Detroit River-Western Lake Erie Cooperative Weed Management Area
2022 Annual Report – 2023 Operating Plan

***Photo 1**. A panoramic view of Phragmites in a wetland, under a bright blue sky. Credit: Emma Delie/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,
Lake Erie Metropark
International Wildlife Refuge Alliance
MI Department of Natural Resources Wildlife Division,
Pointe Mouillee, Pointe aux Peaux, and Erie State Game Areas
Monroe Conservation District
Monroe County Road Commission
National Park Service,
River Raisin National Battlefield Park
The Nature Conservancy
River Raisin Institute
Sisters, Servants Immaculate Heart of Mary
Southeast Michigan Council of Governments
The Stewardship Network
U.S. Fish and Wildlife Service,
Detroit River International Wildlife Refuge
Wayne County Parks,
Crosswinds Marsh and Refuge Gateway
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 2022.*

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

Group 2	
European frog-bit	*Hydrocharis morsus-ranae*
Flowering rush	*Butomus umbellatus*
Common reed (Phragmites)	*Phragmites australis australis*

Group 3	
Autumn olive	*Elaeagnus umbellata*
Canada thistle	*Cirsium arvense*
Common buckthorn	*Rhamnus cathartica*
Dame's rocket	*Hesperis matronalis*
Garlic mustard	*Alliaria petiolata*
Glossy buckthorn	*Frangula alnus*

Year Summary

The Strike Team experienced a few changes this year, with Strike Team Leader Tyler Dolin departing DR-WLE CWMA in February, and team member Alexa Blankenship stepping forward to lead the field crew. Team member Michala Burke stayed with the team through the survey season before departing in August for a full-time position as a fisheries technician with USFWS. Newcomer Emma Delie started in March and will be staying through much of the winter season.

Training, Outreach, and Permits

From January to April, the technicians created additional standard operating procedures including Herbicide Handling Protocols, Marsh Master Pump Operation, UTV Pump Operation, and Commercial Pesticide Licensing Instructions to augment the policies and protocols finalized in 2021. They also attended workshops, webinars, conferences, and trainings (**Table 2**) to keep their knowledge of best management practices up to date and learn about new advancements in the invasive species field.

***Table 2**: Full list of invasive species related conferences, summits, and webinars attended from January to December 2022.*

Event Name	Type	Date Held
Michigan Invasive Species Coalition Annual Meeting	Virtual Annual Meeting	1/5-6/2022
EPA's Integrated Pest Management (IPM) Series: Identification & Management of Hemlock Pests	Webinar	1/11/2022
NAISMA - The History & Effectiveness of Injurious Wildlife Listing under the "Lacey Act"	Webinar	1/19/2022
MI DNR's Not Mi Species Series: Dive into the Gene Pool: Using Environmental DNA to Detect Invasive Species	Webinar	1/25/2022
EGLE's Advancing Inland Stewardship through Shoreline Best Management Practices	Webinar	1/25/2022
EPA's IPM Series: Invasive Woody Plant Management Part 3	Webinar	2/1/2022
Invasive Species Centre's Annual Invasive Species Forum	Virtual Forum	2/1-3/2022
Northeast-Midwest Regional Prescribed Fire Council - Legislating the Right to Burn: An Overview of Prescribed Burning Studies and Regulations	Virtual Forum	2/16/2022
Not MI Species - AIS Team: Conservation Officers On a Mission to Prevent Invasive Species	Webinar	2/16/2022
NAISMA - Recent Publications Explored - Testing Emphasis Message Frames & Metaphors on Social Media to Engage Boaters to Learn about Preventing the Spread of Zebra Mussels	Webinar	2/16/2022
FWS Region 3 North Zone Annual Fire Refresher	Virtual Training	2/22/2022
Oakland County & Lake St. Clair CISMAs - Watch List Invasive Species	Webinar	3/2/2022
NAISMA's Invasive Species Awareness Week Webinar Series	Webinar	3/2-4/2022
2022 Mid-Michigan CISMA Virtual Municipal Training	Virtual Training	3/8/2022
t Mid-Michigan 2022 Municipal Invasive Species Training	Webinar	3/8/2022
Spring Invasive Species Summit Hosted by SE/Saginaw Bay CISMAS	Virtual Summit	3/19/2022
2022 Great Lakes Phragmites Collaborative: A tale of two species: Restoring native wild rice through non-native Phragmites management in Green Bay coastal wetlands	Webinar	3/23/2022
Michigan Chapter of The Wildlife Society Annual Conference	Virtual Conference	3/24-25/2022
MI DNR's Not MI Species series: Step Abroad Michigan's Clean Boats, Clean Waters Grant Program	Webinar	3/24/2022
USFWS Native Science Webinar	Webinar	3/24/2022
2022 Great Lakes Phragmites Collaborative (GLPC): Flooded Phragmites provides habitat for Great Lakes coastal wetland fishes & Mapping invasive Phragmites in Lake Erie wetlands (Canada) using multispectral satellite images	Webinar	4/6/2022
Not MI Species - New Name, Familiar Pest: Preparing for *Lymantria dispar* (formerly known as Gypsy moth)	Webinar	4/14/2022
Not MI Species - Clean It Up, Drain It Out, Dry It Off: Boating Hygiene for the 21st Century	Webinar	5/12/2022
Phragmites Adaptive Management Framework: Virtual PAMF Training Session	Webinar	5/25/2022
EPA's IPM Series: Rebroadcast - Read the Label - Pesticide Label Guidance	Webinar	6/8/2022
Not MI Species: Didymo - What You Need to Know	Webinar	6/9/2022
NAISMA: A Summary of Spotted Lanternfly Ecology and Biocontrol Efforts	Webinar	6/15/2022
Not MI Species: Yooper Troopers - Lessons Learned Controlling Phragmites in Michigan's Upper Peninsula	Webinar	9/22/2022

In the spring, two technicians received U.S. Fish and Wildlife Service's UTV/ATV training, allowing them to operate the USFWS-owned UTV that DR-WLE CWMA frequently uses for herbicide applications. In the late summer, the newest technician completed USFWS's Heavy Equipment Safety Training for Marsh Master, leaving all three technicians certified to drive and operate all treatment vehicles. Additionally, the Strike Team Leader attended USFWS's S-212 training in November, leading to a certification in chainsaw operations.

During this time, DR-WLE CWMA continued its passive outreach through Facebook posts and updates to the website. With 50+ Facebook posts (www.facebook.com/drwlecwma), DR-WLE CWMA has reached over 25,000 people, sharing images, facts, and best management practices with the public. This in turn has led to hundreds of views of the website (www.drwlecwma.org) and over twenty members of the public reaching out via email (drwlecmwa@gmail.com) or direct message through Facebook.

Alexa Blankenship gave a presentation to the Michigan Fly Fishing Club in February, bringing awareness to fly fishers about invasive species, the likely species they would see while casting, and best ways to prevent the spread of invasive species. Alexa and fellow technician Emma Delie also hosted a table at Pointe Mouillee's Waterfowl Festival for two days, quizzing festival-goers on their invasive species knowledge and offering advice to remove populations and reduce the spread of invasive species.

***Photo 2**. A USFWS employee and a DR-WLE CWMA technician staff a community outreach table at Pointe Mouillee Waterfowl Festival. Credit: Emma Delie/DR-WLE CWMA*

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 Strike Team began surveys on May 16 and finished them on August 2. They surveyed 10,213.49 acres, taking 5,638 data points. Compare this to the end results of the 2021 season, with 9,678.1 acres and 3,908 data points. 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). Furthermore, surveys were completed on prairies first, before turning to forest and aquatic ecosystems. Prairie systems then also had a recheck about halfway through the season, to make sure the populations were holding steady.

The Detroit River islands under DR-WLE CWMA purview are split in half, with one set of islands surveyed in even years, and the other half set surveyed in odd years. However, this year the Strike Team was opportunistically able to go out on the water to survey the perimeter of each river island.

Photo 3*. Four technicians kayak on the Detroit River during surveys. Credit: Michala Burke/USFWS*

Treatment Provided by Strike Team

DR-WLE 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,** and **5** should be referenced throughout the treatment narrative while **Figures 6, 7, 8,** and **9** reference treatments from the previous three years. During 2022, the CWMA treated a total of 143.25 acres.

Group 1 Priority Species

At DRIWR's Plum Creek Bay Unit, 0.04 acres of Japanese knotweed (*Fallopia japonica*) was chemically treated on August 9. On August 10, 0.01 acres of floating primrose-willow (*Ludwigia peploides*) was treated at DRIWR's Humbug Marsh Unit. The Strike Team also opportunistically treated 0.09 acres of floating primrose-willow at Pointe Mouillee State Game Area's (PMSGA) Cripple Point Unit on October 4 and 5. Additionally, 0.05 acres of white poplar (*Populus alba*) was treated at Humbug Marsh on August

11. Black alder (*Alnus glutinosa*) was treated on November 2 on Wayne County's Refuge Gateway for a total of 0.62 acres.

Group 2 Priority Species

European frog-bit (*Hydrocharis morsus-ranae*) was mechanically treated by hand pulling for the first time by the Strike Team on DR-WLE CWMA property. A total of 0.03 acres were pulled on July 27 at Wyandot of Anderdon's Six Points property.

***Photo 4**. Three technicians sitting on a truck bed that is filled with the results of a European frog-bit pull event. Credit: Michala Burke/USFWS*

Phragmites (*Phragmites australis australis*) chemical treatments occurred between August 15 and October 6. At DRIWR's Fix Unit, 2.24 acres were treated on August 15, 5.97 acres on August 25, and 14.62 acres on September 13. At Wayne County's Refuge Gateway, 2.94 acres of Phragmites were treated on August 17. DRIWR's Brancheau Unit received 4.63 acres of treatment on August 18 and a combined 25.97 acres on September 1 and 6, and 0.63 acres on September 7. On September 14 and 15, Bay Creek Hunt Club (BCHC) had 15.32 acres and DRIWR's Holloway Unit had 2.3 acres of Phragmites treatment. And finally, PMSGA's Cripple Point and Bad Creek Units were treated for a combined 31.97 acres from October 3 through 6.

Group 3 Priority Species

Garlic mustard (*Alliaria petiolata*) and dame's rocket (*Hesperis matronalis*) were manually removed from DRIWR's Humbug Marsh (0.88 acres) on May 11, DRIWR's Taylor Unit (0.07 acres) on May 12, Wayne County's Refuge Gateway (0.96 acres), and DRIWR's Gibraltar Bay Unit (0.41 acres) on May 25. Seed heads were mechanically removed from cut-leaf and wild teasels (*Dipsacus fullonum* and *D. laciniatus*): 2.72 acres from DRIWR's Blanchett I Unit on August 17 and 2.53 acres from DRIWR's Gibraltar Bay Unit on August 22.

Chemical treatments of Group 3 species included 0.42 acres of Amur honeysuckle (*Lonicera maackii*) treatment at DRIWR's Gibraltar Bay Unit on August 31, and 7.27 acres of common privet (*Ligustrum vulgare*) at DRIWR's Humbug Marsh. On November 1, 0.15 acres of common buckthorn were treated on DRIWR's Humbug Marsh and 0.07 acres of Amur honeysuckle and common and glossy buckthorns (*Rhamnus cathartica* and *Frangula alnus*) on November 2.

Treatment Provided by Partners

Bay Creek Hunt Club was able to complete 20 acres of chemical Phragmites treatment via a helicopter this year.

The Nature Conservancy and Erie Shooting Club were able to complete 130 acres of chemical Phragmites treatment via helicopter.

Crosswinds Marsh, a Wayne County Park, was able to mechanically treat both wild and cut-leaf teasels, and creeping jenny, and held several volunteer workdays cut-stumping buckthorn and autumn olive shrubs.

The City of Monroe chemically treated 28.5 acres of flowering rush in the River Raisin.

Huron-Clinton Metropolitan Authority completed 40 acres of Phragmites treatment at Lake Erie Metropark, along with several acres of reed canary grass, garlic mustard, and Japanese hedge parsley.

The Monroe County Road Commission chemically treated Phragmites along 440 miles worth or roadsides, totaling 80 acres of treatment.

Biomass Removal

In November, the Strike Team was able to complete 19.14 acres of biomass removal, crushing the Phragmites that was previously chemically treated at DRIWR's Brancheau Hemi Marsh.

Photo 5. *A wetland half-mowed, in front of a bright blue sky. Credit: Alexa Blankenship/DR-WLE CWMA.*

Looking to 2023

In 2023, DR-WLE CWMA will be looking to re-hire a full-time Coordinator. This position will be responsible for managing grants, coordinating work between partners, and providing outreach through passive and active methods.

In the meantime, the Strike Team are hoping for another stellar year with goals to achieve a similar number of acres surveyed and treated in 2023.

Acknowledgements

This work would not have been possible without funding provided by the U.S. Fish & Wildlife Service for Early Detection and Rapid Response Projects, the Michigan Department of Natural Resource's Michigan Invasive Species Grant Program, and the Cooperative Agreements between the International Wildlife Refuge Alliance and the Detroit River International Wildlife Refuge.
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

Report Submitted by:

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Emma Delie, *DR-WLE CWMA Strike Team Technician*

Jessica Fletcher, *DR-WLE CWMA Chair*

Treatments for 2022 and 2023 Operating Plan

***Table 3**. Treatments for the 2022 field season with target species and 2023 treatment goals: North Zone.*

Location	Owner	2022 Acres Treated	Method	Target Species	2023 Goal
Mud Island	USFWS	None	N/A	N/A	Continue EDRR Surveys
Grassy Island	USFWS	None	N/A	N/A	Continue EDRR Surveys
Stony Island	MI DNR	None	N/A	N/A	Continue EDRR Surveys
Refuge Gateway	Wayne County	0.96	Hand-pulling	Mustards	Spot Treat, Continue EDRR Surveys
		2.94	Foliar via UTV	Phragmites	
		0.62	Foliar via backpack, cut-stump	Alder	
Humbug Marsh	USFWS	0.88	Hand-pulling	Mustards	Spot treat, Continue EDRR Surveys
		0.66	Cut-stump and hack-and-squirt	Buckthorns	
		0.01	Foliar via spray bottle	Primrose-willow	
		0.05	Foliar via spray bottle	White poplar	
		7.27	Foliar via backpack and UTV	Common privet	
Humbug Island	USFWS	None	N/A	N/A	Continue EDRR Surveys
Gibraltar Bay	USFWS	0.41	Hand-pulling	Mustards	Spot treat, Continue EDRR Surveys
		2.53	Seed head removal	Teasels	
		0.42	Cut-stump and hack-and-squirt	Amur Honeysuckle	
Sugar Island	USFWS	None	N/A	N/A	Continue EDRR Surveys
Gibraltar Wetlands	USFWS	None	N/A	N/A	Continue EDRR Surveys
Six Points	Wyandot of Anderdon	0.03	Hand-pulling	European frog-bit	Spot treat, Continue EDRR Surveys
Celaron Island	MI DNR	None	N/A	N/A	Continue EDRR Surveys
Lake Erie Metropark	HCMA	40	Foliar	Phragmites	Spot treat, Continue EDRR Surveys
		12-14	Foliar	Reed canary grass	
		<5	Hand-pulling	Garlic mustard and Japanese hedge parsley	
US Silica	USFWS	None	N/A	N/A	Continue EDRR Surveys
Hull's Trace	USNPS	None	N/A	N/A	Continue EDRR Surveys

Crosswinds Marsh	Wayne County	None	N/A	N/A	Roller-chopping Partner Treatment

Figure 1. *Invasive species treatments conducted by the Strike Team in DR-WLE CWMA's North Zone.*

***Table 4**. Treatments for the 2022 field season with target species and 2023 treatment goals: North Central Zone.*

Location	Owner	2022 Acres Treated	Method	Target Species	2023 Goal
Pointe Mouillee SGA	MI DNR	31.97	Foliar via MarshMaster	Phragmites	Spot treat, Continue EDRR Surveys
		0.09	Foliar via MarshMaster	Primrose-willow	
Taylor	USFWS	0.07	Hand-pulling	Mustards	Spot treat, Continue EDRR Surveys
Strong	USFWS	None	N/A	N/A	Continue EDRR Surveys
Burke	USFWS	None	N/A	N/A	Continue EDRR Surveys
Osborn	USFWS	None	N/A	N/A	Continue EDRR Surveys

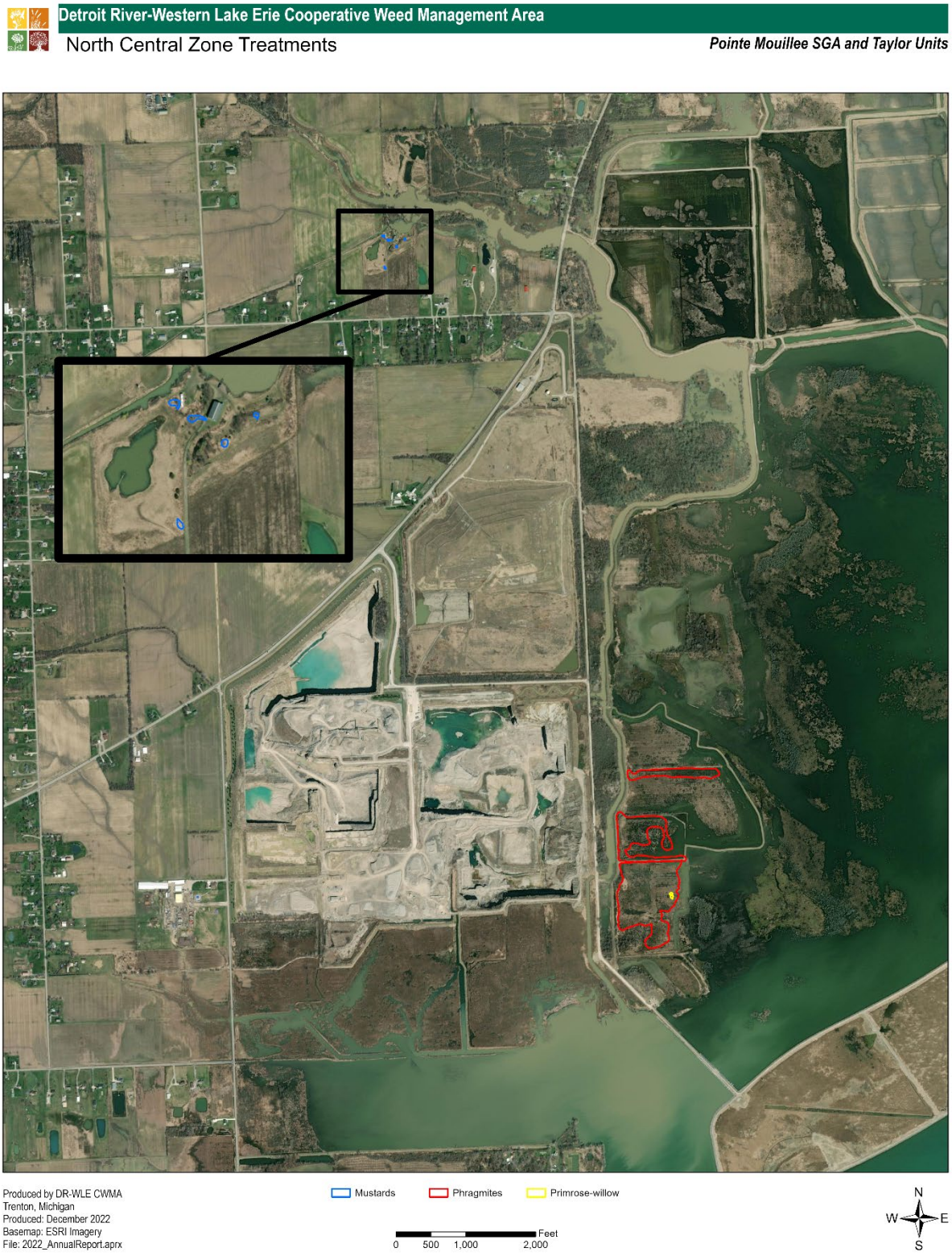

Figure 2. *Invasive species treatments conducted by the Strike Team in DR-WLE CWMA's North Central Zone.*

***Table 5**. Treatments for the 2022 field season with target species and 2023 treatment goals: Central Zone.*

Location	Owner	2022 Acres Treated	Method	Target Species	2023 Goal
Brancheau	USFWS	31.23	Foliar via backpack, UTV, and Marsh Master	Phragmites	Spot treat, Continue EDRR Surveys
		19.14	Roller chopper		
Blanchett I	USFWS	2.72	Seed head removal	Teasels	Spot treat, Continue EDRR Surveys
Blanchett II	USFWS	None	N/A	N/A	Continue EDRR Surveys
Tishkof	USFWS	None	N/A	N/A	Continue EDRR Surveys
Sisung	Private Property	None	N/A	N/A	Continue EDRR Surveys
Fix	USFWS	22.83	Foliar via backpack, UTV, and MarshMaster	Phragmites	Spot treat, Continue EDRR Surveys
Point-aux-Peaux SGA	MI DNR	None	N/A	N/A	Continue EDRR Surveys

Figure 3. *Invasive species treatments conducted by the Strike Team in DR-WLE CWMA's Central Zone.*

***Table 6**. Treatments for the 2022 field season with target species and 2023 treatment goals: South Central Zone.*

Location	Owner	2022 Acres Treated	Method	Target Species	2023 Goal
River Raisin NBP	USNPS	None	N/A	N/A	Continue EDRR Surveys
Ford Marsh	USFWS	None	N/A	N/A	Continue EDRR Surveys
Port of Monroe	USFWS	None	N/A	N/A	Continue EDRR Surveys
Immaculate Heart of Mary	Archdiocese of Detroit	None	N/A	N/A	Continue EDRR Surveys
River Raisin	City of Monroe	28.5	Foliar via helicopter and backpack	Flowering rush	Spot treat, Continue EDRR Surveys
Plum Creek Bay	USFWS	0.04	Foliar via spray bottle	Japanese knotweed	Spot treat, Continue EDRR Surveys
Monroe County Roadways	Monroe County	80	Foliar via vehicle or tractor	Phragmites	Spot Treat

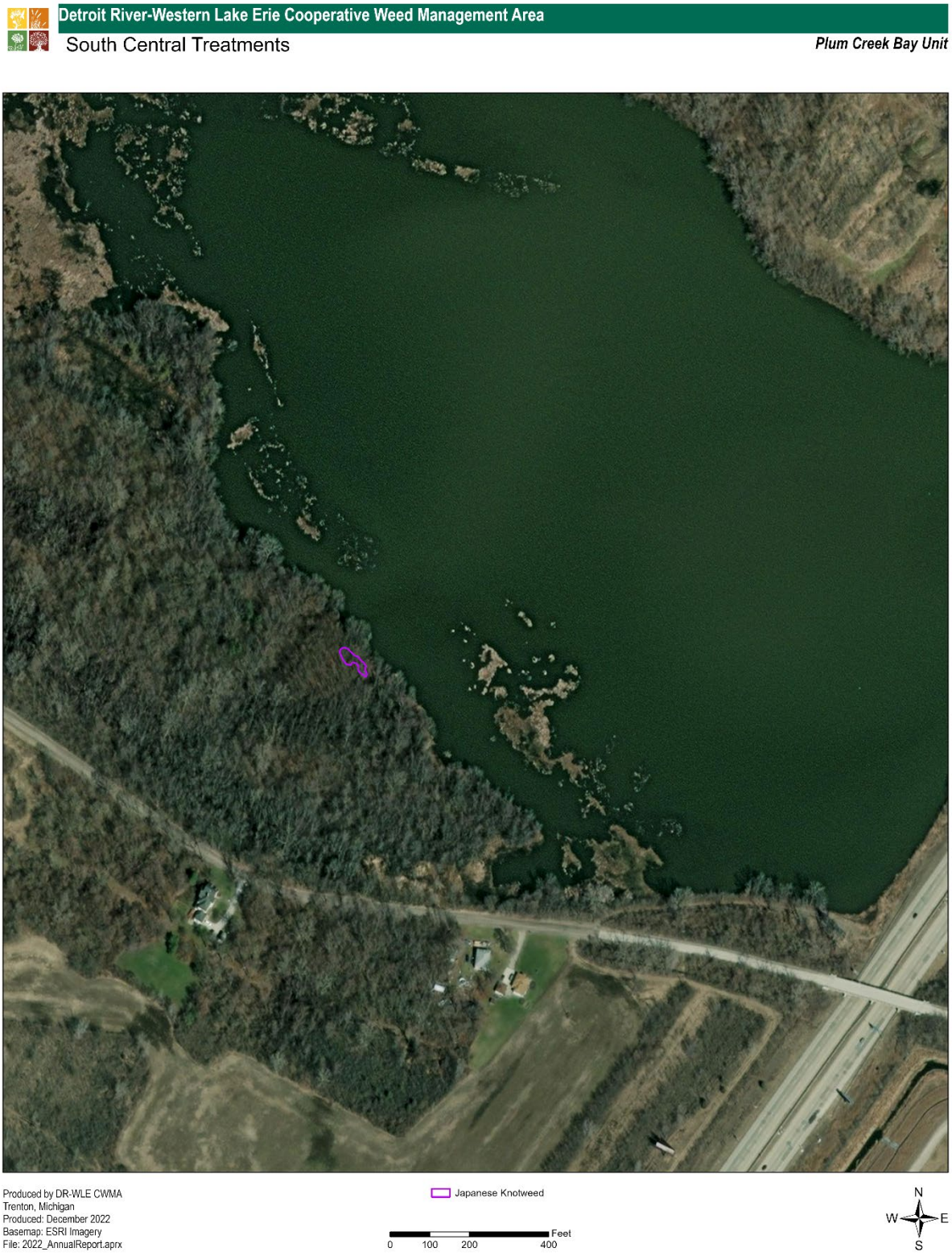

Figure 4. *Invasive species treatments conducted by the Strike Team in DR-WLE CWMA's South Central Zone.*

***Table** 7. Treatments for the 2022 field season with target species and 2023 treatment goals: South Zone.*

Location	Owner	2022 Acres Treated	Method	Target Species	2023 Goal
Erie SGA	MI DNR	None	N/A	N/A	Continue EDRR Surveys
Lady of the Lake	USFWS	None	N/A	N/A	Continue EDRR Surveys
Holloway	USFWS	2.3	Foliar via MarshMaster	Phragmites	Spot treat, Continue EDRR Surveys
Bay Creek Hunt Club	Bay Creek Farms	15.32	Foliar via MarshMaster	Phragmites	Spot treat, Continue EDRR Surveys
		20	Foliar via helicopter		
Erie Marsh Preserve	TNC	130	Foliar via helicopter	Phragmites	Aerial Treatments
Gard Island	University of Toledo	None	N/A	N/A	Continue EDRR Surveys

Figure 5. *Invasive species treatments conducted by the Strike Team in DR-WLE CWMA's South Zone.*

Three Year Treatment Analysis for Phragmites

Figures 6, **7**, **8**, and **9** below highlight the comparison between 2020's, 2021's, and 2022's Phragmites treatments across all Detroit River-Western Lake Erie Cooperative Weed Management Area's partner lands.

Figure 6. *Three- year treatment analysis of Phragmites in DR-WLE CWMA's North Zone.*

Figure 7. *Three-year treatment analysis of Phragmites in DR-WLE CWMA's North Central Zone.*

Figure 8. *Three-year treatment analysis of Phragmites in DR-WLE CWMA's Central Zone.*

Figure 9. *Three-year treatment analysis of Phragmites in DR-WLE CWMA's South Zone.*