

SPARLING BUSH: MANAGEMENT RECOMMENDATIONS FOR THE TOWN OF ST. MARYS



**UPPER THAMES RIVER CONSERVATION AUTHORITY
JULY 2015**

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CONSERVATION AUTHORITY**

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INTRODUCTION

In 2014, the Upper Thames River Conservation Authority (UTRCA) was approached by the Town of St. Marys to review and make recommendations on how best to manage Sparling Bush. This request came as a result of a resident who was new to the neighbourhood and was concerned about the woodlot's overall health and management.

In preparing this report, the UTRCA undertook a detailed vegetation study which included both trees and herbaceous plants (Appendix 1). The UTRCA also reviewed a report entitled, "Sparling Woodlot Assessment," prepared by Warren Moore in October 2001 (Appendix 2). The Rotary Club of St. Marys commissioned the W. Moore report in an effort to guide the Town in its management of the woodlot. Although 14 years old, much of the W. Moore report and many of its recommendations are still applicable today. This UTRCA report in many ways will re-emphasize recommendations that were made in 2001.

SPARLING BUSH OVERVIEW

This 2.4 hectare mature sugar maple woodlot is still relatively healthy but is showing signs of pressure from the surrounding development. Encroachment and the spread of non-native invasive species are probably two of the main threats. The relatively good health indicates that the woodlot was well managed historically. The density, age and health of the trees indicate that it was never over harvested. Improvement cutting of diseased and damaged trees for firewood was probably the extent of harvesting.

The current basal area of the woodlot, 28.4 m²/ha, is greater than the recommended 20 m²/ha for optimizing timber growth. Basal area is the surface area of wood growing at breast height (1.3 m) on a given hectare of land. In this case, the higher basal area is probably protecting this woodlot from the spread of non-native invasive species into the interior. For this relatively small woodlot, the interior is almost void of non-native invasive plants, due to the closed canopy and lack of light reaching the forest floor. The closed canopy has also resulted in a very even age stand of sugar maple with very little regeneration of saplings and seedlings, resulting in a park-like woodlot.

RECOMMENDATIONS

Following are management recommendations to improve the integrity and health of Sparling Bush.

COMMUNITY INVOLVEMENT

Foremost, we believe that community involvement through a dedicated group of interested volunteers would be of great benefit. A committee, such as a "Friends of Sparling Bush," could help in plan and implement projects to enhance the woodlot. The committee might include representation from the Town of St. Marys, the Rotary Club of St. Marys, adjacent landowners

and the UTRCA. Herb Sparling, former landowner and Rotarian, bequeathed the woodlot through the Rotary Club to the Town of St. Marys. Rotary is very dedicated to being a major partner in the enhancement of Sparling Bush.

Community involvement is critical in maintaining community support and will help in policing permitted uses. This entire review process was started by a concerned individual with interest and appreciation for Sparling Bush. Such community interest needs to be nurtured and supported.

ENCROACHMENT

The Town of St. Marys needs to re-establish the property boundaries between Sparling Bush and the adjacent residential properties. Over the years, a number of these properties have encroached upon the woods by cutting vegetation, expanding lawns, planting ornamentals and building structures. This type of encroachment makes a small fragile woodlot even smaller.

The other type of encroachment that is occurring is the dumping of unwanted yard waste (such as grass clippings and leaves) and even construction materials. This type of illegal dumping needs to be stopped. Yard waste reduces the potential for natural regeneration and increases the potential to introduce seeds of non-native vegetation. These materials can be disposed of through the Town's yard waste program.

To stop these types of encroachment there needs to be both an educational and regulatory component. In many cases, we believe that home owners, who really appreciate living near the woods, just do not understand how their actions can negatively impact the woods over the long term. In 1996, UTRCA and the City of London produced a brochure entitled, "Living With Natural Areas - A Guide for Citizens of London" (Appendix 3). In 1998, UTRCA and the City of Woodstock produced a flyer entitled, "Protecting Natural Areas in the City of Woodstock" (Appendix 4). These are examples of educational materials that outline how our actions can impact natural areas. A guide similar to these could be created for Sparling Bush or for St. Marys in general.

NON-NATIVE INVASIVE SPECIES

Our vegetation inventory indicated that Sparling Bush is comprised of 69 species in total, 44 of which are native and 24 non-native. All 24 non-native species are located in the edge community; only seven of them are also located in the interior community. This indicates that the interior is still relatively healthy and that the spread of non-natives is coming in from the edge.

Encroachment as described above is one of the leading causes.

To reduce the spread of non-native plants an educational and control program could be implemented. The UTRCA has produced an educational brochure entitled, "Recommended Native Trees, Shrubs & Vines - for Naturalization Projects in the Upper Thames River Watershed" (Appendix 5). This information could be shared with neighbouring homeowners or presented through a workshop conducted by UTRCA.

A control program might target some of the more aggressive non-natives such as common buckthorn, garlic mustard, Norway maple and common periwinkle. The program would consist

of volunteer community members manually pulling the plants, under the supervision of the UTRCA and the Town of St. Marys. A monitoring and control program would be required annually to try to maintain control of some of the more aggressive non-natives. Once control on these species is achieved, then some of the other non-natives could be targeted.

COMMUNITY NATURALIZATION

Once the encroachment and non-native invasive species issues have been addressed there will be an opportunity to re-plant some of the cleared area with native trees and shrubs. Planting of these areas will help to re-establish the perimeter of the woodlot. A planting day could be organized by UTRCA with planting assistance provided by school groups and/or community members.

WALKING TRAILS AND SIGNAGE

Currently, there are more walking trails than necessary in Sparling Bush. Many of these trails are coming from unauthorized entry points on private land. Excessive trails compact soil, prevent natural regeneration and promote the spread of non-native invasive plants.

The main trail is part of the Town's "LOOP" trail system with signed entry and exit points from the cemetery. There is also an entrance from Waterloo Street South that connects to the main trail. Most of the main trail is presently mulched with woodchips. It is recommended that the entire main trail be maintained with woodchips to indicate permitted use. All other trails could be closed by blocking with downed woody debris and planting with native trees and shrubs. To reduce public liability, an annual inspection of hazard trees adjacent to the walking trail should be made. Any trees within falling distance of the trail that are deemed to be a potential hazard should be felled by the Town. Material cut can be bucked up and left on the forest floor to decompose, adding organic matter to the forest.

Once some of the above issues have been addressed, the sign at the Waterloo Street South entrance can be updated. The new sign can indicate partners, permitted uses and walking trail location.

BUDGET

A budget should be developed for implementing the recommendations in this report. The UTRCA would be able to assist the Town of St. Marys in developing this budget. The UTRCA would also work with the Town and other partners in pursuing potential grants from external funding sources to cover these costs.

APPENDIX 1: 2015 Vegetation Inventory

Community 1 - Perimeter of the woodlot (see attached map)

Native/Non-Native	Weediness	Common Name	Scientific Name
Non-Native	-3	Norway Maple	<i>Acer platanoides</i>
Non-Native	-1	Horse-chestnut	<i>Aesculus hippocastanum</i>
Non-Native	-3	Garlic Mustard	<i>Alliaria petiolata</i>
Non-Native	-3	Smooth Brome	<i>Bromus inermis</i>
Non-Native	-2	Lily-of-the-valley	<i>Convallaria majalis</i>
Non-Native	-3	European Swallow-wort	<i>Cynanchum rossicum</i>
Non-Native	-1	Sweet Woodruff	<i>Galium odoratum</i>
Non-Native	-2	Herb Robert	<i>Geranium robertianum</i>
Non-Native	-2	English Ivy	<i>Hedera helix</i>
Non-Native	-3	Orange Day Lily	<i>Hemerocallis fulva</i>
Non-Native	-2	Purple Dead-nettle	<i>Lamium purpureum</i>
Non-Native	-2	Motherwort	<i>Leonurus cardiaca</i>
Non-Native	-2	Privet	<i>Ligustrum vulgare</i>
Non-Native	-3	Tartarian Honeysuckle	<i>Lonicera tatarica</i>
Non-Native	-1	Apple	<i>Malus pumila</i>
Non-Native	-2	Lemon Balm	<i>Melissa officinalis</i>
Non-Native	-2	Sweet Cherry	<i>Prunus avium</i>
Non-Native	-3	Common Buckthorn	<i>Rhamnus cathartica</i>
Non-Native	-2	Curly Dock	<i>Rumex crispus</i>
Non-Native	-1	Stonecrop	<i>Sedum sp.</i>
Non-Native	-2	Climbing Nightshade	<i>Solanum dulcamara</i>
Non-Native	-2	European Mountain-ash	<i>Sorbus aucuparia</i>
Non-Native	-1	Common Comfrey	<i>Symphytum officinale</i>
Non-Native	-2	Common Lilac	<i>Syringa vulgaris</i>
Non-Native	-2	Common Periwinkle	<i>Vinca minor</i>
Native		Manitoba Maple	<i>Acer negundo</i>
Native		Black Maple	<i>Acer saccharum</i>
Native		Sugar Maple	<i>Acer saccharum</i>
Native		Red Baneberry	<i>Actaea rubra</i>
Native		Jack-in-the-pulpit	<i>Arisaema triphyllum</i>
Native		Calico Aster	<i>Aster lateriflorus</i>
Native		Blue Cohosh	<i>Caulophyllum thalictroides</i>
Native		Enchanter's-nightshade	<i>Circaea lutetiana</i>
Native		Alternate-leaved Dogwood	<i>Cornus alternifolia</i>

Native/Non-Native	Weediness	Common Name	Scientific Name
Native		Grey Dogwood	<i>Cornus foemina</i>
Native		Red-osier Dogwood	<i>Cornus stolonifera</i>
Native		Daisy Fleabane	<i>Erigeron annuus</i>
Native		American Beech	<i>Fagus grandifolia</i>
Native		White Ash	<i>Fraxinus americana</i>
Native		Red/Green Ash	<i>Fraxinus pennsylvanica</i>
Native		White Avens	<i>Geum canadense</i>
Native		Canada Waterleaf	<i>Hydrophyllum canadense</i>
Native		Virginia Waterleaf	<i>Hydrophyllum virginianum</i>
Native		Black Walnut	<i>Juglans nigra</i>
Native		False Solomon's-seal	<i>Maianthemum racemosum</i>
Native		American Ostrich Fern	<i>Matteuccia struthiopteris</i>
Native		Virginia Creeper	<i>Parthenocissus inserta</i>
Native		Clearweed	<i>Pilea pumila</i>
Native		Solomon's-seal	<i>Polygonatum biflorum</i>
Native		Wild Black Cherry	<i>Prunus serotina</i>
Native		Choke Cherry	<i>Prunus virginiana</i>
Native		Bur Oak	<i>Quercus macrocarpa</i>
Native		Red Oak	<i>Quercus rubra</i>
Native		Staghorn Sumac	<i>Rhus typhina</i>
Native		Wild Black Currant	<i>Ribes americanum</i>
Native		Wild Red Raspberry	<i>Rubus idaeus</i>
Native		Black Raspberry	<i>Rubus occidentalis</i>
Native		Bloodroot	<i>Sanguinaria canadensis</i>
Native		Canada Goldenrod	<i>Solidago canadensis</i>
Native		Early Meadow-rue	<i>Thalictrum dioicum</i>
Native		White Cedar	<i>Thuja occidentalis</i>
Native		Basswood	<i>Tilia americana</i>
Native		Horse-gentian	<i>Triosteum aurantiacum</i>
Native		Eastern Hemlock	<i>Tsuga canadensis</i>
Native		Highbush-cranberry	<i>Viburnum trilobum</i>
Native		Riverbank Grape	<i>Vitis riparia</i>

Weediness Score

A negative score means the plant is non-native. A score of -1 to -3 indicates degree of invasiveness. A -3 score is the most invasive.

Community 2 - Interior of the woodlot (see attached map).

Native/Non-Native	Weediness	Common Name	Scientific Name
Non-Native	-3	Norway Maple	<i>Acer platanoides</i>
Non-Native	-3	Garlic Mustard	<i>Alliaria petiolata</i>
Non-Native	-1	Sweet Woodruff	<i>Galium odoratum</i>
Non-Native	-2	Privet	<i>Ligustrum vulgare</i>
Non-Native	-3	Common Buckthorn	<i>Rhamnus cathartica</i>
Non-Native	-2	Climbing Nightshade	<i>Solanum dulcamara</i>
Non-Native	-2	European Mountain-ash	<i>Sorbus aucuparia</i>
Native		Black Maple	<i>Acer saccharum</i>
Native		Sugar Maple	<i>Acer saccharum</i>
Native		Blue Cohosh	<i>Caulophyllum thalictroides</i>
Native		Redbud	<i>Cercis canadensis</i>
Native		Enchanter's-nightshade	<i>Circaea lutetiana</i>
Native		Alternate-leaved Dogwood	<i>Cornus alternifolia</i>
Native		Grey Dogwood	<i>Cornus foemina</i>
Native		American Beech	<i>Fagus grandifolia</i>
Native		White Ash	<i>Fraxinus americana</i>
Native		Red/Green Ash	<i>Fraxinus pennsylvanica</i>
Native		Yellow Avens	<i>Geum aleppicum</i>
Native		White Avens	<i>Geum canadense</i>
Native		Canada Waterleaf	<i>Hydrophyllum canadense</i>
Native		Virginia Waterleaf	<i>Hydrophyllum virginianum</i>
Native		Black Walnut	<i>Juglans nigra</i>
Native		False Solomon's-seal	<i>Maianthemum racemosum</i>
Native		Hop-hornbeam	<i>Ostrya virginiana</i>
Native		Wild Black Cherry	<i>Prunus serotina</i>
Native		Choke Cherry	<i>Prunus virginiana</i>
Native		Wild Black Currant	<i>Ribes americanum</i>
Native		Black Raspberry	<i>Rubus occidentalis</i>
Native		Early Meadow-rue	<i>Thalictrum dioicum</i>
Native		Basswood	<i>Tilia americana</i>
Native		Highbush-cranberry	<i>Viburnum trilobum</i>



ROGERS AVE

WATERLOO ST S

SPARLING CRES

COM2

COM1

Sparling Woods

Assessment Parcel



20 10 0 20 Meters



Source: Data & 2018 Ortho Imagery used under license with Ontario Ministry of Natural Resources. Copyright (c) 2018 GeoEye/Black Sky/GeoEye. Copyright (c) 2018 USNCA

APPENDIX 2: SPARLING WOODLOT ASSESSMENT, 2001

Sparling Woodlot Assessment

St Marys, Ontario

Woodlot Appraisal, October 2001

The Sparling woodlot is a typical woodlot found amongst our fragmented forests in Huron/Perth Counties. This woodlot is somewhat unique due to large diameter species found here. The six acre woodlot is an Upland Hardwood forest composed of mainly Hard maple with other species such as Beech, Basswood, Black cherry, and Black walnut. The walnut found in the woodlot is a species found naturally in the Carolinian area. St. Marys is basically on the northern fringe of the Carolinian Zone. The woodlot is in excellent health and the majority of stock is growing quite well. The overall diameter of the stand is 11 inches at DBH (diameter at breast height). This average diameter is quite large as a lot of the trees are mature, with an average age of 40 to 50 years old.

There are scattered larger trees through out the stand that are not common of the stock found in our area. Heavy logging pressure due to high prices have impacted many of our local woodlots leaving smaller residuals. Some of the larger stock of note are the large Black cherry and Walnut found in this woodlot. The one cherry is 28 inches in diameter, which is quite large for this species. There are scattered walnut of size as well found in the woodlot. One notices the lack of vegetation on the floor. The reason for this is the woodlot is overstocked, in that there is not sufficient sun reaching the forest floor for seedling germination.

The woodlot has some interesting wildlife values.

Being on the edge of town one would feel that the woodlot would lack wildlife values. Entering the woodlot there are at least two stick nests, home to various hawks/owls. There are various cavity trees that provide home for squirrels, owls and possibly pileated woodpeckers. The woodlot is also home to an abundance of mast trees which provide food for many species of birds and small mammals.



This is a picture pointing south from the main entrance of the woodlot. Notice the little regeneration showing. Trees are quite straight and free of defects. The woodlot has been managed in the past where defective diseased trees, were removed leaving a good base of healthy trees. There are many wildlife values seen in this woodlot.

Invasive Species

There are invasive species that have entered the woodlot. The under story is literally scattered with Garlic Mustard which takes up room of native species. The Garlic Mustard has probably been distributed through out the stand by neighbouring landowners who have dumped unwanted vegetation and plants along the perimeter of the woodlot, or distributed by animals and hikers. Dog Strangling vine has taken over as well in sections of the woodlot. Along the western edge a patch of this invasive species has literally taken over a section of the woodlot allowing no other species to grow. This species was most likely started by dumping of unwanted vegetation along the edge of the woodlot.

Glossy Buckthorn has invaded the edges as well. This is another invasive species that will dominate the stand and eventually take over the natives if left unwatched. This shrub is found everywhere. In a small woodlot this species could be controlled to make way for more suitable species.

I also came across Privet which was growing in the woodlot. Privet is an ornamental shrub planted mainly as a hedge, which most likely escaped from neighbours properties.

There is evidence that unwanted vegetation, branches, plants, grass clippings have been dumped along the edges of the woodlot which has and will cause major impacts on the integrity of the woodlot. Not only is the debris an eyesore but can cause unwanted smells as it rots, and can attract unwanted rodent activity to the surrounding area. Definitely some of the invasive species found in the woodlot are the result of dumping of unwanted vegetation along the edge of the woodlot. Eventually the unwanted species will grow and produce seed along the edge which will then be distributed back to the neighbours flower beds if not dealt with in a proper fashion.

A problem that contributes to the spread of these species is landowners being aware of non native plants that are cultivated and pose a threat. Periwinkle is a common ground cover that is planted for its colourful flower and capability of growing in shaded spots. However this plant will take over a wooded setting destroying any chance of natives to seed and grow. Norway maple is also planted all the time and thrives in town setting. Again this plant will seed in prolifically and take over where tolerant hardwoods should live.

There are guidelines and recommendations available to deal with these invasive species. One common method is to manually pull the plant out by hand and dispose of the plant before seeding takes place. There are other various other means to deal with this problem. Since the woodlot is not overly big and the invasives are mainly found along the edges, I would suggest that possibly a community day be devoted to try to eliminate the unwanted species.

Encroachment;

This is a serious problem with the Sparling woodlot. Encroachment to the west and north is quite

evident where grass is mowed into the woodlot, sheds have been constructed on public land and garbage litters the perimeter. Not only are these acts an eye sore but have eliminated the proper naturalization of the woodlot. Activities such as this eventually impacts the woodlot to a point where the woodlot turns into a dumping ground. Those in favour of retaining this woodlot and it's values are not helping the cause by destroying the edges with these practices.

Surrounding Land Uses

This 6 acre woodlot is found in the eastern portion of St Marys. To the south east the woodlot links with a forested area (40 to 50 acres) which follows along Flat creek. The forested area which provides a good buffer to this area is a natural link for wildlife travel. This forested area provides excellent habitat for various wildlife species that frequent the Sparling woodlot. Squirrels, rabbits, grouse, red tailed hawks are common in this area and frequent the woodlot all times of the year. The existing wildlife that frequent the woodlot should be an interest to those that use the trails in the woodlot.

The Sparling woodlot can be defined as being part of an Urban Forest. An Urban Forest is a natural woodland or woods within the zone of influence of urbanization. There are many values that this woodlot contributes to St. Marys and surrounding areas of which some of I have discussed already. In this 6acre woodlot there are over a 1000 trees. These trees improve the air quality within this area. Since many of the trees, are quite large the amount of leaf surface is substantial in helping to improve air quality within the area. Water quality in the vicinity is improved especially water that drains into the nearby stream. The woodlot serves as an insulating mechanism, not only the surrounding neighbours but to residents in the surrounding blocks. Trees this tall provide wind protection for a large area of the eastern portion of town. Neighbours will surely tell you of the cooling effect in the summer and the warmth and protection the woodlot serves in the winter. This small woodlot is also aesthetically pleasing. Since the woodlot is composed of a variety of trees, one sees a pleasing array of leaf structure, shapes and sizes that add to the beauty of the area. It is a proven fact that residential value increases with an existing woodlot near by. The woodlot provides a natural buffer zone that breaks up overcrowding of houses, making a much more enjoyable living. The woodlot being somewhat isolated, provides tranquillity and peacefulness from the normal hustle and bustle of everyday living.

Agricultural areas are found further to the south of the Sparling woodlet. This woodlot serves as an excellent natural buffer to all activities that take place south of this woodlot. The various crops found in nearby fields provide a food source for a variety of wildlife in Perth county. Deer frequent the area and could frequent this woodlet at times of the year.

Development is a part of the area as houses border the north and west of the woodlet. Further development to the south is ongoing which may disrupt a much needed link to the west for

wildlife use. Perth County overall has a forest base of less than 10%, showing the importance of any green space in this fragmented area. Very few natural buffers remain on borders of towns. Not only is the woodlot buffers the view, sound is buffered as well from surrounding activities found to the south and to neighbours near the woodlot.

Potential Considerations for the Woodlot

Education:

The woodlot can be used a tool for many educational routes. I have broken down the education into the various categories below;

Wildlife values;

The woodlot is home to various wildlife and evidence is shown of this. Examples of stick nests, squirrel nests, cavity trees, mast trees are already part of this woodlot and can be enhanced.

Monitoring and identification of these wildlife homes, would be interesting and educational to various school groups.

Various bird boxes, bat houses could be constructed as school projects with follow up monitoring. Bird boxes could be part of a Community plan that could be constructed via Scout groups, School groups all part of a potential CFWIP that is explained in more detail under Naturalization Project.

Dendrology;

There are a good variety of native tree species on site that can be shown with their unique characteristics. Certain trees could be numbered (numbers not on the tree, beside) for future use by students, public as well. Silvics of the common tolerant hardwood group could be emphasized and highlighted in this woodlot.

Naturalization project;

I would suggest that areas where neighbours have cut the grass, dumped or encroached be dealt with by re-establishing native species that will blend with the woodlot setting. There are various species that could be planted so that the entire woodlot would be protected and eventually native species would start to seed in naturally. There is a program delivered by the MNR to provide financial assistance to plant native stock in areas such as the Sparling woodlot. The Community Fisheries, Wildlife Improvement Project is a plan that involves a community project such as this, to enhance wildlife values by planting native trees and shrubs. A planting day/education day could be arranged where various school groups, and neighbours could be involved in the rehabilitation of the woodlot..

Dumping of Unwanted Vegetation;

The dumping of all material in the woodlot must be stopped. This dumping will lead to the eventual change of the makeup of the stand leaving unwanted species to prevail. Already fringe areas are being over run by non native species that will eventually invade

the perimeter of the woodlot.

Those that want to see the woodlot grow and exist, must protect it by taking grass, brush and garden material to a composter or to the appropriate disposable site. If this is not done the woodlot will eventually lose its value in the landscape making development an easier choice.

Encroachment;

The town boundary must be identified. I suggest that those neighbours who care for the woodlot, show they care by removing all that is on town property. Once this is done a plan for naturalization can be done, possibly as a community program where the neighbours can contribute in the plan process together for the direction of the woodlot.

Tree Harvesting

As shown by the following tables the woodlot has high commercial value. There are some very valuable trees that could eventually be harvested using a harvesting system that would better the woodlot and increase value of the woodlot not only economically but for wildlife concerns as well. The Selection system, a harvesting system could be implemented to this stand targeting poor defective trees while promoting the thrifty yet providing the right crown closure to establish wanted regeneration. I would suggest that the Unacceptable Growing Stock, as shown in the table be considered to be removed from the woodlot to better the woodlot, and eliminate potential threats to the public. Again trees listed in this table have no wildlife values as wildlife enhancement is part of this system.

The woodlot, mainly in the northern section is overstocked in terms of proper growing conditions. The woodlot shows a Basal Area of 32m²/ha in the north and 26m²/ha in the southern portion of the woodlot. A managed forest (for proper timber production) should be in the range of around 20m²/ha.

This does not suggest that the woodlot should be thinned to the optimum basal area however a light thinning would improve growing conditions to advance growth and yield of the residual stems, taking in account wildlife values. The lack of regeneration on the forest floor is an indication that the stand is indeed overstocked so that adequate sunlight does not reach the floor for future seeds to germinate.

One must realize that if the stand is thinned there will be an advanced growth of regeneration thus impeding view in the forest. This may be a deterrent from the overall objectives of the woodlot.

There was one example of a large branch that had broken off of a larger maple. An opening in the canopy had resulted and in the immediate area advanced growth of ash, cherry were seen where sunlight had entered the stand. I would suggest that if the trees listed in the Unacceptable Growing Stock table be removed, a good balance within the woodlot would exist.

Commercial Timber/Acceptable Growing Stock

Tree Species	Number of Trees	Volume (board feet)	Ave. Volume	Price/board foot	Total Price of Timber
Hard maple (high quality timber)	18	4081	227	\$1.40	\$5,713.00
Hard maple (average quality)	45	13154	292	\$1.00	\$13,154.00
Black cherry	13	2794	215	\$1.20	\$3,353.00
Black walnut	3	718	239	\$1.00	\$718.00
Basswood	4	1111	278	\$0.30	\$333.00
Beech	2	725	363	\$0.20	\$145.00
Soft maple	1	338	338	\$0.27	\$91.00
Totals	86	22921			\$23,507.00

This assessment is an estimate of the commercial timber value of all trees of legal size as determined by the Perth County By-Law. It is only a value of the larger trees, in most cases all timber over 15 inches, taken at breast height. To cut all of the trees that have been listed in this table would not be good forestry practices. The large openings left by this kind of a harvest would change the make up of the stand allowing intolerant species and invasive species to take over eliminating proper shade conditions for tolerant species such as Hard maple, Beech and intermediates such as White ash to continue. An estimated value of \$23,000 is shown for this timber. Most of the timber is above average in quality, with excellent health.



Here is a picture showing Acceptable growing stock that is included in the above table. This Acceptable growing stock is good to above average stock that show good growth and free of any

major defect. Most of these trees should be left for at least the next cutting cycle if treated as managed commercial timber. Leaving this kind of stock will better all values within the woodlot.

Unacceptable Growing Stock

Tree Species	Number of Trees	Volume board feet	Ave. Volume	Price/board feet	Total Price
Hard maple	4	857	214	\$0.80	\$686.00
Black cherry	2	200	100	\$1.00	\$200.00
Black walnut	1	36	36	\$0.80	\$29.00
Beech	1	92	92	\$0.20	\$18.00
Hard maple	3	0	0	\$0.00	\$0.00
Black walnut	1	0	0	\$0.00	\$0.00
Basswood	2	0	0	\$0.00	\$0.00
Totals	14	1185			\$933.00



This table includes trees of high risk and that are of no value in the stand. They are trees that have very little value commercial wise and could pose a risk to walkers, hikers using the trails. An estimated value of the 14 trees listed in the high risk table is close to \$1000.00. Again these are trees of poor quality with decreasing value. They are trees that I would advise be taken out of the woodlot as they have very little value to any of the aspects of the woodlot.

Here is an example of a tree that has been listed in the Unacceptable Growing Stock table. Stock in this table are in decline, damaged or diseased to a point that they are not of value to retain in the stand for future growth. The stock is also a risk to those that use the trails as well.

Removing this type of tree would benefit the woodlot in all cases.

Trail, Entrance Signs

I would suggest a more visible sign be placed at the entrance, showing the trail systems and links with other trails once everything is in place. It might be an idea to put up a few signs in the woodlot identifying the trail network.

Possibly pamphlets could be available explaining different points of interest in the woodlot, and along points along a trail outside of this woodlot, if trails did link.

Trails;

The trails are quite heavily used in the Sparling woodlot. It might be an idea to have fewer trails go through the woodlot, as compaction of the underscore could be a problem. As discussed there is very little regeneration as a result of the closed canopy.. The trails should be identified a little clearer within the woodlot. At one time a group had placed wood chips down on the base which was a good idea. I would suggest that this be done again if time permits. I know that if Perth County has a Stewardship Ranger Crew, I am sure they would spend time next summer with this kind of direction. Bruce had also mentioned that a trail system was already in place along the old Railway. This woodlot would be an excellent starting point linking a natural trail setting back to the existing Rail Trail. Aspects of this project could be assisted by the Stewardship Ranger crew, if in place.

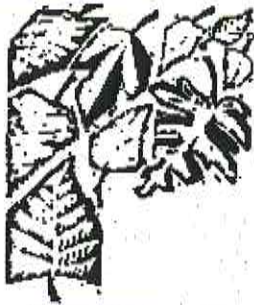
The day I did my evaluation, I came across many that were using the trail to enjoy the woodlot.

Old Growth Forest;

Old growth forests are those that are relatively old and relatively undisturbed. Old means the forest species are beyond their average age as seen by some of the maple, beech and cherry found here.

This small forest could have a direction towards old growth as there are quite a few old trees found here. However since there is quite a bit of traffic along the trails some of the trees would still have to be removed to protect the public. This alters the direction very little as only the risk trees would be removed. One thing that an old growth direction will do is leave the woodlot in virtually a park like setting as regeneration will not be in great abundance. I think a balance of old growth ideas and a light select harvesting technique, might be the best option for this woodlot.

APPENDIX 3: LIVING WITH NATURAL AREAS: A GUIDE FOR HOMEOWNERS

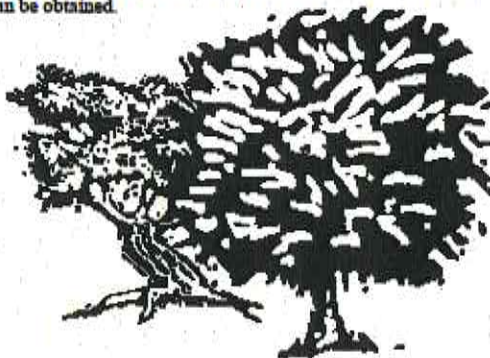


Living With Natural Areas

a guide for homeowners

Is this information for me?

Natural areas are valuable features of our communities' parks and open spaces. Many citizens, however, may not be aware of these local treasures and the need to protect them. What can you do - whether as a property owner or as someone out to enjoy the scenery and get some exercise - to minimize your impact on natural areas? This brochure answers that question. First, it provides guidelines for those of us who live near natural areas, outlining ways to make the spillover impact from our properties more positive. Next, a "code of behaviour" describes what activities are appropriate in a natural area. The last section lists sources where more information can be obtained.



What is a natural area?

Natural areas include wetlands, meadows, woodlots, valley lands and other relatively undisturbed lands that are home to many different plants and wildlife. Natural areas also include the green spaces and stormwater management ponds found in many new developments.

Some natural areas contain rare plants, wildlife or landforms, or have features characteristic of the region before European settlement, or are especially large or diverse in habitat. Many natural areas are considered environmentally significant on a local, regional, provincial or even national scale.

Many municipalities are working to preserve local natural areas. Settlement and development have destroyed much natural vegetation and caused some types of habitat to disappear completely. Often, natural areas contain the only remaining large sections of forest or wetland. They help us to learn about nature, provide clues to the current health of our environment, and add to our quality of life.

Around your home - having a positive impact

The properties that surround natural areas were once part of a wild landscape. Some yards still have remnants of particular habitat types, such as wet areas along the edge of a wetland. As development moves closer to natural areas, trees and other plants that were once in the middle of woodlands or wetlands, shielded by forests, are now exposed.

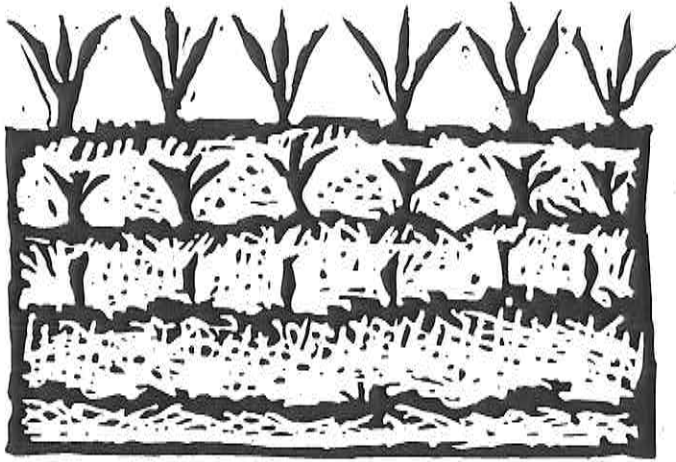
Because urban development sits on the doorstep of many natural areas, what is done in neighbouring yards is critical to their health. Here are some ideas to help home owners to ensure that their activities can help neighbouring natural areas and enhance their yards at the same time.



What about encroachment into natural areas?

Thanks to people who recognize their property limits! If a lawn is mowed past property boundaries into a natural area, the rich habitat is replaced by a manicured lawn and the original diversity is reduced. The cumulative impact of dozens, even hundreds of landowners cutting into the edges of natural areas threatens their integrity.

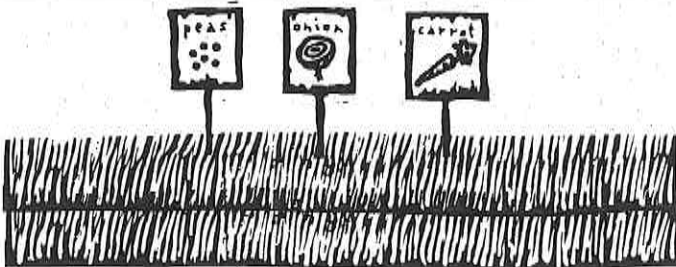
Encroaching past private lot lines into municipal parkland or open space is not permitted and may result in legal proceedings. Call your municipality for more information.



Can I dump my yard & garden waste in a natural area?

Dumped yard waste is bad news for any natural area. Dumped material smothers natural vegetation, may contain harmful chemicals, and often has plant seeds not found normally in the wild. If these materials are dumped in a natural area, the introduced seeds may grow where they fall. Native plants and the wildlife that depends on are constantly under threat from invading non-native plants.

Your local municipality has by-laws concerning dumping waste. For more serious offences, charges can be laid under the Provincial Offences Act, with fines of up to \$5000. Call your municipality if you have concerns about waste being dumped illegally.



What should I do with yard & garden waste?

The best solution is to reduce and recycle as much as possible, by composting leaves, grass clippings, weeds and other materials on your own property. You reduce the amount of garbage going to landfills and create rich soil for your lawn and garden. If you can't use all your grass clippings, leaves and brush, ask your neighbours if they need more material for their home composters. Alternatively, put your yard waste out for curbside collection, or drop it off at London's Yard Waste Depots.

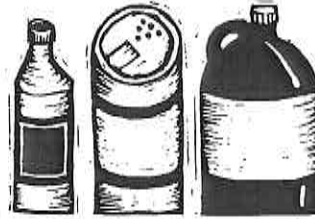
If you employ a professional gardener, check that proper disposal practices are followed. Reputable commercial gardeners are well aware of the City's yard waste regulations.

If you are having home composting problems, such as visits from unwanted wildlife, call the Rot Line (operated by the Thames Region Ecological Association, or TREA) at 519-672-5991 for free advice.



Is it okay to use lawn and garden chemicals?

Remember that, just as water landing on your property doesn't always stay there, neither may all the chemicals that you put on your lawn, garden or driveway. If your property drains into a natural area, any chemical that you use can be carried by water into that area. By adopting an environmentally friendly approach to yard maintenance, you will enhance both your yard and the natural area beyond.



Here are some tips to follow:

- Add compost to your lawn to fertilize it.
- Use a mulching lawnmower to return nutrients to your lawn.
- Cut your lawn at a high setting to reduce weed growth and retain moisture.
- Water grass early in the morning and allow it to dry out between waterings.
- Use alternative native ground covers in shaded areas.
- If you live next to a natural area, consider creating a buffer strip (up to 5 metres wide) on your property. Plant native shrubs and trees in the buffer to reduce the spillover effect.
- Investigate non-toxic alternatives to chemicals for control of pests, weeds and plant diseases.
- If you have to use pesticides, read the product labels carefully and use only as directed. Dispose of household and pool chemicals safely.



Did you know that, in general, approximately 10 times more pesticides are applied by city home owners than are used by farmers on an equal area of farm land?

Does it matter what I grow in my garden?

Alien alert! Be careful when growing plants that are not native to Southern Ontario. Plants don't recognize property boundaries and can spread easily from gardens to natural areas. Many alien species do not have natural predators here and are extremely invasive. For example, the beautiful European import called Purple Loosestrife is flourishing across North America, invading wetlands and out-competing native plants. As a result, plant diversity is reduced and fewer places remain where native wildlife can survive.

Other common species that out-compete native plants are Norway Maple, Periwinkle, and Goutweed (Goat's Foot). Check with your local nursery to find out which plants are native to your region before purchasing. Native plants are better adapted to the climate, soil conditions, insects and diseases of this area.



Many municipalities or counties have information on plants that are suitable for use near natural areas and which plants to avoid.

Can I attract wildlife to my yard?

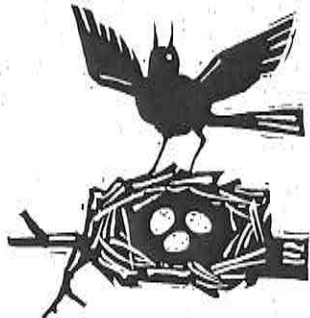
Habitat loss is the number one threat to wildlife today. With time and careful planning, you can create habitat in your back yard and provide a safe haven for many species to visit. Wildlife will be attracted by food, water and shelter, but these elements must be arranged so that birds and animals are not exposed to danger. Cats can have a major impact on bird and animal populations. Keeping your cat indoors from May to July will reduce its impact on nesting birds and small animals. Squirrels drawn to birdfeeders will also eat eggs and nestlings.



A natural area can be a great source of scenic beauty and pleasure. These areas may also be home to insects, such as mosquitoes, that are an important link in the food chain. Suitable clothing and insect repellants will help you avoid becoming part of the chain.

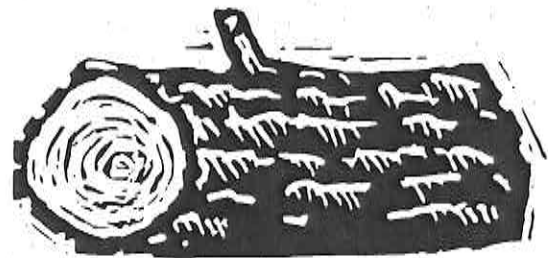
Stepping out in a natural area - "Take only memories, leave only footprints"

Many natural areas are accessible to the public. Local significant areas may contain rare and endangered plants and animals, unique landforms, and habitats that are prized for their high quality and diversity. However, the very features that make them precious are also those that could be easily damaged by thoughtless actions. Most damage occurs when people leave the marked trails and trample vegetation. By following the guidelines below, you can enjoy these natural areas without harming them, and leave them in a healthy state for their "residents" and future visitors.



Rules to remember in a natural area

- Please use the official access points and managed trails. Don't create or use trails that originate in people's backyards, as these additional trails cause more widespread trampling and disturbance of wildlife and plants.
- Avoid walking in natural areas when the trails are muddy, such as in the early spring or after a heavy rainfall. More vegetation gets trampled when people have to walk around mudholes.
- Please respect signs indicating that bicycles are not permitted in a natural area.
- Keep natural areas litter free.
- Keep dogs leashed. Cats and dogs are hunters by nature. If allowed to run loose, they put great stress on or kill birds and small animals. Don't forget to stoop and scoop!
- Do not disturb wildlife or pick or transplant flowers.



Can I take anything from a natural area?

Natural areas are often the only wild place remaining for rare native wildflowers to grow. These plants may have complicated life cycles or need seeds from existing flowers to regenerate the next year. Removing even a few plants can jeopardize the remaining population. Some garden centres stock a wide variety of native plants, trees and shrubs. These have a much better chance of surviving in your yard as they have been raised under similar soil and light conditions.

It is tempting to pick plants for food or herbal remedies, but this practice, just like transplanting, is not appropriate or sustainable. Even a few people picking plants can put the local population of that species in danger. Besides, those plants have a more important role in the natural environment than as food or medicine for humans!

A natural area is no place to find firewood or lawn decorations. Taking dead wood from a natural area will hurt that area's health in the long-term. As wood decays, it contributes nutrients to the soil and provides food and shelter for thousands of tiny organisms. In addition, new growth often depends on old stumps and logs. Cutting trees and brush destroys habitat, tramples vegetation and disturbs wildlife.

Enjoy wildlife when you discover it, but leave it in its natural setting. Don't make survival harder by taking animals out of their homes, leaving fewer behind to carry on. It is impossible to give a wild animal the proper care and nutrition to keep it healthy and happy. Also, it is illegal to keep wild animals, even injured ones, in captivity without a permit.

You can help out the local naturalist and trail groups that regularly remove litter from the natural areas. Pick up any litter that you find and dispose of it properly, and, of course, don't leave any more behind!





Beware!

If you encounter a plant with three shiny green leaflets, leave it alone! You may have found poison ivy, which is abundant in many natural areas. Many people get nasty rashes from the sap of this plant, whether from direct contact with the leaves, roots and stems or from touching pets or equipment that have the sap on them. Remember, though, that poison ivy is part of the food chain, growing berries that are edible for birds and animals. Learn to recognize and avoid it, rather than trying to get rid of it. Poison ivy is usually found in partial shade as a knee-high ground cover, but can also grow as a vine up tree trunks. "Leaflets three, let it be!"

Deer, Deer!

If you are bothered by deer foraging in your backyard, here are some suggestions to protect your garden.

Make your garden unpalatable - Garden centres and the Internet are good sources of information on "deer proof plants." Beebalm, bleeding heart, butterfly bush, cone flower, foxglove and rhododendron are among the plants that deer don't like eating.

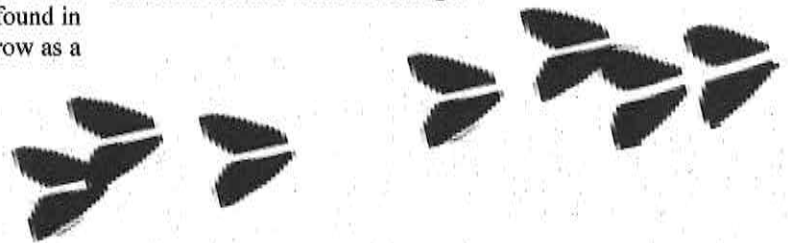
Make the fringes unpalatable - Surround your property with unpalatable and repellent native plants, and the deer may decide to forage elsewhere. Cedar and yew are delicacies for deer and should be avoided. White spruce, tamarack and juniper are good substitutes as deer will avoid them.

Block the view - Deer want an unobstructed view to see approaching predators and do not like to venture past anything that they cannot see through or over. A trellis covered in vines may discourage them.

Block the landing sites - Deer will not jump into your yard if they cannot see where they will land. Wooden fences or lattices that obstruct their view are a good deterrent.

Tidy up - Pick fruit such as apples and pears as they ripen, and remove or till under plants in the vegetable garden after harvest.

Fence them out - Specific trees or beds can be protected with mesh or screen. The barriers should be at least two metres high and at least half a metre from the foliage.



Where can I find out more?

More information on being a good natural neighbour:

- For composting tips call the "Rot Line" at 519-672-5991. This free service is offered to the public by the Thames Region Ecological Association (TREA).
- *Backyard Habitats* (pamphlet) and *Natural Invaders* (booklet). Available from the Federation of Ontario Naturalists at 1-800-440-2366, www.ontarionature.org
- Johnson, Lorraine, 1995. *The Ontario Naturalized Garden*. Whitecap Books, Toronto, Ontario.
- Ministry of Natural Resources, 1990. *Landscaping for Wildlife*. Queen's Printer for Ontario, Ontario.
- Rubin, Carol, 1989. *How to Get your Lawn & Garden off Drugs*. Friends of the Earth, Ottawa, Ontario.

This brochure was published in 2005 by the Upper Thames River Conservation Authority, and based on *Living with Natural Areas - A Guide for Citizens of London*, originally produced by the Upper Thames River Conservation Authority, the City of London's Ecological and Environmental Planning Advisory Committee, and Celebrate the Thames.

UPPER THAMES RIVER

CONSERVATION AUTHORITY

Inspiring a healthy environment

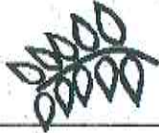
1424 Clarke Road, London, Ontario N5V 5B9
519-451-2800 www.thamesriver.on.ca

APPENDIX 4: PROTECTING NATURAL AREAS IN THE CITY OF WOODSTOCK

Protecting Natural Areas



in the City of Woodstock



April 1998

Natural areas are not as common in our landscape as they once were. It is important that we do all we can to protect those that remain. If you live next to or visit a natural area in the City of Woodstock, there are things you can do to protect it and reduce your impact. Here are some simple guidelines.



Living Next to a Natural Area:



Compost your yard and garden waste. Dumping it in a natural area can smother natural vegetation. Some garden plants and seeds from food waste may begin to grow in the natural area and force native plants out.

Choose plants for your gardens and flowerbeds very carefully. Some plants are invasive and very aggressive. Plants from your garden can spread to the natural area and choke out native species. Try planting native species in your flowerbeds; they are better adapted to the local conditions. Avoid plants such as purple loosestrife, periwinkle and goutweed, and trees such as Norway maple.

Call the City of Woodstock Engineering Department at 530-2382 ext. 814 for more information on proper disposal of your paint, oil and other chemicals.



Dispose of household garbage and hazardous waste properly. Do not dump it in a natural area as it may contain harmful chemicals and will smother natural vegetation. Do not pour chemicals down a storm sewer. Oil, paint and other chemicals are extremely toxic and will eventually reach a waterway or wetland via stormwater drains.

Know where your property line is and do not mow into the natural area. Leave a buffer or space of two metres between the natural area and your lawn, if possible.



Save money and the environment by changing the way you maintain your lawn and garden. Even if your property is not near a waterway, pesticides and fertilizers can seep down into the groundwater. Try the following alternatives:

- 1 Add compost to your lawn to fertilize it.
- 1 Use a mulching lawnmower.
- 1 Plant native groundcovers rather than grass. They are better adapted to this area and require less maintenance.
- 1 Try nontoxic methods of pest control such as manual pulling of weeds.

Approximately 10 times more pesticides are used on city lawns than are applied on an equal area of farmland.

Do not remove fallen or rotting trees and branches from the natural area. They provide many homes for wildlife.

Natural Areas:

Wetlands, meadows, forests, valley lands and other relatively undisturbed lands that are home to many different plant and wildlife species.



Visiting a Natural Area:

Please be aware of and observe permitted uses in the City of Woodstock's natural areas. Motorized vehicles are not allowed. Some passive recreational activities are permitted. Know the boundaries of public land, and avoid using private lands without permission.

Follow marked trails only. Side trails and unmarked trails are not always safe. In addition, too many trails increase our impact on the natural area through trampling and soil compaction. Avoid hiking or biking through wet or muddy areas to prevent erosion and soil loss.

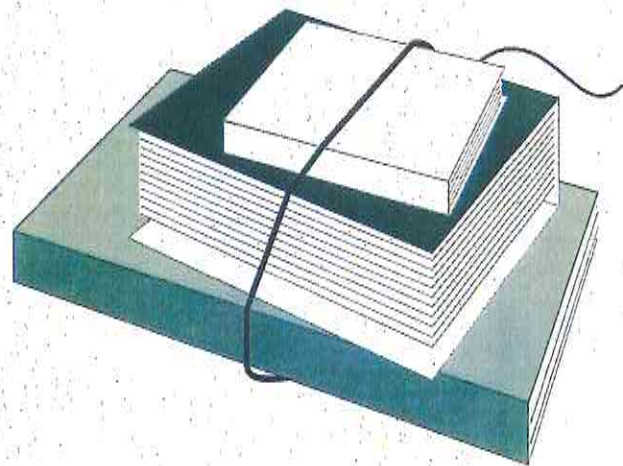
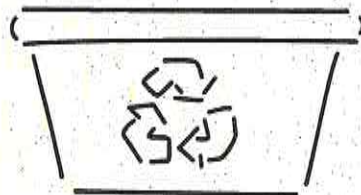
Report any unsafe conditions, such as falling trees or dumped garbage, to the City of Woodstock Works Department at 539-2382 ext. 814. Report any suspicious or unsafe activities to the Woodstock Police Department at 421-2800.

Please keep your cat and dog on a leash, as they sometimes chase or kill wildlife. Remember to stoop and scoop.

Do not pick or remove plants and animals from a natural area. The natural area is the best place for these species to live.

Thank you for putting garbage in its place: a trash can or a recycling bin. Pick up any litter that you find.

To minimize the impact on the Brick Ponds Wetland Complex, no trails have been established there. Please do not hike through the wetland. For more information, refer to the brochure *Brick Ponds Wetland Complex: Woodstock's Natural Treasure*. Copies are available from the City of Woodstock at 539-1291.



Books and Brochures:

- *Landscaping for Wildlife* - 18-page booklet from the Ontario Ministry of Natural Resources (1990). Call 1-800-667-1940.
- *The Ontario Naturalized Garden* - book by Lorraine Johnson (1995). Available at most bookstores.
- *Restoring Nature's Place: A Guide to Naturalizing Ontario Parks and Greenspace* - by J-M Daigle and D Havinga (1996). Published by Ecological Outlook Consulting and Ontario Parks Association. Call OPA to order at (416) 426-7157.
- *How to Get Your Lawn and Garden Off Drugs* - by Carole Rubin (1989). Published by Friends of the Earth.
- *Living With Natural Areas: A Guide for Citizens of London*. Brochure produced by the Upper Thames River Conservation Authority (UTRCA), City of London Ecological and Environmental Policy Advisory Committee (EEPAC), and Celebrate the Thames (1996). Contact UTRCA at (519) 451-2800.

APPENDIX 5: RECOMMENDED NATIVE TREES, SHRUBS AND VINES

Recommended Native Trees, Shrubs & Vines for Naturalization Projects in the Upper Thames River Watershed

The following woody plants (90 species) are native to southern Ontario and grow naturally in the Upper Thames River watershed (Middlesex, Oxford and Perth Counties). They are adapted to the local climate and so are harder than non-native species. Some species have very specific sun, moisture and soil requirements and may not do well in all sites; see the following pages for habitat details.

All species may be available at nurseries that sell native plants (see nurseries list on last page).

(R): Listed as rare in Ontario. Do not plant in large numbers
(C): Carolinian species, rarely found north of London

Trees

Acer rubrum
Acer saccharinum
Acer saccharum ssp. *nigrum*
Acer saccharum ssp. *saccharum*
Amelanchier arborea
Asimina triloba
Betula alleghaniensis
Betula papyrifera
Carpinus caroliniana
Carya cordiformis
Carya ovata
Celtis occidentalis
Cornus alternifolia
Cornus florida
Fraxinus americana
Fraxinus nigra
Fraxinus pennsylvanica
Gymnocladus dioica
Juglans cinerea
Juglans nigra
Juniperus virginiana
Larix laricina
Liriodendron tulipifera
Nyssa sylvatica
Ostryia virginiana
Platanus occidentalis
Pinus strobus
Populus balsamifera
Populus deltoides
Populus grandidentata
Populus tremuloides
Prunus americana
Prunus nigra
Prunus pennsylvanica
Prunus serotina
Quercus alba
Quercus bicolor
Quercus macrocarpa
Quercus muhlenbergii
Quercus rubra
Quercus velutina
Sassafras albidum
Thuja occidentalis
Tilia americana
Tsuga canadensis
Ulmus americana
Ulmus rubra

Red Maple
Silver Maple
Black Maple
Sugar Maple
Downy Serviceberry
Pawpaw (R, C)
Yellow Birch
White Birch
Blue Beech
Bitternut Hickory
Shagbark Hickory
Hackberry
Alternate-leaved Dogwood
Flowering Dogwood (R)
White Ash
Black Ash
Green Ash or Red Ash
Kentucky Coffee-tree (R, C)
Butternut (R)
Black Walnut
Eastern Red Cedar
Tamarack
Tulip Tree (C)
Black Gum (R, C)
Hop-hornbeam or Ironwood
Sycamore (C)
White Pine
Balsam Poplar
Eastern Cottonwood
Large-tooth Aspen
Trembling Aspen
American Plum (C)
Canada Plum
Pin Cherry
Black Cherry
White Oak
Swamp White Oak
Bur Oak
Chinquapin Oak
Red Oak
Black Oak
Sassafras (C)
Eastern White Cedar
American Basswood
Eastern Hemlock
American Elm or White Elm
Slippery Elm or Red Elm

Shrubs

Amelanchier canadensis
Amelanchier laevis
Aronia melanocarpa
Cephalanthus occidentalis
Cornus alternifolia
Cornus amomum ssp. *obliqua*
Cornus foemina ssp. *racemosa*
Cornus rugosa
Cornus stolonifera
Corylus americana
Corylus cornuta
Hamamelis virginiana
Ilex verticillata
Juniperus communis
Lindera benzoin
Physocarpus opulifolius
Prunus virginiana
Rhus aromatica
Rhus glabra
Rhus typhina
Ribes americanum
Ribes cynosbati
Rosa blanda
Rosa carolina
Rosa palustris
Salix amygdaloides
Salix bebbiana
Salix discolor
Salix eriocephala
Salix exigua
Salix lucida
Sambucus canadensis
Sambucus racemosa ssp. *pubens*
Spiraea alba
Viburnum lentago
Viburnum trilobum

Canada Serviceberry
Smooth Serviceberry
Black Chokeberry
Buttonbush
Alternate-leaved Dogwood
Silky Dogwood
Grey Dogwood
Round-leaved Dogwood
Red-osier Dogwood
American Hazelnut
Beaked Hazel
Witch-hazel
Winterberry
Common Juniper
Spicebush
Ninebark
Choke Cherry
Fragrant Sumac
Smooth Sumac
Staghorn Sumac
Wild Black Currant
Prickly Gooseberry
Smooth Rose
Carolina Rose or Pasture Rose (C)
Swamp Rose
Peach-leaved Willow
Beaked Willow
Pussy Willow
Willow
Sandbar Willow
Shining Willow
Common Elderberry
Red-berried Elder
Narrow-leaved Meadow-sweet
Nannyberry
Highbush Cranberry

Vines & Woody Groundcovers

Celastrus scandens
Clematis virginiana
Euonymus obovata
Lonicera canadensis
Mitchella repens
Parthenocissus quinquefolia
Vitis riparia

Climbing Bittersweet
Virgin's-bower
Running Strawberry-bush
Fly Honeysuckle
Partridge-berry
Virginia Creeper
Riverbank Grape



Light and Soil Requirements of Recommended Trees, Shrubs, Vines & Groundcovers

Trees				
Scientific Name	Common Name	Light Level	Soil Moisture	Soil Type
<i>Acer rubrum</i>	Red Maple	Part Sun	Wet to Moist	Variety
<i>Acer saccharinum</i>	Silver Maple	Sun	Wet to Moist	Rich
<i>Acer saccharum ssp. nigrum</i>	Black Maple	Shade	Moist	Rich floodplains
<i>Acer saccharum ssp. saccharum</i>	Sugar Maple	Part Sun to Shade	Moist	Rich, well-drained
<i>Amelanchier arborea</i>	Downy Serviceberry	Part Sun	Moist to Dry	Sandy, Rocky
<i>Asimina triloba</i>	Pawpaw (R, C)	Shade	Wet to Moist	Rich
<i>Betula alleghaniensis</i>	Yellow Birch	Part Sun	Wet to Moist	Rich
<i>Betula papyrifera</i>	White Birch	Sun	Variety	Variety
<i>Carpinus caroliniana</i>	Blue Beech	Shade	Moist	Deep, rich
<i>Carya cordiformis</i>	Bitternut Hickory	Part Sun	Moist	Rich
<i>Carya ovata</i>	Shagbark Hickory	Full to Part Sun	Moist	Rich
<i>Celtis occidentalis</i>	Hackberry	Part Sun	Moist	Variety
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	Part Sun	Moist	Deep, well-drained
<i>Cornus florida</i>	Flowering Dogwood (R)	Part Sun	Moist	Variety
<i>Fraxinus americana</i>	White Ash	Part Sun	Moist	Deep, well-drained
<i>Fraxinus nigra</i>	Black Ash	Sun	Wet	Organic, rich
<i>Fraxinus pennsylvanica</i>	Green Ash or Red Ash	Part Sun	Wet to Moist	Variety
<i>Gymnocladus dioica</i>	Kentucky Coffee-tree (R, C)	Part Sun	Moist	Deep, rich
<i>Juglans cinerea</i>	Butternut (R)	Sun	Moist to Dry	Rocky to well-drained
<i>Juglans nigra</i>	Black Walnut	Sun	Moist	Fertile, well drained
<i>Juniperus virginiana</i>	Eastern Red Cedar	Sun	Moist to Dry	Rocky, sandy soils
<i>Larix laricina</i>	Tamarack	Part Sun	Variety	Variety
<i>Liriodendron tulipifera</i>	Tulip Tree (C)	Sun	Wet to Moist	Sandy, sand loam, rich
<i>Nyssa sylvatica</i>	Black Gum (R, C)	Part Sun	Wet	Rich
<i>Ostrya virginiana</i>	Hop-hornbeam or Ironwood	Shade	Moist	Well-drained
<i>Platanus occidentalis</i>	Sycamore (C)	Part Sun	Wet to Moist	Rich, poorly-drained
<i>Pinus strobus</i>	White Pine	Sun	Moist to Dry	Variety
<i>Populus balsamifera</i>	Balsam Poplar	Sun	Wet to Moist	Rich
<i>Populus deltoids</i>	Eastern Cottonwood	Sun	Moist	Rich
<i>Populus grandidentata</i>	Large-tooth Aspen	Sun	Moist to Dry	Variety
<i>Populus tremuloides</i>	Trembling Aspen	Sun	Moist to Dry	Variety
<i>Prunus americana</i>	American Plum (C)	Sun	Moist	Variety
<i>Prunus nigra</i>	Canada Plum	Sun	Moist	Variety
<i>Prunus pensylvanica</i>	Pin Cherry	Sun	Moist to Dry	Variety
<i>Prunus serotina</i>	Black Cherry	Sun	Moist to Dry	Variety
<i>Quercus alba</i>	White Oak	Full to Part Sun	Moist	Variety
<i>Quercus bicolor</i>	Swamp White Oak	Part Sun	Wet to Moist	Rich
<i>Quercus macrocarpa</i>	Bur Oak	Full to Part Sun	Moist	Variety
<i>Quercus muhlenbergii</i>	Chinquapin Oak	Part Sun	Dry	Sandy, rocky
<i>Quercus rubra</i>	Red Oak	Full to Part Sun	Moist to Dry	Variety
<i>Quercus velutina</i>	Black Oak	Sun	Dry	Sandy to clay
<i>Sassafras albidum</i>	Sassafras (C)	Part Sun	Moist	Variety
<i>Thuja occidentalis</i>	Eastern White Cedar	Part Sun	Wet to Dry	Variety over limestone
<i>Tilia americana</i>	American Basswood	Part Shade	Moist	Rich
<i>Tsuga canadensis</i>	Eastern Hemlock	Shade	Moist (and cool)	Variety
<i>Ulmus americana</i>	American Elm or White Elm	Part Sun	Wet to Dry	Variety
<i>Ulmus rubra</i>	Slippery Elm or Red Elm	Sun	Moist	Rich

Shrubs				
Scientific Name	Common Name	Light Level	Soil Moisture	Soil Type
<i>Amelanchier canadensis</i>	Canada Serviceberry	Part Sun	Moist	All
<i>Amelanchier laevis</i>	Smooth Serviceberry	Part Sun	Moist	Well-drained
<i>Aronia melanocarpa</i>	Black Chokeberry	Sun	Wet to Moist	All
<i>Cephalanthus occidentalis</i>	Buttonbush	Part Sun	Wet	Loam
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	Part Sun	Moist	All
<i>Cornus amomum ssp.obliqua</i>	Silky Dogwood	Sun	Wet	All
<i>Cornus foemina ssp.racemosa</i>	Grey Dogwood	Sun	Moist	Sand
<i>Cornus rugosa</i>	Round-leaved Dogwood	Part Sun	Moist to Dry	Sand
<i>Cornus stolonifera</i>	Red-osier Dogwood	Sun	Wet to Moist	All
<i>Corylus americana</i>	American Hazelnut	Part Sun	Dry	Sand
<i>Corylus cornuta</i>	Beaked Hazel	Part Sun	Moist	All
<i>Hamamelis virginiana</i>	Witch-hazel	Part Sun	Moist to Dry	All
<i>Ilex verticillata</i>	Winterberry	Part Sun	Wet	Clay, Loam
<i>Juniperus communis</i>	Common Juniper	Sun	Dry	All
<i>Lindera benzoin</i>	Spicebush	Shade	Wet to Moist	Loam
<i>Physocarpus opulifolius</i>	Ninebark	Part Sun	Moist	Loam
<i>Prunus virginiana</i>	Choke Cherry	Part Sun to Shade	Moist	All
<i>Rhus aromatica</i>	Fragrant Sumac	Sun	Moist to Dry	Sand
<i>Rhus glabra</i>	Smooth Sumac	Sun	Moist to Dry	Sandy, rocky
<i>Rhus typhina</i>	Staghorn Sumac	Sun	Moist to Dry	All
<i>Ribes americanum</i>	Wild Black Currant	Shade	Wet to Moist	All
<i>Ribes cynosbati</i>	Prickly Gooseberry	Part Sun	Moist	All
<i>Rosa blanda</i>	Smooth Rose	Sun	Moist to Dry	Sand
<i>Rosa carolina</i>	Carolina Rose or Pasture Rose (C)	Sun	Moist to Dry	Sand
<i>Rosa palustris</i>	Swamp Rose	Sun	Wet	Loam
<i>Salix amygdaloides</i>	Peach-leaved Willow	Full Sun	Wet to Moist	Variety
<i>Salix bebbiana</i>	Beaked Willow	Sun	Wet to Moist	All
<i>Salix discolor</i>	Pussy Willow	Part Sun	Wet to Moist	All
<i>Salix eriocephala</i>	Willow	Sun	Wet to Moist	All
<i>Salix exigua</i>	Sandbar Willow	Sun	Wet to Moist	All
<i>Salix lucida</i>	Shining Willow	Sun	Wet to Moist	All
<i>Sambucus canadensis</i>	Common Elderberry	Part Sun	Wet to Moist	All
<i>Sambucus racemosa ssp pubens</i>	Red-berried Elder	Shade	Moist	All
<i>Spiraea alba</i>	Narrow-leaved Meadow-sweet	Sun	Wet to Moist	All
<i>Viburnum lentago</i>	Nannyberry	Part Sun	Moist	All
<i>Viburnum trilobum</i>	Highbush Cranberry	Part Sun	Moist	All

Vines & Woody Groundcovers				
Scientific Name	Common Name	Light Level	Soil Moisture	Soil Type
<i>Celastrus scandens</i>	Climbing Bittersweet	Part Sun	Moist	All
<i>Clematis virginiana</i>	Virgin's-bower	Part Sun	Moist	All
<i>Euonymus obovata</i>	Running Strawberry-bush	Shade	Moist	All
<i>Lonicera canadensis</i>	Fly Honeysuckle	Shade	Wet to Moist	All
<i>Mitchella repens</i>	Partridge-berry	Shade	Moist to Dry	Sand, Loam
<i>Parthenocissus quinquefolia</i>	Virginia Creeper	Part Sun	Wet to Dry	All
<i>Vitis riparia</i>	Riverbank Grape	Part Sun	Moist	All

LIGHT: Sun (shade intolerant), Part Sun (moderately shade tolerant), Shade (shade tolerant; understory species).

MOISTURE: Wet (swamp wetland), Moist (intermediate), Dry.

SOIL TYPE: Sand, Loam, Clay or All/Variety. Rich soils often occur in floodplains.

(C): Carolinian species, rarely found north of London.

Note: In the wild, trees and shrubs often grow in a specific situation such as woodland edges or dry, rocky outcrops because of competition with other species, but most species prefer or do very well on moist, rich soils.

Notes

- Some locally native species are not listed because they are hard to source (e.g., not grown in nurseries that sell native plants).
- Non-local trees and shrubs from commercial nurseries are often acceptable as single plantings in urban gardens, but not for naturalization or reforestation projects.
- Unknown plants and cultivated varieties should not be used in naturalization projects.
- Some invasive, non-native trees, shrubs, vines and woody groundcovers should not be planted in any site or garden.
- List compiled by Upper Thames River Conservation Authority staff, 2010.

Information Sources

Choosing the Right Shrub in London, Ontario and Choosing the Right Tree in London, Ontario. Brochures by the Sherwood Fox Arboretum and ReForest London. www.reforestlondon.ca
Shrubs of Ontario. Soper and Heimburger, 1985. Royal Ontario Museum.
Trees in Canada. John Laird Farrar, 1995. Fitzhenry & Whiteside Ltd. and the Canadian Forest Service, Natural Resources Canada.

Additional Information at www.thamesriver.on.ca

- Recommended Native Wildflowers & Grasses for Naturalization Projects in the Upper Thames River Watershed
- Tallgrass Prairie Plant Species Native to Middlesex, Oxford & Perth Counties
- Gardening with Native Plants
- Aggressive Non-Native Plants
- Regionally Rare Plants in Middlesex County



The following southwestern Ontario nurseries sell some or specialize in locally native trees and shrubs. List compiled by UTRCA staff, 2015.

Name & Address	Phone	Email & Website	Plant Types Carried	Retail / Wholesale
Baseline Nurseries 9084 Elviage Drive, London	519-657-1265	info@baselinenurseries.ca www.baselinenurseries.ca	Some native trees and shrubs	Retail + Wholesale
Eco-Logic Nursery 48811 Brook Line, Aylmer	519-765-3467	ecologic2001@gmail.com www.ecologicnursery.com	Several native trees	Retail + Wholesale
Heavenly Earth 29816 Zone Road 4, Bothwell	519-692-4714	sales@heavenlyearth.ca www.heavenlyearth.ca	Trees, shrubs	Retail
V. Kraus Nurseries Ltd. 1380 Centre Road, Carlisle	905-689-4022	sales@krausnurseries.com www.krausnurseries.com	Trees, shrubs	Wholesale
Little Otter Tree Farm 203924 Keswick Road, Tillsonburg	519-688-4771	litotter@execulink.com	Trees, shrubs	Retail + Wholesale
Nith River Native Plants 4265 Wilmot-Easthope Road, New Hamburg	519-831-0953	nithriverplants@hotmail.com www.nithriverplants.com	Herbaceous, seeds, trees, shrubs	Retail
Sassafras Farms 120 Canby Street, Port Robinson	905-658-8907	cdiraddo@sassafrasfarms.ca www.sassafrasfarms.ca	Herbaceous, trees, shrubs, seeds	Retail + Wholesale
Sloan's Tree Farm 30718 Zone Road #8, Bothwell	519-695-3525	travis@sloansnursery.com www.sloansnursery.com	Trees	Retail + Wholesale
St. Williams Nursery & Ecology Centre 885 Highway 24 West, St. Williams	519-586-9116 1-866-640-8733	sales@stwilliamsnursery.com www.stwilliamsnursery.com	Herbaceous, seeds, trees, shrubs	Wholesale
VanDenNest Nursery 8584 Somers Road, Eden	519-866-5269	www.vandennest-nursery.com	Trees, shrubs	Retail + Wholesale
Verbinnen's Nursery Ltd. 1504 Brock Road, Dundas (Hamilton)	905-659-7072	bernard@verbinnens.com www.verbinnens.com	Trees, shrubs Herbaceous	Wholesale
Windover Nurseries 3662 Petrolia Line, Petrolia	519-882-0120	windover@ebtech.net www.windovernurseries.com	Several native trees, shrubs, plants	Retail + Wholesale