



MARKING A MILESTONE AND IGNITING PASSION FOR STATE NATURAL AREAS As we celebrate seven decades of state natural areas with this special Field Notes issue, we're grateful for the passion and contributions of the many staff, partners, volunteers and donors who have worked to secure Wisconsin's natural treasures. Your impact is demonstrated by the numbers and photos within

We invite you to join us in 2022 at a volunteer workday. donate to the Endanaered Resources Fund or pass this booklet on to inspire new generations to appreciate, explore and care for these special places.

these pages.

Thank you for your support, and we hope to see you in the field!

– DNR NATURAL HFRITAGE CONSERVATION STAFF





Wisconsin's state

natural areas.

State natural

acreage.

areas make up iust 1.2% of

Wisconsin's total

STATE NATURAL AREAS BY THE NUMBERS

communities in Wisconsin. These plant and animal communities range from desertlike sand barrens with cacti and lizards, to northern old-growth forests, to geological features first carved by water 1.5 billion years ago.



The year Wisconsin created the nation's first statewide natural areas preservation program with the sole statutory purpose of saving the wealth of the state's native ecosystems for current and future generations. These natural communities represent different plant and animal species living together in a specific habitat.



Number of DNR field ecologists working at state natural areas with crews to control invasive species, conduct prescribed burns, collect and sow native seeds, cut and burn encroaching brush and conduct species surveys.

Sharon Fandel, a DNR field ecologist, inspects an ornate box turtle.



WISCONSIN DNR

2,336

Number of native plant species in Wisconsin. There are 284 species of breeding birds, 148 fish, 70 mammals, 36 reptiles, 19 amphibians and an estimated 35,000 to 65,000 insects. spiders, mollusks and other invertebrate species.



43,186

Acres of land purchased for state natural areas using Knowles-Nelson Stewardship Program funds.

5,761

Hours volunteers worked in 2020 to help care for state natural areas.

TOP 10 DISCOVERIES AT STATE NATURAL AREAS

State natural areas are full of rare plants and wildlife — some found only in Wisconsin and others still waiting to be discovered.

DNR Natural Heritage Conservation staff, partners and volunteers had a banner year in 2021 for finding species new to Wisconsin and known species in new locations. We're excited to share some of these stories here.



HAPPY NEWS FOR A RARE BLUE BIRD

Cerulean warbler populations have been declining for the last 30 to 50 years. The discovery of this threatened species in a trio of state natural areas on Mississippi River bluffs is reason to sing a happier tune.

Ceruleans need big blocks of forests with some openings in the tree canopy. In 2019, DNR Driftless Area crew leader Justin Nooker and crew members hiked with chainsaws and other gear across steep, rugged terrain to create this habitat and conduct other restoration of the sites' oak savannas and woodlands.

Nooker identified the cerulean warblers in 2020, and DNR conservation biologists Heather Kaarakka and Rich Staffen reconfirmed their presence in 2021.



RESTORED HABITAT WELCOMES NEW RESIDENT

DNR Central Sands ecologist
Jon Robaidek and crew leader
Josh Karow saw firsthand the
benefits of their work to restore
barrens habitat at a state natural
area in the Central Sands area.
During surveys in 2020, they
found endangered Karner blue
butterflies in a restored area, the
first sighting on the property.
Their 2021 follow-up surveys
revealed the butterfly on several
other restored areas of the
property.



PRAIRIE PARSLEY PROSPERS

Habitat restoration work on a central Wisconsin state wildlife area yielded one of the state's biggest populations of prairie parsley, a state threatened plant species. DNR wildlife biologist Sara Kehrli found the rare plant after management work she and others had done on the site to maintain prairie and savanna habitats.



SMALL BUT MIGHTY MOONWORT EMERGES

After four years of crawling around Wisconsin forests searching for a globally imperiled fern, DNR botanist Kevin Doyle flipped over some leaves and found a little goblin moonwort within a U.S. Forest Service state natural area in Oconto County.

Moonwort populations have dropped an estimated two-thirds over the last 20 years as nonnative earthworms chew up the decomposing leaf litter the fern needs. Doyle's discovery underscores the importance of this state natural area forest and the passion DNR staff bring to their work.



NATURAL AREA YIELDS NEW MOSS SPECIES

A trio surveying mosses, liverworts and hornwarts on a federally owned and managed state natural area in northeastern Wisconsin discovered a moss never before recorded in the state.

"It was immediately clear we had discovered something unexpected and unique," said Keir Wefferling, curator of UW-Green Bay's Fewless Herbarium, who was surveying along with volunteers Joan Berkopec and Ron Eichhorn. They identified the moss as tufted fen moss, *Paludella squarrosa*, a species indicative of the high-quality fen found within the state natural area.

NIGHTTIME LEAFHOPPER QUITE A CATCH

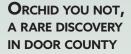
In August, Sauk County volunteer naturalist Angus Mossman was trudging through a poison sumac bog conducting nocturnal insect surveys at a state natural area owned by the Wisconsin Society for Ornithology when he photographed an unfamiliar leafhopper. He thought it might

be Norvellina
novica, a species
expected to be
in Wisconsin
but never
documented
here. DNR
staff and the
online hopper
community
confirmed
Mossman's
hunch.



Leafhopper Norvellina novica





Tasked with documenting all orchid species and individual specimens within a Door County state natural area, volunteers Jane Whitney, David Barnes and Julie Knox had located and identified 28 native orchid species when they stumbled upon their biggest find yet.

While leading a hike in mid-June, Whitney saw three ladies' tresses in the middle of the trail. She sent photos to fellow "orchid trekkers," who identified them as shining ladies' tresses, Spiranthes *lucida*, a species of concern that had been recorded in Wisconsin only once before.



LONG-LOST GREEN VIOLET DISCOVERED

"Dear Dad, I hope you find lots of rare stuff," read the note written by DNR ecologist Ryan O'Connor's 6-year-old daughter on the night before his first field survey of the 2021 season. Her words proved prophetic as O'Connor found and confirmed green violet in a northwestern Wisconsin state natural area. The plant was last documented in Wisconsin in 1958.



GRASSLAND ENGINEERS GET A LIFT

Prairie voles — grassland engineers whose burrowing and seed dispersal are vital for grassland ecosystems - were found at three new sites in Wisconsin in 2021, two of them state natural areas in the southern part of the state. The discoveries by DNR conservation biologists Heather Kaarakka and Rich Staffen are important because prairie voles are considered species of greatest conservation need. Their populations have decreased as their native prairie habitats have vanished.

Many of Wisconsin's rare natural communities evolved with frequent wildfires and need prescribed burns or other management to sustain them. They and other sites also require vigilant monitoring and control of invasive species. In 2021, more than 200 DNR-owned state natural areas were managed through prescribed burns and invasive species removal, and volunteers provided 5,761 hours of labor on 39 sites.

The DNR's nine regional state natural area ecologists and their field crews each manage more than a dozen sites. The following brief summaries share their current priority sites for management and the ongoing work being done.

9 PRIORITY PROJECTS



CHIWAUKEE PRAIRIE
Kenosha County



YOUNG PRAIRIE

Jefferson and Walworth counties



DEWEY HEIGHTS PRAIRIE

Grant County



RUSH CREEK Crawford County



INCH LAKE Bayfield County



TRENTON BLUFF PRAIRIE
Pierce County



QUINCY BLUFF & WETLANDS

Adams County



RED BANKS ALVAR
Brown County



SPREAD EAGLE BARRENS
Florence County

CHIWAUKEE PRAIRIE Kenosha County



management priority in southeast Wisconsin. Once subdivided into hundreds of lots, partners have acquired enough undeveloped lots to protect one of Wisconsin's most diverse prairie complexes and Lake Michigan's most intact coastal wetlands.

> Chiwaukee's mosaic of plant communities makes it a high-priority stopover site for migratory land birds and supports pollinators critical for the reproduction of native prairie plants and agricultural crops. The site benefits surrounding communities by storing rainwater and stormwater runoff.

Chiwaukee Prairie's astounding biodiversity and the unwavering commitment and sweat equity from partner groups make this site the top

With the help of grant funding paired with private foundation support, state natural area crews recently hand-cleared and mowed 90 acres of invasive buckthorn and coordinated 100 acres of brush clearing and mowing by contractors and volunteers. Crews also completed prescribed burns, pulled or cut invasive plants and cleared and seeded newly acquired lots. A new rare reptile species has been documented after this restoration.

In Wisconsin, the Chiwaukee Prairie Preservation Fund and The Nature Conservancy are among the key partners. Across the Illinois state line, the DNR routinely collaborates with the Lake County Forest Preserve District.

— Sharon Fandel, DNR Southeast ecologist

BY THE NUMBERS

- 400 plant species, including 12 that are endangered or threatened
- 75 species of grassland and wetland birds
- 490 acres of coastal wetlands and prairies



YOUNG PRAIRIE Jefferson & Walworth counties



One of the Midwest's best prairie remnants, this site is home to 20 rare plant and animal species and many common plants including compass plant flower, prairie dock, blazing star, purple prairie clover and shooting star. Nesting birds include common yellowthroat, sedge wren and swamp sparrow.

State natural area crews are expanding existing prairies and connecting prairie pockets to aid rare plants, connect to other habitats benefiting grassland



BY THE NUMBERS

- 85 acres of prescribed burns in fall 2020
- 7 species on state endangered list
- 60 acres of invasive plants controlled annually

birds and improve resilience to climate change. Prescribed burns, brush mowing, aspen girdling and selective herbicide application are used.

Work began in fall 2021 on a \$25,000 project to restore wetlands and hydrology. The site was created from a 52-acre donation in 1976 from the Irvin Young Foundation and expanded through a purchase made possible by the Knowles-Nelson Stewardship Fund. The Natural Resources Foundation of Wisconsin also provides important funding for land management.

Pete Duerkop, DNR ecologist,
 Kettle Morgine State Forest-Southern Unit

3

DEWEY HEIGHTS PRAIRIEGrant County



BY THE NUMBERS

- 28 rare prairie/savanna species
- 1 new rare snake found after restoration
- 1 new rare plant found after restoration



Dewey Heights Prairie is a breathtaking site overlooking the Mississippi River that boasts large, highly diverse remnant hill prairies transitioning into forest. It is loaded with plants and wildlife on the state endangered and threatened species list.

Unique plants thrive in the lime-rich soil, and rare fish and mussels abound in the Mississippi River below. The site also contains one of the largest



collections of Native American effigy burial mounds in Wisconsin.

State natural area crews use prescribed burns frequently but with careful unburned refugia to restore and expand prairie/ savanna while maintaining populations of potentially fire-sensitive invertebrates.

Annual invasive species control work keeps weeds out of the prairies, including clearing invasive brush and dense cedar trees encroaching on the prairies from the area. Staff also collect and sow seed on-site after brush clearing. Nelson Dewey State Park staff are important partners along with a local volunteer.

- Nate Fayram, DNR Southwest ecologist





This 2,600-acre site contains a 2-mile-long archipelago of connected remnant prairies along the Mississippi River bluffs. It is one of the largest such groupings in the Midwest and provides one of Wisconsin's best opportunities to maintain the long-term viability of the plants, insects and reptiles associated with these prairies. Most of the species present 250 years ago remain today.

In addition, a rare large block of old oak forest in the uplands as well as floodplain forest in the bottoms

BY THE NUMBERS

- 20 unplowed prairie remnants
- 1,000 acres of forest over 100 years old
- Up to 60% slope

provide critical habitat for many threatened bird species requiring deep woods.

The steep, rugged terrain makes management extremely difficult. State natural area staff control invasive species, cut brush and use prescribed burning to reduce brush and stimulate flowering of native plants.

Key partners are the Paul E. Stry Foundation of La Crosse, the Natural Resources Foundation of Wisconsin and local farmers working with the U.S. Department of Agriculture's Natural Resources Conservation Service to restore adjacent crop fields to planted prairies.

- Armund Bartz, DNR Driftless Area ecologist





INCH LAKEBayfield County

Stands of older, naturalorigin red pine and wild lakes are increasingly rare in northern Wisconsin, and Inch Lake offers both. It also features increased diversity of plants and animals due to the mix of wetlands and other natural communities.

Red pine, red oak, white

pine, bigtooth aspen and sugar maple dominate, while sweet fern, bigleaved aster and wild sarsaparilla carpet the forest floor.

State natural area crews have used various techniques to remove invasive glossy buckthorn, which threatens to degrade the high-quality wetlands and uplands on this site. Native wetland species have rapidly moved in, including sedges, swamp milkweed and marsh cinquefoil.

A 74-acre restoration timber harvest removed

BY THE NUMBERS

- 1 wild lake, 1 minimally developed
- 0 motorboats permitted
- 4 acres of buckthorn cleared

most aspen, maple and oak to open the tree canopy and allow sunlight to reach the forest floor, boosting red pine and oak regeneration. The harvest also sets the stage for future prescribed burns to enhance oak and pine regeneration.

Ryan Magana,
 DNR Northwest ecologist



TRENTON BLUFF PRAIRIE



Trenton Bluff Prairie features two separate dry or "goat" prairies on steep Mississippi River sandstone bluffs capped by massive limestone cliffs. Although not a large site, it has a high concentration of rare species, including several unusual Great Plains species at the eastern edge of their range limit.

Historically, frequent fires sparked by trains traveling along the bluff presumably played a major role in helping preserve the bluff prairies. By 2014, however, the eastern bluff prairie was on the verge of being lost to invasion by woody species.

Today, this site is flourishing due to extensive tree and brush removal by state natural area crews and interns.

BY THE NUMBERS

- 130 acres
- 12 rare plant and animal species
- 1 new rare reptile found in 2021 after restoration

Crews are also using frequent prescribed burning despite the difficulties posed by the site's extreme slopes and topography.

The eastern bluff prairie has been burned annually for the last four years to reduce fire hazards and invasive plant species, stimulate growth of wildflowers and grasses, control brush and improve habitat for local wildlife.

Recent surveys show the site's rare species are stable or expanding.

> Dean Edlin, DNR West Central ecologist



QUINCY BLUFF AND WETLANDS Adams County

BY THE NUMBERS

- 2-mile-long namesake bluff
- 25% of site in barrens or prairie restoration
- 3rd largest state natural area

At 6,700 acres, this area's amazing diversity of natural communities, species and landforms reflects its location on the lakebed of Glacial Lake Wisconsin and in the ecological "tension zone," where Wisconsin's northern mixed forest transitions to its southern prairies, with plants and animals of both intermingling.

With its large size, Quincy Bluff and Wetlands provides the unique opportunity to work on its diverse habitats to meet the needs of species requiring such variety. It also allows for restoring globally rare oak barrens.

DNR staff use regular prescribed burns, timber cutting, mowing, hand cutting and some herbicide application to restore early successional communities reflective of those that existed when fires were common on this landscape.

Key partners include local DNR wildlife management staff and The Nature Conservancy, which managed part of the property for decades and in 2013 donated a 1,700acre parcel and a \$178,000 endowment for its care.

- Jon Robaidek, DNR Central Sands ecologist

RED BANKS ALVAR Brown County



BY THE NUMBERS

- 1 mile of Niagara Escarpment protected
- 93 acres of invasive buckthorn and honeysuckle removed
- 101.5 tons of red cedar removed in 2020

The 344-acres of Red Banks Alvar supports Wisconsin's best and largest instance of a globally rare alvar community featuring very thin soils on flat limestone. It includes a mile-long cliff, part of the nearly 1,000-mile-

long Niagara Escarpment running from central Wisconsin into upstate New York and known locally as "the ledge."

This site contains one of the most diverse land snail communities known in the Midwest, a vital bat hibernaculum, rare ferns and many vulnerable species.

State natural area crews have intensively managed this and an adjacent site owned by the Northeast Wisconsin Land Trust. Management includes controlling invasive species, setting back succession with prescribed burning and brush mowing to grind down red cedar, and collecting and seeding native plant species.

Surveys show the work is paying off. Fifteen bee species have been documented here, plus 37 butterfly species and seven moths.

— Jake Kobernik, DNR Upper Lake Michigan state natural areas crew leader



SPREAD EAGLE BARRENS
Florence County

BY THE NUMBERS

- 2nd largest state natural area
- 2,600 acres burned in rotation
- 168 bird species recorded here

Bracken grassland and pine barrens are imperiled globally and in Wisconsin, where only an estimated .02% of the pine barrens acreage present in the 1800s remains today.

The 7,155-acre Spread
Eagle Barren's site
contains prominent
examples of both
communities and is
vitally important for
many rare and common
species requiring large
expanses of open habitat.

Dry and wet forests, two small lakes and the Pine River, a state-designated Wild River, create a tremendous diversity of high-quality habitats and support excellent hunting, fishing, hiking, nature watching, photography, berry picking and camping.

Invasive species control is conducted annually, along with brush mowing, herbicide treatments and

timber sales on up to

800 acres. There are regular prescribed burns, and four timber harvests are underway to manage advanced oak wilt, restore open communities and manage oak and aspen.

Key partners for this state natural area include Florence County, National Wild Turkey Federation, Natural Resources Foundation of Wisconsin, National Fish and Wildlife Federation, Wild Rivers Invasive Species Coalition and We Energies, which owns a portion of the site.

Carly Lapin, DNR North Central ecologist

FOUR DNR STAFF MAKING A DIFFERENCE FOR STATE NATURAL AREAS



KATIF HAHN

"The more I learned about the state of our landscape compared to how it was before European settlement in Wisconsin, the more I felt compelled to help restore what's been lost. I love state natural areas because they give us a glimpse into what the landscape was like. I especially relish removing mesic trees from around large, open-grown oaks in the prairies of the Driftless Region. It makes me feel like I'm giving them room to breathe again."

- DNR conservation biologist and wildlife technician

TRENT LEAF

"Growing up in Minnesota, we had 5 acres that I roamed around on a lot and neighbors



who were happy to let us explore. Working on state natural areas allows me to help give people a place to go where they can see,

hear, smell and touch something that isn't dependent on us and yet is more perfect than anything we could make."

> DNR conservation biologist and wildlife technician

BRIDGET RATHMAN

"I grew up in Baraboo exploring all of the local public lands and knew

from an early age that I wanted to devote my life to protecting wild places. I had aspirations to run away to the rain



forest. But during my college career and time spent volunteering with a nonprofit, The Prairie Enthusiasts, I learned there is critical habitat to work for right here in Wisconsin!"

 State Natural Areas crew leader for the DNR's Southwest District

BENNETT LIPPERT



"Growing up on a dairy farm and my love for being outside and working with crops inspired me to get involved in a career where I can be outdoors and enjoy nature. My favorite part about this job is getting to preserve endangered habitats and protect the native plant life within them, while also getting the opportunity to see and experience them firsthand."

DNR conservation biologist and wildlife technician

TWO VOLUNTEERS LEADING THE WAY



GINNY COBURN DNR 2021 STATE NATURAL AREA VOLUNTEER STEWARD OF THE YEAR

Ginny Coburn of Whitewater started volunteering at state natural areas in the Kettle Moraine State Forest-Southern Unit a decade ago, as part of a personal mission to educate her grandchildren and herself about nature and ecology. She learned how to safely wield a chainsaw, collect seed and control invasive plants, among many other lessons.

Today, Coburn is instrumental in keeping monthly volunteer workdays going. She serves as a contact, greets volunteers when they arrive and uses her deep community connections to recruit many new people and organizations to join in the workdays and help on specific projects. Together, she and other volunteers have provided thousands of hours of labor at Bluff Creek, Kettle Moraine, Whitewater Oak Opening and Clover Valley Fen state natural areas.

Coburn said her favorite part of volunteering is the people she has met.

"They are fun and knowledgeable and will come out and help or work in any kind of weather," she said. "We learn a lot from each other and just have a very enjoyable time. We feel like we've done good work toward a really big goal."

JOHN KESSLER **DNR 2020 STATE NATURAL AREA VOLUNTEER STEWARD OF THE YEAR**

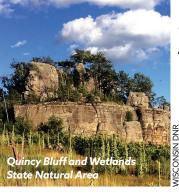
Motorists on the heavily traveled stretch of U.S. Highway 12 west of Madison likely pass by the Empire Prairies State Natural Area without knowing it's there. Fortunately for Wisconsin, John Kessler has taken a shine to the 11-acre hilltop site, one of five sites remaining from a vast prairie covering northern Dane and southern Columbia counties 200 years ago.

"This is a precious gem that's been left untouched because it is so far from farm buildings, so it has not been grazed or trampled," Kessler said.



"A deep connection with the land" got him interested in volunteering for state natural areas after retiring from 27 years as a Dane County deputy sheriff and 11 years as a U.S. postal carrier. Now, Kessler works year-round on the Empire Prairies site and logged more than 250 work hours there in 2020, removing brush, establishing native plants and controlling invasive plant species.

"Working out here is soul-satisfying and gives me a place to go for a few hours to soak in nature," he said.



\$3 MILLION TO CARE FOR STATE NATURAL AREAS AND CREATE COUNTLESS CONNECTIONS TO NATURE

Grants and gifts from individuals and organizations like the Natural Resources Foundation of Wisconsin are vital to keeping state natural areas healthy.

Since its founding in 1986, the NRF has provided more than \$3 million for management of state natural areas through programs, grants and disbursements from 18 endowment funds focused on SNAs.

In partnership with the DNR, the foundation also manages the Cherish Wisconsin Outdoors Fund, which

provides money for habitat management at state natural areas, wildlife areas and other public lands. Small donations — an average of \$5 each — made by hunters and anglers buying licenses through the DNR's Go Wild website are the primary source of contributions to the Cherish Fund.

In addition, NRF-funded habitat work and volunteer training benefit a wealth of plant and animal species. Field trips organized by the NRF help Wisconsinites experience state natural areas, often led by DNR staff who care for these special sites.

PARTNERS HELP PROTECT THE BEST OF WISCONSIN

The DNR works with more than 60 government agencies, nonprofits and individual landowners to care for Wisconsin's 693 state natural areas (see partners list below). The 11-member Natural Areas Preservation Council advises the SNA Program.

Ho-Chunk Nation **Barron County** Chippewa County Clark County Dane County **Door County** Douglas County **Dunn County** Eau Claire County Fond du Lac County Jackson County Jefferson County Langlade County Manitowoc County Marathon County Marinette County Marguette County Milwaukee County Oneida County Price County Racine County

Rock County Rusk County Washburn County Waukesha County Winnebago County Wood County **Beloit College** Lakeshore Technical College Lawrence University Madison Metropolitan School District University of Wisconsin Board of Regents National Park Service U.S. Department of Defense U.S. Fish & Wildlife Service U.S. Forest Service

Door County Land Trust

Groundswell Conservancy Madison Audubon Landmark Conservancy Marshall's Point Association Mississippi Valley Conservancy National Audubon Society Northeast Wisconsin Land Trust Northwoods Land Trust Ozaukee Washington Land Trust Pleasant Valley Conservancy Riveredge Nature Center Standing Cedars Community Land Conservancy

The Nature Conservancy The Prairie Enthusiasts The Ridges Sanctuary Waukesha County Land Trust Wisconsin Society for Ornithology Woodland Dunes Nature Center City of Madison City of Superior Town of Bavview Town of Holland Town of Washington Silver Lake Sportsmen's Club WE Energies Board of Commissioners of Public Lands

Kickapoo Valley Reserve



On the cover: Hogback Prairie State Natural Area, Crawford County; photo by Tyler Boudry. DNR staff photo contributors: Andrew Badje, Armund Bartz, Ryan Cressey-Smith, Kevin Doyle, Pete Duerkop, Dean Edlin, Nate Fayram, Heather Kaarakka, Josh Karow, Ryan Magana, Thomas Meyer, Ryan O'Connor, Cory Peters, Bridget Rathman, Jared Vander Loop, Jay Watson and Chelsea Weinzinger.

Edited by Lisa Gaumnitz, designed by Jayne Laste and printed at Schumann Printers, Fall River.

The Wisconsin Department of Natural Resources provides equal opportunity in its employment, programs, services and functions under an Affirmative Action Plan. If you have any questions, please write to Equal Opportunity Office, Department of Interior, Washington, D.C. 20240. This publication is available in alternative format (large print, Braille, audio tape. etc.) upon request. Please call 608-267-7490 for more information.