Marthaville Habitat Management Area Management Plan

St. Clair Region Conservation Authority
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COUNTY OF LAMBTON

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1.0 Introduction

For more than 15 years, St. Clair Region Conservation Authority (SCRCA) and the County of Lambton have had a very successful partnership for the maintenance and development of the Marthaville Habitat Management Area (HMA). Since the initial formation of a partnership in 1994, a number of steps have been taken to develop natural habitat and improve passive recreation opportunities.

In 2008, the County renewed contracts for maintenance of this property and Perch Creek HMA and added additional properties for SCRCA's management. At that time, this management plan (10 year operational plan) was updated, to act as an appendix to the master agreement. The management plan will provide direction to the Authority for the management of Marthaville HMA, as well as providing a guide for the costs associated with the required management including opportunities for revenues directly from the management or from potential grant sources.

In order to develop management recommendations, properties managed by the Authority are broken down into subunits known as Vegetation Management Units (VMUs). Generally, each VMU is composed of a certain plant community, habitat, and/or landuse. If relevant, forest inventories are conducted and basic description of the history, soil type, herbaceous plants, wildlife features of each VMU are provided. This information is used to develop recommendations for each VMU individually and for the Management Area as a whole.

Key recommendations outlined in the report include:

- Removal of non-native/ invasive plants from the site
- Deterrence of All Terrain Vehicle (ATV) use
- Limit or restrict dog walking

2.0 Property Location and Description

Marthaville HMA is located in the geographic Township of Enniskillen, in the County of Lambton. It is just north of the hamlet of Marthaville in the North half of Lot 9 in the Thirteenth Concession (Map 1). The 20 hectare property fronts on Marthaville Road and is bounded by private lands on the three other sides. The surrounding property uses include residential, agricultural, natural woodland and grassland areas. The properties to the north and west were formerly gravel pits.

Map 1. Location of Marthaville Habitat Management Area

Marthaville HMA was originally acquired by the County for its aggregate resources. Gravel was removed from the site to assist with road construction and maintenance. Expired gravel pits became storage area for a variety of refuse and garbage. In the early 1990s, a plan was developed to change the use of the site to passive recreation.

In 1995, when the agreement for development and management was signed with the St. Clair Region Conservation Authority, garbage was removed. Wetlands were created by County staff prior to the Authority taking over management.

In September 2008, SCRCA staff visited the site and collected data to prepare a management plan. In order to develop recommendations Marthaville HMA was divided into VMUs grouped by similarities in habitat, land use and vegetation type (Map 2). Specific management recommendations were devised for each VMU separately and for the Management Area as a whole. Currently the vegetation on the property is divided into five VMUs: forest (6.5 hectares), wetland (5.3 hectares), meadow (1.5 hectares) and tall grass prairie (6.55 hectares). There are no plans to alter the existing land use areas through the term of this management plan.

As a result of the previous land use and the plantings which have been carried out over the years, there is probably very little truly natural vegetation on this site. The forest is primarily second growth forest and a large proportion of the trees have been planted. Likewise, the tall grass prairie has been planted. It is being thickened and improved by controlled burns financed and conducted by St Clair Region Conservation Authority (SCRCA). Initially burns were financed and conducted in partnership with the Rural Lambton Stewardship Network (RLSN). The most significant issue on site in 2008 was the invasive phragmites (*Phragmites australis*) that was colonizing the wetlands, wooded areas and tall grass prairie.

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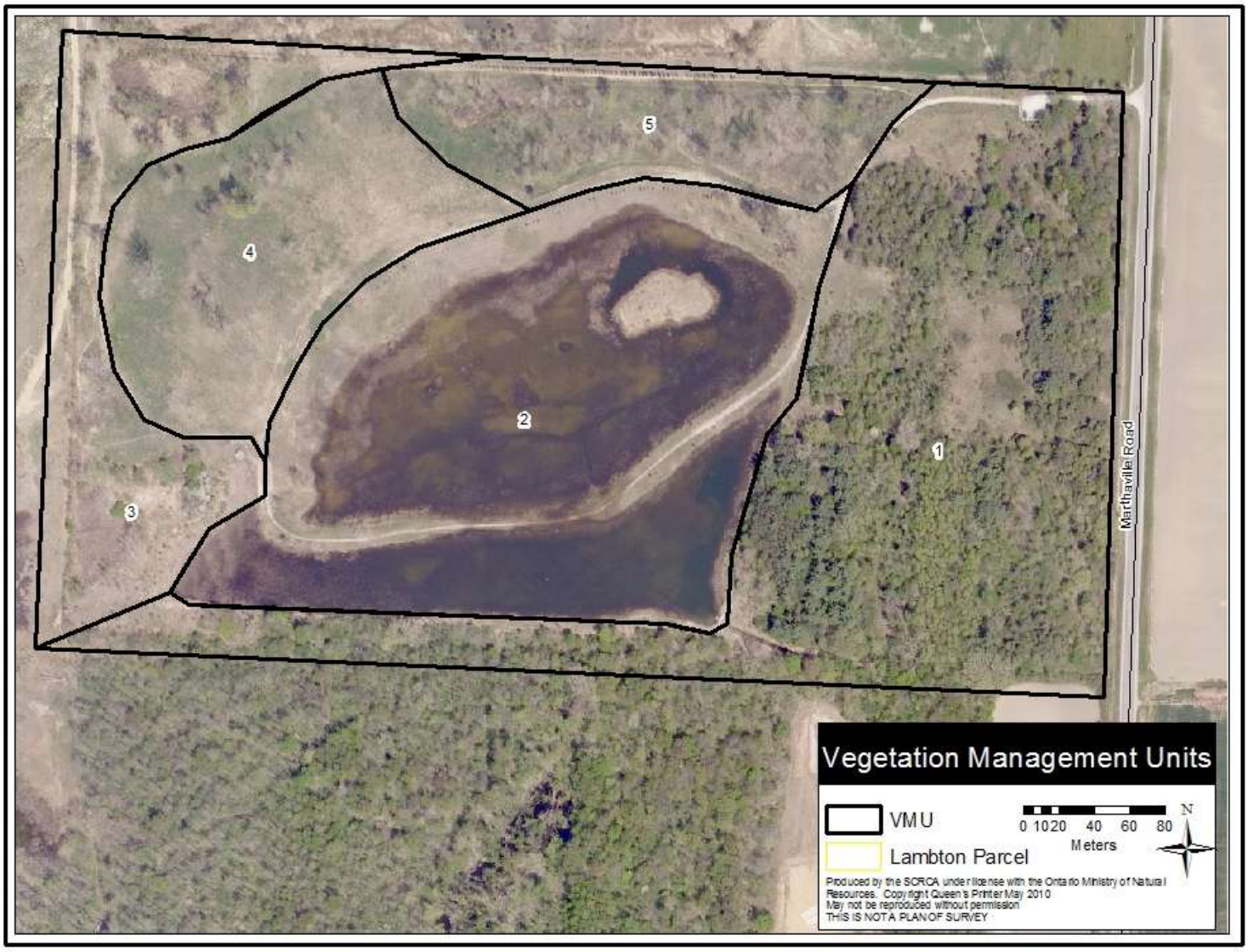
Map 2. Vegetation Management Units of Marthaville HMA



3.0 Vegetation Management Units

VMU 1 Forest

Area 7.2 hectares

Soils It is a combination of Fox sandy loam and Brookston clay.

History This area appears to have been completely cleared at one time but does not appear to have had significant earth removal presumably because there was insufficient sand and gravel to warrant its removal. An attempt was made 50 years or more ago to reforest this section with several coniferous species. The combination of soils and water table has resulted in the premature death of the majority of those trees. However many other species of trees and shrubs have volunteered and the canopy is closed in most locations although there are a few small meadow areas in existence.

Species Composition

Species	***%***
green and white ash	50
white pine	20
trembling aspen	15
other species*	15

*bur oak, red pine, jack pine, Scots pine, eastern white cedar, silver maple, red maple, European white mulberry, black cherry, hawthorn, cottonwood, black walnut, black locust, bitternut hickory, basswood, alternate dogwood, European crab apple, red oak and white elm.

Basal Area

Basal area readings varied from 0 – 38 averaging 28.7 m^2/ha

Size Class	POLEWOOD	SAWLOG CLASS				TOTAL
	Pole wood 10-24 cm	Small sawlog 26-36 cm	Medium sawlog 38-48 cm	Large sawlog 50-60 cm	X-Large sawlog 62 cm+	
AGS BA (m^2/ha)	14.5	7.14	2	1.7	0.28	25.3.
UGS BA (m^2/ha)	2.8	0.28	0	0	0	3.4
Total BA (m^2/ha)	17.3	7.4	2	1.7	0.28	28.7

AGS - acceptable growing stock – trees which will be as valuable or more valuable in ten years than they are now.
UGS - unacceptable growing stock – trees which will be less valuable in ten years than they are now.
DBH - diameter at breast height (1.3m off the ground)

Shrubs and Vines

European high-bush cranberry, poison ivy, Virginia creeper, staghorn sumac, gray dogwood, purging buckthorn, choke cherry, silky dogwood and cane berries.

Herbaceous Plants

Christmas fern, sensitive fern, goldenrod, false Solomon's seal, ginger, garlic mustard, common reed and grasses (this is only a small sampling of the many species which inhabit this VMU - from woodland plants to full sun meadow plants).

Diseases and Insects

Black knot on choke cherry and ash rough-bark. Overall the wooded area is healthy.

Ten Year Management

This woodlot is a mixture of planted areas, natural regeneration forest, shrub forest and meadow. It has been and will continue to move towards a closed forest canopy. Unless emerald ash borer is controlled about 50 % of all the stems in this unit may die in the next 5-20 years. However, at this time there is no market for 80% of the ash because it is too small. The basal area chart above shows that there are very few trees in the medium, large and extra large classes.

1) Manage the Phragmites (also known as common reed).
2) Remove all buckthorn producing seeds and reduce the overall numbers, inspect the property in November and remove and treat the stump of any buckthorn with seed and any others near the same size.
3) Let the forest mature naturally.

Figure 1. White pine stems in VMU 1**.**

VMU 2 Wetlands

Area 6.6 hectares

Description This VMU is composed of two ponds, their shorelines and one island.

History The most common plant in 2007 was probably common reed. The Authority had treated its population twice before 2007 but was not able to treat all of the area containing stems. Nor was there a second treatment the following year. The result was that the population of common reed continued to flourish on the property. In 2007, the ponds were temporarily lowered in September and the common reed was treated with glyphosate. In 2008, the ponds were lowered again to treat areas and individuals missed in 2007. It will be necessary to spot treat the area again for 2-3 more years.

When the ponds were developing people brought trees from their gardens to try to add some life to a very barren landscape. Unfortunately, some of those trees are varieties of Norway maple (*Acer platinoides*) which is very invasive.

Species Composition There are a few volunteer cottonwood, willow and dogwood around the edges of the ponds. They can be allowed to grow at least for the term of this plan.

Herbaceous Plants VMU 1 abuts the edge of the south pond but does not supply enough shade to eliminate common reed in the shallow water.

Ten Year Management

1) Spot treatment of common reed will be required to allow cattails and other native aquatic vegetation to establish.
2) Remove stems of invasive species like Norway maple.

Figure 2. The ponds are lowered so the common reed can be treated.

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VMU 3 Meadow

Area	2.6 hectares
Description	This is a small area outside the burn boundary for VMU 4 along the west property line.
History	During the cleanup and re-grading of the site by the County before the SCRCA took over management two sections received no re-grading.
Species Composition	There are a few natural cottonwoods around the pits.
Shrubs and Vines	Shrubs and herbaceous plants dominate any area not covered by water in the spring.
Herbaceous Plants	There are two small pits, which contain water each spring but dry up in the summer. There is a lot of common reed in these areas.
Ten Year Management	1) Eliminate the common reed and establish other vegetation. 2) Remove any other invasive species. 3) There is some concrete in the wet areas that may be useful as hibernacula. Investigate opportunities to construct hibernacula.

VMU 4 *Tall Grass Prairie*

Area 2.7 hectares

Soils The soils in this unit are greatly disturbed and in addition to the original sand gravel and clay there is also bits of wood, metal and other materials brought onto the site

History This VMU was planted to tall grass prairie species in 1998. Since then it has been burned several times to promote the prairie species. Unfortunately, the burning has also been promoting invasive phragmites. This is consistent in what was presented by representatives from Michigan at the Binational Lake St Clair Conference on March 19, 2008. The first effort to treat the common reed with glyphosate was in the fall of 2008.

Species Composition The following woody plants were identified in the prairie area. Silver maple, Cottonwood, Bebb's willow, green ash, white cedar, heart leaf willow, staghorn sumac.

Ten Year Management

- A survey of this section needs to be carried out to determine whether:
  a) The prairie is developing the way it was originally planned.
  b) It is providing habitat for species which would not be present without it.
- Infill the cedar row located along the fence.

Figure 3. Controlled burn of Prairie area

VMU 5 Young Natural Forest

Area 1.9 hectares

Soils The soils in this unit are greatly disturbed and in addition to the original sand gravel and clay there is also bits of wood, metal and other materials brought onto the site

History

Species Composition The following woody plants were identified in the prairie area. Silver maple, Cottonwood, Tulip, Bebb's willow, green ash, white cedar, red maple, black walnut, heart leaf willow, white pine, staghorn sumac, white elm, Norway spruce, Jack pine, Scots pine, white mulberry, and black locust.

Ten Year Management

- Infill the cedar row that was planted along the north fence to provide a visual barrier as well as winter cover for the site. It should not be burned.

4.0 General Management Strategies

Management objectives can generally be classified into one of the following categories as outlined in '*A Guide to Stewardship Planning for Natural Areas*' published by the Ontario Ministry of Natural Resources (MNR):

1. Environmental Protection
2. Forest Products
3. Recreation
4. Wildlife
5. Nature Appreciation

The MNR guide lists a sixth category, "investment," but because there is no intention of selling the property it is not considered in this document.

Table 1 summarizes the current uses and priorities for Marthaville HMA. Marthaville HMA was originally planned as a wildlife habitat and passive recreation area. In general, environmental protection and wildlife are the highest priorities. For the forest (VMU 1), the priorities are slightly different in that recreation is a higher priority than wildlife and forest products.

Table 1. Summary of Current Use and Priorities at Mathaville HMA

VMU #	*Area ha*	*Current Use*	*Goal Priority*				
			Continue current use (y/n)	Environmental Protection	Wildlife	Recreation	Forest Products
1	7.25	Forest	y	1	3	2	4
2	6.56	Wetlands	y	1	2	3	0
3	2.57	Meadow	y	1	2	3	0
4	2.68	TGP	y	1	2	3	0
5	1.89	Young Natural Forest	y	1	2	3	4

0—not a priority
TGP – Tall Grass Prairie

The principal issue confronting the management for habitat is the large number of non-native exotic plants on the site. The most serious threat is from common reed which is present in great numbers throughout the property. Its widespread distribution resulted from the re-grading 10-15 years ago. A major effort needs to be made in the next 3 years to eradicate as much of it as possible and then subsequent measures taken to keep it from re-establishing. In the wet areas, other plants will fill in fairly quickly. In dry areas, it may be necessary to re-seed or plant something which is desirable. Specific plans need to

be formulated for dealing with each of the other exotic species (Norway maple, garlic mustard, purging buckthorn, Scots pine, and black locust).

The use of ATVs and dirt bikes is always a concern here because of their use on surrounding properties. The use of such vehicles destroys vegetation and trails and spreads the non-native invasive species where ever they travel. It may be necessary to replace some of the fencing over the next 10 years due to its age.

If it is to be a place where birds and other ground nesting creatures are to raise their young it may be necessary to enforce policies to have people to keep dogs on leashes or to ban dog walking altogether.

Recommendations adopted by Council October 19, 2011

1. Continue/strengthen environmental (including control of invasive species) and wildlife enhancement while allowing safe and passive use by the Public.

2. Restrict use as follows:
   - Dogs - must be leashed
   - Motorized vehicles (ATVs, dirt bikes, snowmobiles, etc.) - not permitted
   - Horseback riding - permitted on trails only at walking speed
   - Hunting - not permitted
   - Bicycles - permitted on trails only at recreational speeds (no extreme or bicycle-cross)

3. Focus on pedestrian use initially and consider multi-use trails in the future should demand warrant.

4. Erect signage with regards to: intended use, hours (daylight use only), ownership, property boundaries, interpretive areas, and trail designation.

Appendix A. Tree Species - Marthaville 2008

Abbr	Common Name	Scientific Name
Ag	Green Ash	*Fraxinus pennsylvanica*
Aw	White Ash	*Fraxinus americana*
At	Trembling Aspen	*Populus tremuloides*
Bd	Basswood	*Tilia americana*
Cw	White Cedar	*Thuja occidentalis*
Cb	Black Cherry	*Prunus serotina*
Pv	Choke Cherry	*Prunus virginiana*
Pd	Cottonwood	*Populus deltoides*
	European Crabapple	*Malus sylvestris*
	Alternate Dogwood	*Cornus alternifolia*
Ea	American Elm	*Ulmus americana*
Ht	Hawthorn	*Crataegus spp.*
Hb	Bitternut Hickory	*Carya cordiformis*
Lb	Black Locust	*Robinia pseudoacacia*
Mn	Norway Maple	*Acer platanoides*
Mr	Red Maple	*Acer rubrum*
Ms	Silver Maple	*Acer saccharinum*
	White Mulberry	*Morus alba*
Ob	Bur Oak	*Quercus macrocarpa*
Or	Red Oak	*Quercus rubra*
Pj	Jack Pine	*Pinus banksiana*
Pr	Red Pine	*Pinus resinosa*
Ps	Scots Pine	*Pinus sylvestris*
Pw	White Pine	*Pinus strobus*
Sn	Norway Spruce	*Picea abies*
Tp	Tulip Tree	*Liriodendron tulipifera*
Wb	Black Walnut	*Juglans nigra*

Appendix B. Shrubs and Vines - Marthaville 2008

Common Name	**Scientific Name**
Common Blackberry	*Rubus allegheniensis*
Purging Buckthorn	*Rhamnus cathartica*
European Cranberry	*Viburnum opulus*
Currant	*Ribes spp.*
Gray Dogwood	*Cornus racemosa*
Red Osier Dogwood	*Cornus stolonifera*
Silky or Swamp Dogwood	*Cornus amomum*
Red Elderberry	*Sambucus pubens*
Grape	*Vitus spp.*
European Honey Suckle	*Lonicera tatarica*
Poison Ivy	*Rhus radicans*
Staghorn Sumac	*Rhus typhina*
Nannyberry Viburnum	*Viburnum lentago*
Virginia Creeper	*Parthenocissus vitacea*
Heart-Leaved Willow	*Salix cordata*