

COMPENDIUM OF INVASIVE PLANT MANAGEMENT IN ONTARIO

Prepared for:
The Canada/Ontario Invasive Species Centre

Ontario Invasive Plant Council
Ontario Ministry of Natural Resources
Ontario Federation of Anglers and Hunters



Catalyst for research and response



Ontario Invasive Plant Council. 2012. Compendium of Invasive Plant Management in Ontario.

Printed October 2012

Peterborough, Ontario

ISBN: (to be confirmed)

This document was prepared for the Canada/Ontario Invasive Species Centre by the Ontario Invasive Plant Council.

Support for the production and publication of this document has been provided by the:

Canada/Ontario Invasive Species Centre

Ontario Ministry of Natural Resources

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Acknowledgements

The Invasive Plant Management Survey and Compendium was a cooperative effort with contributions from a number of individuals and agencies across Ontario.

Funding and leadership for this project was provided by the Canada/ Ontario Invasive Species Centre and the Ontario Ministry of Natural Resources. The Ontario Invasive Plant Council and the Ontario Federation of Anglers and Hunters contributed staff support and other services.

This project would not have been possible without the many professionals who responded to the Invasive Plant Management Survey. We thank all those who contributed and welcome comments, additions and suggestions.

Abstract

Invasive plants are a significant and growing threat to Ontario's environment, economy and society. Over 90% of invasive plants found in Canada are present in Ontario, particularly the southern region. This invasion pressure is due to population density, development, ecosystem degradation, and global trade. To address this threat over the last two decades, environmental organizations and agencies have worked to prevent, control and manage invasive plants. These activities have generally been conducted at the local or regional level. A lack of province-wide information-sharing and communication has affected Ontario's ability to manage invasive plants.

Between December 2011 and January 2012, the Ontario Ministry of Natural Resources (OMNR) and the Canada/ Ontario Invasive Species Centre (ISC) worked with the Ontario Invasive Plant Council (OIPC) and the Ontario Federation of Anglers and Hunters (OFAH) to develop a survey related to invasive species education and plant management. The objectives were to:

- 1) Determine the scope of work being undertaken to address invasive plants in Ontario.
- 2) Identify key organizations engaged in work across the province.
- 3) Compare results to a similar survey conducted in 2007.

The on-line survey was distributed by OIPC to its membership network. The management survey was completed by 105 individuals, representing 89 organizations including provincial, federal, and municipal governments, conservation authorities, academic institutions, environmental non-governmental organizations, consultants, and industry. Most responses came from southern Ontario.

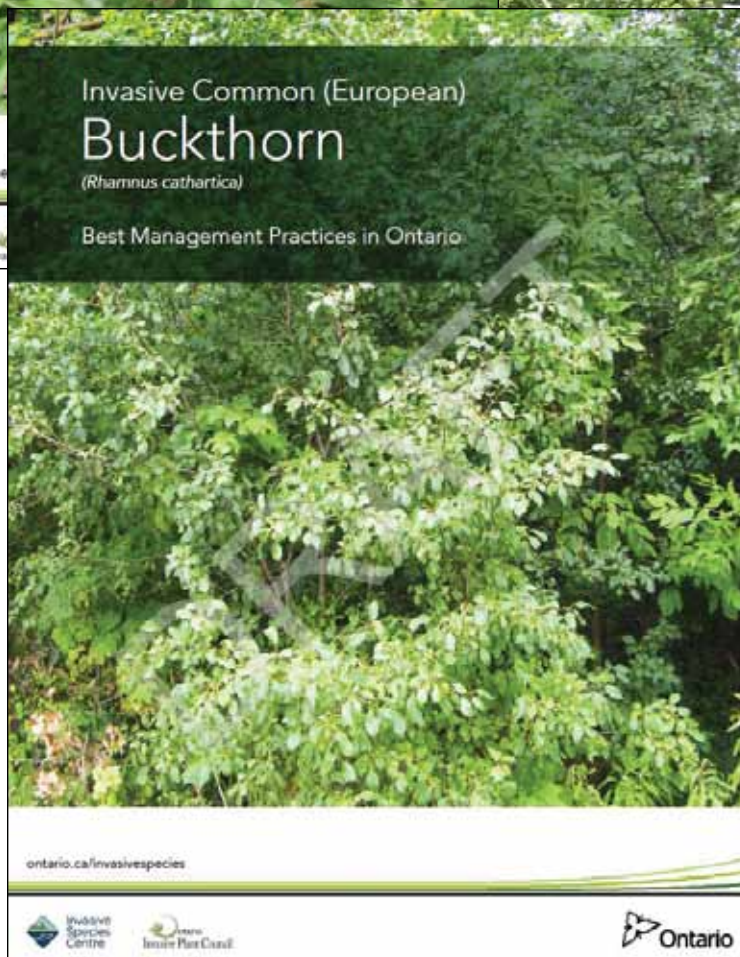
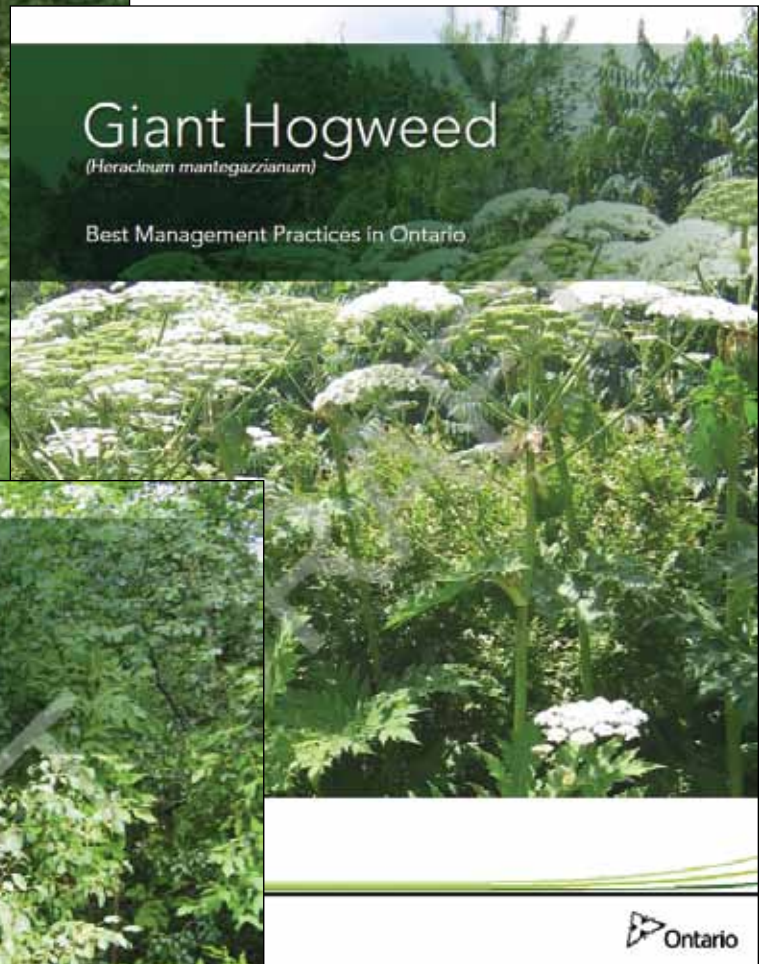
Thirty-eight invasive plants are currently the focus of control efforts; the key species being Garlic Mustard (30% of respondents), Dog-Strangling Vine (25%), Buckthorn spp. (27%) and Giant Hogweed (18%). The primary methods of control were mechanical and chemical. Availability of funding and staff resources were identified as the main barriers to invasive plant control, followed by lack of information on best management practices and aversion to herbicide use. Over 50% of respondents (54.7%) do not conduct site restoration after completion of invasive plant control activities.



Mechanical Control of Common Buckthorn

photo credit: Iola Price

Protection of biodiversity was identified as the main reason for invasive plant management activities (75%). The key resources used to guide management activities were Best Management Practices (BMPs) (75%), followed by organizational monitoring programs. More than 50% used species specific or regional invasive species management plans. Most respondents spent up to \$5000/ year, invested up to 20 staff days in invasive plant control and relied on internal employees to administer control programs (84%).



The key resource used to guide management activities are the Best Management Practices series

This survey was compared to a similar one conducted by the OIPC in 2007. The results show that progress has been made in invasive plant management, with organizations better able to implement their own control programs and an increased use of collaborative networks such as the OIPC for guidance and advice.

The information collected in this survey will help form future invasive plant management priorities in Ontario. This compendium is intended to assist land managers and policy makers work with like-minded or neighbouring organizations. The survey also formed the basis of a Delphi process, started in January 2012, to gain consensus from invasive plant management experts on research, monitoring, control, and climate change adaptation priorities.

1.0 Survey Information

The Canada/Ontario Invasive Species Centre in partnership with the Ontario Ministry of Natural Resources, Ontario Invasive Plant Council and the Ontario Federation of Anglers and Hunters conducted an online survey from December 2011 – January 2012. The purpose of this survey was to gather information on invasive species education, outreach and management activities in Ontario. This report focuses specifically on the results of the invasive plant management component of the survey.

Survey Objectives

- Assess the extent and type of invasive plant management activities in the province.
- Develop a provincial compendium of invasive plant management activities across the province and make it available on-line on the ISC website (www.invasivespeciescentre.ca).
- Help agencies and organizations to coordinate their efforts by sharing knowledge and information about existing projects to encourage collaboration and an organized response.
- Establish the status of current projects to help the ISC and OMNR to set future priorities.
- List the management activities happening across the province to make it easier for agencies to share information.

1.1 Number and Sources of Surveys Completed

The survey was sent to over 1,000 people across Ontario using the OIPC distribution list, contact lists from the partner organizations and the Association of Municipalities of Ontario (AMO) watch file. The survey was comprised of 28 questions and took approximately 30 minutes to complete.

165 people completed the survey from all levels of government, environmental non-government organizations, conservation authorities, academia and the private sector. 105 respondents completed the section on invasive plant management and are represented in these results and the compendium. Most respondents were from southern Ontario, and over half were from conservation authorities and municipalities. Responses from OMNR staff are limited because they had recently completed a similar survey internally.

Survey respondents were asked whether they would like their information to be published online in the compendium, or used for summary purposes only. 63 respondents allowed their information to be shared and published in further detail.

Table 1: Response Summary Table (Organizations Completing Control Activities)

Organization	Sector	Species Controlled	Control Types Used	Reason for Control	Restoration
Baker Forestry Services	Private sector	Autumn olive, black locust, buckthorn spp., common periwinkle, dog-strangling vine, garlic mustard, giant hogweed, goutweed, Himalayan balsam, Japanese knotweed, Norway maple, Russian olive, tartarian honeysuckle, white mulberry, white poplar, winged euonymus and spindle tree	Chemical, mechanical	Protection of biodiversity	Re-planting with native species
Bishops Mills Natural History Centre	Family-based research institute	Black locust, buckthorn spp., garlic mustard, goutweed, Himalayan balsam, Japanese knotweed, Norway maple, purple loosestrife, tartarian honeysuckle, wild parsnip	Biological, mechanical	Protection of biodiversity	None
Blue Heaven Tree Farm	Private individual	Buckthorn spp., Canada thistle, dog-strangling vine	Chemical, mechanical	Protect agriculture/forestry operations	None
Bruce County	Municipal government	Common reed (Phragmites), garlic mustard, giant hogweed, purple loosestrife, spotted knapweed, wild parsnip	Chemical, mechanical	Protection of biodiversity	None
Bruce Trail Conservancy	Environmental non-government organization	Buckthorn spp., common periwinkle, dog-strangling vine, garlic mustard, giant hogweed	Chemical, mechanical	Protection of biodiversity	None
Central Lake Ontario Conservation Authority	Conservation authority	Autumn olive, black locust, buckthorn spp., European frog-bit, garlic mustard, Norway maple, purple loosestrife, Russian olive, wild parsnip, water hyacinth, water lettuce	Biological, chemical, mechanical	Protection of biodiversity	Re-planting with native species, none
Charleston Lake Provincial Park	Provincial government	Dog-strangling vine, garlic mustard	Mechanical	Protection of biodiversity	None
City of Hamilton	Municipal government	Autumn olive, black locust, buckthorn spp., colts-foot, garlic mustard, giant hogweed, Japanese knotweed, multiflora rose, Norway maple, reed canary grass, Russian olive, spotted knapweed, tartarian honeysuckle, tree of heaven, white mulberry, white poplar, sweet white clover	Chemical, mechanical	Protection of biodiversity, Maintain recreational uses/values of property	Re-planting with native species, none
City of London	Municipal government	Buckthorn spp., Canada thistle, garlic mustard, giant hogweed, Japanese knotweed, Norway maple, purple loosestrife, reed canary grass	Biological, chemical, cultural, mechanical	Protection of biodiversity	Re-planting with native species
City of Toronto Urban Forestry	Municipal government	Black locust, buckthorn spp., Canada thistle, common reed (Phragmites), dog-strangling vine, European alder, garlic mustard, giant hogweed, Himalayan balsam, Japanese knotweed, multiflora rose, Norway maple, oriental bittersweet, smooth brome, tartarian honeysuckle, tree of heaven, white mulberry, white poplar, sweet white clover, wild parsnip, winged euonymus and spindle tree, Manitoba maple, Siberian elm, scotch elm, hedge parsley, Scots pine, sycamore maple	Chemical, cultural, mechanical	Protection of biodiversity	Re-planting with native species, prescribed burn program

Table 1: Response Summary Table (Organizations Completing Control Activities)

Organization	Sector	Species Controlled	Control Types Used	Reason for Control	Restoration
Conservation Halton	Conservation Authority	Black locust, buckthorn spp., common periwinkle, dog-strangling vine, garlic mustard, giant hogweed	Chemical, mechanical	Protection of biodiversity	None
County of Simcoe Forestry Dept.	Municipal government	Buckthorn spp., common periwinkle, dog-strangling vine, garlic mustard, giant hogweed, Himalayan balsam, Japanese knotweed, Norway maple, tartarian honeysuckle, white poplar	Chemical, cultural, mechanical	Protect agriculture/forestry operations	None
Credit Valley Conservation	Conservation authority	Buckthorn spp., common periwinkle, common reed (Phragmites), dog strangling vine, European alder, garlic mustard, giant hogweed, Japanese knotweed, Norway maple, oriental bittersweet, purple loosestrife, rough manna grass, tartarian honeysuckle, winged euonymus and spindle tree, yellow iris	Biological, chemical, cultural, mechanical	Maintain recreational uses/values of property	Soil rehabilitation, re-planting with native species
Eastern Ontario Model Forest - Regional Forest Health Network	Model forest working with local communities			Maintain recreational uses/values of property	Re-planting with native species
Essex Region Conservation Authority	Conservation authority	Common reed (Phragmites), giant hogweed, purple loosestrife	Chemical, mechanical	Protection of biodiversity	None
Fletcher Wildlife Garden	Environmental non-government organization	Buckthorn spp., dog-strangling vine, European frog-bit, flowering rush, garlic mustard, oriental bittersweet	Mechanical	Protection of biodiversity	
Friends of Lemoine Point – Cataraqui Region Conservation Authority	Conservation authority	Buckthorn spp., dog-strangling vine, garlic mustard	Chemical, cultural, mechanical,	Protection of biodiversity	None
Friends of the Experimental Farm	Not-for-profit volunteer organization	Buckthorn spp, Canada thistle, dog-strangling vine, garlic mustard	Mechanical	Maintain values of the Arboretum and ornamental gardens, protect forestry	Support planting and soil work by Agriculture and Agri-Food Canada staff
Frontenac Provincial Park	Provincial government	Dog-strangling vine	Mechanical	Protection of biodiversity	None
Ganaraska Region Conservation Authority	Conservation authority	Autumn olive, dog-strangling vine, garlic mustard, wild parsnip	Chemical, mechanical	Protection of biodiversity	None
GWS Ecological and Forestry Services Inc.	Consultant	Black locust, buckthorn spp., garlic mustard, Norway maple, tartarian honeysuckle, tree of heaven, white mulberry	Chemical, mechanical	Protection of biodiversity	Re-planting with native species, none

Table 1: Response Summary Table (Organizations Completing Control Activities)

Organization	Sector	Species Controlled	Control Types Used	Reason for Control	Restoration
Halton Region	Municipal government	Dog-strangling vine	Chemical	Protection of biodiversity	Continuing control measures
Hamilton Naturalists Club	Environmental non-government organization	Autumn olive, black locust, buckthorn spp., dog-strangling vine, garlic mustard, Japanese knotweed, multiflora rose, tartarian honeysuckle, sweet white clover	Chemical, mechanical	Protection of biodiversity	None
Hirsig Landscapes	Landscape maintenance and contractor	European frog-bit, flowering rush, goutweed, Norway maple, purple loosestrife, sweet white clover	Chemical, mechanical	Protection of biodiversity	Soil rehabilitation, re-planting with native species
Humber Arboretum	Public garden/municipal/academic partnership	Buckthorn spp., Canada thistle, common periwinkle, common reed (Phragmites), dog-strangling vine, European alder, garlic mustard, goutweed, Norway maple, Russian olive, tartarian honeysuckle, tree of heaven, winged euonymus and spindle tree, woodland speargrass	Chemical, mechanical	Protection of biodiversity	Soil rehabilitation, re-planting with native species
Invasive Species Research Institute (Algoma University)	Incorporated not-for-profit	Garlic mustard	Mechanical	Protection of biodiversity	None
Kawartha Conservation	Conservation authority	Buckthorn spp., garlic mustard	Chemical	Protection of biodiversity	None
Kawartha Highlands Signature Site Provincial Park	Provincial government	Purple loosestrife	Mechanical	Protection of biodiversity	None
L. Lamb Vegetation Specialist	Consultant	Autumn olive, black locust, buckthorn spp., Canada thistle, colts-foot, common periwinkle, common reed (Phragmites), dog-strangling vine, European alder, flowering rush, garlic mustard, giant hogweed, goutweed, Himalayan balsam, Japanese knotweed, multiflora rose, Norway maple, oriental bittersweet, purple loosestrife, reed canary grass, Russian olive, white mulberry, white poplar, sweet white clover, wild parsnip, winged euonymus and spindle tree, yellow iris	Chemical, cultural, mechanical		
Lower Thames Valley Conservation Authority – Longwoods Road Conservation Area	Conservation authority	Common reed (Phragmites), purple loosestrife	Chemical, mechanical	Protection of biodiversity	Gather local native plant seeds and spread over reclaimed areas

Table 1: Response Summary Table (Organizations Completing Control Activities)

Organization	Sector	Species Controlled	Control Types Used	Reason for Control	Restoration
Lower Trent Conservation	Conservation authority	Common reed (Phragmites), dog-strangling vine, garlic mustard, water soldier	Chemical, mechanical	Protection of biodiversity	None
Municipality of Chatham Kent	Municipal government	Canada thistle, common periwinkle, common reed (Phragmites), dog-strangling vine, Eurasian watermilfoil, garlic mustard, giant hogweed, purple loosestrife, white mulberry, winged euonymus and spindle tree	Biological, chemical, cultural, mechanical	Protection of biodiversity	Re-planting with native species
Murphy's Point Provincial Park	Provincial Government	Garlic Mustard	Mechanical	Protection of biodiversity	None
Nature Conservancy of Canada	Environmental non-government organization	Black locust, buckthorn spp., common periwinkle, common reed (Phragmites), dog-strangling vine, garlic mustard, tartarian honeysuckle	Chemical, mechanical	Protection of biodiversity	Re-planting with native species, fire
Nottawasaga Valley Conservation Authority	Conservation authority	Common reed (Phragmites), dog-strangling vine, garlic mustard, giant hogweed, purple loosestrife, wild parsnip	Chemical, mechanical	Protection of biodiversity	None
Ontario Federation of Anglers and Hunters	Environmental non-government organization	Garlic mustard, water chestnut, water soldier	Mechanical	Protection of biodiversity	None
Ontario Ministry of Natural Resources – Guelph District	Provincial Government	Buckthorn spp, Russian and/or Autumn Olive, Bush Honeysuckle, Privet, Japanese Barberry, Garlic Mustard, smooth brome, fescue, timothy, orchard grass	Chemical, Mechanical, Cultural	restoration of tallgrass prairie, oak savannah and oak woodland habitat remnants	none. The sites are allowed to restore naturally from existing plants and seeds
Ontario Ministry of Natural Resources - Peterborough District	Provincial government	Water soldier	Mechanical	Maintain recreational uses/values of property	None
Ontario Nature	Environmental non-government organization		Manage invasive species by planting native species, do not actively eradicate IS	Protection of biodiversity	Re-planting with native species
Ontario Streams	Environmental non-government organization	Buckthorn spp., Canada thistle, common reed (Phragmites), dog-strangling vine, garlic mustard, Japanese knotweed, purple loosestrife, yellow iris	Chemical, mechanical	Maintain recreational uses/values of property	Re-planting with native species

Table 1: Response Summary Table (Organizations Completing Control Activities)

Organization	Sector	Species Controlled	Control Types Used	Reason for Control	Restoration
Ottawa Invasive Plant Network	Loose-knit group of people and groups in Ottawa	Buckthorn spp., Canada thistle, dog strangling vine, European frog-bit, garlic mustard, Japanese knotweed, Norway maple, oriental bittersweet, Tartarian honeysuckle, white poplar, wild parsnip	Mechanical	Protection of biodiversity	Re-planting with native species
Parks Canada	Federal government	Buckthorn spp., common reed (Phragmites), dog-strangling vine, garlic mustard, Japanese knotweed, purple loosestrife, spotted knapweed, tartarian honeysuckle, sweet white clover, wild parsnip	Chemical, mechanical	Protection of biodiversity	None
Presquile Provincial Park	Provincial government	Dog-strangling vine	Chemical	Protection of biodiversity	None
Region of Waterloo	Municipal government	Autumn olive, black locust, buckthorn spp., Colts-foot, common reed (Phragmites), dog-strangling vine, garlic mustard, giant hogweed, goutweed, Norway maple, white mulberry, wild parsnip	Chemical, cultural, mechanical	Protection of biodiversity	Re-planting with native species
Regional Municipality of York	Municipal government	Buckthorn spp., giant hogweed	Chemical, mechanical	Protect infrastructure, public health	Re-planting with native species, monitoring and education
Rice Lake Plains Joint Initiative	Collaboration of conservation organizations	Buckthorn spp., Canada thistle, dog-strangling vine, spotted knapweed, sweet white clover	Mechanical	Protection of biodiversity	Re-planting with native species
Rideau Valley Conservation Authority	Conservation authority	Dog-strangling vine, garlic mustard, yellow iris	Chemical, mechanical	Protection of biodiversity	None
Royal Botanical Gardens	Botanical garden	Black locust, buckthorn spp., Canada thistle, common periwinkle, dog-strangling vine, European alder, garlic mustard, giant hogweed, Japanese knotweed, multiflora rose, Norway maple, purple loosestrife, rough manna grass, smooth brome, tartarian honeysuckle, tree of heaven, white mulberry, sweet white clover, winged euonymus and spindle tree, woodland speargrass, yellow floating heart	Biological, chemical, cultural, mechanical	Protection of biodiversity	Re-planting with native species
Sandbanks Provincial Park	Provincial Government	Dog-strangling vine, garlic mustard, purple loosestrife	Mechanical	Protection of biodiversity	None
Seneca College - King Campus	Academic institution	Buckthorn spp., common periwinkle, dog-strangling vine, Norway maple	Mechanical	Protection of biodiversity	None
South Nation Conservation	Conservation authority	Buckthorn spp., dog-strangling vine, European frog-bit, garlic mustard, Himalayan balsam, Japanese knotweed, water chestnut	Chemical, mechanical	Protection of biodiversity, and agriculture/forestry operations	Re-planting with native species, none
St Clair Region Conservation Authority	Conservation authority	Common reed (Phragmites)	Chemical, mechanical	Protection of biodiversity	Re-planting with native species, none

Table 1: Response Summary Table (Organizations Completing Control Activities)

Organization	Sector	Species Controlled	Control Types Used	Reason for Control	Restoration
Toronto and Region Conservation Authority	Conservation authority	Buckthorn spp., dog-strangling vine, garlic mustard, giant hogweed, Japanese knotweed, Norway maple	Chemical, mechanical	Protection of biodiversity	Re-planting with native species
Toronto Zoo	Municipal government	Autumn olive, black locust, buckthorn spp., Canada thistle, common periwinkle, common reed (Phragmites), Dog-strangling vine, European alder, garlic mustard, giant hogweed, Japanese knotweed, Norway maple, purple loosestrife, reed canary grass, Russian olive, tartarian honeysuckle	Chemical, mechanical	Protection of biodiversity	Re-planting with native species
Trent University	Academic institution	Eurasian watermilfoil	Biological, cultural, mechanical	Protection of biodiversity	Re-planting with native species
Upper Thames River Conservation Authority	Conservation authority	Buckthorn spp.	Chemical, mechanical	Protection of biodiversity	Restoration work is very recent, so no planting has taken place yet, but it may
Urban Forest Associates Inc.	Consultant	Autumn olive, black locust, buckthorn spp., common periwinkle, dog-strangling vine, garlic mustard, giant hogweed, goutweed, Himalayan balsam, Japanese knotweed, Norway maple, tree of heaven, Russian olive, smooth brome grass, tartarian honeysuckle, white mulberry, white poplar, winged euonymus, spindle tree, purple loosestrife, coltsfoot, Canada thistle, common reed (phragmites), multiflora rose	Chemical, mechanical, cultural	Protection of biodiversity, protection of infrastructure, maintain recreational uses/values of property	Soil rehabilitation, re-planting with native species, ongoing control measures
Voyageur Provincial Park	Provincial government	Water chestnut	Mechanical	Protection of biodiversity, maintain recreational uses/values of property	None
Wasaga Beach Provincial Park	Provincial government	Common reed (Phragmites)	Chemical, Mechanical.	Protection of biodiversity, maintain recreational uses/values of property	If this species is eradicated in a given area it may open up habitat suitable for dune restoration which we actively work on via marram grass transplants.
Williams and Associates	Consultant	Buckthorn spp., colts-foot, dog-strangling vine, garlic mustard, giant hogweed	Chemical, mechanical	Protection of biodiversity	None

In the following pages, the species are broken down in to several categories – Trees, Shrubs, Herbaceous Plants, Riparian Plants and Aquatic Plant Species. Each category of species contains further information on the organizations completing control on these types of species, listed alphabetically by species, to encourage collaboration in control projects. Only those people who agreed to have their information made public are listed.

Control Measures: Trees

Table 2: Organizations Undertaking Control: Black Locust (*Robinia pseudoacacia*)

Organization	Type of Organization	Control Type Used
Baker Forestry Services	Private sector	Mechanical
Bishops Mills Natural History Centre	Family-based research institute	Mechanical
Central Lake Ontario Conservation Authority	Conservation authority	Chemical, mechanical
City of Hamilton	Municipal government	Chemical, mechanical
City of Toronto Urban Forestry	Municipal government	Chemical, mechanical
Conservation Halton	Conservation Authority	Mechanical
GWS Ecological and Forestry Services Inc.	Consultant	Chemical, mechanical
Hamilton Naturalists Club	Environmental Non-government organization (ENGO)	Mechanical
Nature Conservancy of Canada	Environmental Non-government organization	Chemical, mechanical
Region of Waterloo	Municipal government	Chemical, mechanical
Royal Botanical Gardens	Botanical garden	Mechanical
Toronto Zoo	Municipal government	Mechanical
Urban Forest Associates Inc.	Consultant	Chemical, mechanical

Table 3: Organizations Undertaking Control: European Alder (*Alnus glutinosa*)

Organization	Type of Organization	Control Type
City of Toronto Urban Forestry	Municipal government	Chemical, mechanical
Credit Valley Conservation	Conservation authority	Chemical
Humber Arboretum	Public garden/municipal/academic partnership	Mechanical
L. Lamb Vegetation Specialist	Consultant	Mechanical
Royal Botanical Gardens	Botanical garden	Mechanical
Toronto Zoo	Municipal government	Mechanical



Mechanical Control (girdling) of Norway Maple

Photo credit: Stephen Smith

Table 4: Organizations Undertaking Control: Norway Maple (*Acer platanoides*)

Organization	Type of Organization	Control Type
Baker Forestry Services	Private sector	Chemical, mechanical
Bishops Mills Natural History Centre	Family-based research institute	Mechanical
Central Lake Ontario Conservation Authority	Conservation authority	Mechanical
City of Hamilton	Municipal government	Chemical, mechanical
City of London	Municipal government	Cultural
City of Toronto Urban Forestry	Municipal government	Chemical, mechanical
County of Simcoe Forestry Department	Municipal government	Chemical
Credit Valley Conservation	Conservation authority	Chemical, mechanical
GWS Ecological and Forestry Services Inc.	Consultant	Chemical, mechanical

Table 4: Organizations Undertaking Control: Norway Maple (*Acer platanoides*)

Organization	Type of Organization	Control Type
Hirsig Landscapes	Landscape maintenance and contractor	Chemical, Mechanical
Humber Arboretum	Public garden/municipal/academic partnership	Mechanical
L. Lamb Vegetation Specialist	Consultant	Mechanical
Ottawa Invasive Plant Network	Loose-knit group of people	Mechanical
Region of Waterloo	Municipal government	Mechanical
Royal Botanical Gardens	Botanical garden	Chemical, mechanical
Seneca College King Campus	Academic institution	Mechanical
Toronto and Region Conservation Authority	Conservation authority	Mechanical
Toronto Zoo	Municipal government	Mechanical
Urban Forest Associates Inc.	Consultant	Chemical, mechanical

Table 5: Organizations Undertaking Control: Tree of Heaven (*Ailanthus altissima*)

Organization	Type of Organization	Control Type
City of Hamilton	Municipal government	Chemical, mechanical
City of Toronto Urban Forestry	Municipal government	Chemical, mechanical
GWS Ecological and Forestry Services Inc.	Consultant	Chemical, mechanical
Humber Arboretum	Public garden/municipal/academic partnership	Mechanical
Royal Botanical Gardens	Botanical garden	Chemical, mechanical
Urban Forest Associates Inc.	Consultant	

Table 6: Organizations Undertaking Control: White Mulberry (*Morus alba*)

Organization	Type of Organization	Control Type
Baker Forestry Services	Private sector	Chemical, mechanical
City of Hamilton	Municipal government	Chemical, mechanical
City of Toronto Urban Forestry	Municipal government	Chemical, mechanical
GWS Ecological and Forestry Services Inc.	Consultant	Chemical, mechanical
L. Lamb Vegetation Specialist	Consultant	Mechanical
Municipality of Chatham Kent	Municipal government	Cultural
Region of Waterloo	Municipal government	Mechanical
Royal Botanical Gardens	Botanical garden	Chemical, mechanical
Urban Forest Associates Inc.	Consultant	Chemical, mechanical

Table 7: Organizations Undertaking Control: White Poplar (*Populus alba*)

Organization	Type of Organization	Control Type
Baker Forestry Services	Private sector	Chemical, mechanical
City of Hamilton	Municipal government	Chemical, mechanical
City of Toronto Urban Forestry	Municipal government	Chemical, mechanical
County of Simcoe Forestry Department	Municipal government	Chemical, mechanical
L. Lamb Vegetation Specialist	Consultant	Mechanical
Ottawa Invasive Plant Network	Loose-knit group of people	Mechanical
Urban Forest Associates Inc.	Consultant	Chemical, mechanical

Control Measures: Shrubs

Table 8: Organizations Undertaking Control: Autumn Olive (*Eleagnus umbellata*)

Organization	Type of Organization	Control Type
Baker Forestry Services	Consultant	Chemical
Central Lake Ontario Conservation Authority	Conservation authority	Chemical, mechanical
City of Hamilton	Municipal	Chemical, mechanical
Ganaraska Region Conservation Authority	Conservation authority	Chemical, mechanical
Hamilton Naturalists Club	ENGO	Chemical, mechanical
Ontario Ministry of Natural Resources – Guelph District	Provincial Government	
Region of Waterloo	Municipal	Mechanical
Toronto Zoo	Municipal government	Mechanical
Urban Forest Associates Inc.	Consultant	Chemical, mechanical



Central Lake Ontario Conservation Authority mechanically removing Buckthorn species

Photo credit: Diana Shermet



City of Toronto chemically treating buckthorn stumps

Photo credit: City of Toronto

Table 9: Organizations Undertaking Control: Buckthorn Species (*Rhamnus cathartica* and *Frangula Alnus*)

Organization	Type of Organization	Control Type
Baker Forestry Services	Private sector	Chemical, mechanical
Bishops Mills Natural History Centre	Family-based research insitute	Mechanical
Blue Heaven Tree Farm	Private individual	Mechanical
Bruce Trail Conservancy	ENGO	Mechanical
Central Lake Ontario Conservation Authority	Conservation authority	Chemical, mechanical
City of Hamilton	Municipal government	Chemical, mechanical
City of London	Municipal government	Mechanical
City of Toronto Urban Forestry	Municipal government	Chemical
Conservation Halton	Conservation authority	Mechanical
County of Simcoe Forestry Department	Municipal government	Chemical
Credit Valley Conservation	Conservation authority	Chemical, mechanical
Fletcher Wildlife Garden	ENGO	Mechanical
Friends of Lemoine Point	Conservation Authority	Chemical, mechanical
Friends of the Experimental Farm	Not-for-profit volunteer organization	Mechanical
GWS Ecological and Forestry Services Inc.	Consultant	Chemical, mechanical
Hamilton Naturalists Club	ENGO	Chemical, mechanical
Humber Arboretum	Public garden/municipal/academic partnership	Chemical, mechanical
Kawartha Conservation	Conservation authority	Chemical
Nature Conservancy of Canada	ENGO	Chemical, mechanical
Ontario Ministry of Natural Resources – Guelph District	Provincial Government	Chemical, mechanical
Ontario Streams	ENGO	Mechanical
Ottawa Invasive Plant Network	Loose-knit group of people and groups in Ottawa	Mechanical
Parks Canada	Federal government	Chemical, mechanical
Region of Waterloo	Municipal government	Chemical, mechanical
Regional Municipality of York	Municipal government	Mechanical
Rice Lake Plains Joint Initiative	Collaboration of conservation organizations	Mechanical
Royal Botanical Gardens	Botanical garden	Chemical, mechanical
Seneca College - King Campus	Academic institution	Mechanical
South Nation Conservation	Conservation authority	Chemical, mechanical
Toronto and Region Conservation Authority	Conservation authority	Chemical, mechanical
Toronto Zoo	Municipal government	Mechanical
Upper Thames River Conservation Authority	Conservation authority	Chemical, mechanical
Urban Forest Associates Inc.	Consultant	Chemical, mechanical
Williams and Associates	Consultant	Chemical

Table 10: Organizations Undertaking Control: Japanese Knotweed (*Polygonum cuspidatum*)

Organization	Type of Organization	Control Type
Baker Forestry Services	Private sector	Chemical
Bishops Mills Natural History Centre	Family-based research institute	Mechanical
City of Hamilton	Municipal government	Chemical
City of London	Municipal government	Chemical
City of Toronto Urban Forestry	Municipal government	Chemical, cultural, mechanical
County of Simcoe Forestry Dept.	Municipal government	Chemical, mechanical
Credit Valley Conservation	Conservation authority	Chemical, mechanical
Hamilton Naturalists Club	ENGO	Mechanical
L. Lamb Vegetation Specialist	Consultant	Mechanical
Ontario Streams	ENGO	Mechanical
Parks Canada	Federal government	Mechanical
Royal Botanical Gardens	Botanical garden	Mechanical
South Nation Conservation	Conservation authority	Mechanical
Toronto and Region Conservation Authority	Conservation authority	Chemical
Toronto Zoo	Municipal government	Mechanical
Urban Forest Associates Inc.	Consultant	Chemical, mechanical

Table 11: Organizations Undertaking Control: Multiflora Rose (*Rosa multiflora*)

Organization	Type of Organization	Control Type
City of Hamilton	Municipal government	Chemical
City of Toronto Urban Forestry	Municipal government	Chemical, mechanical
Hamilton Naturalists Club	ENGO	Chemical, mechanical
L. Lamb Vegetation Specialist	Consultant	Cultural, mechanical
Royal Botanical Gardens	Botanical garden	Mechanical
Urban Forest Associates Inc.	Consultant	Chemical, mechanical

Table 12: Organizations Undertaking Control: Russian Olive (*Elaeagnus umbellata*)

Organization	Type of Organization	Control Type
Baker Forestry Services	Private sector	Chemical, mechanical
Central Lake Ontario Conservation Authority	Conservation authority	Chemical, mechanical
City of Hamilton	Municipal government	Chemical, mechanical
Humber Arboretum	Public garden/municipal/academic partnership	Mechanical
L. Lamb Vegetation Specialist	Consultant	Mechanical
Ontario Ministry of Natural Resources – Guelph District	Provincial Government	Chemical, mechanical
Toronto Zoo	Municipal government	Mechanical
Urban Forest Associates Inc.	Consultant	Chemical, mechanical

 Table 13: Organizations Undertaking Control: Tartarian Honeysuckle (*Lonicera tatarica*)

Organization	Type of Organization	Control Type
Baker Forestry Services	Private sector	Chemical, mechanical
Bishops Mills Natural History Centre	Family-based research institute	Mechanical
City of Hamilton	Municipal government	Chemical, mechanical
City of Toronto Urban Forestry	Municipal government	Chemical, mechanical
County of Simcoe Forestry Department	Municipal government	Chemical
Credit Valley Conservation	Conservation authority	Chemical, mechanical
GWS Ecological and Forestry Services Inc.	Consultant	Chemical, mechanical
Hamilton Naturalists Club	ENGO	Mechanical
Humber Arboretum	Public garden/municipal/academic partnership	Mechanical
Nature Conservancy of Canada	ENGO	Chemical, mechanical
Ontario Ministry of Natural Resources – Guelph District	Provincial Government	Chemical, mechanical
Ottawa Invasive Plant Network	Loose-knit group of people	Mechanical
Parks Canada	Federal government	Chemical, mechanical
Royal Botanical Gardens	Botanical garden	Chemical, mechanical
Toronto Zoo	Municipal government	Mechanical
Urban Forest Associates Inc.	Consultant	Chemical, mechanical



City of Toronto mechanically controlling Winged Euonymus



Volunteers pulling Canada Thistle

Photo credit: US National Park Service Photo

Table 14: Organizations Undertaking Control: Winged Euonymus and Spindle Tree (*Euonymus alata* and *E. europaeus*)

Organization	Type of Organization	Control Type
Baker Forestry Services	Private sector	Chemical, mechanical
City of Toronto Urban Forestry	Municipal government	Chemical, mechanical
Credit Valley Conservation	Conservation authority	Chemical, mechanical
Humber Arboretum	Public garden/municipal/academic partnership	Mechanical
L. Lamb Vegetation Specialist	Consultant	Mechanical
Municipality of Chatham Kent	Municipal government	Cultural
Royal Botanical Gardens	Botanical garden	Mechanical
Urban Forest Associates Inc.	Consultant	Chemical, mechanical

Control Measures: Herbaceous Plants

Table 15: Organizations Undertaking Control: Canada Thistle (*Cirsium arvense*)

Organization	Type of Organization	Control Type
City of London	Municipal government	Mechanical
City of Toronto Urban Forestry	Municipal government	Chemical, mechanical
Friends of the Experimental Farm	Not-for-profit volunteer organization	Mechanical
Humber Arboretum	Public garden/municipal/academic partnership	Mechanical

Table 15: Organizations Undertaking Control: Canada Thistle (*Cirsium arvense*)

Organization	Type of Organization	Control Type
Municipality of Chatham Kent	Municipal government	Chemical
Ontario Streams	ENGO	Chemical
Ottawa Invasive Plant Network	Loose-knit group of people and groups in Ottawa	Mechanical
Rice Lake Plains Joint Initiative	Collaboration of conservation organizations	Mechanical
Royal Botanical Gardens	Botanical garden	Mechanical
Toronto Zoo	Municipal government	Mechanical
Urban Forest Associates Inc.	Consultant	Chemical, mechanical

 Table 16: Organizations Undertaking Control: Colts-foot (*Tussilago farfara*)

Organization	Type of Organization	Control Type
City of Hamilton	Municipal government	Chemical
Humber Arboretum	Public garden/municipal/academic partnership	Mechanical
Urban Forest Associates Inc.	Consultant	
Waterloo Region	Municipal government	Mechanical
Williams and Associates	Consultant	Chemical

 Table 17: Organizations Undertaking Control: Common Periwinkle (*Vinca minor*)

Organization	Type of Organization	Control Type
Baker Forestry Services	Private sector	Chemical, mechanical
Bruce Trail Conservancy	ENGO	Mechanical
Conservation Halton	Conservation authority	Chemical
County of Simcoe Forestry Department	Municipal government	Chemical
Credit Valley Conservation	Conservation authority	Chemical, mechanical
Municipality of Chatham Kent	Municipal government	Chemical
Nature Conservancy of Canada	ENGO	Chemical, mechanical
Royal Botanical Gardens	Botanical garden	Mechanical
Seneca College - King Campus	Academic institution	Mechanical
Toronto Zoo	Municipal government	Mechanical
Urban Forest Associates Inc.	Consultant	Chemical, mechanical



City of Toronto performing chemical control on Dog-strangling Vine

Photo credit: City of Toronto

Table 18: Organizations Undertaking Control: Dog-strangling Vine (*Cynanchum spp*)

Organization	Type of Organization	Control Type
Baker Forestry Services	Private sector	Chemical, mechanical
Blue Heaven Tree Farm	Private individual	Chemical
Bruce Trail Conservancy	ENGO	Mechanical
Charleston Lake Provincial Park	Provincial government	Mechanical
City of Toronto Urban Forestry	Municipal government	Chemical, cultural
Conservation Halton	Conservation authority	Chemical, mechanical
County of Simcoe Forestry Department	Municipal government	Chemical, cultural
Credit Valley Conservation	Conservation authority	Chemical, mechanical
Fletcher Wildlife Garden	ENGO	Mechanical
Friends of Lemoine Point	Conservation authority	Chemical, mechanical
Friends of the Experimental Farm	Not-for-profit volunteer organization	Mechanical
Frontenac Provincial Park	Provincial government	Mechanical
Ganaraska Region Conservation Authority	Conservation authority	Chemical, mechanical
Halton Region	Municipal government	Chemical
Hamilton Naturalists Club	ENGO	Chemical, mechanical

Table 18: Organizations Undertaking Control: Dog-strangling Vine (*Cynanchum* spp)

Organization	Type of Organization	Control Type
Humber Arboretum	Public garden/municipal/academic partnership	Mechanical
L. Lamb Vegetation Specialist	Consultant	Chemical, mechanical
Lower Trent Conservation	Conservation authority	Chemical, mechanical
Municipality of Chatham Kent	Municipal government	Mechanical
Nature Conservancy of Canada	ENGO	Chemical, mechanical
Nottawasaga Valley Conservation Authority	Conservation authority	Chemical
Ontario Streams	ENGO	Mechanical
Ottawa Invasive Plant Network	Loose-knit group of people	Mechanical
Parks Canada	Federal government	Chemical, mechanical
Presquile Provincial Park	Provincial Government	Chemical
Rice Lake Plains Joint Initiative	Collaboration of conservation organizations	Mechanical
Rideau Valley Conservation Authority	Conservation authority	Mechanical
Royal Botanical Gardens	Botanical garden	Mechanical
Sandbanks Provincial Park	Provincial government	Mechanical
Seneca College King Campus	Academic institution	Mechanical
South Nation Conservation	Conservation authority	Mechanical
South Nation Conservation	Conservation authority	Chemical, mechanical
Toronto and Region Conservation Authority	Conservation authority	Chemical
Toronto and Region Conservation Authority	Conservation authority	Chemical
Toronto Zoo	Municipal government	Chemical, mechanical
Urban Forest Associates Inc.	Consultant	Chemical, mechanical
Waterloo Region	Municipal government	Chemical
Williams & Associates	Consultant	Chemical

 Table 19: Organizations Undertaking Control: Garlic Mustard (*Alliaria petiolata*)

Organization	Type of Organization	Control Type
Baker Forestry Services	Private sector	Chemical, mechanical
Bishops Mills Natural History Centre	Family-based research institute	Mechanical
Bruce County	Municipal government	Mechanical
Bruce Trail Conservancy	ENGO	Mechanical
Central Lake Ontario Conservation Authority	Conservation authority	Mechanical
Charleston Lake Provincial Park	Provincial government	Mechanical
City of Hamilton	Municipal government	Chemical
City of London	Municipal government	Mechanical

Table 19: Organizations Undertaking Control: Garlic Mustard (*Alliaria petiolata*)

Organization	Type of Organization	Control Type
City of Toronto Urban Forestry	Municipal government	Mechanical
Conservation Halton	Conservation authority	Mechanical
County of Simcoe Forestry Department	Municipal government	Chemical, cultural
Credit Valley Conservation	Conservation authority	Chemical, mechanical
Fletcher Wildlife Garden	ENGO	Mechanical
Friends of Lemoine Point	Conservation authority	Cultural, mechanical
Friends of the Experimental Farm	Not-for-profit volunteer organization	Mechanical
Ganaraska Region Conservation Authority	Conservation authority	Chemical, mechanical
GWS Ecological and Forestry Services Inc.	Consultant	Chemical
Hamilton Naturalists Club	ENGO	Mechanical
Humber Arboretum	Public garden/municipal/academic partnership	Mechanical
Invasive Species Research Institute	Incorporated not for profit	Mechanical
Kawartha Conservation	Conservation authority	Mechanical
L. Lamb Vegetation Specialist	Consultant	Cultural, mechanical
Lower Trent Conservation	Conservation authority	Chemical
Municipality of Chatham Kent	Municipal government	Chemical
Murphy's Point Provincial Park	Provincial government	Mechanical
Nature Conservancy of Canada	ENGO	Chemical, mechanical
Nottawasaga Valley Conservation Authority	Conservation authority	Chemical, mechanical
Ontario Ministry of Natural Resources – Guelph District	Provincial Government	Mechanical, cultural
Ontario Streams	ENGO	Mechanical
Ottawa Invasive Plant Network	Loose-knit group of people	Mechanical
Parks Canada	Federal government	Chemical, mechanical
Rideau Valley Conservation Authority	Conservation authority	Mechanical
Royal Botanical Gardens	Botanical garden	Chemical, mechanical
Sandbanks Provincial Park	Provincial government	Mechanical
South Nation Conservation	Conservation authority	Mechanical
Toronto and Region Conservation Authority	Conservation authority	Chemical, mechanical
Toronto and Region Conservation Authority	Conservation authority	Mechanical
Toronto and Region Conservation Authority	Conservation authority	Mechanical
Toronto Zoo	Municipal government	Mechanical
Urban Forest Associates Inc.	Consultant	Chemical, mechanical
Waterloo Region	Municipal government	Mechanical
Williams & Associates	Consultant	Chemical, mechanical

Table 20: Organizations Undertaking Control: Giant Hogweed (*Heracleum mantegazzianum*)

Organization	Type of Organization	Control Type
Organization	Type of Organization	Control Type
Bruce County	Municipal government	Chemical
Bruce Trail Conservancy	ENGO	Chemical
City of Hamilton	Municipal government	Chemical
City of London	Municipal government	Chemical
City of Toronto Urban Forestry	Municipal government	Chemical, mechanical
Conservation Halton	Conservation authority	Chemical
County of Simcoe Forestry Department	Municipal government	Chemical
Credit Valley Conservation	Conservation authority	Chemical
Credit Valley Conservation	Conservation authority	Chemical, mechanical
Essex Region Conservation Authority	Conservation authority	Chemical
L. Lamb Vegetation Specialist	Consultant	Mechanical
Municipality of Chatham Kent	Municipal government	Cultural
Nottawasaga Valley Conservation Authority	Conservation authority	Mechanical
Regional Municipality of York	Municipal government	Chemical
Royal Botanical Gardens	Botanical garden	Mechanical
Toronto and Region Conservation Authority	Conservation authority	Chemical
Toronto Zoo	Municipal government	Mechanical
Urban Forest Associates Inc.	Consultant	Chemical, mechanical
Waterloo Region	Municipal government	Chemical
Williams & Associates	Consultant	Chemical

 Table 21: Organizations Undertaking Control: Goutweed (*Aegopodium podagraria*)

Organization	Type of Organization	Control Type
Baker Forestry Services	Private sector	Chemical, mechanical
Bishops Mills Natural History Centre	Family-based research institute	Mechanical
Credit Valley Conservation	Conservation authority	Chemical, mechanical
Hirsig Landscapes	Landscape maintenance and contractor	Chemical, mechanical
Humber Arboretum	Public garden/municipal/academic partnership	Mechanical
L. Lamb Vegetation Specialist	Consultant	Cultural, mechanical
Region of Waterloo	Municipal government	Chemical, mechanical
Royal Botanical Gardens	Botanical garden	Mechanical
Urban Forest Associates Inc.	Consultant	Chemical, mechanical

Table 22: Organizations Undertaking Control: Oriental Bittersweet (*Celastrus orbiculatus*)

Organization	Type of Organization	Control Type
City of Toronto Urban Forestry	Municipal government	Chemical, mechanical
Credit Valley Conservation	Conservation authority	Chemical
Fletcher Wildlife Garden	ENGO	Mechanical
L. Lamb Vegetation Specialist	Consultant	Mechanical
Ottawa Invasive Plant Network	Loose-knit group of people	Mechanical

 Table 23: Organizations Undertaking Control: Smooth Brome (*Bromus inermis*)

Organization	Type of Organization	Control Type
City of Toronto Urban Forestry	Municipal government	Chemical, cultural, mechanical,
Ontario Ministry of Natural Resources – Guelph District	Provincial Government	Chemical, cultural
Royal Botanical Gardens	Botanical garden	Cultural
Urban Forest Associates Inc.	Consultant	Chemical, mechanical

 Table 24: Organizations Undertaking Control: Spotted Knapweed (*Centaurea maculosa*)

Organization	Type of Organization	Control Type
Bruce County	Municipal government	Chemical
City of Hamilton	Municipal government	Chemical
Parks Canada	Federal government	Chemical, mechanical
Rice Lake Plains Joint Initiative	Collaboration of conservation organizations	Mechanical

 Table 25: Organizations Undertaking Control: Sweet White Clover (*Melilotus albus*)

Organization	Type of Organization	Control Type
City of Hamilton	Municipal government	Chemical, mechanical
City of Toronto Urban Forestry	Municipal government	Mechanical
Hamilton Naturalists Club	ENGO	Mechanical
Hirsig Landscapes	Landscape maintenance and contractor	Mechanical
L. Lamb Vegetation Specialist	Consultant	Cultural, mechanical
Parks Canada	Federal government	Mechanical
Rice Lake Plains Joint Initiative	Collaboration of conservation organizations	Mechanical
Royal Botanical Gardens	Botanical garden	Mechanical

Table 26: Organizations Undertaking Control: Wild Parsnip (*Pastinaca sativa*)

Organization	Type of Organization	Control Type
Bishops Mills Natural History Centre	Family-based research institute	Mechanical
Bruce County	Municipal government	Chemical
Central Lake Ontario Conservation Authority	Conservation authority	Chemical
City of Toronto Urban Forestry	Municipal government	Mechanical
Ganaraska Region Conservation Authority	Conservation authority	Mechanical
L. Lamb Vegetation Specialist	Consultant	Mechanical
Nottawasaga Valley Conservation Authority	Conservation authority	Chemical
Ottawa Invasive Plant Network	Loose-knit group of people	Mechanical
Parks Canada	Federal government	Mechanical
Waterloo Region	Municipal government	Chemical

 Table 27: Organizations Undertaking Control: Woodland Spargrass (*Poa nemoralis*)

Organization	Type of Organization	Control Type
Humber Arboretum	Public garden/municipal/academic partnership	Mechanical
Royal Botanical Gardens	Botanical garden	Cultural

Control Measures: Riparian Plants

 Table 28: Organizations Undertaking Control: Common Reed (*Phragmites*) (*Phragmites australis subsp. australis*)

Organization	Type of Organization	Control Type
Bruce County	Municipal government	Chemical
City of Toronto Urban Forestry	Municipal government	Chemical, mechanical
Credit Valley Conservation	Conservation authority	Chemical, mechanical
Essex Region Conservation Authority	Conservation authority	Chemical, mechanical
Humber Arboretum	Public garden/municipal/academic partnership	Mechanical
Lower Thames Valley Conservation Authority	Conservation authority	Chemical, mechanical
Lower Trent Conservation	Conservation authority	Chemical, mechanical
Municipality of Chatham Kent	Municipal government	Chemical
Nature Conservancy of Canada	ENGO	Chemical

Table 28: Organizations Undertaking Control: Common Reed (*Phragmites*) (*Phragmites australis subsp. australis*)

Organization	Type of Organization	Control Type
Nottawasaga Valley Conservation Authority	Conservation authority	Chemical
Ontario Streams	ENGO	Mechanical
Parks Canada	Federal government	Mechanical
Parks Canada	Federal government	Mechanical
Region of Waterloo	Municipal government	Chemical, cultural, mechanical
St Clair Region Conservation Authority	Conservation authority	Chemical, mechanical
Toronto Zoo	Municipal government	Mechanical
Urban Forest Associates Inc.	Consultant	Chemical, mechanical
Wasaga Beach Provincial Park	Provincial Government	Chemical, Mechanical

Table 29: Organizations Undertaking Control: Flowering Rush (*Butomus umbellatus*)

Organization	Type of Organization	Control Type
Fletcher Wildlife Garden	ENGO	Mechanical
Hirsig Landscapes	Landscape maintenance and contractor	Mechanical
L. Lamb Vegetation Specialist	Consultant	Mechanical

Table 30: Organizations Undertaking Control: Himalayan Balsam (*Impatiens glandiflora*)

Organization	Type of Organization	Control Type
Baker Forestry Services	Private sector	Chemical
Bishops Mills Natural History Centre	Family-based research institute	Mechanical
City of Toronto Urban Forestry	Municipal government	Chemical, Cultural, mechanical
County of Simcoe Forestry Department	Municipal government	Mechanical
Rideau Valley Conservation Authority	Conservation authority	Mechanical
South Nation Conservation	Conservation authority	Mechanical
Urban Forest Associates Inc.	Consultant	Chemical, mechanical

Table 31: Organizations Undertaking Control: Purple Loosestrife (*Lythrum salicaria*)

Organization	Type of Organization	Control Type
Bishops Mills Natural History Centre	Family-based research institute	Biological
Bruce County	Municipal government	Chemical
Central Lake Ontario Conservation Authority	Conservation authority	Biological
City of London	Municipal government	Biological
Credit Valley Conservation	Conservation authority	Biological
Essex Region Conservation Authority	Conservation authority	Mechanical
Hirsig Landscapes	Landscape maintenance and contractor	Mechanical
Kawartha Highlands Signature Site Provincial Park	Provincial government	Mechanical
L. Lamb Vegetation Specialist	Consultant	Mechanical
Lower Thames Valley Conservation Authority	Conservation authority	Mechanical
Municipality of Chatham Kent	Municipal government	Chemical
Nottawasaga Valley Conservation Authority	Conservation authority	Mechanical
Ontario Streams	ENGO	Mechanical
Parks Canada	Federal government	Mechanical
Royal Botanical Gardens	Botanical garden	Biological
Sandbanks Provincial Park	Provincial government	Mechanical
Toronto Zoo	Municipal government	Mechanical
Urban Forest Associates Inc.	Consultant	Chemical, mechanical

 Table 32: Organizations Undertaking Control: Reed Canary Grass (*Phalaris arundinacea*)

Organization	Type of Organization	Control Type
City of Hamilton	Municipal government	Chemical
City of London	Municipal government	Mechanical
L. Lamb Vegetation Specialist	Consultant	Mechanical
Toronto Zoo	Municipal government	Mechanical

 Table 33: Organizations Undertaking Control: Rough (Great) Manna Grass (*Glyceria maxima*)

Organization	Type of Organization	Control Type
Credit Valley Conservation	Conservation authority	Chemical, cultural, mechanical
Royal Botanical Gardens	Botanical garden	Chemical, mechanical



Central Lake Ontario Conservation Authority mechanically removing Yellow Iris

Photo credit: Diana Shermet

Table 34: Organizations Undertaking Control: Yellow Iris (*Iris pseudacorus*)

Organization	Type of Organization	Control Type
Credit Valley Conservation	Conservation authority	Mechanical
L. Lamb Vegetation Specialist	Consultant	Mechanical
Ontario Streams	ENGO	Mechanical
Rideau Valley Conservation Authority	Conservation authority	Mechanical

Control Measures: Aquatic Plants

Table 35: Organizations Undertaking Control: Eurasian Watermilfoil (*Myriophyllum spicatum*)

Organization	Type of Organization	Control Type
Trent University	Academic institution	Biological, cultural, mechanical



Central Lake Ontario Conservation Authority mechanically removing European Frog-bit

Photo credit: Diana Shermet

Table 36: Organizations Undertaking Control: European Frog-bit (*Hydrocharis morsus-ranae*)

Organization	Type of Organization	Control Type
Central Lake Ontario Conservation Authority	Conservation authority	Mechanical
Fletcher Wildlife Garden	ENGO	Mechanical
Hirsig Landscapes	Landscape maintenance and contractor	Mechanical
Ottawa Invasive Plant Network	Loose-knit group of people	Mechanical
South Nation Conservation	Conservation authority	Mechanical

Table 37: Organizations Undertaking Control: Water Chestnut (*Trapa natans*)

Organization	Type of Organization	Control Type
Ontario Federation of Anglers and Hunters	ENGO	Mechanical
South Nation Conservation	Conservation authority	Mechanical
Voyageur Provincial Park	Provincial government	Mechanical

Table 38: Organizations Undertaking Control: Water Soldier (*Stratiotes aloides*)

Organization	Type of Organization	Control Type
Lower Trent Conservation	Conservation authority	Mechanical
Ontario Federation of Anglers and Hunters	ENGO	Mechanical
OMNR - Peterborough District	Provincial government	Mechanical



Volunteers mechanically controlling Water Chestnut

Photo credit: OFAH

Table 39: Organizations Undertaking Control: Yellow Floating Heart (*Nymphoides peltatum*)

Organization	Type of Organization	Control Type
Royal Botanical Gardens	Botanical garden	Mechanical



Mechanical control of Water Soldier

Photo credit: Francine MacDonald

Table 40: Organizational Contact Information

Organization	Address	Phone Number	Website or Email
Baker Forestry Services	5001 ninth line, RR5, Georgetown ON, L7G 4S8	(905) 877-9390	bakerforestryervices@hughes.net
Bishops Mills Natural History Centre	30 Main Street, Bishops Mills, County Rd 18, Oxford Mills, Ontario	(613) 258-3107	http://pinicola.ca/bmnhc.htm
Blue Heaven Tree Farm	7675 Country Lane, Whitby, ON L1M 1N5	(905) 655-5818	
Bruce County	30 Park Street, Walkerton, ON N0G 2V0	(519) 881-1291	http://www.brucecounty.on.ca/
Bruce Trail Conservancy	P.O. Box 857 Hamilton, ON, L8N 3N9	1-800-665-HIKE	http://brucetrail.org/
Central Lake Ontario Conservation Authority	100 Whiting Ave, Oshawa, ON L1H 3T3	(905) 579-0411	www.cloca.com
Charleston Lake Provincial Park	148 Woodvale Rd, Lansdowne, ON K0E 1L0	(613) 659-2065	www.ontarioparks.com/english/char
City of Hamilton	320-77 James St N. Hamilton, ON, L8R 2K3	(905) 546-CITY (2489)	www.hamilton.ca
City of London	P O Box 5035, London, ON N6A 4L9	(519) 661-4500	www.london.ca
City of Toronto Urban Forestry	355 Lesmill Rd, Toronto ON, M3B 2W8	(416) 392-0380	http://www.toronto.ca/trees/
Conservation Halton	2596 Britannia Road West Burlington, ON L7P 0G3	(905) 336-1158	www.conservationhalton.on.ca
County of Simcoe Forestry Dept.	1110 Highway 26, Midhurst, Ontario L0L 1X0	(705) 735-6901	www.simcoe.ca
Credit Valley Conservation	1255 Old Derry Road, Mississauga On, L5N 6R4	(905) 670-1615	www.creditvalleyca.ca
Eastern Ontario Model Forest - Regional Forest Health Network	10 Campus Drive, P.O. Bag 2111 Kemptville, Ontario K0G 1J0	(613) 258-8241	www.eomf.on.ca
Essex Region Conservation Authority	360 Fairview W, Essex, ON N8M 1Y3	(519) 776-5209	www.erca.org
Fletcher Wildlife Garden (Ottawa Field Naturalists Club)	Box 35069 Westgate PO, Ottawa ON K1Z 1A2	(613) 234-6767	http://www.ofnc.ca/fletcher.php
Friends of Lemoine Point – Cataraqui Region Conservation Authority	The Friends of Lemoine Point c/o Cataraqui Region CA 1641 Perth Road, P.O. Box 160, Glenburnie ON, K0H 1S0	(613) 546-4228 x306	http://www.cataraquiregion.on.ca
Friends of the Experimental Farm	Building 72, Arboretum, Central Experimental Farm, Ottawa, ON K1A 0C6	(613) 230-3276	www.friendsofthefarm.ca
Frontenac Provincial Park	Box 11, 1090 Salmon Lake Road Sydenham, ON K0H 2T0	(613) 376-3489	www.ontarioparks.com/english/fron

Table 40: Organizational Contact Information

Organization	Address	Phone Number	Website or Email
Ganaraska Region Conservation Authority	2216 County Road 28, P.O. Box 328, Port Hope, Ontario L1A 3W4	(905) 885-8173	www.grca.on.ca
GWS Ecological and Forestry Services Inc.	4670 Townline Road, Cambridge, Ontario N3C 2V1	(519) 651- 2224	http://www.gwsefs.com/
Halton Region	1151 Bronte Road, Oakville, ON, L6M 3L1	(905) 825-6000	www.halton.ca
Hamilton Naturalists Club	P. O. Box 89052, Hamilton ON L8S 4R5	(905) 381-0329	http://www.hamiltonnature.org/
Hirsig Landscapes	1631 Concession 1, Plantagenet ON K0B 1L0	(613) 673-2221	http://www.hirsiglandscapes.com/
Humber Arboretum	205 Humber College Blvd, Toronto ON, M9W 5L7	(416) 675-5009	http://www.humberarboretum.on.ca/
Invasive Species Research Institute (Algoma University)	Biosciences and Technology Convergence Center, Rm 300, Algoma University, 1520 Queen Street E, Sault Ste. Marie ON P6A 2G4	(705) 949-2301 x3161	www.isri.ca
Kawartha Conservation	277 Kenrei (Park) Road, Lindsay, ON, K9V 4R1	(705) 328-2271	www.kawarthaconservation.com
Kawartha Highlands Signature Site Provincial Park	106 Monck Street, Box 500 Bancroft, ON, K0L 1C0	(613) 332-3940 ext. 261	www.ontarioparks.com/english/kawa
Lower Thames Valley Conservation Authority – Longwoods Road Conservation Area	8449 Irish Drive, R.R.#1, Mount Brydes, ON, N0L 1W0	(519) 264-2420	www.lowerthamesconservation.on.ca
Lower Trent Conservation	714 Murray St., Trenton On, K8V 5P4	(613) 394-4829	http://www.ltc.on.ca/
Municipality of Chatham Kent	315 King Street West, P.O. Box 640 Chatham, ON N7M 5K8	(519) 360-1998	www.chatham-kent.ca
Murphy’s Point Provincial Park	R.R.#5, Perth, ON K7H 3C7	(613) 267-5060	www.ontarioparks.com/english/murp
Nature Conservancy of Canada	P.O. Box 443, London ON, N6A 4W1	1-800-249-9598 Ext. 0	www.natureconservancy.ca
Nottawasaga Valley Conservation Authority	8195 8th Line, Utopia On, L0M 1T0	(705) 424-1479	www.nvca.on.ca
Ontario Federation of Anglers and Hunters	4601 Guthrie Drive, Peterborough On, K9J 8L5	(705) 748-6324	www.ofah.org
Ontario Ministry of Natural Resources – Guelph District	1 Stone Road West, Guelph ON, N1G 4Y2	(519) 826-4955	www.ontario.ca/invasivespecies
Ontario Ministry of Natural Resources - Peterborough District	300 Water St, Peterborough ON K9J 8M5	(705) 755-2001	www.ontario.ca/invasivespecies
Ontario Nature	214 King Street West, Suite 612 Toronto, ON M5H 3S6	(416) 444-8419	www.ontarionature.org

Table 40: Organizational Contact Information

Organization	Address	Phone Number	Website or Email
Ontario Streams	50 Bloomington Road West, Aurora, ON L4G 0L8	(905) 713-7399	www.ontariostreams.on.ca
Ottawa Invasive Plant Network (informal network)	563 Fairview Ave, Ottawa, ON K1M 0X4	(613) 746-6145	iolaprice@comnet.ca
Parks Canada	25-7-N Eddy Street Gatineau, Quebec, Canada K1A 0M5	888-773-8888	www.pc.gc.ca
Presqu'ile Provincial Park	328 Presqu'ile Parkway Brighton, ON K0K 1H0	(613) 475-4324	www.ontarioparks.com/english/pres
Region of Waterloo	150 Frederick St. P.O. Box 9051, Station C, Kitchener, ON N2G 4J3	(519) 575-4400	www.regionofwaterloo.ca
Regional Municipality of York	17250 Yonge Street, Newmarket, ON, L3Y 6Z1	1-877-464-YORK (9675)	www.york.ca
Rice Lake Plains Joint Initiative	Toronto, ON	(905) 352-1184	www.ricelakeplains.ca
Rideau Valley Conservation Authority	3889 Rideau Valley Dr PO Box 599 Stn Main Manotick, ON K4M 1A5	(613) 692-3571	www.rvca.ca
Royal Botanical Gardens	680 Plains Rd W, Burlington On, L7T 4H4	1-800-694-4769	www.rbg.ca
Sandbanks Provincial Park	R.R.#1, Picton, ON K0K 2T0	(613) 393-3319	www.ontarioparks.com/english/sand
Seneca College - King Campus	13990 Dufferin St, King City, ON K7B 1B3	(416) 491-5050	www.senecac.on.ca
South Nation Conservation	38 Victoria Street Finch, ON K0C 1K0	(613) 984-2948	www.nation.on.ca
St Clair Region Conservation Authority	205 Mill Pond Crescent, Strathroy ON N7G 3P9	(519) 245-3710	www.scrca.on.ca
Toronto and Region Conservation Authority	5 Shoreham Drive Downsview, ON M3N 1S4	(416) 661-6600	www.trca.on.ca
Toronto Zoo	361A Old Finch Avenue, Toronto ON M1B 5K7	(416) 392-5929	www.torontozoo.com
Trent University	1600 West Bank Drive Peterborough, ON K9J 7B8	(705) 748-1011	www.trentu.ca
Upper Thames River Conservation Authority	1424 Clarke Rd London, ON N5V 5B9	(519) 451-2800	www.thamesriver.on.ca
Urban Forest Associates Inc.	Toronto, ON	(416) 423-3387	www.ufora.ca
Voyageur Provincial Park	Box 130, Chute-a-Blondeau, ON K0B 1B0	(613) 674-2825	www.ontarioparks.com/english/voya
Wasaga Beach Provincial Park	11-22nd Street North, Wasaga Beach, ON, L9Z 2V9	(705) 429-2516	www.ontarioparks.com/english/wasa
Williams and Associates	5369 Wellington Road 27, R.R.#1 Rockwood, ON, N0B 2K0	(519) 856-1286	www.forestar.ca

