

Habitat Management Plan
Kettle Pond Conservation Park

November 13, 2024



Site information

Address: 5805 Old Middleton Road

Acreage 8.06 acres

Watershed: Kettle Pond

Site summary: Kettle Pond Conservation Park protects a glacial kettle that formed along the edge of a recessional moraine during the Wisconsin Glaciation. Approximately 19 acres currently drain to the kettle, where water slowly percolates through peat, muck and clay deposits. There is no surface drainage out of the pond. The immediate surrounding uplands retain some mature, open-grown bur and white oak trees, but a history of fire suppression, agriculture, and stormwater diversion had greatly altered the hydrology and historic native plant community. Restoration efforts since this parcel became a park have focused on restoring the hydrology of the pond, removing invasive species and re-establishing the native plant community.

Adjacent lands: While the park is largely surrounded by residential development, the railroad corridor along the west boundary provides some connection to Skyview Park and the Mendota-Grassman Greenway to the NW. The heavily wooded Highlands neighborhood, which includes Highlands East and Highlands West parks, is located directly west across the railroad, and Owen Conservation Park is located within 0.5 mile to the SW.

Alder district: District 19 - Alder John Guequierre

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. Kettle Pond Conservation Park includes areas categorized as:

Tallgrass Prairie and Oak Savanna

Urban Forest – *Woodlands*

Wetlands and Waterfronts – *Waterfronts - Lagoons, ponds, and rain gardens*

Wetlands and Waterfronts – *Wetlands - Emergent Marsh*

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). Kettle Pond is located on glacial till and the soil is mapped as Westville silt loam throughout the property.

The land cover and habitats at Moraine Woods can be further described as the following Natural Communities, in part:

Dry-Mesic Prairie

Southern Dry-Mesic Forest

Oak Woodland

Emergent Marsh

Pond (see Aquatic Features)

These 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 3 is a map delineating these Natural Communities in the park. Appendix B contains lists of plant species documented from within the park and bird species documented from the immediate surrounding area.

Students from UW Madison compiled in-depth geological and ecological information about Kettle Pond in their *Kettle Pond Restoration Plan* (Anderson *et al*, 1997.) That document includes first-hand accounts of the changes in vegetation and hydrology through the 20th century, as well as concepts for management and public use. The document is on file at the Parks Division offices.

Ecological threats

Invasive species – Invasive plant species include burdock, garlic mustard, dame's rocket, Japanese hedge parsley, reed canary grass, glossy buckthorn, common buckthorn, black locust, bush honeysuckle, porcelain-berry, and Asian bittersweet.

Fire suppression – The legacy of fire exclusion due to incompatible land uses, and the lack of prescribed burning on the site until recent years has contributed to woody encroachment and loss of native herbaceous species in areas that potentially would have supported oak woodland, prairie, and sedge meadow habitats.

Sedimentation – Historic diversion of storm water to the kettle from outside the immediate watershed, as well as widespread soil disturbance and erosion led to the accumulation of a 4 foot-deep layer of sediment by the end of the 20th century. The pond was dredged in 2008 and a catch basin and rain garden were installed to intercept sediment from adjacent streets above the pond. Maintenance of these pre-treatment structures is crucial to the health of the pond, for continued filtering and trapping of sediment from surrounding uplands.

Conservation goals

1. *Restore and maintain deciduous woodland and tallgrass prairie habitats.*

Removal of invasive shrubs and establishment of a prescribed fire regime will help restore the appropriate structure and species composition to the fire-suppressed oak woodland and tallgrass prairie plant communities on the uplands. Priorities for management include removal of invasive species, and enhancement of oak regeneration and native herbaceous species abundance.

2. *Maintain diverse native shrub canopy adjacent to pond.*

The current canopy structure provides dense cover for multiple bird species during migration and breeding. Invasive species such as buckthorn and bush honeysuckle should be excluded to maintain the native species composition.

3. *Maintain native aquatic plant diversity in the pond and wetland.*

Priority should be placed on removing reed canary grass and limiting abundance of cattail in the pond. A diverse assemblage of aquatic sedge and forb species are currently present, and provide excellent quality habitat for waterfowl.

4. *Monitor amphibians and birds to inform management decisions and increase broader scientific knowledge.*

The pond is currently monitored by the Friends of Amphibians community science program hosted by the Hua Lab at UW Madison. Data collected will provide insight regarding the immediate watershed as well as the broader landscape.

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 Kettle Pond should pay specific attention to the following:

Smoke management – Surrounding residential development limits opportunities for burning this site. Care must be taken to minimize smoke impacts to nearby residences.

Management history

A raingarden was installed in 2004 below the parking area at the intersection of Old Middleton Road and Norman Way to intercept sediment and increase infiltration.

Soil borings conducted in 1997 mapped the soil layers and depth of sediment that had accumulated in the pond on top of the native peat, muck and clay that line the bottom of the kettle and suspend the local water table. Highly erosive soils in the surrounding uplands were disturbed throughout the period of intensive agriculture and urban development following European settlement. The pond was dredged in winter 2008 to remove approximately 3-4 feet of sediment that had accumulated.



Before and after dredging in 2008.

Roughly two thirds of the cottonwoods and silver maples that had grown to surround the pond were removed to reduce the amount of evapotranspiration occurring. Plant surveys conducted in 1970 and 1997 showed that these trees had established and grown in the interim.

A prairie planting was established on the south facing slope in the early 2000s. Native shrubs including wild plum, hazelnut, gray dogwood, and nannyberry were planted elsewhere throughout the park to increase native plant diversity and improve wildlife habitat.

Volunteers have worked for years to remove invasive brush and early successional tree species that had encroached throughout the property after agricultural use ceased. More recently, volunteers have introduced fire to the prairie planting. Prescribed burns were conducted in spring of 2021, 2022 and 2024. Steady volunteer effort has also been focused on hand-pulling dame's rocket and garlic mustard.



Volunteers burn the prairie planting and pull garlic mustard and dame's rocket throughout.

Contractors have worked to control invasive shrubs and vines, as well as herbaceous weeds throughout most of the property. This has included forestry mowing, hand pulling, and foliar and cut-stump herbicide applications.



Forestry mowing completed in February 2024 released abundant native herbaceous plants that summer.

Management units

Please refer to Appendix A, Figure 4 for a map of management units.

Woodland Unit (2 ac) – Northwest portion of property. Potential oak woodland with an open overstory canopy and abundant herbaceous plant community. Some large walnut and hackberry are present in the canopy, and several small bur and white oaks occur in the understory.

Prairie Unit (1 ac) – North central portion of property on the south-facing slope above the pond. Several small, widely spaced bur oak trees occur throughout the southern half of the unit.

East Unit (1 ac) – Eastern edge of property, upslope from pond. This unit features several large white oaks with an open understory. There is potential to restore the native herbaceous plant community characteristic of oak woodland here.

Pond Unit (3 ac) – Basin in south-central portion of property, bounded by the hiking trail that surrounds the pond. Mature cottonwoods and silver maples underlain by dogwood, musclemwood and buttonbush provide structurally diverse canopy. Many wetland and emergent species including river bullrush, cattail,

rice-cut grass, reed canary grass, water plantain, and others occur in and around the pond. The center of the pond typically retains open water all growing season.

South Unit (1 ac) – Southwestern edge of property, situated in the basin and extending upslope at each end of the unit. This area features a few large walnuts and cottonwoods but lacks significant canopy cover. A dense shrub layer of honeysuckle and buckthorn was recently removed. Herbaceous layer is dominated by dame’s rocket and garlic mustard. Tree canopy establishment is a priority here.

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.
- Continued control of porcelain-berry and Asian bittersweet.
- Expansion of fire management to include Woodland and East units.
- Sow native seed to increase diversity and augment native plant community.
- Plant additional trees to ensure development of diverse, sustainable canopy in forest and woodland habitats.

Specific Management Unit Prescriptions:

Timeline	Unit(s)	Task
Winter 2025	East Pond	• Cut and treat remaining buckthorn and honeysuckle.
	East South	• Sow native grasses in areas with exposed soil.
Spring 2025	Woodland South	• Spray or hand pull burdock, garlic mustard, dame’s rocket, and Japanese hedge parsley; spray woody invasive re-sprouts (contract) • Plant bare-root oak seedlings. (staff and volunteers)
Summer 2025	All	• Foliar spray porcelain-berry and bittersweet
Fall 2025	East South	• Spray biennial rosettes and ornamental garden escapes
	Woodland	• Sow native seed mix with high proportion of grasses and sedges
	Pond	• Spray reed canary grass
Spring 2026	Prairie	• Rx burn • Sow native seed mix.
	Woodland South Prairie	• Spray or hand pull burdock, garlic mustard, dame’s rocket, and Japanese hedge parsley; spray woody invasive re-sprouts (staff and volunteers)
Summer 2026	All	• Foliar spray porcelain-berry and bittersweet • Monitor plant community (volunteers)
Fall 2026	Woodland East South	• Spray biennial rosettes and ornamental garden escapes
	Pond	• Spray reed canary grass
Spring 2027	Woodland	• Rx burn • Sow native seed mix.
		• Spray woody invasive re-sprouts (staff and volunteers)
Summer 2027	All	• Foliar spray porcelain-berry and bittersweet

Timeline	Unit(s)	Task
Fall 2027	Woodland East South	<ul style="list-style-type: none"> • Spray biennial rosettes and ornamental garden escapes
Spring 2028	Woodland South	<ul style="list-style-type: none"> • Plant bare-root oak seedlings. (staff and volunteers)
	East	<ul style="list-style-type: none"> • Rx burn • Spray or hand pull burdock, garlic mustard, dame's rocket, and Japanese hedge parsley; spray woody invasive re-sprouts (staff and volunteers)
Summer 2028	All	<ul style="list-style-type: none"> • Foliar spray porcelain-berry and bittersweet • Monitor plant community (volunteers)
Fall 2028	South	<ul style="list-style-type: none"> • Plant native shrubs/plugs in understory
Spring 2029	Prairie	<ul style="list-style-type: none"> • Rx burn • Sow native seed mix.
	East	<ul style="list-style-type: none"> • Evaluate natural oak regeneration, supplement as needed with bare-root seedlings
Summer 2029	All	<ul style="list-style-type: none"> • Foliar spray porcelain-berry and bittersweet

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.
- Purchase and plant herbaceous plugs to advance the establishment of a diverse herbaceous plant community.
- Evaluate the need for any sediment removal from the stone catch basin and pond.



The northwest portion of the park provides a good opportunity to increase oak canopy by planting saplings.

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, Parks 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.

Volunteers currently monitor amphibians and water quality at Kettle Pond through the Friends of Amphibians program. Additionally, a few key metrics that should be tracked at Kettle Pond 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.
- 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 <i>(staff and volunteer hours only)</i>	Annual cost <i>(includes labor, materials, and contracts)</i>
Prescribed burn	20	\$4,000
Native seed, bare-root trees	50	\$800
Invasive species control (in-house and contracted)	150	\$8,000
Monitoring (@ \$25/hr)	32	\$800
Trail maintenance and repair (@ \$20/hr plus materials)	10	\$400
Totals		\$14,000

Citations

Anderson, M., *et.al.* 1997. (unpublished) *Kettle Pond Restoration Plan*. University of Wisconsin – Madison, Department of Landscape Architecture, Restoration Ecology Course, Fall 1997.

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?nodid=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. 2024. Soil Survey Map.
<https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx> Accessed November 12, 2024.

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

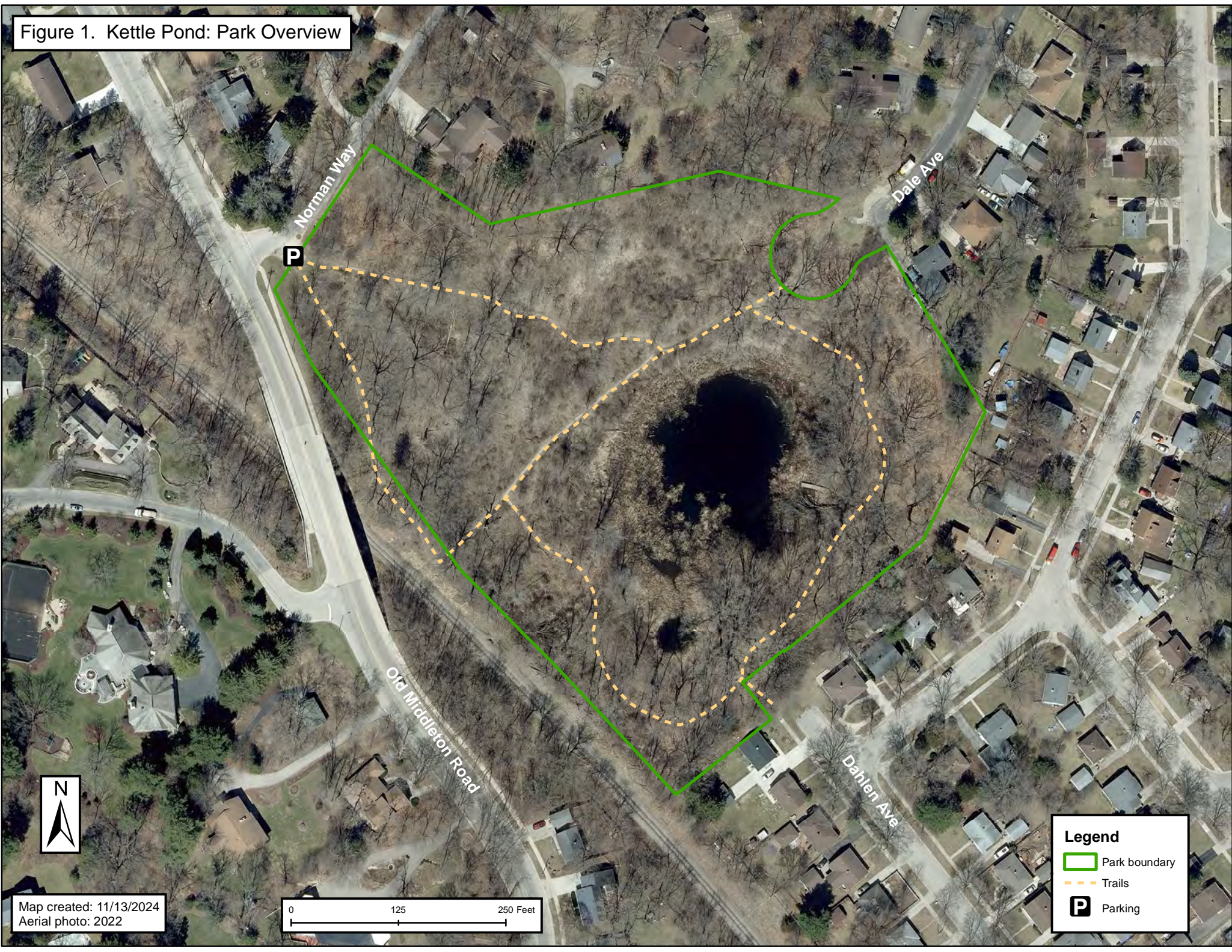
This Habitat Management Plan is consistent with Madison Parks' Land Management Plan. This Habitat Management Plan has 5-year lifespan and should be reviewed yearly. It can be revised whenever new information is discovered. If no changes have been made, it should be updated in its 5th year.

Version	Description
11/13/2024	First draft, presented to Habitat Stewardship Subcommittee on 11/19/24

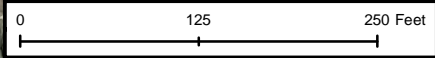
Appendices

- A. Maps
 - Figure 1. Park Overview
 - Figure 2. Land Cover Categories (Parks Land Management Plan)
 - Figure 3. Natural Communities (Department of Natural Resources)
 - Figure 4. Management Units
- B. Species Lists
- C. Natural Areas Monitoring Goals

Figure 1. Kettle Pond: Park Overview



Map created: 11/13/2024
Aerial photo: 2022



Legend



-  Park boundary
-  Trails
-  Parking

Figure 2. Kettle Pond: Parks Land Cover Categories



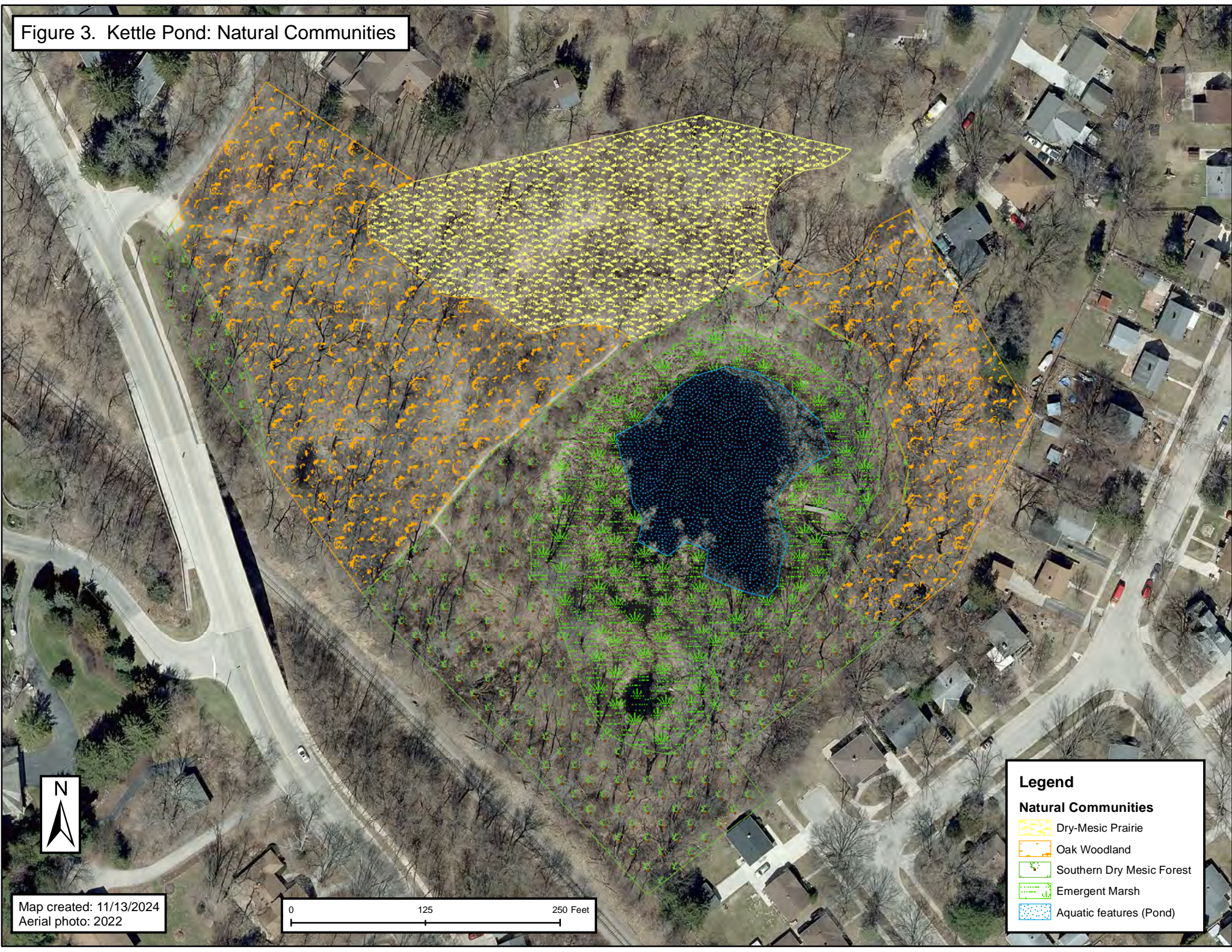
Map created: 11/13/2024
Aerial photo: 2022

0 125 250 Feet

Legend

- Tallgrass Prairie and Oak Savanna
- Urban Forest - Woodland
- Wetlands and Waterfronts - Emergent Marsh
- Wetlands and Waterfronts - Pond

Figure 3. Kettle Pond: Natural Communities



Legend

Natural Communities

- Dry-Mesic Prairie
- Oak Woodland
- Southern Dry Mesic Forest
- Emergent Marsh
- Aquatic features (Pond)

Map created: 11/13/2024
Aerial photo: 2022

0 125 250 Feet

Figure 4. Kettle Pond: Management Units



Appendix B. Species Lists

Vascular Plants

SCIENTIFIC NAME	COMMON NAME	Native	Introduced
Acer negundo	box elder	X	
Acer platanoides	Norway maple		X
Acer saccharinum	silver maple	X	
Agastache nepetoides	Yellow giant hyssop	X	
Alliaria officinalis	garlic mustard		X
Ambrosia artemisiifolia	ragweed	X	
Amelanchier laevis	Allegheny shadblow	X	
Ampelopsis brevipedunculata	porcelain-berry		X
Andropogon gerardi	Big bluestem grass	X	
Arctium minus	burdock		X
Arisaema triphyllum	jack in the pulpit	X	
Arnoglossum atriplicifolium	Pale Indian plantain	X	
Aster novae-angliae	New England aster	X	
Aster pilosus	Frost aster	X	
Blephilia hirsuta	Wood mint	X	
Bolboschoenus fluviatilis	River bulrush	X	
Calamagrostis canadensis	blue joint grass	X	
Campanula americana	Tall bellflower	X	
Carex lacustris	lake sedge	X	
Carpinus caroliniana	musclewood, hornbeam	X	
Carya ovata	Shagbark hickory	X	
Celtis occidentalis	hackberry	X	
Cephalanthus occidentalis	buttonbush	X	
Cirsium arvense	Canada thistle		X
Clematis virginiana	Virgin's bower	X	
Coreopsis tripteris	Tall coreopsis	X	
Cornus alternifolia	pagoda dogwood	X	
Cornus amomum	silky dogwood	X	
Cornus racemosa	gray dogwood	X	
Corylus americana	American hazlenut	X	
Daucus carota	Queen Anne's lace		X
Diarrhena obovata	beak grass	X	
Echinacea purpurea	Purple coneflower	X	
Elymus villosus	Silky wild rye	X	
Erigeron sp.	daisy fleabane	X	
Eupatorium purpureum	Purple joe pye weed	X	
Eupatorium rugosum	white snakeroot	X	
Fallopia japonica	Japanese knotweed		X
Fraxinus pennsylvanica	green ash	X	
Gallium sp.	bedstraw	X	
Gaura biennis	Biennial gaura	X	

SCIENTIFIC NAME	COMMON NAME	Native	Introduced
<i>Geum canadense</i>	white avens	X	
<i>Gleoma hederacea</i>	creeping charlie	X	
<i>Hackelia virginiana</i>	Stickseed	X	
<i>Helianthus grosseserratus</i>	Sawtooth sunflower	X	
<i>Heracleum maximum</i>	Cow parsnip	X	
<i>Hesperis matronalis</i>	dame's rocket		X
<i>Hydrophyllum virginianum</i>	Virginia waterleaf	X	
<i>Hystrix patula</i>	Bottlebrush grass	X	
<i>Impatiens capensis</i>	Orange jewelweed	X	
<i>Juglans cineria</i>	butternut	X	
<i>Juglans nigra</i>	black walnut	X	
<i>Juniperus virginiana</i>	red cedar	X	
<i>Lactuca canadensis</i>	Wild lettuce	X	
<i>Lamium</i> spp.	dead nettle		X
<i>Lemna minor</i>	lesser duckweed	X	
<i>Leonurus cardiaca</i>	motherwort		X
<i>Lonicera maackii</i>	honeysuckle		X
<i>Lychnis alba</i>	white campion		X
<i>Malus angustifolia</i>	apple	X	
<i>Marchantia</i> spp.	liverwort	X	
<i>Monarda fistulosa</i>	wild bergamot	X	
<i>Morus alba</i>	white mulberry		X
<i>Nepeta cataria</i>	catnip		X
<i>Oenothera biennis</i>	evening primrose	X	
<i>Ostrya virginiana</i>	hop-hornbeam	X	
<i>Parthenocissus inserta</i>	Virginia creeper	X	
<i>Phalaris arundinacea</i>	Reed canary grass	X	
<i>Phytolacca americana</i>	Pokeweed	X	
<i>Picea abies</i>	Norway spruce		X
<i>Pinus rubra</i>	red pine	X	
<i>Pinus sylvestris</i>	Scotch pine		X
<i>Poa pratensis</i>	Kentucky bluegrass		X
<i>Polygonatum pubescens</i>	Downy solomon's seal	X	
<i>Polygonum coccineum</i>	smartweed	X	
<i>Populus deltoides</i>	cottonwood	X	
<i>Populus tremuloides</i>	Quaking aspen	X	
<i>Prunus americana</i>	Wild plum	X	
<i>Prunus seotina</i>	black cherry	X	
<i>Prunus virginiana</i>	choke cherry	X	
<i>Pycnanthemum virginianum</i>	Common mountain mint	X	
<i>Quercus alba</i>	white oak	X	
<i>Quercus bicolor</i>	swamp white oak	X	
<i>Quercus macrocarpa</i>	bur oak	X	
<i>Quercus palustris</i>	pin oak	X	

SCIENTIFIC NAME	COMMON NAME	Native	Introduced
<i>Quercus rubrum</i>	red oak	X	
<i>Quercus velutina</i>	black oak	X	
<i>Rhamnus cathartica</i>	buckthorn		X
<i>Rhus glabra</i>	smooth sumac	X	
<i>Rhus typhina</i>	staghorn sumac	X	
<i>Ribes</i> spp.	gooseberry, currant	X	
<i>Robinia pseudoacacia</i>	black locust		X
<i>Rubus occidentalis</i>	black raspberry	X	
<i>Rudbeckia laciniata</i>	Goldenglow	X	
<i>Rudbeckia subtomentosa</i>	Sweet black-eyed susan	X	
<i>Salix nigra</i>	black willow	X	
<i>Sambucus canadensis</i>	elderberry	X	
<i>Scrophularia lanceolata</i>	Early figwort	X	
<i>Silphium perfoliatum</i>	Cup plant	X	
<i>Solanum dulcamara</i>	bittersweet nightshade		X
<i>Solidago canadensis</i>	Canada goldenrod	X	
<i>Toxicodendron radicans</i>	poison ivy	X	
<i>Typha latifolia</i>	broad-leaved cattail	X	
<i>Ulmus americana</i>	American elm	X	
<i>Urtica dioica</i>	stinging nettle	X	
<i>Verbascum thapsus</i>	Common mullein		X
<i>Verbena urticifolia</i>	White vervain	X	
<i>Viburnum lentago</i>	nannyberry	X	
<i>Viburnum trilobum</i>	highbush cranberry	X	
<i>Viola</i> spp.	violets	X	
<i>Vitis aestivalis</i>	Summer grape	X	
total species	111		
total native	90		
total non-native	21		

Animals- Birds

Source: eBird Field Checklist generated by eBird on 6/28/2023. (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 Coot	Fulica americana		
American Crow	Corvus brachyrhynchos		
American Goldfinch	Spinus tristis		
American Redstart	Setophaga ruticilla		
American Robin	Turdus migratorius		
American Tree Sparrow	Spizelloides arborea		
American White Pelican	Pelecanus erythrorhynchos		
American Wigeon	Mareca americana		
Bald Eagle	Haliaeetus leucocephalus		
Baltimore Oriole	Icterus galbula		
Barn Swallow	Hirundo rustica		
Barred Owl	Strix varia		
Bay-breasted Warbler	Setophaga castanea		
Belted Kingfisher	Megaceryle alcyon		
Black-and-white Warbler	Mniotilta varia		
Blackburnian Warbler	Setophaga fusca		
Black-capped Chickadee	Poecile atricapillus		
Blackpoll Warbler	Setophaga striata		
Black-throated Green Warbler	Setophaga virens		
Blue Jay	Cyanocitta cristata		
Blue-gray Gnatcatcher	Poliophtila caerulea		
Blue-headed Vireo	Vireo solitarius		
Blue-winged Teal	Spatula discors		
Blue-winged Warbler	Vermivora cyanoptera		
Bonaparte's Gull	Chroicocephalus philadelphia		
Broad-winged Hawk	Buteo platypterus		

COMMON NAME	SCIENTIFIC NAME	state listing	Wi DNR Wisconsin Wildlife Action Plan
Brown Creeper	<i>Certhia americana</i>		
Brown Thrasher	<i>Toxostoma rufum</i>		
Brown-headed Cowbird	<i>Molothrus ater</i>		
Bufflehead	<i>Bucephala albeola</i>		
Canada Goose	<i>Branta canadensis</i>		
Canada Warbler	<i>Cardellina canadensis</i>		SINS-Monitoring
Carolina Wren	<i>Thryothorus ludovicianus</i>		
Cedar Waxwing	<i>Bombycilla cedrorum</i>		
Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>		
Chimney Swift	<i>Chaetura pelagica</i>		
Chipping Sparrow	<i>Spizella passerina</i>		
Clay-colored Sparrow	<i>Spizella pallida</i>		
Common Grackle	<i>Quiscalus quiscula</i>		
Common Nighthawk	<i>Chordeiles minor</i>	SC/M	SGCN
Common Yellowthroat	<i>Geothlypis trichas</i>		
Cooper's Hawk	<i>Accipiter cooperii</i>		
Dark-eyed Junco	<i>Junco hyemalis</i>		
Downy Woodpecker	<i>Dryobates pubescens</i>		
Eastern Bluebird	<i>Sialia sialis</i>		
Eastern Kingbird	<i>Tyrannus tyrannus</i>		
Eastern Phoebe	<i>Sayornis phoebe</i>		
Eastern Screech-Owl	<i>Megascops asio</i>		
Eastern Towhee	<i>Pipilo erythrophthalmus</i>		
Eastern Wood-Pewee	<i>Contopus virens</i>		
European Starling	<i>Sturnus vulgaris</i>		
Field Sparrow	<i>Spizella pusilla</i>		SINS-Monitoring
Fox Sparrow	<i>Passerella iliaca</i>		
Golden-crowned Kinglet	<i>Regulus satrapa</i>		
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	SC/M	SGCN
Gray Catbird	<i>Dumetella carolinensis</i>		
Great Blue Heron	<i>Ardea herodias</i>		
Great Crested Flycatcher	<i>Myiarchus crinitus</i>		
Great Egret	<i>Ardea alba</i>	THR	SGCN
Great Horned Owl	<i>Bubo virginianus</i>		
Green Heron	<i>Butorides virescens</i>		
Hairy Woodpecker	<i>Dryobates villosus</i>		
Hermit Thrush	<i>Catharus guttatus</i>		
Herring Gull	<i>Larus argentatus</i>		
Hooded Merganser	<i>Lophodytes cucullatus</i>		
Horned Grebe	<i>Podiceps auritus</i>		
House Finch	<i>Haemorhous mexicanus</i>		
House Sparrow	<i>Passer domesticus</i>		
House Wren	<i>Troglodytes aedon</i>		

COMMON NAME	SCIENTIFIC NAME	state listing	Wi DNR Wisconsin Wildlife Action Plan
Indigo Bunting	<i>Passerina cyanea</i>		
Least Flycatcher	<i>Empidonax minimus</i>	SC/M	SGCN
Lesser Scaup	<i>Aythya affinis</i>		
Lincoln's Sparrow	<i>Melospiza lincolni</i>		
Magnolia Warbler	<i>Setophaga magnolia</i>		
Mallard	<i>Anas platyrhynchos</i>		
Mourning Dove	<i>Zenaida macroura</i>		
Mourning Warbler	<i>Geothlypis philadelphia</i>		
Nashville Warbler	<i>Leiothlypis ruficapilla</i>		
Northern Cardinal	<i>Cardinalis cardinalis</i>		
Northern Flicker	<i>Colaptes auratus</i>		
Northern Harrier	<i>Circus hudsonius</i>		SINS-Monitoring
Northern Parula	<i>Setophaga americana</i>		
Northern Waterthrush	<i>Parkesia noveboracensis</i>		
Orange-crowned Warbler	<i>Leiothlypis celata</i>		
Osprey	<i>Pandion haliaetus</i>		
Ovenbird	<i>Seiurus aurocapilla</i>		
Palm Warbler	<i>Setophaga palmarum</i>		SINS-Monitoring
Pied-billed Grebe	<i>Podilymbus podiceps</i>		
Pine Siskin	<i>Spinus pinus</i>		
Pine Warbler	<i>Setophaga pinus</i>		
Purple Finch	<i>Haemorhous purpureus</i>		
Purple Martin	<i>Progne subis</i>	SC/M	SGCN
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>		
Red-breasted Nuthatch	<i>Sitta canadensis</i>		
Red-eyed Vireo	<i>Vireo olivaceus</i>		
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	SC/M	SGCN
Red-tailed Hawk	<i>Buteo jamaicensis</i>		
Red-winged Blackbird	<i>Agelaius phoeniceus</i>		
Ring-billed Gull	<i>Larus delawarensis</i>		
Ring-necked Duck	<i>Aythya collaris</i>		
Ring-necked Pheasant	<i>Phasianus colchicus</i>		
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>		
Ruby-crowned Kinglet	<i>Regulus calendula</i>	SC/M	SGCN
Ruby-throated Hummingbird	<i>Archilochus colubris</i>		
Sandhill Crane	<i>Antigone canadensis</i>		
Scarlet Tanager	<i>Piranga olivacea</i>		
Solitary Sandpiper	<i>Tringa solitaria</i>		
Song Sparrow	<i>Melospiza melodia</i>		
Sora	<i>Porzana carolina</i>		
Swainson's Thrush	<i>Catharus ustulatus</i>	SC/M	SGCN
Swamp Sparrow	<i>Melospiza georgiana</i>		
Tennessee Warbler	<i>Leiothlypis peregrina</i>		

COMMON NAME	SCIENTIFIC NAME	state listing	Wi DNR Wisconsin Wildlife Action Plan
Townsend's Warbler	Setophaga townsendi		
Tree Swallow	Tachycineta bicolor		
Tufted Titmouse	Baeolophus bicolor		
Turkey Vulture	Cathartes aura		
Veery	Catharus fuscescens		
Virginia Rail	Rallus limicola		
Warbling Vireo	Vireo gilvus		
White-breasted Nuthatch	Sitta carolinensis		
White-crowned Sparrow	Zonotrichia leucophrys		
White-throated Sparrow	Zonotrichia albicollis		
Wild Turkey	Meleagris gallopavo		
Willow Flycatcher	Empidonax traillii		
Wilson's Warbler	Cardellina pusilla		
Winter Wren	Troglodytes hiemalis		
Wood Duck	Aix sponsa		
Wood Thrush	Hylocichla mustelina		SINS-Monitoring
Yellow Warbler	Setophaga petechia		
Yellow-bellied Sapsucker	Sphyrapicus varius		
Yellow-rumped Warbler	Setophaga coronata		
total species	131	8	13

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 1m² 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