.2.6 Create and maintain a Canadian Urban Forest Network website and the CANUFNET listserv.

### **5.3 Research**

A sustainable urban forestry program should be based on the best available science and sociological considerations. This includes biology, ecology, sociology, economics, policy and management. Urban forestry benefits from current research initiatives in these sciences. However, the unique nature of the urban forestry realm makes the transfer of some concepts difficult. For example, how applicable are the results derived from ecological studies in "wildland forests" to the true urban environment? How applicable is conventional business theory to a resource with an ownership fragmented into 10m urban lots? Research specifically directed to urban forestry issues is currently lacking. This working group will identify specific research needs and will facilitate the completion of this work. It will also address actions associated with the extension of research results to practitioners in all disciplines.

#### **Tasks**

- 5.3.1 Conduct a survey and develop an inventory of research capacity applicable to urban forestry including the identification of existing and required delivery mechanisms.
- 5.3.2 Assess short- and long-term urban forestry research needs and priorities.
- 5.3.3 Establish a network of people involved in urban forestry research and those who have a pool of expertise.
- 5.3.4 Establish national and regional depositories of urban forestry research knowledge and background studies with a mechanism in place to facilitate access by practitioners.
- 5.3.5 Establish a national centre for urban forestry research, development, technology transfer and international cooperation.

### **5.4 Techniques and Technology for Urban Forest Planning and Management**

The impacts of urban sprawl on the environment and the quality of life of the 80% of Canadians who live in urban environments are slowly being recognized as unsustainable. New approaches to land-use planning such as "smart growth" are an attempt to address this issue. Some versions of these new approaches incorporate a much stronger recognition of the role of the natural environment and green-space as a vital component of healthy, sustainable communities. Any such renewed vision must incorporate urban forestry at all levels from backyards and boulevards, to parks and ravines, to peri-urban woodlands. The design, construction and use of most levels of infrastructure will have some impact on the ability of the urban forest to function as an ecosystem and to provide a sustainable supply of ecological and socio-economic services to society. New



technologies are continually being developed that will make the planning and management of urban forests more effective. For example, new approaches to inventories, GIS, quantification of urban forest benefits, tree risk assessment and abatement, plant health care, planning, tree bylaws and modeling. This working group will facilitate the identification of these techniques and technologies and will assist municipalities, groups and individuals to adopt (and adapt) them to ensure the sustained supply of ecological, economic and social benefits from Canada's urban forests. The outcomes of this objective are intended to promote interdisciplinary planning based on a sound understanding of ecological attributes and functions in urban settings.

## **Tasks**

- 5.4.1 To implement the set of criteria and indicators to track progress both geographically and in time.
- 5.4.2 Develop a gap analysis of Best Urban Forest Management Practices.
- 5.4.3 To further improve the Best Urban Forest Management Practices (on CUFN website) appropriate to Canadian conditions.
- 5.4.4 Develop a process to involve community groups in urban forestry planning and management.

## **5.5 Professional Development**

As urban forestry expands with respect to knowledge, people and places, many more appropriately trained personnel will be needed in the private and public sectors. Training will range from continuing education through college and university programs. Presently, opportunities for this type of formal training in Canada are limited (this is particularly true for the broader issues of urban forestry) and in some jurisdictions, they are shrinking. Training for others who are not directly involved in arboriculture or urban forestry (e.g. planners, engineers, etc.) would also advance urban forestry. This working group will facilitate the development and advancement of a highly trained urban forestry workforce as well as a cadre of informed allied professionals at the national, provincial and municipal levels.

## **Tasks**

- 5.5.1 Assess current levels of formal and informal urban forestry training across the country and promote the inclusion of urban forestry courses.
- 5.5.2 Develop a curriculum for post secondary programs and promote its adoption at educational institutions.
- 5.5.3 Encourage, promote, and link continuing education programs involved in urban forestry.

## **CONTACT INFORMATION**

For more information about how you can become involved in the Canadian Urban Forest Strategy contact Michael Rosen at Tree Canada at (613) 567-5545 ext. 222 ([tcf@treecanada.ca](mailto:tcf@treecanada.ca)) or W.A. Kenney ([a.kenney@utoronto.ca](mailto:a.kenney@utoronto.ca)).

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# APPENDIX

**Table 1.1 A Summary of working groups and tasks associated with the National Urban Forest Strategy**

Working Group	Task Number	Task Description	Performance Indicator	Term	Lead	Status
1.0 National Urban Forestry Infrastructure	1.1	Implement the activities of the Canadian Urban Forest Networking in support of Canadian Urban Forest Strategy. The CUFN will continue to be based on a series of regional chapters, supported by local funding, with a national steering committee.	Canadian Urban Forest Network established and actively implementing this Strategy (yes/no).	Short	W.A. Kenney & M. Rosen	CUFN established with representatives from 5 regions (Pacific, Prairie, Ontario, Quebec and Atlantic)
	1.2	Help secure strong and lasting financial commitment to develop and maintain urban forests.	Performance will be monitored through the Municipal Urban Forest Survey (UofT/Tree Canada)	Long	W.A. Kenney & M. Rosen	
	1.3	Identify stakeholders, including community groups, municipal foresters, and allied professionals	Database of urban forestry stakeholder groups (with contact information) developed and populated (yes/no).	Short	CUFN & Regional groups	
	1.4	Continue to conduct a national survey of urban forestry programs at the municipal level.	Report outlining the extent of urban forestry programs in municipalities is complete (yes/no)	Short	W.A. Kenney	Completed in 2010. Ongoing updates.
	1.5	Develop a common vision for urban forestry with related goals and objectives.	Vision statement developed, debated and endorsed by stakeholders (yes/no).	Short	CUFN & Regional groups	Initiated at CUFN founding meeting in Winnipeg, April 2004. Needs endorsement by the broader CUFN
	1.6	Increase the involvement of the federal and provincial governments and their agencies in urban forestry.	Inclusion of urban forests in the mandates of the Canadian Forest Service and each of the provincial forestry ministries	Long	CUFN & Regional groups	In Progress
	1.7	Encourage existing organizations (including community groups, forestry organizations, professional organizations, etc.) to include urban forestry on their agendas.	Inclusion of urban forests in mandates and programs of community groups/forestry organizations.	Long	CUFN & Regional groups	In Progress
	1.8	Engage the Federation of Canadian municipalities to approach municipal, provincial and federal agencies to become involved in urban forestry	Have urban forestry incorporated in Partners for Climate Protection (PCP)	Short	Tree Canada-M. Rosen	FCM has passed such a resolution. Follow-up needed

**Table 1.2 A Summary of working groups and tasks associated with the National Urban Forest Strategy**

Working Group	Task Number	Task Description	Performance Indicator	Term	Lead	Status
2.0 Communications and Public Education	2.1	Develop a Communications Plan that establishes coordinated approaches to promoting the concepts of urban forestry to industry, government, educational institutions, and the public.	A communications plan has been developed and endorsed by CUFN (yes/no).	Medium		Started – Dorothy Dobbie
	2.2	Identify "target audiences"	A report outlining the location and characteristics of target audiences has been prepared (yes/no).	Medium	CUFN & Regional groups	
	2.3	Develop communications "tools" to deliver the message.	The number of communications tools developed (the number)	Medium		In progress – CANUFNET. Raise awareness and use of web site
	2.4	Develop a funding strategy to support the public education program.	A report outlining a funding strategy to support the public education program is completed (yes/no).	Long		
	2.5	Produce educational kits for politicians, media, schools and community groups.	The number of (i.e. how many) educational kits for politicians, media, schools and community groups produced (yes/no).	Long		
	2.6	Create and maintain a Canadian Urban Forest Network website.	Canadian Urban Forest Network web site is operational and regularly updated (at least monthly) (yes/no).	Short	Tree Canada - Adrina Bardekjian	Established, needs regular updating and promotion
	2.7	Maintain the CANUFNET listserve	CANUFNET running, utilized and up-to-date	Medium	Andy Kenney	Ongoing

**Table 1.3 A Summary of working groups and tasks associated with the National Urban Forest Strategy**

Working Group	Task Number	Task Description	Performance Indicator	Term	Lead	Status
3.0 Research	3.1	Conduct a survey and develop an inventory of research capacity applicable to urban forestry including the identification of existing and required delivery mechanisms.	A survey of research capacity applicable to urban forestry completed; existing and required delivery mechanisms identified (yes/no)	Short	CUFN & Regional groups - Adrina Bardekjian	Adrina Bardekjian has drafted the survey. Research in progress.
	3.2	Assess short- and long-term urban forestry research needs and priorities.	A report outlining short and long-term research needs and priorities completed (yes/no)	Short	CUFN & Regional groups	
	3.3	Establish a network of people and organizations involved in urban forestry research and those who have a pool of expertise	A network of urban forestry researchers and expertise established (yes/no)	Short	CUFN & Regional groups	
	3.4	Establish national and regional depositories of urban forestry research knowledge and background studies with a mechanism in place to facilitate access by practitioners.	A national depository of urban forestry research knowledge and background studies established with a mechanism in place to facilitate access by practitioners. (yes/no)	Long		
	3.5	Establish a national centre for urban forestry research, development, technology transfer and international cooperation	A national urban forestry research centre is established	Long		

**Table 1.4 A Summary of working groups and tasks associated with the National Urban Forest Strategy**

Working Group	Task Number	Task Description	Performance Indicator	Term	Lead	Status
4.0 Techniques and Technology for Urban Forest Planning and Management	4.1	To implement the set of criteria and indicators to track progress both geographically and in time. These standards will be based on existing criteria and indicators from other jurisdictions and adapted to Canadian urban forestry conditions.	A report outlining Criteria and Indicators for sustainable urban forestry produced and endorsed by CUFN (yes/no).	Medium	Andy Kenney, Philip van Wassenear and Alex Satel	An article was published in "Arboriculture and Urban Forestry" (2011)
	4.2	Develop a gap analysis of Best Urban Forest Management Practices	A gap analysis of Best Urban Forest Management Practices completed (YES, 2006).	Medium	Tree Canada - Adrina Bardekjian	Completed in 2006: see CUFN web site. Ongoing updates.
	4.3	To further improve the Best Urban Forest Management Practices (on CUFN website) appropriate to Canadian conditions.	The number of Best Urban Forest Management Practices developed to fill the gaps in 4.2 above.	Medium	Tree Canada, CUFN & Regional groups	Started- CUFN web site Working group of f ISA ON worked to update existing guidelines - 3practices completed in draft form:..
	4.4	Develop a process to involve community groups in urban forestry planning and management.	A strategy to involve community groups in urban forestry planning and management has been developed (yes/no)	Medium		

**Table 1.5 A Summary of working groups and tasks associated with the National Urban Forest Strategy**

Working Group	Task Number	Task Description	Performance Indicator	Term	Lead	Status
5.0 Professional Development	5.1	Assess current levels of formal and informal urban forestry training across the country and promote the inclusion of urban forestry courses.	A report outlining the level of formal and informal training in urban forestry is completed (yes/no)	Short	CUFN & Regional groups	
	5.2	Develop a curriculum for post secondary programs and promote its adoption at educational institutions	Draft curriculum developed in consultation with stakeholders and educational institutions	Medium		Courses developed by Université du Québec à Montréal and Sir Sandford Fleming College/University of New Brunswick
	5.3	Encourage, promote, and link continuing education programs involved in urban forestry.		Long	Canadian Institute of Forestry (CIF), Provincial Professional Foresters Assoc., Canadian Forestry Accreditation Board (CFAB)	