Bitzer Family Preserve
Habitat Management Plan
12/27/2019

DRAFT

Site information

Address: The parcel is located north of the Herman and Jo Tucker property at 3020 Shady Oak Lane, Town of Verona. It is accessed via an easement through the Tucker property.
Acreage: 8.3 acres
Site summary: Acquired 12/16/2016 by donation from Jo Ann and Lloyd Bitzer. Madison Parks has collaborated with the Ice Age Trail Alliance to acquire land to connect the Valley View Segment and Madison Segment of the Ice Age Trail.
Adjacent lands: Adjacent natural areas and areas of strategic and ecological significance include wooded tracts and farms surrounding the parcel. Moraine Woods, a 40-acre parcel on Woods Road that is also owned by the City of Madison, lies ¼ mile east of the Bitzer Family Preserve.
Alder district: N/A – parcel is located in the Town of Verona

Conservation values

The dominant natural feature of Bitzer Family Preserve is the old field that straddles two low knolls and the saddle between them. The area lies on the terminal moraine – the extent of the Green Bay lobe of the Laurentide Ice Sheet that occurred here during the Wisconsin Glaciation.

The old field, which was formerly used as a horse pasture, is dominated by smooth brome and gray goldenrod, but also supports small populations of several native prairie species, including prairie blazing star, stiff goldenrod and wild bergamot. Gray dogwood and tree saplings provide structural diversity, along with red and bur oak, black cherry, and black walnut, which are concentrated on the southern and eastern edges of the parcel. A wide windbreak of spruce is located along the western edge of the tract, and regeneration is encroaching into the field. The southwest corner of the parcel bisects a kettle depression dominated by reed canary grass. Appendix B contains a list of vascular plant species observed at the park.

Wildlife includes common rural and suburban species such as white-tailed deer, wild turkey, Great-Horned Owls, and common songbirds.

The parcel, along with the majority of Madison, is located within a “high potential zone” for the federally-endangered Rusty Patched Bumble Bee (*Bombus affinis*), and its presence should be assumed within this area, which has been delineated by the USFWS (2019).

Madison Parks’ Land Management Plan (2017) outlines the main habitat types found in the City’s conservation parks. These general types can be further classified into “Recognized Natural Communities” described by the Wisconsin Natural Heritage Inventory (2018). This helps us to provide more technical and specific restoration targets based on the nuances of each park. The main habitat types that occur at Bitzer Family Preserve are below, with the appropriate corresponding NHI-recognized natural communities listed under each one.

Tallgrass prairie (Madison Parks)
- Dry-Mesic Prairie (NHI)
- Mesic Prairie (NHI)

Oak savanna / Oak woodland (Madison Parks)
- Oak Opening (NHI)
- Oak Woodland (NHI)
- Southern Dry Forest (NHI)

Ecological threats

Invasive species – Much of the adjacent woodland understory is dominated by bush honeysuckle, common buckthorn and Asian bittersweet.

Conservation goals

The old field habitat that dominates this parcel is addressed in Madison Parks' Land Management Plan.

1. *Provide low-quality buffer habitat that does not pose a threat to adjacent natural communities.*
   While removal of non-native invasive species is a priority for this parcel, the dominant cover of smooth brome and native shrub species do not threaten the adjacent woods or kettle pond. Bur oak and a few native prairie species occur in the field. With management, there could be potential to transition the field to an oak opening, oak savanna or oak woodland natural community.

2. *Provide pollinator habitat.*
   Limiting the abundance of brome grass and shrub thickets, while promoting the spread of the native prairie species that occur here, would improve and expand pollinator habitat.

3. *Control invasive and non-native species.*
   Bush honeysuckle, autumn olive, and Asian bittersweet are present and have the capacity to spread throughout the field. Natural regeneration from the spruce windbreak is encroaching on the grassland habitat.

Management history

No management has been conducted by Parks staff to date. However, the Bitzer family (Evan Bitzer and Jo Tucker) have spent some time removing honeysuckle and buckthorn, and maintain a mowed path along the southern edge of the parcel.

Management units

This parcel is managed as a single unit.

Prescriptions/Options

Options for three levels of management are presented in this plan: maintenance only, moderate restoration, and extensive restoration.

Management Level 1 "maintenance only" is NOT recommended for any of the conservation parks at this time. Restricting ecological management to areas recently treated is not sustainable within the context of existing adjacent invasive species populations and dispersal corridors, both within and outside of a given park.

Management Level 2 "moderate restoration" is based on the current Conservation section budget, staff capacity, and work accomplished in the past two years. This is the level at which the Conservation Parks section currently operates.

Management Level 3 "extensive restoration" could only be accomplished with increased staffing in the Conservation Parks section, in order to conduct the in-house work outlined below, as well as manage volunteers and Capital Improvement Project contracts.

Under management level 3, costs will eventually decrease then plateau, as all management units within a park come under active management. With initial restoration completed, treatment areas and the park as a whole, will transition from a "restoration phase" to a "maintenance phase". Once a healthy, diverse, native plant community has become established park-wide, it can be maintained with much fewer resources. Internal ecological threats will have been minimized, and regular burning and occasional control of new populations of invasive species will be sufficient to sustain the natural area at its new equilibrium. Only then will the "maintenance only" option be successful.

Management Level 1 (maintenance only)

Objectives:

- Cut/treat or foliar spray Asian bittersweet.
- Mow field to control woody encroachment.
- Burn parcel every three years.

Annual Budget Estimate:

Assumes 2-3 visits per year by Parks staff.

Task	**Annual cost**
Brush mowing	$450
Invasive species treatments (fall)	$550
Burns (average one every three years)	$600
Totals	**$1,600**

Specific Management Unit Prescriptions:

Timeline	**Task**
Summer/Fall 2020	Mow brush
Fall 2020	Cut/treat or foliar spray Asian bittersweet
Spring 2021	Rx burn
Summer/Fall 2021	Mow brush
Fall 2021	Cut/treat or foliar spray Asian bittersweet
Summer/Fall 2022	Mow brush
Fall 2022	Cut/treat or foliar spray Asian bittersweet
Summer/Fall 2023	Mow brush
Fall 2023	Cut/treat or foliar spray Asian bittersweet
Spring 2024	Rx burn
Summer/Fall 2024	Mow brush
Fall 2024	Cut/treat or foliar spray Asian bittersweet

Possible Burn Schedule – average one burn every three years:

year	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
all		x			x			x		

Management Level 2 (moderate restoration)

Objectives:

- Collect and sow native seed to increase diversity and augment native plant community.
- Herbicide treatments (cut-stump or foliar spray re-sprouts) to bush honeysuckle, autumn olive, and Asian bittersweet
- Mow field to control woody encroachment and reduce gray goldenrod.
- Burn parcel every other year.

Annual Budget Estimate:

Assumes 3-4 visits per year by Parks staff.

Task	**Annual cost**
Invasive species treatments (spring, summer)	$750
Brush mowing	$350
Collect and sow native seed	$250
Invasive species treatments (fall)	$1,100
Burns (average one burn every other year)	$1,000
totals	**$3,450**

Specific Management Unit Prescriptions:

Timeline	**Task**
Spring 2020	Spray invasive herbaceous species, cut encroaching spruce
Summer/Fall 2020	Mow brush and gray goldenrod
Summer/Fall 2020	Collect and sow native seed
Fall 2020	Cut/treat or foliar spray bush honeysuckle, autumn olive, Asian bittersweet.
Spring 2021	Rx burn
Spring 2021	Spray invasive herbaceous species, cut encroaching spruce
Summer/Fall 2021	Mow brush and gray goldenrod
Summer/Fall 2021	Collect and sow native seed
Fall 2021	Cut/treat or foliar spray bush honeysuckle, autumn olive, Asian bittersweet.
Spring 2022	Spray invasive herbaceous species, re-sprouts of brush near oaks
Summer/Fall 2022	Mow brush and gray goldenrod
Summer/Fall 2022	Collect and sow native seed
Fall 2022	Cut/treat or foliar spray bush honeysuckle, autumn olive, Asian bittersweet.
Spring 2023	Rx burn
Spring 2023	Spray invasive herbaceous species, re-sprouts of brush near oaks
Summer/Fall 2023	Mow brush and gray goldenrod

Timeline	Task
Summer/Fall 2023	Collect and sow native seed
Fall 2023	Cut/treat or foliar spray bush honeysuckle, autumn olive, Asian bittersweet.
Spring 2024	Spray invasive herbaceous species
Summer/Fall 2024	Mow brush and gray goldenrod
Summer/Fall 2024	Collect and sow native seed
Fall 2024	Cut/treat or foliar spray bush honeysuckle, autumn olive, Asian bittersweet.

Possible burn schedule – average one burn every other year:

year	1	2	3	4	5	6	7	8	9	10
all		x		x		x		x		x

Management Level 3 (extensive restoration)

Objectives:

- Sow purchased and collected native seed to increase diversity and augment native plant community.
- Herbicide treatments (cut-stump or foliar spray re-sprouts) to bush honeysuckle, autumn olive, Asian bittersweet
- Mow field to control woody encroachment and reduce gray goldenrod.
- Herbicide treatments to reed canary grass and other invasive herbaceous species.
- Burn parcel every other year.

Annual Budget Estimate:

Assumes 4-5 visits per year by Parks staff.

Task	**Annual cost**
Invasive species treatments (spring, summer)	$1,200
Brush mowing	$350
Collect and sow native seed	$450
Invasive species treatments (fall)	$1,100
Burns (average one burn every other year)	$1,000
Purchase and install native seed mix	$500
totals	**$4,600**

Specific Management Unit Prescriptions:

Timeline	**Task**
Spring 2020	Spray invasive herbaceous species, cut encroaching spruce
Summer/Fall 2020	Mow brush and gray goldenrod
Summer/Fall 2020	Purchase, collect and sow native seed
Fall 2020	Cut/treat or foliar spray bush honeysuckle, autumn olive, Asian bittersweet.
Spring 2021	Rx burn
Spring 2021	Spray invasive herbaceous species, cut encroaching spruce
Summer/Fall 2021	Mow brush and gray goldenrod
Summer/Fall 2021	Purchase, collect and sow native seed
Fall 2021	Cut/treat or foliar spray bush honeysuckle, autumn olive, Asian bittersweet.
Spring 2022	Spray invasive herbaceous species, re-sprouts of brush near oaks
Summer/Fall 2022	Mow brush and gray goldenrod
Summer/Fall 2022	Purchase, collect and sow native seed
Fall 2022	Cut/treat or foliar spray bush honeysuckle, autumn olive, Asian bittersweet.
Spring 2023	Rx burn
Spring 2023	Spray invasive herbaceous species, re-sprouts of brush near oaks

Timeline	Task
Summer/Fall 2023	Mow brush and gray goldenrod
Summer/Fall 2023	Purchase, collect and sow native seed
Fall 2023	Cut/treat or foliar spray bush honeysuckle, autumn olive, Asian bittersweet.
Spring 2024	Spray invasive herbaceous species
Summer/Fall 2024	Mow brush and gray goldenrod
Summer/Fall 2024	Purchase, collect and sow native seed
Fall 2024	Cut/treat or foliar spray bush honeysuckle, autumn olive, Asian bittersweet.

Possible burn schedule – average one burn every other year:

year	1	2	3	4	5	6	7	8	9	10
all		x		x		x		x		x

Monitoring and Evaluation

Measuring results is critical to determining success. Parks conservation staff have developed a monitoring plan to begin to measure and track ecological health and the success of restoration efforts in the conservation parks. Refer to Appendix C for an outline of this plan.

While the Conservation Parks section currently has very limited capacity to increase monitoring efforts, we hope to expand our reach by working with the US Fish and Wildlife Service, the Wisconsin Department of Natural Resources, the University of Wisconsin at Madison, and independent volunteers. Both formal research and citizen science will provide crucial information on which to base management decisions. With this in mind, basic, periodic monitoring can be performed by staff or volunteers to collect data about mammals, birds, reptiles and amphibians, invertebrates, and vascular plants. A few key metrics that should be used at Bitzer Family Preserve include plant diversity and abundance of invasive species.

As part of a wider monitoring program, the following tasks should be completed:
- Update/verify plant and animal species lists.
- Sample plant communities to collect data on richness and cover, then calculate diversity and floristic quality indices.
- Survey oak regeneration.
- Conduct surveys for Rusty Patched bumble Bee using the USFWS protocol at: https://www.fws.gov/midwest/endangered/insects/rpbb/surveys.html
- Conduct photo monitoring on 3-year intervals.

See Appendix A.3 for a map of planned plant monitoring transects and photo monitoring stations.

References

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

Mickelson, D.M. and M.C. McCartney. 1979. Glacial Geology of Dane County, Wisconsin. University of Wisconsin – Extension, Geological and Natural History Survey. Madison.

U.S. Fish and Wildlife Service. 2019. Endangered Species: Rusty Patched Bumble Bee. https://www.fws.gov/midwest/endangered/insects/rpbb/index.html Accessed May 15, 2019.

Wisconsin Department of Natural Resources. 2018. Wisconsin's Natural Communities. http://dnr.wi.gov/topic/EndangeredResources/Communities.asp Accessed February 8, 2018.

Document History

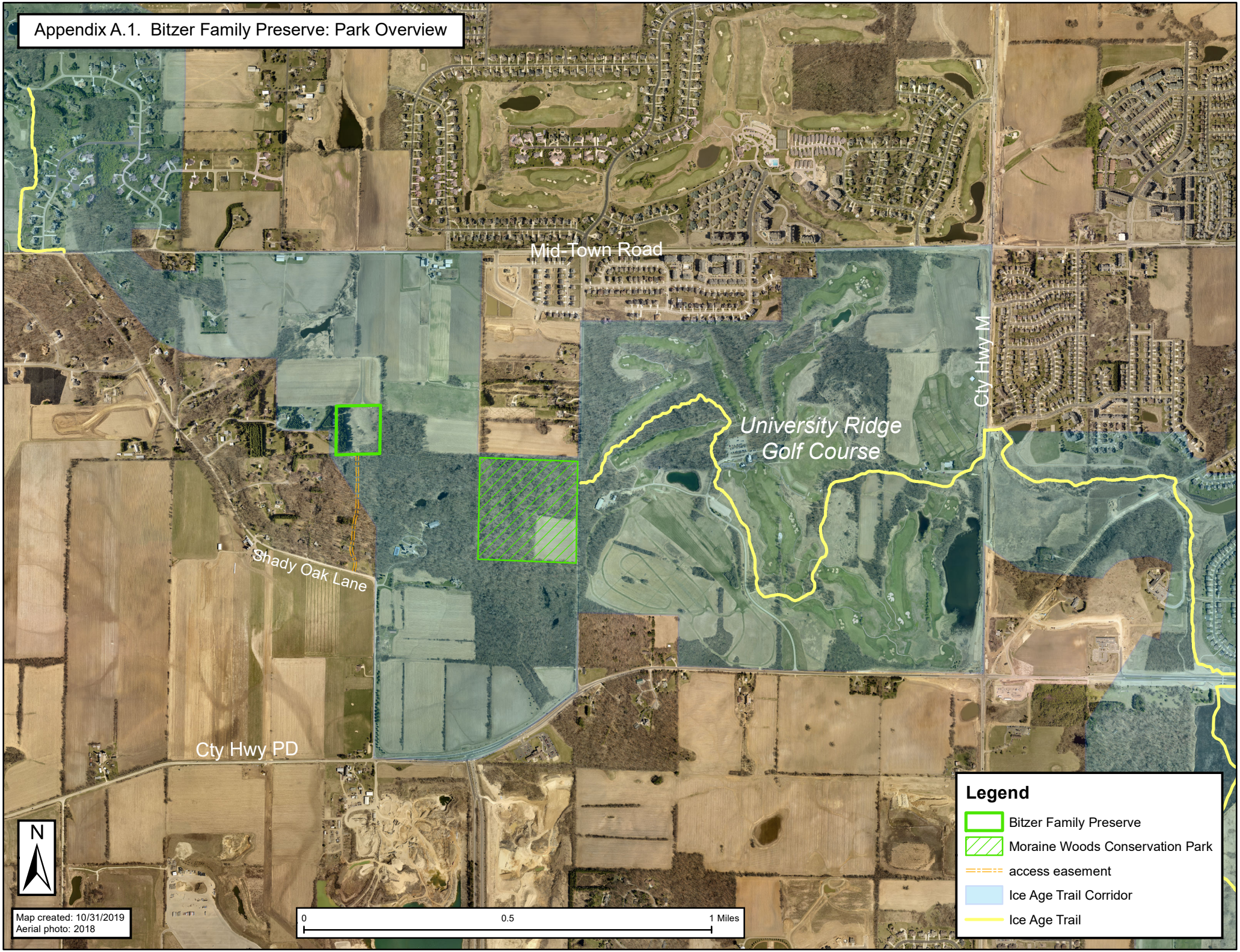
This Habitat Management Plan is consistent with Madison Parks' Land Management Plan. This Habitat Management Plan has 5-year lifespan, and should be reviewed yearly. It can be revised whenever new information is discovered. If no changes have been made, it should be updated in its 5th year.

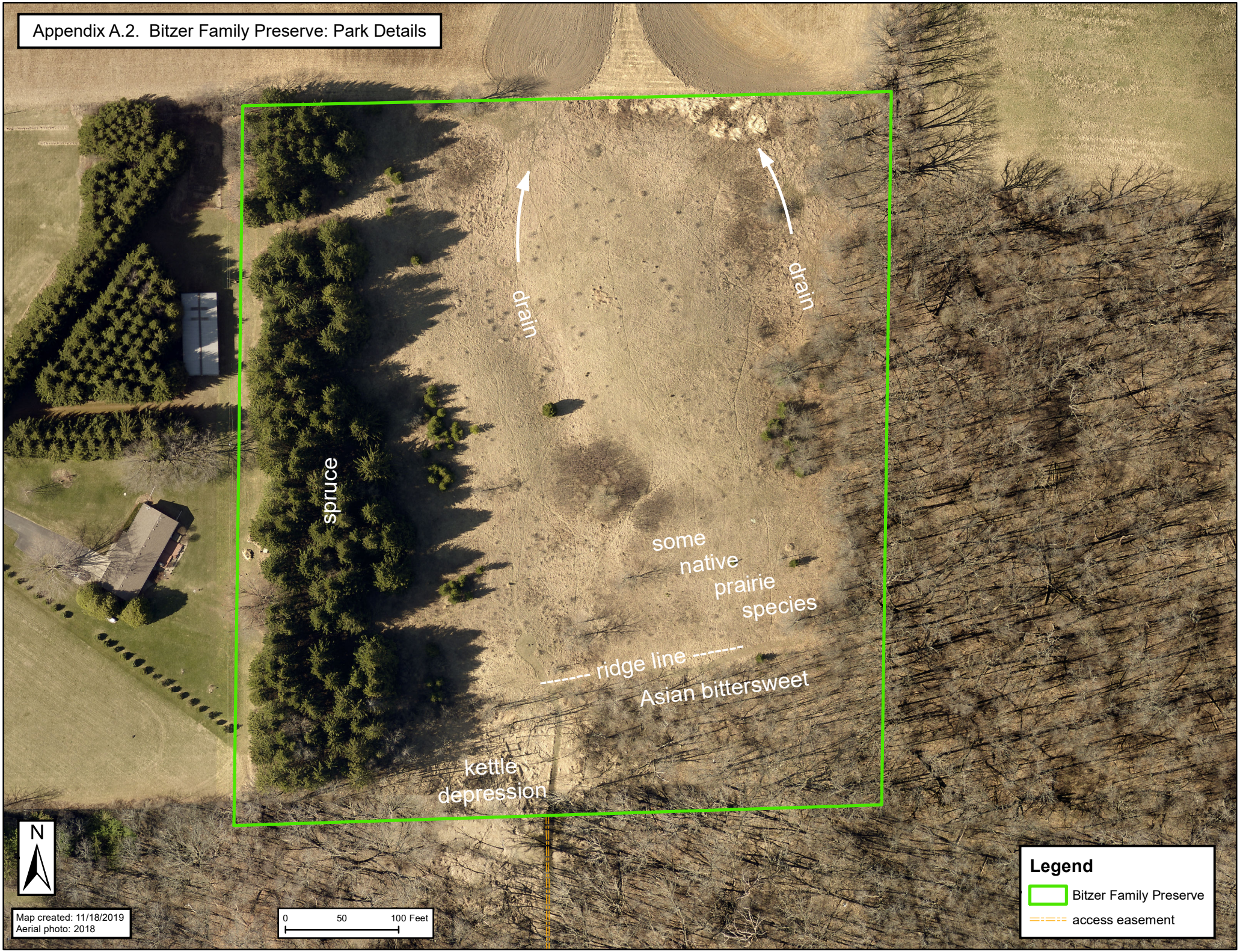
Version	Description
12/27/2019	First draft, will be presented to HSC in February 2020

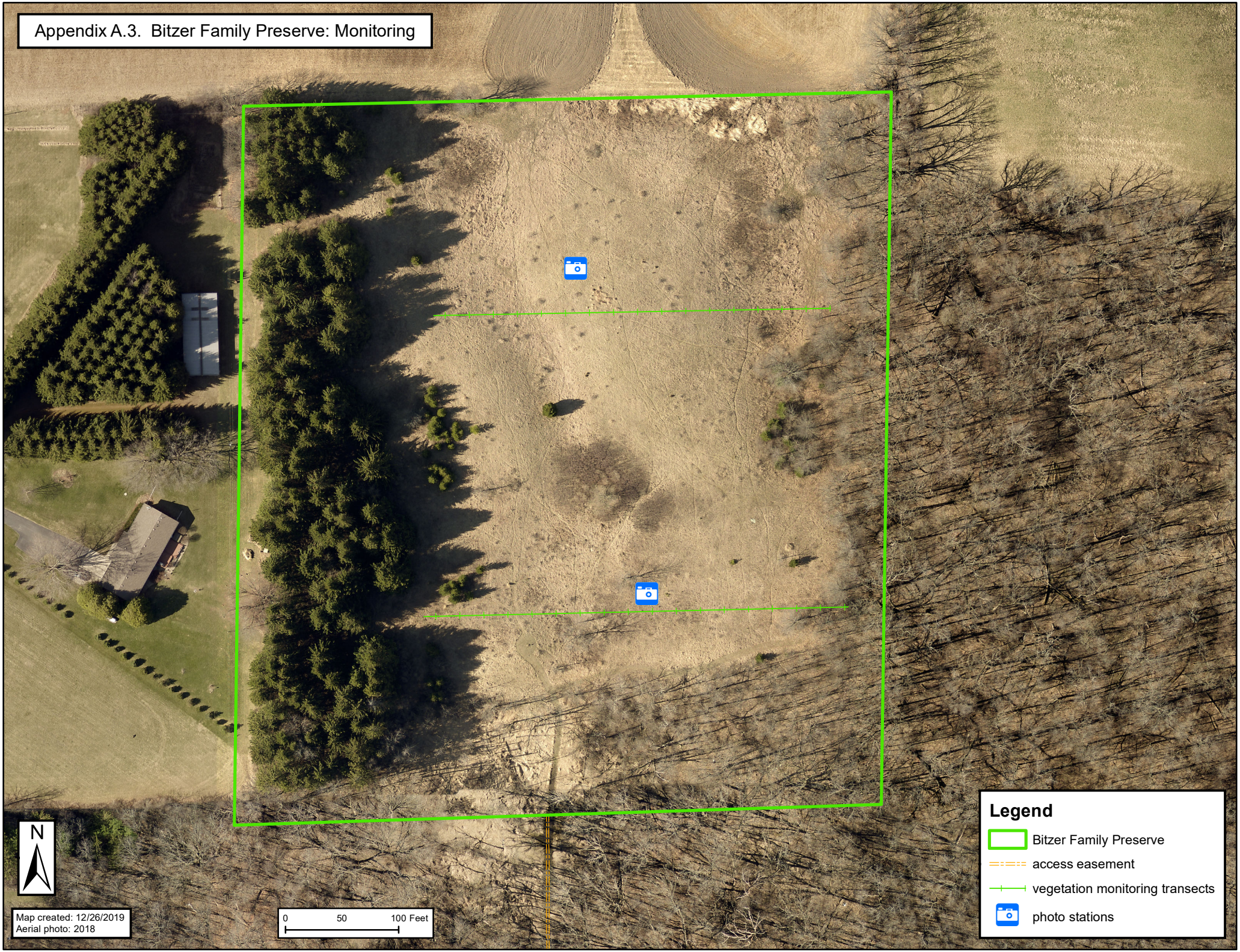
Appendices

A. Maps
   - A.1 Park Overview
   - A.2 Park Details
   - A.3 Monitoring

B. Species Lists
C. Conservation Parks Monitoring Plan


Appendix A.1. Bitzer Family Preserve: Park Overview
Mid-Town Road
Cty Hwy M
University Ridge
Golf Course
Shady Oak Lane
Cty Hwy PD
N
Map created: 10/31/2019
Aerial photo: 2018
0
0.5
1 Miles
Legend
Bitzer Family Preserve
Moraine Woods Conservation Park
access easement
Ice Age Trail Corridor
Ice Age Trail


Appendix A.2. Bitzer Family Preserve: Park Details
drain
drain
spruce
some native prairie species
ridge line
Asian bittersweet
kettle depression
N
Map created: 11/18/2019
Aerial photo: 2018
0
50
100 Feet
Legend
Bitzer Family Preserve
access easement


Appendix A.3. Bitzer Family Preserve: Monitoring
N
Map created: 12/26/2019
Aerial photo: 2018
0
50
100 Feet
Legend
Bitzer Family Preserve
access easement
vegetation monitoring transects
photo stations

Appendix B. Species Lists			
Vascular Plants			
SCIENTIFIC NAME	**COMMON NAME**	**Native**	**Introduced**
Acer negundo	Box elder	X	
Alliaria officinalis	Garlic mustard		X
Anemone cylindrica	Thimbleweed	X	
Asclepias syriaca	Common milkweed	X	
Asclepias verticillata	Whorled milkweed	X	
Asparagus officinalis	Asparagus		X
Aster ericoides	Heath aster	X	
Aster lateriflorus	Calico aster	X	
Bromus inermis	Smooth brome		X
Carex sp.	a sedge	X	
Celastrus orbiculatus	Asian bittersweet		X
Cirsium discolor	Pasture thistle	X	
Cornus racemosa	Gray dogwood	X	
Daucus carota	Queen Anne's lace		X
Elaeagnus umbellata	Autumn olive		X
Epilobium sp.	a willow-herb	X	
Eupatorium maculatum	Joe pye weed	X	
Fraxinus pennsylvanica	Green ash	X	
Geum canadense	White avens	X	
Hackelia virginiana	Stickseed	X	
Hesperis matronalis	Dame's rocket		X
Hypericum sp.	a St. John's-wort	X	
Juglans nigra	Black walnut	X	
Juniperus virginiana crebra	Red cedar	X	
Liatris pycnostachya	Prairie blazing star	X	
Lobelia inflata	Indian tobacco	X	X
Lonicera pseudoaccacia	Black locust		X
Lonicera tatarica	Tartarian honeysuckle		X
Monarda fistulosa	Wild bergamot	X	
Panicum virgatum	Switch grass	X	
Parthenocissus quinquefolia	Virginia creeper	X	
Phalaris arundinacea	Reed canary grass		X
Picea abies	Norway spruce		X
Picea rubens	Red spruce	X	
Pinus strobus	White pine	X	
Populus tremuloides	Quaking aspen	X	
Potentilla simplex	Common cinquefoil	X	
Prnnus serotina	Wild black cherry	X	
Prunella vulgaris	Self-heal	X	
Pyrus malus	Apple		X
Quercus alba	White oak	X	
Quercus macrocarpa	Bur oak	X	
Quercus rubra	Red oak	X	
Rhus typhina	Staghorn sumac	X	
Rubus occidentalis	Black raspberry	X	
Sicyos angulatus	Bur-cucumber	X	
Solidago nemoralis	Old-field goldenrod	X	
Solidago rigida	Stiff goldenrod	X	
Sorghastrum nutans	Indian grass	X	

SCIENTIFIC NAME	COMMON NAME	Native	Introduced
Trifolium pratense	Red clover		X
Verbena urticifolia	White vervain	X	
Viburnum lentago	Nannyberry	X	
Vitis riparia	Riverbank grape	X	
total species	**53**		
total native	**40**		
total exotic	**14**		

Appendix C. Conservation Parks Monitoring Program

Madison Parks

3/15/2019

DRAFT

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 conservation parks. 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.
3. Measure and track herbivory pressure

   Tasks:

   a. Photo monitor conditions inside/outside exclosures
   b. Plant palatable species inside/outside exclosures and track abundance and height

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