Detroit River-Western Lake Erie Cooperative Weed Management Area

2020 Annual Report – 2021 Operating Plan

Membership

Alliance of Downriver Watersheds
Bay Creek Hunt Club
City of Monroe
DTE Energy
Ducks Unlimited, Inc.
Eastern Michigan University
Huron-Clinton Metropolitan Authority
International Wildlife Refuge Alliance
Michigan Department of Natural Resources, Wildlife Division
Monroe Conservation District
Monroe County Road Commission
National Park Service, River Raisin National Battlefield Park
Sisters, Servants Immaculate Heart of Mary
Southeast Michigan Council of Governments
Stewardship Network
River Raisin Institute
The Nature Conservancy
U.S. Fish and Wildlife Service, Detroit River International Wildlife Refuge
Wildlife Habitat Council
Wyandot of Anderdon Nation

Background

The 20 member Detroit River-Western Lake Erie Cooperative Weed Management Area (DR-WLE CWMA or CWMA) collaborates on "preventing the establishment and spread of plant species that are both non-native (not present on an evolutionary time-scale) and invasive (significantly reduce conservation values)..." The CWMA emphasizes detection, inventory, and monitoring; information exchange between members to prevent new invasive species from establishing; and active engagement in invasive species removal.

The DR-WLE CWMA manages current and emerging invasive plant species by using species-specific best management practices. In 2018, a three-tiered system for designating management importance was created that prioritized treatment of invasive species based on three criteria: 1) new or newly emerging invasive species were prioritized over well-established species; 2) invasive species that were more likely to rapidly take over were prioritized over slow invading species; and 3) treatment that significantly benefitted a site was prioritized over invasive species present on land where treatment has little anticipated effect. This new system reframed the focus on aquatic and terrestrial invasive species to better detect and target necessary management (Table 1). This system now incorporates newly detected invasive species found in 2020.

Table 1: *Species included in three-tiered invasive species management prioritization based on known invasive species in 2020*

Group 1	
Black swallow wort	*Cynanchum louiseae*
Chinese yam	*Dioscorea polystachya*
European black alder	*Alnus glutinosa*
Giant knotweed	*Fallopia sachalinensis*
Pale swallow wort	*Cynanchum rossicum*
Parrot-feather milfoil	*Myriophyllum aquaticum*
Water hyacinth	*Eichhornia crassipes*
Water lettuce	*Pistia stratiotes*
White/Silver poplar	*Populus alba*
Yellow flag iris	*Iris pseudacorus*
Floating primrose willow	*Ludwigia peploides*

Group 2	
European frog-bit	*Hydrocharis morsus-ranae*
Flowering rush	*Butomus umbellatus*
Phragmites	*Phragmites australis*
Group 3	
Autumn olive	*Elaeagnus umbellata*
Canada thistle	*Cirsium arvense*
Common buckthorn	*Rhamnus cathartica*
Garlic mustard	*Alliaria petiola*
Glossy buckthorn	*Frangula alnus*
Dame's rocket	*Hesperis matronalis*

Year Summary

Tyler Dolin and Alexa Blankenship returned for the 2020 season with Andrew Newton leaving in November 2019 after successful completion of his seasonal position. This year a new technician, Michala Burke, was hired in May of 2020.

Pre-survey Season

In mid-March, restrictions were placed across Michigan due to the novel COVID-19 pandemic. Prior to COVID-19 restrictions, strike team technicians Alexa and Tyler attended the Michigan State University "Threats to Michigan's Forest Health" Workshop in March. Alexa also completed her Wildland Firefighter Type II training. The strike team prepared for an early prairie survey season and treatment prior to COVID-19 stay-at-home restrictions. The strike team adapted to stay at home restrictions and were able to successfully telework during the beginning of the pandemic. This time provided the opportunity to work on survey and treatment planning, and a Standard Operating Procedure that will be used to institutionalize the current knowledge base, completing and submitting permits, and restructuring the CWMA GIS database. Funding for the strike team through the Michigan Department of Natural Resources Michigan Invasive Species Grant Program was suspended from April 9 through July 13, 2020. During this time, the CWMA was able to secure funding through a Cooperative Agreement between the International Wildlife Refuge Alliance and the US Fish and Wildlife Service to continue strike team operations through the survey season.

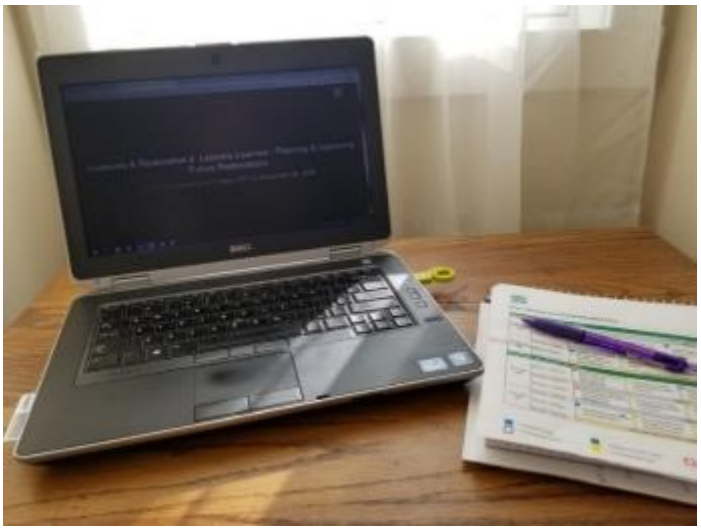

Figure 1: *A technician's workspace during the pandemic*

Survey

Alexa and Tyler started early detection and rapid response (EDRR) surveys on June 17, 2020, and Michala joined in on survey activities mid-August. Minor changes were made to survey protocols to allow technicians to work in the field safely during the pandemic. This included social distancing, wearing masks when indoors together and outdoors in close proximity, and traveling in separate cars to the unit being surveyed. Surveys were concluded August 20, 2020 with a total of 8,839.4 acres covered and 2,746 data points collected, compared to the 4,383 points taken over 9,639.5 acres surveyed in 2019. Due to the survey start delay caused by the COVID-19 work-from-home orders, surveys were restructured to prioritize units currently in a management program, or units that are coastal wetland or prairie ecosystems. These prioritizations and the shortened survey season help account for the reduced numbers in data points taken and fewer acres surveyed. Using these prioritizations, the technicians followed the 2019 plan and surveyed the units from south to north.

Figure 2: *Strike team leader Tyler Dolin surveys a coastal wetland*

Table 2 shows an example of the information collected for a full survey, which includes the following data: Area, Density, Treatment History, Probability of Expansion, Site Quality, and Level of Concern. The EDRR data table is set up to make integration into the Michigan Invasive Species Network (MISIN) database much easier by using some of the same parameters: Area,

Density, and Treatment History. The remaining parameters were created by the CWMA for species treatment prioritization.

Table 2: *Example of an EDRR survey used in 2020*

Species	Common Name	Area	Density	Treatment	Probability of Expansion	Site Quality	Level of Concern	Comments	Unit
Butomus umbellatus	Flowering rush	2	2	U	3	3	6		US Silica
Phragmites australis	Phragmites	4	3	U	2	3	5		US Silica
Hydrocharis morsus-ranae	European frog-bit	2	2	U	3	3	6		Ford Marsh

Figure 3: *Strike team leader Tyler Dolin surveys Pointe Mouillee State Game Area (MDNR)*

Key populations of native species were noted whenever encountered during early detection and rapid response surveys. This year, strike team technicians found another state-threatened plant species, American water willow (*Justicia americana)* on privately-owned partner land.

Figure 4: *American water willow (*Justicia americana*). Photo by Tyler Dolin*

Treatment

The CWMA develops an annual operating plan for the upcoming year that includes prior year treatment totals in a table format. Tables 3, 4, 5, 6, along with associated Figures 8, 9, 10, and 11 should be referenced throughout the treatment narrative; Figures 12, 13, 14, and 15 reference treatments from the previous three years. During 2020, the CWMA treated a total of 89.4 acres. This number is significantly lower than last year and can be attributed to partners unable to conduct treatment activities due to funding suspension brought on by the COVID-19 pandemic.

Group 1 Priority Species

At the Plum Creek Bay Unit, 0.1 acres of Japanese knotweed (*Fallopia japonica)* was treated on September 16, 2020. On September 27, 2020, 2.4 acres of floating primrose-willow (*Ludwigia peploides*) were treated at the Fix Unit and 0.25 acres were treated at Sisung (private property cooperatively-managed as part of the Detroit River International Wildlife Refuge [DRIWR]) on September 14, 2020. A total of 0.5 acres of European alder (*Alnus glutinosa*) were treated in 2020. European alder treatments began on October 5, 2020 and ended on November 19, 2020 at with 0.3 acres of European alder treated on Humbug Island and 0.2 acres treated on Refuge Gateway property. Treatment of European alder may continue through the winter of 2021, depending on weather conditions and COVID-19 restrictions.

Group 2 Priority Species

Phragmites treatment began on September 14, 2020 and concluded on October 8, 2020. A total of 78.6 acres were treated across Refuge Gateway, Holloway, Erie Marsh Preserve, Plum Creek Bay, Fix, Bay Creek Hunt Club, and Sisung. After the treatment season, 16 acres of dead Phragmites stands were roller chopped via Marsh Master on October 21, 26, and 28 at the Erie Marsh Preserve's "Canvasback" impoundment. Roller-chopping dead Phragmites biomass works to improve the success of herbicide treatments by invigorating the soil, allowing this area to be revegetated by cutting down excessive brush competition, and improving access for further habitat management.

This season, the DR-WLE CWMA strike team leader and a Central Michigan University graduate student toured the DRIWR Fix Unit for experimental European frog-bit treatment (*Hydrocharis morsus-ranae*). The CWMA looks forward to keeping involved with this ongoing project and potential implementation for future invasive species management.

Figure 5: *Strike team technician Michala Burke treats Phragmites from the CWMA Marsh Master in a wetland.*

Group 3 Priority Species

During the treatment season, 15 mature autumn olive (*Elaeagnus umbellata*) trees were treated on Refuge Gateway. In addition, five mature common buckthorn (*Rhamnus cathartica*) trees were treated in the Humbug Marsh Unit and Refuge Gateway property. This winter, further treatment of common buckthorn, glossy buckthorn (*Frangula alnus*), and autumn olive will be ongoing and dependent on the status of the global COVID-19 pandemic.

Figure 6: *Roller chopping done at TNC's Erie Marsh. This unit was aerially treated in 2019.*

Post Treatment Season

All three technicians attended the weeklong, virtual 2020 Upper Midwest Invasive Species Conference in early November. The conference provided an opportunity to learn about new and emerging species across the Midwest and to connect with other Cooperative Invasive Species Management Area (CISMA) coordinators and partners. Technicians also worked to create content for and build a website, to be launched in the new year (drwlecwma.org). This website will feature our team, partners, and work, as well as serve as a resource for invasive species information. The website will also feature a page to publish annual reports, received grants, and research done on CWMA partner lands.

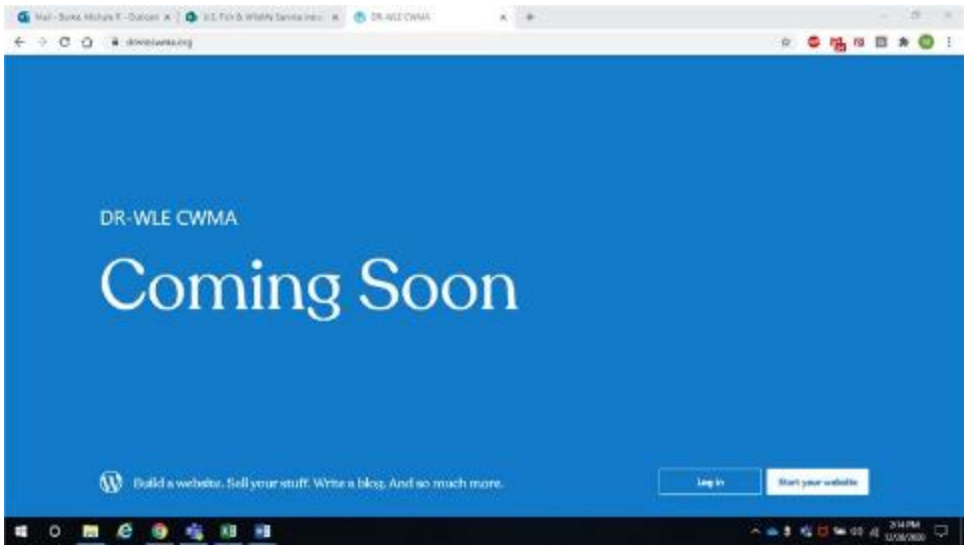

Figure 7: *A screenshot of the "Coming Soon" page for the CWMA website*

A new aquatic invasive species floating pennywort *(Hydrocotyle rannunculoides)* was confirmed within the CWMA boundary. First detected in fall of 2019 post treatment, the species was collected from the field where it was positively identified by CWMA staff and the University of Michigan herbarium. The species is not native to Michigan and has been found at the Strong, Fix, and Holloway units and is treated when observed.

Looking to 2021…

The CWMA currently relies on the official Detroit River International Wildlife Refuge Facebook page to reach the greater community about invasive species identification and management. In addition to the new website launch, the CWMA hopes to activate a Facebook account dedicated to the Detroit River-Western Lake Erie Cooperative Weed Management Area in 2021 to continue this important outreach.

The strike team hopes to increase their invasive species management capacity in 2021 by receiving heavy equipment operation training. An ongoing goal for CWMA technicians is to take advantage of a number of conferences and webinars, now held virtually, which relate to EDRR invasive species monitoring and management.

Acknowledgements

This work would not have been possible without funding provided by the Michigan Department of Natural Resource's Michigan Invasive Species Grant Program and the cooperative agreement between the International Wildlife Refuge Alliance and the United States Fish & Wildlife Service. Special thanks to all DR-WLE CWMA members who contributed their time, resources, and access to properties for this vital, shared goal of invasive species management. The DR-WLE CWMA is extremely appreciative to have been able to carry out another year of invasive species management, despite the unprecedented events of 2020.

Report Submitted By:

Tyler Dolin, DR-WLE CWMA Strike Team Leader

Alexa Blankenship, DR-WLE CWMA Strike Team Technician

Michala Burke, DR-WLE CWMA Strike Team Technician

Jessica Fletcher, DR-WLE CWMA Co-Chair

Chris May, DR-WLE CWMA Co-Chair

Treatments for 2020 and 2021 Operating Plan

Table 3: *Treatment for the 2020 field season with target species and 2021 treatment goals, North Zone.*

Location	Owner	2020 Acres Treated	Method	Target Species	2021 Goal
Mud Island	USFWS	None	N/A	N/A	Continue EDRR survey
Grassy Island	USFWS	None	N/A	N/A	Continue EDRR survey
Stony Island	DNR	None	N/A	N/A	Continue EDRR surveys
Refuge Gateway	Wayne County	1.49 Acres	Foliar	European Alder, Phragmites	Spot treatment
Humbug Marsh	USFWS	None	N/A	Phragmites	Spot Treatment
Humbug Island	USFWS	0.33 Acres	Hack and Squirt	European alder	Spot treatment
Gibraltar Bay Unit	USFWS	None	N/A	N/A	Continue EDRR surveys, Rx fire
Sugar Island	USFWS	None	N/A	N/A	Continue EDRR survey
Gibraltar Wetlands Unit	USFWS	None	N/A	Phragmites	Spot treatment
Six Points	Wyandot	None	N/A	Phragmites	Spot treatment
Lake Erie Metropark	HCMA	None	N/A	N/A	Spot treatment
US Silica	USFWS	None	N/A	N/A	Continue EDRR surveys
Hull's Trace	USNPS	None	N/A	Phragmites	Spot treatment

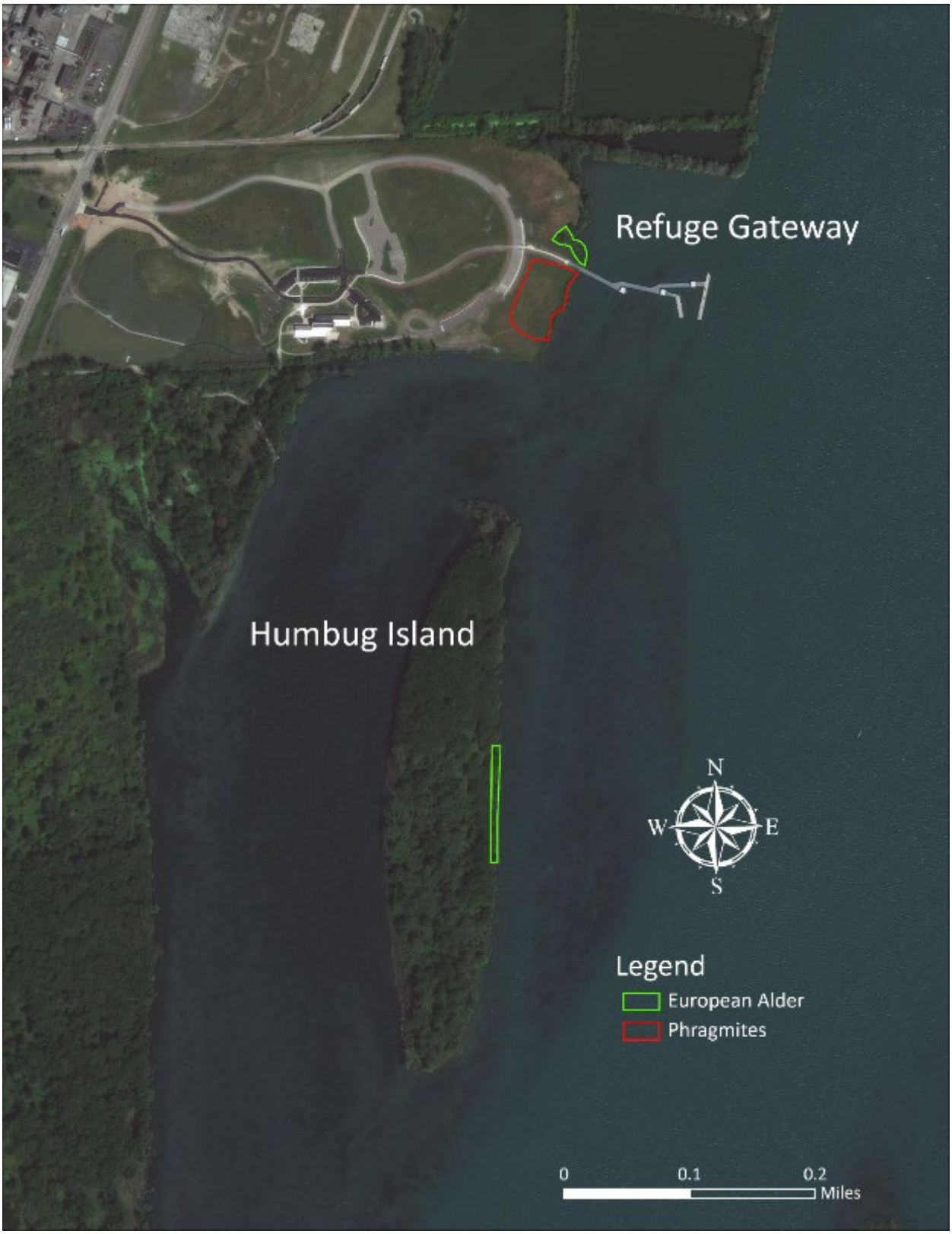

Figure 8: *Invasive species treatments in the North Zone of the CWMA*

Table 4: *Treatment for the 2020 field season with target species and 2021 treatment goals, North-Central Zone.*

Location	Owner	2020 Acres Treated	Method	Target Species	2021 Goal
Point Mouillee	DNR	None	N/A	Phragmites	Spot treatment
Taylor Unit	USFWS	None	N/A	N/A	Continue EDRR surveys
Strong Unit	USFWS	None	N/A	Phragmites	Spot Treatment
Burke Tract	USFWS	None	N/A	N/A	Continue EDRR surveys
Brancheau Unit	USFWS	None	N/A	Phragmites, Flowering rush	Spot Treatment
Blanchette Tract	USFWS	None	N/A	Phragmites	Spot treatment
Fix Unit	USFWS	13.42 Acres	Backpack, squirt bottle, Marsh Master	Phragmites, *Ludwigia peploides*	Spot treatment, Continue EDRR Surveys
Sisung	Private Property	15.69 Acres	Marsh Master	Phragmites, *Ludwigia peploides*, European alder	Continue EDRR Surveys
Point Aux Peaux	DNR	None	N/A	N/A	Continue EDRR surveys

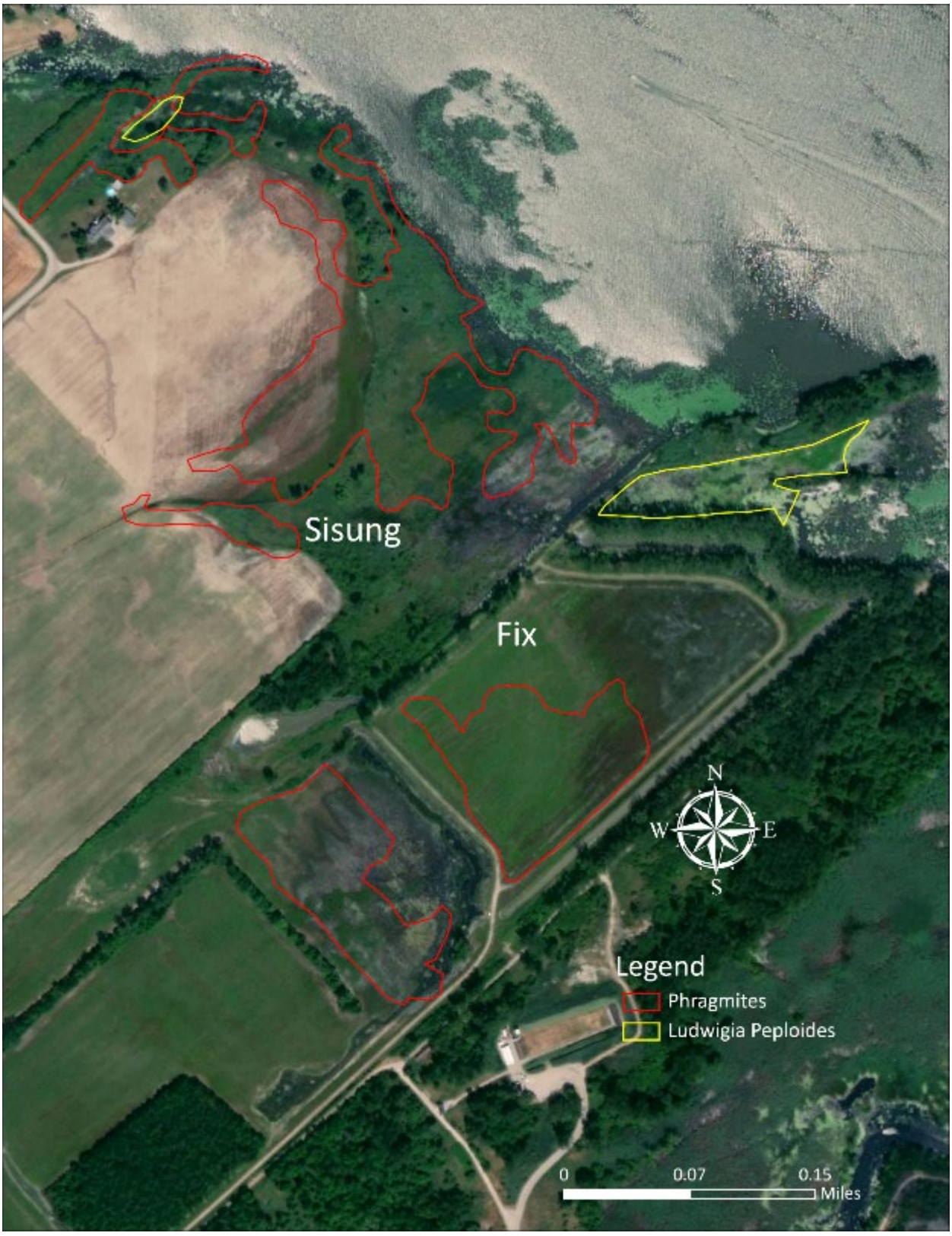

Figure 9: *Invasive species treatments in the North-Central Zone of the CWMA*

Table 5: *Treatment for the 2020 field season with target species and 2021 treatment goals, South-Central Zone.*

Location	Owner	2020 Acres Treated	Method	Target Species	2021 Goal
River Raisin	Monroe County	12.5 Acres	Boat	Flowering Rush, Phragmites	Continue EDRR surveys
Ford Marsh	USFWS	None	N/A	Phragmites	Spot treatment
Port of Monroe	USFWS	None	N/A	N/A	Continue EDRR Surveys
Plum Creek Bay	USFWS	0.39 Acres	Backpack	Japanese knotweed, Phragmites	Continue EDRR Surveys, Spot treatment

Figure 10: *Invasive species treatments in the South-Central Zone of the CWMA*

Table 6: *Treatment for the 2020 field season with target species and 2021 treatment goals, South Zone.*

Location	Owner	2020 Acres Treated	Method	Target Species	2021 Goal
Lady of the Lake	USFWS	None	N/A	N/A	Continue EDRR surveys
Holloway Unit	USFWS	9.96 Acres	Marsh Master	Phragmites	Spot treatment
Bay Creek Hunt Club	Bay Creek Hunt Club	12.18 Acres	Marsh Master	Phragmites	Spot treatment
Erie Marsh Preserve	TNC	28.5 Acres	Marsh Master	Phragmites	Potential aerial, Spot treatment

Figure 11: *Invasive species treatments in the South Zone of the CWMA*

Three Year Treatment Analysis for Phragmites and Flowering Rush

Figure 12: *Three-year treatment analysis in the CWMA North Zone*

Figure 13: *Three-year treatment analysis in the CWMA North Central Zone*

Figure 14: *Three-year treatment analysis in the CWMA South Central Zone*

Figure 15: *Three-year treatment analysis in the CWMA South Zone*