



Stewardship Plan
2021 - 2024

October 2021

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ABBREVIATIONS

ALUS – Alternative Land Use Services	MNR/MNRF – Ministry of Natural Resources/Ministry of Natural Resources and Forestry
CA – Conservation Authority	MOU – Memorandum of Understanding
CIPS – Cambium Indigenous Professional Services	MRSSO – Mississippi Rideau Septic System Office
CRCA – Carp River Conservation Area	MRW – Mississippi River Watershed
CRW – Carp River Watershed	MRWP – Mississippi River Watershed Plan
CSW – City Stream Watch	MVCA – Mississippi Valley Conservation Authority
CWF – Canadian Wildlife Federation	NGO – Non-Governmental Organization
DUC – Ducks Unlimited Canada	ORCWP – Ottawa Rural Clean Water Program
EDDMapS – Early Detection and Distribution Mapping System	PLF – Private Lands Forestry
FHN – Forest Health Network	RCWP – Rural Clean Water Program
FOCR – Friends of the Carp River	RVCA – Rideau Valley Conservation Authority
IEP – Indigenous Engagement Plan	SNC – South Nation Conservation
LID – Low Impact Development	SWM – Stormwater Management
MECP – Ministry of Environment, Conservation and Parks	
MICA – Morris Island Conservation Area	

1.0 INTRODUCTION

The objects of a conservation authority are “to provide...programs and services designed to further the conservation, restoration, development and management of natural resources other than gas, oil, coal and minerals.”¹ A crucial course of action in achieving conservation and restoration goals is that of land stewardship: the act of caring for the land, air, water, and biodiversity in order to maintain collective ecological, social, and cultural benefits. The development and implementation of a Stewardship Plan are key steps to fulfilling this responsibility. This document marks the current phase of implementation of MVCA’s Stewardship Program: Program Development and Planning (Figure 1).

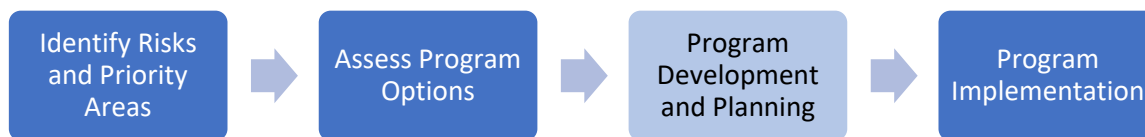


Figure 1. The key steps in development and implementation of a Stewardship Program.

The goals of this Stewardship Plan are:

- To maintain, enhance, and restore natural features and systems so that they may continue to provide ecological services to communities.
- To mitigate the impacts of urban and rural settlement and climate change.
- To engage communities and landowners in effecting improvements to publicly- and privately-owned lands.

1.1 Three-Year Stewardship Pilot Program

The Mississippi River Watershed Plan (MRWP) prescribed the establishment of a Stewardship Strategy.

To achieve the goal to support learning and environmental stewardship, the MRWP suggested the development and implementation of a Three-Year MVCA Stewardship Program Pilot for the protection of water quality, wetland cover, forest cover, and other environmental features. Such a plan is needed to provide long term guidance for MVCA’s Stewardship activities within the Mississippi River and Carp River Watersheds and to address other goals set by the MRWP, including:

- Minimize risks to human life and property due to flooding, erosion, and unstable slopes and soils.

¹ [Conservation Authorities Act, R.S.O. 1990, c. C.27 \(ontario.ca\)](#)

- Sustain or improve water quality for all users.
- Increase our resiliency and adaptive response to climate change.
- Maintain, enhance, or restore natural features and systems for all users, and
- Support learning and environmental stewardship.

This Program Pilot aligns with the 2021-2025 Corporate Strategic Plan and will achieve community building by engaging local partners to foster connections, leverage resources, and strengthen our “social license” to operate. A Stewardship Strategy that outlines intentions to engage and educate community stakeholders through stewardship initiatives would help MVCA obtain the following objectives:

- To demonstrate MVCA to be a trusted, client-centred, resourceful, and helpful partner.
- To strengthen relationships with municipalities and community stakeholders, First Nations, the agricultural sector, developers, not-for-profits, and academia.

MVCA has been engaged in limited stewardship but has not been able to commit to the implementation of a full-time Stewardship Program due to budgetary and staffing constraints. The Three-Year Stewardship Program Pilot is an approved board initiative and a commitment that allows MVCA to establish a foundation of stewardship.

1.2 History of Stewardship Program

Shortly after the termination of the MNR’s Private Land Extension Programs around the year 2000, MVCA initiated a stewardship program to address the service gap, which was comprised of the following programs:

- **Rural Clean Water Program:** Currently only delivered within the City of Ottawa.
- **Ministry of Environment Source Water Protection:** Discontinued by MECP.
- **Lanark County Forest Management Program:** MVCA still delivers this program.

In recent years, MVCA has been engaged in Stewardship on a part-time basis through the delivery of the following programs that have either been MVCA initiatives or shared with other partners, which were funded as resources allowed:

- **Shoreline Naturalization Program:** Offers native planting of riparian areas on private properties. Tree/shrub giveaways/sales are provided in coordination with lake associations.²

² Initially, there was a small amount of municipal levy allocated to this program. Currently, MVCA is implementing a cost-sharing model consistent with what other Conservation Authorities have already implemented.

- **Private Lands Forestry (PLF):** MVCA provides RVCA with \$5,500 towards implementing the Green Acres Program (City of Ottawa) and the Trees for Tomorrow Program. This includes large-scale tree plantings that are not necessarily within watercourse buffers.
- **Special, Site-by-Site Projects:** “One-off” projects generally funded through grants from various government and non-government sources. They range from large shoreline plantings on public properties to in-stream restorations and fish habitat enhancement projects.
- **Ottawa Rural Clean Water Program (ORCWP):** A collaboration between the City of Ottawa, MVCA, RVCA, and SNC that delivers grants to rural property owners for a variety of stewardship activities primarily aimed at protecting water quality.³
- **City Stream Watch (CSW):** A stream monitoring program that enlists volunteers to help staff monitor environmental conditions in streams within the City of Ottawa.⁴
- **Septic Re-inspection Program:** Delivered by the MRSSO to certain municipalities, this program combines homeowner education about septic system operation and maintenance with an inspection component.⁵
- **Education and Outreach:** MVCA’s educational programming was suspended due to the COVID-19 pandemic. This program consisted of outdoor education programming, curriculum-based classroom presentations, guided field trips, and outreach events.⁶
- **Planning and Regulations:** MVCA contributes to aquatic and terrestrial health through the planning and regulations process, allowing MVCA to recommend best management practices to landowners and municipalities.

In 2020⁷, the Board approved a Three-Year Stewardship Pilot Program to enable assessment of program interest and viability.

³ This program is currently only available within the City of Ottawa.

⁴ This program is supported through external funding, and includes an education and stewardship component implemented through volunteer engagement events (e.g. stream litter clean-ups, invasive species removals). Data collected through CSW has been used to direct Stewardship efforts.

⁵ The program aims to help protect drinking water, the natural environment, and support the implementation of the Clean Water Act. We work cooperatively with Tay Valley Township, Township of North Frontenac, and Township of Drummond/North Elmsley to establish a voluntary septic re-inspection program. Alternatively, Bennett Lake in Tay Valley Township is subject to a mandatory re-inspection program. Educational and promotional presentations and workshops are hosted occasionally to encourage participation.

⁶ MVCA launched EcoTrek, an educational and interactive mobile app that allows visitors to learn about the river and wetlands at the Carp River Conservation Area.

⁷ Interim Financial Plan. <https://mvc.on.ca/wp-content/uploads/2021/02/20no13-Interim-Financial-Plan-Append-A-FINAL-v4.pdf>.

1.3 Environmental Scan

The MVCA jurisdiction is comprised of three distinct watersheds: The Mississippi River Watershed (MRW), the Carp River Watershed (CRW), and part of the Ottawa River Watershed. Below are key attributes of the MVCA jurisdiction:

- The jurisdiction is a mix of rural and urban land use, with urban development concentrated in and around the City of Ottawa, Carleton Place, and Almonte, and rural estate-lot growth in the surrounding municipalities.
- The west end mostly consists of contiguous expanses of natural areas.
- The east end has smaller, fragmented pockets of natural area.
- The MRW has two distinct physiographic regions: The Canadian Shield in the west and the St. Lawrence lowlands in the east.
- The Shield area has shallow soils and rocky outcroppings, which is a constraint for agricultural land use.
- The Lowlands area is flatter with deeper fertile soils more suited to agricultural land use.
- Forest cover comprises 65% of the MRW (23% forest interior)⁸, while forests and wetlands represent over 30% of the CRW (59% interior forest canopy [Robinson Consultants, Inc., 2004]).
- There is a disparity in both forest cover and forest interior between the Shield (27% forest interior) and the Lowlands (6% forest interior).
- Wetlands comprise 13% of the MRW (12% of the Shield and 14% of the Lowlands) and 3.8% of the CRW is represented by significant wetland complexes.
- Agricultural land use makes up 56% of the CRW and 11.5% of the MRW.⁹

These areas face the stresses of climate change, rural and urban settlement, and related challenges with flooding and droughts, impairment of water quality and impacts to natural features and systems. The projected local impacts of climate change are as follows:

- Increased flooding and erosion, and early spring flooding (freshet)
- More frequent and prolonged drought conditions
- More frequent severe weather
- Reduced winter snow cover and river/lake ice
- Water quality changes (e.g. warming and increased algae blooms)
- Decreased soil moisture during the growing season
- Reduction in (drying of) wetland areas

⁸ 70% of the forest cover is on private land, 28% on crown land, and 2% on municipal/county lands and land trust managed properties.

⁹ Agriculture in the Mississippi River Watershed is predominantly located in the lower watershed downstream of Mississippi Lake, where one-third of the land is used for farming (Robinson Consultants, Inc., 2004).

- Increases in invasive species, plant pests and diseases
- Changes in aquatic species (more warm water/less cool water species).
- Changes to forest composition and species, affecting ecosystem processes and the forest industry.

Local municipal Official Plans designate areas where future growth is to be permitted. The 2011 and 2016 Statistics Canada Census data for several municipalities show growth rates at three times the Provincial average. The growth is expected to continue, with Carleton Place and Beckwith populations projected to almost double between 2016 and 2038 and Drummond/North Elmsley and Mississippi Mills increasing 60% over that same period. The impacts of urban and rural settlement are as follows:

Impacts	Implications
Reduction in permeable surfaces	<ul style="list-style-type: none"> ▪ Reduced infiltration of precipitation and snowmelt ▪ Increase in stormwater ▪ Overwhelms drainage systems (storm sewers and roadside ditches) and contributes to urban and rural flooding ▪ Water pollution
Removal of riparian buffers, remnant forests, and other natural features	<ul style="list-style-type: none"> ▪ Increased soil erosion ▪ Water quality impairment ▪ Reduced terrestrial and aquatic habitat ▪ Impaired ecological functioning¹⁰
Draining and filling of wetlands ¹¹	<ul style="list-style-type: none"> ▪ Loss of water storage during wet periods ▪ Increased risk of flooding and flood damage¹² ▪ Loss of groundwater and aquifer recharge during droughts ▪ Habitat loss

¹⁰ Forest and riparian cover in the east are nearing the minimum thresholds for a healthy environment recommended by Environment Canada (Environment Canada, 2013).

¹¹ Since European settlement, an estimated 65% of wetlands in the eastern watershed have been drained or filled. Moreover, a local vulnerability assessment predicts that most watershed wetlands are at risk of shrinking or drying due to climate change (Ontario Ministry of the Environment and Climate Change, 2014).

¹² Studies show that wetlands left in their natural state can reduce the cost of flood damage by 29% in rural areas and 38% in urban areas (Moudrak et al., 2017).

Impacts	Implications
Increased dependence on private services (well and sewage systems) ¹³	<ul style="list-style-type: none"> ▪ Reduced groundwater availability ▪ Potential groundwater and aquifer contamination¹⁴

1.4 Stewardship Programming at other CAs

Almost all the CAs in Ontario offer stewardship programming to some degree. Comparative analysis of these programs revealed various program elements are offered and a disparity exists in their delivery. The following list summarizes the percentage of CAs that offer each program element:

Stewardship Program Elements	Percentage of CAs that Offer Element
Large-scale tree planting/reforestation	76%
Plant sales/tree giveaways	58%
Rural clean water	58%
Habitat restoration/enhancement	45%
Agriculture-specific program (funding or otherwise)/ALUS	39%
LID/SWM promotion	24%
Workshops	21%
Shoreline planting	15%
Volunteer events	15%
Ash tree replacement	12%
Species at risk	12%
Invasive species management	12%
Educational/advice-based site visits	12%
Association with native plant nursery	9%
Trees for Rural Roads	6%
Loan equipment to volunteers for independent monitoring	3%

¹³ Not every area projected to have future growth has municipal water and sewer systems.

¹⁴ In rural parts of the watershed, an estimated 63% of the permanent population uses groundwater wells for their drinking water. The high growth areas also contain some of the largest wetlands and groundwater recharge areas of the eastern end of the Mississippi River Watershed, where development can negatively impact hydrologic conditions.

MVCA has offered many of these programs on a limited basis. The development of a Stewardship Plan allows MVCA to determine the most appropriate bundle of programs for this jurisdiction.

1.5 Target Stakeholders

MVCA will strive to engage municipalities, owners of both small and large landholdings, homeowners, businesses, institutions, recreational water users, and all residents of the jurisdiction to learn about and implement stewardship best practices, as well as for inclusion in the implementation of an assessment program for post-effectiveness monitoring. The design and elements of the Stewardship Program will be refined as these relationships develop and new priorities are identified.

1.6 Indigenous Engagement

When work began on the MRWP, MVCA undertook to prepare an Indigenous Engagement Plan (IEP) under the guidance of Cambium Indigenous Professional Services (CIPS). Research conducted by CIPS identified twenty-eight First Nations Communities/groups that hold interest within the MVCA watershed. MVCA, through CIPS, will engage with all twenty-eight Indigenous Communities/groups to discover any stewardship initiatives that they wish to undertake for which MVCA can provide support. As initiatives are identified, MVCA will recommend amendments of the Stewardship Plan to the Board as well as seek funding to support these initiatives.

2.0 CHALLENGES AND OPPORTUNITIES

The following sections outline the stewardship challenges and opportunities present within the Mississippi River and Carp River Watersheds.

2.1 Forestry

Challenges	Objectives	Program Opportunities
<ul style="list-style-type: none"> ▪ Forest fragmentation ▪ Decrease in forest density ▪ Lack of interior forest 	<ul style="list-style-type: none"> ▪ Increase forest connectivity ▪ Increase forest cover (overall and interior forest) ▪ Carbon sequestration 	<ul style="list-style-type: none"> ▪ Promote the development of Forest Management Plans ▪ Educate communities about ecological services provided by forests ▪ Distribute educational material from FHN

2.2 Waterbody, Watercourse, and Wetland Health

Challenges	Objectives	Program Opportunities
<ul style="list-style-type: none"> ▪ Impacts to surface and groundwater quality (pollution, 	<ul style="list-style-type: none"> ▪ Decrease pollution entering waterways and waterbodies 	<ul style="list-style-type: none"> ▪ Septic Re-inspection Program ▪ Relationships with Lake Associations ▪ Shoreline Naturalization Program

Challenges	Objectives	Program Opportunities
<p>nutrient runoff, leaching (sewage)</p> <ul style="list-style-type: none"> ▪ Stormwater management ▪ Erosion and siltation ▪ Loss of wetlands 	<ul style="list-style-type: none"> ▪ Improve on-site water storage to prevent runoff and flooding ▪ Stabilize soils and shorelines ▪ Increase number of wetlands 	<ul style="list-style-type: none"> ▪ ORCWP ▪ CSW ▪ Seek out opportunities for river and stream restoration ▪ Stormwater management education ▪ Promote and encourage LIDs and participation in water storage incentive programs, e.g. Rain Ready Ottawa ▪ Work with municipalities in implementing LIDs on municipal land ▪ Introduction of ALUS Lanark/Carp Program to facilitate the restoration of wetlands on marginal farmland ▪ Use data collected through CSW and volunteer efforts to control litter entering waterways

2.3 Habitat Loss

Challenges	Objectives	Program Opportunities
<ul style="list-style-type: none"> ▪ Fragmentation and loss of natural areas ▪ Habitat loss 	<ul style="list-style-type: none"> ▪ Increase connectivity of natural areas ▪ Increase habitat opportunities for fish and wildlife 	<ul style="list-style-type: none"> ▪ Shoreline Naturalization Program ▪ Introduction of ALUS Lanark/Carp Program to support the use of stewardship best practices among farmers and to facilitate the restoration of wetlands, tallgrass prairies, and riparian areas on marginal farmland ▪ Identify opportunities to implement habitat enhancement projects on municipal or CA-owned lands (e.g. building turtle nesting mound at MICA and CRCA; snake hibernaculum and nesting boxes at CRCA; pollinator habitat at MVCA office)

2.4 Invasive Species

Challenges	Objectives	Program Opportunities
Introduction and spread of invasive species	Prevent and reduce introduction and spread of invasive species	<ul style="list-style-type: none"> ▪ Coordinated management program using data collected through CSW and volunteer efforts in tandem with replanting work ▪ Annual monitoring of managed populations to prevent re-establishment ▪ Use and promotion of EDDMapS tool to identify, document, and monitor the introduction and spread of invasives ▪ Educate the community; promote tools such as <i>Grow Me Instead</i> publication (Ontario Invasive Plant Council, 2020).

3.0 PROGRAM APPROACH

MVCA’s jurisdiction has been divided into three geographic regions for the purposes of this Stewardship Plan (Figure 2):

- **The Upper Watershed (wooded uplands):** Township of Addington Highlands, Township of North Frontenac, Township of Central Frontenac, and Township of Greater Madawaska.
- **The Middle Watershed (transition zone):** Township of Lanark Highlands, Tay Valley Township, and Township of Drummond/North Elmsley.
- **The Lower Watershed (agricultural/urban):** Municipality of Mississippi Mills, Town of Carleton Place, Township of Beckwith, and City of Ottawa.

Rather than delivering all programs to the entire jurisdiction, this Stewardship Plan proposes to target programs suitable to each geographic region. Table 1 (see Appendix) shows the approximate month-by-month delivery of each program for the Upper Watershed, Middle Watershed, and Lower Watershed.

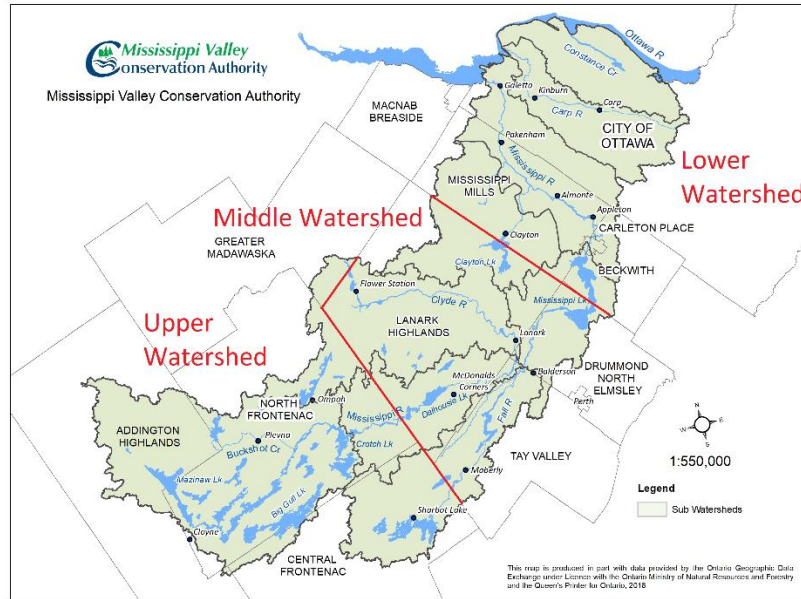


Figure 2. The MVCA jurisdiction divided into the Upper, Middle, and Lower Watersheds.

3.1 Upper Watershed: Areas of Focus

The Upper Watershed contains many lakes, rivers and streams with small wetlands scattered within forested cottage-country and crown-owned lands. The key stewardship objectives for this region are below, paired with program opportunities:

Upper Watershed Objectives	Program Opportunities
Enhance management of forested lands	<ul style="list-style-type: none"> Promote the development of Forest Management Plans Distribute educational material from Forest Health Network
<ul style="list-style-type: none"> Improve waterbody, watercourse, and wetland health Increase knowledge of lake health 	<ul style="list-style-type: none"> Promote and deliver Septic Re-inspection Program (per MOUs) Promote and deliver Shoreline Naturalization Program¹⁵ Participate in Lake Associations meetings Support Lake Links annual meeting Promotion and tracking of the Water Rangers water testing program
Prevent and reduce the introduction and spread of invasive species	<ul style="list-style-type: none"> Distribute educational materials, e.g. <i>Grow Me Instead</i> publication (Ontario Invasive Plant Council, 2020).

¹⁵ Where plantings exceed capacity, projects will be referred to Watersheds Canada.

Upper Watershed Objectives	Program Opportunities
	<ul style="list-style-type: none"> Use EDDMapS mapping database and app and other tools to log sightings

3.2 Middle Watershed: Areas of Focus

The Middle Watershed features many lakes, rivers, and streams along with both small and large wetlands, many of which are deemed Provincially Significant (PSW). Most notable is the abundance of agricultural land use in the eastern area of this section. The key stewardship objectives for this region are below, paired with program opportunities:

Middle Watershed Objectives	Program Focus
Enhance management of forested lands	<ul style="list-style-type: none"> Promote the development of Forest Management Plans Distribute educational material from Forest Health Network
<ul style="list-style-type: none"> Improve waterbody, watercourse, and wetland health Increase knowledge of lake health 	<ul style="list-style-type: none"> Promote and deliver Septic Re-inspection Program (per MOUs) Promote and deliver Shoreline Naturalization Program Participate in Lake Associations meetings Support Lake Links annual meeting Promotion and tracking of Water Rangers water testing program
Habitat enhancement	<ul style="list-style-type: none"> Promote and deliver Shoreline Naturalization Program Promote and deliver ALUS Lanark
Prevent and reduce the introduction and spread of invasive species	<ul style="list-style-type: none"> Distribute educational materials, e.g. <i>Grow Me Instead</i> publication (Ontario Invasive Plant Council, 2020). Use EDDMapS mapping database and app and other tools to log sightings

3.3 Lower Watershed: Areas of Focus

The Lower Watershed is characterized by a high concentration of agricultural land use, limited forested cover that is primarily privately owned and fragmented, large wetland complexes (some PSWs), and a high concentration of rural and urban land use. This region is where the majority of urban growth is projected to take place. The key stewardship objectives for this region are below, paired with program opportunities:

Lower Watershed Objectives	Program Focus
Enhance management of forested lands	<ul style="list-style-type: none"> Promote the development of Forest Management Plans Distribute educational material from Forest Health Network

Lower Watershed Objectives	Program Focus
<ul style="list-style-type: none"> ▪ Improve waterbody, watercourse, and wetland health ▪ Increase knowledge of lake health 	<ul style="list-style-type: none"> ▪ Participate in Lake Associations meetings ▪ Support Lake Links annual meeting ▪ Promotion and tracking of the Water Rangers water testing program ▪ Promote and deliver Shoreline Naturalization Program ▪ Promote and deliver Ottawa Rural Clean Water Program (per MOU) ▪ Promote and deliver City Stream Watch Program (per MOU) ▪ Identify opportunities for river and stream restoration ▪ Promote Low Impact Development and participation in water storage programs, e.g. Rain Ready Ottawa ▪ Promote and deliver stream clean-up events using volunteer efforts
Habitat enhancement	<ul style="list-style-type: none"> ▪ Promote and deliver Shoreline Naturalization Program ▪ Promote and deliver ALUS Lanark/Carp ▪ Promote and deliver Ottawa Rural Clean Water Program (per MOU)¹⁶ ▪ Identify, investigate, and facilitate habitat enhancement of public lands
Prevent and reduce the introduction and spread of invasive species	<ul style="list-style-type: none"> ▪ Analyze City Stream Watch data and prioritize removal of invasives ▪ Organize and deliver volunteer invasive removal events ▪ Distribute educational materials, e.g. <i>Grow Me Instead</i> publication (Ontario Invasive Plant Council, 2020). ▪ Use EDDMapS mapping database and app and other tools to log sightings

4.0 PARTNERING OPPORTUNITIES

MVCA shares environmental protection and resource management interests with many Non-Government Organizations (NGOs), local groups and associations. It has collaborative relationships with universities, many lake associations, and a variety of stewardship organizations. These collaborations become increasingly important as Provincial resources and services continue to diminish at the local level. A detailed description of current and potential partnership opportunities follows.

¹⁶ Wetland habitat restoration is a new category that will be eligible starting in 2022.

4.1 Conservation Authorities

MVCA has formed strong partnerships with several CAs within Ontario, which are explained below:

Conservation Authority	Partnerships
Rideau Valley Conservation Authority	<ul style="list-style-type: none"> ▪ Ottawa Rural Clean Water Program ▪ City Stream Watch ▪ Ash Tree Replacement Program ▪ Private Lands Forestry (Green Acres and Trees for Tomorrow Programs) ▪ ALUS Lanark/Carp¹⁷
South Nation Conservation	<ul style="list-style-type: none"> ▪ Ottawa Rural Clean Water Program ▪ City Stream Watch ▪ Ash Tree Replacement Program
Cataraqui Conservation	<ul style="list-style-type: none"> ▪ Source plant material for Shoreline Naturalization Program and other stewardship initiatives from native plant nurseries that are associated with Cataraqui Conservation¹⁸

4.2 Municipalities

MVCA has been providing planning advice to its member municipalities for many years. By making recommendations for improving and maintaining terrestrial and aquatic health throughout the watershed, MVCA promotes best management practices in a limited nature for properties that are being re-developed.

Along with providing planning advice, MVCA has worked with many of its member municipalities to implement stewardship initiatives within the watershed. Many of these initiatives were shoreline plantings in publicly accessible waterfront locations. Municipal plantings undertaken in recent years are listed below:

Year	Waterfront Site	Municipality
2014	Diefenbunker Site	City of Ottawa
2014	Kinburn Community Centre	City of Ottawa
2014	Poole Creek (Stitt Street Park)	City of Ottawa
2015	Fred Millar Park	Pakenham (Municipality of Mississippi Mills)
2016	Almonte Fairgrounds	Almonte (Municipality of Mississippi Mills)

¹⁷ Starting in 2021, MVCA, RVCA, and Lanark County are partnering with ALUS Canada to deliver an ALUS Lanark/Carp program (see below).

¹⁸ This is a potential new partnership that could begin in 2022.

Year	Waterfront Site	Municipality
2016	Metcalfe Park	Almonte (Municipality of Mississippi Mills)
2016	Riverside Park	Almonte (Municipality of Mississippi Mills)
2018	Poole Creek Outlet	City of Ottawa
2018	Carp River Restoration Site	City of Ottawa
2019	Centennial Park	Town of Carleton Place
2019	Pakenham Beach	Pakenham (Municipality of Mississippi Mills)
2019	Palmerston Lake Beach	Township of North Frontenac
2019	Poole Creek	City of Ottawa

Future opportunities for MVCA to partner with its member municipalities are as follows:

- Continue to deliver shoreline naturalization program, with a focus on larger tracts of land
- Continue to deliver Septic Re-inspection Program where MOUs exist

4.3 ALUS Lanark/Carp

ALUS Canada is an organization that provides financial and technical support to farmers who deliver ecosystem services in their communities through wetland restoration and construction, tallgrass prairie restoration, or shoreline restoration. ALUS Lanark/Carp will expand MVCA’s support of agricultural stewardship initiatives on private lands. The Middle and Lower Watersheds will benefit from this program. The key benefits of these habitat restoration projects include:

- Carbon sequestration
- Reductions in greenhouse gas emissions
- Natural disaster risk reduction from floods
- Habitat enhancement for migratory birds and species at risk
- Reduced loss of topsoil
- Reduced downstream siltation

The first step in implementing the ALUS Lanark/Carp program is to form a partnership advisory committee (PAC). MVCA will find and work with prominent representatives of the agriculture community to gain their expertise on how to engage and support farmers in implementing stewardship best practices. Ideally, these representatives will include local farmers and farm workers, agricultural business and industry representatives, and municipal representatives. Examples of local organizations to which MVCA could perform outreach for recruiting representatives and for promotion of ALUS Lanark/Carp include:

- 4H Ontario
- Lanark Federation of Agriculture
- National Farmers Union
- Ontario Soil and Crop Improvement Association (OSCIA)
- Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)
- Ontario Federation of Agriculture (OFA)

4.4 Local Environmental/Stewardship Organizations

MVCA will be or are currently partnered with the following stewardship-oriented NGOs:

- **The Friends of the Carp River (FOCR):** MVCA is working with the FOCR to develop a “Living Classroom” at the Carp River Conservation Area (CRCA). With the help of educators, a curriculum will be developed to be used by local schools visiting the site.
- **Canadian Wildlife Federation (CWF):** MVCA is partnering with CWF to enhance nesting habitat for northern map turtles (*Graptemys geographica*) by constructing a turtle nesting mound at Morris Island Conservation Area. There are opportunities for enhancing wildlife habitat at the CRCA, and therefore potential to continue this partnership.
- **Ducks Unlimited Canada (DUC):** MVCA will partner with DUC to implement wetland restoration projects for the ALUS program.

MVCA will work with local Stewardship Councils to review current stewardship programming needs, overlap, and gaps, as well as promote participation in existing stewardship initiatives by Stewardship Councils and other groups.

4.5 Academia

There are opportunities to collaborate with the University of Ottawa and Carleton University in the pre-treatment and post-effectiveness monitoring of restoration projects (see Section 7.0).

5.0 GRANTS

MVCA will seek external funding to support habitat enhancement projects, educational activities, and initiatives that benefit the community. Below are examples of grants that MVCA has had success with in the past, as well as others to consider, with additional information where available:

Grant Source	Grant Name	Amount	Dollar-Matching or In-Kind Requirements
Bass Pro Shops and Cabela's	Outdoor Fund		
Canadian Wildlife Federation	Rights-of-Way Habitat Restoration Program	No maximum amount for projects	Staff wages are considered in-kind.
Enbridge Gas	Enbridge Gas	\$5,000	
Environment and Climate Change Canada (ECCC)	Habitat Stewardship Program	\$25,000 - \$100,000 per project	Non-indigenous applicants are required to obtain a minimum of 1:1 matching contribution. Indigenous applications are required to obtain a minimum of 0.20:1 matching contribution. Leveraging can take the form of either financial or in-kind resources.
Environment and Climate Change Canada (ECCC)	EcoAction Community Funding Program	\$25,000 - \$100,000 per project	ECCC will fund up to 50% of project expenditures.
Government of Canada	Canada Summer Jobs	up to 50% of minimum wage	Approximately \$6,000 cost to MVCA
Government of Ontario	Ontario Trillium Foundation	\$5,000 - \$500,000, depending on project and project category	
Ministry of Environment, Conservation and Parks	Species at Risk Stewardship Program		Applications with matching dollars and/or in-kind contributions are preferred; Matching dollars preferred to in-kind contributions.
Ottawa Community Foundation	Community Grants Program	one-year grants in the order of \$10,000; multi-year grants range from \$3,000-\$24,000 per year	
RBC	RBC Tech for Nature	Received \$4,800 in 2020	RBC will fund up to 50% of a specific project or program budget.
TD Bank	TD Friends of the Environment Foundation	average \$6,900 in Ontario	
TD Bank	TD Tree Days	Received \$5,500 in 2020	
Wildlife Habitat Canada	The Habitat Conservation Stamp Initiative		Minimum 1:1 matching from non-federal sources required.
Ontario Wildlife Foundation	Ontario Wildlife Fund	Received \$2,000 in 2019	

6.0 BUDGET

EXPENDITURES	2022	2023	2024
1FTE Wages/Benefits	\$59,652.66	\$60,845.71	\$62,062.63
0.33FTE Wages (summer student)	\$10,000.00	\$10,000.00	\$10,000.00
Rural Clean Water program delivery	\$3,000.00	\$3,000.00	\$3,000.00
Trees Canada program delivery (RVCA Partnership)	\$5,500.00	\$5,500.00	\$5,500.00
County of Lanark Forest Management program delivery	\$6,000.00	\$6,000.00	\$6,000.00
Shoreline Naturalization & Other Watershed Stewardship			
Mileage/Expenses/Prof Development	\$4,000.00	\$4,000.00	\$4,000.00
Mat&Sup/Equip/Gexp/Promotion/Bat Boxes	\$12,000.00	\$12,000.00	\$12,000.00
Publicity	\$1,000.00	\$1,000.00	\$1,000.00
	Sept 2021 - Mar 2022	Apr 2022 - Mar 2023	Apr 2023 - Mar 2024
ALUS Lanark/Carp program delivery	\$16,516.75	\$94,704.79	\$119,407.87
Total	\$117,669.41	\$197,050.50	\$222,970.50
REVENUES	2022	2023	2024
Municipal Levy	\$75,983.00	\$75,983.00	\$75,983.00
User Fees - City of Ottawa RCWP	\$3,000.00	\$3,000.00	\$3,000.00
User Fees - County Forest Management (County of Lanark)	\$6,000.00	\$6,000.00	\$6,000.00
Other - OWF Grant - Fish Habitat Wolfe Grove Creek	\$2,000.00		
Other - Trees/TD Planting Program Grant	\$5,500.00	\$5,500.00	\$5,500.00
Other - Canada Summer Jobs	\$5,000.00	\$5,000.00	\$5,000.00
	Aug 2021 - July 2022	Aug 2022 - July 2023	Aug 2023 - July 2024
Other - ALUS Canada	\$41,300.00	\$35,400.00	\$29,500.00
	Sept 2021 - Mar 2022	Apr 2022 - Mar 2023	Apr 2023 - Mar 2024
Other - ECCC Nature Smart Climate Solutions Fund	\$21,820.00	\$66,167.50	\$97,987.50
Total	\$160,603.00	\$197,050.50	\$222,970.50

7.0 MEASURING SUCCESS

7.1 Short-term Deliverables

It is important to take measurements for gauging the success of Stewardship initiatives. The following quantifiable measures will be assessed in the short term:

- Number of projects undertaken
- Number of trees/shrubs planted
- Total area of land planted
- Total area of land restored to wetlands
- Total area of land restored to tallgrass prairie
- Length of shoreline restored
- Number of landowners contacted
- Number of landowners involved in projects
- Number of attendees at events, workshop¹⁹
- Number of community volunteer hours

In the longer term, the following actions can be taken to gauge the outcomes of Stewardship activities:

- Use sub-watershed report cards and aerial imagery to measure changes in the landscape, e.g. trends in deforestation or afforestation.
- Use City Stream Watch data to track changes in water quality and other trends in the watershed.

7.2 Post-Effectiveness Monitoring and Assessment

As projects arise, MVCA will enter into discussions with landowners regarding the opportunity to carry out post effectiveness monitoring, where appropriate. MVCA proposes to undertake baseline and post-implementation monitoring to assess the impacts of the program on water quality.

For wetland restoration projects, it is recommended that a year 1, 3, and 5 post effectiveness monitoring program be carried out. The following is a selection of parameters typically used for monitoring project function:

- Water levels (water storage)
- Water temperature
- Dissolved oxygen concentration
- % dissolved oxygen saturation
- pH
- Conductivity
- Specific conductivity
- Vegetation community (aquatic and terrestrial)

¹⁹ Program participants, including landowners and volunteers, can be surveyed after the fact

to assess the delivery and educational value of the programs.

- Zoological community (fish, birds, reptiles, amphibians, aquatic invertebrates, pollinators, other insects)

8.0 FUTURE CONSIDERATIONS

Some potential ideas, strategies, and initiatives for MVCA to consider in the future that are implemented by other Conservation Authorities:

- Expansion of Rural Clean Water Program outside of the City of Ottawa
- Expansion of City Stream Watch into Lanark County
- Acquisition of land to offer carbon offsetting program to commercial industry
- Development and delivery of Landowner Stewardship Workshops
- Delivery of guided, themed hikes in Conservation Areas
- Sale of kits of various themes, e.g. shoreline naturalization starter kits, DIY habitat kits
- Sale of nesting boxes for landowner installation
- Development of educational material/guides for download from MVCA website
- Development of Invasive Species Management Strategy for the MVCA watershed
- Organization and delivery of community science Bio-blitz projects (individual species reporting or events centred around a specific location)

9.0 SUMMARY

Land stewardship is one of the keys to providing critical climate change resiliency to municipalities. Stewardship initiatives are integral to reducing and mitigating flooding, water quality improvement, water storage, carbon sequestration, habitat restoration, and the overall benefit of human health and wellness. This Stewardship Plan will allow MVCA to help ensure the aquatic and terrestrial health and drinking water quality of the watershed.

10.0 REFERENCES

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11.0 APPENDIX

Table 1. Seasonal/monthly program delivery for all programs within each region of the watershed.

