

ISSUE 57, SPRING 2020

PRAIRIE SMOKE

NACHUSA GRASSLANDS *Annual Stewardship Report for 2019*



This year's annual report reveals the science we do and how we share what we learn. We also highlight the stewardship we do to restore and sustain healthy habitat. It is a team effort of volunteers, staff and donors. We thank you for your support.

Bill Kleiman
PRESERVE MANAGER

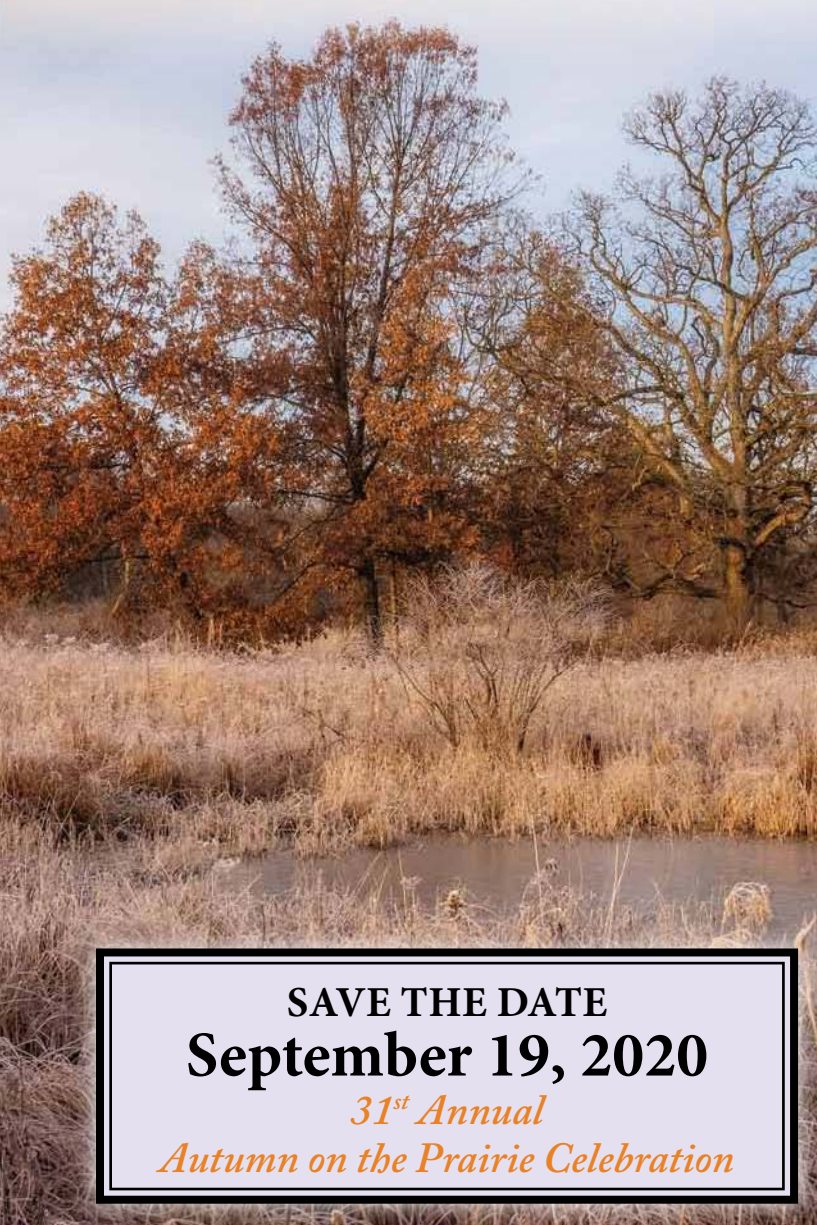


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STAFF: Bill Kleiman, Cody Considine, Elizabeth Bach & Dee Hudson

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Fall wetland

SAVE THE DATE
September 19, 2020
31st Annual
Autumn on the Prairie Celebration

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COVERS
Front Cover: © Dee Hudson; Big Woods Unit stewarded by Becky and Hank Hartman. "After over 200 species planted and over 2,000 volunteer hours per year, the area is looking somewhat improved."
Back Cover: © Charles Larry

Growing Achievements

The crew tackles a new year of restoration



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2019 Restoration Technicians: Tyler Pelligrini, Amanda Contreras, Anna Scheidel, Riley Nylin, Nathaniel Weickert, and Jenny Chlipala

BY AMANDA CONTRERAS, McCormick Resident Fellow, The Nature Conservancy

The 2019 season proved to be yet another promising year for seed collection! Over 240 different plant species were harvested, just shy of the 2018 record of 275. One of our seasonal highlights was setting the new record for *Antennaria plantaginifolia*, or pussytoes, at 28.65 pounds. The previous record was a mere 19.5 pounds! Our complete hand-collected seed harvest totaled 3,000 pounds, which we reverently separated and mixed according to appropriate soil types for the 2019 fall crew plantings.

woodland, and wetland plant species. We topped off our planting efforts for the year by completing half an acre in the Didier Woods management area.

Weed Management

Each season we restore more acres, and that brings more responsibility. As Nachusa expands, herbaceous weed management—and the proper tools to execute it efficiently—continues to be an important aspect of the crew’s restoration efforts. This is now the third season that Nachusa has utilized Collector, the ArcGIS mapping software. Among its other capabilities, this tool allows us to compare and analyze data from the previous years. **When compared to the 2017 season, the number of acres treated for herbaceous weeds in 2019 has nearly doubled, but the total number of worker hours has only increased by 16 percent!** Table 1. From this information we can speculate that our approach on weed management is effective as well as efficient. Collector allows us to organize our management inputs so we can then analyze, reflect, and learn how to best manage a healthy and growing preserve.

Year	Total Worker Hours	Total Acres Treated
2017	948	1666
2019	1100	3005

Table 1. Since we started using Collector in 2017, we have doubled the number of treated acres but only increased the total of worker hours by 16 percent.



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Our crew plantings totaled 84.5 acres this season. We partnered with the Illinois Department of Natural Resources (IDNR) and planted 21 acres of prairie at Franklin Creek Natural Area, our partners to the south. Another important achievement was our 63-acre planting at the junction of Carthage Road and Flagg Road, completing the final piece in the Clear Creek Knolls management unit. We seeded our plantings at 50 pounds per acre, using different prairie,

Developing Future Leaders

McCormick Resident Fellow

BY CODY CONSIDINE, *The Nature Conservancy*

Through a generous gift from the Chauncey and Marion Deering McCormick Foundation, we were able to add a new position to our Nachusa team in 2019. Inspired by the successful Illinois Department of Natural Resources Heritage Biologist residency program and the increasing demands of managing a growing preserve, we created the McCormick Resident Fellow. This

is a leadership position modified from the former crew leader role, with added responsibility and more training over a 12-month period. Our goal is two-fold: (1) train and enhance skillsets of emerging professionals who have a desire to manage natural areas, and (2) forward Nachusa's stewardship goals by sharing the workload.

To say that this program has been a success in its first year is an understatement. Nathaniel



© DEE HUDSON/TNC
McCormick Fellows: Nathaniel Weickert, Amanda Contreras

Weickert was hired in 2019 as Nachusa's first McCormick Resident Fellow. Nathaniel, not new to Nachusa, previously worked as a restoration technician and then crew leader prior to being selected for the Fellow position. He started in March, but by July Nathaniel was offered an opportunity in graduate school at University

of Kansas. We saluted him and wished him well on his next life adventure. Amanda Contreras

was promoted from the assistant crew leader to the new McCormick Resident Fellow. Amanda quickly took off and led the remainder of the 2019 field season, which ended with a near-record-breaking seed harvest the crew used to plant 85 acres of new prairie. Talented

emerging professionals are highly sought after and by the end of 2019 Amanda was offered a full-time and tremendous opportunity from one of our partners. She accepted the position and in July 2020 will become the restoration ecologist for Richardson Wildlife Foundation, a 2,000-acre nonprofit natural area in southern Lee County.

New Opportunity for Emerging Scientists

Science Extern

BY JENN SIMONS, *Master's Candidate, University of Wisconsin Madison*

This summer was the first year of the Science Extern position at Nachusa Grasslands. This position was designed for a current graduate student to live on site from mid-May to mid-August and work on their research while assisting with more general science-related tasks at Nachusa.

As part of my research, I leveraged existing fenced plots that exclude the bison from grazing in sections of the 1,500 acres of

bison habitat. Building on plant community data taken between 2014–2015 and 2017–2018, I gathered data for 2019 to compare changes in the vegetation diversity, structure, and abundance along with soil compaction between grazed and non-grazed land over time. This meant I collected and analyzed 132 soil samples in addition to spending a couple weeks in June and again in August out in the field identifying,



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Science Extern: Jenn Simons

measuring, and counting plants in quarter-meter quadrats throughout the north bison unit. Luckily, several stewards were kind



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Jenn Simons collects soil with a core sampling tool.

enough to help out with this time-consuming task.

In addition to spending time on my own research, I worked with Dr. Bach on entering, organizing, and exporting data collected by Nachusa staff; doing preliminary analyses on data collected prior to 2019; creating GIS maps, and joining the crew on various management tasks. This experience was key to understanding what it looks like to maintain a science-based approach in the field while carrying out management tasks. Collecting baseline data, performing regular monitoring, and incorporating results into future management decisions helps ensure best practices are being followed while giving insight into

how conservation tasks might be carried out going forward.

Thanks to the Friends of Nachusa 2020 Scientific Research Grants, I'm happy to say I'll be returning this summer to collect the rest of my data on the south bison unit. I can't wait to see you all out on the prairie.



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Separating soil core samples.

Head-Starting

A new phase in Blanding's turtle management at Nachusa Grasslands

BY RICHARD KING, Professor, Northern Illinois University



Head-starting goal: to increase egg survival, hatchling survival, and juvenile recruitment.

Blanding's turtles are a long-lived late-maturing species endemic to the Great Lakes region. Individuals range widely within wetland complexes and associated uplands, making them vulnerable to habitat loss and fragmentation. In Illinois, Blanding's turtles are restricted to the northern third of the state. Populations are scattered but include Nachusa Grasslands and Richardson Wildlife Foundation (near Amboy, IL), where they occur in low numbers.

Head-starting, in which eggs are collected from wild females for artificial incubation and hatchlings are reared for a year prior to release, is an effective method to increase egg and hatchling survival and promote population growth. In 2019, 80 Blanding's turtle eggs were collected: 41 from Nachusa Grasslands and 39 from Richardson Wildlife Foundation. Eggs were incubated by the Forest Preserve District of DuPage County, resulting in 78 hatchlings. These are being reared by the Forest Preserve District of Lake County for release at Nachusa and Richardson in 2020. Post-release monitoring of head-starts will be carried out via radio telemetry and trapping. Through additional years of head-starting and wetland enhancement, we hope to ensure Blanding's turtle persistence within the region.

Nurturing Science

BY ELIZABETH BACH, *The Nature Conservancy*

Nachusa's science program is putting down roots and developing into a diverse, lasting endeavor. Twenty-three researchers collected data at Nachusa Grasslands in 2019, with research topics ranging from microorganisms to plants to bison. An important step forward for the Nachusa science program was the debut of the Summer Science Externship (see pg. 4). This program provides graduate students with much-needed summer salary support and experience working in a land management context. In turn, the graduate students can share their skills in data stewardship to synthesize legacy data and build long-term datasets that extend beyond individual research projects. We are excited to continue this program in 2020 and beyond.



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Sheryl Hosler and Anna Farrell survey vegetation in a degraded old pasture at Thelma Carpenter Unit.



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Nachusa's reputation in the scientific community also continues to grow. **Several studies conducted at Nachusa were published in peer-reviewed scientific journals this year.** Publication is a major accomplishment, as it often takes years for scientists to collect and analyze data as well as write and revise the manuscript before it is accepted.

Dr. Nick Barber (San Diego State University), Dr. Holly Jones (Northern Illinois University), and their lab groups published three studies conducted at Nachusa Grasslands. Barber et al. (2019a) were part of a special issue of the *Journal of Ecology*, published by the British Ecological Society, that focused on

grassland plant community assembly around the world. The study examined restoration techniques on plant species diversity and broader plant family group diversity (e.g. how closely related the species are) in 120 tallgrass prairie restorations, including Nachusa. Across all the sites, the evidence supports the conclusion that competition between plant species is the primary driver of tallgrass prairie plant communities, more so than environmental factors.

Nachusa had the highest species richness values of all sites and maintained that diversity to a greater extent over time since restoration. Two publications examined ecological responses to the initial bison reintroduction at Nachusa from dung beetles (Barber et al. (2019b)) and small mammals, led by Angie Burke who received her MSc in Dr. Jones' lab in 2018 (Burke et al. (2020)). Both articles appear in the *Natural Areas Journal*. See Dr. Jones' article on pg. 8 for the key findings from these publications and additional ongoing work.

Research from Dr. Jason Willand (Southern Missouri State University) and Dr. Sara Baer (University of Kansas) evaluating the forage quality



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Opaque earth boring beetles (*Geotrupes opacus*), a dung beetle

of remnant prairie, old restored prairie, and young restored prairie at Nachusa in anticipation of bison reintroduction was published this spring in *American Midland Naturalist*. Plant productivity was greater in restored prairies than remnant. Forage in highly diverse young prairie had the greatest fat content, but protein content was slightly higher in remnant prairie forage. Based on these findings, Willand and Baer (2019) suggest bison may choose to graze more intensely in restored areas where more forage is available. It would be exciting to revisit this work now that bison have been here for five years.



© DEE HUDSON/TNC

Meadow-jumping mouse (*Zapus hudsonius*); small mammal study

Publications

- Barber, N. A., A. K. Farrell, R. C. Blackburn, J. T. Bauer, A. M. Groves, L. A. Brudvig, and H. P. Jones. 2019a. "Grassland restoration characteristics influence phylogenetic and taxonomic structure of plant communities and suggest assembly mechanisms." *Journal of Ecology* **107**:2105–2120.
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- Burke, A., M. Angela, A. Nicholas, P. Holly, A. M. Burke, N. A. Barber, and H. P. Jones. 2020. "Early Small Mammal Responses to Bison Reintroduction and Prescribed Fire in Restored Tallgrass Prairies." *Natural Areas Journal* **40**:35–44.
- King, R. B., and J. P. Vanek (in press). "Responses of Grassland Snakes to Tallgrass Prairie Restoration Implications for Practice." *Restoration Ecology*.
- Virgin, E. E., and R. B. King. 2019. "What does the snake eat? Breadth, overlap, and non-native prey in the diet of three sympatric natricine snakes." *Herpetological Conservation and Biology* **14**:132–142.
- Willand, J. E., and S. G. Baer. 2019. "Resource Availability and the Potential for Bison Introduction in a Landscape Mosaic." *The American Midland Naturalist* **181**:195.

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Dekay's brown snake (*Storeria dekayi wrightorum*)

Dr. Rich King and John Vanek (Northern Illinois University) published their study of the snakes of Nachusa in *Restoration Ecology* in early 2020. From 2013–2016, they found smaller, less-mobile species (e.g. Dekay's brown snake) increased in abundance as restorations matured, but abundances of larger, more mobile species (e.g. garter snakes, fox snakes) were not tied to restoration age. The project was in part looking for the smooth green snake—a species of concern in Illinois—at Nachusa but did not find it. There is no evidence or expectation of a smooth green snake population at Nachusa, despite its presence at Green River State Wildlife Area just 16 miles south. In addition, Dr. King and colleague Emily Virgin (Utah State University) published a study of snake diet in *Herpetological Conservation and Biology*, which included data from Nachusa Grasslands (Virgin and King 2019). They found that snakes in northern Illinois predominately ate slugs, snails, and worms. Most of these prey species are non-native invasive species.

Congratulations to all authors! It is exciting to see Nachusa contributing to the field of ecology broadly.



Bison Bring Changes — Big and Small

BY HOLLY JONES, Associate Professor, Northern Illinois University

It seems ages have passed since that day in 2013 when, together with my collaborator Dr. Nick Barber, I hatched a plan to measure how bison reintroduction would impact prairie plants, animals, and ecosystems. Our vision was simple—we wanted to collect as much data as we could on as many components of the ecosystem as we felt qualified to measure so that we could get a comprehensive picture of bison impacts. The execution, however, was not so simple. Since that day, we have involved 9 graduate students, 13 undergraduate researchers, and 1 postdoctoral fellow in our research. We set up long-term research projects to track bison diet, plants, birds, small mammals, dung beetles, and ground beetles. And we have been finding some exciting stuff!

Plant communities impacted by bison are more complex, showing a wider, more varied range of plant species combinations in the bison unit versus our study sites outside where

the bison roam, but plant diversity has not changed much since bison were reintroduced. Bison diet varies across seasons, but they eat more than just the tallgrasses they're thought to prefer, with as much as around one-third of their diet consisting of wildflowers and legumes.



Grazed rattlesnake master (*Eryngium yuccifolium*)

© HOLLY JONES

Bird communities are important to study because they've shown some of the biggest declines of all species due to the loss of prairie, and because they control a lot of energy flow as both prey for predators and seed/insect eaters

themselves. **Birds have largely been unaffected by bison presence, with the exception of grasshopper**



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Grasshopper sparrow (*Ammodramus savannarum*)

sparrows, which show higher abundance in bison sites.

Small mammals (animals such as mice, voles, and ground squirrels) sit in the middle of food webs—they are prey for larger mammals and raptors but also eat insects and seeds. Studying them, therefore, gives us a sense of how the whole

food web is doing.

They are not strongly impacted by bison presence; they are a bit heavier but otherwise, **small mammals respond more strongly to fire and restoration age than to bison.**

Ground beetles make up much of the diversity of food webs so are a good indicator species for food web health. There are different mixes of species in the bison unit, and slightly lower diversity. Fewer carnivorous ground beetles exist in the bison sites, which could be because carnivorous

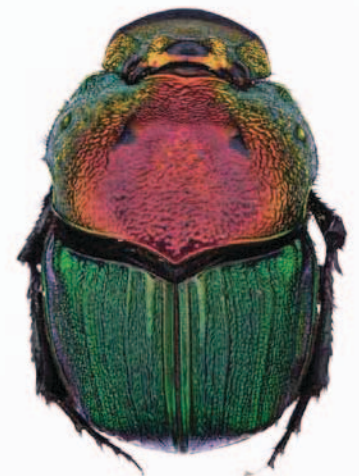
beetles find it harder to withstand disturbances such as grazing and wallowing. **Dung decomposition and the number of dung beetles were higher in the bison sites in the first couple of years after bison were reintroduced**, but that pattern is changing with more data and time.

Holistically, we see that bison reintroduction has impacted many parts of the ecosystem—and mostly how we expected it would. We have a ton more work to do to understand how these patterns will change with time, and how they relate to other factors like fire and restoration age, so stay tuned!



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Prairie Vole (*Microtus ochrogaster*)



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Rainbow scarab beetle (*Phanaeus vindex*)

Nachusa's Native Bees

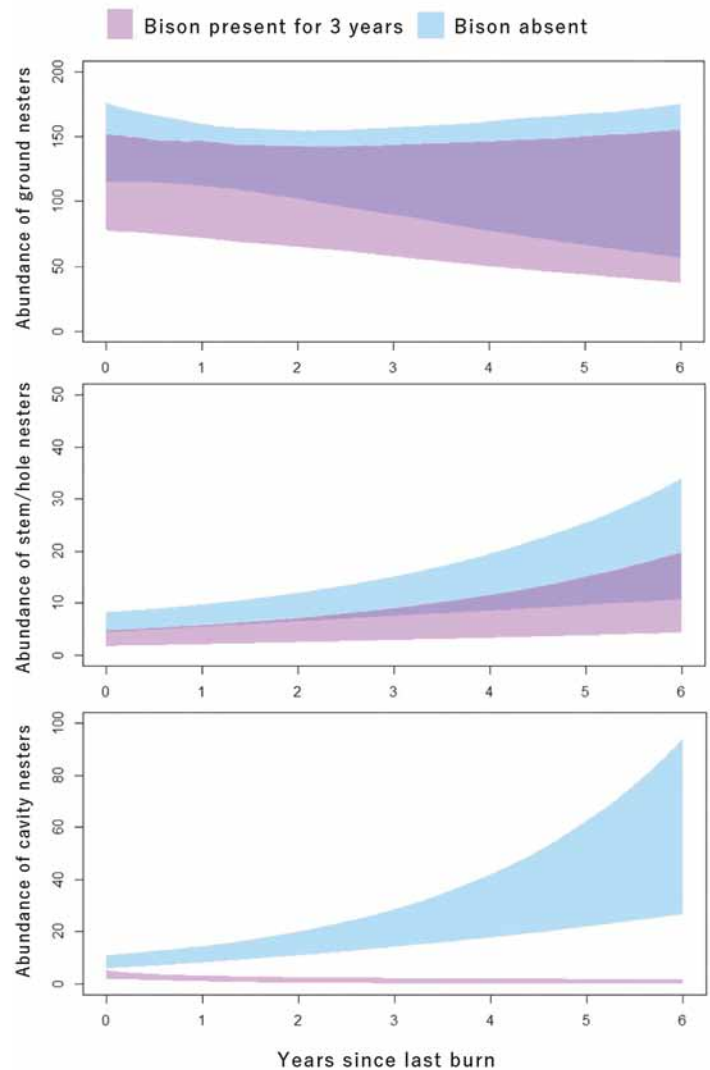
Response to bison and fire

BY BETHANNE BRUNINGA-SOCOLAR, *Post-doctoral Researcher, University of Minnesota*

Different types of bees respond differently to bison and fire.

Nachusa has 227 species of bees and each year my colleagues Sean Griffin (University of Texas at Austin), Laura Rericha-Anchor (Cook County Forest Preserve), and I find more. When we think of supporting a diverse bee community, the first thing that comes to mind is a diverse floral community. In general, scientific research supports this gut reaction: diverse floral communities are often correlated with diverse bee communities. But we overlook the equally important nesting habitats that are required for a diverse bee community to thrive. Bees nest in a variety of substrates, including bare soil, bases of bunch grasses, used rodent burrows, and hollow stems. The availability of these types of nesting habitat at Nachusa is affected by the frequency of prescribed fire and the presence of bison.

In a new paper submitted to the journal *Biological Conservation*, I divided Nachusa's bee community into three groups based on nesting habitat: ground nesters that usually nest in bare soil, stem nesters that nest in hollow stems, and large-cavity nesters (bumble bees) that nest in large, pre-existing cavities. Using bee specimens collected 2015–2017, I analyzed the impact of bison and prescribed fire on the abundance of each of these nesting groups across 19 sites at Nachusa. I found that bison lower the abundance of stem nesters and large-cavity nesters, but bees vary in their



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response to fire. Ground nesters show little change in abundance over time since the last burn. Stem nesters and large-cavity nesters both show a negative response to fire, i.e., they are low in abundance immediately following a burn and increase in abundance over time without fire.

The takeaway? **Varying the application of prescribed fire and grazing pressure in space and over time—standard practice at Nachusa—supports a diverse bee community by creating refuges that different groups of bees require to persist.** Our results underline the importance of refugia, especially for the large-cavity nesting bumble bees: these bees respond poorly to bison in our data set and grazing-free sites are likely essential to their long-term conservation.

Bison Herd Five-Year Anniversary

BY CODY CONSIDINE, *The Nature Conservancy*



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Fran Harty (TNC Director of Terrestrial Conservation) and Jeff Walk (TNC Director of Conservation) confirm data with Elizabeth Bach and Dee Hudson while Bill Kleiman operates the squeeze chute waiting for the "ok" to release the animal.

Over the past five years we've become well versed in all aspects of bison management: bison unit stewardship, annual roundups, bison unit burns, moving and sorting bison in the corral, herd demographics management, tours, research, and veterinarian care are all skillsets we've learned and continue to improve on each year.

One of the important considerations in managing a healthy bison herd is herd demographics. As managers we can directly influence the herd dynamics because we can physically remove or add animals. The goal is to maintain a bull-to-cow ratio that expresses natural behavior, where bulls compete for breeding rights. When more bulls compete to breed, natural selection is ensured. Yellowstone, the largest free-roaming

bison herd in the country, has a 1:1 bull-cow ratio. Currently, Nachusa's herd contains 30 percent mature bulls and will unlikely ever be 50 percent male due to the challenges of handling many mature bulls on a smaller landscape. Results from parentage testing our calves last fall indicate the current herd structure is invoking breeding competition between bulls. DNA analyses performed by Texas A&M indicated 13 bulls sired the 20 calves born into Nachusa's herd in 2019, which means half of the bulls present during the 2018 breeding season sired at least one calf. **These results suggest we can meet genetic objectives with the current makeup of the herd.**

Although we are far from being considered a completely wild herd, our management decisions complement the forces of nature which allow bison to be bison. We've learned a lot in the past five years of managing bison but are even more eager to understand



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Dr. Steve Baker and Jeff Walk vaccinate a calf.

the ecological narrative at the end of next five years, when, at the 10-year anniversary, we will start to understand the ecological effects of bison at Nachusa Grasslands.



© GREG BAKER

Burn Boss

The long journey

BY CODY CONSIDINE, *The Nature Conservancy*



© FANNY TRICONE

On the right side I'm pictured overseeing a suppression exercise in Belize, a coastal country in Central America. Training in Belize in February of 2019 was an incredible experience! Learning about the culture and ecology and developing new friendships with Belizeans and my fellow colleagues from across the Conservancy was the highlight of my fire training journey.

I remember it well, my first day as the restoration ecologist at Nachusa in May of 2008. Although I greatly appreciated my time in graduate school at Southern Illinois University, Carbondale, I was thrilled to be working full time at such an amazing place, finally out of the classroom. How naive I was in thinking I was completely out of the classroom.

One of the requirements of my role at Nachusa was to become qualified within the National Wildfire Coordinating Group as a Prescribed Fire Type 2 Burn Boss (RXB2). The Nature Conservancy (TNC) requires all staff who are leading controlled burns to meet this qualification. I thought the process couldn't be that hard in comparison to graduate school but I was wrong . . . 11 years, 17 courses, two fire academies in Florida, six completed task books, 200+ prescribed fires, and one international trip to Belize later, I finally became qualified as an RXB2. I thought two years of grad school was hard!

Early on in this journey I was quite frustrated and annoyed with the process, considering the amount of time and resources it took to complete the courses, academies, and task books. However, learning more about the fire management process and all the factors

it entailed—weather, leadership, crew dynamics, safety, risk management, contingency plans, and both fire suppression and implementation techniques—illuminated the value of the arduous training process. Additionally, February just happens to be an enjoyable time of year to travel to Florida and Belize to learn how to burn.

Controlled burns are the single most important restoration tool for habitats where fire has been suppressed for the last 150 years. The skills, experience, and professionalism of Nachusa's burn crew rank it among the very finest in the nation.



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Bill Kleiman presents Cody with the burn boss helmet.

Friends of Nachusa Grasslands



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



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Dave Brewer, a 2019 new volunteer, begins sawyer training.



© DEE HUDSON/TNC



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Above: Emmylou Studier thanks donors.
Center: Dave Mauger assists turtle researchers in the field.

SAVE THE DATES

- June 13 Prairie Potluck
- July 25 Annual Meeting
- April 24, 2021 .. Science Symposium



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2019 Science Symposium

SOCIAL MEDIA

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This year Friends of Nachusa Grasslands is focused on welcoming new volunteers and new donors. We're building an even stronger team to pursue our original mission: stewarding the land, funding endowments for long-term protection, and supporting science and education.

Stewardship

Volunteers are the heart and soul of prairie restoration at Nachusa. New volunteers join our veterans by participating in workdays, during which our stewards greet and orient the new recruits. Some 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.

Securing the Future

We are funding endowments that will permanently provide for Nachusa's long-term protection. We are pleased to report that we are more than two-thirds toward our goal of \$3 million.

Scientific Research

We award grants to skilled candidates conducting scientific research significant to habitat restoration and management practices. In October 2019, Friends held its fifth science symposium. One hundred enthusiastic attendees heard fascinating details of the research being conducted by Nachusa's scientists. In January 2020, we awarded 12 researchers a total of almost \$48,000. Their work will involve ornate box and Blanding's turtles, federally threatened eastern prairie fringed orchids, bison wallows, the impacts of treating honeysuckle on soil microbes, and other topics. For more details, please see the Science section of our website.

Support the Friends

Please help keep Nachusa Grasslands flourishing. Consider volunteering or supporting us financially. Leave your legacy as a Heritage Hero by including Friends in your estate plan or will. Please see the Donate section of our website for options.

Middle Rock Conservation Partners



BY AUSTIN WEBB, *President, Middle Rock Conservation Partners*

The rare ecosystems of prairie, savanna, woodland, and wetland struggle to persist due to inadequate use of prescribed fire and pressure from invasive species. Without help, even the most pristine habitats are prone to deterioration. Abandoning efforts to sustain native diversity in our natural areas, preserves, and parks would be condemning the essence of their preservation. In order to promote the health of native diversity in our natural areas, it's up to us to rescript their fate. It falls to us then, to aid our natural areas through management.

Middle Rock Conservation Partners (MRCP)
Mission: Citizens working together to protect and steward habitat for species in greatest need of conservation within Lee and Ogle counties.

If you are interested in becoming a supporter or would like to volunteer, please contact us:

- middlerockcp@gmail.com
- www.middlerockconservationpartners.org

Supporters and volunteers made these 2019 accomplishments possible:



© PAUL SODERHOLM

Pictured above are volunteers on the first workday at the newly acquired 90-acre tract called the Samuel and Edna Hill Preservation Site. MRCP was able to purchase the site through a donation from the Hill family in combination with a grant from the Illinois Clean Energy Community Foundation. The grand opening is scheduled for October 10, 2020.



© DEE HUDSON/TNC

With donations and help from dear supporters, we purchased the \$300,000 "Dream Machine" — the Fecon FTX200 forestry mower. The mower is a game changer that will clear invasive brush across all our natural areas in Lee and Ogle Counties. Above Damian Considine demonstrates the machine's ability to mulch larger trees.



© CODY CONSIDINE/TNC

MRCP's new UTV on its first fire in the spring of 2019. Over 300 restoration hours were donated by volunteers.



© BILL KLEIMAN/TNC

With donations and a grant from the National Wild Turkey Federation, we purchased a Fire Cache which includes a UTV, a trailer, and fire burning supplies/equipment.

Citizen Scientists

RiverWatch, odonate, bird, and frog monitoring

BY ELIZABETH BACH, *The Nature Conservancy*

At Nachusa, volunteers are at the heart of all we do—from restoration activities in the field, equipment maintenance, and prescribed fire to public outreach and event organization. Did you know several volunteers also actively contribute scientific work, collecting and synthesizing data, both to inform our work at Nachusa and to share regionally? Nachusa has several teams of citizen scientists monitoring different aspects of ecosystem recovery and biodiversity.



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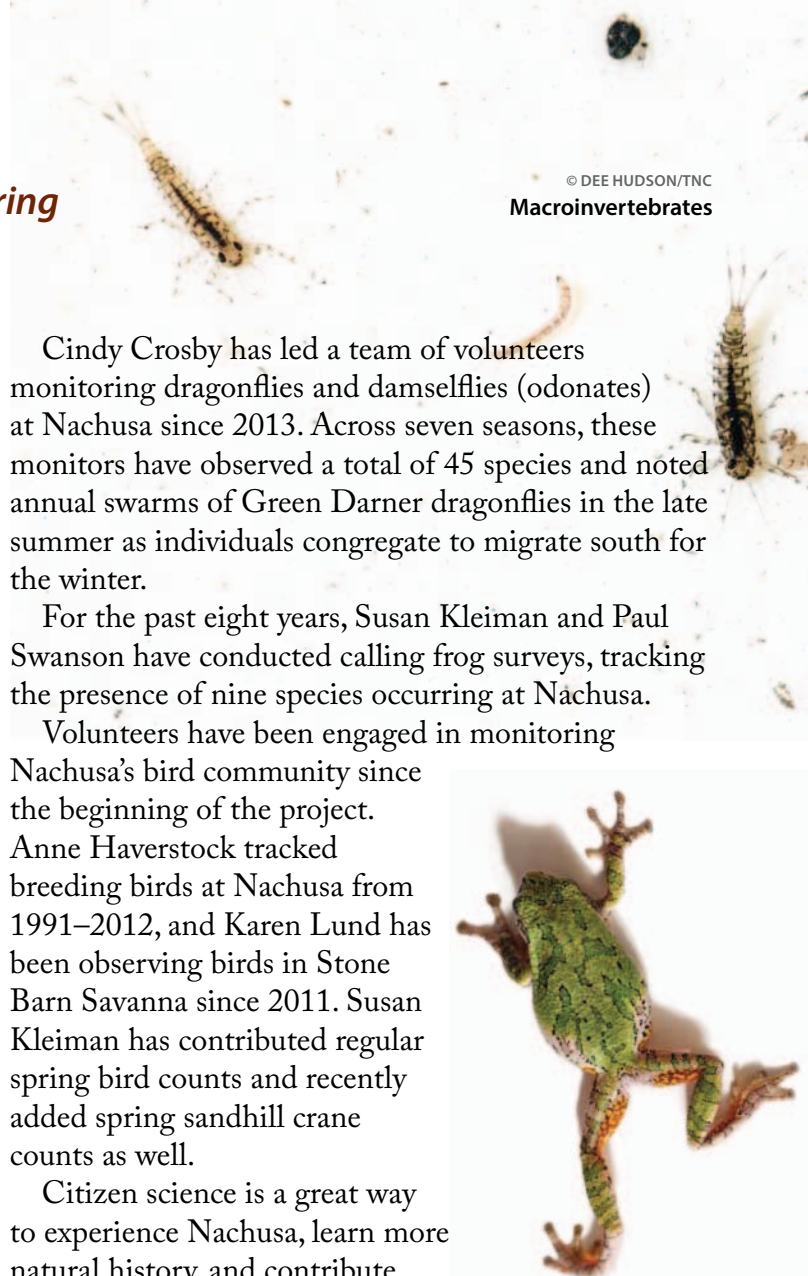
RiverWatch volunteers sort the captured macroinvertebrates.

The RiverWatch team, led by Mary Vieregg, has been monitoring stream quality in Wade Creek, Clear Creek, Johnny's Creek (south end of main unit), and Babbling Brook (Orland tract) by tracking aquatic macroinvertebrate communities. The RiverWatch data is collected as part of a statewide citizen science program, and in **2018 Wade Creek had the best stream quality of the 63 streams monitored across Illinois.**



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Twelve-spotted skimmer (*Libellula pulchella*), a common dragonfly at Nachusa.



© DEE HUDSON/TNC

Macroinvertebrates

Cindy Crosby has led a team of volunteers monitoring dragonflies and damselflies (odonates) at Nachusa since 2013. Across seven seasons, these monitors have observed a total of 45 species and noted annual swarms of Green Darner dragonflies in the late summer as individuals congregate to migrate south for the winter.

For the past eight years, Susan Kleiman and Paul Swanson have conducted calling frog surveys, tracking the presence of nine species occurring at Nachusa.

Volunteers have been engaged in monitoring Nachusa's bird community since the beginning of the project. Anne Haverstock tracked breeding birds at Nachusa from 1991–2012, and Karen Lund has been observing birds in Stone Barn Savanna since 2011. Susan Kleiman has contributed regular spring bird counts and recently added spring sandhill crane counts as well.

Citizen science is a great way to experience Nachusa, learn more natural history, and contribute to better understanding of our restoration work. **All**

teams welcome and train new volunteers, no previous experience necessary!

Contact us through the website if you're interested in participating.



© DEE HUDSON/TNC

Cope's gray treefrog (*Hyla chrysoscelis*)



© DAWN SASEK

Odonate monitors: Joyce Gibbons, Joe Richardson, Dee Hudson, Joan Heng, Elizabeth Bach (scientist), Bill Kruk, Cindy Crosby



Volunteer Support

BY DEE HUDSON, *The Nature Conservancy*

Meet Paul Mellen, an indispensable volunteer working in conservation, mainly behind-the-scenes. Each week Paul supports staff and volunteer efforts through his assistance in the Headquarters workshop, where he maintains all the equipment used for restoration. When a saw needs a sharp chain, staff and volunteers find them neatly organized and ready for use. Paul has even created a system to service all the vehicles and UTVs on a regular basis, ensuring they are kept in working order. Paul has found his purpose as a Nachusa volunteer. When he donates his time and skills, he aids staff so they can focus on their jobs and provides volunteers with safe equipment ready for use.

Have you considered how your skills might support restoration efforts?

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Paul Mellen

WANTED
Handy Volunteer Repair Person
Maintains the houses/buildings. Contact us:
nachusagrasslands.org/tnc-contact-form.html

2019 Donors

To The Nature Conservancy's Nachusa Grasslands

BASED ON GIFTS RECEIVED 1/1/19 – 12/31/19; nature.org/illinois

\$100,000+

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*Deceased

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Fall Savanna



Protecting nature. Preserving life.

The Nature Conservancy

Nachusa Grasslands Preserve

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