

THE ARIZONA WILDLIFER

2021 Issue I

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Winter Edition

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The President's Message



AZTWS President Andrew Jones.

It's the beginning of a new year, as well as the end of my tenure as President of the Arizona Chapter of The Wildlife Society. This past year presented both personal and professional challenges to many of us. Chapter business was no different; our annual field techniques workshop was cancelled, we were unable to gather for a members' retreat, and the upcoming AZ-NM Joint Annual Meeting (JAM) is moved to a [shortened virtual format](#). I am disappointed by these contingencies. Prior to taking the President-elect position, I was looking forward to what would have been the usual great JAM and AZTWS Techniques Workshop. I had also considered ideas such as a mentored jackrabbit hunting camp for interested members, as well as the potential for a membership gathering mid-year. However, we played the hand we were dealt and were effective in our regular business.

President-elect Ho Yi Wan quickly learned the orders and operations of the Chapter and is well-prepared to take charge for the next year. Haley Nelson kept the books in order and secured the financial position of the Chapter. In my opinion, the Treasurer position is the most demanding station on the Executive Board. Haley performed her duties admirably while also stepping up to assist with the Chapter website, including setting up an [online store](#) where AZTWS swag is now available. Corresponding Secretary Emily Scobie was keen in moving our [membership](#) management to the Member Planet platform and was awesome in her communications with membership and board members. Kinley Ragan, as Recording Secretary, was crucial in keeping me in line and also stepped up to update Chapter promotional materials. Holly Hicks and Sidney Riddle were always available with thoughts, opinions, and a helping hand, which is exactly what is needed from Board Members at Large. Brian Blais did an outstanding job as Editor of *The Arizona Wildlifer* (the second-most challenging position) and worked diligently to produce four great issues of the newsletter. I

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Presidents Message cont...

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am also thankful to Chris Carillo for managing Chapter Membership, Pedro Chavarria for chairing our Continuing Education position, Callie Hartson for managing Volunteer Opportunities, and Samantha Novotny for chairing our Conservation Affairs position. Scott Sprague also did fantastic work to add bio-blitz organization as a critical activity to which our Chapter commits. Last—but certainly not least—I am grateful to Jessica Moreno, our past-President, for always answering my out-of-the-blue phone calls.

Beyond the diligent and committed work of the board on regular Chapter business, I am encouraged by the difficult but important conversations regarding how we—as a Board and a Chapter—work to provide opportunities and make space for black, indigenous, people of color, and other minority groups who are typically under-represented in the wildlife field. We are a small chapter with limited resources. However, we developed several steps to be a part of the solution. These include creating space for under-represented voices in *The Arizona Wildlifer*, reaching beyond our current membership dynamic to provide membership to the Chapter, as well as elevating the resources from the Continuing Education fund to support opportunities for those are under-represented—and often silenced—in the wildlife field. We are committed to continuing this work to ensure that it moves forward and that AZTWS becomes an effective ally. This is a particular area in which I hope to focus as past-President. Moving forward, it is possible that conservation, wildlife management, and social-political issues become more difficult before they get better. However, as wildlife professionals we are well-equipped to handle adversity. I know our membership will rise to the challenges we face both personally and professionally to move onward and upward.

My best to you and yours,

Andrew S. Jones

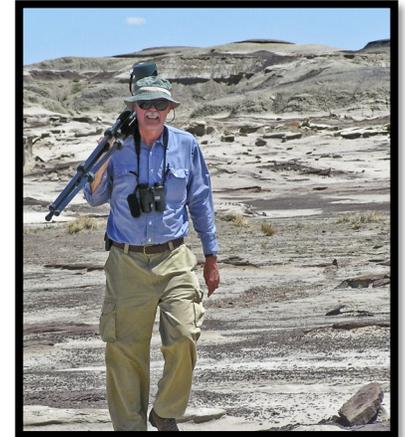
Regional News:

Southwest Section Tracks

By Jim Ramakka

TWS Southwest Section Representative

As 2020 draws to a close on the Colorado Plateau, the daytime temperatures that approached 60°F in late-November and early-December have been replaced with below freezing weather and 5 inches of snow. Fortunately, the rapidly disappearing snow on the La Plata Mountains has been supplemented so we might have a little water next summer. But, considering the progression of this strange year, anything could happen.



After a stress filled spring and summer, the record setting attendance and the generally positive reviews of our first ever TWS Virtual Annual Meeting were a pleasant relief. Due to the hard work of volunteers, contractors, and TWS staff, there seemed to be fewer major glitches than I experienced while attending other virtual conferences during the year.

Council held its annual meeting via Zoom on September 26th and 27th, just prior to the general conference. Incoming President Carol Chambers described the issues she wishes to focus on during her tenure including the following:

- Encouraging diversity through the DEI Strategic Plan
- Implementing an Ombuds Office
- Continuing to support science-based wildlife management through TWS publications, position statements, and policy priorities
- Increasing communication within our profession, and networking to guide policy at the government level
- Establishing a Mexico Chapter

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- Seeking opportunities for more virtual conferences/training options—symposia, training, and other opportunities
- Continuing involvement with the Canadian Chapter

Council then discussed the following topics in detail:

- Budget—positive investment returns, unexpected non-member bequests, lower than projected expenses, and the success of last year’s Annual Meeting in Reno, NV resulted in a budget surplus in FY20
- Budget planning for FY21 will continue to be approached cautiously due to the uncertainty regarding potential long-term financial effects of the COVID-19 pandemic
- Potential Bylaw Revisions were reviewed and will be sent to Organization Units and Working Groups for their input before distribution to the membership for review and comment
- The establishment of an Ombuds Office was approved
- Organization unit incorporation—staff will continue coordination with TWS legal counsel to develop recommendations
- A petition to establish a TWS Chapter in Mexico was reviewed—Council is in favor of the concept and asked TWS Staff to work with the proponents and TWS legal counsel on organizational format
- Changes to the Certification Review Board Operating Manual recommended by the CRB were approved
- Review and discussion of the Diversity, Equity, and Inclusion Funding Proposal
- Discussion of the North American Non-Lead Partnership

The full minutes of the annual council meeting can be reviewed on TWS members page in the [Resources](#) tab.

Council concluded the 2020 Members Meeting by issuing a unanimous Council Proclamation commending and congratulating all TWS staff for “...their tremendous effort and dedication in holding the 2020 virtual conference thereby making a tangible contribution to the advancement of both wildlife science and the wildlife profession.”

During a virtual Special Council Meeting held on November 9th, TWS business discussions continued to review the status of the TWS Budget and discuss options for the coming year. The FY21 Budget projects a budget gap of approximately \$328,000. Council voted to cover the shortfall with funds from the FY20 Budget surplus and to move remaining FY20 surplus funds into the Council Action Fund.

TWS finances have continued to do well as we begin the 2nd Quarter of FY21, but the future will remain uncertain until a semblance of normality returns to the economy. That uncertainty was at the core of a Council debate regarding the status of our 2021 Annual Meeting. The discussion focused on the timing of the various venue and hotel cancellation penalties TWS would face if travel were still restricted in September or if members were reluctant to travel resulting in a lower number of attendees than originally planned in the 2021 Meeting Budget.

It was tough decision, but Council eventually voted to again use the Virtual Annual Meeting format for 2021, and to continue planning for an in-person meeting for 2022 in Spokane, WA. This will enable TWS staff to focus on a single meeting format rather than planning for two options. We will still face some cancellation penalties, but far fewer than if we wait until early next year to decide. So, we will

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have another year of Zoom calls, webinars, and virtual meetings before we meet again in-person in Spokane and at Chapter meetings.

Finally, this is the time of year when we start seeking nominations for TWS Awards. Take a moment to look at the list of [TWS Awards](#) that are presented each year, including the nomination deadlines and criteria. Please consider nominating individuals and/or groups you feel are worthy of recognition. As always, feel free to contact me with any questions on this or any issues you wish to bring before Council.

I plan to begin 2021 with wishes for good things to come and a toast in memory of old friends. I hope you all can do the same.

Jim

Jim Ramakka, CWB®
Southwest Section Representative
Email: j_ramakka@msn.com
Phone: 505-486-2746

Continuing Education Grants



AZTWS offers \$2,500 annually in [Continuing Education Grants](#) to its members (including professionals, graduate and undergraduate students) to support education and career advancement opportunities. Grant requests should not exceed \$500 per application and only one grant is awarded per person, per year. Grants are limited to current Chapter members only; membership dues are \$6/year. Join or renew [here](#).

Applications can be submitted at any time and will be reviewed quarterly by the Continuing Education Committee. Applicants will be notified within 30 days of the Committee’s review. The Committee evaluates applications based on your explanation of how the activity will enhance your career development, your financial need, your efforts to obtain supplemental funding, and your involvement in Chapter activities. AZTWS encourages applicants from under-represented individuals and groups.

**Submit Your
Application [Online](#)**

Reed

*By Brian Blais,
University of Arizona*

A few students and I decided to take a more scenic route to Farmington, NM. Rather than the redundancies of crowded and linear Interstate travel, we left Tucson in the morning and meandered our way along the backroads of Arizona 77—a favorite route of mine—alongside desert scrub valleys, discrete tree-lined riparian corridors, and mosaics of geological formations that always stimulate thoughts of an prehistoric past. From Globe, AZ, it was northward and upward along US-60, subtly transitioning into cooler and wetter biotic communities, where coniferous trees become more continuous than discrete. But not before an unnegotiable pit stop to gaze out at the beautiful view from the Salt River Canyon Viewing Post. Northbound still, a few of us had never been to Petrified Forest National Park, and being on the way (...perhaps one of us purposely planned this route for that reason), we opted to cruise through the Park but stopping at a few points to take it all in. Eventually, we made it to Farmington. Throughout the journey, we all had engaging conversations with one particular individual....



Vista of the Salt River Canyon. Credit Brian Blais.

We were on our way to present at the 2017 Joint Annual Meeting (JAM) and Reed Sanderson—at this point a “retired” Retired Wildlife Professional—had needed a ride. I first heard about Reed, *glowingly*, from my advisor, Dr. John Koprowski. Reed also sought to split a conference room, so I volunteered thinking it would be a good opportunity to meet another experienced biologist and talk ‘wildlife conservation.’ During that car ride, Reed asked each of us about the research that we were presenting. He asked many questions throughout our explanations and shared relatable stories of his wildlife and professional endeavors, which took him from places like California and the Pacific Northwest to West Virginia and back to Arizona. Reed also showed a genuine interest in our future visions and career goals and offered encouraging words. Throughout the JAM, Reed continued to express his supportive attitude. I enjoyed my time with Reed and was thankful I got to meet him.

Time came for another meeting later that year—this time the Annual Conference of The Wildlife Society in Albuquerque, NM—and Reed again sought a ride and a roommate. Enjoying my time and conversations with Reed the first time around, I again volunteered. This was a much larger conference, with many interesting symposia and talks on the docket. Up to the task, I watched Reed eagerly scour his copy of the program itinerary guide, highlighting his “must-do’s” and presentation wish-lists. Reed showed veteran conference poise, and, on several occasions, I saw him whipping between rooms to meet his marks, greeting friends along the way. Reed showed no signs of deceleration and we sometimes found ourselves in the same presentation room for mutually appealing talks. One particular talk, given by a student colleague, focused on the importance of video engagement to communicate conservation. Corey gave a passionate, personable, and compelling presentation, so much so that Reed could not stop talking about how impressed he was. [*He mentioned Corey’s talk for days!*] It was quite evident how much Reed emphasized, encouraged, and supported both student recruitment and effective communication, no matter which discipline or pathway.

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On the ride back to Tucson with Reed and two other students, we stopped for lunch in Hatch, NM. For those who unfortunately do not know, Hatch is an epicenter for some of the most delicious green chile peppers...which just so happened to be “in season.” After purchasing bushel-level quantities of freshly roasted green chile rations at one of the many vendors along Franklin Street, we stopped at Sparky’s—a hallmark green chile cheeseburger joint. [Sorry for the crave that just blossomed.] We respectfully let Reed order first at the counter and by the time our turns arrived, Reed had bought all our meals. This was an unexpected but deeply kind-hearted gesture. It wasn’t until our beverages arrived that we discovered Reed had ordered—possibly sans any dietary oversight committees—himself a big milkshake, whipped cream, sprinkles, “the works,” to go along with his meal.

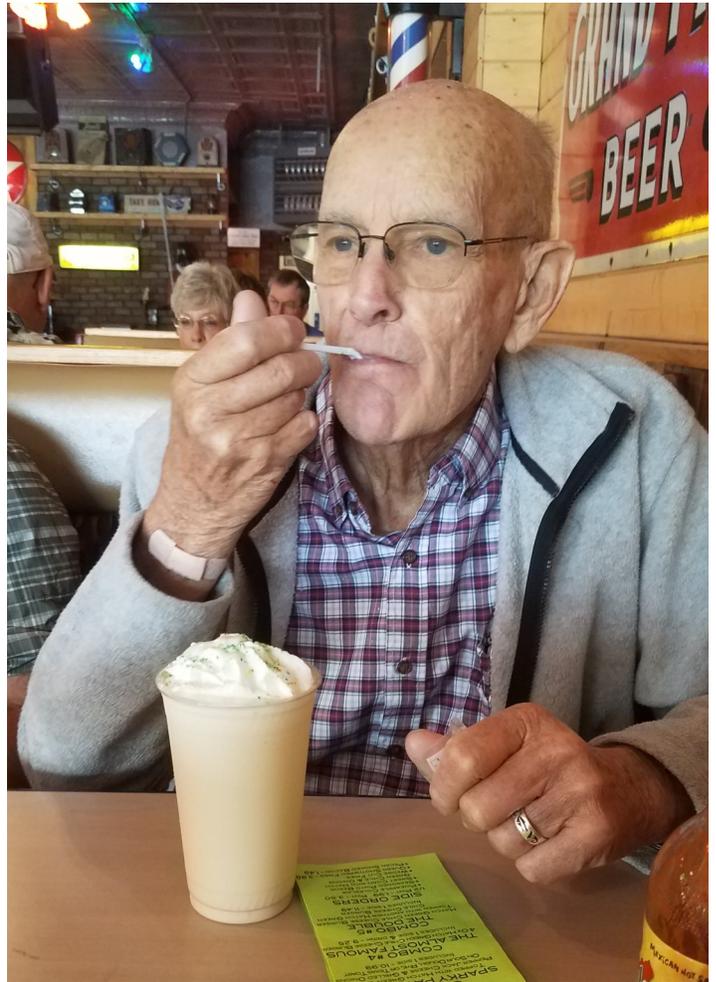
It was easy to judge Reed’s character from how many people distinctively stopped to greet him at the conferences. You sort of got a sense that he made positive impacts on many lives. Not only did he vocally support recruitment of new students and professionals into the wildlife fields, but he also proudly ushered in those with long, accomplished careers. For a time, Reed was the Chair of TWS’s [Retired Wildlife Professionals Committee](#). The following excerpt from the TWS site exemplifies his advocacy:

“In October, I attended The Wildlife Society’s 20th Annual Conference in Milwaukee. I’ve been to many others, and I am always amazed at the changes I see. The most encouraging is the increasing number of students and women. But one thing remains unchanged: There are always dedicated retirees remembering the past, discussing the present, and looking to the future of TWS. I’m one of those who can take the long view.”

~Reed Sanderson, Past Chair of the Retired Wildlife Professionals Committee

I only met Reed near the end of his life’s many journeys in wildlife conservation, but it was enough to comprehend John’s glowing reviews. Reed seemed just as genuine and passionate for the biologist as he was for wildlife. It would be a Herculean task to herd together all the accolades and sentiments from a lifetime of relationships that Reed accumulated, so I respectfully hope this personal anecdote serves as just one example of the many positive impacts Reed Sanderson had on others. He will be missed.

An obituary for Reed from the Green Valley News can be read [here](#). In Reed’s memory and in honor of his advocacy for recruitment into the wildlife field, the Arizona Chapter of The Wildlife Society will sponsor a student travel award to attend the annual JAM. Let us all take the long view and support those looking towards the future.



Reed contently treating himself after another successful TWS conference. Credit Brian Blais.

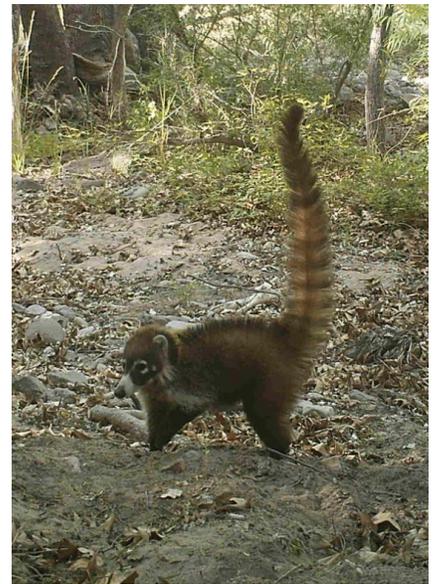
Our Neck of The Woods...

Walking Among Wildlife: Wildlife Cameras in Sonora, Mexico

By Kinley Ragan,
M.S., Arizona State University

It was a brisk November morning in 2016; one foot was crunching on fallen leaves while the other was gently sinking into the muddy river bank. We were at a conservation ranch in Sonora, Mexico and it was my first time in the field—ever. Self-conscious about my gear (or lack thereof) and incredibly excited for this opportunity, I had woken up early to be ready for the day’s adventure. I was scanning the ground, seeking both a sign of wildlife and secure foot placement. My mentor, Dr. Jan Schipper, was walking ahead of me when we heard rustling branches and saw the trees 40 feet in front of us start to sway a bit. I looked up just in time to see a band of 15+ white-nosed coatis (*Nasua narica*) descend from the treetops and advance towards the cliff side in unison. They scaled the vertical wall quite effortlessly and peeked over the top of the cliff, looking down at the intruders that had disrupted their Sunday morning.

Looking back on this memory, I now recognize it to be one of those moments where the hours of hard work and uncertainty gain greater purpose. Over the next couple months, I became fascinated by the wildlife navigating the arduous, arid landscapes lining the US–Mexico



“Fluffy coati.” Credit Kinley Ragan.



The author at a camera trap. Credit Kinley Ragan.

border. I eagerly took on more research responsibilities and eventually asked if I could take over management of the camera trap project for one of our sites—Cuenca Los Ojos (CLO). CLO is owned and managed by [Cuenca Los Ojos A.C.](#), an organization seeking to restore and protect the biodiversity of the US–Mexico borderlands. Our cameras were on two of their ranches, El Diablo and Los Ojos Calientes, which are located within 5 km of both the US–Mexico border and Mexican Federal Highway 2. Bisecting these ranches is one of the few perennial rivers in the region, Cajon Bonito, which is essential to wildlife survival and seems to get drier every year. In fall of 2018, the

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Andy Martinez in Cuenca Los Ojos (top); Andy and Cameron Carver at Cajon Bointo (bottom). Credit Kinley Ragan.



Phoenix Zoo Field Conservation Research Team (a group of ASU undergraduate and graduate student interns with the Phoenix Zoo) helped me deploy the redesigned camera project, which would comprise my master's research. We set up a network of cameras along four washes and the perennial stretch of river within the boundaries of Cuenca Los Ojos. We were in pursuit of understanding which wildlife actively use the CLO wash habitat, and also determining the habitat variables that are most important for influencing their continued use.

As full-time students and with a site 8-hours drive time away, we had an ambitious task ahead of us: we needed to set-up and deploy thirty cameras in three days. As we began our mission, walking along the remote washes of CLO and placing cameras at least 1 km apart from one another, we began to understand the pathway the wildlife were taking. The occasional bug-covered scat, or footprints of a species we had just missed, reminded us that we were not alone on our journey through the mountains. We came across small alcoves of water collecting under the cliffside, thick with a pollen film on top and holding small fish and bugs. We took shelter from the beating sun to eat our lunch in hillside cutouts where we imagined bats might congregate or a mountain lion might stalk its prey. After a full day's work of hiking and momentum being lost in the occasional sandy wash, the team gathered back at our field house to reflect on the day before beginning the next.

After three days of walking among the giant mountains and hearing the rustling of leaves as an animal escaped from our view, we packed up our gear and headed back to Tempe. Six months passed before we were able to return, collect our cameras, and peek at all the information they had captured in our absence. On camera collection trips, the evenings are quite different because we have "presents" to unwrap. A few of us gather with our computers at a table, the others peer over our shoulders as we unload the data from SD cards onto our hard drives. We meticulously keep track of the sites while eagerly seeking an exciting photo of an animal. Sometimes we are rewarded with a spotted cat casually strolling by, a black bear (*Ursus americanus*) walking with its cub, or a mountain lion (*Puma concolor*) passing through a site only minutes before we arrived. Other times, we go through thousands upon thousands of images of grass moving in the wind or the sun shining on the sand—false positives. Each time we set the cameras and fine tune our settings, these false positives decrease. But either way, you get to see the site through a new lens.

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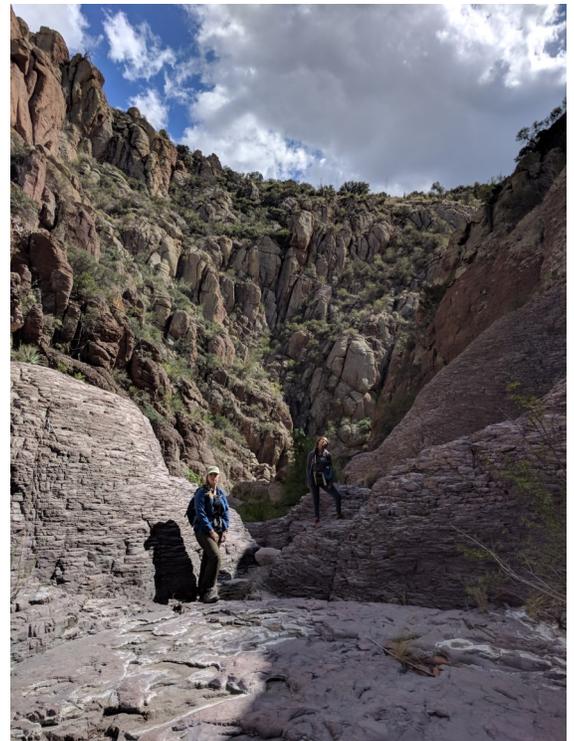
Over the next couple months, the data began to unfold in my hands. Photos were turned into 1s and 0s, habitat data was collected via remote sensing, field notes were typed up and categorized, and analyses were learned, tested, and troubleshooted. Out of the 63,000 photos captured across all sites, around 3,000 contained pictures of wildlife for a total of 1,520 independent pictures. This was an improvement from previous years where one site could have upwards of 20,000 images (due to false positives). Within our images, we identified over 21 species of mammals including all four species of skunks in the region, the Mexican-endangered black bear, and plenty of cats roaming the area. We recorded four photos of a coyote (*Canis latrans*), each at a different site. We also found several cameras to have failed early—an unfortunate reality of camera trap data. Most excitingly, we captured four pictures of jaguar (*Panthera onca*) heading south from both the US–Mexico border and Highway 2 towards the perennial Cajon Bonito. This was the first time a jaguar had been photographed in the region in 25 years. All of this information is incredibly important for current construction and development in the region, especially in reference to the border wall and highway.



Positive detections (“1s”) on camera traps.

I then performed occupancy and abundance modeling to further explore the relationships between medium- and large-sized mammals and the habitat covariates within our washes. Ultimately, our data showed a diversity of species occupy CLO and all of them have a variety of habitat preferences. For abundance modeling, mountain lion preferred areas with greater topographic variety (e.g., cliffs, hills, etc.) while white-tailed deer preferred sites lower in topographic variety (e.g., flatter terrain). This is an easy example of a potential predator-prey interaction occurring within our landscape between mountain lion and white-tailed deer.

There are many more complicated ecological relationships resulting from our analyses, but the major take-away from our findings is that Cuenca Los Ojos has a wide variety of wildlife occupying and preferring a range of habitats. Large ranging species like mountain lion, black bear, and jaguar are present within our landscape and so are small ranging species like the spotted skunk or Mexican fox squirrel that will be impacted by smaller scale changes. A common thread amongst all species was their presence along the perennial river, Cajon Bonito. In recent years, the water levels of Cajon Bonito have become increasingly less available during the scorching summers due to climate



Chelsey Tellez and Heather Coates in Jaguar Canyon. Credit Kinley Ragan.

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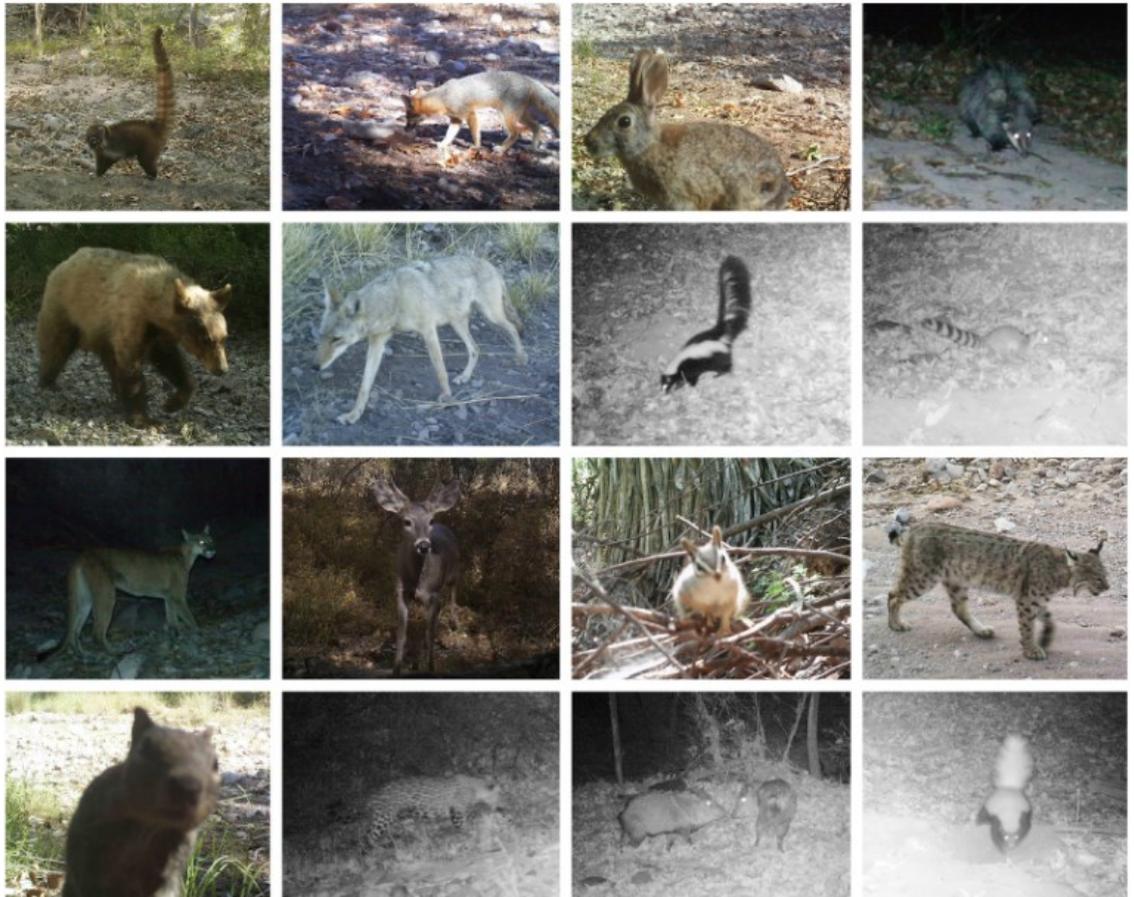
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change and groundwater loss. As we see other infrastructure changes among the landscape, it becomes most important to mention that these stream reaches are important habitat for the wildlife in the region. When advocating for protections and placement of highway or border wall mitigations, the more biodiverse a corridor is, the more species it can benefit.

Thank you to the Phoenix Zoo and Cuenca Los Ojos Foundation for supporting this project and for protecting the biodiversity of the borderlands. Thank you to the members of the 2018–2019 Phoenix Zoo Field Conservation Research Team (Ganesh Marin, Chelsey Tellez, Heather Coates, Andy Martinez, Alejandro Bellon, and Cameron Carver) for assisting with the field work and to Daniela Kenny, Rafael Rodriguez-Garcia, and Isaiah Bing for helping sort all the images.

Chelsey Tellez and Kinley Ragan at a CLO cave (above). Credit Kinley Ragan



(right) Samples of the incredible biodiversity of the Cuenco Los Ojos and Cajon Bonito ecosystem.



Student Voice

Profits of Dove Management: A Bridge for Conservation and Students

*By Jennifer Stroud,
Graduate Student, Restoration Ecology, Auburn University*

COVID-19 has disrupted 2020 for people around the world. Like for many others, the outdoors proved to be a remedy for my quarantine-fever, containing a myriad of enriching experiences. My summer internship with the Arizona Game and Fish Department (AGFD) introduced me to a variety of wildlife programs the Department runs to ensure healthy wildlife populations and provide hunting and wildlife recreation for people. It was a rewarding experience that allowed me hands-on opportunities to contribute to projects, travel around the scenic state, and observe some of Arizona's beautiful biodiversity. The internship provided a method to observe and apply learned concepts in the field and was beneficial as a distance education student. This adventure into nature was my guiding light during unprecedented times and was just one of many internships available with the Department.

Of the many wildlife areas that AGFD manages, I had the pleasure of spending my summer at Cluff Ranch and Whitewater Draw Wildlife Area banding mourning doves. Observing these natural landscapes instilled in me the importance of collaborative scientific efforts to manage wild areas and species for future enjoyment. Society may not be able to retreat to these refuges during hard times without the continued efforts and collaboration of wildlife and natural resource professionals.

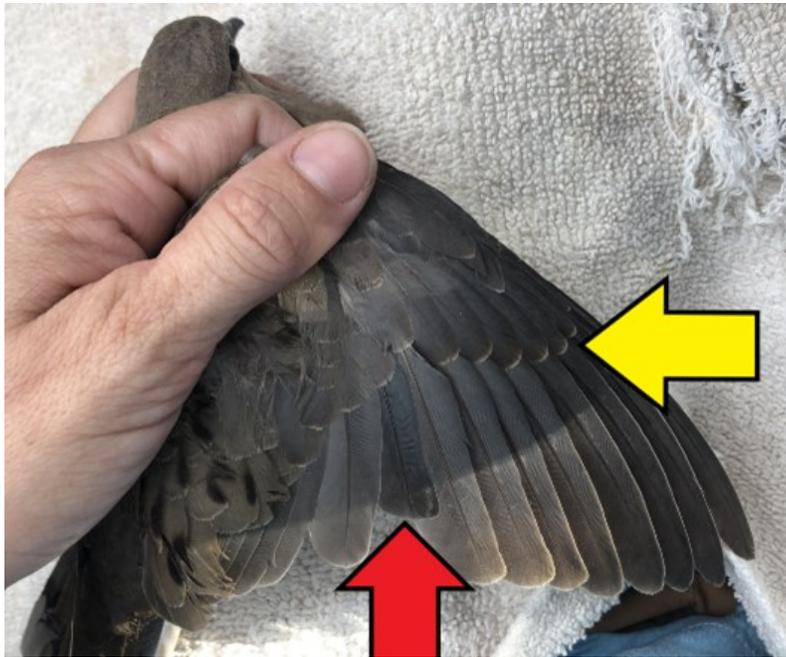
Mourning doves (*Zenaida macroura*) are a plentiful small game species found throughout Arizona. Dove hunting is the second most popular hunting activity in Arizona, boosting the state's economy and cultivating critical wildlife conservation funds through license sales, ammo purchases, and other recreational materials. Wildlife banding data provides insights into population dynamics and bird movements. Continued monitoring of mourning dove population numbers and incorporating data to inform and adapt harvest and management strategies will ensure that populations continue to be robust in the future and provide recreational enjoyment.

Collecting data and banding mourning doves allows for science-based management to ensure these birds stay abundant on the landscape. Metrics are collected on each bird during banding; these include



Mt. Graham viewed from Cluff Ranch (top); two doves relax after banding (bottom). Credit Jennifer Stroud.





A juvenile mourning dove's wing inspection. The buff covert feather tips (yellow arrow) tell us this dove hatched this year. Molt stage can be determined by replacement of primaries (red arrow). Credit Jennifer Stroud

age, which is separated into 'hatch year' or 'after hatch year.' The stage of an individual's molt can also be found by noting which primary feather is missing or newly replaced; this is done by counting primary feathers from the distal end of the wing (feather #10) down to the first primary nearest the body. Sex can be determined visually in 'after hatch year' individuals. Males usually have a rose-colored chest and more distinct gray colored crown.

My internship was extended into December and was the means for maintaining my focused drive through the remainder of this year. It was invaluable to participate in projects that assisted endangered species found within our state. From conducting Mount Graham red squirrel midden surveys and monitoring Mexican gray wolf traplines, to black-footed ferret spotlighting and black-tailed prairie dog visual counts, AGFD specialists shared their knowledge and passion for their work with me. The variety of field experiences I enjoyed would benefit any aspiring wildlife biologist, but the chance to explore a wildlife career during a pandemic was priceless. I would recommend the AGFD summer internship to students looking for hands-on opportunities to develop critical skills for handling wildlife and collecting and maintaining biological data.



The author assists with an examination of a Mexican gray wolf prior to release. Credit Jennifer Stroud.

Acknowledgments—I would like to send my sincere appreciation to Johnathan O'Dell, Larisa Harding, Holly Hicks, and the many other devoted AGFD personnel that made this internship a memorable experience.

Upper Gila Nature Scouts—A Citizen Science Project

By *Alexia Osornio,*
AmeriCorps, Gila Watershed Partnership

I have been working at the Gila Watershed Partnership (GWP; Graham County) through an AmeriCorps program since September 2020. During this time, I have been given an opportunity to run a trail camera project, called “Upper Gila Nature Scouts.” I placed various trail cameras to learn about the biodiversity at GWP’s active restoration sites. Knowing the variety of wildlife at these sites will help the GWP restoration team better plan habitat management actions for newly propagated native plants.

At the beginning of my time with GWP, there was an animal digging up some freshly planted native plants. We placed a camera by the holes and the next day discovered the camera had caught the bandit in the act—a badger! Using this information, we affixed cages around the plants and used deterrents to keep the badgers away. This was only the beginning of how this camera project could help our restoration sites.

Trail cameras can take thousands of photos per week; however our small staff simply cannot go through all of them. But there is a solution to this problem. I have created a project using the Zooniverse platform where volunteers may view our trail camera photos and assist to identify the animals in the photos. Using the help of citizen scientists, we will gather the animal identifications from the Zooniverse project and record which animals are where at our restoration sites.

I am hoping this project will help our community learn more about the wildlife in our area as well as learning more about habitat restoration. You can be a citizen scientist and help our non-profit organization too! We will be launching this project in January 2021. To stay updated on this project, visit the [Gila Watershed Partnership website](#).



Trail camera images of a badger (top) and bobcat (bottom). Credit Upper Gila Nature Scouts Project.

TASK		TUTORIAL	
Like	Coat Pattern	Color	Tail
Nothing here	Fire	Other, Snake	
Unknown	Fox	Porcupine	
Badger	Gila Monster	Quail	
Bat	Great Blue Heron	Raccoon	
Beaver	Ground Squirrel	Rat	
Black Bear	Hawk	Rattle Snake	
Bobcat	Horned Lizard	Ringtail	
Feral Cat	Horse	Road Runner	
Cattle	Human	Sandhill Crane	
Coati	Jack Rabbit	Skunk	
Cottontail Rabbit	Javelina	Toad	
Coyote	Mountain Lion	Tree Squirrel	
Domesticated Dog	Owl	Turkey	
Deer	Other, bird	Turtle/ Tortoise	
Elk	Other, Lizard	Vulture	

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Sample camera image (elk) with the Zooniverse data interface. Credit Upper Gila Nature Scouts.

Candidates for 2021 AZTWS Executive Board

Candidate bios for 2021 AZTWS Executive Board positions. AZTWS Members, please vote by January 25, 2021; Results announced during the AZTWS Business Meeting at JAM (see info [here](#)). Confidential ballots will be sent via email or vote [here](#). Active members only.

Candidate for President-Elect (select 1)

Żaneta Kaszta, Research Fellow, University of Oxford

Żaneta Kaszta is a conservation biologist and a landscape ecologist with research interests covering a wide array of subjects spanning from remote sensing, GIS, landscape pattern analysis, landscape connectivity and genetics, modelling of animals movement and habitat use to modelling disease transmission. Żaneta currently works as a Research Fellow at Wildlife Conservation Research Unit (WildCRU) of the University of Oxford, and is in the process of receiving a research professor position at the Northern Arizona University. Żaneta has a Ph.D. from Université Libre in Brussels. She also holds an MSc in Environmental Biology and an MSc in Remote Sensing and GIS from Jagiellonian University in Poland.



Żaneta is currently involved in a large scale collaborative research project to study wild felids and biodiversity across Africa, South America and South East Asia. Her other work focuses on modeling deforestation in Leuser Ecosystem in Sumatra. Furthermore, together with GEODE Lab of Northern Arizona University, she has recently received a NASA Roses grant to investigate the role of vegetation structure derived from Global Ecosystem Dynamics Investigation (GEDI) Lidar to inform species distribution modeling incorporating the long-missing vertical component of habitat heterogeneity. Her work provides information for developing species conservation planning tools to quantitatively and spatially map effects of conservation and development on wildlife populations. She has organized and taught workshops to local government officials and members of non-governmental organizations in several countries, including Botswana, Zimbabwe, Myanmar, and Malaysia. By serving in AZTWS, she hopes to share her talents and experience for benefiting wildlife conservation and management in Arizona.

Candidate for Treasurer (select 1)

Kerry Griffis-Kyle, Associate Professor, Texas Tech University

Kerry Griffis-Kyle is a wildlife ecologist who has been working on wildlife and water resources in southwestern deserts for over 14 years. She came to Arizona for her Masters, and part of her never left the state. Kerry is an Associate Professor at Texas Tech University where her work integrates across spatial and temporal scales and taxa to address issues of site quality and wildlife, wildlife habitat selection, spatial planning, and vulnerability assessments. The goal of her work is to improve our ability to effectively manage wildlife in ways that address complex issues associated with climate change and natural resources. Her service to the AZTWS is a part of this



investment in wildlife management and the profession.

After earning her B.S. in Wildlife Ecology and Conservation from University of Florida, Kerry arrived in Arizona in 1996 to begin her master's work on patterns of bird diversity in northern Arizona forests at Northern Arizona University. She spent four years working on the Colorado Plateau in the ponderosa pine forests and piñon-juniper woodlands on issues of avian biodiversity and habitat first as a graduate student and then as a research associate. As a research associate, she also worked on questions related to forest health. She later completed her Ph.D. at Syracuse University (yep – that would be upstate NY) and then hustled on back to the Southwest. After her return, she was awarded funding for her proposal on water management and amphibians in the Chihuahuan Desert which supported her postdoctoral work at New Mexico State University. A month after finishing her postdoc, she started as faculty at Texas Tech University where she has been since. When Kerry isn't dragging her family to southwestern Arizona during the summer for fieldwork, she enjoys camping, hiking, and exploring new places, and occasionally binge watching the Great British Baking Show.

Candidate for Corresponding Secretary (select 1)

Haley Nelson, Wildlife Specialist, Arizona Game and Fish Department



Haley Nelson was born and raised in Arizona, where she earned a bachelor's degree in applied biological sciences from Arizona State University, and a master's of science in geographic information system technologies from University of Arizona. She has worked with the Arizona Game and Fish Department (AGFD) since 2014 in both wildlife biology and information technology roles.

Currently, Haley works with the Highways and Wildlife Connectivity crew at the AGFD as a wildlife specialist. In this position, she combines her passion for wildlife biology and skills in information technology, designing process improvement mobile and desktop applications for various projects and processes in the Wildlife Contracts Branch. She has assisted in designing a suite of applications to enhance the safety and efficiency of wildlife capture operations, designed a vehicle mileage submission application and tracking database, and has helped to convert various field project datasheets into mobile forms. She also assists with planning and implementation of large-scale wildlife capture operations, specifically coordination of aerial observers during these events, and spends a lot of time up in the fixed-wing surveying for wildlife. Haley also assists with trail-camera monitoring of highway structures, wildlife-vehicle collision surveys, and aerial telemetry welfare checks.

Haley is finishing up her final term as the AZTWS treasurer, and would be honored to continue serving on the board of such an important society!

Candidate for Recording Secretary (select 1)

Nikhil Nayee, Undergraduate Student, University of Arizona

Nikhil Nayee is currently an undergraduate sophomore at the University of Arizona, double-majoring in Microbiology and Ecology/Evolutionary Biology. Nikhil is also a Doris Duke Conservation Scholar as well as an officer in the University of Arizona Fisheries and Wildlife Services Club. His experience serving as a club officer will be useful for serving on the Executive Board of AZTWS. Nikhil's experience within the Club requires him to play a supporting role to the other primary officers such as the president, vice president, secretary, and



treasurer. He is fully willing to assist any member with any tasks that are delegated to him and he wish to act as a dependable backbone to the infrastructure of the AZTWS Board. Furthermore, he hopes to form a direct connection between the AZTWS and the University of Arizona Wildlife and Fisheries Chapter by acting as a bridge between the two societies. Above all else, Nikhil hopes to play a critical role in tackling the various issues and challenges associated with wildlife conservation and management. What drives him to tackle the various struggles of wildlife conservation and management is to maintain the delicate balance which many species and organisms live in and preserve the natural equilibrium. The relationship between humans and the natural world is something that ought to be preserved without a second thought. As a result, Nikhil believes that it is his duty to assume any responsibilities that can potentially aid in the preservation of the natural world and increasing awareness and appreciation of wildlife. He hopes to not only help with vital AZTWS activities but also to inspire hope and confidence in future wildlife conservationists and naturalists.

Candidates for Board Member (select 1)

José G. Martínez-Fonseca, PhD Student, Northern Arizona University



José G. Martínez-Fonseca is a Nicaraguan biologist and wildlife photographer, who has been working with amphibians, reptiles, and mammals (specially bats) for over 10 years in several public and private reserves in Nicaragua. His current research goal is to increase the knowledge of the existent biodiversity in Nicaragua which currently suffers uncontrolled deforestation and poor law enforcement. Currently, he is working on his Ph.D. under the supervision of Dr. Carol Chambers at the Northern Arizona University. His research investigates forest fragmentation, population genetics, and diet using genetics of several bat species and communities in Nicaragua. José hopes that a better understanding of the effects of forest fragmentation on wildlife will help inform and improve management policies and promote conservation of critical areas in Nicaragua and Central America.

José loves exploring Arizona and has worked on different wildlife projects here, including studying listed native species like the New Mexico Jumping Mouse in the White Mountains and numerous southwestern endemic reptiles in the Chiricahua Mountains. By serving in the AZTWS, José hopes to provide a diverse perspective with his experience in Nicaragua. This would be the first time he serves in an organization this big. This experience would be a great opportunity to learn and promote, create, and adapt organizations like TWS for conservation and better management of the natural resources in Nicaragua and other Latin American countries.

Brianna N. Mann, Data Specialist, Museum of Northern Arizona

Brianna N. Mann is a Data Specialist and biologist for the Spring Stewardship Institute (SSI) at the Museum of Northern Arizona (MNA). She has lived in Arizona for about a year and a half and, in that time, she has had the privilege of working in wildlife throughout Arizona. When she first moved from California, she was part of the New Mexico meadow jumping mouse field crew with Dr. Carol Chambers, where she was first introduced to the incredible diversity of wildlife in the White Mountains and gained firsthand experience tracking an endangered species. Shortly after, she began her role as a data specialist and springs biologist with MNA, where she has



surveyed wildlife for springs ecological assessment, hosted workshops for wildlife experts and ecologists, corresponded with land managers and collaborators, and presented at the AZTWS conference in 2019.

As an early career biologist, Brianna has dedicated herself to research and natural history, from the Burke Museum in Seattle Washington, to the Museum of Vertebrate Zoology at UC Berkeley, to the Museum of Northern Arizona. In these capacities, she has learned that organization, collaboration, and dedication are fundamentals in successful and meaningful wildlife science and conservation.

Brianna enjoys living and working with wildlife in Arizona, and as the Board Member, she hopes to further commit herself to the local wildlife community, to strengthen and support this community. If elected, she will be a dedicated participant in all AZTWS affairs and a devoted advocate for this society.

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SHARE YOUR AZ WILDLIFE STORIES

Want to share your Arizona wildlife stories and perspectives? Please consider submitting **articles, stories, project updates, events, and pictures** for upcoming newsletters! AZTWS welcomes all contributors.

The Arizona Wildlifer Deadlines

<u>Issue</u>	<u>Deadline</u>
Spring 2021	Mar 19, 2021
Summer 2021	Jun 19, 2021

Email submissions at any time to aztwseeditor@gmail.com.

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Year-End Update on the Borderlands Foundation for Understudied Plants and Animals

By *Kay Nicholson,*
AZTWS BFUPA Committee Chair

With the dawning of a new year upon us, and 2020 now in the rearview mirror, I wanted to share with AZTWS members what the Borderlands Foundation for Understudied Plants and Animals (BFUPA) has been up to.

In 2018, David Brown pulled together a group of volunteer biologists, the Liebreanos, to continue working on leporids in the Altar Valley. Along with several ongoing or finalized studies, there was an acknowledgement of a need for updated information on jackrabbit diets. It had been many, many decades since a comprehensive look at diets of *Lepus alleni* and *L. californicus* was conducted in southern Arizona. Fresh fecal samples from *L. alleni* and *L. californicus* were randomly harvested across the Valley every month from August 2018 through July 2019 and are being processed by Dr. Nashelly Meneses at NAU. Dr. Meneses is utilizing a high-molecular weight DNA extraction process to determine plant taxonomy and relative abundance within the samples to create an average utilization summary. We anticipate the data analysis will be completed in 2021. Preliminary results in 2018 revealed some overlap yet clear dietary differences between the two hares; the antelope jackrabbit had a much more robust and diverse plant diet. A similar sampling of desert cottontails has been conducted in the same general areas of the Altar Valley and field collections were expected to be finished by January 1, 2021. Funding for the DNA analysis is still being explored. To date the DNA extraction has been supported by the Altar Valley Conservation Alliance, Quail Forever, Arizona Chapter of Safari Club International, the Southwest Wildlife Conservation Center, and the field biology team itself.

With the detection of the RHDV2 rabbit disease, rabbit and hare numbers in the Altar Valley have declined significantly since the early summer of 2020, more so than previous years. This general drop in numbers of animals seen during road surveys and as road kills will be monitored into the future with over 24 months of previous data collection for comparison.

An attempt to document the continued presence of *Sylvilagus insonus* by Jose Alberto Almazan-Catalan in the Omilteme Forest Reserve in Guerrero, Mexico appears to have been successful. A photograph, taken in 2012 by Stephen Davies, was the only image of a living specimen prior to the current study. Last year, this study located several latrines providing DNA samples of pellets that are expected to be of this species, and an ongoing camera trapping survey captured a photo of this species in 2020. Jose is awaiting COVID-19 clearance before attempting a group survey and DNA collection.

James O'Brien is continuing to x-ray the epiphyseal cartilage of a captive bobcat at Southwest Conservation Center as a novel technique to determine age of bobcats. This animal, "Rocket," is going on 2 years of age and is just now maturing. Additionally, Cheryl Mollohan and her group received a Heritage Grant for an urban bobcat study, which began in Fall 2020—a most welcome development.

The BFUPA charter, which outlines the mission and purpose of this foundation, is available to view on the AZTWS website [here](#). As an AZTWS member, there are opportunities for you to get involved. Consider projects that you would be interested in pursuing and submit a proposal for funding to the AZTWS BFUPA Committee Chair (Kay Nicholson, Kay.E.Nicholson@jacobs.com). You can also support BFUPA with a tax-deductible donation to fund projects that BFUPA is undertaking. Donations by credit card are accepted [online](#) (be sure to indicate that the donation is for BFUPA in the box labeled "Additional Details") or by check (made out to "Borderlands Foundation for Understudied Plants and Animals" and mailed to Linda Searles, Southwest Wildlife Conservation Center, 27026 N 156th St, Scottsdale, AZ 85262).



AZTWS News & Resources

The [Arizona Chapter of The Wildlife Society](#) is dedicated to promoting sound management and conservation of Arizona's wildlife resources and strives to be the preeminent resource for Arizona's community of scientists, managers, educators, students, technicians, planners, and others working to manage and conserve wildlife and habitats in the state. To help you keep up with AZTWS's resources, opportunities, and happenings, we hope that you find the following hotlinks useful:

- **Members** gain access to numerous opportunities; if you are not yet a member, sign up [here](#). Annual dues are only \$6!
- **AZTWS's Web Store** is live! Show your support by gifting cool AZTWS swag to others (or splurging for yourself). Proceeds support AZTWS resources, including conference events and our Continuing Education Grant. [Shop now!](#) [You can also support AZTWS's Mission by [donating](#) discretely or in monthly recurrences.]
- Support others and help increase representation in Arizona's natural resource fields by **gifting a AZTWS membership** (1-year)—[details here](#).
- Looking for that older issue of *The Arizona Wildlifer*? **All issues** are freely accessible [here!](#)
- Our parent society, TWS, emphasizes important resources for **[diversity, equity, and inclusion](#)** throughout the wildlife profession. AZTWS also strives to uphold these values.
- An online course entitled "The Foundations of Wildlife Chemical Capture" is now available; its content is approved for 16 CE credits for TWS's Professional Development Program. [Details [here](#)]
- Want to get more involved with your Chapter? Check out the information available on our [Facebook](#), [Twitter](#), and [website](#) for opportunities.
- Have questions for us? Contact us [here](#).

Virtual JAM

2021 Joint Annual Meeting of the Arizona and New Mexico Chapters of The Wildlife Society and American Fisheries Society

This year, in the interest of keeping all AZ and NM fisheries and wildlife professionals healthy during the COVID pandemic, the JAM is moving to a virtual online format in early February. Following the success of recent virtual meetings for National TWS and AFS meetings, virtual JAM will surely be a success!

Further details will be added to the meeting page here [\[https://aztws.com/jam2021/\]](https://aztws.com/jam2021/).



Lush landscape during monsoon 2019 in the Pajarito Mountains. Credit Brian Blais.