



# Invasive Plant Species Strategy

A strategy for monitoring and controlling invasive plant species on GSCA properties.



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## Introduction

Grey Sauble Conservation Authority (GSCA) will aim to control invasive plant species that are present on their properties through various control measures. Selection of species to control and associated control methods will be on a case-by-case basis.

GSCA will work to provide information to its watershed residents about identification, damage, and control measures. This may be through its website or other means.

## What are Invasive Species?

Invasive species are plants, animals, insects, and pathogens that are introduced to an area and cause harm to the environment, economy, or society (Invasive Species Centre, 2022). Invasive species generally do not have any natural predators within these new ecosystems and are able to outcompete native species for scarce resources. An introduced species is not considered an invasive species unless it causes negative environmental, economic, or social impacts. An example of an introduced, non-invasive species is European larch (*Larix decidua*).

## Impacts of Invasive Plants

Invasive plants can cause numerous negative impacts to GSCA properties and associated infrastructure, their visitors, and the surrounding landscape.

### Natural Areas

Natural areas have developed over many years and provide many benefits to society and the environment. These areas provide numerous ecosystem services including water and air filtration, habitat and food for wildlife, production of oxygen, and recreational and educational opportunities. These ecosystems can be sensitive to change and oftentimes when an invasive species is introduced to an area, they will outcompete the native species and alter the species composition and threaten the natural balance and services these areas offer.

### Agriculture

Invasive species can have extremely negative impacts on agricultural activities. Invasive plants can be vectors for pests and diseases that harm crops, reduce crop yields, and require additional use of pesticides to control them. Several invasive species have been known to take over farmland effectively reducing the yield of desirable crops or reducing the amount of area available to pasture livestock. An example is knapweed sp. (*Centaurea spp.*).

### Forestry

Like agriculture, invasive species can have negative impacts on a forest's productivity and its ability to regenerate itself. Invasive species can outcompete desirable native species reducing their overall numbers and growth rates. Within plantations, common buckthorn (*Rhamnus cathartica*) quickly establishes in recently harvested areas and form dense canopies which stops or hinders the regeneration of desirable native species.

### Human Health

Some invasive species are known to cause physical harm to humans. For example, the sap of giant hogweed (*Heracleum mantegazzianum*) is known to cause severe dermatitis if it comes in contact with the skin.

Other species, such as invasive phragmites (*Phragmites australis*) forms dense stands within ditches and rights-of-way that can block visibility. This can increase the chance of car accidents. Dead stalks of Phragmites are also known to become very flammable.

## Why Control Invasive Species?

Due to the lack of natural predators, when an invasive species is introduced to a new environment, they can quickly become established and grow unchecked. Some invasive species prey directly on native species and reduce their populations. This will reduce the amount of biodiversity within an area and in some cases extirpation of native species can occur.

Invasive species management is a difficult task that can be expensive and time consuming. For certain species one intervention is enough while for many others require multiple interventions. For all control efforts, challenges exist in securing funding, expertise, and resources. For certain projects, funding is only available for a single year, potentially causing problems for species requiring multiple years of control. Invasive species management plans are long-term plans but with the uncertainty of funding for multiple years, can be challenging to execute.

Each of the strategies listed below relate to each other and in many cases overlap with at least one other strategy. For instance, preventing the introduction of an invasive species may include an education component, collaboration with other groups, communication with the public about identifying an invasive species, and sharing of best management practices publicly.

## Strategies for Controlling Invasive Species

The following strategies will be used for all invasive species. In many cases, multiple strategies will be utilized for the same occurrence. For instance, if wild chervil (*Anthriscus sylvestris*) is found on a GSCA property, staff may communicate the negative impacts of it through social media channels, implement a control strategy, collaborate with other organizations to develop/influence policy decisions, and after control efforts monitor the site for control efficacy.

For each finding, a property and species-specific plan/prescription will be developed.

### Prevention

- Preventing an invasive species from entering an area is the preferred method of control as it costs the least and has the least impact on the environment, economy, and society.

### Communication

- Along with prevention, communication is a key component of any invasive species strategy. Building awareness of invasive species is key to achieving GSCA's goals and objectives.

### Best Management Practices (BMP)

- Numerous studies have been completed indicating the most effective control means for many different invasive species. There are many factors that go into controlling invasive species and individual results may vary. GSCA will work to incorporate known BMPs into invasive species control methods, while also applying learnings from past control methods.

### Prioritization

- Controlling every occurrence of invasive species on GSCA properties is not possible. Prioritization is required to make headway and allow for focused control efforts. GSCA has adapted a 'Decision Support Key' (Appendix A) from Credit Valley Conservation, to assist with identifying and selecting species and areas for control.

**Implementation**

- Implementation is conducting the work to control an invasive species. Control efforts for certain invasive species at specific GSCA properties has taken place. When an invasive species is identified on a GSCA property, the Decision Support Key will be used to determine next steps. Invasive species management requires long-term commitments and available resources. Where possible, GSCA will continue to seek funding.

**Collaboration**

- GSCA understands it cannot control all invasive species alone. Working with others through partnerships (formal and informal) is key to long-term success. Staff will seek to maintain current partnership and build additional ones. Groups and organizations may include municipalities, neighbouring Conservation Authorities, or local naturalist groups.

**Policy**

- GSCA will aim to work with various levels of government and key stakeholders to create and influence policies and guidelines to assist in the control of invasive species.

**Monitoring (and Research)**

- GSCA will seek to stay up to date on current research and control methods. GSCA will aim to support groups monitoring and researching invasive species.

## Prioritization of Invasive Species for Control

Identifying and controlling invasive species before they become established within an area is key. Controlling invasive species once they have become established within an area can become extremely costly and time consuming.

GSCA will follow the 'Invasive Species Decision Key' (Appendix A) to identify appropriate next steps when an invasive species is found on a property.

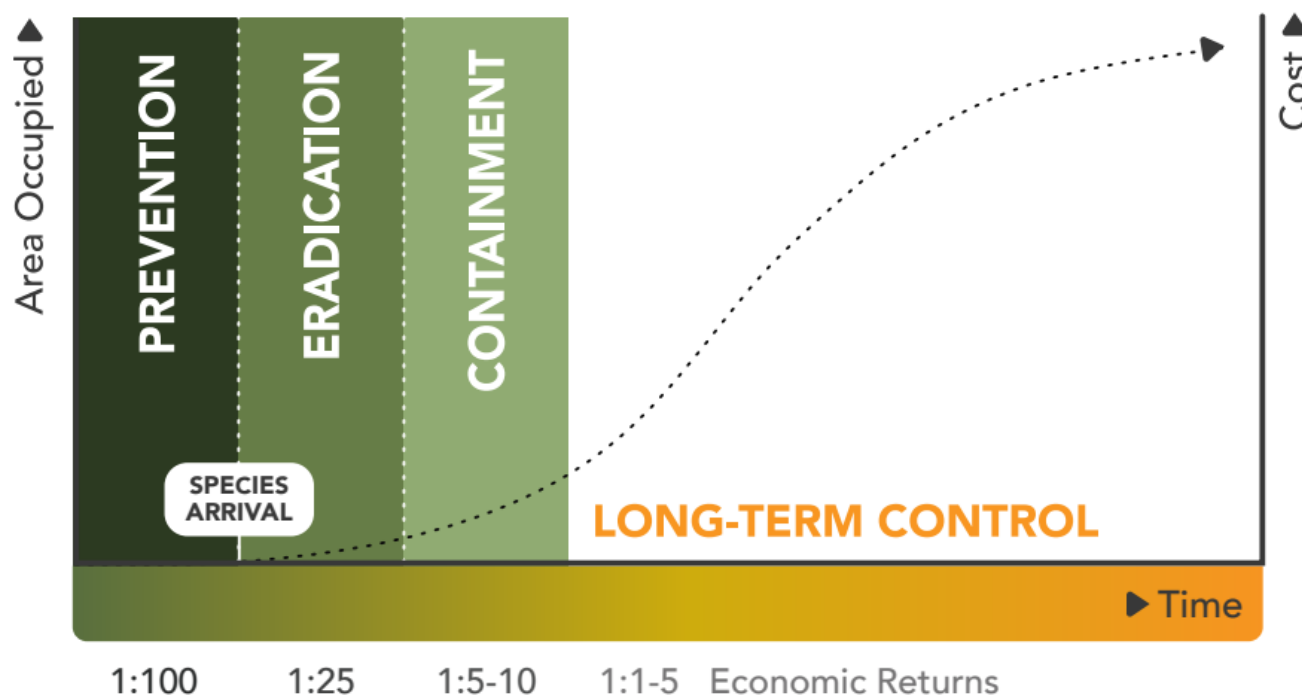
## Priority Species

GSCA aims to ensure safe access to its properties for visitors and staff. As such, invasive species known to cause harm to people will be given top priority. Species listed on the Ontario Noxious Weeds list and located near agricultural properties or species which negatively detract from the ability to use GSCA recreational areas will be given next highest priority, and species known to spread quickly and cause severe harm to the natural environment will be given the next highest priority. Invasive species that do not cause a safety risk to visitors, do not impact agriculture as per the Ontario Noxious Weeds list, do not spread quickly, and those that have no known control tools/techniques will be given the lowest priority. The table below provides examples and potential actions for when an invasive species is found.

Priority Level	Management Trigger	Example	Action
Top priority	<ul style="list-style-type: none"> <li>- Species known to cause bodily harm</li> <li>- Species listed on Ontario Noxious Weeds List*</li> <li>- Species directly affecting GSCA recreational areas</li> </ul>	<ul style="list-style-type: none"> <li>- Giant hogweed</li> <li>- Wild parsnip (<i>Pastinaca sativa</i>)</li> <li>- Wild chervil</li> <li>- Phragmites</li> </ul>	<ul style="list-style-type: none"> <li>- Begin control measures as soon as possible. Close the area, if necessary, and place signs informing the public.</li> </ul>
Medium priority	<ul style="list-style-type: none"> <li>- Species known to reproduce and spread quickly</li> <li>- Small isolated/satellite population</li> <li>- Newly established/detected population</li> <li>- Rapidly expanding population</li> </ul>	<ul style="list-style-type: none"> <li>- Garlic mustard (<i>Alliaria petiolata</i>)</li> <li>- Dog-strangling vine (<i>Vincetoxicum rossicum</i> &amp; <i>Vincetoxicum nigrum</i>)</li> <li>- Buckthorn</li> <li>- Non-native honeysuckle sp. (<i>Lonicera spp.</i>)</li> </ul>	<ul style="list-style-type: none"> <li>- Develop a management plan.</li> <li>- If budget and staffing resources are available, initiate management plan.</li> </ul>
Low Priority	<ul style="list-style-type: none"> <li>- Species known to spread slowly</li> <li>- Species that do not cause physical harm to visitors</li> <li>- Species with no known control tools/techniques</li> </ul>	<ul style="list-style-type: none"> <li>- Periwinkle (<i>Vinca minor</i>)</li> </ul>	<ul style="list-style-type: none"> <li>- Monitor population.</li> <li>- If population grows, affects species-at-risk, or poses safety risk initiate control measures.</li> </ul>

\*[http://omafra.gov.on.ca/english/crops/facts/noxious\\_weeds.htm](http://omafra.gov.on.ca/english/crops/facts/noxious_weeds.htm)

The figure below shows relative cost (economic) ratios of invasive species management at different times of invasion. Preventing entry of an invasive species is 100 times higher than long-term control measures. Eradication is estimated to be 25 times greater, and containment is 5-10 times. This figure highlights the need for prevention of entry and communication of invasive species over control efforts.



Adapted from Generalized Invasion Curve (Agriculture Victoria, 2009).

If an invasive species enters an area, early detection and control are still much cheaper and effective than waiting and implementing control measures after the species is established.

## Selecting a Control Method

Many invasive species there are several control methods to choose from. These may include manually pulling, cutting, solarizing, applying herbicides, and/or using biological control agents. Each control method will have its own advantages and disadvantages. The advantages and disadvantages will be weighed to reduce potential impacts on the environment while meeting the goals of the control program. If possible and where appropriate, partner organizations and/or volunteers will be utilized to control invasive species. Whenever possible, control methods that do as little harm to the surrounding environment will be selected. In some cases, it is not feasible to select a control method with zero off-target impacts. In these cases, the damage to non-target species will be minimized as much as possible.

No matter which control method is selected, Best Management Practices and all laws and regulations will be followed.

## Measuring Successes and Reporting

For all management projects undertaken, follow up monitoring will be conducted. This may include visiting the site to see if a particular species is present again, measuring the size of an area of invasive species to understand if it has become smaller, or completing an inventory to determine the presence and/or abundance of native species before and after management has taken place.

Annually, a report will be developed explaining the management activities for the year, challenges faced, and plans for the upcoming year.

## Scoping / Financial Implications

GSCA identifies the need to control invasive species on its properties and understands that these efforts have a cost. Staff also understand it is not feasible to control every occurrence of an invasive species on an annual basis. Therefore, staff have prioritized several properties and species for initial control efforts. Staff are suggesting \$15,000 per year is earmarked for invasive species control. This includes \$10,000 for staff time and \$5,000 for herbicide/tools. The species and properties located below (Appendix B) are ones that have been identified by staff as having the potential to cause human health problems or negatively affect agricultural production.

## Additional Resources

Below are additional resources that maybe useful for controlling invasive species on GSCA properties.

<https://www.invasivespeciescentre.ca/invasive-species/invasive-species-resources/best-management-practices-database/>

[https://cvc.ca/wp-content/uploads/2021/01/CVC\\_InvasiveSpeciesStrategyWEBsingles-Ir-1.pdf](https://cvc.ca/wp-content/uploads/2021/01/CVC_InvasiveSpeciesStrategyWEBsingles-Ir-1.pdf)

[https://agriculture.vic.gov.au/\\_data/assets/pdf\\_file/0009/582255/Invasive-Plants-and-Animals-Policy-Framework-IPAPF.pdf](https://agriculture.vic.gov.au/_data/assets/pdf_file/0009/582255/Invasive-Plants-and-Animals-Policy-Framework-IPAPF.pdf)

## References

CVC, 2021 - [https://cvc.ca/wp-content/uploads/2020/12/rpt\\_InvasiveSpeciesStrategy\\_v16\\_20201230.pdf](https://cvc.ca/wp-content/uploads/2020/12/rpt_InvasiveSpeciesStrategy_v16_20201230.pdf). Accessed 26-Jan-22.

Invasive Species Centre - <https://www.invasivespeciescentre.ca/learn/>. Accessed 26-Jan-22.

CLOCA, 2010 - Invasive Species Management Strategy (cloca.ca). Accessed 06-May-22.

City of Mississauga, 2021 – Invasive Species Management Plan & Implementation Strategy.  
<https://www.mississauga.ca/wp-content/uploads/2021/02/18112420/Invasive-Species-Management-Plan.pdf>. Accessed 04-July-22.

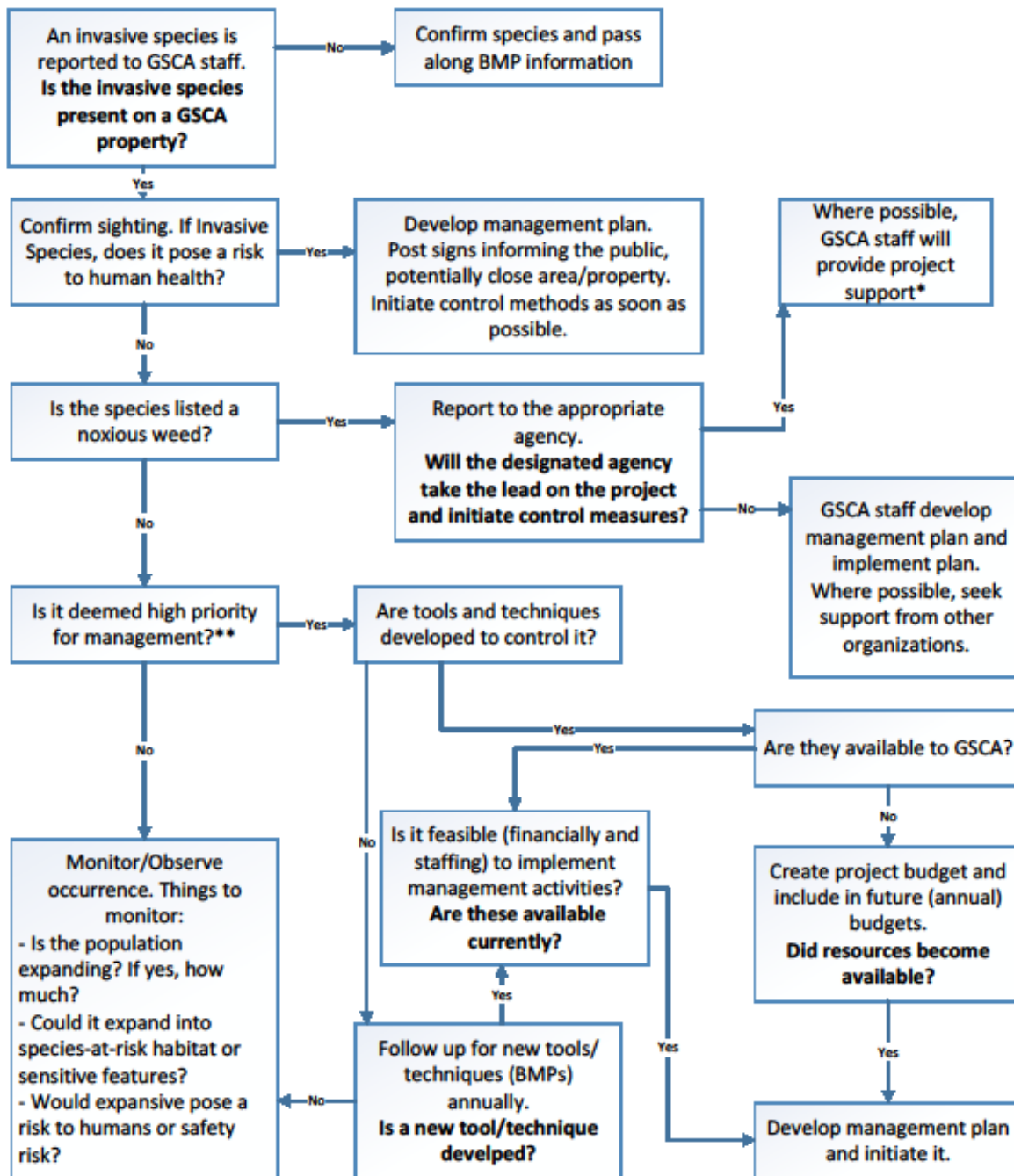
Sherman, Kellie. 2015. Creating an Invasive Plant Management Strategy: A Framework for Ontario Municipalities. Ontario Invasive Plant Council. Peterborough, ON.





## Appendix A – Invasive Species Decision Key

### Appendix A - Invasive Species Control Decision Key



\*Project support may include providing staff, equipment/supplies, education/outreach, access to GSCA property.

\*\*High priority includes priority species based on Invasive Species Strategy, high functioning habitat, known species-at-risk habitat

Adapted from CVC Invasive Species Strategy 2020-2030 – pg 58 - [https://cvc.ca/wp-content/uploads/2021/01/CVC\\_InvasiveSpeciesStrategyWEBsingles-lr-1.pdf](https://cvc.ca/wp-content/uploads/2021/01/CVC_InvasiveSpeciesStrategyWEBsingles-lr-1.pdf)

CVC\_InvasiveSpeciesStrategyWEBsingles-lr-1.pdf

Appendix B – 2023 Priority Invasive Species on GSCA Properties

GSCA Property	Invasive Species			
	Wild Chervil	Giant Hogweed	Wild Parsnip	Dog-strangling Vine
Skinner's Bluff	Yes - small patch			
Skinner Marsh - McNab Lake	Yes - large patch			
Shallow Lake		Yes - medium patch		
The Glen				Yes - small patch
Inglis Falls	Yes - large patch			
West Rocks	Yes - large patch			
Massie Hills	Yes - large patch			
Bognor Marsh	Yes - large patch			
Clendenan		Yes - small patch		
Griersville	Yes - large patch			

## Appendix C – Best Management Practices

Giant Hogweed – [https://www.ontarioinvasiveplants.ca/wp-content/uploads/2020/10/GiantHogweed\\_BMP.pdf](https://www.ontarioinvasiveplants.ca/wp-content/uploads/2020/10/GiantHogweed_BMP.pdf)

Wild Chervil – <http://www.invadingspecies.com/invaders/plants/wild-chervil/>

Common Buckthorn – [https://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/06/OIPC\\_BMP\\_Buckthorn.pdf](https://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/06/OIPC_BMP_Buckthorn.pdf)

Phragmites – [https://www.ontarioinvasiveplants.ca/wp-content/uploads/2021/05/OIPC\\_BMP\\_Phragmites\\_April302021\\_D10\\_WEB.pdf](https://www.ontarioinvasiveplants.ca/wp-content/uploads/2021/05/OIPC_BMP_Phragmites_April302021_D10_WEB.pdf)

Garlic Mustard – [https://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/07/OIPC\\_BMP\\_GarlicMustard.pdf](https://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/07/OIPC_BMP_GarlicMustard.pdf)

Wild Parsnip – [https://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/07/OIPC\\_BMP\\_WildParsnip\\_Feb182014\\_FINAL2.pdf](https://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/07/OIPC_BMP_WildParsnip_Feb182014_FINAL2.pdf)

Dog-strangling Vine - [https://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/06/OIPC\\_BMP\\_DogStranglingVine.pdf](https://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/06/OIPC_BMP_DogStranglingVine.pdf)

## Appendix D – Invasive Species Prescription Template



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### GSCA Invasive Species Control Prescription

#### Compartment Details:

Property Name/Management Area: \_\_\_\_\_  
 Compartment Number: \_\_\_\_\_  
 Lot: \_\_\_\_\_ Concession: \_\_\_\_\_  
 Municipality: \_\_\_\_\_ Former Township: \_\_\_\_\_

#### Property/Stand Details:

(see attached map)

Invasive Species Found (list all that were found):

\_\_\_\_\_

Current Land Cover:      Forested    Agriculture      Open

Accessibility (able to get a pickup truck to site, is there a long hike, is the site roadside, etc...):

\_\_\_\_\_

\_\_\_\_\_

Potential Concerns (note accessibility by the public, known user groups, etc...):

\_\_\_\_\_

\_\_\_\_\_

Presence of Species-at-Risk?      Yes      No      Unknown

If yes, please let them? \_\_\_\_\_

\_\_\_\_\_

#### Treatment:

Best Management Practices document available?

Yes

No

If yes, can suggested BMPs be applied to site?

Yes

No

#### Recommended Treatment:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

#### Follow-up Recommendations:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

#### Member Municipalities

Municipality of Arran-Elderslie, Town of the Blue Mountains, Township of Chatsworth, Township of Georgian Bluffs, Municipality of Grey Highlands, Municipality of Meaford, City of Owen Sound, Town of South Bruce Peninsula

**Strategies – where appropriate, describe possible actions for each strategy. If none, put N/A:**

Prevention:

Communication:

Prioritization:

Collaboration:

Policy:

Monitoring (and Research):

Prepared By: \_\_\_\_\_

Date Prepared: \_\_\_\_\_

Appendix E – Summary of Invasive Species on GSCA Properties

Property	Beech Bark Disease	Beech Scale Insect	Bell's Honeysuckle	Butternut Canker	Coltsfoot	Common Buckthorn	Common Privet	Dog Strangling Vine	Garlic Mustard	Goutweed	Gypsy Moth Caterpillar	Holly Leaved Oregon Grape	Invasive Honeysuckle Sp.	Japanese Barberry	Japanese Knotweed	Lamb's Ear	Lamium	Manitoba Maple	Morrow's Honeysuckle	Norway Maple	Oriental Bittersweet	Periwinkle	Phragmite / Common Reed	Purple Loosestrife	Reed Canary Grass	Scotch Pine	Silver Or White Poplar	Tartarian Honeysuckle	Tufted (cow) Vetch	Wild Chervil	Total by Property	
AINSLIE WOOD														1																	1	
BIGHEAD RIVER						89			4	4					2							5										104
BOAT LAKE - C																						2									2	
BOAT LAKE - D																						2									2	
BOGNOR MARSH - C						6																									6	
BOGNOR MARSH - D	3	11		4		458			2		1		8	2									5	2						93	589	
CLENDENAN			2			1			1																					5	9	
EUGENIA FALLS	2	6				2			4											2	2										18	
FISHING ISLANDS - C																							2								2	
FOUR CORNERS						3																									3	
GIBRALTAR					1	4			25																						30	
HEPWORTH	5	34	15	1		3													14		7							2		1	82	
HIBOU																							35								35	
INDIAN FALLS			1			1			1																					4	7	
INGLIS FALLS	3	7	11	1		70	10		23	1		7		4			1		50	7	3	20								34	252	
KEMBLE MOUNTAIN - B																														2	2	
KEPPEL FOREST			4			3																									7	
KOLAPORE UPLANDS	5	2		19	2	92			21									1				2	1								145	
LEITH SPIT																							1								1	
LITTLE GERMANY		1	3	1	4	36		3	2				2											2					6		60	
MASSIE HILLS - A	3	6				277																	2							14	302	
MASSIE HILLS - B	1	7		14	4	174							1										2							9	212	

Property	Beech Bark Disease	Beech Scale Insect	Bell's Honeysuckle	Butternut Canker	Coltsfoot	Common Buckthorn	Common Privet	Dog Strangling Vine	Garlic Mustard	Goutweed	Gypsy Moth Caterpillar	Holly Leaved Oregon Grape	Invasive Honeysuckle Sp.	Japanese Barberry	Japanese Knotweed	Lamb's Ear	Lamium	Manitoba Maple	Morrow's Honeysuckle	Norway Maple	Oriental Bittersweet	Periwinkle	Phragmite / Common Reed	Purple Loosestrife	Reed Canary Grass	Scotch Pine	Silver Or White Poplar	Tartarian Honeysuckle	Tufted (cow) Vetch	Wild Chervil	Total by Property
PEASEMARSH																						7								7	
ROBSON LAKES - A						201							2																		203
ROBSON LAKES - B		1				7																									8
ROBSON LAKES - C		1	7	4		63																									75
ROCKFORD						44								2							1										47
ROCKLYN CREEK - A		1				81		6																					17	105	
SHALLOW LAKE - A						8																									8
SHEPPARD LAKE						111																									111
SINKHOLE								2																							2
SKINNER McNAB - A		1				26		2																	1						30
SKINNER McNAB - B			3			4		1													1									17	26
SKINNER McNAB - D		5	2		1	32		2													3									33	78
SKINNER McNAB - E						5		1					2																		8
SKINNER'S BLUFF - B		3		2		86							6			2					1									1	101
SKY LAKE - B	1	2																													3
SKY LAKE - C	1	24																													25
SPEY RIVER - B		1				3								1																	5
SPEY RIVER - C		2				3																							2		7
SYDENHAM FOREST	1	3		37		17							5																		63
SYDENHAM LOWLANDS - B																													2		2
TELFER CREEK	1	2			5	8																									16
THE GLEN - A						4		2					6																		12
WALTER'S CREEK - B	1	4				25			2																						32



Property	Beech Bark Disease	Beech Scale Insect	Bell's Honeysuckle	Butternut Canker	Coltsfoot	Common Buckthorn	Common Privet	Dog Strangling Vine	Garlic Mustard	Goutweed	Gypsy Moth Caterpillar	Holly Leaved Oregon Grape	Invasive Honeysuckle Sp.	Japanese Barberry	Japanese Knotweed	Lamb's Ear	Lamium	Manitoba Maple	Morrow's Honeysuckle	Norway Maple	Oriental Bittersweet	Periwinkle	Phragmite / Common Reed	Purple Loosestrife	Reed Canary Grass	Scotch Pine	Silver Or White Poplar	Tartarian Honeysuckle	Tufted (cow) Vetch	Wild Chervil	Total by Property
WALTER'S CREEK (HOLLAND AF)						309							1														1		9		320
WEST ROCKS	2	1										1	4	1																	9
WEST ROCKS - D	1	2				93						1	62	27						1						4			1	2	194
WODEHOUSE - B						20																								3	23
WODEHOUSE - F	1					4																								1	6
WODEHOUSE - G						39																									39
Total by Species	31	127	48	83	17	2,412	10	5	99	5	1	9	99	38	2	2	1	1	64	10	17	32	55	4	1	4	1	2	18	238	3,436