



CONSCIOUS CONSERVATION, LLC
RESTORATIVE LANDSCAPING SERVICES



SHELBY BUTTERFLY TRAILS

Land Management Plan

(Trails, Signage, Emergency, and Habitat Management)

2026 Update



SHELBY BUTTERFLY TRAILS

Land Management Plan

Prepared for:

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RESTORATIVE LANDSCAPING SERVICES

This plan was funded in part by La Crosse County's Bluffland Protection Fund in partnership with The Bluffland Coalition:

The Bluffland Coalition is an umbrella group of local governmental and nonprofit organizations dedicated to the preservation of the La Crosse area bluffs. Each member of the Coalition has a vote on the Coalition's Steering Committee. Current Bluffland Coalition members include:

- La Crosse County
- City of La Crescent
- City of La Crosse
- City of Onalaska
- Village of Holmen
- Town of Holland
- Town of Medary
- Town of Shelby
- La Crosse Area Planning Committee
- Explore La Crosse
- Friends of the Bluffs
- Mississippi Valley Conservancy
- Outdoor Recreation Alliance

"The Bluffland Coalition will establish an exceptional network of contiguous protected lands and recreation trails throughout the La Crosse-La Crescent region. Our cooperative efforts will enhance the health of residents, visitors, natural ecosystems, and our local economy."



TABLE OF CONTENTS

General Information.....	6
Project Background.....	7
Plan Goals.....	8
Natural History.....	9
I. Regional Background & Geology	
II. General Property History	
III. Town of Shelby Management History	
Property Features.....	12
I. Aerial Map	
II. Topographic Map	
III. NRCS Soils Map & Overview	
IV. Property Features Map	
V. Description of Key Property Features	
Habitat Descriptions & Management Recommendations.....	26
I. Habitat Type Map & Subunit Overview	
II. Habitat Descriptions	
A. Key Issues	
B. General Management Recommendations	
III. Invasive Species	
A. Property Overview & Maps – Invasive Species	
B. Invasive Species Removal Recommendations	
IV. Description of Habitat Management Techniques	
V. General Habitat Management Schedule by Season	
Trail Improvement Plan & Management Recommendations.....	45
I. Property Trails Overview	
II. Trail Improvement Plan Map & Overview	
III. Description of Recommended Action Items	
IV. Recommended Trail Map	
V. Trail Care & Ongoing Maintenance	

(continued on next page)

TABLE OF CONTENTS (cont.)

Signage Plan.....	64
I. Trail Signage Overview & Recommendations	
II. Signage Placement Map	
III. Overview of Recommended Signage for Trail Intersections	
Emergency Response Plan.....	81
Property Management Recommendations.....	88
I. Section Overview	
II. Management Unit Map	
III. Management Unit Descriptions & Goals	
IV. Plan Implementation Schedule	
Monitoring & Evaluation Guidelines.....	101
Funding & Partnership Opportunities.....	103
Appendix A: Historic Imagery Maps.....	106
Appendix B: Definition of Terms.....	111
Appendix C: References & Contributors.....	112



GENERAL INFORMATION

LANDOWNER

Landowner Name: Town of Shelby

Website: <https://townofshelbywi.gov/>

Mailing Address: 2800 Ward Avenue, La Crosse, Wisconsin 54601

Fax: 608.788.6840

Primary Contact for Property:

Christina Peterson
Town of Shelby Administrator
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Secondary Contact for Property:

Renee Knutson
Town of Shelby Board Supervisor
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PROPERTY

Property Name: Shelby Butterfly Trails

Property Size: 69.47 acres

Location: South Cul de Sac, Old Vineyard Rd, La Crosse, WI 54601

Approved Public Uses: Hiking, Dog Walking, Wildlife Viewing, Foraging, Snowshoeing

Directions & Property Access: The Shelby Butterfly Trails property has three main accesses:

- 1) **Main Access & Parking:** From the intersection of Farnam St and Old Vineyard Rd in La Crosse, travel uphill on Old Vineyard Rd until the road ends at the property trailhead.
 - a) *Main Access & Parking Coordinates:* 43.799003, -91.204793
- 2) **Lower Trailhead:** From the intersection of Farnam St and Old Vineyard Rd in La Crosse, continue uphill on Old Vineyard Rd traveling east until the road makes a turn to the northwest. The lower trailhead is located at this bend in the road.
 - a) *Lower Trailhead Coordinates:* 43.798269, -91.205503
- 3) **Utility & Off-Trail Access:** From the intersection of Woodland Dr and Joy Ln in La Crosse, travel northwest on Woodland Dr and follow the orientation of the road into the woods and onto the Shelby Butterfly Trails property.
 - a) *Utility Access Coordinates:* 43.795280, -91.202408

Location Description: The Shelby Butterfly Trails property is located in Sections 3 and 10 of Township 15N, Range 7W in La Crosse County, WI. The property starts on Hedgehog Bluff and wraps around toward Cliffwood Bluff, overlooking South La Crosse. It is located just north of Highway 33 in the Town of Shelby and is bordered mostly by forest. Developed residential areas are located less than 1 mile to the west and south. Lower-density housing and farmland is located to the north and east of the property, interspersed among mostly forested land.

PROJECT BACKGROUND

About the Landowner: The Town of Shelby is an unincorporated municipality located in the southwest corner of La Crosse County, just south and east of the City of La Crosse along the banks of the Mississippi River. There are sloughs and marshes along its western boundary and a range of bluffs, which cross the town from north to south and provide some of the most scenic views in the area. Wildlife abounds and recreational opportunities range from camping and canoeing at Goose Island Park to skiing at Mount La Crosse.

An elected 5-person Town Board governs this town of 4,777 residents with the assistance of a Town Administrator and an appointed Clerk and Treasurer. The Town's unique landscape and proximity to an urban center make it a prime location for residential development. Planned growth is directed by the Town's future land use plan, which was developed in conjunction with a countywide plan. The Shelby Town Plan outlines the following vision: "We foresee our Town to be both urban and rural in character, providing a pleasant living environment for our residents. We want sound programs in place to maintain the rural agricultural character and to direct new development to those areas that are already urban in character and conform to a Town plan."

Management of the Town's green spaces is led by the Parks and Vacant Land Committee, which consists of seven volunteers appointed by the Town Board. The Committee meets monthly to oversee and make recommendations for the Town's 16 parks and green spaces, totaling 77 acres. The Town of Shelby Public Works Department is responsible for maintaining these parks and green spaces and implementing the Town's land management initiatives.

The Town of Shelby is an active member of The Bluffland Coalition, an umbrella group consisting of 13 local government and nonprofit organizations that are committed to a shared vision for protection of the La Crosse Area blufflands under a Memorandum of Understanding. The Bluffland Coalition and plan were formally enacted in 2017 by the La Crosse County Board. Bluffland Coalition initiatives are supported by the La Crosse County Bluffland Protection Fund.

Purpose of this Plan: The Town of Shelby received a 2025 Blufflands Grant from the La Crosse County Bluffland Protection Fund to support the preparation of a Land Management Plan for the 69-acre Shelby Butterfly Trails. The Town initiated this project based on their desire for more guidance on how to respond to and prioritize frequent maintenance and upgrade needs for the property and its popular trails. The Town began acquiring the property in 1970 to protect it from development, but in recent years they have faced increased theft of trail signage and other vandalism, continued encroachment of invasive species, lack of information about rogue trails and their locations, and difficulty directing emergency responders to injury and fire reports that are made from the property. This Plan will help the Town address these issues and provides a long-term vision for care of the land while balancing the needs of all property stakeholders.

About the Plan Preparer: Conscious Conservation LLC provides restorative landscaping and environmental consultation services in the La Crosse area, offering eight years of professional experience in native habitat restoration, land stewardship, and invasive species removal.

PLAN GOALS

The main goals of this Land Management Plan are to provide recommendations for rehabilitating, improving, and maintaining the property's trail system, to propose an Emergency Response Plan for the recommended trail system, and to outline best practices for maintaining and restoring the native ecological communities that exist on the Shelby Butterfly Trails property. This Plan fulfills the Town's La Crosse County Blufflands Grant and provides a long-term sustainable vision for the Shelby Butterfly Trails which accounts for the needs and experiences of all stakeholders, including the Town of Shelby, property user groups (hikers, dog walkers, wildlife viewers, foragers, etc.), neighboring landowners, and the general public.

The habitat management recommendations outlined in this Plan are consistent with restoring portions of the property to their native conditions and vegetation where viable remnants exist, preserving and restoring topsoil, sustainably managing timber, improving ecosystem health, and improving species biodiversity. These initiatives benefit the public good by 1) protecting and improving drinking water resources, 2) increasing ecosystem resilience to help shield the community and meet its needs during extreme weather conditions such as heat waves, drought, flooding, and high winds, and 3) providing a beautiful, healthy natural space for outdoor recreation and public wellness. Additional habitat management goals include inventorying species biodiversity on the property and monitoring the success of land management initiatives. Changes in the natural communities and habitats on the property should also be recorded.

Due to the complex and dynamic nature of ecosystems, land management initiatives must be somewhat adaptable with a long-term vision. Therefore, this plan will limit its recommended management actions to the next five years. To ensure that active management is consistent with the current needs of the property and its users, this plan should be reviewed and updated every five years by the landowner with assistance from an experienced consultant as necessary.

The primary goals of this Land Management Plan are:

- 1) Identify the trails, property features, and habitats that exist on the property.**
- 2) Develop a Habitat Management Plan, including invasive species removal recommendations and best management practices for ecosystem restoration.**
- 3) Assess the trails on the property and provide improvement recommendations.**
- 4) Create a user-friendly trail map appropriate for publishing in a variety of formats.**
- 5) Develop a Signage Plan so the recommended trail system can be navigated easily.**
 - a) Include an Emergency Response Plan and property boundary signage needs.
- 6) Complete an implementation timeline for the various actions outlined in the Plan.**
- 7) Identify funding and partnership opportunities for implementation of the Plan.**

NATURAL HISTORY

I. Regional Background & Geology: The Shelby Butterfly Trails property is located in the Driftless Area, a unique geological region that covers southwestern Wisconsin and parts of Illinois, Minnesota, and Iowa. It is called the Driftless Area because it was missed by the glaciers that flowed down from Canada during the Ice Age. “Drift” refers to the sediment and soil left behind by glaciers. Since glaciers did not pass over this region, it lacks these deposits and is thus ‘driftless’. The topography in the Driftless Area is shaped by exposed limestone, dolomite, and sandstone dating back over 400 million years. Erosion has also significantly impacted this region due to its combination of the above minerals and the many rivers and streams located there. Limestone bedrock in particular dissolved over time to form the notable karst features of this area including limestone caves, sinkholes, and springs. This slow erosion helped to form the many recognizable features of the modern day Driftless Area including the steep bluffs and ridges, river valleys, and narrow coulees. This unique topography supports the highest levels of biodiversity in Wisconsin, creating a patchwork of habitats that meet a wide variety of needs. These features also made it possible for cities to develop along the rivers and streams, where the mighty Mississippi River served as a hub for industries like lumber and agriculture in the early 1800s. Today, this area is a popular tourist destination due to its pristine trout streams, top-tier hunting opportunities, rich natural and cultural history, and stunning scenery.

II. General Property History: The earliest available records describing the historic vegetation of the Shelby Butterfly Trails area are from the first public land survey of Wisconsin. The survey for Township 15N, Range 7W was conducted in November 1846 by Alfred L. Brown. In Brown’s General Description for this survey area, he describes an “upland which consists of high hills nearly bare of timber [and] terminating towards the Mississippi abruptly in sandstone cliffs – some of them 200-feet high; with many [fine] springs in the ravines, which sink in the sandy bottom west of them.” He also outlines a “prairie... which is lowest near the bluff [and] gradually rises with an undulating surface till it reaches a slough which bounds it on the [southwest] where it is elevated 40 feet above the [first] bottom. The timbered or [first] bottom... is subject to inundation to the depth of about four feet [and] is cut up by many small sloughs [and] bayous.”

Brown’s survey for the east random between Sections 3 and 10, which bisects the land now known as the Shelby Butterfly Trails from east to west, further describes the character of the land during that time. In his survey notes for this section, he observes only two tree species, black and white oak, and describes a sparse distribution of trees across the landscape. Based on Brown’s description of the land in 1846, it can be concluded that when Wisconsin became a state in 1848, the property was largely unforested and consisted of bluffs covered mostly in prairie and savanna with scattered black and white oak trees and a 200-ft cliff on the west side.

The earliest aerial imagery of the property is from September 1938, captured by the United States Department of Agriculture (USDA). This image shows extensive farmland on the blufftop in the northeast quadrant of the property. A road extends from the southwestern corner of the farmfield and ends at what appears to be a quarry, located at the base of the north-facing cliff below the highest point on Hedgehog Bluff. The northwest property corner also appears to be a sparsely vegetated active quarry at this time. Along the western edge of the property, there is

another area of human impact which appears to be crop or pasture land. All the hillsides and cliffs with some form of a southern aspect appear sparse with trees and are consistent with oak savanna habitat. It is possible that these areas were grazed by cattle during this time. The remainder of the property consists of steep bluffsides and is densely forested and undeveloped. The surrounding land almost entirely consists of forest, pasture, oak savanna, and croplands.

By 1954, updated USDA imagery shows more roads were constructed to the southeast and west of the property. The property appears mostly unchanged from 1938 except that the open areas, including the croplands, are visibly smaller due to encroachment of the forest. In a 1967 USDA image, notable housing development is seen to the east and south of the property with more scattered development to the west. Within the property boundaries, the same pattern of forest encroachment continues into the open savannas and farm field. By 1967, the two visible quarries were inactive and vegetated. The rest of the property otherwise appears unchanged.

Between 1967 and 1992, housing development had increased significantly to the east, south, and southwest and slightly to the west of the property. By 1992, as shown in imagery captured by the U.S. Geological Survey, most of the open areas of the property had filled in completely with forest or had been reduced to small prairie remnants. The old farm field was the only obvious forest opening present at this time, by then less than half of its 1938 size. After 1992, housing development slowed to the east and stalled to the south and west. By 2010, the prairie and savanna remnants were almost too small to observe on the USDA aerial imagery and the crop field on the northeast property corner had reduced by an additional twenty percent. The property has stayed mostly consistent on aerial imagery since 2010.

Aerial maps of the Shelby Butterfly Trails property boundary and trails overlaid on the above referenced historic imagery from 1938, 1954, 1967, 1992, and 2010 are provided in [Appendix A](#).

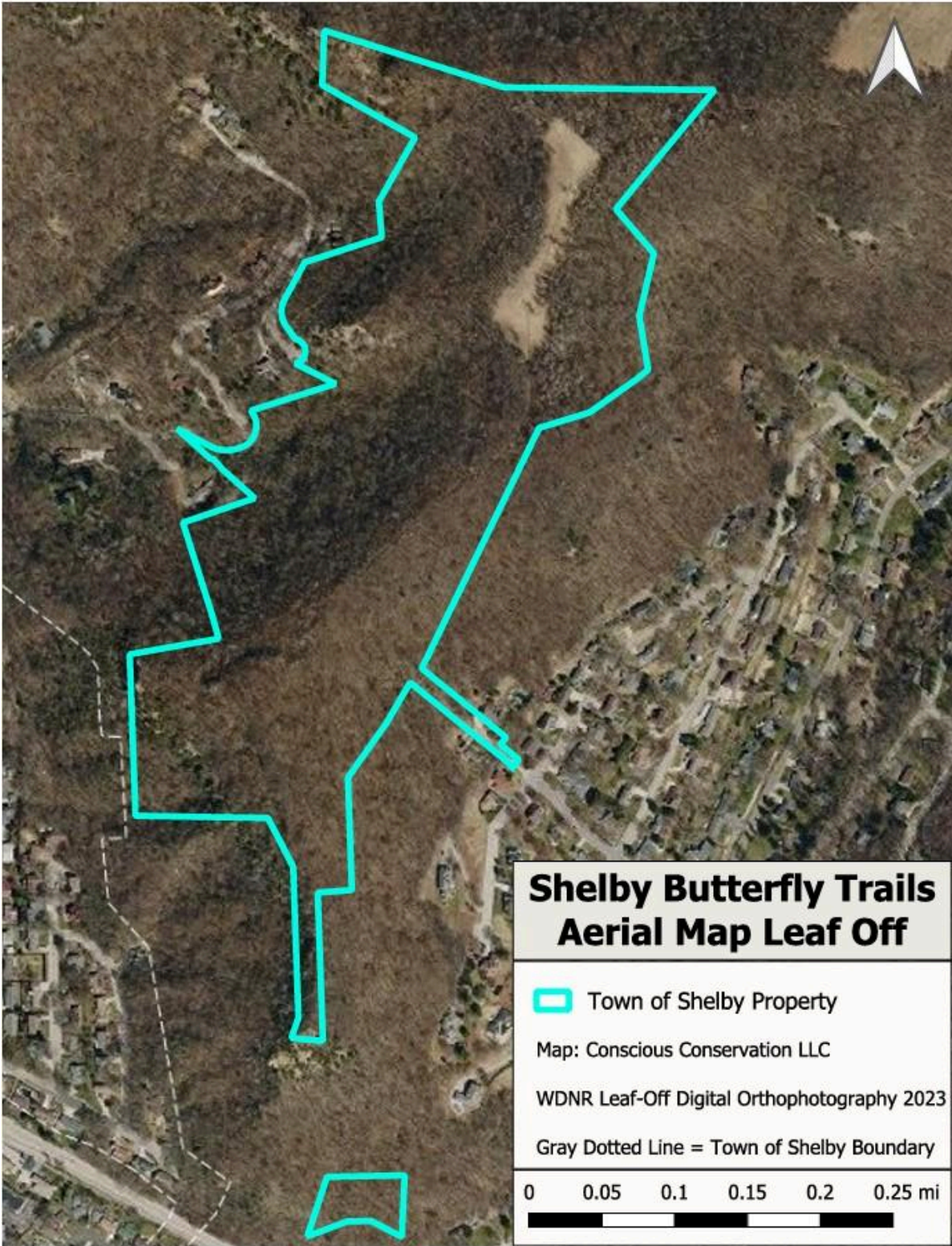
III. Town of Shelby Management History:

Year	Management Activity Description
1970	First parcel acquisition. Parcel #11-363-1, totalling 0.95 acres. Quit Claim Deed #803678 outlines that the land must be left in a natural state and used only for nature trails and hiking. No motorcycles, trail bikes, or power-driven vehicles allowed, and no structure may be constructed on the parcel as restricted by the Deed.
1976	Parcel #11-566-0 is acquired, totalling 10.21 acres, with no land use restrictions.
2003	Parcel #11-568-1 is acquired, totalling 0.67 acres, with no land use restrictions.
2004	Parcels #11-377-0 and 11-569-0 are acquired, totalling 20.91 and 8.07 acres respectively. The Deed stipulates that the land may never be transferred or sold, and no residential or commercial development is allowed. This applies to both parcels.
2009	Parcels #11-586-4, 11-586-6, and 11-587-0 are acquired, totalling 1.64, 1.13, and 1.29 acres respectively, with no land use restrictions. Parcel 11-587-0 is noncontiguous with the rest of the Butterfly Trails property and is located to the south. In 2025, it was observed that this parcel sees little to no public use in connection with the property trail system. Therefore, this parcel was not included in the general property acreage.

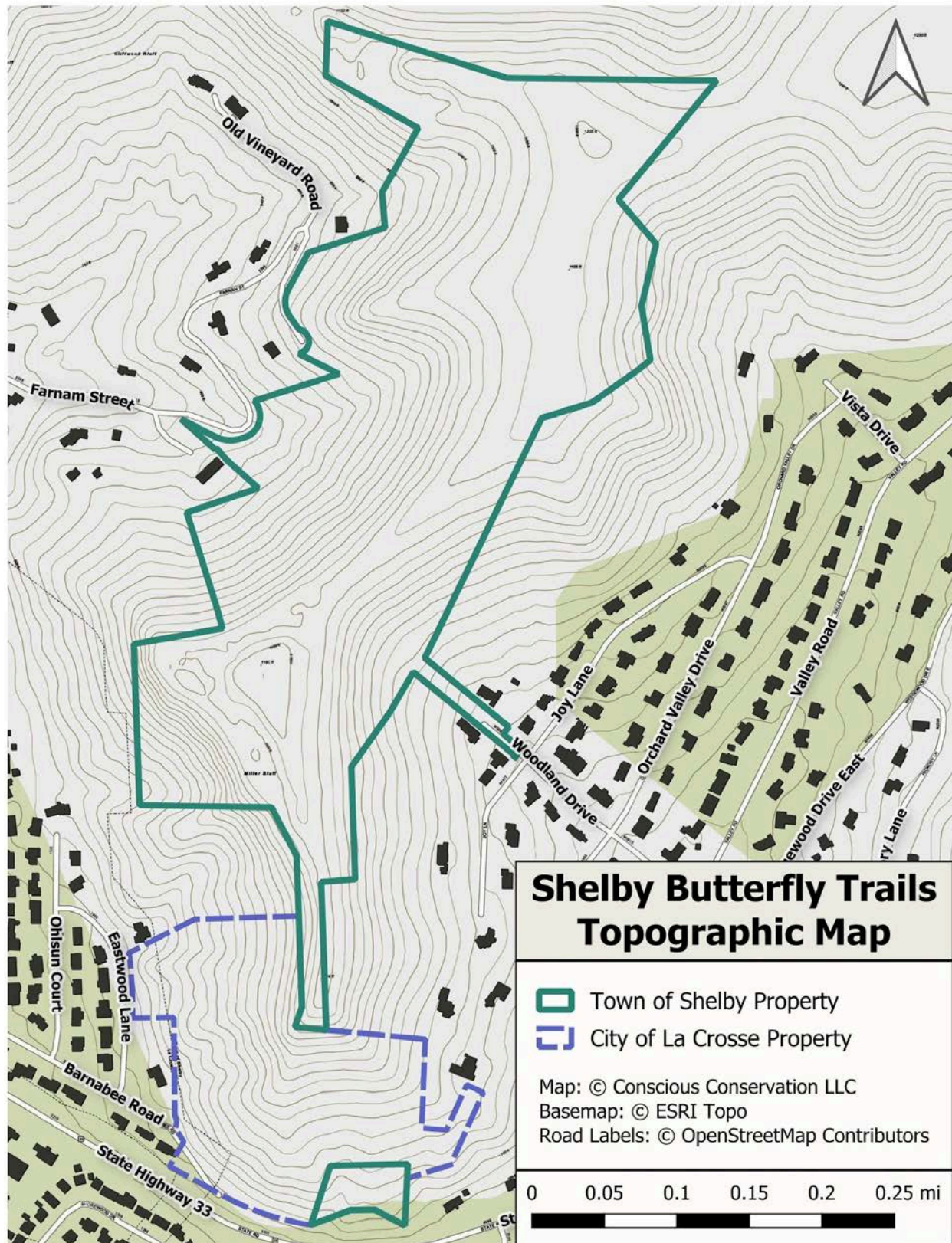
Year	Management Activity Description
2014	Parcel #11-363-0 is acquired, totaling 4.02 acres. This acquisition allowed for trail access from further downhill on Old Vineyard Rd.
2019	Parcel #11-575-0 is acquired, totalling 10.48 acres. This parcel was purchased to protect the top of Hedgehog Bluff, a culturally and ecologically significant area.
2020	Parcel #11-363-2 is acquired, totalling 8.31 acres. This parcel was purchased to provide better access to the blufftop parcels.
2020	Town sponsors an Eagle Scout project to develop the Butterfly Field Pollinator Prairie.
2022	Parcels #11-375-0 and 11-358-0 are acquired, totalling 1.58 and 1.5 acres respectively. This purchase was funded with \$5,000 from La Crosse County's Bluffland Protection Fund. It created a link between the Shelby-owned property and the Baier property, which has a Mississippi Valley Conservancy easement.
2023	Two concrete benches were donated by Alan Schilling and family for the trails system. They were installed by volunteers from the Outdoor Recreation Alliance (ORA) on September 1, 2023 at the West and South property overlooks.
2025	The Town hired Conscious Conservation LLC to complete a Land Management Plan to include Habitat Management, Trails, Signage, and Emergency Plans for the Shelby Butterfly Trails property.

PROPERTY FEATURES

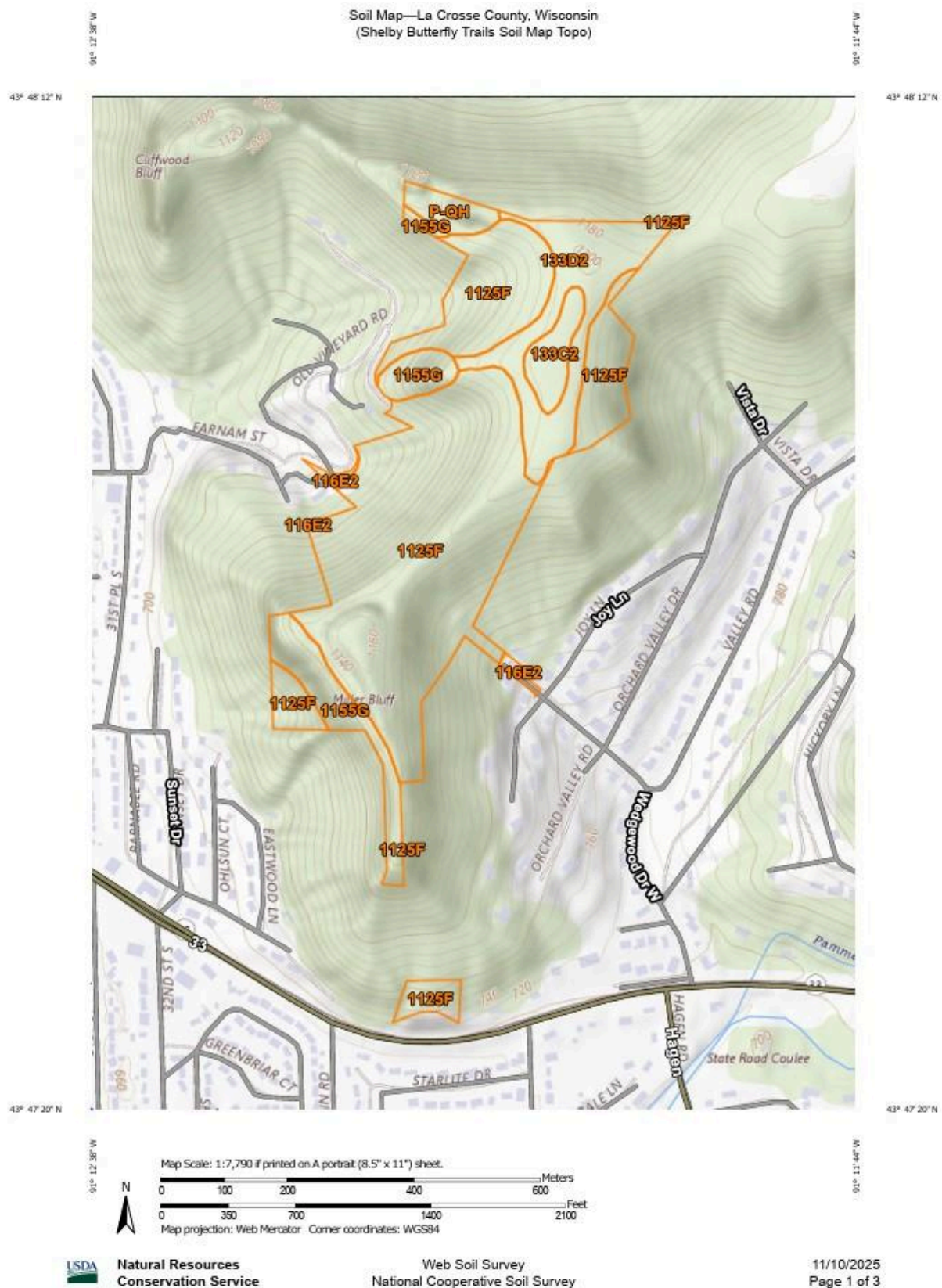
I. Aerial Map



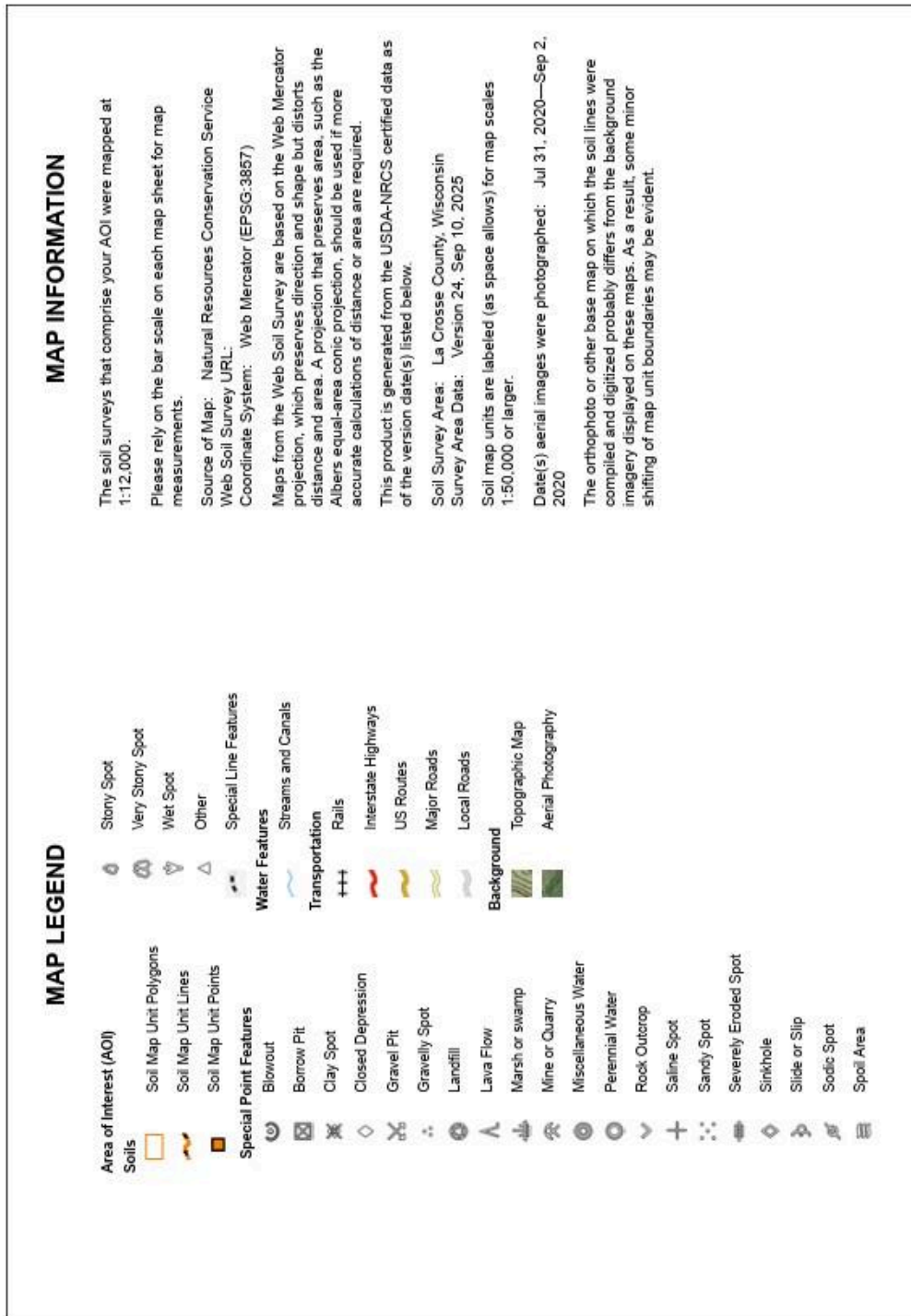
II. Topographic Map



III. NRCS Soils Map & Overview (Full resolution versions are provided supplementarily)



Soil Map—La Crosse County, Wisconsin
(Shelby Butterfly Trails Soil Map Topo)



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
116E2	Churchtown silt loam, 20 to 30 percent slopes, moderately eroded	0.6	0.9%
133C2	Valton silt loam, 6 to 12 percent slopes, moderately eroded	2.3	3.4%
133D2	Valton silt loam, 12 to 20 percent slopes, moderately eroded	9.4	13.7%
1125F	Dorerton, very stony-Elbaville complex, 30 to 60 percent slopes	47.8	69.8%
1155G	Brodale-Bellechester-Rock outcrop complex, 60 to 90 percent slopes	6.6	9.7%
P-QH	Pits, quarry, hard bedrock	1.8	2.6%
Totals for Area of Interest		68.5	100.0%



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

11/10/2025
Page 3 of 3

Soils Overview (A full NRCS description of property soil types is provided supplementarily)

Soil Code	Description
116E2	This type is found on steep slope sides. It is well-drained and consistent in silt loam structure from the surface down to 80 inches. It absorbs, or transmits, water at a moderately high rate, meaning it is unlikely to flood, pond or run off.
133C2	This type is found on ridgetops on gentle slopes. The first 30 inches are silt loam, from 30 to 48 inches it is silty clay, and from 48 to 80 inches it is pure clay. It is well-drained with a highly variable ability to transmit water. It is located on hilltops so is unlikely to flood or pond, but it is highly susceptible to runoff because it does not absorb water well.
133D2	Found near ridgetops on the moderately sloped shoulder and unlikely to pond. The first 30 inches are silt loam, followed by 8 inches of silty clay. From 38 to 80 inches, it is pure clay. Well-drained with a variable ability to transmit water. Highly susceptible to runoff.
1125F	This type is found on very steep side slopes. From 0 to 18 inches underground, it is made of loam. From 18 to 30 inches, it is made of clay loam with flagstones. From 30 to 79 inches, it is made of loamy sand with flagstones. It is well-drained with high water transmission, but has a high capacity for runoff due to its steepness.
1155G	This type is found on cliffsides, with slopes of 60-90%. The first 7 inches are fine sandy loam with flagstones, and from 7-80 inches it is loam with flagstones. It is excessively drained with a high susceptibility for runoff due to its steepness.
P-QH	Quarry or hard bedrock, made principally of sandstone

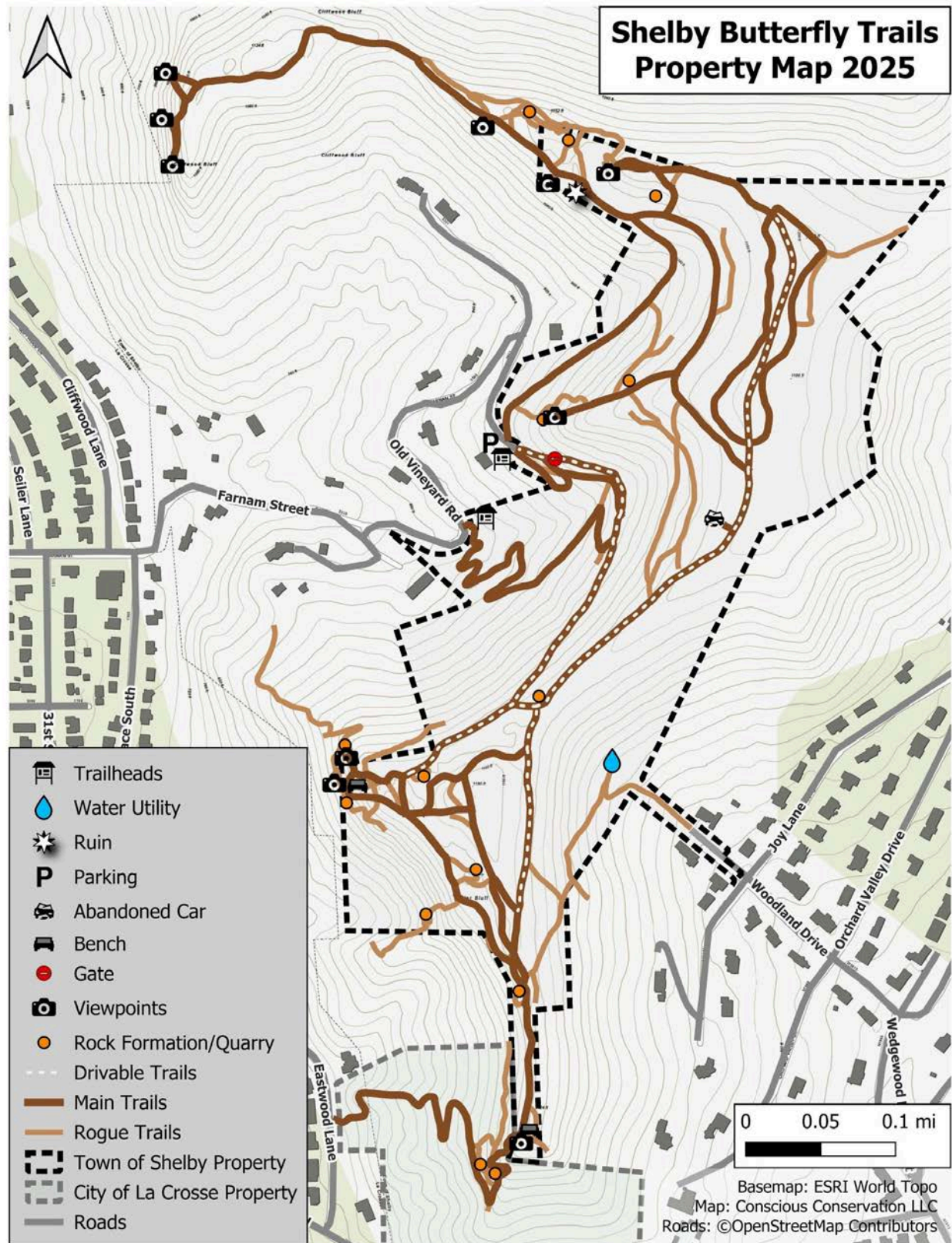
Soil Conservation on the Property: Since taking ownership of the property, the Town of Shelby has made several management choices benefitting the soil. Protecting the land from development, keeping the inactive and recovering quarries closed, and managing the area as a nature preserve has had the most significant positive impact in preventing topsoil loss and protecting the soil structure. Additionally, the Town made a soil-smart investment by converting the 2.3-acre farm field on the northeast property quadrant into a prairie. This Butterfly Field was planted in 2020 as part of a Town-sponsored Eagle Scout project. The prairie planting has been routinely mowed by Town staff to help the prairie plants establish and to prevent brush from encroaching into the field. Once fully established, the prairie will help regenerate and retain topsoil on the hilltop, some of which may have been lost during its time as cropland.

To deepen their commitment to soil preservation and restoration, it is recommended that the Town of Shelby repair and improve their trail system according to the guidelines in this Plan. Along the existing trail system, there are several problem areas where erosion is occurring. Slowing and redirecting the water along the trail system, rerouting unsustainable trails where necessary, repairing gullied or otherwise damaged areas, and closing any unnecessary social trails will significantly improve the property's erosion issues. Removal of invasive species will also greatly benefit the property soils, as several of these species negatively impact the vital soil structure, chemical balance, nutrient availability, and soil microbiome.



Image shows the Butterfly Field prairie planting in fall 2025

IV. Property Features Map



V. Description of Key Property Features

Parking Lot: At the Main Trail Entrance at the end of Old Vineyard Road, there is a small parking lot with six marked spots. There is just enough space to turn around in the lot. The lot is located below a sizable sandstone outcropping, meaning there is a possibility for falling rocks at this location. It may be prudent to install rockfall netting, mesh, or a row of dense native brush above the parking spaces to address this. Sometimes, visitors park on the roadside along Old Vineyard Road. Parking is generally ill-advised along that road because space is tight, the shoulder is not suitable for parking, and the road has multiple hairpin turns in a short distance.

There is no designated parking at the Lower Trailhead entrance, so parking is limited property-wide. It is recommended that any safe areas for parking along Old Vineyard Road be marked with signage to direct overflow visitors to suitable locations. If safe parking spots along Old Vineyard Road cannot be marked and maintained near either trailhead, the Town should clearly direct visitors to park further downhill, possibly in the neighborhood at the base of the bluff.

Benches: Two heavy duty concrete benches are located on the southern half of the property, one at the West Overlook and one at the South Overlook. These benches were donated by Alan Schilling and family and were installed in 2023 by volunteers from the Outdoor Recreation Alliance (ORA). The benches are frequently used by visitors and have little to no maintenance needs. Additional benches could be added to improve the accessibility of the trail system. Possible future locations include the Butterfly Field and the other property overlooks.

Trailheads:

The **Main Trailhead** is pictured below. A trash can is located there which is important for providing a place for visitors to dispose of dog waste and other trash. The inclusion of this service likely reduces littering on the property, but the can should be upgraded. Property signage communicating the property name and rules is also present.

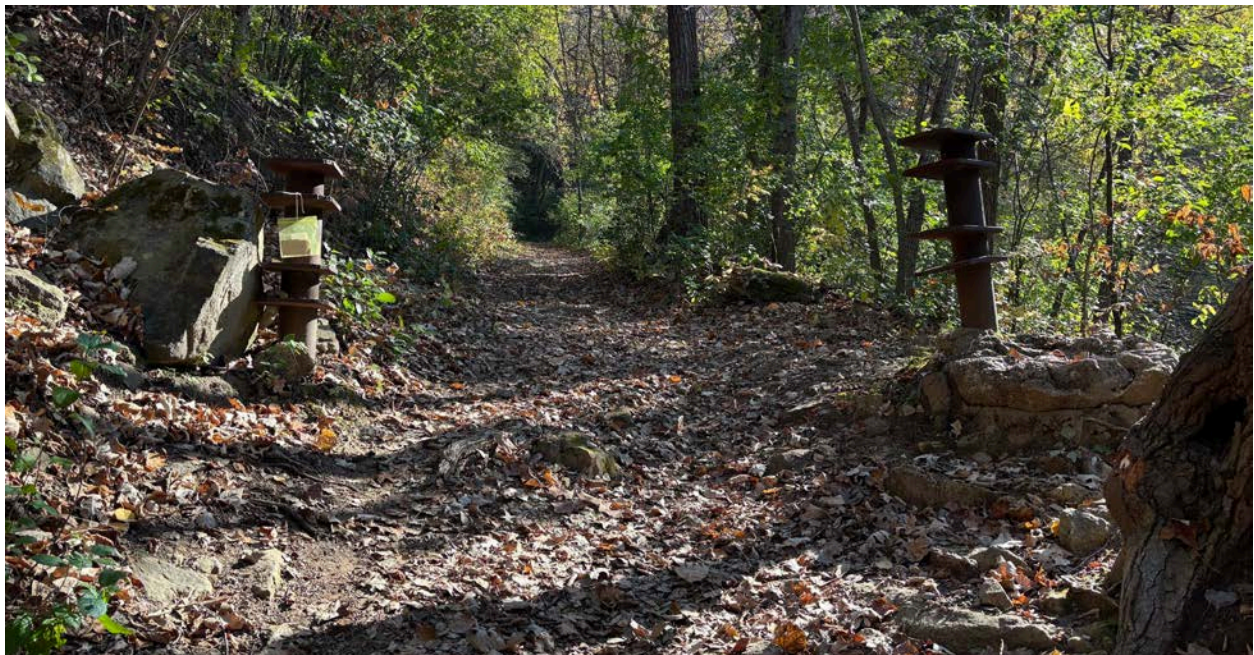


The **Lower Trailhead** is pictured below. This entrance displays the property rules and a directional sign. It would benefit from a trash can for the collection of dog waste. Signage here should be moved to the uphill side of the trail for ease of use and visibility.



Main Trailhead Gate: About 150 feet from the Main Trailhead entrance along the driveable trail, there is a metal frame that previously housed a large metal gate. This gate was removed in fall 2025 in response to public requests to allow for more accessibility on the property, such as for strollers. Its original design required users to either duck under the gate or navigate around it using a narrow rocky berm bordering its south side. The gate's original purpose was to prevent people from driving vehicles into the trail system. This problem has not occurred in recent years.

Currently, the gated trail is only accessible to heavy duty all-terrain vehicles due to its uneven and gullied tread surface. If the Town fixes this trail as recommended later in this Plan, some sort of gate should be reinstalled to protect against unauthorized vehicle access. The Town is currently researching options for replacing this gate with a more multi-purpose design that blocks unpermitted vehicles while allowing diverse trail users to pass through without issue.



Main Trailhead gate frame and rocky berm to the south

Main Trails: Main trails as designated on the Property Features Map are trails that are traveled frequently enough to prevent vegetation growth and leaf litter accumulation. These trails are clearly defined and easy to follow. Trails designated as Main Trails on the map that do not meet these criteria are actively maintained by the Town of Shelby through mowing. Main trails that are designated as “driveable” are wide and flat enough to accommodate a pickup truck. There are some additional driveable sections on the property, but they are not marked as such due to a lack of suitable area to turn a vehicle around in those spots, requiring the vehicle to back out.

Rogue Trails: Rogue trails as designated on the Property Features Map are unmaintained and unestablished trails that are caused by people taking shortcuts, visiting property features that are not accessible by the established trails, getting confused about where to go, or exploring. Some of these trails have an established tread, but most are overgrown and some are inactive.

Water Utility: In the forest on the southeast quadrant of the property near the Woodland Drive entrance, there is a concrete ground storage reservoir for the Town of Shelby Sanitary District #2. The utility consists of a concrete drinking water reservoir and associated equipment. The Public Works Department mows a steep trail for access to this utility from Woodland Drive.



Water utility, pictured from the uphill (L) and downhill (R) sides

Old Well: Near the West Overlook, there is a well that was installed by a previous landowner named Stanley Powell in 1949. Its WDNR Unique Well ID is 8MF944. According to the WDNR Well Inventory Viewer, this well is still active, but when observed onsite it does not appear to be actively used or maintained. Therefore, this site could be a potential source of contamination to local drinking water sources. It is recommended that the Town verify if this well is properly maintained for active use or abandoned if desired.



Old well, pictured fall 2025

Firepits: Unauthorized fire building is common on the Shelby Butterfly Trails property. Six unauthorized firepits were encountered during property visits for this Plan. Their locations are identified on the Trail Improvement Plan for removal. Fire building on this property poses a significant wildfire hazard during periods of dry weather. Wildfires on or near the property are difficult to fight due to the steep topography and limitations for refilling water at this location. Emergency vehicle access is also limited due to the width of the parking lot and trails. Continued monitoring for and removal of unauthorized firepits and char will be necessary.

Graffiti: Graffiti is another common issue on the property. Graffiti has typically been found on exposed sandstone features, especially cliff faces, in locations that are concealed from frequented trails. Areas with the most graffiti are typically difficult to access and have some sort of scenic value such as a panoramic overlook or stone features. Graffiti and unauthorized fire remnants are often found in the same locations. It would be difficult if not impossible to stop delinquency on the property entirely, but this problem can be reduced through strategic management. In affected areas near frequented trails, invasive brush can be removed to provide a clear line of sight to stone features that are frequently vandalized. Suitable areas can also be identified as locations of interest on the trail map to draw more visitors to those places. The more visible and busy a location is, the less likely it is to be a target for vandalism.



This spot between the West and South overlooks is a frequent target for graffiti and fire building

The Chairs: The Chairs is the local name for a sandstone formation below the West Overlook. This location is popular with locals due to its scenic views and private, difficult to access sandstone features. The rogue trails that provide access to this location are steep and dangerous in spots. This location is too popular to safely deny access. However, the rogue trail accessing the feature from the north should be closed by making it impassable because it crosses private land. The access trail from the south should be left passable but marked with a “sensitive habitat please keep out” sign.



Quarries: The property contains several inactive quarries of variable size. These features tend to see some light visitation and impact. Several rogue trails on the property end at these types of locations, but typically these trails show light to medium traffic and are not a major concern.



Example of an old quarry on the property, located at the end of a rogue trail

Cliff Faces: Some evidence of rock climbing activity was found on the property during surveys for this Plan. At the nearby Hixon Trails, rock climbing is allowed at designated locations. Being that this property has many beautiful cliff features similar to those in the Hixon Forest, it is likely that the Town will receive questions about this activity. The Town has determined that rock climbing access will not be permitted on the property. To ensure that visitors are well-informed about this rule, the Town should post accordingly on trail kiosks and other marketing materials.

Historic Ruin: Near the Northwest Overlook, there is a long and narrow stone foundation on the blufftop. This location has potential for an interpretive sign about its history. The Town is currently working to gather and confirm this history. This feature is listed as a place of interest on the recommended trail map. Brush should be cleared inside and around the feature to make it more suitable for highlighting to trail visitors. It could also be a scenic overlook.



Old Car: Near the east property boundary, there is an old junk car along a major trail. This is a beloved feature of the Shelby Butterfly Trails. Brush should be cleared here for visibility.



Old car near the east property boundary, located along a trail leading to the Butterfly Field

Baier Property Trail: One of the trails on the northwest corner of the property extends onto the adjacent Baier property and terminates on the main hilltop of Cliffwood Bluff. The landowner, Terrance Baier, has stated that public access to his land is permitted as long as visitors stay on the established trail. The Mississippi Valley Conservancy, a local land trust nonprofit, has a conservation easement with Mr. Baier for their adjacent La Crosse Floral property, but the Town of Shelby has no such easement with Mr. Baier. It is recommended that a more formal legal agreement regarding property access on this land be reached between Mr. Baier, the Mississippi Valley Conservancy, and the Town of Shelby to ensure that the shared desires of all parties can be protected into the future and to provide more clarity on issues that may arise.

La Crosse Parcel Descending Trail: A well-traveled but unmaintained descending trail begins at the South Overlook and terminates on Eastwood Lane. Most of this trail is located on the City of La Crosse property that is adjacent to the south side of the Shelby Butterfly Trails property. Portions of this trail are dangerous, unclear, eroding, and routed through sensitive remnant dry prairie habitat. Therefore, the location of this trail should not be advertised in any marketing materials and should never be formally established. If the City of La Crosse and the Town of Shelby agree that a descending trail to Eastwood Lane would be a worthy investment for the community, this trail should be closed and a new sustainable route should be established.

Shelby Butterfly Field: This 2.3-acre prairie planting on the northeast property quadrant is a well-known feature of the property. Management recommendations are outlined in future sections. The interpretive signage at this location should be updated as a low-priority project.

Miscellaneous: Other unpermitted land uses that were observed during property surveys include deer stands, mountain biking, bike jump construction, motorized scooters, litter, and dogs off leash. Improved signage outlining property rules at all access points may improve these issues. A bike rack is recommended at each trailhead to provide a safe place for bike storage.

Shelters: In open areas of the property, temporary shelters made of logs are sometimes built. These shelters can easily be removed by disassembling them and scattering the materials.

Property Overlooks: One of the main highlights of the Shelby Butterfly Trails is its many beautiful scenic overlooks. The most frequently visited overlooks on the property include:



Northwest Overlook



North Property Boundary Overlook



West Overlook



On private land (Leaver) by West Overlook



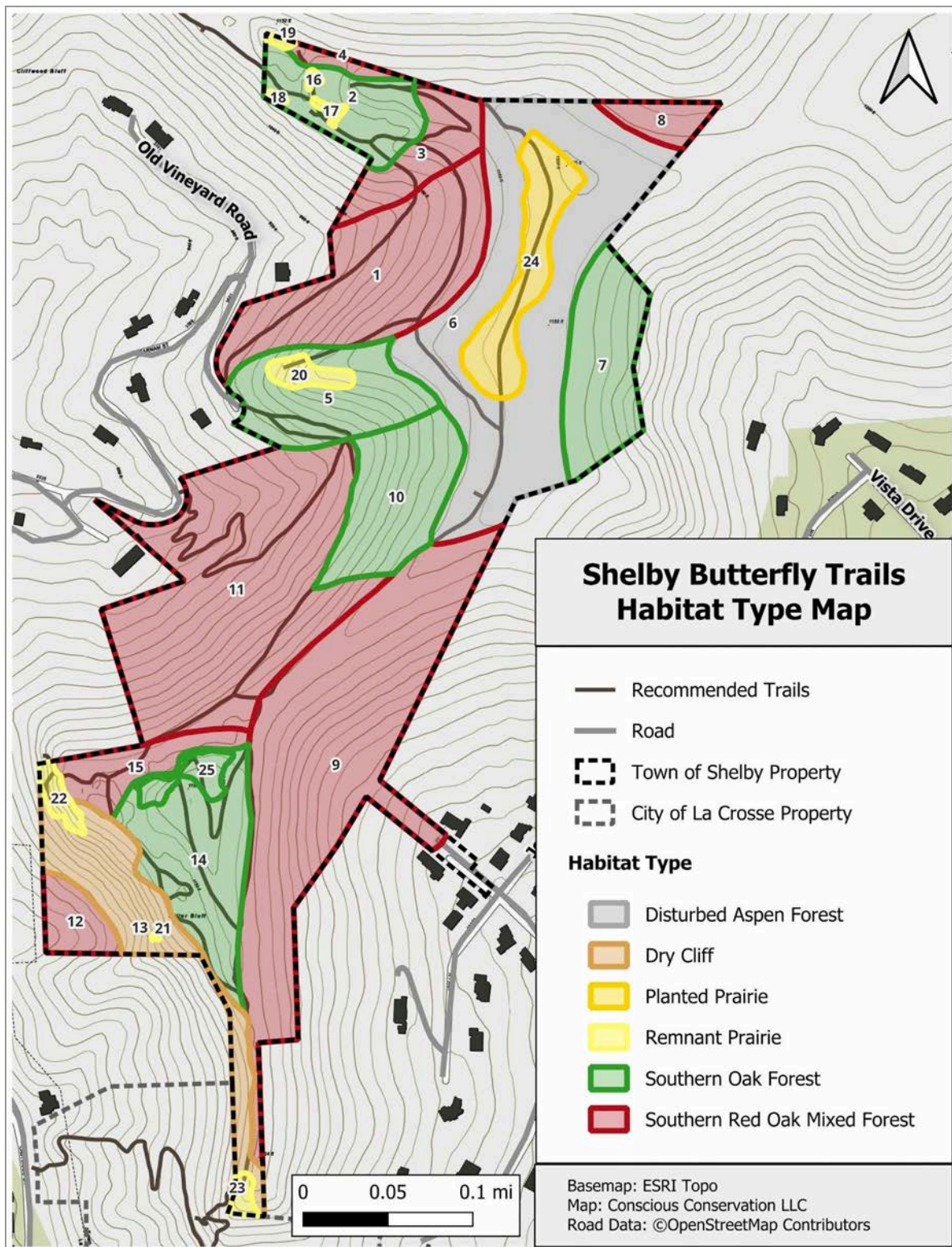
Central Overlook



South Overlook

HABITAT DESCRIPTIONS & MANAGEMENT RECOMMENDATIONS

I. Habitat Type Map & Subunit Overview



Habitat Type Map – Subunit Overview

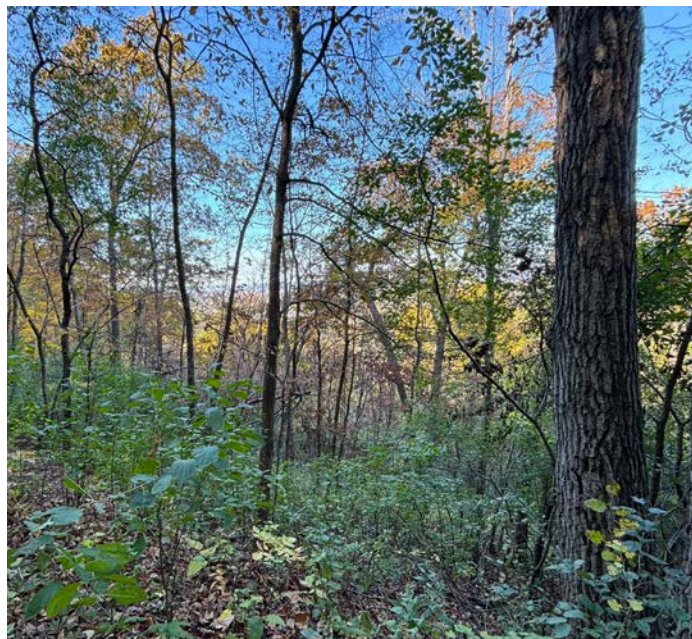
Unit	Type	Forest Age	Aspect	1938 Hab.	Habitat Condition Notes
1	SROMF	> 100 yrs	NW	Forest	Crowded trees, patchy understory invasives
2	SOF	< 50 yrs	SW	Savanna, Quarry	Patchy dense (a.k.a. thick) invasives, scattered prairie species (spp.)
3	SROMF	50 - 100 yrs	SE	Forest	Crowded trees, thick invasives in understory
4	SROMF	< 50 yrs	S	Savanna	Thick invasives, crowded young trees, clifftop
5	SOF	50 - 100 yrs	S	Savanna	Crowded trees, thick invasives in understory
6	DAF	< 50 yrs	Hilltop	Farmfield	Thick invasives, highly degraded, crowded
7	SOF	> 100 yrs	E	Forest	Thick invasives, highly degraded, crowded
8	SROMF	50 - 100 yrs	N	Old Field	Thick invasives, highly degraded, crowded
9	SROMF	> 100 yrs	SE	Forest, Savanna	Crowded trees, thick invasives in understory
10	SOF	> 100 yrs	W	Forest	Crowded trees, thick invasives in understory
11	SROMF	> 100 yrs	NW	Forest	Crowded trees, thick invasives in understory
12	SROMF	> 100 yrs	W	Forest	Crowded trees, thick invasives in understory
13	DC	> 100 yrs	SW	Dry Cliff	Patchy thick invasives, scattered prairie spp.
14	SOF	> 100 yrs	Hilltop	Forest	Crowded trees, thick invasives in understory
15	SROMF	> 100 yrs	Hilltop	Forest	Crowded trees, thick invasives in understory
16	RP	< 50 yrs	Hilltop	Savanna	Scattered invasives/trees, mostly prairie spp.
17	RP	< 50 yrs	Hilltop	Savanna	Scattered invasives/trees, mostly prairie spp.
18	RP	< 50 yrs	Hilltop	Savanna	Scattered invasives/trees, mostly prairie spp.
19	RP	< 50 yrs	Hilltop	Dry Cliff	Scattered invasives/trees, mostly prairie spp.
20	RP	< 50 yrs	SW	Dry Prairie	Patchy thick invasives, but mostly prairie spp.
21	RP	< 50 yrs	SW	Dry Cliff	Scattered invasives/trees, mostly prairie spp.
22	RP	< 50 yrs	W	Dry Prairie	Patchy thick invasives, but mostly prairie spp.
23	RP	< 50 yrs	SW	Dry Prairie	Patchy thick invasives, but mostly prairie spp.
24	PP	< 50 yrs	Hilltop	Old Field	Patchy thick invasives and cool season grasses, scattered trees, mostly prairie spp.
25	SOF	> 100 yrs	Hilltop	Forest	Crowded midstory, mostly native understory

II. Habitat Descriptions

Southern Red Oak Mixed Forest: Southern Red Oak Mixed Forests tend to form on soils that are nutrient-rich and deep enough to support a variety of mixed hardwood species. Red, black, and white oaks are the most dominant tree species of this habitat type. The rest of the tree community is variable depending on site specifics. On drier sites with south and west aspects, shagbark hickory, red maple, and white oak trees are more common than on moister sites with north and east aspects, which tend to have more sugar maple and basswood. Other common trees found in this habitat on the Shelby Butterfly Trails property include American, Siberian, and black elm, bitternut hickory, hackberry, paper birch, ironwood, cottonwood, black cherry, and quaking and bigtooth aspen. White ash is also present, with most sick from Emerald Ash Borer.

Oak dominated forests allow more filtered light to reach the forest floor than other forest types in the region. When healthy, this habitat type supports abundant sedges, grasses, and wildflowers in the forest understory. Understory plants found on the property in this habitat include bellwort, bloodroot, early meadow-rue, false Solomon's seal, hairy sweet cicely, hog peanut, lady fern, Jack-in-the-pulpit, maidenhair fern, May apple, Pennsylvania sedge, wood anemone, and more.

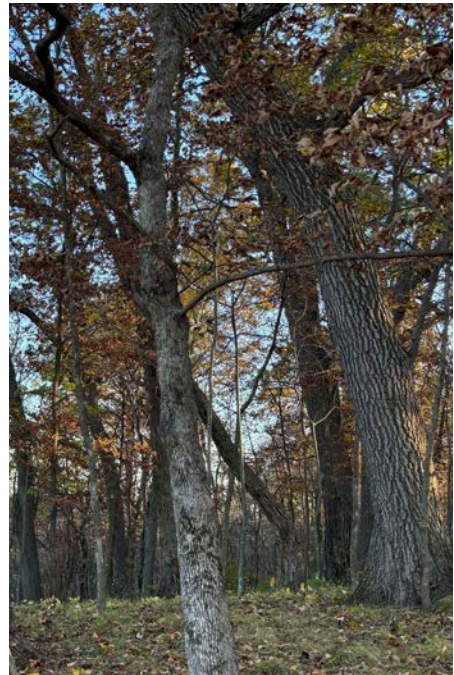
Southern Red Oak Mixed Forests evolved when fires more commonly burned through the landscape, so the suppression of fire in recent history has had a profound impact on the structure and species composition of these sites. Most critically, the increase of shade tolerant tree saplings in the understory and midstory has shaded out many of the light sensitive understory grasses, forbs, and sedges mentioned above. Now, only scattered patches remain. Fortunately, the mature oaks on the property do not appear to have been harvested recently, meaning there is a healthy base from which to build when attempting to restore these sites.



- A. Key Issues:** Not enough sunlight reaching the understory; Invasive species encroachment (buckthorn, Japanese barberry, Asian bittersweet, multiflora rose, autumn olive, bush honeysuckle, garlic mustard, and burning bush are most threatening to this habitat type); Overcrowding of mature oak trees; Lack of occasional prescribed fire
- B. General Management Recommendations:** Invasive species removal; Timber stand improvement; Mature oak daylighting; Prescribed burning; Species inventory; Monitor

Southern Oak Forest: Southern Oak Forests consist of a mixture of oak species including black oak, white oak, bur oak, and red oak with a notable understory shrub layer that includes oak saplings. Shagbark hickory, black cherry, black walnut, and paper birch are also common trees found in this community. These forests typically grow on hills above limestone. The community structure varies depending on soil depth, sunlight, and moisture. Red oak is typically found on deep soils near the base of hills, black oak is typically found on thinner soils closer to the hilltop, and white and bur oaks prefer hilltop areas which tend to have the shallowest and rockiest soils. The oak forests of the Shelby Butterfly Trails property are a sandy type, consisting of mostly black and white oak trees on well-drained soils. Pennsylvania sedge and hog peanut are common understory plant species in this habitat.

Southern Oak Forests were shaped by the presence of fire on the landscape. For thousands of years before European settlement, Native Americans used fire as a tool to shape the undergrowth to fit their needs. This practice maintained widespread savanna communities, with scattered oak trees and prairie dominating the landscape. Many of today's Southern Oak Forests used to more closely resemble oak savannas, but lack of fire has allowed more trees to move in, increasing shade levels and substantially changing the structure of the forest. On the Shelby Butterfly Trails property, the oldest trees in this habitat type are white, bur, and black oak, revealing the historic structure, and ironwood is overrepresented in the forest midstory. Oak trees that matured in an open savanna tend to be shorter with a spreading branch pattern starting from the lower levels and continuing up the tree. Oak trees that matured in a forest are tall with open branching only at the highest levels, giving them a twisted appearance in the canopy.



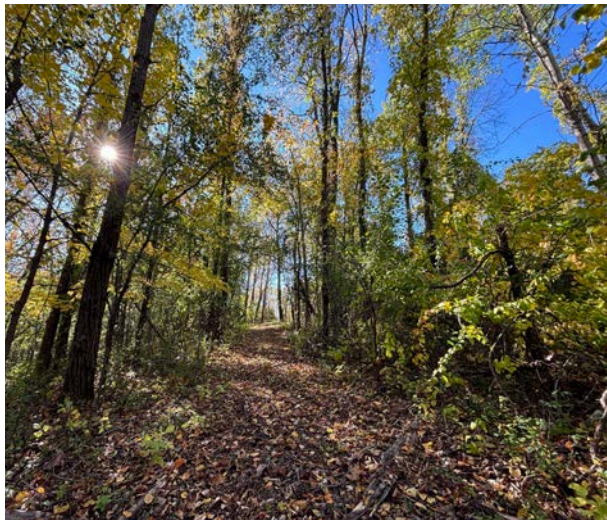
In healthy Southern Oak Forests, there are abundant wildflowers, grasses, and sporadic shrubs in the groundlayer which include oak saplings of variable age. Species that are characteristic of oak savanna, such as shooting star and hoary puccoon, can be found in these habitats, but the most abundant species are more shade tolerant relatives of prairie plants including poke milkweed and pale-leaved sunflower. Other plant species found in this habitat on the Shelby Butterfly trails property include American hazelnut, common blackberry, false Solomon's seal, gray dogwood, hairy sweet cicely, bedstraw, wild strawberry, and bracted tick-trefoil.

- A. Key Issues:** Not enough sunlight reaching the understory; Invasive species encroachment (buckthorn, Japanese barberry, Asian bittersweet, multiflora rose, autumn olive, bush honeysuckle, garlic mustard, black locust, and burning bush are most threatening to this habitat); Overcrowding of mature oak trees; Lack of prescribed fire
- B. General Management Recommendations:** Invasive species removal; Timber stand improvement; Mature oak daylighting; Prescribed burning; Species inventory; Monitor

Disturbed Aspen Forest: This habitat type is found on the northeast section of the property and surrounds the Shelby Butterfly Field. Its canopy is crowded and composed mainly of mature aspen with scattered mixed hardwood species such as black oak, black cherry, shagbark hickory, ironwood and sugar maple throughout. Its understory and midstory are dominated by large, abundant invasive brush species including common buckthorn, Asian bittersweet, Japanese barberry, autumn olive, and multiflora rose, which have crowded out native species.

The area that now hosts this habitat was previously a farm field, which was established in an unknown year prior to 1938. Quaking aspen is the dominant tree species in this area, with some bigtooth aspen also present. Aspen are often the first tree species to colonize forest clearings and other open areas due to their vigorous and opportunistic growth pattern coupled with their ability to quickly capitalize on their environment through features like photosynthetic bark and abundant pores for gas exchange. These species prefer to grow in full sun and can tolerate only partial shade, making open fields and clearings the perfect location for them to establish. Aspen trees grow together in interconnected colonies called “clones” which expand through rhizomes underground. Individual trees are connected to one another through their shared root system, and the entire clone is considered one organism having derived from a single seedling. New saplings in a clone can emerge up to 100 ft from the parent tree. When a clone is damaged, the underground system typically responds by signaling many new saplings to form at the same time to colonize suitable habitats within reach. Over time, hardwood trees will crowd out aspen.

Being that this habitat type surrounds a planted prairie, it is essential that great care be taken to balance prairie management actions with the biological realities of the surrounding aspen forest.



Disturbed Aspen Forest understory



Encroachment into the Butterfly Field

- A. **Key Issues:** Invasive species encroachment (Buckthorn, Japanese barberry, Asian bittersweet, Multiflora rose, Autumn olive, Bush honeysuckle); Aspen clone expansion
- B. **General Management Recommendations:** Invasive species removal; Continued mowing of Butterfly Field; Targeted aspen girdling inside the Field; Daylighting of healthy oak trees and saplings to encourage their survival; Wait for aspen to phase out naturally

Planted Prairie: In 2020, the Town of Shelby invested in converting the Shelby Butterfly Field into prairie habitat with the help of an Eagle Scout. The main goal of this project was to provide monarch butterfly habitat in this location. This site is actively used by monarch populations as intended while at the same time supporting other pollinator species. A sign outlining the project was installed at this location after its completion, pictured below. Additional benefits of this project include topsoil protection and improvement, rainwater purification, erosion reduction, wildlife habitat improvement, and an overall increase in property biodiversity. Considering these benefits and the link between the Field and the property name, the Town should continue to manage this area as a prairie. Management of this area is labor intensive and costly compared to other areas of the property. Prairie relies on ample sunshine, but this site is long, narrow and surrounded by aspen forest and thick invasives. Prairie establishment is a constant struggle in the shady spots along field edges. Currently, the Town mows the entire field annually in the fall.



Images depicting the entrance to and interior of the Shelby Butterfly Field prairie

- A. **Key Issues:** Invasive species encroachment (all brush and trees, crownvetch, bull thistle, and cool season grasses including quackgrass are the observed major threats); Habitat fragmentation due to shade from edges makes maintenance difficult and costly
- B. **General Management Recommendations:**
 - **Burn or mow** the field as short as possible annually between April 15th and May 15th until the prairie is well established (3-5 years).
 - **Mow and clear firebreaks** of at least 15 ft wide around the field ahead of a burn.
 - Complete timed mowing or foliar spraying at least once annually to control for **crownvetch** during its active flowering stage in June or early July.
 - Consider **re-sowing** prairie seed into foliar sprayed areas the fall after treatment.
 - Pull or cut scattered **bull thistle** during its early flowering stage in late June.
 - Once the prairie is established, **burn** at least once every 3 to 5 years or **mow** the field as low as possible every 1 to 2 years, alternating between spring and fall.
 - Girdle any **aspen** in the field. Cut-stump treat **all other woody plants** in the field.
 - Long-term management costs could be reduced by **expanding the prairie size**, but this would significantly increase the short-term management costs.

Remnant Dry Prairie: At least eight remnant dry prairies exist within the boundaries of the Shelby Butterfly Trails property. The term “remnant” is used because these habitats are rare, unaltered examples of the native pre-settlement landscape. These prairies are formed on steep, rocky south and west facing slopes over limestone or sandstone with shallow, nutrient poor soils. The plants able to live in this harsh environment are typically stunted in growth, meaning they are shorter and less sturdy than individuals of the same species in other habitats. The species that characterize these harsh habitats are highly adapted to intense sun and wind exposure, which gives them a competitive advantage over other species. These hardy and adaptable qualities allow for remnant prairie habitats to remain relatively stable over time as long as the land remains rocky, sunny and exposed, which maintains their advantage.

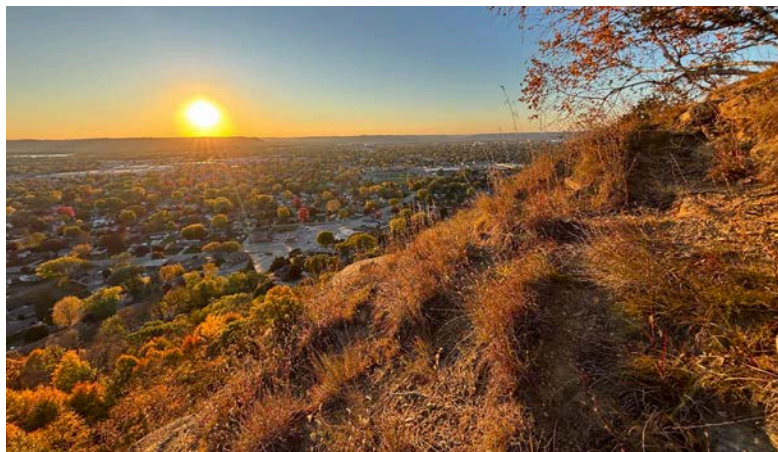
The dry prairies that remain in the Driftless Area are typically less than 1 acre in size and are most commonly found on south and west-facing bluffsides near the hilltop. They are commonly called “goat prairies” due to their steep slopes and the presence of rock outcroppings within them. These prairies are composed mostly of grasses with a high diversity of wildflowers interspersed throughout. Scattered low-growing shrubs such as ground juniper, lead plant, and New Jersey tea are also found in this habitat, providing additional structure, species diversity, and wildlife habitat. Bur and white oak, black walnut, paper birch, and eastern redcedar trees are commonly found on the prairie edges in this region and are sometimes interspersed throughout remnant prairies. Common species found in this habitat on the Shelby Butterfly Trails property include lead plant, purple prairie clover, gray goldenrod, stiff goldenrod, side-oats grama, little bluestem, hoary vervain, switchgrass, big bluestem, Indiangrass, prairie coreopsis, stiff gentian, prairie asters, and whorled milkweed.



A large proportion of the biodiversity found on the Shelby Butterfly Trails property is found in its remnant dry prairie habitats. Many of these species are also regionally and globally imperiled, making management of these habitats especially beneficial.



Stiff Gentian



A. **Key Issues:** Invasive and native tree and brush encroachment, which shades out native prairie plants (buckthorn, honeysuckle, autumn olive, Asian bittersweet, paper birch, and eastern redcedar are the most common invaders of this habitat); Herbaceous invasive species (Crownvetch, sweet clover, leafy spurge); Disturbance from rogue trails

B. **General Management Recommendations:**

- **Brush Removal:** Cut-stump treat all brush species found in the prairie (*note: eastern redcedar does not need to be treated with herbicide after cutting*)
 - Do not cut scattered bur oak or the low-growing shrub species native to this habitat, including ground juniper, leadplant, and New Jersey Tea
- Pull or mow **sweet clover** during its flowering stage— once in June to target yellow sweet clover and once in July for white sweet clover. Sweet clover leaves are easy to distinguish from other lookalike plants due to their serrate leaf edges.
- **Crownvetch:** It is critical to at minimum prevent crownvetch from spreading further in the remnant prairies on the property. This can be done by mowing plants low to the ground first in May, and then two times after that as plants regrow in summer. It is more effective to try and dig the full plant out, including roots, when possible but this may be prohibitively difficult to do in the rocky soils of the property. Non-chemical treatment is the ideal course of action before brush removal projects can be completed in areas with remnant prairie plants. The property's remnants are too small and vulnerable at this time to support even targeted chemical treatment. The invasive brush needs to be removed from these habitats first in order to provide enough sunlight for prairie plants to re-establish. Once the prairie has sufficiently recovered and reached some resilience, crownvetch can be reduced through extremely targeted spot spray foliar treatment using a Milestone herbicide mix with a surfactant included.
- **Close any unauthorized trails** that travel through remnant prairie habitat.
- Remnant dry prairies on south or west slopes are easy to **burn** in the winter months because at this time, snow has melted and dried on the sunny prairies but still blankets the surrounding shaded forests. This snow provides a natural firebreak, allowing for remnant prairies to be burned simply by lighting the hilltop on fire and allowing the prairie to burn to the snow line. Each remnant on the property should be burned in this way at least once every 3 years. Suitable winter burn days are sunny with winds under 15 mph and humidity under 50%.



Dry Cliff: This habitat type develops where bedrock is exposed at the surface of the land, whether from a natural occurrence or from quarrying. Shallow, nutrient-poor soil develops on small, patchy areas of the cliff that are suitable for its formation. The environment in this habitat is harsh and steep with extremely variable temperatures, high wind exposure, little to no soil, and scant water availability. Dry cliffs are sun-exposed and almost always dry, receiving high levels of sunlight and extreme temperature variation, whereas moist cliffs are shaded and almost always wet, receiving little to no sunlight and much less temperature variation. Thus, the composition of a cliff habitat varies greatly depending on the level of sun exposure combined with other environmental factors such as bedrock type and the surrounding plant community.

The natural cliffs on the Shelby Butterfly Trails property consist of mostly limestone with patches of sandstone and are found on south and west bluff faces, usually below Remnant Dry Prairie habitat. As a result, these two habitat types share many species in common. However, several species of ferns, mosses, and lichens are found more often in the Dry Cliff habitat type than in Remnant Dry Prairie. The Dry Cliffs of the property are much more shaded than they were historically due to the

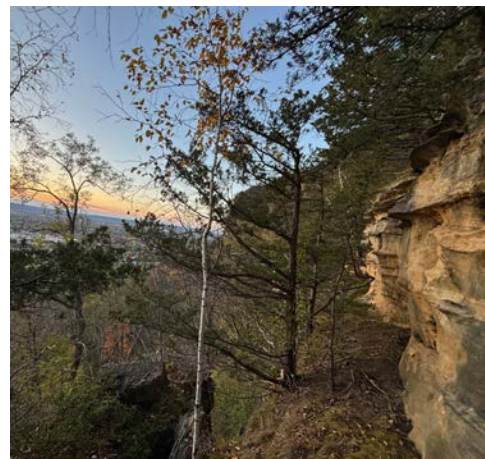


encroachment of trees and brush. The reversal of this trend would be difficult if not impossible in spots due to steep topography and private land boundary locations. Therefore, management of this habitat type should be done in conjunction with the remnant prairies on the property, with a focus on removing invasive species where possible and expanding existing prairie remnants.

A. Key Issues: Invasive and native tree and brush encroachment, which shades out native prairie plants (buckthorn, honeysuckle, autumn olive, Asian bittersweet, paper birch, and eastern redcedar are the most common invaders of this habitat); Herbaceous invasive species (Crownvetch, sweet clover, leafy spurge); Disturbance from rogue trails

B. General Management Recommendations: *Only where safe access is possible*

- Follow guidance from the “Remnant Dry Prairie” section for **removal of invasive brush, sweet clover, and crownvetch** from this habitat, but leave the redcedar.
- **Close any unauthorized trails** that travel through this habitat.
- **Tip:** Many areas will be inaccessible for management without rock climbing gear, but a pole saw can be used to cut some hard-to-reach brush. A paint roller on an extension pole can then be used to treat hard-to-reach stumps with herbicide mix.



III. Invasive Species

Background: Management of invasive species is a key aspect of habitat restoration and land care. An invasive species is defined as any organism that negatively impacts the health of a native ecosystem. These species can be either native or exotic to an area. The most harmful invasives impacting the La Crosse area tend to be exotic, or not naturally found in the region. These species were either accidentally transported or intentionally brought to the area from abroad. Some were introduced for a functional purpose, and others were brought purely for ornamental reasons. For example, crownvetch was introduced for the purpose of roadside erosion control and buckthorn was brought for privacy hedging. Japanese barberry is often used as decorative landscaping, and Asian bittersweet berries commonly adorn Christmas wreaths.

Invasive species are of particular concern to land managers for several reasons. These species can crowd out the native plants in an area, sometimes completely taking over a habitat. Some invasive species have the ability to change soil chemistry, which can stunt the growth of native plants while encouraging the growth and expansion of the invading species. These intrusions can severely disrupt the balance and natural processes of an ecosystem, harming wildlife on all levels of the food chain. Unhealthy ecosystems profoundly impact the health and security of the people living in an area and can also pose a costly risk to nearby infrastructure.

When invasive species take over a habitat, particularly in a forest, they often reduce the amount of light reaching the ground. This inhibits the growth of native understory plants that protect the soil and nourish the microorganisms that support the foundation of ecosystem health. When the understory is unbalanced, the soil is often left vulnerable to erosion as water is more likely to be washed downhill rather than absorbed by the soil. During large rain events, erosion can cause severe damage to the land and trails. Erosion also threatens any infrastructure located near drainage pathways. For this reason, invasive species removal can be financially prudent.

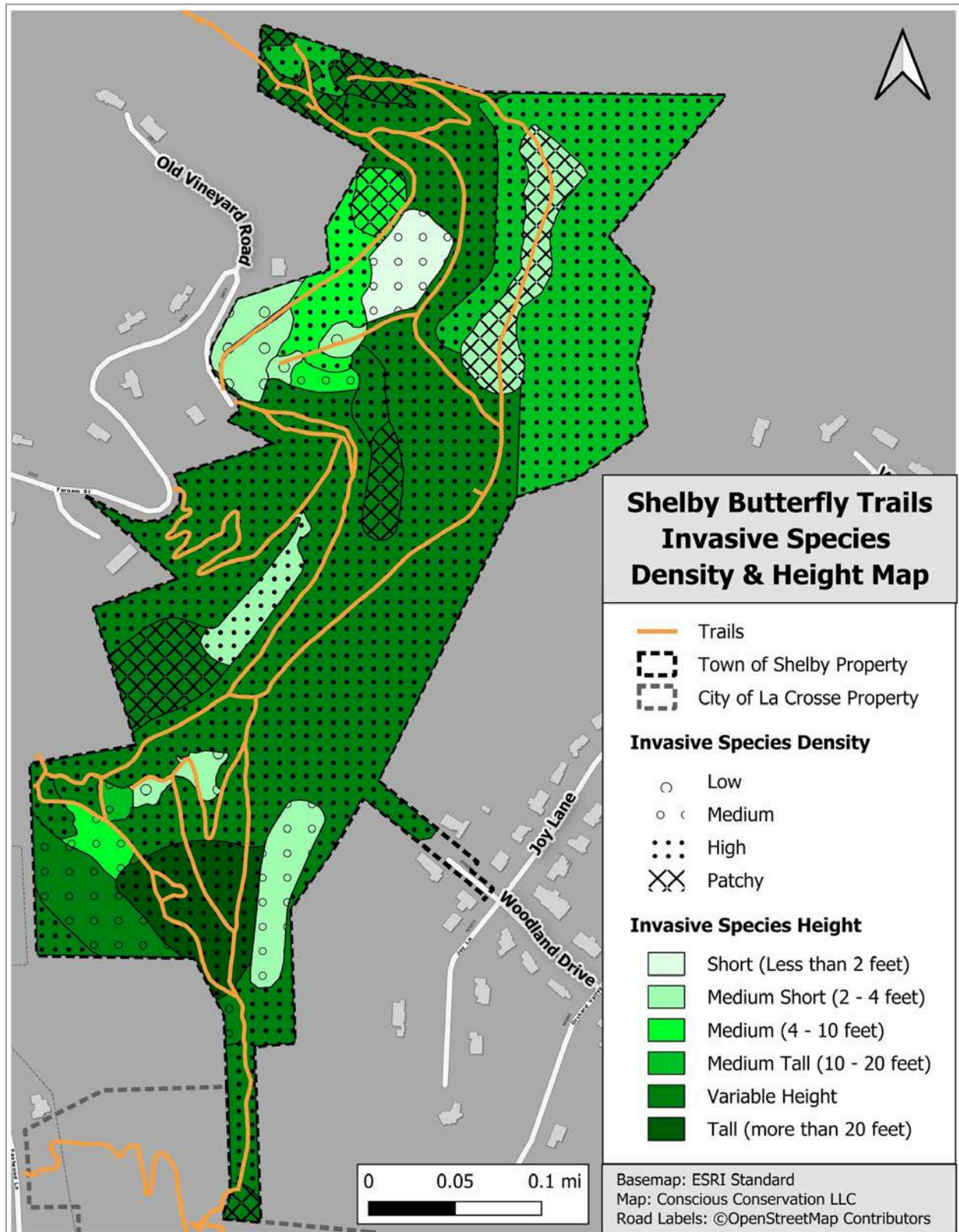
Severe invasive species infestations can also pose a risk to drinking water systems and other matters related to public health. Healthy ecosystems are intrinsically tied to healthy water systems. Groundwater reservoirs rely on the infiltration of water through the soil layers, while surface water is impacted profoundly by the particles carried by water during runoff events. The composition of a natural area also has profound effects on the local climate, impacting the community's humidity, temperature and, most importantly, its vulnerability to severe weather.

Invasive species can negatively impact the visitor experience as well. Invasive brush species are a particular nuisance because they can make a natural area difficult and uncomfortable to navigate, limiting recreation opportunities. Severe infestations tend to significantly reduce visibility in the forest and can make trails feel more crowded and thus less enjoyable.

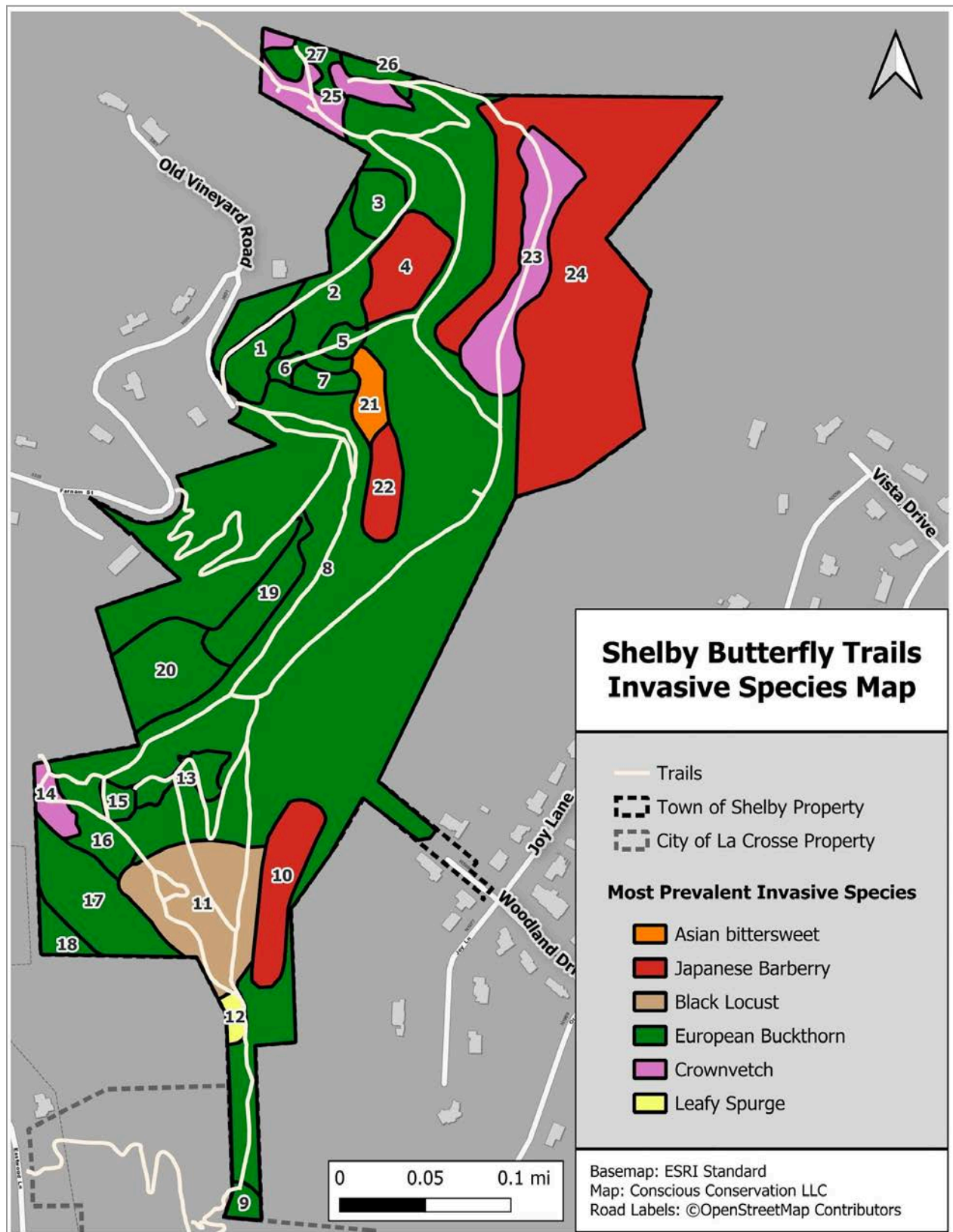
Invasive species are transported by people, wildlife, wind, water, and gravity in addition to being naturally aggressive. Therefore, managing them is a continuous and often arduous process. Many of the invasive species found on the Shelby Butterfly Trails property are widespread in the La Crosse region, so it is unlikely that the property will ever be rid of this problem. Therefore, habitat management should be done proactively with the goal of consistent improvement while maintaining progress. It is best to target smaller infestations first, focusing on the restoration of more intact and biodiverse areas while expanding as able into more heavily infested sites.

III, A. Property Overview & Maps – Invasive Species

Map 1: Invasive Species Density & Height



Map 2: Invasive Species Subunits



Invasive Species (IS) Subunit Overview

Unit	Habitat	IS Height	IS Density	Notes
1	Woods	Medium Short	Low	Thick buckthorn wall along trail and parking lot edges. Scattered young invasives in understory.
2	Woods	Medium	High	Thick but young invasives. Thickest and tallest at drainage bottom and property line.
3	Woods	Medium	Patchy	Patches of thick woodland invasives. The drainage area is disturbed enough to keep invasives at bay.
4	Woods	Short	Medium	Young barberry is spread consistently throughout the understory, but sparse enough for natives to grow.
5	Woods	Medium Short	Low	Herbaceous native forbs dominate the understory. Scattered woodland invasives and large buckthorn.
6	Prairie	Medium Short	Low	Native prairie forbs dominate the habitat, with scattered young invasives. Leafy spurge found.
7	Prairie	Medium	Medium	Native prairie forbs are present in the understory. Historic prairie is now dominated by thick buckthorn.
8	Woods	Variable	High	Thick buckthorn dominated understory, height varies 4-20 ft. Native understory plants scattered and few.
9	Prairie	Variable	Patchy	Native prairie dominates, with patchy dense invasive brush fragmenting the prairie. Sweetclover on hilltop.
10	Woods	Medium Short	Medium	Young barberry, bittersweet, and buckthorn dominate the understory. Patchy native species in understory.
11	Woods	Tall	High	Mature black locust trees are scattered throughout. Dense buckthorn understory mixed with natives.
12	Woods	Variable	Medium	Leafy spurge is present throughout this area, with a buckthorn dominated understory.
13	Woods	Medium Short	Low	Open area with Pennsylvania sedge and other native plants, with scattered young invasive brush.
14	Prairie	Variable	High	Very steep cliff with scattered prairie. Main invasives are sweet clover, crownvetch, and buckthorn.
15	Woods	Medium Tall	Medium	Flat area below a cliff with a buckthorn dominated understory mixed variably with native brush.
16	Woods	Medium	Medium	Buckthorn and redcedar dominate the understory on a steep cliff. Sparse prairie and savanna plants here.
17	Cliff	Variable	Medium	Cliff with scattered trees and prairie, sandstone outcroppings, and patchy variable invasive brush.

Unit	Habitat	IS Height	IS Density	Notes
18	Woods	Variable	High	Thick and mostly buckthorn dominated understory.
19	Woods	Medium Short	High	200 foot wide oak dominated strip with short but dense invasives and scattered natives in understory.
20	Woods	Variable	Patchy	Patchy, mostly dense buckthorn understory with variable height. Patches of herbaceous natives.
21	Woods	Variable	High	Thick patches of Asian bittersweet and patchy barberry in a thick buckthorn dominant understory.
22	Woods	Variable	Patchy	Patches of thick short barberry and thick medium buckthorn with patches of herbaceous native plants.
23	Prairie	Medium Short	Patchy	Crownvetch of variable thickness is prominent in this area. Scattered bull thistle is present throughout the area. Patches of cool season grass are present. Overall, prairie plants are most dominant in the area.
24	Woods	Medium Tall	High	Thick and almost unnavigable woodland invasives—mainly buckthorn, barberry, and bittersweet.
25	Prairie	Variable	Patchy	Native prairie and savanna plants of various size and density are interspersed among a thick buckthorn understory with patches of remnant prairie. Crownvetch is patchy throughout this area.
26	Woods	Variable	Patchy	Native oak forest understory with patchy, variable height invasives, mostly short and scattered. There is a thick patch of woodland invasives by the vista.
27	Cliff	Medium Tall	High	Rocky cliff base with a thick buckthorn understory and scattered patchy native plants throughout.



III, B. Invasive Species Removal Recommendations

(Invasive species common to the area but not confirmed on the property are highlighted in gray)

Species	Habitats Affected	Link to Publicly Available Fact Sheet	Recommended Removal Technique	Recommended Removal Season
Asian Bittersweet	Woods and shady edges	Asian Bittersweet	Foliar Spray (Garlon)	Summer
Autumn Olive	Woods and prairie	Autumn Olive	Cut-stump (Garlon)	Summer/Fall/Winter
Birdsfoot Trefoil	Prairie and sunny edges	Birdsfoot Trefoil	Foliar Spray (Milestone)	Summer
Black Locust	Woods and prairie	Black Locust	Basal bark trees <4" diameter (Milestone)	Anytime
Bull Thistle	Prairie and sunny edges	Bull Thistle	Pull or mow while in the early flowering stage, or foliar spray	Summer
Burning Bush	Woody and shady edges	Burning Bush	Cut-stump (Garlon)	Summer/Fall/Winter
Bush Honeysuckle	Woods and prairie	Bush Honeysuckle	Cut-stump (Glyphosate)	Summer/Fall/Winter
Canada Thistle	Prairie and sunny edges	Canada Thistle	Pull or mow while in the early flowering stage, or foliar spray	Summer
Crownvetch	Prairie and sunny edges	Crownvetch	Foliar spray (Milestone)	Spring/Summer/Fall (leaves must be green)
Dame's Rocket	Woods and shady edges	Dame's Rocket	Foliar spray (Garlon)	Spring
Common Buckthorn	Woods and prairie	Buckthorn	Cut-stump (Garlon)	Summer/Fall/Winter
Field Bindweed	Prairie and sunny edges	Field Bindweed	Foliar spray (Garlon)	Summer
Garlic Mustard	Woods and shady edges	Garlic Mustard	Foliar spray (Garlon) in thick spots, otherwise pull and bag/throw away	Spring/Early Summer
Japanese Barberry	Woods and shady edges	Japanese Barberry	Cut-stump (Garlon)	Summer/Fall/Winter
Japanese Hedge-parsley	Woods and shady edges	Japanese Hedge-parsley	Foliar spray (Escort)	Spring/Fall

Species	Habitats Affected	Link to Publicly Available Fact Sheet	Recommended Removal Technique	Recommended Removal Season
Japanese Stiltgrass	Woody and shady edges	Japanese Stiltgrass	Foliar spray (Glyphosate)	Summer
Multiflora Rose	Woods and shady edges	Multiflora Rose	Cut-stump (Garlon)	Summer/Fall/Winter
Quackgrass	Prairie and sunny edges	Quackgrass	Foliar spray (Glyphosate)	Spring/Summer/Fall
Reed Canary Grass	Prairie and sunny edges	Reed Canary Grass	Foliar spray (Glyphosate)	Spring/Summer/Fall
Spotted Knapweed	Prairie and sunny edges	Spotted Knapweed	Hand pull before or during flowering	Summer
Teasel	Prairie and sunny edges	Teasel	Foliar Spray (Milestone)	Spring/Fall
White/Yellow Sweet Clover	Prairie and sunny edges	Sweetclovers	Pull or mow while flowering	Summer
Wild Parsnip	Prairie and sunny edges	Wild Parsnip	Pull or mow while flowering. Caution—burn hazard!	Summer

IV. Description of Habitat Management Techniques

Basal Bark: An oil-based herbicide mix is sprayed or painted onto the bark of woody plants near the base. Herbicide must be applied all the way around the stem in a strip at least 6" wide.

Cut-Stump: An herbicide mix is applied directly onto the stump top, ideally within 30 mins after cutting down a woody plant. The stump should be cut 0.5 to 3 inches above the soil surface, and the top should be visible for treatment. Herbicide should completely cover the stump top, especially around its edges. See page 56 for more information about brush removal techniques.

Daylighting: The removal of any competing vegetation, typically brush, beneath desirable oak trees, oak saplings, and other favored native plants to reduce competition and promote growth.

Firebreak Construction: In prescribed fire, a firebreak is an unbroken obstacle that prevents the spread of fire outside the burn unit boundary. Firebreaks are constructed by minimizing or eliminating fuel along the entire unit boundary. Firebreaks should be as straight as possible for clear sight lines, and their width should be at least three times the height of the adjacent fuels. Vegetation should be removed on the firebreak to expose bare soil when possible. Firebreaks typically look like a wide, rough trail. Construction methods vary by vegetation type and include brush clearing or low-mowing followed by leaf-blowing or raking material out of the unit.

Foliar Spray: An herbicide solution is applied to an undesired plant's foliage while it is actively growing and absorbs into its system, causing death. A backpack sprayer is useful for most jobs. A vehicle-mounted sprayer is useful for large jobs. Hand sprayers can work for very small jobs.

Girdling: The process of cutting through a tree's cambium, the layer of actively growing cells located just beneath the bark, to prevent the flow of nutrients to the roots. This eventually kills the tree. The tree must be girdled about one half inch below the bark around the entire tree circumference, and the edges of the cut must connect with no cambium left intact on the girdle ring. In most cases, a "double girdle" is used to ensure effectiveness of this method. The second girdle ring should be cut between 6 and 12 inches below the first girdle ring. When applying herbicide to a double girdle cut, it is only effective to apply the chemical to the bottom ring.

For removal of aspen, girdling requires a difference in technique. First, herbicide should never be applied to aspen because it can signal the clone to propagate. Second, aspen girdling should take place during the sap flow season, which typically takes place from March through April. To kill aspen, two girdles spaced about 12 inches apart must first be cut. A third vertical or diagonal cut should then connect the two girdle rings together. Finally, a sharpened leaf spring or other sharp, sturdy pry tool should be used to remove all the bark located in between the two girdle rings. Efficient removal of the bark is only possible during sap flow season. The result should be a bare 10 to 12 inch section. The full aspen clone should be treated this way in a single season, otherwise the clone may prompt new sapling growth. Dieback takes between 1 to 3 years.

Mowing: The process of cutting vegetation at or near the ground to deplete the root resources, prevent the seeding of undesirable plants, and create a more favorable environment for the growth of desirable plants. This method is most effective at preventing seed development when undesirable plants are mowed in their early flower stages. This method is often required multiple times per year to ensure good results. The equipment used depends on acreage and terrain.

Prescribed Burn: The use of pre-planned fire to meet outlined land management objectives, applied to a designated area called a burn unit under specific environmental conditions. Typical goals of prescribed burns include reduction of woody and invasive species, promotion of native biodiversity and productivity, maintenance and improvement of fire-dependent habitats, promotion of seed germination for fire-dependent plants, improvement of soil health and ecological resilience, and reduction of wildfire risk. It is best for local governments to hire a specialized contractor for this service, but it is also common to partner with the local fire department to conduct occasional prescribed burns as training exercises for their staff.

Pulling: Removal of all parts of an undesirable plant by hand, including the root. Certain noxious weeds such as garlic mustard require bagging and disposing of the plant after pulling, and others can be left scattered onsite. Plants must be pulled before they develop seeds.

Timber Stand Improvement (TSI): A management practice where unfavorable, unhealthy, or poor quality trees are removed through girdling, basal barking, timber sale, or selective cutting. This technique can improve overall forest health, encourages understory growth and diversity, and reduces competition for desirable trees. It can also help restore the historic forest structure.

V. General Habitat Management Schedule by Season

Habitat Type	Season	Seasonal Management Actions
Southern Red Oak Mixed Forest	Spring	Garlic mustard removal; prescribed fire; planting; species inventory; monitoring; management planning
	Summer	Invasive species removal (buckthorn, barberry, Asian bittersweet, multiflora rose, autumn olive, honeysuckle, burning bush, black locust, invasive herbs); timber stand improvement; oak daylighting; species inventory
	Fall	Invasive brush removal (buckthorn, barberry, Asian bittersweet, multiflora rose, autumn olive, honeysuckle, burning bush, black locust); timber stand improvement; oak tree daylighting; species inventory; prescribed fire
	Winter	Invasive brush removal (buckthorn, barberry, Asian bittersweet, multiflora rose, autumn olive, honeysuckle, burning bush, black locust); timber stand improvement; oak tree daylighting; prescribed fire; monitoring
Southern Oak Forest	Spring	Garlic mustard removal; prescribed fire; planting; species inventory; monitoring; management planning
	Summer	Invasive species removal (buckthorn, barberry, Asian bittersweet, multiflora rose, autumn olive, honeysuckle, burning bush, black locust, invasive herbs); timber stand improvement; oak daylighting; species inventory
	Fall	Invasive brush removal (buckthorn, barberry, Asian bittersweet, multiflora rose, autumn olive, honeysuckle, burning bush, black locust); timber stand improvement; oak tree daylighting; species inventory; prescribed fire
	Winter	Invasive brush removal (buckthorn, barberry, Asian bittersweet, multiflora rose, autumn olive, honeysuckle, burning bush, black locust); timber stand improvement; oak tree daylighting; prescribed fire; monitoring
Planted Prairie	Spring	Prescribed fire; mow field (alternate spring & fall); clear firebreaks; girdle aspen; species inventory; monitoring
	Summer	Invasive weed removal (crownvetch, thistle, etc); brush removal; mow trail & edges; species inventory; monitor
	Fall	Collect and sow prairie seed; prescribed fire; mow field; clear firebreaks; brush removal; species inventory
	Winter	Sow prairie seed when there is little to no snow cover; prescribed fire; brush removal; monitoring; plan work

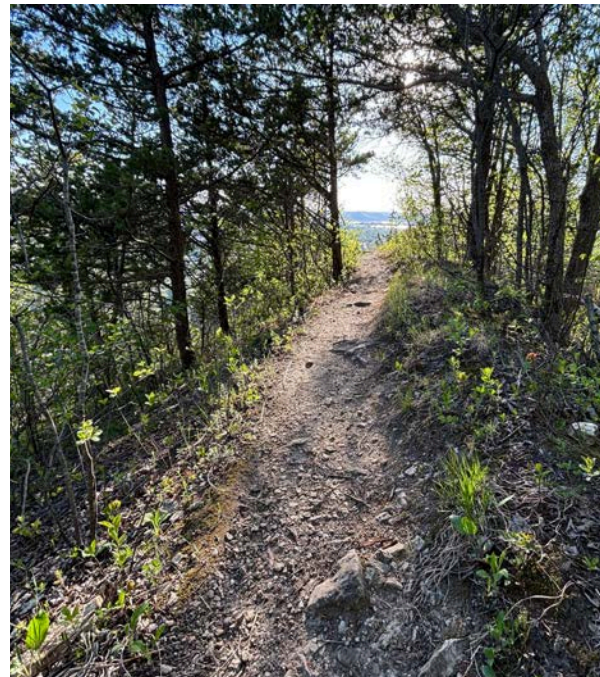
Habitat Type	Season	Seasonal Management Actions
Remnant Prairie, Dry Cliff, and Oak Savanna	Spring	Close rogue trails; species inventory; invasive weed removal (crownvetch, leafy spurge, etc); prescribed fire
	Summer	Invasive weed removal (sweet clover, crownvetch, leafy spurge, etc); brush removal (buckthorn, Asian bittersweet, autumn olive, honeysuckle, paper birch, dogwood, etc); native seed collection and dispersal; close rogue trails; species inventory
	Fall	Brush removal (buckthorn, Asian bittersweet, autumn olive, honeysuckle, paper birch, dogwood, etc); close rogue trails; native seed collection and dispersal; prescribed fire; species inventory; monitoring
	Winter	Invasive brush removal (buckthorn, Asian bittersweet, autumn olive, honeysuckle, paper birch, eastern redcedar, dogwood, etc); native seed dispersal; prescribed fire; management planning; monitoring
Disturbed Aspen Forest	Spring	Aspen girdling; garlic mustard removal; plant natives; species inventory; monitoring; management planning
	Summer	Invasive brush removal (buckthorn, barberry, Asian bittersweet, multiflora rose, autumn olive, honeysuckle, burning bush); timber stand improvement; oak tree and sapling daylighting; species inventory; mow around field
	Fall	Invasive brush removal (buckthorn, barberry, Asian bittersweet, multiflora rose, autumn olive, honeysuckle, burning bush); timber stand improvement; oak tree and sapling daylighting; species inventory; monitoring
	Winter	Invasive brush removal (buckthorn, barberry, Asian bittersweet, multiflora rose, autumn olive, honeysuckle, burning bush); timber stand improvement; oak tree and sapling daylighting; property monitoring

TRAIL IMPROVEMENT PLAN & MANAGEMENT RECOMMENDATIONS

I. Property Trails Overview

The Shelby Butterfly Trails offer a variety of attractive features including stunning viewpoints, scenic rock and cliff features, abundant wildlife, native forest and prairie ecosystems, historic ruins, and the Butterfly Field. The trail system includes 4 miles of frequented main trails and approximately 2 miles of unauthorized “rogue” trails. These trails vary widely in quality, width, and frequency of use. The Shelby Butterfly Trails are enjoyed by hikers, dog walkers, families with strollers, wildlife viewers, mountain bikers, and social groups hammocking, picnicking, etc.

The main issues found along the current trail system include erosion due to drainage issues, footprints and rutting from use in wet conditions, unapproved mountain biking, vandalism, uneven trail tread, narrow trail corridor, unsafe proximity to cliff edges, steep sections, and unauthorized rogue trails. Most of these issues stem from the fact that when initially established, most of the property’s trails were not constructed with sustainability and longevity in mind and current signage is lacking. Most of the trails were constructed by previous landowners or informally established by public use after the Town purchased the property and opened it for public access. The Town maintains the property’s major trails, especially those it uses for access, but a formal trail system has not been established.



Rogue trails along the Shelby Butterfly Trails typically lead to attractive property features and secluded areas that are difficult to access from the main trails. Some are old trails rarely used in the modern day which are currently recovering, or reintegrating into the surrounding landscape. Rogue trails on the property are also used when people get turned around while navigating the trails, which will be significantly reduced by improving the trail signage. The less frequently a rogue trail is travelled, the less convenient it will be to use, making it easier to close and revegetate. When a trail system is well marked and maintained and unauthorized trails are closed properly, most people will choose to stay only on authorized trails.

Despite its mostly informal origin, most of the property’s trail system is in great shape. The improvements recommended for the Shelby Butterfly Trails in this Plan mainly correct issues stemming from either unsustainable initial construction or insufficient routine maintenance. The rocky, shallow soils and steep topography found on the property may at times compound erosion issues and make initial trail construction more difficult, but they also offer high levels of sustainability and longevity when trails are properly constructed and maintained.

All trails found on the property have been mapped and assessed by Conscious Conservation LLC for this Plan. The results of the trail assessment are visually represented on the Trail Improvement Plan Map on page 47. This map shows the main property features as they relate to trail locations, identifies recommended action items to resolve the various issues found along the trails, and outlines a recommended plan for improving the trail system overall.

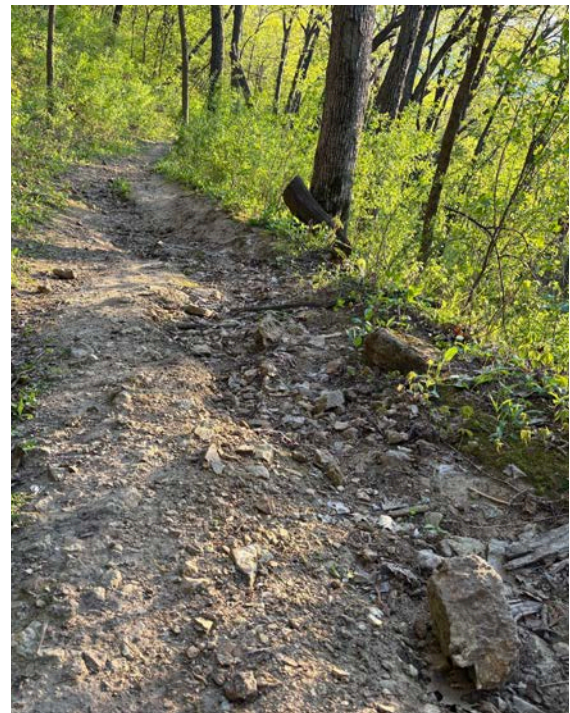
Implementing the trail improvements outlined in this Plan will achieve the recommended trail system, which is demonstrated on the Recommended Trail Map on page 62. This trail system is designed to make the trails as safe, sustainable, and accessible as possible for the property's topography and approved user groups. The Signage and Emergency Plans found later in this Management Plan are based on the recommended trail system and map. Once installed, the signage should be managed as part of routine trail maintenance.



This photo shows a trail that is too close to a cliff edge

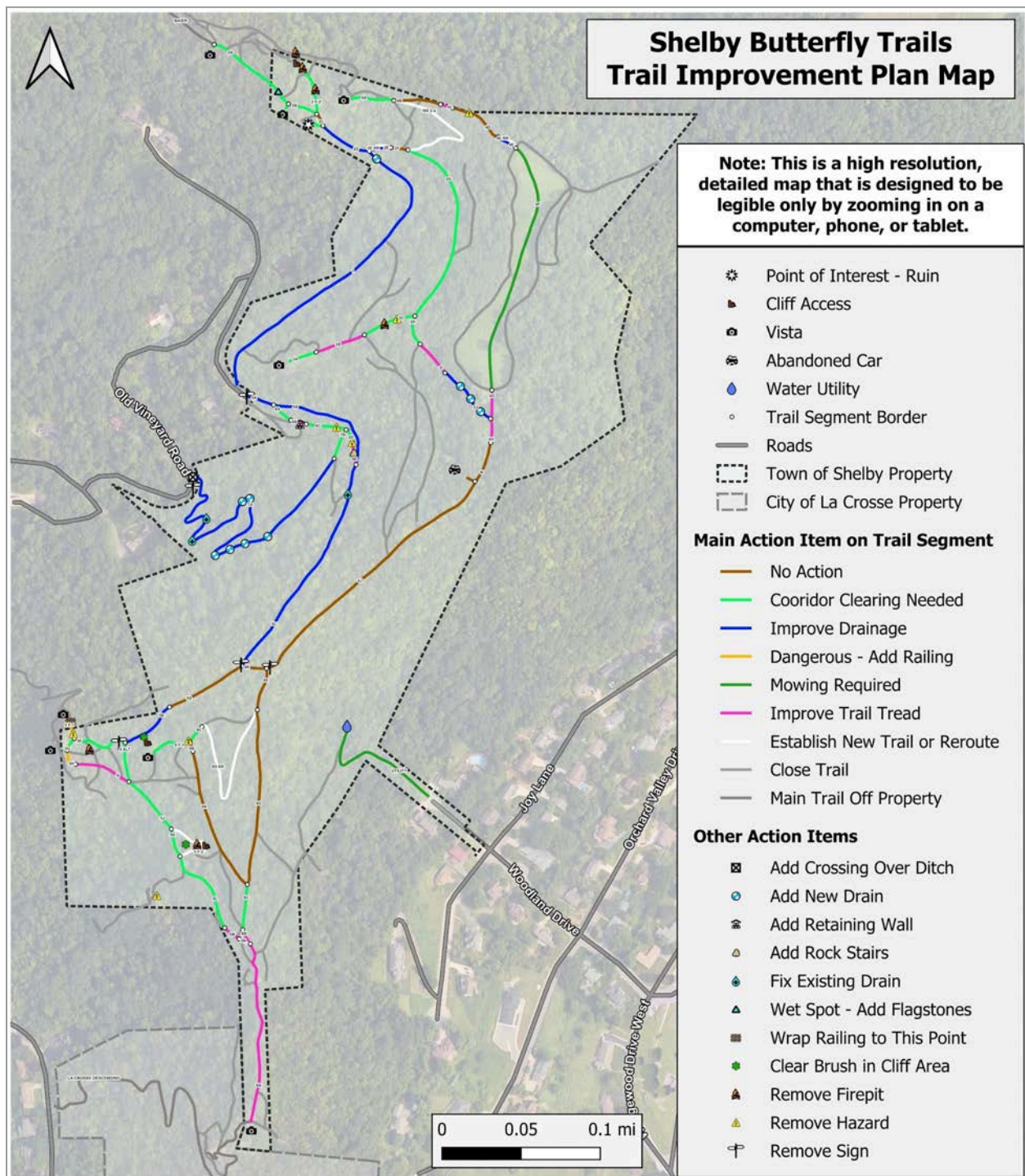


Example of human-caused trail impacts



Example of water erosion damage

II. Trail Improvement Plan Map & Overview



Note 1: This image has been compressed. The high quality version is included supplementarily.

Note 2: Trail impacts due to weather and human behavior can change unexpectedly over a short period of time. Therefore, the “Remove Firepit” and “Remove Hazard” action item locations on the map may become out-of-date by the time work is completed on the ground.

Trail Improvement Plan Map – Overview

Trail Segment	Recommended Trail Name	Difficulty Rating	Overall Condition	Priority	Condition Summary & Recommended Actions
1	Mourning Cloak	Moderate	Fair	High	Poor drainage has caused significant erosion on this trail, creating a very uneven tread with tripping hazards. Due to its width and historic use as a road, this trail should be restored for UTV access to improve emergency access for the northwest section of the property. A heavy equipment operator with knowledge of sustainable trail design should be hired to fix the trail tread, add quality drainage structures, and improve the entrance for UTV access.
BAIER	N/A	Moderate	Okay	N/A	This trail is not included on the Recommended Trail Map because it is located on private land. The landowner allows public access on this trail for hiking only.
2A	Harvester	Easy	Okay	Medium	The trail corridor is narrow due to brush encroachment. There is also a low spot near 2B that pools. People are walking around this low spot when it is muddy, widening the trail. Clear the corridor and possibly armor the low spot with flagstones.
2B	Harvester	Easy	Okay	Medium	The trail corridor is narrow due to brush encroachment and needs to be cleared. No other issues.
2 F-2	Picnic Area Trail (Harvester)	Easy	Okay	High	This segment needs establishment. Completely deconstruct the firepit mounds. Scatter the biodegradable material and bring a trash bag to dispose of any litter found. Clear the trail corridor and add a picnic table in the clearing near the cliff.
2C	Harvester	Easy	Good	Medium	The main trail is in great condition, but the segment from the trail to the historic ruin is too narrow and needs corridor clearing. Brush clearing should be done in and around the ruin also to improve this feature.
2D	Harvester	Easy	Good	Low	This segment isn't draining properly because it was compacted, making it a low spot. It could be moved uphill.

Trail Segment	Recommended Trail Name	Difficulty Rating	Overall Condition	Priority	Condition Summary & Recommended Actions
2E	Harvester	Easy	Okay	Low	This segment is eroding slowly because it is too steep for the topography and doesn't have good drainage. To fix this, the "2E RR" reroute, shown in white, should first be established and then the original 2E route should be closed.
2F	Harvester	Easy	Good	Low	No action recommended.
RR 2-4	Connecting "Skipper" Trail (Harvester & Monarch)	Moderate	N/A	High	The current connector trail from segments 4B to 2F is far too steep and is in poor condition. This is a safety concern that cannot be fixed without a reroute. The "RR 2-4" reroute, shown in white, should first be established and then the original connector trail should be closed.
2G	Harvester	Easy	Good	Medium	This segment needs corridor clearing short-term, which would make this segment UTV driveable. In the long-term, tread improvement and de-berming should be done.
2H	Harvester	Easy	Good	Medium	This segment is mostly in good shape, but needs corridor clearing.
2I	Harvester	Easy	Okay	Medium	This segment needs some tread improvement and de-berming in the short term, and some areas also need corridor clearing.
2J	Harvester	Moderate	Okay	Medium	This segment is a bit too steep for the topography, which is causing water drainage issues and minor erosion. There is not a realistic, cost-effective location to reroute this trail, so instead drains should be added and the tread should be fixed.
3A	Lady	Moderate	Okay	Medium	This segment is in good condition, but it was never formally established so corridor clearing is needed.
3B	Lady	Easy	Okay	High	Because this trail was not formally established, some portions of this segment need to be formally established to ensure the trail is routed sustainably. When establishing the trail, grade reversals should be added to create drainage.

Trail Segment	Recommended Trail Name	Difficulty Rating	Overall Condition	Priority	Condition Summary & Recommended Actions
3C	Lady	Easy	Fair	High	Some portions of this segment need to be formally established to ensure the trail is routed sustainably and drains water properly. There are also obstacles to remove, including a pile of rocks and a log across the trail. A mountain bike jump constructed out of dirt was also found in this area that should be closed.
4A	Monarch	Moderate	Fair	High	This segment has multiple routes going to a single location which will require significant corridor clearing including tree removal to fix. The recommended corridor clearing will also benefit the fragile habitat in this location. All trees and brush <u>except</u> oak, hickory, and Eastern redcedar should be cleared from the desired trail route (the route closest to the cliff edge) to create a comfortable corridor and to allow for the trail to be moved a couple feet further from the cliff edge. Prune any limbs from desirable trees that extend into the trail corridor, preferably in winter. Close and disguise the undesirable trail routes once this work is done.
4B	Monarch	Easy	Good	Low	There is a low spot where drainage could be improved, but no damage was observed so no action needed.
4C	Monarch	Easy	Okay	Medium	This segment has an uneven surface and needs tread improvement.
4D	Monarch	Easy	Okay	High	There is a large fallen tree across a portion of this segment with two trail routes going through and around it. This obstacle should be cleared. A single trail should be re-established by concealing and closing the other.
4E	Monarch	Moderate	Okay	Low	This segment is too steep for the topography, which is causing drainage issues and some erosion. The surrounding topography is viable for reroute "4E RR" to fix the issue, which is shown in white. Significant brush removal would be needed to do so because there are many thick invasive species there.

Trail Segment	Recommended Trail Name	Difficulty Rating	Overall Condition	Priority	Condition Summary & Recommended Actions
4F	Monarch	Easy	Good	High	This segment is in good condition but needs regular mowing because it crosses prairie habitat.
4G	Monarch	Easy	Good	Low	Mostly good trail, but would benefit from minor tread improvement including grade reversals.
4H	Monarch	Easy	Good	Low	Mostly good trail, but would benefit from minor tread improvement including grade reversals.
4I	Monarch	Easy	Excellent	Low	No action recommended except occasional brush removal around the old car property feature.
4J	Monarch	Easy	Excellent	Low	No action recommended.
4K	Monarch	Easy	Excellent	High	Trail condition is excellent, but there are two signs that need to be removed on either end of this segment before installing new signs.
5A	Swallowtail	Moderate	Fair	High	Poor drainage has caused erosion on this trail, creating an uneven tread with tripping hazards and shallow gullies. Due to its width and historic use as a road, this trail should be restored for truck access to improve emergency access for the property. A heavy equipment operator with knowledge of sustainable trail design should be hired to fix the trail tread and add quality drainage structures. The trail entrance signage should also be removed before installing new signs. The gate should also be replaced.
5B	Swallowtail	Moderate	Fair	High	Poor drainage has caused erosion on this trail, creating an uneven tread with tripping hazards and shallow gullies. Due to its width and historic use as a road, this trail should be restored for truck access to improve emergency access for the property. A heavy equipment operator with knowledge of sustainable trail design should be hired to fix the trail tread and add quality drainage structures.

Trail Segment	Recommended Trail Name	Difficulty Rating	Overall Condition	Priority	Condition Summary & Recommended Actions
5C	Swallowtail	Moderate	Fair	High	Poor drainage has caused erosion on this trail, creating an uneven tread with tripping hazards and gullies. Due to its width and use as a road, this trail should be restored for emergency access. A heavy equipment operator with knowledge of sustainable trail design should be hired to fix the trail tread, add quality drainage structures, and improve the trail and hillside stability near the marked drain along this section. This drain is located at a major trail intersection that must be closed due to erosion and unsafe conditions.
5D	Swallowtail	Easy	Good	Low	No action recommended.
5E	Swallowtail	Easy	Okay	Low	The trail surface is mostly good, but there is insufficient drainage causing seasonally muddy conditions. The muddy conditions could be improved by armoring problem areas with flagstones or installing gravel, but no damage was found to justify action. The cliff feature along this section has graffiti. This problem could be reduced by clearing brush to provide a clear line of sight from trail to cliff.
5 ALT	Connecting "Skipper" Trail (Swallowtail shortcut)	Easy	Good	Medium	This segment is mostly good but needs some corridor clearing, including some overhead clearing.
5F	Swallowtail	Easy	Good	Medium	Removal of tripping hazards and corridor clearing would be beneficial. There is also a sign and old firepit in this area that should be removed.
5 F-1	Swallowtail <u>or</u> N/A. <i>This trail leads to an overlook on the Leavers' land. The Alternate Recommended Trail Map includes this segment and is provided supplementarily</i>	Moderate	Fair	High	If permission is granted by the Leavers to include the overlook on their property in the trail system, then the major tripping hazards on this trail segment could be removed. A guardrail should also be added, following the cliff edge and wrapping fully around the overlook area to block the rogue trail that continues northwards and leads to The Chairs. Otherwise, close the segment at the intersection with 5F and 5G.

Trail Segment	Recommended Trail Name	Difficulty Rating	Overall Condition	Priority	Condition Summary & Recommended Actions
5G	Swallowtail	Easy	Good	Low	The trail surface is good, but some corridor clearing would be beneficial.
5H	Swallowtail	Moderate	Fair	High	This segment is too narrow and too close to the cliff edge. Significant brush clearing should be done along this trail segment, and the trail tread should be widened to help draw people away from the cliff edge. A guardrail should be added along the cliff side along this entire segment.
5I	Swallowtail	Moderate	Fair	High	This segment is too narrow and too close to the downslope edge. Corridor clearing needs to be done along this segment, and the tread should be widened to help draw people further from the hill edge.
5J	Swallowtail	Easy	Okay	Medium	The trail surface is good, but some corridor clearing is needed.
5K	Swallowtail	Easy	Okay	High	The trail surface is good, but corridor clearing is needed in this segment. Brush could also be removed along the cliff edge as a lower priority that would highlight the cliff feature.
5 F-2	Picnic Area Trail (Swallowtail)	Easy	Fair	High	This segment is currently a rogue trail that should be established into a main trail with a picnic area in the clearing. This will require clearing the trail corridor, removing enough brush to provide a clear line of sight to the cliffside and reduce graffiti, cleaning the graffiti off the cliffside, removing the firepit in this location, and adding a picnic table.
5L	Swallowtail	Easy	Okay	High	The trail surface is good, but corridor clearing is needed in this segment. Remove the marked "hazard" along the rogue trail descending from this segment. This hazard is a swing that people will continue to visit if not removed. Invasive brush could also be cleared along the cliff edge to highlight the feature as a low priority.
5M	Swallowtail	Moderate	Fair	High	Tread improvement and corridor clearing are needed in this segment and the trail needs to be widened.

Trail Segment	Recommended Trail Name	Difficulty Rating	Overall Condition	Priority	Condition Summary & Recommended Actions
5N	Swallowtail	Moderate	N/A	High	The trail currently connecting segments 5M and 8A is too steep and must be rerouted because it cannot be made sustainable where it is. A reroute should be constructed in the approximate location of "5N" which is shown in white on the map.
LA CROSSE DESCENDING	N/A	Difficult	Poor	High	Close and attempt to rehabilitate. It may be difficult to fully close this trail due to demand, but traffic can be discouraged with a "Sensitive Habitat - Please Keep Out" sign and disguising the trail entrance.
6A	Connecting "Skipper" Trail (Swallowtail & Admiral)	Moderate	Good	High	This segment is mostly in good condition, except near the intersection with 6B. There, corridor clearing is needed and the trail flow needs to be improved via treadwork.
6B	Connecting "Skipper" Trail (Swallowtail & Admiral)	Moderate	Fair	High	There is a section near the intersection with 6A that would benefit from a small retaining wall to keep it stable over time, and the flow into 6A can be improved as well via treadwork. Corridor clearing and some de-berming is also needed.
6C	Connecting "Skipper" Trail (Swallowtail & Admiral)	Easy	Okay	High	There is a dangerous overhead hazard that needs to be cleared or marked along this segment. Corridor clearing and de-berming are needed.
6D	Admiral	Moderate	Okay	High	This segment is currently a rogue trail and needs to be converted to a main trail to replace a segment that will close. A log is across this trail and needs to be removed. Corridor clearing is also needed, and the trail should be widened where possible.
6E	Admiral	Difficult	Fair	High	This segment is currently a rogue trail and needs to be converted to a main trail to replace a segment that will close. In the steep spots, the trail should be widened as much as possible and natural rock steps should be constructed to create an attractive and comfortable flow into trail segment 5C.

Trail Segment	Recommended Trail Name	Difficulty Rating	Overall Condition	Priority	Condition Summary & Recommended Actions
7A	Admiral	Difficult	Fair	High	There are significant drainage issues along the entire length of this segment due to unsustainable trail construction. An experienced trail crew should be hired to de-berm the trail where needed, add drains at strategic locations such as the marked spots, fix the tread in damaged areas, and “clean” existing drains to restore their functionality. Long-term, the sharp turns could be improved by constructing proper switchbacks or this trail could be rerouted altogether to reduce future maintenance needs. At the trailhead, a permanent crossing such as a culvert could be added in the ditch to reduce future maintenance needs and make the crossing more inviting and comfortable for users. The trailhead sign should also be removed before installing a kiosk.
7B	Admiral	Easy	Okay	High	This segment is currently a rogue trail and needs to be converted to a main trail to replace a segment that will close. There are multiple woody obstacles that need to be cleared from the trail, the corridor needs to be cleared of brush on either side, and minor tread improvement and de-berming needs to be done.
8A	Azure	Moderate	Fair	High	The major tripping hazards (rocks) in the trail should be removed through tread improvement. Corridor clearing is also needed the entire length of the segment to widen it further away from the steep drop-off.
8B	Azure	Moderate	Fair	High	Major tripping hazards in the trail should be removed through tread improvement. Corridor clearing is also needed the entire length of the segment to widen it.
8C	Azure	Easy	Good	High	This segment is mostly good, but corridor clearing is needed in the short term. The trail tread also needs improvement in spots.
8D	Azure	Easy	Excellent	Low	No action recommended.

Trail Segment	Recommended Trail Name	Difficulty Rating	Overall Condition	Priority	Condition Summary & Recommended Actions
8E	Azure	Easy	Excellent	Low	No action recommended.
9A	Copper	Moderate	Good	Low	This segment is steep in spots but there is no visible erosion damage so no action is recommended.
9B	Copper	Moderate	Fair	High	There is a stump in this trail that should be removed because it is a tripping hazard. The tread is uneven in spots and should be improved.
9 F-1	Copper	Easy	Fair	High	The trail surface is good, but brush removal is needed on either side of the trail and around the overlook area which is overgrown. These efforts would also benefit the habitat.
9C	Copper	Easy	Good	Medium	The trail surface is good, but corridor clearing is needed in spots.
9D RR	Copper	Moderate	N/A	High	The current trail is too steep and cannot be rehabilitated. The "9D RR" reroute, shown in white on the trail improvement map, should be constructed and the old route closed.
UTILITY	N/A	Difficult	Good	Low	Continue mowing as needed for utility access. Add a "Property Rules" sign at the Woodland Drive access to clarify property rules for visitors.

III. Description of Recommended Action Items

Add Guardrail: It is not uncommon for public entities to route hiking trails along cliff edges to provide access to areas of public interest such as scenic overlooks and geologic features. People tend to find and travel appealing cliffside routes regardless of whether the trails are formally adopted. To protect against the inherent dangers that these routes can pose, several governments and municipalities have invested in the installation of guardrails and other infrastructure along high-risk areas. These structures can be customized to fit the budget and needs of the project, and some designs are available online. It is crucial that these structures are well-engineered and installed to ensure their safety and longevity, so a contractor who is experienced in guardrail installation should be hired for this service. After installation, the structure should be inspected regularly and repaired as needed to retain its level of safety.

Brush Removal: Cut-stump treatment is the most effective method of brush removal when the goal is minimizing both soil disturbance and regrowth of the target plants. This method can be done year-round but is most effective during the summer, fall, and winter months. Brush should

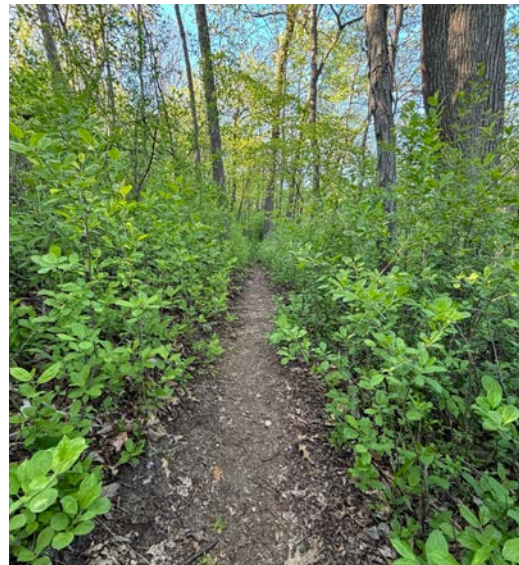
be cut as close to the ground as possible, ideally less than 3 inches from the soil surface. Then the cut portions of the plant are removed from the work area and an herbicide mix (usually 20-25% Garlon 4 Ultra in 75% Bark Oil Red) is applied to the entire cut stump soon after cutting using either a targeted herbicide sprayer or an unpressurized applicator such as a Buckthorn Blaster. Then, the severed portions of the plant can be either chipped and hauled away, scattered throughout the work area, or piled densely and burned in winter. This depends on the amount of brush to be removed, the nature of the work area, vehicle accessibility, and the goals of the project. The stumps degrade within a few years. To preserve results long-term, the area must be routinely maintained by removing the seedlings and resprouts of unwanted species.

Without herbicide, resprouts of target plants tend to occur regardless of method. In sensitive habitats, repeated brush cutting can achieve effective results without herbicide use, but it is more costly than the cut-stump method because multiple annual treatments are required for it to be effective, increasing labor needs. Forestry mulching is another common method for brush removal that does not require herbicide, but it is dependent on vehicle accessibility and the area typically looks disturbed long after the method is used. The large wood pieces created by this method cause a thick layer on the soil surface, affecting the regeneration of forest undergrowth. Also, the vehicles used for this method cause soil compaction which can impact the native habitat's ability to regenerate. This method is not recommended for sensitive habitats and is best used during winter months. Forestry mulching is a great tool for areas with high levels of woody invasive species infestation where other methods of removal are prohibitively expensive.

Corridor Clearing: Whenever possible, remove all brush and branches growing within 3 feet of the trail edge on either side and less than 12 feet above the trail. This zone is called the trail corridor. When cutting brush in the trail corridor, cut the plant as close to the ground as possible and then treat the stump with cut-stump herbicide mix.

Otherwise, mow 3 feet to each side of the trail when conditions allow. Whenever possible, avoid cutting down native trees. Instead, prune only the branches directly impacting the trail corridor. Pruning is best done by first making a small cut in the bottom of the branch in line with and about one quarter inch out from the tree's trunk and then making a similar cut from the top of the branch, cutting down through the branch until the top cut meets neatly with the bottom cut and the branch falls. Be sure to wear a hard hat!

Do not prune or cut oak trees between March 1 and August 31 whenever possible to prevent oak wilt infection and spread. If you must do so, apply pruning sealer directly after cutting to cover the injured area.



Never pull down forcefully on vines to clear them because it may dislodge heavy overhead objects, causing injury. To clear vines from the trail corridor, gently create tension in the vine and cut it off first as high as possible and then at the ground level while minimizing downward pull.

Hazard Removal: When a user chooses to recreate on a public trail, they assume the level of risk inherent to that activity. However, it is the responsibility of the land management team to ensure that the level of risk on their trail system does not become undue. To ensure this, trails should be assessed at regular intervals and identified safety concerns should be removed whenever feasible. If a significant hazard cannot be removed the day of or at all, it should be clearly marked with caution tape, fluorescent paint, or other means. In lieu of removal, low to moderate hazards can be outlined in the trail difficulty descriptions included with the trail map.

Tripping hazards such as rocks and roots will always occur on trails, and the resulting challenge can improve the experience for trail users. However, major tripping hazards should be removed whenever possible to improve safety and accessibility, especially when they occur near drop-offs or on a steep slope. Loose and sharp hazards should be removed from the trail whenever possible because they increase the risk of injury. After removal, fix the trail surface with hand tools.

Overhead hazards such as snags and widowmakers are another common safety hazard that trail managers must address. They occur in and along forested areas. Many overhead hazards cannot be safely removed without special equipment and skills. Trail managers should do their best to remove any overhead hazards they identify, but they should not risk their safety in the process. The degree to which this type of hazard is managed will depend on the property's contracting budget, the skill level of staff, and the level of risk tolerated by the trail system's users.



Maintain or Install Drainage Features: One of the most important factors affecting the quality and longevity of a trail is how water interacts with that trail. As the volume and speed of water



on the trail increases, the likelihood of erosion damage such as gullies also increases. There are several methods for improving the drainage on a trail, but the goal of all these methods is to reduce the volume and speed of water interacting with the trail as much as possible. The photo to the left shows an area where water is damaging a trail.

Installation of grade reversals is the most maintenance-free method for improving drainage on a trail. This is best done during initial construction of a trail, but it can also be done

when improving existing trails. This method involves frequently changing the trail's degree of inclination from positive to negative and vice versa along the route. The goal is to provide many places for water to drain off the trail before it can gather much speed and volume. This can be done so subtly that it is virtually unnoticeable when travelling the trail. However, some trails are too steep to realistically support this method. It is best to hire an experienced trail builder to evaluate whether this method is appropriate for a given trail and to have them implement it if so.

Strategically placed water bars are a common, cost-effective way to improve drainage on a trail, but they require regular maintenance and can be disruptive. Water bars can be made using a variety of materials, including dirt alone. They work by stopping water as it travels down the trail and directing it off to one side. As water travels down the trail, it will encounter the raised edge of the water bar, which stretches the entire width of the trail. Water is then directed towards a dip dug along the end of the bar. This dip is constructed to become gradually deeper and wider until the edge of the water bar. Just past this spot, water will drain downslope off the trail. Sediment is carried by moving water and deposited when it changes direction at the water bar, and over time this will fill the dip and cause the structure to lose its function. Maintenance involves digging out or "cleaning" the dip portion of the water bar just before it fills. The larger the water bar structure, the more disruptive it will be to users of the trail and the less often it will need to be maintained.

In *A Better Way: Design, Construction, Maintenance and Crew Leadership for Modern Silent Sport Trails*, Michael Riter of Trail Design Specialists outlines his design called a Rolling Grade Dip, which is an upgraded version of a dirt water bar that is less disruptive to trail users and requires less maintenance than a regular water bar. His design has been provided as a supplemental resource to this Plan.

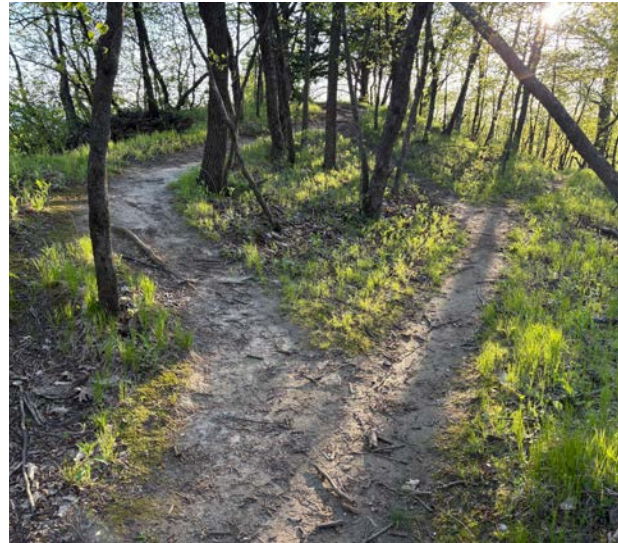
Mowing: The trail that travels through the Butterfly Field should be mowed between 4 and 8 feet wide and between 2 and 6 inches tall as needed throughout the growing season. Mowing should be timed strategically with other land management efforts such as invasive species removal to avoid spreading noxious seeds and otherwise impacting management goals.

Switchback Installation: A switchback is a specialized structure built to sustainably create a sharp turn in a trail. It reverses trail direction on a slope without creating drainage or safety issues. These structures are best designed and installed by a professional, experienced trail crew. Well-constructed switchbacks should require little to no ongoing maintenance. The photo to the right shows a sharp turn in a trail that is not currently draining properly and could be converted into a proper switchback.



Trail Closure: Undesired trails must be properly closed to prevent their continued use and to encourage adoption of reroutes and other sanctioned trails. Simply blocking the entrance to a trail is *not* an effective way to close that trail. To properly close a trail, felled brush, logs, and leaf

litter should be scattered across the entire length and width of the trail to create frequent barriers and a natural appearance. This process should be done such that it would be highly labor-intensive to undo and prohibitively uncomfortable to navigate. It is also important that the closed trail blends in well with the surrounding environment. The photo to the right shows a trail braid where the cause should be removed, a single route established, and the other routes closed.



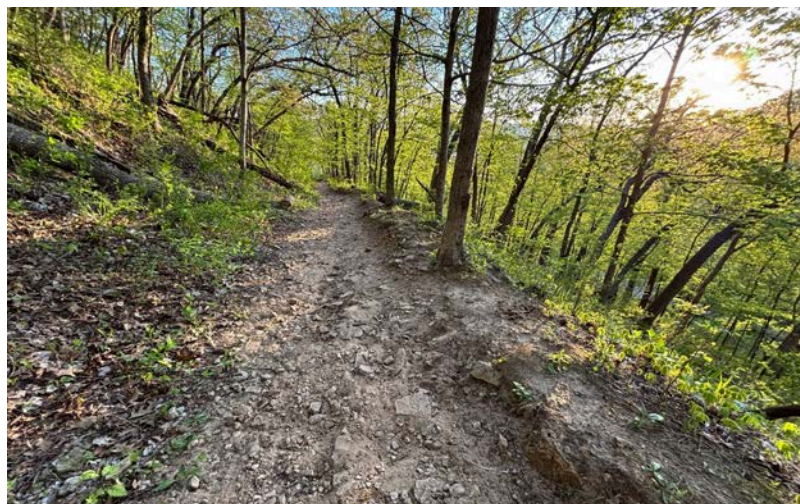
When closing a steep trail section, check dams should be added to encourage the build-up of fertile soil and reduce the likelihood of future erosion issues. Continued erosion on a steep, closed trail will keep the route visible and unvegetated, which may encourage continued use. A trail check-dam is a stable structure that is at least 6 inches in diameter and made of natural materials such as a log. The check dam should be securely anchored in place and oriented perpendicular to the steepest part of the slope it is on. Once placed, the check dam should be difficult to dislodge and there should not be noticeable space between the bottom of the structure and the trail surface. Water should only be able to travel over the check dam, not under it or to the side. The more check dams are placed along a trail, the quicker and more effectively the steep trail will revegetate and blend in with its natural surroundings. When installed, check-dams should look like ladder rungs going straight up the steepest part of the hill, but while following the route of the trail being closed.

Trail Reroutes: Short sections of unsustainably designed trail can be ok as long as there is no visible damage on the trail surface or further downhill. That being said, unsustainable trail design cannot be fixed. When problems are observed along a trail system, the only permanent solution is often to reroute the problem section to a location that offers more longevity and completely removes the source of the problem. The design of a trail reroute is highly dependent on topography, land management goals, budget, public interest, and stakeholders. This management action is best done by an experienced, professional trail crew.

Tread Improvement and Rehabilitation: The trail tread is simply the surface of the trail. It should be constructed to be as smooth as possible, sloping slightly downhill across its width at a decline of 3-8%. This creates a comfortable and safe experience for users while shedding water off the trail for sustainability. Before fixing a damaged trail tread, the underlying issue causing the damage must be addressed first. Then, the damaged area can almost always be repaired onsite without using outside filler material. If filler material must be used, try to locally source it.

Even the most well-constructed trails require occasional maintenance, especially soon after they are installed. This is due to the inevitable compaction that occurs when trails are used. When the trail surface is compacted, it can become lower than its downhill edge. This creates a “berm”

on the downhill edge of the trail which must be removed for proper drainage using a process called de-berming. A trail on a slope should not be lower than both its edges because then



water does not have anywhere to go except down the trail, which causes erosion damage. The photo to the left shows a trail with a large berm on its downhill edge. This trail also has an uneven tread.

When a trail is the lowest point in the surrounding topography, water will collect there and cause pooling or muddy conditions. During dry periods, a seasonally muddy spot in a trail can sometimes be indicated by

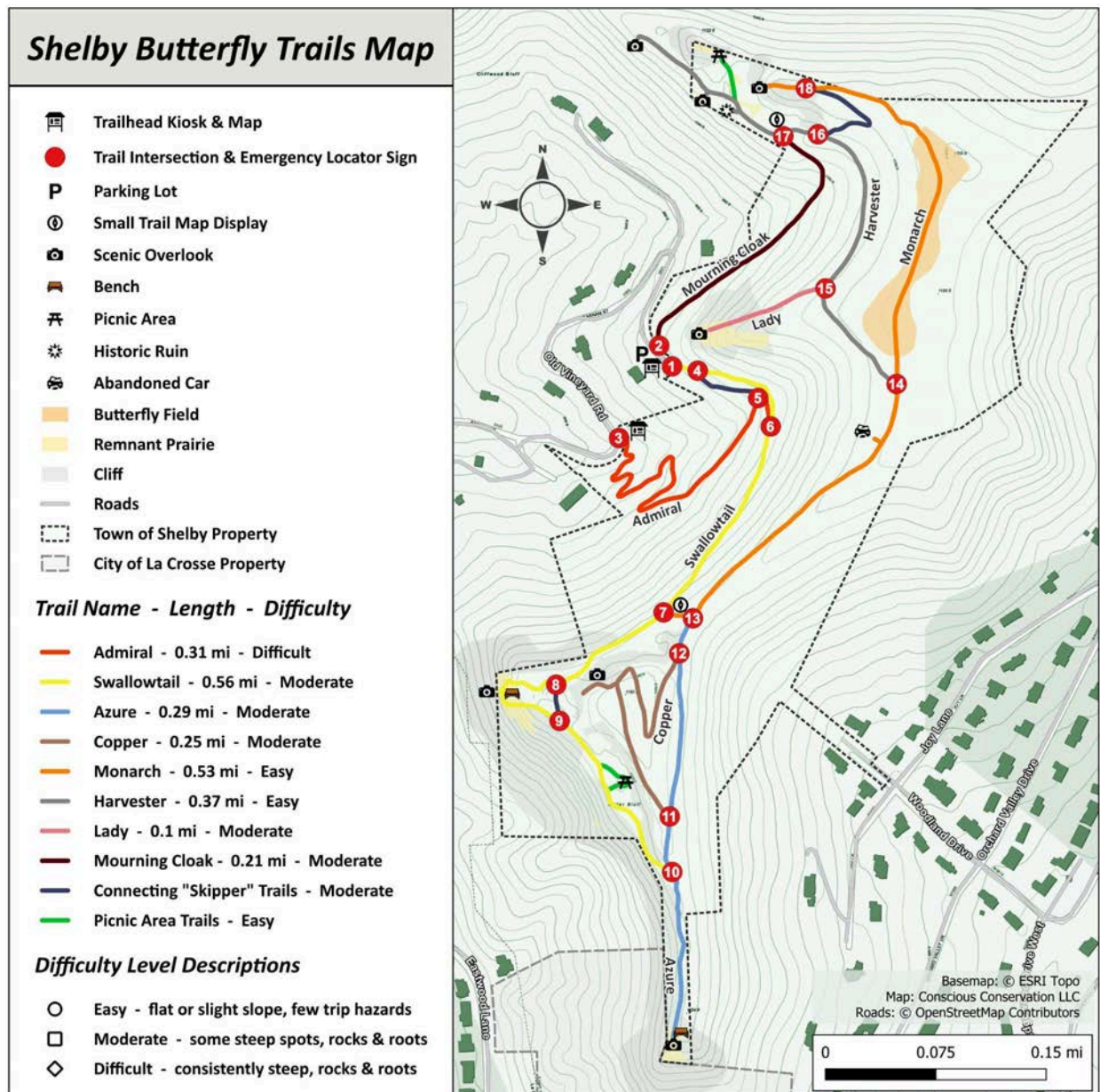
soil surface cracks as shown in the picture below and to the right. When people or wildlife walk through wet spots, they damage the trail. People also tend to walk around the wet spot to avoid it, widening the trail and worsening the problem. When moving the trail to avoid the spot is not realistic, this problem can be improved by armoring the wet spot so people can cross it without getting muddy. This is an ideal solution when the problem area is small because the results look appealing and blend into the surroundings. Armoring is best done by installing large, flat stones such as flagstones in line with the trail surface and fit closely together to improve durability of the tread.



When a sizable portion of a trail sits lower than the surrounding topography, armoring is not a realistic solution to resolve muddy tread conditions because it is labor-intensive and thus costly. For these areas, it is most effective to raise the entire trail for the length of the problem area by installing geocell or plastic grassy pavers packed with a filler material of fine gravel. This allows water to sit in the low spot during wet conditions without affecting the experience of trail users or washing away filler material. This method can also be used to hold the trail surface sediment on steep trails that are eroding but cannot be rerouted. These solutions should be installed by an experienced trailbuilder to ensure that the materials and technique are suitable for the site and conditions.

When a trail is steep and cannot be rerouted, installation of steps can be a viable solution. For short sections that require steps, it is best to source stone from elsewhere on the property to use for construction of the feature. This will provide a natural look and feel to the steps that is more enjoyable for trail users. Rock steps are best constructed by a professional trail crew.

IV. Recommended Trail Map



Note: This image has been compressed. The high quality version is included supplementarily.

Recommended Trail Map Description: This recommended trail system offers 3.65 miles of sustainable trail property-wide. Each trail was named after a species of butterfly commonly found in La Crosse. The color of each trail was inspired by the wing display of the butterfly it was named after. During field surveys, the following butterfly species were confirmed on the property: Spring Azure, Eastern Tiger Swallowtail, Monarch, and Mourning Cloak. All other species used for the trail system (Red Admiral, Bronze Copper, Painted Lady, Harvester) will likely be confirmed on the property if a survey is completed. The trail map also includes major property features, trail difficulty levels, and trail lengths in miles. Emergency Locators and major signage are also included on the map and outlined further in the Signage and Emergency Plans.

V. Trail Care & Ongoing Maintenance

Ongoing care and maintenance tasks for the recommended trail system have been listed below in order of estimated frequency of need. When trails are inspected and maintained regularly, the problems encountered during each visit will mostly be small and easy to handle the day of. When visiting the trails, it is helpful to pack supplies for a variety of management activities so problems can be resolved as encountered. Ongoing care and maintenance tasks will include:

1. Routine inspection of the trails at least once monthly to identify new action items.

Supplies: weatherproof notebook, writing utensil, GPS device, flagging tape

2. Mowing the Butterfly Field trail and vehicle accessible trail corridors as needed.

Supplies: mower, gas, maintenance toolbox, PPE

3. Removal of trees, hazards, and other obstacles across the trail when encountered.

Supplies: chainsaw, bar oil, mixed gas, PPE, small engine toolbox, pole saw, loppers, hand saw, pruning sealer for injuries to oaks during oak wilt season, hand tools for repairing trail surface (shovels, Pulaski, leaf rake, rake hoe)

4. Removal of litter, vandalism, firepits, deer stands, and other unauthorized materials when encountered on the property.

Supplies: contractor garbage bags, PPE, toolbox, graffiti cleaning supplies

5. Brush removal from the trail corridors and scenic overlooks as needed.

Supplies: chainsaw, brush cutter with saw blade, PPE, loppers, hand saw, bar oil, mixed gas, small engine toolbox, herbicide mix/applicators, pole saw, pruning sealer for injuries to oaks during oak wilt season, hand pruner

6. Repair of infrastructure and signage as needed to restore them to good condition.

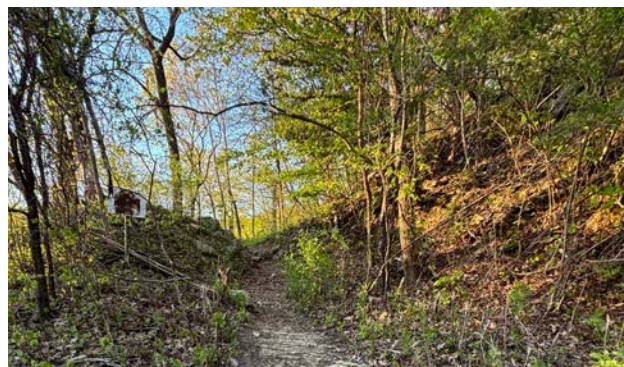
Supplies: maintenance toolbox, replacement parts

7. Routine maintenance of the trails as needed through de-berming, clearing drainage structures, improving trail tread, etc.

Supplies: hand tools (shovels, rake hoe, hand saw, loppers, Pulaski, pickaxe)

8. Replacement of damaged or outdated signage as needed.

Supplies: toolbox, replacement signage if needed, post pounder, post puller



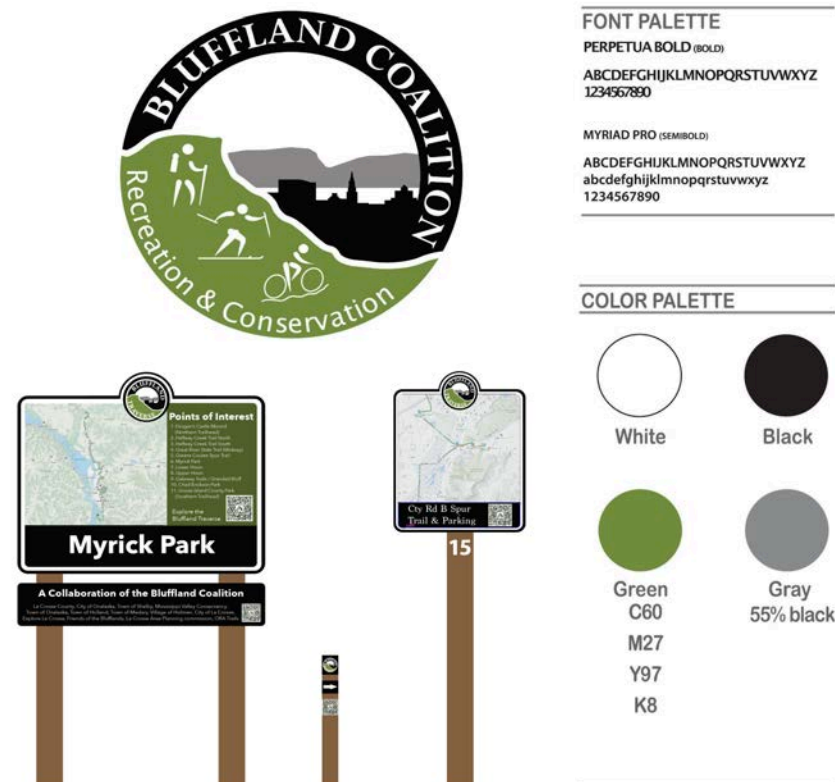
SIGNAGE PLAN

I. Trail Signage Overview & Recommendations

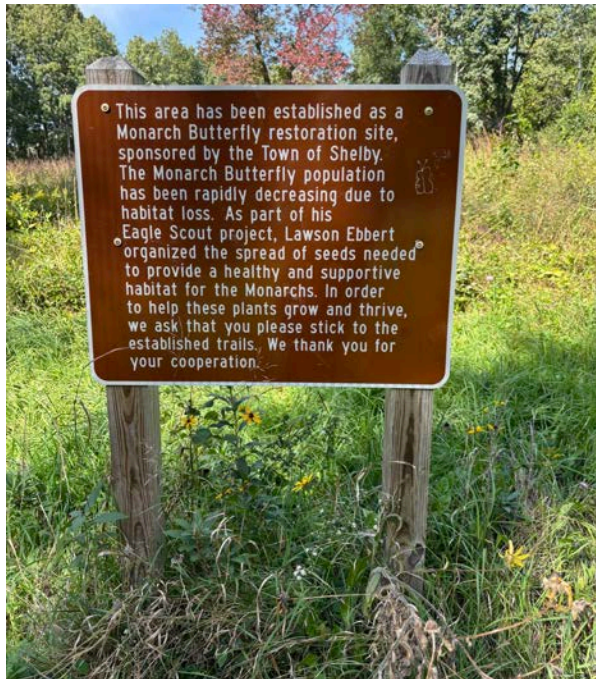
Overview: This Signage Plan outlines recommendations for updating the Shelby Butterfly Trails signage to reflect the changes outlined in the Trail Improvement Plan while catering to the specific needs and challenges of the property. Key priorities are ensuring that the signage is durable and resistant to vandalism, minimizing ongoing maintenance needs, and maximizing visitor safety and understanding of the property rules. The updated signage will incorporate a comprehensive Emergency Response Plan for the property and should be eye-catching, user friendly, and complementary to the signage of other Bluffland Coalition member organizations. The current property signage does not meet these goals and should be replaced.

Recommended sign placement locations are shown on page 71 of this Plan. A detailed overview of the trail intersection signage is included on pages 72 through 80. In the future, the property signage could be further improved by adding interpretive signs at some of the most interesting historical and ecological features. This is a great option for a volunteer project.

Bluffland Coalition Signage Branding: The graphic below outlines the current branding guidelines and logo for trail projects involving The Bluffland Coalition. The sample signage depicted on the bottom left of the graphic has been designed for another Bluffland Coalition project that is unrelated to the Shelby Butterfly Trails. Signage designs for the Shelby Butterfly Trails should use the below font and color palettes whenever possible and should complement the sample signage overall, but they do not need to be an exact match.



Current Shelby Butterfly Trails Signage:



Interpretive Sign



Main Trailhead Sign



Intersection Sign



Lower Trailhead Sign

Problems with Current Signage: The current property signage offers some benefits, but it requires full replacement as part of this Plan for several reasons. First, the T post signage at the major trail intersections has been prone to vandalism and theft in recent years. Signs of this type have been pulled out, moved, vandalised, and stolen on the property. Second, although the use of wooden posts for the trailhead and interpretive signs is effective and sturdy, these posts require more maintenance, are easily damaged, and have a shorter lifespan as compared to other sign materials. Third, the current signage designs are not compatible with the Bluffland Coalition branding and do not draw the eye of visitors enough. Finally, the current trail signage is out of date, incomplete, has some inaccuracies, and is sometimes repetitive. To ensure that the trail system signage meets all the needs of both the landowner and trail visitors, all signs should be accurate, comprehensive, eye-catching, succinct, clear, attractive, low maintenance, and resistant to vandals. A mixture of text and images is best to encourage people to read signs.

Recommended Solutions: All recommendations outlined in this Plan are based on meeting the outlined objectives for property signage while minimizing long-term cost and maintenance for the Town of Shelby. When deciding how to implement the Plan, these recommendations must be weighed against budgetary, logistical, and any other restrictions. A signage company can use the details of this Plan to assist with compiling an initial quote and finding alternatives as needed to maximize benefits while accommodating any restrictions.

The trailhead signage should be replaced with one kiosk display at each trailhead. The display should be composed of one 6mm aluminum composite panel that contains all the information pertaining to the property. This will maximize durability while discouraging vandalism and theft. The posts should be made of metal or a heavy-duty composite material and cemented in. This will maximize durability and longevity while minimizing maintenance costs. The size of the posts and display will depend on what is required to present all the information in an appealing way.

Small trail map displays are a useful tool to help visitors navigate the trail system efficiently when placed in strategic locations. Two of these displays are recommended as part of this Plan. These displays should be 12 to 15 inches square and made of aluminum, angled for drainage and legibility. The display should sit 3 feet off the ground on a 3 inch powder coated steel post. The Property Rules Sign outlined in the next section could also have this setup.

The trail intersection signage should be replaced with 3 inch square steel posts, powder coated and cemented into the ground. The signage information would be displayed on the visible sides of each post using heavy-duty vinyl decal stickers. This setup will make these signs difficult to vandalize, damage, or steal and will be durable, requiring little maintenance. The vinyl stickers can be outfitted with a graffiti resistant coating to enhance their durability, but this is a costly addition that is likely unnecessary. The 3 inch width of each sign would make them inherently unattractive for graffiti tagging. If a vinyl sticker needs replacement, the signage company can easily reprint it. The post can be re-surfaced to accommodate a new sticker without too much effort. If the post is damaged, most problems can be fixed with a fresh coat of paint.

Some sign setups recommended for the property are not described above. These are outlined in the next section. In short, for some purposes a T post with a standard aluminum sign is most appropriate. These are more likely to be damaged than the other types of signs outlined in this Plan, however, so it is recommended to concrete the post into the ground and add a graffiti coat.

Description of Replacement Signage:

- 1) Trailhead Kiosk Display (2): Trailhead signage is a key aspect of the Shelby Butterfly Trails Signage Plan. This signage serves as the first impression for visitors and outlines all of the important information for safely and lawfully experiencing the property. The more engaging and user friendly the trailhead signage is, the more educated trail visitors will be. People are more likely to respect property rules when they are clearly displayed.

Two kiosks are recommended for the property, differing only in the location of a “you are here” marker on each trail map. One kiosk should be installed at the Lower Trailhead Entrance, placed uphill and to the northeast of the trail. This is a more user friendly spot than the current signage location. The other kiosk should be installed at the Main Trailhead and placed in about the same location as the current signage. The panel should be made of durable aluminum composite and will include the following:

- A. The property name “Shelby Butterfly Trails” prominently displayed
- B. Logos for the Town of Shelby and The Bluffland Coalition
- C. A large, clearly legible version of the *Recommended Trail Map*
- D. The *Trailhead Emergency Response Information* as outlined on page 83
- E. Property rules and regulations, with ordinances (in parentheses) included where able. Property rules should have engaging icons to go with them if possible. The most important rules to include have an asterisk. Please include the following:
 - *No fires (4.01 Sec III - 4)
 - *No littering or vandalism (4.01 Sec III - 6)
 - *No camping (4.01 Sec III - 17)
 - *No hunting (4.01 Sec III - 5)
 - *Park is open from 6AM to 10PM (4.01 Sec III - 10)
 - *Dogs must be leashed and cleaned up after (4.01 Sec III - 2)
 - *No overnight parking (4.01 Sec III - 16)
 - No weapons (4.01 Sec III - 5)
 - Stay on trail (4.01 Sec III - 15)
 - Leaving tracks? Turn around.
 - No horseback riding
 - *No biking
 - *No rock climbing
 - *Respect others on the trail
- F. “Report poor trail conditions and hazards to 608-788-1032”
- G. “Access the trail map online here” plus a QR code linking to the trail map
- H. Suicide prevention hotline information such as “988 Suicide & Crisis Lifeline. Your life matters. There is hope. Call, text, or chat 24/7”
- I. Optional: Approved property use icons, if there is space. Approved uses are hiking, wildlife viewing, dog walking, foraging, snowshoeing, and hammocking

- 2) Small Trail Map Display (2): Small versions of the Recommended Trail Map with “you are here” markers will be placed at strategic locations throughout the trail system to help users recenter themselves and find the trailheads. The first should be located between intersections #7 and #13. The second should be located just north of intersection #17 at the intersection of the Mourning Cloak and Harvester trails. The displays should be 12 to 15 inches square and made of aluminum, angled for drainage and legibility. The display should sit 3 feet off the ground on a 3 inch, powder coated metal post.
- 3) Property Rules Sign (1): This sign is intended for the Woodland Drive entrance, where hunters and other off-trail users may access the property. At this location, there is a seasonally mowed utility access lane leading from the entrance into the forest. This entrance can attract people due to its location within a neighborhood, so there should be a sign there outlining key property rules. This aluminum sign will be placed clearly visible off to the side of the utility trail entrance and should include the following:
- A. “Now entering the Shelby Butterfly Trails property”
 - B. Property rules:
 - No hunting or weapons (4.01 Sec III - 5)
 - No fires (4.01 Sec III - 4)
 - No littering or vandalism (4.01 Sec III - 6)
 - No camping (4.01 Sec III - 17)
 - Dogs must be leashed and cleaned up after (4.01 Sec III - 2)
 - Respect private property boundaries
 - C. “To access the public trails, please enter the property from Old Vineyard Road”
 - D. Optional: “Entrance not maintained for public access – enter at your own risk”
- 4) Trail Intersection Signage (18): Clear, accurate signage is necessary at each trail intersection to help visitors navigate the trail system. It is also important that Emergency Locator Numbers are included prominently in this signage as part of implementation of the Emergency Response Plan on page 81. Each trail intersection sign will consist of a 3 inch square metal post with vinyl decals on 3 to 4 sides depending on the intersecting trails. Each decal will include the following, from top to bottom:
- A. Optional: The property name “Shelby Butterfly Trails”
 - B. The *Emergency Locator Number* as outlined on pages 83 through 84
 - C. The trail name should be written directly above or below the trail difficulty shape (circle, square, or diamond). The trail difficulty shape should be filled in to match the color of the corresponding trail and should have a black outline.
 - D. A directional arrow icon with the arrow(s) identifying the correct direction of travel for the trail identified above
 - E. Repeat C and D to identify all trails at that intersection and their directions
 - F. “In case of emergency dial 911 and provide the number in the red circle”
 - G. Optional: The Bluffland Coalition logo and/or the Town of Shelby logo

- 5) Picnic Area Directional Sign (3): This sign will direct trail users to the designated picnic areas and will consist of a 3 inch metal post with vinyl decals. There will be a picnic table icon decal on top and an arrow decal below depicting the correct direction of travel.
- 6) Now Entering Private Land + Scenic Overlook Directional Sign (1): This sign will inform trail users that they are now entering private land, and it will direct users to an approved overlook and trail on the Baier property that the landowner, Terrence Baier, has approved for public use in partnership with the Town of Shelby and the Mississippi Valley Conservancy. This sign is intended for a specific spot where one of the Shelby Butterfly Trails continues onto the approved private trail. This sign will consist of a 3 inch square metal post with vinyl decals. A decal that says "Now Entering Private Land - Stay On Approved Trail" will be placed on the southeast side of the post. Below this decal, also on the southeast side, will be a camera icon decal with an arrow decal pointing up below that to depict the correct direction of travel to the overlook. On the opposite, northwest side of the post, a "Now Entering the Shelby Butterfly Trails" decal should be installed. Finally, the southwest facing side of the post should have a decal that says "Property Boundary - Stay On Approved Trail" on top with a camera icon decal below that. Below the camera icon, there will be an arrow pointing left to depict the correct direction of travel to the overlook. The Town of Shelby should seek written approval of the design by the neighboring landowner, Terrance Baier, before installation.
- 7) Private Land – Stay on Trail Sign (1): This standard 12 by 18 inch aluminum sign on a metal T post will inform trail users that they are on private land, direct them to the approved trail, and remind them to stay on trail. It is intended for the intersection nearest to an approved overlook. This sign should block the unsanctioned trail leading northward from that intersection. This one-sided aluminum sign, placed parallel to and facing the approved trail, will say "Private Land - Stay on Approved Trail" with two arrows pointing left and right below the text to show the approved direction of travel. This sign will need written approval by the landowner, Terrance Baier, before installation.
- 8) Private Land Ahead Sign (3): This sign is intended for three key locations where frequently traveled, popular trails enter private land. The goal is to explain the reason these popular trails are now closed to deter continued foot traffic, therefore aiding in closure and rehabilitation. This sign will be a standard, one-sided 12 by 18 inch aluminum sign on a metal post with text that says "Private Property Ahead – No Trespassing" in an eye-catching display. Each of these signs will be placed at a strategic location near the property boundary, located in the middle of their respective trail with the display facing the traveler to block the trail and thus deter continued travel.
- 9) Sensitive Habitat – Please Keep Out Sign (3): This sign will inform trail users that they should not continue forward to protect a sensitive habitat. This sign should be a standard, one-sided 12 by 18 inch aluminum sign on a metal post. It will include text that says "Sensitive Habitat – Please Keep Out" and it should be nature-themed, possibly including visuals of grasses and butterflies to hint that the sensitive habitat is a prairie.

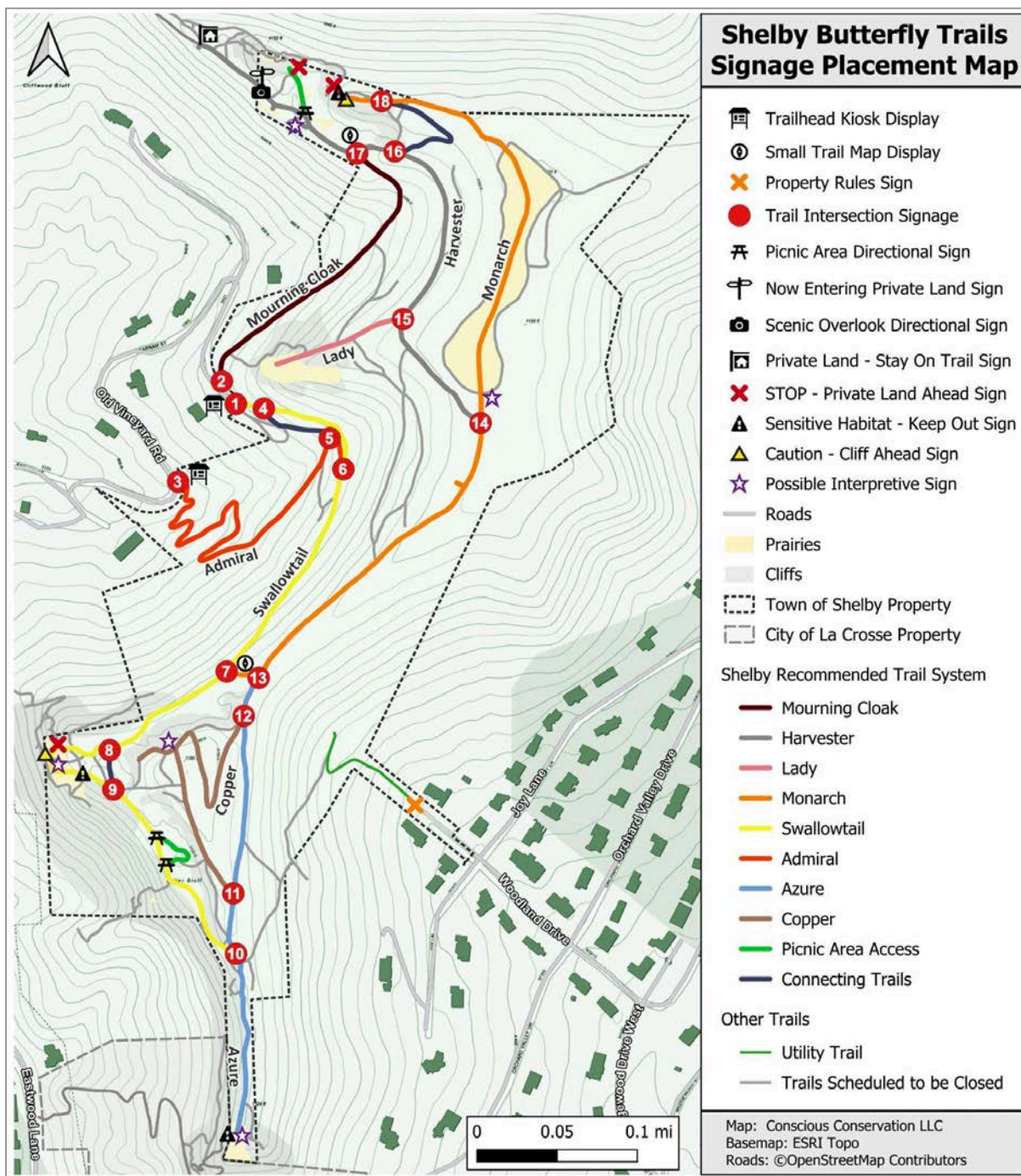
10) Caution – Cliff Ahead Sign (2): This sign will serve as a safety warning for visitors at two key locations that there is a cliff edge nearby. It should be one-sided, made of aluminum, eye-catching, and clearly visible, but it should also not detract from the scenic beauty of the location. A standard 12 by 18 inch display may be too large for this purpose. The sign will say “Caution – Cliff Ahead” with a caution symbol or hazard icon. These signs should be placed at the West Overlook and the North Property Boundary Overlook, where steep cliffs are located on the edge of the overlook locations where people gather.

11) Possible Interpretive Sign (0): Recommended locations for future interpretive signs are marked on the Signage Plan Map, but no such signs are part of this Signage Plan. The locations identified are known to have some natural or cultural relevance. Interpretive signs at these locations would educate visitors and could also enhance their experience and connection to the property. These signs are great projects for college students, or they could be funded through small grants. Quality aluminum interpretive signs can last for decades and require little maintenance, especially when installed on metal posts.

It could be especially beneficial to include an interpretive sign educating visitors about some of the butterfly species the trails are named after and where they may be found on the property. Signs outlining different conservation projects, once underway, are also great tools for public education and can even lead to funding for continued management.



II. Signage Placement Map



Note 1: This image has been compressed. The high quality version is included supplementarily.

Note 2: This map is intended to show where the recommended signage outlined in this Plan should be placed along the recommended trail system. This map assumes that the overlook on the Leaver property will be closed and not incorporated into the trail system. The “possible interpretive sign” icons are not intended for design or installation as part of this Plan. They are solely intended to provide an idea for further improving the trail signage in the future.

III. Overview of Recommended Signage for Trail Intersections

Int. Name	Post Placement Location	Signage Overview & Material	Post Side	Signage Needed	Decal Specifics from top to bottom (Steps 4C & 4D on pg 68)
1	South side of the Swallowtail trail entrance and aligned with the Swallowtail trail	Heavy-duty vinyl sticker decals (possibly with graffiti coating) on a 3" powder coated square metal post (x1) 3 sides vinyl	North	Intersection Signage Decal	"Swallowtail" □ yellow fill Arrow pointing left
			East	Intersection Signage Decal	"Swallowtail" □ yellow fill "Trailhead"
			South	None	None - Blank
			West	Intersection Signage Decal	"Swallowtail" □ yellow fill Arrow pointing up
2	West side of the Mourning Cloak trail entrance and aligned with the Mourning Cloak trail	Heavy-duty vinyl sticker decals (possibly with graffiti coating) on a 3" powder coated square metal post (x1) 3 sides vinyl	North	Intersection Signage Decal	"Mourning Cloak" □ dark brown fill "Trailhead"
			East	Intersection Signage Decal	"Mourning Cloak" □ dark brown fill Arrow pointing right
			South	Intersection Signage Decal	"Mourning Cloak" □ dark brown fill Arrow pointing up
			West	None	None - Blank
3	East side of the Admiral trail and aligned with the trail at a location where it is running north to south	Heavy-duty vinyl sticker decals (possibly with graffiti coating) on a 3" powder coated square metal post (x1) 3 sides vinyl	North	Intersection Signage Decal	"Admiral" ◇ red fill Arrow pointing up
			East	None	None - Blank
			South	Intersection Signage Decal	"Admiral" ◇ red fill "Trailhead"
			West	Intersection Signage Decal	"Admiral" ◇ red fill Arrow pointing right
4			North	Intersection Signage Decal	"Swallowtail" □ yellow fill Arrows pointing left & right "To Admiral" □ dark blue fill Arrow pointing up

Int. Name	Post Placement Location	Signage Overview & Material	Post Side	Signage Needed	Decal Specifics from top to bottom (Steps 4C & 4D on pg 68)
4 cont	South of the trail intersection and aligned with the Swallowtail trail	Heavy-duty vinyl sticker decals (possibly with graffiti coating) on a 3" powder coated square metal post (x1) 3 sides vinyl	East	Intersection Signage Decal	"Swallowtail" ☐ yellow fill Arrow pointing up "To Admiral" ☐ dark blue fill Arrow pointing left
			South	None	None - Blank
			West	Intersection Signage Decal	"Swallowtail" ☐ yellow fill Arrow pointing up "To Admiral" ☐ dark blue fill Arrow pointing right
5	North of the trail intersection with the southwest side of the post facing the portion of the Admiral trail that is coming from southwest	Heavy-duty vinyl sticker decals (possibly with graffiti coating) on a 3" powder coated square metal post (x1) 3 sides vinyl	Northeast	None	None - Blank
			Southeast	Intersection Signage Decal	"To Parking Area" ☐ dark blue fill Arrow pointing up "Admiral" ☐ red fill Arrow pointing left
			Southwest	Intersection Signage Decal	"To Parking Area" ☐ dark blue fill Arrow pointing left "Admiral" ☐ red fill Arrow pointing right
			Northwest	Intersection Signage Decal	"Admiral to Lower Kiosk" ☐ red fill Arrow pointing right "Admiral to Swallowtail" ☐ red fill Arrow pointing up
6	West of the intersection and aligned with the Swallowtail trail	Heavy-duty vinyl decals (possibly with graffiti coating) on a 3" powder coated square metal post (x1)	North	Intersection Signage Decal	"Swallowtail" ☐ yellow fill Arrow pointing up "Admiral" ☐ red fill Arrow pointing right

Int. Name	Post Placement Location	Signage Overview & Material	Post Side	Signage Needed	Decal Specifics from top to bottom (Steps 4C & 4D on pg 68)
6 cont		3 sides vinyl	East	Intersection Signage Decal	"Swallowtail" ☐ yellow fill Arrows pointing left & right "Admiral" ☐ red fill Arrow pointing up
			South	Intersection Signage Decal	"Swallowtail" ☐ yellow fill Arrow pointing up "Admiral" ☐ red fill Arrow pointing left
			West	None	None - Blank
7	South of the trail intersection and aligned with the Swallowtail trail	Heavy-duty vinyl sticker decals (possibly with graffiti coating) on a 3" powder coated square metal post (x1) 4 sides vinyl	Northeast	Intersection Signage Decal	"Swallowtail" ☐ yellow fill Arrow pointing up "Monarch" ☐ orange fill Arrow pointing left
			Southeast	Intersection Signage Decal	"To Parking Area" ☐ yellow fill Arrow pointing right "Swallowtail Overlook" ☐ yellow fill <u>camera inside</u> Arrow pointing left
			Southwest	Intersection Signage Decal	"To Parking Area" ☐ yellow fill Arrow pointing up "Monarch" ☐ orange fill Arrow pointing right
			Northwest	Intersection Signage Decal	"Swallowtail" ☐ yellow fill Arrows pointing left & right "Monarch" ☐ orange fill Arrow pointing up
8			North	Intersection Signage Decal	"Swallowtail" ☐ yellow fill Arrows pointing left & right "Swallowtail Skipper" ☐ dark blue fill Arrow pointing up

Int. Name	Post Placement Location	Signage Overview & Material	Post Side	Signage Needed	Decal Specifics from top to bottom (Steps 4C & 4D on pg 68)
8 cont	Southwest or southeast of the trail intersection and aligned with the Swallowtail trail	Heavy-duty vinyl sticker decals (possibly with graffiti coating) on a 3" powder coated square metal post (x1) 4 sides vinyl	East	Intersection Signage Decal	"Swallowtail Overlook" ☐ yellow fill <u>camera inside</u> Arrow pointing up "Swallowtail Skipper" ☐ dark blue fill Arrow pointing left
			South	Intersection Signage Decal	"To Parking Area" ☐ yellow fill Arrow pointing right "Swallowtail Overlook" ☐ yellow fill <u>camera inside</u> Arrow pointing left
			West	Intersection Signage Decal	"To Parking Area" ☐ yellow fill Arrow pointing up "Swallowtail Skipper" ☐ dark blue fill Arrow pointing right
9	Northeast of the trail intersection and aligned with the Swallowtail trail	Heavy-duty vinyl sticker decals (possibly with graffiti coating) on a 3" powder coated square metal post (x1) 3 sides vinyl	Northeast	None	None - Blank
			Southeast	Intersection Signage Decal	"Swallowtail Overlook" ☐ yellow fill <u>camera inside</u> Arrow pointing up "To Parking Area" ☐ dark blue fill Arrow pointing right
			Southwest	Intersection Signage Decal	"Swallowtail" ☐ yellow fill Arrows pointing left & right "Swallowtail Skipper" ☐ dark blue fill Arrow pointing up
			Northwest	Intersection Signage Decal	"Swallowtail to Azure" ☐ yellow fill Arrow pointing up "To Parking Area" ☐ dark blue fill Arrow pointing left
Swallow-tail Trail Picnic Area			North	Picnic Area Directional	Picnic Table Icon Arrow pointing left

Int. Name	Post Placement Location	Signage Overview & Material	Post Side	Signage Needed	Decal Specifics from top to bottom (Steps 4C & 4D on pg 68)
Swallow-tail Trail Picnic Area cont	East of the trail intersection and aligned with the Swallowtail trail on the south side of the picnic area trail	Heavy-duty vinyl sticker decals (possibly with graffiti coating) on a 3" powder coated square metal post (x2 , one per entrance) 4 sides vinyl	East	Picnic Area Directional	"To Parking Area" ☐ yellow fill Arrow pointing right "Swallowtail to Azure" ☐ yellow fill Arrow pointing left
			South	Picnic Area Directional	Picnic Table Icon Arrow pointing right
			West	Picnic Area Directional	Picnic Table Icon Arrow pointing up
10	Southwest of the trail intersection and aligned with the Azure trail	Heavy-duty vinyl sticker decals (possibly with graffiti coating) on a 3" powder coated square metal post (x1) 3 sides vinyl	Northeast	Intersection Signage Decal	"Azure" ☐ light blue fill Arrows pointing left & right "Swallowtail" ☐ yellow fill Arrow pointing up
			Southeast	Intersection Signage Decal	"Azure" ☐ light blue fill Arrow pointing up "Swallowtail" ☐ yellow fill Arrow pointing left
			Southwest	None	None - Blank
			Northwest	Intersection Signage Decal	"Azure Overlook" ☐ light blue fill <u>camera inside</u> Arrow pointing right "Azure to Copper" ☐ light blue fill Arrow pointing left
11	North of the trail intersection and aligned with the Azure trail	Heavy-duty vinyl sticker decals (possibly with graffiti coating) on a 3" powder coated square metal post (x1) 4 sides vinyl	North	Intersection Signage Decal	"Azure" ☐ light blue fill Arrow pointing up "Copper" ☐ light brown fill Arrow pointing right
			East	Intersection Signage Decal	"Azure" ☐ light blue fill Arrows pointing left & right "Copper" ☐ light brown fill Arrow pointing up

Int. Name	Post Placement Location	Signage Overview & Material	Post Side	Signage Needed	Decal Specifics from top to bottom (Steps 4C & 4D on pg 68)
11 cont			South	Intersection Signage Decal	“Azure” ☐ light blue fill Arrow pointing up “Copper” ☐ light brown fill Arrow pointing left
			West	Intersection Signage Decal	“Azure Overlook” ☐ light blue fill <u>camera inside</u> Arrow pointing right “Azure to Monarch” ☐ light blue fill Arrow pointing left
12	East of trail intersection and aligned with the Azure trail	Heavy-duty vinyl sticker decals (possibly with graffiti coating) on a 3” powder coated square metal post (x1) 3 sides vinyl	North	Intersection Signage Decal	“Azure” ☐ light blue fill Arrow pointing up “Copper” ☐ light brown fill Arrow pointing right
			East	None	None - Blank
			South	Intersection Signage Decal	“Azure” ☐ light blue fill Arrow pointing up “Copper” ☐ light brown fill Arrow pointing left
			West	Intersection Signage Decal	“Azure Overlook” ☐ light blue fill <u>camera inside</u> Arrow pointing right “Azure to Monarch” ☐ light blue fill Arrow pointing left
13	Southeast of the trail intersection and aligned with the Azure trail	Heavy-duty vinyl sticker decals (possibly with graffiti coating) on a 3” powder coated square metal post (x1) 3 sides vinyl	North	Intersection Signage Decal	“Monarch” ☐ orange fill Arrows pointing left & right “Azure” ☐ light blue fill Arrow pointing up
			East	None	None - Blank
			South	Intersection Signage Decal	“Monarch” ☐ orange fill Arrow pointing up “To Parking Area” Arrow pointing left

Int. Name	Post Placement Location	Signage Overview & Material	Post Side	Signage Needed	Decal Specifics from top to bottom (Steps 4C & 4D on pg 68)
13 cont			West	Intersection Signage Decal	"Monarch" ☐ orange fill Arrow pointing left "Azure" ☐ light blue fill Arrow pointing right
14	East of the trail intersection and aligned with the Monarch trail	Heavy-duty vinyl sticker decals (possibly with graffiti coating) on a 3" powder coated square metal post (x1) 3 sides vinyl	North	Intersection Signage Decal	"Monarch" ☐ orange fill Arrow pointing up "Harvester" ☐ gray fill Arrow pointing right
			East	None	None - Blank
			South	Intersection Signage Decal	"Monarch" ☐ orange fill Arrow pointing up "Harvester" ☐ gray fill Arrow pointing left
			West	Intersection Signage Decal	"Monarch Overlook" ☐ orange fill <u>camera inside</u> Arrow pointing left "Monarch to Swallowtail" ☐ orange fill Arrow pointing right
15	Southwest of the trail intersection and aligned with the Lady trail	Heavy-duty vinyl sticker decals (possibly with graffiti coating) on a 3" powder coated square metal post (x1) 4 sides vinyl	North	Intersection Signage Decal	"Harvester" ☐ gray fill Arrow pointing up "Lady" ☐ pink fill Arrow pointing right
			East	Intersection Signage Decal	"Harvester" ☐ gray fill Arrows pointing left & right "Lady" ☐ pink fill Arrow pointing up
			South	Intersection Signage Decal	"Harvester" ☐ gray fill Arrow pointing right "Lady" ☐ pink fill Arrow pointing left

Int. Name	Post Placement Location	Signage Overview & Material	Post Side	Signage Needed	Decal Specifics from top to bottom (Steps 4C & 4D on pg 68)
15 cont			West	Intersection Signage Decal	“Harvester Overlook” ☐ gray fill <u>camera inside</u> Arrow pointing left “Harvester to Monarch” ☐ gray fill Arrow pointing right
16	North of the trail intersection and aligned with the Harvester trail	Heavy-duty vinyl sticker decals (possibly with graffiti coating) on a 3” powder coated square metal post (x1) 3 sides vinyl	North	Intersection Signage Decal	“To Parking Area” ☐ gray fill Arrow pointing right “Harvester to Lady” ☐ gray fill Arrow pointing left
			East	Intersection Signage Decal	“Harvester” ☐ gray fill Arrow pointing up “To Monarch” ☐ dark blue fill Arrow pointing right
			South	None	None - Blank
			West	Intersection Signage Decal	“Harvester” ☐ gray fill Arrow pointing up “To Monarch” ☐ dark blue fill Arrow pointing left
17	North of the trail intersection and aligned with the Harvester trail	Heavy-duty vinyl sticker decals (possibly with graffiti coating) on a 3” powder coated square metal post (x1) 3 sides vinyl	North	None	None - Blank
			East	Intersection Signage Decal	“Harvester Overlook” ☐ gray fill <u>camera inside</u> Arrow pointing up “To Parking Area” ☐ dark brown fill Arrow pointing left
			South	Intersection Signage Decal	“Harvester” ☐ gray fill Arrows pointing left & right
			West	Intersection Signage Decal	“Harvester” ☐ gray fill Arrow pointing up “To Parking Area” ☐ dark brown fill Arrow pointing right

Int. Name	Post Placement Location	Signage Overview & Material	Post Side	Signage Needed	Decal Specifics from top to bottom (Steps 4C & 4D on pg 68)
Harvester Trail Picnic Area	Northwest of the trail intersection and aligned with the picnic area trail	Heavy-duty vinyl sticker decals (possibly with graffiti coating) on a 3" powder coated square metal post (x1) 4 sides vinyl	North	Intersection Signage Decal	"Harvester Overlook" ○ gray fill <u>camera inside</u> Arrow pointing right "To Parking Area" ○ gray fill Arrow pointing left
			East	Picnic Area Directional	Picnic Table Icon Arrow pointing right
			South	Picnic Area Directional	Picnic Table Icon Arrow pointing up
			West	Picnic Area Directional	Picnic Table Icon Arrow pointing left
18	South of the trail intersection and aligned with the Monarch trail	Heavy-duty vinyl sticker decals (possibly with graffiti coating) on a 3" powder coated square metal post (x1) 3 sides vinyl	North	Intersection Signage Decal	"Monarch" ○ orange fill Arrows pointing left & right "To Harvester" □ dark blue fill Arrow pointing up
			East	Intersection Signage Decal	"Monarch Overlook" ○ orange fill <u>camera inside</u> Arrow pointing up "To Harvester" □ dark blue fill Arrow pointing left
			South	None	None - Blank
			West	Intersection Signage Decal	"Monarch" ○ orange fill Arrow pointing up "To Harvester" □ dark blue fill Arrow pointing right

EMERGENCY RESPONSE PLAN

Overview: The 69-acre Shelby Butterfly Trails property is located in the La Crosse-Onalaska Metropolitan Area. The most recent population estimate of this area, which includes La Crosse, Onalaska, Shelby, La Crescent and other surrounding towns and cities, is between 170,000 and 171,000 people according to the United States Census Bureau. This area offers several trails that serve a variety of user groups including pedestrians, mountain bikers and other bicyclists, rock climbers, equestrians, cross-country skiers, snowshoers, snowmobilers, and more.

The Shelby Butterfly Trails expand recreation access for this population by offering additional opportunities for hiking, wildlife viewing, dog-walking, foraging, socializing, and snowshoeing. The popularity of this trail system varies seasonally and day to day, but it is used consistently overall and experiences frequent traffic given its location within the Bluffside neighborhood of La Crosse. Limited trailhead parking restrains access for users traveling from outside areas. The trail system includes 3.65 miles of frontcountry trail, two miles of which are UTV accessible. There are opportunities for this trail system to be expanded in the future, but given the current management needs of the property, expansion is unlikely to occur in the next five years.

When emergencies occur on the Shelby Butterfly Trails property, the Town of Shelby Fire Department, La Crosse Fire Department, La Crosse County Sheriff, and La Crosse Police Department serve as the primary first responders. Depending on the nature of the incident, the Wisconsin Department of Natural Resources may also respond. Non-emergency incidents are typically handled by the Town of Shelby Public Works Department or the La Crosse Police.

Since opening this trail system to public access, the Town of Shelby has taken preventive action to reduce the risk of emergency incidents including signage installation, public outreach, and regular trail maintenance. Nonetheless, the Town has been involved in incident response for emergencies on the Butterfly Trails property. Despite successful handling of past incidents, in recent years the Town identified a need to improve their emergency response procedure for the property. The Town's main goal for the updated procedure is to address an observed difficulty directing first responders to injury and fire reports made from the Shelby Butterfly Trails. There is currently no emergency signage on the property, and a standardized emergency procedure



for the Butterfly Trails has not yet been adopted by all the local first responder agencies. In 2025, the Town received a Blufflands Grant from the La Crosse County Bluffland Protection Fund to, in part, fund the creation of this Emergency Response Plan (ERP) for the property to help resolve these challenges. Conscious Conservation LLC was hired by the Town in 2025 to complete this ERP, which provides a clear action plan for incidents that occur on the Shelby Butterfly Trails. Use of the ERP will help streamline communication between all parties.

Purpose: In any public recreation area, occasional emergencies are unavoidable. Preventive measures to minimize the likelihood of emergency incidents are crucial and should be prioritized, but no amount of preparedness can control for all factors leading up to an emergency. Thus, a robust Emergency Response Plan is an important and necessary tool for all property managers to have in their back pocket for when disaster inevitably strikes.

Inherent risks to visitors of the Shelby Butterfly Trails include slips, trips, falls, overhead hazards, medical emergencies, wildlife encounters, vehicle related incidents, and wildland fire. The trail system includes sections that follow cliff edges, which offer several benefits but pose an especially high risk. Implementation of the Trail Improvement and Signage Plans will help reduce the likelihood of incidents and improve visitor safety by minimizing hazards along the trails and expanding public knowledge of property rules, risks, and emergency procedures.

This Emergency Response Plan (ERP) further builds on this progress by creating a framework for coordinating interagency responses to emergencies and trail-related incidents on the Shelby Butterfly Trails. The Plan also consolidates important emergency information for the property and provides common terms, locations, and guidelines to allow for clearer, more efficient communication between first responders, 911 callers, La Crosse County Dispatch, and any other parties involved in incident response. Implementation of this ERP will improve response times, reduce the severity of incidents, and improve safety for all trail users. Recommended action items include installing emergency locator signs at 18 trail intersections, incorporating Emergency Response Plan information into both trailhead kiosk displays, and sharing the ERP with La Crosse County Dispatch for incorporation into their GIS system and procedures.

Assumption of Risk: Risks may exist when recreating on public land regardless of the steps taken to mitigate potential incidents. Visitors of the Shelby Butterfly Trails recreate at their own risk and should act responsibly. Trailhead signage will inform users how to use the emergency locator signage and what to do in case of emergency, and users should follow this guidance.

Partners: Current partners involved in the ERP for the Shelby Butterfly Trails are listed below.

Land Managers & Property Owners

Christina Peterson, Town of Shelby Administrator

Phone: 608-788-1032 x4

Email: cpeterson@townofshelbywi.gov

Renee Knutson, Town of Shelby Board Supervisor

Phone: 608-461-2107

Email: rknutson@townofshelbywi.gov

Town of Shelby Department of Public Works

Contact: Terry Wright

Phone: 608-788-1032 x5

Email: twright@townofshelbywi.gov

Town of Shelby Parks and Vacant Land Committee



First Responders

Town of Shelby Fire Department

Contact: Tony Holinka, Fire Chief

Phone: 608-788-1032 x7

Email: shelbyfirechief@townofshelbywi.gov



La Crosse Fire Department

Phone: 608-789-7260

Email: fdinfo@cityoflacrosse.org



La Crosse Police Department

Main Phone: 608-789-7200

Non-Emergency Dispatch: 608-782-7575

Email: lacrossepolicy@cityoflacrosse.org



La Crosse County Sheriff

Contact: La Crosse County Sheriff's Office

Phone: 608-785-9629

Email: sheriffhelp@lacrossecounty.org



Wisconsin Department of Natural Resources

DNR Emergency Hotline: 1-800-943-0003

DNR Law Enforcement Non-Emergency: 608-267-7691

Emergency Response Plan Components:

- 1) Trailhead Emergency Response Information: Essential information about the Emergency Response Plan should be incorporated into each trailhead kiosk display. This should include a description of the Emergency Locator system, how to use it, and what to do in an emergency. The sign should have the following components:
 - A. "There are inherent risks associated with using trails. Be cautious and stay alert"
 - B. "In case of emergency, remain calm and dial 911" (dial 911 should be prominent)
 - C. "Know where you are. Emergency Locator Numbers are displayed at each trail intersection. In case of emergency, provide this number to the 911 dispatcher so you can be helped more quickly"
 - D. A picture of the Emergency Locator Number decal (below)
- 2) Emergency Locator Numbers: At each trail intersection, an Emergency Locator Number decal will appear at the top of the trail intersection post signage. These decals will help emergency responders locate an incident. They will also help trail users know where they are when navigating the trails. This decal will consist of a bold white number located within a bright red circle. The red circle will have a thin, black border.



The Emergency Locator Numbers and Trail Intersection Numbers are the same system. Therefore, the number on each Emergency Locator decal will match the trail intersection number that corresponds to its location as shown on the Recommended Trail Map. Trail information corresponding to each intersection will be displayed below the Emergency Locator Number on the trail intersection post signage.

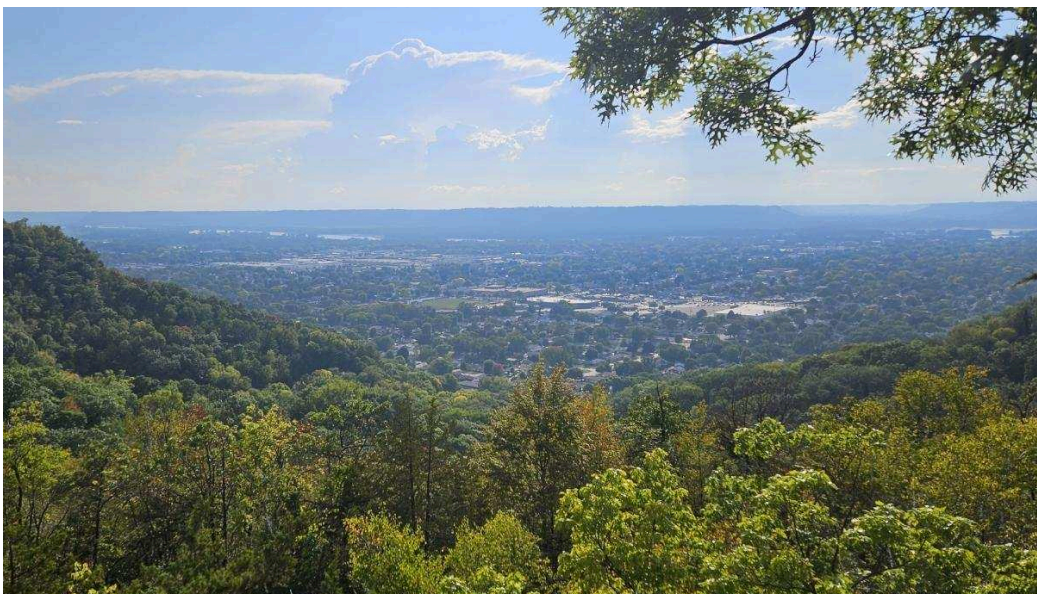
The GPS coordinates and intersecting trails of each Emergency Locator Number are listed in the Emergency Locator Number Information Table, which can be found on page 87. This table and the Recommended Trail Map should be shared with La Crosse County Dispatch and other partner first responder agencies.

- 3) **EMS Access Points:** Two suitable EMS Access Points for the Shelby Butterfly Trails have been identified, each corresponding with a property trailhead. The EMS Access Points are identified by a capital letter, GPS coordinates, location description, and an associated Emergency Locator Number in the EMS Access Point Information Table below. The Emergency Locator Number Information Table on page 87 contains a column indicating the best EMS Access Point for reaching each Emergency Locator Number location. Most of the trail system uses EMS Access Point A because the trails leading from that access point are wider with fewer turns, and some are UTV accessible.

EMS Access Point Information Table

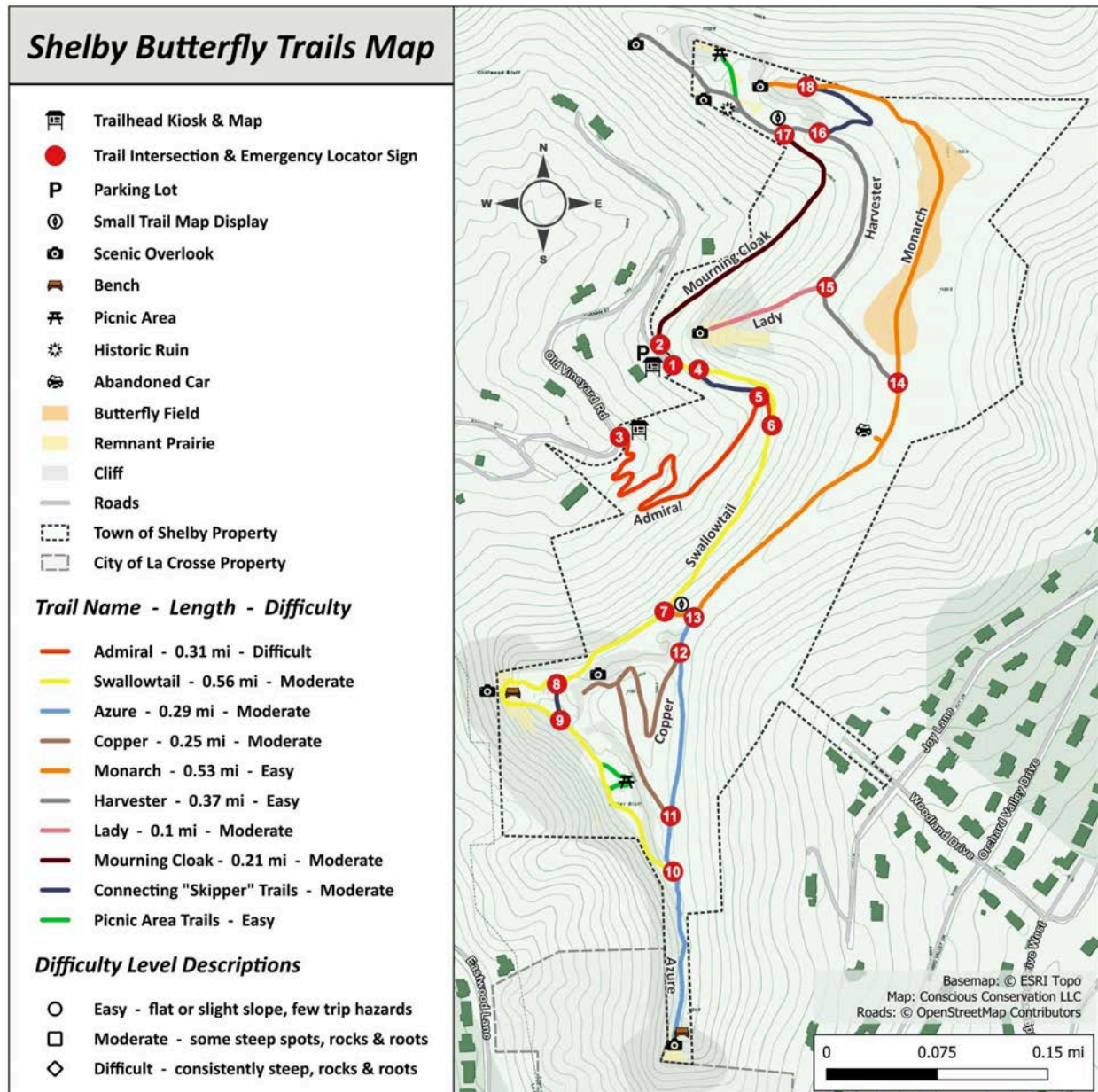
EMS ACCESS POINT INFORMATION Shelby Butterfly Trails				
EMS Access Point	Emergency Locator Number	Latitude	Longitude	Location Description
A	1	43.799003	-91.204793	From the intersection of Farnam St and Old Vineyard Rd in La Crosse, travel uphill on Old Vineyard Rd until the road ends at the property's Main Trailhead.
B	3	43.798269	-91.205503	From the intersection of Farnam St and Old Vineyard Rd in La Crosse, continue uphill on Old Vineyard Rd traveling east until the road makes a turn to the northwest. The Lower Trailhead at this bend in the road is the access point.

- 4) GIS System Integration: Send all Emergency Locator Number and EMS Access Point locations to La Crosse County Dispatch and any other county GIS department for entry into their system. Seek confirmation that 911 dispatch and local first responder agencies have adopted the new locations into their emergency protocols for the property.
- 5) Incident Procedure: When a 911 call is received from the Shelby Butterfly Trails, dispatch will notify first responders according to their protocol. Suggestion below:
 - A. Dispatch asks the caller what trail network they are on.
 - B. Dispatch asks if the caller knows the nearest emergency locator sign number. If they don't know, dispatch can ask them to locate the closest number.
 - C. Once the number is identified, Dispatch references the Emergency Locator Number Information Table to determine the correct EMS Access Point.
 - D. Dispatch communicates the EMS Access Point and other incident details, including the nearest Emergency Locator Number, to first responders.
 - E. GIS systems may be used to further refine the victim's location.
- 6) Follow-Up Reporting: Once the incident response is complete, the agency who responded to the emergency should provide an incident summary report to the Town of Shelby. Incident summaries should be submitted to the Town of Shelby Administrator.
- 7) Plan Relevance and Updates: Although it is unlikely that new trails will be added to the Shelby Butterfly Trails system in the near future, it is important to note that this ERP must be updated if any changes are made. Whenever new trails and signage are developed, the maps, tables, and on-the-ground signage must be updated to reflect the most current information. Any updated EMS Access Points and Emergency Location Numbers will also need to be resubmitted to La Crosse County so their GIS systems can be updated. Local first responder agencies should also receive updated information.



Emergency Locator Number Overview:

Trail Map with Emergency Locator Numbers: The Recommended Trail Map below shows the Emergency Locator Number locations as they relate to the various trails. The Emergency Locator Numbers are the same as the Trail Intersection Numbers.



Note: This image has been compressed. The high quality version is included supplementarily. This is the same map as shown on page 62. It has been copied here for convenience of use.

Emergency Locator Number Information Table: This table comprehensively outlines the spatial information of each Emergency Locator Number, including the GPS coordinates and intersecting trails. The best EMS access point for each Emergency Locator is also identified.

EMERGENCY LOCATOR NUMBER INFORMATION Shelby Butterfly Trails				
Locator Number	Latitude	Longitude	Best EMS Access Point	Intersecting Trails
1	43.799003	-91.204793	A	Swallowtail & Main Trailhead
2	43.799116	-91.204945	A	Mourning Cloak & Main Trailhead
3	43.798269	-91.205503	B	Admiral & Lower Trailhead
4	43.798927	-91.204481	A	Swallowtail & "Skipper" to Admiral
5	43.798679	-91.203588	A	Admiral & "Skipper" to Swallowtail
6	43.798383	-91.203441	A	Admiral & Swallowtail
7	43.796547	-91.204880	A	Swallowtail & Monarch
8	43.795845	-91.206356	A	Swallowtail & Swallowtail "Skipper"
9	43.795490	-91.206310	A	Swallowtail & Swallowtail "Skipper"
10	43.794006	-91.204779	A	Swallowtail & Azure
11	43.794552	-91.204813	A	Azure & Copper
12	43.796154	-91.204683	A	Azure & Copper
13	43.796524	-91.204570	A	Monarch & Azure
14	43.798799	-91.201729	A	Monarch & Harvester
15	43.799738	-91.202696	A	Harvester & Lady
16	43.801252	-91.202799	A	Harvester & "Skipper" to Monarch
17	43.801240	-91.203271	A	Harvester & Mourning Cloak
18	43.801704	-91.202963	A	Monarch & "Skipper" to Harvester

PROPERTY MANAGEMENT RECOMMENDATIONS

I. Section Overview

This section aims to streamline management recommendations for the Shelby Butterfly Trails by integrating the Habitat Management, Trail, Signage, and Emergency Response Plans together through like areas, called Management Units. These units are visually represented on the Management Unit Map on page 89, and the shapefiles have been provided supplementarily for use in on-the-ground management. Each Management Unit has a detailed description and clear set of management goals that reflect its unique set of challenges and features.

The overall goal for each Management Unit is to support its health, resilience, and value through targeted restoration and management that factors in habitat type, public use requirements, and any logistics impacting management access. The grouping of similar, adjacent habitats together into larger Management Units offers an ecosystem-centered, holistic, and straightforward approach to management planning. This strategy aims to be accessible and realistic for implementers of this Plan while supporting a clear, sustainable long-term vision for the property.

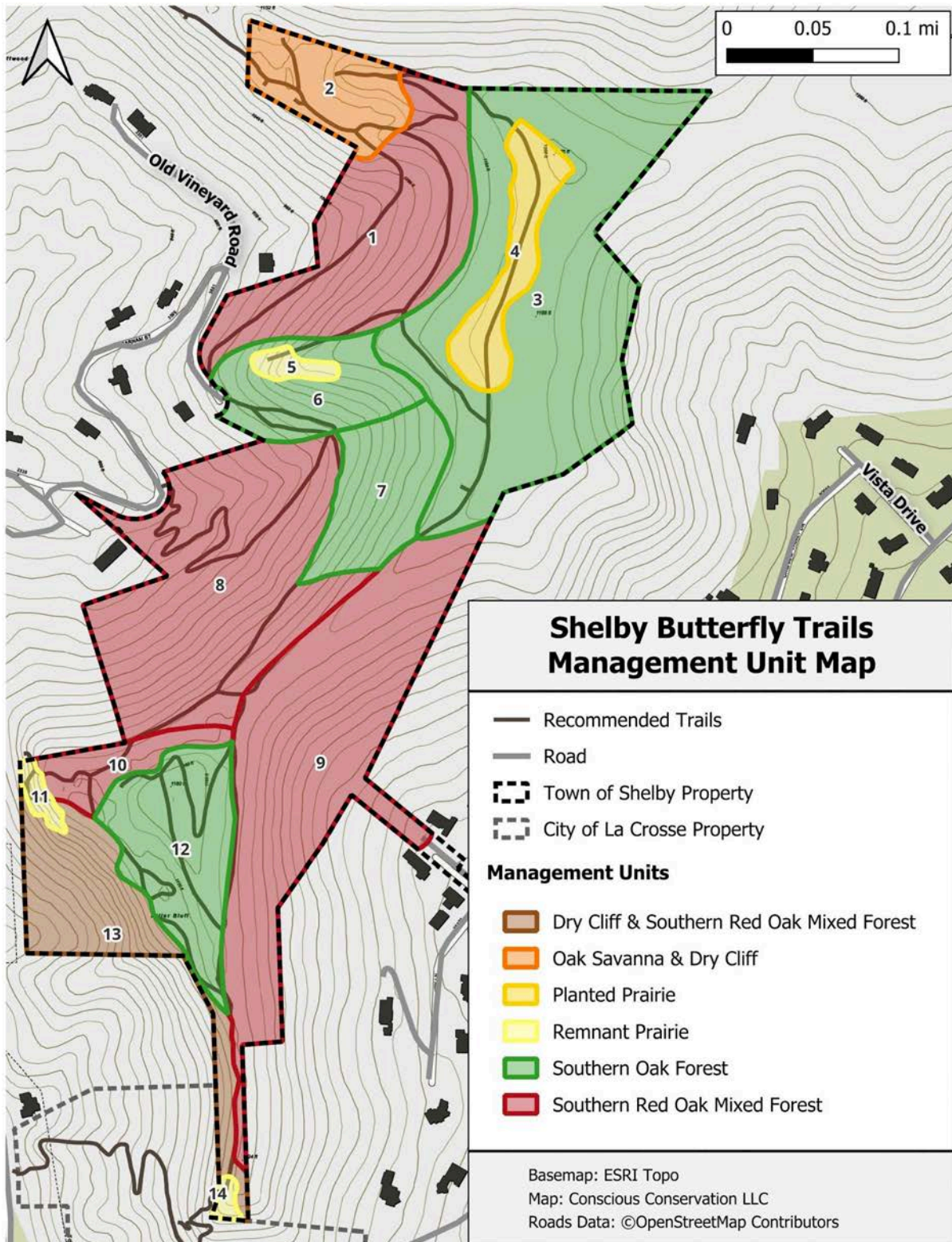
Detailed habitat descriptions, invasive species information, and management recommendations for the property are covered on pages 26 through 44 of this Plan. All of that information is applicable to the Management Units outlined in this section and it should be referenced when planning and implementing management actions. All sections of this Plan have been written to complement one another while furthering the Town of Shelby's goals for the property.

At the end of this section, a Plan Implementation Schedule has been included to help guide land managers as they begin implementation of this Plan. This sample schedule includes recommendations for fall 2026 through fall 2031. It is typically not useful to plan management actions more than five years into the future, because in that time period priorities and onsite conditions can change significantly. For this reason, this Plan should be re-evaluated and updated every five years to ensure that it reflects current property needs, history, and goals.

Actual management actions may differ from the Plan Implementation Schedule depending on funding availability, staffing, field conditions, and other factors. Most of the recommendations outlined in this Plan are flexible in regard to timing. All on-the-ground management decisions should be made at the discretion of the land manager using the most current information.

Implementation of this Plan will offer countless benefits to the Town of Shelby and the local community. Improving ecosystem health will improve resilience of the land, reduce long-term costs, protect the Town's investment in the property, and better shield against extreme weather events. Increasing native biodiversity will beautify the property and enhance recreation, education and research opportunities for the public. Improvement of the trails and signage will improve safety, accessibility, and public enjoyment which could lead to future partnerships and funding. This long-term investment will also improve knowledge of property rules, reducing the human-caused issues currently facing the property. Finally, implementation of the Emergency Response Plan will improve communication, safety and efficiency when responding to incidents. By investing in this Land Management Plan, the Town of Shelby has taken an admirable step towards protecting the Shelby Butterfly Trails property and its resident creatures for generations.

II. Management Unit Map



III. Management Unit Descriptions & Goals

Unit #	Management Unit Description	Management Unit Goals
1	The overstory and understory plants in this unit are most consistent with the Southern Red Oak Mixed Forest habitat type. This unit has mostly a western aspect. The overstory and midstory is crowded with an abundance of ironwood. The midstory and understory consist of patchy to thick understory invasives. The most abundant invasive species in this habitat are buckthorn, Japanese barberry, and Asian bittersweet. Multiflora rose, autumn olive, bush honeysuckle, garlic mustard, and burning bush were also observed in this unit.	● Increase the amount of sunlight reaching the forest understory ○ Invasive species removal ○ Timber stand improvement ● Favor native trees and understory plants to restore natural processes ○ Invasive species removal ○ Oak tree daylighting ○ Timber stand improvement ○ Prescribed burning ● Monitor restoration progress ○ Keep a species inventory ○ Take progress photos ● Trail and signage maintenance
2	The overstory and understory plants in this unit are most consistent with the Southern Oak Forest, Dry Cliff, and Remnant Prairie habitat types. Therefore, this unit has potential for restoration to an Oak Savanna and Dry Cliff structure. This unit has mostly a southwestern aspect and offers sandstone and limestone rock formations. The overstory consists of scattered mature trees, mostly oak and hickory, and a diversity of young trees which are crowded. The midstory is also crowded and composed mostly of ironwood and mature buckthorn. The understory consists of patchy savanna species interspersed with thick patches of invasive brush. In areas where significant sunlight reaches the forest floor, patches of remnant prairie are found interspersed with invasive herbaceous weeds including sweet clover and crownvetch.	● Favor native species and discourage species not native to oak savanna habitat ○ Remove invasive species ○ Oak tree daylighting as needed ○ Remove all woody plants except those native to prairie/oak savanna ○ Connect areas of remnant prairie ○ Timber stand improvement ○ Periodic prescribed burning ● Sow native seeds from healthy areas into degraded areas to help recovery as needed ○ Collect and sow prairie seeds onsite ● Monitor restoration progress ○ Keep a species inventory ○ Take progress photos ● Trail and signage maintenance

Unit #	Management Unit Description	Management Unit Goals
3	This unit is found on a hilltop area, so it does not have a dominant aspect. The overstory is most consistent with Disturbed Aspen Forest and Southern Oak Forest. Given its location between the Butterfly Field on the hilltop and oak forests downhill, the long-term goal for this unit should be to slowly guide it towards Southern Oak Forest habitat. This would restore the unit closer to its historic structure, which would concurrently reduce encroachment pressure on the Butterfly Field. Over time, transitioning to a Southern Oak Forest is likely to reduce yearly management costs for the Field. The understory and soil of this unit is degraded due to its historic use as a cropland. The understory is dominated by a severe invasive species infestation consisting mostly of buckthorn, Japanese barberry, Asian bittersweet, multiflora rose, autumn olive, garlic mustard, and honeysuckle. Oak and hickory saplings were observed in the forest facing high competition from invasive species. The midstory is crowded and consists of native hardwoods and mature invasives. The overstory is dominated by aspen but also offers scattered mature hardwood trees including oak and hickory, which shows slight restoration potential. Over time, aspen naturally phases out as hardwoods establish and become dominant in a forest. If invasives are removed and mature oak and hickory trees are cared for, eventually this unit will have potential for restoration towards a Southern Oak Forest habitat type. This process takes many decades.	Disturbed Aspen Forest ● Favor native trees and understory plants to restore natural processes ○ Invasive species removal ○ Oak and hickory daylighting ● Maintain Shelby Butterfly Field boundary ○ Mow around Field edges ● Monitor restoration progress ○ Keep a species inventory ○ Take progress photos ● Trail and signage maintenance Southern Oak Forest ● Optionally remove aspen when the current clones shrink enough to manage easily ○ Girdle all aspen at once in spring ● Increase the amount of sunlight reaching the forest understory to encourage growth ○ Invasive species removal ○ Timber stand improvement ● Favor native trees and understory plants to restore natural processes ○ Invasive species removal ○ Oak tree daylighting ○ Timber stand improvement ○ Prescribed burning (long term goal) ● Mow Shelby Butterfly Field boundary as needed to prevent forest encroachment ● Introduce native oak savanna species if needed to reestablish oak forest structure ○ Purchase and plant white/bur oak ○ Purchase and sow a native oak forest understory seed mix ● Monitor restoration progress ○ Keep a species inventory ○ Take progress photos ● Trail and signage maintenance

Unit #	Management Unit Description	Management Unit Goals
4	This management unit consists entirely of the Shelby Butterfly Field, which is located on a hilltop and surrounded by thick Disturbed Aspen Forest. The unit is long and narrow overall, and the surrounding forest casts shade onto the habitat edges. These factors make this unit vulnerable to brush encroachment from the surrounding forest. The Shelby Butterfly Field mostly consists of prairie plants, which were introduced to the site via a prairie seed mix as part of a restoration project. Large sections of the habitat have been invaded by crownvetch, and invasive bull thistle is also scattered throughout the prairie. Cool season grasses are overrepresented in this habitat due to an absence of prescribed fire since the prairie was planted. This unit also has scattered trees and shrubs which cast shade onto the ground, disfavoring the prairie species. Most of these trees are aspen, which will require a special girdling strategy to remove them without worsening the problem.	● Increase the amount of sunlight reaching the ground to promote prairie establishment ○ Remove all woody plants ○ Girdle all aspen in the Field ○ Periodic burning and/or mowing ● Favor native prairie plants and discourage undesirable species not native to prairie ○ Invasive species removal ○ Brush removal ○ Prescribed burning ● Reduce encroachment of forest into Field ○ Mow around field edges at least once annually ● Introduce native prairie species to help better establish the habitat as needed ○ Purchase and sow a biodiverse native prairie seed mix ● Monitor restoration progress ○ Keep a species inventory ○ Take progress photos ● Trail and signage maintenance
5	This site most closely matches the Remnant Prairie habitat type and is located on a southern aspect. The unit is currently degraded due to invasive species. The unit consists of a small, intact section of open prairie surrounded by patches of thick invasive brush dominated by buckthorn and Asian bittersweet. Leafy spurge and sweet clover are present in the prairie. Mature oak and hickory trees are scattered in the unit. Several young hardwoods are present in the overstory and midstory. Ironwood dominates the midstory. The understory is mostly native prairie and savanna species.	● Favor native prairie plants and discourage undesirable species not native to prairie ○ Remove invasive species ○ Remove all woody plants, except those native to remnant prairie ○ Periodic prescribed burning ● Sow prairie seeds from healthy areas into degraded areas to help recovery as needed ○ Collect and sow prairie seeds onsite ● Monitor restoration progress ○ Keep a species inventory ○ Take progress photos ● Trail and signage maintenance

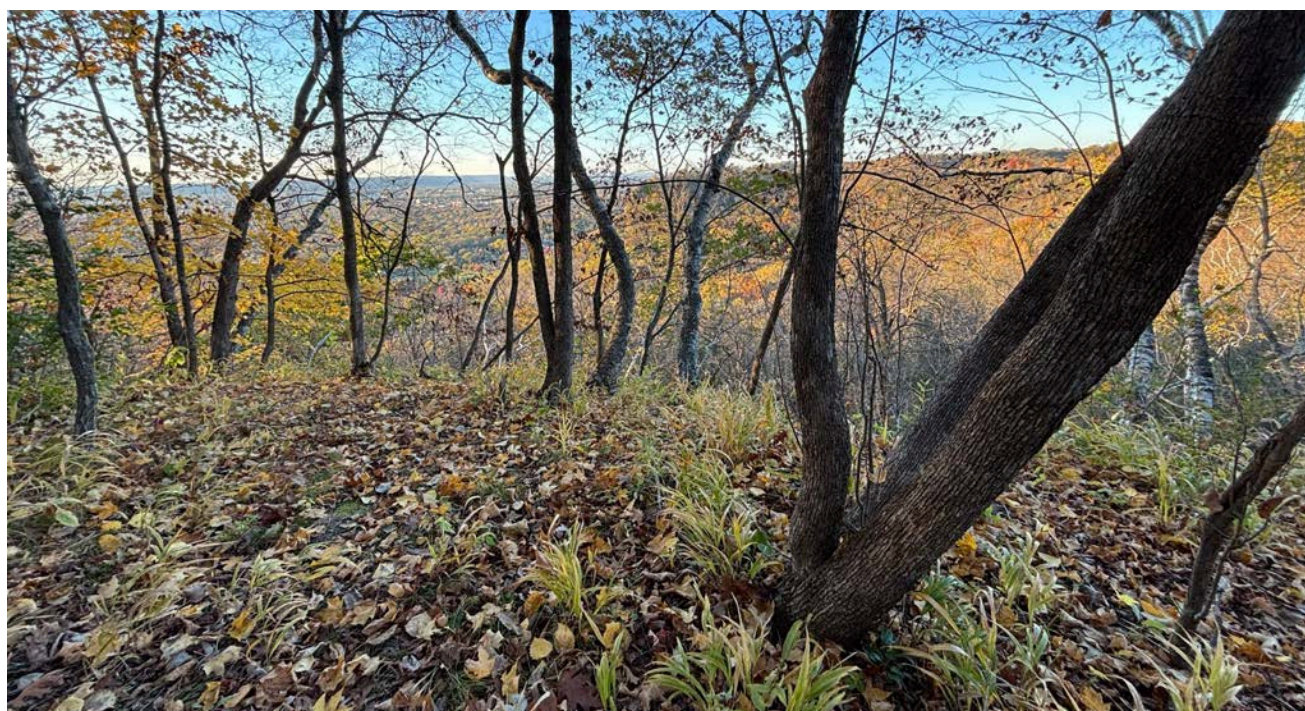
Unit #	Management Unit Description	Management Unit Goals
6	The overstory structure of this habitat most closely matches the Southern Oak Forest habitat type. The unit is located mostly on a southwest aspect. The understory and midstory are impacted by a thick infestation of invasive brush which is made up mostly of buckthorn, honeysuckle, and Asian bittersweet. Scattered understory plants native to the Southern Oak Forest are present in small patches throughout the unit where sunlight is most able to reach the forest floor. The trees in the unit are crowded in the midstory and overstory. Ironwood and mature buckthorn crowd and dominate the midstory, and various hardwood trees make up the overstory. Large white and bur oak trees are scattered throughout the unit.	● Increase the amount of sunlight reaching the forest understory ○ Invasive species removal ○ Timber stand improvement ● Favor native trees and understory plants to restore natural processes ○ Invasive species removal ○ Oak tree daylighting ○ Timber stand improvement ○ Prescribed burning ● Monitor restoration progress ○ Keep a species inventory ○ Take progress photos ● Trail and signage maintenance
7	The overall structure of this habitat most closely matches the Southern Oak Forest habitat type. The unit is located on a western aspect. Large sections of the understory and midstory are impacted by thick, patchy infestations of invasive brush of variable height. The most prevalent invasives include buckthorn, Japanese barberry, and Asian bittersweet. Scattered herbaceous plants native to the Southern Oak Forest are present in patches throughout the unit where sunlight is able to reach the understory and invasives are less dominant. The trees in the unit are crowded in the midstory and overstory. Ironwood and mature buckthorn crowd and dominate the midstory, and various hardwood trees make up the overstory. Mature oak and hickory trees are well represented in the overstory throughout the unit.	● Increase the amount of sunlight reaching the forest understory ○ Invasive species removal ○ Timber stand improvement ● Favor native trees and understory plants to restore natural processes ○ Invasive species removal ○ Oak tree daylighting ○ Timber stand improvement ○ Prescribed burning ● Monitor restoration progress ○ Keep a species inventory ○ Take progress photos ● Trail and signage maintenance

Unit #	Management Unit Description	Management Unit Goals
8	The structure and species of this unit are consistent with Southern Red Oak Mixed Forest. This unit is located on a northwestern aspect and is most impacted by crowded trees in the midstory and overstory and invasive species throughout, which vary in height and thickness. Buckthorn is the dominant invasive, and much of the unit is so thick with it that visibility is low and off-trail navigation is difficult. The uphill areas of the southern half are especially steep due to scattered rock outcroppings and proximity to a cliff. There are spots in the unit where invasives are sparser and thus patches of native understory remain. There is an area of healthy mature oak where the invasives are short but still dense. There are several deadfalls in this unit, especially in downhill sections. Invasives are larger and thicker along the downhill property lines.	● Increase the amount of sunlight reaching the forest understory ○ Invasive species removal ○ Timber stand improvement ● Favor native trees and understory plants to restore natural processes ○ Invasive species removal ○ Oak tree daylighting ○ Timber stand improvement ○ Prescribed burning ● Monitor restoration progress ○ Keep a species inventory ○ Take progress photos ● Trail and signage maintenance
9	The structure and species of this unit are consistent with Southern Red Oak Mixed Forest. This unit is located on a southeastern aspect and is most impacted by invasive species throughout plus crowded trees in the midstory and overstory. The understory is suppressed by invasives varying in density and height. Buckthorn is the dominant invasive, with some thick barberry patches. Much of the unit is so thick with buckthorn that off-trail navigation is difficult and visibility is low. The southern tip of the unit is steep due to scattered rock outcroppings and proximity to a cliff. There is an area of healthy mature oak with low density invasives that has restoration potential. Invasives are larger and thicker along the property lines.	● Increase the amount of sunlight reaching the forest understory ○ Invasive species removal ○ Timber stand improvement ● Favor native trees and understory plants to restore natural processes ○ Invasive species removal ○ Oak tree daylighting ○ Timber stand improvement ○ Prescribed burning ● Monitor restoration progress ○ Keep a species inventory ○ Take progress photos ● Trail and signage maintenance ● All management actions should take care not to interfere with the water utility just uphill of the Woodland Drive entrance

Unit #	Management Unit Description	Management Unit Goals
10	The species and structure of this hilltop unit are consistent with Southern Red Oak Mixed Forest. The main issues facing this unit are crowding of trees in the overstory and midstory and thick invasive species throughout. The dominant invasive species in this unit is buckthorn, and it varies in height and thickness throughout. On the westernmost side of the unit, there are areas of crownvetch and sweet clover. This unit is heavily disturbed because it sees high visitation from the public due to the popular trails and rock features throughout. Areas of the unit have also been quarried in the past. High visitation is expected to continue in this area, which limits its potential for habitat restoration, but high priority should be taken to remove invasive species to avoid their spread to other, more restorable areas and to improve the scenery of the area.	● Increase the amount of sunlight reaching the understory ○ Invasive species removal ○ Timber stand improvement ● Favor native trees and understory plants to restore natural processes ○ Invasive species removal ○ Oak tree daylighting ○ Timber stand improvement ○ Prescribed burning ● Monitor restoration progress ○ Keep a species inventory ○ Take progress photos ● Trail and signage maintenance
11	This unit most closely matches the Remnant Prairie habitat type and is located on a southwestern aspect. This unit is located on a cliff edge and consists of a scattered prairie understory struggling to persist among patchy, variable invasives. Scattered native shrubs of varying height are present in this unit, but overall the area is entirely unforested. This unit has some restoration potential, but the prairie is small and highly degraded due to infestations of invasive species including crownvetch, sweet clover, and buckthorn in addition to frequent disturbance from visitors of the trails and scenic overlooks. The logistics of managing this area are complicated by the unit's proximity to a cliff edge and popularity among property visitors.	● Favor native prairie plants and discourage undesirable species not native to prairie ○ Remove invasive species ○ Remove all woody plants, except those native to remnant prairie ○ Periodic prescribed burning, where possible and safe to do so ● Sow prairie seeds from healthy areas into degraded areas to help recovery as needed ○ Collect and sow prairie seeds onsite ● Monitor restoration progress ○ Keep a species inventory ○ Take progress photos ● Trail and signage maintenance

Unit #	Management Unit Description	Management Unit Goals
12	The structure and species present in this unit are consistent with Southern Oak Forest. This unit is dome-shaped and includes a hilltop, so there is no dominant aspect. The trees in the overstory and midstory are crowded, and there are thick invasive species throughout most of the unit. In the northern half of the unit there are patches of native understory and healthy, mature oak trees in the overstory, indicating high restoration potential. In the southern half of the unit, the invasive species have a higher density and average height as compared to the northern half. The entire unit has a high prevalence of buckthorn, but in the southern half black locust is the most dominant invasive. The black locust in the southern half varies in size up to mature trees. The north and west boundaries are partially bordered by cliffs, so management access may be a challenge in some spots. The southern tip of the unit has a trailside leafy spurge infestation.	● Increase the amount of sunlight reaching the forest understory ○ Invasive species removal ○ Timber stand improvement ● Favor native trees and understory plants to restore natural processes ○ Invasive species removal ○ Oak tree daylighting ○ Timber stand improvement ○ Periodic prescribed burning, where possible and safe to do so ● Monitor restoration progress ○ Keep a species inventory ○ Take progress photos ● Trail and signage maintenance
13	This unit most closely matches the Dry Cliff and Southern Red Oak Mixed Forest habitat types. Most of the unit is rocky and steep. In areas where growth is supported, the habitat is challenged by invasives of variable species, density, and height. There is at least one small, isolated patch of prairie in the unit which is not worth managing. There are some navigable areas, but in addition to being prohibitively steep, this unit is bordered by private land in a way that further limits access. These factors make the unit largely unnavigable throughout, so most of the area cannot realistically be managed.	● Favor native species and discourage species not native to dry cliff habitat ○ Remove invasive species ○ Remove all woody plants except those native to dry cliff habitat ○ Timber stand improvement ● Sow native seeds from healthy areas into degraded areas to help recovery as needed ○ Collect and sow prairie seeds onsite ● Monitor restoration progress ○ Keep a species inventory ○ Take progress photos ● Trail and signage maintenance ● Monitor “The Chairs” area for vandalism

Unit #	Management Unit Description	Management Unit Goals
14	This unit most closely matches the Remnant Prairie habitat type. The unit has a southwestern aspect and includes some Dry Cliff features, making some areas very steep. The unit consists of a relatively healthy and biodiverse prairie understory that is fragmented by patches of thick invasives and pressured on the outside edges by encroachment of brush. Scattered native shrubs and trees of varying height are present in this unit, but overall the area is unforested. The dominant invasive is buckthorn, but sweet clover and honeysuckle are also prevalent. This unit has promising restoration potential due to its size, relative accessibility, and biodiversity, but its steep sections make management access a bit challenging. There is a scenic overlook and trail along the top of the prairie, and there are some rogue trails inside the prairie.	● Favor native prairie plants and discourage undesirable species not native to prairie ○ Remove invasive species ○ Remove all woody plants, except those native to remnant prairie ○ Periodic prescribed burning, where safe and feasible to do so ● Sow prairie seeds from healthy areas into degraded areas to help recovery as needed ○ Collect and sow prairie seeds onsite ● Monitor restoration progress ○ Keep a species inventory ○ Take progress photos ● Trail and signage maintenance ● Close any rogue trails that travel through the prairie and monitor for continued use



IV. Plan Implementation Schedule

Year	Season(s)	Management Unit(s)	Activity
2026	Fall Winter	All	Plan management actions for 2027 and secure funding and labor for these projects.
2027	Spring Summer Fall	Trails and Signs: All Herbaceous Weed Removal: 2, 4, 5, 11, 14	Implement the Trail Improvement Plan so that the property trails match the Recommended Trail Map by completing the following: 1) Hire a trail crew to complete a majority of the outlined trail improvement tasks. 2) Hire a contractor specialized in trail construction to fix the wider access trails with heavy equipment, including the Mourning Cloak Trail (intersections 2 to 17 on the Recommended Trail Map) and part of the Swallowtail Trail (intersections 1 to 7) to restore vehicle access and improve drainage. 3) Maintain trails property-wide and close any unauthorized trails. During the spring, summer and fall, remove all herbaceous invasive species in the prairies by applying the best management practices for each species as outlined in this Plan.
2027	Fall	All	Order and install property signage to implement the Signage Plan.
2027	Winter	5, 11, 14 Trails and Signs: All	Remove invasive brush in the remnant prairies, starting by clearing the scenic overlook areas and then expanding outward as time, funding and access allows. Maintain trails and signage property-wide.
2028	Spring	4 Garlic Mustard: All Trails and Signs: All	Girdle all aspen inside the Shelby Butterfly Field. Burn or mow the Field as short as possible between April 15th and May 15th. If burning the Field, mow and clear firebreaks sometime before burning. Spray crownvetch wherever encountered in its younger stages to make management easier in the summer. Walk all trails and open areas. Pull, bag, and dispose of any garlic mustard encountered. Maintain trails and signage property-wide.

2028	Summer Fall Winter	2, 4, 5, 11, 14 Trails and Signs: All	Remove invasive brush in the prairies and savanna, starting in the open areas and expanding into more infested areas as progress is made and time and funding allows. Clear all open prairie on the property before moving into highly infested areas to best target efforts. Focus on connecting areas of healthy prairie together where possible once all prairie patches are cleared of brush. Prioritize completion of units 4, 11, and 14. During the summer and fall, remove any herbaceous invasive species in the prairies by applying the best management practices for each species as outlined in this Plan. Maintain trails and signage property-wide and close any unauthorized trails found.
2029	Spring	4 Garlic Mustard: All Trails and Signs: All	Burn or mow the Shelby Butterfly Field as short as possible between April 15th and May 15th. If burning the Field, mow and clear firebreaks sometime before burning. Spray crownvetch wherever encountered in its younger stages to make management easier in the summer. Walk all trails and open areas. Pull, bag, and dispose of any garlic mustard encountered. Maintain trails and signage property-wide and clear any obstructions found across the trails.
2029	Summer Fall Winter	Brush Removal: 2, 5, 6, 7, 10, 12 Herbaceous Weed Removal: 2, 4, 5, 11, 14 Trails and Signs: All	Remove invasive brush in the prairie, savanna and Southern Oak Forest habitats (except #3), starting in more open areas and expanding into more heavily infested areas as progress is made and time and funding allows. Prioritize units 2, 5, 6, 10, and the north half of 12. Ignore black locust until all other invasive brush is cleared. In unit 6, do <u>not</u> cut any aspen trees as they will need to be girdled in a future spring to avoid worsening the problem. During the summer and fall, remove any herbaceous invasive species in the prairies by applying the best management practices for each species as outlined in this Plan. Maintain trails and signage property-wide and close any unauthorized trails found.

2030	Spring	4 Garlic Mustard: All Trails and Signs: All	Burn or mow the Shelby Butterfly Field as short as possible between April 15th and May 15th. If burning the Field, mow and clear firebreaks sometime before burning. Spray crownvetch wherever encountered in its younger stages to make management easier in the summer. Walk all trails and open areas. Pull, bag, and dispose of any garlic mustard encountered. Maintain trails and signage property-wide.
2030	Summer Fall Winter	Brush Removal: 2, 5, 6, 7, 10, 12 Herbaceous Weed Removal: 2, 4, 5, 11, 14 Trails and Signs: All	Continue removing invasive brush in the prairie, savanna and Southern Oak Forests (except #3), starting in more open areas and expanding into more infested areas as time and funding allows. Prioritize units 2, 5, 6, 10, and 12. Once other brush removal is complete, girdle any black locust over 4" in diameter and basal bark any locust under 4" in diameter. During the summer and fall, remove any herbaceous invasive species in the prairies by applying the best management practices for each species as outlined in this Plan. Maintain all trails and signs property-wide.
2031	Spring	4 Garlic Mustard: All Trails and Signs: All	Spray crownvetch in the Butterfly Field wherever encountered in its younger stages to make management easier in the summer. Cut down and remove any <u>dead</u> aspen in the Field. Walk all trails and open areas. Pull, bag, and dispose of any garlic mustard encountered. Maintain trails and signs property-wide.
2031	Summer Fall	Brush Removal: 2, 4 - 7, 10 - 12, 14 Herbaceous Weed Removal: 2, 4, 5, 11, 14 Trails and Signs: All	Touch up all units that have undergone invasive brush removal since 2027. Treat each of these areas a second time. Cut stump treat or foliar spray any invasive brush found. During the summer and fall, remove any herbaceous invasive species in the prairies by applying the best management practices for each species as outlined in this Plan. Maintain all trails and signage property-wide.

MONITORING & EVALUATION GUIDELINES

MONITORING RECOMMENDATIONS

Monitoring is a key aspect of land management that supports proactive and sustainable stewardship. This practice helps landowners identify management priorities, key issues, and emerging threats, and it provides key ecological and social information about a property. Below is a list of key monitoring tasks recommended for the Shelby Butterfly Trails property. These monitoring actions can be done by Town of Shelby staff or supported through volunteers and other types of partnerships, such as with local universities and biology clubs. Town staff can gain these skills by consulting local partners or accessing reputable, public resources online.

Recommended Monitoring Tasks for the Shelby Butterfly Trails:

- 1) Monitor for plant diseases and tree dieback (emerald ash borer, oak wilt, Dutch elm, etc.)
- 2) Monitor for species of all taxa on the property and make a species list to record findings. This should be done property wide, but prioritize any actively managed areas.
- 3) Walk the property boundaries once annually to monitor for damage and encroachment.
- 4) Monitor trails, signage, overlooks, and picnic areas at least once monthly.
- 5) Monitor the rock formations on the Property Features Map for vandalism occasionally.
- 6) Take before and after photos of each management project, ideally staying consistent in terms of angle and time of year so the results are more clearly visible.
- 7) Optionally, the Town could collect visitation data to improve knowledge of property use.

PLAN EVALUATION & UPDATES

This Plan should be updated every five years to ensure that everything is accurate and reflective of current property goals and management priorities. To accomplish this, the Town of Shelby could work with Conscious Conservation LLC to directly revise this Plan, or they could prepare a separate addendum to add to the original Plan. If directly revising this Plan, at minimum the Plan Implementation Schedule (p. 98) and Town of Shelby Management History (p. 10) will need to be updated. Formatting is immaterial for an addendum as long as the update summarizes the work that was done in the previous five years and outlines management priorities for the next five years. This Plan is intended to guide the Town of Shelby as they make land management decisions for the Shelby Butterfly Trails property, and the Town may decide to defer from the recommended actions described within it at any time.

In each update, the Town should include any major insights gained while completing the listed management actions. They should add photos wherever possible to demonstrate progress on Plan goals and visually represent the various projects. The Town should also discuss whether the original issues described in the Plan have improved over the previous five years, and should summarize any new challenges that arose while managing the property during this time. It

would also be helpful for the Town to reflect on their use of the Plan in their update. If any inaccuracies, barriers to use, or other issues are identified, then the updated version of the Plan could be revised to improve overall relevancy and ease of use for the land management team.

FUTURE CONSIDERATIONS

Timber Sales: Consideration of a timber sale on the property is beyond the five year scope of this Plan due to the fact that there are more time sensitive management needs that must be prioritized first. The forests of the Shelby Butterfly Trails property will take many years of invasive species removal and midstory timber stand improvement (TSI) before they are healthy and resilient enough to tolerate a timber sale. However, at some point in the future it may become prudent to have the property assessed for potential timber sales. Timber sales are one way of achieving TSI goals, and in some circumstances they are the best option for landowners.

A timber sale is the best method for achieving habitat management goals when the land manager is looking to remove mature, marketable trees that are undesirable in terms of their ecosystem-level priorities. Smaller trees less than eight inches in diameter are not typically considered marketable for a timber sale as a rule of thumb, but there are notable exceptions to this rule. The expertise of a professional forester is invaluable and necessary when determining whether a timber sale is appropriate for a particular area.

Timber assessments should be done by a forester who is proven to value conservation. Ethical foresters take care to prioritize the long-term health and biodiversity of the forest every step of the way. Contacting the local Wisconsin DNR forester is a great place to start when considering this practice. Sustainable and ethical timber sales are selective and have clear, binding contracts for the logger that protect against damage to the forest and its soil. At minimum, Wisconsin Forestry Best Management Practices should be implemented into any contract. It is also worth noting that when a site is being considered for timber sale, it is not advisable to conduct a prescribed burn there because that practice may devalue the marketable “crop” trees.

Trail Development: As certain areas of the property become more accessible due to ongoing invasive species removal, it is likely that the demand for adding new trails will increase. When considering whether to develop new trails in the future, it is important to make an informed and calculated decision that factors in all the pros and cons of a potential project. There should always be a strong case for adding new trails as overdevelopment of natural areas is ill-advised.

Trail development tends to negatively impact forest biodiversity and ecosystem resilience overall and can exacerbate invasive species and erosion issues when they are present. However, there are also positive impacts associated with trail development such as expansion of education and recreation opportunities and improvement of land management access. Therefore, it is important to balance all property goals when making informed decisions regarding new trail development. Regardless, this management action should not be considered within the five year scope of this Plan. Adding new trails is costly and would require signage updates. In the short term, funding and effort would be much more wisely spent on higher priority goals.

FUNDING & PARTNERSHIP OPPORTUNITIES

FUNDING

Summary: This list is intended to serve as a jumping off point for the Town of Shelby as they seek grant funds to complete the work outlined in this Plan. It does not include all of the funding opportunities that may be available for management of the Shelby Butterfly Trails property. Any of the groups listed in the “Partnerships” section have the potential to help with funding or labor for future projects. Partners are also likely to provide valuable advice, insights, and community connections that could lead to funding opportunities, project ideas, and more efficient work flow.

Conservation and Forestry Funding Sources:

Federal Grants

- 1) Natural Resources Conservation Service (NRCS)
 - Environmental Quality Incentives Program (EQIP)
 - An NRCS agent will assess the property to determine eligibility for this program. They can help identify the best projects to submit for funding.
 - Contact the local NRCS office in Onalaska for a consultation.

State Grants through the Wisconsin Department of Natural Resources

- 1) Wild Turkey Stamp Grant
- 2) Urban Forestry & Catastrophic Storm Grants
- 3) Weed Management Area - Private Forest Grant Program (WMA-PFGP)

Local Government Grants

- 1) La Crosse County Bluffland Protection Fund

Nonprofit Grants

- 1) La Crosse Area Community Foundation
- 2) National Wild Turkey Federation Super Fund

Land Acquisition and Outdoor Recreation Funding Sources:

Federal Grants

- 1) Land and Water Conservation Fund (LWCF)
 - State level contacts are available for application and project support.
- 2) Recreational Trails Program (RTP)

State Grants through the Wisconsin Department of Natural Resources

- 1) Knowles-Nelson Stewardship Grant Programs
 - currently closed due to recent nonrenewal of the program

Local Government Grants

- 1) La Crosse County Bluffland Protection Fund

Nonprofit Grants

- 1) La Crosse Area Community Foundation

PARTNERSHIPS

Trail Construction and Management: Local nonprofits including the Outdoor Recreation Alliance (ORA) and the Wisconsin Conservation Corps (WisCorps) have assisted with trail construction and maintenance on the property in the past. Both organizations could play a role in management of the trail system in the future. WisCorps could also help with invasive species.

ORA is a local La Crosse nonprofit that may be able to support ongoing trail maintenance on the property through a Memorandum of Understanding (MOU) with the Town of Shelby. The work they provide is likely to consist of volunteer labor and possibly seasonal staff support. ORA has many ongoing projects that compete for staff time and volunteer labor, so their availability may be limited to help with the property. ORA staff are an excellent resource for advice regarding trail management, trail project planning, and hiring local contractors for implementing trail projects.

WisCorps is a local nonprofit based in La Crosse that hosts seasonal AmeriCorps positions for early career professionals. WisCorps crews complete several types of conservation projects including trail construction and maintenance, invasive species removal, boardwalk installation, and more. WisCorps operates similarly to an environmental restoration contractor, but their prices are much cheaper. Projects are planned and supported by WisCorps' permanent staff and executed by WisCorps crews. WisCorps invests heavily in crew member training, and permanent staff provide support to the crews as needed throughout the season. WisCorps staff plan and assess projects year round, and crews complete work from June through November.

Habitat Management and Prescribed Fire: Town of Shelby staff can be trained to complete many of the tasks outlined in this Plan. An ecological restoration contractor should be hired for any projects that are too large for Town staff to manage. Prescribed burns must be planned and completed by qualified, experienced professionals because of the high degree of risk.

Ecological Restoration Contractors Who Offer Prescribed Fire Services:

- Adaptive Restoration LLC (Mount Horeb, WI)
- Dahlby Conservation Services (Chippewa Falls, WI)
- Field & Stream Restorations (Cottage Grove, WI)
- Good Oak Ecological Services (Madison, WI)
- Heartland Ecological Group, Inc (Mount Horeb, WI)
- Native Range Ecological (Madison, WI & La Crosse, WI offices)
- Quercus Land Stewardship Services (Black Earth, WI)

Other Prescribed Fire Resources:

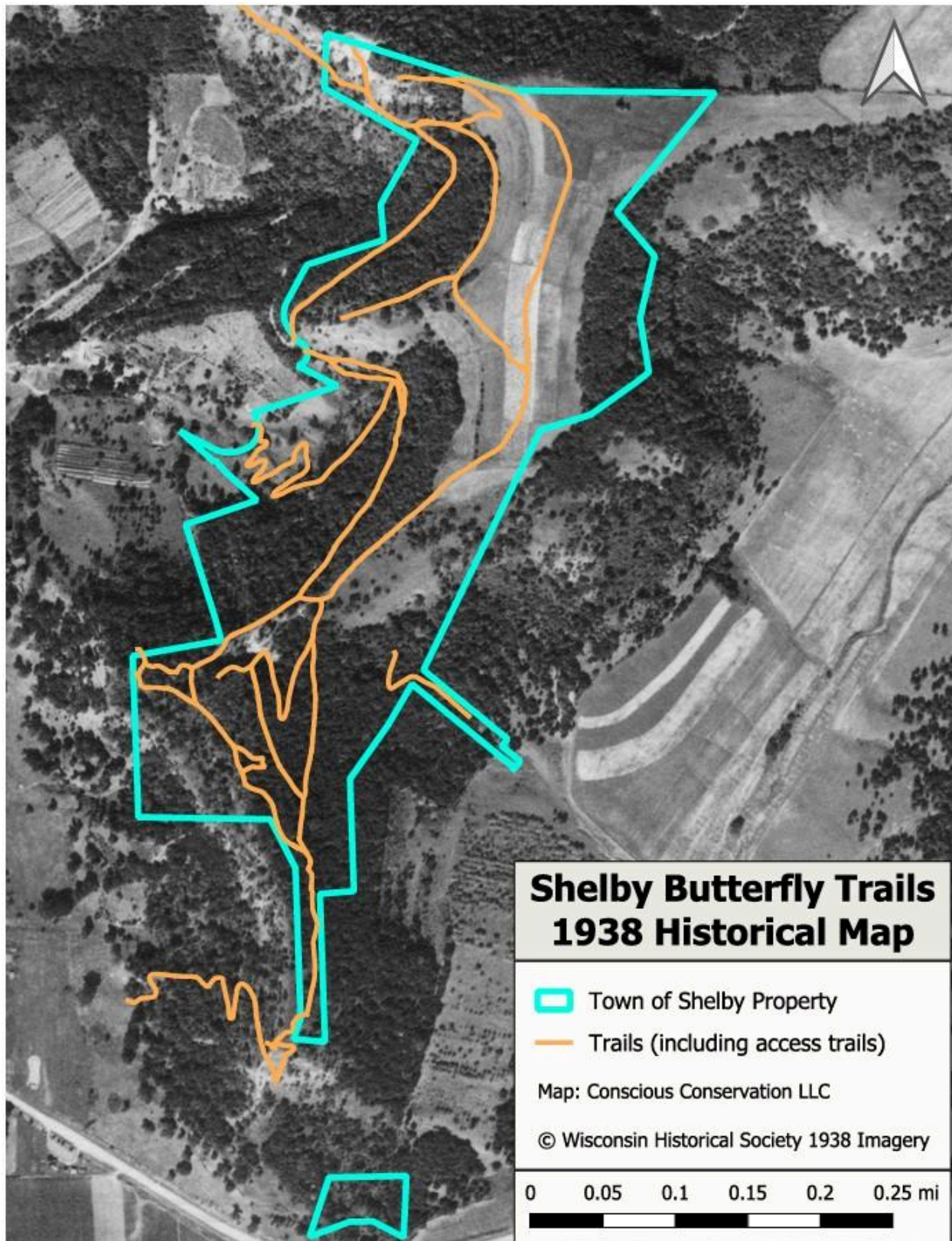
- Certain prescribed burns can be done by the local fire department as training exercises. There is a state grant program called the Forest Fire Protection (FFP) Grant Program that assists local fire departments with expanding their wildland fire capabilities.
- The Wisconsin Prescribed Fire Council offers abundant resources for landowners considering prescribed burns on their property. They also host training exercises for individuals interested in learning how to burn, and it is possible to become a training site through this organization. This could be another low-cost option for prescribed burning.

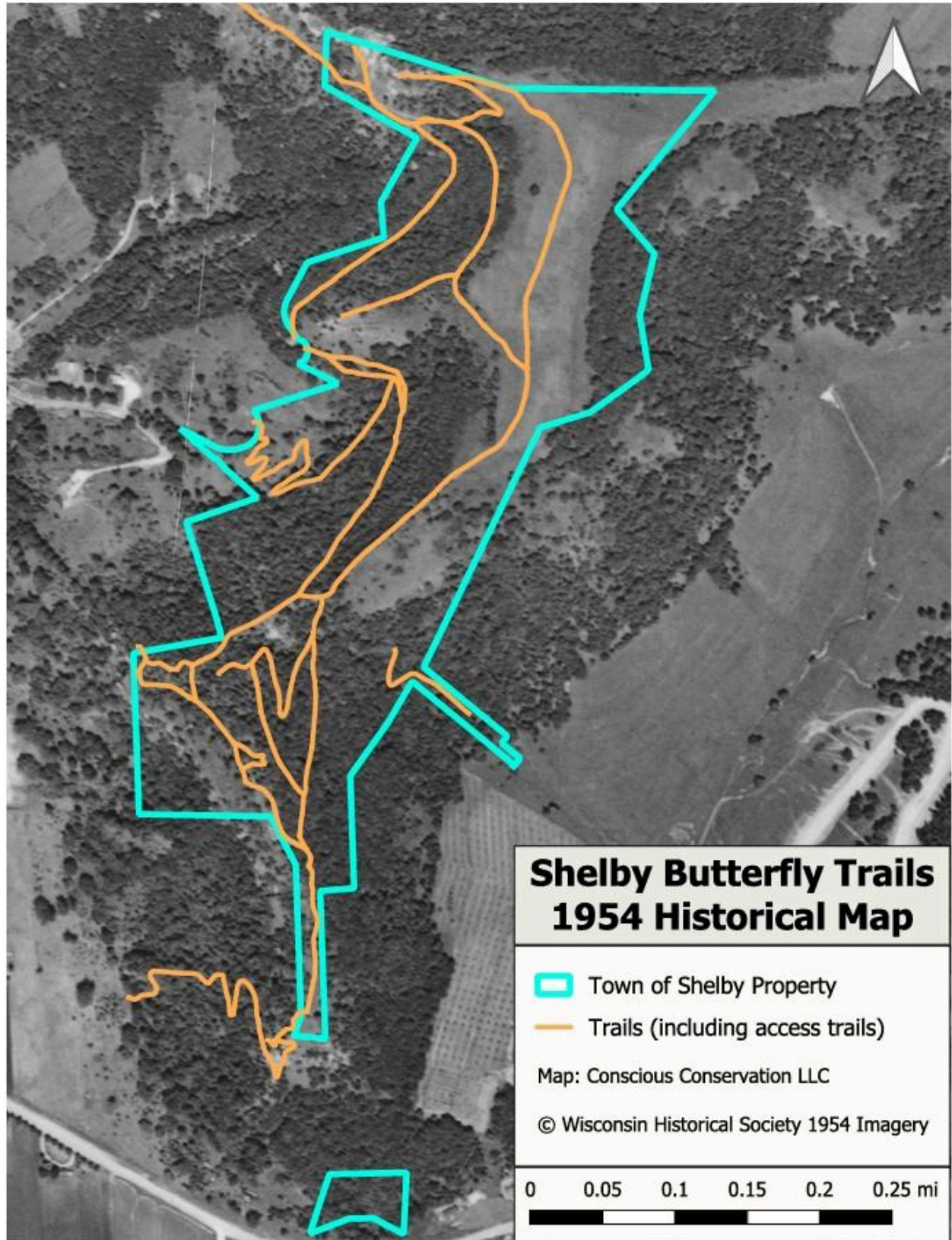
Native Plant and Seed Sources: When native planting is required on the property, seed should be collected and sown onsite whenever possible. However, some projects may require purchasing native plants from a reputable source. Seeds and young plants of species native to prairie, oak savanna, and oak forest can be purchased at [Prairie Moon Nursery](#) or [Prairie Restorations](#). Both of these companies offer a variety of native forbs, shrubs and trees. There are two nurseries run by the Wisconsin Department of Natural Resources that offer purchase of native saplings and seeds. The DNR nurseries sell in larger quantities but are cheaper overall.

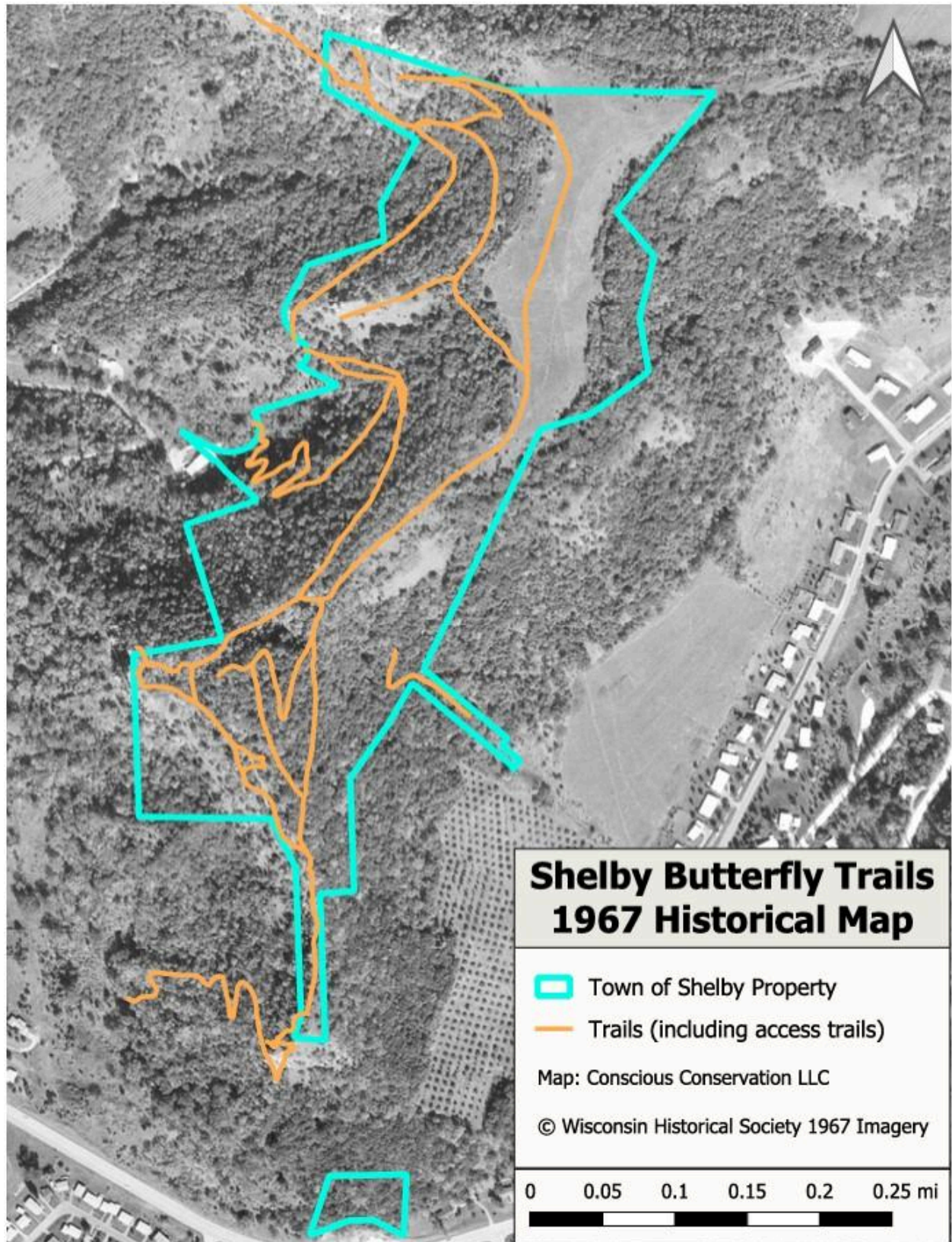
Other Partnership Opportunities: It is beneficial for the Town to connect community organizations to the Shelby Butterfly Trails wherever possible to strengthen local investment in the property, improve public health, build community knowledge, and more. Potential partnership areas for the property that have not already been listed in this section include research, education, and species inventory. Involvement of volunteers in management of the property could expand well beyond trail maintenance. For example, many restoration projects make great volunteer events. A variety of potential partners for the property are listed below.

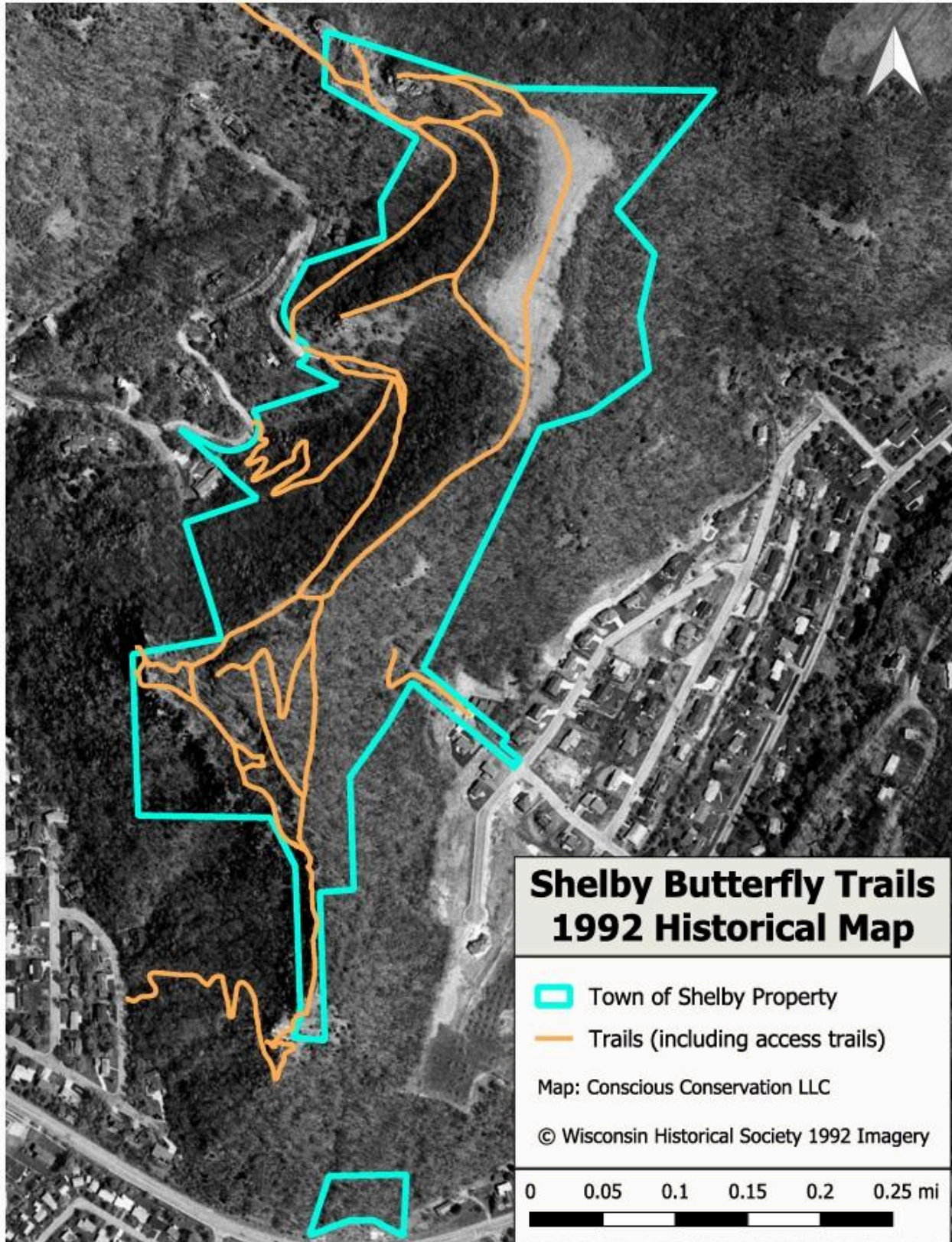
- Active Wisconsin
- American Bird Conservancy
- American Forest Foundation
- Arbor Day Foundation
- [Citizen-Based Monitoring Programs](#)
- Coulee Region Audubon Society
- Friends of the Blufflands
- Friends of La Crosse River Marsh
- Kids and Mentors Outdoors (KAMO) – Coulee Chapter
- La Crosse Area Family YMCA
- La Crosse County (Facilities, Land Conservation, Library Departments)
- La Crosse Fish and Wildlife Conservation Office
- Local high schools, middle schools, and elementary schools
- Midwest Invasive Plant Network
- Mississippi Valley Conservancy
- My Wisconsin Woods
- National Fish and Wildlife Federation
- National Wild Turkey Federation
- Natural Resources Conservation Service (NRCS)
- Outdoor Recreation Alliance (ORA)
- Ruffed Grouse Society
- School environmental clubs [Future Farmers of America (FFA), 4-H, etc]
- Scouts organizations (Eagle Scouts, Girl Scouts, and Boy Scouts)
- Sierra Club – Coulee Region Group
- Southern WI Butterfly Association
- Sustainability Institute
- The Nature Conservancy
- The Nature Place
- The Prairie Enthusiasts – Coulee Region Chapter
- UW Extension (Master Gardeners, Master Naturalists, etc.)
- University of Wisconsin – La Crosse
- Upper Mississippi River National Wildlife and Fish Refuge – La Crosse District Office
- Viterbo University
- Western Technical College
- WisCorps
- Wisconsin Department of Natural Resources (WDNR)
- Wisconsin Woodland Owners Association (WWOA)
- Xerces Society

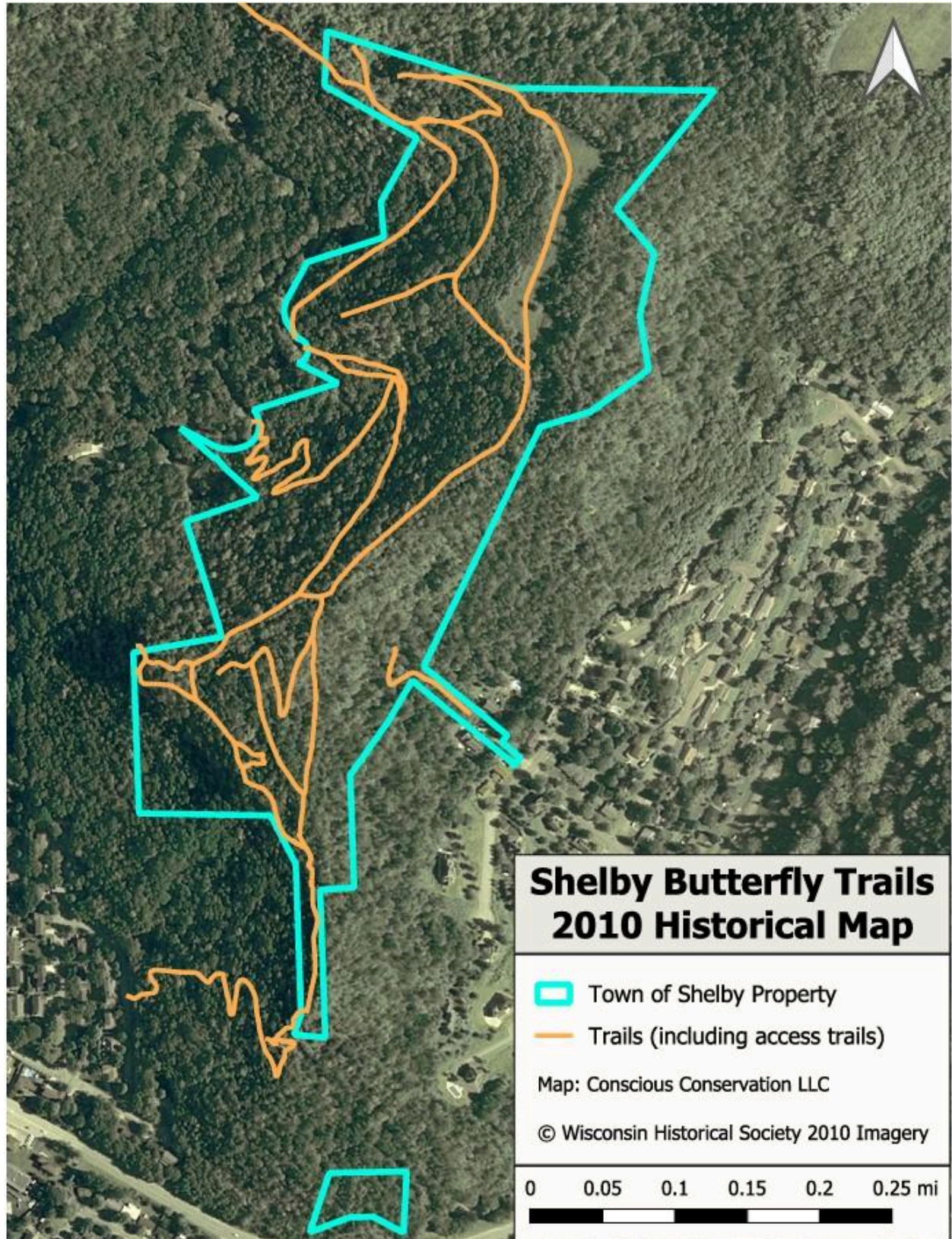
APPENDIX A: HISTORIC IMAGERY MAPS











APPENDIX B: DEFINITION OF TERMS

AOI: Area of Interest

Brush (a.k.a. Woody Plant): A plant containing wood fibers with a relatively strong, rigid stem

Easement: A legal term for a type of property right that grants another person, business or entity access or rights to a specific part of the property

Encroachment: The gradual advancement of something into an adjacent area

Endemic: Native and restricted to a certain place

Flagstone: Flat, thin, sedimentary rock (ie: sandstone, slate, or limestone)

Forb: Non-woody, herbaceous flowering plant that isn't a grass, rush or sedge

Fuel(s): Flammable material that will burn in a given environmental condition

Hardwood: Broadleaved, flowering (angiosperm) trees such as oak, cherry, maple, and walnut

Herbaceous: A plant with little to no woody tissue, usually with a weak and flexible structure

Microbiome: A collection of microorganisms coexisting together in a shared environment

Midstory: A region of the forest where plants grow between the understory and canopy, including tall shrubs and lower canopy trees up to 30 feet in height

Overstory: The topmost layer of a forest, consisting of the treetops making up the canopy

Regeneration: Renewal of a native biological system after significant change or disruption

Rhizome: A horizontal plant stem that grows underground and can form new roots and shoots

Sedge: A perennial plant with long, narrow leaves that resembles a grass but has solid, often triangular-edged stems and typically flowers in inconspicuous spikelet displays

Serrate: Jagged edge; sawlike

Shrub Layer: The woody undergrowth of a forest typically consisting of plants from 3 to 15 feet in height and including both low-growing shrubs and tree seedlings

Slough: A swamp or other shallow wetland system, usually a backwater to a larger water body

Snag: A standing, dead tree

Sow: The process of planting seeds by scattering them onto soil

Taxa: A scientific grouping of like organisms, e.g. mammals, reptiles, birds, fungi, plants

Timber Stand: A collection of trees that share a similar composition and set of characteristics

Tread (e.g. trail tread): The physical surface of a prepared path for travel such as a trail

Understory: A region where plants grow beneath the shrub layer, but above the forest floor

Widowmaker: A damaged portion of a tree such as a branch that is located overhead, typically hanging, and would cause severe injury or death if it fell on a person below

APPENDIX C: REFERENCES & CONTRIBUTORS

- Beleckis, J. (2022, October 5). *Where does the “Driftless Area” get its name? The history, boundaries of the southwest Wisconsin region*. Wisconsin Public Radio.
www.wpr.org/environment/where-does-driftless-area-get-its-name-history-boundaries-southwest-wisconsin-region
- Carson, E., Curry, B., Kerr, P., & Lusardi, B. (2023). *The Driftless Area: The Extent of Unglaciaded and Similar Terrains in Wisconsin, Illinois, Iowa, and Minnesota* (Report No. ES057). Wisconsin Geological and Natural History Survey.
wgnhs.wisc.edu/catalog/publication/000997/resource/es057
- Census Reporter. (2024). *La Crosse-Onalaska, WI-MN Metro Area*. Retrieved August 29, 2025, from <https://censusreporter.org/profiles/31000US29100-la-crosse-onalaska-wi-mn-metro-area/>
- Driftless Wisconsin, Inc. (n.d.). *History of the Driftless Area of Wisconsin*. Retrieved December 24, 2025, from driftlesswisconsin.com/explore/history/
- Hoffman, R. (2002). *Wisconsin’s Natural Communities: How to Recognize Them, Where to Find Them*. University of Wisconsin Press.
- La Crosse Public Library. (n.d.). *General La Crosse History*. Archives & Local History Department. Retrieved December 24, 2025, from www.footstepsoflacrosse.org/local-history-and-architecture
- Midwest Invasive Plant Network. (n.d.). *Invasive Plant Control Database*. Retrieved December 29, 2025, from mipncontroldatabase.wisc.edu/
- MSA Professional Services. (2016, July 15). *The Blufflands: A Plan for Conservation And Recreation Throughout The La Crosse - La Crescent Region*.
- Natural Resources Conservation Service. (n.d.). *Web Soil Survey*. U.S. Department of Agriculture. Retrieved November 10, 2025, from websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx
- Riter, M. T. (2025). *A Better Way: Design, Construction, Maintenance and Crew Leadership for modern silent sport trails*. Trail Design Specialists.
- The Bluffland Coalition. (2023, September 19). *Bluffland Coalition Annual Report - Final*.
- Town of Shelby. (n.d.). *Parks*. Retrieved December 23, 2025, from <https://townofshelbywi.gov/>
- University of Wisconsin - Madison. (n.d.). *Wisconsin Historic Aerial Imagery Finder*. Retrieved December 22, 2025, from maps.sco.wisc.edu/WHAIFinder/
- University of Wisconsin - Madison. (2026). *Wisconsin Public Land Survey Records: Original Field Notes and Plat Maps*. Board of Regents of the University of Wisconsin System. Retrieved December 23, 2025, from digicoll.library.wisc.edu/SurveyNotes/
- U.S. Census Bureau. (n.d.). *Explore Census Data*. U.S. Department of Commerce. Retrieved August 29, 2025, from <https://data.census.gov/>

U.S. Forest Service. (2005, January 16). *Weed of the Week: Winged Burning Bush*. U.S. Department of Agriculture.

Wi DNR Curator. (2023, February 16). *Wisconsin Leaf-Off Digital Orthophoto Web Map*. Wisconsin Department of Natural Resources. Retrieved December 22, 2025, from data-wi-dnr.opendata.arcgis.com/maps/wi-dnr::wisconsin-leaf-off-digital-orthophoto-web-map/about.

Wisconsin Department of Natural Resources (n.d.). *Community-Based Monitoring*. Retrieved August 27, 2026 from <https://dnr.wisconsin.gov/topic/WildlifeHabitat/citizenMonitoring>

Wisconsin Department of Natural Resources. (n.d.). *Wisconsin Well Inventory Viewer*. Retrieved December 29, 2025, from dnrmaps.wi.gov/H5/?viewer=Well_Inventory_Viewer

Wisconsin Department of Natural Resources. (1949). *Well Constructor's Report To Wisconsin State Board Of Health* (Report No. WUN - 8MF944). Retrieved December 28, 2025, from apps.dnr.wi.gov/wellconstructionpub/ReportViewer.aspx?id=WellConstructionReport&download=false&WUWN=8MF944

Wisconsin First Detector Network. (2026). *Invasive Species I.D. and Impacts*. UW - Madison Division of Extension. fyi.extension.wisc.edu/wifdn/learn/invasive-species-i-d-and-impacts/

Wisconsin Prescribed Fire Council. (2025). *Why We Burn*. Retrieved December 29, 2025, from <https://prescribedfire.org/why-we-burn/>

Wisconsin Reed Canary Grass Management Working Group. (2009). *Reed Canary Grass (Phalaris arundinacea) Management Guide: Recommendations for Landowners and Restoration Professionals* (Publication No. PUB-FR-428 2009).



CREDITS

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Software Credits: QGIS; DNRGPS; Garmin GPSMAP 65s; Google Workspace

