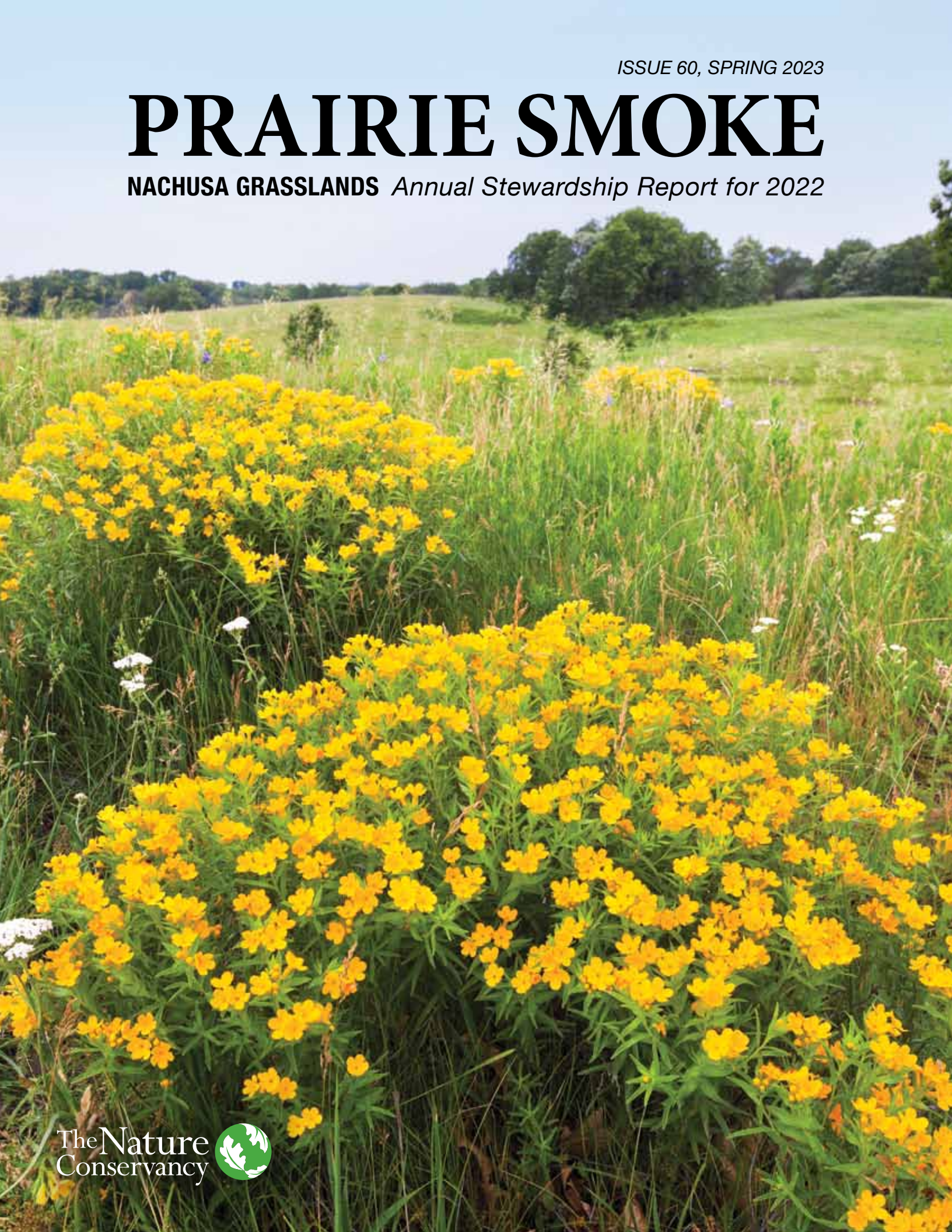
ISSUE 60, SPRING 2023

PRAIRIE SMOKE

NACHUSA GRASSLANDS *Annual Stewardship Report for 2022*



The Nature Conservancy

STAFF L-R: Dee Hudson, Bill Kleiman, Elizabeth Bach, Phil Nagorny, Molly Duncan and Cody Considine at the Chicago office.
© Wright Gatewood

It is late winter and we are loading the prescribed fire equipment and checking the fire breaks for readiness. Then warm weather comes and we hustle to get as many units burned as possible—the landscape fires are what return the health to these habitats. By the end of April, the landscape is full green and we are finishing up with fire. Then we shift to weed management and seed collecting, science and visitors. This work goes all the way to fall, when the cycle begins again with fire and brush thinning. We need volunteer help with all of these tasks and more. We need tour leaders, visitor center docents, handy people to care for buildings and other invaluable volunteers. Thank you for your support in whatever role you have with us!

Bill Kleiman

Donors, With Our Thanks

We are grateful to our donors and volunteers who make our work at Nachusa Grasslands possible. Thanks to your generous support, we have preserved and restored more than 4,100 acres of prairie, oak woodlands and wetlands. Together we have created a world-class model for restoration and are now providing for its long-term survival.

Thank you for believing in the importance of this marvelous project.

Your friends at The Nature Conservancy

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PHOTOS

Front: Hairy puccoon © Dee Hudson
Back: Prairie dawn © Charles Larry
Right: Dwarf dandelion, a native spring annual

Land Steward

BY PHIL NAGORY, *Nachusa Grasslands Land Steward*

© Dee Hudson/TNC

In January 2022, I was hired to be the Nachusa Grasslands land steward. Six years of seasonal work at Nachusa had led to this point. Four of those years were also spent as a wildland firefighter for the U.S. Fish and Wildlife Service in Washington during the summers before always coming back to Nachusa for the winters.

As the land steward, I have a great variety of tasks and responsibilities throughout the seasons. The year begins with brush work—one of my favorites. Heavy equipment is the tool of choice here. Brush mowers, feller bunchers, grapple rakes and chainsaws do most of the work in the winter season. As spring arrives, I check the firebreaks and equipment for readiness. When the weather allows, it's time for prescribed fire season. I lead a crew on most of our prescribed fires at Nachusa, and when I don't, it means I'm likely training someone new to handle that role. Once fire season ends, it is time to start tackling the weeds. For much of the summer, you can find me in a tractor running transects across hundreds of acres looking for a variety of weed species, switching between boom sprayers and mowers to handle the task at hand.

As weed season slows down and fall begins to set in, my job switches yet again to thinking about fire as well as bison management. Prepping fire breaks can take several weeks of mowing, hay raking and leaf blowing every control line for the next season's burn units. Around the same timeframe, I begin preparing the corral for the fall's bison roundup and moving the herd incrementally closer each week. On the long day of the roundup, I help move the animals through the corral system and back out into the prairie.

If we're lucky, we may get a fall fire season as well, and if not, my year ends back where it started—in the cab of a skid steer or with a chainsaw in my hands.

© Bill Kleiman/TNC

© Charles Larry

Nachusa Joins the Buffalo Restoration Movement

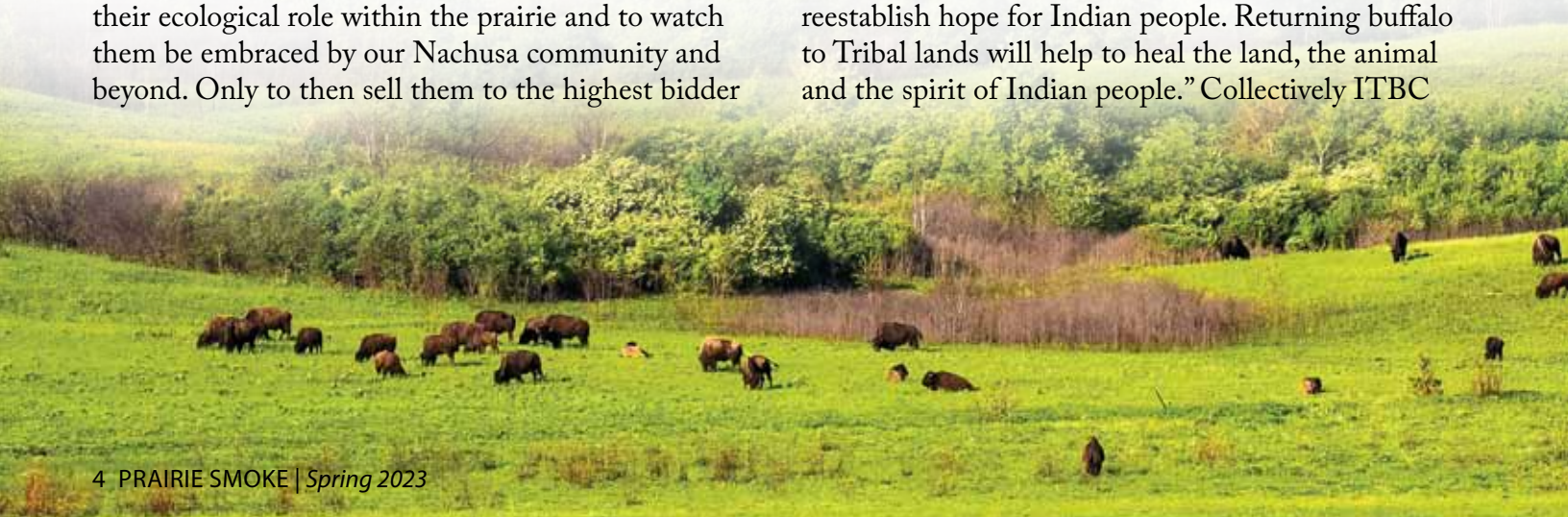
BY CODY CONSIDINE, *Nachusa Grasslands Deputy Director*

Over the past few years, you may have heard snippets about the exciting new partnership we've been codeveloping with Native Nations and Tribal communities through our buffalo program. Nachusa began this journey in 2020 and has since helped spark a larger effort across The Nature Conservancy (TNC) to support the return of buffalo to Indigenous lands and communities throughout the country.

Buffalo are a keystone species whose ecological role is integral to thousands of other natural relationships, which is the reason they were brought to Nachusa in 2014. By 2018, the herd had reached its targeted size to support desired conservation outcomes across the preserve. To maintain healthy stocking rates, surplus animals must be removed from the herd to prevent overpopulation. Following TNC protocols, we conducted public sales of our surplus bison in 2018 and 2019. After an unfavorable experience with one of the buyers in 2019, we began to reevaluate the way we manage Nachusa's surplus buffalo. It has been such an amazing feeling to know and understand all the decades of restoration effort it took to bring buffalo back in 2014, to see them thrive and provide their ecological role within the prairie and to watch them be embraced by our Nachusa community and beyond. Only to then sell them to the highest bidder felt disingenuous in the relationship we've created together. The buffalo meant more to us than the economics.

As ecologically important as buffalo are to prairies, they are even more so—and are considered a cultural keystone species—for Indigenous communities throughout North America. Buffalo were nearly driven to extinction in the late 1800s, when they were slaughtered by the U.S. government to intentionally starve Tribes in order to remove them from their lands. Buffalo are important to Tribal communities for spiritual and cultural revitalization, ecological restoration, conservation, food sovereignty, economic development, health initiatives and more.

In 2020, we learned of a bison restoration movement led by The InterTribal Buffalo Council (ITBC) to restore buffalo to Tribes across North America. ITBC is a federally chartered Tribal organization, formed in 1992 as a gathering of 17 Tribes. Today it has a membership of 78 Tribal Nations and is growing every year. Troy Heinert, executive director of ITBC, stated, "To reestablish healthy buffalo populations on Tribal lands is to reestablish hope for Indian people. Returning buffalo to Tribal lands will help to heal the land, the animal and the spirit of Indian people." Collectively ITBC



Tribes manage over 33 million acres across North America and have restored over 20,000 bison to over 1 million acres of Tribal lands.

So instead of selling surplus buffalo in 2020, Nachusa transferred 35 buffalo to Tribal Nations through ITBC, along with 40 buffalo from Zapata Ranch in TNC's Colorado program. The following year, Nachusa—along with TNC's Colorado, Indiana, Missouri and Tri-State (MN-ND-SD) chapters—restored 200 buffalo from TNC preserves to 12 Native Nations across North America.

These first steps and transfers were transformational. The return of buffalo to Tribal communities not only had large impacts on the people and lands in their communities, but those experiences also reverberated within us and across TNC, leading to the formal creation in September 2022 of the Buffalo Restoration Program (BRP).

The pilot enabled more TNC preserves to participate by transferring their surplus buffalo to ITBC and Tanka Fund. By the close of 2022, **857 buffalo, born and raised on TNC preserves, made their journey home to 24 Indigenous Communities**. This transfer marked the largest in ITBC's 30-year history! For the first time ever, ITBC was able to fulfill all buffalo requests from their member Nations. We honor and celebrate our partners in this historic accomplishment; these partners have been leaders in their communities, working tirelessly for the betterment of their community and lands.

The buffalo are a keystone species with a crucial ecological role. Their return to Tribal lands will provide spiritual and cultural revitalization, create economic opportunities, combat climate change, regenerate the health of North America's grasslands and strengthen food sovereignty within Native Nations.

"The partnership with TNC has been a blessing for the Tribal Nations which we serve. We're extremely excited about the opportunity to grow this relationship in the coming years," said Heinert. "Each animal returned to Tribal lands becomes much more than its physical presence on the landscape—it signifies a restored web of relationships that had been broken for hundreds of years."

Over the next two years, I will spend the majority of my time continuing to lead and develop the BRP, along with a team of colleagues across TNC. Throughout this two-year pilot phase, we will work with our Tribal partners to begin co-creation of a restorative model for buffalo and beyond—a model that will advance our collective efforts in ways we can only achieve by working together.

The Nachusa team, including volunteer stewards, Illinois chapter staff and our board of trustees, championed this effort when it was first an idea to transfer buffalo from Nachusa to ITBC. Without that initial, unwavering support, we might not be where we are today, working towards transformative change. Notably, Illinois TNC staff beyond Nachusa who have gone above and beyond to support this effort include Lucas Vereline, Alice Coyne, Darius Goldsby, Wendy Dolipschi, Isabel Morales, Carolyn Scholz, Michelle Carr, Jeff Walk, Ken Modzelewski and Jacob Smutz.

So the next time you visit Nachusa and see the buffalo, know that they are not only supporting the ecological health of the prairie, they are also contributing to the healing and restoration of Indigenous lands and communities across North America.

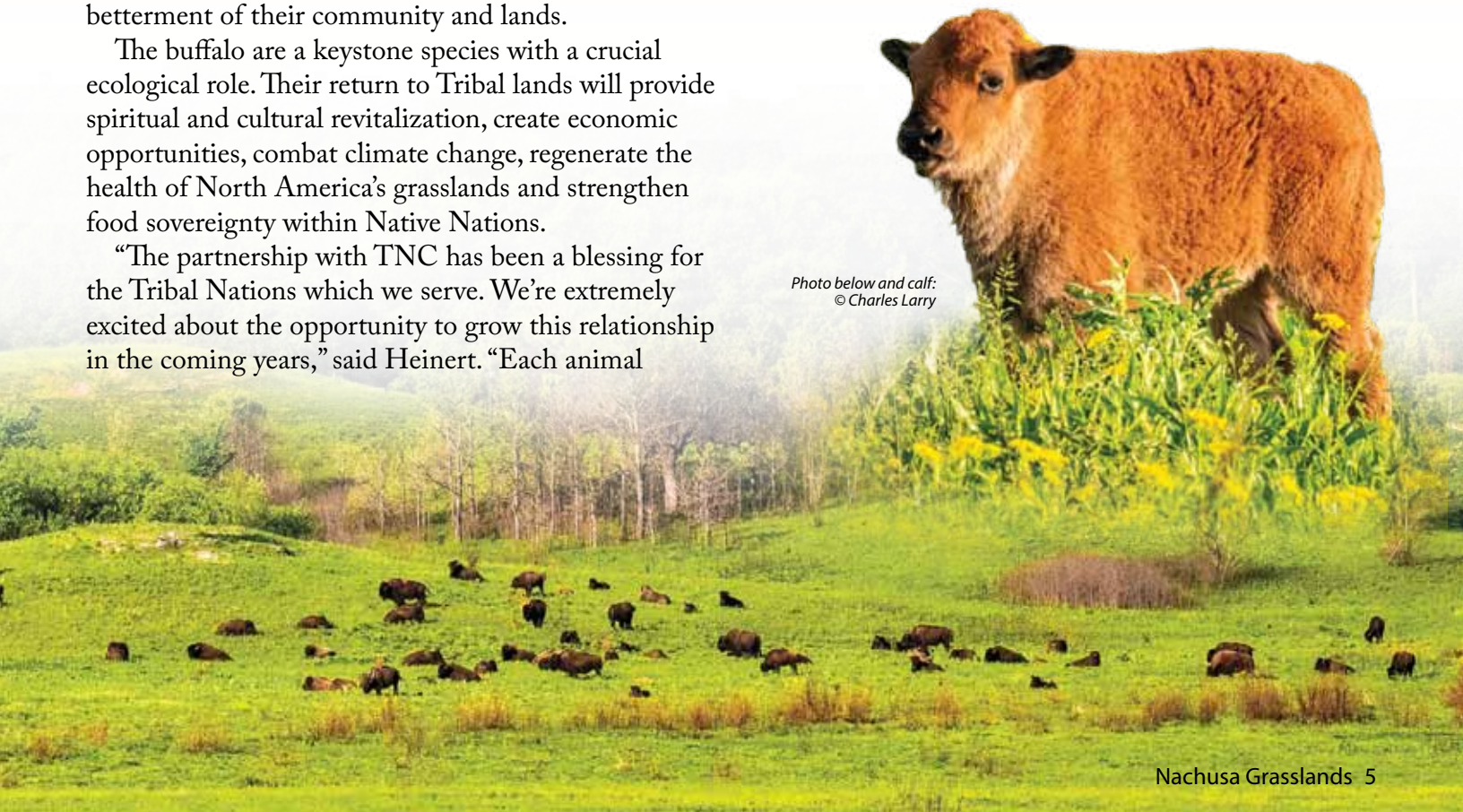


Photo below and calf: © Charles Larry

Saving Our Oak Woods

BY BILL KLEIMAN,
Nachusa Grasslands Project Director


© Charles Larry

The oak woods of the Midwest are moving towards ecological collapse. The majority of our oak woodlands have a dense buildup of brush and small trees that have damaged not just oaks but the ground layer cover of wildflowers, grasses and sedges. A collapsed community cannot support much wildlife.

Showy orchid
© Dee Hudson/TNC

Regionally, we have lost populations of hazelnut, American beak grass, showy orchid, blue lupine, purple milkweed, starry campion and other plants. Woodland birds in need of these habitats include indigo bunting, pileated woodpecker, red-headed woodpecker, Bell's vireo and the blue-winged warbler. The insect world is diverse and utilizes healthy oak woods. Naturalist Laura Anchor Rericha shared a few examples of such specialized insects: *Andrena krigiana*, which feeds on pollen of the woodland flower false dandelion. *Andrena polemonii*, a bee that is a specialty pollinator of Jacob's ladder, another woodland flower. And *Hylaeus fedorica*, a cavity-nesting bee that forages the plants in the parsley family of high-quality woodlands.


Indigo bunting
© Charles Larry


Purple milkweed
© Dee Hudson/TNC

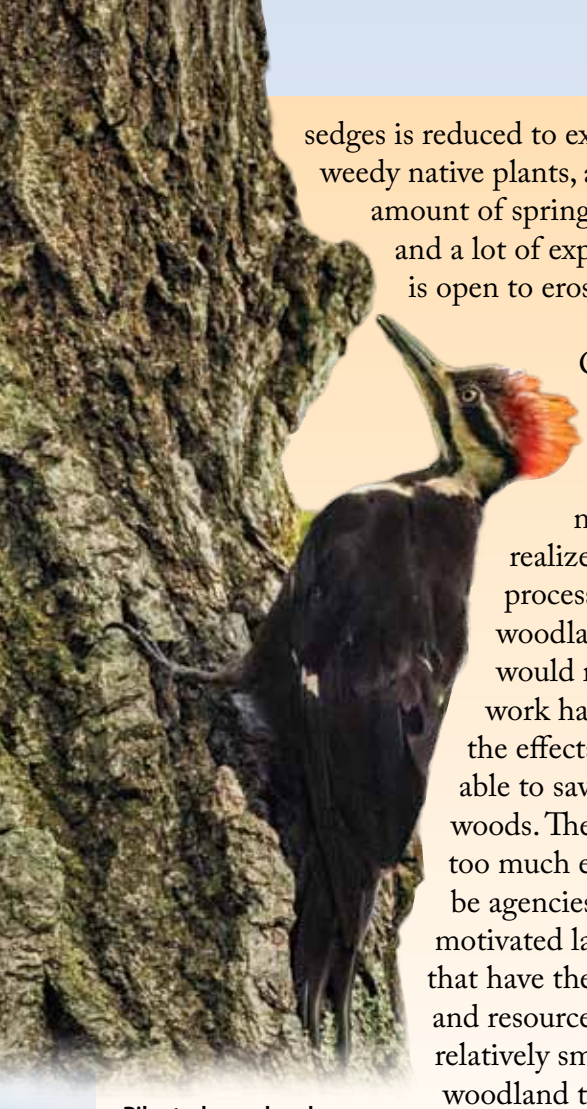
What we typically find now in our woods are mature, sometimes majestic oaks, but few young oaks to take their place when they die. Some call these oak communities the living dead, which is zombie-movie dramatic but close to the mark.

The shrub layer in these degraded woods are dense stands of invasive Amur honeysuckle, multiflora rose, autumn olive and common buckthorn. All of these are invasive shrubs that were introduced from other continents, and they grow profusely because their new home happens to be free from the pests found in their former native habitats. Those pests kept these shrubs in check but now, without any limitations, they spread fast.


Starry campion
© Dee Hudson/TNC

In this heavy shade cast by shrubs, the ground layer of once-diverse flowers, grasses and

sedges is reduced to exotic weeds, weedy native plants, a modest amount of spring ephemerals and a lot of exposed soil that is open to erosion.



Pileated woodpecker
© Charles Larry

Only in the last few decades have land managers realized that this process of our woodlands' demise would require us to work hard to reverse the effects. We won't be able to save most of the woods. The work takes too much effort. It will be agencies and a few motivated landowners that have the commitment and resources to return relatively small tracts of woodland to health. The bulk of our landscape will convert to common species.

Andrena polemonii
© Anders Croft

The woodland acres we will save will need us to thin the brush, thin trees that are not oak, keep the old oaks so they continue reproducing and keep sprinkling native plant seeds. The most important stewardship we can do is return frequent fire to the woods. For thousands of years, fires set by Native people and lightning led to these landscapes.

The brush-clearing work we do at Nachusa is expensive, noisy, and at first unsightly, with brush piles, stumps and brush-mowing slash. The opened woods look different, and humans sometimes don't react well to different. But within a year or two the woods look better, at least to those who know what a healthy woodland looks like.

Scan the QR code to
READ MORE ABOUT OAK WOODS

BELOW: Prescribed fire in Nachusa's oak woods
© Charles Larry

Nachusa Science Review 2022

Published Data

BY ELIZABETH BACH, *Nachusa Grassland Research Scientist*

Science research at Nachusa informs management decisions and pushes scientific boundaries. This issue of *Prairie Smoke* features deep dives into two recent scientific publications. First, a study investigated the potential impacts of invasive honeysuckle control with basal bark herbicide on soil microbial communities (see pg. 10). Second, Nachusa's fire history was published as a data paper, making that information easily available to scientists and practitioners (see pg. 11). See below for the complete list of Nachusa scientific publications in 2022!

Invertebrates

Barney, R. J. (2022). Monitoring of *Pachybrachis* Chevrolat (Coleoptera: Chrysomelidae: Cryptocephalinae) Diversity and Abundance in Illinois for 140 Years: Recent Detections and Presumed Extirpations. *The Coleopterists Bulletin, 76*(4). https://doi.org/10.1649/0010-065X-76.4.489

Otto, C. R. V., Schrage, A. C., Bailey, L. L., Mola, J. M., Smith, T. A., Pearse, I., Simanonok, S., & Grundel, R. (2022). Addressing Detection Uncertainty in *Bombus affinis* (Hymenoptera: Apidae) Surveys Can Improve Inferences Made from Monitoring. *Environmental Entomology*. https://doi.org/10.1093/ee/nvac090

© Joyce Gibbons

Wetzel, M. J., & Reynolds, J. W. (2021). A Preliminary Inventory of Earthworms (Annelida, Clitellata) of the Nachusa Grasslands Area, Lee and Ogle Counties, Illinois, USA. *Megadrilogica, 26*(8), 91–124.

Wolf, A. T., Watson, J. C., Hyde, T. J., Carpenter, S. G., & Jean, R. P. (2022). Floral Resources Used by the Endangered Rusty Patched Bumble Bee (*Bombus affinis*) in the Midwestern United States. *Natural Areas Journal, 42*(4). https://doi.org/10.3375/22-2

Turtles

Doke, R., Hiebert, K., Repella, M., Stuart, M., Mumm, L., Winter, J., Adamovicz, L., Glowacki, G., Kessler, E., & Allender, M. C. (2022). Prevalence of Intraerythrocytic Parasites in *Macrochelys temminckii*, *Emydoidea blandingii*, *Terrapene carolina*, and *Terrapene ornata*. *Journal of Herpetological Medicine and Surgery, 32*(1). https://doi.org/10.5818/JHMS-S-20-00017

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Ecosystem Services

Garfinkel, M. B., Fuka, M. E., Minor, E., & Whelan, C. J. (2022). When a Pest Is Not a Pest: Birds Indirectly Increase Defoliation but Have No Effect on Yield of Soybean Crops. *Ecological Applications, 32*(4). https://doi.org/10.1002/eap.2527

© Megan Garfinkel

Zanne, A. E., Flores-Moreno, H., Powell, J. R., Cornwell, W. K., Dalling, J. W., Austin, A. T., Classen, A. T., Eggleton, P., Okada, K., Parr, C. L., Adair, E. C., Adu-Bredu, S., Alam, M. A., Alvarez-Garzón, C., Apgaua, D., Aragón, R., Ardon, M., Arndt, S. K., Ashton, L. A., … Zalamea, P.-C. (2022). Termite Sensitivity to Temperature Affects Global Wood Decay Rates. *Science, 377*(6613), 1440–1444. https://doi.org/10.1126/science.abo3856

Bison

Brockman, J. C., Nielsen, C. K., & Walk, J. W. (2022). Influences of Land Cover, Fire, and Human Activity on Bison Habitat Selection in Restored Grasslands. *Rangeland Ecology & Management, 84*, 45–53. https://doi.org/10.1016/j.rama.2022.05.007

© Bill Kleiman/TNC

Guiden, P. W., Burke, A., Fliginger, J., Rowland-Schaefer, E. G., Savage, K., & Jones, H. P. (2023). Reintroduced Megaherbivores Indirectly Shape Small-Mammal Responses to Moonlight. *Ecology,* 104(2), e3884. https://doi.org/10.1002/ecy.3884

Management

James, J. J., Bach, E. M., Baker, K., Barber, N. A., Buck, R., Shahrtash, M., & Brown, S. P. (2022). Herbicide Control of the Invasive Amur Honeysuckle (*Lonicera maackii*) Does Not Alter Soil Microbial Communities or Activity. *Ecological Solutions and Evidence, 3*(3). https://doi.org/10.1002/2688-8319.12157

© Dee Hudson/TNC

Rowland-Schaefer, E. G., Bach, E. M., Kleiman, B. P., & Jones, H. P. (2022). Mapping Fire History and Quantifying Burned Area Through 35 Years of Prescribed Fire History at an Illinois Tallgrass Prairie Restoration Site Using GIS. *Ecological Solutions and Evidence, 3*(2), 1–6. https://doi.org/10.1002/2688-8319.12144

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Science Conferences

Nachusa Grasslands Research Represented

BY ELIZABETH BACH, *Nachusa Grassland Research Scientist*

© Elizabeth Bach/TNC

In 2022, Nachusa scientists began returning to in-person meetings and conferences after nearly three years of virtual-only formats. While conferences typically required masking indoors and encouraged testing to manage COVID-19, it was a joy to see colleagues again face-to-face and catch up on new science. In August, 20 scientists (photo) who are involved with work at Nachusa Grasslands attended the joint meeting of the Ecological Society of America and the Canadian Society for Ecology and Evolution in Montéal, Québec, Canada. Their posters and presentations shared emerging science from Nachusa with thousands of ecologists from across North America and beyond. It was also a rare moment for these scientists from several different institutions to interact with each other and discuss their shared experiences. Nachusa scientists also shared work at meetings for the American Geophysical Union, Wildlife Disease Association, and Midwest Microbial Pathogenesis Conference. Congratulations to all who presented talks or posters!

© Andrew Davies

2022 Science Fellow

BY ANDREW DAVIES, *Master of Science Student, Northwestern University*

© Dee Hudson/TNC

As many visitors before me have surely experienced, it was the welcome committee of the resident bison that had me smiling before I met the staff and volunteers that make Nachusa Grasslands tick. Prior to the summer fellowship, Dr. Elizabeth Bach gave me a tour of the preserve and incorporated a visit to one of the kittentail populations I would soon study. As we arrived at Kittentails Knob—a patch of remnant prairie on the edge of an oak woodland—Dr. Bach explained how the area had been burned only a month earlier. The green meadow gave away no such details until I learned that a lack of brush is the best sign of a recent burn—no heaps of dead stems or leaves to obstruct the new shoots being pushed out by long-lived root systems.

These early emerging plants and their later-arriving counterparts were my primary focus at Nachusa over the summer. I assisted with vegetation surveys across various-aged prairie restorations and in grazed and ungrazed plots. These long-term projects are designed to improve our understanding of prairie succession after restoration and to learn how bison grazing impacts plant diversity. When I wasn't collecting vegetation data, I could be found collecting data on kittentails for my own research. My thesis is focused on connecting genetic diversity with reproductive fitness of this rare species. I had a busy and rewarding summer at Nachusa and won't forget the vibrant, ever-changing prairies that awaited each week I returned, nor the dedicated team that has rebuilt such a beautiful ecosystem.

Kittentail
© Dee Hudson/TNC

Kittentails flagged on Doug's Knob
© Andrew Davies

Honeysuckle Herbicide Control

BY ELIZABETH BACH, *Nachusa Grasslands Research Scientist*

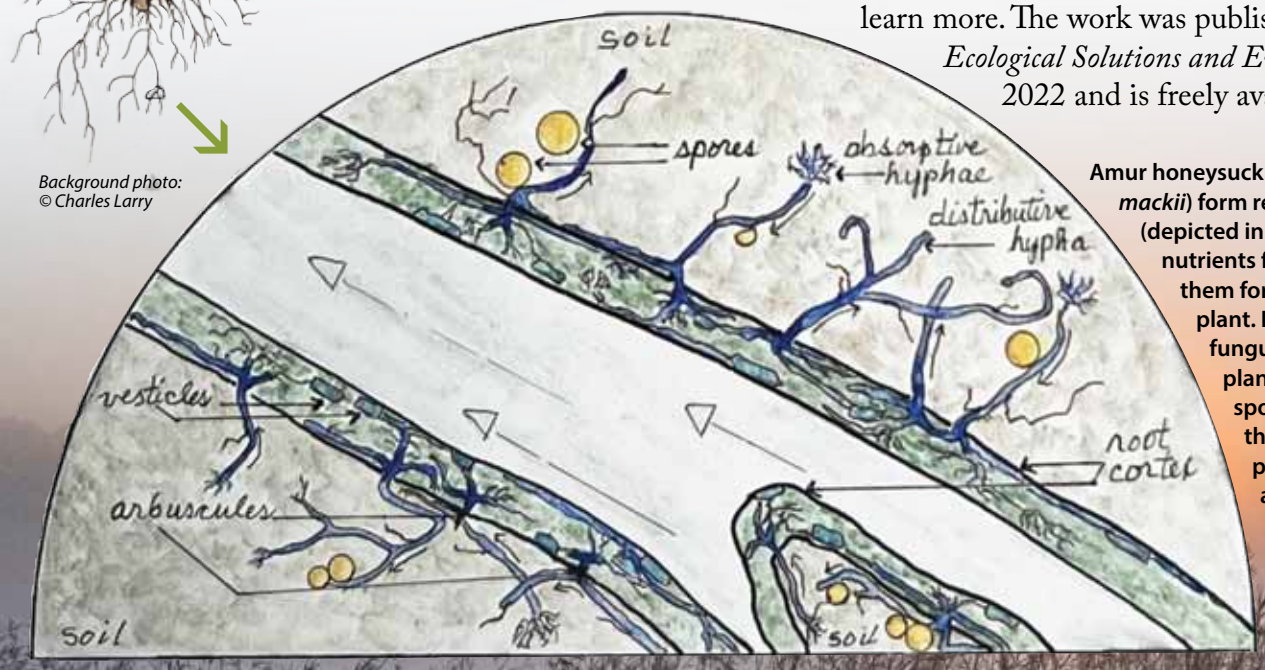
Invasive Amur honeysuckle (*Lonicera maackii*) is a top management concern at Nachusa Grasslands. For several years, management efforts have honed a system of killing the brush with winter application of basal bark oil herbicide. Research has shown this approach to be essentially 100% effective at killing honeysuckle (Kleiman et al., 2018). As part of his Master's thesis at Northern Illinois University in 2019, Kaleb Baker observed a small area where herbaceous plants did not grow immediately around the treated honeysuckle bushes. To examine potential reasons that might be causing this, Baker's advisor, Dr. Nick Barber, and Nachusa scientist Dr. Elizabeth Bach, teamed up with colleagues at the University of Memphis. Jonathan James, an undergraduate researcher, led an investigation into soil microbial communities surrounding treated honeysuckle bushes with guidance from Dr. Shawn Brown. The goal was to determine if herbicide was impacting soil bacterial or fungal communities or potentially transferring to other plants through fungi. This project was developed in the winter of 2019-2020 and, unfortunately, the ensuing pandemic shutdown prevented James, Brown, and the team from Memphis from visiting Nachusa that summer. Elizabeth Bach applied the basal bark treatments and collected the soil and root samples.

Illustrations © Betty Higby

Overall, basal bark herbicide treatments showed no negative impacts on soil microbial communities or their activity. Fungal and bacterial diversity and activity were similar across all treatments. Herbicide treated roots had fewer fungal associates than untreated plants, driven by the death of the host plant, not a direct effect of herbicide.

This study exemplifies scientific research integrated with priority management questions. It is the result of cross-lab collaborations across several studies and publications, which will hopefully continue as we learn more. The work was published in the journal *Ecological Solutions and Evidence* in spring 2022 and is freely available online.

Background photo: © Charles Larry



Amur honeysuckle roots (*Lonicera mackii*) form relationships with fungi (depicted in blue). The fungi acquire nutrients from the soil and trade them for carbon fixed by the plant. In some cases, the fungus interacts with multiple plants. The fungi produce spores (depicted in yellow) that function like seeds, persisting until conditions are right for germination.

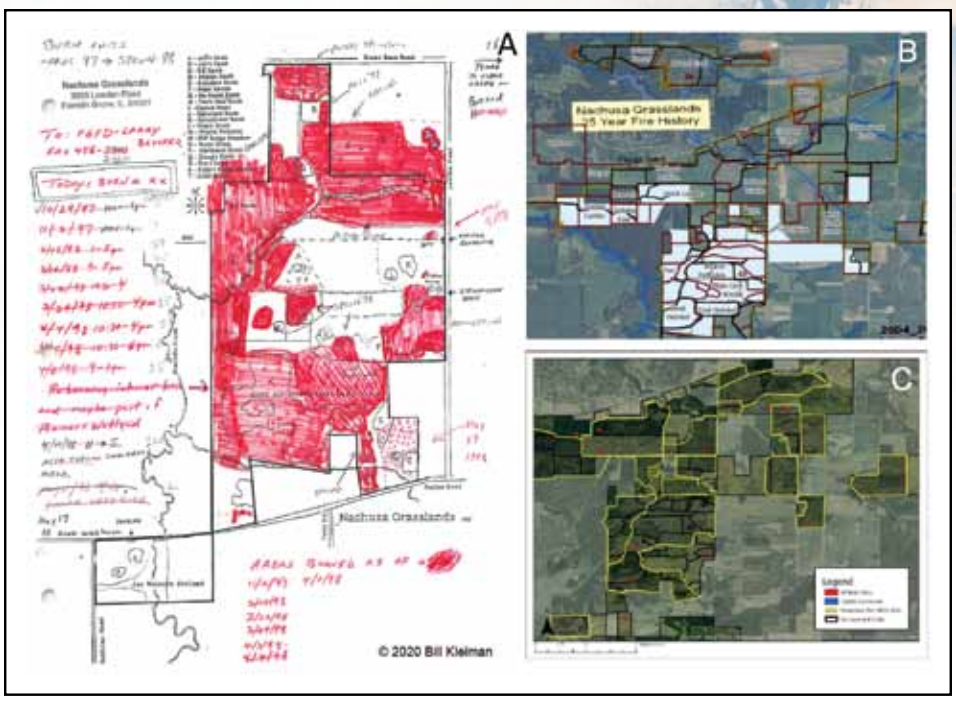
35 Years of Prescribed Fire History

Mapping Nachusa's fire history and quantifying burned areas

BY ERIN ROWLAND-SCHAEFER, *PhD Candidate, Northern Illinois University*

Background photo: © Charles Larry

Fire has always been an integral part of the management of Nachusa Grasslands. Prescribed fires drive many ecological aspects of the prairies and savannas. Given the importance of fire to management, I set out to digitize the long-term fire management history of Nachusa. I wanted to provide an accessible, digitized record of the fire history across the landscape to support the work of researchers and land managers. This project was initiated during the spring of 2020, when I was hired as the Nachusa Summer Science Fellow. While my original plans for the summer involved spending lots of time working at the preserve, I instead spent a summer sitting at a desk in my living room playing a sophisticated connect-the-dots game to build maps mutually beneficial to managers and researchers.



(a) An example of a hand-drawn archival map representing the areas of the preserve burned between the fall of 1997 and the spring of 1998. (b) An image demonstrating the georeferencing process for archival images. The overlaid circles and Xs represent points that have been selected as reference on both the image and the shapefile. The preserve boundaries in the archive image are shown in green, and the boundaries of the shapefile are shown in brown. (c) An example of the finished fire map product. This map shows the areas that received prescribed fire between fall of 2015 and spring of 2016 and are stored as shapefiles, as well as images, in order for the data to be fully accessible and used in future analysis.

I began with the archival records of prescribed fire on the preserve, either early hand-drawn maps or later digitized maps. These images were imported to the mapping software ArcGIS Pro and georeferenced, meaning that we identified points on the images and matched them to the same points on the map. I overlaid the georeferenced map on the digital map of the preserve and hand-traced the images to create a digital record of the preserve's fire history.

The proportion of the preserve burned has increased dramatically over time, outpacing the growth of the preserve itself. This reflects increased capacity through trained volunteers and staff, equipment and the ability to burn larger units.

This work was published as a data paper in 2022 in *Ecosystem Solutions and Evidence*, an open-access academic journal. Making fire management data open access is helpful to conservation and restoration practitioners. Understanding when fires are accomplished over years and decades provides the opportunity to connect fire regimes with ecological outcomes. For example, how has the fire frequency at Nachusa shaped plant, insect, bird and animal communities? I am incredibly excited to see what new avenues are opened as we enter an age of more open-access data, and we are keen for collaboration that helps the Nachusa community both manage and research more effectively.

© Dee Hudson/TNC

Friends of Nachusa Grasslands

BY BERNIE BUCHHOLZ, *President, Friends of Nachusa Grasslands*

Volunteers and donors are in their 15th year of devotion to Nachusa Grasslands. There is much to be proud of.

Friends awarded Andrew Davies a grant to study Nachusa's kittentail populations.

© Dee Hudson/TNC

SAVE THE DATES

April 22 . . . . . Science Symposium

June 10. . . . . Prairie Potluck

July 29. . . . . Annual Meeting

SOCIAL MEDIA

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Volunteering

Based on our first detailed counting done in 2022, we can say with confidence that Friends volunteers have given over 125,000 hours since our founding. We harvest seed, battle invasives, conduct controlled burns, award science grants, revel in photography, repair equipment and communicate with the community. Our volunteers do the highest-quality work and achieve emotional satisfaction, including the joy of community.

Securing the Future

Donors have funded endowments exceeding $3 million, which will permanently fund a significant part of Nachusa's operation. This is a major achievement for this grassroots organization and bodes well for reaching our goal of $5 million.

Scientific Research

Friends have awarded $431,000 to dozens of researchers representing many universities and scientific organizations. Increasingly, Nachusa is being recognized for leadership in grasslands research. Our annual Science Symposium is highly regarded, and our new science endowment is more than halfway to its $1 million goal.

Land Protection

We are committing $50,000 per year to support Land Protection.

Restored Habitat

Our gifts of time and treasure are creating marvelous grassland habitat. Please participate in this mission as donor or volunteer and enjoy the results.

Recently retired, Mark Herman volunteers as a tour leader and participates in many workdays.

© Dee Hudson/TNC

WATCH A VIDEO!
Scan the QR code to see a video about Nachusa's volunteers.

James Higby volunteers many hours as an editor. Here he assembles the annual report to mail.

© Dee Hudson/TNC

Thursday Morning Workdays

BY DEE HUDSON, *Nachusa Grasslands Administrative Assistant*

Thursday Workday
© Molly Duncan/TNC

Have you tried our Thursday morning workdays? This day has become very popular and offers a weekday experience for volunteers who are unavailable on the weekends. To sign up, look for information on the Friends of Nachusa Grasslands website, *nachusagrasslands.org*, or visit Nachusa's social media pages. No experience is necessary!

Adding a second workday had long been discussed, but it wasn't until 2020 that this option became a reality. The social distancing requirements during the pandemic necessitated that Nachusa change its workday approach to comply with the mandated reduced group sizes. Now the leaders prefer the smaller groups and like knowing who will attend. Additionally, since all volunteers signup beforehand, it's easy for leaders to contact them with special instructions or weather cancellations.

Come spend a little time with us and make a big difference! Our volunteers attest to their experience:

YOSHI FREDISDORF
"I appreciate the people who come to work . . . they are very mindful, knowledgeable and are not only the textbook smart people. They are all keen to work with soil and plants. I feel I have found my kindred people at Nachusa, and that is the reason I love to be there."

MARK HERMAN
"Since my retirement in February 2022 . . . I have cut, pulled and sprayed a variety of invasive plants, hand-picked plant seeds, milled seeds and later spread them in Nachusa's prairies and savannas. I have led bison tours for visitors and am also a member of the prescribed fire crew and have participated in many fall and spring burns. The Nature Conservancy's Nachusa Grasslands is one of the best-run land conservation experiences you can have in the area. I strongly urge any outdoor-minded individual to come out to experience it for yourself through volunteering."

KIRK HALLOWELL
"Being new to retirement, I am always looking for meaningful activities to fill my days. Thursday workdays are a perfect way to fill out my week. I have enjoyed getting to know and work with many of the regular volunteers who have also found that Thursdays work for their schedules."

CATHERINE GORT
"I volunteer on Thursdays because I can, being a retired person. There's a peace and a rhythm to the prairie and the work we do out there. The idea of "restoration" is important and so hopeful to me. I've met old friends and new at Nachusa."

SUSIE KENNEDY
"I like volunteering at Nachusa because every time I go, I learn something new; and I always feel like I have made a valuable contribution/ good use of my time. And everyone is so nice!"

MARY PALIGA
"I enjoy coming to work on the grasslands because I find it to be an inspiring place. I felt a deep connection from my first visit. We have traveled the world and only here, in humble northwest Illinois, do I get that mystical connection with the landscape that you hear writers and artists talking about. It is a unique place."

Mike Carr
© Dee Hudson/TNC

Join the Woodies Team

This team is led by Mike Carr, a Nachusa steward since 2010. Mike's team works on areas of most concern: areas recommended by staff, grant projects, workdays that need support or problem areas Mike has determined.

Mike schedules his available stewardship days and then communicates with his team by email and invites them to join him.

Interested? Fill out the form on the website and Mike will contact you.

Summer Crew L-R: Derek Hofland, Amber Denker, Katee Johnson, Molly Duncan, Emma Hovland, Dan Rabideau, and Marissa Gorsegner
Photo: © Katee Johnson

Targeting Weeds

BY MOLLY DUNCAN, *Nachusa Grasslands Resident Fellow and Crew Leader*

The 2022 season welcomed another group of passionate stewards to our seasonal crew at Nachusa. Our weed season started strong, and by the end of the year, we'd treated a record 5,740 acres for invasive weeds. One notable addition to our stewardship efforts was the use of plant occurrence points in Field Maps, our ArcGIS mapping software. This feature allows us to enter specific GPS points for individual plants. We used this extensively to map populations of invasive birdsfoot trefoil (BFT) and Asian bushclover (ABC), which helped us identify high-priority areas for future stewardship efforts.

Asian bushclover was a top priority for our weed season this year. ABC was introduced to the preserve in the early 2000s when a plant nursery mistakenly included it in a native seed mix we purchased. Nachusa is now one of the few places in Illinois where this invasive has established. We treated over 75 acres for ABC this year, which is three times more than the average number of acres treated in previous years. With this renewed focus, we were (un) fortunately able to discover new ABC populations and entered over 330 weed occurrence points for it into Field Maps. We are hopeful that these efforts will help curtail the presence of ABC at Nachusa and prevent it from being spread to other natural areas in Illinois.

Our summer and fall crews also worked hard to ensure we had a successful year for seed collection. We collected over 168 species, totaling more than 400 lbs. of handpicked seed. The crew also planted 10 acres of the Juanita & Homer Williams tract that Nachusa acquired in fall 2019. This planting included 133 species and over 670 lbs. of dry and dry mesic seed, with an average seeding rate of 70 lbs./acre. Wetland scrapes like those constructed in the 2020 planting are currently being planned for the remaining 20 acres of this tract. As one of the final pieces needed to completely connect a 350-acre block of the preserve from Lowden to Carthage Rd., this year's planting is the continuation of Nachusa's decades-long commitment to creating high-quality native habitat on a large scale.

Fall Crew L-R: Booker Moritz, Noah Reynolds, Derek Hofland, and Molly Duncan
Photo: © Dee Hudson/TNC

Support Our Prairie State's Center for Prairie Conservation

BY ALICE COYNE, *Development Communication Specialist, The Nature Conservancy*

It's commonly known that only one tenth of one percent of prairie remain in Illinois—the Prairie State. Ecosystem restoration at Nachusa Grasslands is reversing that trend. From one small acquisition in 1986, Nachusa is now a rich, rolling grassland, buzzing with life—thanks to steady acquisition, a deep culture of stewardship, engaged partners and volunteers and supporters like you who share our commitment to the prairie.

By the end of the decade, we aim to deepen Nachusa's value as a center of learning, science, biodiversity and stewardship. We will do this by:

- **Building community.** Volunteers contribute to all parts of Nachusa's mission through two weekly workdays, dedicated unit stewardship, monitoring biological communities and helping with mechanical and technical needs.
- **Protecting more land.** With your support, we will continue growing the preserve at key opportunities to make more habitat for beloved wildlife like pollinators and bison.
- **Deepening ecosystem understanding**. Last year, we celebrated 20 years of restoration science at Nachusa. Under ecosystem restoration scientist Dr. Elizabeth Bach, we continue informing grassland management around the world
- **Collaborating.** Nachusa's updated facilities—a new equipment barn and updated headquarters barn (planning for this piece is underway)—will provide more space for hosting visiting researchers (we hosted 40 this past year!) and partners who extend the impact of what we learn.

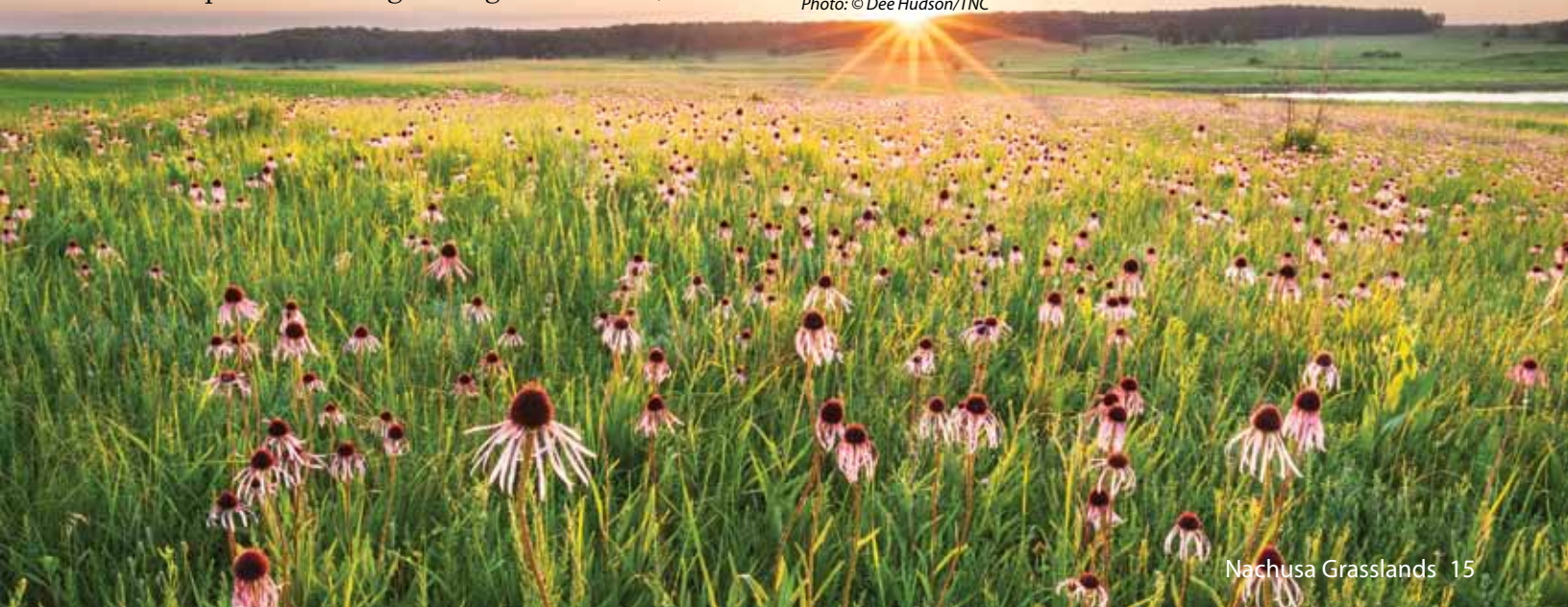
How you can help

The story of Nachusa—and your support of it—gives us much to be hopeful for in the years to come.

- **Contact:**
  Heather Hartman,
  Associate Director of Development
  309-445-0488
  heather.hartman@tnc.org
- **Online:** You can follow this link to designate your gift to the Illinois chapter: **nature.org/Illinois**
- **Via check:** If you would like to mail a check, please use this address:
  The Nature Conservancy in Illinois
  400 North Michigan Avenue, Suite 1100
  Chicago, IL 60611
  Please make the following note on the memo line of your check: ***Nachusa Grasslands***
- **Wire transfer:** Contact Heather Hartman at heather.hartman@tnc.org for instructions.

DONATE ONLINE!
Scan the QR code to donate to The Nature Conservany Illinois chapter.

Photo: © Dee Hudson/TNC



The Nature Conservancy

Protecting nature. Preserving life.

The Nature Conservancy
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