



Charter Township of Oakland
Parks and Recreation

Natural Areas Stewardship 2021 Annual Report

Prepared by
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Natural Areas Stewardship Manager



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Front Cover: Cranberry blooming at Cranberry Lake Park, June 30, 2021

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

PART I

STEWARDSHIP HIGHLIGHTS

2021

STEWARDSHIP SNAPSHTOS

2021

1. **Seasonal Technicians:** Parker Maynard returned for a second season on our crew. He earned a bachelor's degree in Environmental Science at Eastern Michigan University. Katrianna Studtmann graduated from Michigan Tech University with a bachelor's degree in Ecology, where she was involved with the Fish Biology Lab and the women's soccer team. Maxwell Dunn is studying Crop and Soil Science at Michigan State University and enjoys basking in nature's beauty, native plant landscaping, and reading.
2. **Stewardship Specialist:** Grant Vander Laan continued as the part-time year 'round Stewardship Specialist in 2021.
3. **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 site preparation for the fields at Blue Heron Environmental Area, Stony Creek Ravine Nature Park, and Watershed Ridge Park.
4. **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. We again used CISMA funds to cover 50% of road right-of-way treatment in Oakland Township in 2021 (13.7 linear miles of Phragmites). The CISMA also provided a grant for treatment of swallow-wort and Phragmites at the Lost Lake Nature Park expansion.
5. **Prescribed Burns:** We completed prescribed burns at Charles Ilsley Park, Lost Lake Nature Park, Paint Creek Heritage Area—Wet Prairie, Paint Creek Trail right-of-way south of Silverbell, and Watershed Ridge Park with contractors. We completed burns at Bear Creek Nature Park with our staff and volunteer crew.
6. **Forestry Mowing:** We completed forestry mowing at Cranberry Lake Park, Marsh View Park, and Stony Creek Ravine Nature Park in 2021.
7. **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 29 posts and had 12,665 visitors (+849), with 19,540 page views (+281). Natural Areas Notebook, oaklandnaturalareas.com
8. **Volunteer Program:** Volunteers contributed 767.25 hours in 2021. Volunteer workdays focused on invasive shrub control (July to December), and seed collecting (October). Volunteers also monitored nest boxes at Bear Creek Nature Park, Draper Twin Lake Park, Charles Ilsley Park, and the Paint Creek Trail; helped with native seed cleaning; and surveyed parks to document bird species.
9. **Education Events:** Stewardship talks included virtual presentations on native plant alternatives to lawn by Dr. Dan Carter, and gardening with Michigan native plants by Cheryl English. Weekly bird walks continued Wednesday mornings, except March-June.
10. **Native Plant Sale:** We offered our pre-order native plant sale again, with good success.
11. **Phragmites Outreach Program:** We continued the Phragmites Outreach Program to help township residents get Phragmites treated on their property. We received about 20 requests for no-obligation cost estimates, and treated 19 properties with a contractor, PLM Lake and Land Management.



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

STAFF & STEWARDSHIP COMMITTEE

2021

Natural Areas Stewardship Manager

Dr. Benjamin VanderWeide has lead the Natural Areas Stewardship program since 2014. He coordinates ecological restoration in Oakland Township parks. We continued large-acreage prairie restoration and native landscaping and used a forestry mower to control autumn olive and other invasive woody plants in fields. In 2021 he completed the botanical inventories of Cranberry Lake Park and Charles Ilsley Park.

Seasonal Technicians

Parker Maynard returned for a second season as a land stewardship technician. He was raised in Novi, Michigan and realized his love of the outdoors through camping and fishing as a kid. Through his experience earning a bachelor's degree in Environmental Science at Eastern Michigan University, Parker discovered an interest in maintaining and improving ecosystems. It is his goal to research and execute sustainable solutions for mitigating anthropogenic harm in vital areas. Parker is excited to be working with Oakland Township Parks and Recreation, and feels that it is the perfect opportunity for him to give back to the state that has provided so many of the natural resources and recreational activities that he has enjoyed throughout his life.

Katri Studtmann joins our crew this summer as a land stewardship technician. She graduated in May 2020 from Michigan Technological University with a degree in Ecology. At Michigan Tech, Katri was involved with a Fish Biology lab and the Women's Soccer team. She also has worked for the Wildlife Rehabilitation Center of Minnesota and the University of Minnesota. She hopes to one day pursue her master's degree in the future studying anthropogenic effects on the environment. Katri is excited to work for Oakland Township Parks and Recreation this summer to continue gaining more experience in the field. She loves to mountain bike, ski, run, and play soccer.

Maxwell Dunn joined our crew as a land stewardship technician. He lives on a quaint lake in Lake Orion and enjoys basking in nature's beauty, native plant landscaping, and reading. He is studying Crop and Soil Science at Michigan State University and worked on an organic farm in Clarkson for the past two years. He is grateful for the opportunity to preserve the native lands of Oakland Township and looks forward to consistently observing their development throughout the work season.

Stewardship Specialist

Grant Vander Laan continued as the Stewardship Specialist in 2021. 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. **Maryann Whitman** continued her service as Citizen Advisor on the committee. Parks staff representatives included **Ben VanderWeide**, Natural Areas Stewardship Manager, and **Mindy Milos-Dale**, Parks Director.



2021 Stewardship Crew (L-R): Ben VanderWeide, Katri Studtmann, Parker Maynard, Grant VanderLaan, and Max Dunn. Photo by Carol Kasprzak.

VOLUNTEERS & OUTREACH

2021

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 767.25 hours in 2021! Thank you.

Our 2021 volunteers were Ian Ableson, Isaac Anselmo, Diane Bennett, Lynda Billotto, Erica Clites, Rachel Dolson, Kathleen Dougherty, Patrick Falle, Yachiyo Falle, Michael Fetzer, Jim Fostey, Ruth Glass, Anthony Gorney, Stacy Hahn, Matthew Haleanson, George Hartsig, Louise Hartung, Emily Holst, Mark Isken, Bill Jandeska, Jean Jandeska, Andrew Johnson, Sharon Jourdan, Bill Kamman, Ingrid Kliffel, Tom Korb, Jim Lloyd, James Mackinder, Rob Mair, Cam Mannino, John McDonald, Emily Messick, Vinnie Morganti, Bill Pankratz, Laurie Peklo, Donna Perkins, Jon Reed, Jenny Sigelko, Tom Stoye, Katri Studtmann, Domenico Vechhio, and Bob Yager.



Volunteers pull garlic mustard at Watershed Ridge Park on May 12, 2021.



Seed cleaning workday at Watershed Ridge Park on December 2, 2021.



Cam and Stephanie help sort plants for the native plant sale on May 28, 2021.



Butterfly monitor training at Gallagher Creek Park, led by Dr. Mary Jamieson from Oakland University. August 17, 2021.

VOLUNTEERS & OUTREACH

2021

Volunteer Workdays

In 2021 we hosted garlic mustard workdays, invasive shrub control workdays at Bear Creek Nature Park, native seed collecting, and native seed processing. We also began training volunteers to work independently on projects that were appropriate for them.

Bird Walks

In 2021 we continued our weekly bird walks. 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 2021 birders at these parks have documented **136 species** at Bear Creek Nature Park (+8), **126 species** at Draper Twin Lake Park (+5), **122 species** at Charles Ilsley Park (+6), **158 species** at Cranberry Lake Park (+18), and **98 species** at Lost Lake Nature Park (+10).

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 2021. 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. In December stewardship staff repaired several boxes and updated locations of several nest boxes to make them easier to access for volunteers. Volunteer Tom Korb built two kestrel nest boxes and mounting pole systems. One kestrel box was installed at Charles Ilsley Park in honor of Tom's mother, and the second installed at Stony Creek Ravine Nature Park in honor of volunteer and friend Ruth Glass, who both passed away in 2021.



Donna Reed checks her nest boxes at Draper Twin Lake Park on June 2, 2021. Photo by Grant Vander Laan.

Prescribed Fire Volunteer Crew

In our sixth season with volunteers participating in our in-house prescribed fire crew, we were able to resume operations after a hiatus in 2020. We were able to complete the annual volunteer training virtually in February 2021 (see the newsletter announcement below). We then burned about 15 acres at Bear Creek Nature Park in April 2021. In February 2021 we burned many brush piles at Paint Creek Heritage Area –Wet Prairie with help from Six Rivers Land Conservancy technicians and volunteer Jon Reed.

Volunteer Crew Training - 9 am to 2:30 pm on Saturday, February 26, virtual. 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.



Virtual prescribed fire crew training on February 20, 2021.

VOLUNTEERS & OUTREACH

2021

Educational Events

Stewardship hosted a variety of educational events in 2021. Check out the newsletter descriptions below.



Wildflowers in MI Garden

*Cheryl English
Black Cat Pottery,
Thursday, January 21, 6:30 pm VIRTUAL*

Often considered too wild and crazy for the average gardener, wildflowers can thrive and provide years of beauty even in a small urban garden. Don't limit yourself to the development of "well-behaved" "garden-worthy" cultivars. Learn how the species themselves can be a successful part of your garden while providing an attractive environment for our local fauna as well. Cheryl English is an Advanced Master Gardener living in Detroit, Michigan. Formally educated as an Art Historian and currently the owner of Black Cat Pottery, Cheryl has combined her varied training and experience into a career as a professional gardener, artist, writer and garden and art educator. Cheryl is President Emeritus of Master Gardeners of Greater Detroit and has also been active with the editorial board for the Detroit Garden Center's "Bulletin", volunteered with The Greening of Detroit, and served as an officer of the Wildflower Association of Michigan.

Photo courtesy of Cheryl English

An Alternative to Boring Midwestern Blue-grass and Fescue Lawns

*Dr. Dan Carter
Landowner Services Coordinator, The Prairie Enthusiasts
Thursday, February 1, 6:30 pm VIRTUAL*

Blur the separation between daily life and nature by thinking about your lawn differently, and learn how to create home landscapes that allow your lifestyle and nature to co-mingle. This presentation will introduce how North American grasses, sedges, and wildflowers can be used to create alternative lawns and native gardens that are inspired by natural plant communities in the Midwest. Preparation, planting, and maintenance will be discussed. Dan Carter is Landowner Services Coordinator for The Prairie Enthusiasts, a conservation non-profit that protects fire dependent ecosystems in Wisconsin, Minnesota, and Illinois. He is also a research associate and former research fellow with the Milwaukee Public Museum and owner of Dropseed Ecological and Botanical Services. Dan is lead-author of several scholarly articles in botanical and ecological journals and his primary hobby has been gardening with native plants since he was a teenager.

Photo courtesy of Dan Carter



VOLUNTEERS & OUTREACH

2021

Native Plant Sale

2021 was the third year that the Stewardship Program offered a pre-order native plant sale to residents and participants in the Natural Areas Stewardship Program. While there are many “drop-in” native plant sales in the area, our plant sale fills a new niche as a pre-order sale. This format allows customers to plan ahead and order plants in bulk for the summer gardening projects. It also simplifies the process for stewardship staff so that we can do most of the work for the sale in the winter and early spring, before the rush of spring stewardship work. By ordering early, we are able to extend low prices to customers. This year customers ordered many species of native plants in various sizes, from spring wildflowers in 2” pots to small trees. Total sales were about \$7400.



Kestrel nest box installation at Stony Creek Ravine Nature Park. Volunteer Tom Korb built the nest box and pole mounting system. Cam Mannino helped document the installation in memory of Ruth Glass on December 3, 2021.

VOLUNTEERS & OUTREACH

2021

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 2021 we were able to partner with private landowners adjacent to prairie habitat along the Paint Creek Trail south of Silver Bell Rd.



Prescribed burn along the Paint Creek Trail, in partnership with private landowners with contiguous prairie and oak savanna habitat. May 14, 2021.

Oakland County CISMA

Oakland Township Parks and Recreation continued involvement in the Oakland County Cooperative Invasive Species Management Area. The Oakland Township Board of Trustees funded half of the fifth year of treatment for Phragmites infestations in the right-of-way of major roads in Oakland Township, with the CISMA covering the other half with funds from the Road Commission for Oakland County. Ben VanderWeide, Natural Areas Stewardship Manager, attended the monthly OC CISMA meetings and continued to serve on various committees. Major initiatives included the third Spring Invasive Species Summit, continued work on grants from the Michigan Invasive Species Grant Program, right-of-way Phragmites treatment and monitoring throughout Oakland County, European frogbit surveys near Novi, landowner outreach, and outreach events. The CISMA began to transition to Oakland County as the fiduciary in 2021.

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 2021, rolling out a new app for field data collection. The Natural Areas Stewardship Manager hosted a field training day to learn the monitoring protocols for staff and volunteers. We monitored several vernal pools at Cranberry Lake Park.

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 2021, writing features about significant stewardship projects and nature observations. The stewardship crew also posted regular articles in the spring, summer, and fall. We published 21 posts and had 12,665 visitors (+849 from 2020), with 19,539 page views (about the same as 2020).

Park Stewards

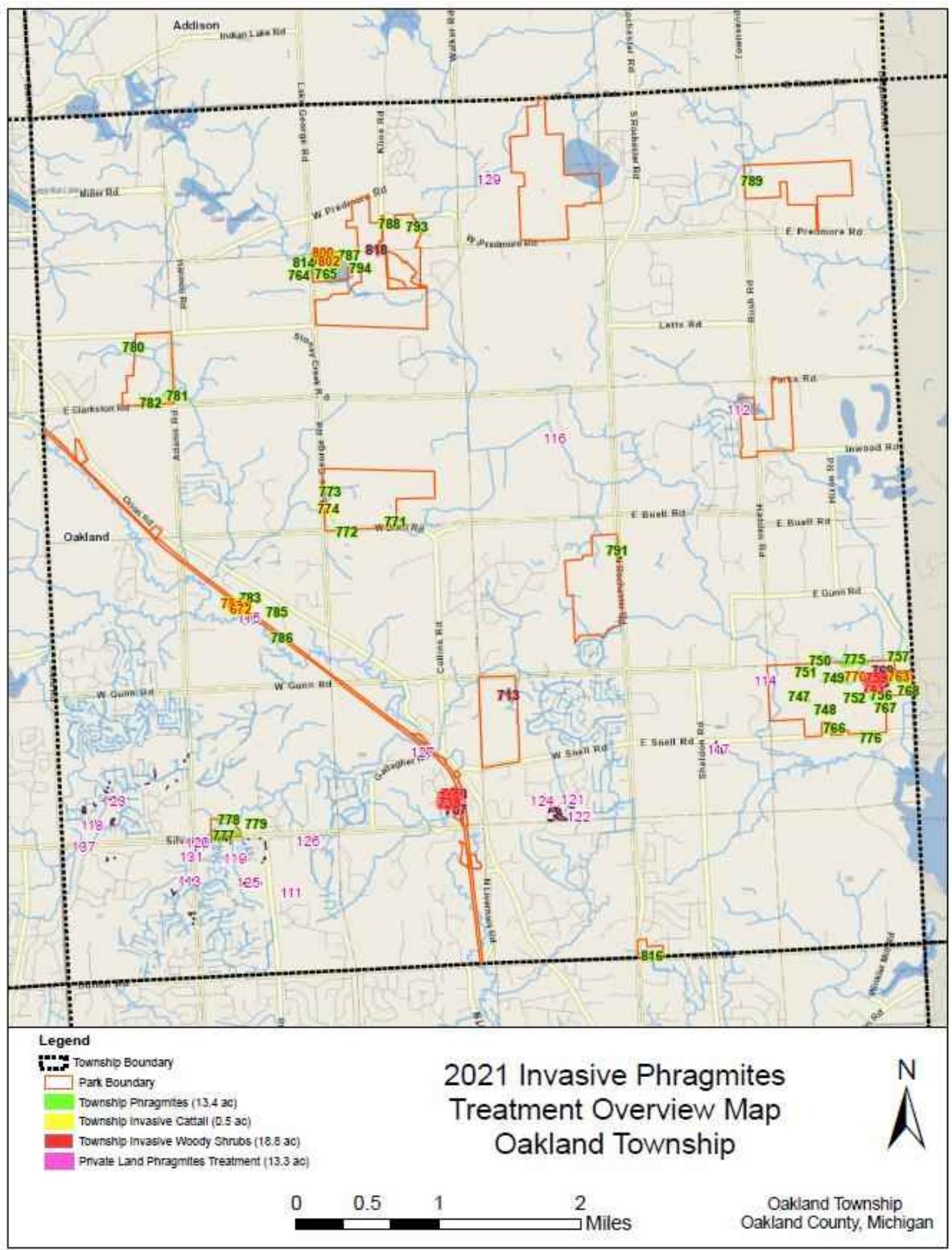
A few special volunteers help us with many aspects of our natural areas stewardship work on a regular basis.

- **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.
- **Tom Korb** helped maintain and monitor nest boxes at Charles Ilsley Park. He installed kestrel boxes at Stony Creek Ravine Nature Park and Charles Ilsley Park with a mounting system for easy monitoring.
- **Jon Reed** lent a helping hand wherever needed in 2021. 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

2021

This map summarizes all known Phragmites and wetland invasive species treatment in Oakland Township in 2021. Rights-of-way along major roads were treated by the Oakland County CISMA using funds from the Road Commission for Oakland County and Oakland Township general funds approved by the Board of Trustees (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

2021



Stewardship Technician Parker completes lake monitoring at Lost Lake Nature Park on September 28, 2021. Photo by Grant Vander Laan.



Stewardship technicians Katri, Parker, and Max (front to back) spread native seed at Bear Creek Nature Park on April 29, 2021. Photo by Grant Vander Laan.



Stewardship technician Max installs native plant plugs at Watershed Ridge Park wetland restorations on May 20, 2021.



Parker, Max, Katri, and Grant complete a prescribed burn for training at the Bear Creek Nature Park parking lot island on April 21, 2021.



Max identifies Culver's Root at Paint Creek Heritage Area—Wet Prairie for Karen Renner, his internship instructor from Michigan State University on August 10, 2021. Photo by Grant Vander Laan.



Ian Ableson and volunteers from FCA (L-R) remove invasive shrubs at Bear Creek Nature Park on October 1, 2021.



Nodding lady's tresses (*Spiranthes cernua*) at Bear Creek Nature Park on October 6, 2021.



Tulip tree flower (*Liriodendron tulipifera*) at Blue Heron Environmental Area on June 4, 2021.



Woodland Phlox (*Phlox divaricata*) blooming at Charles Ilsley Park on May 18, 2021.



Herb Robert (*Geranium robertianum*) at Cranberry Lake Park on June 10, 2021.



Humped bladderwort (*Utricularia gibba*) on floating mud flat at Lost Lake on October 5, 2021.



Blue-eyed grass (*Sisyrinchium angustifolium*) is abundant in moist old-field areas at Stony Creek Ravine Nature Park. June 7, 2021.



Swamp valerian (*Valeriana uliginosa*) at the Lost Lake Nature Park fen on May 26, 2021.

PART II:

PARK STEWARDSHIP

SUMMARIES

2021

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 2021
 - 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

2021

Stewardship Tasks

1. Completed spring maintenance on native plant beds near the Snell Road entrance. In July we cut back tall plants along paths and aggressive perennial sunflowers.
2. Mapped and pulled garlic mustard throughout the park.
3. Swallow-wort and crown vetch—treated all known patches in the park.
4. Treated the patch of brown knapweed (*Centaurea jacea*) documented in 2019.
5. Woody invasive shrubs: Cut and treated glossy buckthorn and other invasive woody plants on the south side of Bear Marsh near the south observation deck in July and October. Burned brush piles from 2021 in January 2022.
6. Phragmites: Treated all known patches of Phragmites.
7. Prescribed Fire: completed 13.5 acres of prescribed burns in SW and east-central old field on April 26, 2021. Completed burn of parking lots island for crew training on April 20, 2021. Spread native grass and forb mix in prescribed fire areas in late April 2021.
8. Seed collecting: collected boneset from Bear Creek Marsh.
9. Forestry mowing: stewardship staff completed follow-up treatment of invasive shrub re-sprouts in north forestry mowing areas and in the new central and southern field areas mowed in fall 2020. Spread native graminoid seed mix selectively in field areas where there was bare soil or where dense invasive shrubs were mowed. Spread native forb mix in north area to boost plant diversity.
10. Collected *Quercus alba* acorns at the Lost Lake Nature Park parking lot and planted through the fields on October 6.

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. 136 bird species observed in park since 2014 (+8 from 2020).
- Continued nest box monitoring. Kathleen Dougherty completed nest box monitoring. We had 9 nest attempts, with 10 eastern bluebirds and 15 tree swallows successfully fledging.
- Completed scheduled photo monitoring in 2020. Scheduled for monitoring in 2022.
- Upcoming monitoring: Complete photo monitoring and floristic inventory in 2022.

Future Stewardship Tasks

- Priority invasive plants: treat teasel, swallow-wort, crown vetch, Phragmites, garlic mustard annually
- Fields: scan every 1-3 years to spot treat invasive shrubs.
 - Increase diversity in fields through frequent prescribed burn and interseeding native plants.
 - Finish forestry mowing by completing thickets around ponds and near the Snell parking lot.
 - Begin 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.



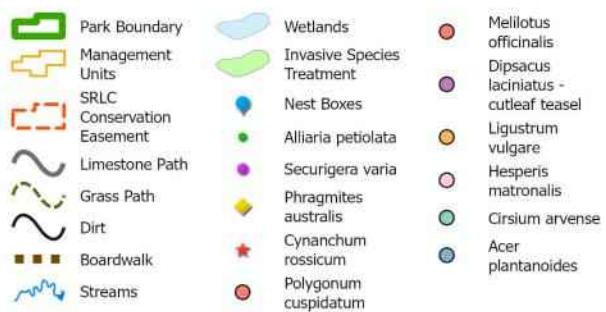
Broadcasting seed with the tractor on April 28, 2021.



Invasive shrub control area by the north marsh on October 1, 2021.



Bear Creek Nature Park Stewardship Summary 2021



0 250 500 1,000 Feet



BLUE HERON ENVIRONMENTAL AREA

2021

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: density continues to be low. Did not treat in 2020.
4. Spot treated invasive shrubs in field behind the circle drive.
5. USFWS wetland and prairie restoration projects continued. Earthmoving for wetlands was completed in 2020, site prep for prairie planting continued in 2021. We hope to complete planting early 2022.
6. Added cuttings of *Decodon verticillatus* and *Nuphar variegata* to the north wetland restoration.
7. Hand dug bolting plants and foliar sprayed rosettes of teasel in the south field near Deer Point Drive.

Monitoring

- 77 bird species observed in the park since 2014 (+7 from 2020).
- 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.
- Consider monitoring potential vernal pools to collect baseline information and confirm vernal pool status.

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.

Future Stewardship Tasks

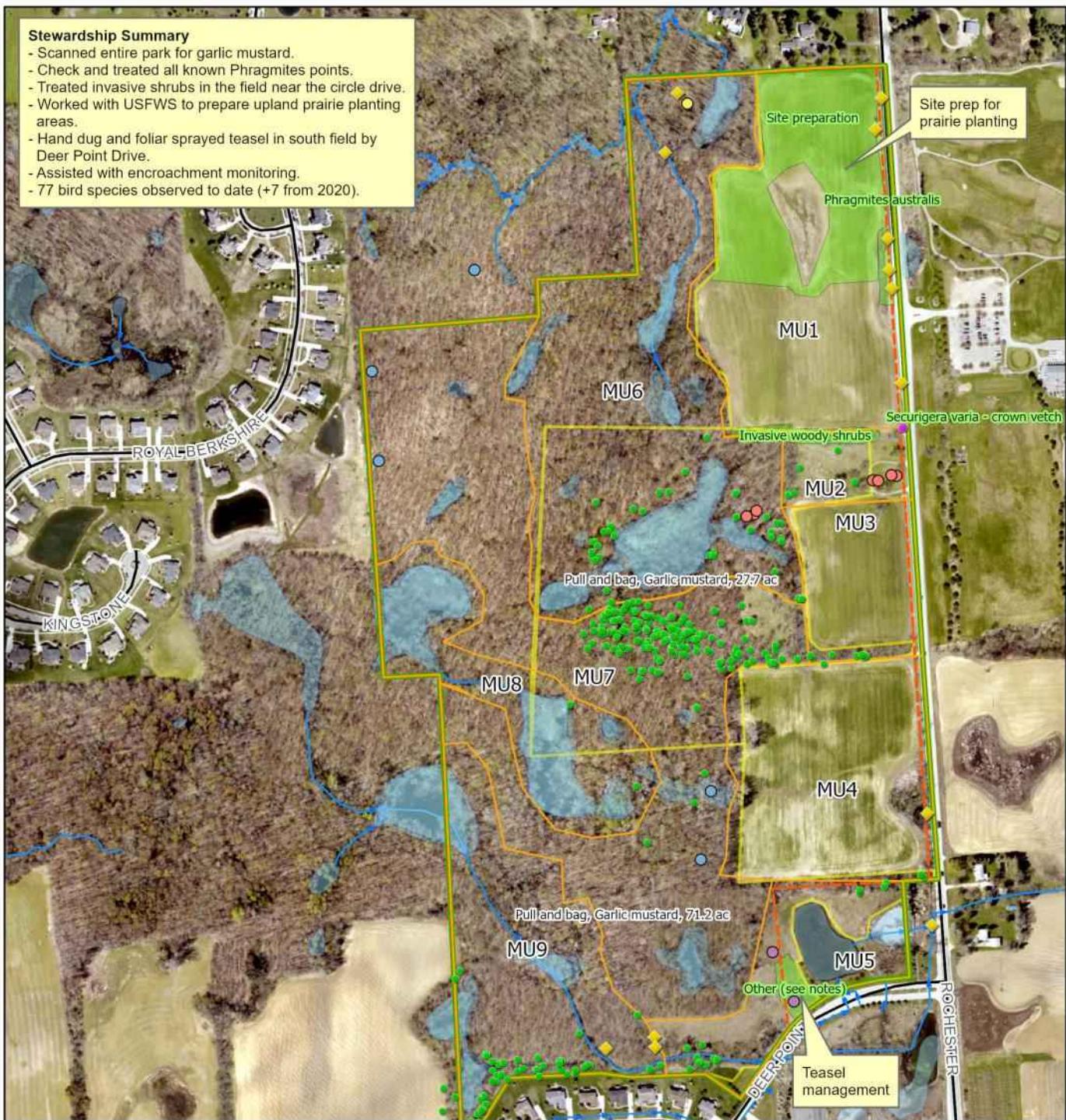
- Continue to survey and pull garlic mustard.
- Continue to monitor and aggressively treat Phragmites and Japanese knotweed.
- Continue to treat invasive shrubs in forestry mowing areas and along field edges. Sweep forests biannually for invasive shrubs.
- Continue to implement wetland and upland restoration plans with USFWS biologist to reduce runoff from farm fields. Restore fields to native vegetation if farming ceases, per conservation easement document.
- Invasive woody plants should be surveyed and treated annually. The patches with mature woodies should be targeted: the southern border, around edges of wetland, and around edges of fields.
- 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.



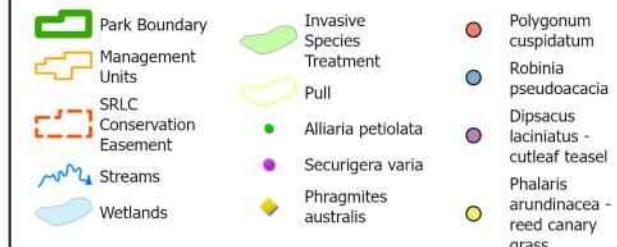
Mallards and an American Black Duck in the wetland restoration in the north field on August 10, 2021.



Vernal pool in the forest at Blue Heron Environmental Area on May 6, 2021.



Blue Heron Environmental Area Stewardship Summary 2021



0 250 500 1,000 Feet



CHARLES ILSLEY PARK

2021

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. Prairie Restoration: Collected seed in prairie plantings. Scanned plantings for invasive shrubs. Planned for 2022 prescribed burn.
5. Phragmites: Checked and treated patches throughout the park.
6. Completed a prescribed burn on the north and east prairie plantings and the northeast woodland on April 23, 2021. Spring had been very dry to that point, so many large wood fuels smoldered, making mop up a long process.
7. Conducted canopy thinning on 1/4 acre in northeast woodland.

Monitoring

- 122 bird species observed in the park since 2014 (+6 from 2020).
- Volunteers monitored nest boxes through the nesting season. From the 102 eggs laid, at least 86 young birds fledged (a few nests not monitored later in the season). Included Eastern Bluebird and Tree Swallows. Relocated nest boxes closer to trails for easier monitoring. Installed kestrel nest box.
- We observed a Blanding's Turtle on April 23 during the prescribed burn. It was not injured.
- Completed photo monitoring in 2021. Originally scheduled for annual monitoring; move to biannual in 2022.
- Completed floristic inventory of entire park in 2021, except western wetlands (vernal pools, emergent marsh, southern hardwood swamp) and prairie fields. Documented 211 plant species, with 184 native. The total FQI is 47.9, with mean C of 3.3. The 2001 assessment did not include the 37 acres added in 2005.
- Potential site for installation of deer exclosures to monitor the effects of deer browse on prairie plantings.
- Update the park management plan, incorporating results of botanical inventory and monitoring.

Future Stewardship Tasks

- Continue to survey and control garlic mustard, Phragmites, crown vetch, 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.
- Oriental bittersweet should be treated throughout the park.
- Invasive woody plants in northeast and northwest forests should be controlled biannually.
- Girdle red maple and other fire sensitive trees in northeast woodland to promote oak recruitment. 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.

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.



Buttonbush (*Cephaelanthus occidentalis*) in the northern shrub wetland at Charles Ilsley Park. July 7, 2021.



Bird walk at Charles Ilsley Park on June 16, 2021.



CRANBERRY LAKE PARK

2021

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.
2. Phragmites: Checked all known locations and treated as needed. Re-treated location on south side of Cranberry Lake in rich tamarack swamp. We were not able to treat the new patch just south of the lake access in 2021 (ran out of time).
3. Japanese Knotweed: Checked known location near north entrance. No new growth observed.
4. Swallow-wort: checked old point in central area of the park and found none. Documented and treated large area in southwest area of the park.
5. Crown vetch: documented and treated a large patch in the southwest area of the park, in same field as swallow-wort.

Monitoring

- 158 bird species have been documented in the park to date using eBird (+18 from 2020). A Seven Ponds Nature Center bird walk on May 5 found a white-eyed vireo in the park, attracting birders from all over Michigan to the park to view this rare bird.
- 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 2020, and is planned for 2022.
- Little to no beaver activity observed near the trail at Cranberry Lake.

Future Stewardship Tasks

- Continue to survey and treat garlic mustard, Phragmites, Japanese knotweed, 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 forestry 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 savanna (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.



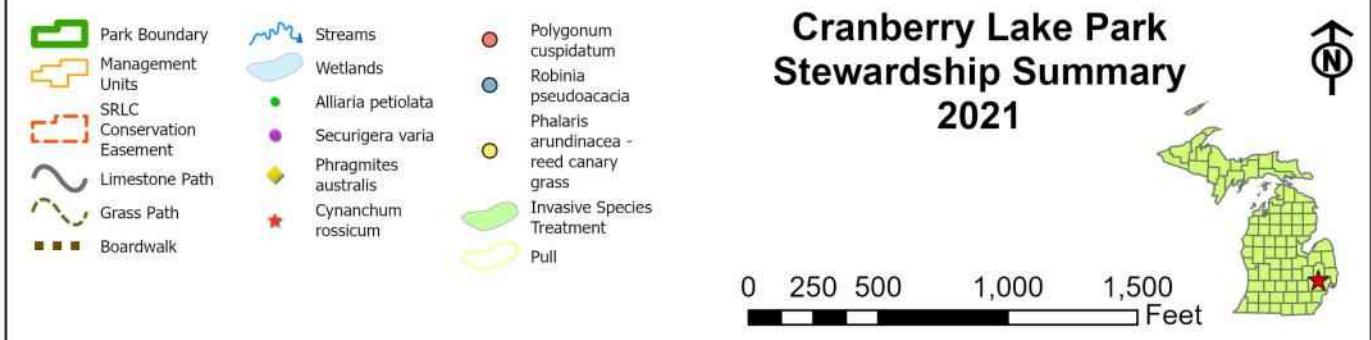
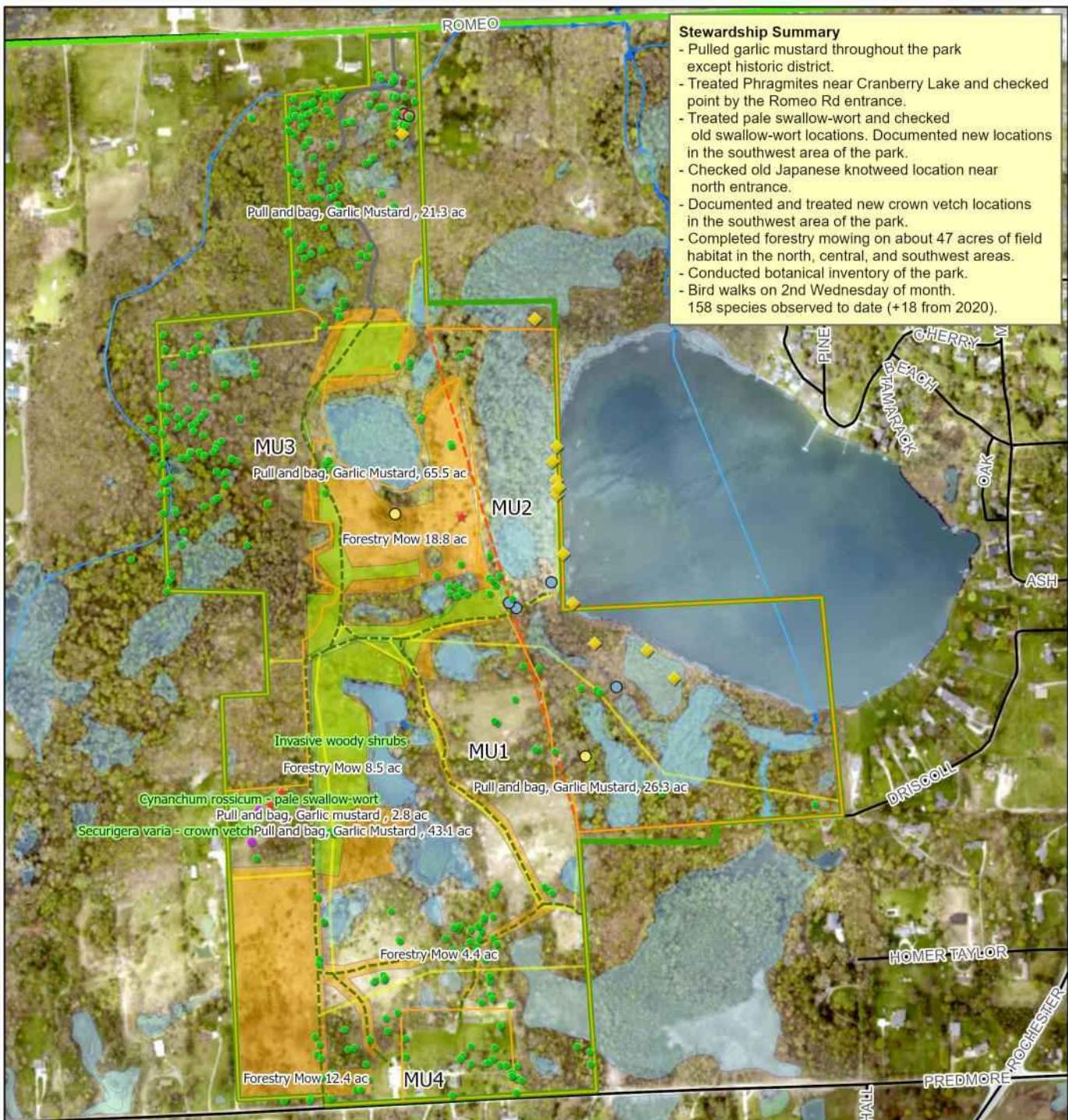
Ben documents plant species in the southern hardwood swamp near Cranberry Lake on June 29, 2021. Photo by Max Dunn.



Mountain holly (*Ilex mucronata*) in the wetland near the margin of Cranberry Lake. June 29, 2021.

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

2021

Stewardship Tasks Completed

1. Swallow-wort: Checked and treated known patches. Documented and treated new patches.
2. Crown vetch: Checked and treated known patches. Documented and treated new patches.
3. Prairie Restoration: Scanned and treated invasive woody shrubs in prairie planting.
4. Woody Vegetation Control:
 - Treated invasive shrubs in eastern old field to follow up on previous work.
 - Spread locally collected native forb mix in east forestry mowing area.
 - Spread native graminoid seed mix in the west forestry mowing area.
 - Completed spot treatment of invasive shrubs in west forestry mowing area.
5. Phragmites: Treated patch across the lake from the dock and the new patches documented in the powerline corridor along Inwood Road.
6. Contractor treated curly-leaf pondweed near the public dock.
7. Removed trash from west forestry mowing area. Removed old dump of construction debris, fencing, and old farm dumps.

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.

Monitoring

- Bird walks on 4th Wednesdays. 126 bird species documented to date in eBird (+5 since 2020).
- Volunteers monitored nest boxes as part of NestWatch program through the nesting season (4th season). Of the 45 eggs laid, 38 young birds fledged, including Eastern Bluebirds and Tree Swallows. Relocated nest boxes closer to trails for easier monitoring.
- Cooperative Lakes Monitoring program for Twin Lake East resumed in 2021.
- Photo monitoring was completed in 2020. Move to biannual monitoring as of 2022.
- Update the park management plan, incorporating 2020 botanical inventory and other monitoring.

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.
- 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 forestry mowing areas.
- Spot treat tree-of-heaven in east forestry mowing area to control the large clone.
- Interseed old fields and forestry mowing areas 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.



Volunteers and staff spread native grass and sedge seed in the west forestry mowing area at Draper Twin Lake Park on March 4, 2021. Jon Reed, Ben VanderWeide, Tylor Roberts, Dean Johnson (L-R). Photo by Grant Vander Laan.



Bog birch (*Betula pumila*) surround by wiregrass sedge (*Carex lasiocarpa*) in the east kettle wetland at Draper Twin Lake Park on October 4, 2021.



Draper Twin Lake Park Stewardship Summary 2021

0 250 500 1,000 Feet



FOX NATURE PRESERVE

Stewardship Tasks Completed

2021

1. Garlic Mustard: Mapped and pulled garlic mustard in high-quality woodlands.
2. Swallow-wort: Scanned old fields, documenting and treating all swallow-wort observed. Appears to all be pale swallow-wort.
3. Crown vetch: Scanned old fields, documenting and treating all crown vetch locations observed.
4. Phragmites: documented and treated all Phragmites observed. Oakland County CIS-MA contractor treated large Phragmites stands along Lake George Rd, Predmore Rd, and the wetland northeast of Clam Lake. Found a patch in the southeast woodland after treatment season ended.
5. Treated bittersweet and other invasive shrubs in the bog and the woodland on the northwest corner of Clam Lake.
6. Began canopy thinning by removing small diameter red maples in the woodland around the bog and northwest of Clam Lake.

Monitoring

- 57 bird species observed to date. In future years rotate bird walk to this park to document species.
- Photo monitoring was completed for the first time in 2021, and is scheduled for 2023.
- Document new plant species as observed, survey for spring ephemerals, and plan for 2027 floristic inventory. Check Stony Creek corridor for undocumented fen pockets.
- 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 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.
- Control invasive woody plants, prioritizing high quality natural areas.
- Restore oak barrens/savanna/woodland using prescribed fire, canopy thinning, invasive species control, and additions of local-genotype seed.
- Assess threats to hydrology and water quality and begin to implement restoration measures.



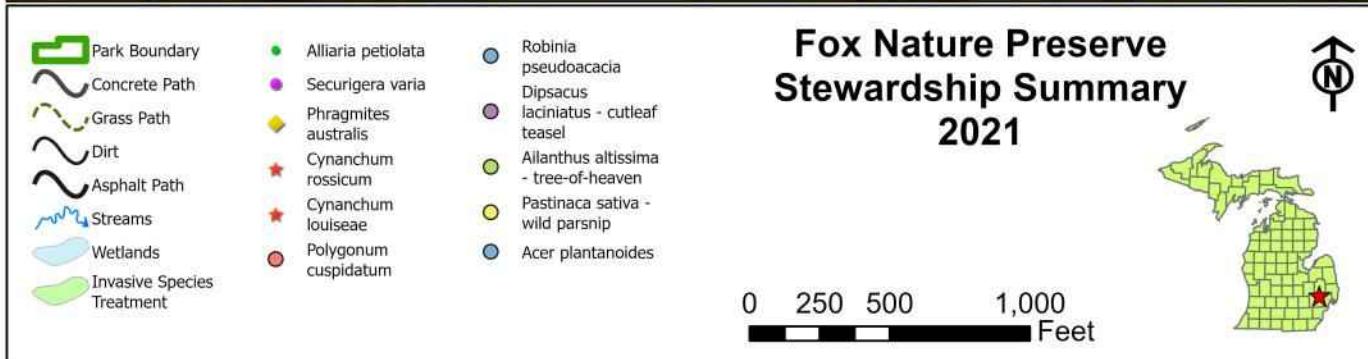
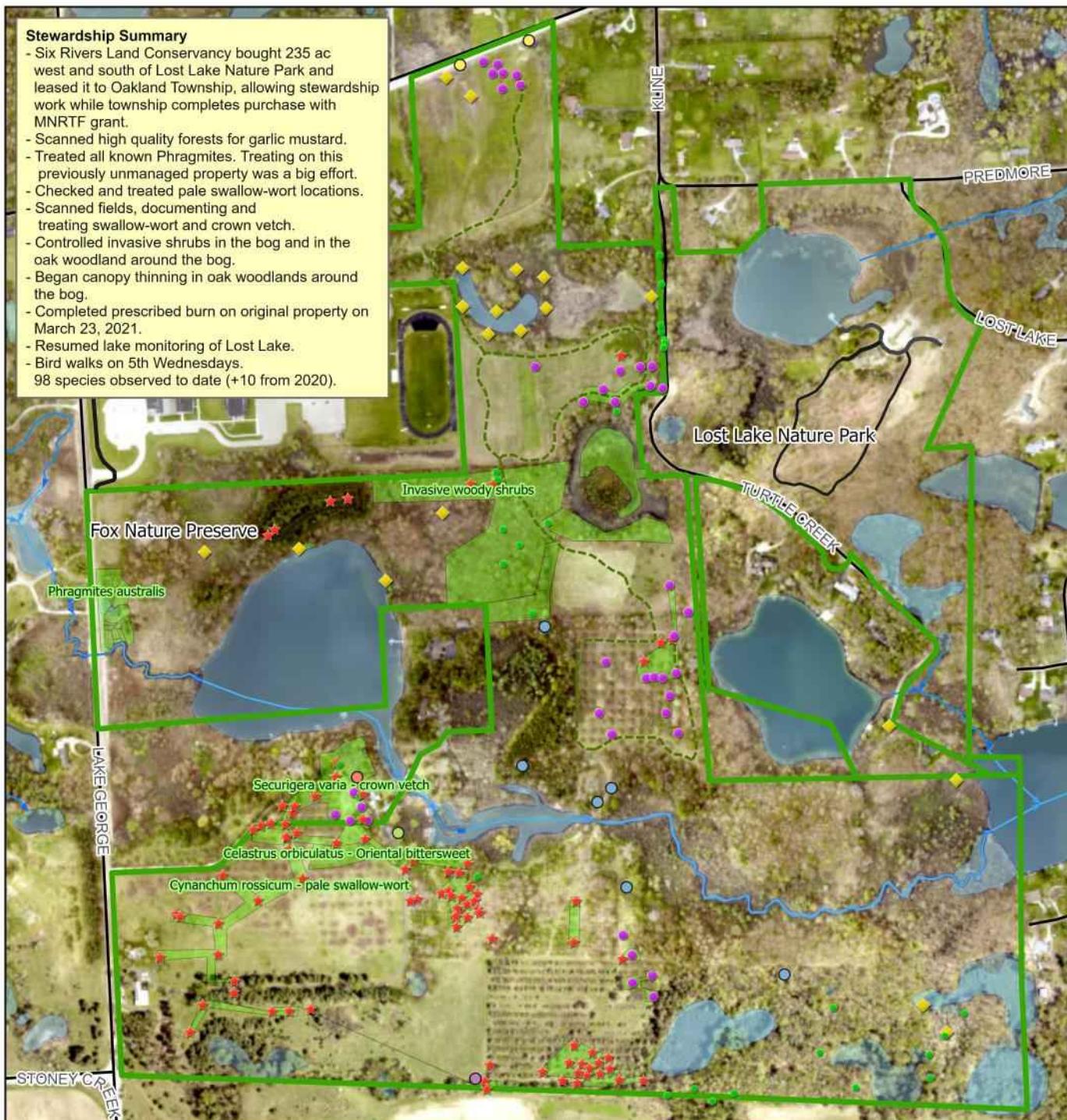
Bog on June 30, 2021.



Fen along the West Branch of Stony Creek near Lake George Road. Note the invasive shrubs and dense Phragmites. August 13, 2021.

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

2021

Stewardship Tasks Completed

1. Prairie restoration: Gridded through plantings and spot treated any invasive plants found.
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, and added a few plugs of *Helianthus occidentalis* to fill in bare spots.

Monitoring

- 77 bird species observed in the park since 2014 (no change from 2020).
- Photo monitoring was completed in 2020. Switch to biannual monitoring in 2022.
- Complete next floristic inventory in 2024, according to schedule. The original floristic inventory was in 2014.
- Dr. Mary Jamieson conducted pollinator surveys in 2021.
- Monitor areas that were disturbed by construction of playground and pathways for invasive plants.

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

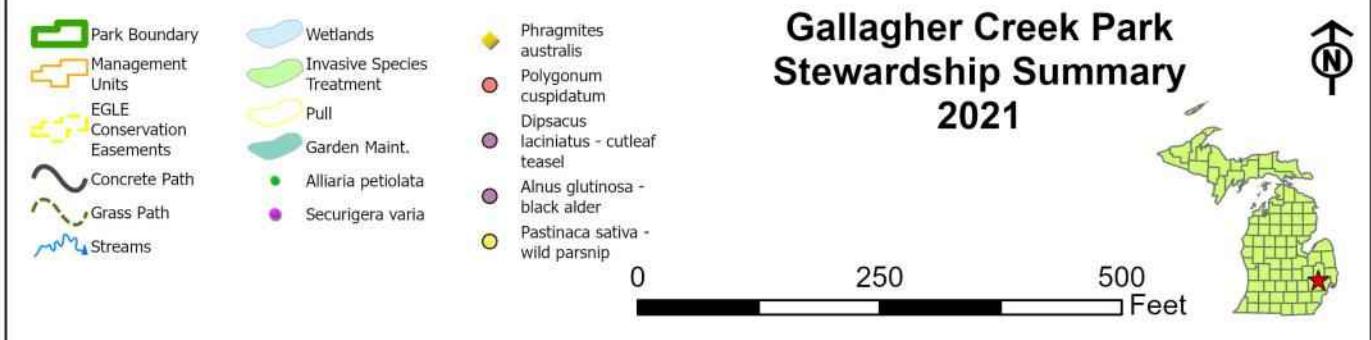
- Maintain the native landscaping and rain garden. Supplement with additional plants as needed to complete season-long bloom display for pollinators.
- Begin removal of invasive woody plants from the “island” in the north-central part of the park. Plantwise indicated wet prairie potential in this area 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.
- In wetland areas showing fen characteristics, seed in more fen species to increase diversity.



Katri's American Gothic pose in the native plant landscaping at Gallagher Creek Park. June 15, 2021.



Wild petunia (*Ruellia humilis*) in the native plant landscaping in Gallagher Creek Park on August 17, 2021.



LOST LAKE NATURE PARK

Stewardship Tasks Completed

2021

1. Garlic Mustard: Mapped and pulled garlic mustard in high-quality woodlands.
2. Swallow-wort: monitored prior locations. Appears to all be pale swallow-wort.
3. Crown vetch: Treated crown vetch along Turtle Creek Lane, on sled hill, and in forest.
4. Phragmites: documented and treated all known patches.
5. Completed prescribed burn of core oak woodland habitat in original park on March 22.
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 bittersweet and other invasive shrubs in core woodland and in the wetland lobe on the southwest corner of Lost Lake.
9. Continued canopy thinning in core oak woodland by selected removal of fire-sensitive tree species.

Monitoring

- 97 bird species observed to date (+9 from 2020).
- Photo monitoring was completed in 2021, and is scheduled for 2023.
- Document new plant species as observed and plan for 2027 floristic inventory.
- 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 plants 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.

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 (2009).
- Caretaker family and nature center occupy house.
- Sled hill with warming shelter is a popular attraction.



Sedges flowering in the burn unit on May 3, 2021.



Oak woodland photo monitoring point at the top of the sled hill, looking west on August 27, 2021.



Lost Lake Nature Park Stewardship Summary 2021



Invasive Species Treatment	Ligustrum vulgare
● Alliaria petiolata	Phalaris arundinacea - reed canary grass
● Securigera varia	Hesperis matronalis
◆ Phragmites australis	Pastinaca sativa - wild parsnip
★ Cynanchum rossicum	● Acer plantanoides
● Melilotus officinalis	

0 250 500 Feet



MARSH VIEW PARK

2021

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. Treated Phragmites around the athletic fields and on the north side of the park.
4. Forestry mowing area around new picnic pavilion: Completed mowing, spread native grass and sedge seed mix, spot treated invasive shrubs.
5. Forestry mowing areas northeast of marsh overlook platform: completed forestry mowing in early November 2021.
6. Scheduled forestry mowing to clear invasive shrubs in the “viewscape” of the new pavilion for early 2021.

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

- 40 bird species observed to date (no change from 2020).
- As trail development and volunteer interest allows, remove old nest boxes and replace with new to restart the nest box trail at Marsh View Park.
- Photo monitoring was completed in 2020, and is scheduled for 2022.
- Complete floristic inventory for the park in 2022 as scheduled, including the parcel on the southwest corner added to the park most recently. The original floristic inventory was in 2001.

Future Stewardship Tasks

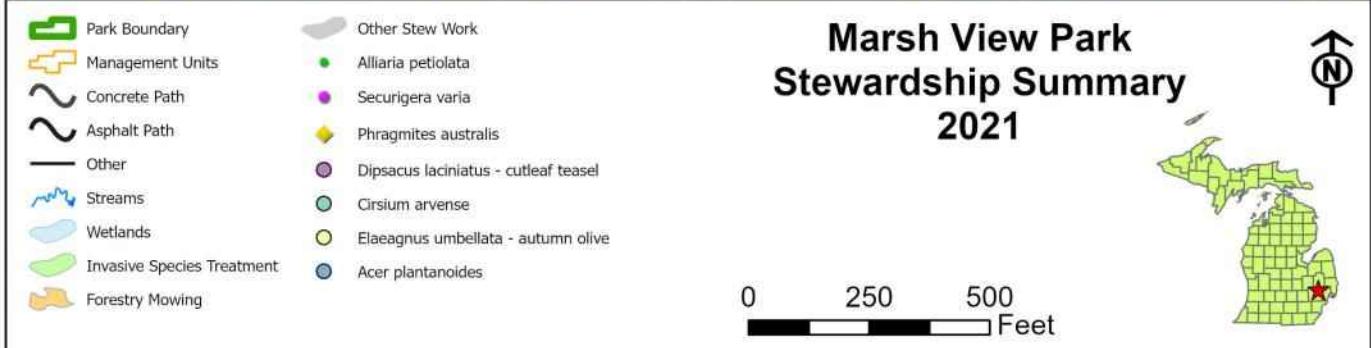
- Use forestry mowing and follow-up treatment to control invasive woody plants in old fields. Areas not completed yet are scheduled for 2022.
- Teasel is just getting established at a few points in the park. Document locations and control.
- Survey park annually for swallow-wort and treat as needed.
- Continue to control Phragmites aggressively. Monitor wetlands for Phragmites annually. Mark plants around athletic field with flagging as found during the growing season.
- Monitor native plantings for invasive species and treat as needed.
- Install new species in the native plant beds (aromatic sumac, butterfly milkweed, etc.).
- Develop a trail to the north side of the park.



Invasive shrubs dying after treatment in the forestry mowing areas around the new picnic pavilion. August 19, 2021.



Forestry mowing area northeast of the marsh overlook platform after mowing on November 2, 2021.



MILL CREEK CROSSING

2021

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 2021.
2. No pictures of Mill Creek Crossing taken in 2021.

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

2021

Stewardship Work Completed

1. Pulled garlic mustard along the trail.

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 forestry 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 immediately after forestry mowing, February 8, 2020.



Mill Race Trail on August 13, 2020.



O'CONNOR NATURE PARK

2021

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 2020, and is scheduled for 2022.
- Complete floristic inventory for the park in 2024 as scheduled. The original floristic inventory was in 2014.

Quick Stats

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

Future Stewardship Tasks

- 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.
- Continue to treat Phragmites.
- Control *Vinca minor* in the southwest corner.
- Control invasive woody plants throughout the park biannually.
- Concentrate stewardship on the hillside along Rochester Road to remove callery pear and other invasives. Plant native species on hillside.
- Use prescribed fire occasionally to promote native plant recruitment in wetland and forest.
- High deer densities are degrading the forest.
- Work with neighbors to prevent dumping yard waste in the park.



Stormwater runoff from Rochester Road is dumping 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 27, 2021.



Yard waste and trash dumping from neighbors is a big problem at O'Connor Nature Park, bringing in invasive plants on all sides of the park. May 19, 2021.



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

O'Connor Nature Park Stewardship Summary 2021



0 50 100 200 300 Feet



PAINT CREEK HERITAGE AREA—FEN

2021

Stewardship Tasks Completed

1. Garlic Mustard has not been identified at this park.
2. Phragmites in the fen was monitored and foliar sprayed where dense or cut stem treatment where sparse.
3. Park neighbor to south had Phragmites on property treated through the Phragmites Outreach Program. Sixth year of treatment for the neighbor to the south.
4. 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 and 2020. In 2021 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.
5. Treated a small 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 fen wetland and viewshed along the Paint Creek Trail.

Monitoring

- Photo monitoring was last completed in 2020, and is scheduled for 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

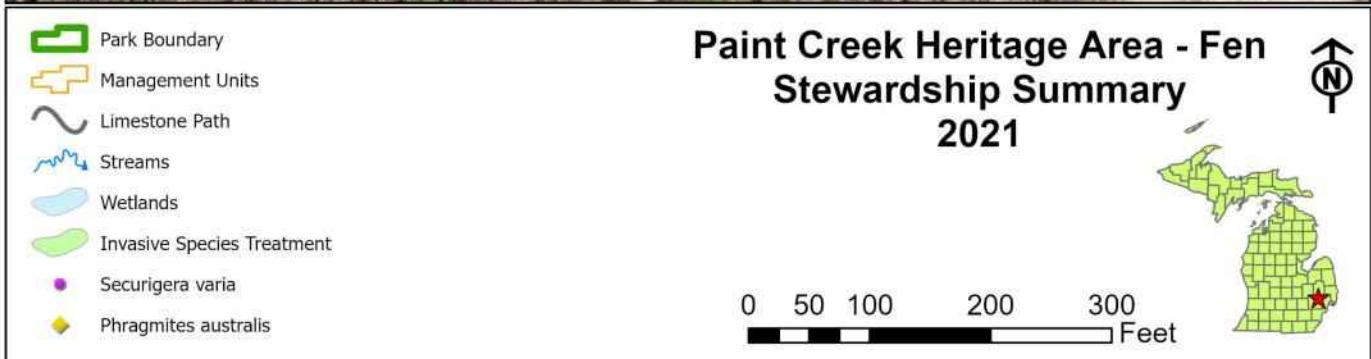
- Control woody plants encroaching on the fen and adjacent upland areas.
- Continue Phragmites and purple loosestrife control. May need to collect beetles to control purple loosestrife.
- Continue to control cattails with hand-wipe where sparse or foliar spray where they are very dense. Start in areas with highest native plant abundance and move to areas more heavily infested with invasive cattails.
- 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.
- Work with neighbor to end mowing along fence border.



The core fen area. Notice the dead cattails around the perimeter. June 16, 2021.



South property boundary of the fen parcel, showing treated cattails on the left and the dense untreated cattails on the right. June 24, 2021.



PAINT CREEK HERITAGE AREA

WET PRAIRIE

2021

Stewardship Tasks Completed

1. Seed Collection: Collected seed of various native plants with volunteer assistance.
2. Mapped and pulled garlic mustard throughout the park. Neighbor property that was included in the prescribed burn was also scanned as part of post-burn monitoring.
3. Continued controlling invasive woody plants in the core prairie area, the surrounding berm, the southern panhandle, and the trail right-of-way.
4. Completed a big push of cut stump treatment and follow-up spot treatment of all remaining dense stands of invasive shrubs north of the core prairie area. We burned brush piles in February 2021, and spread local genotype native seed in the area to assist re-establishment of native plants. We worked with staff from Six Rivers Land Conservancy as contracted help on this project.
5. Completed a prescribed burn on 5 acres of the southern part of the park on May 13, 2021.
6. Began canopy thinning of fire-sensitive tree species north of the core prairie area.
7. Hand-pulled spotted knapweed and sweet clover in the open wet prairie area in July and August.
8. 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 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.
- 67 bird species observed to date (+ 6 from 2020).

Future Stewardship Tasks

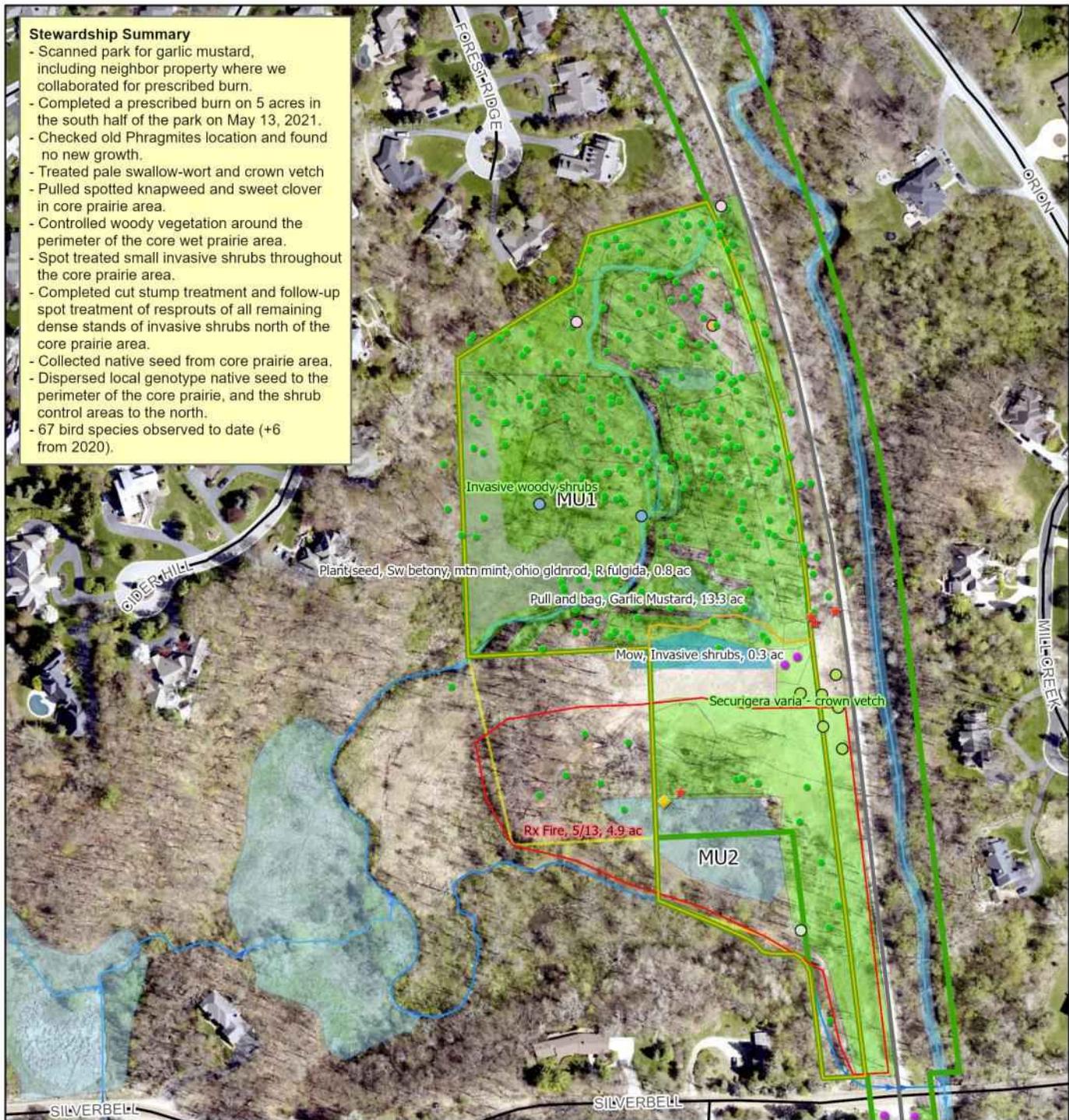
- Continue to survey garlic mustard, spotted knapweed, and sweet clover and hand pull throughout the park.
- Scan park annually for woody invasive shrubs and spot treat as needed. Continue to control European birch (*Betula pendula*) in the core prairie area where small saplings are abundant.
- Thin 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.
- Collect seed of prairie and savanna species annually and broadcast in adjacent areas after invasive shrub control.
- Design and install interpretive signage to explain unique plants found in the area.
- Continue working with neighbors to ensure good stewardship and protection of the entire natural community.



North invasive shrub control area after the initial removal during the winter. This picture shows abundant starry false Solomon seal on May 17, 2021.



Core prairie area on July 1, 2021. Note standing water in low areas from recent heavy rains. We spot treated small diameter invasive woody shrubs in the core prairie area.



Paint Creek Heritage Area Wet Prairie Stewardship Summary 2021



0 250 500 Feet

PAINT CREEK JUNCTION

2021

Stewardship Tasks Completed

1. Treated the patch of swallow-wort found on the adjacent Paint Creek Trail right-of-way.
2. Hand pulled parsnip and cut-leaf teasel along Orion Road before seed set and left stalks to dry out on the shoulder of the road.
3. Scanned adjacent trail right-of-way for garlic mustard.
4. Spread native seed in area between new parking lot and Orion Road, and the perimeter of the construction area.

Monitoring

- Photo monitoring was completed again in 2020, and is scheduled for 2022. Monitoring will be completed bi-annually.
- Completed floristic inventory for the park in 2019. The inventory should be repeated in 2029 as scheduled.

Future Stewardship Tasks

- In 2022 complete spot treatment of invasive shrubs around the perimeter of the construction area.
- After trailhead development is complete, 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 planned for the access improvements.

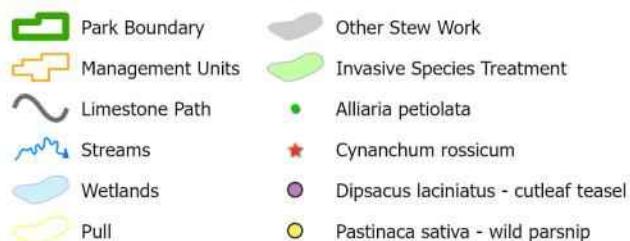
Quick Stats

- 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. Planning started in 2019, with construction in early 2022.



Construction in progress at Paint Creek Junction on September 10, 2021.

The area between Orion Road on the new parking lot at Paint Creek Junction. Extra soil was distributed in this area at the end of the project. Burying tree roots and compacting may kill the remaining trees. November 18, 2021.



Paint Creek Junction Stewardship Summary 2021

0 50 100 200 300 Feet



PAINT CREEK TRAIL—ART PROJECT

2021

Stewardship Tasks Completed

1. Garlic Mustard: No garlic mustard has been identified at the Art Project.
2. The shoulder of the adjacent Paint Creek Trail right-of-way was mowed to control shrubs and woody vegetation near the trail in late 2021.
3. Checked crown vetch points near the parking area.

Monitoring

- Photo monitoring was completed at the Art Project 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.



Photo point 1 at the Art Project on July 29, 2021. Invasive shrubs are again encroaching along the southwest and northwest sides.



Katri and Max completing photo monitoring at the Art Project prairie on July 29, 2021.



Paint Creek Trail - Art Project Stewardship Summary 2021



0 50 100 Feet



PAINT CREEK TRAIL

KAMIN EASEMENT

2021

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.
3. Scanned the northern part of the easement for garlic mustard.
4. Mowed invasive woody shrubs around the perimeter of the north prairie area on May 3, 2021.

Monitoring

- Photo monitoring was completed at the Kamin Easement in 2020, and is scheduled for 2022.
- Completed floristic inventory for the park in 2018. The inventory should be repeated in 2026 as scheduled.

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.

Future Stewardship Tasks

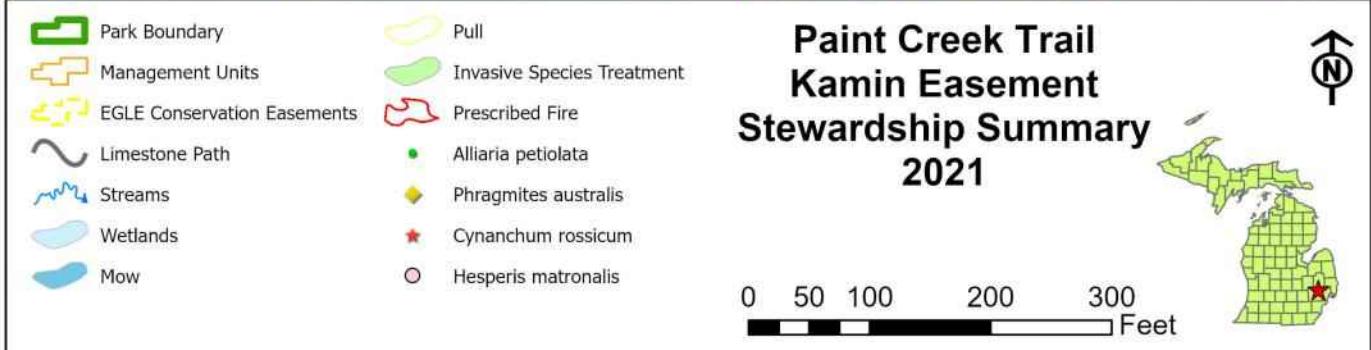
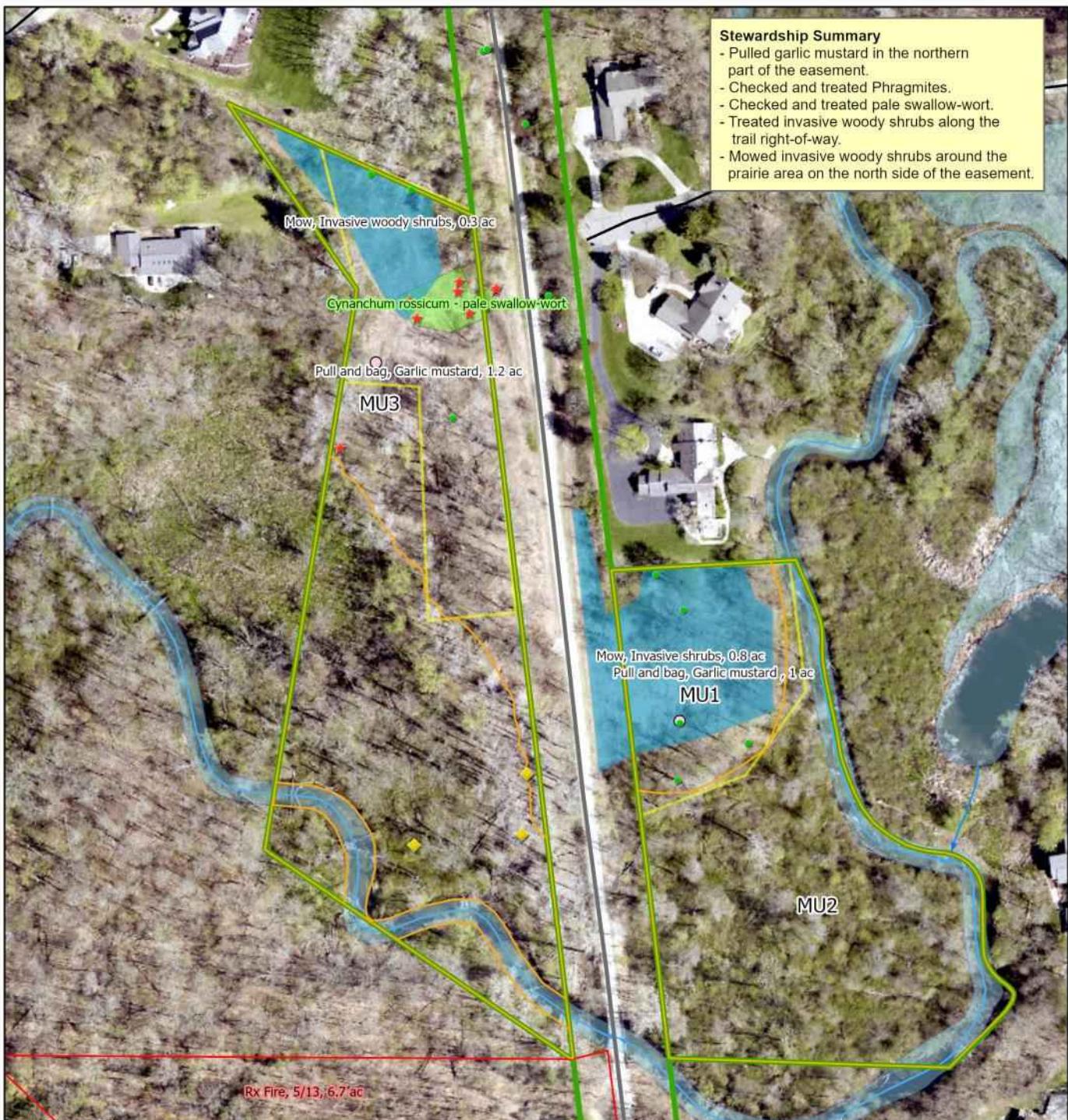
- Continue to control garlic mustard, swallow-wort, and Phragmites.
- Monitor purple coneflower that has escaped from neighbor's landscaping. Control if it begins to spread.
- Thin fire-sensitive trees in the upland areas.
- Invasive woody plants in floodplain and edges of prairie getting very dense. 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.



Kamin Easement along the Paint Creek Trail, showing the area where invasive shrubs were mowed on May 3, 2021.



Oak savanna area at the Kamin Easement on May 3, 2021.



PAINT CREEK TRAIL

NICHOLSON PRAIRIE

2021

Stewardship Tasks Completed

1. Scanned the northern area for garlic mustard.
2. Removed large woody debris in the north prairie area. Many dead logs had accumulated over the years due to emerald ash borer and senescence of large trees.
3. Mowed the prairie area in April to prepare for follow-up spot treatment.

Monitoring

- Photo monitoring was completed at the Nicholson Prairie in 2020, and is scheduled for 2022.
- Completed floristic inventory for the park in 2018. The inventory should be repeated in 2026 as scheduled. Consider quantitative vegetation sampling.
- Documented *Wisteria sinensis* on the north side of the parcel. Plan for treatment.

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

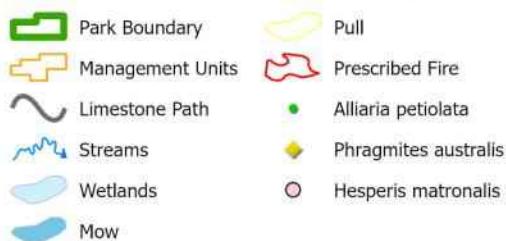
- Resume privet removal in the floodplain. Will likely need to use a forestry mower or similar equipment for initial control, followed by spot treatment.
- Control *Wisteria sinensis*.
- Continue garlic mustard control and dame's rocket control.
- Adjacent trees and shrubs growing larger and shading 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 and fall prescribed burns when possible. Establish wood betony (*Pedicularis canadensis*) to reduce warm-season grass abundance.
- Monitor vegetation in the deer exclosures.
- Continue prescribed burns every 1-3 years, varying season of fire to benefit different species.



Grant surveys Nicholson Prairie after completing brush mowing and large woody debris removal on April 8, 2021.



Nicholson Prairie on May 25, 2021 with wild lupine flowering.



Paint Creek Trail Nicholson Prairie Stewardship Summary 2021

0 50 100 200 Feet



PAINT CREEK TRAIL RIGHT-OF-WAY

2021

Stewardship Tasks Completed

1. Contractor completed deep mowing of trail shoulder in fall 2021 to prevent woody plant encroachment into the trail.
2. We maintained the native plantings at the Gunn Road crossing.
3. Pulled garlic mustard in some areas along the trail on May 25, 2021 during a garlic mustard workday in partnership with Six Rivers Land Conservancy.
4. Phragmites: treated all known patches of Phragmites in park properties along the trail and within the Paint Creek Trail right-of-way.
5. Treated crown vetch at the Silverbell Road parking lot, Gallagher Road parking lot, near the Paint Creek Heritage Area—Fen, and Adams Road crossing.
6. Documented and treated swallow-wort locations along the Paint Creek Trail.
7. Completed a prescribed burn along the trail right-of-way south of Silverbell Road on May 13, 2021. Prairie and oak woodland habitat on adjacent private property was included in the burn unit.

Monitoring

- Photo monitoring along the trail right-of-way was completed in 2018, and is scheduled for 2021.
- Volunteers monitored bird nest boxes along the trail.
- 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

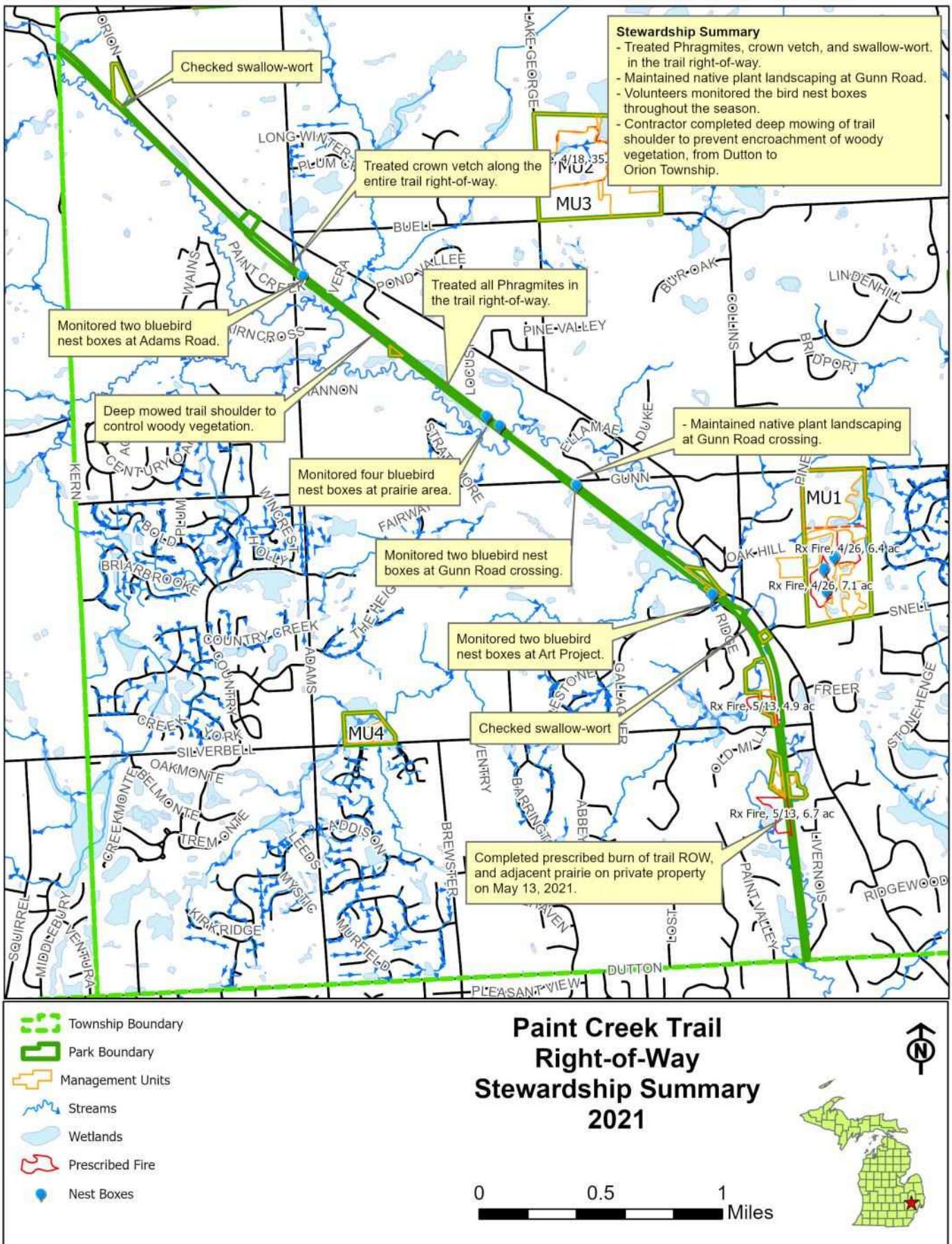
From their 2020-2024 Master Plan: "The Paint Creek Trail was the first non-motorized rail-to-trail in the State of Michigan and traverses five different municipalities in Oakland County, Michigan: the City of Rochester, the City of Rochester Hills, the Charter Township of Oakland, the Charter Township 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."



Prescribed burn on trail right-of-way south of Silverbell Rd on May 13, 2021.



Grant works on mop-up after the prescribed fire along the Paint Creek Trail on May 13, 2021.



STONY CREEK RAVINE NATURE PARK

2021

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. Completed second treatment of all known Phragmites patches in the expansion area. We had good results from 2020 treatment. Found a few new patches and completed initial treatment on those.
4. Invasive Woody Plants
 - Spread graminoid seed mix of upland forestry mowing areas in the NE corner. Began spot treatment of invasive shrubs in forestry mowing area, but only completed the large wetland area.
 - Stewardship staff treated oriental bittersweet and other invasive shrubs in the woodland corridor around Stony Creek as follow-up from contractor work in this area in previous years.
 - Began control of black locust around the borrow pit site.
4. Worked with USFWS to do site prep for prairie plantings and earthmoving for wetland restorations/borrow pit regrading. Rough grading completed in fall 2021, and final grading will happen in early summer 2022. Farmer sprayed ag fields twice and disked/cultipacked to prep for prairie planting.
5. Continued trash removal as it was encountered. Removed over 70 tires in 2021.

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.
- Volunteer Tom Korb installed a kestrel nest box in the east expansion on December 3, 2021.
- 147 bird species observed to date (+8 from 2020). 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.
- Continue to treat high priority invasive plants throughout the park.
- Complete follow-up treatment of invasive shrubs in forestry mowing areas.
- 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.
- Develop and implement habitat restoration plans in partnership with the US Fish and Wildlife Service.
- Implement prescribed fire where appropriate to control invasive woody plants.



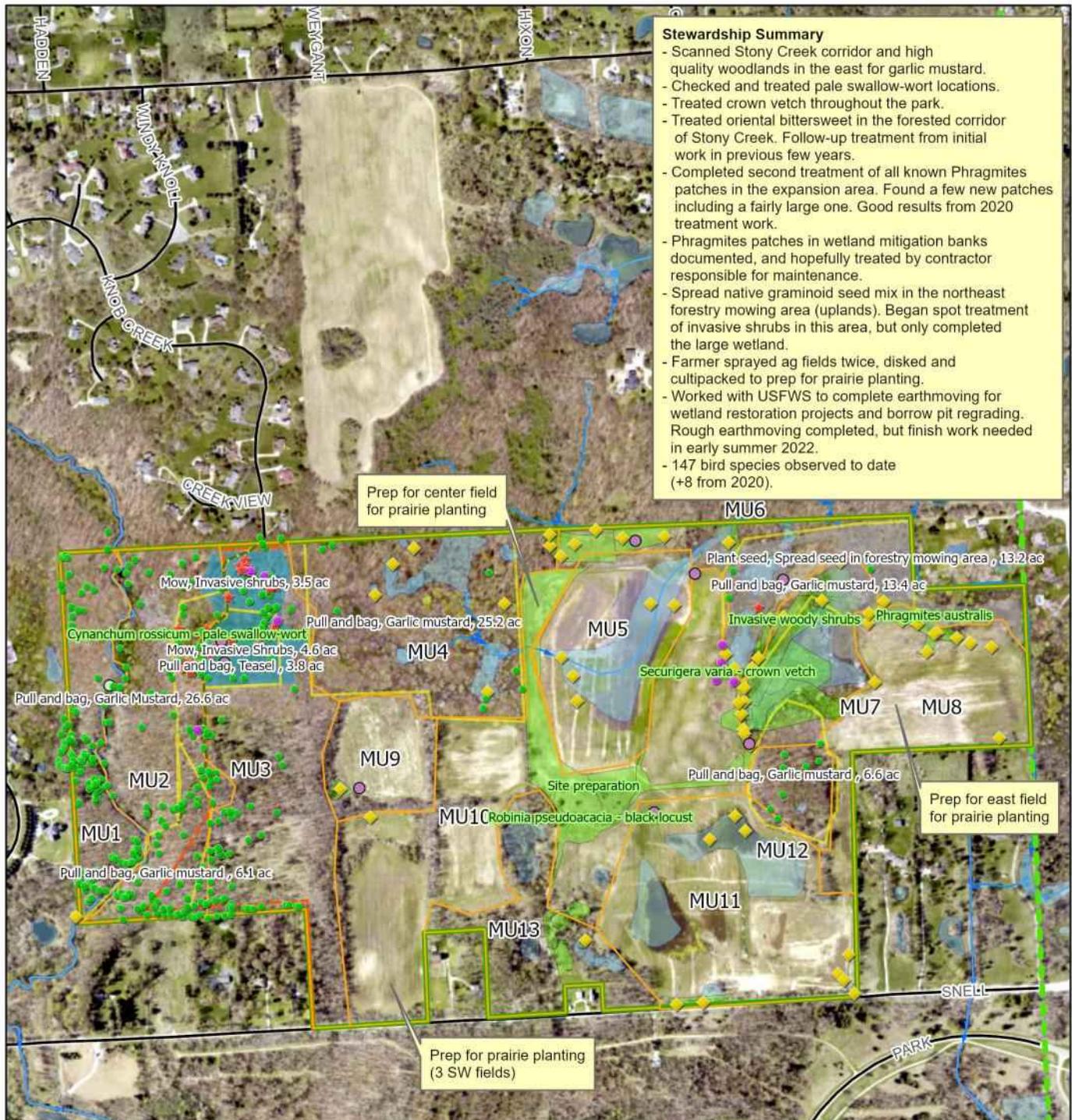
Large wetland in the southeast corner, showing an area of sedge meadow that was forestry mowed the previous fall. June 7, 2021.



Contractor works on earthmoving for wetland restoration areas at Stony Creek Ravine Nature Park on November 23, 2021.

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).



Stony Creek Ravine Nature Park Stewardship Summary 2021

0 500 1,000
Feet



WATERSHED RIDGE PARK

2021

Stewardship Tasks Completed

1. Scanned woodland areas for garlic mustard.
2. Phragmites was monitored and treated throughout park.
3. Swallow-wort and crown vetch: Monitored and treated all known patches.
4. Installed wetland grass and sedge plugs in two areas that used to be dense Phragmites patches to assist with recovery of native vegetation.
5. Completed site prep for prairie plantings. Planting not completed in 2021, so we tentatively plan to install the prairie plantings in early 2022.
6. Completed a prescribed burn on the west woodland and adjacent areas on April 18, 2021.
7. Broadcast native seed and installed plugs in wetland restoration areas to increase plant diversity.

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.
- Floristic inventory for Watershed Ridge Park was completed in 2018. Repeat survey of entire park in 2029.
- 65 bird species have been observed in the park to date (+4 from 2020).
- Documented locations of wild parsnip in northwest field.

Future Stewardship Tasks

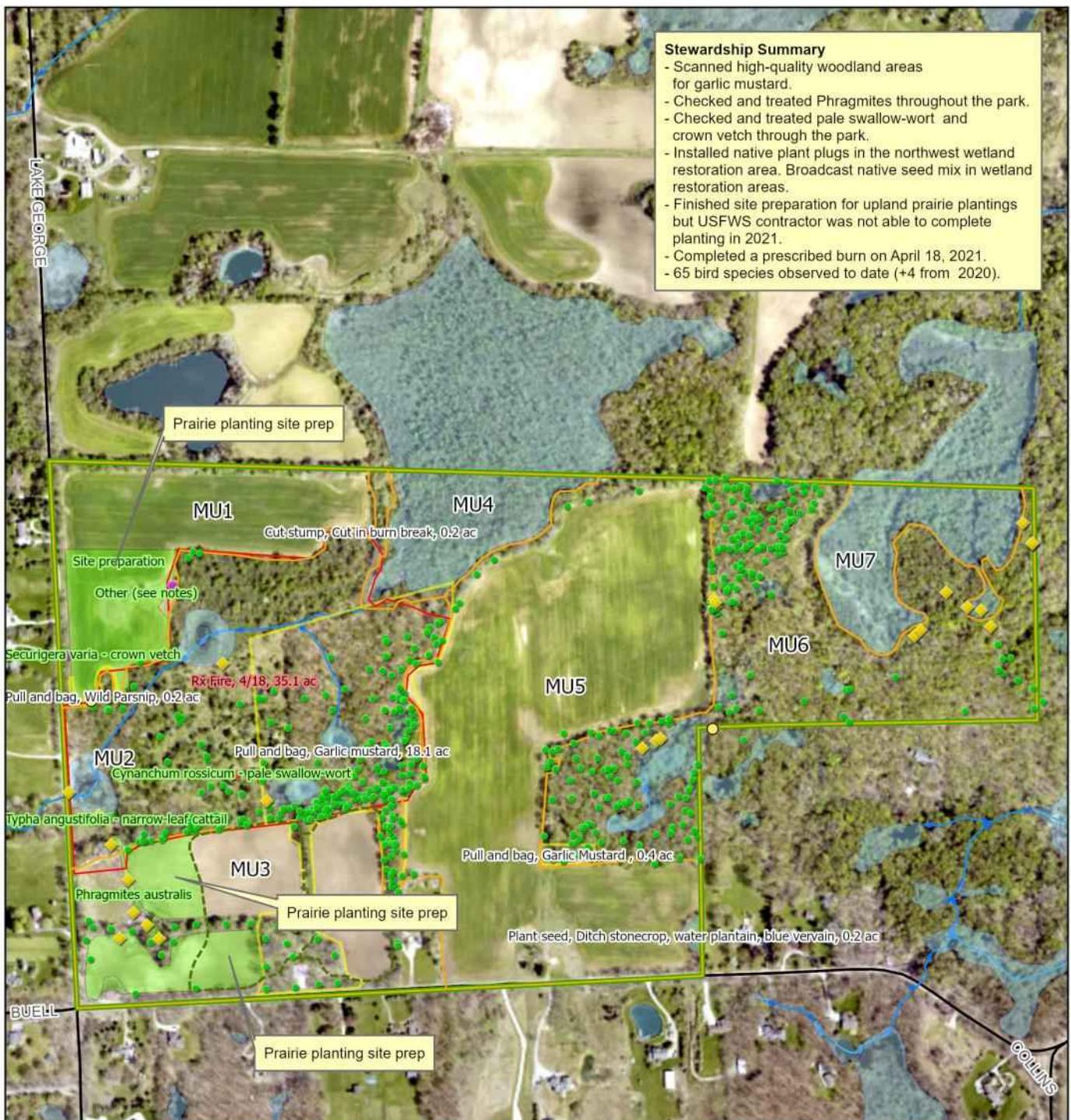
- Hand pull garlic mustard in high quality woodland areas and around trailheads. Do not manage garlic mustard in degraded areas.
- Continue to use forestry mower for initial clearing of invasive shrub thickets on west side of park. PRC staff would then handle follow-up and native plant seeding work.
- Sweep northeast and central forests for invasive woody plants bi-annually.
- Work with park development planning process to place facilities and developments in areas that will not affect sensitive habitat. Assess opportunities for restoring native plant communities as the area is 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 and fields.
- Continue to remove wet and erodible areas from farming to eliminate continued sedimentation and nutrient pollution in wetlands and waterways. Establish native species in prairie fields as they are removed from farming.



The open old field/prairie habitat at Watershed Ridge Park after the prescribed burn. April 19, 2021.



Parker and Katri install native plant plugs in the wetland restoration areas at Watershed Ridge Park on September 21, 2021.



Watershed Ridge Park Stewardship Summary 2021

0 250 500 1,000
Feet



PART III: SUPPORTING DOCUMENTS

2021

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	2019	2020	2021	2022	2023	2024	2025
Bear Creek Nature Park	12	Biennially		Yes		Planned		Planned	
Blue Heron Environmental Area	9	Biennially	Yes		Yes		Planned		Planned
Charles Ilsley Park	10	Biennially	Yes	Yes	Yes		Planned		Planned
Cranberry Lake Park	5	Biennially		Yes		Planned		Planned	
Draper Twin Lake Park	5	Biennially	Yes	Yes	Yes		Planned		Planned
Fox Nature Preserve	13	Biennially			Yes		Planned		
Gallagher Creek Park	6	Biennially	Yes	Yes		Planned		Planned	
Kamin Conservation Easement	4	Biennially		Yes		Planned		Planned	
Lost Lake Nature Park	15	Biennially	Yes		Yes		Planned		Planned
Marsh View Park	8	Biennially		Yes		Planned		Planned	
Mill Race Trail	3	Triannually			Yes			Planned	
Mill Creek Crossing	2	Triannually			Yes			Planned	
Nicholson Prairie	3	Biennially		Yes		Planned		Planned	
O'Connor Nature Park	4	Biennially		Yes		Planned		Planned	
Paint Creek Heritage Area - Fen	3	Biennially		Yes		Planned		Planned	
Paint Creek Heritage Area - Wet Prairie	5	Biennially	Yes		Yes		Planned		Planned
Paint Creek Junction	3	Biennially		Yes		Planned		Planned	
Paint Creek Trail - Art Project	3	Triannually			Yes			Planned	
Paint Creek Trail Parcel	2	Every 5 years	Yes					Planned	
Paint Creek Trail - Right-of-Way	10	Triannually			Yes			Planned	
Stony Creek Ravine Nature Park	16	Biennially	Yes	Yes	Yes		Planned		Planned
Watershed Ridge Park	10	Biennially	Yes		Yes		Planned		Planned
Number of Locations for Year	22		10	13	12	10	9	14	8
Sum of Photo Points for Year	151		88	82	101	58	86	68	73

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	189	152	37	64
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

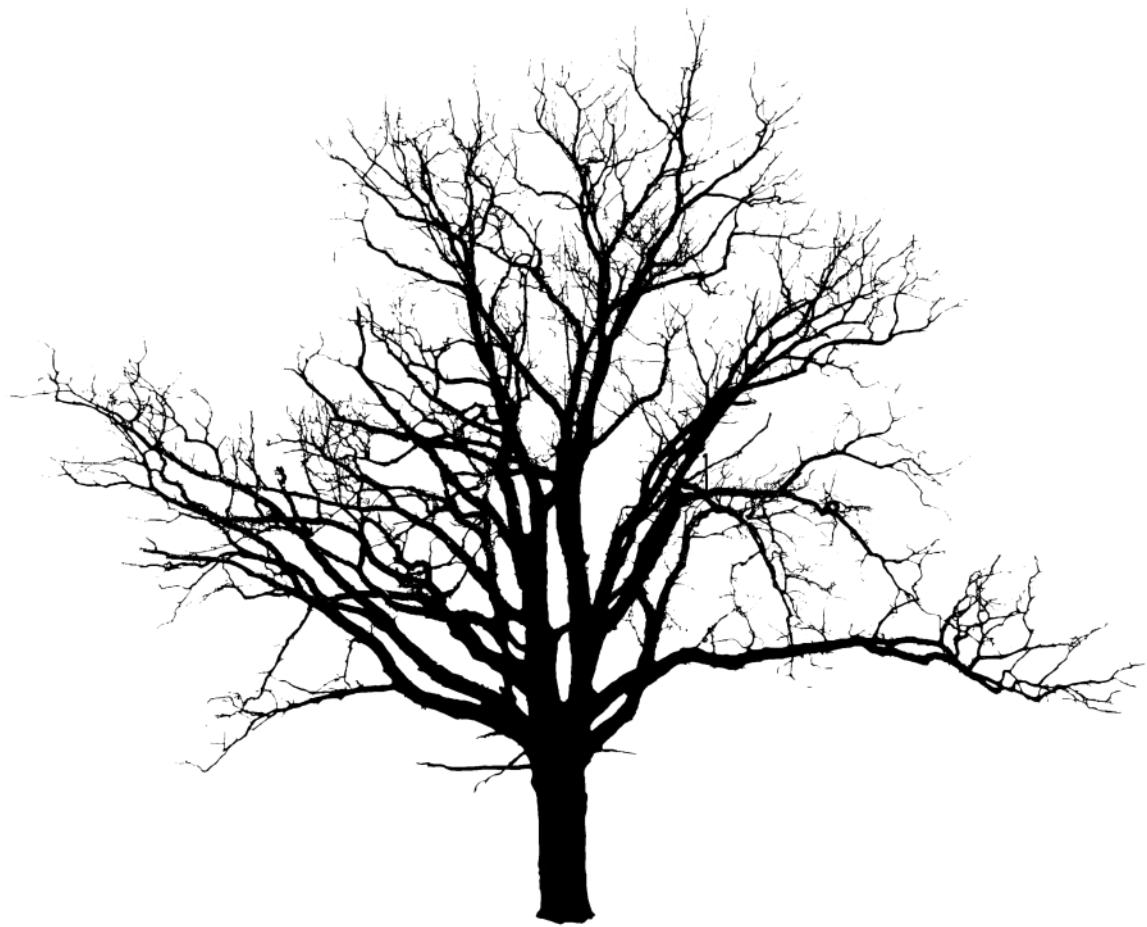
1. Seed collection – collect wherever desirable native seed is present
 2. Phragmites – finish any treatment in first week of October
 3. Invasive shrub control – switch to only cut stump and basal bark methods as leaves change color. Continue working on projects outlined in July/August.
 4. Trash cleanup 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.
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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

2021