



# BOSQUE WATCH

FALL 2021



## *Water Is Life*

“If there is magic on this planet, it is contained in water.” – Loren Eiseley

You have likely noticed changes to the number and size of wetlands at the refuge in recent years. Having sufficient water has been an ongoing issue throughout the Middle Rio Grande Valley and the southwest, especially during the past two decades of continual drought. While we are grateful for the abundant monsoon season this summer, it cannot make up for twenty years of drought.

In our Fall 2019 edition of *Bosque Watch*, we shared that when Mauldin Drilling came to replace a groundwater well that had collapsed in the heart of the refuge’s farming program, they also assessed other refuge groundwater wells. They found that, after nearly seventy years, the refuge’s wells were far beyond their service lives. All the inspected wells needed significant upgrading and rehabilitation to keep them functioning. At that time, Mauldin Drilling inspected eight wells, all needing critical repairs; that number has since grown to

eleven. To complete all the needed work will cost \$700,000. Gulp.

This is where the fundraising efforts of Friends come in. Friends submitted grant proposals to Lannan Foundation and Carroll Petrie Foundation early this year and received \$500,000! We are very thankful for these much-needed funds, and work on seven wells is set to commence this autumn and continue into 2022. Over the next few months, Friends will reach out to large donors and companies with our “Well of Hope” campaign and a video that explains the water situation. We hope to raise the remaining \$200,000 needed to repair the final four wells.

Why is this well repair so critical? Today, natural wetland habitats comprise less than two percent of the desert landscape, and Bosque del Apache National Wildlife Refuge endures as the largest remaining wetlands complex in New Mexico. In winter, the refuge is a critical stopover for tens of thousands of migrating sandhill cranes, geese, and ducks. In spring and summer,

the refuge is critical habitat for birds that visit to breed within and adjacent to wetland areas and have little flexibility in finding alternative habitats. Further, the refuge hosts over 406 species of birds and is home to four endangered species as well as other wildlife. Water shortages threaten them all.

Diminishing federal funds and a dwindling water supply threaten the ability of Bosque del Apache to continue to provide habitat to visiting and resident wildlife. Maintaining a reliable water supply is critical to providing this habitat. As drought conditions persist, Bosque del Apache staff continue to change water management techniques and will increasingly depend on wells to meet water demands.

Refuge personnel are continually looking for ways to conserve water and become more efficient with annual water management prescriptions. Staff annually assess unit food productivity and, during times of water shortages, prioritize flooding units that have the highest wildlife food value. The refuge is also working to transition units that don't have a history of producing high food value into other important native habitat areas,

such as wet meadow areas or grasslands that require less water to manage. By prioritizing the flooding of only units that have high food value, the refuge is being a responsible partner, together with all users in the Middle Rio Grande Valley who face shared water shortages. This prioritization will be extremely critical in years to come as the Middle Rio Grande Valley is predicted to have even less water available for all users due to climate change and increased human needs.

Articles that follow detail how the refuge is shifting plans for agricultural crops, flooding units, and saving water. The refuge works hard at being a responsible water partner in the Middle Rio Grande Valley.

Bosque del Apache is truly a place of refuge for wildlife and for people. It is critical to the Central Flyway, and we need to ensure that it continues to thrive. Federal funding cannot keep pace with required repairs, much less be available for both on-going and preventative maintenance. We are grateful to have secured funding to repair seven critical wells in the coming years, and we hope to secure enough for the remaining four.



Bosque del Apache wetlands with sandhill cranes and geese at Flight Deck. Photo by Danny Hancock.

# Shifting Water Availability Shifts Agricultural Crops



Birds foraging in field of triticale. Photo by Bob Hailey.

It may seem odd to find agricultural fields on a wildlife refuge, but the crops grown here help support the mission of Bosque del Apache to provide supplemental food for migratory birds during the winter. Because of the way in which humans have changed the landscape of the river and its surrounding environment, the birds that migrate through Bosque del Apache each winter are no longer able to find sufficient food naturally.

To combat this change, refuge staff annually produce about 1.2 million pounds of grain crops, such as corn and triticale (winter wheat/rye hybrid). Although these crops are not historically what the birds would have fed on, they provide the calories and nutrients that the birds require. Having plentiful grain on the refuge also discourages the birds from going off refuge in search of food, thereby damaging the crops on local and surrounding farms. These traditional agricultural grain crops are in addition to the approximately 2.5 million pounds of native seeds produced annually in our seasonal wetlands.

Regular visitors to Bosque del Apache may notice a change in the ratio of corn and

other grain crops this year. In previous years, you may have noticed many fields full of tall, dry, tasseled corn complemented by a few nearby fields of a shorter triticale. Refuge staff typically plant an average of 120 acres of corn and 80 acres of wheat (triticale); this year the ratio has flipped. This change is intended to help us balance the caloric needs of overwintering birds with the decreasing availability of water throughout the Middle Rio Grande Valley.

Corn has been grown on the refuge for many decades, and its popularity among overwintering birds could not be overstated. It provides a calorie-rich food source, especially during the cold snaps experienced at Bosque del Apache and throughout the southwest in the winter months. However, corn requires a lot of regular, predictable water throughout the growing season. Refuge staff were informed in 2020 to prepare for extreme agricultural season water shortages in planning for our agricultural crop production.

Triticale has been grown on the refuge for several years and is typically planted in the fall. First produced in the 19th century, it is mainly used for animal feed, but can

be found in some human food products as well. It combines the high yield and green quality of wheat with the disease and environmental tolerance of rye. Most importantly, it requires much less water than corn, a characteristic that is highly favorable when it comes to agriculture in the southwest. Triticale needs to be only flash irrigated two to four times per year, and these irrigations can be easily met by groundwater wells, removing the reliance on irrigation tail-water deliveries.

Corn has one advantage over triticale for wildlife food. Corn must be knocked to the ground for cranes and geese to forage on it; this means that refuge staff can control how long the corn crop lasts by knocking down small areas weekly. Unlike corn, triticale does not have to be manipulated to be made available to cranes and geese, and the birds are able to feed freely on the triticale at any time. Because refuge staff cannot partition triticale to be available throughout the winter, like corn, the triticale could be exhausted before the birds leave in the spring. Therefore, by planting a combination of corn and triticale, refuge staff provide nourishment that is available all winter while being responsive to water shortages facing the entire Middle Rio Grande Valley.

About 110 acres of triticale that were planted in the fall of 2020 have seeded and are ready to be eaten. One hundred acres are being planted in September 2021 to provide green browse for birds and seed heads for next winter. Approximately fifty-five acres of corn were planted in spring 2021. You can view triticale around the tour loop, including at the southernmost point of the South Loop and along the northern edge of the North Loop. The end of the John P. Taylor Jr. Memorial Trail also provides a perfect viewpoint of our southern triticale fields,

where, during the fall and winter, you can observe birds knocking down triticale stalks as they feed through the fields. On a windy day, the swaying triticale stalks can form a beautiful scene that creates the illusion of a breeze blowing across a lake.

As climate change continues, droughts are predicted to become more frequent and more severe. Over the past several years, the Middle Rio Grande Valley has received less and less rain and snowmelt, and we are currently suffering drought conditions that have not been seen since the 1950s. To adapt to the times, refuge staff have made several changes, including modifying our agricultural practices. Identifying and utilizing the most productive agriculture fields to plant each year and transitioning to less water-intensive crops, such as triticale, should allow us to continue to meet our annual goal of producing 1.2 million pounds of grain for cranes and other waterfowl.

Bosque del Apache will strive to produce the same amount of food to support our regular numbers of wintering birds; we will simply be producing it in a different way. Since refuge staff started planting triticale, we have consistently observed crane, geese, and turkey actively foraging in triticale fields throughout the fall and winter. Refuge staff are exploring ways to extend the lifespan of this crop to ensure that it is an available food source for birds throughout the winter. Refuge staff will continue to adaptively manage our agricultural crop production and balance our planted crops to anticipated water availability. We will continue to be a responsive partner to shared water shortages within the Middle Rio Grande Valley while meeting the needs of migratory birds.

*- Sarah Lampley, summer intern, and Deb Williams, Bosque del Apache NWR manager*



# Updates to a Popular Seasonal Wetland

Along the west side of Highway 1, just south of Bosque del Apache's north boundary, is a seasonal wetland. It's known for many things: the most photographed cottonwood tree, the winter-ponded water, and the fly-in/fly-out wildlife spectacle. But to refuge staff, it's Unit 3. And last year, for the first time in many years, we were unable to flood Unit 3 due to drought conditions. Unfortunately, we are facing the same prospect this year with continued drought conditions and the subsequent need by the Middle Rio Grande Conservancy District to cut off the irrigation season early for the second year in a row.

Unit 3 is not a natural wetland, but one we created and one that our wildlife has found inviting. While there is little natural food in that unit because of the salty soils, it does provide a safe space for wildlife and is renowned for close-up viewing opportunities, great lighting, and landscape backgrounds for photographers. It's important to us at Bosque del Apache to continue providing that wildlife roost and visitor experience. But we are realizing that it is going to be challenging to flood and maintain that unit in the way we have done historically due to anticipated continued changes in how, where, and when we receive water.

The water needs of Bosque del Apache are met by irrigation tail-waters from the Middle Rio Grande Conservancy District (District) as well as twelve groundwater wells. We

typically flood wetland units using irrigation tail-waters and sometimes maintain them using wells. During drought years, we must flood and maintain wetland units using wells, and in 2020 we focused those efforts on units that we knew had the most available food for waterfowl and sandhill cranes. Refuge staff determine how much food is in each wetland and agricultural unit by completing annual seed yield surveys. We use those data to prioritize delivery of water to the units that have the most food – supporting as many cranes, ducks, and geese as possible during their overwintering season. We will use this same strategy moving forward into 2021 and 2022.

Further complicating the water situation, the state of New Mexico is bound to an interstate compact to ensure that certain water flows make it to Texas through the Rio Grande. New Mexico is in a significant water deficit in relation to the interstate compact, and the District is currently directing all available water to Elephant Butte and Caballo reservoirs to help with compact deliveries. This was part of the difficult decision-making process the

District went through this year to make the determination to cut off the local irrigation season early, significantly impacting our agricultural neighbors. The decision to end the irrigation season early also affects the refuge: it means that we will not be receiving irrigation tail-waters during the period we would use those waters to flood up our wetland units for winter.



Cottonwood and sandhill cranes in Unit 3 wetlands. Photo by Russ Burden.



Geese flying out from Unit 3 wetlands. Photo by Paul White

So how does all this tie back to our management of Unit 3? Well, the scenic backdrop of Unit 3 perhaps overshadows the complexities of managing this unit as a seasonal wetland and almost certainly hides its inefficiencies. The water control structure that feeds the unit is partially collapsed and seated at a height to take advantage of only high-water flow. The San Antonio ditch, which ferries water from the inflow and the well into Unit 3, has filled in with sediment over the years, creating a meandering path. Furthermore, a poorly defined western boundary allows water to seep into the desert. With varying depths, Unit 3 takes a long time to fill and maintain as a wetland.

Based on anticipated future water availability, wildlife observation opportunities, and this second year of minimal water, we are taking this opportunity to rehabilitate Unit 3. You may observe heavy equipment and operators in the unit over the winter and into 2022

replacing water control structures – preparing us to take full advantage of all available water flowing in the San Antonio ditch. Reshaping levees will give us the opening to recontour the unit, improving water flow efficiency along a straightened ditch from the northern inflow to the southern outflow. This rehabilitation project will allow us to move water more efficiently into and out of Unit 3, while also improving roosting habitat for overwintering sandhill cranes and geese.

Once the rehabilitation project is complete and there is available water, you can anticipate water in that unit starting in August and September (and perhaps search for early migrating waterfowl!). We realize that we need to take advantage of irrigation tail-waters in late summer to fill the unit and can no longer wait until October. Once filled, we can maintain the unit with a groundwater well.

What will the cranes and geese do this winter without a flooded Unit 3? Cranes and geese have been visiting the Middle Rio Grande Valley for centuries and will adapt to changing local conditions and location of water. Their roosting location will shift to other ideal habitat nearby – perhaps the Flight Deck or one of the seasonal wetlands along the North Loop.

The first year we re-flood the rehabilitated Unit 3 will be a test to see how the sandhill cranes and geese respond to the updates. We feel these changes will be positive and allow us to maintain the roost even in years with water shortages, keeping all our visitors happy and fulfilled, from the sandhill cranes to the ducks to our greatest supporters – all of you!

- Deb Williams, Bosque del Apache NWR manager

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## ***Festival Artwork: Crane Fiesta 2021***

We want to thank everyone who submitted photos to our 2021 Festival of the Cranes Brochure art contest. We are pleased to announce that Christina Baal is the winner of the art contest for her beautiful watercolor and ink piece, Dance of the Sandhill Cranes.

Christina Baal is a bird artist, writer, and naturalist whose dream is to meet and paint 10,000 different species of birds. After graduating from Bard College in 2014, she started her art business, Drawing 10,000 Birds, and has since traveled nonstop looking for birds. During the rest of the year, Christina works as an environmental educator and illustrator.

We are busy developing various items of merchandise featuring this beautiful artwork, all of which will be available for purchase in person at our Nature Store and in our online store as well. Please keep an eye on our online store for these and other items at [www.friendsofbosquedelapache.org/shop/](http://www.friendsofbosquedelapache.org/shop/).



(Note that we will unfortunately not be able to carry Crane Fiesta tee-shirts this year.)

# *Bosque del Apache Saves Water*



Wetlands and beautiful sky -Paul White

For those of us who visit the Bosque del Apache National Wildlife Refuge frequently in the fall and winter, what first comes to our minds is the thousands of calling sandhill cranes landing in the late afternoon and preparing to roost for the night in the watered fields, where they are safer than in dry fields. Their cacophonous calling is sweet music for those of us who have come to appreciate their annual return to New Mexico to spend the winter months.

In spite of all the water the refuge provides for cranes and other waterfowl, the refuge actually uses less water than other valley irrigators. First of all, the water that you see in the fields is water that is flowing through the refuge from the north to the south. The water must continuously flow through the refuge to keep the birds safe from avian cholera. And because it moves through the refuge, not as much water is consumed; it flows into the Rio Grande and downstream, helping New Mexico meet its obligation to pass a certain amount of water to ranchers

and farmers in southern New Mexico and Texas. Also, the refuge uses the most water in the winter months, when water for agriculture is not typically used.

Refuge management practices that benefit water conservation do not end here. For many years the refuge has eradicated large amounts of salt cedar--trees that consume large amounts of water. In the place of the monotonous and nonnative salt cedar forests, the farsighted and able managers of the refuge have created a rich mosaic of riparian habitats, similar to those the river used to create before the ravages of overgrazing and the clear cutting of the forests in northern New Mexico in the 1800s. This mosaic of wet and dry meadowlands, cottonwood forests, stands of willows, ponds, and other diverse habitat means less water consumption than before this work was done. It also allows those of us seeing the Rio Grande in this modern era to visualize how the whole Rio Grande basin used to be.

The refuge does grow grain and alfalfa for

the birds to eat during the winter, but the amount of water used is far less than the extensive agricultural use farther to the north and to the south. Were the refuge being used for full-scale agriculture, there would be much greater water consumption and far less water to share.

The riparian mosaic of Bosque del Apache is one of the aesthetic and practical pleasures of visiting this refuge. The mix of habitats in the setting sun with the multitude of

wintering waterfowl creates a rich palette of colors and sounds for the afternoon fly-ins. And for those of us willing to get up early in the morning, the fly-outs are equally spectacular, as the geese, the cranes, and the many species of ducks leave the protection of their night-time roosts to find food during the day.

- Dr. Lane Leckman, M.D., Friends of Bosque del Apache Board member

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## ***Get Ready for Crane Fiesta 2021***



Photo by John Radford

While we cannot host our normal in-person Festival of the Cranes this November, the migratory flock will be here, and we're excited to announce that we will offer a full virtual event, Crane Fiesta 2021, from November 18-20 instead! As usual, this will be a team effort by Friends and refuge staff, volunteers, and workshop presenters. Crane Fiesta 2021 will be three days, with several amazing events each day: online Zoom workshops, webinars, and a few Facebook Live events, like Fly-In and Fly-Out. Most events will be educational, covering such topics as cranes, raptors, water management on the refuge, and endangered species. We are currently working on a virtual Expo Tent for each day and will have webinars, videos and workshops for all ages! Leading up to and after Crane Fiesta 2021, Friends will host webinars and release many videos. We'll soon release a schedule for Crane Fiesta 2021 on our website (<https://friendsofbosquedelapache.org/crane-fiesta/>) and our Facebook page ([www.facebook.com/festivalofthecranes/](http://www.facebook.com/festivalofthecranes/)) Many of these events will be free; however, people are welcome to donate so that we can create and offer even more educational programming in the future.

Our exclusive Crane Fiesta 2021 Merchandise will soon be making an appearance in our store and online! Be ready since quantities are limited and available only this year.

# ***Welcome Our New Administrative Officer, Matt Wirth***



Joining us on July 6, Matt Wirth brings a wealth of knowledge and experience to his new position as Administrative Officer at Bosque del Apache. As we reported in our Spring 2021 edition, Christina Carnegay retired from this position in December 2020, after eighteen-and-a-half years at our refuge; so the position sat empty for seven months. As Administrative Officer, Matt has a very broad array of responsibilities, including purchasing, timekeeping, executing payroll, tracking health and HR benefits, budgeting, bringing on board new staff, handling recreation tasks, and serving as backup when needed in Visitor Services. Whew, I feel overwhelmed just reading this list!

Matt grew up near Baltimore, Maryland, and spent quite a bit of time in the Maryland countryside at his grandfather's rural property, where his love for nature, especially birds, began. Matt also received much of his education in Maryland: a bachelor's degree in fisheries and wildlife at Frostburg State University and then a bachelor's degree in business administration at Salisbury University. Currently, Matt is continuing his education, taking online graduate courses in wildlife management through Oregon State University.

Though Matt spent his formative and college years in water-rich and lush environments, he loves the west. He said, "It was literally eye-opening to come west and see such amazing vistas and huge tracts of public lands," which he had never before been exposed to. Matt first headed west in 2008 for a job at Utah Division of Wildlife, studying threatened prairie dogs. He accepted a position at Grand Canyon National Park in 2016. Matt first vacationed in New Mexico in 2016, and he began his love affair with Bosque del Apache then, returning here six times before taking his new job as Administrative Officer. In 2018, Matt moved to Carlsbad, New Mexico, for a job with the Bureau of Land Management (BLM) and then to Farmington, New Mexico, in 2019 for a BLM position in Natural Resources.

I asked Matt what drew him to apply for the Administrative Officer position at Bosque del Apache. As mentioned before, he'd visited this refuge six times to birdwatch and see the sandhill cranes in winter, so that was one draw. He said that he also had a good feeling about coming here, after clicking with refuge manager Deb Williams during his interview, and he loved the idea of being part of a collaborative team in a respectful environment. Since arriving, he's mostly worked with wildlife refuge specialist Susan Coppelli and park ranger Amanda Walker, and he feels a great sense of camaraderie at our refuge. With all the recent changes in staffing (many retirements and some transfers), Matt is excited to help build the new team, and the Administrative Officer position truly is a hub of many activities that affect the whole staff.

When Matt has spare time, how does he plan to spend it? He recently bought a house and is settling in nearby Socorro. He mentioned that right before he accepted his job at Bosque del Apache, he finally purchased a kayak as he loves kayaking,

fishing, camping, birdwatching, and hiking. I don't think he'll be able to use his kayak in the mighty (sad) Rio Grande, but there certainly are plenty of birdwatching and hiking opportunities at Bosque del Apache and in the surrounding areas. Matt is excited to further develop his relationships with his great coworkers at the refuge and

experience the refuge through the fall and winter months, maybe adding a few birds to his life list. He is also looking forward to welcoming new staff and helping them experience all that New Mexico has to offer.

*Deb Caldwell, Friends of Bosque del Apache  
Executive Director*

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## ***A New LandPride Mower Will Soon Arrive at Bosque del Apache***

In July, Friends combined restricted funds from the Watermolen Foundation with those from Friends board member Forest Graber to purchase a second new LandPride Mower. In September 2019, funding from Friends made it possible for Bosque del Apache to obtain the first new LandPride Mower. The newest mower should arrive in December. Mowers and other types of heavy equipment are critical to maintaining the refuge, as the refuge mows over 5,000 acres per year! Even the highest quality mower does not last over a decade.

Here's a behind-the-scenes look at the many ways that mowers are used on Bosque del Apache. First, refuge staff use mowers to rehabilitate habitat where needed, cutting back decadent woody or tall vegetation. This supports wildlife that prefers open spaces, early succession plant communities, and makes wildlife viewing easier for the visiting public. Second, staff mow down invasive plants species, such as cocklebur, that compete for resources with waterfowl food-producing plants. Third, mowing the habitat of endangered species restores the appropriate plant community needed for survival. Fourth, mowing is essential for crop management – staff cut corn crops strategically to make it available to wintering flocks of cranes



and geese. Fifth, staff mow the ditch banks (several times a year) to clear away weeds that impede water flow in irrigation canals and ditches. Sixth, staff mow wetland units prior to fall/winter flooding to make food resources more available to wintering waterfowl and cranes. Seventh, staff use mowers to maintain trails and points of interest for visitor access. Lastly, staff mow the sides of the roadways to support safety and viewing opportunities for the public.

As you can see, mowers are critical tools on the refuge. Massive amounts of work are required to provide food and habitat for wildlife, as well as great viewing opportunities for our viewing public. Now that you understand some of what happens, we hope that you'll appreciate your next trip here even more, and we hope that you are as excited as we are that we are getting a second, much needed LandPride Mower soon!

# Farewell to Refuge Biologist Dylan Wilder



On August 20, we bid farewell to refuge biologist Dylan Wilder who had been on staff since January 2020. Dylan returned to his home state of California for a position as a private lands biologist at the San Luis National Wildlife Refuge Complex. The complex includes three refuges and a wildlife management area, and Dylan is stationed at the complex headquarters in Los Banos. Dylan's main duty is to partner with private landowners and duck clubs to create wetlands and waterfowl habitat on their properties throughout the San Joaquin Valley. In his new position, Dylan will draw heavily from the knowledge and expertise he gained as the refuge biologist at Bosque del Apache, where he was heavily involved in water management, moist soil management, the year-round farm program, and surveying/feeding cranes and waterfowl. Dylan also gained experience presenting to people at many levels—partners, stakeholders, and school children—and he mentored nine college interns over two summers.

Skills gained at Bosque del Apache will serve Dylan very well in his new position.

Dylan says that while he is excited to return to California and be near his family and his fiancé, he will miss New Mexico and Bosque del Apache. He liked the variety in his job on the refuge, combining office and field work, mentoring, and research. He faced new challenges in learning and implementing complex water management and writing farm planning documents. As will be the case in his new job, Dylan's work entailed cooperating with different local stakeholders, especially around water issues. Dylan commented that he will miss the vibrant history and natural landscapes, as well as the unique foods here, "especially chile and carne adovada." In his short stay with us, Dylan grew fond of the New Mexican culture and will use all he learned here to contribute to wildlife conservation in his home state.

*-Deb Caldwell, Friends of Bosque del Apache Executive Director*

# Summer Internships Make a Difference

In our last edition, you read about seven college students whom the staff of Bosque del Apache and Friends welcomed for Summer 2021 internships. This year, Friends by was very fortunate to benefit from two donations that made it possible to hire more interns than ever. Many thanks to the family of Loyal and Mildred Benham, who contributed in their parents' memory, and to Jonathan & Tessa Dowell. Two of the refuge interns worked in visitor services; the other five were on the biology team. Their time here was valuable both to Bosque del Apache and to the interns. We've asked their staff mentors and each of the students to remark on the experiences.

## Visitor Services Team

Answering questions, handing out maps, identifying plants or birds—sounds like a day in the world of a visitor services intern, right? Though those tasks did occur this summer, the world of this summer's visitor services interns looked a little different than you might expect. And the two interns were up to the challenge. Returning for a third summer before he begins graduate school, Joel Gilb picked up nearly where he left off in August 2020. In addition to spending time illustrating birds, mice, and insects for future interpretive panel projects, Joel also worked on compiling breeding bird data from eBird observation reports to help update the refuge bird checklist. Sarah Lampley, a rising senior from North Carolina, took on the daunting task of learning about all the management tools we use on the refuge and then writing short articles about how we use them. We will use Joel and Sarah's works as we update our website as well as to help train our volunteers. Between answering the phones, refilling Habitat! dispensers, creating content for our Facebook page, and working on their individual projects, both visitor services interns gained experience in planning, communicating, and researching. "Behind the desk" in visitor services may not be

very glamorous, but the work Sarah and Joel completed over the course of their summer will have lasting impacts on how we communicate our work through- and post-pandemic.

*-Amanda Walker, Staff Visitor Services Ranger*

## Joel Gilb

It's hard to believe that I've already completed my third summer on the Bosque del Apache visitor services team! This year saw a transition back to many in-person activities, as well as increased collaboration with the other volunteers and interns. I was lucky this summer to have the company of another visitor services intern, Sarah Lampley, who was fun to work with and helped me with many of my visitor services duties. My roles this summer were particularly diverse; they included the following: documenting nesting evidence for birds along refuge trails, creating artworks portraying the refuge's threatened and endangered species, designing a document for self-guided education groups, writing engaging Facebook posts, and regularly assessing the condition of the tour loop and trails. My work at Bosque del Apache this summer further widened my visitor services skillset and has provided me with invaluable experience for my future careers. It has been extremely rewarding to simultaneously build upon my resume and give back to the refuge and its visitors, all while spending my summer at this stunning location with its outstanding array of wildlife. I would like to express my gratitude to the wonderful refuge staff who were always welcoming, helpful, and eager to impart their experience, and to the Friends of Bosque del Apache for making all



of this possible for a straight third year!

## Sarah Lampley



Time flies when you're having fun! As I write this in August, it's hard to believe that the summer is already over, and it is time for us all to head our separate ways. My summer as an intern at Bosque del Apache (BdA) has been so rewarding and full

of some of the best people and experiences. With help and input from Amanda Walker, BdA park ranger, I was able to complete a lengthy report on the various management techniques implemented on the refuge.

I also wrote a series of shorter articles detailing the specific projects in which these techniques have been applied. In order to compile all the information that I required, I needed to conduct some primary research. To that end, I was fortunate enough to get to shadow visitor services intern Joel Gilb and the biology interns as they surveyed the yellow-billed cuckoo and the southwestern willow flycatcher. And I assisted seasonal intern Bryden Baker with conducting vegetation surveys and setting up camera traps for the New Mexico meadow jumping mouse. I also talked in depth with refuge staff about their duties on the refuge. After a summer of the most amazing sunrises, several rattlesnake encounters, and too many mosquito bites to count, I will be returning home to North Carolina to start my senior year at UNC Chapel Hill. I would once again like to thank both the Friends of Bosque del Apache for allowing us this opportunity and the wonderful refuge staff for investing so much of their time and energy into us this summer. It has been a tremendous privilege to work with you all!

## Biology Team

This summer, Bosque del Apache National Wildlife Refuge (refuge) had a large group of incredible volunteer biological interns. As the team leads, Jeff Sanchez, Susan Coppelli, and I are sincerely thankful for all of the hard work that Kristen, Abby, Emma, Karly, and John did in support of the refuge's biology program and signage project. Hailing from New York, Indiana, Ohio, Colorado, and Wisconsin, each intern arrived with unique experiences and perspectives to contribute to the team's success. We are glad that they left with a greater appreciation of the arid southwest and the wildlife that live here. This was the refuge's second summer during the COVID pandemic, and we are especially appreciative of the interns' hard work during these challenging times. This summer the interns conducted surveys for three threatened/endangered species on the refuge: the southwestern willow flycatcher, yellow-billed cuckoo, and New Mexico meadow jumping mouse. They also removed invasive plant species, created jumping mouse habitat using native seeds, and assisted with collecting live animals for an educational presentation. This was our first year with a designated intern for the signage project, and we thank Kristen for using her GIS skills at the refuge. We wish all five of the interns the best as they continue their university education back home and we hope that they will remember their time at Bosque del Apache fondly as they move forward in their careers.

*-Dylan Wilder, Wildlife Biologist*

## John Anglin

This was one of the best summers of my life! I had done an AmeriCorps term in Taos six years prior and was very eager to return to New Mexico, and I'm so glad that I did. I was able to



dip my toes into various aspects of wildlife biology, from endangered bird surveys to setting up camera traps, and from habitat assessments to native seed planting. The most memorable moments were during early-morning bird surveys, where I sat in silence listening for the kwolp of a yellow-billed cuckoo or the fitz bew of a willow flycatcher and was profoundly focused and fulfilled by what I was doing, deeply in the flow state. I endured the heat and the mosquitoes for a tremendously valuable experience that I will never forget. I am very grateful for the opportunity to do valuable work at Bosque del Apache, and I'll certainly be back one day!

### Abby Bourne



Working at Bosque del Apache National Wildlife Refuge was, without a doubt, an amazing experience. As a future wildlife professional, I came away from this internship with a plethora

of useful skills, like trapping animals, surveying endangered species, and even doing preventive vehicle maintenance. Some of my favorite aspects of the job included surveying the southwestern willow flycatcher (those birds are absolutely adorable) and helping out with the outreach programs that we participated in, such as an event for future women in STEM (science, technology, engineering, math) careers and an outreach program for the local public library in Socorro. Getting kids interested in the refuge and in the environment as a whole is always fun. Even tasks like spraying herbicide for invasive species removal, which is a bit arduous, were valuable, not only for my own professional development but also for the health of the refuge. Both the exciting and the unexciting aspects of my internship will have a lasting influence on my career path. The staff, the other interns, and the Friends group are amazing people who made me feel welcome and helped all us interns accomplish great things for the refuge.

### Kristen Hutz

My time as an intern at Bosque del Apache well exceeded any expectations I had when starting the summer. The quality and variety of experiences



I gained as an intern have given me skills and knowledge that will be invaluable as I pursue my career goals. I was given the opportunity to independently conduct endangered species surveys for the southwestern willow flycatcher and yellow-billed cuckoo. Alongside that responsibility, I collected and planted seeds to restore habitat, installed signs around the refuge, applied herbicide treatments, and so much more. The refuge staff acted as mentors by sharing their knowledge and expertise about the US Fish and Wildlife Service, academia, and the professional world. I came out of this summer with memories that will last a lifetime, new friends, and a fantastic introduction into this field. I would like to thank all the refuge staff for leading me this summer and for their commitment to the natural world. Finally, thank you to the Friends of Bosque del Apache for making this internship possible.

### Karly Tellier

During my time at Bosque del Apache (BdA) National Wildlife Refuge this summer, I had a variety of amazing experiences that I will cherish forever. I would like to take the time to thank all the lovely employees on the BdA team for establishing such an



amazing work environment and making us interns feel valued. This was my first experience working under US Fish and Wildlife Service, and it has helped me to envision myself within this organization throughout my career. This was not like any other internship I have experienced; all the staff put a lot of effort into helping and mentoring us interns with advice on how to best continue our careers based on our interests. My favorite aspect of this internship was that the work I was doing was making a positive impact on several federally listed species. I specifically enjoyed conducting surveys on the southwestern willow flycatcher because this allowed me to enjoy the sunrise and the beauty of the refuge and its wildlife, all while working and getting to hear the beautiful song of these birds. I also enjoyed collecting specimens for a youth educational class. We captured snakes, lizards, turtles, rats, and more, and we made them habitats as well as provided them food and water. My goal after leaving this summer internship is to apply the skills and experience I gained to my qualifications in order to get another federal job while working on my master's degree.

## Emma Watson



Spending my summer as a biology intern at Bosque del Apache National Wildlife Refuge was an incredibly fun and rewarding experience. We interns assisted with a wide variety of projects and tasks, and we were able to gain a

broad understanding of the refuge and all its components, including monitoring endangered species, controlling invasive species, managing water, and maintaining

facilities. Although all aspects of this internship were enjoyable, I particularly liked conducting surveys for the southwestern willow flycatcher and yellow-billed cuckoo, which meant getting up and out early most days. Encountering wildlife in the early morning hours was a wonderful way to admire the natural beauty of Bosque del Apache. Working alongside the refuge staff provided a valuable introduction into the many different career paths offered through the US Fish and Wildlife Service, and it gave me a better understanding of the professional direction I would like to pursue after graduating college. I would like to thank the staff at Bosque del Apache for their support and guidance throughout the summer and the Friends of Bosque del Apache for providing this exceptional opportunity to me and the other interns.



Whether you shop in person or online, our Bosque Nature Store has something for everyone! Shop in our Nature Store during your visits to the refuge, or shop online anytime. Interested in these popular item featured in our ad? Follow the links below.

Memorabilia: <http://tiny.cc/BdAExclusive>  
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## Recent Change, but Only in Name

If you've recently looked for a way to renew your membership on our website, you may have noticed that there is now a spot only for "donation" and wondered what's up. This is because we value all our amazing supporters, and we've decided to combine our pool of members and donors into one. We now welcome you to support the refuge and Friends by giving at any level that feels right to you—it all helps us!

Any level of donation makes you a Friend and all donors will receive the same great benefits that you already love:

- 10% discount on Nature Store and online store purchases
- Early Registration for Festival of the Cranes events
- Receipt of our quarterly newsletter, Bosque Watch, which will keep you abreast of upcoming refuge and Friends events and regular email updates
- Tax exemption for your donation amount
- And best of all, the satisfaction of knowing that you are making a tangible difference at Bosque del Apache, sustaining it now and for the future!

Please stay tuned for details about another change coming soon, our new monthly sustainer program, which we will launch later this fall.

And as always, thank you for your ongoing support of Bosque del Apache and the Friends!

## Ornithotherapy Workshop coming this month!



Just a few seats remain for you to join Friends of Bosque del Apache for a two-hour outdoor Ornithotherapy workshop run by author and birding expert Holly Merker. Learn how birds and nature outside your door can benefit you in mind, body, and spirit! Each session is limited to ten attendees. For more information or to register go to:

<https://friendsofbosquedelapache.org/ornithotherapy/>



Photo by John Olson



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**YOUR STORY MATTERS!**

For more information on sharing your story about Bosque del Apache with decision makers, please contact the Friends at [Execdirector@friendsofbosquedelapache.org](mailto:Execdirector@friendsofbosquedelapache.org)

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**— Friends of Bosque del Apache Donation Form —**

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Please contact me about Planned Giving.