

Charter Township of Oakland
Parks and Recreation

Natural Areas Stewardship 2022 Annual Report



Prepared by
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Natural Areas Stewardship Manager



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*Unless otherwise noted, all photos were taken by Ben VanderWeide.

Front Cover: Trout lily (*Erythronium americanum*) at Blue Heron Environmental Area on May 10, 2022.

Back Cover: Oak Tree Silhouette at Stony Creek Ravine Nature Park

PART I

STEWARDSHIP HIGHLIGHTS

2022

STEWARDSHIP SNAPSHTOS

2022

- US Fish and Wildlife Service Partners for Fish and Wildlife Grants:** We secured a final grant to complete wetland and prairie restoration at Stony Creek Ravine Nature Park. We completed installation of seed and two maintenance mows for the fields at Blue Heron Environmental Area, Stony Creek Ravine Nature Park, and Watershed Ridge Park, about 60 acres all together.
- Oakland County Cooperative Invasive Species Management Area (OC CISMA):** Oakland Township Parks and Recreation continued involvement in the OC CISMA, where Stewardship Manager Ben VanderWeide served on the committee planning the annual Invasive Species Summit. The CISMA funded all of the road right-of-way Phragmites treatment in Oakland Township in 2022 (13.7 linear miles of Phragmites). The CISMA also provided a grant for treatment of invasive shrubs in the wetlands around Cranberry Lake.
- Prescribed Burns:** We completed a prescribed burn at Charles Ilsley Park with a contractor in early November. We completed burns at Paint Creek Heritage Area—Wet Prairie and Nicholson Prairie with our staff and volunteer crew in late April.
- Invasive Shrub Mowing:** We completed invasive shrub mowing at Fox Nature Preserve, Marsh View Park, and Bear Creek Nature in 2022.
- Stewardship Blog:** The stewardship blog continued to thrive, with regular posts from Cam Mannino and posts from the seasonal technicians during the summer. We published 28 posts and had 13,188 visitors (+453), with 20,217 page views (+677). naturalareasnotebook.com
- Volunteer Program:** Volunteers contributed 809.5 hours in 2022. Volunteer workdays focused on invasive shrub control and seed collecting/cleaning. Volunteers also monitored nest boxes at Bear Creek Nature Park, Draper Twin Lake Park, Charles Ilsley Park, and the Paint Creek Trail; assisted with prescribed burns; cut invasive shrubs; and spread native seed.
- Education Events:** Stewardship talks included virtual presentations on Great Lakes hummingbirds by Allen Chartier, and pollinator conservation by Dr. Mary Jamieson. Popular weekly bird walks continued on Wednesday mornings.
- Phragmites Outreach Program:** We continued the Phragmites Outreach Program to help township residents get Phragmites treated on their property. We received about 30 requests for no-obligation cost estimates, and treated 23 properties with a contractor, PLM Lake and Land Management.
- Opening Fox Nature Preserve:** After closing on the property in early 2022, Parks & Recreation commissioners and staff dedicated many hours and meetings to collecting public input for trail layouts, boundary signage, and parking locations. The stewardship staff took the lead on installing boundary markers and signage and laying out the north phase trail routes.



Oak woodland at Lost Lake Nature Park on May 24, 2022.

STAFF & STEWARDSHIP COMMITTEE

2022

Natural Areas Stewardship Manager

Dr. Benjamin VanderWeide has led the Natural Areas Stewardship program since 2014. He coordinates ecological restoration in Oakland Township parks. He continued large-acreage prairie restoration, native landscaping, invasive shrub mowing and restoration of high-quality natural areas.

Seasonal Technicians

Camryn Brent joined our team as a land stewardship technician. She grew up in Bloomfield Hills and became interested in the natural sciences through her local nature center. She loves to go on hikes and identify the native species that make Michigan's natural communities. Since graduating from Michigan State University in May 2021 with a degree in Fisheries and Wildlife, she has worked on several invasive species field crews. She is ecstatic to be joining Oakland Township Parks and Recreation and grateful for this experience to further her understanding of what it means to steward the land and her community.

Emma Campbell joined our team as a land stewardship technician. She graduated in late 2022 with a bachelor's in Field Ecology and Environmental Studies from Ohio University. At Ohio University, Emma has conducted research which has identified hybrids of several species of clubmosses. Her education has fueled her obsession with all things wild. She is happiest in the outdoors and spends most of her free time hiking, backpacking, and kayaking. Emma is looking forward to having the opportunity to apply ecological principles while working with Oakland Township Parks & Recreation and to explore all that Michigan has to offer.

Cassie Stitzman joined our team as a land stewardship technician. She is currently pursuing her degree in Fisheries and Wildlife Management at Northern Michigan University. Within her first year at Northern, she discovered an interest in invasive species management and endangered species protection, and hopes to one day be part of this field of study. Cassie is excited to work with Oakland Township Parks and Recreation to contribute to the community and grow as a person. She is grateful for the opportunity and looks forward to meeting new people.

Stewardship Specialist

Grant Vander Laan continued as the Stewardship Specialist in 2022. He continued to take on additional responsibilities as his knowledge and experience grew. He graduated from Calvin College with a bachelor's degree in biology in 2019, and previously worked as a land management fellow for Pierce Cedar Creek Institute and as an Ecosystem Preserve Steward for Calvin College.

Stewardship Committee

The Charter Township of Oakland Parks and Recreation Commission directs natural areas stewardship work through their Stewardship Committee. Commissioners **Cathy Rooney (chair)**, **Dan Simon**, and **Judy Workings** continued service on the Stewardship Committee. Parks staff representatives included **Ben VanderWeide**, Natural Areas Stewardship Manager, and **Mindy Milos-Dale**, Parks Director.



2022 Stewardship Crew (L-R): Cassie Stitzman, Camryn Brent, Emma Campbell, Grant Vander Laan, Ben VanderWeide. Photo by Carol Kasprzak.

VOLUNTEERS & OUTREACH

2022

Thank You!

Volunteers are an important part of our natural areas stewardship program. In addition to the invaluable hours they give to protect and restore our wetlands, forests, and grasslands, volunteers learn ecological land management techniques that they can bring home. Forty-two volunteers contributed 809.5 hours in 2022! Thank you.

Our 2022 volunteers were Bonnie Abiko, Ian Ableson, Paul Borecki, Camryn Brent, Leslie Clark, Hollie Coleman, Kathleen Dougherty, Birgit Eckardt, Patrick Falle, Yachiyo Falle, Jim Fostey, George Hartsig, Louise Hartung, Mark Isken, David Klionsky, Alex Korb, Tom Korb, Dave Kramer, Holly MacMahon, Jan Mandernach, Cam Mannino, Emily Messick, Vinnie Morganti, Lisa Muenzenberger, Bill Pankratz, Laurie Peklo, Donna Perkins, Tyler Peterlin, Sue Peters, Doug Peterson, Jon Reed, Sue Reed, Dena Scher, Robert Schrader, Jenny Sigelko, Rita Ski, Jennifer Slocum, Keira Slocum, Tom Stoye, Katri Studtmann, Dawn Sun, Elizabeth Tanalski, Lily Tang, Ethan Teranes, Karen Troshynski-Thomas, Maryann Whitman, Rachel Winters, Lynn Witherell, Patricia Wojciechowski, Richard Wojciechowski, Bob Yager



Volunteers pull garlic mustard at Paint Creek Heritage Area—Wet Prairie on May 14, 2022.



Invasive shrub control workday at Bear Creek Nature Park on July 21, 2022.



Seed cleaning workday in the new heated building at Watershed Ridge Park on November 15, 2022.



Bird walk at Charles Ilsley Park on March 16, 2022.

VOLUNTEERS & OUTREACH

2022

Volunteer Workdays

In 2022 we hosted garlic mustard workdays, invasive shrub control workdays at Bear Creek Nature Park, native seed collecting, and native seed processing. We also continued equipping volunteers to work independently on projects that were appropriate for them including native landscaping maintenance, seed collecting/processing, and nest box monitoring. Dedicated volunteers George Hartsig and Jon Reed joined staff occasionally to assist with restoration projects.

Bird Walks

In 2022 we continued our weekly bird walks. We switched up the park rotation to include newer parks or those with new trail systems. We had a regular group of 8-15 birders throughout the year. These bird walks help us document the bird species using our parks so that we can better manage our natural areas for bird diversity. We've also attracted expert birders to our parks by building impressive species lists for many parks. Thanks to all of our birders for your help with these monitoring efforts. According to eBird, through the end of 2022 birders at these parks have documented **144 species** at Bear Creek Nature Park (+8), **127 species** at Draper Twin Lake Park (+1), **124 species** at Charles Ilsley Park (+2), **170 species** at Cranberry Lake Park (+12), **98 species** at Lost Lake Nature Park (no change), **153 species** at Stony Creek Ravine Nature Park (+6), and **80 species** at Watershed Ridge Park (+17).

Nest Box Monitoring

We completed our fourth year of the nest box monitoring program. Volunteers monitored 64 nest boxes at Bear Creek Nature Park, Draper Twin Lake Park, Charles Ilsley Park, and the Paint Creek Trail. Oakland Township Parks & Recreation continued as an official NestWatch Chapter with the Cornell Lab of Ornithology. We held the NestWatch training virtually in 2022. We had 56 nest attempts, and 35 of those produced at least one fledgling (62.5% nesting success rate). We had 158 fledglings from three species from those nest attempts: 50 Tree Swallow, 7 House Wren, and 114 Eastern Bluebird. Volunteers at Charles Ilsley Park and Draper Twin Lake Park enjoyed the more accessible nest box locations, after nest boxes were moved nearer the trails in late 2021. The kestrel boxes at Charles Ilsley Park and Stony Creek Ravine Nature Park built by and monitored by volunteer Tom Korb did not have any kestrel activity in 2022. Tom plans to modify when the box is open and hope the boxes attract kestrels in 2023.

Prescribed Fire Volunteer Crew

In our seventh season with volunteers participating in our in-house prescribed fire crew, we were able to complete the annual volunteer training in-person in February 2022 (see the newsletter announcement below). We then burned about 1 acre at Paint Creek Heritage Area—Wet Prairie and 1 acre at Nicholson Prairie on April 28, 2022. In December 2022 we burned brush piles at Paint Creek Heritage Area –Wet Prairie with help from volunteer George Hartsig.

Volunteer Crew Training - 9 am to 2:30 pm on Saturday, February 26, at the Paint Creek Cider Mill. If you are interested in joining our volunteer prescribed fire crew, join us for this training workshop. We will cover reasons for using prescribed fire, preparations for conducting a fire, necessary tools, roles of each burn crew member, and ignition patterns.



Prescribed fire crew training on February 26, 2022. Photo by Grant Vander Laan.



Prescribed fire at the Wet Prairie, April 28, 2022. Photo by Ian Ableson.

VOLUNTEERS & OUTREACH

2022

Educational Events

Stewardship hosted a variety of educational events in 2022. Check out the newsletter descriptions below.

Hummingbirds of the Great Lakes

*Allen Chartier
Project Director, Great Lakes HummerNet
Thursday, January 13, 6:30 pm VIRTUAL*



In Autumn 2001, the Great Lakes HummerNet was formed by Allen Chartier, primarily to learn more about hummingbirds in the Great Lakes region, focusing on Ruby-throated Hummingbirds in Michigan by enlisting the help of volunteer observers throughout the region. Data is gathered through observation as well as banding studies. Other species of hummingbird that occur as "vagrants" are also studied. This presentation will describe the research objectives of the project, tell you how you can participate, provide helpful hints on how to attract and feed hummingbirds, provide hummingbird gardening tips, and review what has been learned so far. It will also review the status of other species of hummingbird confirmed to occur in the region. Among his many interests, Allen Chartier is the Project Director for the Great Lakes Hummer Net, has been a contributing author for various projects with National Geographic, and in 2018 published a "Field Guide to Birds of Michigan."

Photo courtesy of Allen Chartier

Pollinator Conservation in Our Backyards and Local Parks

*Dr. Mary Jamieson, Assistant Professor, Oakland University
Thursday, February 13, 6:30 pm VIRTUAL*

Dr. Mary Jamieson will review some causes and consequences of pollinator decline and what's being done to help support pollinators in our local area. She'll highlight research, education, and community engagement efforts aimed at characterizing and protecting plant and pollinator diversity across Southeast Michigan. This talk will introduce research efforts to monitor pollinators in Oakland Township and Oakland County Parks and conclude by providing suggestions for how we all can contribute to pollinator conservation. Dr. Jamieson is a Biology Professor at Oakland University, where she studies plant and insect ecology. Her research group focuses on understanding ecological interactions between plants and their insect pollinators and herbivores in natural, managed and agricultural ecosystems. Work by Dr. Jamieson and students in her research group have examined how environmental change influences plants and insects – from species interactions to patterns of biodiversity. Through research, education, and community engagement, this work aims to promote and protect beneficial insects and the plants they depend on.

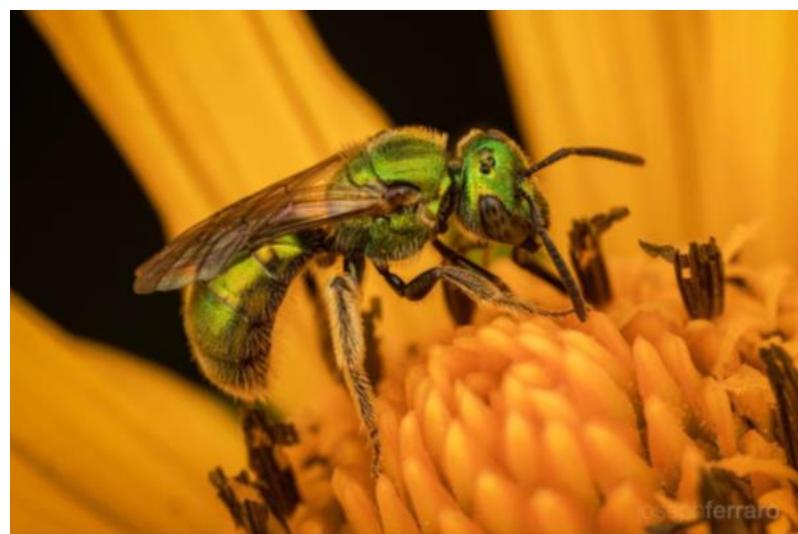


Photo courtesy of Joseph Ferrero

VOLUNTEERS & OUTREACH

2022



Bird walk at Bear Creek Nature Park on September 7, 2022. Fall 2022 was very dry, and the center pond at Bear Creek dried down to a puddle in the center.

VOLUNTEERS & OUTREACH

2022

Phragmites Outreach Program

We continued to work with Professional Lake and Land Management (PLM) to help township residents treat Phragmites on their land, under the Oakland County Cooperative Purchasing Program. We provided 20 no-obligation cost estimates to private property owners, and PLM treated Phragmites on 19 of those properties. **About 13.3 acres of Phragmites were treated!**

Prescribed Fire Outreach Program

Since natural areas cross property boundaries, we try to include willing park neighbors in our prescribed burn units when possible. In addition to the benefits of prescribed fire on the additional acreage, this approach often allows us to use natural fire breaks instead of installing breaks. This makes the burning process more efficient and safe. Participating property owners are responsible for any additional costs for burning on their property. In 2022 we weren't able to complete any burns with neighbors due to weather, but we planned for several future burns with partners.



Vernal pool monitoring field training at Cranberry Lake Park. April 7, 2022.

Oakland County CISMA

Oakland Township Parks and Recreation continued involvement in the Oakland County Cooperative Invasive Species Management Area. The CISMA fiduciary switched from Six Rivers Land Conservancy to Oakland County Parks. Ben VanderWeide, Natural Areas Stewardship Manager, attended the monthly OC CISMA meetings and continued to serve on various committees. Major initiatives included continued work on grants from the Michigan Invasive Species Grant Program, right-of-way Phragmites treatment and monitoring throughout Oakland County, European frogbit surveys, landowner outreach, and outreach events.

Michigan Vernal Pools Partnership

Oakland Township has over 100 potential vernal pools in its parks. These seasonal wetlands are biodiversity hotspots, serving as homes for unique creatures such as fingernail clams, fairy shrimp, and diving beetles, and breeding areas for salamanders, spring peepers, and other amphibians. The Michigan Vernal Pool Partnership held a virtual training series for vernal pool monitoring in 2022, rolling out a new app for field data collection. The Natural Areas Stewardship Manager hosted a field training day in April to help volunteers practice the monitoring protocols.

Natural Areas Stewardship Website

We continued to grow our stewardship website, the **Natural Areas Notebook** (oaklandnaturalareas.com). The blog contains information about stewardship events, volunteer opportunities, prescribed burning, grassland restoration, and regular posts on stewardship work or natural history observations. Cam Mannino continued her lead role in 2022, writing features about significant stewardship projects and nature observations. The stewardship crew also posted regular articles in the spring, summer, and fall. We published 28 posts and had 13,118 visitors (+453 from 2021), with 20,217 page views (a slight increase from 2021).

Park Stewards

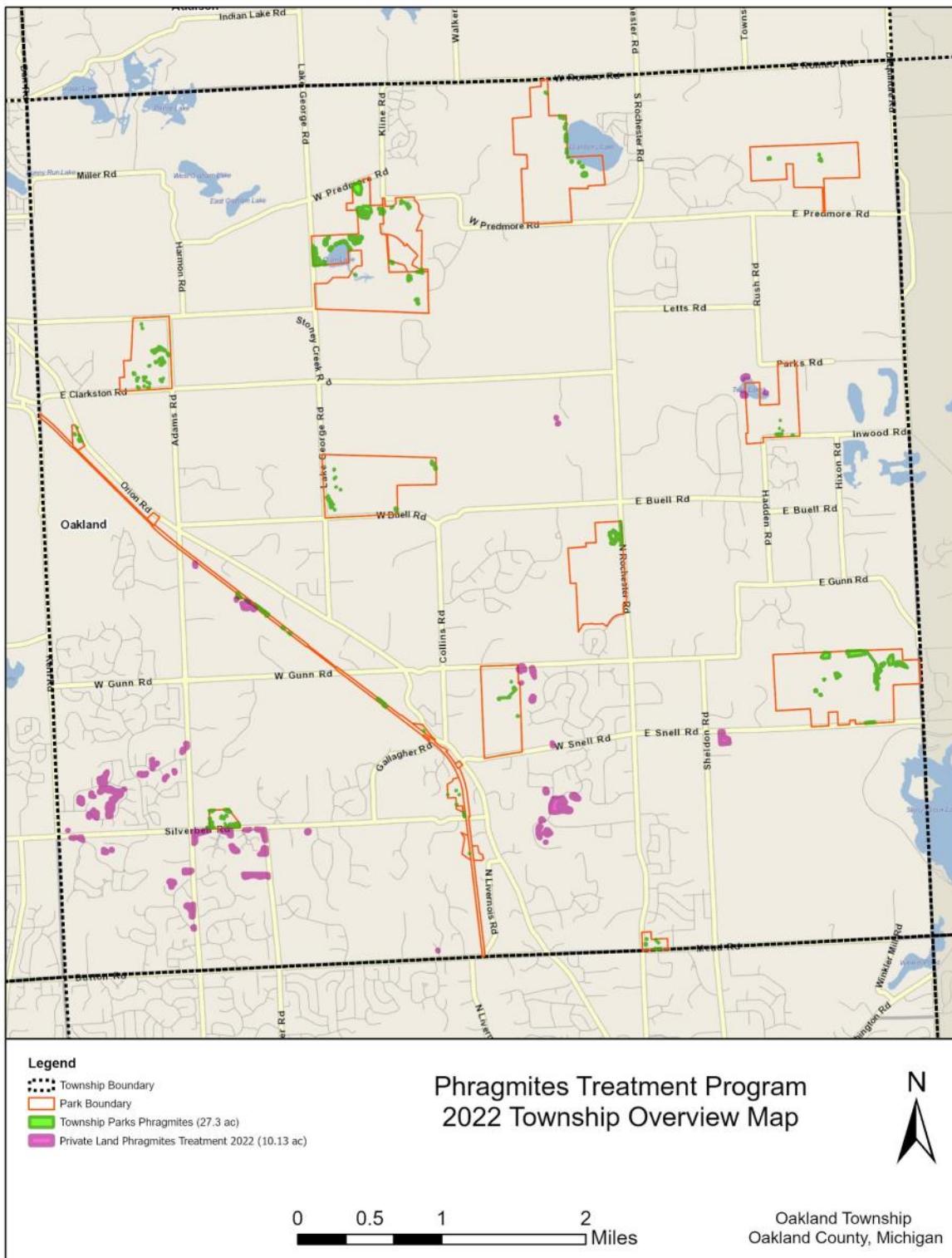
A few special volunteers help us with many aspects of our natural areas stewardship work on a regular basis.

- **Cam Mannino** wrote nearly all of the features on the blog this year, gathered and cleaned native seed, monitored vernal pools, and monitored nest boxes at Charles Ilsley Park.
- **George Hartsig** joined our volunteer team, helping with everything. George developed a special interest in seed collecting and cleaning. He increased our seed collecting throughout the season, and improved seed cleaning with time-saving innovations (yay for leaf vacuums!).
- **Jon Reed** lent a helping hand wherever needed in 2022. Jon helped us with invasive shrub clearing and pile burning at Paint Creek Heritage Area—Wet Prairie, seed cleaning, and oak woodland restoration.

PHRAGMITES TREATMENT SUMMARY

2022

This map summarizes all known Phragmites treatment in Oakland Township in 2022. Rights-of-way along major roads were also treated by the Oakland County CISMA using funds from the renewed Oakland County Parks millage (not included on this map). Private lands were treated under the Phragmites Outreach Program. Township park property was treated by the Natural Areas Stewardship team.



THE YEAR IN PHOTOS

2022



Stewardship Technicians Camryn, Emma, and Cassie (L-R) spread seed from the Pollinator Partnership at Blue Heron Environmental Area on May 12, 2022.



Construction began on a new pole barn at Water-shed Ridge Park that will be shared by township staff. Sept 16, 2022.



A new shared track loader with a mower deck was purchased by the township, increasing our capacity to control invasive shrubs. December 10, 2022.



Cassie and Camryn basking in sunshine and golden ragwort at the Wet Prairie on May 17, 2022.



Ben taught the Michigan Wetlands Association General Wetland Plant Identification class in August 2022.



George Hartsig and Grant ignite invasive shrub piles at Paint Creek Heritage Area—Wet Prairie on Dec 20, 2022.



Baby Blanding's turtle at Paint Creek Heritage Area – Fen on August 22, 2022.



Bear corn (*Conopholis americana*) at Charles Ilsley Park on June 9, 2022.



Canadian owllet (*Calyptra canadensis*) caterpillar on tall meadowrue at Cranberry Lake Park, May 25, 2022.



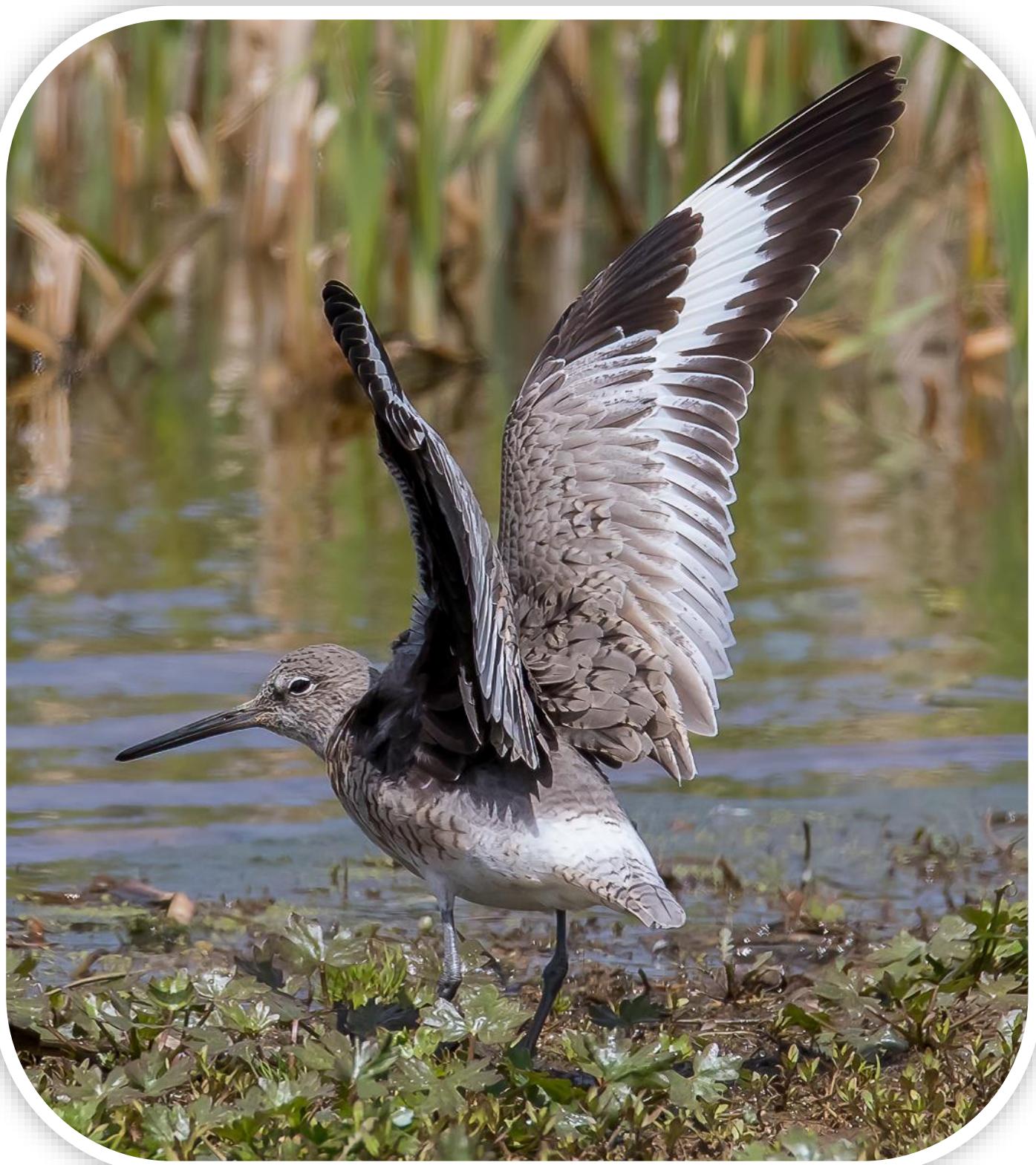
An oak “wolf” tree at Cranberry Lake Park, indicating a potential area for restoration work. May 27, 2022.



Bolboschoenus fluviatilis* and *Bidens trichosperma in the moat around the bog at Fox Nature Preserve on September 13, 2022.



Bladdernut (*Staphylea trifolia*) at Stony Creek Ravine Nature Park on May 20, 2022.



Willet (*Tringa semipalmata*) at the wetland restoration in the north field at Blue Heron Environmental Area on May 4, 2022. Ben VanderWeide found the bird, and Joan and Bob Bonin came over quickly to help document it. Photo by Joan Bonin.

PART II:

PARK STEWARDSHIP

SUMMARIES

2022

Part II contains summaries for each township park and township-managed property. Look for five elements in each summary:

- Stewardship Tasks Completed
- Monitoring Tasks—Completed and Upcoming
- Future Stewardship Recommendations
- Photos from 2022
- Stewardship Summary Map.

* Note that invasive species points shown are **all mapped locations from all years**. Depending on the survey effort for each species, this may not reflect the actual distribution in the parks. High priority species (e.g. Phragmites, swallow-wort, crown vetch, garlic mustard) are mapped more completely than other species.

BEAR CREEK NATURE PARK

2022

Stewardship Tasks

1. Completed spring maintenance on native plant beds near the Snell Road entrance.
2. Mapped and pulled garlic mustard throughout the park.
3. Swallow-wort and crown vetch—treated all known patches in the park. Began documenting *Lotus corniculatus* and other currently minor invasives for future treatment.
4. Northeast marsh: Burned brush piles from 2021 in January 2022. Spot treated shrubs in prior year work areas. Cut and treated glossy buckthorn and other invasive woody plants on the south and west sides of Bear Marsh in the summer and fall.
5. Scanned about half of the fields to spot treat invasive woody shrubs seedlings and re-sprouts.
6. Phragmites: Treated all known patches of Phragmites.
7. Prescribed Fire: No prescribed burns were completed in 2022.
8. Seed collecting: collected buttonbush from Bear Creek Marsh.
9. Seed planting: planted bloodroot seed north of the center pond (source Paint Creek Trail)
10. Invasive shrub mowing: Contractor mowed three areas along the trails near the Snell Road parking lot in December 2022. Stewardship staff spread native graminoid seed mix in the mowed areas.

Quick Stats

- Purchased 1977
- 107 acres
- Oak forest with vernal pools in north half of park, fields and ponds in south half of park.
- 39.49 acre conservation easement held by Six Rivers Land Conservancy on northern third of the park.

Monitoring

- Bird walks on 1st Wednesday of the month. 143 bird species observed in park since 2014 (+7 from 2021).
- Continued nest box monitoring through NestWatch. Kathleen Dougherty completed nest box monitoring. We had 11 nest attempts, with 24 eastern bluebirds and 9 tree swallows successfully fledging.
- Completed scheduled photo monitoring in 2022. Scheduled for monitoring in 2024.
- Began botanical inventory update in 2022, with help from seasonal staff.
- Upcoming monitoring: Complete botanical inventory in 2023. Complete photo monitoring in 2024.

Future Stewardship Tasks

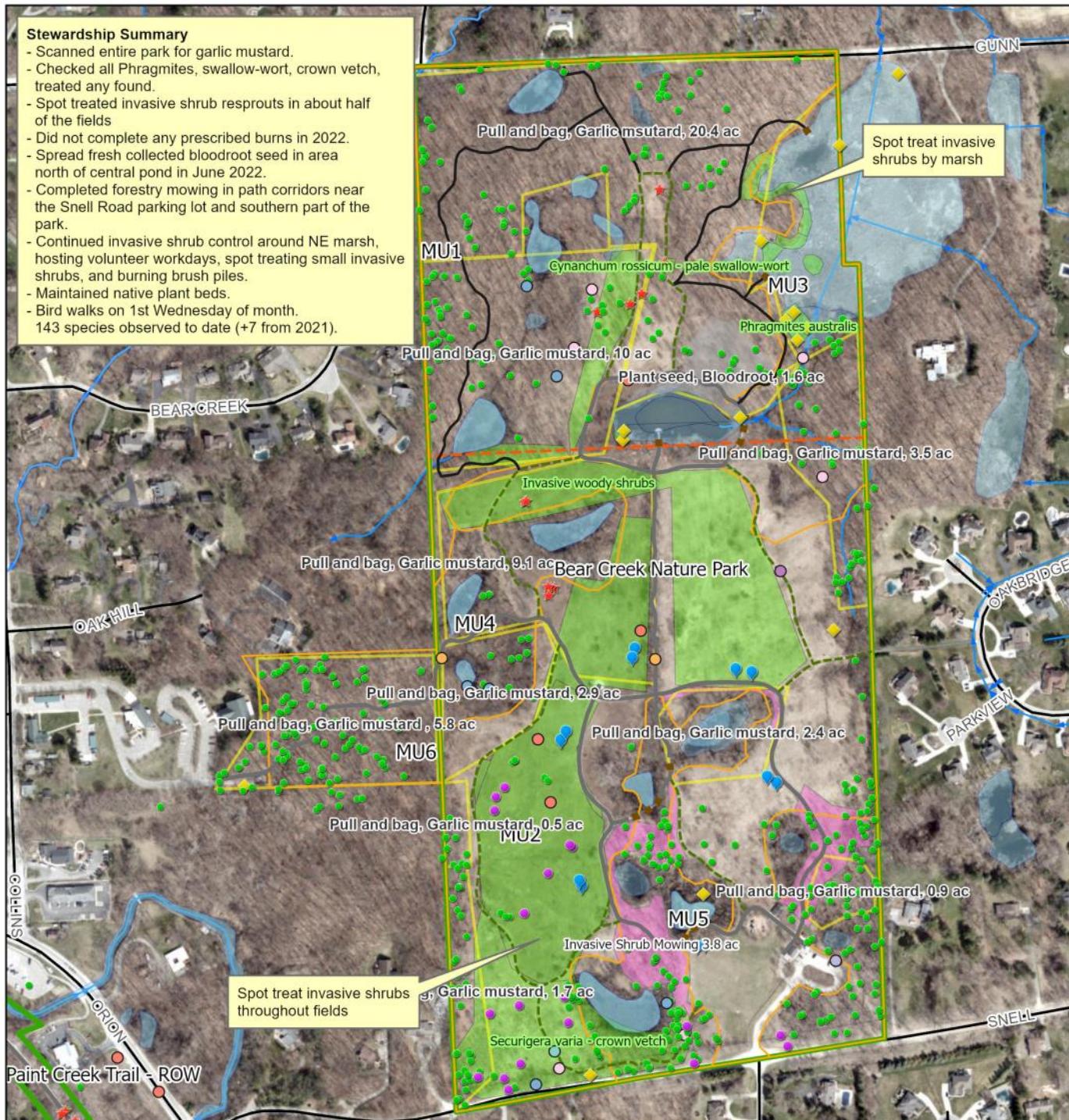
- Priority invasive plants: treat teasel, swallow-wort, crown vetch, birdfoot trefoil, Phragmites, garlic mustard annually
- Southern Park and Fields: scan every 1-3 years to spot treat invasive shrubs.
 - Increase diversity in fields through frequent prescribed burn and interseeding native plants.
 - Continue invasive shrub control around ponds and other remaining thickets
 - Continue to establish savanna trees by phasing out box elders and planting oaks.
 - Thin trees around large white oak near the central pond and farm lane walnut hedgerow.
- Northern Oak Woodland and Marsh
 - Continue annual invasive woody plant control, particularly around Bear Marsh.
 - Continue to use prescribed fire to discourage fire-sensitive tree species and promote oak regeneration in the northern forest.
 - Begin thinning fire sensitive tree species to promote understory recovery.
 - High deer densities are degrading the northern forest. Deer control is needed. Consider exclosures to assess the impact of deer browse and preserve sensitive plant species.



Staff and volunteers show off a big brush pile by the north marsh on November 3, 2022.



Duckweed and watermeal on the playground pond on August 17, 2022.



BLUE HERON ENVIRONMENTAL AREA

2022

Stewardship Task Completed

1. Garlic mustard—mapped and pulled garlic mustard throughout the park.
2. Phragmites: checked all known points and treated as needed.
3. Japanese Knotweed: None by entrance, very low density in forest. Did not treat in 2022.
4. USFWS wetland and prairie restoration projects continued. Planted the north field area and wetland in early 2022. USFWS broadcast seeded upland areas with a UTV in early May. Stewardship staff seeded wetland areas by hand broadcasting (Feb and May). Contractor completed two maintenance mows (July and Sept).
5. Did not complete teasel management in south field by Deer Point Drive in 2022.

Monitoring

- 90 bird species observed in the park since 2014 (+12 from 2021).
- Monitored boundaries for dumping, hunting blinds, and encroachment.
- Photo monitoring completed in 2021 and scheduled for 2023.
- Complete floristic inventory in 2023, according to the schedule.
- Monitoring potential vernal pools to collect baseline information and confirm vernal pool status.

Future Stewardship Tasks

- Continue to survey and pull garlic mustard in woodlands.
- Continue to monitor and aggressively treat Phragmites and Japanese knotweed.
- Begin more aggressive treatment of teasel, crown vetch and other species that may spread into natural areas and prairie plantings.
- Invasive woody plants in forests should be surveyed and treated annually. The patches with high-quality plant species, and any mature invasive shrubs should be targeted: the southern border, around edges of wetland, and around edges of fields. Bittersweet is currently low density and should be treated aggressively when found.
- Continue to treat invasive shrubs in forestry mowing areas and along field edges. Sweep every two years for invasive shrubs.
- Continue to implement wetland and upland restoration plans with USFWS biologist to reduce runoff from farm fields. Restore fields to native vegetation if farming ceases, per conservation easement document.
- High deer densities are degrading the forest. Deer control is needed. Finish deer exclosure installation and use to assess the impact of deer browse and preserve sensitive plant species.
- Clean up extensive farm dumps.



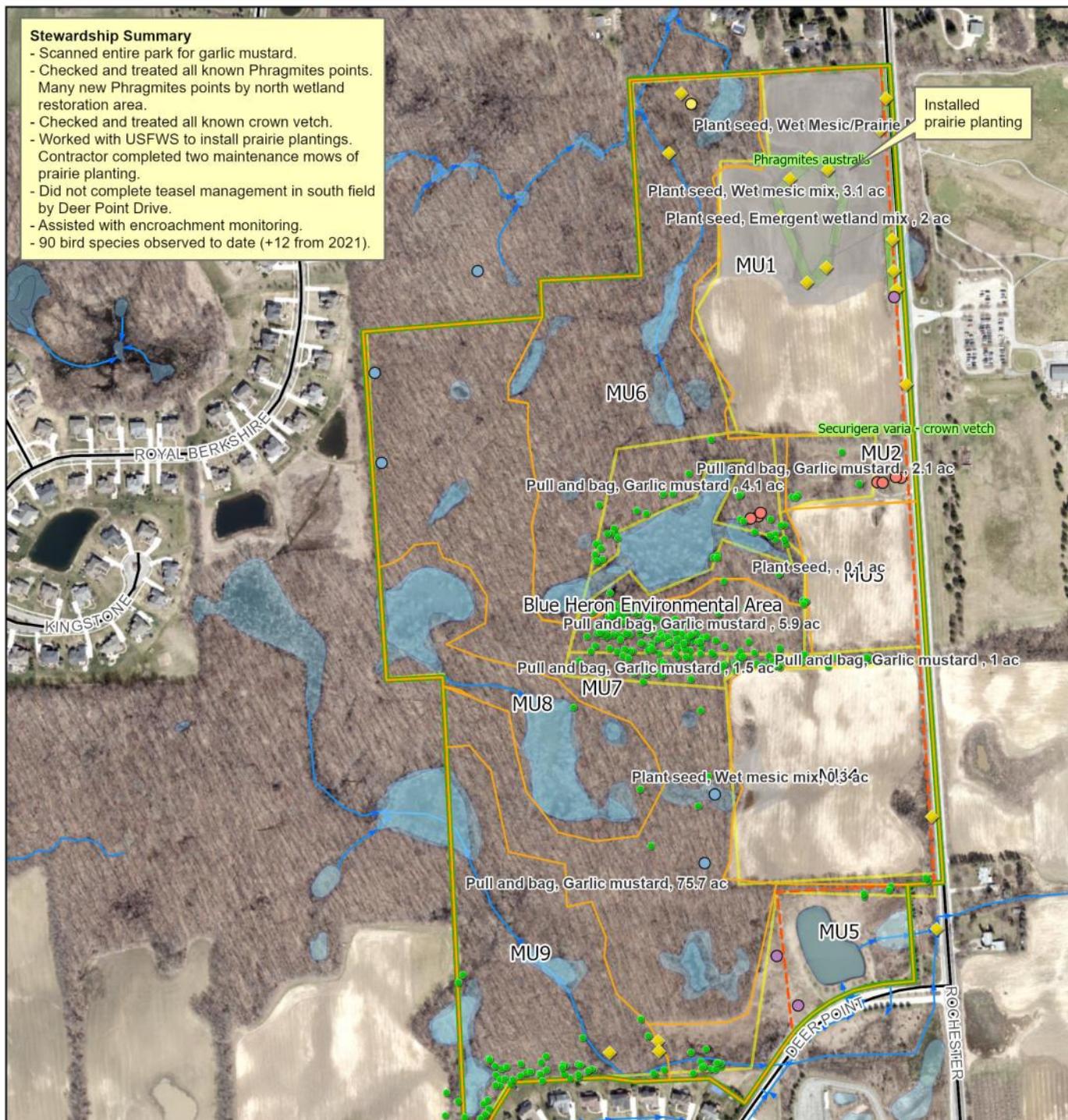
USFWS biologists broadcast seed the prairie planting in the north field on May 9, 2022. Contractor issues prevented dormant season planting.

Quick Stats

- 139 acres
- Contains a mix of farm fields, upland hardwood forest, swamp, and shrubby wetlands.
- Designated for protection of special high quality natural features, which included a great blue heron rookery until 2007.
- 135.65 acre conservation easement held by Six Rivers Land Conservancy cover the entire park except a few acres in southeast corner.



Emma plants plugs from a small Pollinator Partnership grant around the wetland restoration in the north field on May 27, 2022.



Blue Heron Environmental Area Stewardship Summary 2022



0 250 500 1,000
Feet



CHARLES ILSLEY PARK

2022

Stewardship Tasks Completed

1. Garlic Mustard: Scanned the northeast and northwest forests.
2. Swallow-wort: Checked old swallow-wort locations and treated as necessary.
3. Crown vetch: Checked all crown vetch locations and treated as necessary.
4. Phragmites: Checked and treated patches throughout the park.
5. Prairie Restoration: Collected seed in prairie plantings. Scanned plantings for invasive shrubs. Completed a burn of all the prairie plantings and the edge of the northeast woodland on November 8, 2022. Fall had been very dry to that point, so many large wood fuels smoldered and dead stumps burned down into the roots, making mop up a long process. However, these conditions helped with removal of large woody debris in the woodland and woodland edge, facilitating future burns.

Monitoring

- 124 bird species observed in the park since 2014 (+2 from 2021).
- Volunteers monitored nest boxes through the nesting season. 7 Tree Swallow nest attempts, 29 eggs laid, and 25 fledglings. 14 Eastern Bluebird nest attempts, 46 eggs laid, 44 fledglings. Continued adjusting box locations and setups to facilitate monitoring. Kestrel nest box installed in fall 2021 was visited by kestrels, but no nesting observed in 2022.
- Completed photo monitoring in 2021. Moved to every two years, so next scheduled for 2023.
- Completed botanical inventory of part of the park in 2021, except western wetlands (vernal pools, emergent marsh, southern hardwood swamp) and prairie fields. Complete inventory then update the park management plan, incorporating results of botanical inventory and monitoring.
- Potential site for installation of deer exclosures to monitor the effects of deer browse on prairie plantings.

Future Stewardship Tasks

- Continue to survey and control garlic mustard, Phragmites, crown vetch, teasel, and swallow-wort. Work with neighbor to implement swallow-wort control efforts on adjacent land.
- Continue maintenance of prairie plantings, including targeted mowing to reduce Queen Anne's lace/spotted knapweed/Canada goldenrod abundance, prescribed fire, and spot treating invasive plants. Continue to thin trees in hedgerows between fields to connect grassland habitat. Remove old fencing. Interseed to boost diversity in areas that did not establish well.
- Use prescribed fire to maintain prairie plantings and woodlands.
- Invasive woody plants in northeast and northwest forests should be targeted for initial control as time allows, then sweep biannually. Oriental bittersweet should be treated throughout the park.
- Girdle red maple and other fire sensitive trees in northeast woodland to promote oak recruitment, targeting areas with remaining native groundcover. Large oak trees were logged by the previous landowner, and now dense pole-sized maple trees have established.
- Document and clean up farm dumps, including old car, manure spreader, bales of fencing, bottles, etc.



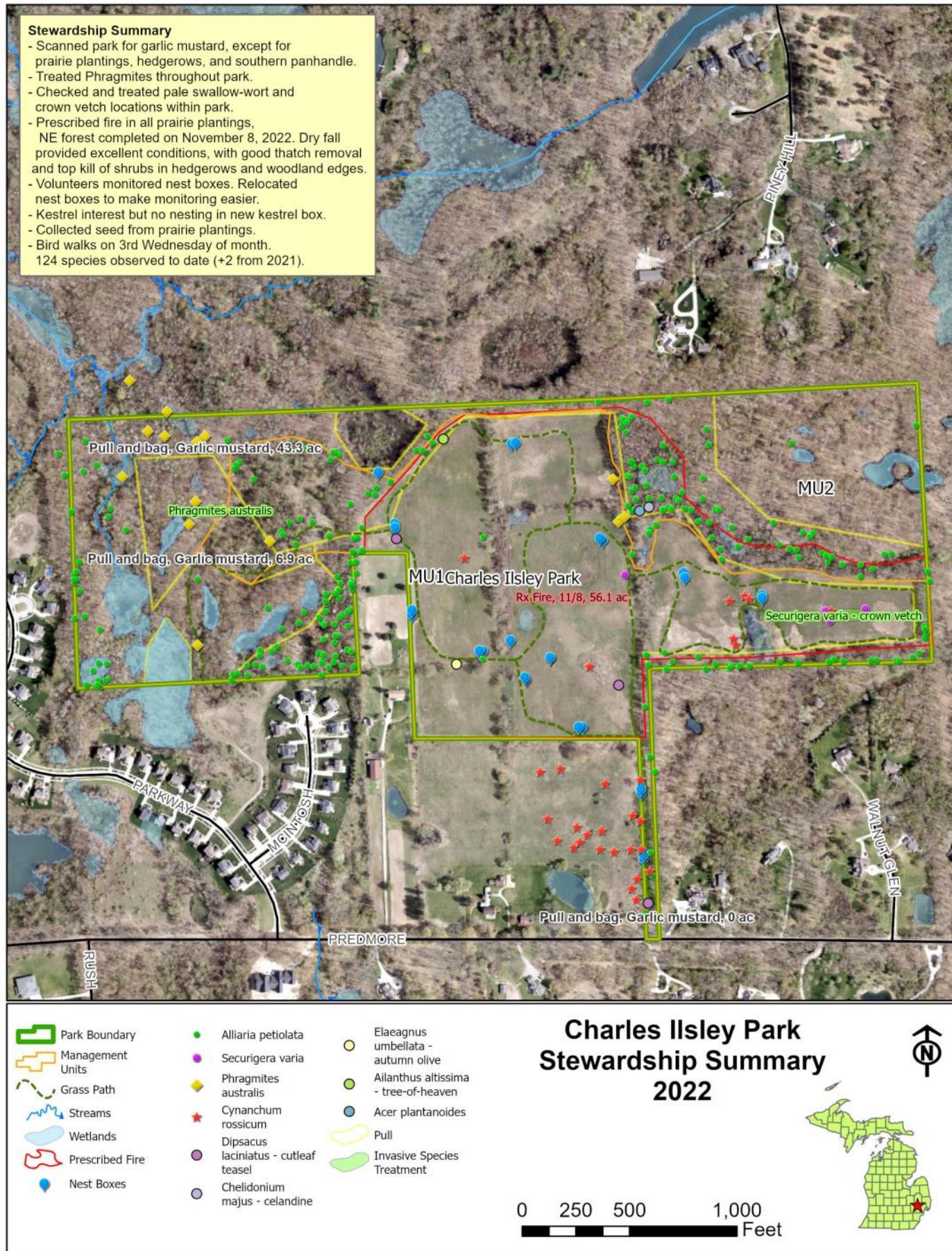
The final stages of the prescribed burn on November 8, 2021. Active burning ceased quickly after the sun went below the horizon.



Dasistoma macrophylla was seeded on the edges of the prairie plantings. This was a problem with the supplier who was supposed to provide *Aureolaria flava* for the mix, but made an error.

Quick Stats

- 120 acres total. 83 acres donated in 1990, 37 acres donated in 2005.
- Farm fields in central area have been planted with native prairie species.
- Upland and lowland hardwood forests cover the rest of the park.



CRANBERRY LAKE PARK

2022

Stewardship Tasks Completed

1. Garlic Mustard: Mapped and pulled garlic mustard throughout the park. We did not work in heavily infested areas near the historic district, or southern old field areas.
2. Phragmites: Checked all known locations and treated as needed.
3. Japanese Knotweed: Checked known location near north entrance. No new growth observed.
4. Swallow-wort: Checked and treated all known locations.
5. Crown vetch: Checked and treated all known locations.
6. Completed first-year follow-up in invasive shrub mowing areas: spread native graminoid mix in February and March, then spot treated resprouts in the summer.
7. Invasive shrubs in the wetlands near Cranberry Lake were treated by Plantwise through an Oakland County CISMA/Parks community grant.

Monitoring

- 170 bird species have been documented in the park using eBird (+12 from 2021).
- Completed floristic inventory for the park in 2021 as scheduled, including inventory on the 22 acre parcel on the west side that was not included in the 2001 inventory. Documented 313 plant species, with 244 native. Total FQA = 56.6, and mean C = 3.2.
- Update management plan, incorporating results of botanical inventory and monitoring.
- Photo monitoring was completed in 2022, and is planned for 2024.
- Little beaver activity observed near the trail at Cranberry Lake.
- Hosted Vernal Pool Patrol monitoring field training at Cranberry Lake Park in April 2022.

Future Stewardship Tasks

- Continue to survey and treat garlic mustard, Phragmites, Japanese knotweed, crown vetch, swallow-wort.
- Scan high quality wetlands around Cranberry Lake and forest in the northwest corner for invasive woody shrubs biannually. Glossy buckthorn and bittersweet are increasing in wetlands by the lake.
- Remove Scotch pines (*Pinus sylvestris*) in fields by girdling or cutting off below the lowest branch.
- Remove invasive woody vegetation in old fields. A combination of prescribed fire, herbicide, and mowing should be used as appropriate.
- Oriental bittersweet should be treated throughout the park, starting in highest quality areas.
- Northern fields and forest have characteristics of degraded oak woodland (including wet area with bur oak wolf trees), including some oak savanna indicator species and wolf trees. Begin control of invasive woody shrubs in this area. Also begin thinning fire-sensitive trees (red maple, elm, etc.) from the understory to promote recruitment of oaks.
- Continue to use prescribed fire to manage natural areas.
- Clean up extensive farm dumps throughout the park.



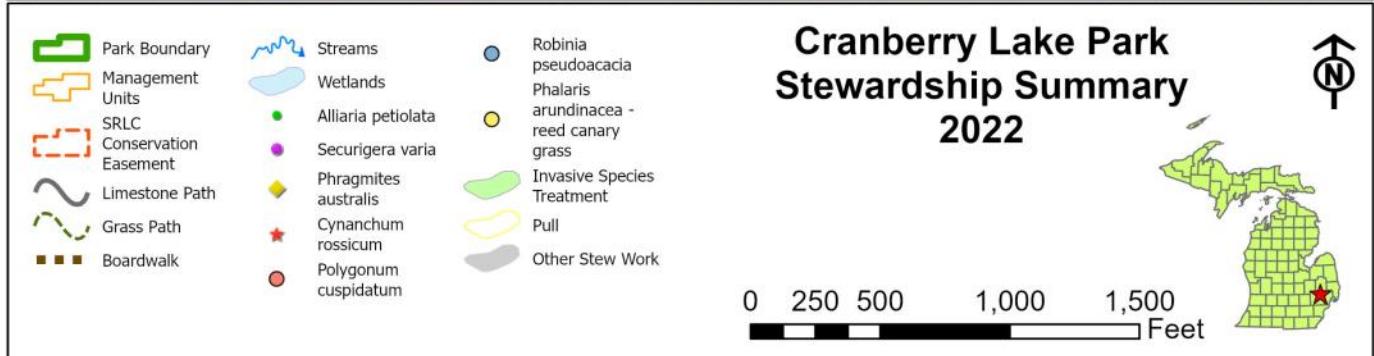
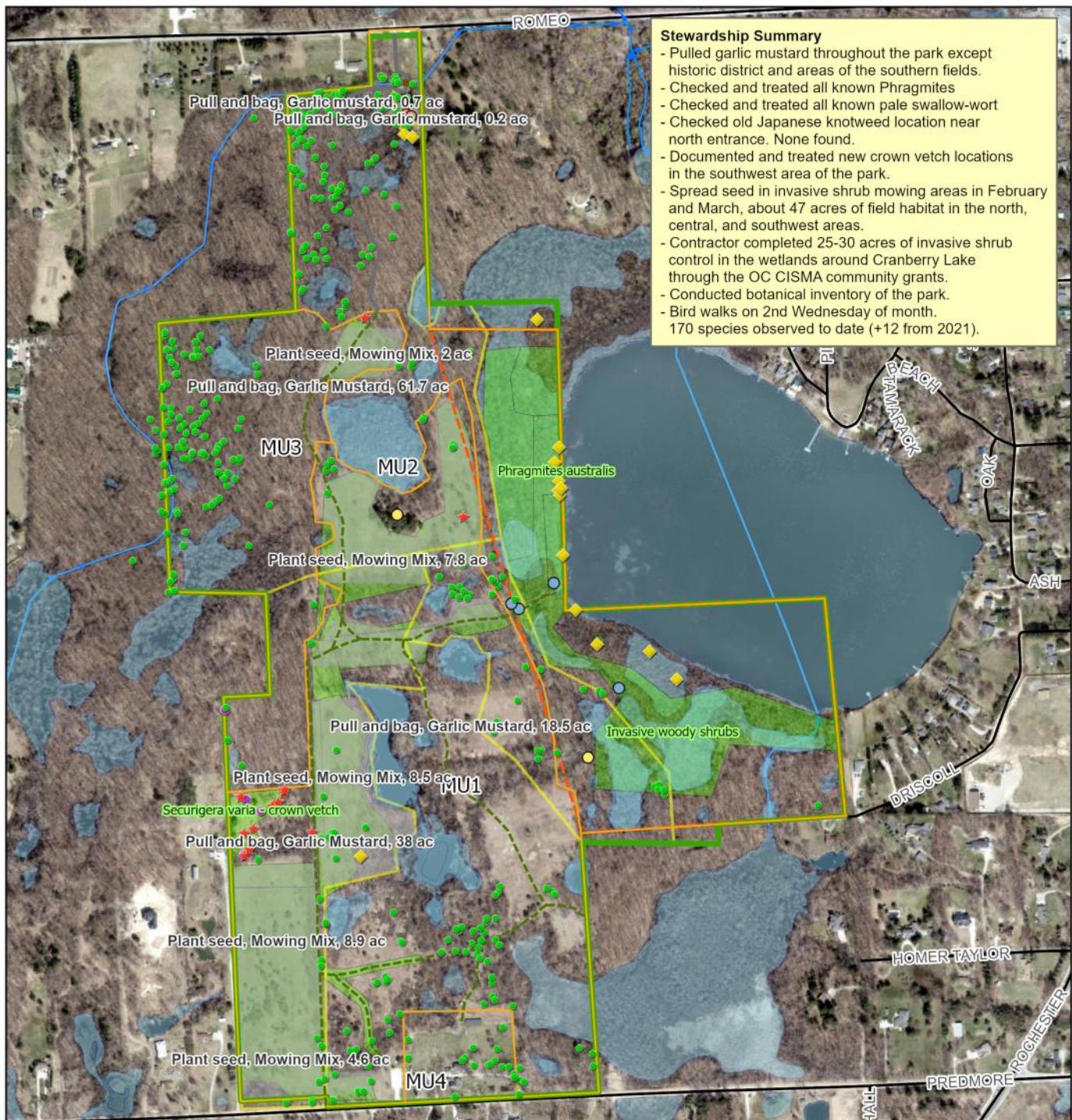
Marsh bellflower (*Campanula aparinoides*) and leatherleaf (*Chamaedaphne calyculata*) in the wetlands near Cranberry Lake on September 7, 2022.



Old farm dump in the northwest corner of the park that needs to be cleaned up. May 31, 2022.

Quick Stats

- 213 acres
- Contains a mix of fields, upland hardwood forest, swamp, bog, and shrubby wetlands.
- 52.67 acre conservation easement held by Six Rivers Land Conservancy on wetland area around Cranberry Lake.



DRAPER TWIN LAKE PARK

2022

Stewardship Tasks Completed

1. Swallow-wort: Checked and treated known patches.
2. Crown vetch: Checked and treated known patches.
3. Phragmites: Checked and treated all known patches.
4. Woody Vegetation Control:
 - Treated invasive shrubs in west old field that were missed in 2021.
 - Spread locally collected native forb mix in west forestry mowing area.
5. Contractor treated curly-leaf pondweed near the public dock.

Monitoring

- Bird walks on 4th Wednesdays. 127 bird species documented to date in eBird (+1 since 2021).
- Volunteers monitored nest boxes as part of NestWatch program through the nesting season (5th season). Tree Swallows had 5 nest attempts, 19 eggs laid, and 17 young fledge. Eastern Bluebirds had 8 nest attempts, 31 eggs laid, and 31 young fledge.
- Cooperative Lakes Monitoring program for Twin Lake East continued.
- Photo monitoring was completed in 2022. Next scheduled for 2024.
- Beaver activity was observed in the center wetland, with a dam constructed just south of Twin Lake.
- Update the park management plan, incorporating 2020 botanical inventory and other monitoring.
- Blanding's Turtle observed near the outlet of the east kettle wetland on November 8, 2022.

Quick Stats

- 90 acres
- Contains a mix of lakes, streams, fields, upland hardwood forest, wet meadow, a boggy kettle wetland, and shrubby wetlands.
- 20 acre field in northwest corner planted to native prairie species in fall 2015.

Future Stewardship Tasks

- Control invasive woody plants in central and eastern marsh (prioritize east marsh perimeter). Botanical inventory in 2020 documented fen pockets in central wetland.
- Hand wick cattails in the prairie fen areas.
- Conduct targeted mowing of prairie restoration areas to control spotted knapweed, sweet clover, and other species as needed. Control noxious weed species (spotted knapweed, crown vetch, etc.).
- Use prescribed fire to maintain the prairie restoration and control invasive shrubs in fields.
- Spot treat tree-of-heaven in east forestry mowing area to control the large clone.
- Interseed old fields and prairie planting to boost native plant diversity.
- Oriental bittersweet should be treated throughout the park as resources allow (prioritize east side).
- Continue to document and clean up farm dumps.



High water behind the beaver dam on McClure Drain, just south of Twin Lakes on September 14, 2022.



Ohio goldenrod (*Solidago ohioensis*) in a prairie fen area of the center wetland on September 14, 2022.



FOX NATURE PRESERVE

Stewardship Tasks Completed

2022

1. Garlic Mustard: Mapped and pulled garlic mustard in high-quality woodlands.
2. Checked and treated all known crown vetch, swallow-wort, teasel, and wild parsnip.
3. Phragmites: treated patches documented through 2021, but continued to find new late in the season and could not complete all before the weather got too cold.
4. Treated bittersweet and other invasive shrubs in the bog and the woodland on the northwest corner of Clam Lake.
5. Began canopy thinning by removing small diameter red maples in the woodland around the bog and northwest of Clam Lake. Thinning work paused due to resident concerns.
6. Completed invasive shrub mowing work in about 40 acres of the south old fields. Spread graminoid seed mix, but follow-up treatment work not completed due to resident concerns.
7. Boundary staking and signage, Phase I. Installed u-channel posts with park property signs along all property boundaries except shared boundary with Lost Lake Nature Park, roads edges, the south boundary, and boundaries north and south of Clam Lake. Installed information and trail signage within the park.

Monitoring

- 46 bird species observed to date. In future years rotate bird walks to this park to document species.
- Photo monitoring was completed for the first time in 2021, and is scheduled for 2023.
- Work with Michigan Natural Features Inventory to complete a management plan for the park.
- High deer densities are degrading the forest. Deer control is needed. Exclosures could be used to assess deer browse and preserve sensitive plant species.
- Document light levels under the canopy, and repeat occasionally to document effects of canopy thinning.
- Survey for eastern massasauga rattlesnake and other rare/sensitive insects and wildlife.
- Begin monitoring Clam Lake, Green Lake, and Tamarack Lake through the Cooperative Lakes Monitoring Program as resources allow.

Future Stewardship Tasks

- Implement outreach to educate and build consensus about future management work.
- Implement management of high priority natural communities with all appropriate methods, and begin restoration of surrounding areas to native plant species as buffer areas.
- Continue to survey and treat garlic mustard, crown vetch, oriental bittersweet, Phragmites, swallow-wort, wild parsnip, and other high priority invasive plants.
- Restore oak barrens/savanna/woodland using prescribed fire, canopy thinning, invasive species control, and additions of local-genotype seed.
- Assess threats to hydrology (failing culvert) and water quality (runoff at Lake George Rd into prairie fen and creek) and begin to implement restoration measures.



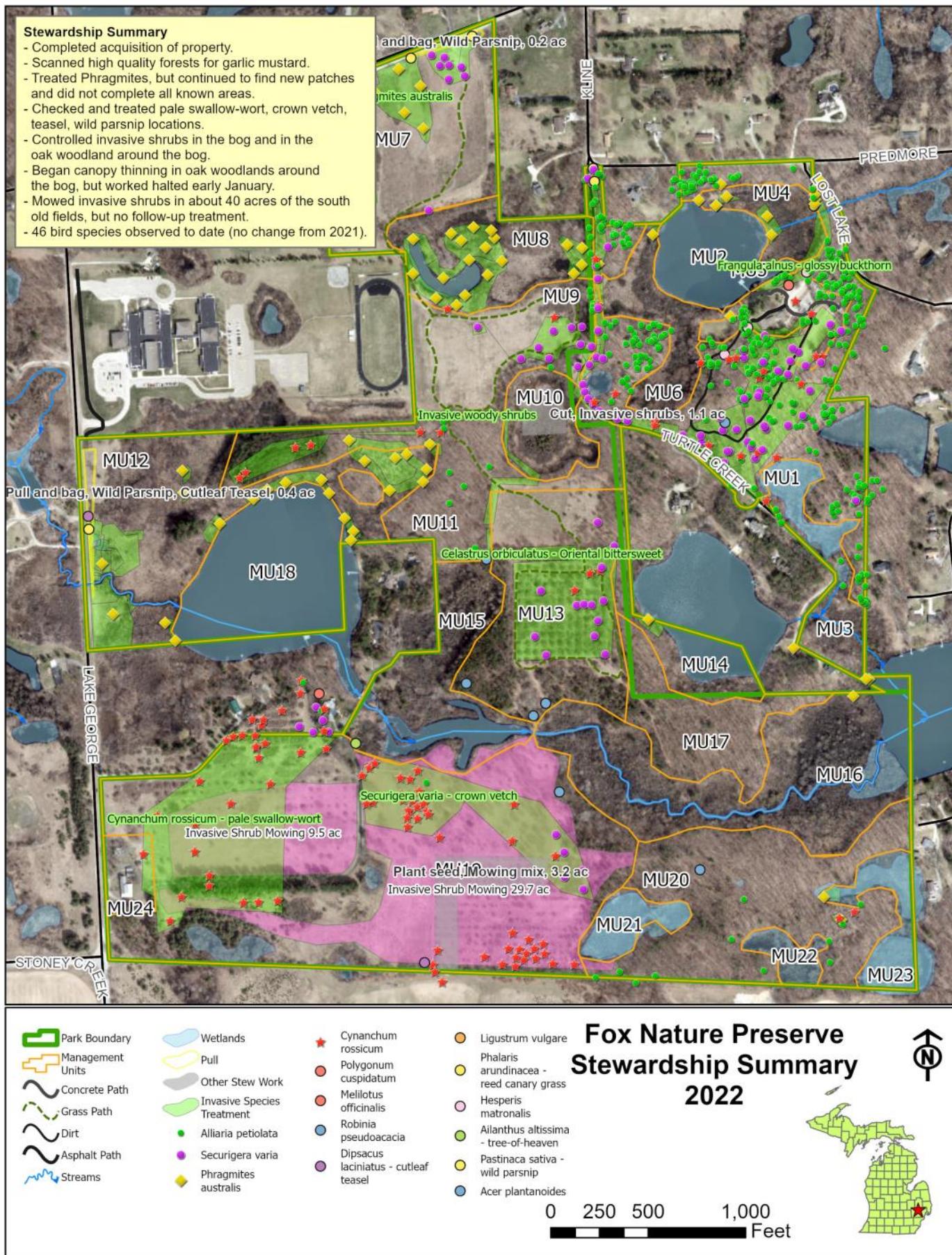
Sediment-laden runoff from Lake George Rd runs into the prairie fen north of the West Branch of Stony Creek. August 22, 2022.



Sediment-laden runoff from Lake George Rd runs into the West Branch of Stony Creek. February 16, 2022.

Quick Stats

- 234 ac, acquired in 2022.
- Contains a mix of lakes, streams, fields, oak woodlands, emergent wetlands, shrubby wetland, bog, fen, and vernal pools.
- Most upland areas farmed for decades, including row crops and orchards.
- Hydrology along the West Branch of Stony Creek affected by road runoff and historical alterations (dredging, water control structures, etc.)



GALLAGHER CREEK PARK

2022

Stewardship Tasks Completed

2. Phragmites: Surveyed and treated Phragmites patches throughout the park.
3. Cutleaf Teasel and Wild Parsnip: Hand dug and spot treated throughout the park.
4. Hand pulled and foliar sprayed seedling black alder found in upland areas.
5. Checked Japanese knotweed patch at stream crossing and found no new growth.
6. Crown vetch: Treated crown vetch throughout upland areas in June.
7. Maintained native plant landscaping that was installed in 2019. Weeded approximately every month, trimmed around the outside edge of logs. Crown vetch continues to pop up in the beds.
8. Collected native plant seed from both the natural areas and native garden beds.

Monitoring

- 78 bird species observed in the park since 2014 (+1 from 2021).
- Photo monitoring was completed in 2022. Next scheduled for 2024.
- Complete next floristic inventory in 2024, according to schedule. The original floristic inventory was in 2014.
- Monitor areas that were disturbed by construction of playground and pathways for invasive plants.
- Consider water quality monitoring for Gallagher Creek.
- Continue to check Culver's root for signs for borer moth (*Papaipema sciata*) activity. None observed to date, but ongoing wilting of plants during the growing season may indicate their presence.

Quick Stats

- 15 acres donated in 2000.
- Natural areas include Gallagher Creek, wet meadow, emergent marsh, old fields.
- Upland old fields planted to native species in 2016 and 2018
- Playground installed in 2018, native landscaping installed in 2019.
- EGLE conservation easements on wetlands.

Future Stewardship Tasks

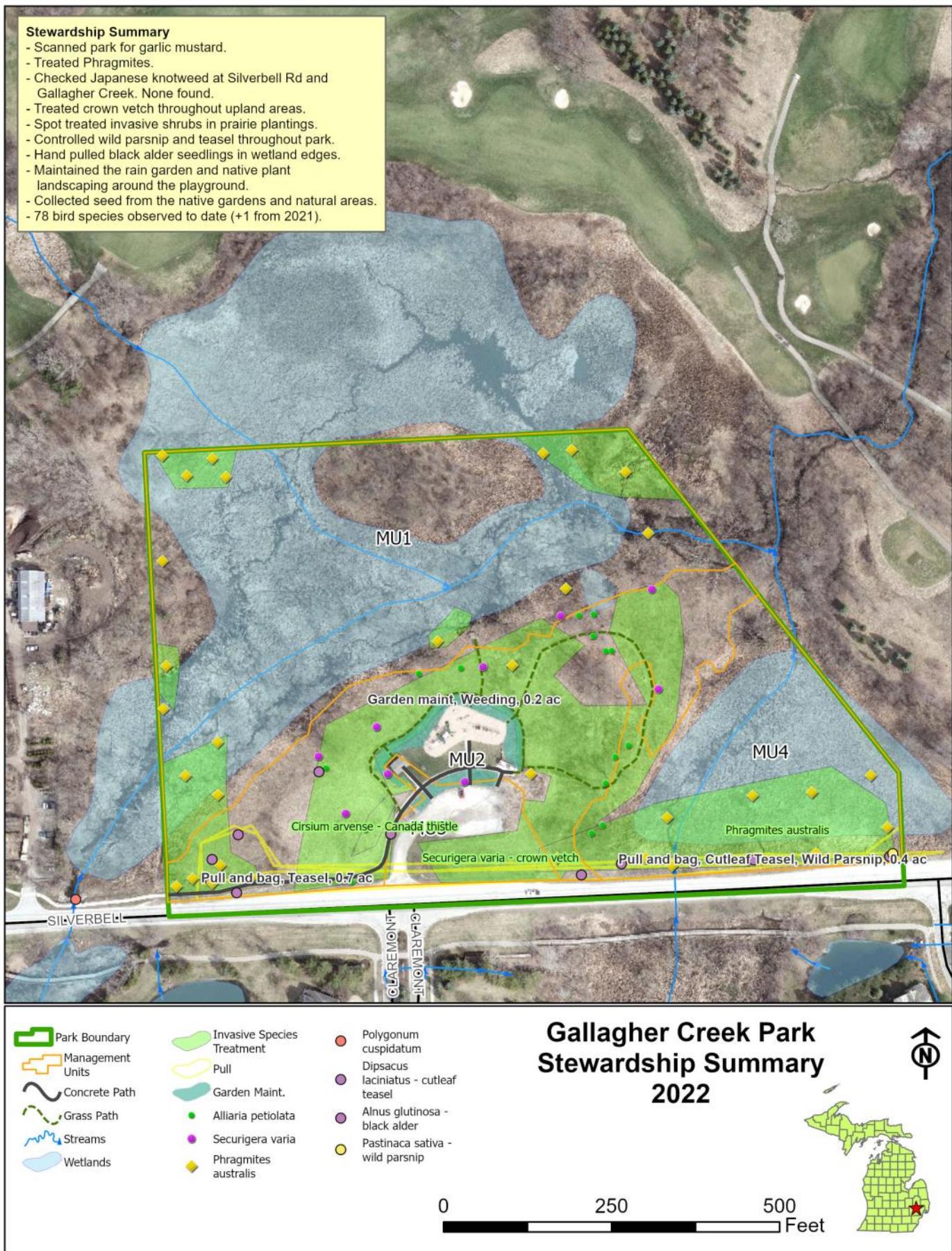
- Maintain the native landscaping and rain garden. Supplement with additional plants as needed to complete season-long bloom display for pollinators.
- Begin managing bird's foot trefoil in along the road so that it doesn't spread further into the prairie plantings.
- Begin removal of invasive woody plants from the 0.5 acre upland "island" in the north-central part of the park. Plantwise indicated wet prairie potential in this area in their 2011 management plan.
- Continue control of black alder throughout the park, a known invasive small tree.
- Begin control of reed canary grass in the wetland areas. Plant treated areas with aggressive native sedges.
- Continue to use prescribed fire to maintain prairie plantings, remove old Phragmites stems, and control invasive woody plants.



Bird's foot trefoil (*Lotus corniculatus*) and teasel along Silver Bell Road at Gallagher Creek Park. June 14, 2022.



A snapping turtle nests in the mulch next to the native plant garden beds at Gallagher Creek Park. June 14, 2022.



LOST LAKE NATURE PARK

2022

Stewardship Tasks Completed

1. Garlic Mustard: mapped and pulled garlic mustard in high-quality woodlands.
2. Swallow-wort: checked and treated all known pale swallow-wort.
3. Crown vetch: treated crown vetch along Turtle Creek Lane, on sled hill, and in forest.
4. Phragmites: checked and treated all known patches.
5. Wild parsnip: checked and hand dug plants at the intersection of Predmore Road and Turtle Creek Lane.
6. Participated in Cooperative Lakes Monitoring program for Lost Lake. Tested spring overturn total phosphorus, fall total phosphorus, chlorophyll, dissolved oxygen, and biweekly Secchi disk readings through the growing season.
7. Contractor controlled aquatic plants around the dock to improve access for recreation.
8. Treated invasive woody shrubs on the southeast corner of Lost Lake, and on the hill behind the caretaker house. Removed the Norway spruce behind the house due to flammability concerns during prescribed burns.

Quick Stats

- 58 ac
- Contains a mix of lake, oak-pine barrens, emergent wetlands, shrubby wetland, and vernal pools.
- Historical sighting of eastern massasauga rattlesnake in southeast corner (2009).
- Caretaker family and nature center occupy house.
- Sled hill with warming shelter is a popular attraction.

Monitoring

- 97 bird species observed to date (no change from 2021).
- Photo monitoring was completed in 2021, and is scheduled for 2023.
- Document new plant species as observed and plan for 2027 floristic inventory.
- Without advanced noticed, a DTE contractor broadcast sprayed woody vegetation under the powerline west of the nature center with a mix containing a soil-residual herbicide, killing many sensitive oak woodland species and creating a dead zone in areas under the powerline. Contacted DTE and had them add our parks to their ecologically sensitive “no-spray” areas.
- High deer densities are degrading the forest. Deer control is needed. Exclosures could be used to assess deer browse and preserve sensitive plant species.
- Document light levels under the canopy, and repeat occasionally to document effects of canopy thinning.
- Survey for eastern massasauga rattlesnake and other rare/sensitive insects and wildlife.

Future Stewardship Tasks

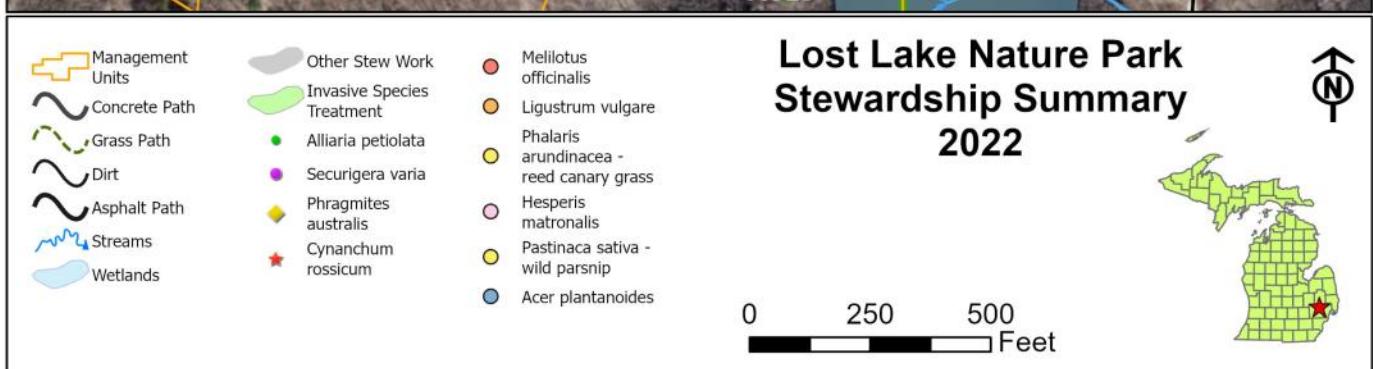
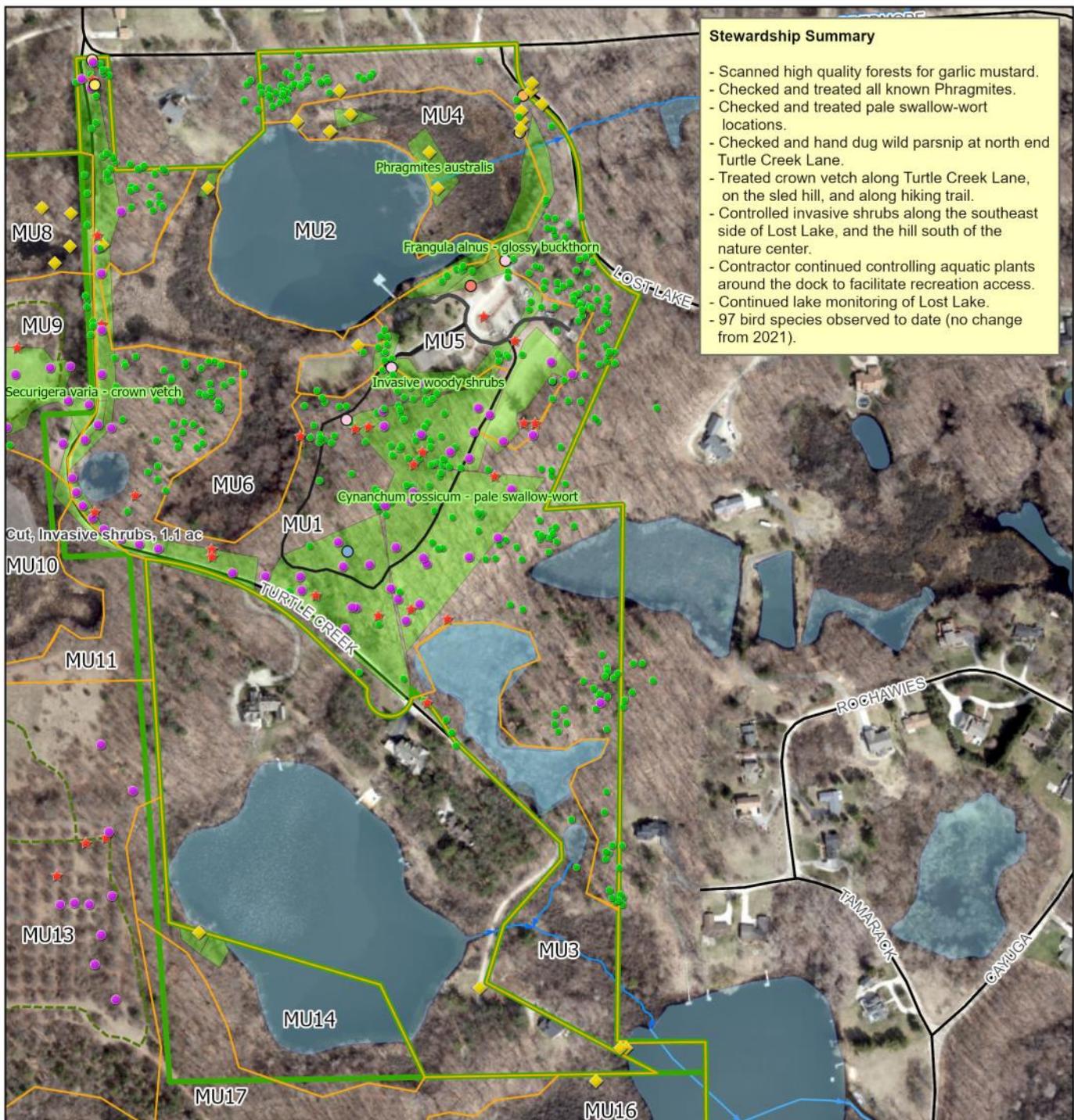
- Continue to survey and treat garlic mustard, crown vetch, oriental bittersweet, Phragmites, swallow-wort, wild parsnip, and other high priority invasive plants.
- Control invasive woody plants, prioritizing high quality natural areas.
- Continue to restore oak barrens/savanna/woodland using prescribed fire, canopy thinning, invasive species control, and additions of local-genotype seed.
- Monitor effects of nuisance aquatic plant treatment around the dock.
- Consider adding floating mat plant species (*Carex lasiocarpa*, *Dulichium arundinaceum*, etc.) to bare mud/ floating organic matter around Lost Lake. The lake continues to recover from historical dredging and herbicide use, with floating and emergent vegetation increasing each year.



DTE treatment area under the powerline, shortly after their herbicide application. May 19, 2022. See note above in monitoring.



DTE treatment area under the powerline, about one month after herbicide application. June 21, 2022. See note above in monitoring.



MARSH VIEW PARK

2022

Stewardship Tasks Completed

1. Maintained parking lot native plant beds: Removed dead thatch in spring, weeded.
2. Treated invasive shrubs, crown vetch, teasel, and Phragmites in plantings around athletic fields.
3. Checked and treated all known pale swallow-wort locations.
4. Documented and hand-dug newly found wild parsnip locations along Adams Road.
5. Checked and treated all known Phragmites locations. New locations were found in the large marsh during the botanical survey, and were treated.
6. Invasive shrub mowing was completed in 35 acres of old fields throughout the park in November and December. Previous year mowing areas were scanned for invasive shrubs, and a native grass and sedge mix was spread in the mowing area east of the marsh overlook deck.

Quick Stats
• 95.6 acres
• Natural areas include a large marsh and degraded old fields in upland areas. Native plants have been installed around the athletic fields.
• Athletic fields and archery range occupy the south side of the park.

Monitoring

- 49 bird species observed to date (+9 from 2021). Additional bird surveys are warranted for the central marsh, which is large enough to support various wading birds.
- As trail development and volunteer interest allows, install a nest box trail at Marsh View Park.
- Monitor vernal pools through the MNFI Vernal Pool Patrol.
- Photo monitoring was completed in 2022, and is scheduled for 2024.
- Began the botanical inventory of the park as scheduled for 2022, including the parcel on the southwest corner added to the park most recently. The inventory will need to be completed in 2023. The original floristic inventory was in 2001.

Future Stewardship Tasks

- Invasive shrub mowing areas: Spread native grass and sedge mix in areas mowed in 2022. Scan old fields every 2-3 year to spot treat invasive shrubs. Spread additional forbs and grasses after initial treatment of invasive shrubs.
- Annually check and treat high-priority invasive plants: teasel, wild parsnip, Phragmites, crown vetch, swallow-wort.
- Monitor native plantings around athletic fields for invasive species and treat as needed.
- Install new species in the native plant beds (aromatic sumac, butterfly milkweed, etc.).
- Begin treatment of invasive shrubs around the edge of the center wetland.
- Develop a trail to the north side of the park.



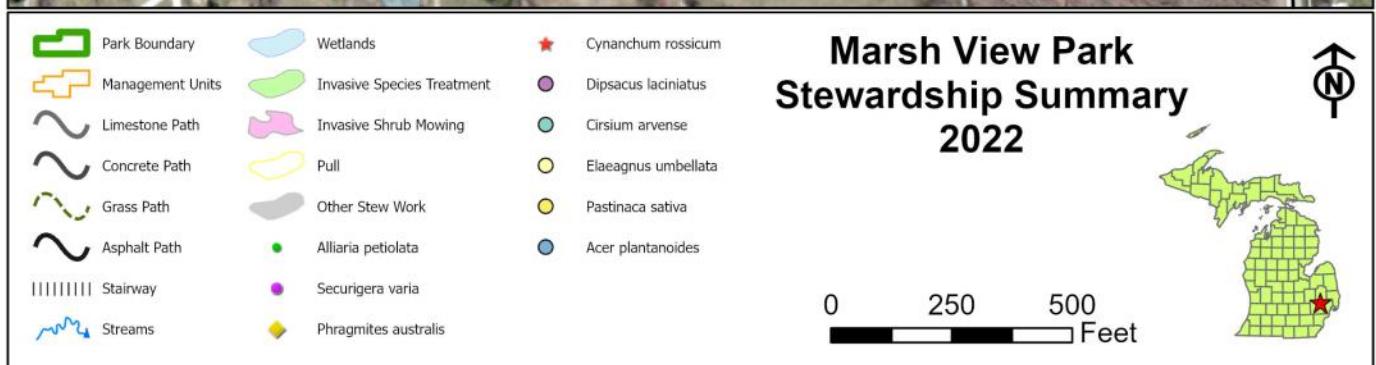
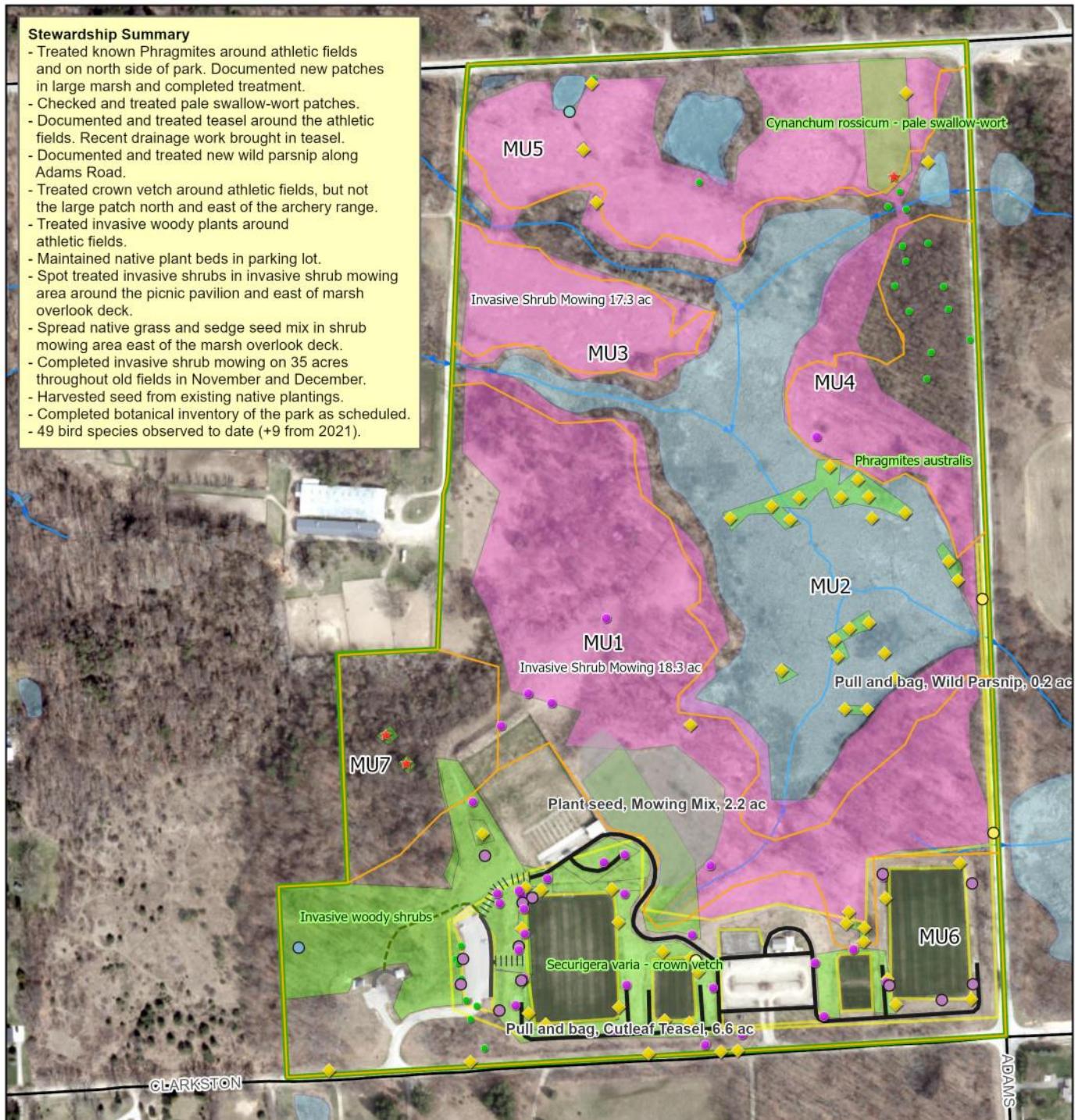
Insect predation in action in the center marsh on July 11, 2022.



Culver's root (*Veronicastrum virginicum*) flowers on the east side of the center marsh on July 11, 2022.

Stewardship Summary

- Treated known Phragmites around athletic fields and on north side of park. Documented new patches in large marsh and completed treatment.
- Checked and treated pale swallow-wort patches.
- Documented and treated teasel around the athletic fields. Recent drainage work brought in teasel.
- Documented and treated new wild parsnip along Adams Road.
- Treated crown vetch around athletic fields, but not the large patch north and east of the archery range.
- Treated invasive woody plants around athletic fields.
- Maintained native plant beds in parking lot.
- Spot treated invasive shrubs in invasive shrub mowing area around the picnic pavilion and east of marsh overlook deck.
- Spread native grass and sedge seed mix in shrub mowing area east of the marsh overlook deck.
- Completed invasive shrub mowing on 35 acres throughout old fields in November and December.
- Harvested seed from existing native plantings.
- Completed botanical inventory of the park as scheduled.
- 49 bird species observed to date (+9 from 2021).



MILL CREEK CROSSING

2022

Quick Stats

- 1 acre
- Natural areas include floodplain forest and Paint Creek
- Invasive plants have degraded the site and will require lots of effort to control.

Stewardship Work Completed

1. No stewardship work completed in 2022.
2. No pictures of Mill Creek Crossing taken in 2022.

Monitoring

1. Complete floristic inventory in 2029.
2. Original floristic inventory was completed in 2018. Observed 100 species, with 66% native. Floristic Quality Index (Total) is 23 (28 with only native species included).

Future Stewardship Work

1. Control invasive plants as time and resources allow.
2. Watch erosion along Orion Road and the edge of Paint Creek.



Paint Creek borders Mill Creek Crossing on two sides. Photo from December 11, 2019.



Natural communities present at Mill Creek Crossing, as documented in the 2019 management plan.



Mill Creek Crossing is directly across Paint Creek from the fishing access boardwalk on the Paint Creek Trail. Photo taken December 11, 2019.

MILL RACE TRAIL

2022

Stewardship Work Completed

1. Pulled garlic mustard along the trail.
2. Documented and treated a new Phragmites location.

Monitoring

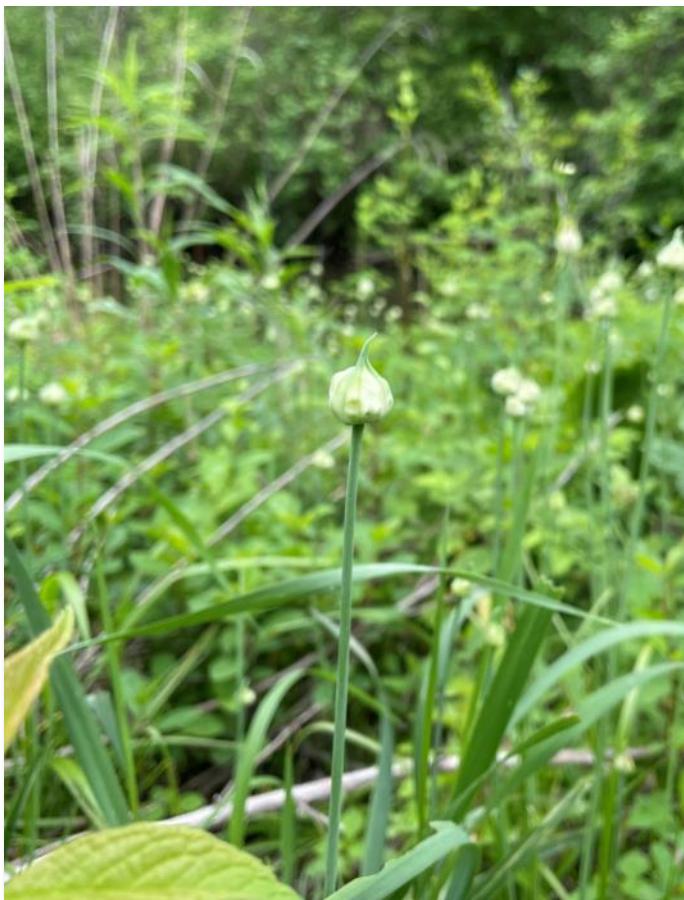
- Photo monitoring was last completed in 2021 and will be completed again in 2024 as scheduled (every 3 years).
- Floristic inventory was last completed in 2018, and is scheduled for the next inventory in 2029.

Future Stewardship Tasks

- Site is small, degraded and isolated from other natural areas, so stewardship work is low priority. Should be managed for user safety and to protect Paint Creek, wetlands, and any sensitive species discovered. Stewardship tasks listed below should work toward these goals if time allows.
- Garlic mustard should be surveyed and pulled annually if time allows.
- Treat invasive shrub sprouts along the trail annually to prevent regrowth. Seed in native species.
- Begin systematically cutting invasive shrubs and treating stumps in areas not affected by invasive shrub mowing. Plant wet prairie/wet meadow/savanna mix of native species after shrub removal.
- Remove black locust trees, replace with burr oak or other native tree species.



Mill Race Trail along the creek on June 1, 2022.



Wild garlic (*Allium canadense*) along the Mill Race Trail on June 1, 2022.



O'CONNOR NATURE PARK

2022

Stewardship Tasks Completed

1. Pulled garlic mustard and celandine throughout the park.
2. Phragmites throughout the park foliar sprayed (dense patches) or cut-stem treated (if mixed with natives). Re-treated new patches found in the pipeline easement in 2020.

Monitoring

- Photo monitoring was last completed in 2022, and is scheduled for 2024.
- Complete floristic inventory for the park in 2024 as scheduled. The original floristic inventory was in 2014.

Future Stewardship Tasks

- Work with neighbors to prevent dumping yard waste in the park.
- Monitor the pipeline easement for new invasive species following 2018 construction work.
- Continue to survey and treat garlic mustard and celandine. The dense patch in the northeast corner could be foliar sprayed in early spring.
- Control invasive woody plants throughout the park biannually. After sweeping the higher quality woodland and wetland areas, concentrate stewardship on the hillside along Rochester Road to Plant native species on hillside.
- Continue to treat Phragmites.
- Control *Vinca minor* in the southwest corner.
- Use prescribed fire occasionally to promote native plant recruitment in wetland and forest.
- High deer densities are degrading the forest.

Quick Stats

- 10 acres
- Acquired in 2008
- Dramatic topography, mature oak woodlands, and intact wetlands provide greenspace for Oakland Township residents.



Stormwater runoff from Rochester Road continues to dump large amounts of gravel and sediment into the wetland at O'Connor Nature Park, and eroding deep cuts in the bank along Rochester Road. September 14, 2022.



Some areas of the woodland have a fairly intact groundcover flora. Robin's plantain (*Erigeron pulchellus*) is flowering here, with pussytoes, hog peanut, Virginia creeper, and Penn sedge. June 6, 2022.



O'Connor Nature Park Stewardship Summary 2022



- Park Boundary
- Management Units
- Streams
- Wetlands
- Invasive Species Treatment

- Pull
- Alliaria petiolata
- ◆ Phragmites australis
- Chelidonium majus - celandine
- Hesperis matronalis

0 50 100 200 300 Feet



PAINT CREEK HERITAGE AREA—FEN

2022

Stewardship Tasks Completed

1. Phragmites in the fen was monitored and foliar sprayed where dense or cut stem treatment where sparse.
2. Park neighbor to south had Phragmites on property treated through the Phragmites Outreach Program. Sixth year of treatment for the neighbor to the south.
3. We treated invasive cattails with hand wicking in areas with native vegetation present, and foliar sprayed cattail monocultures. Fen vegetation continues to return in areas where cattails were treated in 2019-2021. Grass-of-parnassus, Ohio goldenrod, Kalm's lobelia, marsh bellflower, and other conservative species observed. In 2022 we again worked to treat all the cattails, and cut down the dead stalks in early winter to prepare for follow-up treatment in 2022.
4. Completed a small amount of invasive shrub control along the edge of the trail.
5. Monitored a patch of crown vetch in the Paint Creek Trail ROW just north of the fen.

Quick Stats

- 0.5 acres
- Acquired in 2008
- Protects the parcel's unique prairie fen wetland and viewshed along the Paint Creek Trail.
- Good habitat for Eastern Massasauga Rattlesnake (EMR), so the parcel is "managed habitat" for the EMR CCAA with USFWS.

Monitoring

- Photo monitoring was completed in 2022, and is scheduled for 2024.
- A baby Blanding's turtle was found in the fen in 2022.
- Update floristic inventory for the park in 2023 as scheduled. The original floristic inventory was in 2014, and extensive Phragmites and cattail control has been completed since then.

Future Stewardship Tasks

- Control woody plants encroaching on the fen and adjacent upland areas.
- Continue Phragmites and purple loosestrife control. May need to collect beetles to control purple loosestrife.
- Cattails are now sparse, so maintain the fen area by annually hand-wicking any cattails found.
- Spread locally collected fen plant species seed in Phragmites and cattail control areas to assist recovery of native plants.
- Work with neighbor on south and east boundary to manage adjacent fen and upland oak savanna.



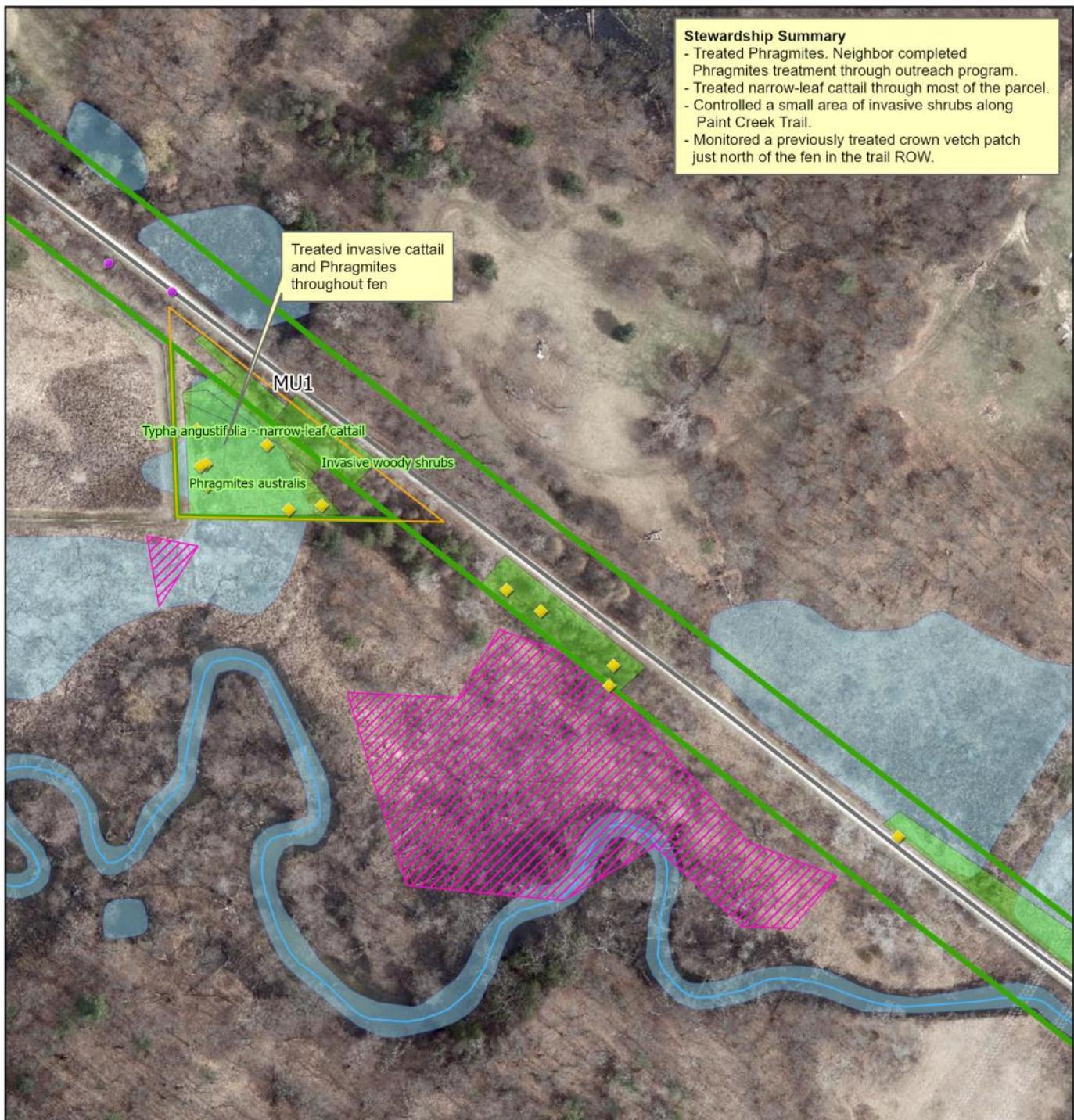
Parnassia glauca on the west transition to drier land along the fence. With *Solidago ohioensis*, *Solidago riddellii*, *Lobelia kalmii*.



The core fen area. Notice the dead cattails around the perimeter.
August 19, 2022.



The deeper water area along the west boundary, which used to be exclusively cattails or Phragmites as recently as 2019. Ruderal wetland species are re-establishing. August 19, 2022



Paint Creek Heritage Area - Fen Stewardship Summary 2022



0 50 100 200 300 Feet

PAINT CREEK HERITAGE AREA

WET PRAIRIE

2022

Stewardship Tasks Completed

1. Seed Collection: Collected seed of various native plants with volunteer assistance.
2. Mapped and pulled garlic mustard throughout the park.
3. Continued controlling invasive woody plants throughout the park, including a second year of follow-up spot treatment
4. Completed a prescribed burn on 0.8 acres of the center core area on April 27, 2022.
5. Continued canopy thinning of fire-sensitive tree species and large fuels reduction north and south of the core prairie area.
6. Hand-pulled spotted knapweed and sweet clover in the open wet prairie area in July and August.
7. Monitored and treated swallow-wort patch and crown vetch patch on the north-east side of the core prairie area.

Quick Stats

- 10 acres
- Acquired in 2003
- Protects the parcel's globally imperiled wet-mesic prairie habitat, Paint Creek floodplain, and viewshed along the Paint Creek Trail.

Monitoring

- Photo monitoring was last completed in 2021, and is scheduled for 2023.
- Complete floristic inventory for the park in 2026 as scheduled. The original floristic inventory was in 2006.
- Found a new sedge in the core prairie and keyed it to *Carex tetanica* (C=9, FACW).
- Found several robust plants of *Lysimachia quadriflora* south of the core prairie, in the transition to the wet shrubby swale south of the berm.
- Assisted with design of interpretive signage about the wet prairie installed by the Paint Creek Trailway Commission.
- 73 bird species observed to date (+ 6 from 2021). Red-headed woodpecker observed on site in May 2022.

Future Stewardship Tasks

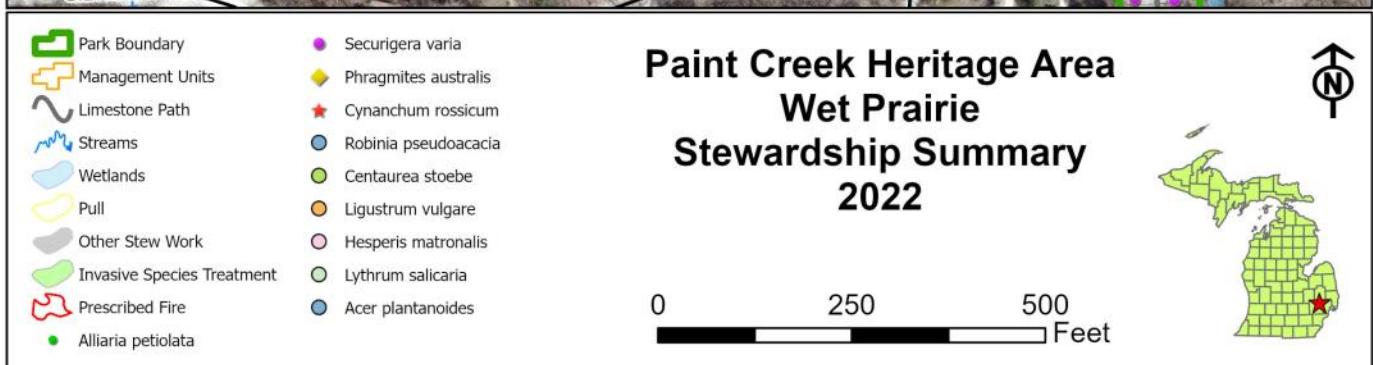
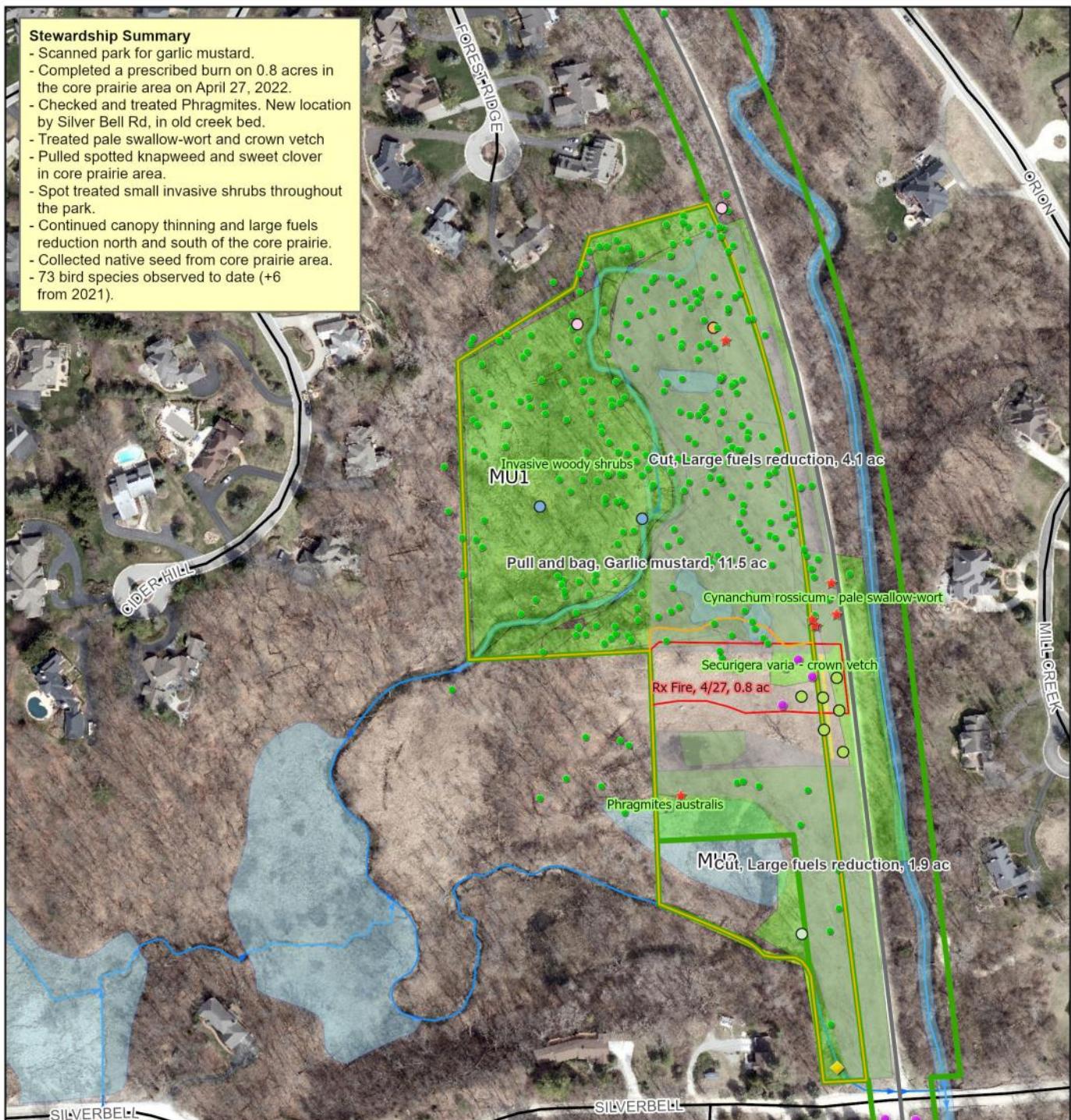
- Continue to survey garlic mustard, spotted knapweed, and sweet clover and hand pull throughout the park.
- Scan park annually for woody invasive shrubs and spot treat as needed. Continue to control European birch (*Betula pendula*) in the core prairie area where small saplings are abundant.
- Thin tree canopy by drill and fill, girdling, or removal of small to mid-diameter cottonwoods, black locust, and other tree species not typical of oak savanna or wet-mesic prairie. Remove large woody debris as time allows to limit mop-up issues after prescribed fire and allow more burns to be done with stewardship staff.
- Collect seed of prairie and savanna species annually and broadcast in appropriate areas throughout the park.
- Improve plant species diversity in the core prairie near the trail, particularly forbs. Warm-season grasses and non-native cool-season grasses are the most abundant plants.
- Continue working with neighbors to ensure good stewardship and protection of the entire natural community.



Carex tetanica in the core prairie area on May 23, 2022.



Lysimachia quadriflora south of the core prairie on July 19, 2022.



PAINT CREEK JUNCTION

2022

Stewardship Tasks Completed

1. Documented and treated new Phragmites locations that established in the newly exposed construction areas.
2. Treated the patch of swallow-wort found on the adjacent Paint Creek Trail right-of-way.
3. Hand pulled parsnip and cut-leaf teasel along Orion Road.
4. Scanned adjacent trail right-of-way for garlic mustard.

Monitoring

- Photo monitoring was completed in 2022, and is scheduled for 2024. Monitoring will be completed bi-annually.
- Monitor the vernal pool in the northern corner of the park.
- Completed floristic inventory for the park in 2019. The inventory should be repeated in 2029 as scheduled.

Future Stewardship Tasks

- Continue monitoring and treatment of priority invasive species.
- Complete spot treatment of invasive shrubs that were mowed down for construction access.
- Use the botanical inventory, habitat map, and final development conditions to develop a natural areas management plan following completion of the park access improvements.
- Maintain native plantings and rain garden within the developed area.

Quick Stats

- 5.7 acres
- Acquired in 2003
- Formerly known as Marsh View Connector
- Oakland Township Parks & Recreation was awarded a Michigan Natural Resources Trust Fund grant in 2018 to develop a regional trailhead for the Iron Belle Trail (of which the Paint Creek Trail is part) at this location. Installed 2021-2022.



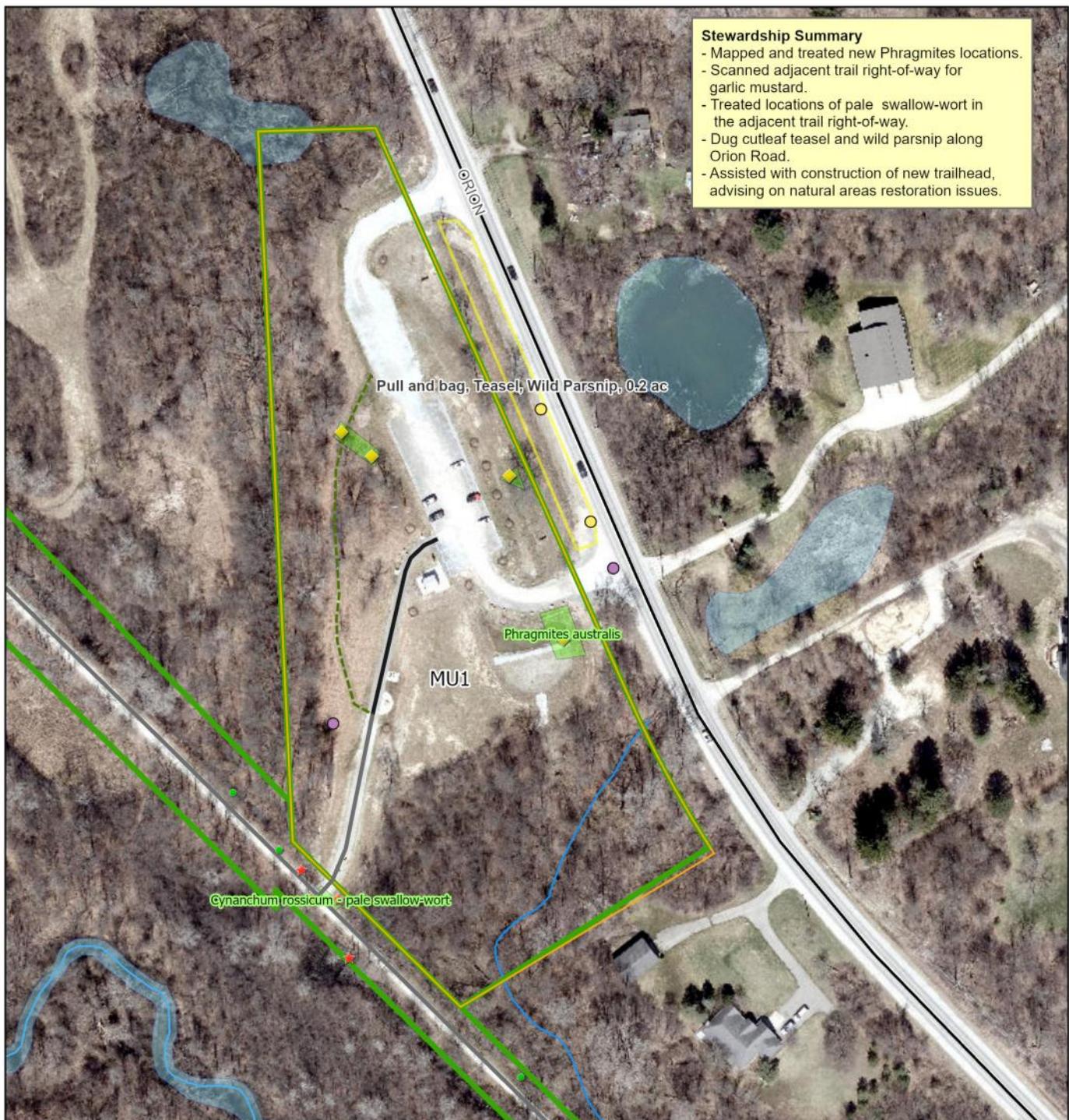
Vernal pool in the northwest corner on June 1, 2022.



Rain garden to process rainwater from the parking lot on June 1, 2022. Area with standing water is the sediment forebay.



Connector to the Paint Creek Trail, with a bench dedicated in memory of stewardship volunteer Ruth Glass. October 7, 2022.



PAINT CREEK TRAIL—ART PROJECT

2022

Stewardship Tasks Completed

1. Garlic Mustard: No garlic mustard has been identified at the Art Project.
2. Created burn breaks around the perimeter of the area, but did not complete a prescribed burn due to weather.
3. Checked crown vetch points near the parking area.

Monitoring

- Photo monitoring was completed in 2021, and is scheduled for 2024.
- Completed floristic inventory for the park in 2018. The inventory should be repeated in 2028 as scheduled.
- Volunteers monitored the nest boxes through the nesting season.

Quick Stats

- 0.5 acres
- Acquired by the Paint Creek Trailway Commission in 1980.
- Protects the parcel's prairie habitat, Paint Creek floodplain, and viewshed along the Paint Creek Trail.

Future Stewardship Tasks

- Continue to control invasive woody plants biannually. Conduct cut stump treatment of larger shrubs and careful spot treatment of small stems.
- Interseed area with locally collected native prairie plant species to increase diversity and fuel loading.
- Use prescribed fire annually or biennially. Vary burn season when possible to allow different prairie species to benefit from prescribed fire.
- Expand invasive woody plant control to the north along the trail and across the trail adjacent to the creek.
- Install interpretive signage to explain the unique plants found in the area.
- Install markers to prevent mowing the prairie area.
- Continue to work with adjacent private property owners to provide a buffer to the prairie remnant.
- Treat reed canary grass patches to keep from expanding.



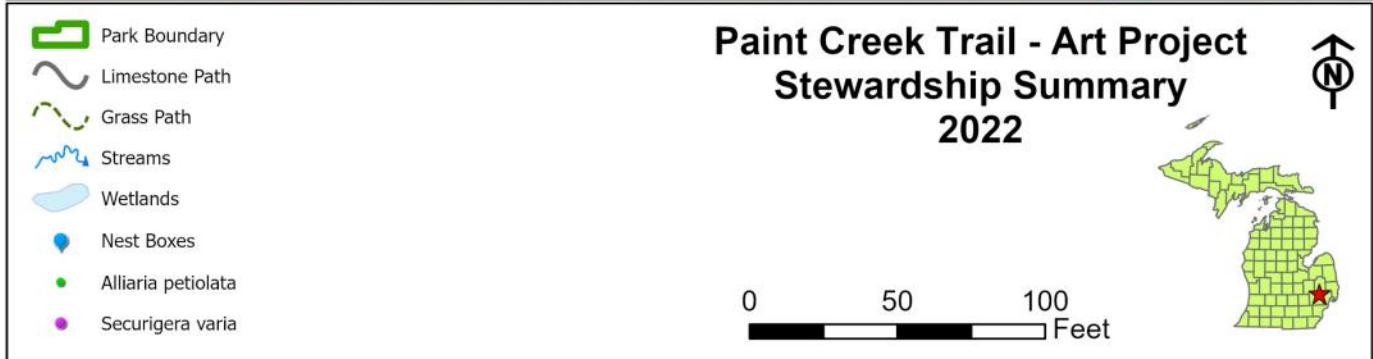
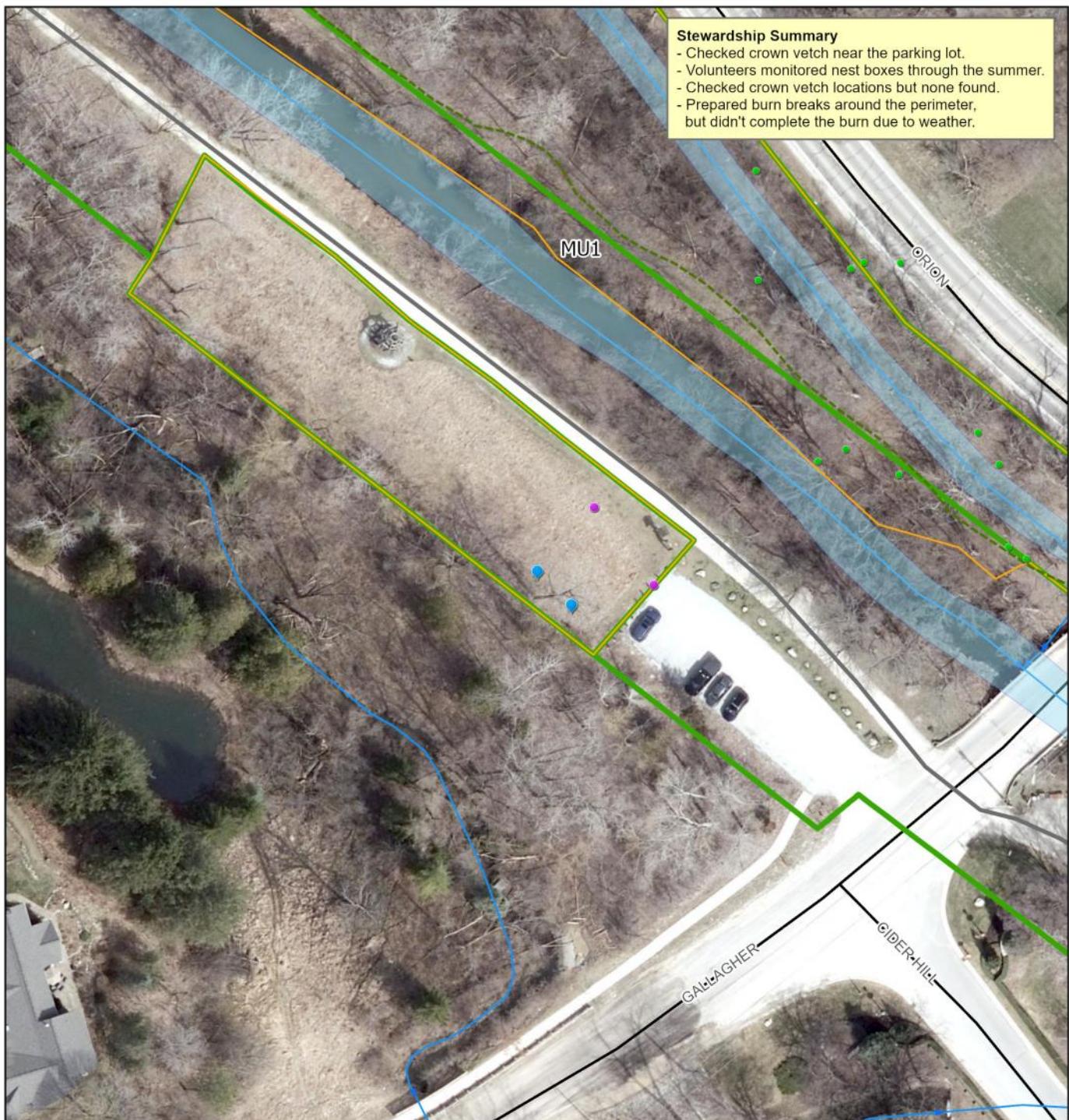
Prescribed fire crew training on February 26, 2022.



The Art Project on June 1, 2022. Invasive shrubs are again encroaching along the southwest and northwest sides.



Hypoxis hirsuta at the Paint Creek Trail—Art Project on June 1, 2022.



PAINT CREEK TRAIL

KAMIN EASEMENT

2022

Stewardship Tasks Completed

1. Treated known swallow-wort locations along the north side near the trail.
2. Checked all Phragmites locations and treated any live stems found.

Monitoring

- Photo monitoring was completed in 2022, and is scheduled for 2024.
- Completed floristic inventory for the park in 2018. The inventory should be repeated in 2026 as scheduled.

Future Stewardship Tasks

- Continue to control garlic mustard, swallow-wort, and Phragmites.
- Monitor purple coneflower that has escaped from neighbor's landscaping. Control if it begins to spread.
- Thin fire-sensitive trees in the upland areas. In areas where sun-loving species are a priority (e.g. hoary puccoon, wild lupine, etc.), consider additional thinning to maintain open conditions.
- Invasive woody plants in floodplain and edges of prairie getting very dense. Control invasive woody plants in high quality areas annually and plan for control of plants in floodplain and around prairie.
- Continue prescribed burning every 1-3 years, varying season of burn and time between burns. As invasive shrubs are controlled reduce return interval to 3-4 years.

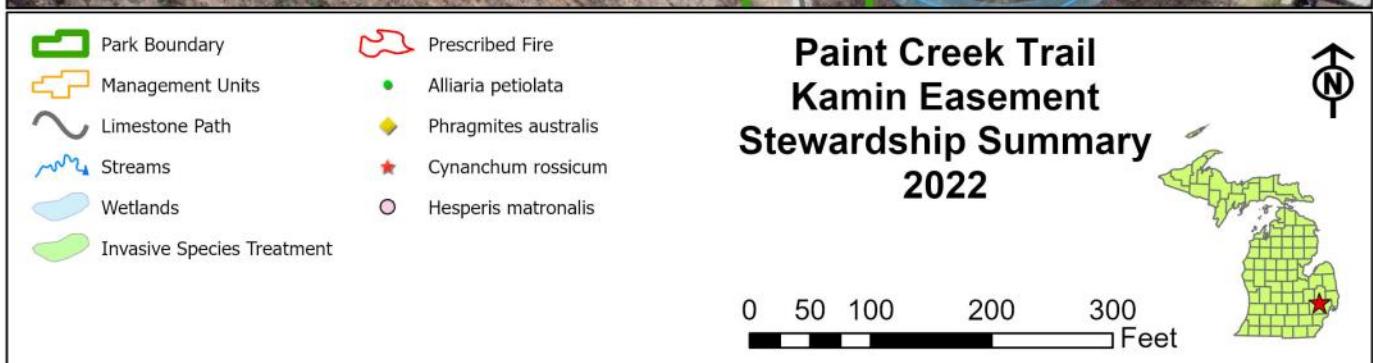
Quick Stats
• 4.25 acres
• Conservation easement approved by township residents in 2008.
• Protects the parcel's prairie, savanna, and Paint Creek floodplain habitats.
• Protects natural views along the Paint Creek Trail.



Lespedeza virginica at the Kamin Easement on September 12, 2022.



Oak savanna area at the Kamin Easement on May 23, 2022.



PAINT CREEK TRAIL

NICHOLSON PRAIRIE

2022

Stewardship Tasks Completed

1. Completed a prescribed burn on April 27, 2022. Timing was not optimal for managing warm-season grasses, but it was a good opportunity for crew training.

Monitoring

- Photo monitoring was completed at the Nicholson Prairie in 2022, and is scheduled for 2024.
- Completed floristic inventory for the park in 2018. The inventory should be repeated in 2026 as scheduled. Consider quantitative vegetation sampling.

Quick Stats

- 3.1 acres
- Acquired by the Paint Creek Trailway Commission in 2002.
- Protects the parcel's prairie habitat, Paint Creek floodplain, and viewshed along the Paint Creek Trail.

Future Stewardship Tasks

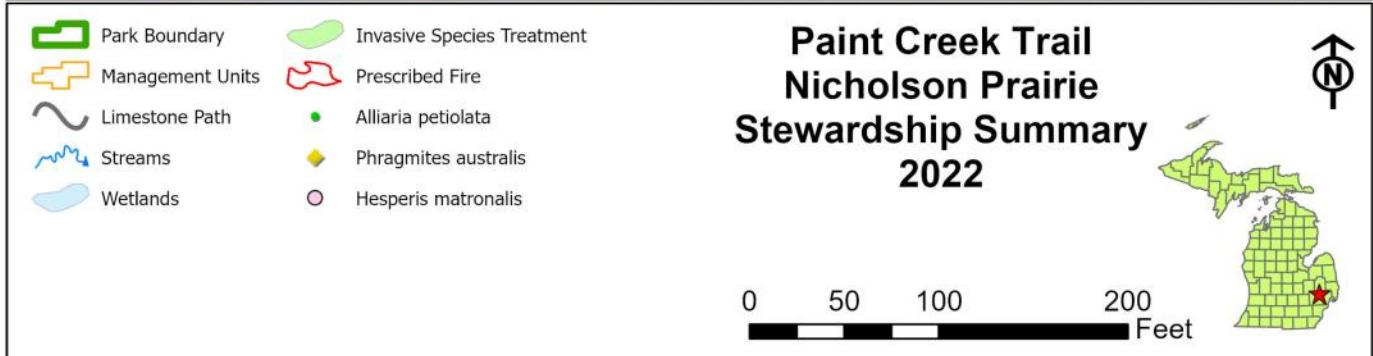
- Continue prescribed burns every 1-3 years, varying season of fire to benefit different species. Avoid late spring burns, which stimulate over-abundant warm season grasses.
- Adjacent trees and shrubs are growing larger and shading out the prairie areas. Continue to maintain and expand the prairie area by removing woody plants and seeding with locally collected native plant species.
- Reduce the abundance of native warm-season grasses to increase forb abundance. Use late summer, fall, or very early spring prescribed burns when possible. Establish wood betony (*Pedicularis canadensis*) to reduce warm-season grass abundance.
- Invasive woody shrubs: Resume privet removal in the floodplain. Will likely need to use a forestry mower or similar equipment for initial control, followed by spot treatment. Spot treat small invasive shrubs and remove remaining mature invasive shrubs in the core prairie area to the north border. Control *Wisteria sinensis*.
- Continue garlic mustard control and dame's rocket control.
- Monitor vegetation in the deer exclosures.



Fire crew after the prescribed burn on April 27, 2022. Left to right: Ben VanderWeide, Grant Vander Laan, Jan Mandernach, Camryn Brent, George Hartsig, Ian Ableson.



Nicholson Prairie on May 23, 2022. Notice the shrub thicket with privet and honeysuckle on the left, and trees encroaching on the core prairie on the right.



PAINT CREEK TRAIL RIGHT-OF-WAY

2022

Stewardship Tasks Completed

1. Pulled garlic mustard in some areas along the trail on May 14 and 17, 2022 during garlic mustard workdays in partnership with Six Rivers Land Conservancy. We focused on area primarily south of Gunn Road.
2. Phragmites: treated all known patches of Phragmites in park properties along the trail and within the Paint Creek Trail right-of-way.
3. Treated crown vetch along the trail. Continuing locations include at the Silverbell Road parking lot, Gallagher Road parking lot, near the Paint Creek Heritage Area—Fen, and Adams Road crossing.
4. Documented and treated swallow-wort locations along the Paint Creek Trail.
5. Completed a prescribed burns at Paint Creek Heritage Area—Wet Prairie and Nicholson Prairie on April 27, 2022.
6. Maintained the native plantings at the Gunn Road crossing.

Monitoring

- Photo monitoring along the trail right-of-way was completed in 2021, and is scheduled for 2024.
- Volunteers monitored bird nest boxes along the trail.
- Documented beach construction along Paint Creek and passed along to Paint Creek Trailway Commission and EGLE for enforcement.
- Several high-quality natural areas along the trail should have a floristic inventory completed as time allows by 2030.

Future Stewardship Tasks

- Control Phragmites along the trail and work with adjacent landowners to control their patches.
- Continue annual mowing of trail shoulders during the dormant season to control woody vegetation.
- Control woody plants on bridge structures and high-quality habitat along the trail.
- Develop management plans for the natural areas along the trail, with botanical inventories of high quality habitat.
- Develop and install interpretive signage in high-quality habitat.

Quick Stats

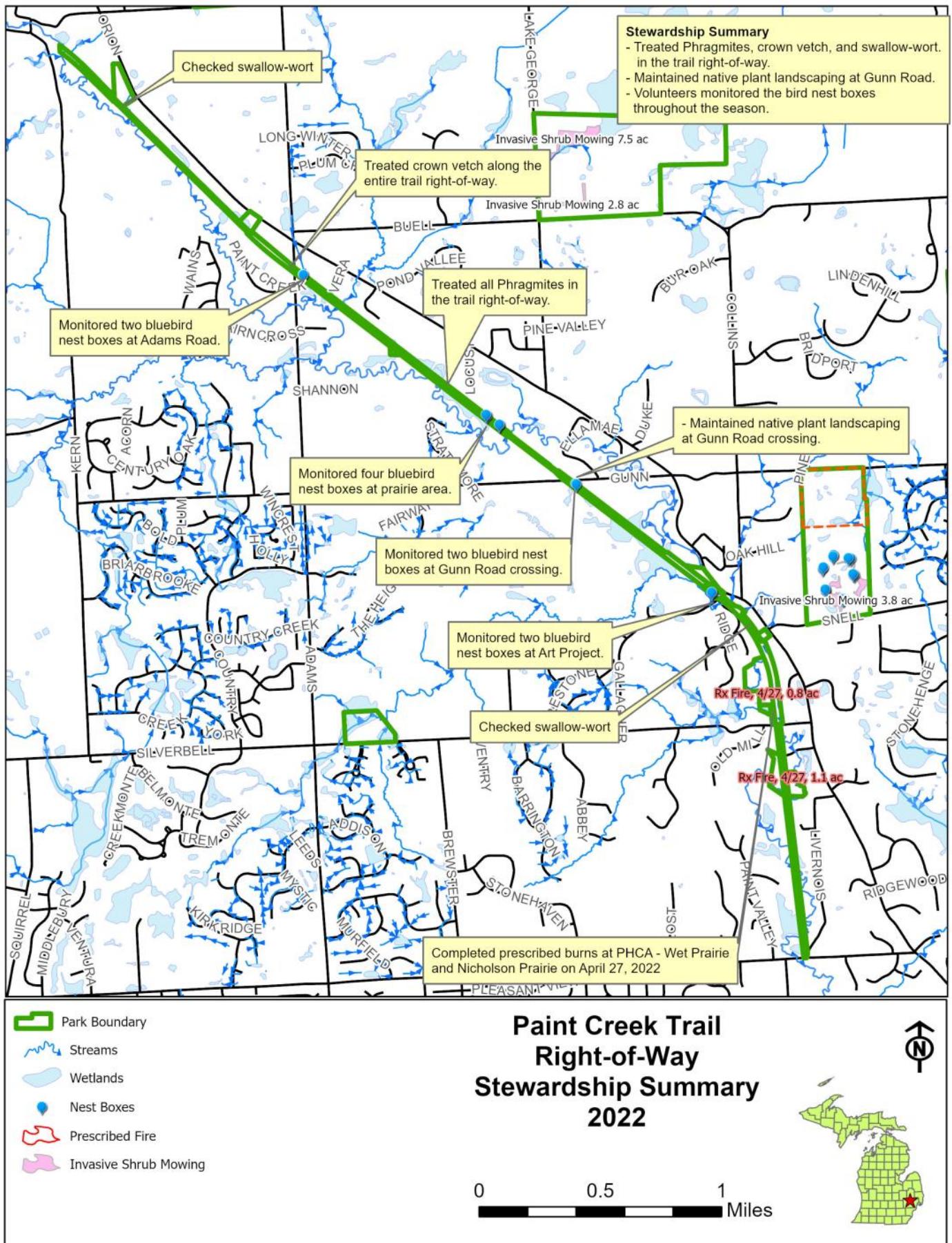
From their 2020-2024 Master Plan: "The Paint Creek Trail was the first non-motorized rail-to-trail in the State of Michigan and traverses five different municipalities in Oakland County, Michigan: the City of Rochester, the City of Rochester Hills, the Charter Township of Oakland, the Charter Township of Orion, and the Village of Lake Orion. It consists of 8.9 miles of the former Penn Central Railroad right-of-way connecting the City of Rochester at the trail's southern terminus to the Village of Lake Orion at the north. Open to the public since 1983, the Paint Creek Trail serves pedestrians, cyclists, equestrians, anglers, nature enthusiasts, and users of all ages and abilities. The Paint Creek Trail is a trail of regional importance and receives over 100,000 visitors annually."



Rosa Carolina in the trail right-of-way between Gunn Road and Adams Road on June 21, 2022. This area has high-quality prairie and oak savanna remnants along the trail.



Access stairs to Paint Creek at Gallagher Road on June 1, 2022. The stairs and native wildflowers were installed by the local Trout Unlimited chapter about three years prior, in consultation with the Stewardship Manager.



STONY CREEK RAVINE NATURE PARK

2022

Stewardship Tasks Completed

1. Garlic Mustard: scanned the corridor along the West Branch of Stony Creek and high quality woodlands in the east.
2. Treated all known locations of swallow-wort and crown vetch.
3. Documented teasel but we were unable to treat all known locations.
4. Treated all known Phragmites locations. We've eliminated a few patches, and densities are much lower at all remaining patches. The manager of the wetland mitigation banks has allowed Phragmites to establish, but will hopefully be treating them.
5. Invasive Woody Plants
 - Treated porcelainberry patch in the southwest corner near Snell Road.
4. US Fish and Wildlife Service continued progress on the prairie plantings and wetland restoration. They finished grading areas that were left rough in 2021. Their contractor installed seed mixes in the dry areas using a seed drill in March 2022. The stewardship manager is not confident that the contractor did a good job installing the seed mixes. Stewardship staff planted seed in wet areas in February 2022 for areas that didn't need additional grading, and in November 2022 for areas that were finish graded over the summer. OTPR hired a contractor to complete maintenance mows of the prairie plantings to control annual weeds. Mowing was completed in July and September.

Quick Stats

- 60 acres acquired in 2008, 208 acres added in 2019.
- Protects the 0.5 miles of the west branch of Stony Creek, and dramatic glacial features.
- 36 acre Six Rivers Land Conservancy conservation easement protects the creek corridor.
- Wetland mitigation banks have restored wetlands in former farm fields in east expansion (protected by EGLE conservation easements).

Monitoring

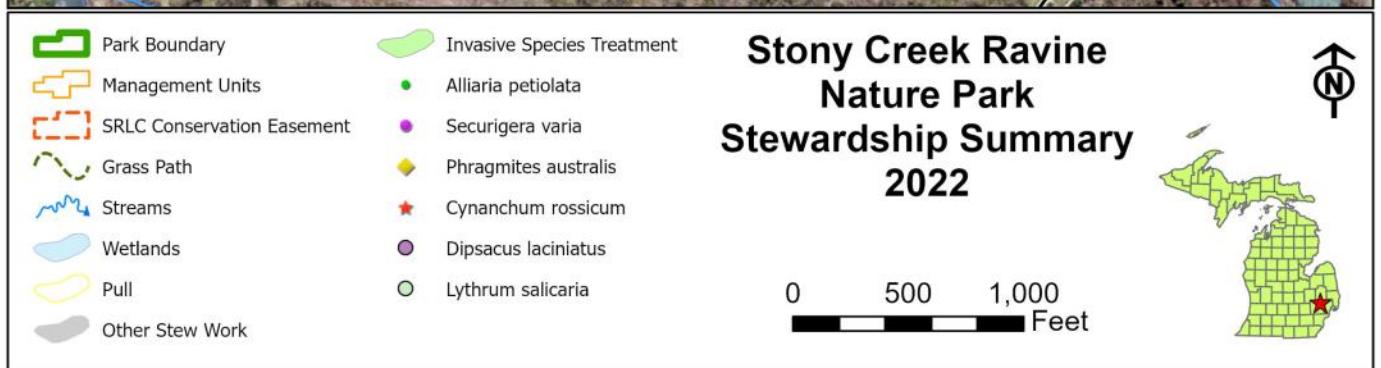
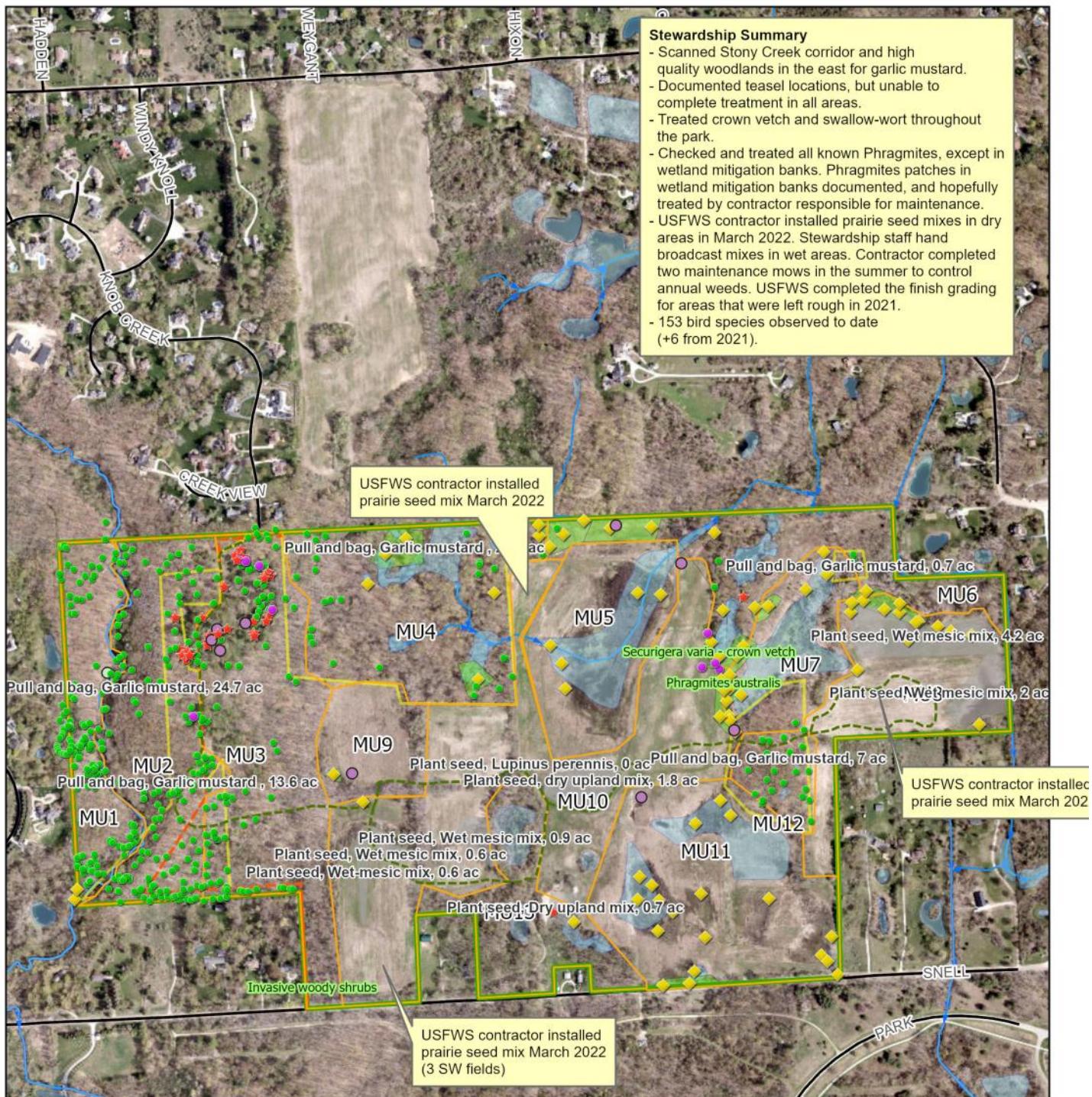
- Photo monitoring of both the 60 acres and new points in the 208 acre expansion was completed in 2021. Scheduled for photo monitoring in 2023.
- Floristic inventory for 60 acre parcel was completed in 2005, and inventory for east expansion in 2015. Survey likely habitat for rare plant species. Repeat survey of entire park in 2025.
- 153 bird species observed to date (+6 from 2021). Hold a bird walk at this park once per month during the summer to continue documenting birds using the park.
- Determine if other biological surveys are needed for herpetofauna, insects, etc.

Future Stewardship Tasks

- Continue garlic mustard control in high quality habitats. Focus on the ravine and nice woodlands in east.
- Continue oriental bittersweet control in the stream corridor. Expand bittersweet control to high quality habitats on the east expansion. Complete follow-up treatment of invasive shrubs in forestry mowing areas.
- Continue to treat high priority invasive plants throughout the park (teasel, crown vetch, porcelainberry, Phragmites, swallow-wort).
- Control invasive shrubs and interseed wet-mesic prairie and savanna species in the northwest field where remnant plants persist.
- Thin hedgerows between farm fields, particularly around large open-grown oak trees.
- Continue to implement habitat restoration plans in partnership with the US Fish and Wildlife Service.
- Implement prescribed fire where appropriate to control invasive woody plants.
- High deer densities are degrading the forest. Encourage continuing controlled archery hunt.



The ravine and floodplain along the West Branch of Stony Creek on May 17, 2022.



WATERSHED RIDGE PARK

2022

Stewardship Tasks Completed

1. Scanned woodland areas for garlic mustard.
2. Phragmites was monitored and treated throughout park.
3. Swallow-wort, crown vetch, wild parsnip: Monitored and treated all known patches.
4. Prairie planting completed with US Fish and Wildlife service on May 9-10, 2022. It was planned for dormant seeding, but there were issues with the contractor. USFWS staff and stewardship staff installed the seed by broadcasting (hand and UTV).
5. Broadcast native seed and installed plugs in wetland restoration areas to increase plant diversity.
6. New pole barn was constructed, and we hosted our seed cleaning workday in the new heated barn in November.
7. We received our new compact track loader, and tested the mower deck in a small area of the previous invasive shrub mowing areas.

Quick Stats

- 187 acres
- Acquired in 2008
- Watershed divide between Stony Creek and Paint Creek runs through the park.

Monitoring

- Photo monitoring was completed in 2021, and is planned for 2023.
- Blanding's turtle documented in the park on April 12, 2022.
- Floristic inventory for Watershed Ridge Park was completed in 2018. Repeat survey of entire park in 2029.
- 80 bird species have been observed in the park to date (+17 from 2021).

Future Stewardship Tasks

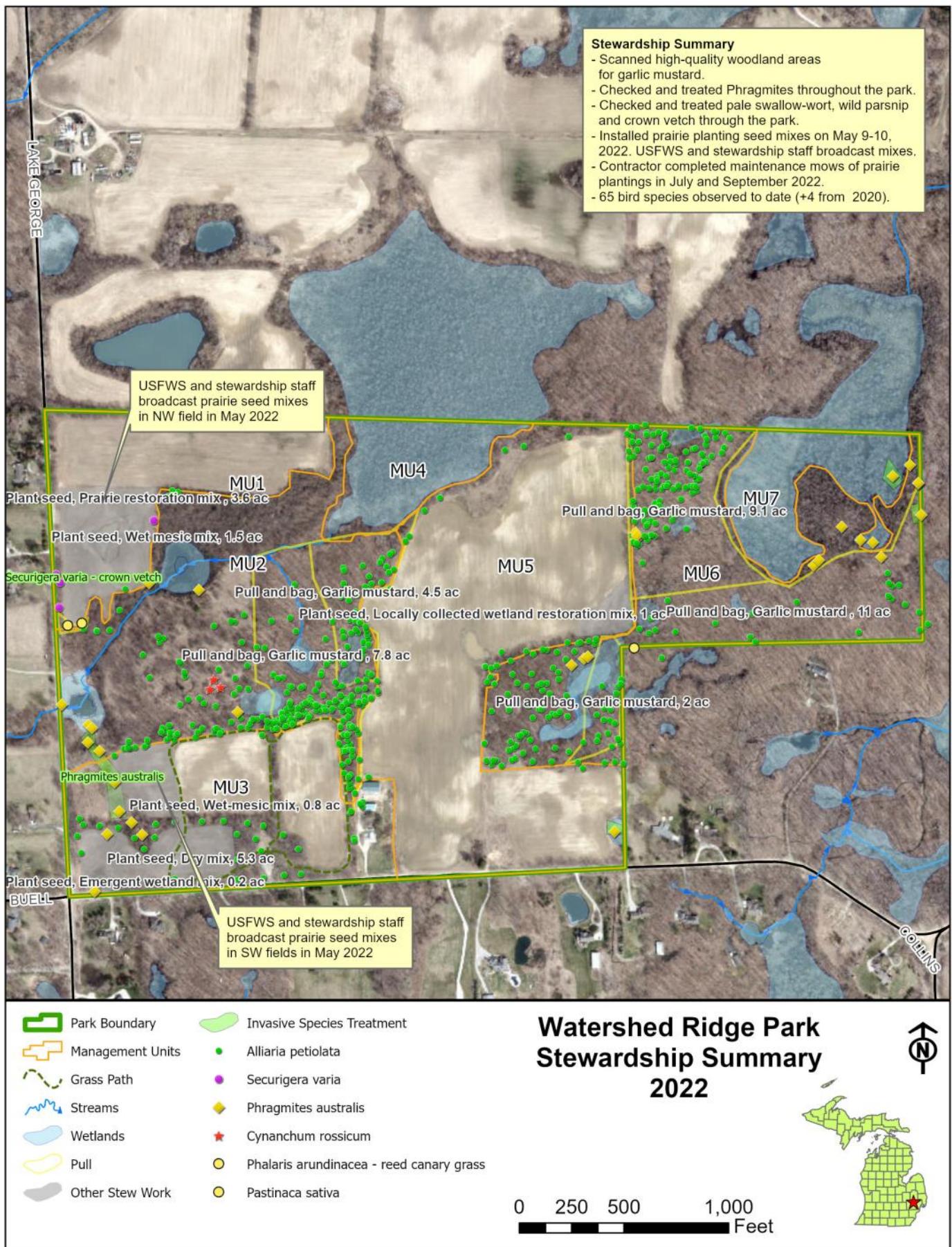
- Hand pull garlic mustard in high quality woodland areas and around trailheads. Do not manage garlic mustard in degraded areas.
- Continue to use mowing for initial clearing of invasive shrub thickets on west side of park. PRC staff would then handle follow-up and native plant seeding work.
- Sweep northeast and central forests for invasive woody plants bi-annually.
- Work with park development planning process to place trails and other development in areas that will not affect sensitive habitat. Assess opportunities to restore native plants as areas are developed.
- High deer densities are degrading the forest. Deer control is needed. Exclosures should be used to assess the impact of deer browse and preserve sensitive plant species.
- Continue prescribed burning, particularly in the western oak woodlands, fields, and prairie plantings.
- Continue install prairie plantings in farm fields to increase habitat, create wildlife movement corridors, and eliminate continued sedimentation and nutrient pollution in wetlands and waterways.



Meri Bryant and Erica Roberts install seed mixes in the western fields on May 9, 2022.



Prairie planting in the northwest field on July 8, 2022. *Conyza canadensis* and annual weeds are abundant.



PART III: SUPPORTING DOCUMENTS

2022

Part III contains supporting documents:

- Photo Monitoring Schedule
- Floristic Inventory Summary and Schedule
- Natural Areas Stewardship 2022 Field Work Plan

Photo Monitoring Planning Sheet

Natural Areas Stewardship
Oakland Township Parks Recreation

Park	No. Points	Target Frequency	2021	2022	2023	2024	2025	2026
Bear Creek Nature Park	12	Every 2 Years		Yes		Planned		Planned
Blue Heron Environmental Area	9	Every 2 Years	Yes		Planned		Planned	
Charles Ilsley Park	10	Every 2 Years	Yes		Planned		Planned	
Cranberry Lake Park	5	Every 2 Years		Yes		Planned		Planned
Draper Twin Lake Park	9	Every 2 Years	Yes		Planned		Planned	
Fox Nature Preserve	13	Every 2 Years	Yes		Planned			
Gallagher Creek Park	6	Every 2 Years		Yes		Planned		Planned
Kamin Conservation Easement	4	Every 2 Years		Yes		Planned		Planned
Lost Lake Nature Park	15	Every 2 Years	Yes		Planned		Planned	
Marsh View Park	8	Every 2 Years		Yes		Planned		Planned
Mill Race Trail	3	Every 3 Years	Yes			Planned		
Mill Creek Crossing	2	Every 3 Years	Yes			Planned		
Nicholson Prairie	3	Every 2 Years		Yes		Planned		Planned
O'Connor Nature Park	4	Every 2 Years		Yes		Planned		Planned
Paint Creek Heritage Area - Fen	3	Every 2 Years		Yes		Planned		Planned
Paint Creek Heritage Area - Wet Prairie	6	Every 2 Years	Yes		Planned		Planned	
Paint Creek Junction	4	Every 2 Years		Yes		Planned		
Paint Creek Trail - Art Project	3	Every 3 Years	Yes			Planned		
Paint Creek Trail Parcel	2	Every 5 years				Planned		
Paint Creek Trail - Right-of-Way	10	Every 3 Years	Yes			Planned		
Stony Creek Ravine Nature Park	16	Every 2 Years	Yes		Planned		Planned	
Watershed Ridge Park	10	Every 2 Years	Yes		Planned		Planned	
Number of Locations for Year	22		12	10	9	14	8	10
Sum of Photo Points for Year	157		106	59	91	69	78	57

Floristic Inventory Assessment and Management Plan Update Schedule

Natural Areas Stewardship, Oakland Township Parks Recreation

Park	Acres	1st Survey Year	2020s Survey Year (Adjusted 10 yr interval)	2030s Survey Year (10 yr interval)	Total Spp	No. Native	No. Non-native	Total FQI
Draper Twin Lake Park (FQA complete, need to update mgt plan)	90	2020	2020	2030	280	194	86	45.2
Charles Ilsley Park (2021 FQA update in progress)	120	2001	2021	2030	176	159	17	43.8
Cranberry Lake Park (2021 FQA update in progress)	213	2001	2021	2031	313	244	69	56.6
Bear Creek Nature Park	107	2001	2022	2032	187	146	41	39.7
Marsh View Park	96	2001	2022	2032	125	85	40	24.6
Blue Heron Environmental Area	139	2001	2023	2033	140	134	6	48.5
PCHA - Fen	0.5	2014	2023	2033	143	105	38	29.9
Gallagher Creek Park	15	2014	2024	2034	192	131	61	31.9
O'Connor Nature Park	10	2014	2024	2034	213	146	67	37.9
Stony Creek Ravine (208 ac Expansion)	208	2015	2025	2035	305	229	76	50.6
Stony Creek Ravine Nature Park (original)	60	2005	2025	2035	177	138	39	46.05
Kamin Easement	5	2018	2026	2036	161	121	40	36.8
Nicholson Prairie	5	2018	2026	2036	123	91	32	28.8
PCHA - Wet Prairie	10	2006	2026	2036	244	206	38	56.2
Lost Lake Nature Park Expansion	235	2020	2027	2037	281	229	52	58.7
Lost Lake Nature Park	58	2001	2027	2037	152	132	20	41.9
Other Paint Creek Trail ROW habitats	5	2027	2027	2037				
Paint Creek Trail - Art Project	0.5	2018	2028	2038	76	55	21	20.9
Watershed Ridge Park	170	2018	2028	2038	211	170	41	43.6
Mill Creek Crossing	1	2018	2029	2039	100	66	34	23
Mill Race Trail	2.5	2019	2029	2039	104	65	39	20.4
Paint Creek Junction	5.5	2019	2029	2039	114	88	26	25.6
Paint Creek Trail Parcel	2.5	2017	2029	2039	73	47	26	14.5

2022 Field Work Plan

Natural Areas Stewardship Oakland Township Parks & Recreation



Introduction

The annual Natural Areas Stewardship field work plan is developed by integrating recommendations from park management plans, stewardship annual reports, and monitoring from prior years. We prioritize work in high quality remnant natural communities, especially those that are rare or imperiled in southeast Michigan. One index that can give a general idea of site quality is the FQI (Floristic Quality Index) as shown in the table at the end of this document. The FQI indicates the overall quality of the vegetation at a site. For reference, 1-19 is low quality, 20-35 is high quality, and above 35 is exceptional. Several parks have FQI values that are near or above 50, indicating just how special these parks are (Lost Lake Nature Park, Paint Creek Heritage Area – Wet Prairie, Stony Creek Ravine Nature Park, Blue Heron Environmental Area, Cranberry Lake Park).

Our management plans are over ten years old and are scheduled for updates on a rolling basis. Monitoring often changes our priorities compared to management plans as we learn more about the natural communities in our parks and the effects of our previous stewardship work. We always try to do our management work based on the best information we have available at the time. This process of making decisions by learning from previous work and changing management approaches as needed is known as the adaptive management framework.

Actual timing and quantity of work completed will depend on the availability of staff and contractors, weather, and working around other commitments.

January and February

1. Canopy thinning
 - a. Lost Lake Nature Park: In the oak woodlands, girdle or drill-and-fill fire sensitive trees. Small diameter (<3 inches) can be girdled near trails, but remove whole trees greater than 3 inch diameter if working near trails so that we don't leave standing dead hazard trees.
2. Prepare for prescribed burns
 - a. Flag perimeters and check burn breaks of all contractor burn units (Charles Ilsley Park, Draper Twin Lake Park, Lost Lake Nature Park).
 - b. Check burn breaks for all OTPR burn units (Bear Creek Nature Park, Paint Creek Heritage Area – Wet Prairie, Nicholson Prairie, PCT Art Project, Lost Lake Nature Park parking lot plantings, Gallagher Creek Park plantings)
 - c. Field verify fire sensitive areas in all burn units.
3. Forestry Mowing and Brush Hogging
 - a. Brush hog prior year forestry mowing areas to prepare for follow-up spot treatment of invasive shrubs in the summer (Draper Twin Lake Park west, Bear Creek Nature Park, Charles Ilsley Park, Watershed Ridge Park).
 - b. Manage contractors completing new forestry mowing in parks (Lost Lake Nature Park remains for 2022. Cranberry Lake Park and Marsh View Park overlook completed in late 2021).
 - c. Cut dead invasive cattails in Paint Creek Heritage Area – Fen to prep for summer re-treatment.
4. Invasive Shrub Control

- a. Complete invasive shrub removal at Lost Lake Nature Park fen: cut stump mature invasive shrubs, stack brush piles, and burn brush piles. Focus on highest quality area near Lake George Road. Work in bog if time allows.
 - b. Burn brush piles by northeast marsh at Bear Creek Nature Park and north end of Paint Creek Heritage Area – Wet Prairie.
 - c. Control black alder at Gallagher Creek Park if time allows.
5. Seed Mix Installation
 - a. Spread seed in new forestry mowing areas after work is completed (Cranberry Lake Park, Lost Lake Nature Park, Marsh View Park overlook).
 - b. Spread forb seed in previous forestry mowing areas where initial phase of invasive shrub control is complete (Draper Twin Lake Park west, Stony Creek Ravine Nature Park northeast corner).
 - c. Spread seed at Paint Creek Junction in area between Orion Road and parking lot. Spread forestry mowing mix in park where construction contractor mowed vegetation but did not do earthmoving.
 - d. Work with USFWS to complete installation of upland prairie seed mixes in project areas at Blue Heron Environmental Area, Stony Creek Ravine Nature Park, and Watershed Ridge Park. Stewardship staff will spread emergent wetland seed mixes at Blue Heron and Watershed.

March and April

1. Prescribed burns
 - a. Implement prescribed burns as time and weather allows with the volunteer crew at Bear Creek Nature Park, Paint Creek Heritage Area – Wet Prairie, Nicholson Prairie, PCT Art Project, Lost Lake Nature Park parking lot plantings, Gallagher Creek Park plantings.
 - b. Implement prescribed burns with contractor at Charles Ilsley Park, Draper Twin Lake Park, and Lost Lake Nature Park,
 - c. Interseed burn units after burns are complete if appropriate seed is available.
2. Garlic mustard
 - a. Begin hand pulling garlic mustard when plants are starting to bolt and easy to see. Scan all parks except Draper Twin Lake Park, Marsh View Park, Mill Creek Crossing, Paint Creek Junction, Paint Creek Trail Parcel, and low-quality areas of Stony Creek Ravine Nature Park.
 - b. Pick up trash in conjunction with garlic mustard scan.
3. Vernal pool monitoring – complete volunteer field training in early April.
4. Finish brush hogging and mowing that were not completed in the winter, as outlined above.
5. Native plant landscaping
 - a. Clean up native plant beds in late April after days are getting consistently warmer (allow native bees to emerge).
 - b. Order plants needed to supplement at Bear Creek Nature Park, Gallagher Creek Park, and Marsh View Park if needed.

May

1. Garlic mustard
 - a. Continue hand pulling garlic mustard when plants are starting to bolt and easy to see. Scan all parks except Draper Twin Lake Park, Marsh View Park, Mill Creek Crossing, Paint Creek Junction, Paint Creek Trail Parcel, and low-quality areas of Stony Creek Ravine Nature Park.
 - b. Volunteer workdays
 - c. Pick up trash in conjunction with garlic mustard scan.
2. Reed canary grass
 - a. Treat reed canary grass in fields at Bear Creek Nature Park. Scan prairie plantings at Gallagher Creek Park, Draper Twin Lake Park, and Charles Ilsley Park, treating any reed canary grass found.
 - b. Plan for aggressive native sedges that can be planted in treatment areas to prevent re-establishment.
3. Native plant landscaping
 - a. Begin monthly weeding of native plant landscaping. May need additional weeding at Gallagher Creek Park landscaping that is still establishing and has a large weed seedbank.
 - b. Pick up and install plants needed to supplement existing plantings.
4. Floristic Inventory
 - a. Complete first visit to Bear Creek Nature Park and Marsh View Park in late May or early June. Document spring ephemerals, trees, shrubs, and early sedges.
 - b. Conduct meander survey in late May or early June through high-quality natural areas at Stony Creek Ravine Nature Park and Lost Lake Nature Park expansions to look for threatened, endangered, and species of special concern.

June

1. Complete any remaining garlic mustard control by early June.
2. Monitor and treat swallow-wort, crown vetch, wild parsnip, teasel throughout the park system. Document any new locations in mobile app and treat.

Park	Swallow-wort	Crown Vetch	Wild Parsnip	Teasel
BCNP	X	X		X
BHEA		X		X
CIP	X	X		X
CLP	X	X		
DTLP	X	X		
GCP		X	X	X
Kamin	X			
LLNP	X	X	X	X
MCC				
MRT				
MVP		X		X
OCNP				
PCJ	X		X	X
PCHA-Fen				
PCHA-Wet Prairie	X	X		
PCT-ROW	X	X		

SCRNP	X	X		X
WRP	X	X	X	X

3. Floristic Inventory – Complete second visit at Bear Creek Nature Park and Marsh View Park in mid to late June to document sedges and early flowering plants.
4. Collect spring ephemeral seed (bloodroot, others?)
5. Native plant landscaping
 - a. Continue monthly weeding of native plant landscaping at Bear Creek Nature Park, Gallagher Creek Park, and Marsh View Park
 - b. Water new trees if drought conditions
6. Work with contractor to complete first maintenance mow of prairie plantings at Blue Heron Environmental Area, Stony Creek Ravine Nature Park, and Watershed Ridge Park.
7. Invasive cattails – treat at Paint Creek Heritage Area – Fen and Lost Lake Nature Park fen.
8. Invasive shrub control
 - a. Begin spot treatment of invasive shrubs in prior year forestry mowing areas (Bear Creek Nature Park, Draper Twin Lake Park, Stony Creek Ravine Nature Park, Watershed Ridge Park, Charles Ilsley Park, Marsh View Park pavilion).

July and August

1. Invasive shrub control
 - a. Scan and spot treat invasive shrubs in prior year forestry mowing areas at (Bear Creek Nature Park, Draper Twin Lake Park, Stony Creek Ravine Nature Park, Watershed Ridge Park, Charles Ilsley Park, Marsh View Park pavilion).
 - b. Scan and spot treat invasive shrubs in current year forestry mowing areas (Marsh View Park overlook, Cranberry Lake Park, Lost Lake Nature Park).
 - c. Complete follow-up spot treatment of invasive shrubs throughout Paint Creek Heritage Area- Wet Prairie.
 - d. Treat oriental bittersweet
 - i. Stony Creek Ravine Nature Park in Stony Creek woodland, north central woodland, southeast woodland, and hedgerows between new prairie plantings.
 - ii. Lost Lake Nature Park in north-central and southeast woodlands.
 - e. Hand pull small invasive shrub seedlings at Lost Lake Nature Park high quality habitat on days not appropriate for herbicide application.
 - f. Check black alder at Gallagher Creek Park and do follow-up treatment if necessary.
 - g. Check porcelainberry at Stony Creek Ravine Nature Park and treat
 - h. If awarded Oakland County Parks grants, work with them to complete project at Lost Lake Nature Park fen/bog and Cranberry Lake Park wetlands by lake.
2. Sweet clover – hand pull or cut sweet clover at full bloom along the Paint Creek Trail, in prairie plantings, and in other parks as time allows
3. Spotted knapweed
 - a. Hand pull at Paint Creek Heritage Area – Wet Prairie

- b. Spot mow in prairie plantings
- 4. Work with contractor to complete first maintenance mow of prairie plantings at Blue Heron Environmental Area, Stony Creek Ravine Nature Park, and Watershed Ridge Park.
- 5. Floristic Inventory
 - a. Scan high-quality habitat at Stony Creek Ravine Expansion and Lost Lake Nature Park for undocumented species.
- 6. Photo monitoring – complete parks scheduled for 2022 in late August to early September.
- 7. Collect native seed (golden alexanders, blue-eyed grass, others?)
- 8. Native plant landscaping
 - a. Continue monthly weeding of native plant landscaping.
 - b. Water new trees if drought conditions

September

- 1. Phragmites – complete treatment at all parks. Second year of treatment at Lost Lake Nature Park expansion will likely take quite a bit of time.
- 2. Invasive Shrub Control – continue work on projects listed for July/August.
- 3. Native plant landscaping at Bear Creek Nature Park, Gallagher Creek Park, and Marsh View Park.
 - a. Continue monthly weeding of native plant landscaping.
 - b. Install any supplemental plants needed.
- 4. Floristic Inventory
 - a. Complete third visit at Bear Creek Nature Park and Marsh View Park to document asters and other fall-blooming plants.
 - b. Scan high-quality habitat at Stony Creek Ravine Expansion and Lost Lake Nature Park expansion.
- 5. Crown vetch – check patches and re-treat any areas with new growth.

October

- 1. Seed collection – collect wherever desirable native seed is present
- 2. Phragmites – finish any treatment in first week of October
- 3. Invasive shrub control – switch to only cut stump and basal bark methods as leaves change color. Continue working on projects outlined in July/August.
- 4. Trash cleanup as time allows
 - a. Draper Twin Lake Park – various farm dumps on east and west sides. Will need a dumpster for aggregate and one for normal/construction waste trash.
 - b. Stony Creek Ravine Nature Park – various farm dumps throughout the new expansion
 - c. Charles Ilsley Park – clean up scrap metal on west side (car frame, manure spreader, rolls of fencing)
 - d. Lost Lake Nature Park expansion as found

November

1. Seed collection and processing
 - a. finish collecting any late species.
 - b. Host volunteer seed cleaning workday.
 - c. Prepare, document, and plan planting areas for seed mixes.
2. Understory thinning – girdle, drill-and-fill, or whole tree removal of fire sensitive trees in high quality oak woodlands and near prairie habitat. Target areas for winter 2022-2023:
 - a. Bear Creek Nature Park (around large diameter white oak by central pond)
 - b. Lost Lake Nature Park expansion (NE of Clam Lake, south of Green Lake, SE corner of expansion)
 - c. Charles Ilsley Park (NE woodland)
 - d. Stony Creek Ravine Nature Park (hedgerows between new prairie plantings).
 - e. Watershed Ridge Park (hedgerows between new prairie plantings).
3. Begin or continue trash removal outlined in October as time allows.
4. Complete prescribed burns with contractors and volunteers as conditions allow.
Locations depend on areas completed in spring and site priorities (burn prairie areas if not done in the spring).
5. Mowing and Brush Hogging
 - a. Brush hog previous year forestry mowing areas if needed. Locations depend on work accomplished during the summer and projected need for 2023.
 - b. Manage contractors completing forestry mowing at Marsh View Park and Lost Lake Nature Park. Complete forestry mowing at any other parks as needed (Watershed Ridge Park?). Work can begin when soils freeze, or at least dry and firm.
6. Continue invasive shrub control with cut stump and basal bark.
 - a. Bear Creek Nature Park – continue working around the marsh in the northeast corner. Burn any new brush piles as conditions allow.
 - b. Scan prairie plantings at Draper Twin Lake Park and Charles Ilsley Park.
 - c. Lost Lake Nature Park – continue work in fen and bog wetlands.
 - d. Draper Twin Lake Park – invasive shrubs around the pocket wetland on east side.

December

1. Plant locally collected seed in restoration areas (locations depend on species collected and sites ready for seed)
2. Continue invasive shrub control outlined in November.
3. Continue understory thinning outlined in November.
4. Complete trash removal for the year before soils freeze.
5. Mowing and Brush Hogging – continue as outlined in November.
6. Scout potential prescribed burn units for 2023.



Oakland Township Parks and Recreation

Natural Areas Stewardship

2022