



REFUGE UPDATE

September 2022

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Board meetings are held the second Tuesday of every month, all are welcome. The next Board meeting is Tuesday, September 13 at 2:00PM at the Visitor Center.

Refuge Manager Notes

Jeff Sanchez, Refuge manager

My favorite time of year is upon us. The smell of roasting green chiles fills the air and the afternoons are becoming cool and pleasant. The end of seasonal allergies is just around the corner for many of us, and the first juvenile migrating waterfowl are beginning to make their maiden voyages southward. The plants on the Refuge that have been blessed with favorable precipitation this monsoon season are beginning to drop seed with great vigor, while also changing color from green to yellow or brown. This is just in time for migrating/wintering birds, small mammals and other fauna to collect and store food/energy for the colder months to come.

These important seasonal cues mark the time of plenty for most and spark frantic instincts to collect and store food/energy for harder times. But food is only one piece to the natural puzzle. Water is life for all of us, and sometimes it's hard to come by in a desert ecosystem. To make things complicated, water is becoming scarcer as climate change yields obvious hydrologic negative impacts. Some of you may be aware that the

Refuge harbors a number of natural springs and seeps. These oasis areas have provided watering sources to wildlife for thousands of years. Unfortunately, Southwest desert systems as a whole are losing these critical spring and seep resources due to climatic changes, which are likely irreversible impacts. I suspect that the same is occurring on Sevilleta NWR. That is why we will be moving forward to implement a monitoring effort focused on Refuge spring and seep systems. We have already met with our US Fish & Wildlife Service Water Resources Division professionals to begin investigating options on how to effectively monitor spring and seep output. In addition, the Refuge will be implementing measures around our springs and seeps to protect water quality and the sensitive flora and fauna from human and non-native/invasive large mammal impacts.

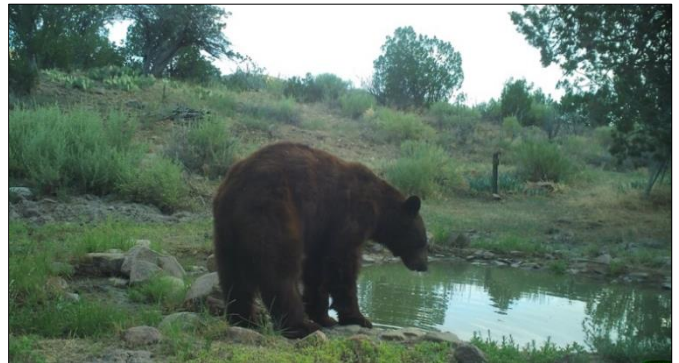
In addition, you may be aware that the Refuge maintains a number of wildlife drinkers throughout the landscape. These drinkers are remnant watering sources dating back prior to

Refuge establishment when the landscape was managed as a cattle ranch. Some drinkers have become an important part of the landscape that provide unique opportunities for wildlife to flourish. The Refuge views these drinkers as a way to offset impacts of climate change and provide the needed water resources to fulfill important faunal life cycles. These human maintained drinkers will also receive protections from impactful non-native/invasive mammals and human-caused disturbances.



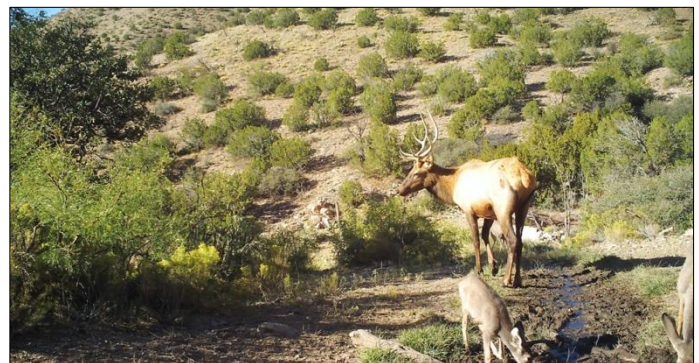
As we obtain funding and resources, we will also begin to replace some of the older style drinkers with a more natural drinker design, providing opportunities for reptiles, amphibians, birds, and other wildlife groups. We will also investigate opportunities to strategically relocate drinkers to areas where water resources were once available prior to climate change impacts.

All in all, water is key to life at Sevilleta NWR and we will continue to look for ways to ensure that all the pieces of the puzzle are in place to maintain a natural and healthy desert ecosystem.



Water Around the Refuge

Photos submitted by Jeff Sanchez



President's Message

Colin Barnett, Board President

Last month I had the opportunity to participate in a panel of scientists and Fish & Wildlife employees to talk about career pathways in biology, conservation, forestry, and environmental studies. The audience was the REU students at the UNM Sevilleta Field Station. This complex of buildings is just west of the Visitor Center.

REU stands for Research Experience for Undergraduates. This is an NSF-funded program that enables college students across the country to spend 10 weeks at a research site, under the mentorship of graduate students, post-doctoral researchers, faculty, or land managers. At Sevilleta, mentors come from UNM, NM Tech, NMSU, and Fish & Wildlife Service. In addition to NSF funding, Sevilleta REU students also receive support through the Sevilleta Long-Term

Ecological Research (LTER) program, and individual grants from Principal Investigators.

The program is highly competitive; Sevilleta accepts 5-7% of applicants. Most students conduct scientific research, but two of them are art students who focus on communicating scientific concepts through interpretive art. The REU students live communally at the UNM Field Station; in fact, living on-site is a requirement in order to foster a sense of camaraderie and teamwork. A huge strength of the program is its diversity. The students learn through many lenses: academia, conservation, and art.

The REU program is coordinated by Alesia Hallmark and Gregor Hamilton. Alesia and Gregor are the resident UNM Sevilleta Field Station Managers.



The field station was initially established in 1989 to support the research efforts of Sevilleta Long-Term Ecological Research (SevLTER) program.

I spoke to Alesia about the REU Program. She said that “one thing that’s important to me is the fact that we support diverse students. Over 70% represent racial/ethnic minorities. Many are freshman or sophomores that haven’t solidified their career plans. Many are first-generation college students, non-traditional students, veterans, or have disabilities. Many come from non-Ph.D. granting institutions, so they don’t have opportunities to engage with ecology research at their universities. We focus on bringing in these students at very early career

stages to empower them to choose ecologically-focused careers such as research and conservation. About 95% of our students are now in graduate school or have professional positions in ecologically-related jobs. We are diversifying these fields and making them more equitable from the bottom up!”

I was able to take pictures of some of the REU Students and learn a bit about their background. At the end of this column, I present a group photo and list all the 2022 REU projects.

Some of the 2022 REU Students



Hillary Bohm

Hillary was one of two REU artists this season. She set out to capture the theme of the Rio Grande as it flows through the three refuges in the middle Rio Grande Valley—Valle de Oro, Sevilleta, and Bosque del Apache. The two pictures show the work in progress and the final realization. Hillary lives in New Orleans and is an environmental biology major at Tulane, with a minor in studio art. Hillary drove out to Sevilleta with her mom and two dogs. She likes making earrings.





Karin Ebey

Karin's REU project was the study of dietary overlap among the Snapping Turtle, Painted Turtle, and Red-eared Slider communities at both the Rio Grande Nature Center in Albuquerque and the refuge. (The refuge turtle community also included the Spiny Softshell Turtle). But Karin's first love is crocodiles; in high school she did some theoretical modeling of crocodile populations. Karin is now a sophomore at Eckert College in Florida, majoring in biology and chemistry. Karin grew up in Los Alamos, where her parents are both physicists working at the lab there. Karin plays bassoon in the school band.



Gaby Harrold

Gaby's REU project was the study of the effect of added nitrogen on the top layer of desert soil (the biocrust). Too much nitrogen can cause biocrust plants to fail. Gaby looked at photosynthesis, nitrogen-fixing bacteria, and colonization of plants by fungi in response to added nitrogen.

Gaby lives in Silver City and attends Western NM University with majors in Botany and Zoology. Gaby is an avid hiker in the Gila, has an interest in bat ecology, and owns, besides the traditional dog, a pet sulcata and a gecko.



Katie Jansson

Katie's REU project was the characterization of soil types on the refuge. She was well qualified to undertake this project because she is considered a soil judging expert in her hometown of Farmington, Arkansas. (Soil judges classify soil in pits for soil competitions). Katie is a horticulture and environmental water and soil science major at the University of Arkansas. She is particularly fond of white-tailed deer.



Nika Povelikin

Nika's REU project was the study of lizard communities and niche partitioning. Among several findings of her research was the conclusion that the UNM field station at the refuge has the greatest diversity and abundance of lizards compared to other locations on the refuge. Nika was born and raised at 116th & Broadway, NYC. But she was eager to leave the big city, so she is now a sophomore at Florida State University, majoring in herpetology. (She has a pet corn snake.) She appreciates the large number of lizards on the refuge compared to what she sees in Florida. As a high school student, Nika interned at the American Museum of Natural History, working on a project that will result in the identification of a new snake species. Nika performs in an aerial circus.



Ben Simmons

Ben's REU project was identifying plants eaten by oryx and feral horses living on the refuge. He did this by analyzing scat for isotopes that represent the presence of plant material, and by extracting DNA from the scat to identify plant genomic material.

Ben, who grew up in Kansas City, is now a wildlife biology major at the University of Vermont. He would like to have a career as a wildlife biologist, possibly specializing in tundra ecology. As an avid birder, Ben's life list is close to 300, some of which he added in NM. His favorite NM sighting is the White-faced Ibis, seen at Bosque del Apache.



Gavin Wagner

Gavin's REU project was to assess the validity of long-term monitoring of meteorological data, expanding on previous work on vegetation dynamics conducted by other researchers at Sevilleta. Gavin chose to come to New Mexico because he was looking for an ecological experience completely different than his home state of New Jersey. Gavin majors in bio-environmental engineering at Rutgers, and would be happy with a career in either environmental studies or engineering. Gavin is a long-distance runner and a stir fry cook.

2022 REU Projects at Sevilleta Education and Research Facility

- **Gavin Wagner:** Rebar, Weather Stations, and Plants: A Climate-focused Revival of 40-Year-Old Transects
- **Nika Povelikin:** An Exploration of Lizard Community Composition and Niche Partitioning
- **Priscilla Castañeda:** Effects of Precipitation on Biogeochemical Cycling in Semi-arid Ecosystems
- **Hillary Bohm:** The River is a Mirror
- **Ben Simmons:** Characterizing Dietary Niche of Two Exotic Ungulates in Central New Mexico
- **Sophie Epps:** Off to the Races: Soil Organic Matter Hastens Seed Germination
- **Karin Ebey:** Analysis of Dietary Niche Overlap of Turtles in the Middle Rio Grande Basin Using Stable Isotopes
- **MC Vigilante:** RIFT: After Objectivity
- **Kyle Gallant:** Drought Sensitivity of Grass and Shrub Species in Contrasting Chihuahuan Desert Sites with Contrasting Climate, and Physical Characteristics
- **Jodhan Fine:** Bell's Vireo (*Vireo bellii*): an Understudied Songbird in New Mexico
- **Gaby Harrold:** Biocrust Thresholds Across a Nitrogen Gradient
- **Esteban Mendez:** Arthropod Communities Across Topographically Distinct Microhabitats
- **Katie Jansson:** Correlation of Arid Soil Properties and Vegetative Cover on Stand and Ecotonal Scales



Pueblo of Isleta 10th Annual Environmental Fair

by Colin Barnett

The Pueblo of Isleta hosts an Environmental Fair each year to offer the Pueblo's residents the chance to learn about various local groups whose activities are related to the environment, such as the USDA Forest Service and the Maxwell Museum of Anthropology. The three Middle Rio

Grande refuges had displays at the fair. Board members Sandy Barnett, Colin Barnett, and Alesia Hallmark staffed the Sevilleta table. Since Isleta and the refuge are virtually neighbors, it was wonderful to be able to share the refuge with the residents of the Pueblo.



Board President Colin Barnett recruits the latest Amigos member, aka the Rail Runner mascot.



Young visitor is intrigued by the Bighorn Sheep skull and horns.



Board Vice President Sandy Barnett answers questions about wildlife at the Refuge.

Additions to the Amigos Board of Directors

by Rex Meyers

Amigos volunteers are members who step forward to serve on the Board of Directors. Three new directors bring enthusiasm and expertise to Amigos leadership

Alesia, UNM Field Station Manager, has been “working” at Sevilleta since 2014, first as a researcher, then in other capacities, and finally as manager. Her Ph.D. expertise is in plant/animal growth and life cycles. She truly enjoys interacting with students and researchers at all levels, and while she is most interested in refuge grasslands, Alesia thinks the most beautiful terrain is in San Lorenzo Canyon.

Chuck, retired to Socorro after a career in urban planning which included time in the El Paso area. He also worked for a climate change think tank and has travelled widely. Chuck volunteers weekly at Sevilleta, most recently fixing fence damaged by recent monsoon rains. He enjoys the refuge’s unspoiled landscapes and particularly likes the east side of Los Pinos Mountains.

Allan, spent a career working for Scripps Oceanography, involved with places having more water than Sevilleta ever sees. He also worked with the NSF Earthscope project exploring the evolution and structure of the North American continent. Lemitar is now home. He volunteers time cleaning up the I-25 exit, hikes refuge trails, and is interested in exploring ways to increase public awareness of the refuge. The most beautiful spot he’s seen at Sevilleta? West Mesa.

Welcome to Amigos. The Board is richer with your contributions.



Alesia



Chuck



Allan

New at the Nature Store

by Susan Richards



Iron Ornaments and Magnets



Notecards from New Mexico Native
Paige Canfield



New T-shirt Colors
Royal Blue and True Purple



The Nature Store is open Wednesday – Friday, 8 a.m. to 4:30 p.m. All profits are returned to the refuge for programming. You pay no taxes on purchases.



Facebook Activity

by Susan Richards

We currently have 848 followers so our exposure continues to grow. If you use FB, please share our posts and encourage your friends to follow us.



Amigos Contacts

Amigos web site

<https://www.amigosdelasevilleta.org/>

Amigos on Facebook

<https://www.facebook.com/amigossevilleta>

Refuge Web Site

<Http://www.fws.gov/refuge/sevilleta>

Jeannine Hunter

Visitor Services Manager

505-864-4021 ex 2106

Editor's Note

Items for consideration in the Refuge Update are encouraged.
Please email your submission in .doc format to sdrandl72@gmail.com

Past editions of this Newsletter are available at the Amigos website
<https://www.amigosdelasevilleta.org/contacts>