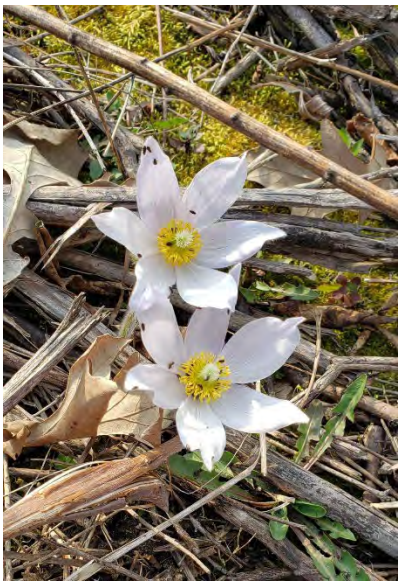
Habitat Management Plan

Heritage Prairie Conservation Park

May 6, 2025



Site information

Address: 5401 Queensbridge Road

Acreage 4.28 acres

Watershed: Starkweather Creek

Site summary: Heritage Prairie is a small remnant savanna located on the east side of Madison, named for the adjacent Heritage Heights neighborhood. The park is situated on the south slope of a small tributary to Starkweather Creek – the aspect of the site is northwest. The site features an example of Oak Opening habitat, with mature bur oaks growing alongside herbaceous species such as little bluestem, pasqueflower, thimbleweed, shooting star, and wild bergamot. Pre-settlement vegetation documented by U.S. government land surveyors consisted of large open areas with very young bur oak trees scattered throughout. Subsequently, most of the land was converted to agriculture and farmed by European settlers until the land was converted to residential development in the early 20th century. Restoration efforts to date have focused on removal of woody encroachment from native species such as black cherry, grey dogwood, and sumac, and invasive shrubs such as buckthorn and bush honeysuckle.

Adjacent lands: The conservation park is bounded to the north by the Queensbridge Road Section of the Starkweather-Olbrich Greenway, and to the south and east by a platted but undeveloped city street (South Thompson Drive). The Madison Police Department (MPD) East District headquarters on Cottage Grove Road, which features a solar panel installation and native prairie plantings, is located to the south. Interstate 39/90 is located to the east, and low-density residential development is located to the north and west. The undeveloped street right-of-way features early successional vegetation typical of former farmland, and is becoming forested by young black cherry, quaking aspen, and black walnut. Black locust is also abundant. See Appendix A, Figure 1 for an overview of the park.

Alder district: District 3 - Alder Derek Field

Madison Parks' Land Management Plan (2023) defines land cover categories found in the City's parklands and provides general parameters for their management. That document provides a foundation upon which more detailed, site-specific work plans can be built. Heritage Prairie Conservation Park is categorized entirely as Tallgrass Prairie and Oak Savanna.

This habitat management plan addresses the ecological management of the natural areas within the park. It considers ecological processes, species lifecycles, and population and community dynamics.

Conservation values

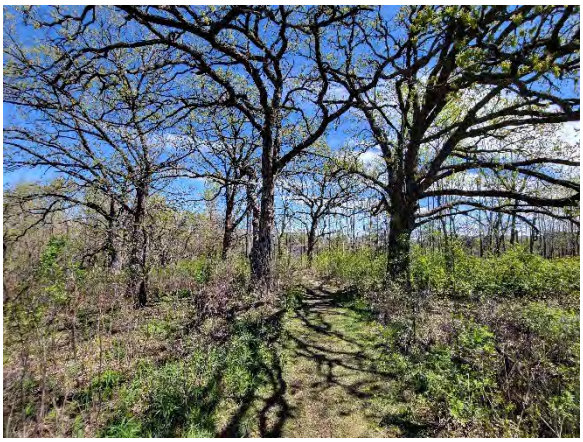
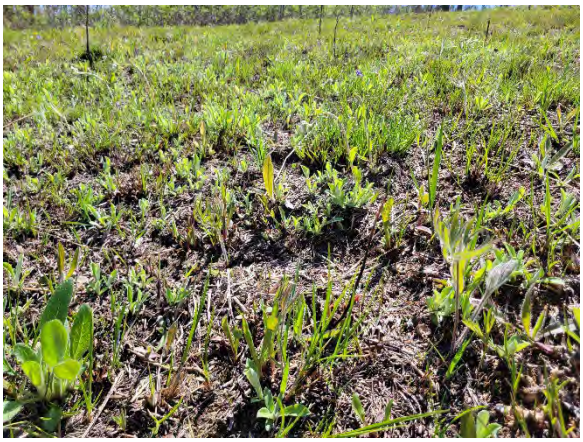
Madison is located within the Southeast Glacial Plains Ecological Landscape as defined by the Wisconsin Department of Natural Resources in The Ecological Landscapes of Wisconsin (2015). Soils throughout most of Heritage Prairie are characterized as Griswold loam. Troxel silt loam is found in the drainage at the bottom of the slope. The soil map also includes "made land" which would apply to the disturbed and graded areas within the platted city street, and to the former quarry on the west side of the park.

The land cover and habitats at Heritage Prairie can be further described as an Oak Opening natural community.

Recognized Natural Communities described by the Wisconsin Natural Heritage Inventory help provide more technical and specific restoration targets based on the ecology of Wisconsin. These reference communities provide benchmarks that help guide ecologically appropriate restoration efforts.

Descriptions for Wisconsin's Natural Communities can be accessed at: https://apps.dnr.wi.gov/biodiversity/Home/Index/Communities.

Appendix A, Figure 2 is a map delineating the different vegetation found throughout the park. Appendix B contains lists of plant species documented from within the park and bird species documented from the immediate surrounding area.

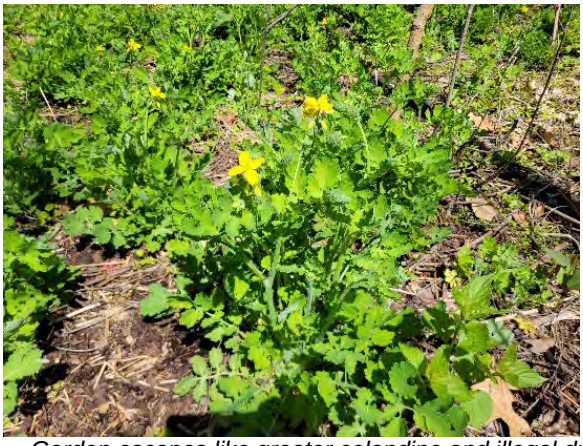
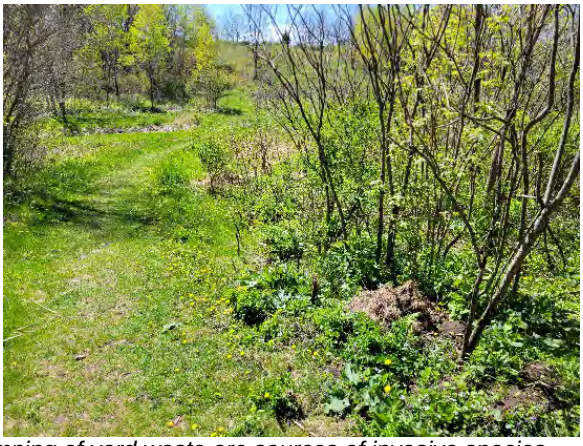



Canopy-dominant bur oaks are present in aerial photos from 1937, and diverse plant species such as pasque-flower, prairie violet and pussy-toes grow in the open prairie.

Ecological threats

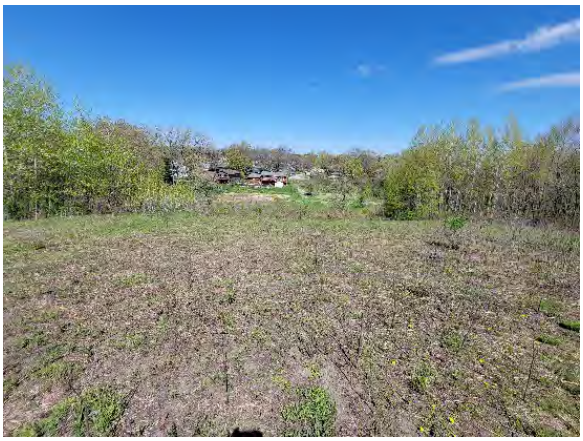
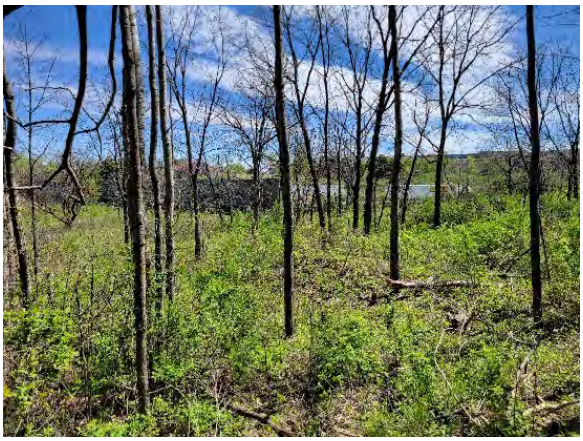
Woody species encroachment – The legacy of fire exclusion due to incompatible land uses, and the restrictive smoke management parameters required to conduct prescribed burns on this site have contributed to woody encroachment and loss of native herbaceous species in areas that potentially would have supported a wider range of native prairie, savanna and woodland species in the Oak Opening habitat.

Invasive species – Populations of several highly invasive species are located adjacent to the park. Some examples include bird's foot trefoil and spotted knapweed on the MPD parcel, Pampas grass (*Cortaderia selloana*) escaping into the greenway and park from a neighbor's property to the north, and teasel located along the interstate corridor and on a parcel owned by Wisconsin Department of Transportation that is located between the highway noise barrier wall and the right of way of the undeveloped city street. Within the park, dame's rocket and greater celandine occur in the northwest corner, and wild parsnip occurs at the bottom of the slope.

Garden escapes like greater celandine and illegal dumping of yard waste are sources of invasive species.

Fragmentation and genetic isolation – The small site is a remnant of open land and native habitat that has persisted through the conversion of the surrounding area to agriculture, then residential development. Opportunities exist to directly enhance habitat quality and establish corridors on adjacent lands, and to decrease fragmentation at a meta scale via increased native plantings at residences and open spaces throughout the neighborhood.

The prairie opening is surrounded by woody encroachment and the park is bounded by residential areas to the north and west and by the undeveloped South Thompson Drive right of way and Interstate 39/90 to the east.

Conservation goals

1. *Restore and maintain Oak Opening habitat.*

   Reduce stem density and manage canopy layers to allow oak recruitment and retention, and to maintain stands of native herbaceous species ranging from shade tolerant Solomon's seal and wild geranium, to sun loving prairie violet and golden alexanders. The result should be a very open woodland with several ages of bur oak trees interspersed with small numbers of native shrubs. Fire-intolerant species would no longer be encroaching into the more open goat prairie.

2. *Maintain barriers to dispersal from adjacent invasive species populations.*

   Continue to control invasive species in the portion of stormwater greenway at the bottom of the slope, perform early detection – rapid response (EDRR) to prevent the spread of teasel and spotted knapweed from the east and south, and maintain dense stands of native shrubs and brambles as a physical barrier along the south and east sides of the park in the immediate future (5 years).

   As partnerships are formed with agencies that manage adjacent parcels, and more support is directed to the eradication of invasive species that currently surround the park, the thicket of native brush could be reduced to promote better access for pollinators and genetic dispersal.

3. *Conduct surveys to complete species lists for all taxa.*

   Engage students and volunteers to assist with species inventories and surveys.

Management considerations

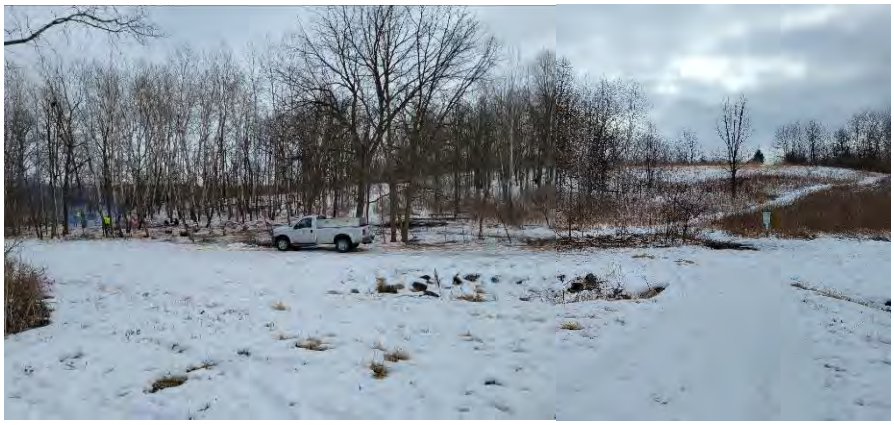
Madison Parks' vision is "to provide the ideal system of parks, natural resources and recreational opportunities which will enhance the quality of life for everyone." Ord. 8.40, Preservation of Conservation Parks, includes, "It is important to the residents of Madison that the City preserve Madison's native landscapes, its plant and animal populations for residents' careful use and full enjoyment."

In pursuit of these goals, we strive to balance ecological management needs with the needs of the community. Ecological management at Heritage Prairie should pay specific attention to the following:

Smoke management – Surrounding residential development and the adjacent interstate highway limit opportunities for burning this site. Care must be taken to minimize smoke impacts to nearby residences and thoroughfares.

Management history

Management to date has included occasional mowing and burning in the prairie, focused brush removal and native seeding on the lower slope, and invasive shrub removal in the woodlands on the east and west sides of the prairie. Invasive herbaceous species including wild parsnip, garlic mustard and Canada thistle have been controlled with mowing, hand pulling, or herbicide applications, as appropriate.



Invasive shrubs were removed from the east side of the park in winter 2021-22 by Operation Fresh Start Legacy Program crews. This area was then burned in May 2022.

The park was most recently burned in March 2025, with a prescribed burn that included the area inside the trail loop.

Management units

At 4.3 acres, it is not practical nor helpful to divide the park into management units. Execution of management prescriptions outlined below is self-evident.

Looking beyond the park borders, successful management of Heritage Prairie requires cooperation with neighboring landowners and management agencies. The stormwater greenway, the undeveloped city street right of way, and the MPD property all have potential to threaten or complement and support the natural area preserved by the conservation park. Landscaping practices of individual neighbors have a large impact on the natural area as well, most notably through escape of invasive species, and introduction of non-native species in yard waste dumped in the park and greenway.

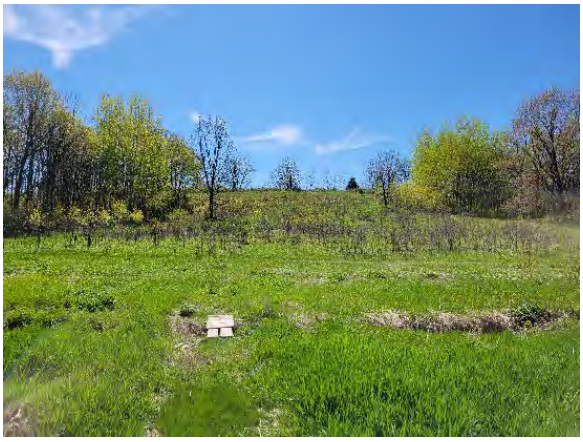
Parks staff and other stakeholders should actively develop and maintain relationships and cooperate with neighboring entities to build support for the stewardship of Heritage Prairie.

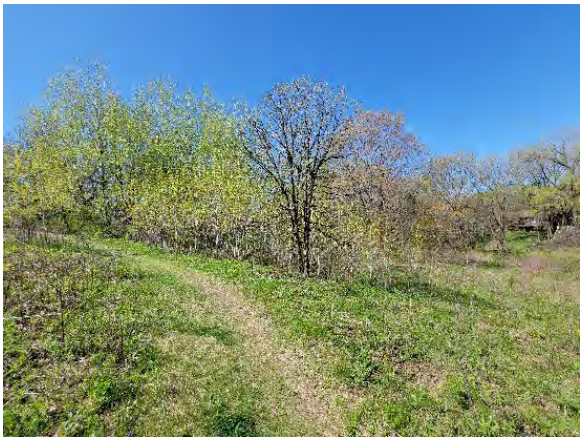
Objectives

The following objectives are recommended to repair and sustain the natural communities at this site:

- Continued control of invasive shrubs and invasive biennial species.
- Prescribed burns on a maximum 3-year return interval.
- Canopy management to ensure longevity and reproduction of oak species. Remove aspen clones and reduce oak stem density to release young oaks.

- Removal of excessive woody debris.
- Sow native seed to increase native plant diversity and cover in currently shaded areas that lack a native seed bank do not respond to canopy reduction.





While regular prescribed burns are effective on smaller diameter woody species, a history of infrequent burning has allowed establishment and expansion of aspen clones which are encroaching on prairie vegetation and prohibiting oak regeneration.

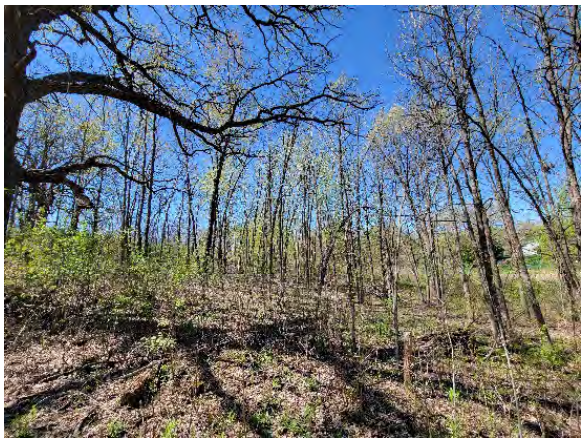
Specific Management Unit Prescriptions:

Timeline	Task
Spring 2025	• Prescribed burn (inside trail loop) • Spray burdock, garlic mustard, dame's rocket, and hedge parsley • Sow native grass seed mix at base of prairie slope
Summer 2025	• Pull/spade wild parsnip • Pull or spray greater celandine on west side of park • Mow and spray Pampas grass in park and greenway
Fall 2025	• Burn brush piles on west side of park • Remove any remaining honeysuckle, buckthorn and white mulberry from park
Winter 2026	• Remove aspen clones on east and west sides of prairie • Thin (remove) 1/2 of bur oaks <10 inches diameter inside trail loop
Spring 2026	• Spray burdock, garlic mustard, dame's rocket, and hedge parsley • Collect pasqueflower seed.
Summer 2026	• Monitor plant community (volunteers) • Collect and disperse seed from native woodland species • Pull/spade wild parsnip • Pull or spray greater celandine on west side of park • Mow and spray Pampas grass in park and greenway
Fall 2026	• Downed woody debris management • Spray biennial rosettes
Winter 2027	• Thin overstory to reverse mesophication and reduce shading and competition on oaks ("daylight" oak trees) east and west of trail loop. Target black cherry, box elder and hackberry.

Timeline	Task
Spring 2027	• Rx burn (entire park) • Sow seed in areas where aspen and oak were removed in winter 2026, if needed • Collect and disperse seed from native woodland species
Summer 2027	• Spray or hand pull burdock, garlic mustard, dame's rocket, and hedge parsley; • Spray woody re-sprouts post burn
Winter 2028	• Remove black locust in S corner of park (contract)
Spring 2028	• Plant bare root bur oak seedlings in former locust area • Spray or hand pull burdock, garlic mustard, dame's rocket, and hedge parsley
Summer 2028	• Monitor plant community (volunteers)
Fall 2028	• Rx burn • Sow native seed mix
Spring 2029	• Spray or hand pull burdock, garlic mustard, dame's rocket, and hedge parsley

In addition to the objectives outlined above for stewardship of this natural area, the following initiatives would advance the restoration trajectory of the park, resulting in greater benefit, achieved sooner. These actions would be accomplished through implementation of capital improvement projects, special initiatives directed at a specific goal, or a general, longer-term increase in resources, including volunteer labor.

- Engage volunteers to control biennial invasive species, thus reducing the need for herbicide treatments.
- Engage volunteers, the City Engineering Division, and MPD to improve habitat on adjacent lands.




While oak regeneration is very desirable at a larger scale, this small, isolated parcel can only support a limited stem density in order to maintain the diverse herbaceous species composition found here. The thicket of smaller bur oaks requires management to allow some of them to continue to grow into healthy canopy dominant trees to replace the oldest trees on site.

Monitoring and Evaluation

Measuring results is critical to determining success. Refer to Appendix C for an outline of the goals for monitoring natural areas in Madison Parks.

Parks staff currently have very limited capacity to conduct monitoring. However, the Parks Division is supported by a network of volunteers and researchers. Community science programs collect data on sensitive ecological indicators and provide crucial information on which to base management decisions.

Program	Coordinator	Website
Wisconsin Bumble Bee Brigade (since 2020)	Wisconsin Department of Natural Resources	https://wiatri.net/inventory/bbb/
iNaturalist	iNaturalist	https://www.inaturalist.org/

A few key metrics that should be tracked at Heritage Prairie include plant and animal diversity, and abundance of invasive species.

As part of a wider monitoring program, the following tasks should be completed:

- Add to plant and animal species lists.
- Sample plant communities to collect data on richness and cover, and track development of herbaceous plant community and overstory canopy.
- Conduct photo monitoring on 5-year intervals.

Budget

The work outlined in this plan is accomplished through financial and in-kind support from the City's General Operating budget, special Capital Improvement Project funding, and volunteer labor.

Typical Annual Budget Estimate:

Task	**Labor required** *(staff and volunteer hours only)*	**Annual cost** *(includes labor, materials, and contracts)*
Prescribed burns (every other year @ $4,000 each)	20	$2,000
Invasive species control	64	$2,500
Canopy management (in-house and contracted)	200	$8,000
Woody debris management	10	$400
Monitoring (@ $25/hr)	32	$800
Trail maintenance and repair (@ $20/hr plus materials)	10	$400
Totals		**$14,100**

Citations

GBIF.org (28 June 2023) GBIF Occurrence Download https://doi.org/10.15468/dl.jxrwfs Accessed June 28, 2023.

Madison General Ordinance 8.40, Preservation of Conservation Parks https://library.municode.com/wi/madison/codes/code_of_ordinances?nodeId=COORMAWIVOICH1--10_CH8PUPR_8.40PRCOPA

Madison Parks. 2023. *City of Madison, Parks Division Land Management Plan*. City of Madison, Parks Division, Madison.

USDA Natural Resources Conservation Service. 2025. Soil Survey Map. https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx Accessed May 6, 2025.

Wisconsin Department of Natural Resources. 2015. *The ecological landscapes of Wisconsin: An assessment of ecological resources and a guide to planning sustainable management.* Chapter 18, Southeast Glacial Plains Ecological Landscape. Wisconsin Department of Natural Resources, PUB-SS-1131T 2015, Madison, WI.

Wisconsin Department of Natural Resources. 2023. Wisconsin's Natural Communities. https://apps.dnr.wi.gov/biodiversity/Home/Index/Communities Accessed August 2, 2023.

Document History

This Habitat Management Plan is consistent with Madison Parks' Land Management Plan. This Habitat Management Plan has a 5-year lifespan and should be reviewed yearly. It can be revised whenever new information is discovered. If no changes have been made, it should be updated in its 5th year.

Version	Description
5/6/2025	First draft, presented to Habitat Stewardship Subcommittee on 5/13/2025

Appendices

A. Maps
   Figure 1. Park Overview
   Figure 2. Vegetation
B. Species Lists
C. Natural Areas Monitoring Goals

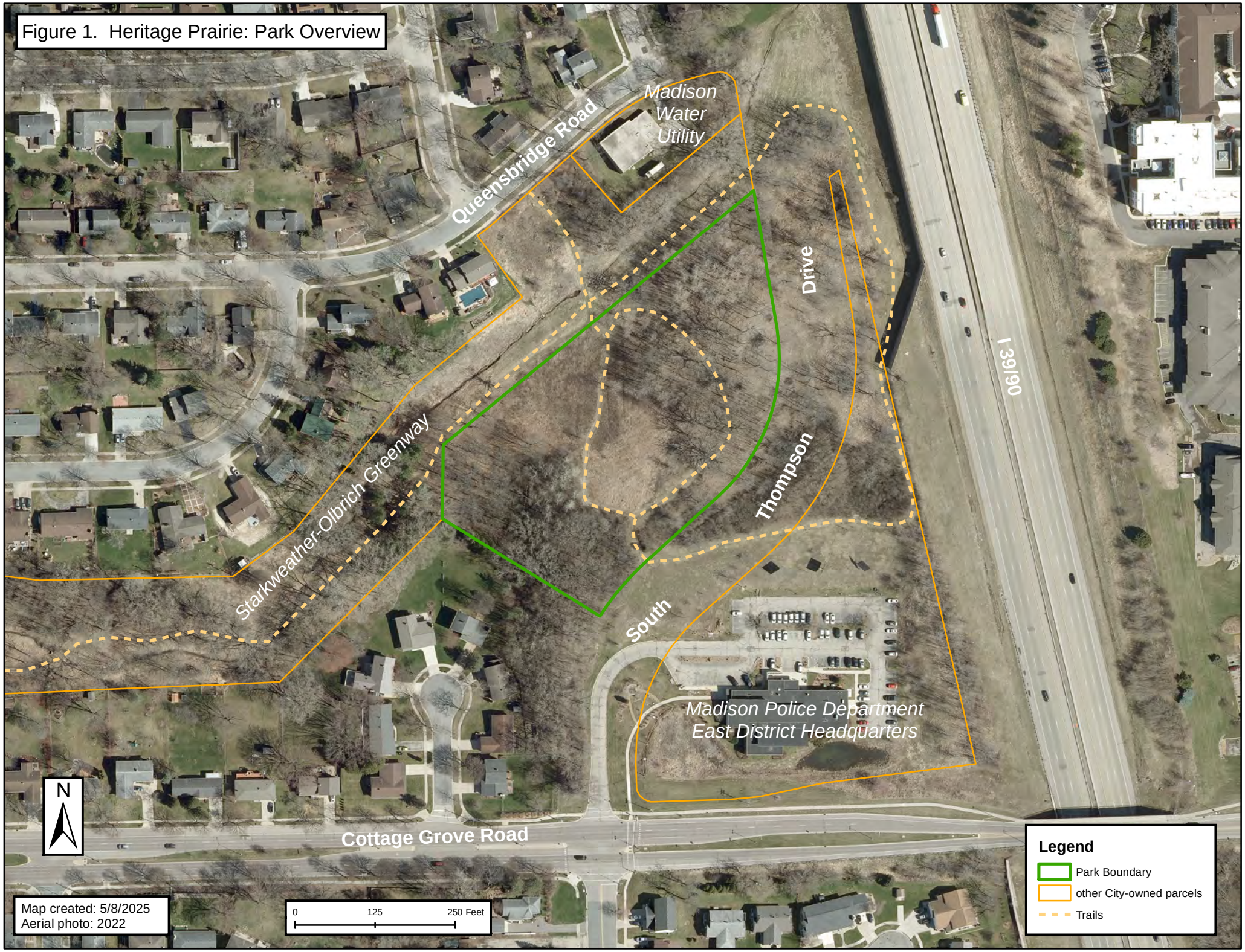


Figure 1. Heritage Prairie: Park Overview
Madison Water Utility
Queensbridge Road
Drive
I 39/90
Thompson
Starkweather-Olbrich Greenway
South
Madison Police Department East District Headquarters
Cottage Grove Road
N
Legend
Park Boundary
other City-owned parcels
Trails
Map created: 5/8/2025
Aerial photo: 2022
0
125
250 Feet

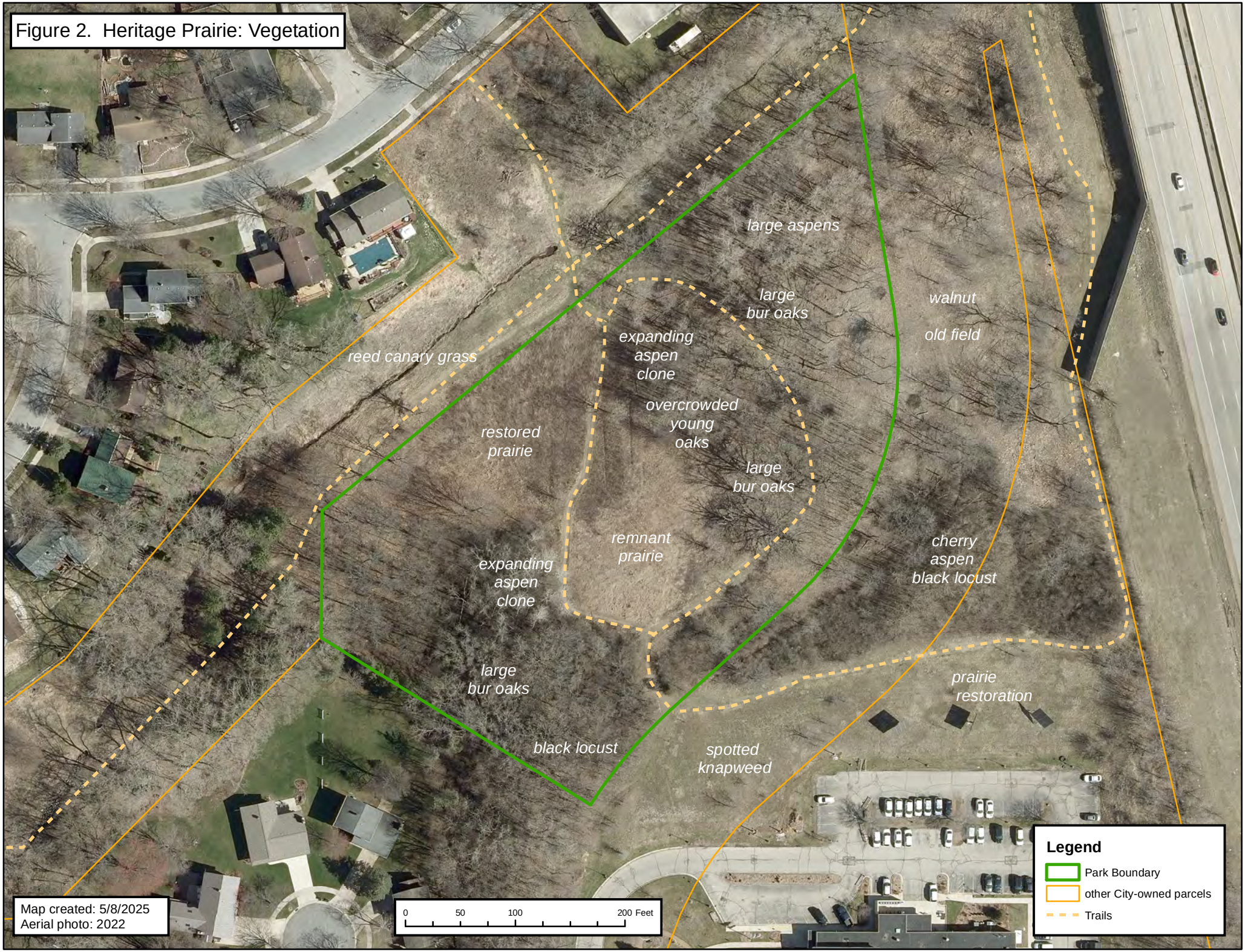


Figure 2. Heritage Prairie: Vegetation
large aspens
large bur oaks
walnut
old field
expanding aspen clone
reed canary grass
overcrowded young oaks
restored prairie
large bur oaks
remnant prairie
cherry aspen black locust
expanding aspen clone
large bur oaks
prairie restoration
black locust
spotted knapweed
Legend
Park Boundary
other City-owned parcels
Trails
0 50 100 200 Feet
Map created: 5/8/2025
Aerial photo: 2022

Appendix B. Species Lists			
Vascular Plants			
SCIENTIFIC NAME	**COMMON NAME**	**Native**	**Introduced**
Acer negundo	Box elder	X	
Alliaria petiolata	Garlic mustard		X
Andropogon gerardi	Big bluestem grass	X	
Andropogon scoparius	Little bluestem grass	X	
Anemone cylindrica	Thimbleweed	X	
Antennaria plantaginifolia	Pussy toes	X	
Aquilegia canadensis	Wild columbine	X	
Arctium minus	Common burdock		X
Aster azureus	Sky-blue aster	X	
Aster ericoides	Heath aster	X	
Aster laevis	Smooth blue aster	X	
Aster lateriflorus	Calico aster	X	
Aster novae-angliae	New England aster	X	
Chelidonium majus	Greater celandine		X
Circaea quadrisulcata canadensis	Enchanter's nightshade	X	
Cornus racemosa	Gray dogwood	X	
Cortaderia selloana	Pampas grass		X
Daucus carota	Queen Anne's lace		X
Erechtites hieracifolia	Burnweed	X	
Erigeron annuus	Annual fleabane	X	
Erigeron canadensis	Horseweed	X	
Eupatorium rugosum	White snakeroot	X	
Geranium maculatum	Wild geranium	X	
Hesperis matronalis	Dame's rocket		X
Lonicera tatarica	Tartarian honeysuckle		X
Monarda fistulosa	Wild bergamot	X	
Morus alba	White mulberry		X
Pastinaca sativa	Wild parsnip		X
Phalaris arundinacea	Reed canary grass		X
Polygonatum biflorum	Solomon's seal	X	
Populus deltoides	Cottonwood	X	
Populus tremuloides	Quaking aspen	X	
Primula meadia	Shooting star	X	
Prunus americana	Wild plum	X	
Prunus pensylvanica	Pin-cherry	X	
Prunus serotina	Black cherry	X	
Prunus virginiana	Choke cherry	X	
Pulsatilla vulgaris	American pasque-flower	X	
Quercus alba	White oak	X	
Quercus macrocarpa	Bur oak	X	
Quercus rubra	Red oak	X	
Rhamnus cathartica	Common buckthorn		X

SCIENTIFIC NAME	COMMON NAME	Native	Introduced
Rhus glabra	Smooth sumac	X	
Rhus typhina	Staghorn sumac	X	
Robinia pseudo-acacia	Black locust		X
Rubus allegheniensis	Common blackberry	X	
Rubus occidentalis	Black raspberry	X	
Rudbeckia hirta	Black-eyed susan	X	
Rudbeckia subtomentosa	Sweet black-eyed susan	X	
Rudbeckia triloba	Brown-eyed susan	X	
Sambucus canadensis	Elderberry	X	
Silphium integrifolium	Rosin weed	X	
Silphium perfoliatum	Cup plant	X	
Torilis japonica	Japanese Hedge Parsley		X
Toxicodendron radicans	Poison ivy	X	
Viburnum lentago	Nannyberry	X	
Viola pedatifida	Prairie violet	X	
Zizia aurea	Golden alexanders	X	
total species	**58**		
total native	**45**		
total exotic	**13**		

Animals- Birds

Source: eBird Field Checklist generated by eBird on 6/23/2023. (GBIF.org 2023)

State listings:
END = endangered
THR = threatened
SC/M = special concern, but fully protected by federal and state laws under the Migratory Bird Act

SGCN = Species of Greatest Conservation Need, as identified in the Wisconsin Wildlife Action Plan
SINS-Monitoring = Species has numerical conservation status ranks and sufficient information to be assessed, but does not meet SGCN criteria.
SINS-Ranking = Species for which there is basic information, but not enough to assign a numerical rank

See Wisconsin natural heritage working list website for more information:
https://dnr.wi.gov/topic/NHI/WList.html

COMMON NAME	SCIENTIFIC NAME	state listing	Wi DNR Wisconsin Wildlife Action Plan
American Crow	*Corvus brachyrhynchos*		
Canada Goose	*Branta canadensis*		
Cliff Swallow	*Petrochelidon pyrrhonota*		
Eastern Bluebird	*Sialia sialis*		
European Starling	*Sturnus vulgaris*		
Red-tailed Hawk	*Buteo jamaicensis*		
Red-winged Blackbird	*Agelaius phoeniceus*		
Ring-billed Gull	*Larus delawarensis*		
Rock Pigeon	*Columba livia*		
total species	**9**	**0**	**0**

Appendix C. Madison Parks Natural Areas Monitoring Goals

August 2023

Monitoring is necessary to track the success of restoration efforts as well as the overall quality of the habitat being managed. Data collected can quantify results, show trends in natural area health, and reveal potential concerns. The following framework identifies some possible monitoring subjects and strategies. Objectives and tasks can be implemented and completed as staff and volunteer capacity allow.

Much information can be gained by engaging and supporting various formal community science programs, and less formal community-populated databases. Data from many of these are accessible from the individual host organizations, as well as through clearing houses such as the Global Biodiversity Information Facility (GBIF) Many volunteers currently conduct monitoring within conservation parks and other natural areas. These programs are recognized below as well.

Taxa: Plants

Objectives:

1. Complete and update species inventories for each park, and each management unit where applicable (Managed Meadow, Woodland, management unit within a conservation park, etc.).

   Tasks:

   a. Conduct meander surveys three times during the growing season to compile and update plant species list.

2. Determine and track floristic quality in managed natural areas

   Tasks:

   a. Establish permanent transects with randomized 1m^2 plots (quadrats)

   b. Survey quadrats and record percent cover of each species present.

   c. Analyze data to calculate species richness, diversity, and Floristic Quality Index.

Taxa: Insects

Objectives:

1. Complete overall species inventory per park

   Tasks:

   a. Conduct daytime surveys with sweep nets

   b. Conduct nighttime surveys with light traps

   c. Conduct surveys of soil surface insect fauna

2. Monitor pollinator abundance and species composition

   Tasks:

   a. Collect data using Wisconsin Bumble Bee Brigade protocols

   b. Support the Integrated Monarch Monitoring Program

   c. Collect data using Pollard transects to target butterflies

   d. Support the Wisconsin Odonata Survey

Taxa: Herptiles

Objectives:

1. Complete overall species inventory per park

   Tasks:

   a. Conduct surveys with funnel traps

2. Conduct breeding survey

   Tasks:

   a. Establish Wisconsin Frog and Toad Survey phenology survey locations where appropriate

Taxa: Birds

Objectives:

1. Conduct surveys and document species present.
2. Analyze data available from eBird through the Global Biodiversity Information Facility (GBIF)

   Tasks:

   a. Download data sets for each park