



Landowner Conservation Report

Landowner Name

Buffalo County, WI
T01, R01W, S01
November 1, 2015



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Standard Information

This Land Conservation Report (LCR) contains **Natural Heritage Inventory data** (<http://dnr.wi.gov/topic/NHI>), including specific locations of endangered resources, which are considered sensitive and are **not** subject to Wisconsin's Open Records Law. As a result, information contained in this LCR may be shared only with individuals who need this information to carry out specific roles in the planning of land management and restoration activities. Specific locations of endangered resources may not be released or reproduced in any publicly disseminated documents.

Categories of endangered resources considered in LCRs and protections for each: Endangered resources records from the NHI database fall into one or more of the following categories:

- Federally-protected species are those that are federally-listed as Endangered or Threatened Designated Critical Habitats. **Federally-protected animals are protected on all lands;** federally-protected plants are protected only on federal lands and in the course of projects that include federal funding (see [Federal Endangered Species Act of 1973 as amended](#)). Federal proposed and candidate species which are not protected, are also included.
- Animals (vertebrate and invertebrate) listed as Endangered or Threatened in Wisconsin are protected by Wisconsin's Endangered Species Law on all lands and waters of the state ([s. 29.604, Wis. Stats.](#)).
- Plants listed as Endangered or Threatened in Wisconsin are protected by Wisconsin's Endangered Species Law only on public lands except in the course of forestry, agriculture, utility, or bulk sampling actions ([s. 29.604, Wis. Stats.](#)). Endangered or Threatened plants are not protected on private property.
- Special Concern species, as well as high-quality examples of natural communities are also included in the NHI database. These endangered resources are not legally protected by state or federal endangered species laws. However, other laws, policies (e.g., related to Managed Forest Law), or granting/permitting processes may require protection of these resources. The purpose of the Special Concern classification is to focus attention on species before they become endangered.
- State Natural Areas (SNAs) are also included in the NHI database. SNAs protect outstanding examples of Wisconsin's native landscape of natural communities, significant geological formations, and archeological sites. Endangered species are often found within SNAs. SNAs are protected by law from any use that is inconsistent with or injurious to their natural values ([s. 23.28, Wis. Stats.](#)).

This Landowner Conservation Report includes the best information currently available about endangered resources that may be present in your area. However, the NHI database is not all inclusive; systematic surveys of most public lands have not been conducted, and the majority of private lands have not been surveyed. As a result, NHI data for the area may be incomplete.

Evaluations of the presence of rare species on the site should always be based on whether suitable habitat exists on site for that species.

All photos and images have permission granted to the WDNR, credits are found on each species homepage at dnr.wi.gov. Please see the WDNR photo use agreement for more information. LCR information is compiled using the WI Wildlife Action Plan, dnr.wi.gov, Natural Heritage Inventory Portal, and public GIS data. Please contact NHC Biologist with any errors or omissions.

Thank you for participating in the Landowner Lottery and Landowner Conservation Report program. If you have any questions about your LCR, or your land, please feel free to contact me.

Alex Wenthe

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Property Overview

Site description: The site is dominated primarily by sandy terraces with oak forest (mostly black, some white and bur) that was thinned significantly in to combat oak wilt. Canopy cover now ranges from 25-40%. While oak seedlings are semi-frequent in the cleared areas, red maple saplings are also abundant. In dry areas, Pennsylvania sedge dominates the ground layer in a near-continuous carpet, with abundant blueberries, bracken, and blackberries. One very small area supports Sand Prairie species such as frostweed (*Helianthemum* sp.), red milkwort (*Polygala sanguinea*), and leadplant (*Amorpha canescens*). Of particular interest are numerous examples of plant species typical of more northern climates such as bluebead lily (*Clintonia borealis*), starflower (*Trientalis borealis*), Canada mayflower (*Maianthemum canadense*), Canada bunchberry (*Cornus canadensis*), partridge berry (*Mitchella repens*), shinleaf (*Pyrola* sp), and downy rattlesnake-plantain (*Goodyera pubescens*). Many areas are wet, with abundant sedges, ferns, and other wetland associates. Springs and spring runs are common on this site and in the vicinity, with many species reflecting this influence such as skunk cabbage (*Symplocarpus foetidus*), marsh marigold, sensitive fern, and sedges. A small sedge meadow (~3 acres) and adjoining pond occupy the southern boundary; the sedge meadow is dominated by bristly sedge (*Carex comosa*), bog birch (*Betula pumila*), and a small amount of tamarack at the margins. The pond has a dense margin of reed canary grass along the south boundary. A small area of Tamarack has tamarack, red maple, and occasional yellow birch in the canopy, while poison sumac and blackberries are frequent in the shrub layer. Common ground layer species include Sphagnum, fowl manna grass (*Glyceria striata*), marsh marigold (*Caltha palustris*), orange jewelweed (*Impatiens capensis*), cinnamon fern (*Osmunda cinnamomea*), royal fern (*O. regalis*), skunk cabbage, swamp candles (*Lysimachia terrestris*), a bottlebrush sedge, and halberd-leaved tear-thumb (*Polygonum arifolium*).

Site significance: The site is important in promoting and maintaining water quality for Dell Creek, a Class II trout fishery and WDNR Exceptional Resource Water that adjoins the property to the south. This watershed is heavily dominated by agriculture and development, thus this site and the adjoining wildlife area provide natural vegetation that secures soils from erosion and slows and filters runoff; the wetlands on the site are particularly important for this function. This property harbors an uncommon community type: Southern Tamarack Swamp (rich). This community is mostly found in glaciated areas in southern Wisconsin, but a few stands are known from southwestern Wisconsin's Driftless Area, especially in the Western Coulees and Ridges ecological landscape, where they occupy lowlands bordering small streams. It's possible that rare plant species could be found if surveys were conducted. There is high diversity of plants and animals due to the diverse community types as described above.

Site visit and description completed by:

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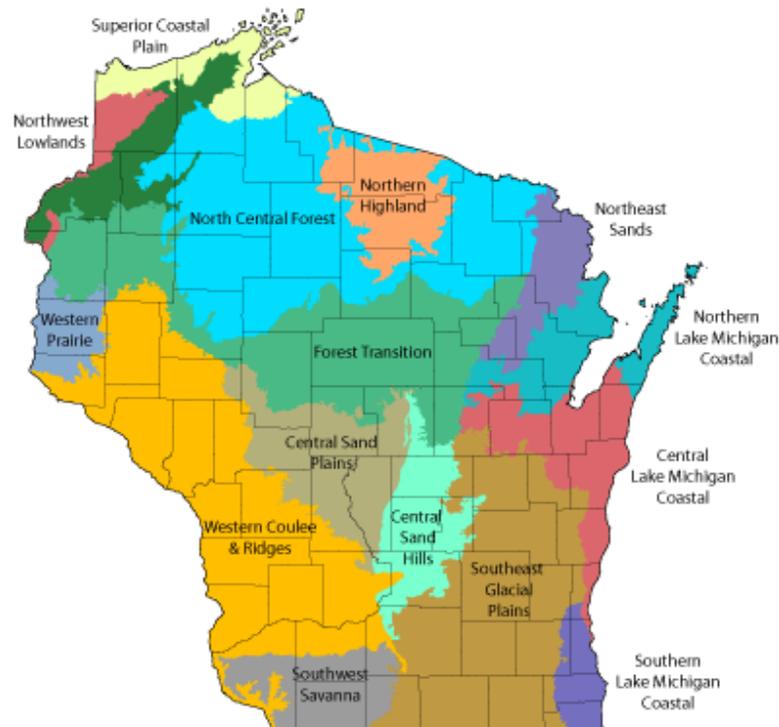
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Ecological Landscapes

What is an Ecological Landscape?

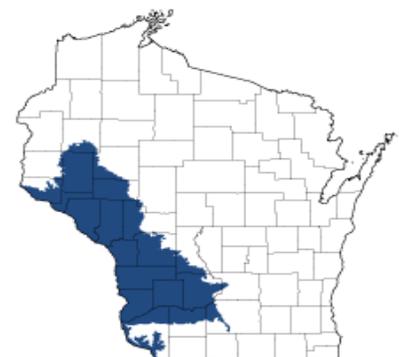
Ecological Landscapes are 16 areas of Wisconsin with different ecological attributes and management opportunities. They can be used to identify the best areas of the state to manage for different natural communities, key habitats, aquatic features and native plants and animals from an ecosystem management perspective.



You are in the *Western Coulee and Ridges* Ecological Landscape

For online information about the Western Coulee and Ridges Ecological Landscape, visit the DNR

website: <http://dnr.wi.gov/topic/landscapes/index.asp?mode=detail&Landscape=11>



Western Coulee and Ridges Ecological Landscape: General Information

Size	9,642 square miles (6,170,674 acres), over 17% of the state, making it the largest of Wisconsin's 16 Ecological Landscapes.
Climate	Typical of southern Wisconsin; mean growing season of 145 days, mean annual temperature is 43.7 deg. F, mean annual precipitation is 32.6, and mean annual snowfall is 43 inches. Because it extends over a considerable latitudinal area, the climate varies from north to south. The climate is favorable for agriculture, but steep slopes limit intensive agricultural uses to broad ridgetops and parts of valleys above floodplains. The climate variability, along with the rugged ridge and coulee (valley) topography, numerous microhabitats, and large rivers with broad, complex floodplains, allows for a high diversity of plants and animals.
Bedrock	Mostly Paleozoic sandstones and dolomites of Cambrian and Ordovician age. Precambrian quartzite occurs in the Baraboo Hills, near the eastern edge of the Ecological Landscape. Thin beds of shale occur with other sedimentary rocks in some areas. Bedrock is exposed as cliffs and, more locally, as talus slopes.
Geology & Landforms	Characterized by its highly eroded, unglaciated topography with steep sided valleys and ridges, high gradient headwaters streams, and large rivers with extensive, complex floodplains and terraces. Ancient sand dunes occur on some of the broader terraces along the Mississippi and Wisconsin rivers
Soils	Windblown loess of varying thickness; alluvium in the floodplains. Organic soils, especially peats, are rare. For more specific information on soils within your property, visit the Soil Web Survey at http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx
Hydrology	Dendritic drainage patterns are well-developed in this mostly unglaciated Ecological Landscape. Natural lakes are restricted to the floodplains of large rivers. Large warmwater rivers are especially important here, and include the Wisconsin, Chippewa, and Black. The Mississippi River forms the Ecological Landscape's western boundary. Numerous spring-fed (cold water) headwaters streams occur here. Cool water streams are also common.
Current Land cover	Current vegetation is a mix of forest (41%), agriculture (36%), and grassland (14%) with wetlands (5%) mostly in the river valleys. Primary forest cover is oak-hickory (51%). Maple-basswood forests (28%), dominated by sugar maple, basswood and red maple, are common in areas that were not burned frequently. Bottomland hardwoods (10%) dominated by silver maple, swamp white oak, river birch, ashes, elms, and cottonwood are common within the floodplains of the larger rivers. Relict "northern" mesic conifer forests composed of hemlock, white pine and associated hardwoods such as yellow birch are rare but do occur in areas with cool, moist microclimates. Dry rocky bluffs may support xeric stands of native white pine, sometimes mixed with red or even jack pine. Prairies are now restricted to steep south- or west-facing bluffs, unplowed outwash terraces along the large rivers, and a few other sites. They occupy far less than 1% of the current landscape. Mesic tallgrass prairies are now virtually nonexistent except as very small remnants along rights-of-way or in cemeteries

Western Coulee and Ridges: General Management Opportunities

The Western Coulees and Ridges Ecological Landscape offers the best opportunities in the state to maintain many of southern Wisconsin's natural communities. Many rare species have been documented here due to the diversity, scale, types, condition and context of the natural communities present.

Forests can be managed and conserved here at virtually all scales, including areas up to hundreds, or even thousands, of acres. Oak forests are more abundant here than any other ecological landscape, mesic maple-basswood forests are also widespread, and some of the Upper Midwest's most extensive stands of Floodplain Forest occur here along major rivers. All of these forest types can provide critical breeding and/or migratory habitat for significant populations of native plants and animals. Maintaining large blocks of these forest types, including areas with combinations of these types, is a major opportunity. Since much of the forested acreage is privately owned, there are opportunities to work with private landowners, looking for places to combine efforts and plan on a much larger scale than an individual property.

Less common natural communities also provide excellent management opportunities here. Conifer relicts, by definition, are almost entirely restricted to the Western Coulees and Ridges, with lesser management opportunities present in the Southwest Savanna. Fire-dependent oak ecosystems are well-represented here include Oak Openings, Oak Barrens, Oak Woodland and dry to mesic oak forests. Bluff prairies and sand prairies are better represented in this Ecological Landscape than anywhere else in Wisconsin and probably better than anywhere else in the Upper Midwest. These fire-dependent communities could be managed in a continuum with savanna and forest communities, wherever possible.

Man-made habitats such as "surrogate grasslands" can be important for many species by increasing the effective size and reducing isolation of small remnant prairies or savannas. Large open habitats can be critical for area-sensitive grassland birds and others. Properly sited and managed dredge spoil islands can provide important habitat for herptiles and birds, especially along the Mississippi River, which has been heavily altered by dam construction, diminished water quality and the impacts of invasive species.

Large warmwater rivers are critical for fish, herptiles, birds and invertebrates, especially mussels and some groups of aquatic insects. The diverse habitats associated with the large river corridors include the main channels, running sloughs, oxbow lakes and ponds, various floodplain wetland communities, terraces with sand prairies and barrens and adjoining mesic to xeric forested bluffs. Managing this mosaic can protect ecotones and connectivity, representing opportunities that are unavailable or limited elsewhere in the state. Other important aquatic features include high concentrations of coldwater and coolwater streams, spring runs and spring seepages.

Bedrock features are important throughout the Western Coulees and Ridges and include cliffs, caves, talus slopes and Algific Talus Slopes. Some bats and reptiles are dependent on caves, tunnels and abandoned mines as roost sites and hibernacula.

Conservation Opportunity Areas

In 2005 The Wisconsin Wildlife Action Plan laid out over 1,700 conservation actions to help secure the future of Wisconsin wildlife. The Department then created a list of the best places in the state to undertake those actions, called Conservation Opportunity Areas (COA). These priority actions and COAs serve as a framework for the conservation in specific regions of the state. **The rare species and communities found in COAs have the potential to be on your property.**

Green Sand Cuesta COA encompasses your property. This COA is of continental significance for its Driftless Area features and is comprised of Driftless Area natural communities over loess and sandstone influenced soils, including a continuum of Dry Prairie, Dry-Mesic Prairie, Oak Opening, Oak Woodland, Southern Dry Forest, Southern Dry-Mesic Forest, Southern Mesic Forest, Shrub Carr, Dry Cliffs, and Moist Cliffs.

Species of Greatest Conservation Need in this area are: Black Rat Snake, Bullsnake, Four-toed Salamander, Northern Prairie Skink, Prairie Racerunner, Prairie Ring-neck Snake, Timber Rattlesnake, Western Worm Snake, Yellow-bellied Racer, Acadian Flycatcher, Bell's Vireo, Blue-winged Warbler, Blue-winged Teal, Brown Thrasher, Cerulean Warbler, Eastern Meadowlark, Field Sparrow, Hooded Warbler, Kentucky Warbler, Louisiana Water thrush, Northern Bobwhite, Peregrine Falcon, Red-headed Woodpecker, Red-shouldered Hawk, Veery, Whip-poor-will, Willow Flycatcher, Wood Thrush, Worm-eating Warbler, Yellow-billed Cuckoo, Yellow-throated Warbler, Eastern Red Bat, Franklin's Ground Squirrel, Northern Long-eared Bat, Prairie Vole, Woodland Vole, Dusted Skipper, Wild Indigo Dusky Wing, Columbine Dusky Wing, Leonard's Skipper, Cobweb Skipper, Marbleseed Leafminer, Mulberry Wing, Whitney's Underwing, Ottoe Skipper, Hickory Hairstreak, Wing Snaggletooth, Red-tailed Leafhopper, Prairie Leafhopper, Duck-billed Leafhopper, 10 additional SGCN leafhoppers, Colaspis Leaf Beetle, and Saxinus Beetle.

Wisconsin Important Bird Areas

An Important Bird Area (IBA) is a site that provides essential habitat to one or more species of breeding birds. Sites may vary in size, but are usually discrete and distinguishable in character, habitat, or ornithological importance from surrounding areas. They may include public or private land.

The [Baraboo Hills IBA](#) is approximately 8 miles north of your property. Famous for their varied topography and scenic beauty, the Baraboo Hills are the remains of a famous Precambrian rock formation called Baraboo Quartzite, one of the most ancient rock outcroppings in North America. This area contains the largest block of southern forest in Wisconsin and one of the largest in the Midwest. The southern slopes are forested with oaks and hickory; north-facing slopes are mostly maple, basswood, and oak. Scattered ravines and steep valleys harbor northern species such as white pine, hemlock, and yellow birch. Other habitats present include oak savanna, native prairie, cool season grasses, and cliffs and talus slopes.

The Baraboo Hills support some 135 species of breeding birds, including important populations of several high-priority species such as hooded warbler and worm-eating warbler. The site is considered a cerulean warbler core habitat, with up to 30,000 acres of suitable habitat available for this species. The area is a concentration area for migratory landbirds in both spring and fall, supporting an estimated 10,000 migrants per season. Greater than 25% of the state's turkey vultures congregate here in the fall. The Baraboo Hills contain more rare species and diverse concentrations than any other similar sized forested area in southern Wisconsin and are considered critical for bird conservation.

State Natural Areas

State Natural Areas (SNAs) protect outstanding examples of Wisconsin's native landscape of natural communities, significant geological formations and archeological sites. Encompassing over 373,000 acres, Wisconsin's **673** natural areas are valuable for research and educational use, the preservation of genetic and biological diversity and for providing benchmarks for determining the impact of use on managed lands. They also provide some of the last refuges for rare plants and animals.



The nearest State Natural Area to your property is [Hulbert Creek Woods SNA](#) located 8 miles north.

Hulbert Creek Woods (166 acres), comprised of three separate units, contains a rich and diverse complex of communities along a small Class I trout stream in the Driftless Area of Wisconsin. Hulbert Creek is a clear, cold, fast flowing stream with numerous springs, many originating from under the sandstone outcrops. Impressive sandstone cliffs with northern and southern dry-mesic forest relics, bedrock exposures, and shaded cliffs are also present. The forest relicts, inaccessible due to their location on steep bluffs and valley slopes, were protected through time from development and logging. The southern dry-mesic forest is dominated by black, white, and red oaks with associated trees of shagbark, and bitternut hickory, jack pine, red maple, white birch, aspen and black cherry. Blackberries dominate the shrub layer with sumac along the edges and openings. White pine dominates the northern dry-mesic forest; however there are substantial quantities red maple, red pine and red oak. Common understory plants include trailing arbutus, large-leaved aster, oak fern, American starflower, Canada mayflower, and small enchanter's nightshade. Impressive sandstone cliffs characteristic of the Driftless Area contain numerous seeps and cold air drainages where plants with more northern affinities occur. Species include the uncommon Sullivant's cool-wort, common polypody fern, fragile and bulblet fern, maidenhair fern, partridgeberry, prairie alumroot and many liverworts and mosses. The cliffs also provide nesting habitat for many cliff swallows. Along the creek and its tributaries is a well-developed alder thicket. The cool water and shaded banks provides habitat for some specialized cold water plants, including American golden saxifrage, marsh pennywort, water-starwort, and marsh purslane. Hulbert Creek Woods is owned by the DNR and was designated a State Natural Area in 2002.

A State Natural Area near your property with similar natural landscape is [Mirror Lake Pine Oak Forest](#) located 8 miles southeast

Mirror Lake Pine Oak Forest features a mature dry-mesic forest dominated by white pine and oaks, with dry sandstone cliffs, alder thicket, and scattered vernal ponds. The gently undulating sandy uplands west of Mirror Lake support the forest, which is dominated by white pine, white oak, red oak, and black oak. Red pine is co-dominant above the sandstone cliffs flanking the lake and is locally present elsewhere. The sapling layer is composed primarily of white pine, red maple, and a few scattered white oaks. Huckleberry dominates the shrub layer with American hazelnut occurring at various locations. Other characteristic low shrubs and herbs include early low blueberry, swamp dewberry, pipsissewa, creeping snowberry, wintergreen, princess'-pine, spinulose wood fern, narrow-leaved loosestrife, sessile-leaved bellwort, long-awned wood grass, and maidenhair fern. Locally, there are pockets of moister, somewhat richer forest in which red maple is an important component of the forest. The groundlayer contains enchanter's nightshade, wild sarsaparilla, and Jack-in-the-pulpit. An extensive shrub swamp dominated by speckled alder borders a small perennial tributary of Dell Creek. Characteristic flora includes skunk cabbage, marsh marigold, orange jewelweed, blue marsh violet, American golden saxifrage, and rough bedstraw. Also present is the rare bog bluegrass (*Poa palustris*). Numerous seepages occur along the tiny, clear, sandy-bottomed stream. Several short, cliff-enclosed dry ravines open to Mirror Lake with vertical rock exposures of nearly 12 meters in height. Nearer to Mirror Lake, red pine becomes more important as a canopy species. Bird life includes ruffed grouse, American woodcock, gray catbird, pileated woodpecker, barred owl, tufted titmouse, pine warbler, brown creeper and the state-threatened cerulean warbler (*Dendroica cerulea*). Mirror Lake Pine Oak Forest is owned by the DNR and was designated a State Natural Area in 2003.

Another State Natural Area near your property is [Dells of the Wisconsin River](#), located 8 miles east.

The Dells of the Wisconsin River (1,300 acres) encompasses over 5 miles of Wisconsin River corridor with a spectacular gorge, cliffs, tributary canyons, and rock formations carved into Cambrian sandstone. Formed between 510-520 million years ago, some cliffs rise over one hundred feet above the water and have been shaped by the erosive processes of water and wind. With a variety of exposures and moisture regimes, the cliffs afford many different niches for plants, some of which are very rare in Wisconsin. Cliff cudweed (*Gnaphalium obtusifolium var saxicola*), known from only 2 places on Earth - here and in the Kickapoo Valley, grows on protected rock ledges. Other rarities include Lapland azalea (*Rhododendron lapponicum*), round-stemmed false foxglove (*Agalinis gattingeri*), maidenhair spleenwort (*Asplenium trichomanes*), and fragrant fern (*Dryopteris fragrans*). This area contains a mosaic of plant communities including northern and southern oak/pine forests, oak savanna, and moist and dry cliffs. Rare animals include six dragonfly species including the Royal river cruiser (*Macromia taeniolata*), six rare mussels and numerous birds. While set aside to protect the rare plants and animals, the Dells also has an important cultural history that spans several thousand years. Various Native Americans, ranging from early Paleo-Indian people to the more recent Ho-Chunk, Sac, and Menominee, were attracted to the scenic waterway, and left behind archeological evidence such as effigy and burial mounds, camps and village sites, garden beds and rock art. Dells of the Wisconsin is owned by the DNR and was designated a SNA in 1994.

Natural Communities

The following natural communities are possibly on your land. Each community can vary greatly throughout the state as well as across a small area. Microclimate factors such as elevation, aspect, hydrology, and topography play a large part in determining the species present on your property. Please use the descriptions below to help identify what communities are on your property.



[Southern tamarack swamp](#) community is similar to 'northern wet forest' but less acidic, supporting understory associates that are more nutrient-demanding and tolerant of higher pH levels. Tamarack is the dominant tree, though in some stands hardwoods such as paper birch, red maple, black ash, or American elm may be present as associates, saplings, or as subcanopy trees. The understory is more diverse and structurally complex than in the more acid spruce-dominated swamps and includes nutrient-demanding species such as speckled alder, bog holly, winterberry holly, and black ash. Poison sumac is the most abundant tall shrub in many southern Wisconsin tamarack forests. The bryophytes may include many genera other than Sphagnum.

Stands that are fed by spring seepage sometimes support plants such as marsh-marigold, cinnamon fern, royal fern, and skunk-cabbage. These seepage stands have been separated out as a distinct type or subtype in some nearby states and provinces. In Wisconsin, the tamarack seepage swamps occur statewide but may be more common south of the tension zone. Historically, tamarack swamps occurred extensively in parts of southeastern Wisconsin and on the margins of Glacial Lake Wisconsin. Many of the swamps were drained and cleared for agricultural purposes. Intact examples are now uncommon but occur in a wide variety of settings, such as on the margins of lakes or streams, at the base of moraines, in outwash areas, and in a few Driftless Area stream valleys.

[Southern Dry-Mesic Forest](#) oak is a common dominant tree of this upland forest community type. Red oak mainly but white oak, basswood, sugar and red maples, white ash, shagbark hickory, and black cherry are also important. The herbaceous understory flora is diverse and includes many species listed under southern dry forest plus jack-in-the-pulpit, enchanter's-nightshade, large-flowered bellwort, interrupted fern, lady fern, and tick-trefoils.



Southern dry-mesic forests occur on loamy soils of glacial till plains and moraines, and on erosional topography with a loess cap, south of the tension zone. This community type was common historically, although white oak was considerably more dominant than red oak, and the type is still common today. However, to the detriment of the oaks, mesophytic tree species are becoming increasingly important under current management practices and fire suppression policies. Oak forests are succeeding to more mesic species (e.g., central and northern hardwood forest types), or to brush.

Rare species information

Many rare species and natural communities have been recorded within five miles of your property. Based on the variety of habitat types on your property and your location there are lots of opportunities for you to attract these rare species. The following section is a highlight of some of the species that may be present on your property in areas of suitable habitat.

<u>Common Name</u>	<u>Scientific Name</u>	<u>Type</u>	<u>Status</u>
Little White Tiger Beetle	<i>Cicindela lepida</i>	Beetle	SC/N
Acadian Flycatcher	<i>Empidonax virescens</i>	Bird	THR
Hooded Warbler			R
Red-shouldered Hawk			R
Alder Thick-knee			
Dry Cliff Swallow			
Dry Prairie Warbler			
Hemlock Redstart			
Moist Cliff Swallow			
Moist Sandpiper			
Northern Dipper			
Northern Dipper			
Northern Water Thrush			
Pine Redstart			
Sand Barrer			
Southern Dipper			
Southern Dipper			
Southern Marsh Wren			
Springs and Wetlands Sparrow			
Stream--Fairy Wren			
White Pine Tanager			
Blanchard's Sparrow			D
Slender Glasswing			D
Big Brown Eater			R
Azure Bluet			
Cliff Cudweed			R
Grassleaf Rattlesnake			
Pale Green Sapsucker			R
Prairie Falcon			
Rocky Mountain Junco			
Slim-stemmed Grass			
Whip Nutrush	<i>Sciaria triglomerata</i>	Plant	SC
Blanding's Turtle	<i>Emydoidea blandingii</i>	Turtle	SC/H
Ornate Box Turtle	<i>Terrapene ornata</i>	Turtle	END

The [big brown bat](#) (*Eptesicus fuscus*) is a Threatened species in Wisconsin. It has a dark brown dorsal fur coat and may have light-brown ventral fur. During the summer months, big brown bats are found in various habitats including mixed landscapes of deciduous woodlands, farmlands, edges near water and urban areas. Female big brown bats may form large colonies in bat houses and buildings over the summer. During the winter months, they are found in natural and manmade structures such as caves, mines and human dwellings. The big brown bat is insectivorous and feeds primarily on small beetles found among tree foliage. Mating occurs in the fall at cave and mine entrances and females store sperm until the spring. One to two pups are born in early June and mature after six weeks. See the [species guidance document](#) for avoidance measures and management guidance from the Natural Heritage Conservation Program.



The [Blanchard's cricket frog](#) (*Acris crepitans*), an endangered species in Wisconsin, prefer ponds, lakes, and a variety of habitats along and adjacent to streams and rivers including, marshes, fens, sedge meadows, low prairies, and exposed mud flats. The species tends to breed in quite water (no or low flow) and may also move from streams and rivers to adjacent wetlands and ponds. Cricket frogs cannot tolerate freezing or complete inundation for more than 24 hours during the winter and seek a variety of microhabitats that provide suitable overwintering conditions, including crayfish burrows, small mammal burrows, rotted-out root channels, seepage areas where groundwater flow prevents freezing at the surface or spaces created by sloughing streambanks. Cricket frogs are active from late-March through November. Breeding occurs from mid-May through mid-August, with some larvae not transforming until late September. See the [species guidance document](#) for avoidance measures and management guidance from the WDNR-BNHC.

[Blanding's turtles](#) (*Emydoidea blandingii*) are listed as a Special Concern species in Wisconsin. They utilize a wide variety of aquatic habitats including deep and shallow marshes, shallow bays of lakes and impoundments where areas of dense emergent and submergent vegetation exists, sluggish streams, oxbows and other backwaters of rivers, drainage ditches (usually where wetlands have been drained), and sedge meadows and wet meadows adjacent to these habitats. This species is semi-terrestrial and individuals may spend a good deal of time on land. They often move between a variety of wetland types during the active season, which can extend from early March to mid-October. They overwinter in standing water that is typically more than 3 feet deep and with a deep organic substrate but will also use both warm and cold-water streams and rivers where they can avoid



freezing. Blanding's turtles generally breed in spring, late summer or fall. Nesting occurs from about mid-May through early July depending on spring temperatures. They strongly prefer to nest in sandy soils and may travel up to 900 feet from a wetland or waterbody to find suitable soils. This species appears to display nest site fidelity, returning to its natal site and then nesting in a similar location annually. Hatching occurs from early August through mid-October. This species takes 17 to 20 years or more to reach maturity. See the [species guidance document](#) for avoidance measures and management guidance from the Natural Heritage Conservation Program.

[Pale Green Orchid](#) (*Platanthera flava* var. *herbiola*), a State Threatened plant, is found in a variety of habitats, including moist prairies, sedge meadows, floodplain forests, river banks and ditches. Blooming occurs early June through early August; fruiting occurs early July through late August. The optimal identification period for this species is late June through early August.



[Pickerel frogs](#) (*Lithobates palustris*) are a Species of Special Concern in Wisconsin. It has a rather complex habitat range as it prefers to overwinter in cold water streams, seepage pools or spring holes, often taking advantage of water cress for cover. It moves to warmer water ponds to breed and lay eggs from April through mid-June. Adults spend most of the active season foraging on land in riparian habitats along streams and rivers. This species is active from late March to early November but can remain semi-active in winter under water. Larvae metamorphose from mid-July to mid-August.



[Red-shouldered Hawk](#) (*Buteo lineatus*), a bird listed as Threatened in WI. This species prefers larger stands of older-aged to mature bottomland hardwoods along riparian areas, deciduous swamps, and northern hardwoods or mixed deciduous – coniferous upland forests with wetland pockets or ephemeral ponds interspersed or located in close proximity. The recommended avoidance period is from **March 15 to July 31 in southern Wisconsin, and April 1 to July 31 north of Highway 64**. See the [species guidance document](#) for avoidance measures and management guidance from the WDNR – BNHC. Photo Lana Hays

***We value your observations! Please report a rare or native species at <http://wiatri.net/nhi/>**

***For more information on natural communities and rare species of Wisconsin, please visit: <http://dnr.wi.gov/topic/EndangeredResources/biodiversity.html/>**

Invasive Species

Invasive species are a major threat to Wisconsin's ecosystems. They can reduce habitat for native species and limit management options such as tree regeneration. Most invasive species are exotic and have been transported to WI by humans. Invasive species include plants, animals, and pathogens that could all potentially impact your land.

Below is a list of invasive plants that could be on your land. These plants can invade habitats ranging from open grasslands to woodland understories. Early detection and control is often the best strategy, where feasible. Otherwise persistent control measures are needed to reduce established populations of invasive species. **For more information on invasive species and control methods please visit dnr.wi.gov/invasives or the [Midwest Invasive Plants Network](#)**

Herbaceous Invasives

Garlic mustard (*Alliaria petiolata*)

Found in nearly every county, garlic mustard is considered the worst woodland invader in the state. It is a biennial forb, meaning it takes two years to complete its life cycle and produce viable seed. First year plants have basal leaves that are dark green, heart or kidney-shaped, with scalloped-edges and wrinkled appearance. Second year plants are taller and have leaves that are alternate and "heart-shaped" with large teeth. It smells like garlic when crushed. Seeds can remain viable for over six years in the soil so persistent management is needed to control this species. First year plants are evergreen, making late fall a good time for control measures. For more information please visit [Garlic Mustard factsheet](#) by University of Wisconsin-Extension.



Japanese hedgeparsley (*Torilis japonica*)

JHP is a biennial in the carrot family with white umbel flowers and parsley-like leaves. Flowering plants are branched and grow 2-6 feet tall. First-year plants have low-growing, parsley-like rosettes that stay green until late fall. Second-year plant leaves are alternate, compound, fern-like, 2-5 inches long and slightly hairy. Flowers are tiny and white, growing in small, open, flat-topped umbels; similar to Queen Anne's lace. Blooms in July and August. For more information please visit [Japanese Hedge Parsley factsheet](#) by UW-Extension.



Wild parsnip (*Pastinaca sativa*)

Parsnip invades prairies and oak savannas as well as roadsides, old fields, and pastures. Flowering stems are stout, hollow, grooved, and up to 5' tall. Broad habitat tolerance; grows in dry, mesic, or wet habitats, but it does not grow in shaded areas. Use precaution during control as it can cause severe rash if handled in direct sunlight. For more information see the [Wild Parsnip factsheet](#) by UW-Extension.



Woody Invasives

Common buckthorn (*Rhamnus cathartica*)

Tall understory shrub or small tree up to 20-25' tall, often with several stems arising from the base, and spreading crown. Gray to brown bark with prominent light-colored lenticels. (Caution: native plums and cherries have a similar bark). Plants are either male or female. Cut bark exposes yellow sapwood and orange heartwood. Twigs often end in stout thorns. Depending on size and density, cut-stump treatment with triclopyr is often the most effective control measure. For more information on control techniques, visit the [Common buckthorn factsheet](#) by UW-Extension.



Glossy buckthorn (*Frangula alnus*)

Tall understory shrub or small tree grows up to 20' tall, often with several stems arising from the base, and spreading crown. Gray to brown bark with prominent light-colored lenticels. (Caution: native plums and cherries have a similar bark). Cut bark or branch exposes yellow-orange inner bark

Honeysuckle (*Lonicera* sp.)

Usually a dense, multi-stemmed, deciduous shrub that grows up to 20' tall. Young stems are slightly hairy and light brown; while older stems have shaggy, peeling bark and are often hollow between the nodes. Species include Amur, Bell's, Morrow's, and Tatarian; also look for Japanese honeysuckle. Cut stump treatment with glyphosate is often the most effective control measure. For more information on control techniques, visit the [Bush honeysuckles factsheet](#) by UW-Extension.



Japanese barberry (*Berberis thunbergii*) is a low-growing (2-3' tall), dense, spiny shrub with small oval green leaves that turns reddish brown in fall. Plants have single sharp spines at each node and small, bright red, oblong berries. Clustered in tight bunches above spines, the leaves are simple, alternate, small, and oval to spatulate shaped (wider at the tip than the base). Leaves may be green, bluish green or dark reddish-purple depending on the cultivar. They leaf out in early spring. Plants have single sharp spines at each node. If a stem is cut, it will reveal that the inner bark is yellow. Branches root freely when they touch the ground. For more

information on control techniques, visit the [Japanese Barberry factsheet](#) by WDNR.

Specific Management Recommendations

Based on your site visit information these are priority management recommendations for your property.

- Disruptions of site hydrology due to ditching, diking, and diversion of runoff can have major negative impacts on the Tamarack Swamp. Measures should be taken to protect the integrity of this area from direct disturbance (e.g., logging) as well as indirect disturbance (e.g., hydrological modification).
- Some type of hydrological disruption may have already occurred, as the oak forest areas have an atypical preponderance of wetland species – could this have contributed to decline of the oaks
- Swamp white oak may be a good choice for replanting in cleared areas, as it will better tolerate wetter soils and is resistant to oak wilt. Species available to purchase in [tree seedling program](#)
- Facilitate reproduction and growth of oaks in cleared areas by cutting and stump-treating competing red maple.
- Hazelnut, in addition to oaks, can provide food for wildlife, also available in seedling program.
- Mowing trails can inadvertently introduce non-native invasives. Regularly monitor trails for: leafy spurge, cypress spurge, wild parsnip, yellow sweet clover.
- Use Rodeo or other aquatic-habitat-safe herbicide to kill reed canary grass and red maple in any areas where water is present (either ponded or as part of a wetland). Use a certified applicator.
- Manage recreational uses so they are compatible with protecting the environment (e.g., limiting erosion, controlling spread of invasives, preventing damage to sensitive soils and vegetation).
- Apply for cost share funding such as [WFLGP](#) and [CRP](#). This program can help offset costs of hiring private contractors, tree planting, and other management actions on properties like yours

General Management Recommendations

Based on LCR results and the [WWAP](#), the following are general management actions for your property.

- Manage for rare species and natural communities consistent with your ecological landscape.
- Control terrestrial invasive species through active management techniques such as mechanical, chemical, and prescribed fire.
- Preserve remaining forest communities, maintain large forest blocks, and increase connectivity where possible.
- Manage for a gradient from upland to lowland habitats where possible.
- Reconstruct bluff and ridge prairie habitat where possible.
- Work toward a balanced mosaic of age-classes within wooded areas.
- Encourage neighbors to actively manage their land as well.
- Increase species diversity. Maintain a component of white and bur oaks as well as red oak in southern dry-mesic community type. Use adaptive management techniques to restore structure and composition.
- Leave long-lived reserve trees as individuals or in groups to provide timber, wildlife, and aesthetic value. Such trees provide denning/nesting sites, cover and a food source for wildlife.
- Reduce deer density, where possible.

Conservation Programs

Blue Mounds Area Project

A community-based organization that seeks to inspire, inform and empower private landowners in the Southwestern Wisconsin region to enjoy, protect and restore native biodiversity and ecosystem health. BMAP assists landowners with managing their properties for native species. Since 1995, the Project has helped over 200 landowners improve more than 18,000 acres in Southwest Wisconsin. 16 plant species and 5 bird species state listed as endangered, threatened or special concern are being protected by the work of the Project, along with native prairies, wetlands and oak savannas.

The Prairie Enthusiasts

The Prairie Enthusiasts is a private organization committed to the protection and management of native prairie and savanna of the Upper Midwest. We have an incorporated, nonprofit status and are a grass roots organization run mainly by volunteers.

The Prairie Enthusiasts differ from other conservation groups in its sole dedication to the preservation of the last remaining pieces of the once vast, now endangered, prairies and savannas of the Upper Midwest through land protection and management. The Prairie Enthusiasts evolved from small prairie preservation organizations that began in the mid-1970's. We now have 11 [chapters](#) in Illinois, Minnesota, and Wisconsin. More information can be found in our [brochure](#).

Southwest Badger Resource Conservation & Development

A community development organization serving Crawford, Grant, Green, Iowa, LaCrosse, Lafayette, Richland, Sauk, and Vernon counties. Our mission is to implement natural resource conservation, managed growth, and sustainable rural economic development in our area. Our vision is to be an incubator for innovative, economic, and sustainable use of local resources in the SWB RC&D area. We are a nonprofit 501(c)3 organization based out of Platteville, Wisconsin. Offering programs like Invasive Species Management Areas, Forest Initiatives, and Managed Grazing.

WDNR Tree Seedling Program

Seedlings are available to all Wisconsin landowners regardless of residence. Trees must be planted in Wisconsin and used only for conservation purposes such as forest products, wildlife habitat and erosion control. State nursery stock may not be resold, used for ornamental, decorative or landscaping purposes or Christmas tree production.

The minimum order is (a) a packet*, (b) 500 shrubs or (c) 1000 trees. Tree and shrub seedlings must be ordered in increments of 100 of each species. Contact the Wisconsin DNR nursery or call 715-424-3700 with any questions.

**A packet consists of 300 seedlings of the landowners own choice of any combination of conifers, hardwoods or wildlife shrubs, in increments of 100 of each species.*

Possible funding sources

Landowner Incentive Program – WDNR: Natural Heritage Conservation

The goal of the Landowner Incentive Program (LIP) is to help private landowners create and manage habitat for species that are rare or declining. The program provides management advice, assistance with management plans and cost-share funding to individuals and organizations on private lands in the driftless area of Wisconsin.

Conservation Reserve Program (CRP/CREP)

The Conservation Reserve Program (CRP) is a land conservation program administered by the [Farm Service Agency \(FSA\)](#). In exchange for a yearly rental payment, farmers enrolled in the program agree to remove environmentally sensitive land from agricultural production and plant species that will improve environmental health and quality. Contracts for land enrolled in CRP are 10-15 years in length. The long-term goal of the program is to re-establish valuable land cover to help improve water quality, prevent soil erosion, and reduce loss of wildlife habitat.

***There is a currently an initiative to enroll [bottomland hardwood communities](#) like those found on your property.**

Wisconsin Forest Landowner Grant Program

The Wisconsin Forest Landowner Grant Program (WFLGP) was created to encourage private forest landowners to manage their lands in a manner that benefits the forest resources and the people of the State. The WFLGP assists private landowners to protect and enhance their forested lands, prairies, and waters. The program allows qualified landowners to be reimbursed up to 50 percent of the eligible cost of eligible practices.

Private landowners in Wisconsin are eligible for WFLGP funding if they own at least 10 contiguous acres of non-industrial private forest, but not more than 500 acres within Wisconsin. Applicants must have a forest stewardship plan in place on their land or be applying to have one prepared through the WFLGP program. Landowners granted WFLGP funding can only be cost shared for non-commercial practices. Successful applicants will receive an award letter from the WFLGP coordinator indicating that eligible grant work may begin. Costs incurred prior to receiving an award letter are not eligible for reimbursement.

Additional Resources

Many websites are linked throughout this document as headings or hyperlinks. Additional resources about rare species, land management, general conservation are listed below.

DNR sites

- ◆ [Bureau of Natural Heritage Conservation](#)
- ◆ [Wisconsin Rare Animals, Plants and Natural Communities](#)
- ◆ [Rare Species Management Guidance Documents](#)
- ◆ [Rare Animal & Plant Reporting Website](#)
- ◆ [Citizen based monitoring](#)
- ◆ [Volunteer Opportunities](#)
- ◆ [Grassland and Savanna Management](#)
- ◆ [WDNR Grant & Funding Opportunities](#)
- ◆ **Forestry:**
 - [WDNR Forest Landowners Page](#)
 - [Best Management Practices](#)
 - [Forest Health / Disease webpage](#)
 - [Tree seedling program](#)
- ◆ **Invasive species:**
 - [WDNR Invasives Page](#)
 - [Best Management Practices](#)
- ◆ **Wildlife:**
 - [Build a bat house](#)
 - [Wildlife Action Plan](#)
 - [WDNR Wildlife Management](#)
 - [Deer Management Assistance Program](#)

Partner Sites

- ◆ [US Fish & Wildlife endangered species information](#)
- ◆ [USGS Northern Prairie Wildlife Research Center](#)
- ◆ [Natural Resource Conservation Service \(USDA-NRCS\)](#)
- ◆ [Wisconsin Society for Ornithology](#)
- ◆ [Wisconsin Herbarium](#)
- ◆ [Aldo Leopold Foundation](#)
- ◆ [Invasive Plant Association of Wisconsin](#)
- ◆ [The Prairie Enthusiasts](#)
- ◆ [Wisconsin Wetland Association](#)
- ◆ [Wisconsin Woodland Owners Association](#)
- ◆ [Private Contractor and Consultant List \(pdf document\)](#)

Aerial Image

