

# THE ARIZONA WILDLIFER

2023 Issue 3

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Summer Edition

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## The President's Message



AZTWS President Sarah Rinkevich with the San Juan Mountains, Southern Colorado, in the background.

Greetings, fellow Arizona wildlifers, and welcome to our summer issue. The months of May and June have been very cool for Tucson with temperatures in the 90's. While I embrace the hot summers in southern Arizona, I haven't minded the cooler than normal temperatures. Hope you are having a good beginning to summer and have safe and productive field season outings.

The body of knowledge held by Indigenous Peoples here and around the world has been referred to as Traditional Ecological Knowledge (TEK) or Indigenous Knowledge. The Biden administration's Office of Science and Technology Policy and Council on Environmental Quality issued a memorandum in 2021 for the heads of departments and agencies, among other tasks, to convene an "Interagency Working Group on Indigenous Traditional Ecological Knowledge" that would include representatives from agencies across the federal government. A guidance document titled *Implementation of Guidance for Federal Departments and Agencies on Indigenous Knowledge* was finalized on November 30, 2022. The Department of the Interior is currently drafting a Departmental Manual on "Inclusion of Indigenous Knowledge in Departmental Actions and Scientific Research."

In June, I attended an Indigenous Knowledge Training and Handbook Workshop, which was attended by federal agencies and Indigenous Knowledge holders who were the subject matter experts. More to come on this subject as the manual and trainings are currently being developed. I have personal experience from my own research

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## Presidents Message cont...

of the value of Indigenous Knowledge, as well as its contributions to the field of Conservation Biology from other examples I have found.

The Inflation Reduction Act of 2022 is providing critical funding that will allow the U.S. Fish and Wildlife Service (USFWS) to increase the resiliency of habitats and infrastructure to help National Wildlife Refuges withstand severe weather events. The funding also provides additional resources for addressing backlogs related to recovery planning and recovery needs for at-risk and listed species. Further, the USFWS received a \$62.5 million investment to address endangered species recovery planning efforts that will be implemented over the next several years to benefit more than 300 species currently listed under the Endangered Species Act, several of which are in Arizona. This infusion of funding will allow the USFWS to hire additional biologists so we can ensure recovery plans are in place to provide the roadmaps for on-the-ground implementation actions that are necessary to recover species and remove them from the Endangered Species Act list. These positions will be posted on [USAJOBS](#).

AZTWS will be hosting the 2024 Joint Annual Meeting, which will be held in Flagstaff at the Little America Hotel on February 1–3, 2024. We are at the beginning stages of planning, so please reach out to the Executive Board if you are able to serve on one of the many committees (see announcement below). Please also be thinking about any potential workshops that you may want to host on the Thursday of the conference. Rooms for workshops are limited, so please contact us as soon as you know you would like to hold a workshop at the Little America. We look forward to seeing everyone in person in February 2024!

Best to all,  
Sarah

## Help Plan the 2024 Joint Annual Meeting!

If you're looking for a way to engage with AZTWS, want experience planning a professional conference...or just have a little extra time on your hands...get involved with the 2024 JAM Planning Team! The team consists of the following committees — let us know if you're interested in chairing or participating in any of these:

- ◆ Facility Arrangements
- ◆ Announcement/Publicity
- ◆ Registration
- ◆ Plenary/General Session
- ◆ Technical Sessions
- ◆ Poster Session
- ◆ Student Paper and Poster Judging
- ◆ Student-Mentor Lunch
- ◆ Program Layout and Printing
- ◆ Quiz Bowl
- ◆ Photo Contest
- ◆ Audio-Visual Equipment/Assistance
- ◆ Commercial Exhibits/Vendor
- ◆ Raffle/Auction
- ◆ Student Volunteer Committee
- ◆ Job and Message Board
- ◆ Continuing Education/Workshop
- ◆ Digital Content

For more information or to get involved, contact Sarah Rinkevich at (520) 203-1448 or [sarah\\_rinkevich@fws.gov](mailto:sarah_rinkevich@fws.gov). Thank you!



## Regional News

# Southwest Section Tracks

By **Kathy Granillo**,  
**TWS Southwest Section Representative**



Southwest Section Representative  
 Kathy Granillo with a wolf pup.

I've been thinking about democracy quite a bit of late, and it got me wondering what those of you reading this newsletter think about voting. Do you think it is important? Do you think of it as a right? Do you value your ability to vote? As you mull those questions over, let's consider the history of voting in the U.S. A quick search of the internet led me to the [Carnegie Corporation](#), which had the following to say about this topic:

Despite their belief in the virtues of democracy, the founders of the United States accepted and endorsed severe limits on voting. The U.S. Constitution originally left it to states to determine who is qualified to vote in elections. For decades, state legislatures generally restricted voting to white males who owned property. Some states also employed religious tests to ensure that only Christian men could vote.

During the early part of the 19th century, state legislatures begin to limit the property requirement for voting. Later, during the Reconstruction period following the Civil War, Congress passed the Fifteenth Amendment to the Constitution, which ensured that people could not be denied the right to vote because of their race. The amendment was ratified by the states in 1870. However, in the decades that followed, many states, particularly in the South, used a range of barriers, such as poll taxes and literacy tests, to deliberately reduce voting among African American men.

Early in the 20th century, women still were only able to vote in a handful of states. After decades of organizing and activism, women nationwide won the right to vote with the ratification of the 19th amendment to the U.S. Constitution in 1920.

Inspired by voting rights marches in Alabama in spring 1965, Congress passed the Voting Rights Act. The vote was decisive and bipartisan: 79-18 in the Senate and 328-74 in the House. President Lyndon Johnson signed the measure on August 6 with Dr. Martin Luther King, Jr., Rosa Parks, and other icons of the civil rights movement at his side.

Now what does all of this have to do with The Wildlife Society? Hopefully, it got you thinking about the struggles in this country to give every person 18 years and older the right to vote. And hopefully it inspires you to exercise that right in whatever elections you are eligible to vote. So *now* we get to TWS.

Every member of TWS can vote for the leadership of TWS. Every year, we hold elections for Vice President and for approximately one-third of the Section Representatives. As I hope you all know, the person elected as Vice President serves for one year in that capacity, followed by one year as President-Elect, followed by one year as President, followed by a final year as Past-President. Your vote for Vice President is really a vote for four different positions in TWS leadership. I hope you all voted in this year's election, which closed June 30. The person elected as Vice President will be installed at the Annual Conference, which is in Louisville, Kentucky, this year.

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The other important point I'd like to make about voting is that, in order to vote, there must be candidates. In order for TWS to have an awesome Council, one that reflects the diversity of our membership and that continues to help wildlife students and professionals be the best that they can be, we need people to step up and be willing to be part of that leadership. I hear grumbling here and there about the leadership of TWS not reflecting the diversity of TWS membership, notwithstanding the fact that Council has several women members and the current President is of Japanese descent. However, it also reflects the group of people willing to run for Council positions. TWS struggles every year to beat the bushes to round up well-qualified candidates to run for office. Many of you reading this newsletter are well-qualified to run, and I urge you all to think about nominating yourself or fellow TWS members to run for Council. If you have thoughts or concerns on how the nominating process works or changes you'd like to see, I'd be pleased to hear from you.



Speaking of the Annual Conference, have you seen the logo for the conference? It features a squirrel. The squirrel family is among the most diverse of all modern mammals, with more than 278 species and 51 genera thriving everywhere from Arctic tundra and tropical rainforest to farms, suburbs, and big cities. How many squirrel species are native to Arizona? According to one of my reference books (with the caveat that it was published many years ago and so taxonomy may have changed between now and then) there are five chipmunk species, two antelope squirrel species, five ground squirrel species, two prairie dog species, and four tree squirrel species for a total of 18 squirrel species. My favorite is the Mt. Graham red squirrel, as I worked with them for about three years, but all squirrels are pretty darn fabulous. Which one is your favorite?

Squirrels are an important food source for lots of nonhuman predators, including snakes, coyotes, hawks, and owls, to name a few. They've long been hunted by people, too, and once served as key ingredients for American dishes like Kentucky burgoo and Brunswick stew, although today other meats are commonly used instead. My husband hunts squirrels occasionally, and I've made some wonderful tacos after cooking the meat in my pressure cooker.

I hope to see many of you in Louisville in November, perhaps enjoy some Kentucky burgoo, exchange squirrel recipes, and perhaps chat about squirrels as well as other topics of importance to the wildlife profession. And you can always contact me at [KGBirder55@gmail.com](mailto:KGBirder55@gmail.com).

Sincerely,  
Kathy





# Our Neck of the Woods...

## Mule Deer Respond to Urbanization and Recreation in the McDowell Mountains

By Brianna Russo<sup>1,2</sup>, Jesse Lewis<sup>1</sup>, Scott Sprague<sup>2</sup>, Tiffany Sprague<sup>2</sup>, Scott Hamilton<sup>3</sup>

<sup>1</sup>Arizona State University, <sup>2</sup>Arizona Game and Fish Department, <sup>3</sup>City of Scottsdale

Humans and wildlife are increasingly interacting as human development and activities expand into natural areas. Maricopa and Pinal counties in Arizona are two of the fastest growing regions in the country, where two million acres of desert are expected to become developed by 2040. The Phoenix valley also offers hundreds of miles of hiking, biking, and equestrian trails, which are located throughout dozens of nature parks and preserves. Rapid urbanization and increased recreation can have consequences for wildlife. For example, animals may experience direct or indirect habitat loss, an increase in vigilance and cortisol (stress hormone) levels, or potential loss of gene flow.



Mule deer caught on a wildlife camera. Credit: Jesse Lewis Laboratory

Mule deer are a highly mobile species and generally require a minimum of several square kilometers to meet their daily and seasonal habitat requirements. As urbanization and recreation increase, mule deer may alter their use of resources within their home range or may be forced to move from an area. However, in some areas of the country, mule deer have adapted to urbanization and readily consume potted plants and drink from bird fountains. In the hot deserts of the Southwest, limited research has explored the relationship between mule deer and urbanization and if mule deer can adapt to recreational disturbance. As such, in collaboration with the Arizona Game and Fish Department, City of Scottsdale, McDowell Sonoran Conservancy, and

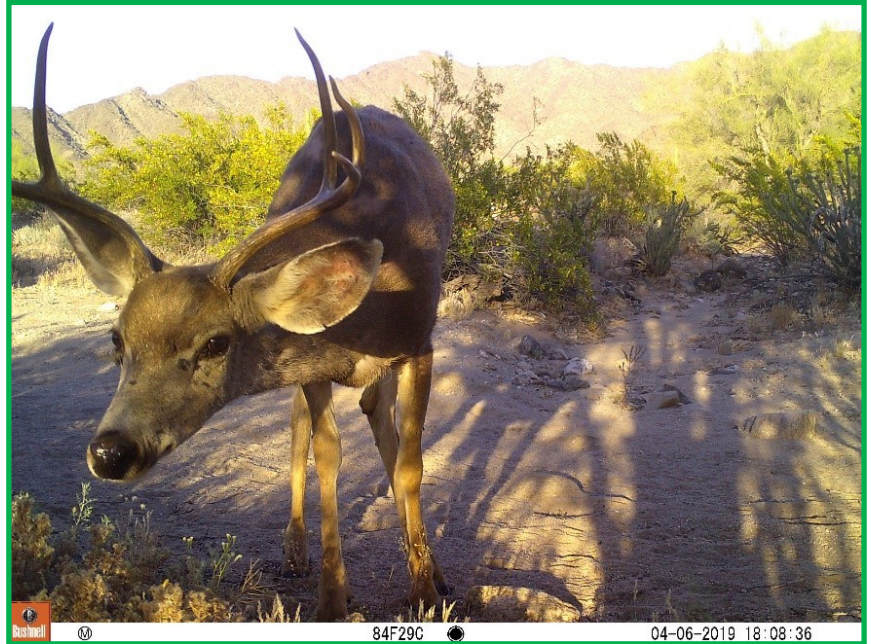
Arizona State University, we examined how 37 GPS collared mule deer responded to human disturbance in the McDowell Sonoran Preserve (hereafter the “Preserve”) in Scottsdale, Arizona. The Preserve is a large natural area that is surrounded by an increasingly developed landscape and is heavily used for non-motorized recreation. Therefore, the Preserve provided a unique opportunity to

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investigate how mule deer respond to human disturbance at the wildland-urban interface.

Because mule deer can adapt to human disturbance in some systems, but may also be negatively affected by human disturbance, we predicted that mule deer may shift their selection of resources depending on seasonal and daily resource availability and human activity. During the hottest and driest months in the desert, a lush golf course with green vegetation or water in a neighborhood could be appealing to mule deer. As such, we predicted that mule deer might use some areas of urbanization when resources were most limited on the natural landscape, especially at night when human disturbance was minimized. Additionally, many wildlife species use trails as travel corridors and habitat associated with human recreation. Therefore, we also predicted that mule deer might select for areas closer to trails when recreation was minimal, such as during the summer season and at night.



McDowell Sonoran Preserve supports a robust population of mule deer.  
Credit: Jesse Lewis Laboratory

To evaluate the relationship between mule deer and human disturbance, we assessed resource use during three seasons (hot-wet, cool-wet, and hot-dry) and three times of day (crepuscular, day, and night). Data analysis is ongoing, but preliminary results suggested that mule deer exhibited a tradeoff between selecting for areas associated with human disturbance, while also minimizing exposure to disturbance. Specifically, mule deer generally avoided urbanization across all seasons and hours of the day. However, at night across all seasons, mule deer were less averse to urbanization, relative to day and crepuscular time periods. During the hot and dry season, mule deer also became more tolerant of urbanization during the crepuscular time period. Mule deer also selected for habitat closer to trails at night, regardless of season. The number of Preserve visitors is reduced by half during the hottest months compared to the winter season. However, our results suggested that visitation to the Preserve during the summer months was still high enough to deter mule deer from trails during the day. The Preserve is closed to recreation at night, and our results suggest that mule deer responded positively to this temporary closure.

Overall, as the Phoenix valley continues to grow, wildlife that reside along the urban interface and in recreational areas will increasingly be influenced by human activities. This research provides important information about how mule deer respond to multiple human factors, which can be used to manage and conserve mule deer habitat and habitat for other less mobile species that also rely on these natural areas.



# Student Voice

## University of Arizona Experience at the 2023 Joint Annual Meeting

*By Elizabeth EbadiRad, Past President, UA Fish and Wildlife Society Student Chapter*

Having never previously attended Joint Annual Meeting (JAM) of the Arizona and New Mexico chapters of The Wildlife Society and American Fisheries Society until this past conference in February, I was quite delightfully struck by my experience. Because I had not had the opportunity to attend such conferences due to personal circumstances, I had tried my best to view recorded and archived conferences online. As such, when I was notified of the opportunity to attend JAM, I was tremendously jubilant that I'd have the chance to behold a professional wildlife conference in the flesh. The opportunity would allow me to become exposed to a genuine professional conference within a field I hope to become deeply involved in. Now that the 2023 JAM is behind us, I'm left deeply satisfied and with a more informed understanding of what I need to do moving forward.

As for the conference, most everything went in very splendid order. There was an immense variety of presentations, far more than I had anticipated, across multiple disciplines, such as mammalogy, ichthyology, herpetology, and ornithology. What really caught my fascination, however, were the talks on mammalogy, specifically those about big game. Nothing speaks more to me than learning more about large mammals, and throughout the entirety of this series of presentations I was exceedingly enthralled by each and every single talk. The presentations that stood out most for me were about the effects of wildland recreation on desert bighorn sheep in Western Colorado by Ashley D. Evans and the landscape and structural factors influencing the seasonal use of wildlife overpasses along a major canal by Kaela M. Hamilton. A personal favorite of mine was David Rogowski's presentation on the wanderings of male tarantulas during their breeding season!

What attracted me to the presentations on big game was that I wish to further develop my career within that area of wildlife conservation. That is my greatest takeaway from having attended JAM. In viewing the numerous talks performed by fellow students, I was deeply struck and exceedingly impressed by the extent of their research; it hadn't quite occurred to me that this was, in essence, what I would have to do later down the road as I progress with my academics. It was quite the revelation, and I'm still pondering as to



Congrats to the University of Arizona Quiz Bowl Team! Credit: UAFWS

what type of research I should devote myself towards, as did those exemplary students who presented their theses. I'm immensely thankful to have attended JAM and I hope to continue doing so!

# Artificial Intelligence and Wildlife Technology

By Jack Kauphusman, Biologist, Logan Simpson



Jack Kauphusman presenting at the 2023 NAEP Conference and Training Symposium. Credit: Logan Simpson

In an effort to facilitate the introduction of wildlife technology and artificial intelligence to enhance conservation and survey efforts to identify Endangered Species Act (ESA) avian species, I presented a talk at the National Association of Environmental Professionals (NAEP) 2023 Conference and Training Symposium, introducing lead environmental professionals to a groundbreaking artificial intelligence developed by Dr. Stefan Kahl with the Cornell Labs of Ornithology called BirdNET.

The session started with describing what BirdNET is – an artificial intelligence model trained on more than 3,000 different avian species across both North America and Europe that can identify a bird species when provided audio data. I explained to the audience how this artificial intelligence could be paired with Autonomous Recording Units (ARUs) to identify various birds, including ESA species during a biological survey or monitoring session, referring to this pairing as the “Bird-Scanner Workflow.”

omous Recording Units (ARUs) to identify various birds, including ESA species during a biological survey or monitoring session, referring to this pairing as the “Bird-Scanner Workflow.”

The Bird-Scanner Workflow is a workflow tutorial, which can be accessed at [https://jkauphus.github.io/Bird\\_Scanner](https://jkauphus.github.io/Bird_Scanner). I shared with the attendees how to use this guide to set up BirdNET artificial intelligence on their own computers to identify bird species from their audio data. The primary objective of this presentation was to attract collaboration from wildlife professionals involved in surveys of threatened or endangered bird species, such as the Mexican spotted owl, yellow-billed cuckoo, and Southwestern willow flycatcher, to pilot this workflow into their own survey techniques and protocols.

At the end of the session, I shared a pilot study using the Bird-Scanner Workflow during my biological evaluations in 2022 for the Navajo Tribal Utility Authority (NTUA) distribution line projects, as part of their ambitious Light Up the Navajo Nation projects. During these biological evaluations, a site visit was involved within a given project location to collect a species inventory and habitat assessment. To evaluate the effectiveness of BirdNET compared to traditional pedestrian surveys, I deployed the Bird-Scanner Workflow at 12 utility line projects across the Navajo Nation and compared the bird species identified through the Bird-Scanner Workflow with those identified during pedestrian surveys.

The results of the pilot study revealed interesting insights. Although the pedestrian surveys identified a greater number of species overall, the Bird-Scanner Workflow was able to detect unique species that had not been observed during the pedestrian surveys. These species were manually verified through short audio clips and spectrograms created by the tool. When combining the results of the Bird-Scanner Workflow with pedestrian surveys, the survey efforts yielded a significantly higher number of species compared to pedestrian surveys alone.

These findings emphasize the potential of the Bird-Scanner Workflow as a valuable tool for improving biological surveys for avian species. By integrating artificial intelligence technology with ARUs, envi-

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ronmental professionals conducting surveys can benefit from a more comprehensive and accurate understanding of bird populations, thereby aiding conservation efforts and informing decision-making processes.

The presentation at NAEP 2023 served as a platform to introduce the Bird-Scanner Workflow to a wider audience and foster collaboration among professionals engaged in avian surveys. As this innovative tool gains recognition within the environmental community, it is poised to revolutionize the way biological evaluations are conducted and contribute significantly to the preservation of threatened and endangered bird species.



Autonomous Recording Units (ARUs) used on the project. Credit: Jack Kauphusman

## Interested in a Leadership Role with AZTWS?

AZTWS has open vacancies for Chair Committee positions. Join us and make a difference in your Arizona wildlife community. The following positions are available:

1. **Conservation Affairs Chair** — This position includes review of regulatory, planning, environmental, and other issues related to wildlife and their habitat in Arizona. Duties include soliciting, recommending, and preparation of materials related to conservation issues. The Chair is also responsible for an annual summary of conservation affairs to be distributed in the AZTWS Annual Report.
2. **Events and Opportunities Chair** — This position involves acquiring information related to events and opportunities that may be of interest of Chapter members and distributing them to committee members in charge of Chapter outreach.

Please contact us at [aztws@gmail.com](mailto:aztws@gmail.com) to inquire.

# 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*

| Issue       | Deadline     |
|-------------|--------------|
| Fall 2023   | Sep 15, 2023 |
| Winter 2024 | Dec 15, 2023 |

Email submissions at any time to [aztwseeditor@gmail.com](mailto:aztwseeditor@gmail.com).

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## Continuing Education Grants

AZTWS offers \$1,500 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](#)**



## “You Can’t Kick the Fish!” AZTWS Wildlife Techniques Workshop Featured Fun Facts...and Fun!

*By Tiffany Sprague, Project Evaluation Specialist, Arizona Game and Fish Department*

At long last, the AZTWS Wildlife Techniques Workshop made its return over the weekend of April 22, 2023. What better way to celebrate Earth Day than to spend time with friends while learning about techniques used to study wildlife? Students, new professionals, and biologists gathered to share knowledge, network, and enjoy some time in nature. This year’s event was co-hosted by the Arizona Game and Fish Department, and AZTWS is grateful for the partnership.

Honestly, the fact that the workshop happened at all is a bit of a miracle. The world seemed pretty keen to throw random obstacles in our way. We knew we would be a bit rusty in our planning efforts as a result of the three-year hiatus due to the pandemic, but this year had some extra surprises for us. We learned early on that instructors for some of our standing courses wouldn’t be available but were able to come up with a long list of other possibilities to fill those spots. However, as the date neared and more instructors dropped, we had to get creative. The planning team getting sick during this time really didn’t help efforts, either. The biggest hurdle, though, came just a few weeks before the event when we learned that Horseshoe Ranch, where the event had been held since its inception, was no longer available due to storm damage and flooding. Thanks, Mother Nature! The team scrounged for an alternative that would meet our needs and finally found the perfect spot just two weeks before the event. Huge shout-out to Maricopa County Parks and Recreation, especially Jennifer Johnston, Juanita Armstrong-Ullberg, and Steven Heinsma, for enabling us to host the event at McDowell Mountain Regional Park, which provided ample space for camping and each course’s needs. The sunrises over Four Peaks weren’t too shabby, either.

Over the course of the weekend, 32 participants engaged in five courses: capture techniques, darting, CODA net gun, telemetry, and fisheries. The courses provided an overview of the technique, why it’s used, and the basics of how to conduct it, but the bulk of each was hands-on experience for each participant, which is the primary purpose of the workshop. The fisheries course had to get a bit creative, given the lack of surface water at the site, but participants were able to practice the seining technique and learned a valuable lesson – you can’t kick the fish! ([See what we mean.](#))

Participants were also invited to join a number of optional activities, including an [iNaturalist contest](#), nightly road cruising (amphibians, reptiles, mammals, and birds – oh my!), and a Sunday morning bird



Birding is even more fun when there’s cool scat to investigate.  
Credit: Scott Sprague.

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It's around here somewhere! Participants test their telemetry skills.  
Credit: Scott Sprague

walk. Unfortunately, the Saturday evening bat netting had to be canceled due to flooding that pushed too many recreationists into the planned site. (Again, thanks, Mother Nature!) Each evening, participants were encouraged to join the instructors to network and engage, which is the other purpose of the workshop. Experience and networking are two of the most important tools students and new professionals have in this field, and AZTWS is committed to providing these opportunities.

*Participants and instructors:* AZTWS values feedback on its events and would love to hear from you! What

went well, what could be improved, and what ideas do you have for future techniques workshops or other learning opportunities?

*Get involved!* We are already looking forward to next year's event and are seeking ideas and assistance. If you have ideas on courses or optional activities, are interested in being an instructor, would like to assist with planning (it'll go smoother this time, we hope), or know of any groups we should contact to attend, please reach out to Holly Hicks at [hhicks@azgfd.gov](mailto:hhicks@azgfd.gov).

Huge thanks to everyone who made this event a success! The planning team, led by the intrepid Holly Hicks, included Scott Sprague, Tiffany Sprague, and Kay Nicholson. The event wouldn't have been possible without all the instructors – Chris Carrillo, Jered Ellingson, Jennifer White, Mark Gray and family, Betsy Grube, Tiffany Sprague – and the assistants and optional activity leads – Brianna Johnson, Ryan O'Donnell, Crosby Hedden, Scott Sprague, and Tim Bradley.

Can't wait to see you next year!



You never know what you'll find on a night cruise. A small water feature in the regional park hosted this red-spotted toad (left) and Woodhouse's toad (right). Credit: Kathryn Dick (left) and Scott Sprague (right)



## Friends of the San Pedro River Xeriscape Course a Success

*By Joanne M. Roberts, retired Conservation Biologist, FSPR Board of Directors*



The San Pedro House provided a perfect outdoor classroom for the xeriscape course. Credit: Joanne Roberts

On May 13, 2023, the Friends of the San Pedro River (FSPR) hosted its first post pandemic educational outreach program for adults at the San Pedro House in Sierra Vista, Arizona. The topic of mastering your garden for beginners using native drought tolerant plants played nicely with the World Migratory Bird Day 2023 theme of “Water: Sustaining Bird Life,” which was celebrated on the same day.



Friends of the San Pedro River

The FSPR is a 501(c)(3) non-profit organization that supports the Bureau of Land Management by providing public outreach and interpretive services, such as workshops, classes, and bird-nature-history guided walks, and operates two visitor information contact centers within the San Pedro Riparian National Conservation Area (SPRNCA) at the San Pedro House and the Fairbank Schoolhouse Museum.

Jan Groth, University of Arizona Master Gardener; Saff Killingsworth, Xerces Society, Tucson; Lori Kovash, Master Gardener and FSPR Docent; Jim Koweek, Author and Land Restorationist; and Ted Mouras, FSPR Docent and former President of the FSPR Board had excellent presentations featuring the importance of using native species and the philosophy and techniques of xeriscape landscaping and what it means in reducing water use. They covered the importance of water conservation and its relevance to the SPRNCA, introduced rain harvesting, temperature, soil, and rainfall effect on plants, native invertebrate pollinators and pollination plants, and native grass species such as sacaton that can be used in home gardening. Presentations were followed by practical demonstrations in the San Pedro House xeriscape demonstration garden on proper planting methods, soil texture and composition, adding and caring for your backyard water features, and review of the San Pedro House pollinator plants.

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With a full house and a beautiful outdoor venue, participants left with a better appreciation for the importance of water conservation and native plants and their role in the long-term protection of the SPRNCA.

Kudos to FSPR Board Members Mary Ann Ambrose and Joanne Roberts, along with FSPR staff Laura Mackin and Carolyn Santucci, who made this workshop possible. Look for the next class on winterizing your garden for plants and birds for adult beginners this coming October! Visit [FSPR's Facebook page](#) for more info on this and other events.



*Top left:* Lori Kovash discussed the importance of removing 20% of water monthly and constant de-mucking of debris from a backyard water feature, such as this pond.

*Top right:* Featured speaker Jan Groth discussed the importance of choosing native plants, their adapted survival traits for this environment, and the benefits to reducing water use.

*Bottom left:* Students got their hands dirty with Jim Koweek, determining soil structure and composition and their relationship to choosing regionally appropriate plants for a home garden.

*Bottom right:* This native bee specimen collection provided by Saff Killingsworth helped facilitate discussion on where the majority of native Arizonan bees nest and spend their lifecycle.

Credit: Joanne Roberts





## *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.
- Want to get more involved with your Chapter? Check out the information available on our [Facebook](#), [Twitter](#), and [website](#) for opportunities.
- AZTWS has vacancies for several Committee Chair positions. See [page 9](#) for details.
- Have questions for us? Contact us [here](#).



A stripe-tailed scorpion fluoresces under ultraviolet light. Credit: Scott Sprague