Nov.3, 2025

Citizens Environmental Quality Committee
Winona, Minnesota 55987

Dear Committee Members:

The next meeting of the Citizens Environmental Quality Committee meeting will be held on **Thursday, Nov. 6th, 2025 at 4:30 p.m.** in the **City Council Chambers** at City Hall.

1. **Call to Order**
2. **Approval of Oct. Minutes**
3. **Resident Concerns update (10 minutes)**
4. **Tree Grant updates (5 minutes)**
5. **Prairie Island Park Habitat Management Plan (20 minutes)**
6. **Minnesota Climate Action Framework Draft (10 Minutes)**
7. **CEQC Priority Topics Discussion (10 minutes)**
8. **Other Business**
9. **Adjournment**

Sincerely,

John Howard

Natural Resources Sustainability Coordinator

CITIZENS ENVIRONMENTAL QUALITY COMMITTEE MEETING NOTES

DATE: Thursday Oct. 2, 2025

TIME: Scheduled for 4:30 pm in the City Hall Council Chambers

PRESENT: David Ruff, Sadie Neuman, Paul Schmitt.

GUESTS:

STAFF: John Howard

1. **Call to Order**: Call to order at 4:34 PM by Chair Sadie Neuman.

2. **August Minutes:** Paul moved for approval, David seconded. All in favor.

3. **Resident Concerns Update (15 minutes):**
   Noise Issue: Sadie asked for any updates. John has been in contact with Ms. Dretske, who has done research on the CEQC's history and purpose. She has been looking for assistance with noise issues. John reported that he had reached out to other cities to explore how they handle noise issues.

   Sadie relayed that she had talked with Ms. Dretske at an event, who wished to speak more with the CEQC. Sadie shared the decibel meter app to record noise levels. Over Labor Day, noisy neighbors were an issue for Ms. Dretske.

   Knopp Valley Herbicide: In Knopp Valley Park, the City has applied herbicide along some posts and borders to save staff time from weekly weed whipping. This isn't a new practice. Paul asked about willingness to change practices. John expects Park Maintenance will be reluctant to take on work load as they already feel they have more to do than time to do it. David asked about changing the standard to allow grass to grow, which appears to be the case at some parks, and the historical precedent. Paul wondered if a resident could weed whip the areas rather than Park maintenance doing it. John believes the Parks Dept. probably would let them know that weed whipping is a City responsibility if they observed it. A more formal agreement would needed to let people manage the parks. David asked what Mr. Ploetz could ask or if the complaint gets filed somewhere. John said Mr. Ploetz could file a complaint asking for them not to do spraying.

   John has looked into applicable laws, and there isn't a requirement to provide notice of spraying, but it is something all professionals in town do.

   Sadie asked about agreements between groups to do management, such as at gardens. John said that there were agreements for management of the rose gardens, and in building Sobieski Park Pavillion, but is unsure on the specifics. Sadie wondered about an MOU going forward, and John agrees that is something the City would do, such as with the Recreation Alliance of Winona for the Ice Park. Sadie asked about the best contact for such agreements at the City, and John replied it would be Patrick Menton who is the Park facilities director.

4. **Tree Grant Update (20 minutes):**

John described that the city utilized a contractor to plant trees and provide care this year. All the trees have a three year warranty. The contractor did two waves of planting this year: about 75 in late May, and 175 in the end of August. For some reason, the later planting trees struggled more, which surprised John since the fall tends to be a good time to plant. The contractor did not do much watering due to their confidence in the trees to survive without it, but the result is John expects there will be 20-30 trees needing replacement in the spring. The contractor is much more expensive at $275/tree compared to about $50 in past years with the AmeriCorps members. Sadie spoke with the people planting the trees in front of her house. They did not stress the need for watering, saying just to keep the mulch moist. John advises watering more extensively. The City will be doing another RFP for years 2 and 3 in the grant later this year.

Given that the City has funding for two more years of planting, John is not planning on applying for DNR grants for planting. We are in need of Ash tree treatment for the future, so we will seek funding for that through the open grant opportunity. Sadie asked if the ash injection is a neo-nic and impacts pollinators. This shouldn't be a big issue since the ash doesn't have major flowers, although any insect that eats the trees will be dead. Paul asked about the prioritization and split between the park and street trees since it looks like a healthy split. John maybe would reprioritize some boulevard trees over park trees given that the boulevard trees do more for shading cars and houses, and stormwater. There are another 300 boulevard trees we would treat if we had the funding. Paul is curious about the west side of town seemingly having less treated ash. John agrees and explained that is partly due to the planting pattern and due to having less sidewalks, and thus fewer trees on right of way. David is curious if the ash on W. Broadway made it through construction? Yes, these were out of the reconstruction zone so have survived.

Ash seem to do better than many other large trees in small spaces, which explains some of the treatment decisions in small boulevards. Getting a future tree in those places will be a challenge. Sadie asked about adding trees to Huff St. through the lakes where there is a high percentage of ash. John said the City hasn't done much planting there because the canopy is pretty thick. David suggested some of the treatments maybe could be reprioritized to other boulevards from Huff, and we replant along Huff. David also wonders about having a cost share with homeowners on treatment to stretch out the number of treated ash trees. Sadie thought most of Winona is within the DNR priority areas, which should help the application.

Sadie asked how the CEQC can help? John said the City is in a good place right now, so no immediate need at this moment. The CEQC discussed the merits of applying for treatment of all ash trees versus being somewhat selective in the grant request. Historically the City prioritized the biggest trees and in areas which are hard to replant, and acknowledged not all would get treatment. Sadie showed the areas that are priority zones in DNR application.

5. **CEQC Priority Topics Discussion (20 minutes):**

Paul updated about a cotter student who is interested in the CEQC and starting a food waste recycling program.

David asked about any updates the Prairie Island Habitat Plan? John said the consultant did a site visit about a month ago, and has been in touch with local experts and stakeholders. He expects the plan to be complete in about a month if all goes well. The hope was to use the plan to strengthen an application to the Conservation Partners Legacy funding through the state for restoration work, although the first round of

that has already passed. David asked whether the plan also encompasses Aghaming, and John said it does not – Aghaming already has a plan created by the USFWS. John added that there was some recent work in Aghaming in Sam Gordy slough, and there was a show and tell with the WI DNR about the work. John noted that the Prairie Island plan covers about 1,100 acres, so is much larger than the area most people associate with the park.

Sadie wondered if the timing on the plan would align with the DNR forestry grants? John believes the grants focus on larger trees, so maybe wouldn't be the best fit for a wildland planting of smaller plant stock. David said there is a movement to use larger stock (RPM type) with more roots to help establishment in flood plains so they can outgrow reed canary grass and survive flooding. David said the Prairie Island restoration project might be good for the Lessard Sams grant program. Just this week John received an invite to explore a Nature Conservancy facilitated grant coalition. David suggests dreaming big with the funding request.

Sadie filled out a bikeable communities survey, and they may reach back out.

6. **Other Business:** None

7. **Adjournment:** Moved by Paul, second by David. All approved at 5:35 PM.

Notes prepared by John Howard.

CITIZENS ENVIRONMENTAL QUALITY COMMITTEE

AGENDA ITEM: 5. Prairie Island Park Draft Habitat Management Plan

PREPARED BY: John Howard

DATE: Nov. 6, 2025

The City's consultant completed a draft of a habitat management plan for Prairie Island Park. It has been reviewed by City Staff, and will be shared with stakeholders and the community in the coming weeks for their input. Now is a good time for the CEQC to review the draft and comment on the plan.

Requested action: Review the attached draft plan and provide comments/input.

PRAIRIE ISLAND PARK

Habitat Management Plan

Winona, Minnesota – **October, 2025**

PRAIRIE ISLAND PARK
Habitat Management Plan

Developed by

Rock Leaf Water Environmental LLC Staff
Ellysa Johnson, Ecologist
Libby Markham, Natural Resources Technical Writer
Jen Schuetz, GIS Specialist

City of Winona
John Howard, Natural Resources Sustainability Coordinator

CITY OF WINONA™ MINNESOTA

Park & Recreation Department
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INTRODUCTION

Prairie Island Park is one of Winona's most ecologically valuable natural areas. Situated within the dynamic Mississippi River floodplain, the park encompasses a diverse mosaic of habitats that provide essential functions for wildlife and opportunities for recreation.

However, the ecological integrity of Prairie Island Park is increasingly threatened by pressures such as invasive species, woody encroachment, and the altered hydrology of the Mississippi River. Without active management, these stressors will continue to degrade native habitats and diminish their ecological and recreational value. Yet, there are clear opportunities to restore and strengthen these systems through coordinated management, community engagement, and continued investment in land stewardship. This plan provides a comprehensive strategy for protecting, managing, and restoring the native plant communities of Prairie Island Park.

1.1 Site Location

Prairie Island Park (hereafter "Prairie Island") in Winona, Minnesota, consists of developed and undeveloped areas. The developed zones include the campground, parking areas, playground, shelters, and turf zones and constitute about 50 acres. The undeveloped or minimally developed,zones, such as the former deer park, are the focus of the plan and total nearly 1,100 acres (**Fig. 1**). The undeveloped zone consists of three distinct sections, with the largest located to the west of the others along the Mississippi River. This main section is bordered by the city of Goodview, Winona Municipal Airport-Max Conrad Field, and property managed by the US Fish and Wildlife Service (USFWS) as part of the Upper Mississippi River National Wildlife and Fish Refuge. Two smaller sections are located on an island approximately 377 feet from the main section, within the Upper Mississippi River, and complete Prairie Island. Another portion of the Upper Mississippi River National Wildlife and Fish Refuge separates these two sections. Lock and Dam 5a is directly upriver of Prairie Island.

Prairie Island has a moderate biodiversity ranking assigned by the Minnesota Department of Natural Resources (MN DNR), based on the condition of existing native plant communities and the presence of rare species such as the prothonotary warbler (*Protonotaria citrea*), palm sedge (*Carex muskingumensis*), and Blanchard's cricket frog (*Acris blanchardi*).

This biodiversity is directly influenced by Prairie Island's proximity to other biodiverse sites, such as Minnesota City Bottomlands (moderate biodiversity) to the northwest and Garvin Heights (high biodiversity), Goodview Bluffs (moderate biodiversity), and Hart Hill (moderate biodiversity) west of Highway 61. Prairie Island's location alongside the Minnesota-Wisconsin border provides a unique opportunity to unify the landscape and bridge habitats between the Upper Mississippi River National Wildlife and Fish Refuge and Trempealeau National Wildlife Refuge about six miles downstream on the Wisconsin side of the river.

1.2 Historic Vegetation

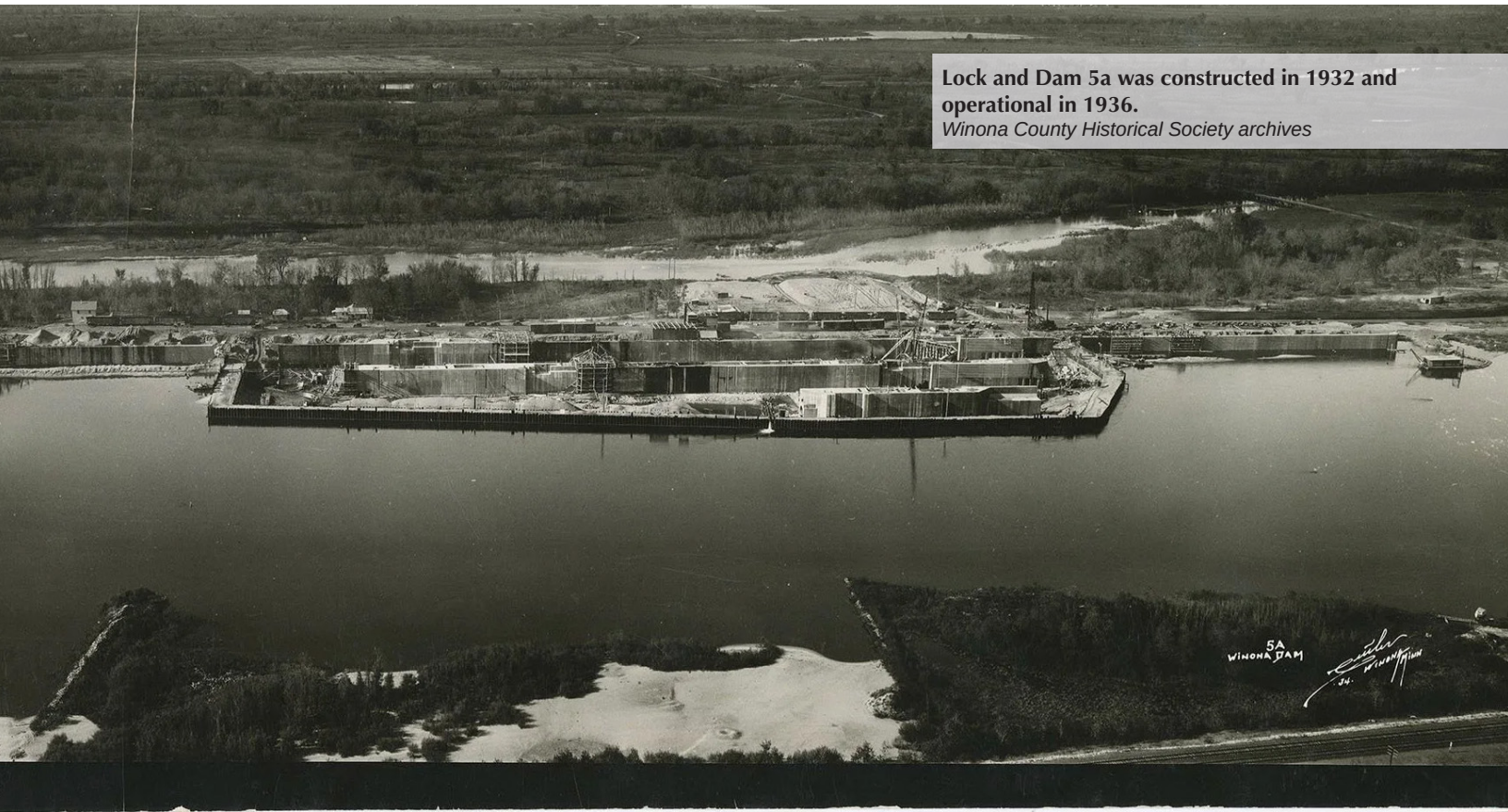
European settlers documented Minnesota's vegetation in the mid-1800s. These early surveyors noted Prairie Island consisted of a dry to mesic prairie, wet prairie, and floodplain forest (**Fig. 2**).

Native tallgrass prairie once covered a third of Minnesota, with grass species varying by topography and soil moisture. Dry to mesic prairies were primarily made up of big bluestem, Indian grass, little bluestem, and sideoats grama, while wet prairies favored prairie cordgrass, bluejoint, and various sedge species. Natural fires, often sparked by lightning or set by Native Americans, were crucial for maintaining biodiversity and an open landscape.

Floodplain forests were documented along various waterways throughout the state. Common canopy species included silver maple, American elm, and cottonwood. These fire-sensitive trees grew in wetter environments that were less likely to burn. Flooding was common in these low-elevation forests, resulting in a sparse understory and groundcover. A few species were observed beneath the canopy, including river birch, black willow, poison ivy, and stinging nettle.

Sources:

Wendt, K.M. and Coffin, B.A. 1988. Natural Vegetation of Minnesota at the Time of the Public Land Survey. Minnesota Department of Natural Resources.



Lock and Dam 5a was constructed in 1932 and operational in 1936.
Winona County Historical Society archives

Figure 1. Prairie Island Park Area

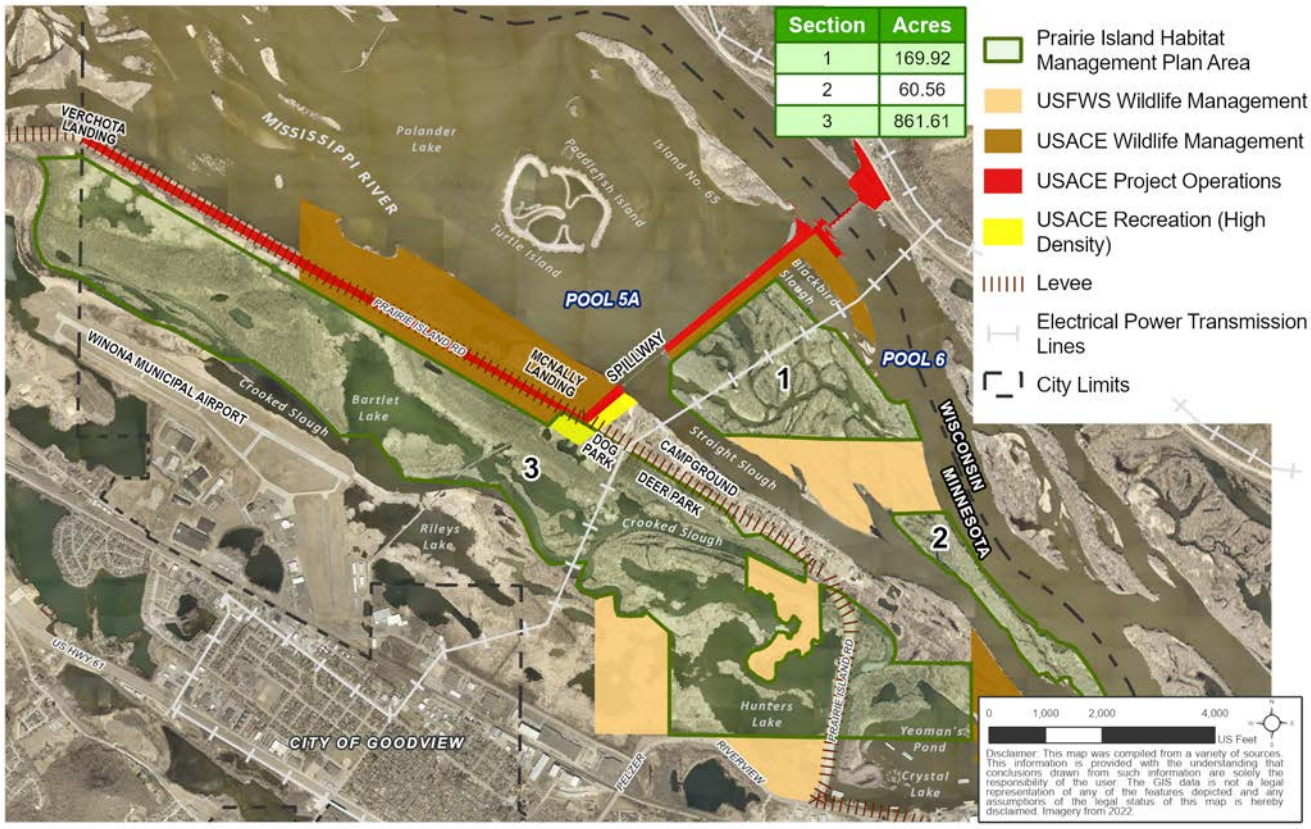
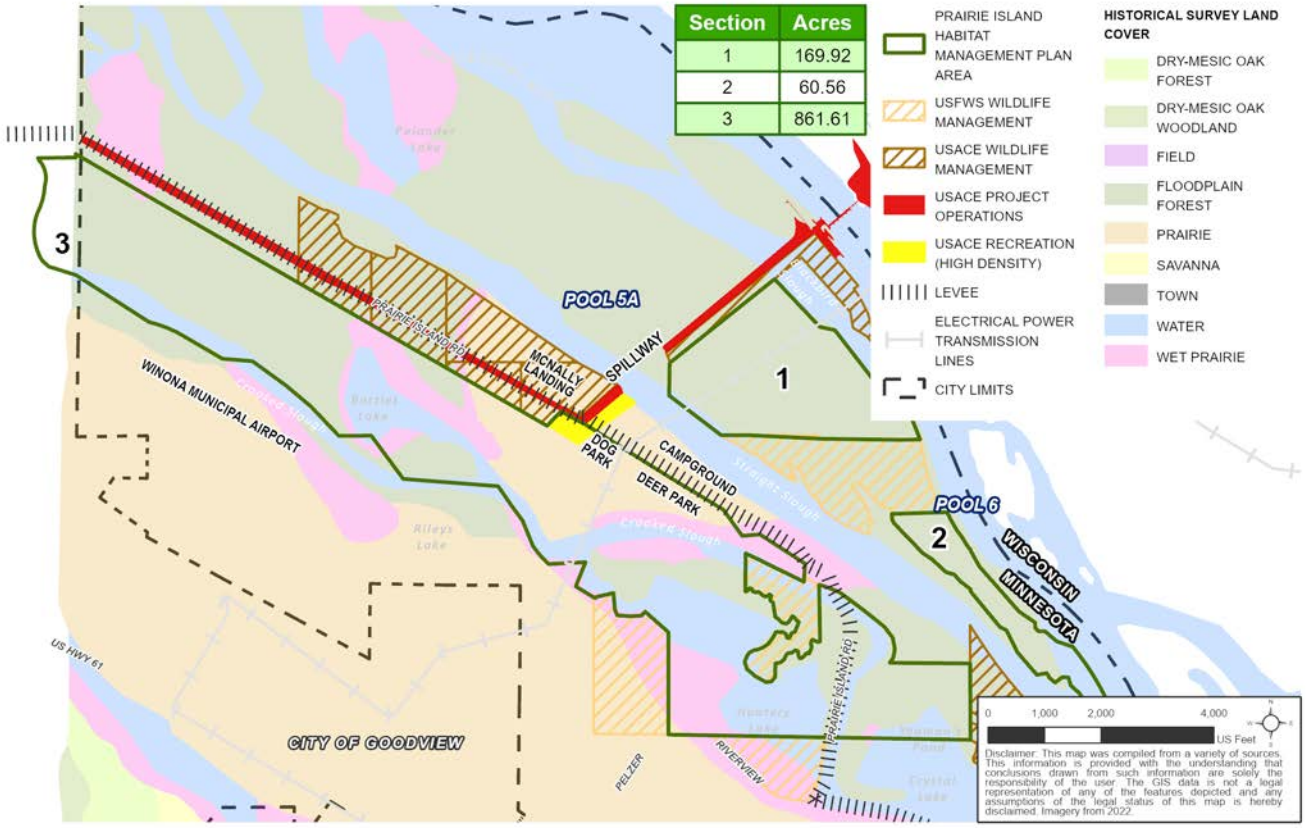


Figure 2. Historical Plant Communities of Prairie Island Park



1.3 Human-Induced Changes

Before European expansion to Winona in the mid-1800s, Dakota people lived in the area and used it for farming, hunting, and religious purposes. Many Dakota were forced to leave the land in 1863, but a few native settlements persisted until the 1870s. Early European settlers cleared the forests for timber and tilled prairies for crops, farmsteads, and cattle. These activities proved highly profitable due to access to railroad and river transportation systems. By the 1890s, Winona was known throughout the country for its timber and grain industry.

In 1916, John A. Latsch, a local grocer and outdoorsman, gifted the City of Winona (hereafter "Winona") with several thousand acres of land along the Mississippi River. Latsch intended the land to serve as a nature preserve for outdoor education and recreation. Subsequently, the land was used by several local groups and clubs for activities involving eco-restoration, agriculture, environmental outreach, and more. The land also served the community in times of need, such as providing timber for fire fuel during the Great Depression. Later in the 1930s, the Winona Chapter of the Izaak Walton League hosted gatherings in Prairie Island for skeet shooting, turkey hunting, wild game cooking lessons, and other activities. White, red, and jack pine trees were planted by local Boy Scouts, of which many red and white pines remain today. In 1934, 3,000 acres of gifted land were permanently flooded and condemned due to the completion of Lock and Dam 5A, for which Winona was compensated. By 1935, Prairie Island had become an unofficial destination for camping, hunting, and fishing, serving local residents for decades. Improved road access in 1938 continued to increase the possibilities of future development and maintenance. In 1939, the remaining land was divided between Winona and the War Department. In 1940, the War Department transferred ownership to the Upper Mississippi Wildlife and Fish Refuge. During the 1940s, Prairie Island became the host of a popular Minnesota state dog trial competition, the Winona Chapter of the Izaak Walton League moved its base cabin onto the land, and Winona installed new picnic shelters to accommodate the growing number of visitors. In the early 1950s, the Izaak Walton League installed an enclosed area that included both white-tailed deer and turkey.

"We wish to compliment you on your fine deer park and Prairie Island camping area." -Rosemary and Archie Carr, 1972

The increased popularity of Prairie Island also brought about unique challenges. The adjacent land owned by the Army Corps of Engineers had become a dumping ground for park visitors, and vandalism became a growing concern. In the 1950s, various caretakers and law enforcement were hired and housed on Prairie Island to ensure its protection. Despite enforcement efforts, Prairie Island continued to face issues with dumping, off-leash dogs, improper firearm and vehicle use, vandalism, and unintentional, intense prairie fires.

"...the question is always *Why is this park such a mess?* During the average summer weekend, there are approximately 300 people camping and three rolls of toilet paper."
-Frank and Rose Ann Adamczyk, 1976

In the 1960s, varied use of Prairie Island continued. The Tri-State Hunting Dog Association hosted a few clean-up efforts before events. Continued levee work allowed controlled flooding along the main section of Prairie Island. Material staging occurred on portions of the upland, which began the fragmentation and degredation of the main prairie area.

In the late 1980s, the Hiawatha Valley Audubon Society Conservation Committee (now known as the Winona Bird Club), the John Latsch Memorial Board, and Winona set aside areas of the remaining prairie, pine plantation, and some of the floodplain forest south of Prairie Island Road for outdoor education. These areas became closed to all vehicle traffic, and interpretive trails, benches, and signage were installed. Restoration efforts within the prairie began at this time, but invasive species regained dominance not long afterwards.

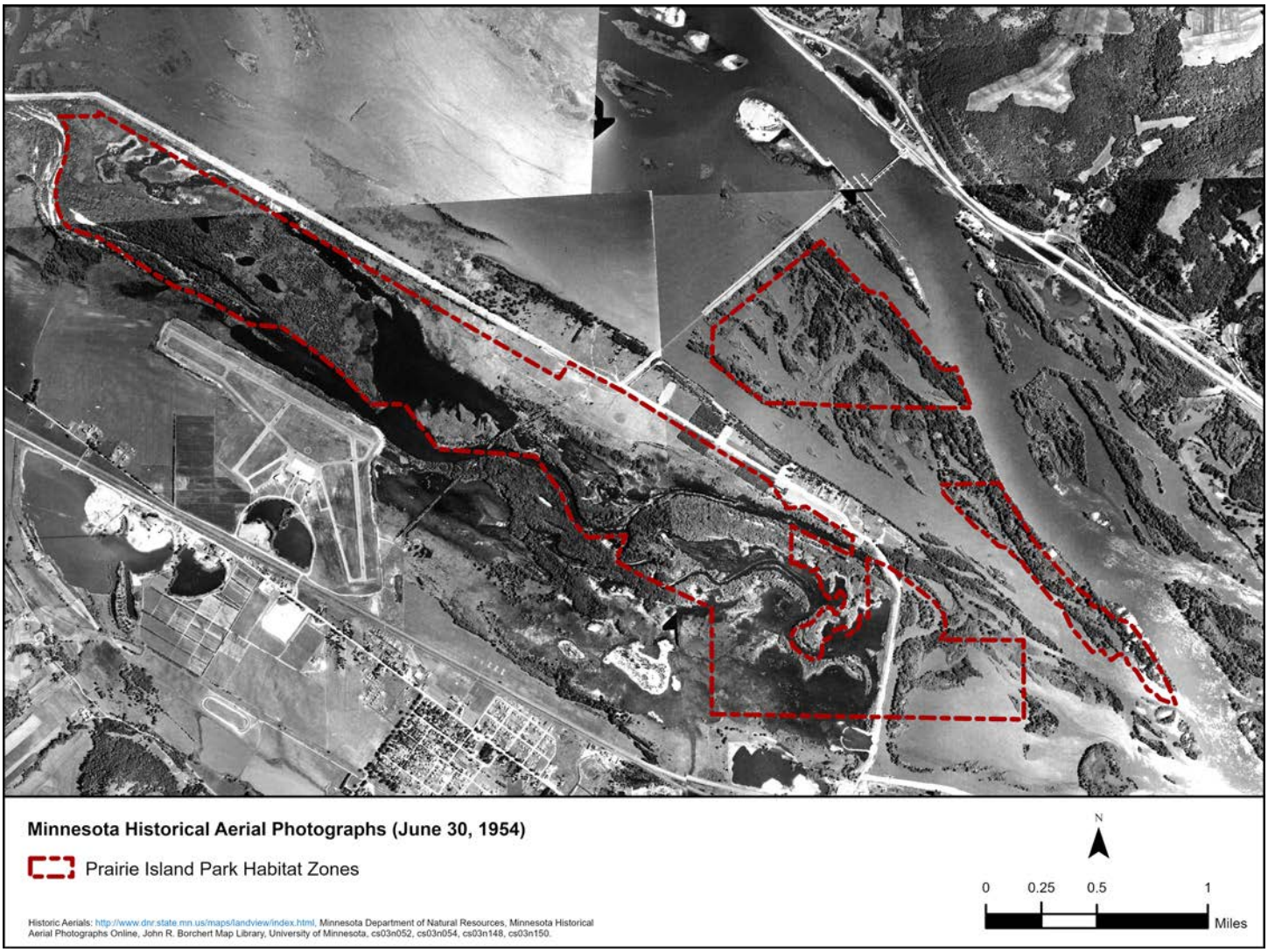
In 2005, a wetland project began in the degraded prairie area and resulted in the northwestern prairie fragments becoming a series of permanent ponds. In 2008, dredge material from the port was spread over the northeastern section of the former prairie. The western portion of filled area would become an Ash tree quarantine zone throughout the 2010s and the eastern two thirds became a dog park in 2017. In 2019, the deer park was shut down due to increased concern about Chronic Wasting Disease. In the early 2020s, management efforts within Prairie Island included ongoing volunteer-based buckthorn removal in the forest and a renewed sense of conservation. With a long-term management plan, Prairie Island will be able to serve its native wildlife and local community for years to come.

Sources:
Conway, A. 2023. City of Winona's Prairie Island Park. The Argus 24(2).

Environmental Education Committee, Hiawatha Valley Audubon Club. 1991. Prairie Island: Environmental Education Curriculum Guide.

Kids interacting with white-tailed deer within the deer park in 1974.
Winona Daily News

Figure 3. Historical Aerial Imagery of Prairie Island Park, 1954



Izaak Walton League cabin relocated to Prairie Island in 1948.
Barry Drazkowski, President of Izaak Walton League: Will Dilg Winona Chapter

2

CURRENT CONDITIONS

The following section provides an overview of the current state of the natural resources within Prairie Island Park.

2.1 Natural Resources

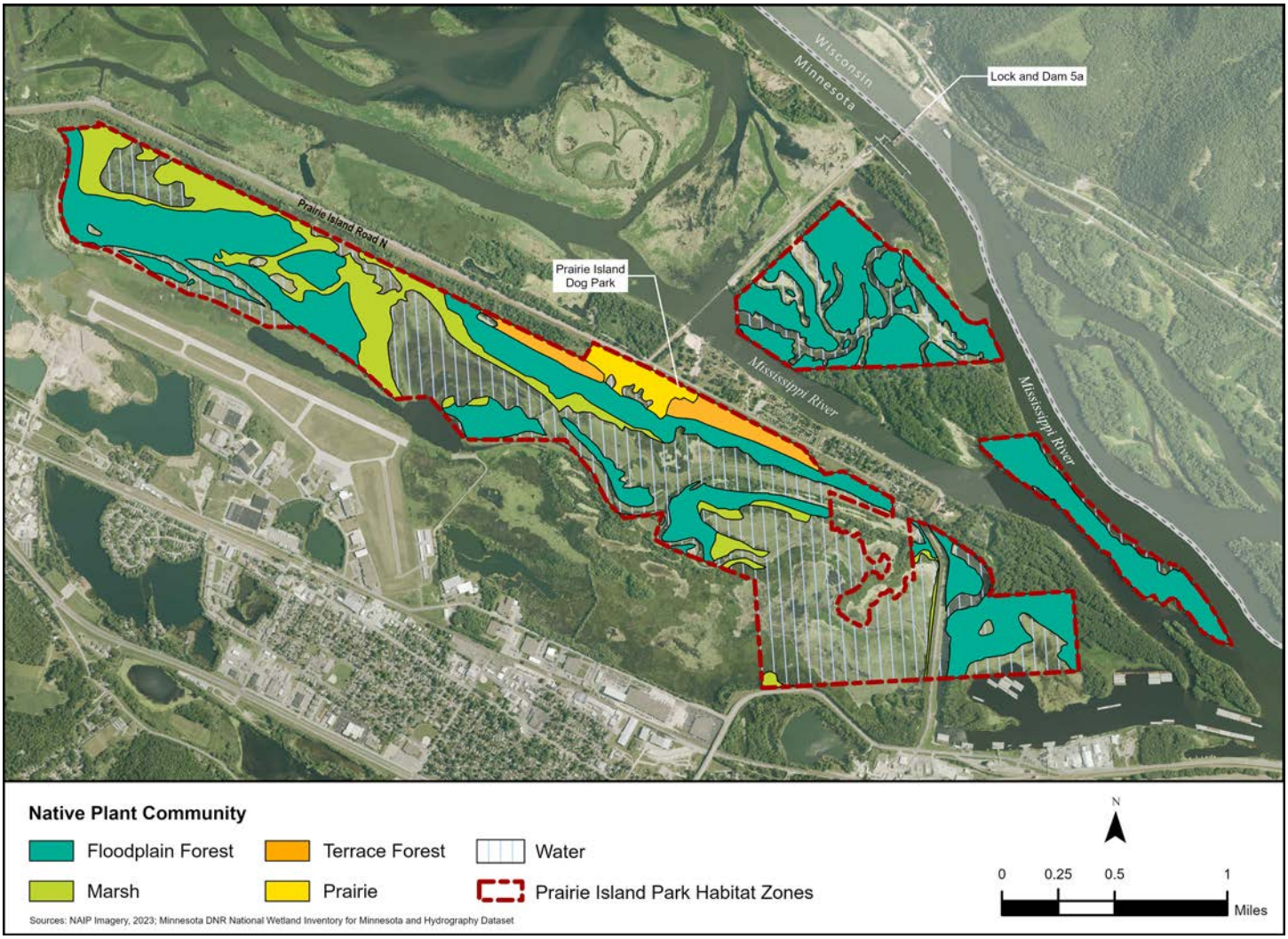
In 2025, field investigations were conducted to inform this management plan. These efforts focused on verifying existing land cover classifications, evaluating the ecological quality of plant communities, and identifying environmental concerns such as invasive species and altered hydrology.

2.1.1 Plant Community Inventory

The land cover categories shown in **Figure 4** are derived from the Minnesota Land Cover Classification System developed by the MN DNR. These categories have been simplified for planning purposes, and the primary cover types that define the study area's ecological communities are summarized in the following paragraphs.

Virginia creeper (*Parthenocissus* spp.) is a common and important plant in floodplain forests.

Figure 4. Existing Plant Communities



Swamp white oak (*Quercus bicolor*), a Minnesota State Special Concern species, has been planted in protective tubes throughout the forests following buckthorn removal efforts.

2.1.1.1 FLOODPLAIN FOREST

General Characteristics

The floodplain forest plant community covers the vast majority of Prairie Island (~463 acres) and is characterized as Silver Maple–Virginia Creeper Floodplain Forest (FFs68a) under the MN DNR Native Plant Community classification system. It occupies the active floodplain of the Mississippi River, where periodic inundation typically occurs on an annual basis. The combination of fine-textured alluvial sediments, poor drainage, and recurring flood creates dynamic environmental conditions that influence vegetation structure, nutrient cycling, and species composition.

Although once extensive across the Mississippi River valley, floodplain forests in Minnesota have been widely degraded due to hydrologic alteration and land-use change. Floodplain forests historically occupied a much greater extent before the construction of locks and dams in the 1930s and 1940s. These structures deepened navigation channels, altering sedimentation patterns and prolonging flood durations. As a result, many forested islands and inland floodplains were lost to persistent inundation, and the remaining forested cover near Lock and Dam 5A has become increasingly fragmented over time.

Hardwoods make up the canopy, dominated by silver maple with scattered box elder and cottonwood. Green ash was historically abundant, but has since been drastically reduced due to emerald ash borer. The full canopy creates a shaded understory. The limited sunlight that reaches the forest floor and frequent flooding restrict the growth of subcanopy species (*i.e.*, shrubs and saplings) and ground cover.

The subcanopy is sparse to patchy (0–50% cover), and includes regenerating canopy tree species, as well as American elm and hackberry. Swamp white oak saplings have been planted within the floodplain and protected in tubes to prevent herbivory, while basswood occurs on the community's higher, less frequently flooded margins.

Vines are common throughout the floodplain, such as Virginia creeper, wild grape, and Canada moonseed. Ground cover, when present, is generally dominated by wood nettle, though Ontario aster, clearweed, touch-me-nots, and smartweed are also common, and silver maple seedlings are frequent. The invasive shrub, glossy buckthorn, is found throughout and common buckthorn is heavily present in the most upland portions of the floodplain forests.

Sources:

De Jager, N.R. and J.J. Rohweder. Land Cover Indicators, chap. D in Houser, J.N., ed., 2022, Ecological status and trends of the Upper Mississippi and Illinois Rivers (ver. 1.1, July 2022): U.S. Geological Survey Open-File Report 2022–1039, 72-81p.

Landscape Settings and Soils

Floodplain forests in Prairie Island Park occupy low-lying areas adjacent to the Mississippi River and alluvial valleys that experience frequent flooding and seasonal inundation. Soils in these systems are typically silt loams underlain by heavier clay loams, reflecting the accumulation of successive flood deposits over time. These soils are poorly drained, with a water table often at or near the surface, especially during the spring.

Observed Plant Indicators

In this context, an indicator refers to a plant species associated with specific environmental conditions and plant communities, such that its presence signals the occurrence of a characteristic native plant community.

Groundcover

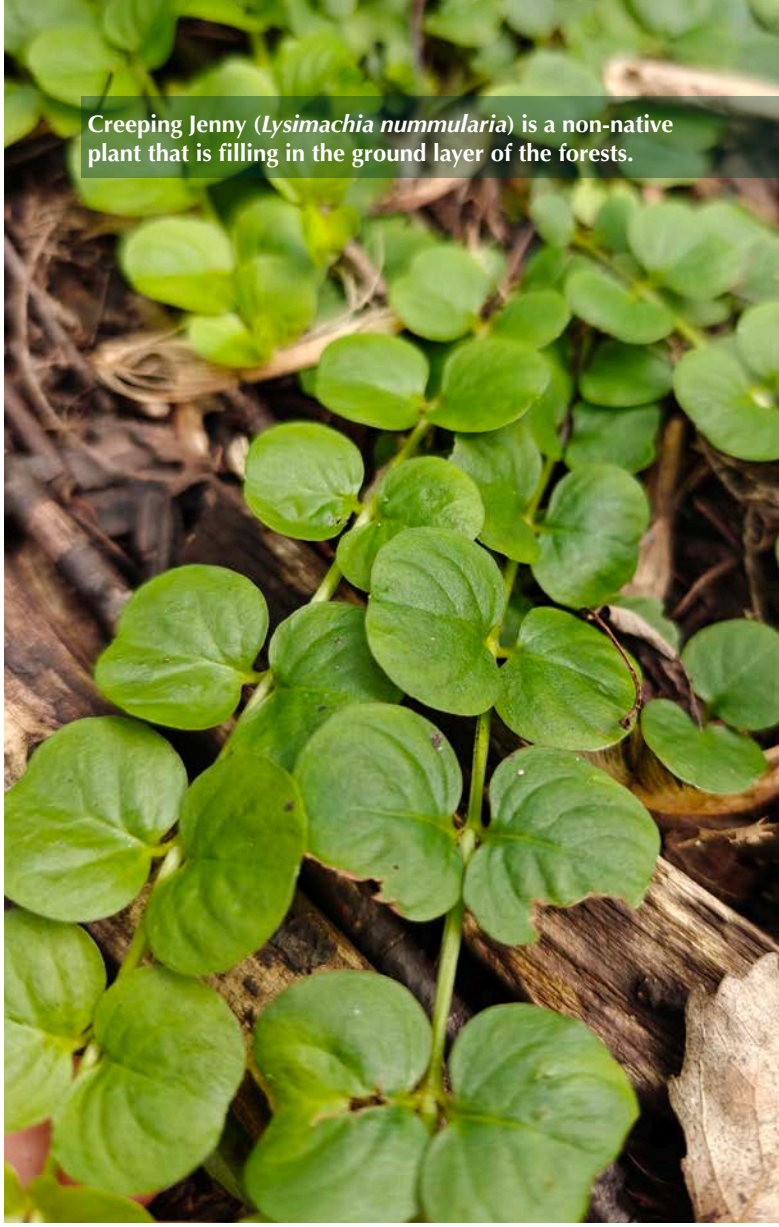
Wood nettle (*Laportea canadensis*), Ontario aster (*Aster ontarionis*), clearweed (*Pilea* spp.), touch-me-nots (*Impatiens* spp.), stinging nettle (*Urtica dioica*), tall bellflower (*Campanula americana*), germander (*Teucrium canadense*), white snakeroot (*Eupatorium rugosum*), southern blue flag (*Iris virginica*), Virginia wild rye (*Elymus virginicus*), white grass (*Leersia virginica*), and rice cut grass (*Leersia oryzoides*).

Shrubs + Vines

Virginia creeper (*Parthenocissus* spp.), wild grape (*Vitis riparia*), and Canada moonseed (*Menispermum canadense*).

Trees

silver maple (*Acer saccharinum*) with scattered green ash (*Fraxinus pennsylvanica*), box elder (*Acer negundo*), cottonwood (*Populus deltoides*), hackberry (*Celtis occidentalis*), American elm (*Ulmus americana*), and red elm (*Ulmus rubra*).



Creeping Jenny (*Lysimachia nummularia*) is a non-native plant that is filling in the ground layer of the forests.

It is common for floodplain forests to have relatively open ground layers due to inundation and associated hypoxia, erosion, and sedimentation.

2.1.1.2 PRAIRIE

General Characteristics

A small portion (~19 acres) near the center of Prairie Island was occupied by a remnant prairie for which the park is named. Today, less than an acre of prairie remains, though some individual prairie plants persist. Classified as Southern Dry Sand–Gravel Prairie (UPs13b), this community once covered a greater portion of the landscape. Prior to the installation of Lock and Dam 5A, frequent fires maintained open prairie and oak savanna systems by limiting woody growth. Subsequent fire suppression and altered flood dynamics have allowed forest succession to progress, converting much of the former prairie and savanna to woodland.

Today, this prairie remnant is severely degraded and dominated by non-native and invasive species, including quackgrass, crown vetch, and birdsfoot trefoil. These species outcompete native plants, reducing structural and species diversity and impairing habitat functions. Woody encroachment, particularly from fast-growing species such as quaking aspen, further accelarates the shift towards forested conditions.

Restoration efforts between 1985 and 1988 included interseeding portions of the prairie, which temporarily improved native cover. However, the absence of consistent follow-up management has led to ongoing ecological decline. A 1989 survey recorded exceptional diversity, including fragrant false indigo, pasque flower, prairie coreopsis, blazing stars, puccoons, prairie clovers, and two state special concern species—white and cream false indigo. Today, only a few of these species remain in isolated pockets, such as flowering spurge, round-headed bush clover, purple prairie clover, and bird's foot violet. Even rattlesnake master, a special concern species seeded in 1988, no longer occurs on-site as of 2025.

Landscape Settings and Soils

The prairie is situated upland of the floodplain forest and experiences only occasional or infrequent flooding. It is typically 2 to 3 feet above the seasonal water table and is neither persistently saturated nor fully dry. This environment supports a diverse assemblage of prairie vegetation. Soils are composed primarily of sandy loam that is moderately well-drained.

Observed Plant Indicators

In this context, an indicator refers to a plant species associated with specific environmental conditions and plant communities, such that its presence signals the occurrence of a characteristic native plant community.

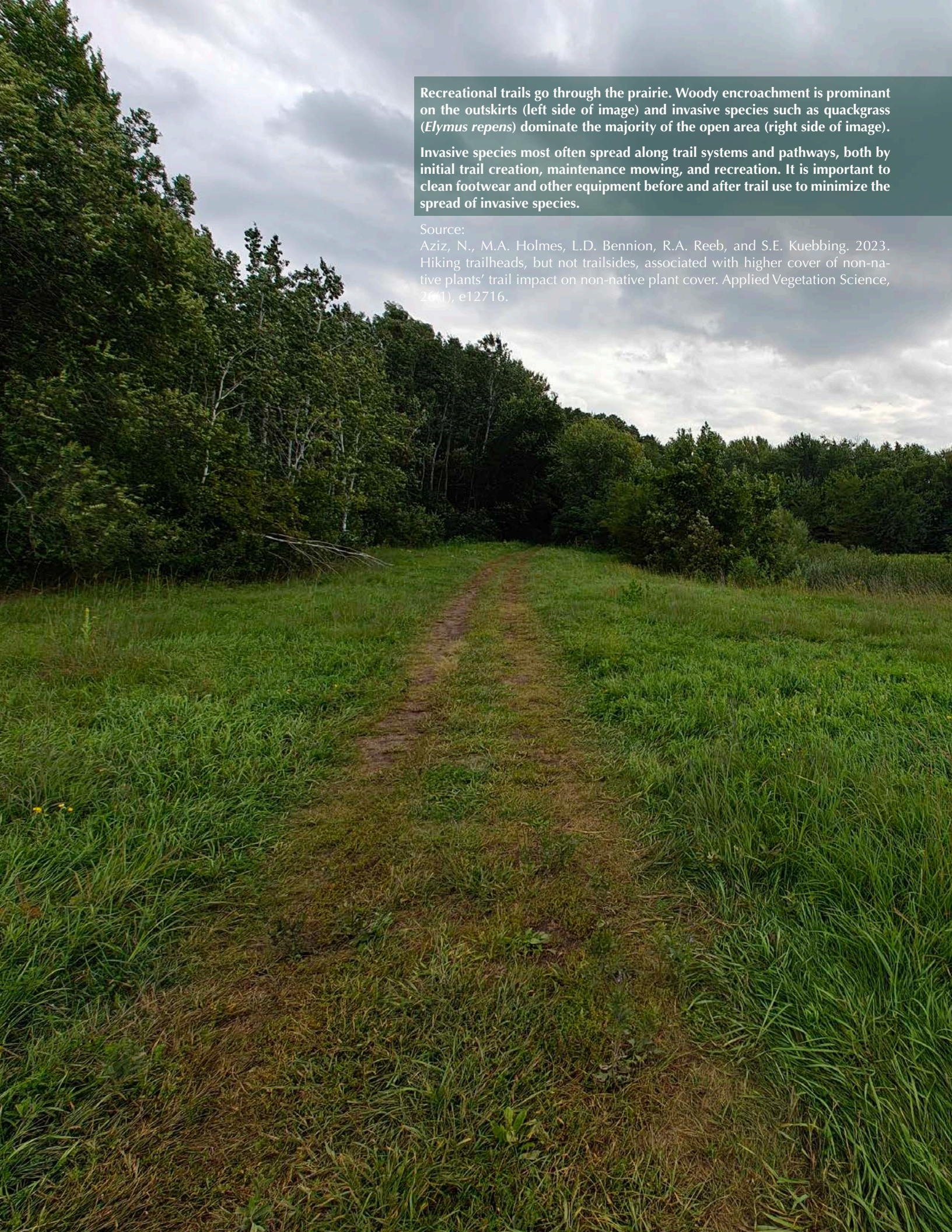
Ground Cover

Purple prairie clover (*Dalea purpurea*), Virginia ground cherry (*Physalis virginiana*), western ragweed (*Ambrosia psilostachya*), Canada goldenrod (*Solidago canadensis*), flowering spurge (*Euphorbia corollata*), prairie sage (*Artemisia ludoviciana*), little bluestem (*Schizachyrium scoparium*), side-oats grama (*Bouteloua curtipendula*), big bluestem (*Andropogon gerardii*), and Indian grass (*Sorghastrum nutans*).

Shrubs + Vines

Prairie rose (*Rosa arkansana*).

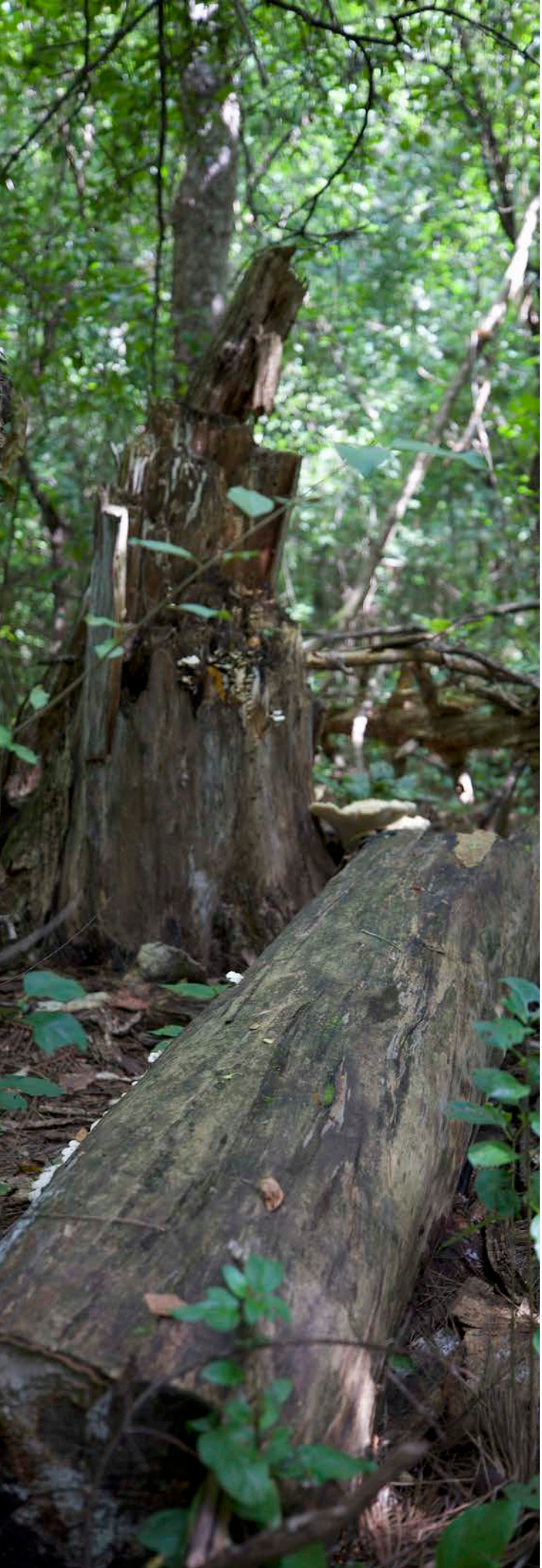
All instances of prairie on Prairie Island are dominated by invasive species, such as Queen Anne's lace (*Daucus carota*).



Recreational trails go through the prairie. Woody encroachment is prominant on the outskirts (left side of image) and invasive species such as quackgrass (*Elymus repens*) dominate the majority of the open area (right side of image).

Invasive species most often spread along trail systems and pathways, both by initial trail creation, maintenance mowing, and recreation. It is important to clean footwear and other equipment before and after trail use to minimize the spread of invasive species.

Source:
Aziz, N., M.A. Holmes, L.D. Bennion, R.A. Reeb, and S.E. Kuebbing. 2023. Hiking trailheads, but not trailsides, associated with higher cover of non-native plants' trail impact on non-native plant cover. Applied Vegetation Science, 26(1), e12716.



2.1.1.3 TERRACE FOREST

General Characteristics

A narrow band (~29 acres) of occasionally flooded forest lies between the floodplain and Prairie Island Road N. This community, classified as Silver Maple–Green Ash–Cottonwood Terrace Forest (FFs59a), represents a transitional zone between the frequently inundated lowlands and the drier inland soils, emphasizing the visual differences between minor elevation changes. Following the construction of Lock and Dam 5A, sediment deposition created more level, shallow terrain, reducing the extent of upland forest cover in the area.

Floodplain forests and terrace forests often grade into one another, sharing flood-adapted species. However, terrace forests also tend to include less flood-tolerant vegetation and a denser understory. The canopy is variable, both in cover and composition, but elms, black cherry, hackberry, basswood, box elder, silver maple, and cottonwood are common, with occasional black walnut. Ash were once abundant in the forest but have been nearly eliminated by the emerald ash borer. Further inland, near the prairie and road, oaks become more frequent, including bur, red, and black oaks.

The shrub layer typically includes young canopy tree species as well as chokecherry and red-berried elder. Vines are abundant, mostly present in the lower strata, and include Virginia creeper, wild grape, and moonseed.

The ground layer is more developed than in adjacent floodplain forests, with 50–100% vegetative cover. Dominant herbaceous species include wood nettle, spotted touch-me-not, stinging nettle, white avens, clearweed, and Clayton's sweet cicely. Together, these layers form a structurally complex and hydrologically dynamic forest that reflects the gradual transition between wet floodplain and upland systems.

Landscape Settings and Soils

Terrace forests, akin to the prairie, occupy further upland areas than the floodplain forest and are only occasionally flooded. Soils in these systems are typically sandy loams that are moderately well-drained. The water table is two to three feet below the surface.

Observed Plant Indicators

In this context, an indicator refers to a plant species associated with specific environmental conditions and plant communities, such that its presence signals the occurrence of a characteristic native plant community.

Groundcover

Wood nettle (*Laportea canadensis*), clearweed (*Pilea* spp.), touch-me-nots (*Impatiens* spp.), stinging nettle (*Urtica dioica*), tall bellflower (*Campanula americana*), Ontario aster (*Aster ontarionis*), white avens (*Geum canadensis*), black snakeroot (*Sanicula* spp.), and Clayton's sweet Cecily (*Osmorhiza claytonii*).

Shrubs + Vines

Virginia creeper (*Parthenocissus* spp.), wild grape (*Vitis riparia*), and Canada moonseed (*Menispermum canadense*).

Trees

American elm (*Ulmus americana*), box elder (*Acer negundo*), silver maple (*Acer saccharinum*), green ash (*Fraxinus pennsylvanica*), hackberry (*Celtis occidentalis*), basswood (*Tilia americana*), cottonwood (*Populus deltoides*), black ash (*Fraxinus nigra*), red elm (*Ulmus rubra*), and black walnut (*Juglans nigra*).

2.1.1.4 MARSH

General Characteristics

Large portions (~116 acres) of Prairie Island lie at or near the water table, where shallow standing water (approximately 20 to 40 inches deep) persists for most of the year, labeled as Northern Bulrush–Spikerush Marsh (MRn93). These nearly permanent inundation conditions create an environment that supports hydrophytic vegetation while excluding most woody species. As a result, these areas are dominated by emergent aquatic communities, particularly forbs such as broad-leaved arrowhead and graminoids such as bulrushes. These plants are well adapted to low-oxygen soils and fluctuating water levels. Of note is the relative abundance of wild rice (*Zizania palustris*).

Over time, however, emergent vegetation has declined near Lock and Dam 5A (measured from 1989 to 2011) due to altered water level regimes, sedimentation, and nutrient enrichment, which collectively reduce habitat diversity and favor more tolerant or opportunistic species.

Today, invasive species are common in many instances of this wetland community, including purple loosestrife, flowering rush, and narrow-leaved and hybrid cattails. These species can form dense monocultures that outcompete native emergents, alter hydrology, and diminish wildlife value. It is important to note that the marsh boundaries expand and retract with water depth, often shifting from year to year. These dynamic marshes are important for birds, fish, mammals, insects, and reptiles alike.

Landscape Settings and Soils

Marsh within Prairie Island Park occupies lowlands along the Mississippi River and associated sloughs that are permanently ponded except in drought years. Soils in these systems are typically silt loams underlain by heavier silty clay. These soils are very poorly drained, with the water table at the surface.

Observed Plant Indicators

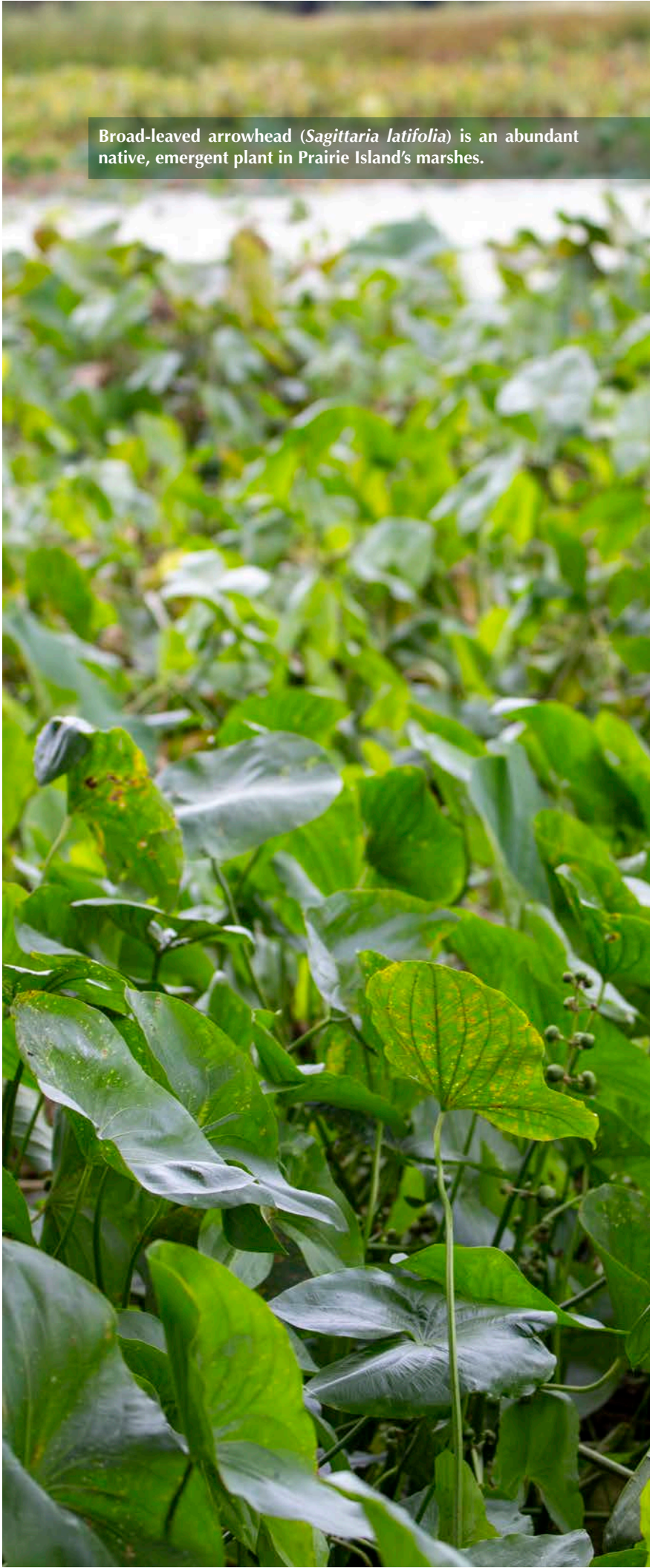
In this context, an indicator refers to a plant species associated with specific environmental conditions and plant communities, such that its presence signals the occurrence of a characteristic native plant community.

Graminoids

Rice cut grass (*Leersia oryzoides*), bulrushes (*Scirpus* spp.; *Schoenoplectus* spp.), lake sedge (*Carex lacustris*), and bluejoint (*Calamagrostis canadensis*).

Emergent Forbs

Broad-leaved arrowhead (*Sagittaria latifolia*), beggarticks (*Bidens* spp.), clearweed (*Pilea* spp.), northern bugleweed (*Lycopus uniflorus*), false nettle (*Boehmeria cylindrica*), swamp milkweed (*Asclepias incarnata*), and touch-me-nots (*Impatiens* spp.).



Broad-leaved arrowhead (*Sagittaria latifolia*) is an abundant native, emergent plant in Prairie Island's marshes.

2.1.2 Ecological Quality

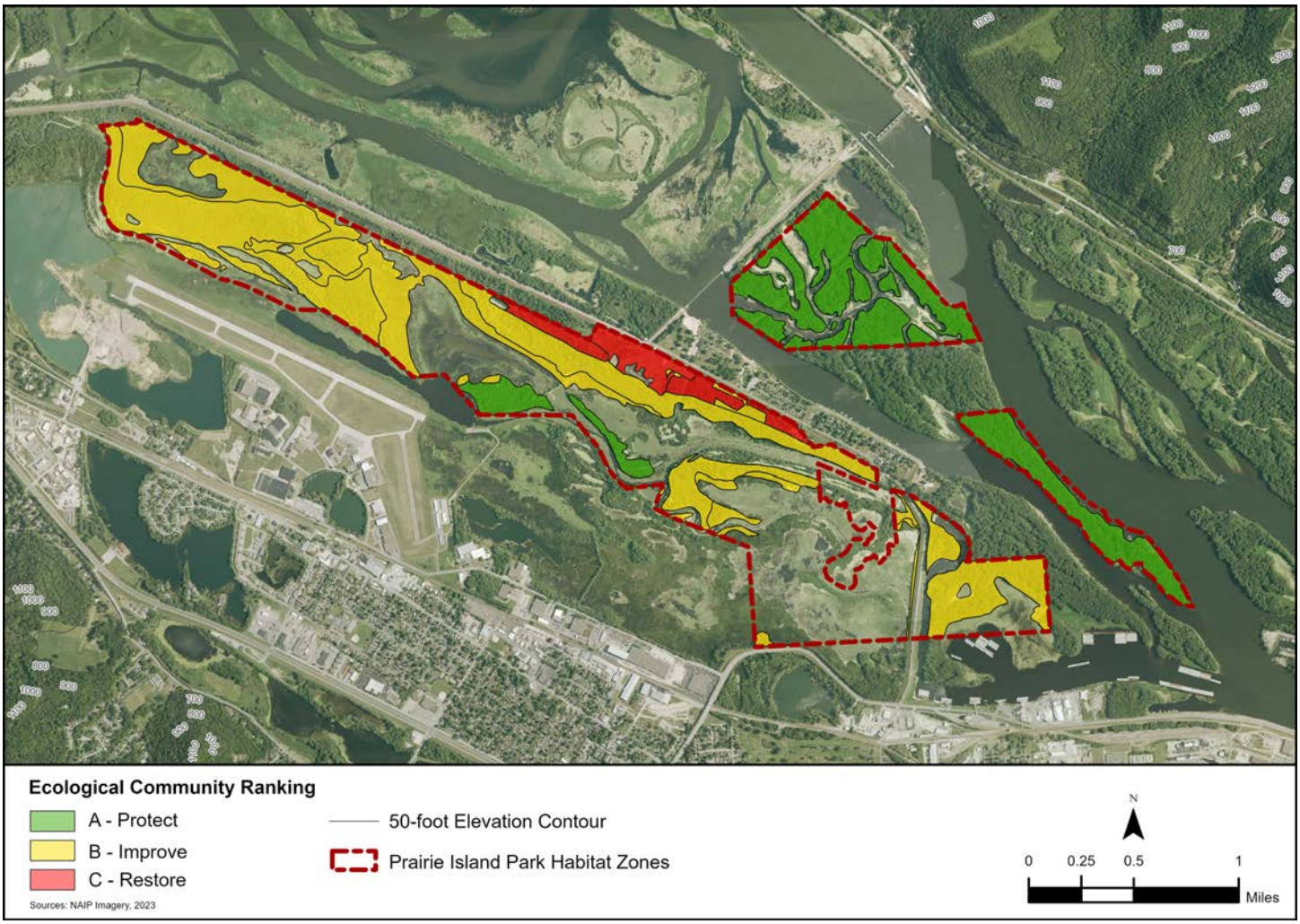
A qualitative evaluation of the native plant communities within Prairie Island Park was undertaken as part of the community inventory. This process included analysis of existing data, supplemented by field surveys, to assess ecological condition.

The entirety of Prairie Island Park has been shaped by human activity, both directly and indirectly. Direct impacts include historic farming, grazing, and construction, while indirect influences stem from hydrological alterations associated with the lock and dam system and levee. In areas where forests remain, the canopy is largely composed of native species, and soils generally reflect their pre-settlement composition, except in locations that were physically altered, such as the Latsch Shelter site and Prairie Island Road N, where fill soils were added to elevate the roadway above flood levels. The most significant factor reducing plant community quality throughout the park is the presence and spread of invasive species.

Table 1. Plant Community Rankings

Quality Ranking	Level of Disturbance Historic uses, such as agriculture, foot traffic, recreational vehicle use, grazing, and logging, can have lasting impacts on the landscapes.	Current Status The current appearance of the area reflects the extent and type of disturbance it has experienced.	Restoration Effort The financial investment and physical effort required to restore a plant community vary depending on its current condition.
A	Slight / None	Native plant diversity and coverage are somewhat reduced. <5% invasive species	*Slight*: monitor for invasive species and rapid response control when observed.
B	Moderate	Native plant diversity and coverage are reduced, with some invasive species present. 5–50% invasive species	*Medium*: remove invasive species and plant/interseed with native species.
C	Severe	Few native species and extensive invasive species encroachment. >50% invasive species	*Significant*: focus on restoring higher quality areas first, and control invasive species to protect adjacent higher quality plant communities.

Figure 5. Ecological Community Rankings



2.1.2.1 Defining Ecological Quality Rankings

A: Protect

Natural communities in this category exhibit high ecological quality, with minimal human disturbance and invasive species comprising less than 5% cover. Native plant diversity is generally high, though certain areas may show slight reductions in species richness. These communities should be preserved, and any disturbances, such as trail placement, should be avoided or approached with caution. Regular MN DNR monitoring for invasive species is recommended, with prompt control measures implemented as new populations establish.

B: Improve

Natural communities with good to moderate quality and intact natural processes, but also exhibit some evidence of past human impacts. Invasive species cover is currently not dominant (5–50%). These areas should be carefully managed to avoid further damage and decrease invasive species cover. Native plant community restoration is feasible.

C: Restore

Natural communities that have been greatly disturbed through actions such as historic agriculture or high visitor traffic. The shrub and/or groundcover layers are dominated by invasive species (>50%), and these communities generally have a low diversity of native plant species. However, a native tree canopy is typically intact when applicable (*e.g.*, terrace forests). These communities are restorable, but greater physical and financial effort is required to restore native plant diversity.

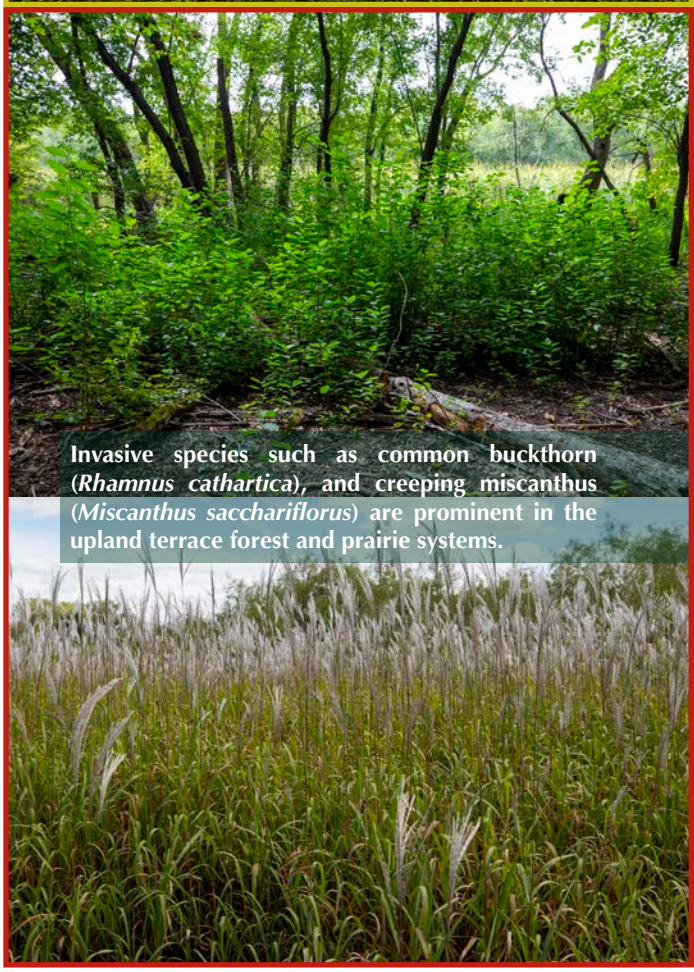
If future trails or recreational features are considered at the park, these lower plant diversity areas may be the most appropriate for development, though they should be accompanied by increased monitoring and rapid treatment of new invasive species populations.

2.1.3 Observed Trends

Without active management and long-term stewardship, the ecological systems within Prairie Island Park are expected to continue trending toward decline, as indicated by reduced biodiversity, habitat degradation, and overall loss of ecological integrity. Key stressors include the increasing frequency and intensity of flood events, loss and fragmentation of floodplain forest, elevated nutrient and sediment inputs from upriver agricultural activities, declines in aquatic vegetation, woody encroachment, and the proliferation of invasive species.

Despite these challenges, opportunities for ecological recovery and resilience remain through targeted restoration and adaptive management strategies. These include invasive species control, reestablishment of native vegetation, and climate change adaptation.

Source:
Houser, J.N., ed., 2022, Ecological status and trends of the Upper Mississippi and Illinois Rivers (ver. 1.1, July 2022): U.S. Geological Survey Open-File Report 2022–1039, 72-81p.



Invasive species such as common buckthorn (*Rhamnus cathartica*), and creeping miscanthus (*Miscanthus sacchariflorus*) are prominent in the upland terrace forest and prairie systems.

2.1.4 Rare and Unique Species

The MN DNR Minnesota Wildlife Action Plan 2015-2025 emphasizes wildlife species of greatest conservation need in Minnesota. The habitats associated with these at-risk species are typically rare or declining due to trends in land use such as farming and development. According to the Minnesota Biological Survey, Prairie Island Park contains habitats that include occurrences of rare species, moderately disturbed native plant communities, and/or landscapes with strong potential for recovery. The MN DNR assigns conservation status ranks to reflect a native plant community's risk of elimination. The native plant community types within Prairie Island Park that are considered to be rare or at risk include:

- Silver Maple-–Virginia Creeper Floodplain Forest: **Vulnerable to extirpation**
- Silver Maple–Green Ash–Cottonwood Terrace Forest: **Vulnerable to extirpation**
- Dry Sand–Gravel Prairie (Southern): **Imperiled**

Due to Prairie Islands' proximity to the Mississippi River, it serves as a corridor between otherwise fragmented habitats for migratory songbirds, raptors, and waterfowl and is adjacent to numerous Minnesota Audubon designated Important Bird Areas. Nesting and foraging habitats impacted by development make many species vulnerable and dependent on areas like Prairie Island Park. Protecting these native plant communities and critical habitats will enable Prairie Island Park to continue hosting a diverse range of wildlife species.

Minnesota's endangered, threatened, special concern, and species of greatest conservation need (SGCN) recorded within Prairie Island Park since 1995:

- Blanchard's cricket frog (*Acris blanchardi*): **State Endangered**
- Cut-leaf water parsnip (*Berula erecta*): **State Threatened**
- Brown-eyed Susan (*Rudbeckia triloba*): **State Threatened**
- White false indigo (*Baptisia lactea*): **Special Concern**
- Palm sedge (*Carex muskingumensis*): **Special Concern**
- Cerulean warbler (*Setophaga cerulea*): **Special Concern**
- Red-shouldered hawk (*Buteo lineatus*): **Special Concern**
- Lark sparrow (*Chondestes grammacus*): **Special Concern**
- Prothonotary warbler (*Protonotaria citrea*): **SGCN**
- American woodcock (*Scolopax minor*): **SGCN**

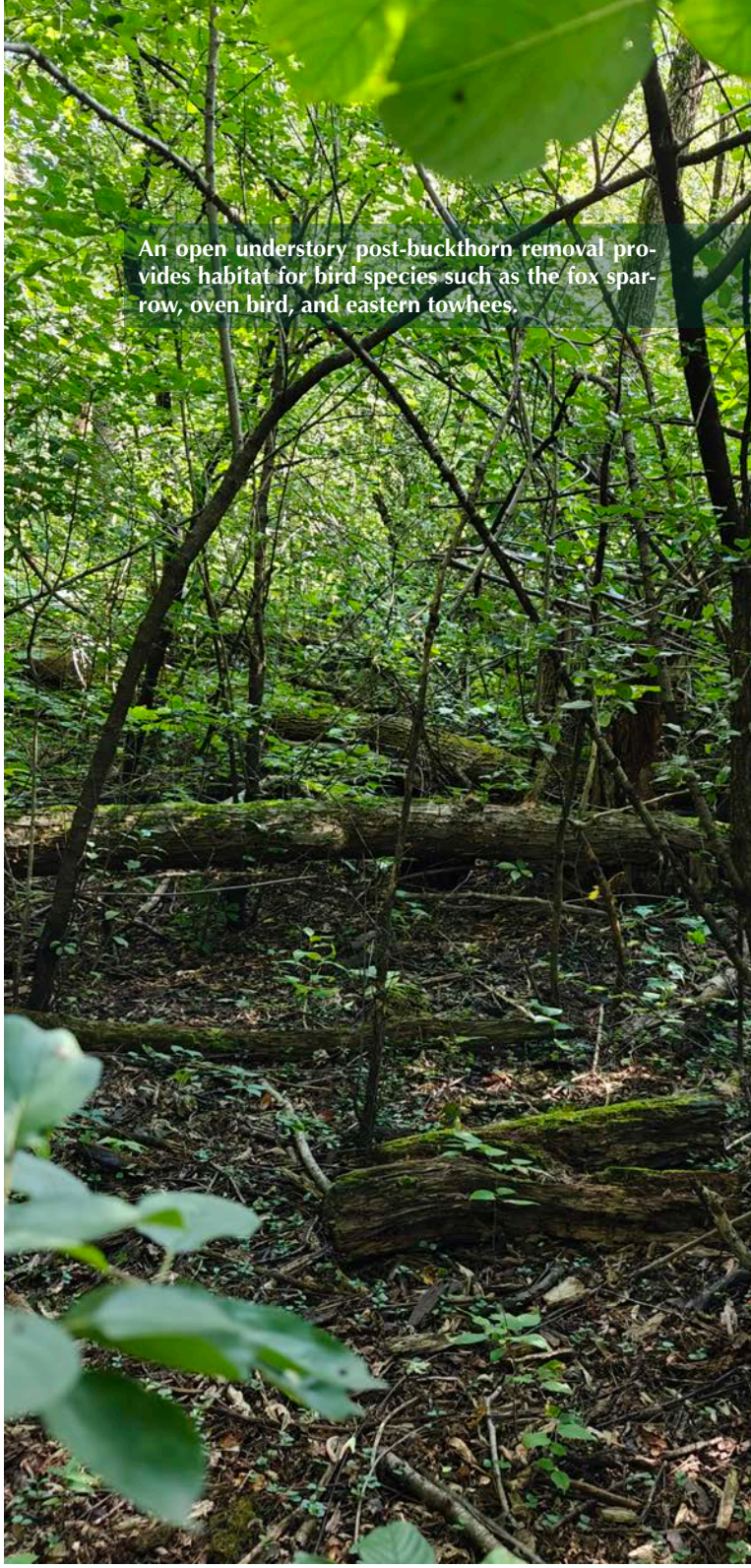
Sources:

The conservation Vision Committee of the Winona Bird Club. 2018. Conservation Vision for Winona's 2018 Comprehensive Parks and Recreation System Plan, Winona Bird Club.

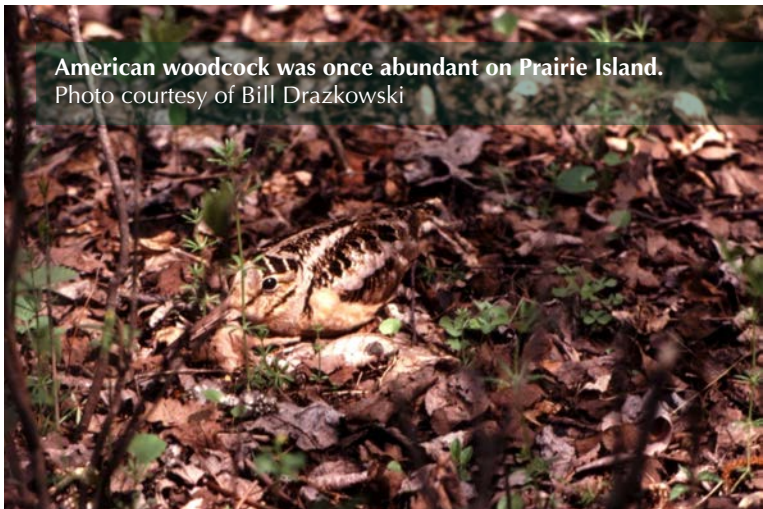
State of Minnesota, Department of Natural Resources. 2015. Minnesota's Wildlife Action Plan 2015-2025, Division of Ecological and Water Resources, State of Minnesota, Department of Natural Resources.

State of Minnesota, Department of Natural Resources. Accessed July, 2025. MBS Site Biodiversity Significance Ranks.

State of Minnesota, Department of Natural Resources. Accessed October, 2025. Natural Heritage Information System (NHIS), State of Minnesota, Department of Natural Resources.



An open understory post-buckthorn removal provides habitat for bird species such as the fox sparrow, oven bird, and eastern towhees.



American woodcock was once abundant on Prairie Island.
Photo courtesy of Bill Drazkowski

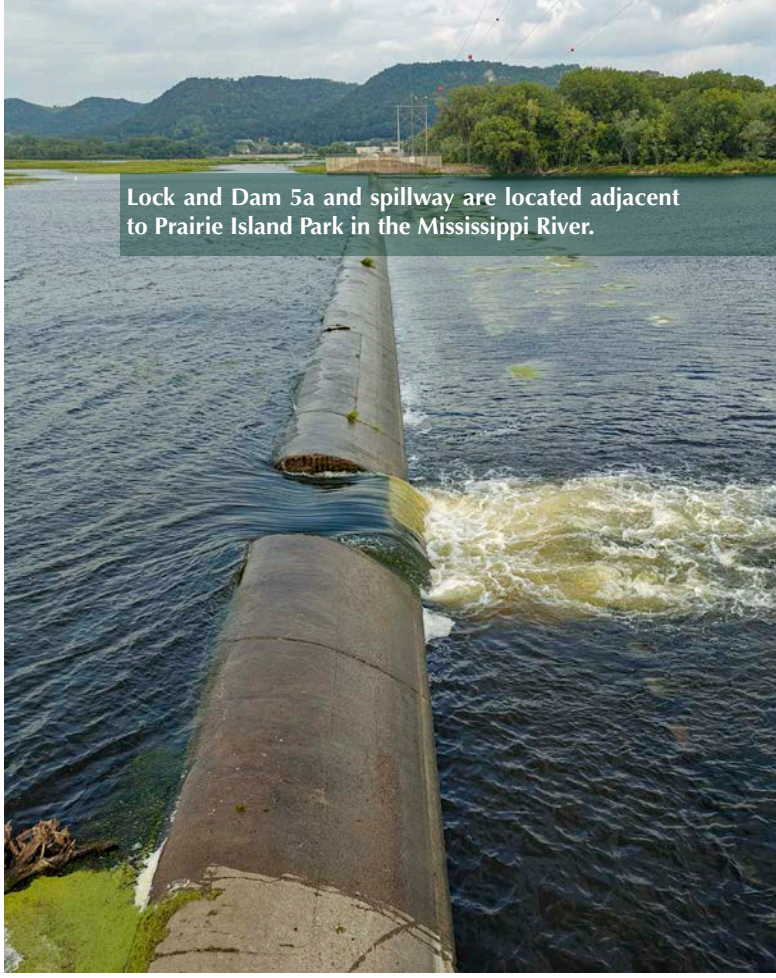
2.2 Physical Features

Nestled along the upper Mississippi River valley, Prairie Island Park has a few dominant physical features that make this site unique and rich with natural resources. Roughly two million years ago until 10,000 years ago, glaciers covered much of the state of Minnesota during the Ice Age. Glacial movement, particularly that of the Wisconsin glaciation stage, shaped Minnesota's landscape into what is seen today: a matrix of bluffs, rolling hills, glacial lake beds, moraines, outwash plains, and kettles.

2.2.1 Topography

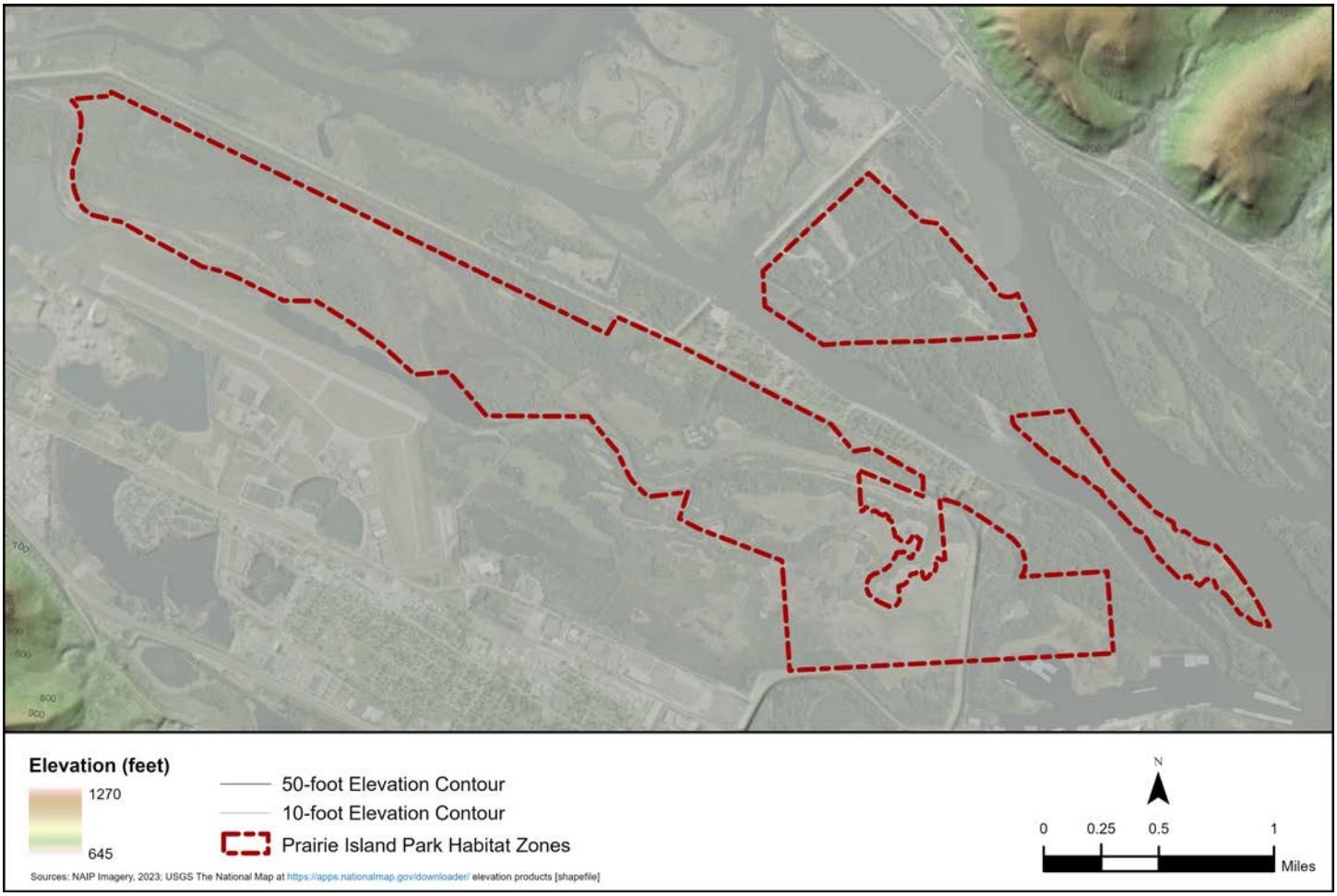
Prairie Island is located in the Driftless Area of Minnesota, where the topography was most influenced by the melting of the glaciers (*e.g.*, sediment deposition), rather than their physical movement (*e.g.*, glacial striations). Glacial meltwaters formed the steep cliffs, rolling hills, and deep valleys that make up the Driftless Area. Prairie Island is located in one of these valleys and continues to maintain only a small topographic variance (<10 feet elevation difference across the park; **Fig. 6**), aided by frequent flooding of nearby sloughs and the Mississippi River, as well as the soil stabilization of dominant floodplain forest tree roots.

Source:
Lusardi, B.A. 1994. Minnesota at a Glance: Quaternary Glacial Geology: Minnesota Geological Survey; revised by E.L. Dengler. 2017; modified for web by A.J. Retzler. 2021.



Lock and Dam 5a and spillway are located adjacent to Prairie Island Park in the Mississippi River.

Figure 6. Topography of Prairie Island Park



2.3 Cultural Use

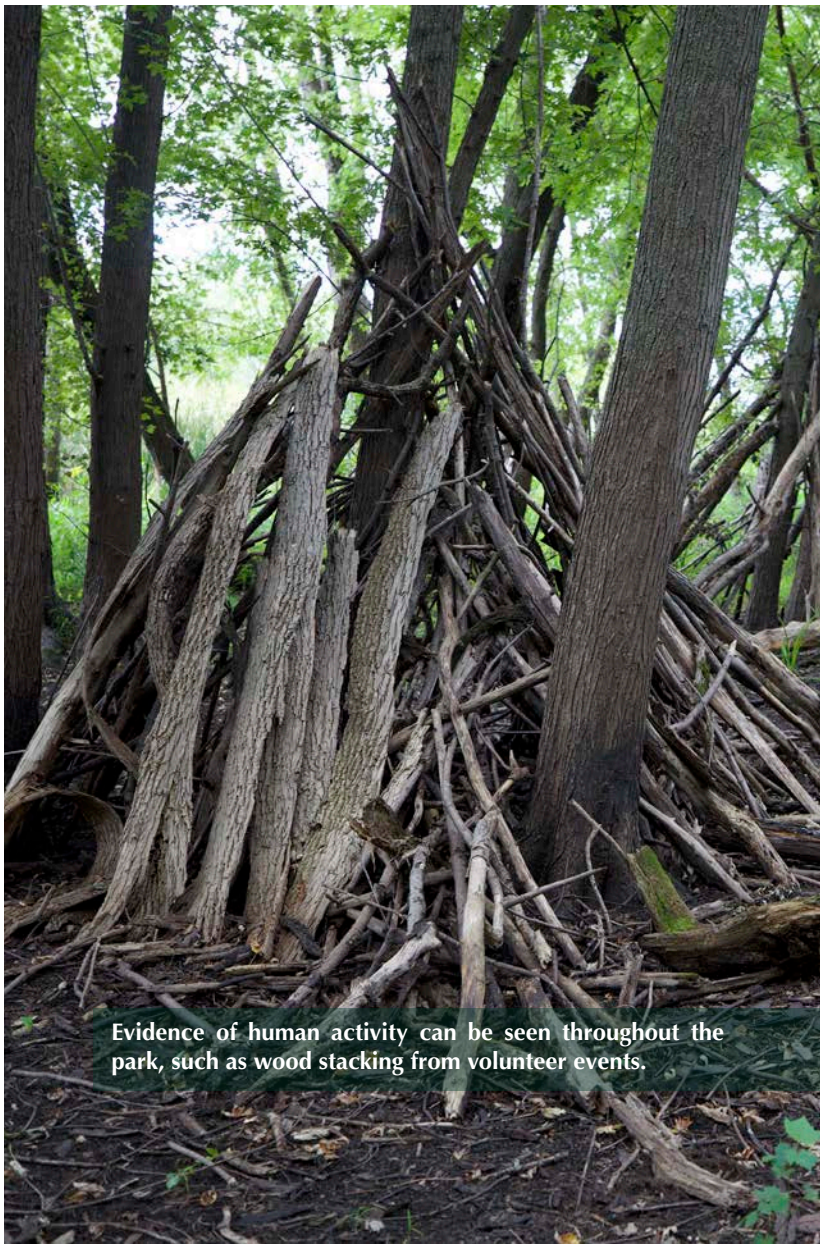
General Characteristics

A network of trails covering approximately 18 acres (1.5-mile Prairie Island Hiking Trail loop; 1-mile Prairie Island Nature Trail loop) extends across Prairie Island Park, connecting the Latsch Shelter in the east to the Prairie Island Dog Park in the west, and from Prairie Island Road N in the north to the floodplain forest in the south. The trails, which are typically no more than 6-feet wide, are maintained through periodic mowing and are used primarily for recreational walking and birdwatching. A mowed buffer separates the dog park from the adjacent prairie.

A power line corridor, approximately 100-feet wide, crosses a portion of Prairie Island Park. Excel Energy maintains this strip through an easement agreement with Winona to provide access for utility operations. Historically, a boardwalk connected the prairie to Crooked Slough through this corridor, providing access across wet terrain; however, it has since been washed away by flooding events.

The former deer park closed in 2019 due to chronic wasting disease concerns, but its enclosure fencing continues to stand as a visible reminder of the site's past use.

Several numbered wooden stakes along the trails highlight points of interest.



Evidence of human activity can be seen throughout the park, such as wood stacking from volunteer events.

3

NATURAL RESOURCES
ISSUES + OPPORTUNITIES

This section outlines the primary factors contributing to ecological decline within Prairie Island Park, including deer overabundance, invasive species, woody encroachment, human disturbance, and climate-related stressors, as well as strategies to address each. While portions of the park have benefited from past restoration efforts, such as prairie interseeding, buckthorn removal, and selective tree planting, continued management is essential to sustain and improve the existing plant communities. This can be achieved through targeted restoration and adaptive management strategies that emphasize resilience.

3.1 Invasive Plants

Issue

An invasive plant is defined as a non-native species that causes harm to the economy, environment, or human health. These plants tend to be highly aggressive, capable of rapid growth and reproduction due to the absence of natural predators, diseases, or competitors that would otherwise regulate their populations. As a result, invasive plants often form dense, single-species (monotypic) stands that outcompete and suppress native vegetation, reducing biodiversity and altering ecosystem function.

Numerous invasive plant species are established within Prairie Island, though their abundance varies across the site. Ongoing monitoring and early detection are essential to prevent further spread and introduction of additional invasive species. Early intervention significantly reduces long-term management costs and ecological impacts, particularly for species not currently present at Prairie Island Park. The species to be extra vigilant for include round leaf bittersweet, hooked hair hops, knotweed and barberries as these are present in Winona, but not yet established at Prairie Island Park. Another set of species to watch for are on the MN DNR Early Detection Watch List, which includes non-native, invasive plants with limited distribution in the state but assessed as posing high ecological risk. Species on this list are as follows: knapweeds (brown, diffuse, and meadow), common and cut-leaved teasel, dalmatian toadflax, narrowleaf bittercress, yellow starthistle, Japanese stiltgrass, tree-of-heaven, black and pale swallow-worts, Japanese honeysuckle vine, porcelain berry, red hailstone, and round-leaved bittersweet. As of summer 2025, knapweed was found within the prairie.

Suggested Solutions

- Promote and host volunteer workdays focused on invasive species removal in common or highly visible areas of the park.
- Develop and implement a comprehensive invasive species management program that includes regular monitoring, early detection, and rapid response protocols.
- Prioritize invasive removal efforts to occur during the non-nesting season of birds, roughly from September through mid April, to minimize disturbance to local birds
- Seek grant funding through either the Conservation Partners Legacy Program or the LCCMR for initial funding to remove existing invasive vegetation. Budget around $1,000/acre for moderately infested sites, and $1,500/acre for heavily infested sites.
- Educate visitors about invasive species: how to identify them, understand their ecological impacts, and prevent their spread.
- Encourage visitors to clean footwear and equipment (*e.g.*, bike tires, walking sticks) before and after visiting the park to reduce seed transfer.
- Monitor trails, high-traffic areas, and disturbed sites for early signs of invasive species and promptly report or treat new populations.
- Review online community science platforms such as iNaturalist and EDDMaps for invasive species reports.
- Mow then spray dense patches of invasive grasses (*e.g.*, quackgrass and creeping miscanthus) and follow up with native species seeding in subsequent years.

Some invasive species found within Prairie Island include:

- Garlic mustard*
- Common burdock
- Smooth brome
- Flowering rush
- Musk thistle
- Knapweed*
- Canada thistle*
- Queen Anne's lace*
- Quackgrass
- Leafy spurge*
- Glossy buckthorn*
- Creeping Charlie
- Butter-and-eggs
- Morrow's honeysuckle*
- Birdsfoot trefoil
- Creeping Jenny
- Purple loosestrife*
- Yellow and white sweet clover
- Creeping Miscanthus*
- Reed canary grass
- Common buckthorn*
- Black locust*
- Crown vetch*
- Yellow foxtail
- Narrow-leaved cattail
- Siberian elm

*Indicates a MN prohibited noxious weed

Common and glossy buckthorn (*Rhamnus cathartica; Frangula alnus*) are abundant in the upland forests of Prairie Island.

The number one concern for Prairie Island is invasive species. In the forests, buckthorn can grow dense in the understory and shade out or outcompete native plants in the ground layer.

3.2 Woody Encroachment

Issue

Prairies depend on periodic disturbances, particularly fire, to maintain their open structure and high plant diversity. Most woody species are not fire-adapted, so when disturbances are suppressed, trees and shrubs begin to colonize open areas. This process, known as woody encroachment, shades out sun-loving prairie plants and gradually converts prairies into woodlands or forests. At Prairie Island Park, much of the prairie has been overtaken by shrubs and fast-growing trees such as quaking aspen, resulting in a significant loss of grassland habitat. This shift reduces habitat availability for species that rely on open conditions, including pollinators and grassland-dependent birds such as lark sparrows.

Although woody vegetation is generally undesirable in prairies, not all native shrubs are harmful. White false indigo (*Baptisia lactea*), a native shrub of Special Concern in Minnesota, occurs within the aspen grove near the dog park. It was likely introduced during restoration efforts in the 1980s and is a fire-adapted, deer-resistant species that can coexist within prairie systems without dominating them.

Woody encroachment also poses challenges in floodplain and terrace forests, where invasive shrubs such as common and glossy buckthorn can fill in the understory, reducing structural diversity and shading out native herbaceous plants.

This loss of semi-open forest conditions diminishes habitat quality for bird species such as fox sparrow (*Passerella iliaca*), ovenbird (*Seiurus aurocapilla*), and eastern towhee (*Pipilo erythrophthalmus*).

Effective management—through prescribed burning, mechanical removal, and targeted herbicide treatment—is therefore essential to limit woody spread and restore the open habitats necessary for native species to thrive.

Suggested Solutions

- Conduct prescribed burns on a rotational schedule to maintain open prairie structure and promote native species regeneration.
- Cut and treat non-prairie woody species (*e.g.*, black locust, Siberian elm, and quaking aspen) along prairie margins to reclaim lost habitat and prevent further encroachment.
- Continue buckthorn removal projects within forested areas to enhance native regeneration and improve wildlife habitat.
- Provide educational signage or outreach explaining prairie management practices, such as prescribed burning and woody control, to increase public understanding and support.
- Encourage visitors to remain on designated trails to protect native vegetation and maintain resiliency.

Fast-growing woody species, such as quaking aspen (*Populus tremuloides*), fill in prairie edges and eventually grow inward, expanding the woodland and consequently shrinking the prairie.

3.3 Impacts of People

Issue

As visitation to Prairie Island Park continues to grow, so does the potential for ecological disturbance associated with recreational use. The park faces ongoing challenges related to off-leash dogs, unauthorized motorized vehicle activity, littering, and the creation of informal trails (*i.e.*, "desire paths"). These actions can lead to habitat degradation, soil compaction, and disturbance or displacement of wildlife. Engaging the community in stewardship and management efforts will be key to fostering long-term care and sustainable use of Prairie Island Park.

Suggested Solutions

- Careful design of multi-use trails to balance recreation and conservation by directing foot traffic away from or around the outskirts of sensitive habitats (*e.g.*, core floodplain forest or prairie restoration).
- Establish signage with information on the native plant communities within the park to inform the public how their actions can benefit these communities (*e.g.*, clean footwear).
- Install maps of all official trails and sanctioned types of use.
- Curate community-based management efforts and education events (*e.g.*, volunteer programs to remove buckthorn).

3.4 Climate Change

Issue

Climate change has already begun to influence the ecological systems of Prairie Island Park and will continue to do so in the coming decades. In Minnesota, shifting climate patterns are resulting in warmer winters, more frequent heavy rainfall events, and greater overall precipitation. By mid-century, average annual temperatures in southeastern Minnesota are projected to rise by approximately 3.7 to 4.3 degrees Fahrenheit, accompanied by an estimated one-inch increase in annual precipitation. These changes are expected to intensify seasonal flooding and storm impacts, leading to greater nutrient leaching, habitat loss, and reduced accessibility in low-lying areas of the park. Additionally, fluctuations in temperature and precipitation may stress native plant and animal communities, creating ecological openings that favor the establishment and spread of invasive species.

Suggested Solutions

- Regular monitoring of soils, vegetation, and wildlife to catch early signs of disturbance or distress.
- Develop and implement an adaptive management plan to accommodate future environmental changes (**Section 3.6.1**).
- Conduct assisted migration, which means planting species in areas with climatically suitable conditions to help them survive rapid climate shifts that outpace their natural migration abilities. Suggested species for floodplain and terrace forests include overcup oak (*Quercus lyrata*), bitternut hickory (*Carya cordiformis*), Kentucky coffeetree (*Gymnocladus dioicus*), shellbark hickory (*Carya laciniosa*), American sycamore (*Platanus occidentalis*), catalpa (*Catalpa* spp.), and northern pecan (*Carya illinoinensis*).

Source:
Coffman, D., K. Black, K. Boyd, S. Clark, B. Greene, D. Saravana, and C. Weske. 2024. Climate Change in Southeast Minnesota. Prepared for the University of Minnesota Climate Adaptation Partnership. Version 1; September 2024.

3.5 Deer Overabundance

Issue

White-tailed deer (*Odocoileus virginianus*) are native grazers in southern Minnesota, but their populations have increased dramatically over the past century. This growth has been fueled by the creation of ideal habitat (*i.e.*, a mosaic of open fields and woodlands produced by logging and agriculture), as well as the loss of natural predators. While deer are an important part of native ecosystems, overabundant populations can hinder forest regeneration through excessive browsing. Deer preferentially consume wildflowers, tree seedlings, new shrub growth, seeds, fruit, and fungi, while typically avoiding invasive or unpalatable plants such as buckthorn and garlic mustard. This selective feeding behavior gives invasive species a competitive advantage, reducing native plant diversity and simplifying forest structure, which in turn diminishes habitat quality for small mammals, birds, and other wildlife. Although Prairie Island has a history of connecting Winona citizens with wildlife via the deer park, the current deer population size is likely to cause problems with restoration efforts.

Suggested Solutions

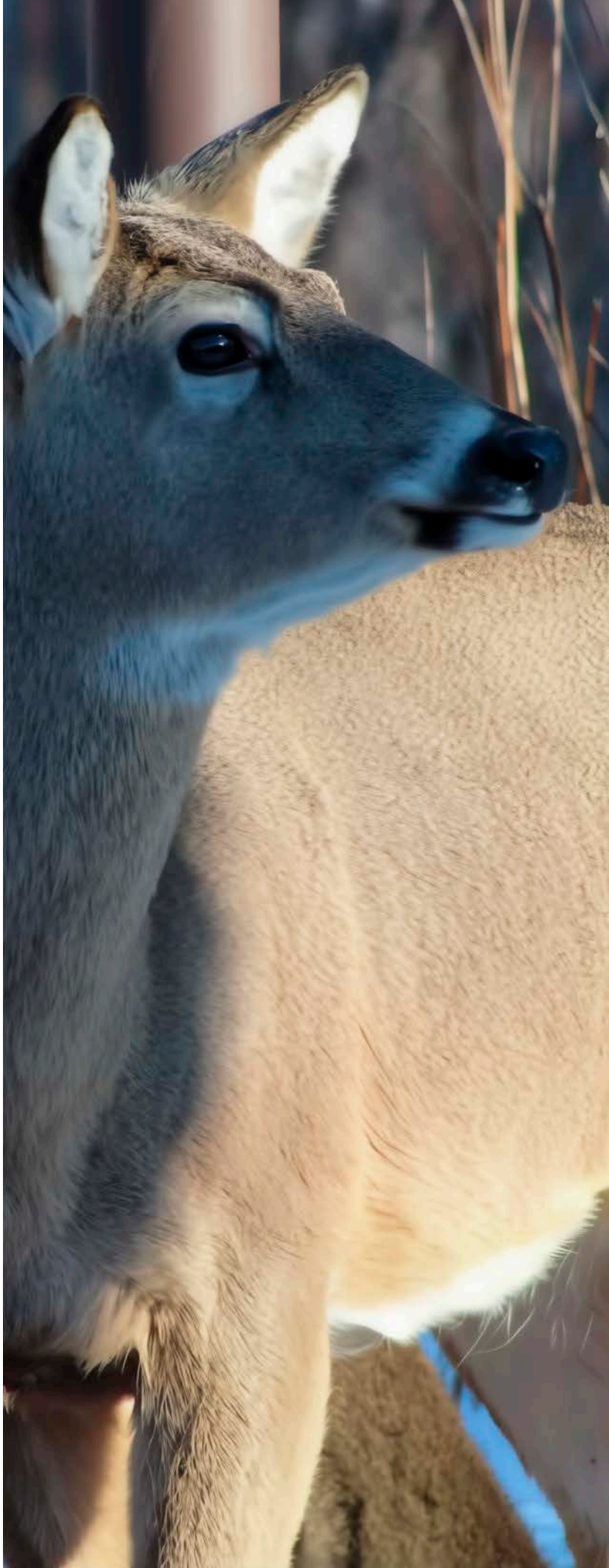
- Plant native wildflowers, shrubs, and trees to restore natural habitat diversity and structure, using fencing or breathable anti-herbivory tubes to protect young plants.
- Monitor browse impacts in restoration areas to evaluate deer pressure and adjust management actions accordingly, such as implementing a deer management program to reduce population density and alleviate browsing pressure on regenerating vegetation.

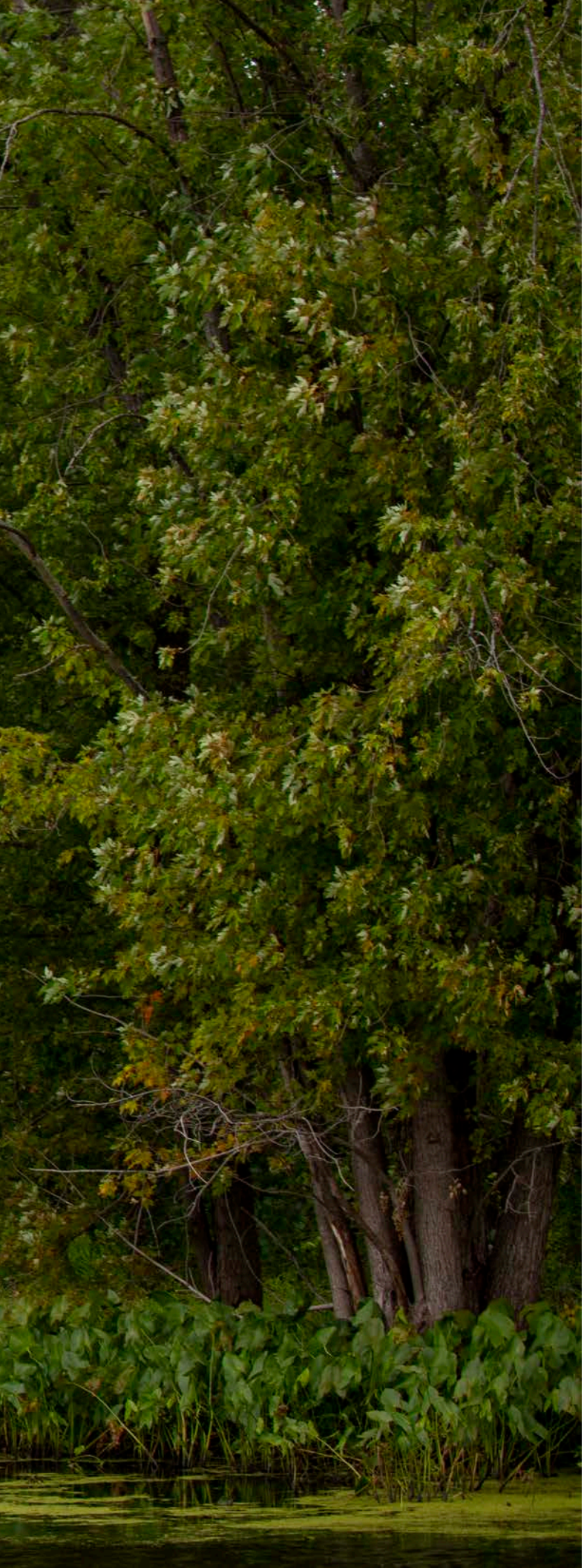
3.6 Suggested Plant Community Management Strategies

Ecological systems that function well, or are relatively unaffected by stressors such as invasive species, excessive human disturbance, and overabundant deer populations generally show resilience and require little ongoing management to maintain their functions. To guide Prairie Island Park's plant communities toward a self-sustaining and resilient ecological state, targeted restoration and management efforts are recommended to begin with higher quality (B-ranked) areas to maintain their condition, followed by degraded (C-ranked) sites that require more extensive intervention. These ranks reflect the current ecological condition, with B-ranked areas generally maintaining good native structure but impacted by invasive species, and C-ranked areas showing lower native species diversity and a higher degree of human influence (**Fig. 5**).

Priority should be given to the B-ranked areas, as they are most likely to respond successfully to restoration with relatively moderate effort. Management in these areas should focus on the removal of common and glossy buckthorn within the floodplain forests, followed by vigilant monitoring and spot-treatment of resprouts. Once invasive pressure is reduced, existing native vegetation is expected to recolonize open spaces naturally, improving overall forest structure and habitat quality for wildlife.

The C-ranked areas will require more intensive and sus-





tained management to recover native diversity. These efforts should include a multi-phase invasive species control plan, followed by native plant reintroduction through locally sourced seed mixes or plug plantings. Because the current degraded conditions limit natural recolonization, active seeding or planting is essential to reestablish diverse native assemblages in the prairie and terrace forest communities. The rate of recovery will depend on available funding, staff capacity, and coordination with volunteers or partner organizations for implementation and maintenance.

Within the prairie community, particular care should be taken to prevent the spread of invasive species into adjacent forest edges, as the prairie currently acts as a potential source of invasive seed. Mechanical removal of debris and old wood piles is advised. Herbicide treatments are recommended across most of the prairie, with careful attention to avoid non-target impacts to native prairie species such as white false indigo, sand dropseed, prairie sage, and birdsfoot violet. Over time, consistent management will promote a healthier, more diverse prairie ecosystem for park visitors to enjoy.

Managing marsh communities should be considered a long-term objective due to the complexity of restoring and maintaining these hydrologically dynamic systems. Targeted removal or treatment of flowering rush (*Butomus umbellatus*) is a top priority while control of invasive cattails and reed canary grass along floodplain margins and marsh edges is recommended as funding and capacity allow. Although all marsh occurrences within Prairie Island are currently B-ranked, the potential for reinvasion remains high because of the continual influx of floating seeds and propagules carried by the Mississippi River and its associated sloughs. Given these reinfestation pressures and the substantial effort required for sustained control, marsh management should be prioritized after the prairie, floodplain, and terrace forest restorations, as it is likely to be the least cost-effective community to maintain in the near term.

3.6.1 Adaptive Management Approach

An adaptive management approach is recommended to guide the restoration and long-term stewardship of Prairie Island Park's native plant communities. Adaptive management is a deliberate, flexible process of decision-making that incorporates learning through monitoring and observation. Because natural systems, especially those shaped by the Mississippi River's dynamic hydrology, are inherently variable, management actions should be adjusted over time in response to observed outcomes. Outcomes to evaluate include:

- Effectiveness of invasive species removal and control
- Native species establishment and survival following restoration efforts
- Extent and success of woody encroachment reduction, especially in the prairie
- Visitor impacts, trail maintenance, and other sources of disturbance
- Hydrologic or climatic shifts affecting floodplain communities' composition and stability

Adaptive management is an incremental and cyclical process of planning, implementing, monitoring, evaluating, and refining. At Prairie Island Park, this process should include the following steps:

- **Secure and sustain funding** for vegetation management and restoration activities through a combination of city budgets, state or federal grants, and partnerships with local organizations
- **Define management responsibilities** (*e.g.*, whether work will be performed by city staff, contractors, volunteers, or a combination thereof) and establish a clear reporting structure for progress and results
- **Conduct annual site assessments**, ideally each spring, to evaluate conditions in each major plant community (floodplain forest, prairie, terrace forest, and marsh) and identify/prioritize current management needs such as invasive species treatment, prescribed burning, woody removal, or reseeding
- **Hold end-of-season review meetings** to evaluate results, share lessons learned, and refine strategies for the following year

Over time, this structured yet flexible approach will help improve efficiency and strengthen ecological resilience across Prairie Island Park. Adaptive management recognizes that natural resource stewardship is an evolving process and that learning from each action taken is the key to sustaining this unique riverine landscape for generations to come.

3.7 Conclusion

Prairie Island Park has contributed to the outdoor education and recreational scene in Winona for over 100 years. Its history is one of community involvement and wildlife conservation through figures and entities such as John Latsch, the Izaak Walton League, Winona Bird Club, and Prairie Island Campground. The natural resources within the park (floodplain forests, prairie, terrace forests, and marsh) help secure habitat for wildlife and bolster recreational activities such as bird watching, hiking, and canoeing.

Management actions to protect, improve, or restore the natural environment should be a priority at Prairie Island Park to balance its dual use for wildlife habitat and recreational activities. By investing in invasive species control through volunteer events, city funds, and/or grants, Prairie Island Park can continue to be a haven for Winona residents and visitors for years to come.

4

APPENDICES

4.1 Plant List at Prairie Island Park, September 2025

Asterisk (*) indicates a non-native / invasive species to Minnesota.

Scientific Name	Common Name
*Abutilon theophrasti**	Velvet leaf
Acalypha rhomboidea	Common copperleaf
Acer negundo	Box elder
Acer saccharinum	Silver maple
Achillea millefolium	Common yarrow
Ageratina altissima	White snakeroot
*Alliaria petiolata**	Garlic mustard
Ambrosia trifida	Giant ragweed
Andropogon gerardii	Big bluestem
Anemone quinquefolia	Wood anemone
Apocynum cannabinum	Hemp dogbane
*Arctium minus**	Common burdock
Artemisia ludoviciana	Prairie sage
Asclepias incarnata	Swamp milkweed
Asclepias syriaca	Common milkweed
Asimina triloba	Pawpaw
Aster ontarionis	Ontario aster
Athyrium filix-femina	Lady fern
Baptisia lactea	White false indigo
*Berteroa incana**	Hoary allysum
Betula nigra	River birch
Bidens cernua	Nodding beggarticks
Boehmeria cylindrica	False nettle
Bolboschoenus fluviatilis	River bulrush
Bouteloua curtipendula	Sideoats grama
*Bromus inermis**	Smooth brome
*Butomus umbellatus**	Flowering rush
Calamagrostis canadensis	Canada bluejoint
Campanulastrum americanum	Tall bellflower
*Carduus nutans**	Musk thistle
Carex lacustris	Lake sedge
Carex lupulina	Hop sedge
Carex muskingumensis	Palm sedge
Catalpa spp.	Catalpa
Celastrus scandens	American bittersweet
Celtis occidentalis	Hackberry
*Centaurea spp.**	Knapweed / Starthistle
Chamaecrista fasciculata	Partridge pea
*Chenopodium album**	Lamb’s-quarters
*Cirsium arvense**	Canada thistle
Cirsium discolor	Field thistle
*Convolvulus arvensis**	Bindweed
Cornus spp.	Dogwood
*Cyperus esculentus**	Yellow nutsedge
Cyperus lupulinus	Slender nutsedge
Dalea purpurea	Purple prairie clover
*Daucus carota**	Queen Anne’s lace

Scientific Name	Common Name
Dryopteris carthusiana	Spinulose wood fern
*Elymus repens**	Quack grass
Eragrostis spectabilis	Purple lovegrass
Erigeron spp.	Fleabane
Erigeron strigosus	Daisy fleabane
*Eriochloa villosa**	Hairy cupgrass
Euphorbia corollata	Flowering spurge
*Euphorbia davidii**	David's spurge
Euphorbia nutans	Nodding spurge
*Euphorbia virgata**	Leafy spurge
Fragaria virginiana	Wild strawberry
*Frangula alnus**	Glossy buckthorn
Fraxinus nigra	Black ash
Fraxinus pennsylvanica	Green ash
Galium spp.	Bedstraw
Geum canadense	White avens
*Glechoma hederacea**	Creeping Charlie
Gleditsia triacanthos	Honey locust
Helianthus tuberosus	Jerusalem artichoke
*Hypericum perforatum**	Common St. John's wort
Impatiens spp.	Touch-me-nots
Juglans nigra	Black walnut
Lactuca spp.	Wild lettuce
Laportea canadensis	Wood nettle
Leersia oryzoides	Rice cutgrass
Leersia virginica	White grass
*Leonurus cardiaca**	Common motherwort
Lespedeza capitata	Round-headed bush clover
*Linaria vulgaris**	Butter-and-eggs
Lobelia cardinalis	Cardinal flower
*Lonicera morrowii**	Morrow's honeysuckle
*Lotus corniculatus**	Birdsfoot trefoil
Lycopus americanus	American water horehound
*Lysimachia nummularia**	Creeping Jenny
*Lythrum salicaria**	Purple loosestrife
Maianthemum racemosum	False Solomon's seal
Malus spp.	Crab apple
*Medicago sativa**	Alfalfa
*Melilotus spp.**	Sweet clover
Menispermum canadense	Canada moonseed
Mirabilis nyctaginea	Wild four o'clock
*Miscanthus sacchariflorus**	Creeping miscanthus
*Morus alba**	White mulberry
Onoclea sensibilis	Sensitive fern
Osmorhiza claytonii	Clayton's sweet Cecily
Panicum capillare	Witch grass
Panicum virgatum	Switchgrass
Parthenocissus spp.	Virginia creeper
Persicaria amphibia	Swamp smartweed
*Phalaris arundinacea**	Reed canary grass

Scientific Name	Common Name
Phlox pilosa	Prairie phlox
Physalis virginiana	Ground cherry
Physostegia virginiana	Obedient plant
Pilea pumila	Canada clearweed
Plantago spp.	Plantain
Populus deltoides	Cottonwood
Populus tremuloides	Quaking aspen
Prunus americana	Wild plum
Prunus serotina	Black cherry
Prunus virginiana	Chokecherry
Pseudognaphalium obtusifolium	Sweet everlasting
Quercus bicolor	Swamp white oak
Quercus macrocarpa	Bur oak
Quercus rubra	Northern red oak
Quercus velutina	Black oak
*Rhamnus cathartica**	Common buckthorn
*Robinia hispida**	Bristly locust
*Robinia pseudoacacia**	Black locust
Rosa arkansana	Prairie Rose
Rubus spp., Allegheniense series	Blackberry
Rudbeckia triloba	Brown-eyed Susan
Sagittaria latifolia	Broad-leaved arrowhead
Salix interior	Sandbar willow
Sambucus canadensis	Common elderberry
Sambucus racemosa	Red-berried elder
Sanicula canadensis	Canadian black snakeroot
Schizachyrium scoparium	Little bluestem
Schoenoplectus spp.	Bulrush
*Securigera varia**	Crown vetch
*Setaria pumila**	Yellow foxtail
Smilax tamnoides	Bristly greenbrier
Solanum carolinense	Carolina horsenettle
Solanum emulans	Eastern black nightshade
Solidago altissima	Tall goldenrod
Solidago canadensis	Canada goldenrod
*Sorbus aucuparia**	European Mountain ash
Sorghastrum nutans	Indian grass
Sporobolus cryptandrus	Sand dropseed
Stachys spp.	Hedgenettle
Teucrium canadense	American germander
Tilia americana	Basswood
Toxicodendron rydbergii	Poison ivy
*Trifolium hybridum**	Alsike clover
*Typha angustifolia / T. X glauca**	Narrow-leaved cattail / hybrid
Ulmus americana	American elm
*Ulmus pumila**	Siberian elm
Ulmus rubra	Red elm
Urtica dioica	Stinging nettle
*Verbascum thapsus**	Common mullein
Verbena hastata	Blue vervain

Scientific Name	Common Name
Verbena stricta	Hoary vervain
Verbena urticiflora	White vervain
Vernonia fasciculata	Prairie ironweed
Veronicastrum virginicum	Culver's root
Viola pedata	Bird's foot violet
Vitis riparia	Wild grape
Zizania palustris	Wild rice

CITIZENS ENVIRONMENTAL QUALITY COMMITTEE

AGENDA ITEM: 6. Minnesota Climate Action Framework

PREPARED BY: John Howard

DATE: Nov. 6, 2025

The State is seeking comment on their draft Climate Action Framework Update. Over the last year, the MPCA has worked with residents, experts, and municipal staff across the state to revise the Climate Action Framework. There is a new section specifically about local government action, which is attached for CEQC review.

The full plan and engagement page is here: https://engage.eqb.state.mn.us/climate-action-framework-update?tool=survey_tool#tool_tab

Requested action: Review the attached draft plan section on local government and provide comments/input if desired.

The essential role of local government

DRAFT

FALL 2025

Why are local communities important to the Climate Action Framework?

Minnesota's local governments play a critical role in Minnesota's climate mitigation and adaptation work. Across Minnesota, local governments are shaping climate mitigation and adaptation, leading change in their communities through active, incentives, and leading by example. Meaningful, on-the-ground change is increasingly led at the local level – directly, through incentives, or by example. Without local government action and leadership, Minnesota will not be able to hit state emissions reduction targets.

Local governments, and locally tailored climate action, are often best positioned to engage with and respond to community needs, settings, and values. In addition, local government units hold unique powers and responsibilities that position them to make lasting climate progress. Local government climate powers include:

- **Cities, townships, counties:** Land use planning, right-of-way control, infrastructure and transportation planning, and emergency management.
- **School districts:** Facility investments, public engagement, and resilience planning.
- **Watershed districts:** Land management, drainage systems, and water conservation.
- **Regional development organizations:** Intergovernmental coordination, funding, and collaboration.

Local climate progress is most effective when the state supports these efforts by:

- Providing funding, policy supports, data, and capacity.
- Employing incentives and requirements to facilitate coordinated local climate action.
- Collaborating with local government leaders and staff to align state and local climate targets and strategies.

Where and how can local communities lead on climate action?

Local governments hold unique powers that make their action indispensable in Minnesota's climate work. These powers allow local governments to pursue important climate actions on their own, and to play critical roles in cross-jurisdictional partnerships.

Local climate work extends beyond the work of local "climate" or "resilience" staff, touching investments and programs run by public works, planning, emergency response, parks, and schools. As a result, departments across local governments will benefit from department-specific climate guidance that breaks down silos and integrates climate knowledge across offices. Cross-department communication, coordination, and education is equally important.

First, local government authority over land use and rights-of-way provide enormous climate action potential.

Through zoning and planning powers, local governments can incentivize or require development patterns that create compact walkable communities centered around a main street or central business district. By allowing for more housing types and commercial uses in a concentrated area, and by reducing or eliminating minimum parking requirements, local governments can help reduce transportation costs, reduce air pollution, and facilitate reductions in vehicle miles traveled. Well-planned communities can also help increase housing supply, reduce housing costs, and reduce the amount of infrastructure—and associated infrastructure maintenance costs—required to serve a given community's population.

In addition, local governments can deploy land use controls and land ownership to preserve natural and working lands and to require or encourage natural systems in built-environment areas. For example, zoning use designations can preserve agricultural lands and Minnesota's farming heritage; promote tree planting and preservation; and require stormwater retention and green infrastructure which can play important water management roles. For public green spaces and parks, local governments can ensure that lands they manage directly are adapted to be resilient to climate change impacts, providing community health and infrastructure protection benefits.

Local government's right-of-way control also allows for multi-sector climate impacts. Through right-of-way control—whether of town roads, city streets, or county highways—local governments can strengthen multimodal transportation networks, implement Complete Streets designs, and create low- or zero-emissions zones to support mode choice, reduce single occupancy vehicle travel, improve public health outcomes, and lower transportation costs for community members. In addition, local governments can support climate-friendly transportation choices by managing and pricing parking, managing stoplight operations, providing electric vehicle charging, and establishing vehicle weight limits on certain streets to reduce wear and tear, encourage more efficient vehicles, and increase pedestrian safety.

Right-of-way control also gives local governments authority or influence over utility infrastructure and stormwater systems. For example, local governments can collaborate with or support district energy or thermal energy networks, which can efficiently provide heating and cooling solutions.

Second, local governments can advance climate action through non-regulatory levers and lead by example.

Financial incentives for projects, such as rebate programs for energy upgrades or tax incentives for sustainable development, can spur resident and business climate action and can provide additional benefits for recipients. For example, weatherization and energy conservation incentives make housing stock more resilient to extreme weather, improve indoor air quality, and save money. The same projects on public facilities can reduce operating costs for city hall, a fire department, or for affordable housing.

Local governments can also spur climate friendly investments with non-monetary programs. These include targeted density or building height bonuses, expedited permitting programs for sustainable projects, and recognition programs that visibly celebrate private sector "Green Businesses" or "Climate Champions."

Public engagement and educational programs are another important form of non-monetary local climate action. For example, local governments build local knowledge through free or low-cost workshops and trainings on energy efficiency, sustainable landscaping, waste management, or transportation options. And public campaigns—such a biking campaign or promotion of composting and recycling—can promote behavior change.

Finally, local governments can show the benefits of climate action by example. Local governments can invest in public building energy improvements and electric car or bicycle fleets, embrace sustainable purchasing practices, implement recycling and organics recovery or sustainable landscaping programs, and showcase pervious surfaces. These actions influence private sector decision-making, particularly when these public decisions or investments are paired with awareness campaigns or are part of demonstration or pilot projects that showcase innovative technologies.

How can the state support local climate action?

While local governments can lead in areas like land use regulation and right-of-way control, many more opportunities exist through state support of local action, whether financial, legislative, or through partnerships and education. State support is particularly important when the federal government deprioritizes climate investments. Direct feedback from local government participants in the Climate Action Framework process recommended three distinct areas of action, summarized below.

First, the state can support local government climate priorities with funding, policy supports, data, and capacity.

When the state provides funding for local government climate action, the state can ensure that that resources reach those most in need. It is particularly important for the state to prioritize climate funding for those most likely to experience climate-induced hardships, whether because they are a historically disadvantaged community, are in a geography susceptible to climate-specific vulnerabilities, or are an energy transition community.

Funding support is most valuable to local governments when it aligns with existing local climate priorities—like recent stormwater, wastewater, and community resilience grants (see callout box). However, if funding is intermittent or unpredictable, local communities may not be able to engage in sustained climate work. Further, when funding requires a local match, it can create insurmountable hurdles for local communities.

State climate grants have helped communities across the state prepare for and act on climate change. Since 2022, the state has awarded 163 Climate Resiliency grants, and the Local Climate Action Grant program awarded another 78 grants. Taken together, these 241 grants are helping communities across the state prepare for and act on climate change. During the 2023 legislative session, Minnesota invested over $100 million in Climate Resiliency, Water Infrastructure, and Local Climate Action Grants. Learn more about these grants and see a map of projects at the Minnesota Pollution Control Agency's Climate Grants site.

Beyond direct state funding support, the state can help fund local climate work by granting local governments climate-focused and/or equitable revenue-raising authority through local income taxes, carbon taxes, or congestion pricing.

Beyond funding, the state can facilitate local climate action by providing policy supports and removing state preemption for key climate activities. For example, if the state created an option to allow local governments to opt into an established stretch building code, it would better position local governments to secure a sufficient, sustainable, and healthy housing stock.

Finally, the state can provide climate education and capacity supports, particularly for smaller local government units that may not have specialized staffing. This may take the form of trainings, workshops, or sharing local climate success stories. The state can also develop and provide resources and tools—like local greenhouse gas emissions data, climate projection data, model ordinances, or policy examples—to reduce barriers to local climate program planning and implementation.

Second, the state can employ incentives to facilitate coordinated local climate action.

All Minnesotans benefit when communities participate in climate work, and it is important that state dollars support Climate Action Framework goals. To help guide state investments, the state can establish parameters to ensure work will help, not harm, Minnesota's climate goals before providing infrastructure, program, or project funding.

Similarly, the state can explore ways to incentivize local government funding for climate planning and action, beyond competitive grant processes. For example, the state could release certain funds upon the creation of a local climate action plan, or could create policies, funding, and reporting parameters to ensure that local transportation investments align with the Minnesota Department of Transportation's efforts to reduce greenhouse gases and vehicle miles traveled.

Third, state and local government leaders and staff can work together to align state and local climate targets and strategies.

State and local entities can partner on strategies to demonstrate and communicate the benefits of climate leadership. When state and local efforts are combined, those efforts become mutually reenforcing and increase impact.

Coordinated communications can help community members understand how climate action provides tangible benefits day to day, whether through improved health, long-term public cost savings, reduced household expenses, or other outcomes.

Coordinated and complementary infrastructure and program investments can also maximize community impacts. In transportation planning and operations, for example, local street designs, state highway planning, Safe Routes to School initiatives, and regional transit planning—including bus rapid transit investments—can dovetail to increase safety and health outcomes, reduce household transportation costs, reduce vehicle miles traveled, and bolster multi-modal transportation options, particularly for vulnerable or under-resourced populations.

Additional opportunities for alignment exist in the pursuit of a reliable, safe, and clean energy grid; promotion of climate-friendly procurement practices; expansion of Minnesota's electric vehicle charging network; development of policies and practices to protect against climate and ecological risks; and establishment of green workforce and economic development initiatives.

Moving forward

Communities across the state of Minnesota are stepping up and offering innovative, place-based solutions that are essential to our statewide progress. These local actions are even more critical during times the federal government shifts its focus away from climate. Strong support for local efforts is an important component of how the state will achieve the Climate Action Framework goals.