



FRIENDS OF WYE MARSH INC.
16160 Hwy #12, P.O. Box 100
Midland, ON, L4R 4K6
Tel: (705) 526-7809
www.wyemarsh.com

2024 Wye Marsh Invasive Phragmites Report

Date: January 30, 2025

Prepared for: Vanessa Potvin – Environmental and Socio-Economic Consultant, Avaanz

Prepared by: Craig Pezik – Stewardship and Conservation Manager, Friends of Wye Marsh

Project Title: Wye Marsh Phragmites Management Project 2022

Funding Recipient: Friends of Wye Marsh (FOWM)

Funding Awarded: \$250,000 over 5 years

Project Partners: Cambium Inc., Severn Sound Environmental Association (SSEA)

Target Species at Risk: Blanding's turtle, and Eastern musk turtle

Project Status: Complete (Five-year duration, 2020-2024)

Project Summary

In 2020, the Friends of Wye Marsh (FOWM) received the first of five years of Ganawenim Meshkiki's (GMI) Eastern Georgian Bay Initiative (EGBI) funding to support prevention, detection, and management efforts of the highly invasive European Common Reed, commonly known as Phragmites, which is prevalent in eastern Ontario's Wye Marsh. The Wye Marsh encompasses ~1,215 hectares of Provincially Significant Wetland and surrounding upland in the Severn Sound Watershed of eastern Georgian Bay. In this region, Phragmites monocultures degrade habitat and outcompete natural food sources for Wye Marsh wildlife, including Eastern Georgian Bay species at risk (SAR): the Blanding's turtle, and Eastern musk turtle. More broadly, Phragmites monocultures threaten the overall health of the marsh ecosystem and other species, both aquatic and non-aquatic, that inhabit the area.

2024 marked year five of GMI funding to advance Phragmites management and control efforts in the Wye Marsh. 2024 is the final year of the EGBI project at the Wye Marsh. With the help of project partners SSEA and Cambium Inc., FOWM staff and volunteers progressed Phragmites detection and management efforts through the following actions:



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Identification and mapping of populations of Phragmites

Initial areas of suspected Phragmite populations were mapped using drone imagery in 2020. Ground truthing in 2021 was used to confirm the location and size of these populations. In 2021, 7 sites were identified. In subsequent years, new site detection was carried out by traversing throughout areas of the Wye Marsh. In 2022, an additional 22 sites were identified. In 2023, two sites (FOWM-AB-028 and FOWM-AB-029) had merged into one site, and an additional 5 sites were detected. In 2024, three sites (FOWM-AB-013, FOWM-AB-014, and FOWM-AB-015) had merged into one site, and an additional 2 sites were detected. By the end of the 2024 field season, a total of thirty-three sites with distinguishable boundaries have been identified within, and adjacent to the Provincial Wildlife Area (PWA) or National Wildlife Area (NWA). This data was provided to Cambium Inc. to update mapping of Phragmites populations throughout the PWA and NWA. Cambium provided geospatial support by expanding on the Reference Grid Map for the Wye Marsh Wildlife PWA and NWA lands. A detailed site map can be found in Appendix A.

Pre-treatment assessments

Assessments were conducted to help determine whether there had been a change in size in existing populations since the previous year, as well as tracking changes in site densities throughout the duration of the project. These assessments were also helpful in detecting any changes to the site that may lead to complications implementing management activities.

Removal/Management activities

Through consultation between FOWM, SSEA, and Cambium Inc., previously managed sites and smaller sites that were easily accessible were deemed as priority for management in 2024. A total of thirteen sites were managed with support from SSEA, Cambium and volunteers using a variety of manual management techniques. The manual spading removal method was used at all thirteen sites, with cut-to-drown methodology being utilized when appropriate. Phragmites biomass that was removed was piled on site, away from the water in order to dry out and become inviable. Phragmites were removed at the most accessible sites and transported off site for appropriate disposal at the North Simcoe Transfer Station. A site-specific management plan can be found in Appendix B.

Post-treatment assessments

Post treatment monitoring was completed by FOWM and SSEA in order to determine effectiveness of management activities and extent of regrowth at each of the controlled sites. Thirteen sites had



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management activities occur in 2024, with twelve sites having the entirety of the site managed, and one site only receiving management to part of the site. Sites that had management activities occur over the entirety of the site, showed an overall reduction in phragmite density, while partial management did not. Of the sites receiving complete management, six showed a reduction in density of 26-50%, five showed a reduction of 1-25% and one showed a reduction of 51-75%. Site density details can be found in Appendix C.

Outreach, training, and technical support

Project staff trained volunteers and seasonal staff on how to identify, manage, and dispose of Phragmites in ways that ensure participant safety and optimal results. Five social media posts were created and shared and a total of forty-five volunteer hours were contributed to removal and restoration efforts.

Field sheets created in collaboration with Cambium Inc. were used for data collection and review. Cambium also provided guidance and technical review of geospatial data collection approaches.

Remediation

Remediation efforts were employed on sites with large biomass reductions and low regrowth rate. In 2024, this meant five sites were targeted for remediation efforts – FOWM-AB-004, FOWM-AB-007, FOWM-AB-009, FOWM-AB-032, and FOWM-AB-036. In an attempt to promote native species competing with the phragmites, two hundred plants (one hundred speckled alder and one hundred red-osier dogwood) were planted at the sites, with the distribution of plantings shown below (Table 1). Due to access limitations at many sites, plants purchased were plugs to allow for ease of transportation and planting.

Table 1: Site Remediation Plantings

Site ID	Number of Speckled Alder Planted	Number of Red-osier Dogwood Planted
FOWM-AB-004	8	8
FOWM-AB-007	40	40
FOWM-AB-009	40	40
FOWM-AB-032	8	8
FOWM-AB-036	4	4



Overall Project Impact

By the end of the 2024 field season, a total of thirty-three distinguishable sites were identified. Throughout the course of the project, sites selected for management varied slightly from year to year. In general, smaller, more accessible patches were prioritized for management. Sites that were managed for multiple years, as well as size changes and 2024 post-management densities are shown in Table 2, while more detailed information about site sizes can be found in Appendix D.

Table 2: Sites Managed Multiple Years

Site ID	Years Management Actions Conducted	Site Size Change (%) Since Initial Detection	2024 Post-management Site Density
FOWM-AB-001	2021, 2022	49.5%	76 – 100%
FOWM-AB-003	2021, 2022, 2023, 2024	-23.9%	1 – 25%
FOWM-AB-004	2021, 2022, 2023, 2024	44.0%	1 – 25%
FOWM-AB-005	2021, 2022, 2023, 2024	-33.5%	1 – 25%
FOWM-AB-006	2022*, 2023*, 2024*	44.9%	76 – 100%
FOWM-AB-007	2021*, 2022, 2023, 2024	356.0%	1 – 25%
FOWM-AB-008	2022, 2023, 2024	-27.1%	1 – 25%
FOWM-AB-009	2022*, 2023, 2024	42.4%	1 – 25%
FOWM-AB-031	2023, 2024	-10.9%	1 – 25%
FOWM-AB-032	2023, 2024	-18.8%	1 – 25%
FOWM-AB-033	2023, 2024	-52.4%	26 – 50%

* indicates partial management

A total of eleven sites had management activities conducted over multiple years. Of the eleven sites, eight had a 2024 post-management density of 1 – 25%, and six had a reduction in size compared to the initial year the site was detected. It should be noted that FOWM-AB-007 was likely mapped incorrectly in 2021 and inaccurately reflected the true size of the site, as the geospatial data from 2021 and 2022 indicate that the site quintupled in size, which is a dramatic growth compared to any other sites, even those that did not receive any management. While FOWM-AB-006 was managed in multiple years, it was never managed over the entire spatial extent of the site. This site shows the importance of applying management practices to the entirety of a site.

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Based on the results of the project, it appears that physical management practices can be employed to control phragmites, however, depending on the size, and remoteness of the site, may require a large number of man hours and may require extensive volunteer involvement to achieve meaningful progress.

Over the course of the project, a total of \$186, 445.54 was spent. A cost breakdown is provided in Appendix E.

Project Limitations

Unfortunately, the overall effectiveness of this project was impacted by staff turnover rate within the Friends of the Wye Marsh, specifically with the role of Stewardship Manager, resulting in variations in the implementation of protocols which potentially impacted the accuracy of collected data, the efficiency in delivery of management actions, as well as general site navigation, and project continuity.

Site management of many of the sites in the southern portion of the Wye Marsh is complicated, and difficult to implement. Many of the sites in this portion of the marsh are quite large, are inaccessible by Truxor, and due to the remoteness and nature of the surrounding environment, make using gas powered equipment difficult due to refueling complications. Machines should be refueled a safe distance away from any wetland or aquatic habitat, to ensure that any inadvertent spills are not able to enter the aquatic ecosystem. As most of the sites in this portion of the marsh are a 1 to 2 km walk through difficult terrain from a suitable refueling area, making this method of management even more physically draining and taking even longer. Due to the size of the sites in this area, management via spading and cane cutting, is unfeasible due to the amount of man hours required to perform these actions.

Next Steps

Should Friends of Wye Marsh procure future funding through grants or other funding streams, it is likely that a more diverse management strategy will be required to maximize impact. Additional management strategies such as chemical and biological control should be investigated to determine if they would be appropriate for the management of some sites.

Chemical control could include imazapyr applied by wicking in aquatic habitats and spraying glyphosate in terrestrial sites where runoff is not a concern.

Ducks Unlimited has been attempting to utilize two stem boring moths native to Europe (*Archana neurica* and *Lenisa geminipuncta*). They had trialed it in lab to determine if there may be any



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adverse impacts to native vegetation. After a lengthy trial period, no adverse impacts on native vegetation were noted. In 2019, they moved to trialing in field locations. Insects are released into phragmites patches in the spring as both eggs and larvae. Eggs are placed in plastic cups to protect eggs from predators while allowing hatching larvae to crawl out and find nearby invasive phragmites to feed on. The larvae of these moths bore into the stem of the phragmites, killing off that stem in the process. This results in reduced phragmites density at the site, allowing native vegetation a better chance to grow within the phragmites patches, and potentially outcompete the phragmites, or at least allow for more biodiversity within the patch.

Ducks Unlimited has been contacted regarding this potential, and while possible, they are reluctant to engage at this time due to complications arising from the approval process for releasing on provincial or federal land.

Please do not hesitate to contact us should you have any questions or require further information.

Best regards,

Craig Pezik | Stewardship and Conservation Manager

Wye Marsh Wildlife Centre

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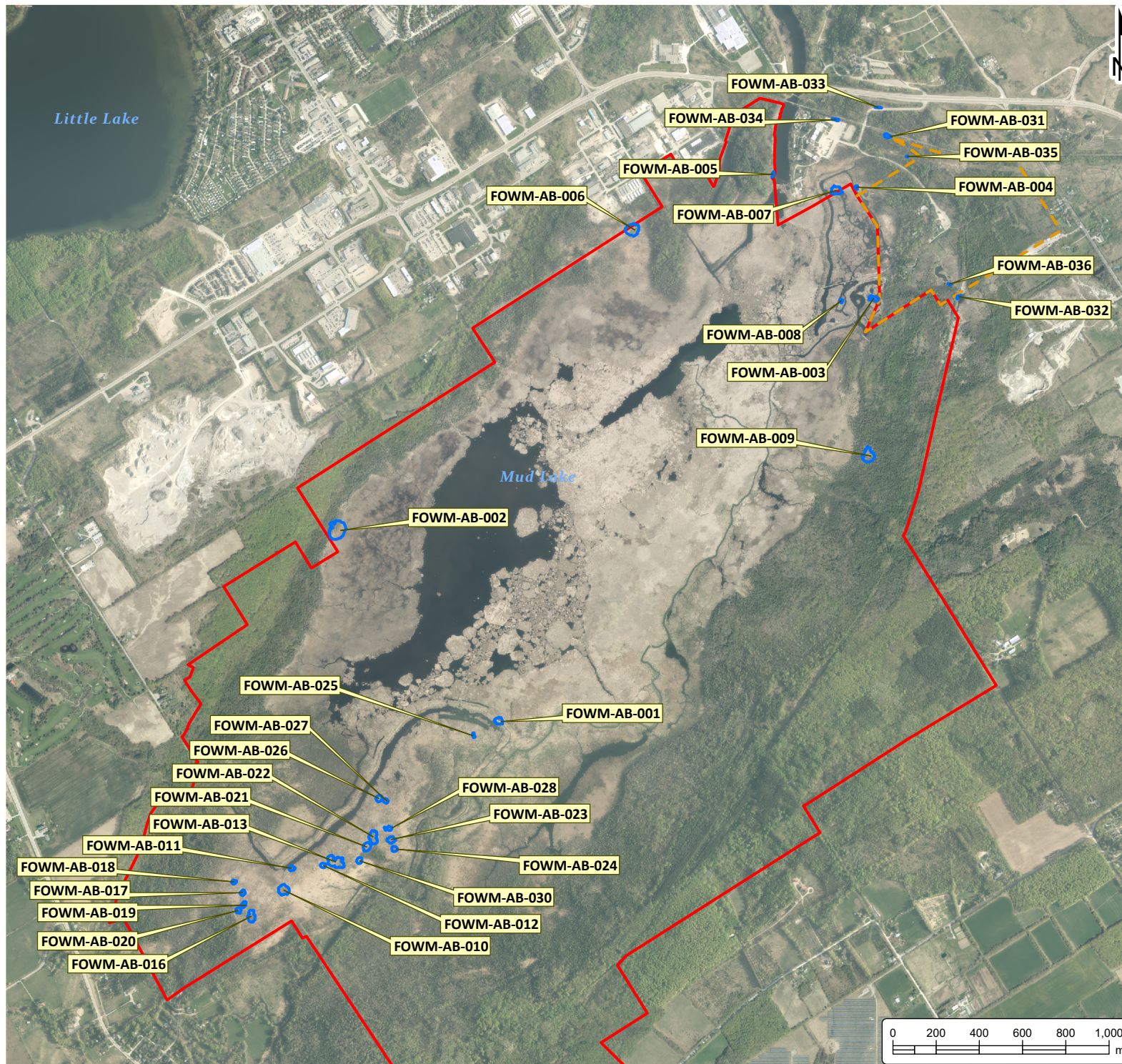
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Appendix A: Site Map



WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024

WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

- Invasive Species Management Site (2024)
- Provincial Wildlife Area (PWA)
- National Wildlife Area (NWA)

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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024

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PHRAGMITES
MANAGEMENT 2024**
WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

-  Invasive Species Management Site (2024)
-  Invasive Species Management Site (2023)

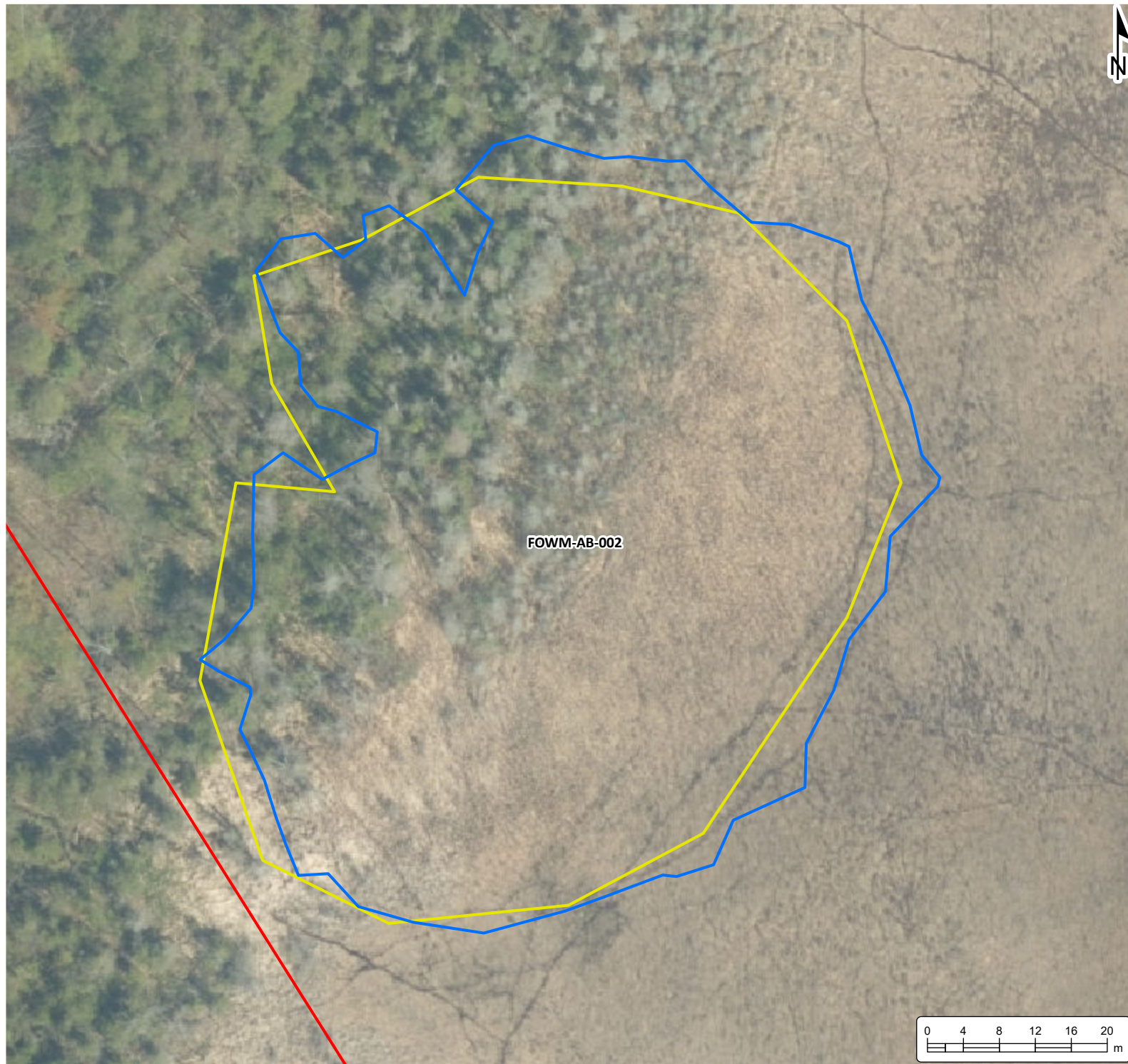
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FOWM-AB-001**

Project No.:	10102-001	Date:	January 2025
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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024

WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
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LEGEND

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**WYE MARSH INVASIVE
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WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

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**WYE MARSH INVASIVE
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FOWM-AB-003**

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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024

WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024 FOWM-AB-004

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**WYE MARSH INVASIVE
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WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
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LEGEND

-  Invasive Species Management Site (2024)
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-  Provincial Wildlife Area (PWA)

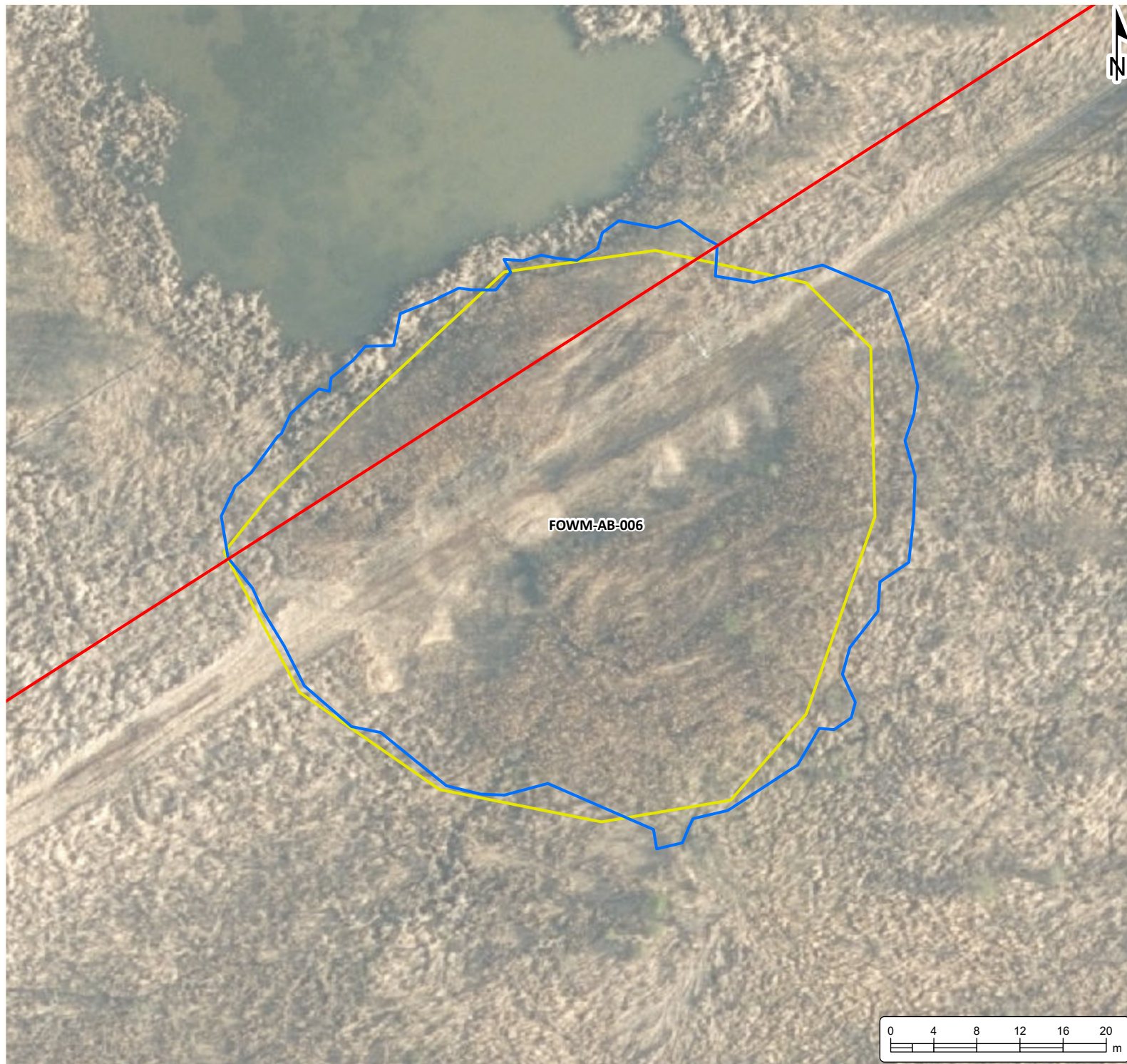
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FOWM-AB-005**

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**WYE MARSH INVASIVE
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FOWM-AB-006**

Project No.: 10102-001		Date: January 2025	
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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024

WYE MARSH WILDLIFE CENTRE
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LEGEND

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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024 FOWM-AB-007

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**WYE MARSH INVASIVE
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FOWM-AB-008**

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LEGEND

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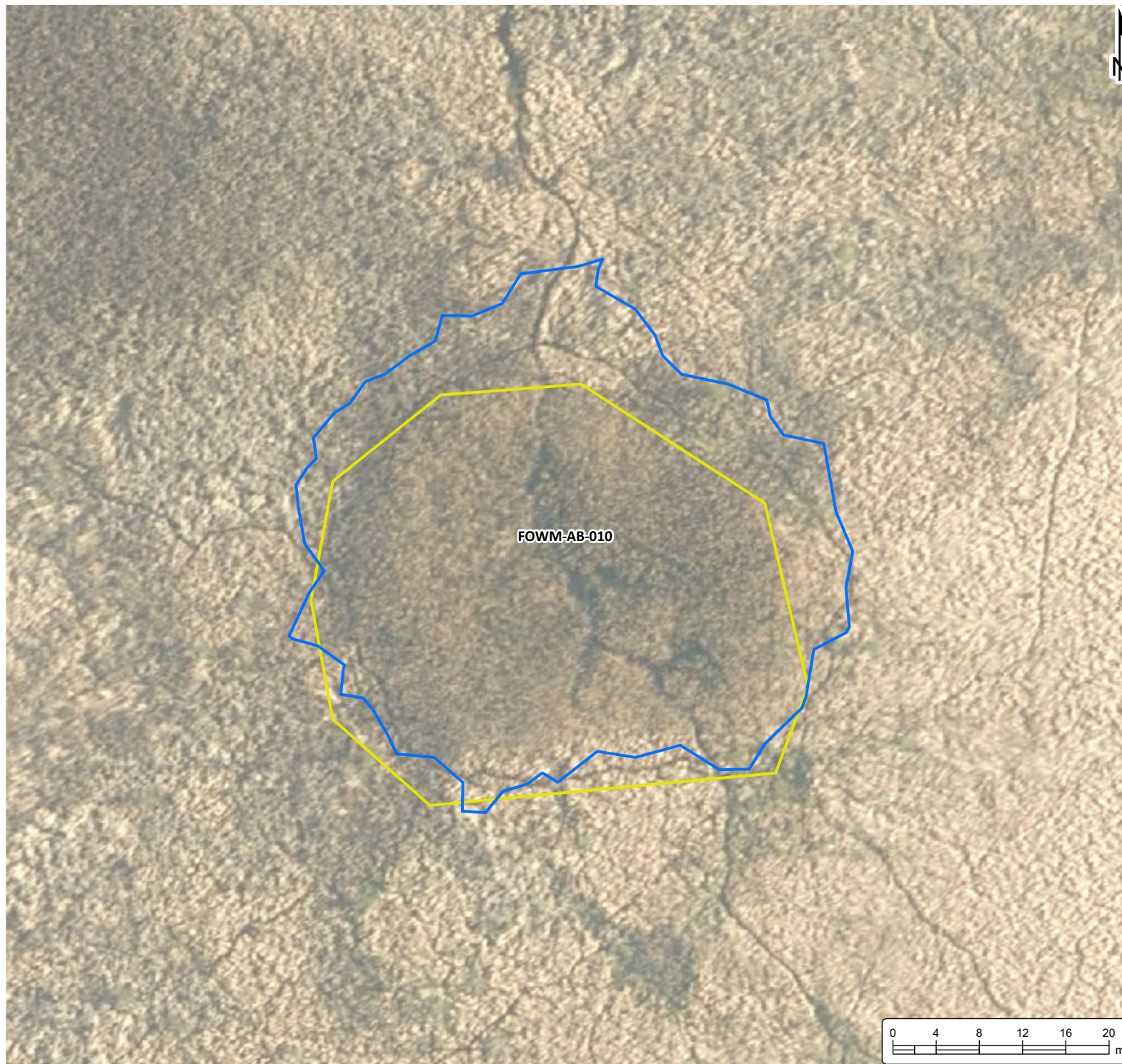
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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024

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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024 FOWM-AB-010

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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024

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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024 FOWM-AB-011

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Figure:	12		



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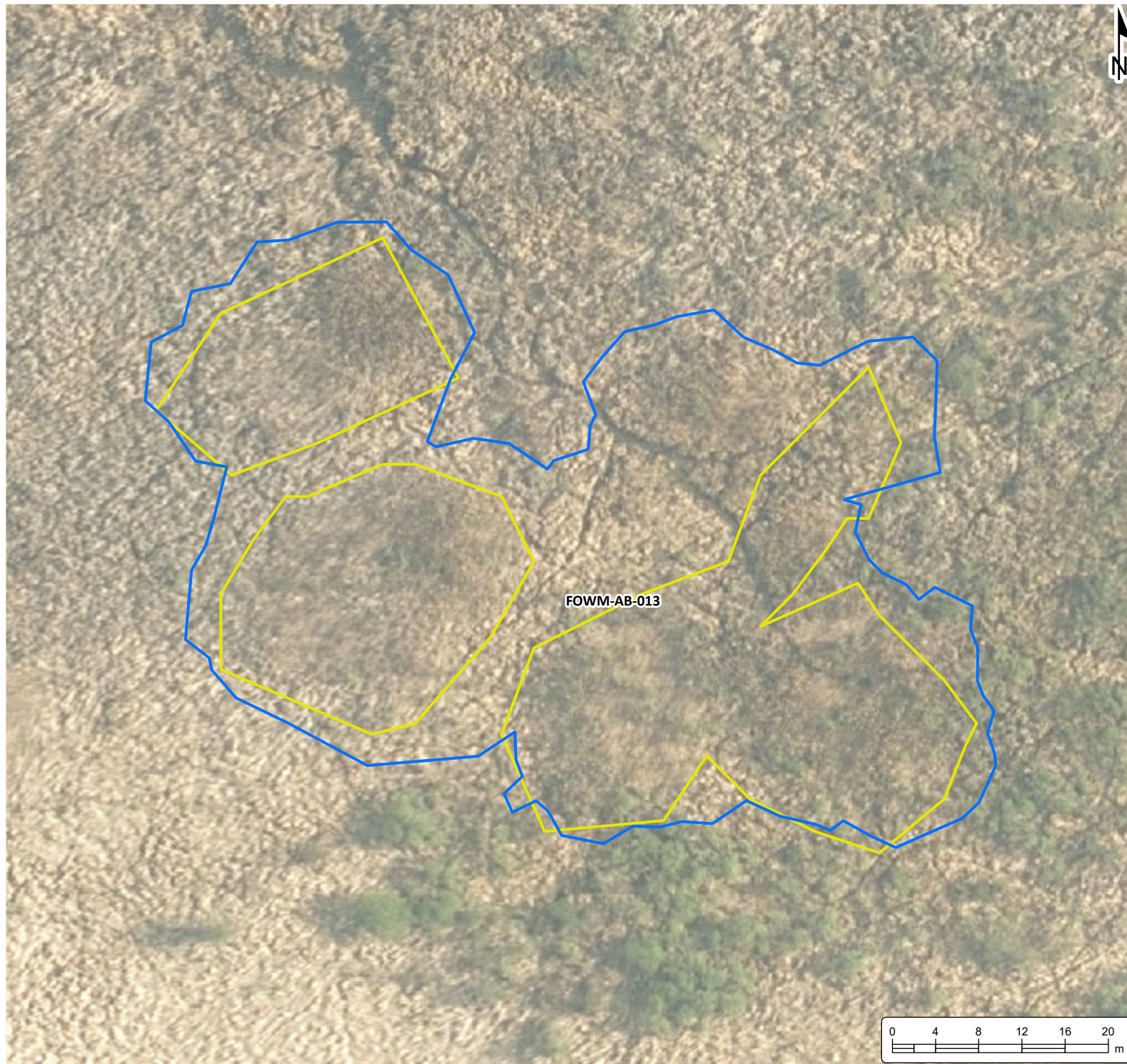
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FOWM-AB-012**

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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024

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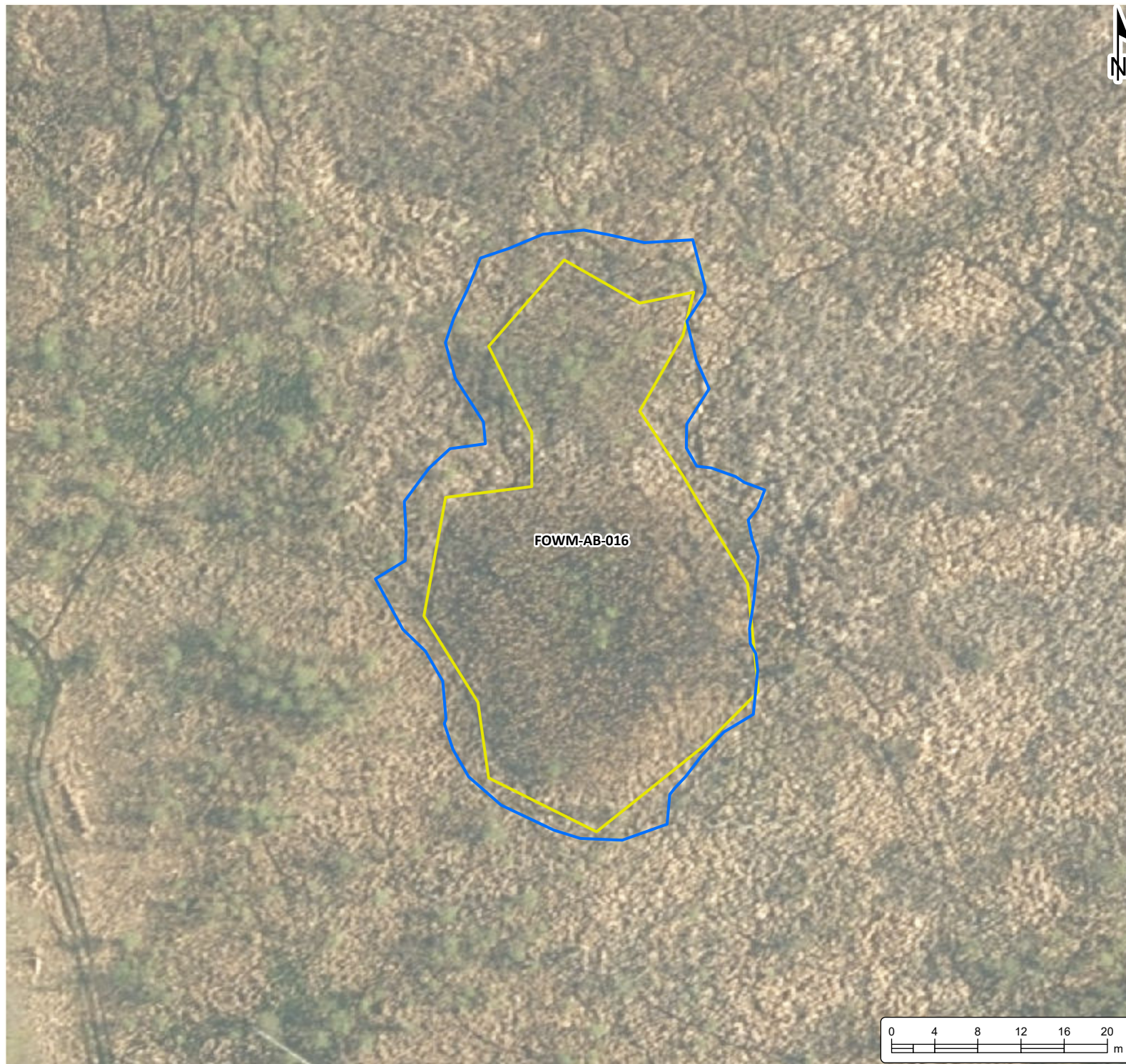
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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024 FOWM-AB-013

Project No.:	10102-001	Date:	January 2025
Scale:	1:500	Rev.:	
Projection:	NAD 1983 UTM Zone 17N		
Created by:	DBC	Checked by:	JP
Figure:	14		



WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024

WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

- Invasive Species Management Site (2024)
- Invasive Species Management Site (2023)

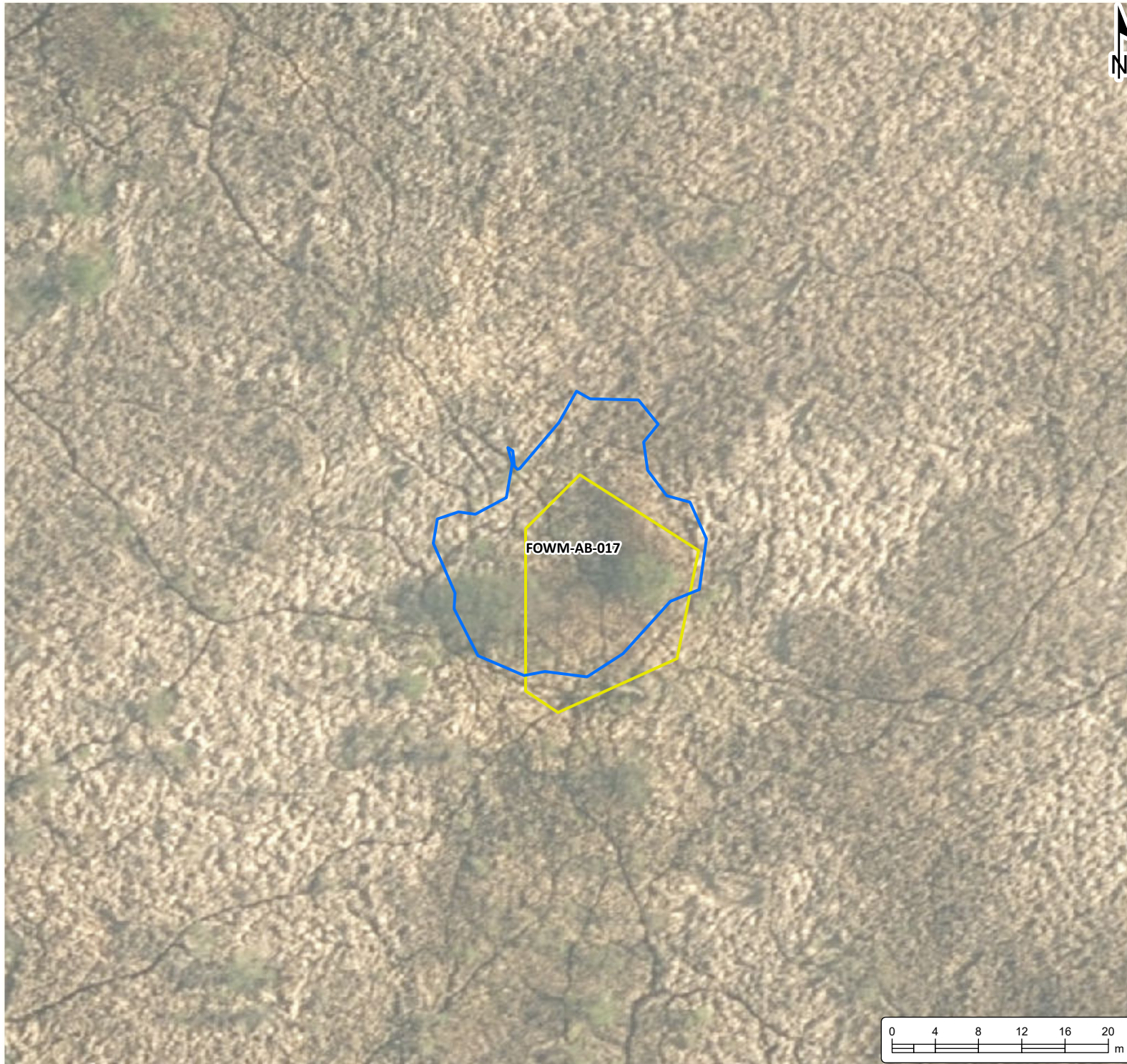
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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024 FOWM-AB-016

Project No.: 10102-001		Date: January 2025	
Scale: 1:500		Rev.: NAD 1983 UTM Zone 17N	
Created by: DBC	Checked by: JP	Figure: 15	



**WYE MARSH INVASIVE
PHRAGMITES
MANAGEMENT 2024**
WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

-  Invasive Species Management Site (2024)
-  Invasive Species Management Site (2023)

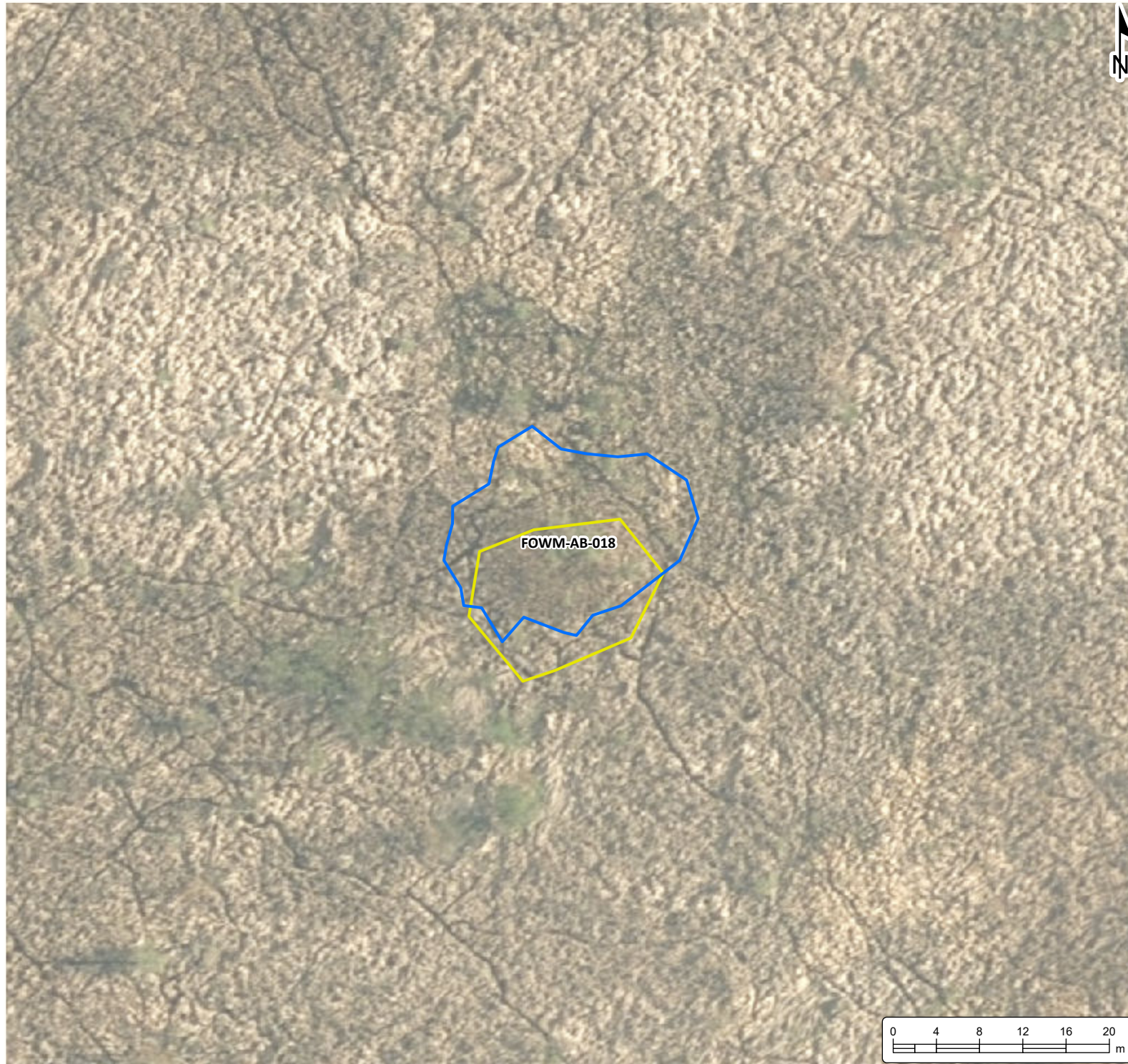
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**WYE MARSH INVASIVE
PHRAGMITES MANAGEMENT 2024
FOWM-AB-017**

Project No.:	10102-001	Date:	January 2025
Scale:	1:500	Rev.:	
Created by:	DBC	Projection:	NAD 1983 UTM Zone 17N
Checked by:	JP	Figure:	16



**WYE MARSH INVASIVE
PHRAGMITES
MANAGEMENT 2024**
WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

-  Invasive Species Management Site (2024)
-  Invasive Species Management Site (2023)

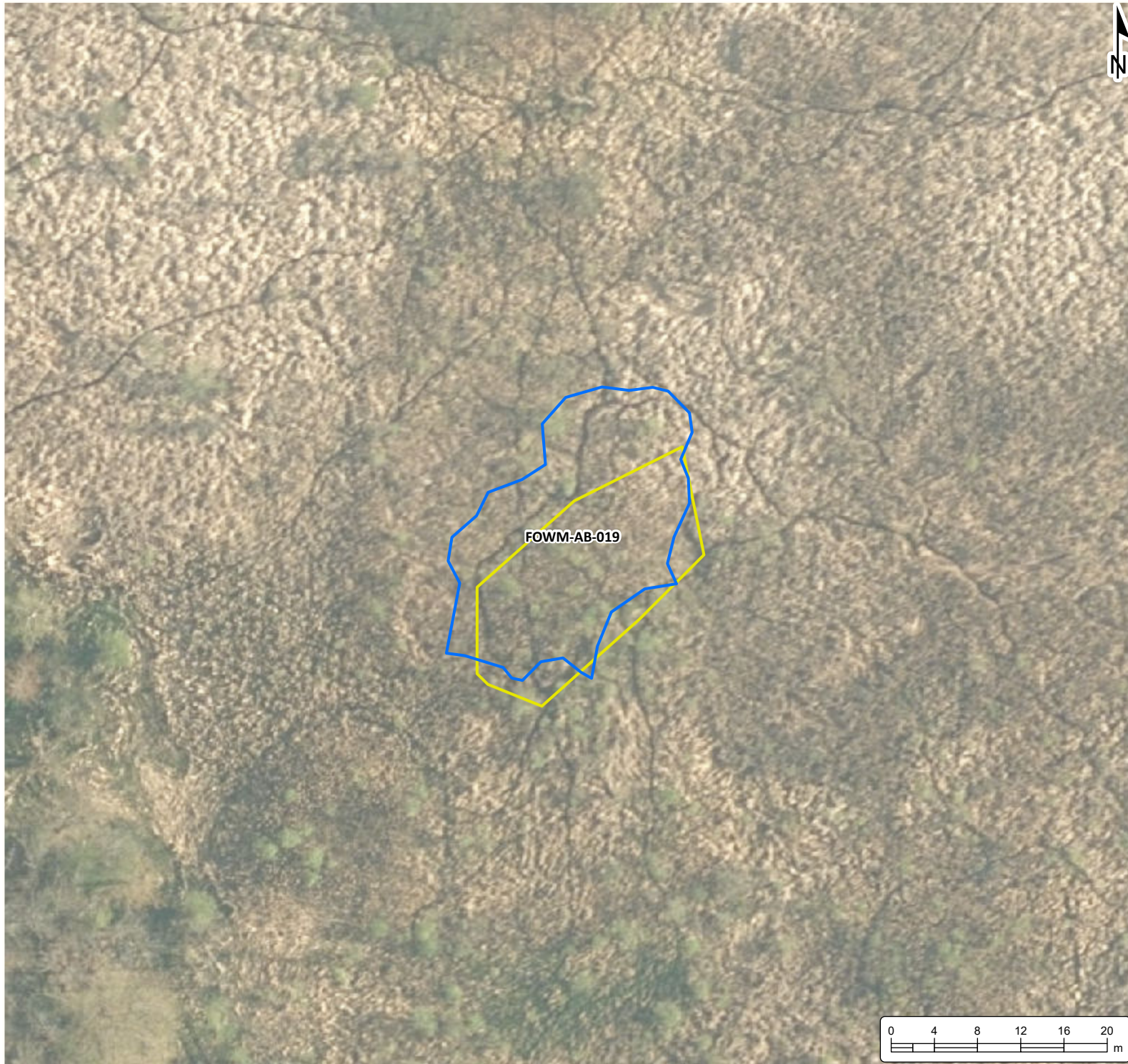
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FOWM-AB-018**

Project No.:	10102-001	Date:	January 2025
Scale:	1:500	Rev.:	
Created by:	DBC	Projection:	NAD 1983 UTM Zone 17N
Checked by:	JP	Figure:	17



**WYE MARSH INVASIVE
PHRAGMITES
MANAGEMENT 2024**
WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

-  Invasive Species Management Site (2024)
-  Invasive Species Management Site (2023)

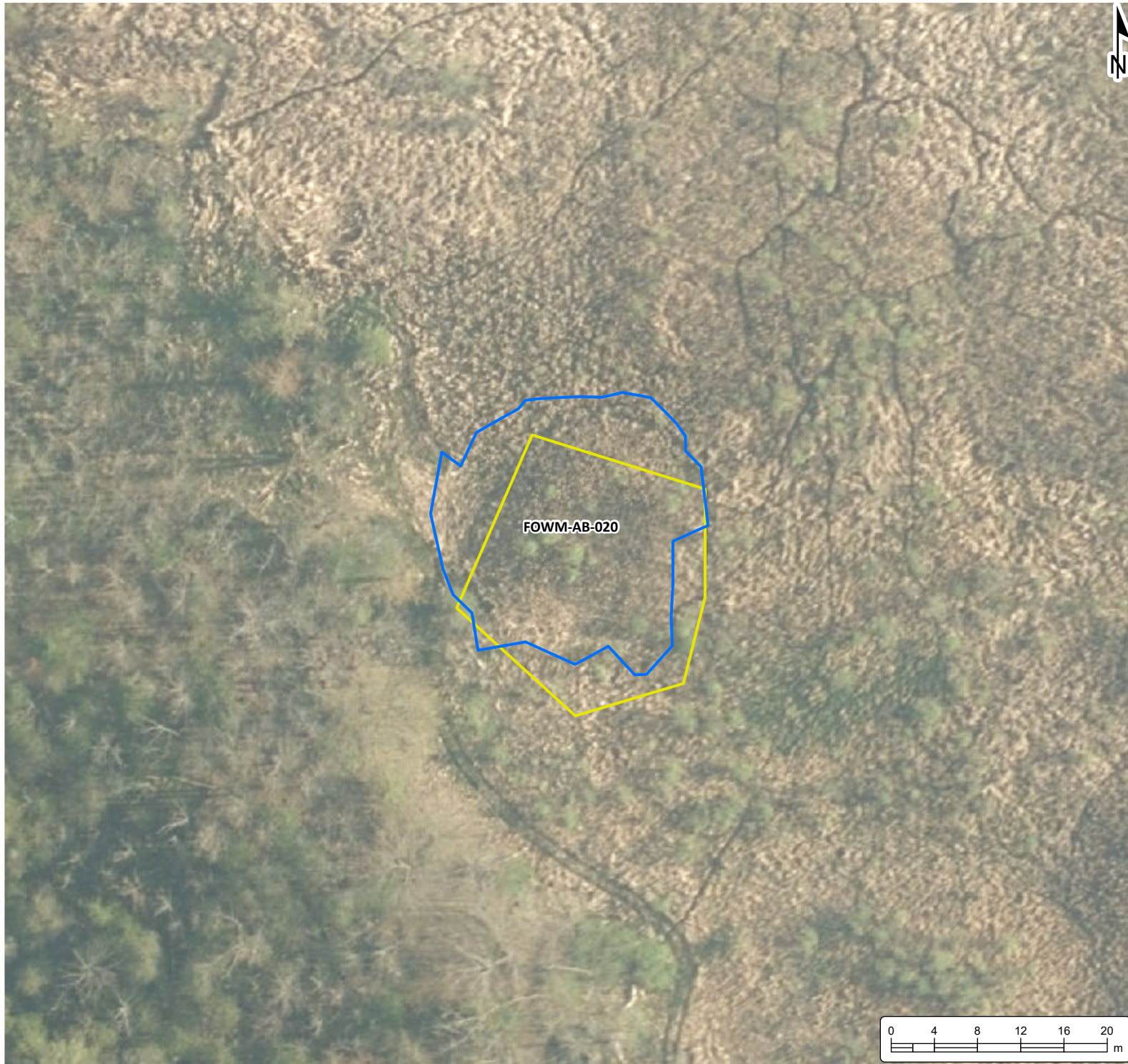
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**WYE MARSH INVASIVE
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FOWM-AB-019**

Project No.:	10102-001	Date:	January 2025
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Checked by:	JP	Figure:	18



WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024

WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

-  Invasive Species Management Site (2024)
-  Invasive Species Management Site (2023)

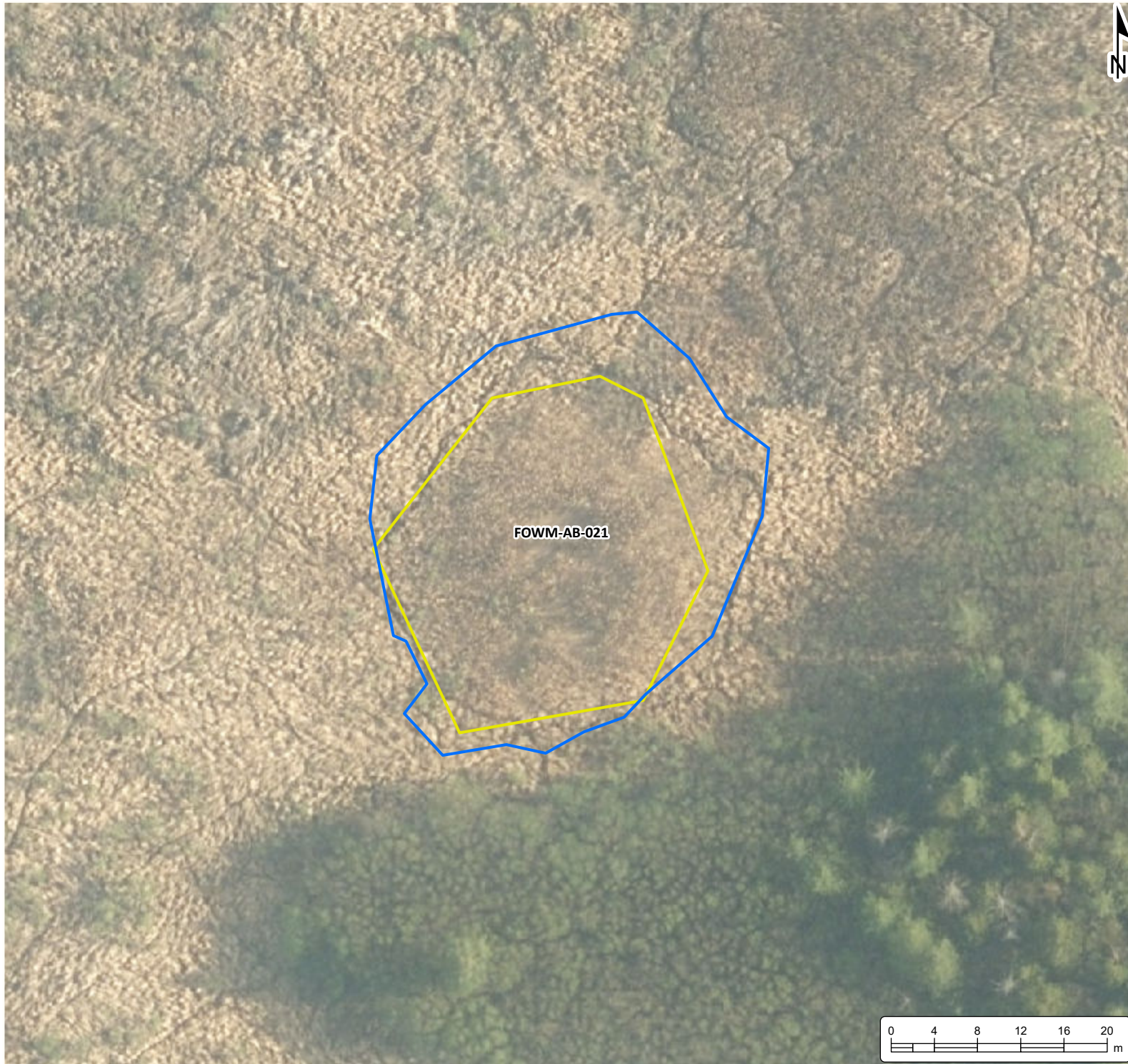
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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024 FOWM-AB-020

Project No.: 10102-001		Date: January 2025	
Scale: 1:500		Projection: NAD 1983 UTM Zone 17N	
Created by: DBC	Checked by: JP	Figure: 19	



**WYE MARSH INVASIVE
PHRAGMITES
MANAGEMENT 2024**
WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

-  Invasive Species Management Site (2024)
-  Invasive Species Management Site (2023)

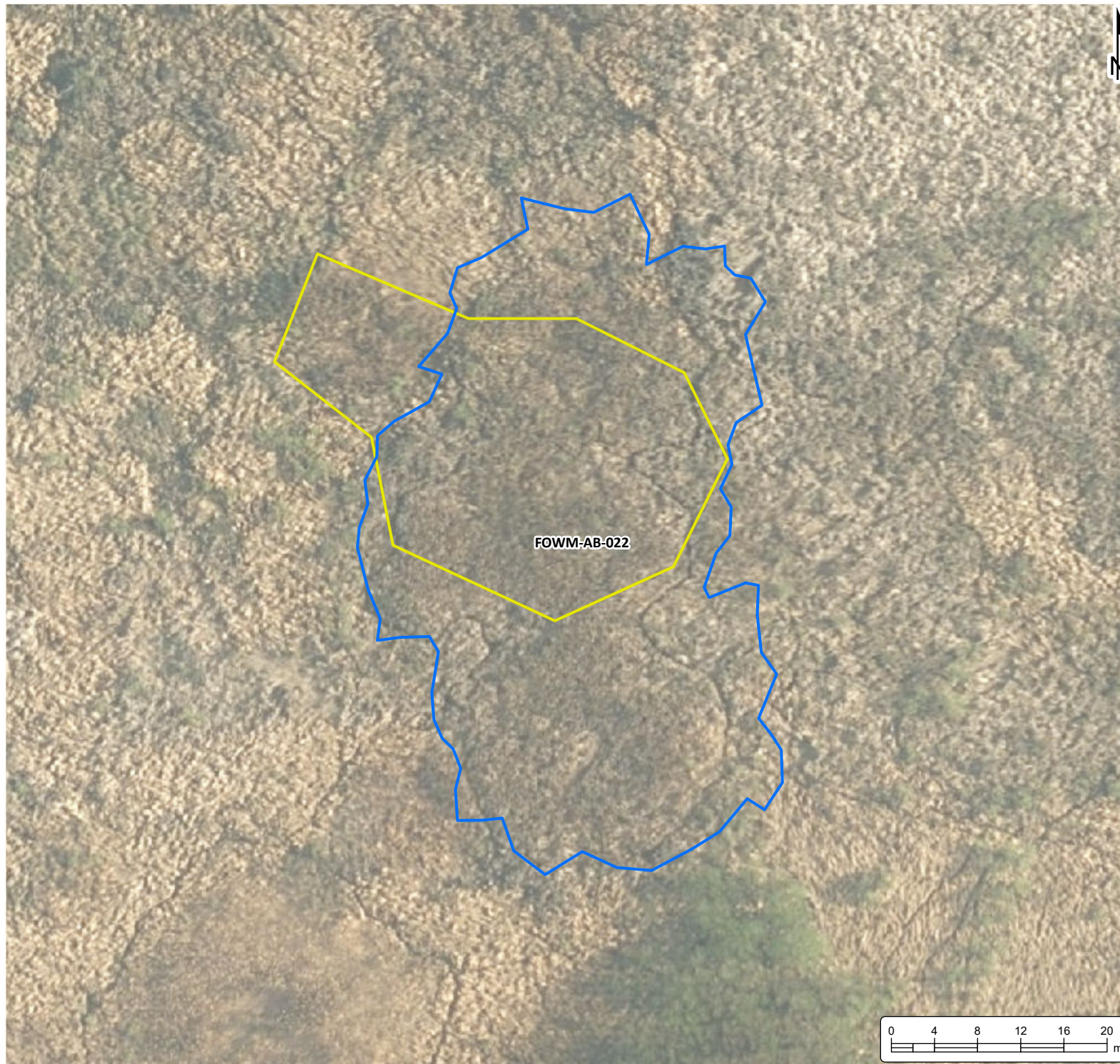
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**WYE MARSH INVASIVE
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FOWM-AB-021**

Project No.: 10102-001		Date: January 2025	
Scale: 1:500		Projection: NAD 1983 UTM Zone 17N	
Created by: DBC	Checked by: JP	Figure: 20	



WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024

WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

- Invasive Species Management Site (2024)
- Invasive Species Management Site (2023)

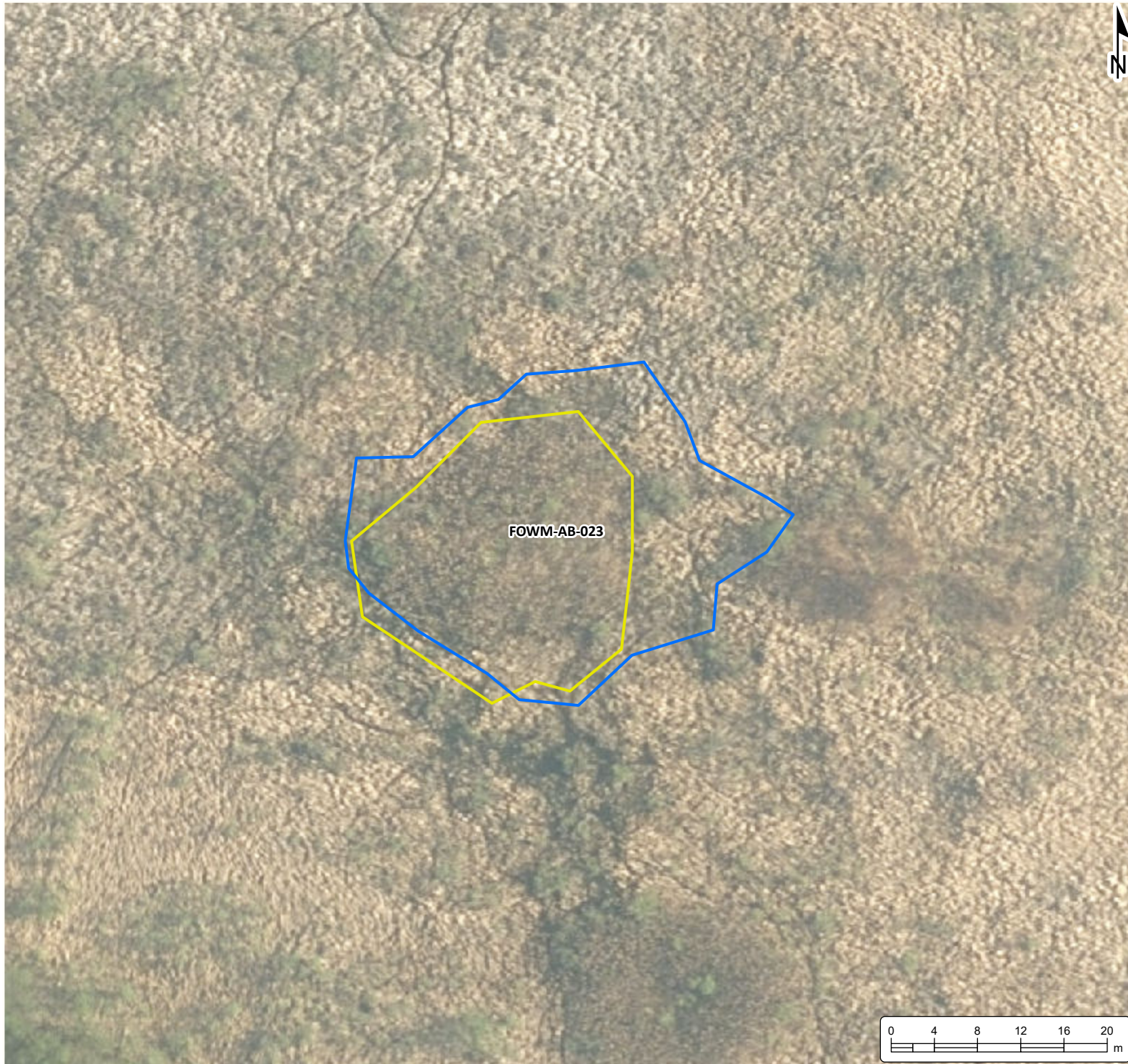
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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024 FOWM-AB-022

Project No.:	10102-001	Date:	January 2025
Scale:	1:500	Rev.:	
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Checked by:	JP	Figure:	21



WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024

WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

- Invasive Species Management Site (2024)
- Invasive Species Management Site (2023)

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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024 FOWM-AB-023

Project No.:	10102-001	Date:	January 2025
Scale:	1:500	Rev.:	
Projection:	NAD 1983 UTM Zone 17N		
Created by:	DBC	Checked by:	JP
Figure:	22		



**WYE MARSH INVASIVE
PHRAGMITES
MANAGEMENT 2024**
WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

-  Invasive Species Management Site (2024)
-  Invasive Species Management Site (2023)

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**WYE MARSH INVASIVE
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FOWM-AB-024**

Project No.: 10102-001		Date: January 2025	
Scale: 1:500		Rev.: NAD 1983 UTM Zone 17N	
Created by: DBC	Checked by: JP	Figure: 23	



**WYE MARSH INVASIVE
PHRAGMITES
MANAGEMENT 2024**
WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

-  Invasive Species Management Site (2024)
-  Invasive Species Management Site (2023)

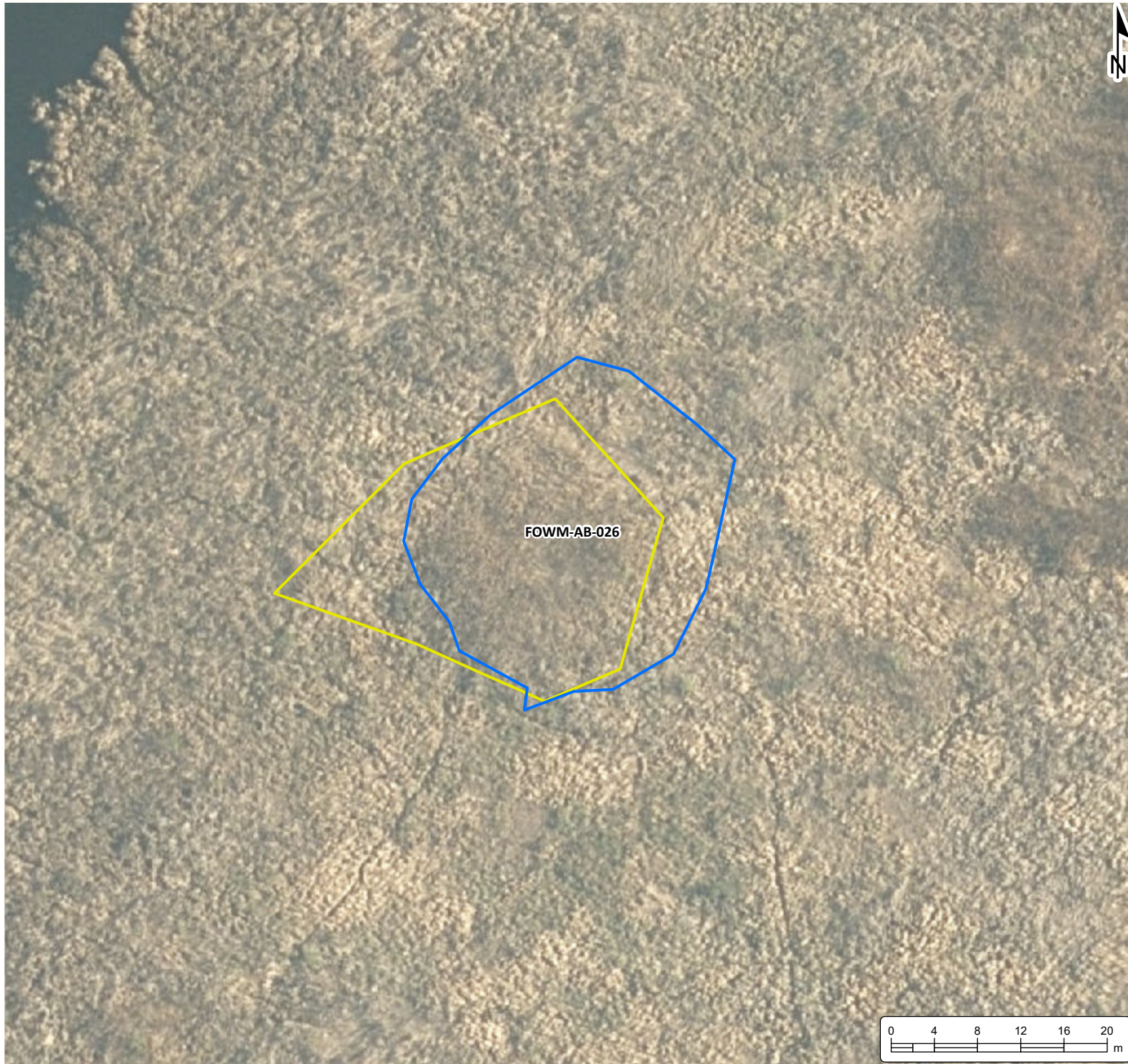
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**WYE MARSH INVASIVE
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FOWM-AB-025**

Project No.:	10102-001	Date:	January 2025
Scale:	1:500	Rev.:	
Created by:	DBC	Projection:	NAD 1983 UTM Zone 17N
Checked by:	JP	Figure:	24



**WYE MARSH INVASIVE
PHRAGMITES
MANAGEMENT 2024**
WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

-  Invasive Species Management Site (2024)
-  Invasive Species Management Site (2023)

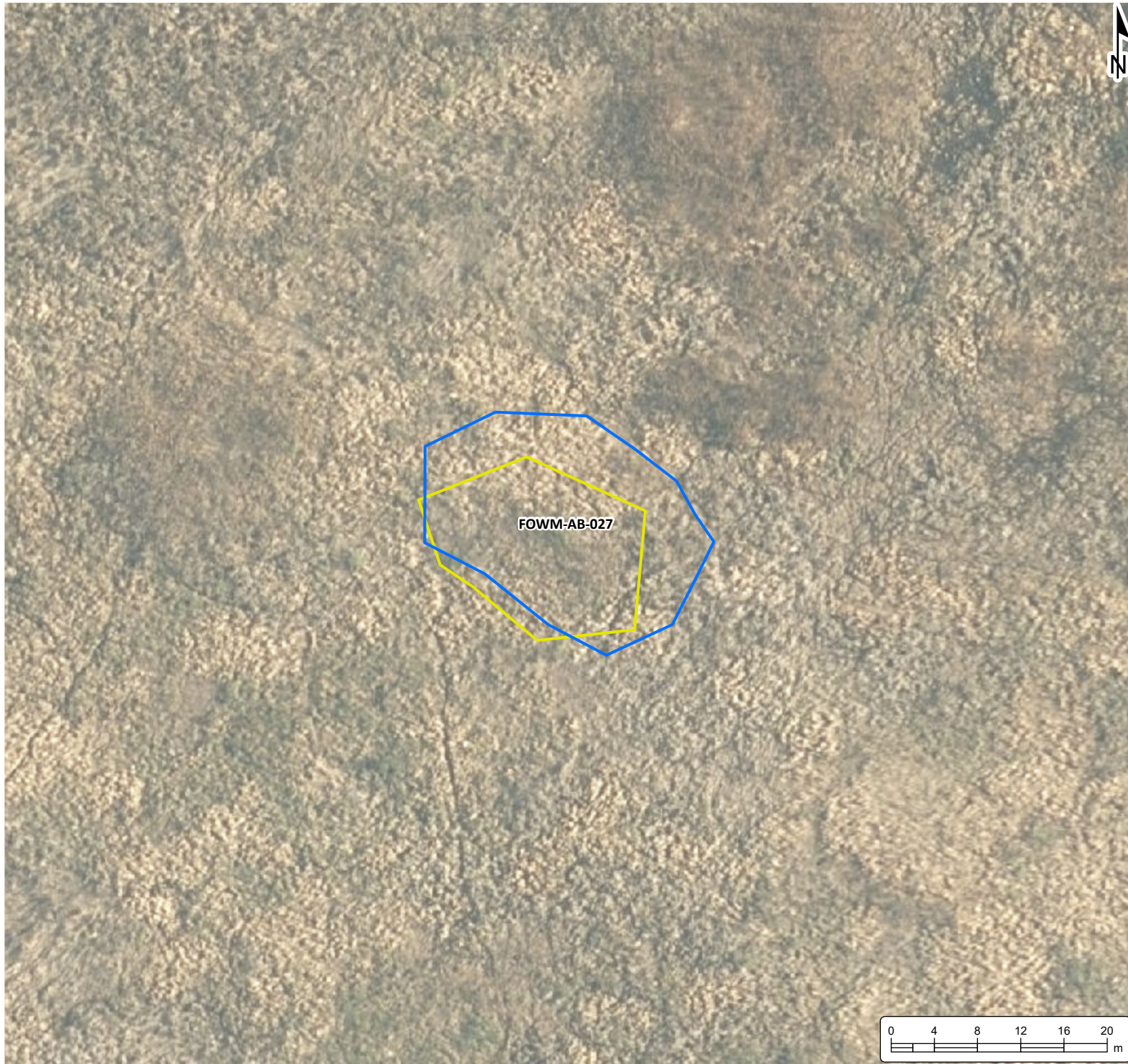
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**WYE MARSH INVASIVE
PHRAGMITES MANAGEMENT 2024
FOWM-AB-026**

Project No.:	10102-001	Date:	January 2025
Scale:	1:500	Rev.:	
Created by:	DBC	Projection:	NAD 1983 UTM Zone 17N
Checked by:	JP	Figure:	25



**WYE MARSH INVASIVE
PHRAGMITES
MANAGEMENT 2024**
WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

-  Invasive Species Management Site (2024)
-  Invasive Species Management Site (2023)

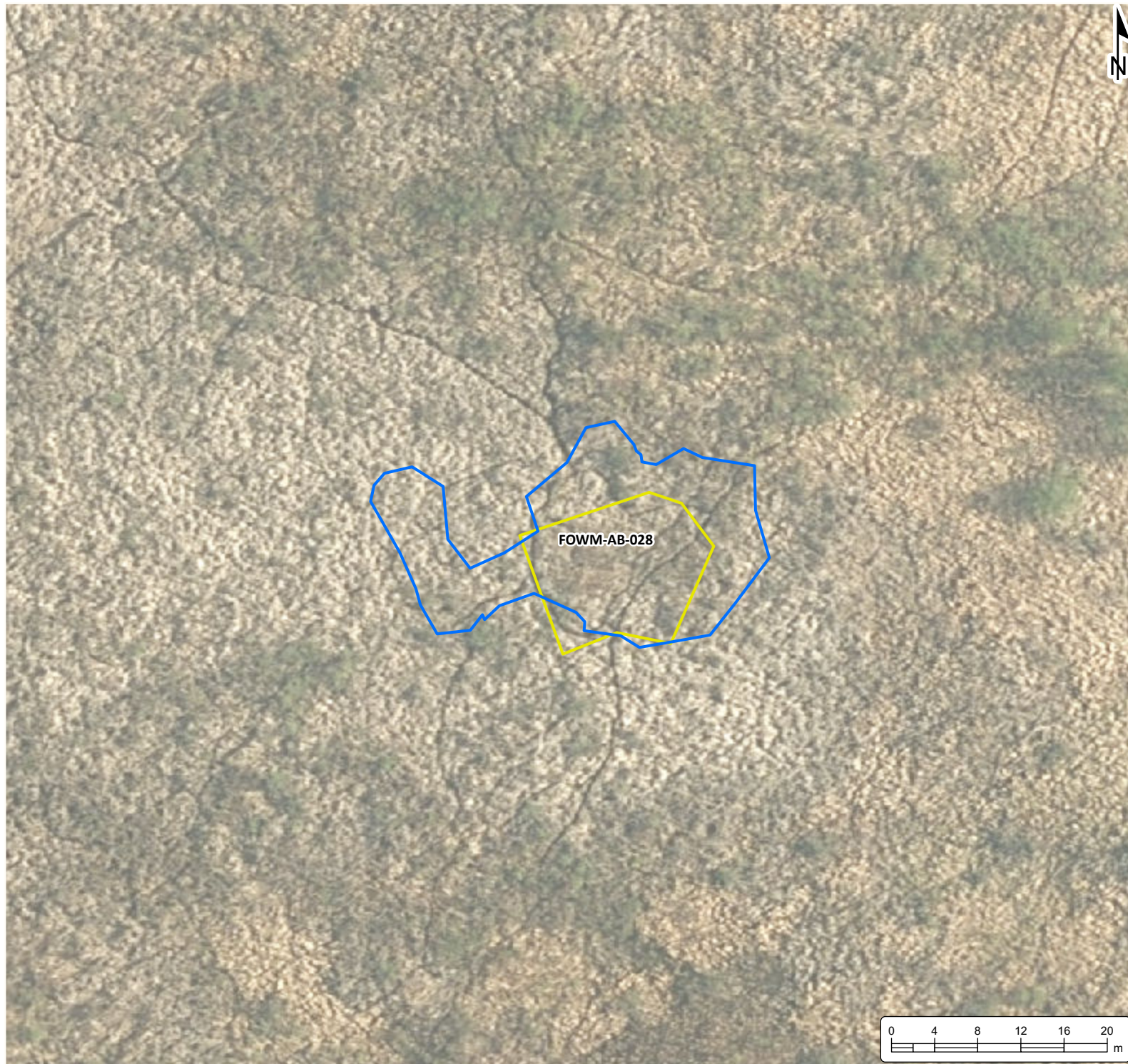
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PHRAGMITES MANAGEMENT 2024
FOWM-AB-027**

Project No.: 10102-001		Date: January 2025	
Scale: 1:500		Rev.: NAD 1983 UTM Zone 17N	
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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024

WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

- Invasive Species Management Site (2024)
- Invasive Species Management Site (2023)

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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024 FOWM-AB-028

Project No.:	10102-001	Date:	January 2025
Scale:	1:500	Rev.:	
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Checked by:	JP	Figure:	27



WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024

WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

- Invasive Species Management Site (2024)
- Invasive Species Management Site (2023)

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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024 FOWM-AB-030

Project No.:	10102-001	Date:	January 2025
Scale:	1:500	Rev.:	
Projection:	NAD 1983 UTM Zone 17N		
Created by:	DBC	Checked by:	JP
		Figure:	28



WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024

WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

- Invasive Species Management Site (2024)
- Invasive Species Management Site (2023)
- National Wildlife Area (NWA)

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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024 FOWM-AB-031

Project No.:	10102-001	Date:	January 2025
Scale:	1:500	Rev.:	
Projection:	NAD 1983 UTM Zone 17N		
Created by:	DBC	Checked by:	JP
			Figure: 29



WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024

WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

- Invasive Species Management Site (2024)
- Invasive Species Management Site (2023)
- Provincial Wildlife Area (PWA)
- National Wildlife Area (NWA)

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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024 FOWM-AB-032

Project No.:	10102-001	Date:	January 2025
Scale:	1:500	Rev.:	
Projection:	NAD 1983 UTM Zone 17N		
Created by:	DBC	Checked by:	JP
		Figure:	30



**WYE MARSH INVASIVE
PHRAGMITES
MANAGEMENT 2024**
WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

-  Invasive Species Management Site (2024)
-  Invasive Species Management Site (2023)

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**WYE MARSH INVASIVE
PHRAGMITES MANAGEMENT 2024
FOWM-AB-033**

Project No.:	10102-001	Date:	January 2025
Scale:	1:500	Rev.:	
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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024

WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

- Invasive Species Management Site (2024)
- Invasive Species Management Site (2023)

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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024 FOWM-AB-034

Project No.:	10102-001	Date:	January 2025
Scale:	1:500	Rev.:	
Projection:	NAD 1983 UTM Zone 17N		
Created by:	DBC	Checked by:	JP
		Figure:	32



**WYE MARSH INVASIVE
PHRAGMITES
MANAGEMENT 2024**
WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

-  Invasive Species Management Site (2024)
-  Invasive Species Management Site (2023)
-  National Wildlife Area (NWA)

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**WYE MARSH INVASIVE
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FOWM-AB-035**

Project No.: 10102-001		Date: January 2025	
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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024

WYE MARSH WILDLIFE CENTRE
16160 Highway 12 East
Midland, Ontario

LEGEND

- Invasive Species Management Site (2024)
- Invasive Species Management Site (2023)
- Provincial Wildlife Area (PWA)
- National Wildlife Area (NWA)

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WYE MARSH INVASIVE PHRAGMITES MANAGEMENT 2024 FOWM-AB-036

Project No.: 10102-001		Date: January 2025	
Scale: 1:500		Projection: NAD 1983 UTM Zone 17N	
Created by: DBC	Checked by: JP	Figure: 34	



FRIENDS OF WYE MARSH INC.

16160 Hwy #12, P.O. Box 100

Midland, ON, L4R 4K6

Tel: (705) 526-7809

www.wyemarsh.com

Appendix B: Wye Marsh Phragmite Site Management Plan 2024

Wye Marsh Phragmite Site Management Plan 2024

In 2021, the Friends of Wye Marsh (FOWM) embarked on a 5-year project, named the Eastern Georgian Bay Initiative (EGBI), to detect, map, and manage *Phragmites australis* (invasive phragmites) in the vicinity of the Wye Marsh. After preliminary ground truthing and aerial drone surveying in 2021, FOWM & Severn Sound Environmental Association (SSEA) identified 7 distinct sites of invasive phragmites within the boundaries of the Wye Marsh – Provincial Wildlife Area (PWA). In 2022, during the second year of invasive phragmites management, an additional 22 sites were identified and characterized on both the PWA and National Wildlife Area (NWA). In 2023, the third year of this project, two sites (FOWM-AB-028 and FOWM-AB-029) had merged into one site, and an additional 5 sites were detected. In 2024, three sites (FOWM-AB-013, FOWM-AB-014, and FOWM-AB-015) had merged into one site, and an additional 2 sites were detected. By the end of the 2024 field season, a total of thirty-three sites with distinguishable boundaries have been identified within, and adjacent to the Provincial Wildlife Area (PWA) or National Wildlife Area (NWA). This report will provide an overview and site-specific management strategies for each location to optimize the removal and disposal of invasive phragmites.

Site 1: FOWM-AB-001

Site Description and Access

FOWM-AB-001 (Preston Cell Site) is located on the northeast portion of the berm in the Preston Cell. The site is most easily accessed by foot using the trail at the end of Marsh Lane in Wyebidge, however, due to the remoteness of the site, it is a 2-kilometer walk. This site is approximately 900m² in size.

Management

FOWM-AB-001 is both a terrestrial and aquatic site, however, the majority of the invasive phragmites are located on top of the berm. As a result, most of the site will be spaded with cut-to-drown being employed where possible.

Removal/Disposal

As one of the denser sites, FOWM-AB-001, is expected to have a large amount of biomass for disposal. Given the remoteness and accessibility challenges, it is not feasible to remove cut material from the site, and it is recommended that material be solarized on a heavy-duty tarp.

Recommended Equipment

Equipment	Quantity
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Appendix B: Wye Marsh Phragmite Site Management Plan 2024

Spades	5
Cane Cutters	3
Power Cutters	2
Waders	3
Tarp (15 foot x 20 foot or larger)	1

Management Notes

This site was initially managed in 2021, 2022, and 2024. Terrestrial phragmites was managed by spading or power cutting, while aquatic phragmite was managed using cut-to-drown where possible.

Site 2: FOWM-AB-002

Site Description and Access

FOWM-AB-002 (Mud Lake Fen Site) is located west of Mud Lake, between the lake and Dufferin Aggregates Midland. The site is walk-in only, with the closest access point being at the Town of Midland Operations Facility on MacDonald Road. The hike is approximately 1 kilometer through mixed deciduous forest, transitioning to mixed forest swamp, then to open graminoid fen. This site is approximately 5000m² in size.

Management

FOWM-AB-002 is a predominantly aquatic site, with some more terrestrial areas interspersed. Management of this site is especially difficult. Due to site access limitations and sensitivity of fen ecosystems, it is not feasible to manage this site using a Truxor. As the site is approximately 5000 square meters in size, manual management is a massive undertaking, and it is not advised to undertake management with less than five people. It is recommended to have ten people conduct management to ensure an appreciable difference is made on visits.

Removal/Disposal

Due to the remoteness of the site and volume of biomass, it is not feasible to haul removed material out and dispose of it at an external facility. Due to the aquatic nature of most of the site and surrounding area, solarization is also not feasible.

Recommended Equipment

Equipment	Quantity
Spades	10
Cane Cutters	10
Power Cutters	2
Waders	10

Site 3: FOWM-AB-003

Site Description and Access

Appendix B: Wye Marsh Phragmite Site Management Plan 2024

FOWM-AB-003 (Cygnet Pond Site) is located south of the lookout tower at the Wye Marsh NWA and is best accessed by foot from the nearby Muskrat Loop trail on the NWA. This site is approximately 600m² in size.

Removal/Disposal

FOWM-AB-003 is situated between two small ponds, and is a predominantly terrestrial site, with some aquatic portions along the edges of the ponds. As a result, most of the site should be managed by spading, with cut-to-drown being employed in the ponds.

As this site is on the boundary of the PWA and NWA, it is recommended that material be solarized on a heavy-duty tarp located on the PWA.

Recommended Equipment

Equipment	Quantity
Spades	4
Cane Cutters	4
Power Cutters	1
Waders	2
Tarp (15 foot x 20 foot or larger)	1

Management Notes

Management of this site occurred in 2021, 2022, 2023, and 2024. Terrestrial phragmites was managed by spading or power cutting, while aquatic phragmite was managed using cut-to-drown where possible. All biomass was solarized on site at the highest point of the terrestrial area. Site density has decreased as a result of management actions.

Site 4: FOWM-AB-004

Site Description and Access

FOWM-AB-004 (Bird Blind Site) is located northwest of the bird blind on the Waterfront I.D. Trail. It is most easily accessed by canoe along the canoe channel. The site is located on the boundary of the PWA and the adjacent property owned by the Jesuits of St. Marie and the Martyrs' Shrine, with a portion of the phragmites being on each property. FOWM has received approval from the Jesuits to manage this site as part of the EGBI project. This site is approximately 150m² in size.

Removal/Disposal

FOWM-AB-004 is predominantly a terrestrial site, with a small portion of aquatic phragmites growing along the watercourse. As this site contains a substantial number of native species, it is not recommended to utilize power cutters, in order to prevent injury to them. To prevent

Appendix B: Wye Marsh Phragmite Site Management Plan 2024

inadvertent spread of phragmites, it is recommended that harvested material be solarized on a tarp on site.

Recommended Equipment

Equipment	Quantity
Spades	3
Cane Cutters	3
Waders	1
Tarp (15 foot x 20 foot or larger)	1

Site 5: FOWM-AB-005

Site Description and Access

FOWM-AB-005 (Sainte-Marie Site) is located on the west bank of the Wye River, across from St. Marie Among the Hurons, just below the control dam. The site can be most easily accessed by foot across the control dam at St. Marie Among the Hurons. Aquatic access is also possible from the St. Marie Park Boat Launch. This site is approximately 130m² in size.

Management

FOWM-AB-005 is a predominantly terrestrial site, with some aquatic phragmites occurring at the base of the bank. Terrestrial phragmites should be managed by spading, while aquatic phragmites should be managed using the cut-to-drown method. As the bank is steep and water becomes quite deep quickly, it is recommended that staff/volunteers be in a canoe in the river to collect any material that may fall into the river. As this site is not too dense, and there is a noticeable amount of native shrubs, it is not advised to utilize a power cutter.

Removal/Disposal

As the riverbank at this location is quite steep and tall, the area directly west is elevated and very dry, a tarp is not required, and material can simply be piled in the dry area and will become inviable.

Recommended Equipment

Equipment	Quantity
Spades	3
Cane Cutters	3
Waders	1
Canoe	1
Tarp (15 foot x 20 foot or larger)	1

Management Notes

This site was managed in 2022, 2023, and 2024. Terrestrial phragmites have been managed by spading, while aquatic phragmites have been managed using the cut-to-drown method.

Site 6: FOWM-AB-006

Site Description and Access

FOWM-AB-006 (William Street Site) is located southwest of William Street along a hydro corridor. The site can be easily accessed by walking southeast along the unimproved portion of William Street, then following the hydro corridor southwest. The invasive phragmites are on the border of the PWA, with approximately half of the site being on private land. This site is approximately 2600m² in size.

Management

FOWM-AB-006 is approximately equal area of terrestrial and aquatic phragmites. The PWA portion of the site is mostly aquatic, growing in a cattail marsh. The private section of the site is more terrestrial. As a result, the majority of phragmites on the PWA should be managed by cut-to-drown, and if landowner consent is received, the private portion should be managed by spading.

Removal/Disposal

FOWM-AB-006 is a large, dense site and is expected to produce a large amount of biomass for disposal. Solarization is possible at the intersection of the hydro corridor and unimproved portion of William Street but is contingent on approval from hydro authorities. Transport to the North Simcoe Transfer Station is an alternative for disposal but would require the rental of a large bin or large trailer, which would incur additional costs.

Recommended Equipment

Equipment	Quantity
Spades	5
Cane Cutters	5
Power Cutter	1
Waders	5
Tarp (15 foot x 20 foot or larger) OR Trailer/Rental Bin	1

Management Notes

This site was managed in 2021 and 2023. In 2021, it was managed using power cutters, and in 2023 it was managed by manual cut-to-drown and spading methods.

Site 7: FOWM-AB-007

Site Description and Access

FOWM-AB-007 (Canoe Channel Site) is located near the center of the canoe channel. Site access is exclusively aquatic, with the nearest land access from the Wye Marsh canoe docks. This

Appendix B: Wye Marsh Phragmite Site Management Plan 2024

site has a mixture of invasive and native phragmites, and caution should be taken during removals to not disturb native phragmites. This site is approximately 1350m² in size.

Removal/Disposal

FOWM-AB-007 is roughly equally split between aquatic and terrestrial habitat. As a result, both cut-to-drown should be employed for aquatic phragmites and spading should be employed for terrestrial phragmites. Power cutting is not recommended as it would likely result in unintentional cutting of native phragmites.

Removal of biomass from the site is not advised, as it would likely inadvertently cause the spread of invasive phragmites. Biomass should be solarized on a heavy-duty tarp positioned on the singular raised, dry portion of land located near the center of the phragmites patch.

Recommended Equipment

Equipment	Quantity
Spades	5
Cane Cutters	5
Waders	5
Tarp (15 foot x 20 foot or larger)	1
Canoe	1

Management Notes

This site was managed in 2021, 2022, 2023, and 2024. In 2022, the site was managed using power cutters, and in subsequent years manual management was performed using the cut-to-drown method for aquatic phragmites and spading for terrestrial phragmites. Site density has reduced an estimated 30% since initial management.

Site 8: FOWM-AB-008

Site Description and Access

FOWM-AB-008 (The Berm Site) is located directly south across the water from the shade structure on the boardwalk. The site is a small island and is only accessible by canoe. The site is predominantly terrestrial, with occasional instances of phragmites in aquatic conditions. This site is approximately 120m² in size.

Removal/Disposal

As this site is mostly terrestrial, spading will be the primary method of removal, with cut-to-drown being utilized for aquatic portions. Biomass should be solarized on a heavy-duty tarp on site set up on one of the drier portions of the site.

Recommended Equipment

Equipment	Quantity
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Appendix B: Wye Marsh Phragmite Site Management Plan 2024

Spades	2
Cane Cutters	2
Waders	2
Tarp (15 foot x 20 foot or larger)	1
Canoe	1

Management Notes

This site was managed in 2022, 2023, and 2024 using cut-to-drown and spading techniques.

Site 9: FOWM-AB-009

Site Description and Access

FOWM-AB-009 (Freshet Pond Site) is located south of the public access trails, just off of freshet creek. This location is most easily accessed using a side-by-side along the rail trail or by foot from the Wye Marsh trail network. The remaining 100 meters involves going off trail and walking through densely grown forest. This site is approximately 2450m² in size.

Removal/Disposal

FOWM-AB-009 is a site with both shallow aquatic and terrestrial phragmites. As this site is accessed through thick forest, a Truxor is not able to reach it. It is also not recommended to utilize power cutters, as the site is interspersed with native vegetation. Spading should be utilized for terrestrial phragmites, while cut-to-drown be used on aquatic phragmites at this site. It is recommended to solarize biomass on a heavy-duty tarp set up on a terrestrial spot on the site to prevent inadvertent spread which could occur transporting the biomass off site.

Recommended Equipment

Equipment	Quantity
Spades	5
Cane Cutters	5
Waders	5
Tarp (15 foot x 20 foot or larger)	1
Side-by-side	1

Management Notes

This site was managed in 2022, 2023, and 2024. Management in 2022 was limited to removal of seed heads, while spading and cut-to-drown were utilized in 2023 and 2024.

Site 10: FOWM-AB-010

Site Description and Access

FOWM-AB-010 is one of the sites in the south end of the marsh located on the PWA. It is a predominantly aquatic site with a small more terrestrial area. The site can be accessed by

Appendix B: Wye Marsh Phragmite Site Management Plan 2024

walking approximately 1 km from the end of Marsh Lane. This site is approximately 1800m² in size.

Removal/Disposal

Due to the remote nature of this site and dense cattail mats, manual cut-to-drown removal is the best option, as lack of access prohibits a Truxor from treating this site. Due to the remote nature of the site, it is not feasible to remove biomass from the site. It is recommended that a tarp be set up in the most terrestrial location on site, and material be solarized on site.

Recommended Equipment

Equipment	Quantity
Spades	1
Cane Cutters	5
Waders	5
Tarp (15 foot x 20 foot or larger)	1

Site 11: FOWM-AB-011

Site Description and Access

FOWM-AB-011 is one of the sites in the south end of the marsh, slightly north of AB-010. This site is most easily accessed by walking approximately 1 km from the end of Marsh Lane. This is a shallow aquatic site, with water depths of approximately 0.25m. This site is approximately 450m² in size.

Removal/Disposal

Due to the remote nature of this site and dense cattail mats, manual cut-to-drown removal is the best option, as lack of access prohibits a Truxor from treating this site. Due to the remote nature of the site, it is not feasible to remove biomass from the site. It is recommended that a tarp be set up in the most suitable location on site, and material be solarized on site.

Recommended Equipment

Equipment	Quantity
Cane Cutters	5
Waders	5
Tarp (15 foot x 20 foot or larger)	1

Site 12: FOWM-AB-012

Site Description and Access

FOWM-AB-012 is one of the sites in the south end of the marsh, slightly east of AB-011. This site is most easily accessed by walking approximately 1 km from the end of Marsh Lane. This is

Appendix B: Wye Marsh Phragmite Site Management Plan 2024

a shallow aquatic site, with water depths of approximately 0.25m. This site is approximately 420m² in size.

Removal/Disposal

Due to the remote nature of this site and dense cattail mats, manual cut-to-drown removal is the best option, as lack of access prohibits a Truxor from treating this site. Due to the remote nature of the site, it is not feasible to remove biomass from the site. It is recommended that a tarp be set up in the most suitable location on site, and material be solarized on site.

Recommended Equipment

Equipment	Quantity
Cane Cutters	5
Waders	5
Tarp (15 foot x 20 foot or larger)	1

Site 13: FOWM-AB-013

Site Description and Access

FOWM-AB-013 is a large patch, formed by the combination of AB-013, 014, and 015 from previous years. These patches have now grown into a continuous patch with no discernable delineation possible. This site is located directly to the east of AB-012 and is most easily accessed by walking approximately 1 km from the end of Marsh Lane. This is a shallow aquatic site, with water depths of approximately 0.25m. This site is approximately 2950m² in size.

Removal/Disposal

Due to the remote nature of this site and dense cattail mats, manual cut-to-drown removal is the best option, as lack of access prohibits a Truxor from treating this site. Due to the remote nature of the site, it is not feasible to remove biomass from the site. It is recommended that a tarp be set up in the most suitable location on site, and material be solarized on site.

Recommended Equipment

Equipment	Quantity
Cane Cutters	8
Waders	8
Tarp (15 foot x 20 foot or larger)	1

Site 14-18: FOWM-AB-016 to FOWM-AB-020

Site Description and Access

FOWM-AB-016 to FOWM-AB-020 is a cluster of small to medium sites within 100m of each other. This cluster is located in the very southernmost portion of the marsh on the PWA. This site is most easily accessed by walking approximately 1 km from the end of Marsh Lane. This is a

Appendix B: Wye Marsh Phragmite Site Management Plan 2024

predominantly shallow aquatic site, with water depths of approximately 0.25m. There are a few small portions of terrestrial phragmites spread throughout the 5 sites. FOWM-AB-016 is the largest site of this group, approximately 1400m², while FOWM-AB-017, 018, 019, and 020 are all similar in size, ranging from 305m² to 420m².

Removal/Disposal

Due to the remote nature of this sites and dense cattail mats, manual removal is the best option, as lack of access prohibits a Truxor from treating this sites. Spading will be employed at more terrestrial areas, with the aquatic areas employing the cut-to-drown method. Due to the remote nature of the sites, it is not feasible to remove biomass from the sites. It is recommended that a tarp be set up in the most terrestrial location on the sites, and material be solarized on site.

Recommended Equipment

Equipment	Quantity
Spades	2
Cane Cutters	8
Waders	8
Tarp (15 foot x 20 foot or larger)	5 (one for each site)

Site 19-20: FOWM-AB-021 and FOWM-AB-022

Site Description and Access

FOWM-AB-021 and 022 are located within 20m of each other. These sites are in the south part of the marsh located 100m east of FOWM-AB-013. These sites are most easily accessed by walking approximately 1.2 km from the end of Marsh Lane. This is a predominantly shallow aquatic site, with water depths of approximately 0.25m. There are a few small portions of terrestrial phragmites spread throughout the 2 sites. FOWM-AB-022 is slightly larger than FOWM-AB-021, approximately 1755m² and 1085m² respectively.

Removal/Disposal

Due to the remote nature of these sites and dense cattail mats, manual removal is the best option, as lack of access prohibits a Truxor from treating these sites. Spading will be employed at more terrestrial areas, with the aquatic areas employing the cut-to-drown method. Due to the remote nature of the sites, it is not feasible to remove biomass from the sites. It is recommended that a tarp be set up in the most terrestrial location on the sites, and material be solarized on site.

Recommended Equipment

Equipment	Quantity
Spades	2
Cane Cutters	8
Waders	8
Tarp (15 foot x 20 foot or larger)	2 (one for each site)

Site 21-22: FOWM-AB-023 and FOWM-AB-024

Site Description and Access

FOWM-AB-023 and 024 are located within 20m of each other. These sites are in the south part of the marsh located 50m east of FOWM-AB-022. These sites are most easily accessed by walking approximately 1.2 km from the end of Marsh Lane. These are predominantly shallow aquatic sites, with water depths of approximately 0.25m. There are a few small portions of terrestrial phragmites spread throughout the 2 sites. FOWM-AB-023 is slightly larger than FOWM-AB-024, approximately 825m² and 515m² respectively.

Removal/Disposal

Due to the remote nature of these sites and dense cattail mats, manual removal is the best option, as lack of access prohibits a Truxor from treating these sites. Spading will be employed at more terrestrial areas, with the aquatic areas employing the cut-to-drown method. Due to the remote nature of the sites, it is not feasible to remove biomass from the sites. It is recommended that a tarp be set up in the most terrestrial location on the sites, and material be solarized on site.

Recommended Equipment

Equipment	Quantity
Spades	2
Cane Cutters	8
Waders	8
Tarp (15 foot x 20 foot or larger)	2 (one for each site)

Site 23: FOWM-AB-025

Site Description and Access

FOWM-AB-025 is located approximately 110m southwest of FOWM-AB-001. This site is most easily accessed by walking approximately 1.5 km from the end of Marsh Lane. This is a predominantly shallow aquatic site, with water depths of approximately 0.25m. There are a few small portions of terrestrial phragmites within the site. This site is approximately 180m² in size.

Removal/Disposal

Due to the remote nature of this site and dense cattail mats, manual removal is the best option, as lack of access prohibits a Truxor from treating this site. Spading will be employed at more terrestrial areas, with the aquatic areas employing the cut-to-drown method. Due to the remote nature of the site, it is not feasible to remove biomass from the site. It is recommended that a tarp be set up in the most terrestrial location on the sites, and material be solarized on site.

Recommended Equipment

Equipment	Quantity
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Appendix B: Wye Marsh Phragmite Site Management Plan 2024

Spades	2
Cane Cutters	8
Waders	8
Tarp (15 foot x 20 foot or larger)	1

Site 24-25: FOWM-AB-026 and FOWM-AB-027

Site Description and Access

FOWM-AB-026 and 027 are located within 10m of each other. These sites are in the south part of the marsh located 150m north of FOWM-AB-022. These sites are most easily accessed by walking approximately 1.3 km from the end of Marsh Lane. These are predominantly shallow aquatic sites, with water depths of approximately 0.25m. There are a few small portions of terrestrial phragmites spread throughout the 2 sites. FOWM-AB-026 is slightly larger than FOWM-AB-027, approximately 670m² and 410m² respectively.

Removal/Disposal

Due to the remote nature of these sites and dense cattail mats, manual removal is the best option, as lack of access prohibits a Truxor from treating these sites. Spading will be employed at more terrestrial areas, with the aquatic areas employing the cut-to-drown method. Due to the remote nature of the sites, it is not feasible to remove biomass from the sites. It is recommended that a tarp be set up in the most terrestrial location on the sites, and material be solarized on site.

Recommended Equipment

Equipment	Quantity
Spades	2
Cane Cutters	8
Waders	8
Tarp (15 foot x 20 foot or larger)	2 (one for each site)

Site 26: FOWM-AB-028

Site Description and Access

FOWM-AB-028 is a patch, formed by the combination of AB-029, and 029 from previous years. These patches have now grown into a continuous patch with no discernable delineation possible. This site is most easily accessed by walking approximately 1.2 km from the end of Marsh Lane. This is a predominantly shallow aquatic site, with water depths of approximately 0.25m. There are a few small portions of terrestrial phragmites spread throughout the site. This site is approximately 440m² in size.

Removal/Disposal

Due to the remote nature of this site and dense cattail mats, manual cut-to-drown removal is the best option, as lack of access prohibits a Truxor from treating this site. Due to the remote nature

Appendix B: Wye Marsh Phragmite Site Management Plan 2024

of the site, it is not feasible to remove biomass from the site. It is recommended that a tarp be set up in the most suitable location on site, and material be solarized on site.

Recommended Equipment

Equipment	Quantity
Cane Cutters	6
Waders	6
Tarp (15 foot x 20 foot or larger)	1

Site 27: FOWM-AB-030

Site Description and Access

FOWM-AB-030 was first detected in 2023 and is located in the south end of the marsh, approximately 70m east of FOWM-AB-013 and 40m southwest of FOWM-AB-021. This is a very shallow aquatic site, with water depths of approximately 0.1m. This site is approximately 560m² in size.

Removal/Disposal

Due to the remote nature of this site, manual cut-to-drown removal is the best option, as lack of access prohibits a Truxor from treating this site. Due to the remote nature of the site, it is not feasible to remove biomass from the site. It is recommended that a tarp be set up in the most suitable location on site, and material be solarized on site.

Recommended Equipment

Equipment	Quantity
Cane Cutters	6
Waders	6
Tarp (15 foot x 20 foot or larger)	1

Site 28: FOWM-AB-031

Site Description and Access

FOWM-AB-031 (Tay Trail Site) was first detected in 2021 and is located along the Tay Trail, approximately 100m east of the intersection of the Tay Trail and St Marie/Wye Marsh driveway. This site is easily accessible by foot along the Tay Trail. This site is roughly evenly split between terrestrial and shallow aquatic habitat, with water depths of approximately 0.1m. This site is approximately 380m² in size.

Removal/Disposal

This site is inaccessible by Truxor and it is recommended to be managed by manual methods. Cut-to-drown will be utilized in aquatic portions, while spading will be utilized in terrestrial

Appendix B: Wye Marsh Phragmite Site Management Plan 2024

portions. Due to proximity to the Wye Marsh driveway, it is recommended that removed biomass be disposed of at the North Simcoe Transfer Station.

Recommended Equipment

Equipment	Quantity
Spades	3
Cane Cutters	3
Waders	6

Site 29: FOWM-AB-032

Site Description and Access

FOWM-AB-032 is located near the boundary of the NWA and PWA on private property. Permission to manage this phragmites patch has been obtained from the property owner. The site is easily accessible by foot by following the rail trail approximately 300m east from the corner of the Wye Marsh visitor parking lot. This site is on the edge of a pond, and contains terrestrial phragmites, as well as shallow aquatic phragmites. This site is approximately 100m² in size.

Removal/Disposal

Due to the size of this site and to prevent inadvertent harm to native species, it is recommended to be managed by manual methods. Cut-to-drown will be utilized in aquatic portions, while spading will be utilized in terrestrial portions. As this stretch of the rail trail is wide enough and in good enough condition to allow site access by vehicle, it is recommended that removed biomass be disposed of at the North Simcoe Transfer Station.

Recommended Equipment

Equipment	Quantity
Spades	3
Cane Cutters	3
Waders	6
Vehicle for disposal	1

Site 30: FOWM-AB-033

Site Description and Access

FOWM-AB-033 (Driveway Site) is located on the right side of the Wye Marsh/Sainte-Marie driveway approximately 220m from the intersection of the driveway and Highway 12. The phragmites at this site are growing in the driveway ditch, which fluctuates in moisture levels, varying from moist soil to 5cm of water. This site is approximately 90m² in size.

Removal/Disposal

Appendix B: Wye Marsh Phragmite Site Management Plan 2024

Due to fluctuating water levels, it is recommended that phragmites at this location be spaded, as the site is prone to drying out and as such cut-to-drown would be ineffective, even if performed when the site contains standing water. Due to ease of access, it is recommended that removed biomass be disposed of at the North Simcoe Transfer Station.

Recommended Equipment

Equipment	Quantity
Spades	6
Vehicle for disposal	1

Site 31: FOWM-AB-034

Site Description and Access

FOWM-AB-034 (Sainte-Marie Parking Site) is located in the northern ditch of the Sainte-Marie parking lot. The phragmites at this site are growing in the driveway ditch, which fluctuates in moisture levels, varying from moist soil to 5cm of water. This site is approximately 190m² in size.

Removal/Disposal

Due to fluctuating water levels, it is recommended that phragmites at this location be spaded, as the site is prone to drying out and as such cut-to-drown would be ineffective, even if performed when the site contains standing water. Due to ease of access, it is recommended that removed biomass be disposed of at the North Simcoe Transfer Station.

Recommended Equipment

Equipment	Quantity
Spades	6
Vehicle for disposal	1

Site 32: FOWM-AB-035

Site Description and Access

FOWM-AB-035 (Hydro Corridor Site) is located in the hydro corridor approximately 180m to the east of the Wye Marsh driveway. This site is terrestrial, however, at times the soil conditions can be quite moist. This site is approximately 25m² in size.

Removal/Disposal

As this is a terrestrial site, it is recommended that phragmites at this location be spaded. Due to ease of access, it is recommended that removed biomass be disposed of at the North Simcoe Transfer Station.

Recommended Equipment

Appendix B: Wye Marsh Phragmite Site Management Plan 2024

Equipment	Quantity
Spades	6
Vehicle for disposal	1

Site 33: FOWM-AB-036

Site Description and Access

FOWM-AB-036 (Dipnet Pond Site) is located in the southern corner of the dipnet pond, approximately 200m south of the Wye Marsh parking lot. The phragmites at this site are growing in pond with abundant hydric organic material, as such the growing conditions at the site are always moist, despite occasional periods when the water level in the pond drastically decreases. This site is approximately 45m² in size.

Removal/Disposal

It is recommended that phragmites at this location be managed by cut-to-drown during a time when the water level in the pond is higher to ensure successful drowning. Due to ease of access, it is recommended that removed biomass be disposed of at the North Simcoe Transfer Station.

Recommended Equipment

Equipment	Quantity
Cane cutters	2
Waders	2
Vehicle for disposal	1



FRIENDS OF WYE MARSH INC.

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Appendix C: Site Density

Appendix C: Site Density

Site ID	Pre-management Density	Post-management Density	Increase/decrease	2024 Management Actions Performed
FOWM-AB-001	51 - 75%	76 - 100%	+ 1 - 25%	None
FOWM-AB-002	51 - 75%	51 - 75%	0%	None
FOWM-AB-003	51 - 75%	1 - 25%	- 26 - 50%	Complete
FOWM-AB-004	51 - 75%	1 - 25%	- 26 - 50%	Complete
FOWM-AB-005	26 - 50%	1 - 25%	- 1 - 25%	Complete
FOWM-AB-006	51 - 75%	76 - 100%	+ 1 - 25%	Partial
FOWM-AB-007	51 - 75%	1 - 25%	- 26 - 50%	Complete
FOWM-AB-008	26 - 50%	1 - 25%	- 1 - 25%	Complete
FOWM-AB-009	26 - 50%	1 - 25%	- 1 - 25%	Complete
FOWM-AB-010	76 - 100%	76 - 100%	0%	None
FOWM-AB-011	51 - 75%	51 - 75%	0%	None
FOWM-AB-012	51 - 75%	51 - 75%	0%	None
FOWM-AB-013	51 - 75%	51 - 75%	0%	None
FOWM-AB-016	76 - 100%	76 - 100%	0%	None
FOWM-AB-017	51 - 75%	51 - 75%	0%	None
FOWM-AB-018	51 - 75%	51 - 75%	0%	None
FOWM-AB-019	76 - 100%	51 - 75%	- 1 - 25%	None
FOWM-AB-020	76 - 100%	51 - 75%	- 1 - 25%	None
FOWM-AB-021	26 - 50%	51 - 75%	+ 1 - 25%	None
FOWM-AB-022	51 - 75%	51 - 75%	0%	None
FOWM-AB-023	51 - 75%	51 - 75%	0%	None
FOWM-AB-024	76 - 100%	76 - 100%	0%	None
FOWM-AB-025	Not recorded	Not recorded		None
FOWM-AB-026	51 - 75%	26 - 50%	- 1 - 25%	None
FOWM-AB-027	51 - 75%	26 - 50%	- 1 - 25%	None
FOWM-AB-028	26 - 50%	26 - 50%	0%	None
FOWM-AB-030	51 - 75%	51 - 75%	0%	None
FOWM-AB-031	51 - 75%	1 - 25%	- 26 - 50%	Complete
FOWM-AB-032	51 - 75%	1 - 25%	- 26 - 50%	Complete
FOWM-AB-033	76 - 100%	26 - 50%	- 26 - 50%	Complete
FOWM-AB-034	76 - 100%	1 - 25%	- 51 - 75%	Complete
FOWM-AB-035	26 - 50%	1 - 25%	- 1 - 25%	Complete
FOWM-AB-036	26 - 50%	1 - 25%	- 1 - 25%	Complete



FRIENDS OF WYE MARSH INC.

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Appendix D: Site Sizes

Appendix D: Site Sizes

Site ID	Site Area (m ²) in _____				Years Management Actions Conducted	Site Size Change 2023-2024 (%)	Overall Site Size Change (%)	Years Mapped
	2021	2022	2023	2024				
FOWM-AB-001	600	700	665	897	2021, 2022	34.9%	49.5%	2021 - 2024
FOWM-AB-002	4200	4410	4811	5005	None	4.0%	19.2%	
FOWM-AB-003	800	840	434	609	2021, 2022, 2023, 2024	40.3%	-23.9%	
FOWM-AB-004	100	130	176	144	2021, 2022, 2023, 2024	-18.2%	44.0%	
FOWM-AB-005	200	400	357	133	2021, 2022, 2023, 2024	-62.7%	-33.5%	
FOWM-AB-006	1800	2120	2320	2608	2022*, 2023*, 2024*	12.4%	44.9%	
FOWM-AB-007	300	1510	2043	1368	2021*, 2022, 2023, 2024	-33.0%	356.0%	
FOWM-AB-008	N/A	170	Not recorded	124	2022, 2023, 2024	N/A	-27.1%	2022 - 2024
FOWM-AB-009	N/A	1730	2195	2464	2022*, 2023, 2024	12.3%	42.4%	
FOWM-AB-010	N/A	1430	1405	1788	None	27.3%	25.0%	
FOWM-AB-011	N/A	250	465	450	None	-3.2%	80.0%	
FOWM-AB-012	N/A	230	246	422	None	71.5%	83.5%	
FOWM-AB-013	N/A	1540	1793	2972	None	65.8%	93.0%	
FOWM-AB-016	N/A	1130	993	1400	None	41.0%	23.9%	
FOWM-AB-017	N/A	300	251	419	None	66.9%	39.7%	
FOWM-AB-018	N/A	170	185	305	None	64.9%	79.4%	
FOWM-AB-019	N/A	300	279	406	None	45.5%	35.3%	
FOWM-AB-020	N/A	340	418	495	None	18.4%	45.6%	
FOWM-AB-021	N/A	900	703	1088	None	54.8%	20.9%	
FOWM-AB-022	N/A	1140	823	1755	None	113.2%	53.9%	
FOWM-AB-023	N/A	580	501	823	None	64.3%	41.9%	
FOWM-AB-024	N/A	380	437	517	None	18.3%	36.1%	
FOWM-AB-025	N/A	100	Not recorded	179	None	N/A	79.0%	
FOWM-AB-026	N/A	410	584	672	None	15.1%	63.9%	
FOWM-AB-027	N/A	170	246	409	None	66.3%	140.6%	
FOWM-AB-028	N/A	230	179	440	None	145.8%	91.3%	
FOWM-AB-030	N/A	N/A	347	561	None	61.7%	61.7%	2023 - 2024
FOWM-AB-031	N/A	N/A	431	384	2023, 2024	-10.9%	-10.9%	
FOWM-AB-032	N/A	N/A	128	104	2023, 2024	-18.8%	-18.8%	
FOWM-AB-033	N/A	N/A	189	90	2023, 2024	-52.4%	-52.4%	
FOWM-AB-034	N/A	N/A	124	190	2024	53.2%	53.2%	
FOWM-AB-035	N/A	N/A	N/A	26	2024	N/A	N/A	2024
FOWM-AB-036	N/A	N/A	N/A	45	2024	N/A	N/A	

* indicates partial management



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Appendix E: Project Expenses

Appendix E: Project Expenses

Project Year	Expense Type	Cost	Total Yearly Expenses
2020	Project Partners		
	Severn Sound Environmental Association	\$8,701.66	
	Cambium Inc	\$500.00	
	Total 2020 Expenses		\$9,201.66
2021	Tools/materials	\$733.33	
	Disposal	\$1,549.90	
	Project Partners		
	Severn Sound Environmental Association	\$15,709.09	
	Friends of the Wye Marsh	\$14,600.00	
	Cambium Inc	\$2,505.00	
	Total 2021 Expenses		\$35,097.32
2022	Disposal	\$329.00	
	Eastern Georgian Bay Initiative Conference Costs	\$272.00	
	Project Partners		
	Severn Sound Environmental Association	\$1,931.09	
	Friends of the Wye Marsh	\$16,000.00	
	Cambium Inc	\$24,288.25	
	Total 2022 Expenses		\$42,820.34
2023	Disposal	\$349.00	
	Project Partners		
	Severn Sound Environmental Association	\$27,675.00	
	Friends of the Wye Marsh	\$12,500.00	
	Cambium Inc	\$9,242.61	
	Total 2023 Expenses		\$49,766.61
2024	Native Plants	\$539.47	
	Tools/materials	\$292.63	
	Project Partners		
	Severn Sound Environmental Association	\$26,306.40	
	Friends of the Wye Marsh	\$18,300.00	
	Cambium Inc	\$4,121.11	
	Total 2024 Expenses		\$49,559.61
2020 - 2024	Total Project Expenses		\$186,445.54



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Appendix F: SSEA Wye Marsh Invasive Phragmites Management 2024 Annual Report



Severn Sound Environmental Association

489 Finlayson St, PO Box 460, Port McNicoll ON L0K 1R0

Phone (705) 534-7283

Email: pjackson@severnsound.ca Website: www.severnsound.ca

Date: December 13, 2024

To: Friends of Wye Marsh Inc.
16160 Highway 12 East,
Midland, ON L4R 4K6
ATTN: Stewardship and Conservation Manager – Craig Pezik
via e-mail to: cpezik@wyemarsh.com
cc: Kim Hacker khacker@wyemarsh.com

From: Patrick Jackson, Invasive Species Program Coordinator

Wye Marsh Invasive Phragmites Management 2024 Annual Report

*****IMPORTANT NOTE: This report contains information about sensitive Species At Risk and their locations and is not intended for public disclosure. Any individual, group or agency receiving this report must treat the information, photographs and data as sensitive and confidential unless otherwise notified.**

In 2020, the Friends of Wye Marsh (FOWM) received the first of five years of funding from Ganawenim Meshkiki's (GMI) Eastern Georgian Bay Initiative (EGBI) to support a multi-year project to prevent, detect, and manage the highly invasive European Common Reed (*Phragmites australis* ssp. *australis*), commonly known as Phragmites, which is prevalent in Wye Marsh. With the help of project partners, Severn Sound Environmental Association (SSEA) and Cambium Inc., FOWM further progressed invasive Phragmites detection and control efforts in 2024, which marked year fifth and final year of the project in the Wye Marsh. This report is intended for Friends of Wye Marsh and provides an update on progress by the SSEA for the Wye Marsh Phragmites Management project in 2024.

Identification and Mapping

SSEA provided field work support to FOWM through identification and mapping of new and recurring invasive Phragmites (hereafter referred to as Phragmites) populations using a primarily ground-truthing techniques (Figure 1). Ground truthing involved surveying the Marsh by land (foot) and canoe, a time- and resource- intensive process. Since sites were known to project staff and mapped in previous years, aerial surveying was largely unnecessary.

Ground-truthing was used to confirmed the location, size and characteristics of populations of Phragmites within the Provincial Wildlife Area (PWA) of the Wye Marsh. Seven sites were identified and characterized in 2021, an additional fifteen new sites were identified and characterized in 2022, and eleven new sites were identified and characterized in 2023. In 2024, SSEA did not identify any new sites within the project area/scope, despite surveying areas in the marsh with known occurrences. To date, a total of thirty-three Phragmites sites have been identified; 30 in the PWA of the Wye Marsh, 3 adjacent to the PWA (along the FOWM driveway). The survey data was provided to the project coordinator to complete updating mapping of each Phragmites population. ** Note: Site names were changed by FOWM in 2023, although site numbers listed below should still correspond with those used in previous years of the project. **



Figure 1. SSEA Staff surveying a population of invasive Phragmites.

Pre-Treatment Assessments

SSEA provided field work support to FOWM for the pre-treatment assessments, which involves geodata and occurrence data collection of previously identified sites, and are completed prior to any management actions. The pre-treatment assessments for newly identified sites are combined with the field surveys for mapping. These assessments help to determine whether there has been a change in size and/or location of Phragmites (e.g., spread to new areas), whether there are additional considerations that need to be addressed before management (e.g., presence and endangerment of Species At Risk [SAR]), and/or whether there has been a change in site accessibility (e.g., significant water level increase/decrease). The pre-treatment and post-treatment assessments provide a standardized approach to track Phragmites biomass reduction and/or spread within each site long-term.

In 2024, SSEA staff primarily focused on pre-treatment assessments of the phragmites in the Preston Cell (southwest side) of Wye Marsh. Due to the remote nature of these sites, only one had been managed in previous years of the project – FOWM-AB-001. During the surveys, it was observed by staff that several of the sites had expanded and begun to merge, potentially reducing the total sites on the map but an increase in overall patch size. This occurrence was most prevalent in sites FOWM-AB-013, FOWM-AB-014, FOWM-AB-015; all of which could be considered one site at this time.

Outreach, Training and Technical Support

Outreach in 2024 included attending local events such as Wye Marsh's Earth Day to educate the public about Phragmites, raise awareness about the project, encourage volunteer sign-up for FOWM led activities. Additionally, SSEA attended local events in Tay and Midland to further the same objectives (among other SSEA projects). Social media was also used to as a tool to encourage volunteerism and educate the public about the impacts of phragmites. If request by FOWM, SSEA is available to assist with the 2024/2025 EGBI Conference – whether attending or preparing presentation materials. SSEA continues to communicate with other regional and local Phragmites experts to stay up to date on technical guidance, research and best management practices.

Removal/Management Activities

FOWM, SSEA and Cambium completed management activities on ten of the thirty-three sites in 2024 (Table 1).

Table 1. Summary of 2024 Phragmites Management Sites within PWA of Wye Marsh.

Site Name	Management Notes 2024	Proposed for Controlled Burn (Y/N)
Preston Cell Site (FOWM-AB-001)	No management	N
Cygnat Pond Site (FOWM-AB-003)	Manual	N
Bird Blind Site (FOWM-AB-004)	Manual	N

Site Name	Management Notes 2024	Proposed for Controlled Burn (Y/N)
Sainte-Marie among the Hurons (Ste. Marie) Site (FOWM-AB-005)	Manual	N
William Street Site (FOWM-AB-006)	Partially managed	N
Canoe Channel Site (FOWM-AB-007)	Manual	Y
Osprey Site (FOWM-AB-008)	Manual	N
Freshet Creek Site (FOWM-AB-009)	Manual	N
Tay Trail Site (FOWM-AB-031)	Manual	N
Ski Trail Site (FOWM-AB-032)	Manual	N
Driveway Site (FOWM-AB-033)	Manual	N

FOWM determined which of the thirty-three sites were priorities for management. Overall, sites that had been previously managed in the first three years of the project were prioritized first (with the exception of FOWM-AB-001), then smaller and easily accessible sites were deemed the next priority.

SSEA provided staff to support the manual labour of removing and disposing of Phragmites at seven of the ten sites by implementing best management practices (Figure 3). At all sites, manual spading and cut-to-drown (cane cutter) methods were employed as dictated by habitat – cut-to-drown in wet areas of the Marsh, spading in the drier areas. Mechanical removal using extended hedge trimmers was not employed at aquatic sites in 2024. Refer to the site-specific management plans for a detailed outline of the management and disposal techniques employed at each site as well as site-specific challenges (e.g., accessibility was a significant challenge at the Freshet Creek Site; to get to the site, staff had to walk 1.5 km through thick woods and swamp and the Phragmites is growing in swamp adjacent to a fen).

In addition to the staff-only Phragmites management activities, SSEA participated in Wye Marsh's Earth Day Event, where staff helped educate visitors about Phragmites and the EGBI project. Altogether, a total of approximately 143 person-hours (SSEA staff only) were spent on management activities.

The Phragmites biomass that was removed at each site was piled on land away from water, to allow it to solarize, dry out and become inviable. At sites with significant biomass, FOWM could explore options for thinning piled biomass, however, if future management does not occur, SSEA would recommend letting biomass break down manually.



Figure 3. SSEA, and FOWM Staff cutting Phragmites at the Freshet Creek Site.

Post-Treatment Assessments

SSEA provided field work support to FOWM for post-treatment assessments, which involves geodata and occurrence data collection of previously identified sites. As the culmination of the project, all sites were reassessed to determine overall changes in size/density over the 5 years of funding. SSEA understands from FOWM that at the sites that were managed in 2024, re-growth ranged from none to moderate, indicating that overall, removal was effective at reducing overall size and extent of Phragmites sites. Similarly to the pre-treatment assessments, SSEA staff focused on the Preston Cell area of Wye Marsh. Unsurprisingly, sites had small increases in overall size during the growing season. As noted in the pre-treatment assessments, some of the sites had expanded enough that nearby sites could be now amalgamated into one polygon for mapping purposes.



Figure 4. SSEA staff conducting post-treatment assessments at the Fen Site.

Remediation

Remediation of sites can be a useful technique to help prevent re-growth of Phragmites; however, only sites that consistently show greater than 50% biomass reduction should be targeted for remediation efforts. In 2024, FOWM planned to collect and plant clippings of Red-Osier Dogwood and native Willow species sourced from the Wye Marsh property as a cost-effective method to out-compete Phragmites and help restore some native vegetation.

While managing the phragmites in 2024, SSEA staff observed various species of frogs and turtles returning to sites that had been managed over the project (Figure 5).



Figure 5. American Bullfrog at phragmites management site.

Future Actions

As the final year of the EGBI project, future management efforts and funding are unknown at this time. SSEA would recommend the following continue with invasive phragmites in the Wye Marsh Provincial Wildlife Area:

- Monitoring identified invasive phragmites sites for change/spread;
- Continued management of sites that were prioritized during the project;
- Ongoing remediation of managed sites;
- Exploration/research of additional management strategies for unmanaged sites;
- Identify further funding opportunities.

Prepared by:

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Invasive Species Program Coordinator