

Central Sand Plains

ecological landscape



Sandhill Cranes (*Grus canadensis*) at Necedah State Wildlife Area

Attributes and Characteristics

The dominant feature in this landscape is the vast, remarkably flat, sandy plain that was once the bed of Glacial Lake Wisconsin—the enormous body of water fed primarily by glacial runoff. This lake, ringed by the Driftless Area to the southwest and the glacier to the north and east, was 70 to 150 feet deep and covered over 1,800 square miles. Streams and rivers draining from the glacier into the lake carried enormous loads of sand, silt, and clay that settled onto the lake bottom. The lake is believed to have drained catastrophically, in an estimated 7 to 10 days, when the ice dam along its southern end failed. This flush of water out of the lake carved the spectacular narrow, deep-sided gorges at Wisconsin Dells.

Additional striking features are the castellated mounds scattered across the southern portion of this landscape. These irregular bluffs are remnants of

the sandstone escarpment forming the eastern border of the Western Coulee and Ridges ecological landscape. They are the result of the steady erosional forces of wind and water (particularly Glacial Lake Wisconsin) slowly wearing away the softer sandstone surrounding them.

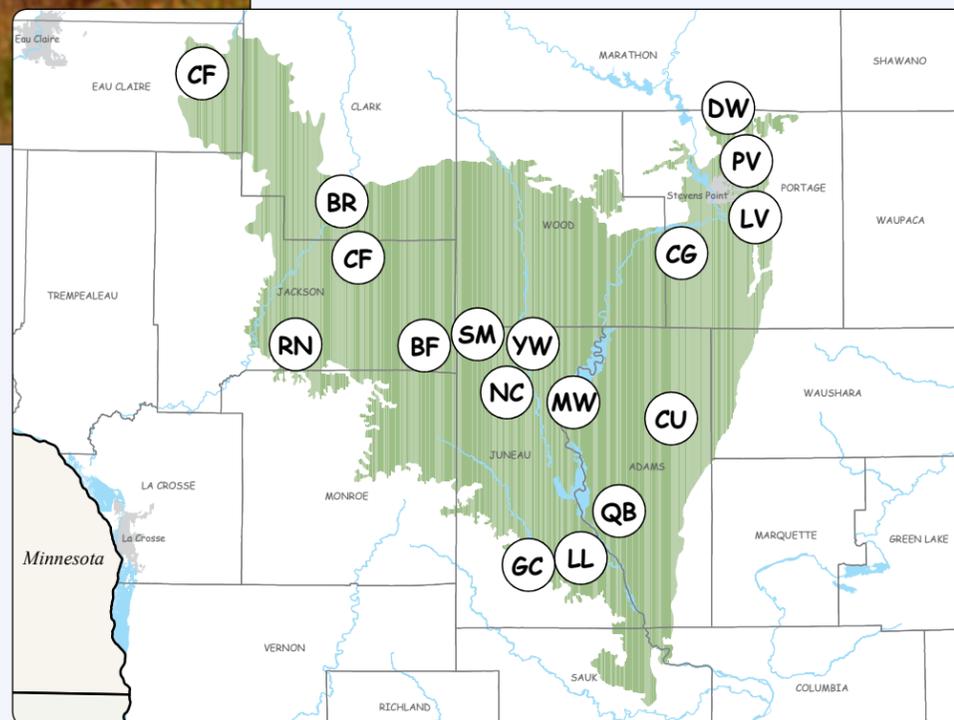
There are no large, naturally occurring lakes in this ecological landscape, although there are a number of hydroelectric dams on the Wisconsin River that create large impoundments.

Conservation Needs and Opportunities

Prior to Euro-American settlement, large wetland complexes, sand prairies, and oak forests, savannas, and barrens dominated the area. Some mesic forests, containing white pine and hemlock, were found in the northwest portion of the landscape. Much



Birdwatching, one of Wisconsin's most rapidly growing outdoor pursuits



Legacy Places

- BF Bear Bluff
- BR Black River
- CF Central Wisconsin Forests
- CG Central Wisconsin Grasslands
- CU Colburn-Richfield Wetlands
- DW Dewey Marsh and Woods
- GC Greensand Cuesta
- LV Little Plover River
- LL Lower Lemonweir River
- MW Middle Wisconsin River
- NC Necedah National Wildlife Refuge
- PV Plover River
- QB Quincy Bluff and Wetlands
- RN Robinson Creek Barrens
- SM Sandhill-Meadow Valley-Wood County Wildlife Areas
- YW Yellow (Juneau) River



Figure 101: Legacy Places and public conversation lands of the Central Sand Plains

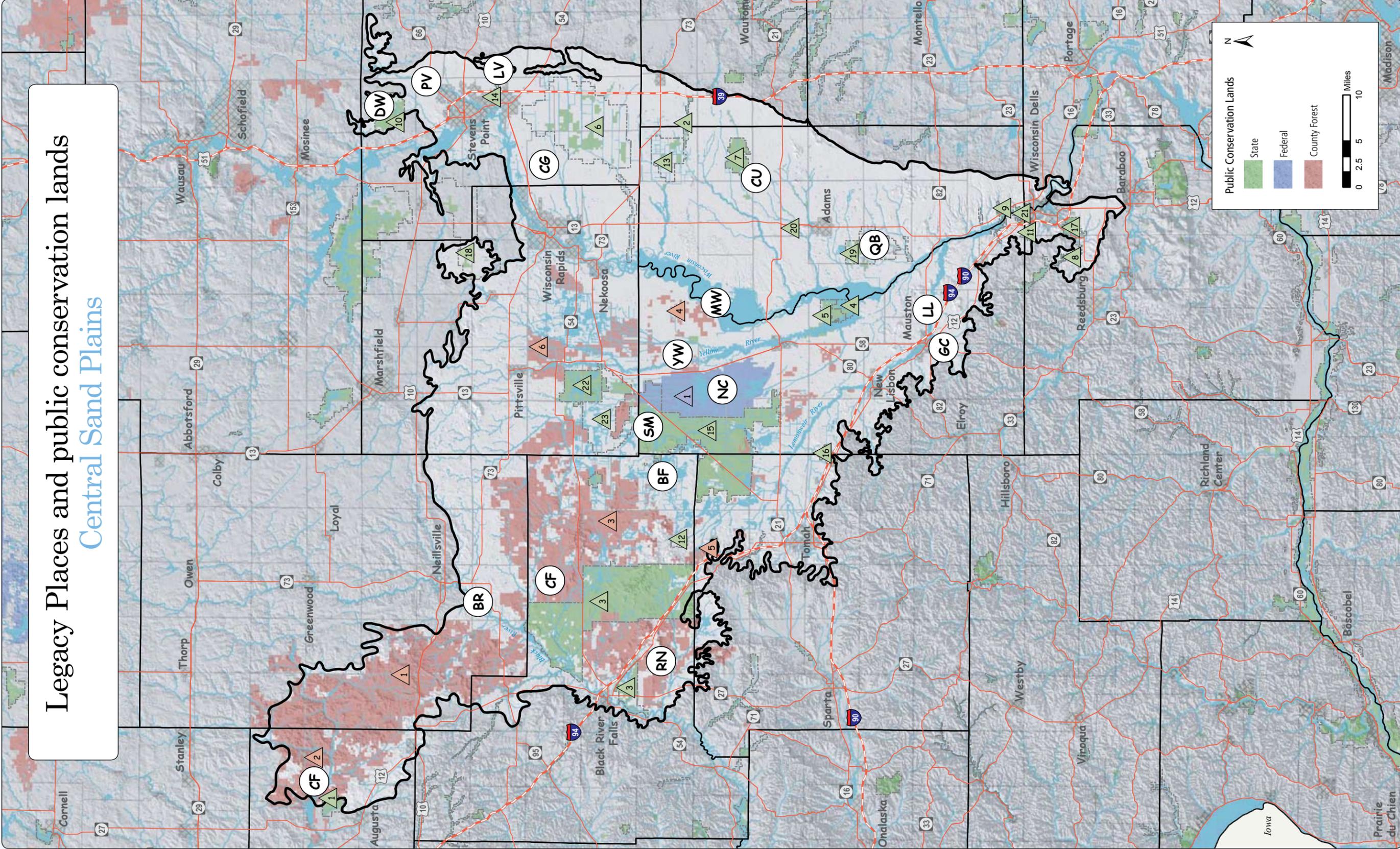
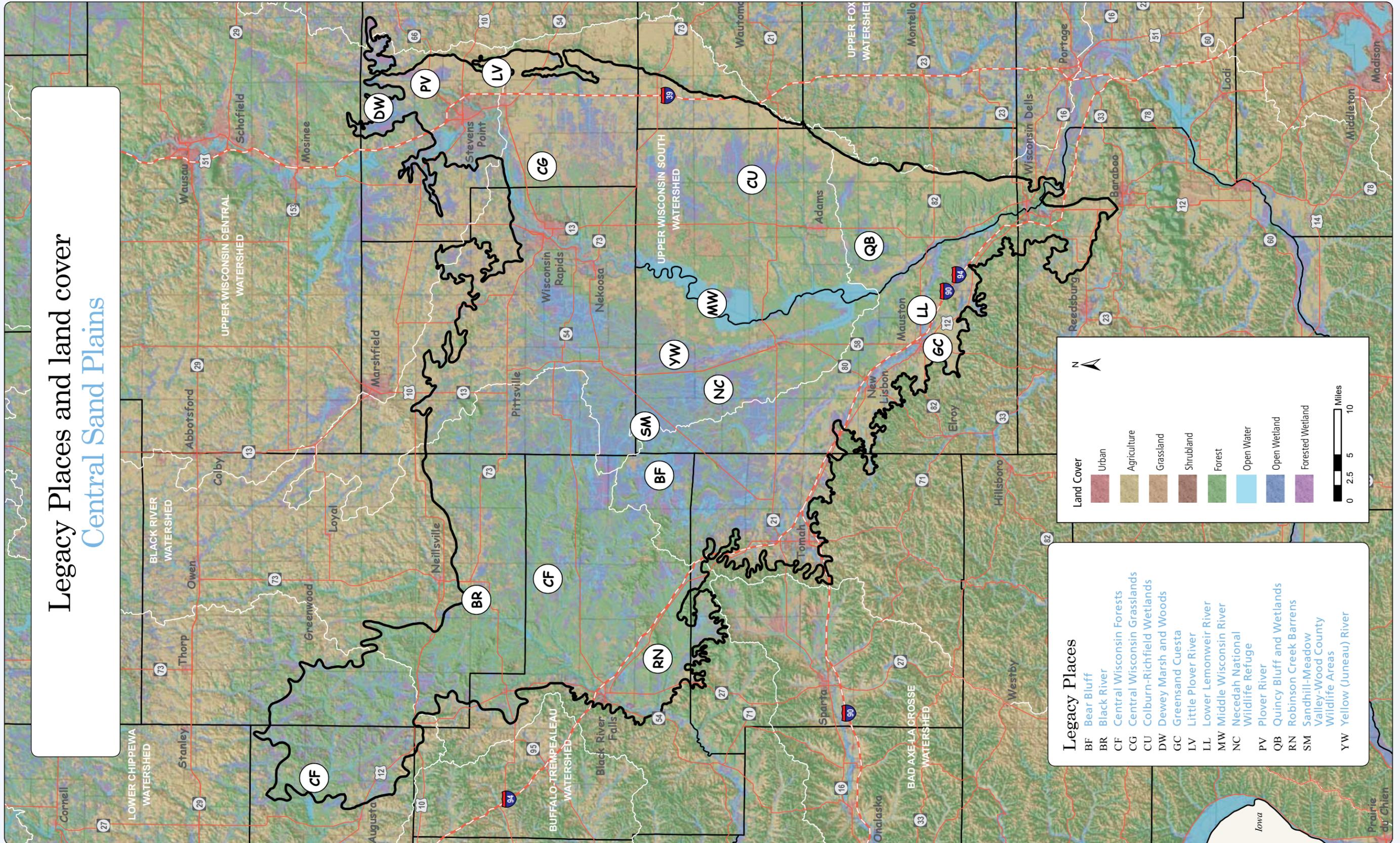


Figure 102: Legacy Places and land cover of the Central Sand Plains



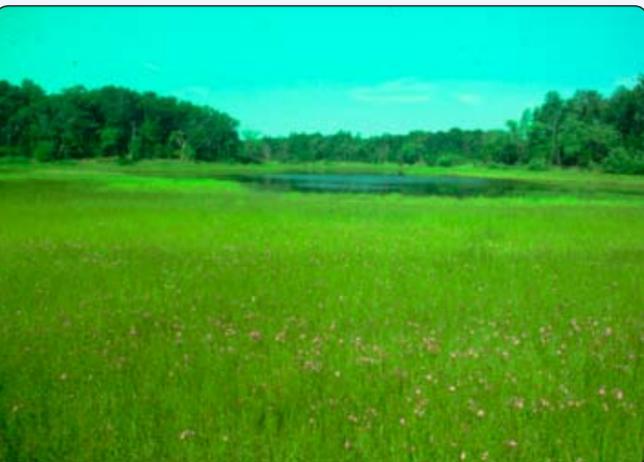
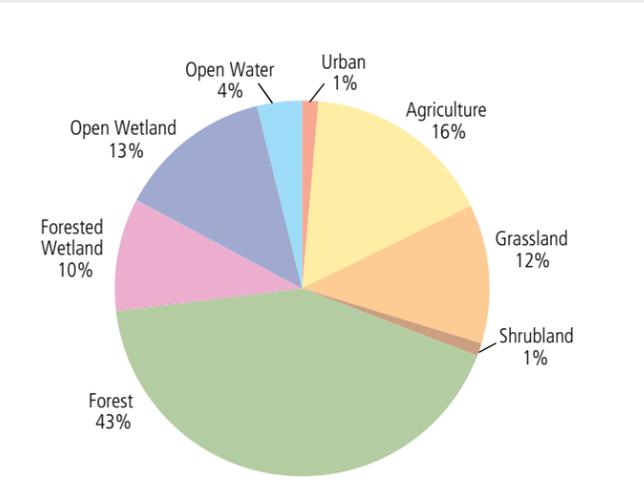
Central Sand Plains ecological landscape

Public Conservation Lands

Map#	Property Name	Size (acres) ¹
State		
1	Augusta State Wildlife Area ²	380
2	Big Roche A Cri State Fishery Area	810
3	Black River State Forest ²	65,930
4	Buckhorn State Park	2,610
5	Buckhorn State Wildlife Area	4,380
6	Buena Vista State Wildlife Area	7,740
7	Colburn State Wildlife Area	5,050
8	Dell Creek State Wildlife Area ²	770
9	Dells of the Wisconsin River State Natural Area	1,370
10	Dewey Marsh State Wildlife Area ²	4,960
11	Hulburt Creek State Fishery Area ²	590
12	Jay Creek State Natural Area	360
13	Leola Marsh State Wildlife Area	1,870
14	Little Plover River State Fishery Area	245
15	Meadow Valley State Wildlife Area	58,040
16	Mill Bluff State Park ²	1,150
17	Mirror Lake State Park	2,150
18	Paul Olson State Wildlife Area ²	780
19	Quincy Bluff And Wetlands State Natural Area	4,870
20	Roche A Cri State Park	460
21	Rocky Arbor State Park	230
22	Sandhill State Wildlife Area	9,480
23	Wood County State Wildlife Area	1,070
	Miscellaneous Lands ³	4,175
Federal		
1	Necedah National Wildlife Refuge	39,580
County Forest⁴		
1	Clark County Forest ²	123,300
2	Eau Claire County Forest ²	41,340
3	Jackson County Forest ²	118,130
4	Juneau County Forest ²	14,950
5	Monroe County Forest ²	3,500
6	Wood County Forest	37,570
TOTAL		557,840

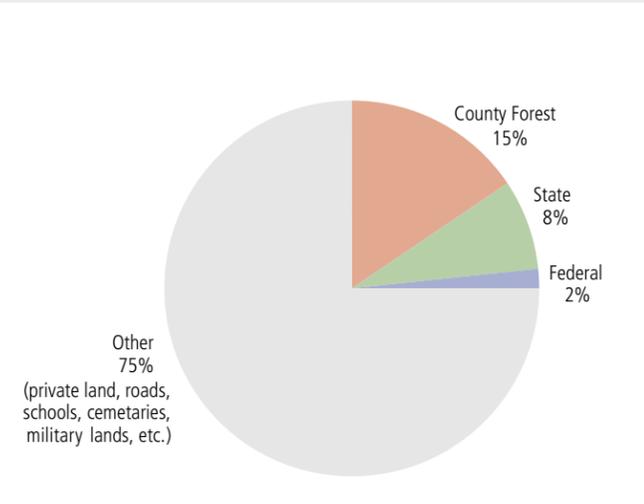
¹ Actual acres owned in this Ecological Landscape.
² This property also falls within adjacent Ecological Landscape(s).
³ Includes public access sites, fish hatcheries, fire towers, streambank and non-point easements, lands acquired under statewide wildlife, fishery, forestry, and natural area programs, small properties under 100 acres, and properties with fewer than 100 acres within this Ecological Landscape.
⁴ Locations and sizes of county owned parcels enrolled in the Forest Crop Law are presented here. Information on locations and sizes of other county and local parks in this Ecological Landscape is not readily available and is not included here, except for some very large properties.

Figure 103: Land cover of the Central Sand Plains



Coastal plain marsh at Silver Lake State Natural Area

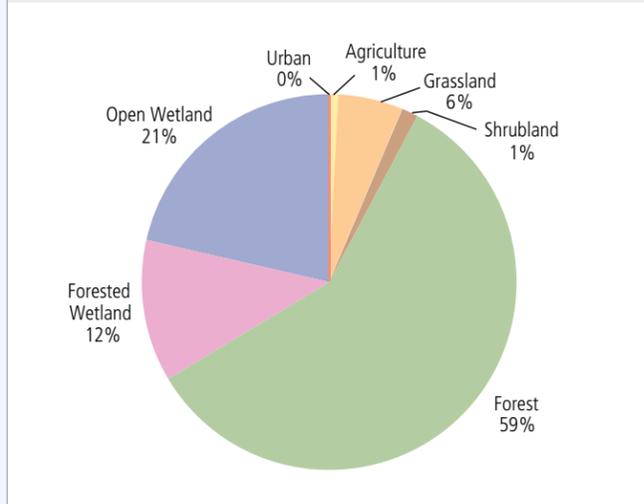
Figure 104: Public conservation and other land ownership in the Central Sand Plains



of the Central Sand Plains were subject to frequent, and likely wide-ranging, fires. With increased development spreading through much of the area, this ecological landscape remains one of the state's highest needs for fire management and suppression. Prescribed burns, carefully timed and controlled fires that seek to mimic some aspects of those that occurred in pre-settlement times, are increasingly seen as a way to reduce the risk of large, economically and ecologically damaging fires.

Today, much of the existing forest is comprised of oak, aspen and pine. A minor portion is maple-basswood forest and lowland hardwood. Conifer swamps occupy a significant portion of the wetlands. Timber management is focused on pulp production, giving rise to an abundance of pine plantations. Farmland and grassland comprise the bulk of the remaining area. Agricultural activities are dominated by extensive commercial cranberry production and crop production through the use of center-pivot irrigation on drained soils. Due to the abundance of bogs, commercial harvest of sphagnum moss occurs more extensively here than in any other ecological landscape in the state.

Figure 105: Land cover of public conservation lands in the Central Sand Plains



The Central Sand Plains ecological landscape provides some of the best prospects in the state for managing large oak and pine barrens complexes. Excellent conservation opportunities exist for a number of species dependent on these "shrubby" habitats, including brown thrasher, eastern towhee, eastern phlox moth and the federally-Endangered Karner blue butterfly. Some of the largest wetland complexes in the southern portion of the state are found within this landscape, and they provide important habitat for numerous species of reptiles, amphibians, and birds, including sandhill crane, golden-winged warbler, and northern harrier. Efforts are underway to establish a new population of the federally-Endangered whooping crane, which hopefully will spend their summers in these large wetlands.

Because much of this landscape is characterized by low population density, few roads, and a high percentage of forested cover, wide-ranging mammals such as timber wolf, black bear, and fisher occur throughout the area. This landscape also offers important opportunities to manage for numerous species of birds typically found in northern Wisconsin (e.g., hermit thrush, black-throated green warbler, and ring-necked duck).

Recreation Uses and Opportunities

This landscape receives substantial public use for a variety of recreation activities, due largely to the extensive amount of public land. Use of all terrain vehicles and snowmobiles is particularly popular due to the presence of an extensive trail system. Deer hunting, camping, hiking and cross-country skiing are also popular activities. There is demand in this area for additional trails to accommodate off road biking, ATV riding, horseback riding, snowmobiling, snowshoeing, and cross country skiing. Canoeing and kayaking along the larger rivers, as well as rustic tent camping and fully developed camping opportunities, are in demand in this region.

Also noteworthy are the many shallow-water areas within the large public properties that offer fishing, canoeing, kayaking, waterfowl observation, and hunting opportunities.



Red-bellied Woodpecker (*Melanerpes carolinus*)



View from Roche-a-Cri Mound

Key characteristics:

- » Sandy soils
- » Extensive pine and oak barrens
- » Dry forests
- » Large wetland complexes
- » Significant tracts of public land
- » Commercial cranberry production

Size:

- » 3,420 square miles
- » 2,187,100 acres
(6.1% of Wisconsin)

Population:

- » 191,000
(3.6% of Wisconsin's population)

Notable species:

- » Timber wolf
- » Black bear
- » Fisher
- » Sandhill crane
- » Trumpeter swan
- » Prairie chicken
- » Blanding's turtle
- » Massasauga rattlesnake
- » Chorus and Wood frogs
- » Walleye
- » Sand shiner
- » Karner blue butterfly
- » Massachusetts fern
- » Yellow screwstem
- » Long sedge

Natural communities:

(See Appendix B for descriptions)

- » Alder thicket
- » Central Sands pine-oak forest
- » Coastal plain marsh
- » Dry cliff
- » Floodplain forest
- » Northern dry forest
- » Northern sedge meadow
- » Oak barrens
- » Open bog
- » Pine barrens
- » Poor fen
- » Sand prairie
- » Shrub carr
- » Southern dry-mesic forest
- » White pine-red maple swamp

Central Sand Plains
ecological landscape

Legacy Places



Pine grove at Black River State Forest

ROBERT QUINN

BF Bear Bluff

Size Large
Protection Initiated Limited
Protection Remaining Substantial
Conservation Significance ★★★★★
Recreation Potential ★

Lying on the bed of Glacial Lake Wisconsin, the Bear Bluff area is made up of a vast complex of wetlands interspersed with low, sandy upland ridges supporting stands of pine, aspen, pine barrens, oak barrens, and dry oak forest. Due to its remoteness, size, variety of habitat types, and proximity to large blocks of public land, this area harbors a high concentration of rare species. Remnant pine and oak barrens support large Karner blue butterfly populations, and provide critical habitat for sharp-tailed grouse. Wooded tracts harbor a diverse assemblage of birds, including many with northern affinities such as hermit thrush, pine warbler, and white-throated sparrow. The Bear Bluff area also contains some of the largest remaining wetlands in southern Wisconsin and forms the headwaters of streams flowing outward in nearly all directions. Sandhill cranes are abundant. Several packs of timber wolves have become well established in the area, as have other wide-ranging species including black bear and fisher.

By providing a linkage to existing public properties, including Black River State Forest, Jackson County Forest, Wood County Forest, Meadow Valley and Sandhill State Wildlife Areas and Necedah National Wildlife Refuge, the Bear Bluff area provides one of the best opportunities in southern Wisconsin to undertake landscape scale protection and management. Ensuring the viability of this landscape would provide substantial benefits to rare plant communities and myriad wildlife species. Significant public recreation opportunities, including hunting, fishing, trapping, camping, hiking, cross-country skiing, and motorized trails, could be realized here.

BR Black River

Size Large
Protection Initiated Moderate
Protection Remaining Moderate
Conservation Significance ★★★★★
Recreation Potential ★★★★★

The Black River originates in the northern forests of central Taylor County and meanders south for more than 100 miles to its confluence with the Mississippi River. Biological diversity along the corridor is high due to its north-south orientation, association with four ecological landscapes, and the presence of pronounced, intact, wet-to-dry environmental gradients along the length of the river. The floodplain widens downstream from Black River Falls and supports large tracts of high quality southern floodplain forest, numerous oxbow lakes, and shallow marshes.

In this ecological landscape, part of the immediate river corridor along with several tributaries are protected within the Black River State Forest and Jackson and Clark County Forests. Wildlife habitat value along the corridor is extremely high due, in part, to the adjacent, extensive, and relatively undeveloped uplands. The river corridor provides important nesting and migratory habitat for a variety of songbirds and waterfowl, and serves as an important north-south dispersal corridor for bear, wolves and fisher. The river and its major tributaries support a diverse warmwater fishery and offers high quality sport fishing opportunities. The East Fork of the Black River in particular hosts a very diverse aquatic community.

Establishment of a protected corridor along the Black River would serve several purposes. First, it would link several existing public lands: Chequamegon National Forest, Clark and Jackson County Forests, Black River State Forest, Big Creek State Fishery Area, North Bend Bottoms and Van Loon State Wildlife Areas, and the Upper Mississippi River National Fish and Wildlife Refuge. In addition, it would facilitate protection of important wildlife habitats, thus maintaining the value of the corridor for migrating and dispersing wildlife. It would also provide additional opportunities for high quality outdoor recreational experiences in the western part of the state.



Greater Prairie-Chicken (*Tympanuchus cupido*) in display

TVEBT

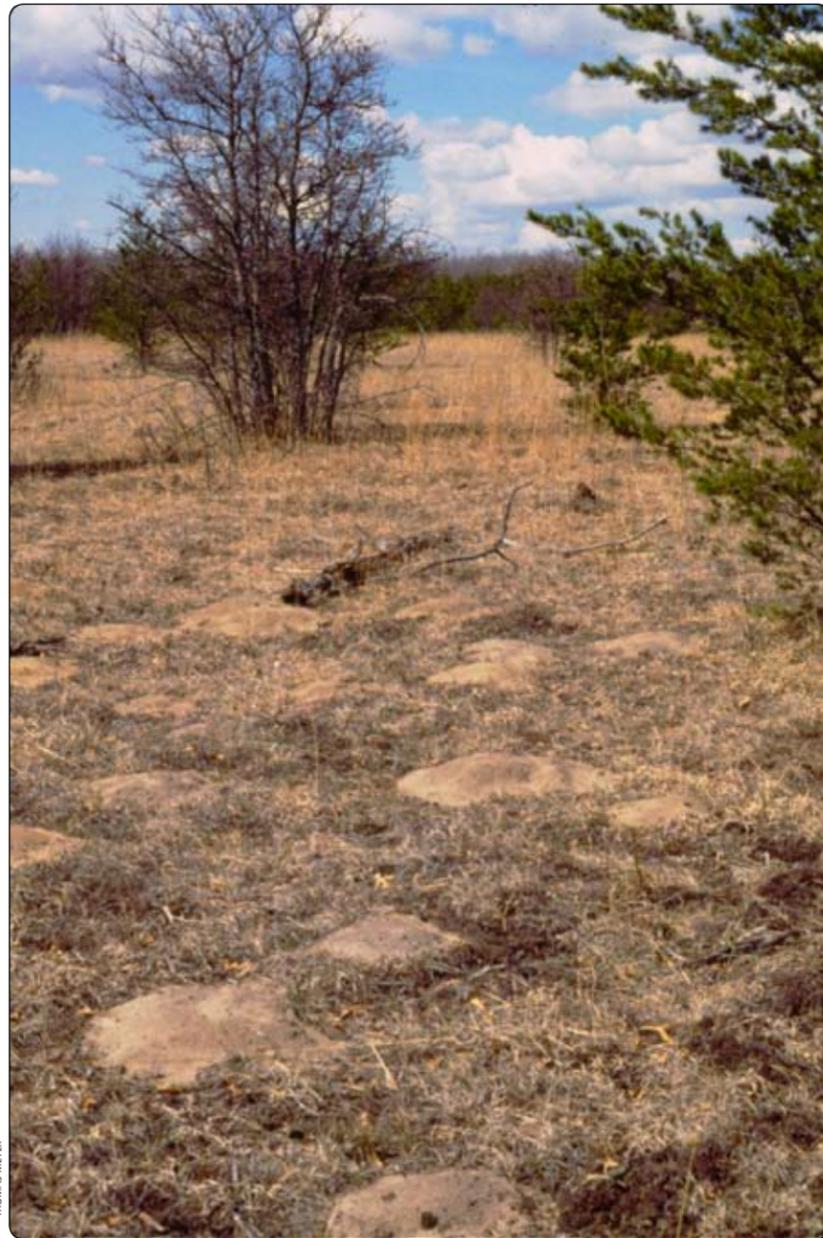
CF Central Wisconsin Forests

Size Large
Protection Initiated Substantial
Protection Remaining Limited
Conservation Significance ★★★★★
Recreation Potential ★★★★★

The Black River State Forest and the Jackson, Wood, and Clark County Forests together provide a block of more than 330,000 acres of publicly-owned land. Located in the central part of the state, these properties have a “north woods” feel to them and support numerous species more commonly found in northern environs, including timber wolf, black bear, fisher, Blackburnian warbler and white-throated sparrow. Aspen and maple are predominant and stands of white and red pine are common. Also present are dry oak forests, remnant pine and oak barrens, tamarack swamps and boggy sedge meadows.

Given the large public land holdings here, the Central Wisconsin Forests offer the opportunity to manage for a variety of fire dependent natural communities and species, including oak and pine barrens as well as the Karner blue butterfly and a number of other rare insects. Diverse recreation opportunities are provided by these properties, including hunting, fishing, camping, hiking, cross-country skiing, and snowmobile and ATV riding on designated trails.

Central Sand Plains
ecological landscape



Pocket gopher mounds at Bauer-Brockway Barrens State Natural Area

CG Central Wisconsin Grasslands

SizeLarge
Protection InitiatedModerate
Protection RemainingModerate
Conservation Significance★★★★★
Recreation Potential★★★

Stretching in an “S” shape from southeastern Taylor County, between Stevens Point and Wisconsin Rapids, and south to northeastern Adams County, this area may be the best location in Wisconsin to create a grassland landscape large enough to sustain viable populations of most grassland species. This area consists of a mosaic of publicly and privately owned grasslands of varying size embedded in a primarily open, agricultural landscape. Center pivot irrigation agriculture is prevalent in the flat sandy soils covering the southern portion of the area. Dairy farming predominates on the gently rolling clay loams of the northern portion of the area that is within the Forest Transition ecological landscape.

Due to the size, quality and distribution of the existing grasslands, this area is particularly attractive to a diverse community of grassland birds. The state’s largest populations of prairie chicken and Henslow’s sparrow are found here. Other declining or rare grassland birds, including grasshopper sparrow, upland sandpiper, eastern meadowlark, northern harrier, and short-eared owl, are found locally. Working with farmers and non-farming landowners to create linkages between scattered grassland parcels would be important in ensuring the long-term viability of populations of grassland-dependent species. Strategic expansion of existing public properties would also provide substantial public recreation benefits.

CU Colburn - Richfield Wetlands

SizeSmall
Protection InitiatedSubstantial
Protection RemainingLimited
Conservation Significance★★★★
Recreation Potential★★

This very large and diverse wetland complex contains relatively undisturbed sedge meadows with dry oak ridges harboring overgrown oak savanna. There has been little invasion by exotic species and restoration of the savanna areas would likely be very successful. Colburn State Wildlife Area protects part of this vast wetland.

DW Dewey Marsh and Woods

SizeSmall
Protection InitiatedModerate
Protection RemainingLimited
Conservation Significance★★★★
Recreation Potential★★★

Dewey Marsh contains extensive tracts of open bog, sedge meadow and both conifer and hardwood swamp. The State Wildlife Area protects much of the marsh and is a popular destination for hunting and wildlife watching. Beyond the marsh are large blocks of upland forest that provide habitat for numerous species of rare plants and animals.

GC Greensand Cuesta

See the *Western Coulee and Ridges* ecological landscape.

LV Little Plover River

SizeSmall
Protection InitiatedModerate
Protection RemainingModerate
Conservation Significance★★★
Recreation Potential★★★★

Although only about five miles long from its headwaters to its confluence with the Wisconsin River, this good quality river supports a diverse coldwater fishery. Flowing between Plover and Whiting, the river is heavily used for recreation and education. Part of the river is protected within the Little Plover River State Fishery Area. Threats include land use changes associated with the growing cities and high capacity well development adjacent to headwater areas.



Sullivant’s Cool-wort (*Sullivantia sullivantii*) interspersed with mosses and ferns

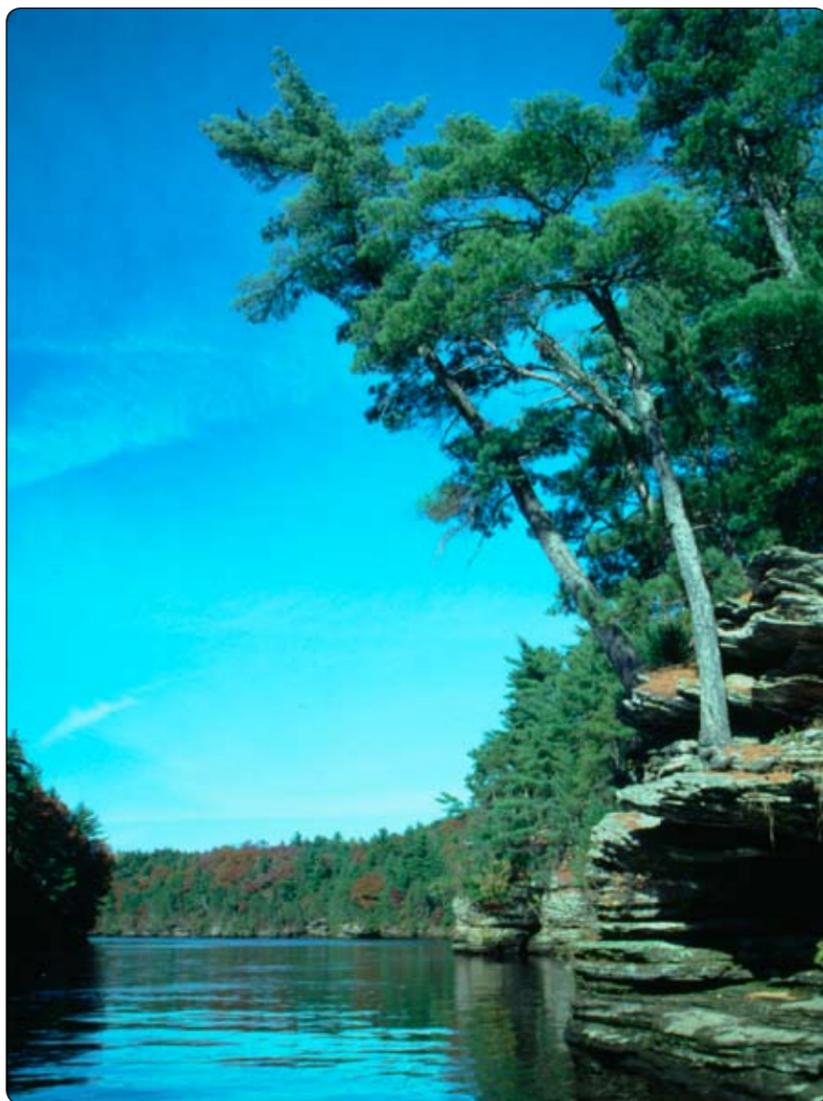
LL Lower Lemonweir River

SizeMedium
Protection InitiatedLimited
Protection RemainingSubstantial
Conservation Significance★★★★
Recreation Potential★★

The Lower Lemonweir River, from New Lisbon to its confluence at the Wisconsin River, flows through the flat, sandy soils that characterize the Central Sand Plains. Due primarily to a lack of topographic relief, the floodplain consists of a vast complex of swales, running sloughs, and oxbow lakes. Floodplain forests, occurring throughout the river corridor, are dominated by silver maple, green ash, river birch, hackberry, and swamp white oak. The surrounding uplands are also heavily wooded. Sandstone cliffs border the south side of the river channel and provide habitat for a variety of unusual plants. Red and white pine relicts occur on some of the cliffs.

Although the waters of the Lemonweir run very dark (a result of the peat soils it flows through), it is one of the highest quality rivers in the area and supports an excellent warm-water fishery. Aquatic diversity within the river is very high. Due to the extensive forests and scenic cliffs, the Lower Lemonweir River offers high quality canoeing opportunities. Access points are limited which, particularly in the lower reaches near the Wisconsin River, provides a near-wilderness setting.

Central Sand Plains
ecological landscape



Dells of the Wisconsin River State Natural Area

MW Middle Wisconsin River

Size Large
 Protection Initiated Limited
 Protection Remaining Moderate
 Conservation Significance ★★
 Recreation Potential ★★★★★

As the Wisconsin River meanders across the central portion of the state, it flows through a number of communities, including Wausau, Mosinee, Stevens Point, and Wisconsin Rapids. Numerous hydroelectric facilities are found throughout this reach of the river. Despite heavy industrial and commercial use, the Wisconsin River continues to support a robust warmwater fishery. Extensive southern floodplain forests dominated by silver maple, green ash, and hackberry are found along the river's lowlands. In concert with associated marshes, they provide important habitat for a variety of resident and migratory wildlife. Upland forests adjacent to the river contribute to the corridor's wildlife habitat values, help maintain water quality, and have significant aesthetic value.

Due to the proximity of several large population centers, this portion of the river receives substantial public use. Recreational boating, fishing and waterfowl hunting are particularly popular activities. A protected corridor along the river could provide protection for critical habitats and increase the variety of public recreation opportunities available.

NC Necedah National Wildlife Refuge

Size Medium
 Protection Initiated Substantial
 Protection Remaining Limited
 Conservation Significance ★★★★★
 Recreation Potential ★★★★★

Necedah National Wildlife Refuge consists of stands of oak-dominated hardwoods, large wetlands, and extensive flowages managed primarily for waterfowl. Uplands are managed for a variety of game and non-game species. Many of the oak barrens found within the refuge are periodically burned to maintain habitat for the Karner blue butterfly and other barrens associated wildlife. This refuge also serves as the site for establishment of Wisconsin's first wild flock of whooping cranes, a federally-Endangered species. Popular recreation activities include hunting, trapping, fishing, and wildlife observation.

PV Plover River

Size Medium
 Protection Initiated Limited
 Protection Remaining Substantial
 Conservation Significance ★★★★★
 Recreation Potential ★★★★★

The Plover River originates from a series of springs and spring ponds and flows southerly to the Wisconsin River. In the upper stretches, the Plover supports one of the most productive and popular trout fisheries in the area. Further downstream, the river slows, widens and runs through several large, high quality forest blocks and wetlands. Of particular note is Jordan Swamp, a large, forested wetland complex that harbors a good quality conifer bog and supports numerous rare species.

Some state ownership exists along the Plover River, but is mostly confined to a narrow corridor along the river. Additional land protection would help ensure that water quality and quantity are maintained and provide improved management capability for important upland and wetland habitats.

QB Quincy Bluff and Wetlands

Size Medium
 Protection Initiated Substantial
 Protection Remaining Moderate
 Conservation Significance ★★★★★
 Recreation Potential ★★★★★

Running two miles in length and rising more than 200 feet above the surrounding plain, Quincy Bluff provides spectacular views of the Central Sand Plains and other "castellated mounds." The bluff harbors outstanding examples of northern dry forest and dry cliff natural communities. Remnant pine-oak barrens are also present. Surrounding the bluff are high quality sedge meadows, shrub carrs, and northern wet forests. Numerous rare species have been documented here. The Nature Conservancy and the DNR are actively working with landowners to protect the area.



Quincy Bluff rising above the surrounding sand plain

RN Robinson Creek Barrens

Size Medium
 Protection Initiated Substantial
 Protection Remaining Limited
 Conservation Significance ★★★★★
 Recreation Potential ★★★★★

The predominantly sandy, nutrient-poor soils of the Robinson Creek watershed support relatively open, "scrubby" vegetation, including extensive pine barrens dominated primarily by jack pine, and oak barrens dominated by black oak and Hill's oak. Numerous pine plantations are also found throughout the area.

Most remaining pine and oak barrens exist as small, isolated fragments on existing state and federal properties, and most of these are likely too small and isolated to ensure long-term viability of all their characteristic plant and animal species. The Robinson Creek barrens are believed to be large enough to be biologically viable and provide one of the best opportunities to restore and maintain functioning pine and oak barrens within this ecological landscape. The juxtaposition of this area with the Jackson County Forest, Black River State Forest and the U.S. Army's Fort McCoy enhances landscape scale management opportunities and would augment the ability to manage for wide-ranging species such as timber wolf and black bear and barrens-dependent species like the Karner blue butterfly.

Central Sand Plains
ecological landscape



Camping in Wood County

SM Sandhill - Meadow Valley - Wood County State Wildlife Areas

Size Large
 Protection Initiated Substantial
 Protection Remaining Limited
 Conservation Significance ★★★★★
 Recreation Potential ★★★

Covering more than 80,000 acres, these state-managed wildlife areas support diverse habitats, including oak forest, emergent marsh, sedge meadow, pine and oak barrens, and extensive flowages. Wildlife is abundant. Notable species include sandhill crane, timber wolf, trumpeter swan, sharp-tailed grouse, woodcock, and the federally-endangered Karner blue butterfly.

These properties provide excellent opportunities for hunting, berry picking, outdoor education, and wildlife observation and receive substantial public use.

YW Yellow (Juneau) River

Size Large
 Protection Initiated Moderate
 Protection Remaining Moderate
 Conservation Significance ★★★★★
 Recreation Potential ★★

Originating in the farmland west of Marshfield, the Yellow River flows southward through the flat sand plains in southwest Wood County and central Juneau County. From Dexterville to its confluence with the Wisconsin River, the river corridor is characterized as having nearly level topography, sandy soils and relatively low human population density. A low stream gradient and meandering main stem have combined to create oxbow lakes, cut-offs and running sloughs, and numerous small ponds. The broad, flat floodplain gives rise to large tracts of southern floodplain forest dominated by silver maple, green ash, cottonwood, and swamp white oak.

The extensive forests, oxbows and shallow marshes within the river corridor support an impressive array of wildlife. Particularly noteworthy are populations of wood duck, hooded merganser, red-shouldered hawk, prothonotary warbler, and cerulean warbler. Overall aquatic diversity is high. This area provides a unique opportunity to protect and manage a large, biologically functional block of southern floodplain forest. It would also augment landscape scale management efforts in the Central Sand Plains by connecting several large blocks of public land.

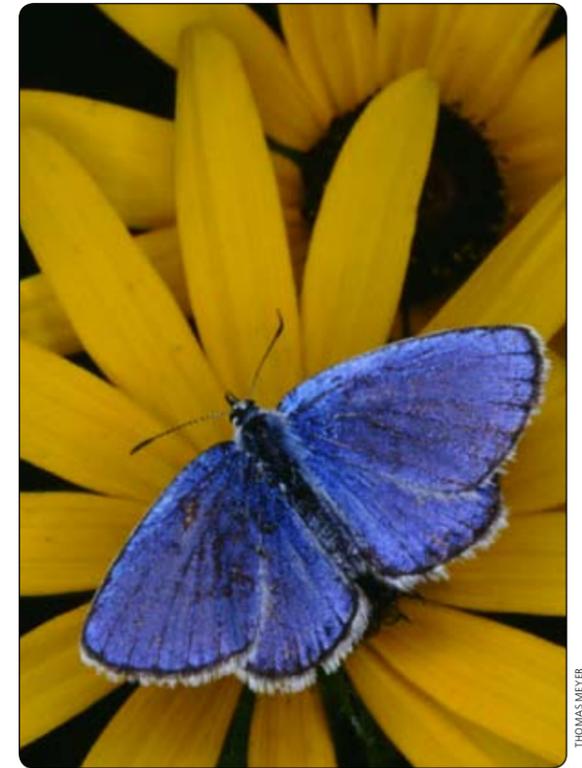
Other Areas of Interest

Cranmoor Wetlands (Wood County)

This large wetland area is located within former Glacial Lake Wisconsin and is between large Wood County Forest properties. The area contains extensive wet meadows and marshes and an impressive array of wetland plant and wildlife species amidst a series of cranberry operations. Although altered, the wetlands have relatively few invasive plants and the potential to support rare plants is high.

Powers Bluff (Wood County)

This 300' high monadnock (an isolated remnant hill) is round-shaped due to the erosion-resistant durability of the quartzite. This contrasts with other less durable sandstone bluffs in the area that have weathered parallel to their vertical planes giving them very steep slopes. Dominant trees on the bluff are sugar maple, yellow birch, and bitternut hickory with scattered red oak, white ash, and basswood. The forest floor is strewn with boulders and two boulder trains extend southeast and southwest from the bluff, suggesting that glacial ice moved over and around the bluff. The area is known to harbor Native American historical features. Although the bluff is part of the Wood County park system, there is interest in expanding protection efforts to further meet both conservation and recreation needs.



Karner Blue Butterfly (*Lycaeides melissa samuelis*)