

Urban Foresters in Big Picture Planning

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Urban centers have huge ‘ecological footprints’ (Wackernagel and Rees 1996). The role of urban foresters and urban forest planning needs to expand into a larger portion of that footprint. Both the effects and the environmental support of urban centers extend well beyond the urban boundary. Urban centres are the economic, political and social power points of their regions; planning will be urban-centred.

The real ecosystem of urbanized regions is driven by variables derived from consumer processes. Rather than classical ecological variables such as net primary production, ecosystems of urbanized regions like southern Ontario, the lower British Columbia mainland and similar regions of Canada have principal variables such as: commercial energy flow and conversion, commercial monetary flow, urbanization, motorized freight and passenger traffic, industrialization of farming and extraction of aggregate minerals. The generators of processes influencing this sort of ecosystem include: taxation policy, transportation policy, business and financial planning, foreign trade, and municipal and regional planning (Hounsell 2001, Merriam 1999). Urban foresters should acknowledge that variables driving ecosystems in heavily settled regions are controlled at board room tables and scope their efforts in urban forestry accordingly. Because forest planning in urbanized regions is not a high priority with commercial foresters, the value of forest planning in these regions is increasingly tied to the urban centers and their residents. This presents growing opportunities for urban foresters.

Neighbourhood trees produce amenities such as local shade, aesthetic pleasure and spiritual and psychological benefits. Large numbers of such trees in older neighbourhoods produce larger amenities such as mesoclimate control of temperature, humidity, wind and ultraviolet exposure. But there is too much air pollution on critical smog days for so few trees. They do not influence atmospheric oxygen concentration (Broecker 19701). Urban foresters need to move to a larger scale – the urban centre and its regional environmental support area. Urban foresters should move their criteria to a scale where forests have all the major ecological subsystems vital to a forest ecosystem. Not just some even-aged producers but also a decomposition subsystem, nutrient cycles, a functional set of consumers, and producers with an age structure capable of replacing themselves.

The Greater Toronto Area (GTA) is an example of where urban forest planning can be scaled up. The distribution of urban centres in this part of southern Ontario was strongly influenced by the shores of lakes, particularly Lake Ontario, and large river valleys. From all of these centres urban foresters have the potential to extend their influence outward from their city and across the regions among all the cities in settled southern Ontario. Following the natural land patterns initially will provide the most environmental benefits and the most public support.

Several stewardship initiatives following large scale land patterns are already underway in other parts of the country. The Niagara Escarpment is a nearby example that serves many urban centres. Carolinian Canada overlaps the southern parts of the Niagara Escarpment with an aim to conserve and restore Carolinian Forest fragments and Carolinian riverine forests. To the east, the Algonquin to Adirondack conservation initiative is providing stewardship support for private lands and conservation reserves along the international corridor between Algonquin and Adirondack State Park in New York (information at [:www.cpaws.org](http://www.cpaws.org)). A similar larger and older international initiative in the west aims at conservation of the area between the Yukon and Yellowstone National Park.

The Oak Ridges Moraine stewardship development is an outstanding example of the potential of inter-urban forestry. It demonstrates clearly the power of urban dwellers to influence the lands between cities. It is an excellent example of the power of land patterns and land forms in connecting urban centres to their environmental support area and it makes clear the strong advantages of defining management areas according to natural land patterns. The legislated planning of the Oak Ridges Moraine is an outstanding example of new public values and political policy. The plan extends over the whole length of the landform, not just the portion giving rise to rivers flowing into the GTA as once proposed (Crombie 1992, Kanter 1990). A plan which follows the natural land pattern and cuts across parts of several municipalities is a sign of progress. This development also led to the realization that the GTA uses environmental support to the west so the Oak ridges Moraine is linked at Caledon and Orangeville to the Niagara Escarpment. And the Niagara Escarpment intersects the scattered remains of Carolinian Canada. A 'Big Picture' is building in the public and the political mind. The Oak Ridges Moraine plan has been legislated to extend across parts of several municipalities. This override of the historical patchwork of plans confined by municipal boundaries and ignoring ecological land patterns is a significant precedent for land planning in urbanized regions. This landscape-oriented plan with its provincial-federal cooperative support opens the doors for urban forest planning to move ahead.

How do these areas of the GTA environmental support region actually connect into the urban centre? The most effective connection is by people moving back and forth. (Watersheds only stop water – not us!). Atmospheric currents bring in weather and exchange GTA air, flushing urban products out into the support area for treatment. On the ground, rivers and their valleys enter GTA and flow through in urban ‘ravines’ with highly valued ecological riparian strips. Those rivers have source areas on watershed boundaries, like the Oak Ridges Moraine. Those highland source areas also give rise to rivers flowing the opposite direction and connecting to more distant parts of the GTA environmental support region. Now we are up to a scale where forests can be very effective environmental components. They can have all the components of a forest ecosystem and can maintain themselves into the future as ecologically complete forests. But don’t stop there – consider the bigger picture.

The GTA is an urban centre nested in watersheds flowing from the Oak Ridges Moraine. The current planning area includes many more rivers and the riparian ecosystems flowing from the Moraine into Lake Ontario east all the way to the Trent River. Beyond this, starting in the islands of Georgian Bay and running from Parry Sound east to the Frontenac Axis is an ecotonal zone between the Canadian Shield and the limestone plain along Lake Ontario. Peter Alley wants this zone recognized as ‘The Land Between’.

The Frontenac Axis, abutted by ‘The Land Between’, is part of the Adirondack to Algonquin, or A2A, planning proposal. Algonquin Park, one anchor of A2A, is a major highland, giving rise to several Central Ontario rivers.

All of these areas are used and valued highly by residents of urban centres throughout southern Ontario who expect them to continue to supply amenities from solitude to big game. Many urban residents spend increasing amounts of time “cottaging” in these areas among the cities and many retire there.

Environments for urbanites do not stop at city boundaries.

The main feature of this ‘Big Picture’ is connected major elements of the land’s patterns – elements characterized not by the classical features of a fibre-producing forest but instead, by the vital ecological elements of a forest. This planning picture also is characterized by the high values we are placing on these land elements as our consumer-driven ecological footprint enlarges and we come to recognize our dependence on landscape-scale and regional ecological processes. Self-maintenance of our living

conditions – even in the urban core – depends on ‘Big Picture’ variables and we must move our forest planning up to that scale.

The mandate for urban foresters has changed. In densely settled parts of the country, more than 80 percent of the people are urban residents. The environmental support for their urban life depends heavily on ecological processes outside the urban centres. In addition, much of the aesthetic and spiritual stimulation and a large fraction of their amenities come from areas outside of the cities. These current conditions and the future trajectory of urban lifestyles should provide redirection for the potential of urban foresters.

Redirect your efforts to focus on integrated, multi-scale forest planning including not only the urban centre but also the suburbs and the areas between urban centres. You would not only find challenging opportunities but you also would fill a vital need in fitting our activities associated with urbanization into a liveable landscape.

NOTES

1. Broecker showed that the excess of atmospheric oxygen due to buried carboniferous plant matter, including deep and unavailable carbon shales, is so great that we cannot influence our oxygen supply regardless of our actions.

REFERENCES

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