



NATURAL  
HERITAGE  
CONSERVATION  
PROGRAM

2020

FIELD  
NOTES





## A NOTE FROM THE DIRECTOR

MEADOW FELD KIRCHNER

Across the globe, 2020 was a year like no other. Yet amid tribulations, we saw examples of hope and renewal. People visited natural areas and appreciated native wildlife in new ways. Dedicated staff, partners, volunteers and donors worked in earnest to conserve Wisconsin's natural heritage. With your help, we located and conserved

endangered and threatened plants and animals, controlled harmful invasive species and cared for some of Wisconsin's best remaining prairies, wetlands and forests. We created a roadmap for the country's oldest and largest system of State Natural Areas.

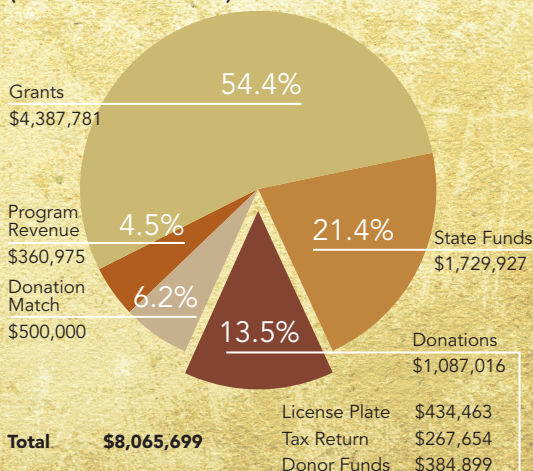
In 2021, we'll unveil a new strategic plan to guide our work. Among our initiatives is to engage many more people in caring for and enjoying nature. We want to connect and collaborate with people from diverse backgrounds who represent all of Wisconsin. We'll invite your ideas and suggestions, and we will be ready to listen. Until then, thanks for your support — and please be well.

Drew Feldkirchner

## YOUR DONATION MAKES A DIFFERENCE

Private donations, including gifts through the Natural Resources Foundation of Wisconsin, are critical for our conservation work.

(FY 2020 Revenue)



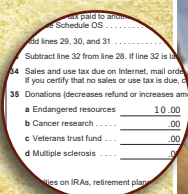
## EASY WAYS TO HELP

- **Donate \$10 to the Endangered Resources Fund on your Wisconsin income tax form**

Your gift is matched by the state, doubling your impact for rare species and State Natural Areas.

- **Buy an Endangered Resources license plate**

Your \$25 annual donation to keep the plate drives the next endangered species recovery.



BECOME A DONOR TODAY: [DNR.WI.GOV](http://DNR.WI.GOV), SEARCH "NHC."



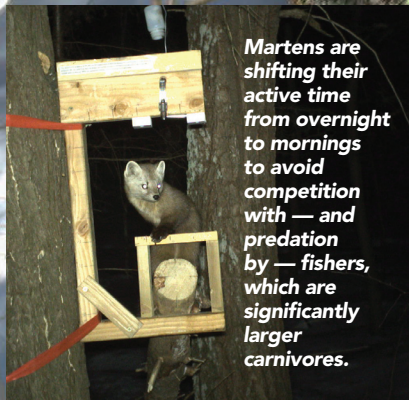


*Martens reaching for a bait expose unique fur patterns researchers use to identify individual animals.*

## **SMILE! TRAIL CAMERAS REVEAL GOOD NEWS FOR MARTENS**

NHC and partners have worked tirelessly for over 50 years to recover endangered American martens. Now, trail cameras are efficiently adding important insights about these secretive nocturnal animals and documenting gains from past marten reintroductions, research and monitoring with partners Chequamegon-Nicolet National Forest, Apostle Islands National Lakeshore, UW-Madison and the Great Lakes Indian Fish and Wildlife Commission.

NHC's trail camera project reveals a stable and sustainable Nicolet population, with a very high annual survival rate of 81%, and documents a shift in active hours to avoid fishers, a larger competitor and predator. Trail camera and genetic research in the Apostle Islands show martens thriving and some animals dispersing to boost mainland Wisconsin populations; genetic testing confirms them as recent migrants from Michigan's Upper Peninsula.



*Martens are shifting their active time from overnight to mornings to avoid competition with — and predation by — fishers, which are significantly larger carnivores.*

TRAIL CAMERA PHOTOS



## **CITIZEN SCIENTISTS BUSY AS BEES**

Wisconsin crawls with an estimated 35,000 to 60,000 invertebrate species — bees, butterflies, leafhoppers, beetles, grasshoppers, dragonflies, mayflies, mussels and snails — and the lack of information for many of these groups makes their conservation more challenging. Wisconsin's bumble bees are a different story. In just three short years, NHC's trained Bumble Bee Brigade volunteers have turned in more than 6,800 observations and documented 17 of 20 species, seven of them rare. That's good news for helping preserve and improve habitat and addressing other threats to these important pollinators of native wildflowers and agricultural crops. Get involved: [wiatri.net/inventory/bbb](http://wiatri.net/inventory/bbb)



JAY WATSON

***The rare indiscriminate cuckoo bumble bee has been found in eight new counties.***



ED BUCHS

***The rare American bumble bee has been found in four new counties.***



JAY WATSON

***Volunteers have helped to identify 167 new sites and 12 new counties with endangered rusty patched bumble bees.***





## NEW STRATEGY TO SAVE THE BEST OF THE BEST

State Natural Areas protect some of Wisconsin's best remaining prairies, oak savannas, wild lakes, old forests and geological and archaeological features. These nearly 700 sites owned and managed by DNR and 60 other partners are also critical to sustain Wisconsin's biodiversity: Populations of 90% of endangered plant species and 75% of endangered animal species live on these sites. Our native landscapes — and the science for how best to protect them — have changed since the first State Natural Area was designated in 1951.

In 2020, NHC staff completed the first strategic plan in 35 years to help preserve these special sites in light of six major threats: habitat loss; alteration of the natural processes that shaped them (e.g., fire suppression, wetland draining, damming rivers); invasive species; high populations of whitetail deer; excessive nitrogen and phosphorus deposition; and climate change. New strategies to manage these challenges provide a framework for establishing State Natural Areas protection and management priorities for the next decade.

*Van Vliet Hemlocks is a triple treat, protecting an ecologically significant lakeshore, wetlands and rare old-growth hemlock-hardwood forests.*



## ONE GOOD TERN DESERVES ANOTHER

A newly refurbished “Ashland Tern Island” helped common terns, one of four endangered tern species in Wisconsin, fledge a state record high number of young — 510 chicks from four colony sites. Habitat loss, predators and chemical contamination have threatened the birds in past years, with habitat loss the greatest threat. NHC and public and private sector partners worked to provide secure nesting habitat. In addition to the Ashland island sites, nests on dredge spoil islands in the Duluth-Superior estuary and on Lake Butte des Morts in Winnebago County, as well as nests at two rafts maintained on Lake Puckaway in Marquette County by the lake district, also contributed to 2020’s high-flying total.



**A common tern and its chicks on “Ashland Tern Island.”**

SUMNER MATTESON



**Island repairs funded by the U.S. Fish and Wildlife Service boosted nesting tern pairs in 2020.**

TED KOHLAR



**Retired DNR wildlife manager Fred Strand with a banded common tern chick in 2020, his 40th year studying the birds on “Ashland Tern Island.”**

SUMNER MATTESON



**Common tern colony on a repurposed raft in Lake Puckaway.**

SUMNER MATTESON



# HABITAT HELP



**SNA crew member Renee Asmann, left, and team leader Bridget Rathman clear away overgrown cedar in winter to allow prairie and savanna plants to thrive.**



U.S. FISH AND WILDLIFE SERVICE

## JACKSON COUNTY WORK HITS A HIGH NOTE FOR KIRTLAND'S WARBLERS

Habitat work on county and national forests to aid the Kirtland's warbler and other pine barrens species hit a high note in 2020 as the small songbird showed in locations where it hadn't been heard for some time. Connie Weedman heard a singing Kirtland's warbler while looking for native prairie plants in the Jackson County Forest and reported it to the DNR; NHC staff and Weedman subsequently visited the site and confirmed three singing males and later sighted a female Kirtland's. These discoveries marked the first time in 13 years of statewide censuses the birds had been found there.

The discovery followed work to restore the jack pine habitat the bird needs. One male was found much farther north in the Chequamegon-Nicolet National Forest where habitats had been restored, the first time in six years one had been recorded there during the breeding season.

**Report your observation of rare species to: [wiatri.net/nhi](https://wiatri.net/nhi)**

## GLOBALLY RARE GLADE RESTORED

Bedrock glade communities are globally rare and are characterized by prairie and savanna plants on very shallow soil over quartzite. Scattered oaks and red cedars grow slowly due to the shallow soil, so are much older than their size might suggest. In some places, trees only grow 20 to 30 feet tall, earning them the nickname "pygmy forests."

In 2019, NHC staff conducting extensive botanical and ecological surveys of Devil's Lake State Park documented numerous rare plants and high quality natural communities, including bedrock glades. Some of the glades were already in good shape, while others were more degraded and needed to be restored to allow sunlight to reach plants.

In 2020, NHC staff and SNA field crews spent a day clearing trees and brush from one degraded glade at the park, opening it up significantly and turning it into the second largest glade at the site. This summer, native plants like skullcaps, spiderworts and shooting stars had already reappeared, a huge success for such a rare community type.

WILL O'CONNOR



## HATCHING SUCCESS FOR RARE TURTLES

Female wood turtles don't lay eggs until they're 14 to 18 years old and then lay only four to 17 eggs a year. So losing even one adult female a year can potentially sink small, local populations. Since 2014, the DNR and partners have studied and monitored these state-threatened turtles and carried out multiple conservation strategies to protect nests from predators and reduce turtles killed crossing roadways. They've created or restored more than 20 nest sites protected with electric fencing and communal nest boxes protecting over 100 individual nests. A minimum of 410 hatchlings have been documented from those sites. DNR wildlife biologists, U.S. Forest Service, Turtles for Tomorrow and private individuals maintain similar sites on public and private land.



At least 16 wood turtles used this communal nesting site in Washburn County.

DAMIAN VRANIAK



Two of 20 hatchlings radio tracked by UW-Madison and NHC survived; most were killed by predators or drowned.

TIFFANY BOUGIE

## STEADY WINS THE RACE

*About the cover photo*

NHC regional ecologist Carly Lapin holds a wood turtle found in 2014 during a multi-state research project to conserve the threatened species. Ongoing surveys like these help NHC better understand the health of Wisconsin's wood turtle population and how to help maintain them.

"In our research, we have been very surprised to learn that female wood turtles will travel as far as 4 to 5 miles to their annual nest sites to lay eggs,"

Lapin said. "They stay in the same home areas year after year and return to the same nesting areas. They must have some amazing internal mapping systems!"

Surveying for wood turtles during the first warm days each spring is among her favorite fieldwork, Lapin added. "It feels great after the long, cold winter. I like to try and predict where we will find them. Sometimes I'm right, and sometimes I'm not, but it's always a good day when you find a wood turtle!"



ANDREW BADJE



Wood turtle

Search online at the Wisconsin Turtle Conservation Program site — [wiatri.net/inventory/witurtles](http://wiatri.net/inventory/witurtles) — for DIY nest cage instructions and video.

ANDREW BADJE



## TURTLES DIG RESEARCH AND ROADWAY SAFETY

Citizen reports to NHC's Wisconsin Turtle Conservation Program have identified 69 previously unknown populations of rare turtles and updated information on 106 known populations since 2012, greatly boosting information to help better conserve these ancient species. Critically, citizens have reported over 3,000 turtle road crossings, and the DNR has been working with partners like Girl Scout Ella Kreuziger to improve turtle safety at particularly deadly sites. In 2020, Kreuziger contacted the DNR about a county highway along the Bark River in Waukesha County. She raised money to pay for stenciling a turtle crossing sign to alert motorists. The county highway department did the work this fall, and Ella received her Silver Award in scouting for helping turtles cross to safety.



*Ella Kreuziger raises money to pay for stenciling a turtle crossing sign and shows off the finished product, below.*

JEREMY KREUZIGER PHOTOS



**YOUR ROAD CROSSING REPORTS ARE MAKING A BIG DIFFERENCE FOR TURTLES.**

Can you help snakes, too? Fill out our Reptile and Amphibian Road Mortality Reporting Form at [dnr.wi.gov/topic/WildlifeHabitat/HelpHerps.html](https://dnr.wi.gov/topic/WildlifeHabitat/HelpHerps.html)



RORI PALOSKI



## FRESH LOOK AT RARE MUSSEL HABITATS

Freshwater mussels are the most imperiled animals globally and in Wisconsin, with nearly half the state's 50 native species endangered, threatened or declining. 2020 brought good news for two very rare species, spectacle case and salamander mussels. NHC biologists documented many new populations of both species in 2019 and 2020 by searching specific habitats not typically sampled for other riverine mussels. Locating more spectacle case mussels has demonstrated good reproduction in localized areas that can be used for future propagation efforts. Meanwhile, NHC and partners are working with Genoa National Fish Hatchery to propagate salamander mussels and place them on mudpuppies, their host species, to deliver the juvenile mussels to waters within their historic range.



**NHC's Jesse Weinzinger, left, and Lisie Kitchel survey for rare mussels on the St. Croix River in 2019.**



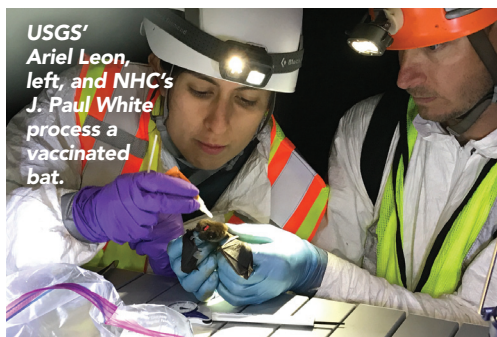
**Spectacle case mussels.**

GREG SEITZ PHOTOS

## HISTORIC VACCINE TRIALS TO SAVE BATS CONTINUE

Wisconsin's four cave bat species are state-threatened and severely impacted by white-nose syndrome, a deadly disease decimating hibernating bats across North America. Since 2014, NHC has worked with the USGS National Wildlife Health Center,

UW-Madison, Mississippi Valley Conservancy and Virginia Tech to develop and evaluate vaccines to help bat populations recover, including undertaking the first vaccine trials in the wild for any disease affecting bats. Two vaccine candidates were tested in little brown bats at two hibernacula in Wisconsin just as the bats were entering hibernation. The field trials demonstrated the vaccines were safe for bats, and at least one vaccine increased survival in males and significantly reduced levels of the fungus causing white-nose syndrome. More trials got underway this fall in Wisconsin to test specific vaccine candidates.



**USGS' Ariel Leon, left, and NHC's J. Paul White process a vaccinated bat.**

TONIE ROCKE, USGS





**Stilt grass chokes out native plants, harms wildlife habitat and reduces tree seedling survival.**



**NHC invasive plant specialist Kelly Kearns hand-pulled stilt grass to keep it from spreading.**

## INVASIVE GRASS MEETS ITS MATCH

Invasive species are a grave threat to native species and landscapes, so the serendipitous discovery and containment in 2020 of an aggressive invasive grass new to Wisconsin was worth celebrating. A volunteer for NHC's Rare Plant Monitoring Program identified the dreaded invasive Japanese stilt grass while checking on rare plant populations in a state forest in La Crosse County, spurring NHC staff and partners to action. They surveyed the property, hand-pulling small patches of the grass, and State Natural Area field crews sprayed larger areas with herbicide. As a result, the stilt grass is being contained. The effort showcases the continued need for quick detection and response, involved citizens and partnerships to protect Wisconsin's ecosystems and economy from damaging invasive species not yet established within our state's borders.



**Volunteer Amanda Weise gives DNR staff identification tips for Japanese stilt grass.**



## TLC FOR RAREST OF RARE PLANTS

Prairie bush clover is the rarest of the rare: a federally threatened plant of prairies, which themselves cover less than 1% of their historic acreage in Wisconsin. In 2020, NHC transplanted seedlings to a Nature Conservancy-owned natural area where cattle grazing and fire maintain the prairie's open structure. The hope is that grazing will reduce competition from prairie grasses and allow the clover to thrive, showing how working farms can also meet conservation goals.

In other actions to restore globally rare plants, NHC Rare Plant Monitoring Program volunteer Ben Johnston carefully checked sandstone cliffs in Vernon County, a stronghold for northern monkshood and the location where Johnston discovered a new population in 2016. Such monitoring work by volunteers allows NHC botanists to focus on other priority plants.

In other Rare Plant Monitoring Program news, volunteer Tara Buehler rediscovered the federally threatened eastern prairie fringed orchid at a site where it had not been seen in six years despite annual surveys. And program coordinator Kevin Doyle was able to hand pollinate it as part of broader efforts to improve the orchid's seed production and genetic diversity.



KEVIN DOYLE

**Transplanted prairie bush clover seedlings.**



U.S. FISH AND WILDLIFE SERVICE

**Grazing may help the clover and its pale pink flowers thrive at the site.**



**Ben Johnston searches a cliff in Vernon County for northern monkshood, a threatened plant.**

**Monkshood**

BEN JOHNSTON

DARCY KIND



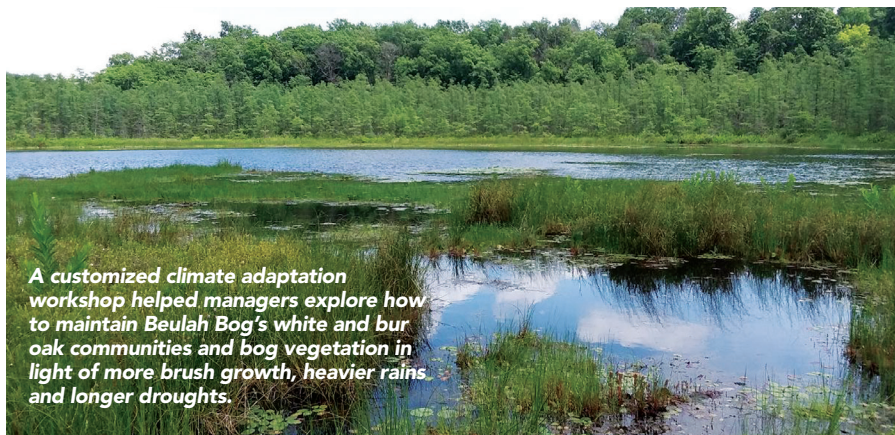
## A CHANGING CLIMATE SPURS ACTION

Climate change is an important consideration for all of NHC's work to conserve species and maintain State Natural Areas. While the conditions shaping natural habitats for Wisconsin's plants and animals have always changed, their evolution can't keep pace with our changing climate. Wisconsin is generally getting warmer and wetter, albeit unevenly across the state. Working as part of the Wisconsin Initiative on Climate Change Impacts, NHC has sought to sustain habitats and native species by analyzing and developing adaptations and offering workshops to help State Natural Area managers translate the science into on-the-ground actions. NHC and WICCI partners are integrating climate considerations as they pursue demonstration projects restoring wild rice beds on Spur Lake in Oneida County and wetlands on a Winnebago County site farmed for over a century. As another example, NHC conservation biologists contributed significantly to WICCI's recent report to the Governor's Task Force on Climate Change, identifying impacts to Wisconsin communities, natural resources and economy and recommending solutions including incentives for property owners who place their land into conservation easements and agree to restore the land to promote native plants and natural communities.



**NHC regional ecologist Carly Lapin works to clear Twin Lakes Creek, hoping to revive wild rice on Spur Lake.**

BEN MEYER



**A customized climate adaptation workshop helped managers explore how to maintain Beulah Bog's white and bur oak communities and bog vegetation in light of more brush growth, heavier rains and longer droughts.**

THOMAS MEYER



## CITIZEN SCIENTISTS SHINE WHILE SAFER AT HOME

Sales of bird feeders, fishing licenses and camping gear soared in 2020 as people turned to nature to help cope with the COVID-19 pandemic. Many used their increased time outdoors to help Wisconsin's rare species by reporting the plant and animal species they saw at home, in local and state parks or while safely distancing on the road. Checklists submitted to Wisconsin eBird surged 27%, bumble bee sightings to NHC's Bumble Bee Brigade exceeded the total from the previous two years, and rare species were documented in new locations, adding information that helps NHC better understand species populations and work to conserve them. Importantly, too, these citizen observations confirm that native plant gardens in urban, suburban and rural areas are making a difference and providing important habitat for pollinators. Find information to help add native plants to your garden: [dnr.wi.gov/topic/endangeredresources/nativeplants.html](https://dnr.wi.gov/topic/endangeredresources/nativeplants.html)



JOEL TRICK/WIL99844361

**Kay Kavanagh credits the Blackburnian warbler as the species that jumpstarted her life as a birder.**



**Kay Kavanagh often birds by bike when conditions allow.**

COURTESY OF KAY KAVANAGH

## MVP LIFTS WISCONSIN AVIAN CITIZEN SCIENCE

In the last two years, Kay Kavanagh has been the MVP of the Wisconsin birding world. In July, she submitted the 1 millionth checklist from Wisconsin to the online platform eBird, helping lift Wisconsin to an

avian citizen science feat accomplished by only one state with a similar population, Oregon. Her 22,000-plus checklists are more than any other Wisconsin birder has turned in, and she accounted for 78% of the checklists submitted from her home Florence County for the Wisconsin Breeding Bird Atlas II. This comprehensive five-year survey engaged more than 2,000 volunteers in surveying over 1,300 specific blocks of land to document bird species nesting in Wisconsin.



## BOB AND SUE VOLENEC

Newly retired dairy farmers Sue and Bob Volenec jumped into monitoring natural resources after a field trip sponsored by the Natural Resources Foundation to one of the state's largest bat hibernation sites.

"We were then invited to help/watch a bat tagging evening. It was fascinating, and we were hooked," Sue Volenec said.

"We were used to being outdoors, used to interacting with the environment for the benefit of wildlife along with our agricultural practices, and used to continuously learning new information. Once we were part of the monitoring network, new opportunities to monitor

and become involved just kept popping up."

Their volunteer work now includes monitoring bat roosts; listening for frog calls; sampling water quality for the Citizen Lake Monitoring Network and Rock River Coalition; and surveying

***Sue and Bob Volenec, with birding mentor Karen Etter Hale, right, used a canoe in 2018 to survey hard-to-reach areas in Jefferson County for the Wisconsin Breeding Bird Atlas II.***

birds for Madison Audubon, the International Crane Foundation, the Chimney Swift Working Group, American Kestrel Project and the Wisconsin Breeding Bird Atlas II. They encourage others to become stream monitors by volunteering at public events and visiting local schools to teach children about the importance of streams. Their track record helped earn them an Outstanding Achievement Award in 2020 from the Wisconsin Citizen-based Monitoring Network and the DNR.

Sue Volenec said the couple does not have a favorite activity but likes learning new information, encountering the unexpected and knowing their data "will help preserve our natural environment and the species that live within it."

## LICIA JOHNSON

"Growing up in the Northwoods, we often had bats in our house, and I was honestly scared of them," said Licia Johnson, a longtime educator at the North Lakeland Discovery Center in Manitowish Waters.

Her trepidation turned to appreciation in 2010 after hearing the late Dave Redell, a DNR bat biologist, recruiting for a new effort to train volunteers to survey for bats using equipment that detects and records bat calls. "He had a captive big brown bat, Miss Biggs; she stole my heart.

And after hearing about how important bats are to the natural world, and hearing of the devastating effects of white-nose syndrome to bat populations out East, I knew this was a project we (the North Lakeland Discovery Center) needed to be a part of."

Since then, Johnson has trained over 120 people to conduct acoustic bat monitoring surveys, coordinated their efforts and equipment, and led over 20 bat education programs for schools and community groups each year. Her contribution was recognized with an Outstanding Achievement Award for 2020 from the Wisconsin Citizen-based Monitoring Network and the DNR.

"Getting to experience the natural world during a time when most folks are inside sleeping is really special," she said. "My greatest joy comes from training new volunteers and hearing about their first experience surveying. Some have told me it was the most incredible thing they have ever done and a dream come true to experience the night in such a way."



***Licia Johnson gives people a close-up view of Eugene, a big brown bat living at North Lakeland Discovery Center.***





# FOLLOWING IN THEIR FOOTSTEPS

*Donor carries on  
her family's  
commitment  
to conservation*



Caring for Wisconsin's native species and natural areas is in Gigi La Budde's DNA.

"I was steeped in it," said La Budde, who camped and fished with her parents, explored forests and fields with her entomologist grandfather (maternal), and listened to stories of her paternal grandmother's efforts to preserve Horicon Marsh, require environmental education in Wisconsin schools and pass protective laws for raptors.

In 1990, Wilhelmine La Budde became the first woman inducted into the Wisconsin Conservation Hall of Fame. Among the many words of wisdom she passed on to her granddaughter: "Preserving and cherishing our natural resources is the highest form of patriotism."

Gigi La Budde carries on these family values by restoring the woodlands on her 40-acre property near Spring Green and helping other landowners

do the same. She draws on her background as an ecologist for several Midwest sustainable woods cooperatives, an employee of a native plant nursery and an environmental educator. "It's exciting to see people getting to know their land, develop deep connections and understand the importance of their actions ... or their failure to take action."

It's important to her, too, that DNR's Natural Heritage Conservation staff have the funding they need. "I've had

an endangered resources license plate for 20 years and we've done the Wisconsin Environmental Resources tax checkoff for as long as it's been available," she said.

"A long-established statewide agency like the DNR that operates for the public good can make a real difference. So many of my mentors and colleagues are from the DNR, and these people are among the most knowledgeable, committed, professional people I've had the privilege of working with. They have a vision and they apply it with passion to their work — every day. That's inspiring."

*Learn how you can join Gigi La Budde and other Wisconsin residents and visitors in donating to the Endangered Resources Fund: [dnr.wi.gov/topic/EndangeredResources](http://dnr.wi.gov/topic/EndangeredResources).*

*Learn more about Wilhelmine La Budde on the Wisconsin Conservation Hall of Fame website: [wchf.org](http://wchf.org).*



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.