



# Rolling Plains Chapter NEWSLETTER

Vol.14, No. 9

<http://txmn.org/rollingplains>

September 2022

*The Rolling Plains Chapter partners with River Bend Nature Center and Wild Bird Rescue, Inc. in Wichita Falls; Lake Arrowhead State Park in Clay County; Copper Breaks State Park in Hardeman Count;, Whiteside Museum of Natural History in Seymour; and Comanche Springs Astronomy Campus in Crowell. Our Chapter covers Archer, Baylor, Clay, Foard, Hardeman, Jack, Montague, Wichita, Wilbarger, and Young Counties.*

**SEPTEMBER 6:**  
**Rolling Plains Chapter Meeting** - 7:00pm at MSU's Bolin Science Hall, room 209. If you would prefer to attend via Zoom, watch for the link to the meeting in your email. Either way, I hope you will join us.

**The program:** Laura Gillis and Lynn Seman will be speaking about Monarch tagging and testing for parasites on the butterflies.

**VT SEPTEMBER 10: BIRD OUTING at LASP 8:00-10:00** Join Penny Miller, other members and guests at Lake Arrowhead State Park for a bird outing. Look for and identify birds found at the park. This is a leisurely hike on level ground (handicap accessible). Binoculars helpful, but not required. Meet at the dump station at 8 am.



I thought it might never get here, but there are finally signs that Fall is just around the corner. The temperature has finally released its hot, heavy-handed grip, the birds are gathering up and planning their treks south, and Monarch butterflies have begun to trickle through the area on the cooler air. It's one of my favorite times of the year.

As the Monarchs begin making their way to Mexico, we will be getting ready for Monarch tagging. For our September program I will be going over the data sheets and how to tag our little insect friends and Lynn Seman will show us how she will be testing for parasites on the butterflies.

We will also be celebrating the completion of the 2022 Spring Training Class with certificates and some sweet treats! These new friends have worked very hard and I hope you will come share this accomplishment with them. Kevin Seager and Lisa Winkles have put in some extra time and will be receiving double certifications at the September meeting. Ian and Rebecca Milunas are also very close to double certification and I am confident we will be presenting their awards in the near future. I am so very proud of all of our trainees and their commitments to nature and learning.



Just a reminder that the offices of President and Treasurer are both open for election this year so if you would like to serve in either of those offices, please let one of the Board members know. The ballot will be presented at the November meeting with elections in December. We also need a new Chairman of the Hike Committee and a person to oversee the Volunteer Management System (VMS). Please let any Board member know if you are interested in one of these positions or if you have any questions.

I hope to see you in Bolin Science Hall, Room 209 at Midwestern State University (or on Zoom - link will be in your email) for the Chapter meeting Tuesday, September 6th at 7:00 PM. If you are there in person, we will be passing out Monarch tags!

Happy Fall, y'all!—Laura

**VT SEPTEMBER 10:**  
*Sike Lake Clean Up*  
9:00-11:00 Help clean up Sikes Lake off of Midwestern Parkway. The Chapter will hand out trash bags, gloves and grabbers to MSU students, the public and members who will gather as much trash out of and around the lake as possible.

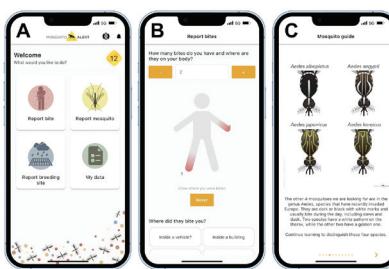
**AT SEPTEMBER 13:**  
*TMNTuesday 10:00-11:00 Summer 2022: What Happened & Why.*  
By mid-September, summer will be over, or almost so. It's time to take stock and figure out how the summer of 2022 stacks up against past summers. This talk will put the summer of 2022 within its historical climate context and explain the short-term, medium-term, and long-term factors that contributed to 2022 being yet another memorable summer in Texas. Also, since Texas Master Naturalist members are spread across the state with varying experiences, we'll look at where in Texas the conditions were particularly unusual and therefore likely to have an outsized impact on the natural environment. You may watch this webinar live or its recording at a later date (as long as it is watched within the calendar year it was recorded). You

# Mosquitoes and Your Smartphone

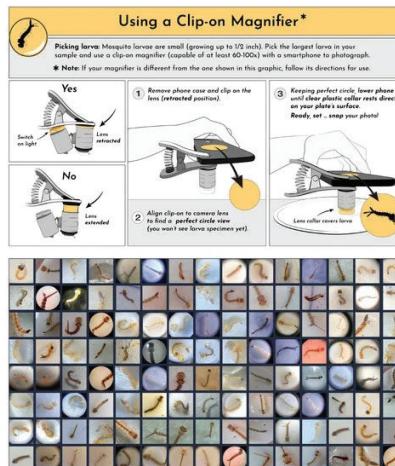
reprinted from the August issue of *iWire*

There are many technological innovations and advances that are leveling the playing field between us and invasive species. Some of them are mentioned in the articles above. Others remain unmentioned because there just isn't enough article space. However, one last amazing innovation needs to be mentioned.

A global dashboard that tracks invasive mosquitoes and is driven by citizen science reports has been created by the University of South Florida researchers. Researchers hope this database will help combat the ongoing threat of mosquito-borne diseases worldwide and prevent deadly outbreaks. The dashboard combines data from three international available apps, Mosquito Alert, Nasa's Globe Observer, and iNaturalist, which allow people anywhere to upload photos of mosquitoes using their smartphones. The dashboard can be used by



An example of how the new Mosquito Alert app works.  
Credit: USF.



*Top:* Panel from the instructional materials for citizen scientists, demonstrating the proper way to use an inexpensive 60x clip-on lens with a smartphone to photograph mosquito larvae. *Bottom:* A selection of citizen science images submitted through the Mosquito Habitat Mapper app. Credit: Carney et al., 2022

researchers and mosquito control professionals to monitor invasive species populations, such as *Aedes scapularis*, an invasive species that causes yellow fever. It can also be used to detect and monitor disease vectors by geo-referencing citizen scientist reports.

Since only a small number of mosquito species transmit diseases, identification and geo-referencing is critical in community defense. The dashboard was tested during a preliminary study that targeted primary vectors of Zika, yellow fever, dengue and Chikungunya. One of the citizen scientists' reports led to the first U.S. iNaturalist observation of *Aedes scapularis*. This information was supplied to local vector control officials in Texas. A.I. algorithms for species recognition are still being

developed, and further development and testing will be conducted in Africa as part of an urban malaria vector campaign.

## Where the Buffalo Roam, Endangered Prairies Thrive

*A study 29 years in the making shows how bison reintroductions can create richer ecosystems and resilience against climate change in North America.*

by Jason Bittel, *National Geographic*, published August 29, 2022

Twice a year for the last 29 years, scientists have waded through the same sections of tallgrass prairie in eastern Kansas and tallied up as many plant species as they could find. The goal was

to determine the impact of American bison and cattle on the ecosystem, compared with plots of similar prairie protected from these grazers.

It's hot, tedious, and tick-in-

fested work, but it is incredibly important: Tallgrass prairies used to cover a huge portion of Texas and stretch all the way up to southern Canada. Today this habitat, dominated by head- and

will record your time as AT: TMNTuesday. \*\*  
**Must be watched within calendar year.** \*\*

**VT SEPTEMBER 24:**  
*Monthly Nature Hike*  
3:00pm Join members for our Monthly Nature Hike as Laura Gillis and Lynn Seman teach us about Monarchs and their migration. We will be tagging the butterflies as they pass through our area, to further our understanding of their migration.

**AT SEPTEMBER 29:**  
Registration for *Texas Wildlife Association* next webinar is now live! On *Thursday, September 29th (noon to 1 PM)* we will have guest speaker Steve Nelle who will be discussing Grazing as a Tool for Habitat Management. Steve Nelle has been instrumental to land management and conservation efforts in Texas; during his career with NRCS, he worked closely with private landowners and continues to provide expertise as an advisor, teacher, writer, and leader in natural resource conservation. Register for free today at: <https://texaswildlifeassociation.salsalabs.org/wildatwork-sep2022/index.html>

waist-high grasses and forbs, herbaceous flowering plants, is imperiled. Tallgrass prairie is now present in just four percent of its former North American range.

Now, decades of diligence and data show a perhaps surprising result: When bison were allowed to graze through patches of tallgrass prairie, they boosted native plant species richness by a whopping 86 percent over the past three decades, according to a study published August 29 in the journal *Proceedings of the National Academy of Sciences*.

Areas grazed by cattle also benefited native species, though they increased by just 30 percent. American bison, also called buffalo, provided nearly three times the environmental benefit as cows, and researchers aren't yet sure why.

*"We're still kind of surprised at just how large of an effect bison had," says study leader Zak Ratajczak, an ecologist at Kansas State University. "I don't think anyone would have predicted this ahead of time."*

The scientists checked their results against 252 similar studies worldwide that looked at the impact of large herbivores on plant diversity. Among these studies, the American bison and their effects ranked in the 95th percentile, meaning that the new study's findings are some of the most dramatic on record.

Between 30 million and 60 million bison lived in the United States in the mid-1800s, before the U.S. government largely exterminated the population, reducing their numbers to just a few hundred by 1889, part of a coordinated effort to deny a key food source to Native American populations. The new study's findings suggest that ongoing efforts to reintroduce bison into their former range could have enormous benefits not only to Native peoples and their culture, but also to the land and natural environment.

*"That is a reciprocal relationship that really was severed,"* says Jason Baldes, tribal buffalo program manager for the National Wildlife Federation's Tribal Partnerships Program, who was not involved in the new study.

*"As Native people, as we restore this connection to the buffalo, it heals us. And that buffalo, by its presence on the land, heals the land,"* says Baldes, who is also an ecologist and a member of the Eastern Shoshone Tribe. *"And that is something that we can all learn, understand, and benefit from."*

### **How do bison affect tallgrass prairies?**

For the prairie grass study, scientists surveyed sections of the Konza Prairie Biological Station, an 8,600-acre tallgrass prairie reserve co-owned by Kansas State University and the Nature Conservancy. In some areas, which are as large as 2,000

acres, free-ranging bison were allowed to graze year-round and other sections housed cattle during the growing season, between April and November. To test the impact of the grazers, a third group of plots were kept clear of both species.

In the herbivore-free plots, much of the landscape was covered by just four species of native grasses: big bluestem, Indian grass, switchgrass, and little bluestem. However, when bison and cattle were allowed to mow these species down, other, less dominant plants were able to thrive. *"That's something we call 'keystone herbivory,'"* says Ratajczak.

One particular beneficiary was a tall, flowering forb known as rigid goldenrod. The botanists saw this species only rarely in the ungrazed plots, but it popped up regularly in those frequented by bison. Similarly, several species of dry-adapted grasses also took hold in the bison plots, along with 11 annual species that had never been seen before in those plots.

### **Beneficial wallowers**

Though Ratajczak can't say for sure yet why bison create better opportunities for native species than cattle do, he has some theories.

Bison tend to be more heterogeneous in their grazing, he says. This means they might crush one area and eat everything down to the nubs, while leaving another

## Did You Know?



1. Badgers spend up to 70% of their time underground.
2. Badgers' keen sense of smell is about 800 times sharper than our own.
3. Perhaps because of their powerful noses, badgers keep their homes in tip-top shape by creating a latrine pit out of dried grass and leaves just outside their burrow.
4. Badgers use grass for another reason, too: as bedding. They change their bedding daily, bringing in fresh leaves to sleep on.
5. Some badger homes are over 100 years old and are passed down to future generations. These underground burrows, known as "setts," have up to 40 entrances and many meters of tunnels.

patch of prairie untouched—thus creating more plant diversity. Cattle, on the other hand, tend to be more methodical and uniform in their grazing.

*"Bison also go around forming disturbances in the soil, called wallows," says Ratajczak. "These are areas where they roll around and shake off their winter fur, and that creates this little hot spot of very different types of soil characteristics you wouldn't find otherwise."*

Wallows harden and collect water after rain, for instance, creating miniature wetlands, which allow still more and different types of plants to grow.

Interestingly, by promoting different types of plant growth, the scientists believe bison could help their ecosystems become more resilient to prolonged droughts, one of the most significant effects of climate change in the American West.

For instance, annual plant species, which were abundant in the grazed plots, reproduce early before they flower, seed, and finally go dormant during the hottest and driest months,

reappearing when climate conditions improve.

### **"We have to reassess what progress has looked like"**

For his part, Baldes was impressed with the scope of the new study and says its findings reiterate "what we already know about the importance of this animal as a keystone species."

Bison boost butterflies, salamanders, and reptiles by creating habitat both for the animals themselves and the plants they require for survival, says Baldes. When the large herbivores shed their thick winter coats, that hair becomes useful for nesting birds. *"I've witnessed osprey flying over me at the buffalo enclosure, and it looks like they're carrying a snake, but they're carrying a big piece of buffalo hair back to their nest."*

Baldes is working to bring bison back to lands they once inhabited, such as Wyoming's Wind River Indian Reservation, which is home to almost a hundred reintroduced bison. It's an idea that's gaining momentum in the U.S. and Canada, bolstered by studies such as this one, he says. A recent

study also suggested that bison reintroductions would help Native American populations achieve better food sovereignty and economic sustainability.

By rejecting environmental exploitation, reintroducing important species like buffalo, and working to preserve Native languages, Baldes says, *"we can make sure that our young people can be proud of being Shoshone and Arapaho, Blackfeet, Crow, Cheyenne, or any of the 574 federally recognized tribes in this country that are trying to tell their story."*

*"We've had a level of colonization that's happened, not only to Native people, but also to how land gets utilized," says Baldes. "It's been plowed up, paved over, fenced in, fenced out, all with this idea of progress."*

If bison reintroductions are going to succeed, Baldes says the health of the environment should take priority.

*"That colonial system of thinking destroyed predators and removed the buffalo," he says. "And so we have to reassess what progress has looked like."*

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