

Detroit River-Western Lake Erie Cooperative Weed Management Area 2021 Annual Report – 2022 Operating Plan



Landscape view of the Detroit River, Humbug Island, and Humbug Marsh coastline.

Credit: Michala Burke/DR-WLE CWMA

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

River Raisin Institute

Sisters, Servants Immaculate Heart of Mary

Southeast Michigan Council of Governments

Stewardship Network

The Nature Conservancy

U.S. Fish and Wildlife Service,

Detroit River International Wildlife Refuge

Wayne County Parks

Wildlife Habitat Council

Wyandot of Anderdon Nation

Background

The 21-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**).

Table 1: Species included in three-tiered invasive species management prioritization based on known invasive species in 2021.

Group 1		Group 2	
Black alder	<i>Alnus glutinosa</i>	European frog-bit	<i>Hydrocharis morsus-ranae</i>
Chinese yam	<i>Dioscorea polystachya</i>	Flowering rush	<i>Butomus umbellatus</i>
Black swallow-wort	<i>Cynanchum louiseae</i>	Common reed (Phragmites)	<i>Phragmites australis australis</i>
Floating primrose-willow	<i>Ludwigia peploides</i>		
Giant knotweed	<i>Fallopia sachalinensis</i>	Group 3	
Japanese knotweed	<i>Fallopia japonica</i>	Autumn olive	<i>Elaeagnus umbellata</i>
Pale swallow-wort	<i>Cynanchum rossicum</i>	Canada thistle	<i>Cirsium arvense</i>
Parrot-feather milfoil	<i>Myriophyllum aquaticum</i>	Common buckthorn	<i>Rhamnus cathartica</i>
Water hyacinth	<i>Eichhornia crassipes</i>	Dame's rocket	<i>Hesperis matronalis</i>
Water lettuce	<i>Pistia stratiotes</i>	Garlic mustard	<i>Alliaria petiolaris</i>
White poplar	<i>Populus alba</i>	Glossy buckthorn	<i>Frangula alnus</i>
Yellow flag iris	<i>Iris pseudacorus</i>		

Year Summary

Strike team technicians Tyler Dolin, Alexa Blankenship, and Michala Burke returned for the 2021 season. Co-chair Chris May moved on from his position with The Nature Conservancy and as a DR-WLE CWMA co-chair in September 2021. We wish him well in his new position!

Pre-Survey Season

Due to the ongoing COVID-19 pandemic, the technicians mainly worked from home during the winter season, from January to May. Throughout this time, they created additional standardized operating procedures for various field operations and finalized Early Detection and Rapid Response (EDRR) invasive species survey protocols, all of which will ensure an easy transition and onboarding experience for future strike team technicians. Technicians also used this time to attend a number of webinars, conferences, and summits related to invasive species best management practices and gained newfound knowledge on emerging watchlist species in the Midwest. **Table 2** lists invasive species related summits, conferences, and webinars attended by the DR-WLE CWMA technicians as opportunities for continuing education.

Table 2: Full list of invasive species related conferences, summits, and webinars attended from January to December 2021.

Event Name	Type	Date Held
Michigan Invasive Species Coalition Conference	Annual Meeting	01/19-20/2021
Michigan Rx Burning Issues	Annual Meeting	02/02-04/2021
National Invasive Species Awareness Week	Webinar Series	02/22-26/2021
Regional Fire Refresher	Webinar	3/2/2021
Environmental Protection Agency (EPA) – Woody Invasive Plant Management	Webinar	3/9/2021
North American Invasive Species Management Association (NAISMA) – Invasive Earthworms	Webinar	3/17/2021
Invasive Species Summit – Oakland County Cooperative Invasive Species Management Area (CISMA)	Summit	3/20/2021
Michigan Chapter – The Wildlife Society	Conference	3/25/2021
NotMISpecies – Responding to Aquatic Plants	Webinar	4/20/2021
NAISMA – Emerald Ash Borer Deregulations & Programs Going Forward	Webinar	4/21/2021
NotMISpecies – Dynamite! And Other Tools to Protect Michigan’s State Park Trees	Webinar Series	5/25/2021
NotMISpecies – Hey! What’s That In Your Backyard? An Introduction to Michigan CISMAs	Webinar Series	7/27/2021
NotMISpecies – Fowl Play: Protecting Michigan’s Wetland Wonders from Invasives	Webinar Series	9/15/2021
NotMISpecies – Just Do It! Learn Invasive Plant Removal Skills at Stewardship Workdays	Webinar Series	10/21/2021
NotMISpecies - Woolly Bully: A New Invasive Adelgid to Watch for in Michigan	Webinar Series	11/10/2021
Lake St. Clair CISMA – Knotweed Biocontrol	Summit	11/16/2021
NAISMA Biocontrol Summit	Summit	12/2/2021
EPA – Integrated Pest Management Managing Troublesome Vines	Webinar	12/7/2021
NAISMA – Misconceptions about Biocontrol	Webinar	12/15/2021

The DR-WLE CWMA joined the 21st century, launching both an official website (www.drwlecwma.org) and Facebook page (www.facebook.com/drwlecwma) to increase outreach and educational opportunities. These efforts have culminated in thousands of impressions and engagements from public Facebook users and website visitors. The addition of an official website and Facebook page has substantially aided in meeting grant deliverables dedicated to outreach and invasive species awareness. This winter, technicians were also invited to speak to Carlson High School students about the work the DR-WLE CWMA conducts and provided educational material on early career pathways and opportunities in the environmental field.

Two members of the strike team completed additional heavy equipment training, now making all three technicians certified through US Fish and Wildlife Service (USFWS) to operate an agricultural tractor, skid steer, and Marsh Master. These new trainings will allow DR-WLE CWMA technicians to expand on management options for treatment and restoration activities.

All required permit applications were completed, submitted, and granted by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) prior to the commencement of field operations.

Surveys

The technicians began prairie invasive species surveys on May 13, 2021. COVID-19 safety measures were followed throughout the duration of the 2021 field season, including social distancing and wearing masks indoors and when traveling together between sites. Surveys concluded on August 31, 2021, with a total of 9,678.1 acres surveyed and 3,908 data points collected, compared to the 8,839.4 acres surveyed and 2,746 data points collected in 2020. The restructuring of units in the 2020 season were modified for the 2021 season, focusing on units in active management and which reside in coastal wetland or prairie ecosystems, followed by forest ecosystems. Units were surveyed strategically to capture the early emergence of invasive plant species across a variety of properties with different ecosystem types (e.g., prairie, wetland, and forested habitats.). To embody these differences, properties were surveyed south to north to capture plant physiology and ecology (i.e., prairie invasive species establish earlier in the year than aquatic invasive species). Detroit River islands have been set on a biennial survey schedule. This year, partner-owned islands located within the Detroit River were surveyed including DRIWR's Mud Island, Grassy Island, and Sugar Island.

Treatment Provided by Strike Team

The CWMA developed an annual operating plan for the upcoming year that includes prior year treatment totals in a table format. **Tables 3, 4, 5, 6 and 7**, along with associated **Figures 1, 2, 3, 4, 5, and 6** should be referenced throughout the treatment narrative; **Figures 7, 8, 9 and 10** reference treatments from the previous three years. During 2021, the CWMA treated a total of 91.02 acres. This number is higher than last year and can be partly attributed to an increase in field operations brought on by lifted work constraints.

Group 1 Priority Species

At the Plum Creek Bay Unit, 0.1 acres of Japanese knotweed (*Fallopia japonica*) were treated on September 8, 2021. On September 30, 2021, a total of 0.36 acres of floating primrose-willow (*Ludwigia peploides*) were treated across two partner properties: DRIWR's Fix Unit and a privately-owned partner unit. At the Fix Unit, 0.21 acres were treated, while 0.15 acres were treated at the privately owned unit. For black alder (*Alnus glutinosa*), a total of 1.23 acres were treated across two partner properties: Refuge Gateway and Humbug Island. At Refuge Gateway, 0.67 acres of black alder were treated on September 13, 2021 and 0.56 acres were treated on Humbug Island on November 8, 2021.

On September 15, 2021, 0.02 acres of floating pennywort (*Hydrocotyle rannunculoides*) were treated at Bay Creek Hunt Club's Potters Unit. This species non-native status was confirmed by the University of Michigan's Herbarium. In result, this species has been treated whenever it is observed on partner property. So far, this species has been found at the Strong, Fix, and Holloway Units, and now Bay Creek Hunt Club. Treated populations are closely monitored for treatment response (i.e., regrowth and further spread).

Group 2 Priority Species

Phragmites (*Phragmites australis australis*) treatments usually occur from September 1 to either October 15 or first frost, whichever comes first. This year differed due to the Michigan Department of Natural Resources (MDNR)'s request to treat two dedicated waterfowl hunting units before the start of the hunting season. This allowed MDNR to complete necessary post treatment actions required prior to beginning of duck season on October 9, 2021. From July 26 to July 28, 2021, the strike team treated a combined 25.21 acres at Pointe Mouillee State Game Area (SGA)'s Waipatch and Cripple Point Units.

Additional Phragmites treatments occurred on September 13, 2021 with a total of 1.28 acres treated at Refuge Gateway. On two different occasions, a total of 25.9 acres of Phragmites were treated across Bay

Creek Hunt Club's Stark Marsh and Potters Units. From September 15-16, 2021, 9.4 acres of Phragmites were treated at Stark Marsh, and 16.5 acres were treated on September 29, 2021 at the Potters Unit. From September 27-28, 2021 and September 30, 2021, a total of 6.25 acres of Phragmites were treated at two Fix Unit impoundments and the coastal wetland section. On September 30, 2021, 0.11 acres were treated at a privately-owned partner property as well. On September 29, 2021, 5.4 acres of Phragmites were treated at DRIWR's Holloway Unit.

For the month of October, the DR-WLE CWMA concluded Phragmites treatment season at MDNR's Erie SGA and The Nature Conservancy's Erie Marsh. At Erie SGA, 5.41 acres were treated at the Dusseau Unit on October 5, 2021. On October 13, 2021, 11.03 acres were treated at Erie Marsh's Widgeon Hole Unit.

Group 3 Priority Species

Prior to survey season, the DR-WLE CWMA technicians were able to conduct early mechanical removal of invasive two mustard species (*Alliaria petiolata* and *Hesperis matronalis*) at the DRIWR's Taylor Unit. On May 13 and 19, 2021, the strike team hand-removed 0.04 acres, totaling to approximately 360 pounds of plant material removed.

The Refuge Gateway was treated for both teasel species (*Dipsacus fullonum* and *D. laciniatus*) and autumn olive (*Elaeagnus umbellata*). On September 13, 2021, 0.22 acres of teasel were treated. Teasel species were also treated on DRIWR's Blanchette I tract, equating to 0.12 acres on October 19, 2021. Although neither teasel species are usually prioritized, these populations were easily treated opportunistically while treatment was already taking place at a partner's property and grant-obligated species treatments were already completed. Another opportunistic treatment from the Group 3 priority species included spotted knapweed treatments at the National Park Service's (NPS) River Raisin National Battlefield Park. On June 15, 2021, a total of 4.8 acres were treated.

Early woody invasive removal first began on March 6, 2021, when the DR-WLE CWMA technicians joined one of its newest partners, Crosswinds Marsh, on a woody invasives removal volunteer workday. The strike team joined volunteers to act as certified pesticide applicators for the event, where a total of 0.76 acres of glossy buckthorn (*Frangula alnus*) was removed. On November 15, 2021, 0.03 acres of autumn olive were treated and removed on Refuge Gateway. From November 8-10, 2021, a total of 2.47 acres of common buckthorn (*Rhamnus cathartica*) were treated on DRIWR's Humbug Island, in addition, a single glossy buckthorn individual was treated on November 10, 2021.

Treatment Provided by Partners

Phragmites treatment was contracted out at the Wyandot of Anderton Six Points Tribal Heritage Site, equaling to 4.0 acres treated.

Over the course of 2021, Crosswinds Marsh (Wayne County Parks) partnered with The Nature Conservancy to complete 143.13 acres of invasive species treatment and removal. In March, 15.77 acres of woody invasive species were removed. In August, 16.26 acres of woody invasive species were treated and removed, and in October, 41.07 acres of treatment were conducted. During the month of November, 78.47 acres of woody invasive species and Phragmites were treated, by both mechanical removal and chemical treatment.

Post Treatment Biomass Removal

In August 2021, MDNR staff roller chopped 37.89 acres of treated Phragmites populations in the Pointe Mouillee SGA's Waipatich and Cripple Point units. On September 8, they then mowed the same areas to remove any remaining stands. On October 20, 2021, DR-WLE CWMA staff mowed 2.38 acres at the Dusseau unit of Erie SGA, and roller chopped 6.30 acres at the Wigeon Hole unit of Erie Marsh on October 27, 2021.

Looking to 2022

In 2022 the strike team will face a shift change, with Tyler Dolin departing the team, and Alexa Blankenship stepping into the lead technician role. The third spot on the team will be filled before the start of the 2022 survey season, to give plenty of time for the new team member to become familiar with DR-WLE CWMA standardized operating procedures, EDRR invasive species protocols, required trainings, and basic field operation standards.

Another goal for DR-WLE CWMA is to continue to provide educational outreach through their newly created official website and Facebook page. The DR-WLE CWMA will continue invasive species awareness and best management practices throughout the 2022 field and off-seasons, in addition to active engagements through community events.

Acknowledgments

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 Agreements between the International Wildlife Refuge Alliance and the United States Fish and 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 lingering effects and challenges of the COVID-19 pandemic.

Report Summited By:

Tyler Dolin, *DR-WLE CWMA Strike Team Leader*

Alexa Blankenship, *DR-WLE CWMA Strike Team Technician*

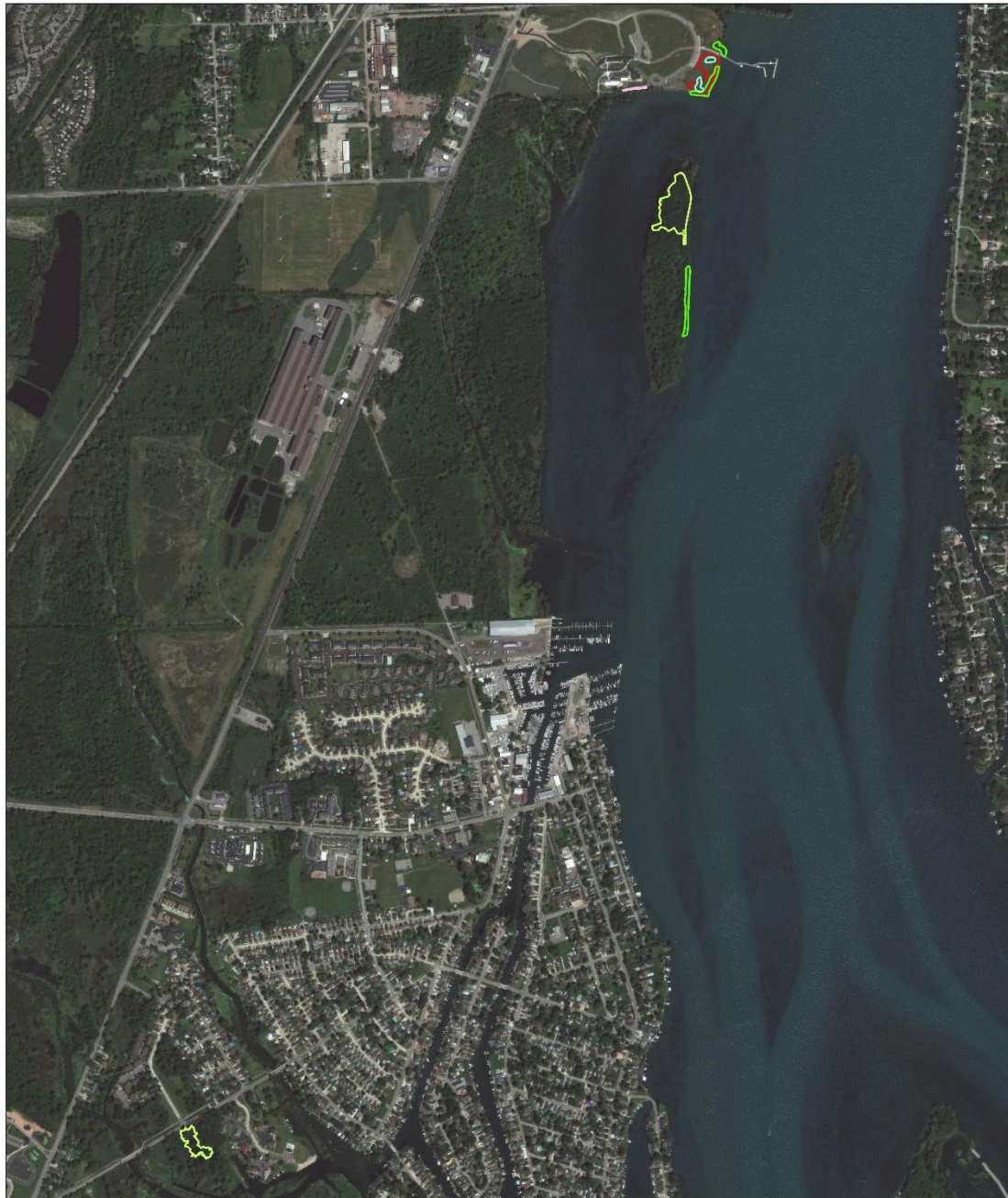
Michala Burke, *DR-WLE CWMA Strike Team Technician*

Jessica Fletcher, *DR-WLE CWMA Chair*

Treatments for 2021 and 2022 Operating Plan

Table 3: Treatments for the 2021 field season with target species and 2022 treatment goals. North Zone.

Location	Owner	2021 Acres Treated	Method	Target Species	2022 Goal
Mud Island	USFWS	None	N/A	Upland Invasives	Continue EDRR Survey
Grassy Island	USFWS	None	N/A	Phragmites	Continue EDRR Survey
Stony Island	MDNR	None	N/A	Phragmites, Upland Invasives	Continue EDRR Surveys
Refuge Gateway	Wayne County	1.95	Foliar	Black Alder, Phragmites, Teasel, Autumn Olive	Spot Treatment, Continue EDRR Surveys
Humbug Marsh	USFWS	None	N/A	Phragmites	Continue EDRR Surveys
Humbug Island	USFWS	3.03	Hack-Squirt, Cut-Stump, Drill-Injection	Black Alder, Common and Glossy Buckthorn	Spot Treatment, Continue EDRR Surveys
Gibraltar Bay Unit	USFWS	None	N/A	Phragmites, Teasel	Continue EDRR Surveys
Sugar Island	USFWS	None	N/A	Buckthorn, Privet	Continue EDRR Surveys
Gibraltar Wetlands Unit	USFWS	None	N/A	Phragmites, Common Buckthorn	Continue EDRR Surveys
Six Points	Wyandot of Anderton	4.95	Foliar, Hack--Squirt	Phragmites, Common and Glossy Buckthorn	Continue EDRR Surveys
Lake Erie Metropark	HCMA	Unknown	Unknown	Unknown	Continue EDRR Surveys
US Silica	USFWS	None	N/A	Phragmites	Continue EDRR Surveys
Hull's Trace	USNPS	None	N/A	Phragmites	Spot Treatment, Continue EDRR Surveys
Crosswinds Marsh	Wayne County Parks	143.89	Cut Stump	Glossy Buckthorn	Partner Continues Treatment



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Buckthorn Black Alder Teasel
Autumn Olive Phragmites
0 312.5 625 1,250 1,875 2,500 Feet



Figure 1: Invasive species treatments conducted by the strike team in the North Zone of the CWMA.



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 Buckthorn

0 75 150 300 450 600 Feet



Figure 2: Invasive species treatments at Crosswinds Marsh, in the North Zone of the CWMA.

Table 4: Treatment of the 2021 field season with target species and 2022 treatment goals. North-Central Zone.

Location	Owner	2021 Acres Treated	Method	Target Species	2022 Goal
Point Mouillee SGA	MDNR	25.21	Marsh Master	Phragmites	Spot Treatment, Continue EDRR Surveys
Taylor Unit	USFWS	0.04	Hand Pull	Garlic Mustard, Dame's Rocket	Spot Treatment, Continue EDRR Surveys
Strong Unit	USFWS	None	N/A	Phragmites, <i>Ludwigia peploides</i>	Continue EDRR Surveys
Burke Tract	USFWS	None	N/A	Phragmites, Autumn Olive, Teasel	Continue EDRR Surveys



Figure 3: Invasive species treatments conducted by the strike team in the North-Central Zone of the CWMA.

Table 5: Treatment of the 2021 field season with target species and 2022 treatment goals. Central Zone.

Location	Owner	2021 Acres Treated	Method	Target Species	2022 Goal
Brancheau Unit	USFWS	None	Underwater Cutting	Phragmites	Continue EDRR Surveys
Blanchett Tract I	USFWS	0.12	Backpack	Common and Cut-Leaf Teasel	Continue EDRR Surveys
Blanchett Tract II	USFWS	None	Backpack	Phragmites	Continue EDRR Surveys
Tishkof Tract	USFWS	None	N/A	Phragmites	Continue EDRR Surveys
Fix Unit	USFWS	6.51	Backpack, Marsh Master	Phragmites, <i>Ludwigia peploides</i>	Spot Treatment, Continue EDRR Surveys
Sisung	Private Property	0.26	Backpack	Phragmites, <i>Ludwigia peploides</i> ,	Spot Treatment, Continue EDRR Surveys
Point Aux Peaux	MDNR	None	N/A	Phragmites	Continue EDRR Surveys



Figure 4: Invasive species treatment conducted by the strike team in the Central Zone of the CWMA.

Table 6: *Treatments for the 2021 field season with target species and 2022 treatment goals, South-Central Zone.*

Location	Owner	2021 Acres Treated	Method	Target Species	2022 Goal
River Raisin National Battlefield Park	USNPS	4.80	UTV	Spotted Knapweed	Spot Treatment, Continue EDRR Surveys
River Raisin	Monroe County	Unknown	Boat	Flowering Rush	Spot Treatment
Ford Marsh	USFWS	None	N/A	Phragmites	Continue EDRR Surveys
Port of Monroe	USFWS	None	N/A	Phragmites	Continue EDRR Surveys
Immaculate Heart of Mary	Archdiocese of Detroit	None	N/A	N/A	Continue EDRR Surveys
Plum Creek Bay	USFWS	0.10	Backpack	Japanese Knotweed	Continue EDRR Surveys



Detroit River-Western Lake Erie Cooperative Weed Management Area
South Central Zone Treatment

River Raisin National Battlefield Park, Plum Creek Bay Units



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Spotted Knapweed Japanese Knotweed

0 250 500 1,000 1,500 2,000 Feet



Figure 5: *Invasive species treatments conducted by the strike team in the South-Central Zone of the CWMA.*

Table 7: *Treatments for the 2021 field season with target species and 2022 treatment goals, South Zone.*

Location	Owner	2021 Acres Treated	Method	Target Species	2022 Goal
Erie SGA	MDNR	5.41	Marsh Master	Phragmites	Aerial, Continue EDRR Surveys
Lady of the Lake	USFWS	None	N/A	Phragmites	Continue EDRR Surveys
Holloway Unit	USFWS	5.4	Marsh Master	Phragmites	Spot Treatment, Continue EDRR Surveys
Bay Creek Hunt Club	BCHC	25.9	Marsh Master	Phragmites, Floating Pennywort	Spot Treatment, Continue EDRR Surveys
Erie Marsh Preserve	TNC	11.03	Marsh Master	Phragmites	Spot Treatment, Continue EDRR Surveys



Detroit River-Western Lake Erie Cooperative Weed Management Area

South Zone Treatment

Bay Creek Hunt Club, Erie Marsh, Erie SGA and Holloway Units



Figure 6: Invasive species treatments conducted by the strike team in the South Zone of the CWMA.

Three Year Treatment Analysis for Phragmites and Flowering Rush



Figure 7: Three-year treatment analysis in the CWMA North Zone.



Detroit River-Western Lake Erie Cooperative Weed Management Area
North Central Zone Phragmites Treatment

Three year period covering 2019, 2020, and 2021

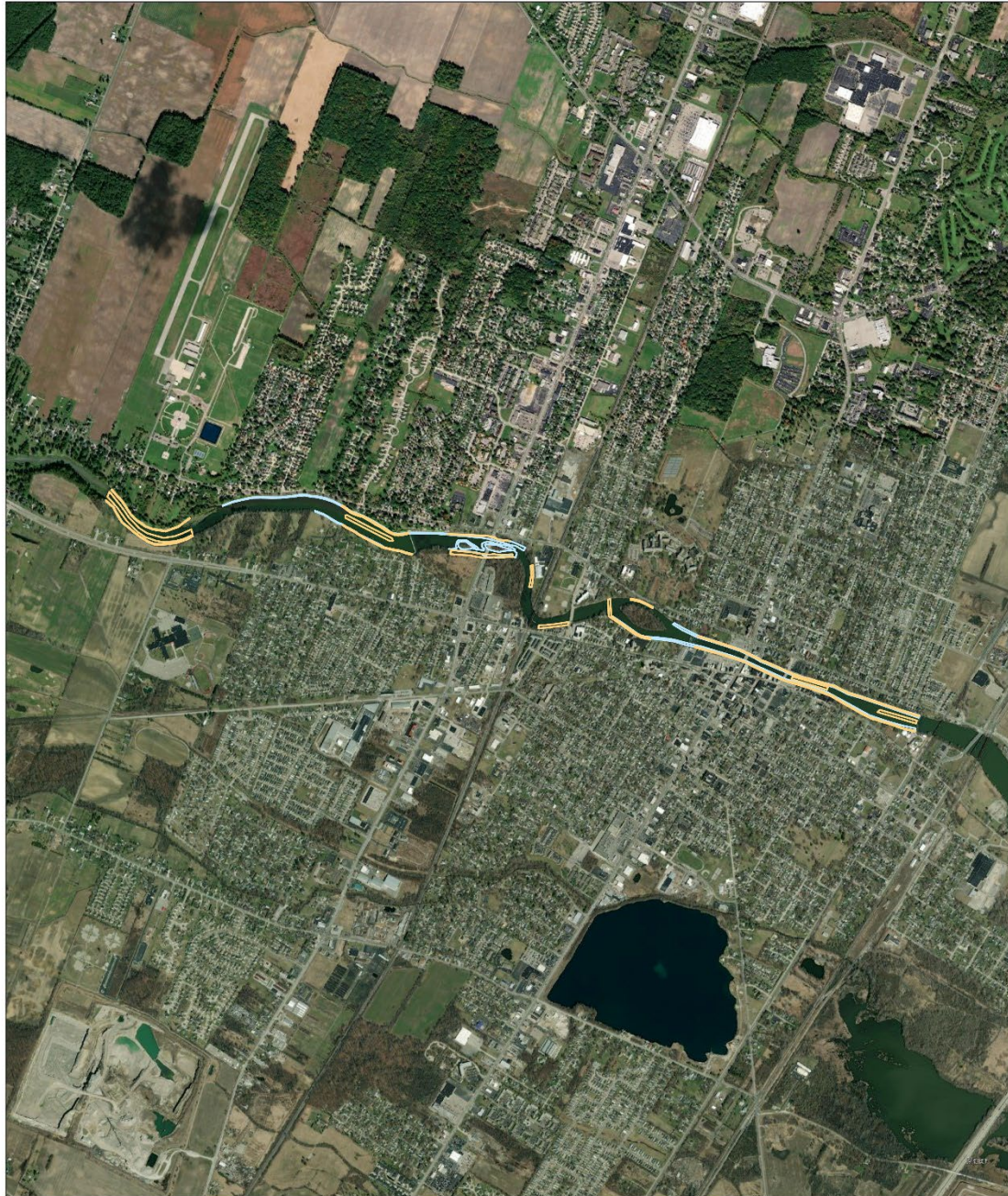


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2021 2020 2019
0 375 750 1,500 2,250 3,000 Feet



Figure 8: *Three-year treatment analysis in the CWMA North-Central Zone.*



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2020 2019

0 500 1,000 2,000 3,000 4,000 Feet



Figure 9: Three-year treatment analysis in the CWMA South-Central Zone.



Figure 10: Three-year treatment analysis in the CWMA South Zone.