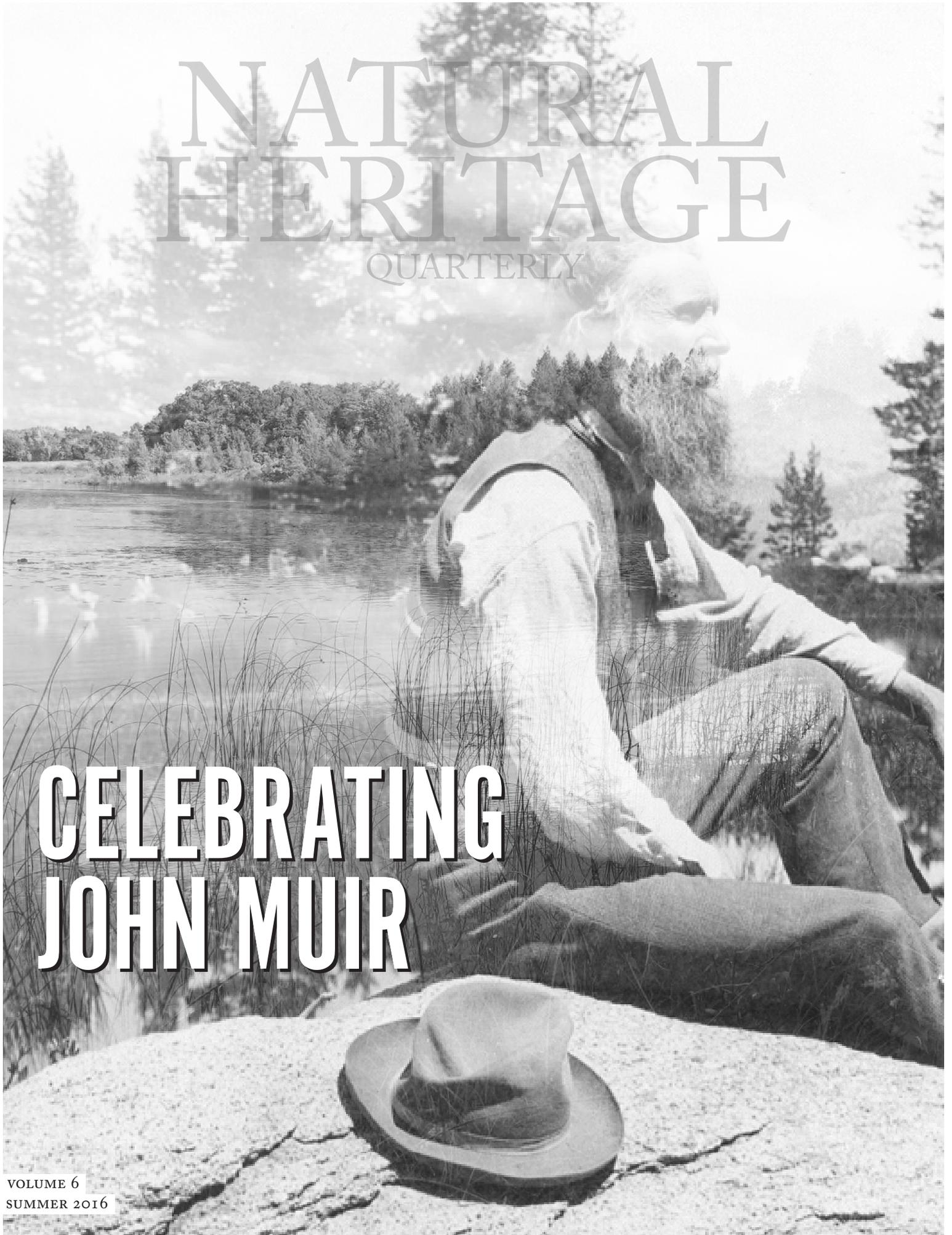


# NATURAL HERITAGE

QUARTERLY

## CELEBRATING JOHN MUIR

VOLUME 6  
SUMMER 2016



## Editor's note

This summer our country celebrates the 100th anniversary of the National Park Service and Wisconsin's role in what writer and historian Wallace Stegner (another conservation giant with a Wisconsin connection) called "America's best idea." John Muir, recognized as the father of our national parks, spent his childhood in Wisconsin and was deeply influenced by the prairies, wetlands and oak savanna he explored here in the mid-1800s. Our summer issue provides information about ways to learn more about Muir's role and his eloquent writings that have influenced so many Wisconsin conservationists.



We hope the information and resources in our summer issue can help you achieve your own conservation goals on your land and maintain and restore the landscapes Muir loved so well. Conservation biologist Alex Wenthe advises on using timber harvest as a management tool, DNR Science Services fire researcher Jed Meunier, the great-grandson of another towering Wisconsin conservation figure Aldo Leopold, sheds light on which season holds the best opportunity for prescribed burns, and conservation biologist Lucas Olson introduces a new effort to help recognize landowners like you for your stewardship of Wisconsin's native plants and animals.

Sincerely,

Lisa Gaumnitz  
Wisconsin Department of Natural Resources  
Bureau of Natural Heritage Conservation  
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## Calendar of events

### July

#### Public input sessions on federal conservation programs

When: July 15–Aug. 3

Where: various Wisconsin locations

#### [Buffalo County Bluff Prairie Tour](#)

When: July 29

Where: Durand, WI

#### [Forest Communities of Southeastern Wisconsin](#)

When: July 29 & 30

Where: UW-Milwaukee Field Station, Saukville, WI

### August

#### [Native Shrub Identification session](#)

When: Aug. 2

Where: Barneveld, WI

#### [National Park Service 100th anniversary celebration](#)

When: Aug. 6

Where: Montello, WI

#### [Wisconsin Master Naturalist Training Course](#)

When: Aug. 22

Where: Hartman Creek State Park, Waupaca

### September

#### [Upper Midwest Invasive Species Conference](#)

When: Sept. 1

Early registration deadline

#### [Land Management Workshop](#)

When: Sept. 17

Where: Barneveld, WI

#### [Native by Design: Gardening for a Sustainable Future](#)

When: Sept. 18

Where: UW-Arboretum, Madison, WI

#### [Where Ecology Meets Economy](#)

When: Sept. 21

Where: Menomonee Falls, WI

### October

#### [Wisconsin Bat Festival](#)

When: Oct. 1

Where: Milwaukee, WI

# MUIR

## PLACES TO GO AND THINGS TO READ

John Muir, father of our national parks, grew up in Wisconsin and was deeply influenced by our landscapes. On the 100th anniversary of the National Park Service, we celebrate his role in creating them and in developing Wisconsin's conservation ethic.

### [Wisconsin's John Muir: A Traveling Exhibit and Reading Program](#)

Public libraries and historical societies in 25 communities host the Wisconsin Historical Society's free Muir exhibit. As well, the society has compiled Muir's most famous writings online.

### [John Muir Memorial Park and Ice Age Trail](#)

Part of the original Muir homestead has been preserved as a county park and features a 2.3-mile segment of the Ice Age Trail and a state natural area. From Montello take County Road F, 7 miles south to the park entrance on the east.

### [Eggleston/Muir Natural Heritage Land Trust acquisition](#)

More of the original Muir homestead is now open to the public through the acquisition of the former Bessie McGwin Eggleston farm. Enjoy a historical kiosk, a portion of the original barn wall and bluebird trail.

### [Marquette County John Muir Nature and History Route](#)

Explore 22 sites that directly touched Muir's life or tell what life was like in Marquette County in the 1800s. All sites are marked with signs and can be accessed with a QR code.

### [Marquette County Saunter Sites](#)

John Muir encouraged people to saunter, not hike so enjoy leisurely strolls through 20 sites including boyhood haunts and prairies, wetlands, woodlands and lakes he explored. Download the brochure or find it at most Marquette County businesses.

### [National Park Service 100th Anniversary Celebration, Aug. 6, John Muir Memorial Park, Montello](#)

Speakers from the NPS, historians, exhibits, hikes, field trips and more explore Muir's role in creating our national parks. Pre-registration is required.

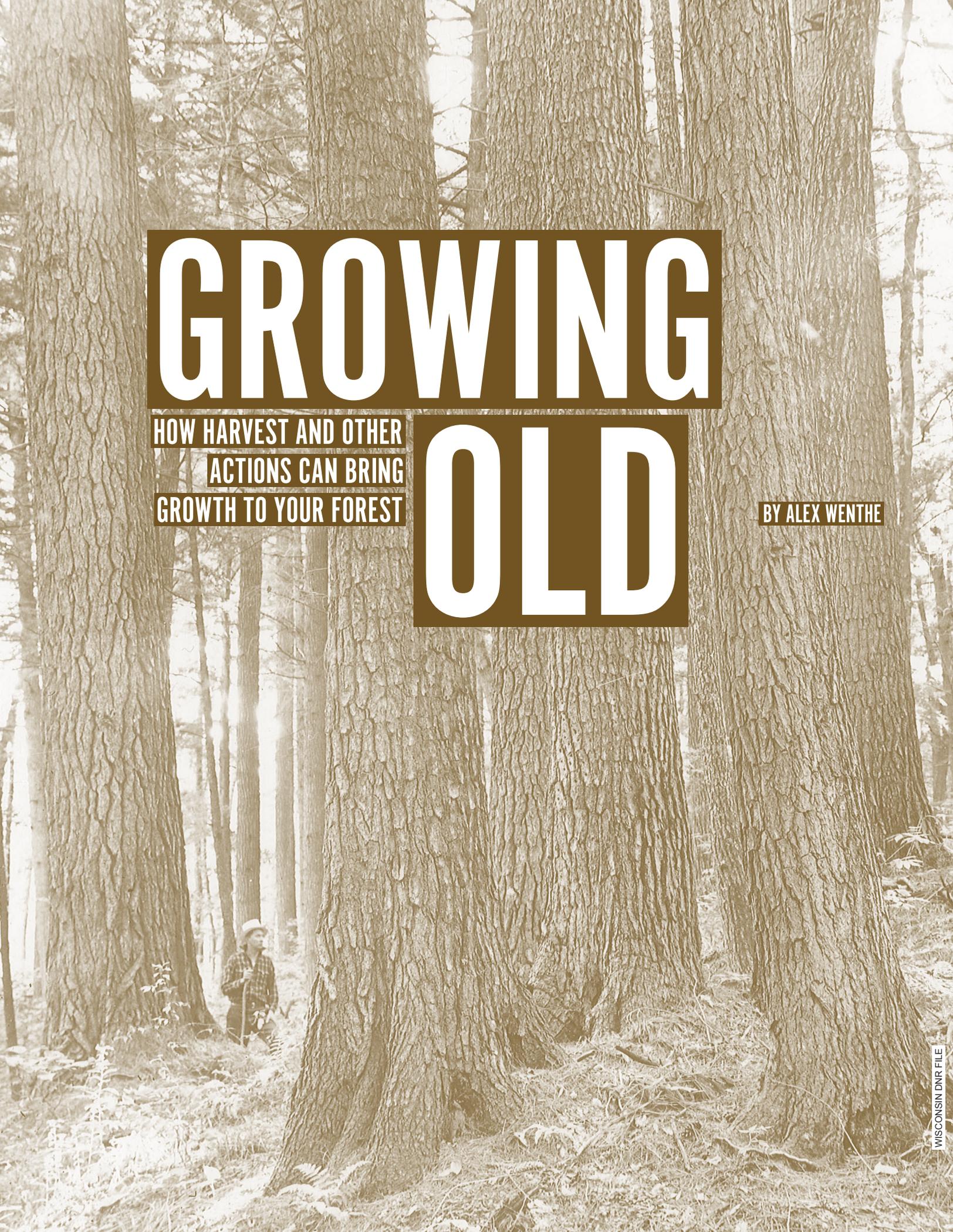
## NATURAL RESOURCES MAGAZINE ARTICLE

John Muir would escape to Observatory Hill from the long, harsh work days on their Fountain Lake farm and the strict religious teachings of his father, Daniel.

"Excepting Sundays, we boys had only two days of the year to ourselves, the 4th of July and 1st of January...They were usually spent on the highest rocky hill in the neighborhood, called the Observatory..."

More than 165 years after Muir first explored the Wisconsin wilderness and Observatory Hill, Wisconsin partners are embarking on an audacious and urgent project to restore this favorite boyhood haunt and a wellspring of his wilderness gospel.

[Read the Natural Resources Magazine article](#)

A sepia-toned photograph of a forest. The image is dominated by the vertical trunks of large, mature trees, likely oaks, which are spaced out across the frame. The ground is covered in a dense layer of ferns and other forest floor vegetation. In the lower-left background, a person wearing a hat and a plaid shirt is visible, standing among the trees. The overall lighting is soft and natural, suggesting a forest interior.

# GROWING

HOW HARVEST AND OTHER  
ACTIONS CAN BRING  
GROWTH TO YOUR FOREST

# OLD

BY ALEX WENTHE

One can only imagine what the early European settlers must have thought when they arrived at Wisconsin's virgin forests with nothing but a crosscut saw. These forests contained enormous examples of pine, oak, maple, birch and hemlock and were becoming increasingly desirable as the eastern forests were largely harvested and our young country was continuing to grow.

Eventually during the 19th century and early 20th century, nearly all of Wisconsin's forests fell to the saw. At the same time, land use was changing. Wisconsin was becoming more populated and the landscape fragmented by settlers, with many of the newly harvested areas used for homesteads and crop fields. This new land use greatly altered the types of trees and other species in the forest that regrew. Today only a handful of true old

## HOW OLD FORESTS DIFFER FROM OLD-GROWTH FORESTS

Old-growth forests are biologically old and have nearly reached their climax community, sometimes called a "steady state." They contain trees which are nearing or beyond their average expected lifespan. The structure of the forest has become more complex and varied and will appear very different from when the stands were younger and were dominated by trees mostly of the same or similar ages. The maximum lifespan of Wisconsin's trees can vary greatly from one species to the next, so overall stand age will vary based on factors like dominant species and site characteristics.

In Wisconsin, it is more common to find old forests that haven't yet reached old-growth stage but are now starting to develop some of the characteristics. These forests are still evolving and species composition can still be changing. The dominant species may be nearing the end of their average life spans, and animals associated with old forest may be present.

growth forests remain in Wisconsin.

Fortunately, if there is one thing a forest is good at, it's growing. So there are opportunities for old-growth forest on public and private land. And there are things you can do to simulate old growth characteristics on your land including leaving snags, diversifying species composition and following certain timber harvest practices.

It may sound a little contradictory – cut trees to promote old growth? But as Ryan Magana, a state natural area land manager, says, "a well-planned harvest may be able to

accelerate the conversion of a forest to long-lived tree species."

## STATE NATURAL AREAS PRESERVE SMALL POCKETS OF OLD-GROWTH FORESTS

True old-growth forests are extremely rare in Wisconsin. Small pockets still exist and play a critical role in preserving many rare species including threatened and endangered birds, bats, and plants. These areas are mostly designated as [state natural areas](#) and can be visited by anyone. You would expect these old-growth forests to have extremely large trees, but that's not always the case. Nutrient limited areas like cedar glades and bogs can produce dwarf old-growth trees that are the same size as found in a young forest but are more than 300 years old. Good examples are the pygmy forest at Devils Lake State Park or the string wetlands at Cedarburg Bog State Natural Area.

Traditional old-growth forests, in a northern hardwood stand for instance, only exist in a few places in Wisconsin. Most of the older areas are considered old forest and have the potential to become old growth over the long term.

## HARVEST AIDS OLD-GROWTH GOALS ON MOOSE LAKE STATE NATURAL AREA

DNR's State Natural Areas program uses timber harvests to successfully complete a wide range of management goals on some of the most sensitive properties in the state. In 2016, plans are in place to complete harvests that will promote habitat for rare species, help regenerate native trees and aid the conversion to long-lived species. The long-term goal is to establish old-growth forest and these initial harvests are intended to set the stage for reaching that goal.

[Moose Lake State Natural Area](#) is one of the sites slated for multiple harvest practices in 2016-2017 with the long-range goal of establishing a type of old growth forest.

Magana, a DNR Natural Heritage Conservation ecologist and state natural areas manager for northwest Wisconsin, has plans for properties like Moose Lake that have excellent potential to become old growth forests. He also has a lot of foresight. He knows that the properties he works on now will not be true old growth forests in our lifetime but are meant to preserve areas for our grandchildren to enjoy.

To that end, he has worked with DNR Forestry staff from the Mercer ranger station to establish two initial timber harvests at Moose Lake. While NHC staff establish the long-term management goals for SNAs, forestry staff provide the technical knowledge, on-the-ground work and timber sale administration that is essential for reaching the long-term property goals. Needless to say, the NHC program is grateful to forestry for filling this critical role in the management process.

Harvests on public land are part of a larger master plan or forest management plan that considers other properties in the area to maintain a balanced landscape. Moose Lake provides a wonderful example of a large, undeveloped lake in a wilderness setting that is largely surrounded by industrial forest and Iron County Forest. These surrounding forests are already being managed intensively for timber production, with many areas comprised of young forest and short-lived tree species such as aspen.

Moose Lake provides excellent habitat for wildlife and rare species that use older forest types while also providing timber resources. The property contains a diversity of wetland communities surrounding the lake, including



ERIC EPSTEIN, WISCONSIN DNR

communities surrounding the lake, including areas of lowland conifer and hardwoods dominated by black spruce, white cedar and black ash. The upland forest surrounding the lake has pockets of higher rocky terrain dominated by sugar maple, basswood, paper birch and balsam fir. The site also harbors pockets of old-growth hemlock, especially on the southern end of the property. The high canopy, mature timber and numerous decomposing logs on the forest floor give this site many old-growth characteristics. Dominant trees are hemlock and yellow birch, some more than 2 feet in diameter at breast height and the presence of some standing dead hemlock and yellow birch accentuate these characteristics. Large numbers of wildlife use the area. Bald eagles, northern goshawk and the common loon are found breeding here.



A den tree that was left during a harvest at Bibon Swamp SNA. It provides structural complexity and numerous wildlife benefits to the recently harvested stand.

The [interim forest management plan for the site](#) calls for timber harvest of aspen and northern hardwoods in the northern portion of the property where the forest is younger than in areas on the south end of the property. The goal is to both increase the growth and vigor of the stands and also facilitate the longer-term conversion of aspen to longer-lived species like hemlock-hardwoods.

## OPTIONS TO WEIGH FOR YOUR LAND

There are as many options to manage your land as there are trees in the forest, and not all forests are good candidates for old forest management.

Regardless, there are many things you can

## THINGS YOU CAN DO TO SIMULATE OLD-GROWTH CHARACTERISTICS ON YOUR LAND BEFORE, DURING AND AFTER A HARVEST

### LEAVE SNAGS & DEN TREES

Leave more dead-tree or cavity trees per acre. This will create habitat for many birds, mammals, and insects as well as increase nutrients in the soil.

### DIVERSIFY SPECIES COMPOSITION

Consider increasing species diversity throughout your woodlot. Historically, old growth forests could have a large diversity of species. Many species have been reduced over the last 200 years. This practice also will help add to the resiliency of your woodlot against threats like emerald ash borer and oak wilt. Following are standard industry practices to promote desirable native species.

**Oak** - Requires increased sunlight to the ground floor, often through canopy gaps. May require Timber Stand Improvement or in the future.

**White Pine** - Seed source has been greatly reduced over the last 200 years. Consider planting white pine in dry to mesic areas to increase stand diversity.

**Jack Pine** - Seed source has also been greatly reduced over the last 200 years. It provides wildlife habitat for many rare species. Timber plantings can provide as much production volume in plantings as red pine (in certain areas) while increasing seed source for adjacent lands.

**Hemlock** - Preferred deer browse makes regeneration of hemlock extremely difficult. Consider caging or strategically placing brush piles around seedlings to reduce deer browse.

**Yellow Birch** - Slow growing hardwood species that requires specific conditions to thrive, including sunlight and mineral soil for germination. Gaps

are often cut on the east side of a large yellow birch tree (prevailing winds from the west). Often this can be done in conjunction with other harvest practices where large gaps in the canopy will be created.

### CONSIDER BIG TREE SILVICULTURE

Big tree silviculture is a guideline identifying practices that can be applied to accomplish specified forest management goals and objectives in selected stands. Big tree silviculture refers to the cultivation of long-lived, large diameter trees, either as entire even-aged stands or as reserve trees within stands of smaller sized trees. Big trees are retained until they approach senescence (biological maturity) or can be retained in perpetuity as “wildlife trees”.

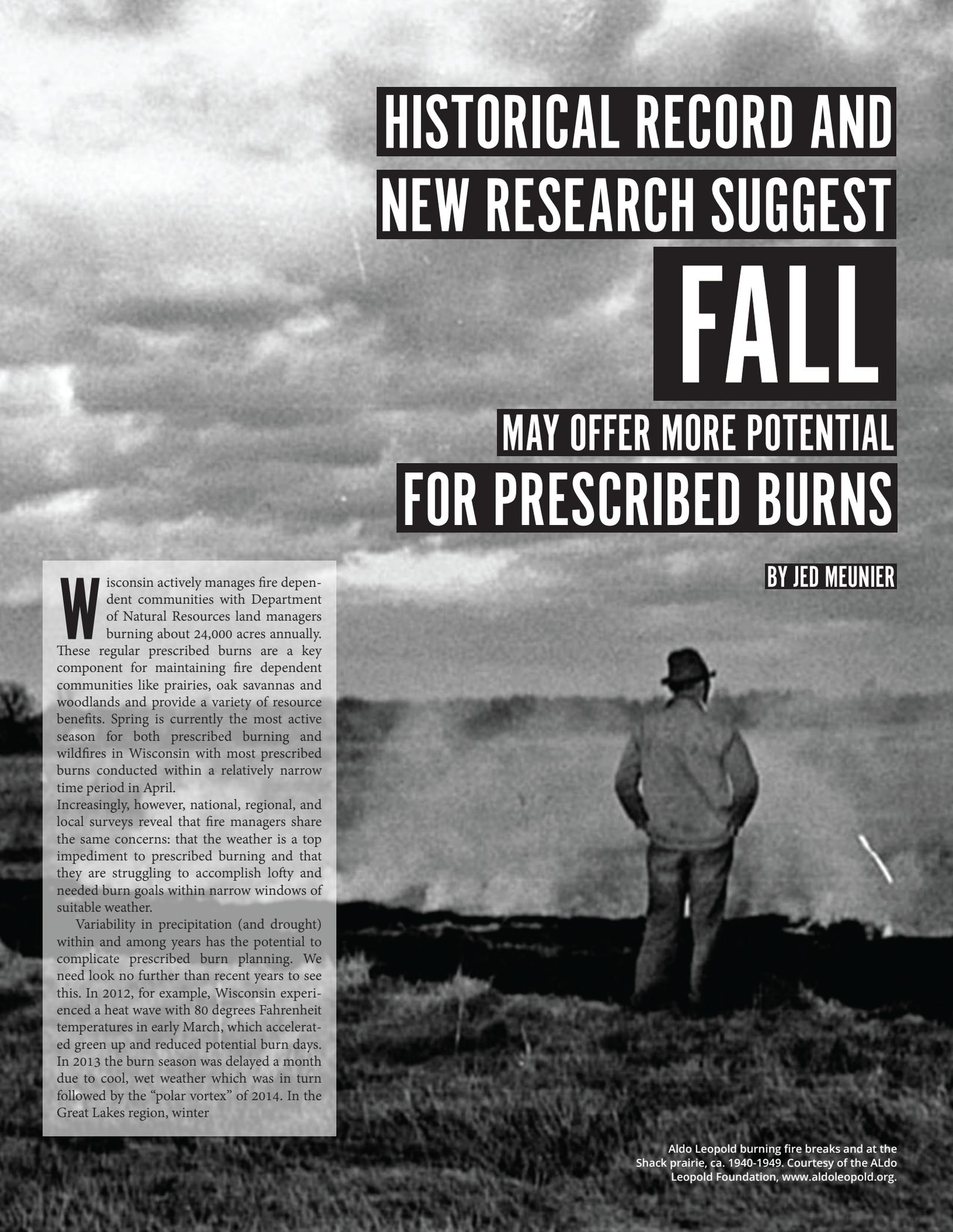
do to enhance old growth habitat on your land and benefit many of Wisconsin’s native species. You can do these any time, but doing them during harvest allows you to take advantage of the equipment already out there in your forest.

Typically landowners enrolled in the Managed Forest Law program or other forestry stewardship programs must follow the guidelines presented in the DNR’s Silviculture Handbook, the handbook does provide opportunities for a variety of different objectives.

All foresters must meet specific productivity standards for each sale, including a “standard order of removal” that they must follow. However, foresters also have great respect for the goals of the landowner.

“The bottom line is that depending on landowner goals, numerous wildlife trees can be retained during harvest,” Magana adds. “Landowners who are interested in establishing old growth characteristics should get informed about both forest productivity and old forest attributes when a sale is established on their property.”

Whether privately or publicly owned, old forests can provide critical habitat for rare and declining species throughout the state. With long-term vision and management these forest types can return to the Wisconsin landscape. There are many things you can do to encourage old growth characteristics on your land. Be sure to consult with your forestry professionals about what is right for your property. And don’t be afraid to grow old... forests.



# HISTORICAL RECORD AND NEW RESEARCH SUGGEST FALL MAY OFFER MORE POTENTIAL FOR PRESCRIBED BURNS

BY JED MEUNIER

**W**isconsin actively manages fire dependent communities with Department of Natural Resources land managers burning about 24,000 acres annually. These regular prescribed burns are a key component for maintaining fire dependent communities like prairies, oak savannas and woodlands and provide a variety of resource benefits. Spring is currently the most active season for both prescribed burning and wildfires in Wisconsin with most prescribed burns conducted within a relatively narrow time period in April.

Increasingly, however, national, regional, and local surveys reveal that fire managers share the same concerns: that the weather is a top impediment to prescribed burning and that they are struggling to accomplish lofty and needed burn goals within narrow windows of suitable weather.

Variability in precipitation (and drought) within and among years has the potential to complicate prescribed burn planning. We need look no further than recent years to see this. In 2012, for example, Wisconsin experienced a heat wave with 80 degrees Fahrenheit temperatures in early March, which accelerated green up and reduced potential burn days. In 2013 the burn season was delayed a month due to cool, wet weather which was in turn followed by the “polar vortex” of 2014. In the Great Lakes region, winter

Aldo Leopold burning fire breaks and at the Shack prairie, ca. 1940-1949. Courtesy of the Aldo Leopold Foundation, [www.aldoleopold.org](http://www.aldoleopold.org).

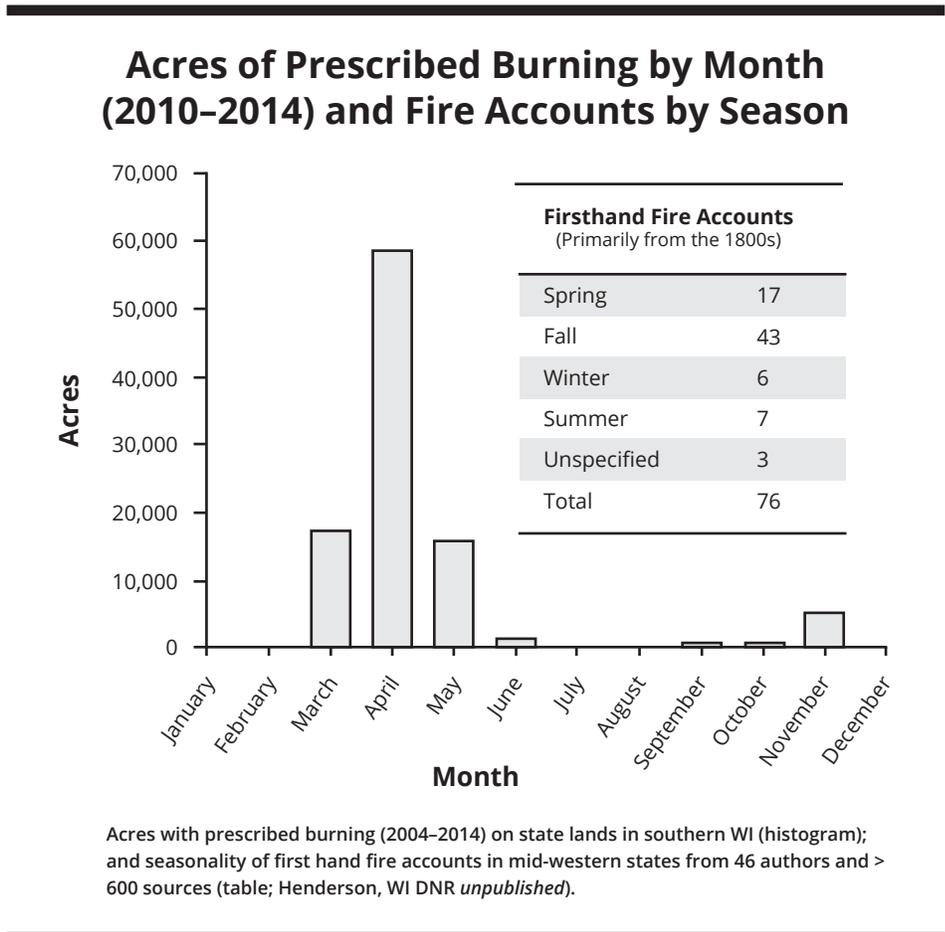
and spring precipitation is only projected to increase and recent research has found that rainfall events greater than 3 inches per day increased in Wisconsin by 203 percent from 1961 to 2010; much of this increase occurred in spring. Anecdotally, it seems that it is becoming increasingly difficult to implement prescribed fires within suitable prescription ‘windows’ (e.g. ranges of relative humidity, wind, temperature, moisture, etc.), a sentiment confirmed by land managers.

### RATIONALE FOR TIMING

There are many opinions, sometimes even dogmatic views, on which season is best to conduct prescribed burns. I have lost track of the number of times I have heard that you cannot get anything to burn in the growing season or that weather in fall does not cooperate and fall burns don’t work. These sentiments are fueled, in part, by a lack of research on fire seasonality in this region. They are also likely rooted in recent traditions. The rationale for burning when we do can generally be boiled down into historical, ecological/phenological and logistical considerations such as suitable burn windows. These same considerations can help address the question of whether we should be burning at different times of the year.

### HISTORICAL & RECENT BURN TRADITIONS

It is generally accepted that Native Americans contributed significantly to the maintenance of prairie and savanna landscapes through their use of fire but it’s difficult to document and substantiate in which season they burned. Firsthand historical accounts of fire use in Midwestern states show that before Euro-American settlement, fires occurred mostly in the fall and were primarily attribut-



ed to fall hunting practices (Henderson, WI DNR unpublished). In fact, many have suggested that the term “Indian Summer” stems from a warm, dry spell after a killing frost in fall when fires burned extensively. Spring fires were more often attributed to Euro-American settlers clearing land so our recent traditions may in fact be at odds with historical practices.

### ECOLOGICAL AND PHENOLOGICAL CONSIDERATIONS FOR TIMING OF BURNS

Spring, summer and fall fire will all suppress or promote a different suite of species based on plant characteristics and general phenology (timing of leaf out, flowering, etc.). The different ecological goals and complexities with timing of burns are too numerous to

**THE SKY IN THE NIGHT TIME IS A FIERY RED, AND THE SMOKE IN THE DAY PREVENTS THE SUN FROM BEING SEEN UNTIL 10 O’CLOCK IN THE FORENOON. THIS SMOKY SEASON IS WHAT IS CALLED HERE INDIAN SUMMER –NEWHALL, 1821**

cover here, but if our goals include diversity then timing of burns also should be similarly diverse. One of the primary objectives of prescribed burns in our region, for example, is to knock back woody plant species. There will be important differences in vulnerability to timing of fire even among woody plants, but generally these plants are more easily damaged by fires during the growing season.

### WHEN ARE OUR OPPORTUNITIES TO BURN?

I have initiated research to look at burn windows among seasons, particularly spring (March-May) and fall (September-November) as a way to understand opportunities and challenges with planning and conducting prescribed burns. I suspected that fall would add some opportunity for prescribed fire use but what I found was surprising. In comparing the number of potential burn days - days with suitable ranges of precipitation, temperature, wind speed, and relative humidity- I found that there were more suitable burn days in fall than spring for every year we looked at, and that held true across all regions we studied in southern Wisconsin. For most years, these differences were statistically significant, not likely attributed to chance.

When looking at the limiting factors for each weather variable I found that spring was generally more limiting in terms of relative humidity (84 percent of days with relative humidity levels too low to be a burn day were in spring) and temperature (62 percent of unsuitable burn days had temperatures below 35 F). Fall was more likely to have winds

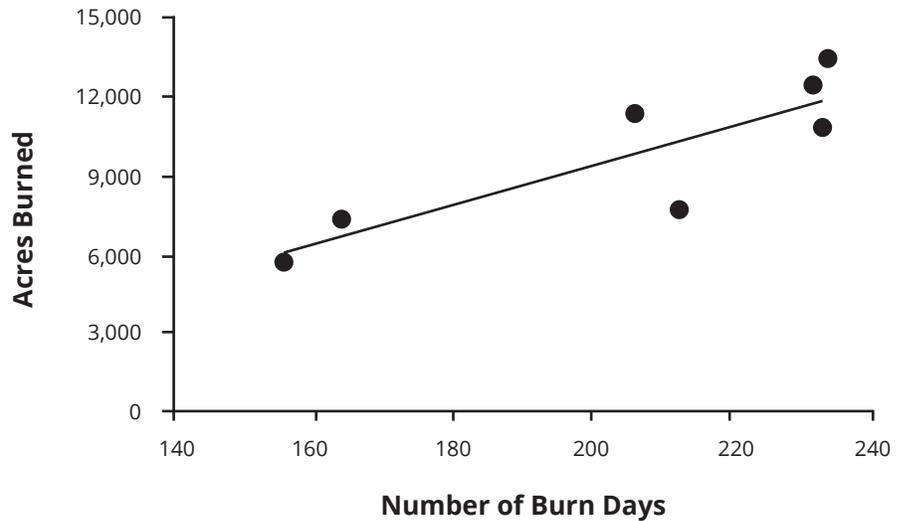
### Ranges of Weather Variables Suitable for Potential Burn Days

Precipitation	≤0.01"
Temperature	35-80° F
Wind Speed	3-18 MPH
Relative Humidity	25-70%

speeds too low for burning although days with wind speeds too high for burning were more likely in spring. I also found significantly more days with rainfall in spring than fall, in terms of number of rain days and amount. This suggests that by almost every weather variable we looked at, fall was less restrictive in limiting the ability to burn on a given day.

We know by comparing records of the number of acres burned on state lands in southern Wisconsin to the number of suitable

## Acres Burned on State Lands Compared to Number of Suitable Days



The total number of acres burned on state lands for southern WI each year compared to the total number of suitable burn days in spring (cumulative among regions/weather stations). The relationship is very close to the line indicating that they are very closely tied (i.e. we are burning everything we can whenever conditions allow).

burn days in spring that we are utilizing every possible burn window we can and that our ability to burn is closely dictated by the number of potential burn days. Aldo Leopold once wrote that “the art of land-doctoring is being practiced with vigor, but the science of land health is a job for the future.” Certainly our land-doctoring, or management, as well as our science have made great gains since

Leopold conducted some of the first prescribed burns for early ecological restorations in the 1930s, but we still have a lot to learn. What this work suggests is that we can, and should, sharpen our use of prescribed fire as a management tool. A good first step is to evaluate when our opportunities to burn occur.

### ABOUT THE AUTHOR



I got my start in fire as a management tool as an intern with the Aldo Leopold Foundation, an organization that my grandmother, Nina Leopold Bradley, and her siblings started. I also did my dissertation research on fire history in northern Mexico where there was no grazing, logging and other land-use changes so prevalent throughout the adjacent U.S. southwest. It was an idea that my great-grandfather, Aldo Leopold, suggested in a 1937 paper called "Conservationist in Mexico." He recognized the potential of the northern Mexico mountains to inform management in the southwestern United States after visiting there and it was for him a life-changing experience. I seem to have stumbled into my great grandfather's work along the way in my own journey, not by design but by chance (to some degree).

I am now an ecologist with DNR's Science Services Bureau and specialize in trying to understand fire, both its role historically on the land as well as current fire-related issues. I have a background in both wildlife ecology and forestry and am interested in the way these fields, and others, intersect with fire ecology. What I love most about fire is that it is a process that transcends different fields of study. Understanding fire-climate relationships are critical for public safety and future planning; wildlife management often depends on the use of fire, and more and more forestry practices try to emulate natural disturbance processes like fire. These are but a few examples but already enough to keep me busy for some time.

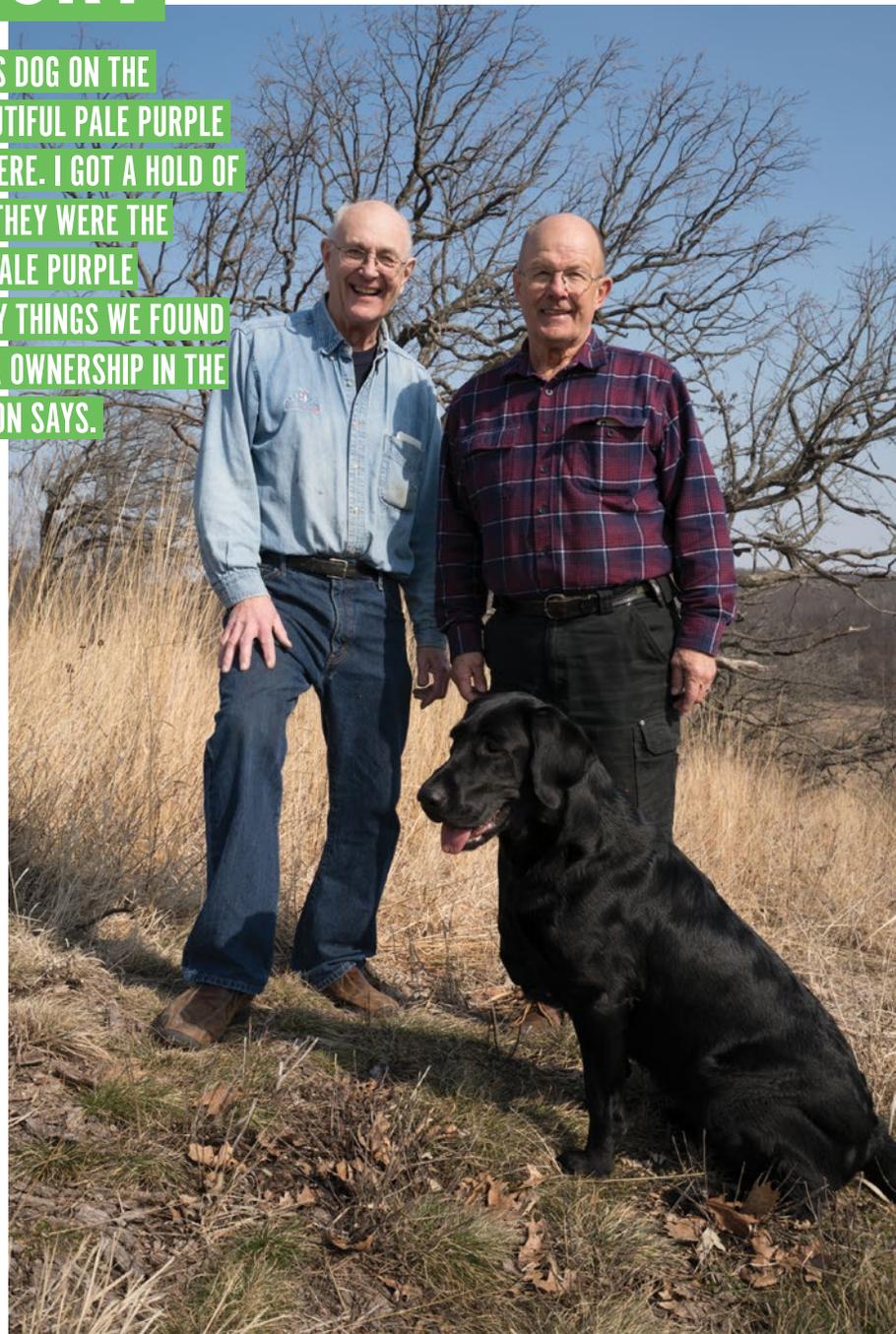


# SHARING OUR STORY

ONE DAY LEE SWANSON WAS WALKING HIS DOG ON THE PROPERTY AND CAME ACROSS FOUR BEAUTIFUL PALE PURPLE FLOWERS. "I DIDN'T KNOW WHAT THEY WERE. I GOT A HOLD OF JERRY AND TOLD HIM AND IT TURNS OUT THEY WERE THE FARTHEST NORTHERN STAND OF NATIVE PALE PURPLE CONEFLOWERS. THE MORE OF THESE NIFTY THINGS WE FOUND AND LEARNED ABOUT, THE MORE WE TOOK OWNERSHIP IN THE CARETAKING OF THE PROPERTY," SWANSON SAYS.

READ THE REST OF THE "SWAMPLOVERS" STORY IN THE JUNE WISCONSIN NATURAL RESOURCES MAGAZINE

[READ MORE](#)



## FUNDING AVAILABLE TO MANAGE RARE SPECIES HABITAT IN DRIFTLESS AREA

Private landowners seeking to restore habitat for rare plants and animals in the Driftless Area can now apply for funding and technical help through DNR's Landowner Incentive Program.



DNR recently received a \$250,000 grant from the U.S. Fish and Wildlife Service's competitive State Wildlife Grants program that will help fund the Landowner Incentive Program's work in the Driftless Area. Portions of the grant also will be used to conduct inventories of priority species and for public lands management in the region.

The program is now accepting project proposals from new and previously-funded landowners. Eligible work may include but is not limited to conducting prescribed burns, planting native vegetation and removing invasive and woody species. Landowners who have received Landowner Incentive Program funding in the past can contact LIP staff directly to receive a project application.

New applicants are required to submit a pre-proposal that allows staff to review the proposed project. A site visit by the LIP biologist also may be needed to assess the project. If the pre-proposal is approved, landowners will be invited to submit a full proposal, which includes a detailed budget, project objectives, work schedule and evaluation benchmarks. Applicants may request funding between \$2,500 and \$25,000; however, most awards are around \$4,000 to \$6,000. Projects generally last one year but may be extended for reasons such as weather complications.

DNR will reimburse a landowner for up to 75 percent of the project cost while the landowner is required to contribute the remaining 25 percent share through out-of-pocket costs (e.g. cash), or as in-kind labor and equipment match. The process is competitive and landowners should visit the [Landowner Incentive Program website](#) to review the project ranking criteria, eligible work and costs for more information.

**Dawn Hinebaugh**  
LIP Coordinator  
[dawn.hinebaugh@wisconsin.gov](mailto:dawn.hinebaugh@wisconsin.gov)

## NEW STATE POLLINATOR PROTECTION PLAN



Phlox moth

LES FERGE

Landowners will find good background information and advice on how to help enhance habitat on your land for pollinators in the [Wisconsin Pollinator Protection Plan](#), recently released by the Wisconsin Department of Agriculture, Consumer Trade & Protection.

Starting in 2014, amid concerns about pollinator declines, honey bee health issues and the future of honey and crop production, the state agriculture department partnered with researchers at the University of Wisconsin-Madison to gather scientific research and information from a diverse array of stakeholders to guide development of the protection plan. Jay Watson, a conservation biologist with DNR's Natural Heritage Conservation Program and Rich Henderson, a DNR research scientist, served as members of the stakeholder group.

Because many pollinator issues affect a diversity of species, the plan focuses on both wild pollinators and managed bees found in Wisconsin and defines a pollinator as any animal that visits flowering plants and transfers pollen from flower to flower, thus aiding plant reproduction. North American pollinators include bees, butterflies, moths, flower flies, beetles, wasps, hummingbirds and in some parts of the southwestern U.S. and Mexico, nectar-feeding bats.

### STATUS OF POLLINATORS IN WISCONSIN

Wisconsin is home to several bumble bee species thought to be in decline, including the rusty-patched bumble bee (*Bombus affinis*), the yellow-banded bumble bee (*B. terricola*) and the American bumble bee (*B. pensylvanicus*). Wisconsin is also home to the federally endangered Karner blue butterfly (*Lycaeides melissa samuelis*) 13 and lies along the central migratory route of the monarch butterfly (*Danaus plexippus*), whose migration was named a "threatened phenomenon" by the International Union for Conservation of Nature. State endangered butterflies and moths include the northern blue butterfly (*Lycaeides idas*), the regal fritillary (*Speyeria idalia*), the Phlox moth (*Schinia indiana*) and several others. For the vast majority of wild pollinator species, there is a lack of data on population status or trends.

In Wisconsin, pollinator-dependent crops account for more than \$55 million in annual production of crops including apple, cranberry, cherry, green beans, pickling cucumbers and fresh market fruits and vegetables. Honey and beeswax are also important commodities in Wisconsin, accounting for \$3.5 million in annual production. During the 2014-15 winter season, Wisconsin was among the U.S. states suffering an annual honey bee colony loss greater than 60 percent and following several harsh winters, Wisconsin's honey production decreased 19 percent between 2013 to 2014, and Wisconsin fell from 10th to 15th in honey production among states.

### PLAN CONTAINS SEPARATE BEST MANAGEMENT PRACTICES FOR DIFFERENT SETTINGS

The plan has a statewide scope and provides best management practices (BMPs) for improving pollinator habitat in different settings, including providing advice on what are good plantings to boost habitat and linking to [DNR's list of native plant nurseries](#).

Sections in the plan include BMPs for: improving pollinator habitat in gardens and lawns; beekeeping; farms, and on prairies, roadsides and open spaces.

## GOT HABITAT?

## GET CERTIFIED AND GET RECOGNIZED



Do you take pride in restoring and conserving wildlife habitat in your backyard, back 40 or campus? If so, there's a new way to get recognized for your stewardship. Wisconsin DNR's new voluntary Natural Heritage Site Program certifies and recognizes properties of all sizes with exceptionally managed wildlife habitat.

By meeting standards of fostering native plant diversity, controlling invasive species, limiting challenges to wildlife and meeting other conservation standards, your property can get certified as a gold, silver, or bronze Natural Heritage Site. You'll receive benefits including a metal sign to display on your property acknowledging your contribution to preserving Wisconsin's natural heritage. Wisconsin will benefit through having more habitat for native species, particularly important in a state where more than 80 percent of land is privately owned. Wisconsin DNR recognizes the benefits your property can offer to our native species, and now others will recognize them too.

### APPLICATION AND CERTIFICATION PROCESS

Getting started is as simple as completing an application form describing your site's characteristics and your management practices, emailing photos confirming your efforts, and paying a nominal fee according to your certification category. Once your site is enrolled, you are eligible to apply for Natural Heritage Site Certification. Sites are divided into five categories, each with their own criteria. The categories are:

- Rural private landowners
- Urban and suburban private landowners
- Businesses and organizations
- Primary and secondary schools
- Post-secondary schools

If your property stacks up to the certification criteria, a DNR biologist or trained volunteer will schedule a visit to verify your site's characteristics and your management practices described in your application. In addition to the environmental, recreational, economic, health and spiritual rewards restored habitat can offer, your certified site also will receive these benefits from DNR:

- Natural Heritage Site certification sign to display outdoors on your site
- Natural Heritage Site certificate to display indoors
- A single point of contact at DNR
- Optional listing on the DNR website
- Optional press releases sent to local media

DNR's goal is to recognize your efforts to conserve wildlife habitat. Your voluntary participation in the Natural Heritage Site Program can be cancelled at any time for any reason. Participating properties do not incur any additional legal requirements or receive tax benefits. Participation also does not require properties to be open to public access.

Certification requires that at least 10 percent of a site not devoted to buildings, paved surfaces, agriculture or athletic is managed for native plants and also requires that the site is NOT purposely cultivated with invasive species. To maintain open contact and better recognize and aid your efforts, site leaders of certified properties are required to submit a brief update on your site annually. To maintain your site's certification, you must reapply once every 5 years.

Whether your property's habitat is already established, in the process of being restored, or only planned, all properties that fall within the categories of the Natural Heritage Site Program are eligible to apply and receive technical assistance from Wisconsin DNR.

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**Lucas Olson**  
Natural Heritage Site Program Coordinator  
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## GREAT WISCONSIN BAT

## COUNT

Thank you to newsletter subscribers who helped us count bats during the June 3–5 Great Wisconsin Bat Count—get ready to count again on July 29–31.

This effort is similar to the Christmas Bird Count where we conduct as many surveys as possible across the state in a single weekend. The two count dates capture the time periods before and after pups begin to fly, allowing us to look at recruitment. The project will help monitor bat colonies before and after the impacts of white-nose syndrome in Wisconsin. That disease of bats was first detected in Wisconsin in 2014 and has since spread statewide.

We've tallied results from our first count in 2016, and what an amazing effort was put forth all over the state! Counts were completed from Bayfield to Janesville, Door County to Grant County.

Without further ado, drum roll please—the total count was 10,367 bats! Last year during the pre-volancy (before pups begin to fly) survey, 7,819 bats were counted.

Total number of bats: 9,742 little brown bats at 37 sites; 616 big brown bats at 16 sites; 9 eastern pipistrelles at 2 sites.

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HEATHER KAARAKKA, WISCONSIN DNR

# PUBLIC INPUT SESSION ON FEDERAL CONSERVATION PROGRAMS IN JULY, AUGUST

Landowners can provide input and help set priorities for the federal conservation programs under the 2014 Farm Bill at meetings in Wisconsin starting July 15.

The Environmental Quality Incentives Program (EQIP), the primary federal conservation program for agricultural and forest lands, which is offered by the Natural Resources Conservation Service, will be the main topic of the Local Working Group meetings, which are open to the public. For more information about the meetings and a schedule of meetings, read the June 10 press release, "[NRCS Conservation Local Work Group Meeting Schedule Announced for 2016](#)."

EQIP offers technical and financial assistance to help landowners with needed conservation practices for water quality, soil health, wildlife and other natural resources. As of May, Wisconsin has received \$19.4 million in EQIP funding for conservation practices this year. The program was re-authorized through 2019 in the federal Farm Bill, which was passed in February 2014.

## ENDANGERED RESOURCES LICENSE PLATE



**Time to renew your license plate? Support the conservation of Wisconsin's rare plants and animals by getting an Endangered Resources license plate.**

**For information on how to get the eagle plate go to our [license plate webpage](#).**

## NATURE NURTURE



ANDREW BADJIE, WISCONSIN DNR

**Confirm breeding birds** for Wisconsin's Breeding Bird Atlas because fledglings abound! Go to [wsobirds.org/atlas](http://wsobirds.org/atlas) to learn more if you haven't already gotten involved in this important five-year survey to help understand bird population trends in Wisconsin. The information you provide can help shape bird conservation efforts for the generation to come.

**Shorebirds start their** fall migration, followed closely by the hatching of some of your backyard favorites. Keep your eyes open for young cedar waxwings, cardinals and goldfinches, all of which can hatch in August or even September! This [Wisconsin Breeding Bird Atlas chart](#) is a quick visual guide to when your favorite birds are nesting or migrating.

**Mow wild parsnip,** yellow sweet clover and white sweet clover after the emergence of flower heads (late June–July). Monitor for additional flowering and do follow-up mowing as needed.

**July into August** is also a key time to report to the Wisconsin Frog and Toad Survey, as the last round of species is calling. See what frogs typically call in this [Calling Phenology chapter](#) from the survey, and help us understand whether these calling times are occurring earlier in the year due to changing environmental conditions. Reporting what you hear will help contribute to our [phenology study](#).

**Bat pups** are flying in July and August and are vulnerable to predators and other sources of mortality because they lack the strength and mechanics to sustain flight and maneuver proficiently as adults do. Juveniles are also learning what entrances to use and which ones to avoid when leaving a roost site, be it a cavity in a tree or an attic space. For these reasons, juveniles during this time of year are prone to entering the living space of homes as they explore their surroundings. If you find one of them in your house or other living area, please remove them using the methods advised by Bat Conservation International on their webpage, "[There's a bat in my house!](#)"

**As August wears** on, bats start migrating. Tree bats move out of Wisconsin and head to warmer climates for the winter, like Florida and Mexico. Cave bats move from summer roosting sites to suitable hibernation sites, like caves, mines, tunnels and other hibernating locations. During this time, bats may be found in peculiar places, sometimes roosting in the open—on buildings, under doorways, on garage doors. Please leave the bats where they are as they are usually only there for a few days to rest and fuel up on the local insect population. If you see bats roosting during this time, please report observations to our email, [DNRbats@wisconsin.gov](mailto:DNRbats@wisconsin.gov).