

## LIVING

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## Our urban forest

Most of us think of a forest as something "out there" and distinct from the city landscape. This view, however, is changing. More and more, city trees are being thought of as part of an urban forest — a



## OUR CHANGING SEASONS

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forest which has a huge effect on how well cities function and on the well-being of the people who live there. Instead of just thinking of trees as attractive landscaping, it is time to see them as an essential part of our health and welfare, especially in the face of climate change.

Consider a bird's perspective of the city. Looking down, the tree canopy covers much of what the bird sees. Islands of green leaves cover streets, buildings and parkland. However, they do not cover enough. Only about 17 per cent of the total surface area of our city is covered by the urban forest canopy. This is less than half of the target of 40 per cent suggested by the Center for Urban Forest Research in Davis, California.

Right now, Peterborough is not even keeping up with the annual tree losses. Our trees continue to take a real beating. To begin with, severe windstorms (2006) and repeated serious droughts (2005, 2007) have stressed many trees to the point of no return. Damage from air pollution, road salt and construction practices which harm the root zones are also stressing the trees. Unfortunately, replanting is not keeping up with annual losses. The city's budget for forestry has actually declined with so many other demands on municipal resources. To make matters worse, our loss of urban forest is happening at a time when more and more of our surrounding natural forests are disappearing. Witness the destruction of woodlands for the Costco and Trent Rapids Hydro projects.

There may, however, be some hope on the horizon. Last summer, the Peterborough Green-Up received three years of support funding from the Ontario Trillium Foundation to launch an urban forestry program in partnership with the City of Peterborough. Clearly, protecting and enhancing our urban forest is a community affair that must involve not only municipal government but also local neighbourhoods and homeowners. According to professor Andrew Kenney of the forestry department at the University of Toronto, the key level for engagement is in fact the neighbourhood level.

What exactly does a healthy urban forest look like? First of all, it is characterized by a diversity of tree species. When you have many different kinds of trees, the forest is much more resistant to serious damage from pests and disease than one composed of all the same species. When Dutch elm disease struck, many well-treed streets right here in Peterborough lost all of their tree cover because only American elms had been planted.

It is also important that a variety of properly selected native species be included. Not only do



Part of the urban forest coming into leaf along Maple Crescent this week.

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they help support a diverse ecosystem, but they also help to reinforce our sense of local identity. This does pose a challenge, however, since many native species such as sugar maple are not tolerant of city stresses. However, a number of native tree cultivars — cultivated varieties of trees produced by horticultural techniques — have proven to be quite urban-hardy and are thriving in Peterborough. These include white ash autumn purple, basswood Redmond and Freeman maple. The latter is a cross between our native red and silver maples, turning a beautiful red in the fall.

Other elements of a healthy woodland include full crowns with minimal dieback, adequate room for root development and a diversity of tree ages. Above all, however, a thriving urban forest must also have an active community, committed to the care and protection of the trees — not just planting them and then simply hoping for the best.

Urban trees play numerous roles that improve our quality of life. Most importantly, the benefits accrue to the community as a whole and not just to the people who own the trees. In addition, the benefits increase exponentially with the size of the tree. Simply put, we need big trees in the urban environment. We not only need to plant trees with the genetic potential to become large, but, even more importantly, we must protect those large trees we already have.

One of the most important functions of trees is to improve air qual-

ity. By absorbing noxious particulate matter, tree leaves act like sponges and therefore help to alleviate smog. The larger the leaf area we have, the more pollutants are removed. Air quality is a major concern in Peterborough, since prevailing winds regularly bring us polluted air from Toronto and southwestern Ontario and lead to many smog alerts.

When properly located around a building, trees can also reduce our energy needs. For example, deciduous trees on the south side let the sun shine through in winter but provide summer shade, which can lower air-conditioning costs. In fact, trees not only shade streets, sidewalks and buildings, but they actually cool the air itself, sometimes by as much as 5 C. This is accomplished by transpiring vast amounts of water through their leaves.

Trees also reduce UV radiation. With skin cancer being a major health problem, we need to reduce our overall exposure to sunlight. This is especially true for children playing on unshaded schoolyards. Providing shade should therefore be an essential element in the planning of our cities. Once again, bigger trees produce more shade and more cooling.

It is also well known that trees improve property value. Human beings simply prefer to live, relax and even shop in a treed environment. Surveys have shown that people believe that the presence of trees in the city contributes to overall well-being, both physical and

psychological. Residential properties in neighbourhoods with mature trees can be as much as 25 per cent higher than non-treed neighbourhoods. Many examples in Peterborough back this up. One has only to consider the popularity of the old west end and many parts of East City, both of which have large numbers of mature trees.

By pulling carbon out of the air and storing it in their leaves and wood, trees help to combat climate change. They also play a role in preventing floods by reducing storm water runoff as they intercept and slow rainfall. Clusters of trees are also an effective buffer of noise.

It is also important to emphasize the role of city trees as wildlife habitat. For 80 per cent of Canadians, the urban forest is the primary link and exposure to wildlife. We would never have enjoyed the barred owls, bohemian waxwings, pine grosbeaks and pileated woodpeckers of this past winter if it wasn't for our urban trees. I am always amazed by the huge diversity of birds that I see during migration in my own section of urban forest along Maple Crescent. Over the years, nearly two dozen species of warbler have turned up here at one point or another. Resident birds, too, thrive in this pocket of urban greenspace.

However, it's not an easy task being a tree in the city these days. Urban conditions make it difficult for trees to survive, let alone thrive. Possibly the biggest stressor is simply a lack of water. In

the city environment, much of the rainfall lands on pavement and ends up in storm sewers instead of making its way to the thirsty deep roots. Trees therefore require deep watering throughout their root zone, especially during periods of drought. Related to this is the problem of not having enough space for the root zone to begin with. Obstacles such as pipes and building foundations sometimes leave precious little space for tree roots.

Urban soil, too, presents a challenge. Not only is it often compacted but there is often very little nutrient-rich topsoil. It is therefore important to gradually build the topsoil by adding compost and by mulching fallen leaves with your lawnmower instead of bagging them. This will help feed the trees naturally and attract earthworms to assist in aerating the soil.

Other problems can include imported pests such as emerald ash borer and Asian long horned beetle as well as diseases like Dutch elm disease. The best line of defense here is simply planting a diversity of different species.

Hopefully, having read this far, you'll want to know how you can help the urban forest. Since most city trees are on private property, a large part of the responsibility rests on private individuals and community groups such as neighbourhood and ratepayer associations. The first priority is taking care of your existing trees to allow them to thrive. Good maintenance practices include top-dressing the root zone with leaf compost every year, watering deeply during periods of drought, mulching fallen leaves with a mower in autumn, properly pruning damaged branches and protecting the trunk and root zone from damage.

Consider hiring the services of a local arborist. They can identify future potential problems, even in young trees. Some judicious pruning, for example, can greatly extend the life of the tree and reduce the chance of future damage.

Young trees need special attention. During dry periods, they should be watered once a week. They will also grow almost twice as quickly if their root zones are mulched with woodchips instead of allowing grass to grow around the trunk. Finally, look for good tree locations in your yard and neighbourhood and plant species that will add to the diversity of your neighbourhood forest. If you can involve your neighbours in this same endeavor, all the better.

See Peterborough Green-Up's fact sheet, *Planting and Caring for Trees*, for more detail.

There are also other ways to become involved. Helping with neighbourhood tree inventories which will begin this summer, taking part in planting and maintenance programs and attending training workshops are other ways you can get involved. For more information, call Peterborough Green-Up at 745-3238.

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