Lebanon Hills Regional Park
Natural Resources Management Plan

Open House
16 January, 2018

Stantec

Dakota County
forever wild PARKS

Topics

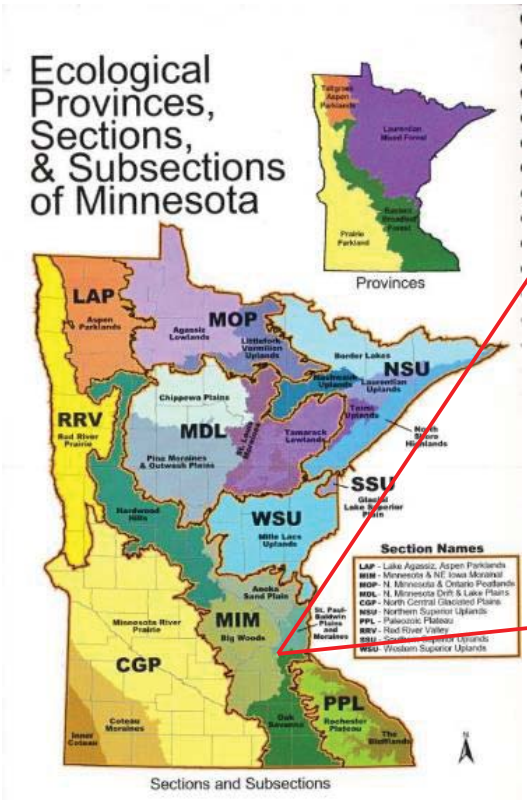
1. Project Process
2. Landscape Context
3. Landform
4. Vegetation
5. Water Resources
6. Wildlife
7. Rare/Unique Natural Features

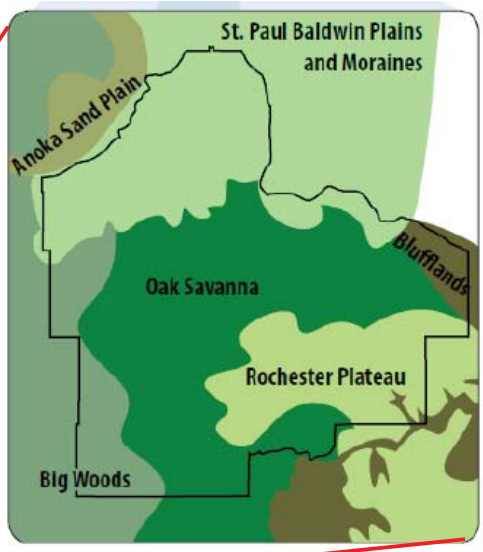
LEBANON HILLS REGIONAL PARK NATURAL RESOURCES MANAGEMENT PLAN

Date	Tasks	Phase
August 2017	Project start	Initiation
September-December 2017	• Research & findings • Existing conditions • Stakeholder meetings	Research & Findings
January-February 2018	• Public Open House • Planning Commission, County Board	
January-March 2018	• Issues and opportunities • Develop approaches, priorities, and recommendations • Stakeholder meetings	Concept Develop-ment
April-May 2018	• Additional field work • Draft Plan • Pubic Open House, Planning Commission, County Board	
June-August 2018	• Final Plan • Public review (30 days)	Public Review
August-October 2018	• Plan adoption	Plan Adoption

Vegetation

Ecological Subsection (MN DNR)



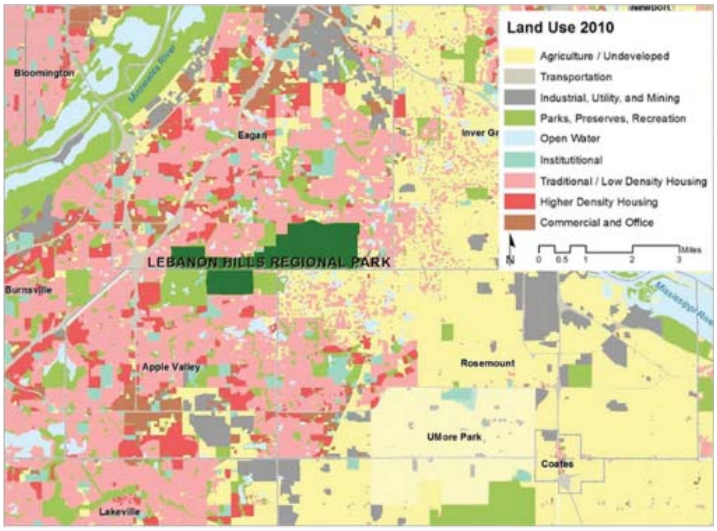


Dakota County lies at the junction of six ecological subsections — more than any other county in the state — creating a uniquely diverse landscape.

Landform

Landscape Context

- Adjacent Land Use



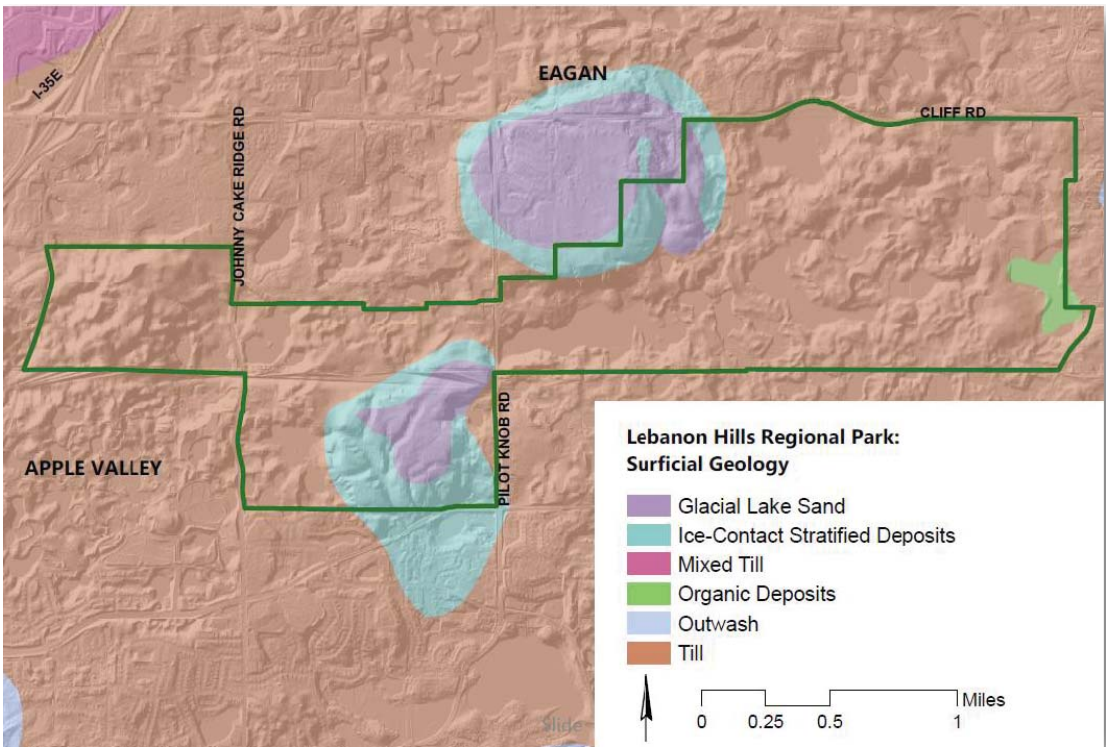
Vegetation

Park Characteristics Influencing Natural Resources Within the Park

- Size of the park
- Roads that bisect the park
- Development up to the park's boundary
- Many trails throughout the park
- Park located in the northern part of the County—most urban part
- Relatively isolated from other natural areas
- The most heavily used/visited of all Dakota County parks
- Stormwater runoff from outside of park (sediment, nutrient loading, pollution)
- Invasive species potential to be introduced into park

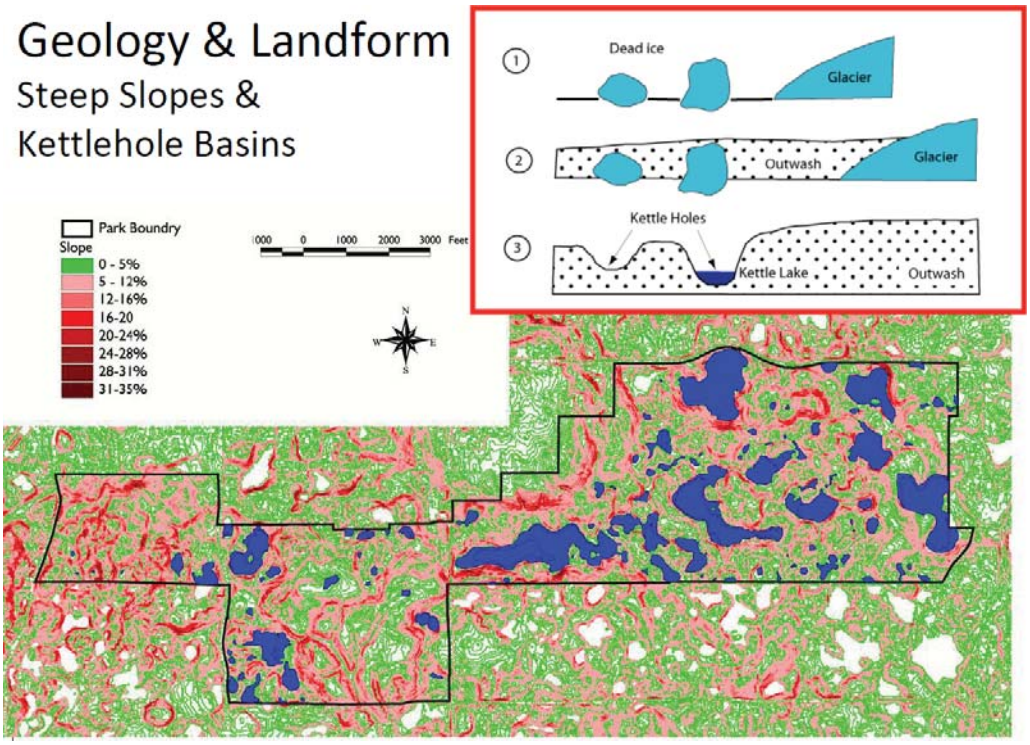
Landform

Surficial Geology

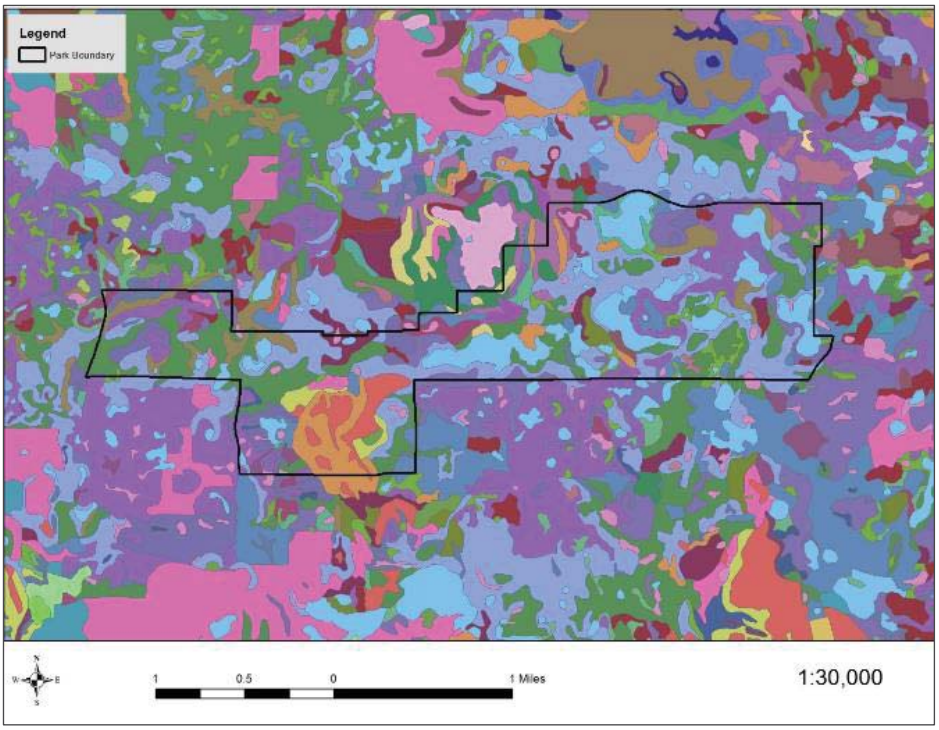


Landform

Topography

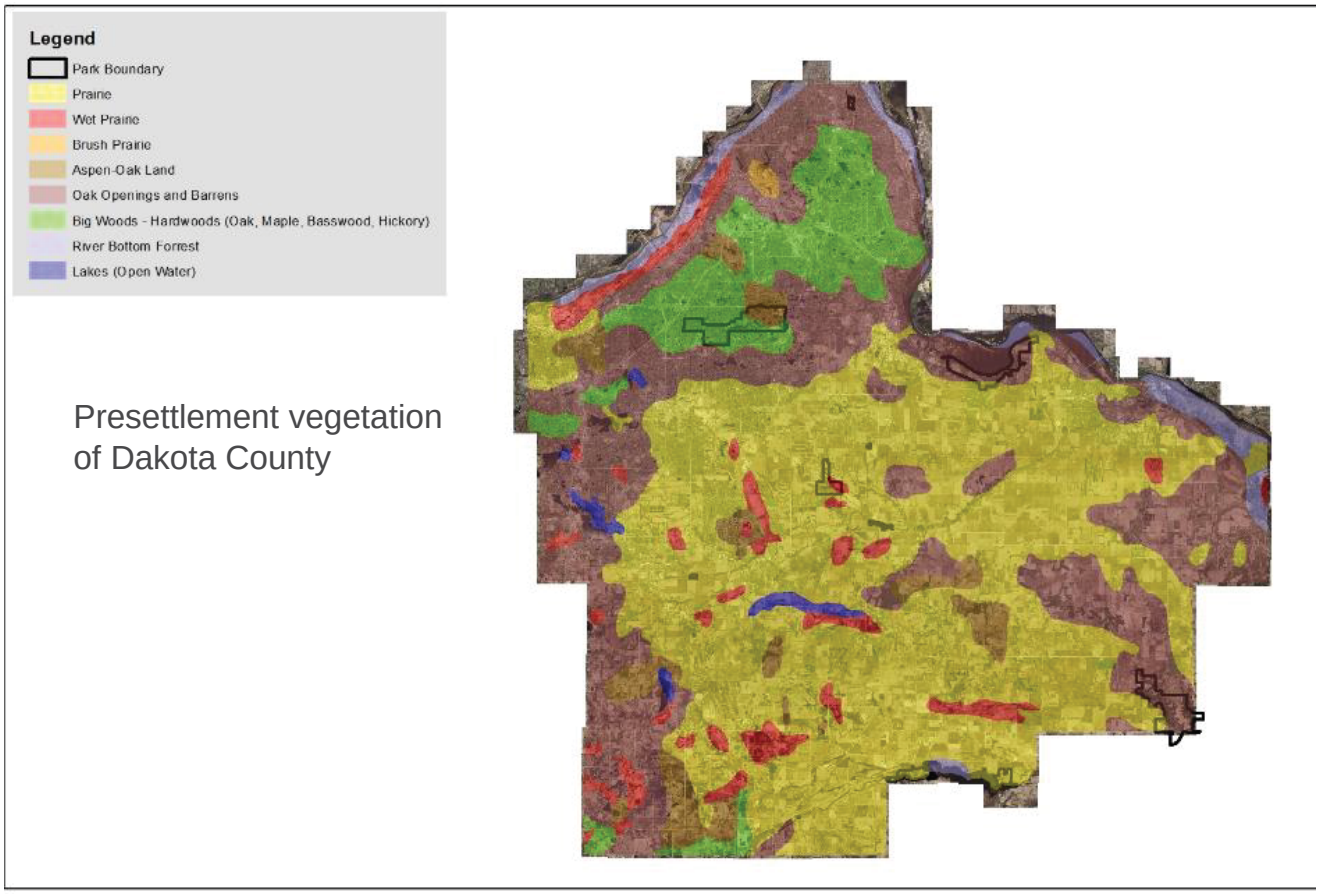


Soils



Source: Dakota County Parks

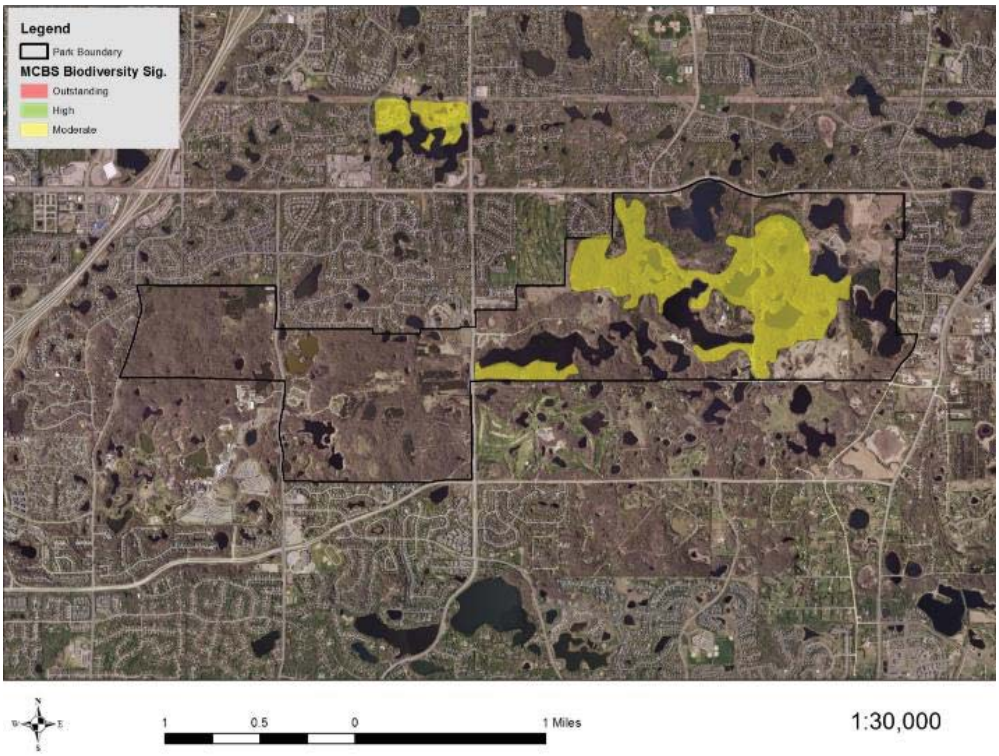
Key: Sandy loams = violet, silt loams = orange. Light blue = lakes



Presettlement vegetation of Dakota County

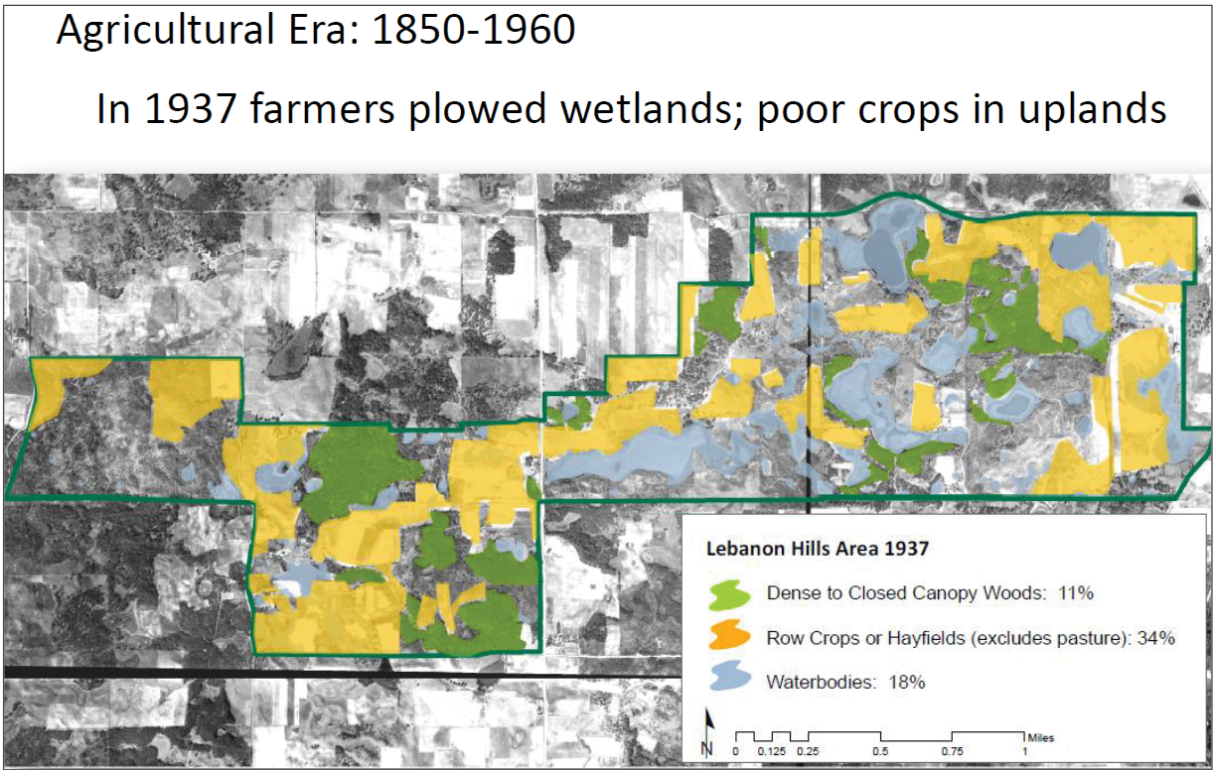
Vegetation

MCBS Biodiversity



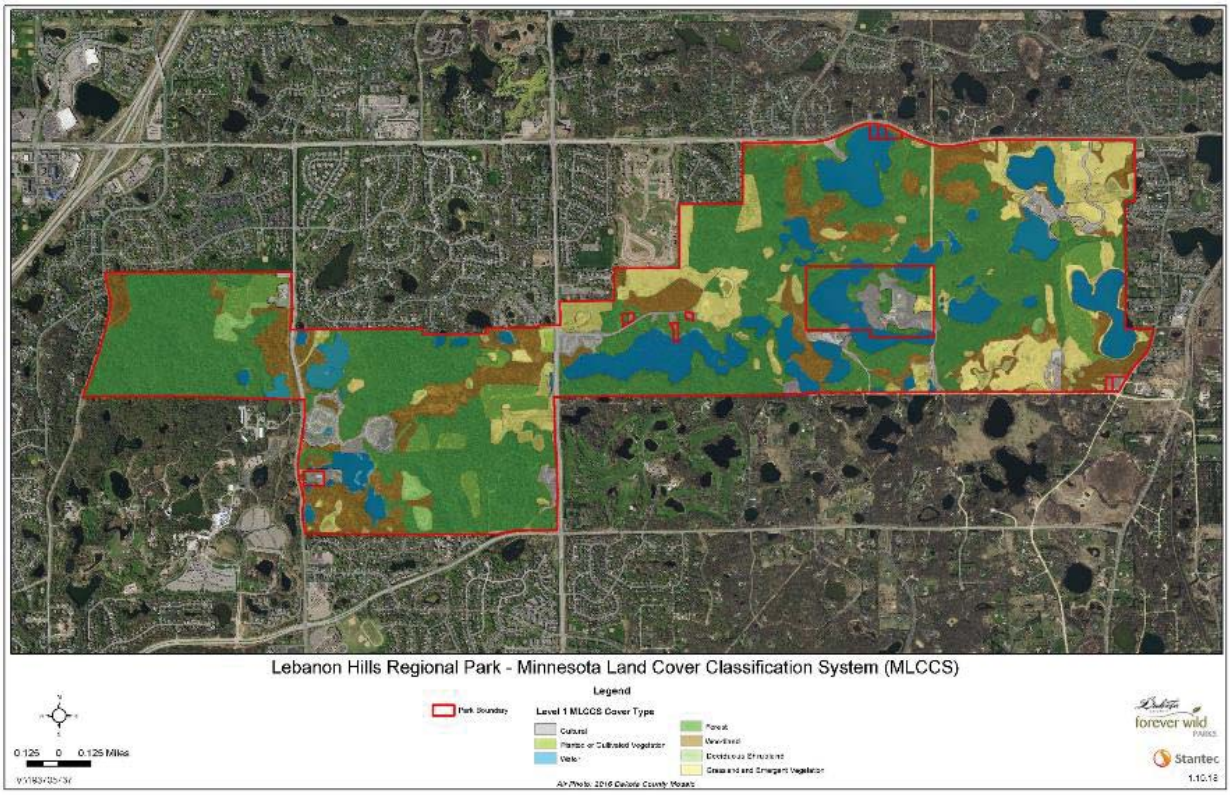
Vegetation

Land Cover & Land Use Trends



Vegetation

Land Cover Mapping Results



Vegetation

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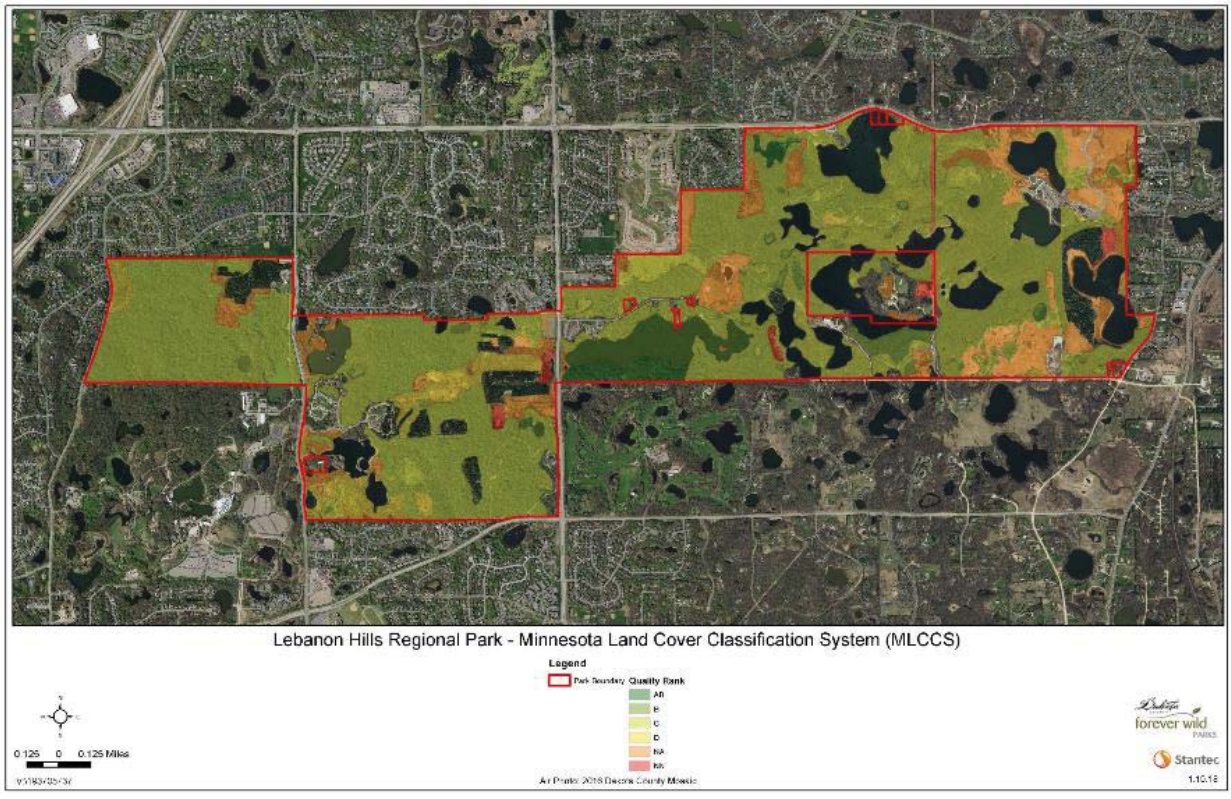


Examples of Cover Types

Sceptridium multifiduum

Sceptridium dissectum dissectum

Crotalaria sagitallis “Rattlebox”

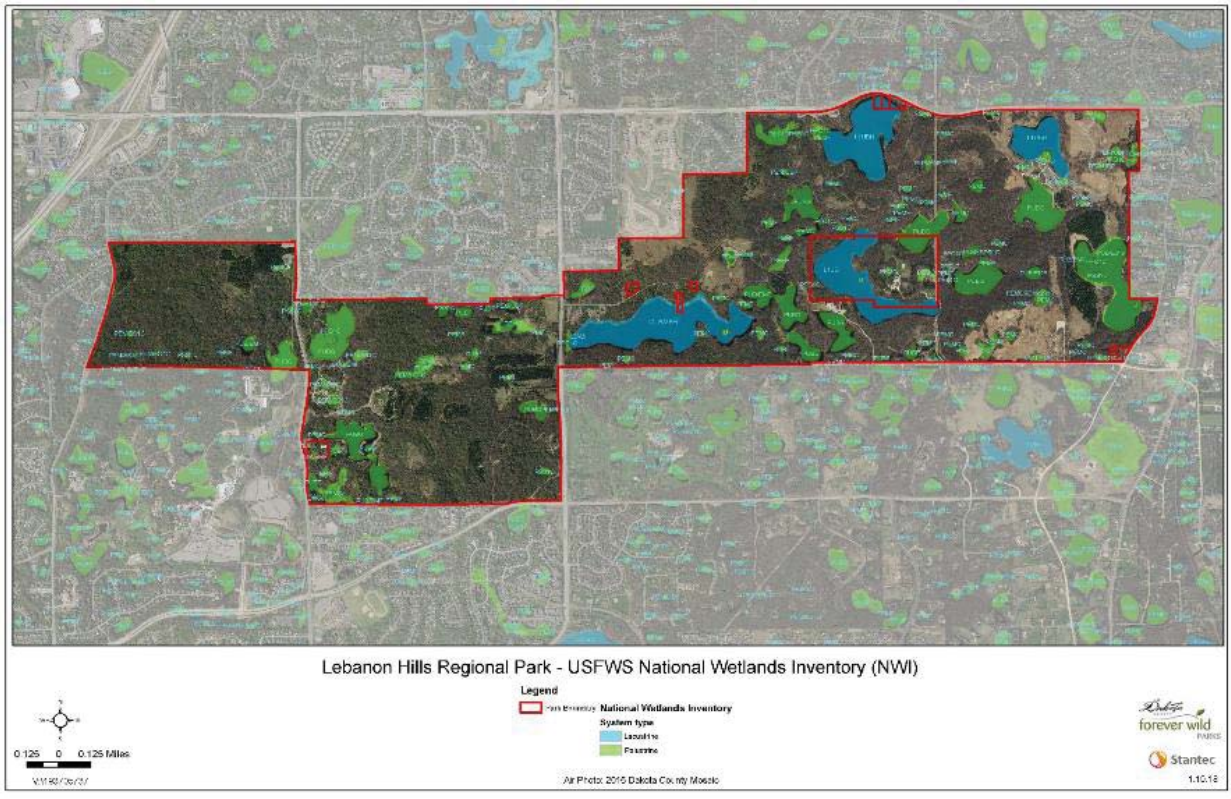
Rare Plants: Grapeferns, Rattlebox, and orchids

Sceptridium oneidense

Downy rattlesnake plantain

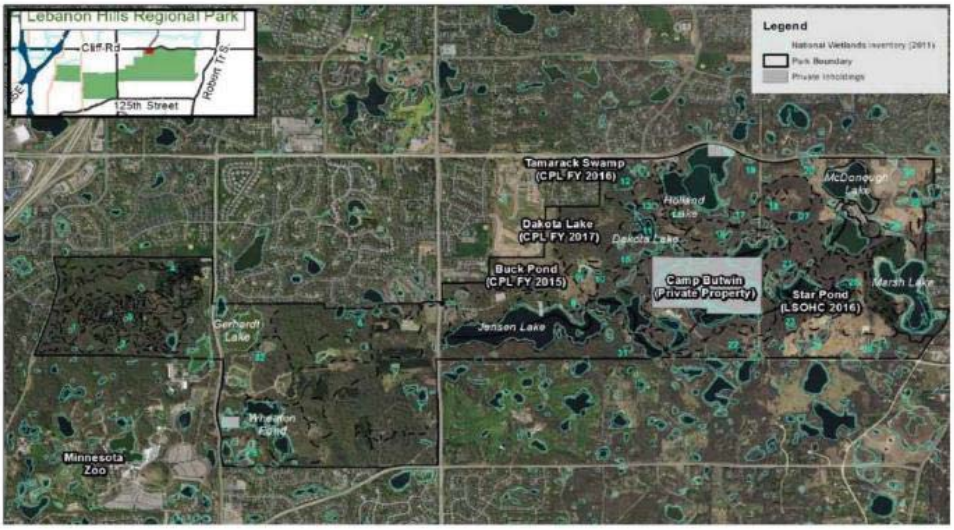
Water Resources

Wetlands



Water Resources

Wetland Function & Values Assessment



MnRAM – Ranking results for select categories (Total wetlands sampled = 32)

Category	Exceptional	High	Moderate	Low	N/A
Vegetative Diversity/Integrity	0	2	12	18	0
Wildlife Habitat Structure	2	16	14	0	0
Amphibian habitat	0	24	4	0	4
Sensitivity to Stormwater & Urban Development	9	2	21	0	0

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Water Resources

Wetlands

Water Resources

2017 AIS Action Plan

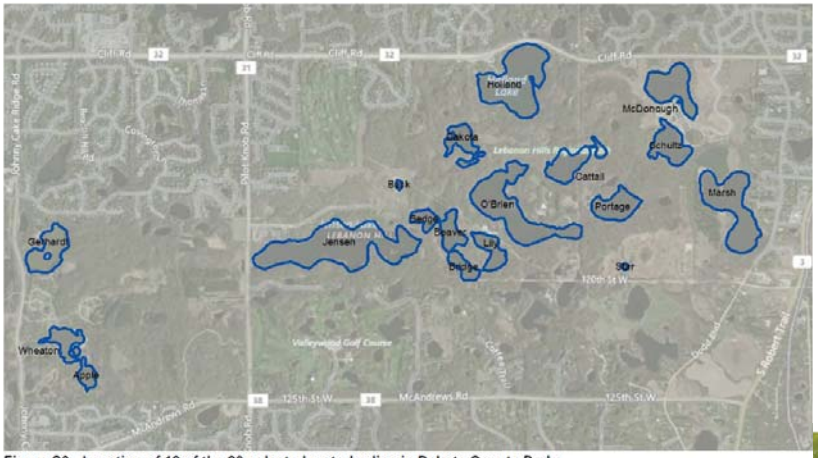


Figure S3. Location of 18 of the 20 selected waterbodies in Dakota County Parks.

Figure S4. [left] Underwater view of curlyleaf pondweed in Empire Lake on June 23, 2016. [right] Underwater view of Eurasian watermilfoil in Portage Lake on August on August 2, 2016.

Water Resources

ECOLOGICAL RESTORATION: WHAT IS IT AND HOW DO WE ACHIEVE IT?

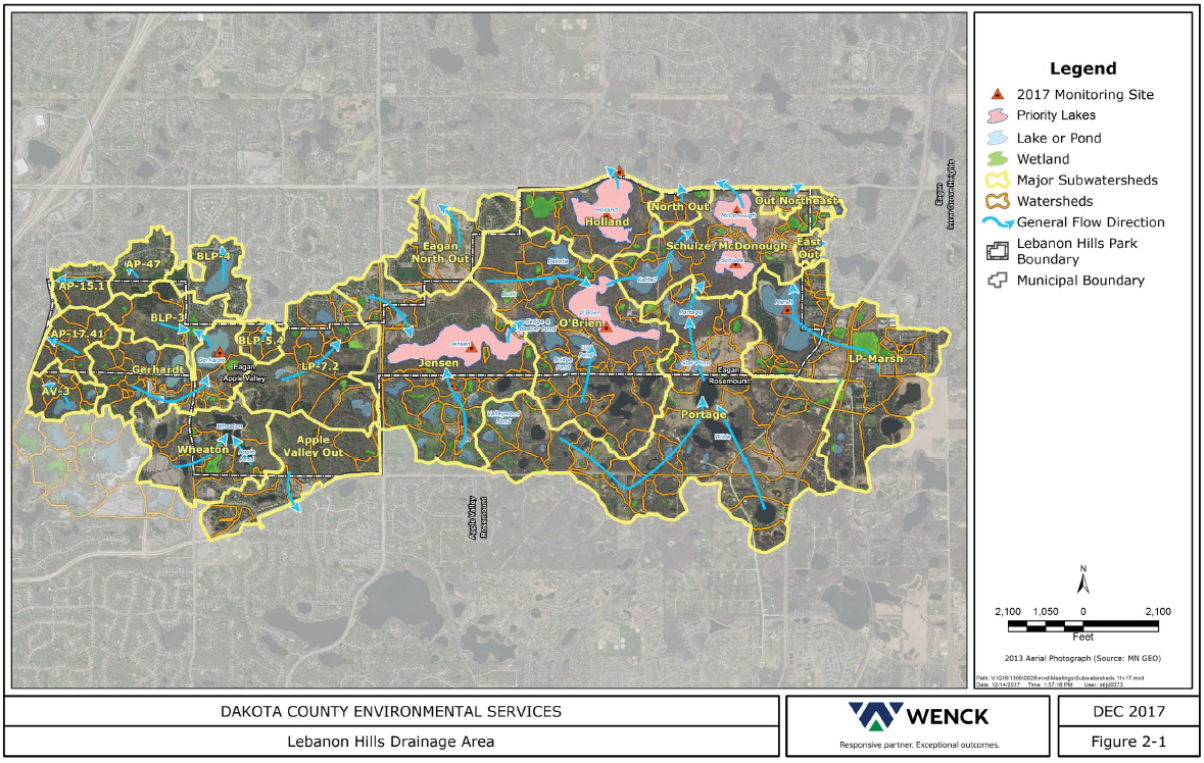
Photo by Scott Hagen

Ecological restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed.

- Intentional activity
- Accelerates the recovery of an ecosystem with respect to its health, integrity, and sustainability
- Attempt to return an ecosystem to its historic trajectory
- Determine historic conditions that existed prior to degradation
- Put the ecosystem back on a trajectory similar to its historic one
- Long-term commitment of land and resources
- Requires thoughtful deliberation
- Develop collective decisions
- Gain consensus among stakeholders
- Careful and systematic planning
- Monitored approach

Water Resources

2017 Subwatershed Assessment



DAKOTA COUNTY ENVIRONMENTAL SERVICES	WENCK	DEC 2017
Lebanon Hills Drainage Area	Responsive partner. Exceptional outcomes.	Figure 2-1

Water Resources

2017 Subwatershed Assessment

- Five lakes studied
  - Jensen, O'Brien, Shulze, McDonough, Holland
- Characteristics of lakes and their watersheds
  - Generally small watersheds; water quality moderate to good; shallow lakes, with exception of Holland
- Aquatic vegetation survey
  - Submergent plant cover high; quality of cover is only fair; AIS present (EWM in 4 of 5 lakes and CLP in 3 of 5 lakes)
- Fisheries
  - Three lakes stocked by MN DNR, including trout in Holland; fish surveys needed
- Erosion assessment
  - By remote assessment/on-foot surveys; identified key locations
- Proposed Stormwater BMP projects
  - 15 recommended projects to reduce nutrients and other impacts to lakes

Historic wildlife

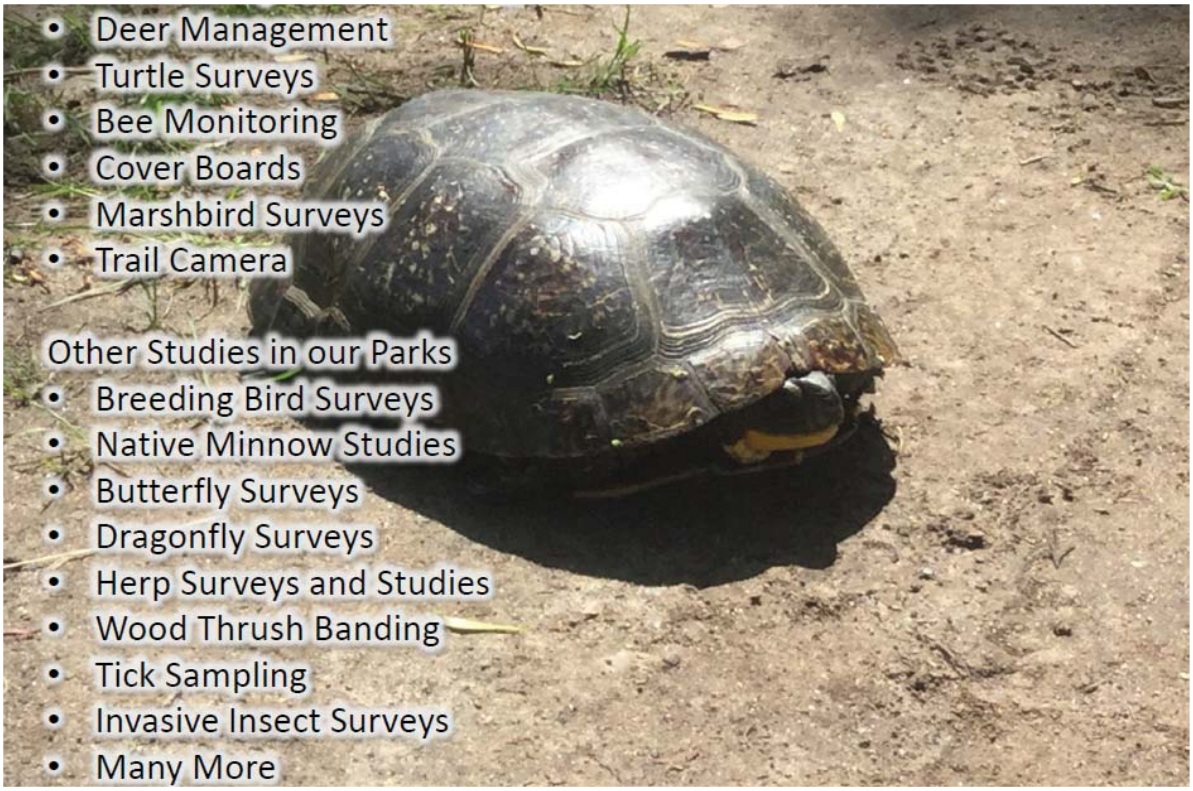
- Large grazers common (elk & bison)
  - Influenced vegetation
  - Landscape-scale effects
- Keystone species of historic landscapes lost
  - Loss of biodiversity reduces stability and resilience of natural systems

Rare Natural Features

Rare Natural Features

Common Name	*Scientific name*	SGCN*	Status
Animals			
Red-shouldered Hawk	*Buteo lineatus*	x	MN Special Concern
Lark Sparrow	*Chondestes grammacus*	x	
Acadian Flycatcher	*Empidonax virescens*	x	
Blanding's Turtle	*Emydoidea blandingii*	x	MN Threatened
Big Brown Bat	*Eptesicu fuscus*	x	
Milk Snake	*Lamptopeltis triangulum*		
Franklin's Gull	*Leucophaeus pipixcan*	x	
Fisher	*Martes pennanti*		
Red-headed Woodpecker	*Melanerpes erythrocephalus*	x	
Northern Long-Eared Bat	*Myotis septentrionalis*	x	MN Special Concern Fed Threatened
Smooth Green Snake	*Opheodrys vernalis*	x	
Tri-colored Bat	*Perimyotis subflavus*	x	
Horned Grebe	*Podiceps auritus*	x	
Purple Martin	*Progne subis*	x	
Virginia Rail	*Rallus limicola*	x	
Cerulean warbler	*Setophaga cerulea*	x	
Forster's Tern	*Sterna forsteri*	x	
Golden-winged Warbler	*Vermivora chrysoptera*	x	
Bell's Vireo	*Vireo bellii*	x	
Plants			
Lily-leaved twayblade	*Liparis lilifolia*		
Rattlebox	*Crotalaria sagittalis*		MN Special Concern
White wild indigo	*Baptisia lactea*		MN Special Concern
*SGCN - Species in Greatest Conservation Need			

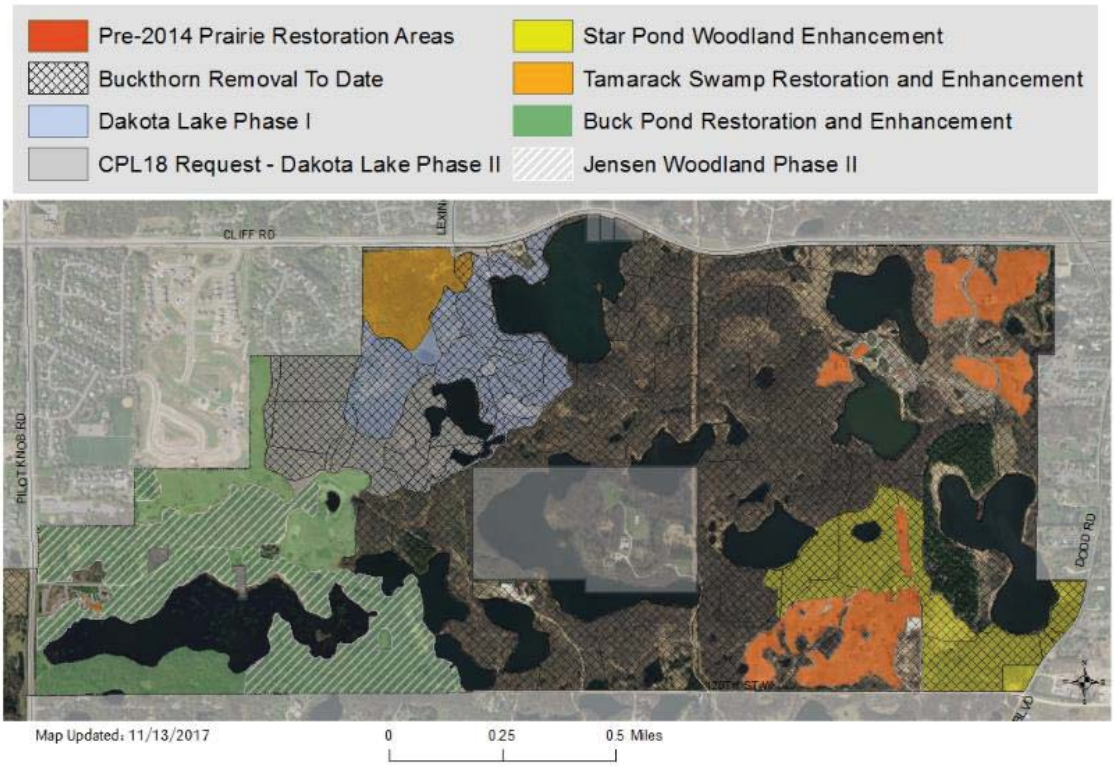
Wildlife Studies/Monitoring



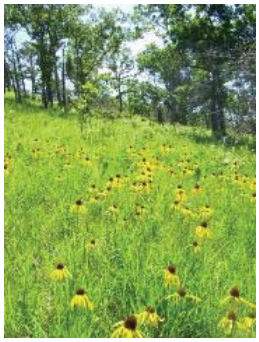
RESTORATION ACCOMPLISHMENTS: WILDLIFE SURVEYS

- Surveying turtles with hoop nets at Whitetail Woods and Lebanon Hills Regional Parks
- Found Blanding's, painted, and snapping turtles at Lebanon
- Other herp surveys we found a smooth green snake, milk snakes and tiger salamanders
- Small mammal surveys initiated in 2017

NATURAL RESOURCES RESTORATION AT LEBANON HILLS: CURRENT PROJECTS



UPCOMING RESTORATION: SAVANNAS AND WOODLANDS



UPCOMING RESTORATION: SAVANNAS AND WOODLANDS

Forestry Mowing, Hot-saw

VOLUNTEERING

Mitch Miller, 2015

ADDITIONAL QUESTIONS OR COMMENTS

Project Manager: Joe Walton
Joseph.Walton@co.dakota.mn.us
952-891-7507

Project Webpage:
https://www.co.dakota.mn.us/parks/Planning/NaturalResources/Pages/lebanon-hills-management-plan.aspx

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