Aguila-Wong, Christine

Subject: FW: Regional Council Decision - Annual Update on Invasive Species
Attachments: Original Staff Report - Annual Update on Invasive Species.pdf

From: Regional Clerk <ClerkGeneralLine@york.ca>
Subject: Regional Council Decision - Annual Update on Invasive Species

On October 17, 2019 Regional Council made the following decision:

1. The Regional Clerk forward this report to the Minister of Natural Resources and Forestry, expressing concern about continued invasive species impacts and requesting that funding be restored to key invasive species partner organizations to assist municipalities with mitigating the impacts of invasive species.

2. The Regional Clerk forward this report to the local municipalities.

The original staff report is attached for your information.

Please contact James Lane, Manager, Natural Heritage and Forestry at 1-877-464-9675 ext. 75271 or Laura McDowell, Director, Environmental Promotion and Protection at 1-877-464-9675 ext. 75077 if you have any questions with respect to this matter.

Regards,

Christopher Raynor | Regional Clerk, Regional Clerk's Office, Corporate Services
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*Our Values: **I**ntegrity, **C**ommitment, **A**ccountability, **R**espect, **E**xcellence*

The Regional Municipality of York

Committee of the Whole
Environmental Services
October 3, 2019

Report of the Commissioner of Environmental Services

Annual Update on Invasive Species

1. Recommendation

The Regional Clerk forward this report to the Minister of Natural Resources and Forestry, expressing concern about continued invasive species impacts and requesting that funding be restored to key invasive species partner organizations to assist municipalities with mitigating the impacts of invasive species.

2. Summary

Key Points:

- Invasive species continue to be a significant financial burden to municipalities and conservation authorities in Ontario with an estimated combined annual expenditure of $50.8 million
- The provincial government has significantly reduced funding to key invasive species-focussed partner organizations which will impact support and resources available to municipalities, conservation authorities and residents
- Emerald Ash Borer Management Plan budget and expenditures remain on track
- Staff remain vigilant and continue to work with local municipalities, conservation authorities, partner organizations and other levels of government to review and respond to emerging invasive species threats

3. Background

Invasive species in Ontario have an estimated $3.6 billion annual impact and are a growing environmental and economic concern

Ontario has more invasive species than any other province or territory in Canada (over 660 species) and as a result municipalities continue to face significant pressures and costs. In 2019, an updated analysis was carried out by the Invasive Species Centre, in partnership with the Regional Public Works Commissioners of Ontario's (RPWCO) Urban Forestry Sub-committee. This analysis estimated that invasive species expenditures by Ontario

municipalities and conservation authorities are $50.8 million per year (Attachment 1). Potential economic impacts from invasive species to Ontario's agriculture, fisheries, forests, healthcare, and tourism and recreation industries are estimated to be $3.6 billion per year (Attachment 1). Economic impacts to these industries include crop yield losses, increased herbicide use and costs, direct impacts to fisheries and forest resource values and production.

Province reduced funding to organizations which provide valuable research and resources for invasive species mitigation

Climate change is expected to increase the rate at which invasive species become established in Ontario and create conditions that allow established species to spread into new areas. The Region's Climate Change Action Plan will identify actions and objectives to address invasive species in a changing climate. The Province's, A Made-in-Ontario Environment Plan (2018) recognizes that climate change will have significant impacts and identifies specific actions to protect our natural environment from invasive species including working with partners and other governments.

In 2019 the provincial government significantly reduced funding to nine programs devoted to combating the introduction, spread and impacts of invasive species. The Invasive Species Centre received a $50,000 reduction in funding for 2019. The Invading Species Awareness Program funding was reduced by 43% and funding to the Ontario Invasive Plant Council (OIPC) was eliminated entirely.

These funding cuts represent a set-back for preventing and mitigating invasive species impacts in York Region and Ontario. Elimination of funding to the OIPC threatens the loss of valuable expertise and resources such as best management practice documents for managing invasive plants in Ontario, invasive species factsheets, Clean Equipment Protocol, and The Invasive Plant Management Strategy Framework for Ontario Municipalities.

York Region collaborates with local municipalities, provincial and federal governments, non-governmental organizations and academia to manage invasive species

Since 2008, York Region has worked with its partners to raise awareness of invasive species including emerald ash borer, and to prevent and mitigate adverse effects of invasive species on tree canopy and woodland cover.

Regional staff participate on the Communications Committee of the Ontario Invasive Plant Council and co-chair the Regional Public Works Commissioners of Ontario (RPWCO) Urban Forest Sub-committee, which provides a forum to share experiences amongst public works jurisdictions in Ontario.

Ontario's *Invasive Species Act, 2015* includes provisions to restrict possession, propagation and movement of regulated invasive species, and requires management plans be enacted when a regulated species is discovered. Risk assessments for individual invasive species have been completed by the province with a number of new species being proposed for

regulation later this year. Staff will continue to participate in reviewing regulatory proposals and track new species listings.

Regional staff also chair the York Region Invasive Species Technical Working Group which includes representatives from local municipalities, conservation authorities, surrounding jurisdictions including the Chippewas of Georgina Island First Nation, and the federal and provincial governments. Topics include updates on ash tree removal and replacement, and other priority invasive species (e.g. hemlock woolly adelgid, Phragmites, and dog-strangling vine). On August 7, 2019 Regional staff visited Georgina Island and met with staff from the Chippewas of Georgina Island Environmental Department to discuss the recent discovery of emerald ash borer on Georgina Island and to discuss other invasive species impacting the island such as dog-strangling vine and Phragmites. A follow-up meeting is scheduled to discuss collaboration regarding various environmental and natural heritage projects.

June 2011 Council endorsed the York Region Emerald Ash Borer Management

At its meeting on June 23, 2011, Council endorsed the York Region Emerald Ash Borer Management Plan outlining an active management approach. The emerald ash borer will likely always be present; however, over the next 10 years, with a diminished supply of living ash trees and the impact of natural and introduced predators (e.g. parasitic wasps), their numbers should decline. Staff continue with proactive management to mitigate emerald ash borer impacts including assessment of priority ash trees for treatment and removal of hazard trees in the York Regional Forest. The Region has also partnered with Local Enhancement and Appreciation of Forests (LEAF) to offer an additional tree planting subsidy for residents who have lost an ash tree to emerald ash borer.

4. Analysis

York Region at risk for a number of invasive pests, plants and aquatic species

Regional staff and regulatory agencies remain vigilant in monitoring for invasive tree pests and diseases. In 2019, monitoring traps were installed in ash trees on Regionally-owned land to monitor the status of emerald ash borer populations. Survey results confirm that emerald ash borer continues to be present throughout the Region, and appears to be impacting urban ash trees to a greater degree than ash trees in woodlands. In April 2019 emerald ash borer was detected on Georgina Island for the first time.

Hemlock woolly adelgid, a tiny (0.8 mm) invasive insect that has killed billions of hemlock trees in the northeastern United States, was detected and eradicated (2012, 2013) at two sites in southern Ontario (Etobicoke and Niagara Region). In 2019, two new infestations were confirmed in Niagara Region: Niagara Gorge and Wainfleet Township. The Canadian Food Inspection Agency has completed a delineation survey and control measures are in place to prevent further spread.

Invasive plants continue to impact natural and agricultural areas throughout York Region. Forestry staff work in partnership with Roads Maintenance staff to implement best practices (e.g. manual removal and herbicide treatments) removing hazardous plants such as wild parsnip and giant hogweed along Regional roads.

There are currently 48 known invasive aquatic species including fish, mussels, plants and disease threatening the health and function of our watersheds including Lake Simcoe. Invasive quagga mussels continue to impact nutrient cycling and algal blooms in our lakes. The Region has made operational changes ($100,000 annually) to our water intake systems to adapt to increasing levels of quagga mussels which clog the water intakes to our drinking water plants.

For more information and status updates on priority invasive species currently impacting or threatening York Region, see Attachment 2 – Priority Invasive Species in York Region.

York Regional Forest is a research site for biological control of emerald ash borer and dog-strangling vine

Natural Resources Canada's biological control program for emerald ash borer has included release sites in the York Regional Forest since 2015. Two species of tiny (2-4 mm), stingless wasps were released, which pose no threat to residents. Larval wasps destroy emerald ash borer eggs and larvae. Biological control is an effective part of the solution to control introduced invasive species, and has been successful in the past (e.g. purple loosestrife, gypsy moth). Early indication is that the York Regional Forest release site has successfully established a wasp population contributing to the success of the biocontrol efforts across the watershed and beyond.

The biological control of dog-strangling vine with Hypena moth continues to advance in the York Regional Forest as part of a research partnership with Agriculture and Agri-Food Canada, the University of Toronto, and a private company. The Hypena moth caterpillar feeds only on this invasive plant, reducing its ability to mature and produce seed. Caterpillars have been released at seven sites since 2015 and three sites have confirmed established populations. The work has expanded in 2019 to include additional release sites and monitoring of all sites continues. Biological control is a long-term solution and it is anticipated that it will take several years to see tangible impacts.

Invasive European common reed (*Phragmites australis*) persists across York Region

In 2019, Natural Heritage and Forestry staff, working in partnership with Roads Maintenance, carried out an initial inventory of invasive European common reed (Phragmites) within Regional road right of ways (Attachment 3). Findings from this first inventory conducted for Phragmites will be compared to future survey data to assess the spread of this invasive plant. Staff will consult with local municipalities, conservation authorities, community groups and other regional departments to identify priority areas for control (e.g. natural heritage feature protection, drainage infrastructure). Phragmites is extremely difficult to eradicate. It grows in and around waterways (ditches, ponds, wetlands) and there are no approved

herbicides for use to control it in and around water. In 2020, staff will pilot best management practices to address priority populations and evaluate effectiveness.

Public outreach provides tools and options to help residents manage emerald ash borer and other invasive species

Invasive species education is a core component of programming, and focusses on awareness and identification of priority species, and sharing information resources related to control and mitigation. In partnership with Forests Ontario, the Region developed a Woodlot Owner Advisory Program which provides information to woodlot owners for managing the impacts of emerald ash borer. Through a partnership with Local Enhancement and Appreciation of Forests (LEAF), residents can receive an increased subsidy to replace lost ash trees with trees of a different species through the Backyard Tree Planting Program.

5. Financial

Budget supports overall program including emerald ash borer priority tree removals and replacement of Regional road ash trees

Currently, the majority of costs associated with emerald ash borer include tree protection, street tree removal and replacement along Regional roads, and hazard tree removal within the York Regional Forest. The original cost estimates from the Emerald Ash Borer Management Plan (2012–2021, $10 million) remain on track. From 2012 to the end of 2019, approximately $7.8 million will have been spent to manage impacts through the peak of the infestation. Emerald ash borer will likely persist on the landscape indefinitely, and beyond 2021 the Region will remain dedicated to managing impacts by supporting research and monitoring, treating priority ash trees to protect them from emerald ash borer and offering information and resources to residents. Any additional budget pressures associated with emerging invasive species impacts will be brought forward for Council's consideration as part of future budget processes.

Minister is requested to restore provincial funding to key invasive species programming in Ontario

Invasive species continue to be a significant financial burden to municipalities and conservation authorities in Ontario (Attachment 1). The Province's funding cuts to key invasive species programs such as the Invasive Species Centre, Ontario Invasive Plant Council and the Invading Species Awareness Program is a considerable setback. These organizations provide leadership and educational resources, contribute to research, and provide technical expertise and collaborative opportunities for municipalities, conservation authorities and residents across Ontario. Provincial funding cutbacks reduce the Region's ability to provide valuable outreach and education opportunities to residents through invasive species-related programming, and limit staff's ability to provide accurate and reliable information to our residents. Provincial funding for invasive species prevention has supported early detection, rapid response and control which are imperative for a successful response to

the challenge of invasive species in Ontario. This report will be submitted to the Minister of Natural Resources and Forestry requesting the Minister to restore funding to key invasive species partner organizations (Invasive Species Centre, Invasive Species Awareness Program, Ontario Invasive Plant Council) to assist York Region and other municipalities with mitigating the growing impacts of invasive species.

6. Local Impact

The Invasive Species Technical Working Group provides a forum for sharing knowledge about emerald ash borer as well as other invasive species. York Region staff will continue to collaborate with local municipalities in monitoring, prevention, education and outreach activities as well as sharing latest science.

All nine local municipalities have or are working on Emerald Ash Borer Management Plans or implementation strategies, which align with Regional interests. The Region focuses on managing impacts to Regional assets (e.g. street trees along Regional roads, York Regional Forest properties) and local municipalities focus on street trees on local roads, parklands and more. Jurisdictions work collaboratively on communications and outreach initiatives. Most local municipal plans include removing and replacing trees, with some protection of selected trees with insecticide.

7. Conclusion

Emerald ash borer is established throughout York Region, and most recently confirmed on Georgina Island. Efforts to manage and mitigate emerald ash borer impacts will continue to be guided by our Emerald Ash Borer Management Plan, including removal and replacement of street trees and mitigating impacts to the York Regional Forest, as well as offering tree planting rebates to residents who have lost ash trees on their property.

Staff remain vigilant and continue to work with local municipalities, other levels of government and non-profit organizations to review emerging threats and work proactively to prevent and respond to the impacts of invasive species. In light of the recent funding reductions to invasive species focussed partner organizations, staff recommend that the provincial government reinstate funding to these organizations as there is no direct funding to municipalities. These organizations are integral in providing resources to municipalities and community groups working to manage the threat and impact of invasive species in Ontario.

For more information on this report, please contact James Lane, Manager, Natural Heritage and Forestry at 1-877-464-9675 ext. 75271 or Laura McDowell, Director, Environmental Promotion and Protection at ext. 75077.

Recommended by: **Erin Mahoney, M. Eng.**
Commissioner of Environmental Services

Approved for Submission: **Bruce Macgregor**
Chief Administrative Officer

September 19, 2019
Attachments (3)
eDocs #9694193

ATTACHMENT 1

ESTIMATED EXPENDITURES ON INVASIVE SPECIES BY ONTARIO MUNICIPALITIES & CONSERVATION AUTHORITIES

Between 2017-2019, the Invasive Species Centre (ISC) conducted online and telephone surveys to review current known and reported expenditures on invasive species incurred by municipalities and conservation authorities in Ontario. We received data from 147 municipalities and 23 conservation authorities specific to the most recent fiscal year or annual expenditures. Estimates are based on averages and extrapolations of this data.

Total estimated expenditures by municipalities and conservation authorities across Ontario:

$50.8 MILLION/YEAR

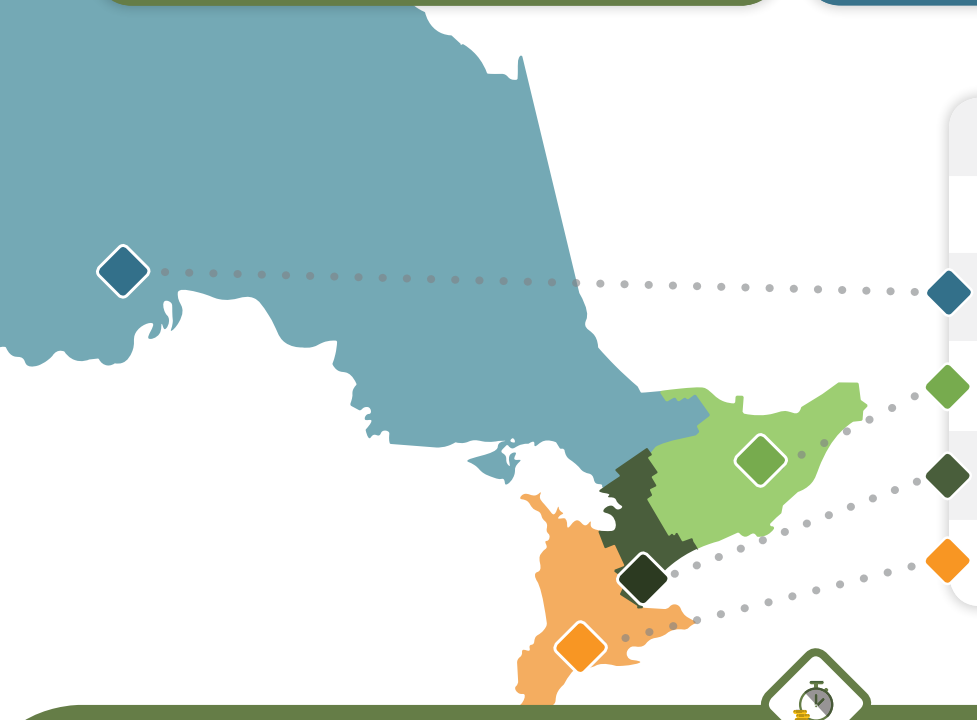
Estimated average expenditure per **Ontario municipality:**

$218,148/YEAR

This number includes an average **$1,077,562/YEAR** spent by **urban areas**, **$213,518/YEAR** spent by **counties**, and **$28,976/YEAR** spent by **townships**.

Estimated average expenditure per **Ontario conservation authority:**

$314,724/YEAR



AVERAGE ANNUAL EXPENDITURES BY REGION:

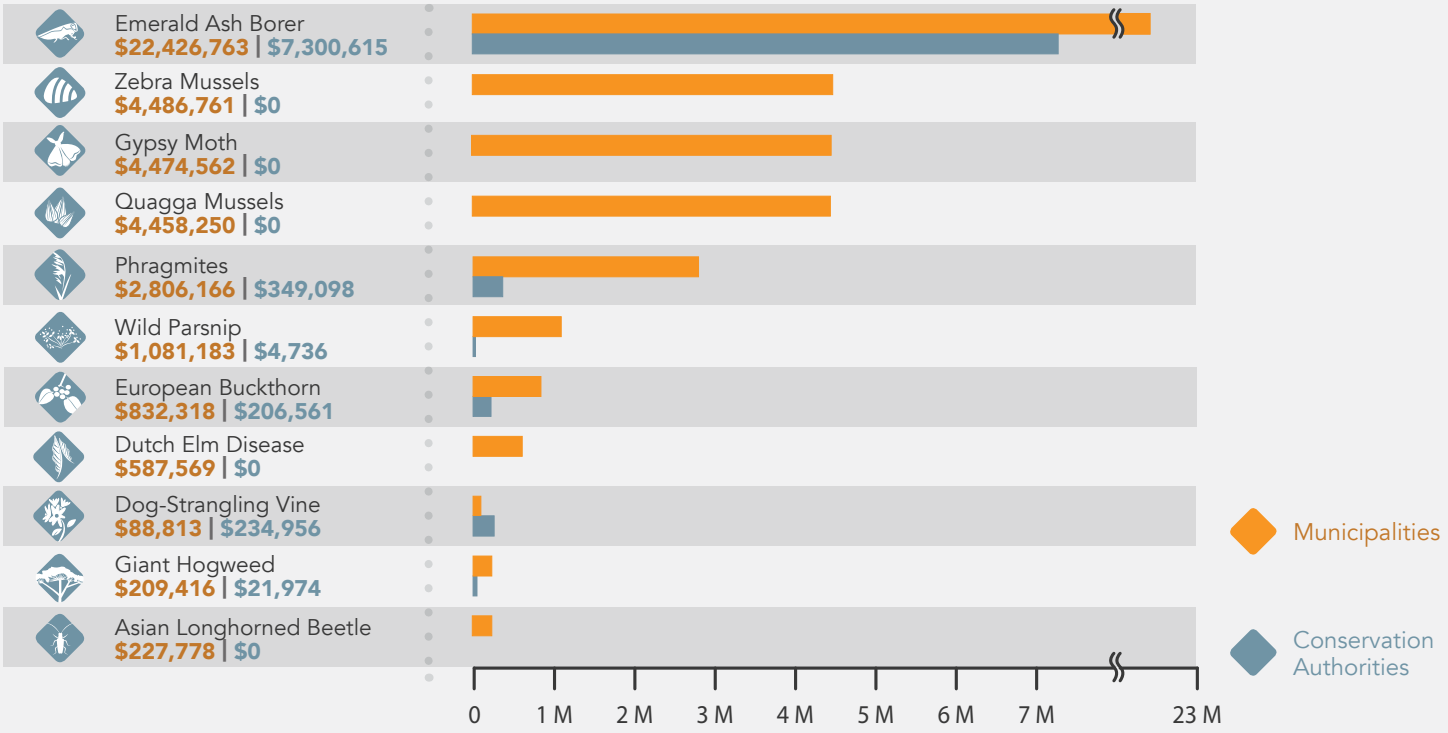
	PER MUNICIPALITY	PER CONSERVATION AUTHORITY
	$10,770	$9,735
	$132,424	$293,757
	$527,573	$710,222
	$172,939	$127,403

RPWCO Regional Public Works Commissioners of Ontario

Invasive Species Centre

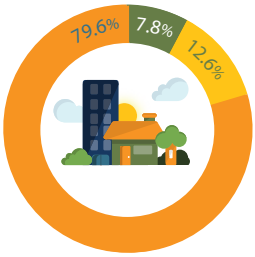
While this report estimates what Ontario municipalities and conservation authorities are spending on invasive species, this is just a fraction of the economic impacts of invasive species. The potential economic impacts on agriculture, fisheries, forests, healthcare, tourism and the recreation industry are estimated to be approximately **$3.6 billion/year in Ontario.**[1]

ESTIMATED ANNUAL EXPENDITURES ON INDIVIDUAL INVASIVE SPECIES

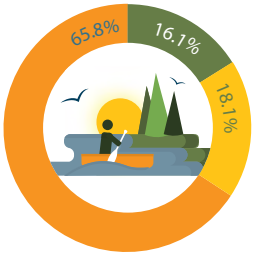


HOW WAS THE MONEY SPENT?

Municipalities

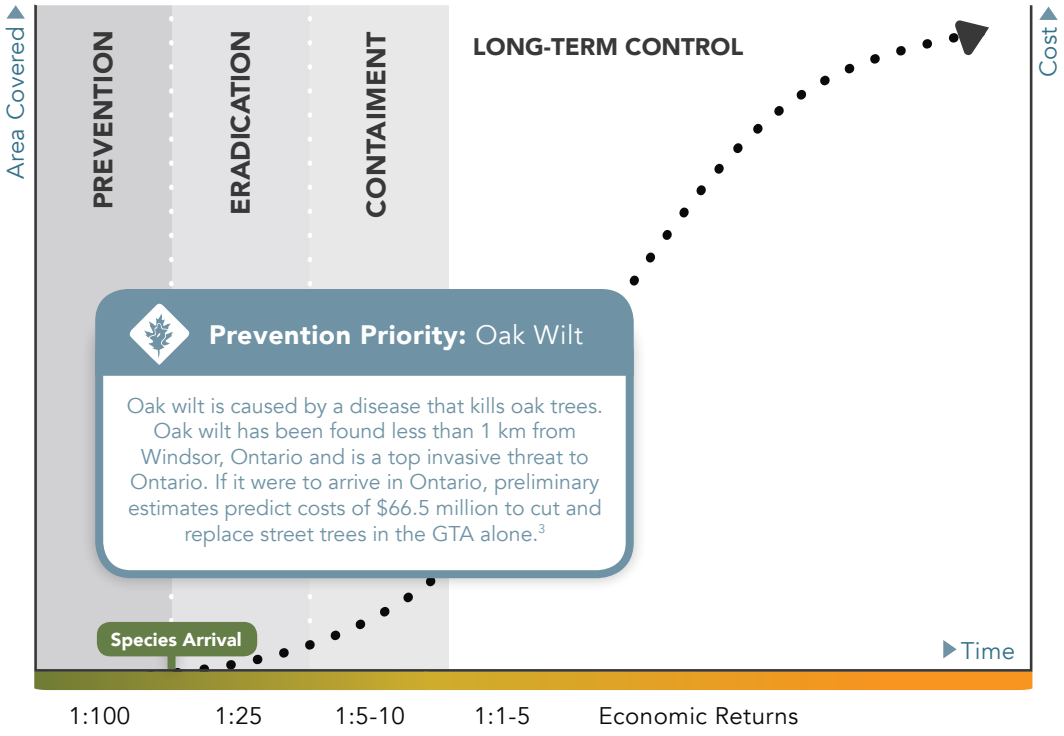


Conservation Authorities



- Prevention
- Detection
- Control & Management

It pays to invest in prevention. The invasion curve shows that **investing in prevention provides economic returns *100x higher* than management after species arrival.**[2]



1 Vyn, Richard. 2017. "An Assessment of the Costs and Economic Impacts of Invasive Species in Ontario." Report prepared for the Invasive Species Centre.

2 Adapted from the Generalised Invasion Curve (Agriculture Victoria, 2009).

3 Canadian Forest Service, 2018. Unpublished data.

Zebra mussel photo: Amy Benson, U.S. Geological Survey, Bugwood.org.

Vyn, Richard. 2019. "Estimated Expenditures on Invasive Species in Ontario: 2019 Survey Results." Report prepared for the Invasive Species Centre.

Contact info@invasivespeciescentre.ca for a copy of the full report.

PRIORITY INVASIVE SPECIES
in York Region

ATTACHMENT 2

Asian long-horned beetle life stages egg - adult beetle.

Photo Credit: K.R. Law, USDA APHIS PPQ, Bugwood.org

ASIAN LONG-HORNED BEETLE *(Anoplophora glabripennis)*

ORIGIN: Native to Asia, can be introduced into Canada with infested wood packaging material (e.g. wooden pallets, crates, boxes, etc.).

IMPACTS: Adults lay their eggs in hardwood trees, and larvae then tunnel through the living tissue of the tree stopping the flow of water and nutrients, killing it.

Host tree species preferred by Asian long-horned beetle include birch, maple, elm, poplar, willow and mountain ash.

WHERE: Regulated area in Toronto and Mississauga.
Map: inspection.gc.ca

UPDATE: Monitoring for 2019 underway, if no new finds, CFIA will declare successfully eradicated.

Emerald ash borer - adult beetle.
Photo Credit: CFIA

EMERALD ASH BORER *(Agrilus planipennis)*

ORIGIN: Native to Asia, proven to be highly destructive in its introduced range.

IMPACTS: Adults lay their eggs in ash trees, and larvae then tunnel through the living tissue of the tree stopping the flow of water and nutrients, ultimately killing it, usually within three years.

Host tree species preferred by emerald ash borer are green, black, white, blue and European ash (Fraxinus spp.).

WHERE: Spreading north throughout Ontario and into Quebec and New Brunswick. Satellite populations have been reported in Thunder Bay, ON, Winnipeg, MB and Halifax County, N.S.

UPDATE: Confirmed infestation on Georgina Island April 2019.

Adelgid nymphs with white woolly covering feeding on underside of hemlock needles

Photo Credit: Connecticut Agricultural Experiment Station, Bugwood.org

HEMLOCK WOOLLY ADELGID *(Adelges tsugae)*

ORIGIN: Native to Asia.

IMPACTS: The hemlock woolly adelgid nymph feeds on the tree's stored starches, depleting its energy stores and thus damaging the tree.

The insect is inactive through much of the summer, resuming feeding and development in the fall. During this time, the nymph produces its distinctive woolly white covering. Hemlock woolly adelgid are small in size and only their woolly coverings are easily visible to the naked eye.

WHERE: Previously found in isolated locations in Ontario (Etobicoke, 2012 and Niagara Gorge, 2013) where infested trees were removed and destroyed.
In 2017, a well-established population was discovered in southwestern Nova Scotia.

UPDATE: Two new reports confirmed in Ontario: Niagara Gorge and Wainfleet Township June 2019.

PRIORITY INVASIVE SPECIES
in York Region

Gypsy moths in the City of Vaughan
Photo Credit: R. Clark, York Region

GYPSY MOTH *(Lymantria dispar dispar)*

ORIGIN: Native to Europe and Asia, gypsy moth was first introduced to North America in the late 1860's in Boston and it has been spreading ever since. Gypsy moth was first discovered in Ontario in 1969 however widespread defoliation did not occur until 1981.

IMPACTS: This European defoliator feeds on a wide variety of tree species but appears to prefer oak (Quercus). The moth's larvae form (caterpillar) feeds aggressively on the tree's leaves, reducing growth and, in severe cases, killing the tree. Gypsy moth outbreaks occur every 7 to 10 years with peak feeding observed in July.

WHERE: The distribution of gypsy moth coincides with the range of the insect's preferred host species of oak however, no known populations of the insect have been found in the northern-most part of the oak species' range (e.g. New Liskeard and west of Thunder Bay). The gypsy moth is considered to be present throughout much of southern Ontario.

UPDATE: City of Toronto carried out aerial and ground treatments on public and private property from May 26-June 7, 2019. In York Region, staff continue to monitor gypsy moth populations and treatments are not warranted at this time.

Adult Spotted Lanternfly
Photo Credit: Lawrence Barringer, Pennsylvania Department of Agriculture, Bugwood.org

SPOTTED LANTERNFLY *(Lycorma delicatula)*

ORIGIN: Native to southern Asia and is often identified by its distinguished colouring.

IMPACTS: A significant potential threat to fruit and timber industries through aggressive sap-sucking by both nymph and adult growth stages. If this pest were to be established in Ontario it would have significant impacts on wine, grape, tender fruit, apple and timber (e.g. pine, oak, walnut) industries which have a total estimate economic total of over $5 billion.

WHERE: The first confirmed North American sighting was in 2014 in Pennsylvania, USA. Currently only confirmed in the USA, it has been placed on Canada's regulated pest list to limit the threat of outbreak.

UPDATE: A total of $17.5 million emergency funding was announced by the Pennsylvania Department of Agriculture in early 2018 to stop the spread in southeastern Pennsylvania.

PRIORITY INVASIVE SPECIES
in York Region

Dense patch of dog-strangling vine in the York Regional Forest

Photo Credit: D. Laxton, York Region

DOG STRANGLING VINE *(Vincetoxicum rossicum)*

ORIGIN: Native to Eurasia, introduced to the northeastern United States in the mid 1800s for use in gardens.

IMPACTS: Forms dense stands that overwhelm and crowd out native plants and young trees, preventing forest regeneration. This is a serious concern for the conifer plantations in the York Regional Forest.

Leaves and roots may be toxic to livestock. Deer and other browsing animals also avoid dog strangling vine, which can increase grazing pressure on more palatable native plants.

This vine also poses a threat to monarch butterfly populations; butterflies lay their eggs on the plant but, the larvae are unable to successfully complete their life cycle.

WHERE: Currently it is spreading into backyards and natural areas across York Region at an alarming rate, as it produces seeds that are easily carried by the wind over great distances.

European common reed along road side in York Region

Photo Credit: C. Ogden, York Region

EUROPEAN COMMON REED *(Phragmites australis)*

ORIGIN: Native to Eurasia and introduced to the eastern seaboard of North America in the early 19th century.

IMPACTS: An aggressive perennial grass that has been damaging ecosystems in Ontario for decades. The plant grows very quickly to heights of almost 5 metres (15ft) which crowds out native vegetation resulting in decreased plant biodiversity in turn impacting native wildlife populations. Dense stands of the plant can even lower water levels in ponds and wetlands.

WHERE: Increased sightings throughout York Region most prominently along road sides and in ditches.

UPDATE: As of July 2019, staff completed an inventory of populations along Regional roads and will be consulting with the local municipalities to identify priority areas for piloting removal using best management practices.

Photo Credit: D. Cappaert, Michigan State University, Bugwood.org

GARLIC MUSTARD *(Alliaria petiolata)*

ORIGIN: Herb native to Europe.

IMPACTS: Can invade relatively undisturbed forests. Once established it can displace native wildflowers like trilliums *(Trillium spp.)* and trout lily *(Erythronium americanum).* It hinders other plants by interfering with the growth of fungi that bring nutrients to the roots of the plants.

Threatens several of Ontario's species at risk, including American ginseng (Panax quinquefolius).

WHERE: Established in southern and eastern Ontario (throughout York Region) as far north as Sault Ste. Marie, in parts of Quebec, and south to North Carolina and Kentucky in the United States.

PRIORITY INVASIVE SPECIES
in York Region

Photo Credit: J. Ferreira, City of Brampton

GIANT HOGWEED *(Heracleum mantegazzianum)*

ORIGIN: Southwest Asia (Caucasus Mountains).

IMPACTS: Poses a significant threat to human health. Giant hogweed sap can cause a condition called phytophotodermatitis, which makes skin extremely sensitive to sunlight, and can result in severe burns and blisters. It also outcompetes native plants, reduces biodiversity and degrades the quality of riparian habitats (the zone of land along or around a body of water). Giant hogweed can negatively impact agriculture and is listed as a noxious weed under the Weed Control Act.

WHERE: Sparsely scattered throughout York Region (and all of Southern Ontario). Confirmed reports as far north as Sudbury and Elliot Lake.

Photo Credit: K. Reese, York Region

JAPANESE KNOTWEED *(Fallopia japonica)*

ORIGIN: Plant is native to eastern Asia and was first introduced into North America in the late 1800s.

IMPACTS: Commonly invades disturbed areas with high light, such as roadsides and stream banks. Reproduction occurs both vegetatively (rhizomes) and seeds, making this plant extremely hard to eradicate. The dense patches shade and displace other plant life and reduce wildlife habitat.

WHERE: Increased sightings throughout York Region, road sides and fields.

UPDATE: York Region staff are working with local municipalities to monitor the distribution of this plant in York Region. Mapped locations are being compiled.

Wild parsnip along road side in York Region

Photo Credit: C. Ogden, York Region

WILD PARSNIP *(Pastinaca sativa)*

ORIGIN: Native to Eurasia. Likely brought to North America by European settlers, who grew it for its edible root.

IMPACTS: Can form dense stands and spreads quickly in disturbed areas such as abandoned yards, waste dumps, meadows, open fields, roadsides and railway embankments. Its seeds are easily dispersed by wind and water and by mowing or other equipment.

Like giant hogweed and other members of the carrot family, it produces sap containing chemicals that can cause human skin to react to sunlight, resulting in intense burns, rashes or blisters.

WHERE: Spreading rapidly in southern Ontario, with an increase in sightings along roadsides in York Region.

Photo Credit: Ontario Federation of Anglers and Hunters

WATER SOLDIER *(Stratiotes aloides)*

ORIGIN: Plant is native to Europe and Northeast Asia. Likely introduced as an ornamental water plant sold for water gardens. It is submerged most of the year and rises to the surface in summer months.

IMPACTS: Water soldier decreases plant diversity by forming a dense vegetative mat and crowding out other aquatic plant species. Its presence can change water chemistry and influence populations of important aquatic organisms. The plant has sharp, serrated leafs which can be harmful to those who handle it. Dense patches can also obstruct recreational activities such as swimming and fishing.

WHERE: The only known populations in North America occur in the Trent River (east of Peterborough, ON) and the Black River (Sutton, ON). No new sightings of plants have been observed in the Black River since 2016, while the population in the Trent Severn continues to spread. Provincial and local partners are currently monitoring known populations and attempting to control the spread of this plant.

UPDATE: A new population of water solider was reported in a large pond on private property within the floodplain of the Black River in the Town of Georgina. The Ministry of Natural Resources and Forestry, and the Ontario Federation of Angler and Hunters are working with the landowner to remove the plants to prevent introduction to the Black River and Lake Simcoe.

Photo Credit: Ohio State University, USDA Forest Service, Bugwood.org
Water Soldier

BEECH LEAF DISEASE

ORIGIN: The first detection of beech leaf disease was in Ohio, USA in 2012 and has spread rapidly since. The cause and method of spread is unknown.

IMPACTS: American beech trees are already at risk from beech scale and beech bark disease. Beech leaf disease shows characteristics of an invasive pathogen and is thought to affect the ability of the tree to photosynthesize. It first appears as dark bands on the leaf, later causing leaves to shrivel and dry.

In areas where the disease is established; close to 100% of American beech trees are affected. It also makes trees more susceptible to other pathogens and pests. After several years with the disease, the tree will die.

WHERE: First discovered in Elgin County in 2017 but has not been detected in York Region.

PRIORITY INVASIVE SPECIES
in York Region

Photo Credit: D.W. French, University of Minnesota, Bugwood.org

OAK WILT *(Fungus: Bretziella fagacearum)*

ORIGIN: First reported in Wisconsin in 1942 however, its origin is technically unknown.

IMPACTS: All oak species are at risk. The red oak is the most susceptible with mortality occurring the most rapidly (as soon as 30 days). White and bur oak appear to be slightly more resistant. Oak trees are a highly valuable resource and play a significant ecological role which includes providing food for many forms of wildlife.

WHERE: Oak wilt has spread throughout the Eastern United States. In 2016, Oak wilt was confirmed on Bell Isle in the Detroit River less than 1 kilometer from the shores of Windsor. Oak wilt is not currently known to be present in Ontario.

UPDATE: St. Clair Region Conservation Authority and Ministry of Natural Resources and Forestry have partnered to trap nitidulid beetles (who spread the fungus) to monitor for oak wilt in St. Clair Township.

Quagga mussels (left) Zebra mussels (right).

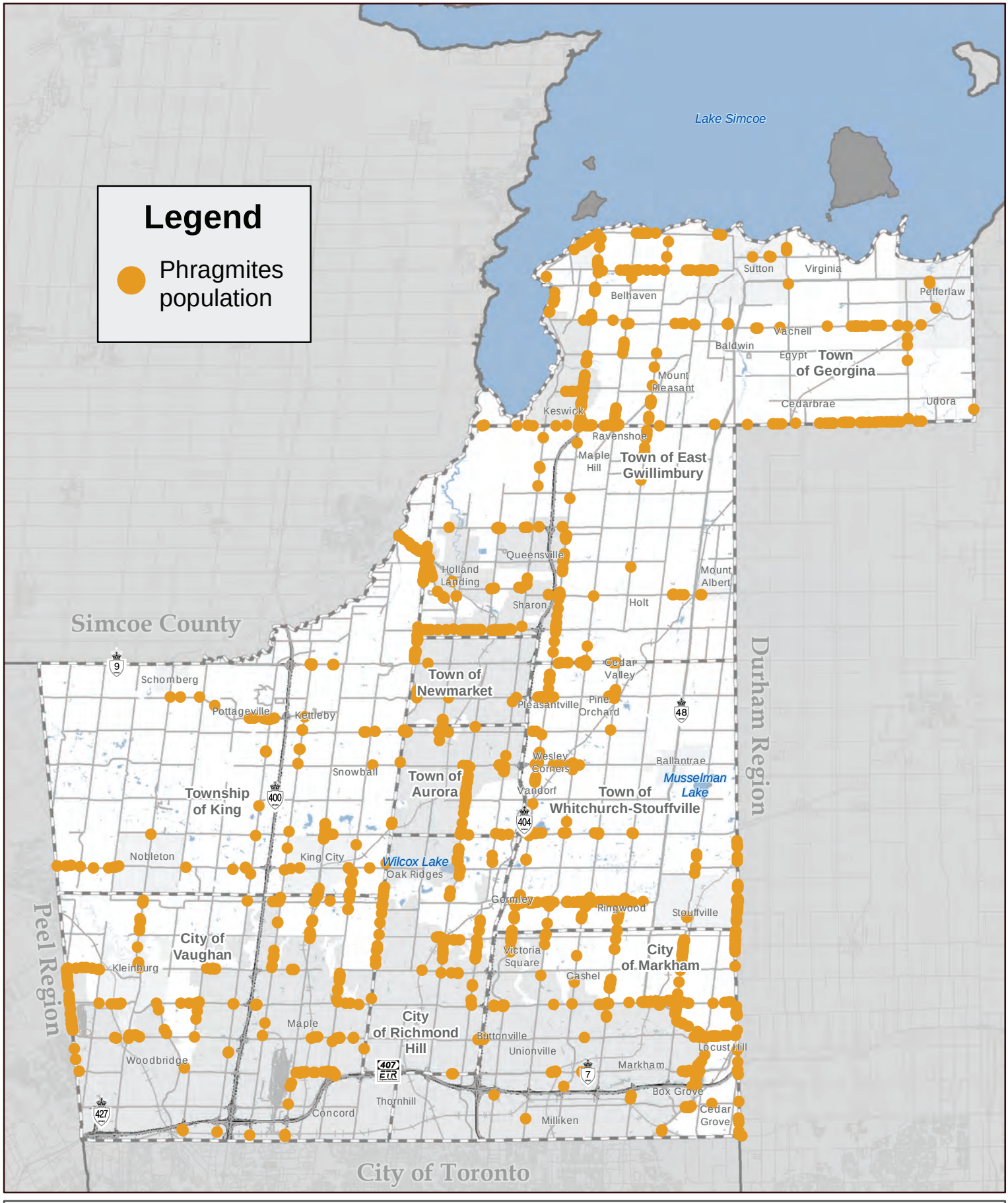
Photo Credit: Centre for Invasive Species Research, University of California, Riverside

ZEBRA MUSSELS *(Dreissena polymorpha)* & QUAGGA MUSSELS *(Dreissena rostriformis bugensis)*

ORIGIN: Both mussel species originated from Europe and were introduced to North America in the 1980's by boats travelling between the continents.

IMPACTS: Firmly cling to materials and other organisms causing clogs in pipes, motors and other water-related equipment or infrastructure. They live in abundant clusters, taking away food sources for phytoplankton-dependent species and limiting biodiversity of native mussels, clams, turtles and crustaceans.

WHERE: Both mussel species are found throughout the Great Lakes Basin, including Lake Simcoe.



European common reed (*Phragmites australis*) populations along York Region road right of ways

Annual Update on Invasive Species

October 3, 2019

0 5 10 km

York Region

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