Glenway Golf Park
Habitat Management Plan
5/12/2022

Site Information

Address:	3747 Speedway Road, Madison, WI
Acreage:	approximately 7 acres of native vegetation surrounding the fairways of a 9-hole golf course.
Site summary:	This management plan pertains to the planted native vegetation in the "rough" areas surrounding the fairways of the golf course. The golf course was redesigned, constructed, and revegetated in 2021.
Adjacent lands:	Forest Hill Cemetery borders the golf course to the east. The cemetery property includes an overstory of mature bur oak and other native and non-native trees in a classical park-like setting with manicured lawn surrounding the graves in the northern ¾ of the parcel. The southern ¼ of the parcel is characterized by an undeveloped, 10-acre mature oak woodland that features a network of social trails. The site is located within the Wingra Creek watershed.
Alder district:	District 13

Glenway Golf Park was established in 2021 to address deficiencies in playability and turf health that had developed on this this historic, 100-year-old golf course. The course was re-designed to not only improve playability, but to also provide a more sustainable, resilient system of play and non-play areas. Low-maintenance turf was established on greens and fairways, and the "rough" was planted in a variety of native species to improve aesthetics while providing habitat for wildlife and increased opportunities for recreational use, beyond golf alone.

This management plan pertains to the non-turf portions of the course, and outlines rationale and objectives for managing the "natural" vegetation here in accordance with Parks' Land Management Plan (2017). Please note that while the Land Management Plan is being updated in 2022, these two documents will remain in harmony.

Conservation Values

The natural plantings at Glenway Golf Park provide:

- Habitat for native pollinators and other wildlife.
- Increased storm water infiltration.
- Lower maintenance costs, relative to non-native cool-season grasses which formerly dominated the non-play areas of the course.

These natural areas also provide cultural values, including:

- Increased variety and aesthetics in parklands dominated by turf.
- Increased passive recreational opportunities, such as bird watching and nature study.
- Opportunity for increased public appreciation and interaction with the natural world within this developed suburban setting.

Ecological Threats

Invasive species – Newly established plantings are vulnerable to invasion by aggressive plant species. Proper management must include rigorous weed control and practices to promote the vigor of the native plant community until it becomes more established and resilient.

Tree diseases – Oak wilt and oak blight are widespread in this area and already present on this and surrounding sites.

Management Goals

The vision of Glenway Golf Park is to provide a sustainable, multi-use space that engages the community and promotes appreciation for the land and a connection to place. Management of the natural spaces on the course will pursue the following goals.

Optimize and maintain habitat for native pollinators and other wildlife – The native plant community will be managed to promote native species diversity and a level of structural diversity that is compatible with recreational use. Overwintering habitat for insects will be maintained. Downed woody debris will be allowed to remain on the ground, and dead standing trees will be retained where it is safe to do so.

Promote diverse recreational activities – The park includes a multi-use path that brings users through the natural areas. Trail and vegetation maintenance will be performed by staff and volunteers and will accommodate a variety of recreational activities including sledding, cross country skiing, hiking, and others.

Utilize and demonstrate low-impact pest control – As with all lands and facilities managed by the Parks Division, weed control at Glenway will follow the principles of Integrated Pest Management. Invasive plants will be monitored and controlled when populations exceed pre-determined thresholds. Control methods will be selected to provide the most effective control with the least negative impacts to environmental and human health. Low impact methods will be employed first, then higher-impact methods as needed. For example, hand-pulling, mowing, and other mechanical weed control methods will be favored and employed when possible and feasible. Herbicides, when necessary, shall be narrow-spectrum, non-persistent, and applied with the timing and method that requires the lowest effective quantities.

Promote citizen science – Glenway Golf Park provides a unique opportunity to engage the public in citizen science monitoring programs to collect data for both park management and the wider scientific community. Several programs currently active in Madison Parks can be implemented at Glenway as well, including BRAW Bluebird Trails, Wisconsin Bumble Bee Brigade, joint monarch Venture's IMMP, and others. Parks staff will support volunteers in monitoring plant diversity in the management units, and will use data collected to inform management.

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." In pursuit of this goal, we strive to balance ecological management needs with the needs of the community, and the uses proposed for the park. Ecological management at Glenway Golf Park 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 surrounding residences.

Pesticide Use - Public engagement and education will be necessary to explain integrated pest management and the particular goals of herbicide treatments. Staff may have to reconcile incomplete and conflicting information available to the public in the media.

Leaf Management – Historically, staff have been able to blow leaves off of the greens and fairways into non-play areas, primarily the Woods and the Ravine. The quantity of leaves is so great that it is anticipated they will smother the native vegetation that now occupies these areas. Staff may need to modify leaf management strategies to avoid adverse effects on native areas.

Management units

The natural areas are divided into areas established from seed, and those established with live plantings. See Appendix A for a map of the park.

Seeded areas include:

Ravine Bioswale (0.08 ac) Located at the bottom of the watershed that drains the majority of the site, this basin is vegetated to sequester pollutants and increase storm water infiltration.

The Ravine (1 ac) Meandering from west to east across the southern third of the property, this area receives drainage from nearly the entire park and delivers it through a bio-swale to the Glenway storm water greenway that drains ultimately to Lake Wingra.

The Swale (0.6 ac) Located along the western side of the park, this area separates the course from Glenway Street and drains to The Ravine

Golf Park Woods (1.7 ac) Located along the east edge of the course, this unit provides a transition between open golf course and dense woodland. Management here will minimize stress on remaining oak and hickory trees and will promote oak regeneration.

The Savanna (0.6 ac) Located in the northeast corner of the course, overlooking he cemetery to the east and Glenway Woods to the south.

Prairie (2.25 ac total) Three main areas of tallgrass prairie have been established, in addition to several small live planted areas interspersed throughout.

Live planted areas include:

- Clubhouse Planting
- Speedway Planting
- Glenway Planting
- Ravine Bioswale
- And small, live planted areas within all of the seeded areas described above.

Management Prescriptions

Management of the natural areas at Glenway will initially require more resources until the plant communities become established and can be maintained with relatively lower effort.

This will generally include establishment mowing, monitoring and controlling individual populations of weeds, monitoring and documenting species composition, richness and diversity of the native plant community, and annual maintenance practices such as mowing and prescribed burning.

Timeline	Unit(s)	Task
Spring 2022	All units	• Monitor for invasive species including but not limited to: burdock, dame's rocket, motherwort, mullein, spiny-plumeless thistle, musk thistle, Canada thistle, and velvetleaf • Hand pull or spray with broad-leaf specific herbicide depending on population size

Timeline	Unit(s)	Task
Summer 2022	Prairie Savanna Swale	Establishment mowing – cut to 6-8" height twice during the growing season – once in mid June and again in early August *Note that live planted areas within these units must be avoided by mower. These will be weeded manually or spot sprayed.
Summer 2022	Golf Park Woods Ravine	Continue targeted weed control with spot treatments (string trimming or herbicide) in these areas that should not be mowed with a tractor.
Spring 2023	All units	• Monitor for invasive species including but not limited to: burdock, dame's rocket, motherwort, mullein, spiny-plumeless thistle, musk thistle, Canada thistle, and velvetleaf • Hand pull or spray with broad-leaf specific herbicide depending on population size
Summer 2023	Prairie Savanna Swale	Establishment mowing – cut to 6-8" height twice during the growing season – once in mid June and again in early August *Note that live planted areas within these units must be avoided by mower. These will be weeded manually or spot sprayed.
Summer 2023	Golf Park Woods Ravine Live plantings	Continue targeted weed control with spot treatments (string trimming or herbicide) in these areas that should not be mowed with a tractor.
Fall 2023	All units	Add seed to areas where native species are less robust or where treatments have reduced cover of vegetation.
Spring 2024	Golf Park Woods Ravine	Attempt prescribed burn if sufficient leaf litter has accumulated.
Spring 2024	Golf Park Woods Ravine Swale	Plant plugs of various native herbaceous species, including some slower-growing mesic woodland species, to increase plant diversity.
Spring 2024	All units	• Monitor for invasive species including but not limited to: burdock, dame's rocket, motherwort, mullein, spiny-plumeless thistle, musk thistle, Canada thistle, and velvetleaf • Hand pull or spray with broad-leaf specific herbicide depending on population size
Summer 2024	All units	Continue targeted weed control with spot treatments (string trimming or herbicide).
Fall 2024	All units	Add seed to areas where native species are less robust or where treatments have reduced cover of vegetation.
Spring 2025	Prairie Swale Savanna Live plantings	Attempt prescribed burn if sufficient leaf litter has accumulated.

Timeline	Unit(s)	Task
Spring 2025	Golf Park Woods Ravine Swale	Plant plugs of various native herbaceous species, including some slower-growing mesic woodland species, to increase plant diversity.
Spring 2025	All units	• Monitor for invasive species including but not limited to: burdock, dame's rocket, motherwort, mullein, spiny-plumeless thistle, musk thistle, Canada thistle, and velvetleaf • Hand pull or spray with broad-leaf specific herbicide depending on population size
Summer 2025	All units	Continue targeted weed control with spot treatments (string trimming or herbicide).

Annual Budget Estimate

Task	Estimated labor hours	Annual cost (including supplies)
Invasive species treatments (spring)	160	$5,000
Establishment mowing	16	$600
Invasive species treatments (summer)	160	$5,000
Prescribed burns (average annual cost, burns will likely be conducted every other year)	20	$1,000
Install native seed mix	16	$1,500
Install native plant plugs (average annual cost, plants will be installed every few years if needed)	24	$2,500
Plant monitoring	120	$2,400
Totals	**516**	**$18,000**

Monitoring and Evaluation

Measuring results is critical to determining success. Management should include regular monitoring of the plant community as well as pollinators and other wildlife species that it supports.

Monitoring will include citizen science programs, such as Wisconsin Bumble Bee Brigade, and staff led vegetation monitoring to track plant species composition, richness, and diversity.

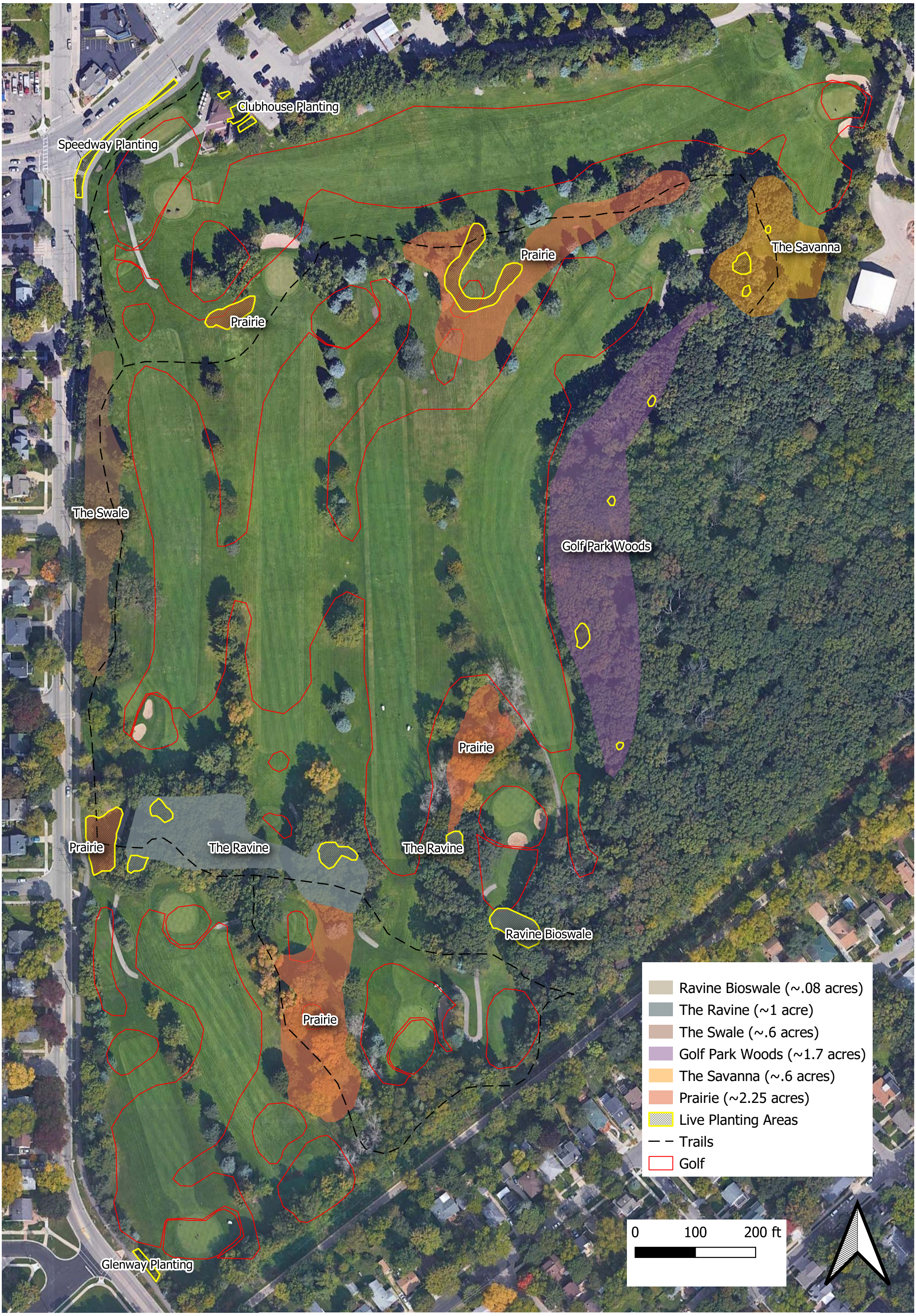
See Appendix C for Madison Parks' vegetation monitoring protocol.

References

Madison Parks. 2017. *Land Management Plan: City of Madison Parks*. City of Madison, Parks Division, Madison.

Appendices

A. Map of Management Units
B. Species Planted by Management Unit
C. Vegetation Monitoring Protocol



GLENWAY GOLF COURSE RESTORATION PLAN
MAY 2022

Madison, WI

play MADISON PARKS

JENSEN ECOLOGY

DATE: 5/10/22
DRAWN BY: JRJ

Appendix B
Glenway Golf Park
Species planted in the Prairie areas and the northern portion of The Swale

Scientific Name	Common Name
GRASSES AND SEDGES	
Bouteloua curtipendula	Sideoats Grama
Carex brevior	Shortbeak Sedge
Elymus canadensis	Canada Wild Rye
Koeleria macrantha	Prairie Junegrass
Schizachyrium scoparium	Little Bluestem
Sporobolus heterolepis	Prairie Dropseed
FORBS	
Agastache foenicium	Anise Hyssop
Allium cernuum	Nodding Onion
Anemone cylindrica	Candle Anemone
Amorpha canescens	Lead Plant
Asclepias tuberosa	Butterfly Milkweed
Asclepias verticillata	Whorled Milkweed
Baptisia alba	White Wild Indigo
Chamaecrista fasciculata	Partridge Pea
Coreopsis lanceolata	Sand Coreopsis
Coreopsis palmata	Prairie Coreopsis
Dalea purpurea	Purple Prairie Clover
Echinacea pallida	Pale Purple Coneflower
Eryngium yuccifolium	Rattlesnake Master
Euphorbia corollata	Flowering Spurge
Helianthus occidentalis	Western Sunflower
Lespedeza capitata	Round-headed Bush Clover
Liatris aspera	Tall Blazing Star
Monarda fistulosa	Wild Bergamot
Monarda punctata	Spotted Horsemint
Oligoneuron rigidum	Stiff Goldenrod
Parthenium integrifolium	Wild Quinine
Penstemon digtialis	Foxglove Beardtongue
Penstemon hirsutus	Hairy Penstemon
Phlox pilosa	Prairie Phlox
Ratibida pinnata	Gray-headed Coneflower
Rudbeckia hirta	Black-eyed Susan
Symphyotrichum oolentangiense	Sky Blue Aster
Symphyotrichum sericeum	Silky Aster
Tradescantia ohiensis	Common Spiderwort
Verbena stricta	Hoary Vervain
Veronicastrum virginicum	Culver's Root
Zizia aurea	Golden Alexander's
TOTAL # SPECIES	**38**

Appendix B
Glenway Golf Park
Species planted in The Savanna, Golf Park Woods, The Ravine, and southern portion of The Swale

Scientific Name	Common Name
GRASSES AND SEDGES	
Carex pennsylvanica	Oak Sedge
Carex rosea	Curly-styled wood sedge
Elymus canadensis	Canada Wild Rye
Elymus hystrix	Bottlebrush grass
Elymus virginicus	Virginia Wild Rye
FORBS	
Anemone cylindrica	Candle Anemone
Aquilegia canadensis	Columbine
Aralia racemosa	Spikenard
Camassia scilloides	Woodland Hyacinth
Dodecatheon meadia	Shooting Star
Euyrbia macrophylla	Large Flowering aster
Echinacea purpurea	Purple Coneflower
Eupatorium purpureum	Purple Joe Pye Weed
Geranium maculatum	Wild Geranium
Helianthus divaricatus	Woodland Sunflower
Lobelia siphilitica	Blue Lobelia
Monarda fistulosa	Wild Bergamot
Polemonium reptans	Jacobs Ladder
Rudbeckia hirta	Black-eyed Susan
Rudbeckia triloba	Brown-eyed susan
Solidago ulmifolia	Elm-leaved goldenrod
Solidago flexicalus	zigzag goldenrod
Symphyotrichum oolentangiense	Sky Blue Aster
Symphyotrichum sericeum	Silky Aster
Thalictrum diocium	Meadow rue
Trillium grandiflorum	White Trillium

TOTAL # SPECIES **26**

Appendix C. Parks Monitoring Program

Monitoring is necessary to track the success of restoration efforts as well as the overall quality of "the resource" – the biotic and abiotic composition of the natural areas in the conservation park system. The following outlines the current monitoring program for Madison's natural areas. This is a working document that will be updated as the program grows.

Taxa: Plants

Objectives:

1. Complete and update overall species inventory per park, and preferably per management unit.

   Tasks:

   a. Conduct meander surveys through different management units
2. Determine and track FQI in restoration areas

   Tasks:

   a. Establish transects of permanent $1m^2$ plots
   b. Sample plots to record percent cover of each species present.

Taxa: Insects

Objectives:

1. Complete overall species inventory per park

   Tasks:

   a. Conduct surveys with sweep nets, light traps and ground sampling?
2. Monitor pollinator abundance and species composition

   Tasks:

   a. Collect data using Wisconsin Bumble Bee Brigade protocols
   b. Collect data using Pollard transects to target butterflies

Taxa: Herptiles

Objectives:

1. Complete overall species inventory per park

   Tasks:

   b. Conduct surveys with pitfall traps?
2. Conduct breeding survey

   Tasks:

   a. Establish Wisconsin Frog and Toad Survey phenology survey locations in parks

Taxa: Birds

Objectives:

1. Analyze data available from eBird

   Tasks:

   a. Download data sets for each park

   b. Identify likely breeding species from observation dates

   c. Compare species richness for breeding and non-breeding birds across decades

2. Conduct breeding survey

   Tasks:

   a. Develop clearer goals and objectives for this based on gaps in forthcoming Wisconsin Breeding Bird Atlas II before proceeding

"Taxa": Overall vegetative structure

Objectives:

1. Establish photo points in all parks.
2. Map plant community boundaries