



**SITE-SPECIFIC MANAGEMENT SHEET
TIER-3 RESOURCE MANAGEMENT PROPERTY**

Property Name: Maiden Rock Bluff

Property Designation or Type: State Natural Area

SNA Designation Number: 410

Property Location: Pepin County

Real Estate:

Project boundary acreage: 358

Fee acres owned: 263

Dedicated acres: 248 (File #D181E (2004))

DNR Easement acres: 0

Partner easement acres: 0

Federal aid interest: DNR file #NA 20061. This parcel was used as match for NAWCA grant # WI-N131 - Phase II - Lower Chippewa River Wetland Protection Partnership. Federal covenants state that the property be held for conservation purposes.

Land use agreements: None

Maps

- A. Project Boundary
 - B. Existing Cover Types
 - C. Existing Roads and Infrastructure
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Property Manager: **Dean Edlin, West Central Ecologist**

407 South 2nd Street

Alma, WI 54610

608-685-3252

Prepared By (District Ecologist):

Name: Dean Edlin

Title: Conservation Biologist

Date: 4/27/2016

Reviewed/Approved By: (Bureau)

Name: Erin Crain-Sullivan

Title: Deputy Division Administrator

Date: 4/27/2016

Approved by Natural Resources Board: Date: May 25, 2016

A. Regional and Property Assessment

- 1. General Property Description (topography, soils, vegetation, water resources):** Maiden Rock Bluff protects one of Wisconsin's most notable limestone cliff faces on a 400-foot high bluff above the Mississippi River overlooking Lake Pepin. Representative cliff species include red cedar aged at 250 years of age, harebell, slender lip fern, smooth cliff brake, slender cliff brake, white-flowered leaf-cup, and plains muhly grass. The open cliff and adjacent narrow band of dry prairie provide habitat for several rare plant species including cliff goldenrod, dragon, and prairie sagebrush. Many dry prairie species are also present including little bluestem, wild bergamot, columbine, leadplant, mountain mint, alumroot, pasque flower and silky aster. Larger blocks of restorable oak savanna are found on the deep soils of the lower slopes and support such species as arrow-leaved aster, zigzag goldenrod, bare-stemmed tick-trefoil, round-leaved shinleaf, sweet cicely, and wild yam. The rocky bluff provides hunting perches and habitat for a variety of raptors including gyrfalcon, golden eagle, bald eagle, and turkey vulture. The rapid warming of the steep, south-facing slope forms convective thermals that are well known and used by migrating diurnal raptors. Situated along the Mississippi River flyway, an important migration corridor for raptors and neotropical songbirds, protection of Maiden Rock Bluff also provides important habitat for other migrating birds.

The soils are either part of the Pepin-Dorerton-Churchtown association or the Ella-Orion-Plumcreek association. The former association is the steep to very steep stony areas which are for the most part wooded land. The latter association is the more open and level grassland on the top of the ridge.

The Pepin-Dorerton-Churchtown areas are generally characterized with deep to very deep well drained loess over clay or loam. The surface layer of soil is either silt loam or loam with generally good moisture retention and natural fertility. Rock outcrops are frequent in this association.

The Ella-Orion-Plumcreek association areas are generally very deep with varying degree of drainage ranging from well drained to somewhat poorly drained depending on the position in the topography and the subsurface structure. The dominant material is silty alluvium and the texture of the surface layer is silt loam. The soil type throughout the level open grassland is Seaton silt loam.

- 2. Ecological Landscape:** [Western Coulee and Ridges EL](#) is characterized

by its highly eroded, unglaciated topography with steep sided valleys and ridges, high gradient headwaters streams, and large rivers with extensive, complex floodplains and terraces. This landscape offers the best opportunities in the state to maintain many of southern Wisconsin's natural communities. Many rare species have been documented here due to the diversity, scale, types, condition and context of the natural communities present.

- 3. Ownership and Adjacent Land Uses:** Remnant dry prairie and dry cliff, agriculture, residential, highway, railroad tracks, and Lake Pepin.

4. Property Management Issues, Trends and Needs:

Invasives: Bush honeysuckle, common buckthorn, crown vetch, bird's-foot trefoil, sweet clover, and Canada thistle all occur on this property. Crown vetch and common buckthorn pose the greatest threat to the property. An effort is made to control priority invasive species on an annual basis.

Forestry/Silviculture: While timber production is not the goal, opportunities do exist to use commercial timber harvest to help reach ecological goals for the property.

Prescribed Burning: An intensive prescribed fire regime will be needed to help reach ecological goals for the property. **Burn History:** The mesic prairie planting was burned in the spring of 2005 and 2015. No prescribed burning has occurred on the remnant dry prairie since SNA designation in 2004.

5. Facility/Amenity development:

- a. **Existing:** 0.5 miles of native surface maintenance/service road, 1 native surface parking area, and 1 gate
- b. **Future:** No additional development planned.

6. Endangered, Threatened, Special Concern Species or Habitats, and wildlife Species of Greatest Conservation Need:

The NHI database currently lists 1 state endangered bird, 1 special concern snake, 1 special concern invertebrate, and 3 special concern plants as occurring within the general vicinity of the property. Likely habitat is present on this property for most of these species. For detailed data, see Appendix A.

7. Conservation Opportunity Area(s): Mississippi River Bluffs and Floodplain (11.15)

8. **Easements:** None.
9. **Land use Agreements:** None.
10. **Significant Cultural and Archaeological Features:** State Natural Areas may contain historic Native American or Euro-American sites. Activities with potential to disturb archaeological sites will only be undertaken after consultation with the DNR Archaeologist. Any sites with cultural or historical value will be managed in accordance with guidance and statutory requirements (see ss. 44.40 and DNR Manual Code 1810.10). See Appendix B for detailed information.
11. **Refuges and other Closed Areas:** None.
12. **Primary Public Use:** Recreational uses such as hiking, fishing, skiing, hunting, trapping, scientific research, wild edibles collection, and wildlife viewing are allowed. Reference the State Natural Areas [Visitation Guidelines](#) and the [property's specific webpage](#) for more information.
13. **Biotic Inventory Needs:** New and updated records for flora and fauna tracked in the Natural Heritage Inventory are routinely submitted by DNR staff, volunteers, partners, and the general public. Currently no additional plant or vertebrate inventory needs have been identified beyond normal monitoring including the established SNA Site Inspection protocol. There is, however, a lack of knowledge regarding prairie dependent invertebrate diversity and potential impacts to these species through management techniques such as prescribed fire, mowing, and grazing. Research is needed to help determine both the diversity of invertebrates at these remnant sites and especially the impacts of management techniques. The Department acknowledges this and is moving forward with research to address this to help improve management outcomes for these species.

**B. Property Purpose and Goals/
Management Objectives and Prescriptions**

1. **Property Purpose and Goals:**
 - a. **Purpose:** The purpose of the State Natural Areas (SNA) Program is to protect outstanding examples of Wisconsin's native landscape of natural communities, significant geological formations and archeological sites. Natural areas are valuable for research and educational use, the preservation of genetic and biological diversity, and for providing ecological benchmarks for determining

the impact of use on managed lands. They also provide habitat for numerous rare plants and animals.

- b. Goal:** Manage the site as a reserve for dry prairie, dry cliff, and oak opening, and as an ecological reference area.

2. Management Objectives by Natural Community Type:

- a.** Restore approximately 98 acres of oak woodland, 20 acres of oak opening, 8 acres of dry prairie, 4 acres of dry cliff, and 88 acres of mesic (reconstructed) prairie. Allow the development of old forest conditions on approximately 24 acres.
- b.** Maintain a continuum of fire-dependent native communities from dry prairie and oak opening to open oak woodland.
- c.** Expand the size of remnant dry prairie openings to maintain conditions favorable to native prairie vegetation.
- d.** Create overstory conditions that allow enough light to penetrate the canopy and reach the forest floor to stimulate light dependent understory oak opening and oak woodland species that are currently suppressed from inadequate light.
- e.** Allow old forest characteristics, including biologically mature trees, large diameter trees, structural diversity, standing and downed course woody debris, and an uneven canopy to develop on the steep north facing slopes that are currently converting to southern mesic forest.
- f.** Increase plant species diversity in the reconstructed (planted) mesic prairie.
- g.** Develop and maintain natural transitions between different plant communities. Reduce hard edges between different cover types.
- h.** Increase the diversity and abundance of native dry prairie, oak opening, and open oak woodland vegetation and associated animal species with emphasis on rare species.
- i.** Maintain or increase existing populations of Species of Greatest Conservation Need.
- j.** Restore and maintain oak opening and oak woodland to provide long term hard mast food sources and habitat for wildlife and game species such as white-tailed deer and wild turkeys.
- k.** Expand the size of remnant dry prairie openings to provide thermal cover and an important late winter food source for white-tailed deer, wild turkeys, and other wildlife.
- l.** Prevent introduction of new invasive species, and ensure long-term limitation of the spread, reproduction and impact of existing invasive species.
- m.** Restore and maintain open areas around appropriate rock structures as an important habitat component for herptiles.

- n. Retain ground juniper as an important habitat component for herptiles.
- o. Retain snags as important habitat features, unless they conflict with other objectives (such as hazard trees near roads, or prescribed fire hazards).
- p. Maintain red cedar in appropriate locations (cliffs) where protected from historical fires.
- q. Protect Dry Cliffs and associated rare species from human disturbance, and specifically rock climbing.

3. Management Prescriptions by Natural Community Type:

- a. The ecological characteristics of the dry prairie, oak opening, and oak woodland will be primarily shaped by an intensive fire management program.
- b. In the oak openings and oak woodlands the native dominant tree species (primarily oaks) are managed passively. However, some thinning of the canopy, understory manipulation, and shrub control may be needed to mimic natural disturbance patterns.
- c. In the dry prairies, the native species are managed actively through tree/shrub control using cutting, brushing, prescribed grazing, and especially fire to mimic natural disturbance patterns. Occasional fire-tolerant oaks, hickories, and native shrubs such as hazelnut may be retained at low densities.
- d. Allow natural processes and passive canopy management to determine the structure of the steep north-facing slopes (southern mesic forest). Retain snags and coarse woody debris to promote old-growth characteristics.
- e. In the savannas, timber harvests will focus on removal of central and northern hardwood species and walnut (primarily non-oak and hickory species), some thinning of suppressed oak where dense patches occur (leaving largest diameter/crowned individuals), or where small crowned individuals are shading open grown, larger crowned trees.
- f. Monitor effects of grazing on community structure and composition, and rare species.
- g. Contain or eradicate invasive species through the use of department approved manual, chemical, biological, and mechanical practices, as well as prescribed fire.
- h. Leave appropriate unburned refugia for remnant prairie dependent invertebrates within prescribed burn units.
- i. Follow Incidental Take Protocols for listed species.

- j. Consider impacts to both reptiles and prairie invertebrates regarding both timing and ignition techniques of prescribed burns.
- k. Increase access to the site for management purposes through access easements or land purchases.
- l. Work with law enforcement to enforce rock climbing prohibition.
- m. Continue outreach to secure volunteer site stewards to help reach management objectives and strengthen the joint public/private partnership.
- n. For additional guidance, see the Xeric Prairie, and Oak Savanna, State Natural Areas Management Guides (WDNR, 2010).

4. Special Management Issues and/or constraints

- a. Access to suppress wildfires is allowed.
- b. Salvage of trees after a major wind event can occur if the volume of woody material inhibits fire prescriptions.
- c. Roadside easement area may be managed sporadically by township.
- d. Cliff access is prohibited due to the extremely friable nature of the rocks; they pose a significant safety hazard and are ecologically fragile.
- e. Augmentation of the ground layer after careful review and documentation would only add species that historically would have been found on the site, using seeds or plugs from local genetic material. On remnant sites follow the steps below based on seed availability:
 1. Collect seed on-site, distribute to depauperate areas.
 2. Collect seed from sites within 50 miles east/west and within 25 miles north/south.
 3. Purchase seed from local nurseries who can identify source location that meets above criteria. Consult with NHC Botanist to ensure appropriateness of any nursery introductions.
- f. On reconstruction sites follow the progression of steps below based on seed availability:
 1. Collect seed on-site, distribute to depauperate areas.
 2. Collect seed from sites within 50 miles east/west and within 25 miles north/south.
 3. Purchase seed from local nurseries that can identify source location.

Table 1: Current Facilities or Infrastructure

Type of Facility	Total (number/length)	Management Activities	Management Issues and Constraints
Roads – public	None		
Roads – maintenance/service	0.5 mi. (native surface)	None	None
Parking lots	1 (native surface)	None	None
Boat landings	None		
Designated trails	None		
Dikes, ditches	None		
Other	Gates -1	None	None
Other	Barn – 1	A current project is in place to remove the barn in 2016	