

ISSUE 56, SPRING 2019

PRAIRIE SMOKE

NACHUSA GRASSLANDS *Annual Stewardship Report for 2018*





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STAFF: Bill Kleiman, Cody Considine, Elizabeth Bach & Dee Hudson

Last year we described our plan to hire a scientist for the preserve to take our science program to a level of national significance. In June we hired Dr. Elizabeth Bach, who has been showing us how to mesh our work with universities, science foundations, and national ecology programs. In a few years we expect to be a driver of research that answers the many questions posed by restoration ecology. Welcome aboard, Elizabeth Bach.

Bill Kleiman
PRESERVE MANAGER

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SAVE THE DATE September 21, 2019

30th Annual Autumn on the Prairie Celebration



2018 Autumn on the Prairie at the new Visitor Center

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A Note From Elizabeth Bach

Nachusa's New Ecosystem Restoration Scientist

BY DR. ELIZABETH BACH

Thank you to all the staff, stewards, volunteers, and scientists on the Nachusa Grasslands team for welcoming me so warmly as the Ecosystem Restoration Scientist. The first six months have included a lot of learning for me: getting to know the Nachusa site deeply, collecting plant community data, participating in the Nachusa Science Symposium, contributing to bison roundup data management, meeting colleagues across The Nature Conservancy, and sharing our findings with local and regional conservation groups. I am deeply honored to be working with everyone at Nachusa to build a long-term science program that will drive stewardship and contribute new knowledge of restoration and ecological interactions.

I first visited Nachusa Grasslands 10 years ago, when I was a graduate student at Southern Illinois University Carbondale, to help my friend and colleague Ryan Klopf collect data. After completing my master of science in plant biology in 2009, I worked at Neal Smith National Wildlife Refuge in my hometown of Prairie City, Iowa, and went on to earn a PhD in ecology and evolutionary biology from Iowa State University. In 2015, my path brought me back to Nachusa, as a post-doctoral fellow with the Illinois Natural History Survey, collecting data on soil fungi and bacteria. The following year, I had the incredible opportunity to become executive director for the Global Soil Biodiversity Initiative, housed at the School of Global Environmental Sustainability at Colorado State University. In this position my perspective on soil ecology broadened and I contributed to science-policy reports from the US Forest Service, the European Union Joint Research Centre, the UN Convention to Combat Desertification, and the Intergovernmental Platform on Biodiversity and Ecosystem Services. However, my research focus and passion remained fixed on tallgrass prairie restoration and soil ecology, and the opportunity to return to the Midwest and Nachusa was ideal for me.

I look forward to supporting more scientific research at Nachusa, building stronger ties between research and restoration management, and sharing

the great work accomplished at Nachusa across the Midwest and beyond. My job as a scientist is to ask questions, not to know all the answers, and I am excited to ask important and new questions with all of you!



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Land Conservation Is The Mission

Protecting the lands and waters on which all life depends



© CHARLES LARRY

The Nature Conservancy (TNC) works around the world to protect the lands and waters on which all life depends. In 1986, TNC purchased the 250 acres that were the foundation of Nachusa Grasslands, which would become one of Illinois's largest and highest-quality prairie landscapes.

Protecting land and water is one of TNC's strategic priorities. Land owned and managed for conservation provides many benefits to our community, including natural open spaces, connections to our historical roots, vast areas for pollinators to thrive, groundwater recharge areas, native habitat, and corridors for wildlife, including bison, to call home. Sellers also benefit when TNC buys their land.

TNC pays fair market value for land. As a private entity that works with willing sellers, TNC can be flexible in deal structure, timing, and seller-retained rights. For example, some sellers chose to retain privileges to hunt, fish, camp, or hike; others ask that row crop land stay in agriculture for a defined period so that existing land lease agreements can be honored.

TNC also buys development rights on land. For instance, TNC's Nachusa Grasslands has several land easements that must stay in agriculture, preventing the land from being turned into housing developments.

Sellers have peace of mind that TNC will preserve their land for conservation so that future generations will have the chance to enjoy this open space.

TNC has a long history of working constructively with neighbors and adjacent landowners to protect land. Nachusa's most recent transaction was the purchase of 30 acres from a long-time neighbor, who

was preparing to leave northern Illinois. TNC secured an appraisal of market value, worked with the seller to meet his specific needs, and made steady progress to a closing in December.

TNC recognizes that land carries a lot of meaning and history for the owners. As a conservation buyer, TNC offers advantages to sellers that sometimes include aspects that are more powerful than price alone. Finally, TNC also recognizes the importance of paying local property taxes and has always voluntarily paid them. Since 1992 TNC has paid more than \$350,000 to Lee and Ogle Counties.



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A Great Year For Seed Diversity

275 plant species collected

BY NATHANIEL WEICKERT

This year was a bellwether for seed diversity. The restoration crew planted three different fields across the preserve totaling 64 acres at 60 pounds of seed per acre, with plenty of seed mix left for over-seeding projects around the preserve. With a new wetland scrape (soil is moved to create a shallow depression) and several woodland edges to seed, the plantings this year covered a broad range of habitat types. This habitat diversity led the crew to collect seed from a record-breaking 275 plant species, many of which had never been collected. All of these species allow staff at Nachusa to restore the full range of potential habitats the plantings have to offer.

Achieving record seed diversity was possible, in part, due to the mapping software ArcGIS Collector. This was our second year using Collector, which means it was our first year with a comprehensive and easy-to-use map of seed and weed locations. Collector saved the crew time: searching for seeds was reduced and more time was spent picking or spraying weeds. With each successive year's data entered into ArcGIS Collector, more and more species will easily be found on the preserve, allowing seed collection for higher-diversity plantings.

It was also the first year using the new seed-processing facilities at the 201 seed barn. A second facility meant the crew and volunteer stewards had



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more elbow room for seed processing and storage. A larger hammermill and dryer enabled the crew to process the large volume of collected seed quickly and efficiently.

Institutional knowledge and recent innovations made 2018 an incredibly successful year for the crew, allowing us to collect an amazing diversity of species without sacrificing overall seed weight. New technology adopted this year will only get better with time, and knowing Nachusa, we aren't going to stop there. We will keep on getting better at what we do.

L-R: Leah Kleiman, Avery Parmiter, Nathaniel Weickert, Kim Elsenbroek, Tyler Berndt, and Karey O'Brien



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Meet Nachusa Stewards

Local and international volunteers

Nachusa volunteers have diverse backgrounds and nationalities, a wide range of skills and abilities, and a strong desire to make a difference in conservation. For many years, there have been numerous volunteers at the preserve and they provide a backbone of support for the staff. Let's meet a few volunteer stewards that comprise Nachusa's community.

Dick Gambrel

VOLUNTEER STEWARD

The first time I remember visiting Nachusa was for a burn class that Bill Kleiman, the preserve's project director, did some 20 years ago. I came out once in a while throughout the years, but after it was announced the bison were coming, I knew I wanted to come more often. The more I came, the more I regretted all the years I missed. Now I help where I can. I do some



© ELIZABETH BACH/THE NATURE CONSERVANCY

lane mowing, spread gravel in rutted tracks, and check the bison fence. I have helped with some prescribed burns and a few bison roundups. I even lead some of the bison tours. The people are great and very willing to share their considerable knowledge. Any day at Nachusa is a good day.

Tyler Pelligrini

VOLUNTEER INTERN

I first visited Nachusa in 2017 for my environmental studies course field trips and research projects at Northern Illinois University. My first real experience with the prairie, was Nachusa's 2018 spring burn season, when I took NIU's prescribed fire class. I assisted with about 10 burns that spring and really fell in love with working in fire management. Later that summer and fall I interned with the restoration crew, mainly collecting seed and planting a couple new prairie units. My first year at Nachusa has truly been inspiring. I developed a passion for prairie restoration and gained a second family in the wonderful staff and volunteer community.



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Sebastian Schaefer from Germany

VOLUNTEER INTERN



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The work I assisted with ranged from prescribed burning, brush removal, and spraying weeds to collecting seeds, planting seeds, and maintaining bison fences. Additionally, I had the chance to help the scientists

working at Nachusa. I am highly impressed with the priority placed on proper scientific monitoring. This really makes the Nachusa Grasslands management stand out from other preserves I have gotten to know. In addition to the restoration work, it was great to get insight into scientific projects.

I was amazed how fast I was integrated into everyday life at Nachusa. On the first day I was involved in prescribed fire courses, introduced to various work around the preserve, and included in free time activities. Assisting in prescribed burns was unbelievably exciting, educational, and an experience different from anything I have done

before; I will bitterly miss it in Germany. However, watching the prairie green up very fast and gradually getting to know various plants, as well as animals, was equally impressive. Every day offered me new learning experiences, which was exactly what I was looking for.

My time at Nachusa would have been nothing like this without all the amazing people I got to know during my stay. I am deeply grateful for the support, patience, kindness, and enthusiasm I was shown. Working and living at Nachusa was very motivating. I can confidently say that I can hardly imagine a better work environment. My stay at Nachusa was a truly valuable, educational, fun, and inspirational experience I will never forget. I hope I get the chance to return.

Darko Kazija from *Velenje, Slovenia*

VOLUNTEER STEWARD

I have a university degree in electrical engineering, but I am now retired. I am a great fan of the outdoors and I'm an environmentally conscious citizen. My interests are related to cultural exchange, independent travel, living outdoors, nature conservation, environmental issues, and general sustainability.

At Nachusa I met an amazing bunch of people, old and young, devoted to restoring the prairie. I had no idea how rich the original prairie was in plants and wildlife. I enjoyed working with

Jay Stacy to fight the red clover and Queen Anne's lace weeds. I am grateful to all that have treated me as a friend. I have quite a number of nice memories to keep.

I have worked in various TNC preserves throughout the United States: locations in Oregon, Washington,

New Hampshire, Michigan, Montana, Wisconsin, and now Illinois. A long-time TNC acquaintance in Oregon first recommended Nachusa: "It's an amazing place and team, and they do a good job working with and empowering volunteers."



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Toren Reis from *Zerbst, Germany*

VOLUNTEER INTERN

I am married with three children and live in Germany. I work as a forest engineer for the state government and am responsible for the management of 7,400 acres of forest land.

As a family, we decided to take a one-year break from everyday life in Germany. I wanted to do some volunteer activity during this time similar to my job, which I enjoy doing. The pursuit of more and more profit, money, and economic growth are things that constantly accompany me in my work as a forest engineer. Working only for a cause is a new experience for me.

Friends living near Mt. Morris, IL, helped me contact Cody Considine, Nachusa's restoration ecologist. I could not have found a better place for myself.

Nachusa Grasslands is a special place that is characterized by the people who work there. They are committed to a common cause for the conservation of endangered prairie

landscapes—mostly on a voluntary basis. The commitment of the Nachusa Grasslands volunteers is impressive and a model I will try to introduce in my sphere of activity in Germany.

Since August 2018, I have been involved in a variety of activities: crew work, Autumn on the Prairie festival preparations, seed collection, and the bison roundup. I especially liked seed collection and welding metal to modify the bison corral. In particular, collecting prairie plant seeds is something that I like to remember. There are no machines, no noise, no exhaust smells, just working with your hands in the prairie landscape. I will not forget the smell of the prairie in late summer.

At the beginning of my time in Nachusa, I read the following sentence in a brochure: "Find Your Place in Nachusa." Now after 6 months, I think I can say, "I have found my place in Nachusa Grasslands." Although I miss Germany, I will certainly be a bit sad when my days in Nachusa end in June 2019.



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Grounded In Science

Research and Nachusa's Conservation Goals

BY DR. ELIZABETH BACH

Grazing

- **Bison habitat:** Julia Brockman (Southern Illinois University Carbondale) studied bison habitat selection in 2015/16 and found bison favor grazing in recently burned areas and recently restored prairie.
- **Bison diet:** Kirstie Savage (Northern Illinois University) defended her master's of science in early 2018, investigating bison diets, using stable isotopes from bison tail hair. Bison eat mostly iconic tallgrasses like big bluestem (*Andropogon gerardii*) and Indian grass (*Sorghastrum nutans*) from spring to fall, but then they shift to more wetland sedges and rushes as the grasses start to brown. Dr. Holly Jones (Northern Illinois University) is continuing to collect data to learn what they eat during the winter.
- **Bison impacts on plant community:** When the bison were introduced, 22 fenced exclosures were built to compare plant community and other ecological responses to grazing. Baseline and 3 year post introduction data has been collected and analysis is on-going.



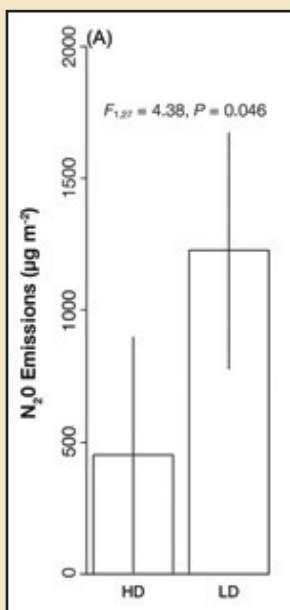
© CHARLES LARRY

Fire

- Dr. Nick Barber (San Diego State University) and colleagues showed that beetle communities recover effectively over time, filling many different ecological niches. Regular prescribed fire decrease presence of large beetle species, but this is a trade-off with benefits of prescribed fire to plant community composition including ground beetles.

Conservation

- Protect and restore the matrix of tallgrass streams through fire, climate, prairie lands.
- Large-scale fire, climate, prairie lands.
- Localized ecological flow, topography.



Ecological Processes

- Dr. Ryan Klopff (Southern Illinois University Carbondale, now Virginia Department of Conservation and Recreation) and colleagues showed that Nachusa restorations with very high plant diversity resulted in a 250 percent increase in plant species, greater root biomass, faster recovery of soil structure, and greater nitrogen conservation than plantings with only a few plant species included (Klopff et al. 2017).
- Dr. Drew Scott (Southern Illinois University Carbondale) defended his PhD including a study of N₂O gas emission from Nachusa soil. This greenhouse gas is 3000 percent more powerful than CO₂ and is commonly emitted from soil through microbial processes. He found N₂O emissions from high-diversity plant communities were approximately half the emissions from low-diversity plant communities. The mechanism behind this result could not be determined, but the study suggests plant diversity is affecting the physiology or the community structure of soil microbes that produce N₂O. (See graph)



© BILL KLEIMAN

on and resulting benefits to insects,
des (Barber et al. 2017).

Restoration Goals

Restore an endangered habitat man-
ages prairie, savannas, wetlands, and
through active management including:
ecological drivers — specifically
fire and grazing — to sustain a
landscape

ecological processes such as water
hydrology, and sun exposure

Biodiversity

- Blanding’s turtle: Over the past four years, Dr. Rich King (Northern Illinois University), Tom Anton, Dave Mauger, and colleagues have been monitoring the state-endangered Blanding’s turtles at Nachusa Grasslands. In 2018, several nests were protected, and we were thrilled to release the eventual hatchlings into wetlands on site.



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- Bees: Laura Anchor (Forest Preserve of Cook County) found 217 species of bees at Nachusa Grasslands in 2018, including many rare species that specialize on prairie



“COLLETES AESTIVALIS, M, RIGHT SIDE, SHENANDOAH NP, VA_2016-12-22-12.53” BY USGS BEE INVENTORY AND MONITORING LAB, FLICKR, CC BY 2.0

plants including pale purple coneflower (*Echinacea pallida*) and leadplant (*Amorpha canescens*). One of the more interesting finds was *Epeolus interruptus*, which thrives on pollen stolen from *Colletes aestivalis*, a specialist bee on the plant coral bells (*Heuchera richardsonii*). Additionally, published work from Sean Griffin (Michigan State University), Bethanne Bruninga-Socolar (University of Minnesota), and colleagues found that bee community diversity and composition in Nachusa restorations resembled remnants

within 2–3 years of restoration, and bee communities were highly variable between sites, regardless of remnant/restoration status.

- Hill’s Thistle: Nora Gavin-Smyth (Chicago Botanic Gardens/ Northwestern) defended her master’s thesis, including work on Nachusa’s Hill’s Thistle (*Cirsium hillii*) population. She found cross-pollination between populations across northern Illinois increased seed production, but did not affect genetic diversity, indicating populations could produce more viable seed with assisted pollination from other populations.



© ANN HAVERSTOCK

Further reading

Barber, N.A. et al. 2017. “Species and functional trait re-assembly of ground beetle communities in restored grasslands.” *Biodivers Conserv* 26: 3481–98.

Klopf, R.P. et al. 2017. “Restoration and management for plant diversity enhances the rate of belowground ecosystem recovery.” *Ecol Appl* 27: 355–62.

Nachusa Scientists

The Effects of Bison Reintroduction on Grassland Bird Nest Success in Tallgrass Prairie

BY HEATHER HEROKOVICH

During the last five summers, I have spent many early mornings scouring Nachusa looking for bird nests in the prairie. These nests are like the proverbial “needle in a haystack,” but finding them was crucial



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to determine how prairie management at Nachusa may be impacting grassland-nesting birds—specifically, how bison may be impacting these species.

From 2014 to 2018, I found 260 nests and watched each of them from start to finish.

During those years, I found 14 species, on par with previous nest success studies at Nachusa. The most abundant were red-winged blackbirds, field sparrows, and dickcissels.

All bird species

For all species I found nesting at Nachusa, bison did not play a major role in chicks successfully leaving the nest. There was no significant nest trampling, dislodgement from grazing and wallowing, or brown-headed cowbird parasitism. Brown-headed cowbirds do not provide parental care for their chicks, but rather

lay eggs in another bird’s nest (parasitize) in hopes that the other bird will raise their young. (See photo above)

Nests of all species were likely to be more successful when built in denser vegetation, which helps conceal nests from predators. They were also more likely to succeed if not parasitized by brown-headed cowbirds. What was surprising was the lowered incidence of parasitism in areas with bison present, even though cowbirds forage with the bison herd. In 2016 and 2017, there was no parasitism in sites with bison whereas sites without bison had 11% of nests parasitized.

Grassland-dependent bird species

Bison presence did lower nest density and success of 10 bird species considered grassland dependent, although the response varied by species. Grassland-dependent birds are those that use grasslands for most of their life. Overall, species nesting in sites with bison have not rearranged to include more grazing-tolerant species, and species that are not tolerant of grazing probably nested outside my study area, causing the lowered nest density and varied success. More research, restoration, and defined areas without grazing will be beneficial to birds nesting at Nachusa.

Basal Bark and Fire Efficacy on *Lonicera maackii* with Off-Target Impacts

BY KALEB BAKER

Amur honeysuckle (*Lonicera maackii*) is an invasive shrub that flourishes along forest edges and in open woodlands. Amur honeysuckle shades out native flora, and, when left uncontrolled, can produce a near monoculture threatening biodiversity.

Land stewards have implemented a variety of eradication methods including pulling, cutting and treating with herbicide, foliar-applied herbicide, basal bark herbicide treatments, and prescribed fire. Continuous treatments and monitoring are needed to eradicate Amur honeysuckle so the cost, effort, and time requirements of controls are important.

In this study, I worked with my advisor Dr. Nick Barber to explore basal bark and prescribed fire



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NACHUSA NESTING BIRDS

2014-2018

Bolded species are those that are considered grassland-dependent as defined by Vickery et al. (1999)*.

- **Red-winged Blackbird**
- **Mourning Dove**
- **Grasshopper Sparrow**
- **Common Yellowthroat**
- **Eastern Meadowlark**
- Field Sparrow
- Brown Thrasher
- **Mallard**
- **American Goldfinch**
- **Dickcissel**
- **Lark Sparrow**
- **Ring-necked Pheasant**
- Song Sparrow
- Indigo Bunting

*Vickery, P.D. et al. 1999. Ecology and Conservation of Grassland Birds of the Western Hemisphere. In: Studies in Avian Biology. Lawrence, Kansas. Allen Press Inc. p. 2-26.



© DEE HUDSON/THE NATURE CONSERVANCY

treatments as means of control. Basal bark treatments involved spraying a 12 percent solution of triclopyr herbicide around each plant's base from a backpack, which was both quick and easy. I included 800 individually marked Amur honeysuckle at five sites within Nachusa

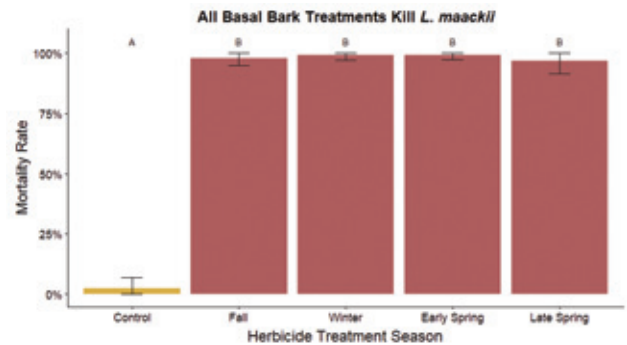
Grasslands and Franklin Creek State Natural Area. Basal bark treatments were applied in fall 2017, winter 2018, early spring 2018, and late spring 2018. Prescribed fire was administered in spring 2018 with mortality checked in fall 2018.

Basal bark treatments were equally effective at killing Amur honeysuckle regardless of timing. The combined mortality rate of herbicide treatments was

98.4 percent compared to a 2.5 percent mortality with no basal bark treatment. Prescribed fire did not impact mortality.

In spring 2018 I placed a 1-m² quadrat around 200 Amur honeysuckle to measure off-target damage to the plant community, finding a decrease of living cover equating to about a 10-inch radius. The off-target "ring of death" did not differ based on fire treatment or basal bark season.

From these results, I highly recommend using basal bark treatments to control Amur honeysuckle for all but the highest-quality areas. The speed and ease allow managers to cover large swaths of invaded areas.



2018 Sightings

Rare & Uncommon Species



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May 2018: Pictured is one of three juvenile badgers spotted near their nesting burrow.

American Badger

Stable populations

Since these mammals are mainly nocturnal and their home is underground, it's hard to spot them; these are the first seen at Nachusa in many years.



© TYLER BERNDT

"I believe this marks the first time we have had whooping cranes, American bison and native prairie together on the same landscape in the eastern US since the 1800s"

—Dr. Richard Beilfuss, International Crane Foundation President & CEO

Whooping cranes

Endangered—only 849 in the world

Although not residents, in 2018 these two whoopers stopped to feed in Nachusa's restored wetland as they flew northward.

Friends of Nachusa Grasslands

BY BERNIE BUCHHOLZ



This year Friends of Nachusa Grasslands celebrate our 10th Anniversary. We continue to pursue our original mission with passion and optimism: to fund endowments, conduct and encourage stewardship, and support science and education.

Legacy of Stewardship

Volunteers are the heart and soul of prairie restoration at Nachusa. New volunteers join our veterans by participating in Saturday workdays, during which our stewards greet and orient the new recruits. Some new volunteers go on to participate in workdays year round and even take responsibility for their own restoration unit. Volunteer efforts annually exceed 10,000 hours.

Legacy of a Secure Future

We are funding endowments that will permanently support restoration at Nachusa and provide for its long-term protection. We are pleased to report that we are approaching two-thirds of our goal of \$3 million.

Legacy of Science Research

We award grants to skilled candidates conducting scientific research significant to habitat restoration and management practices.

In October 2018, Friends held its fourth science symposium. One hundred enthusiastic attendees heard fascinating details of the research being conducted by Nachusa researchers.

In January 2019, we awarded 10 researchers a total of almost \$42,000. Their work will delve into studying Blanding's turtles, beetles, butterflies, ornate box turtles, bison intestinal microbial ecology, treatment of honeysuckle, and other topics. For more details on these research projects, please visit our website.

Legacy of Support

Please help keep Nachusa Grasslands flourishing. Consider volunteering or supporting us financially. You can also leave your own legacy as a Heritage Hero by including Friends of Nachusa Grasslands in your estate plan or will. Please visit our website for options: nachusagrasslands.org.



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Save the Dates!

June 15 Prairie Potluck

July 27 Annual Meeting

October 19 Science Symposium

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Thriving: Nachusa's Bison Herd Matures

2018 Bison Roundup



BY CODY CONSIDINE

A new-born calf only hours old.

© GREG BAKER

Learning from previous years, we made three major roundup improvements in 2018: eliminating shadow optical illusions in the bison corral, slowing bison speed through the squeeze chute, and changing the bison data management system.

Shadows

Last year, sunlight through the corral bars created an illusion on the ground resembling a cattle guard, and bison did not want to move into the Berlinic cube (a bison corral system). This year, in preparation for the roundup, we covered all the sides of the cube with wood panels, which eliminated most of the shadows, and the animals went right through the cube.

Reduced speed

Secondly, we darkened the Berlinic cube inside, which significantly lowered the animal's speed entering and hitting the squeeze chute. In years past, animals hit the crash gate very hard, and although the crash gate is engineered to take the impact, it was a concern for the bison.

Data Management

Lastly, we revamped our bison data management program. The two software programs we purchased had not been updated or maintained by the developers since 2014 and therefore became obsolete. Working closely with new ecosystem restoration scientist, Dr. Elizabeth Bach, we identified what information was needed to manage the herd; she then created a workflow to collect and analyze the data in-house so we no longer rely on third-party programs. Nachusa is currently sharing this method with all TNC bison herd managers.

Bison Sale

With 31 calves born in 2018, Nachusa's bison herd reached the preserve's target goal and transitioned from the growing phase into the maintenance phase; 25 animals were sorted and sold from the herd.

The Buyers

Preference was given to our TNC Wind Cave partners and other conservation herds. Fermi Lab purchased 2 two-year-old bulls. The remaining 23 animals were sold to three buyers through an online auction with Bradeen Auction Services out of Rapid City, SD. This method of sale was new for Nachusa and for TNC. Online auctions are becoming more common and reach diverse buyers.

CURRENT HERD

Roundup	132
2018 Calves.....	31
Bison Sale	25
Bulls.....	41
Cows.....	66
Total Bison	107

Future Sales

Each year a sale will take place to maintain Nachusa's herd size. Based on our herd structure and demographics, we expect to sell as many as 40 animals in 2019, primarily yearlings and older bulls. Yearlings will make up the bulk of our sale animals due to their less-significant role within the herd and better ability to handle the potential stress of handling and shipping. Nachusa will keep the herd size consistent for the next five years to enable us and the scientists we work with to understand the herd's impacts on the ecosystem over time.

Managing Brush

Efficiency With the Right Equipment

BY BILL KLEIMAN

Due to lack of fire, natural areas in the Midwest have suffered encroachment from non-native shrubs (ie. honeysuckle, buckthorn) and non-fire tolerant native trees (cherry, elm, boxelder). This invasion has shaded out native flowers, grasses and sedges; germination of oaks and native shrubs has been severely set back.

To remove overgrown brush, land managers use prescribed fire and all the equipment available to them to work efficiently. Brush mowers help us get the job done. Intensive brush removal is hard on the preserve's aging machine, so Illinois TNC is looking for donor(s) to help us buy a heavy-duty machine built for brush mowing.



© BILL KLEIMAN/THE NATURE CONSERVANCY

BEFORE. Using a chainsaw would have taken many hours. With the brush mower attachment mounted on the Terex, the task was completed in 20-30 minutes.



© BILL KLEIMAN/THE NATURE CONSERVANCY

AFTER. The large oak is cleared of brush. Its acorns will have space to grow, along with wildflowers.

The Dream . . .



● **\$225,000**

© CODY CONSIDINE/THE NATURE CONSERVANCY

2018 Donors

To The Nature Conservancy's Nachusa Grasslands

BASED ON GIFTS RECEIVED 1/1/18 – 12/31/18

\$100,000+

Illinois Clean Energy Community Foundation

\$25,000 – \$99,999

Chauncey & Marion Deering McCormick Foundation
Friends of Nachusa Grasslands
Grand Victoria Foundation
Mr. and Mrs. Ian McCutcheon
Sally Mead Hands Foundation
Jay Stacy

\$10,000 – \$24,999

Keith W. Benson Jr.

\$5,000 – \$9,999

Anonymous (2)
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\$1,000 – \$4,999

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