

FIELD NOTES

FOR MEMBERS OF THE NATURE CONSERVANCY IN ARIZONA



FALL 2023
**AN INSIDE
LOOK:**
Leveraging
our Lands

The Nature Conservancy 
Protecting nature. Preserving life.



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From the Director

Together We Find a Way to Protect What We Love



After coming off the hottest Arizona summer on record and extreme weather conditions throughout the world, I am reminded of how critical The Nature Conservancy's work is and the importance of coming together to make a collective impact.

Our conservation teams are working across multiple disciplines – from tackling climate solutions to addressing urban heat to critical land and water protection strategies. Many of you may know us for the places we protect. We wanted to use this issue to focus on a behind-the-scenes look at the diverse places we all find so special.

In my time with TNC, I've been fortunate to spend time at virtually all our properties around the state. These are spectacular places, and every time I visit, I come away grounded, recharged and reconnected to our work. We have a remarkable team managing these places and I am just as inspired by their efforts as I am by the beauty of the land. These are living laboratories that help inform our conservation efforts on a global scale. Our teams and partners bring unmatched passion for the work, the land and the unique species that rely on us to help protect their habitats.

We hope that you sense that passion and the impact we've had on Arizona and beyond in our nearly 60 years of working here.

The story of TNC's preserves is a story of donors, members and staff coming together to conserve these remarkable places. I'm incredibly grateful for the generations of committed conservationists who made it possible to protect some of the most ecologically important places in the state. In the years ahead, we will continue to invest in conserving these special places and we hope, with your help, to be able to increase our commitments.

In addition to continuing our conservation work, we have two new important focus areas regarding our preserves. First, we are committed to strengthening our partnerships with Indigenous people and communities who stewarded our lands well before us and will play a critical role in the years ahead.

Additionally, as we continue critical conservation work, we are also striving to ensure that our preserves, particularly those like Ramsey Canyon, Patagonia-Sonoita Creek which are open to the public, are accessible and comfortable for everyone.

Whether it is resetting native ecological conditions at our Patagonia-Sonoita Creek Preserve (page 4), surveying endangered avian species at Aravaipa Canyon Preserve (page 10) or continuing critical forest restoration work at our Hart Prairie Preserve (page 12), we recognize that together, we always find a way to protect what each of us loves about our beautiful state.

Best,

Dan Stellar, State Director



Road Tripping Through Arizona's Living Laboratories

For over half a century, The Nature Conservancy in Arizona has been dedicated to safeguarding and enhancing our state's natural resources and ecosystems. Even though the world has changed a lot since 1966, the places we protect remain essential for our work on a larger scale – they provide us with stability, trust, and opportunities for collaboration.

And while many of our local on-the-ground projects may not be widely known, it is the work we do here in Arizona that informs and supports our global work, and vice versa. By using creative, nature-inspired solutions and working with diverse partners and communities, we turn conservation

ideas into effective actions that benefit people and nature.

Let's explore Arizona's "living laboratories" to see the work for ourselves. We'll begin with our first Arizona preserve and the one that started The Nature Conservancy in Arizona: Patagonia-Sonoita Creek.



Resetting Native Ecological Conditions

As we drive through the small town of Patagonia, 60 miles Southeast of Tucson, we wind our way through the towering cottonwoods and Goodding's willow - where birders line the road, hoping to spot their favorite feathered friend - and enter Patagonia-Sonoita Creek Preserve.

Located in the heart of one of the most biodiverse places within the Sky Island region of Arizona and Sonora, Mexico,

the preserve protects three miles of Sonoita Creek and provides a breathtaking landscape for avian, faunal and vegetative species. But some of them are unwelcome guests.

Invasive species such as giant reed (also known as Arundo), tree of heaven, Johnson grass and vinca wreak havoc on the land.

"Each has a profound impact on the ecosystem around them because they each have the unique ability to outcompete many of the native plants that would naturally be found in these areas," says Patagonia-Sonoita Creek Preserve Manager Aaron Mrotek.

Sadly, the non-native species don't provide the same habitat structure, food, shelter and other facets that animals, birds and insects need, making them a direct threat to a resilient ecosystem.



Borderlands Earth Care Youth help remove invasive plant species.

It's a threat that Aaron and many others are tackling head-on. Several local partner organizations and more than 50 volunteers have come together to help in removing the invasive plant species to reset the area to its native ecological condition. It's highly labor intensive, often requiring a variety of tools and machinery and once complete, revegetation of native plants into the microhabitats begins. Both steps require reading the landscape to best understand what approaches to take for optimal success.



Those findings are not only critical to the Conservancy's work, but useful information that transcends the preserve's borders.

"These ecosystems that we work with don't end at our 'fence lines'," says Aaron. "I share a lot of my findings with our neighboring partners to help them better manage their landscapes and for the betterment of the ecosystem that we protect here."

This past June, students from Borderlands Earth Care Youth, a watershed restoration program for kids ages 15-18, visited Patagonia to learn about the habitat and lend a hand. The group successfully removed the last Arundo patch on the preserve - a significant accomplishment.

"It was a great experience for everyone," says Aaron. "After all, they are the next generation, the ones who are going to take over after us someday."

Invasive species such as giant reed (also known as Arundo), tree of heaven, Johnson grass and vinca wreak havoc on the land.



Arizona Conservation Corps volunteers assist with trail maintenance.



A Playground for Wildlife & Researchers

Approximately 55 miles away from Patagonia, Ramsey Canyon Preserve is a natural oasis in the Apache Highlands ecoregion, where the Sierra Madre of Mexico, the Rocky Mountains and the Sonoran and Chihuahuan deserts converge. The preserve not only features remarkable diversity of plant and animal life but has a rich cultural history dating back to the prehistoric times when Native Americans such as the Hohokam,

Mogollon, Salado, Sobaipuri and Apache inhabited the area.

In 1963, Ramsey Canyon became the first site to be designated a National Natural Landmark by the National Park Service. Today, the preserve covers 380 acres and attracts over 25,000 visitors annually.

“At Ramsey Canyon there is this nexus between land preservation and land conservation,” says Southeast Arizona Preserves Manager Pete Leiterman. “It’s this little laboratory where we are experimenting with the conservation aspect of land protection - where we can have the public come experience the preserve - and at the same time manage a high level of ecosystem integrity and species diversity.”

And those efforts are working.

Known as both a birder’s and researcher’s paradise, the uniqueness of Ramsey Canyon provides a playground of opportunity for studying

everything from plants to mammals to macroinvertebrates.

One such researcher is Mallory Davies, a Ph.D. student at Colorado State University, who is taking part in an international study to better understand how the populations, activity, and movement patterns of nectar bats are affected by food availability.

Ramsey Canyon is at the northern distribution of the bat’s migration route which follows a nectar corridor that covers 1,200 kilometers from Southern Mexico to Southern Arizona and New Mexico. The canyon also provides critical food sources for the bats: agave plants and hummingbird feeders supplied by the preserve.

Researchers survey the bats by hanging mist nets around the hummingbird feeders. Once the bats are secured, they are measured, weighed and tagged to track the bats’ movements. Additionally, they swab the bat’s fur with gelatin

cubes to collect pollen samples and, when possible, collect fecal samples to study what insects and plants make up their diet. With the care of the bats their utmost priority, each is given a sugar water snack before they are released back into the canyon. This helps keep them full and happy.

Over a six-week period, the team has successfully studied nine lesser long-nosed bats and 19 Mexican long-tongued bats.

“Our research shows that Ramsey Canyon supports a large biodiversity of nocturnal nectarivores that know

they can seek refuge within the desert climate of the preserve,” says Mallory. “Not only due to the biodiversity of nocturnal blooming plants that support the bats, but also by having hummingbird feeders as a backup food source during times of drought when their food sources aren’t as secure.”

By providing a safe and diverse habitat for nectar-feeding bats, the preserve not only contributes to bat conservation, but the success of preliminary monitoring establishes Ramsey Canyon as a long-term monitoring site for additional bat species as well.

Over a six-week period, the team has successfully studied nine lesser long-nosed bats and 19 Mexican long-tongued bats.



A juvenile male lesser long-nosed bat.



Davies prepares to release a juvenile female lesser long-nosed bat.



Lighting Up the Night Sky

We now head north to explore the rich natural and cultural history of Muleshoe Ranch Cooperative Management Area. Managed collectively by The Nature Conservancy, Bureau of Land Management and the Coronado National Forest, Muleshoe spans 56,000 acres of rugged beauty and lush riparian areas with massive biodiversity values. Home to unique ecosystems, Muleshoe also encompasses most of the watershed area for seven permanently flowing

streams that support eight species of native fish, including Gila chub, as well as 80 percent of the region’s wildlife species, many of which are native or endangered.

One such species listed as vulnerable with an elevated risk of extinction under International Union for Conservation of Nature (IUCN) criteria is the Southwest spring firefly, or *Bicellonycha wickershamorum*.

This is typically when one might ask, “Do fireflies really exist in Arizona?”

That is exactly what retired wildlife biologist, Cheryl Mollohan, asked when she heard that Muleshoe Ranch was home to some. Not only are fireflies in Arizona unexpected and considered rare, but overall data have been limited, which has greatly hampered management efforts of this vulnerable species.

Beginning in 2020, Cheryl, Ron Day, previous Muleshoe Ranch preserve manager, and partners from the Xerces Society, set out to

better understand firefly species distribution, habitat associations, seasonalities, conservation status and needs on Muleshoe, and across Southeastern Arizona.

Using time-lapse trail cameras and 360-degree GoPros, the research team has confirmed the presence of fireflies at Muleshoe Ranch. Furthermore, their survey allows them to estimate long-term population sizes which will shed light on whether populations are stable or declining and what other threats they may face. This is important as it will help inform future IUCN Red List assessments as well as assessments under the U.S. Endangered Species Act.

But that is not all. Muleshoe also had a secret weapon. The Conservancy’s 25 years of San Pedro River wet-dry mapping data was used to inform the species distribution model of potential Southwest spring firefly habitats in Southern Arizona based on their need for permanent water. This data turned out to be the key in predicting occurrence – so much so that fireflies



were found at every Muleshoe location checked in 2021, suggesting that this species requires permanent water to survive.

Additionally, the fireflies tell us so much more about the lands we protect and preserve.

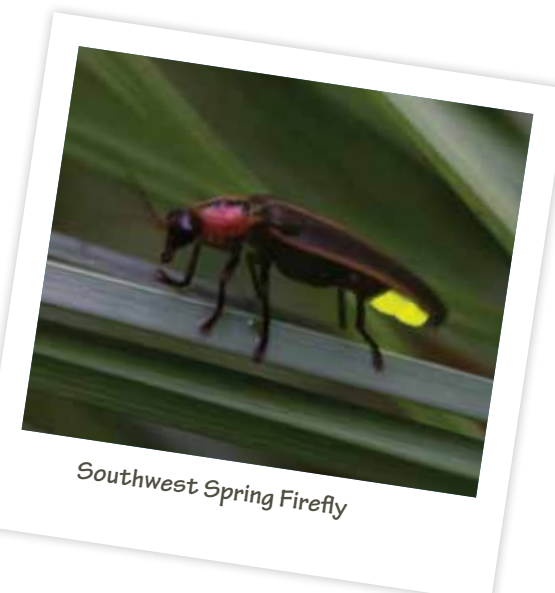
“The Southwest spring firefly is a good indicator species from the standpoint that they reflect high-quality, riparian habitats,”

says Cheryl. “Many other species also depend on these same important habitats.”

While firefly flashes streaking through tender green vegetation are meant as communications to potential mates, they tell us something else: that our efforts to protect and restore Muleshoe’s streams over the last 40 years pay off in unexpected and spectacular ways.

“The Southwest spring firefly is a good indicator species from the standpoint that they reflect high-quality, riparian habitats.”

~ Cheryl Mollohan



Southwest Spring Firefly



A Mini Grand Canyon

Not far from Muleshoe Ranch we find Aravaipa Canyon Preserve, which Preserve Manager Mark Haberstich describes as “kind of a miniature Grand Canyon we’ve protected that includes 16 miles of flowing creek which originates out of the ground on our property.”

For 20 years, The Nature Conservancy has worked on consolidating water rights and experimenting with best landscape practices to restore the habitat and mitigate damage done to the riparian health of the canyon.



Portrait of the endangered southwestern willow flycatcher

Mark continues, “We’re able to protect the creek, water rights, and habitats while also controlling cattle grazing. The natural restoration being done at Aravaipa has some direct comparisons to green infrastructure projects being done on a global scale.”

Those efforts are also paying off for some of Arizona’s endangered avian species.

Previously, Aravaipa Canyon was thought to be an unsuitable habitat for the southwestern willow flycatcher, or *Empidonax traillii extimus*, which rely on the non-native tamarisk for nesting. But while working there on an invasive species removal project, the Conservancy’s Kit Kleinschmidt heard a “FITZ-bew!” She was familiar with the distinctive call of the flycatcher from her management at the Hidden Waters San Pedro River Preserve where she had also observed the special status species.

Kit soon set out with Southern Sierra Research Station’s Nick Beaugard

to transect multiple Conservancy properties, surveying areas to discover if the southwestern willow flycatcher sightings were a fluke or an indication of increased habitat health.

Over three separate visits to Aravaipa Canyon, Kit utilized a federal protocol referred to as “call-playback” to determine if the species was present. In those transects, Kit would play an audio clip of a southwestern willow flycatcher and wait to hear if she’d get a “FITZ-bew” in return. If so, the exact coordinates were documented and she would move on, surveying the entire length of the transect.

After this first survey season was complete, Kit and Nick’s coordinates established that, within just a portion of Aravaipa Canyon, they had already discovered 13 southwestern willow flycatcher territories.

“The discoveries are significant because they shed light on how important Aravaipa Canyon is to this endangered species and how our management of the



Mark and TNC staff member Heather Switzer sein for native fish in Aravaipa Canyon Creek.

preserve is improving wildlife habitats for a variety of species including those that are endangered,” says Kit.

Other migratory avian species are also benefiting from a separate restoration project happening nearby. Mark’s work restoring native grasses on

Aravaipa Canyon Preserve’s Cobra Ranch provides a dense, seed-filled 40-acre feeding station for migratory birds who rely on seeds, especially in the winter when there aren’t as many insects.



“I think what we will always find is that recreating a natural habitat is always better than an exotic habitat.”

~ Mark Haberstich, Preserve Manager, Aravaipa Canyon Preserve



Good Fire Versus Bad Fire

Finally, our journey throughout Arizona takes us more than 300 miles north to Hart Prairie Preserve, a 245-acre natural treasure that sits at the foot of the sacred and culturally significant San Francisco Peaks, just outside of Flagstaff. At one time, it was the first stop on the Flagstaff to Grand Canyon stagecoach route and still boasts the 130-year-old homestead, the perfect place to take in the high diversity of wildlife, birds and plants, including its globally rare Bebb's willow community. Today, the preserve is a living laboratory of research and restoration projects to enhance the health and resilience of the grassland ecosystems and forest.

Sadly, it is no secret that after 100 to 150 years of fire suppression, we've radically altered forest structure and the behavior of wildfires. Now,

Western fires are becoming more frequent with larger areas of high severity. While parts of the country tout planting more trees, in Arizona forests, the focus is the opposite - thinning our overgrown forests to prevent catastrophic wildfires.

In fact, over 2 million acres of Arizona's forests need to be restored through thinning and reintroduction of low-intensity fire — good fire — to reduce fuels, recycle nutrients and promote diversity according to The Nature Conservancy in Arizona's Forest and Fire Ecologist, Travis Woolley.

And that restoration work cannot be done alone. Adjacent to Hart Prairie is the site of a forest restoration project: Unit 88, 54 acres of U.S. Forest Service

land comprised of mixed conifers such as spruce, pine, fir, and aspen trees.

The Conservancy's partnership with the U.S. Forest Service's Coconino National Forest is critical as we work together to increase the probability of good fire. At Unit 88, that involves reducing the fuel load — or the amount of woody debris per acre — by hand thinning the potential combustibles. Increased fuels threaten Hart Prairie Preserve and the surrounding areas, and this work will reinvigorate the health of the forest while providing increased opportunity for good fire to be put back on the landscape.

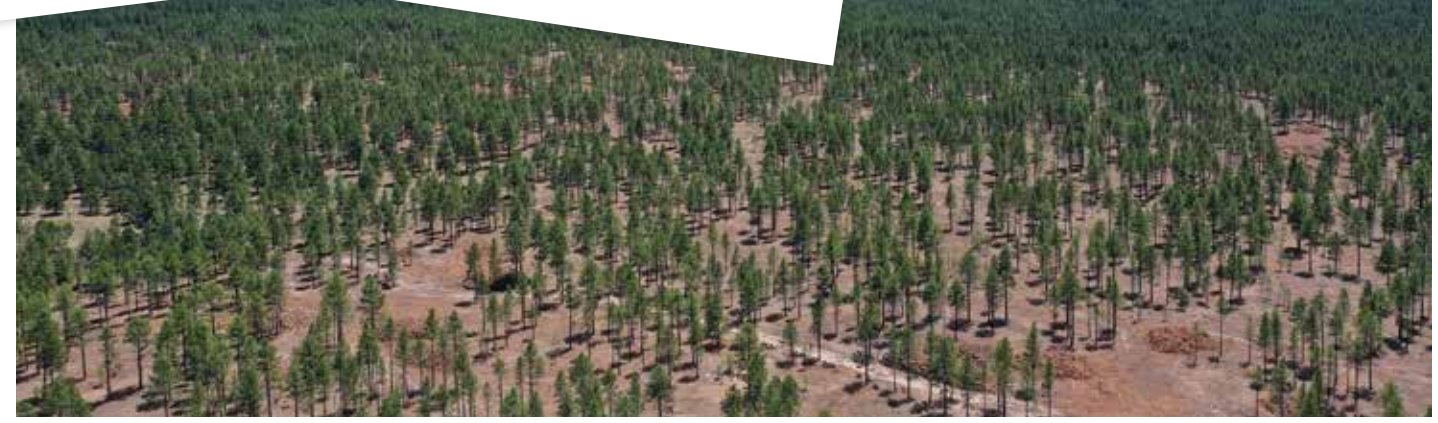
"It's a matter of having fire in a way that is enhancing and protecting the health of the forest making it more resilient to the effects of a changing climate and better able to support the full



Small, dense trees as the result of fire suppression



Thinned forest ready for "good fire"



array of plants and animals that live there. Good fire also protects our communities from the devastating, catastrophic fires that burn hundreds of homes every year and tens of thousands, if not millions, of acres of forest," says Hart Prairie Preserve Manager Bob Hoffa.

In other words, it is all about "good fire versus bad fire" and for Unit 88, that means getting that good fire on the

ground more broadly, while also protecting resources on private land and facilitating ecological health through fire so we can protect our communities and those in them.

After all, conserving the lands and waters on which all life depends is a mission critical to The Nature Conservancy and all the places we protect, in Arizona and throughout the world.

"Good fire also protects our communities from the devastating, catastrophic fires that burn hundreds of homes every year."

~ Bob Hoffa
Hart Prairie Preserve Manager



For more information on our preserves, hours of operations or activities, please scan the QR code.

Meet the GUARDIANS OF THE LOWER SAN PEDRO RIVER



KATHLEEN "KIT" KLEINSCHMIDT

Hidden Waters
Preserve Manager

YEARS AT TNC: 2

EXPERTISE: Threatened
and Endangered Avian
Species Monitoring



Kathleen "Kit" Kleinschmidt spent years in corporate America, working a job that didn't fulfill her. All of her free time was spent outdoors, backpacking the Grand Canyon with her family and exploring the natural world on many solo trips all over the West, dreaming that she might one day be able to explore her passion for the outdoors full-time.

After 20 years, Kit took a leap of faith and left her corporate career to pursue work in field biology. Starting with field tech jobs with the Institute for Bird Populations and Great Basin Bird Observatory, she ultimately landed at The Nature Conservancy.

Now, Kit manages TNC's Hidden Waters San Pedro River Preserve (formerly Three

Links), part of a 2,200-acre parcel of land purchased 20 years ago. The preserve is a hidden gem, a wildlife corridor through the San Pedro River Valley that provides connectivity from the Catalina and Rincon Mountains to the Galiuros.

Equipped with a thorough understanding of birds, Kit knew the preserve was a critical migratory flyway for many avian species. She quickly realized that one way to check the pulse of the land she was here to protect, was to take a deeper look into the threatened and endangered species that inhabited the area.

She obtained federal and state permits to allow the Conservancy, and Kit herself, to monitor special status species on its preserves. After months of networking, years of formal and self-education, and hundreds of hours in the field, Kit created and launched the Conservancy's Arizona Avian Monitoring Program. She set the foundation for the chapter allowing other credentialed staff to be able to monitor and study other threatened and endangered species, outside of just birds.

IN HER WORDS

"As we strive to determine baseline data and reveal trends, we can ask questions. 'Are the numbers declining? What's changing within the ecosystem?' By focusing on questions like these, land managers can target their efforts to address and improve conditions on the land we are here to protect."

THIS PAGE LEFT TO RIGHT Kathleen Kleinschmidt © Courtesy of Kathleen Kleinschmidt; Yellow Breasted Chat © Kathleen Kleinschmidt/TNC OPPOSITE PAGE CLOCKWISE Mark Haberstich © Courtesy of Mark Haberstich; San Pedro River © Kathleen Kleinschmidt/TNC; Jeff Smith © Courtesy of Jeff Smith



MARK HABERSTICH

Aravaipa Canyon
Preserve Manager

YEARS AT TNC: 27

EXPERTISE: Fish/Watershed
Management/Hydrology

Extended periods of solitude in the wilderness may not be for everyone, but for Mark Haberstich, it is everything.

As a child, Mark spent his summers at his grandfather's cabin in Big Bear Lake, California. The town was isolated, much more so than it is now, and Mark was able to explore the wilderness by himself freely. When he came across a fire lookout, he was fascinated, and spent hours in the same spot from then on, imagining a future for himself in the U.S. Forest Service. Unfortunately, when it came time to go to college and choose a major, forestry wasn't offered at the University of Arizona, so he opted for watershed management.

Nonetheless, Mark fulfilled his dream, working as a firefighter and range conservationist for the U.S. Forest Service. And after 10 years, his degree, along with his expertise in fire and cattle management, landed him a spot as Aravaipa Canyon's Preserve Manager.

IN HIS WORDS

"Aravaipa Creek has the longest continuous monitoring record for native fish in Arizona, dating back to 1963 and I've been a part of those efforts since 1996. Native fish populations go up and down for a lot of reasons, so a good monitoring record is important and fortunately fish populations at Aravaipa are stable, while almost all native fish populations in the western U.S. are declining."



JEFF SMITH

Muleshoe Ranch Preserve Manager

YEARS AT TNC: NEARLY 3

EXPERTISE: Reptile Ecology &
Conservation Storytelling

Jeff Smith discovered a love for exploration early. At only 4 years old, he was spending time in Santa Cruz, California observing reptiles - especially snakes - and visiting the California Academy of Sciences in San Francisco, a research facility and natural history museum. Every weekend his mother would tolerate the drive.

As he matured, he became more passionate about conservation. His awareness grew of pressing ecological issues like the loss of rainforests, but he didn't realize yet that anyone could have a career protecting the environment.

It was after graduating college, with a Spanish and Biology double major, that



Given Aravaipa's reputation as a sought-after place to study native fish, it comes as no surprise that between Mark's expertise in watershed management and hydrology, and his love of the land, it wasn't long before he became known as a fish expert too.

Described by colleagues as an "overall, well-rounded naturalist," Mark has assisted on dozens of research projects over the years, including serving on native fish recovery teams, fish surveys and formalizing habitat requirements. His work is not only featured in a book called "Standing between Life and Extinction," but he has also been recognized with an USDI Partners In Conservation Award from Secretary Ken Salazar for "Native Fish Conservation and Restoration Partnership."

Jeff volunteered for a six-month project working with olive ridley sea turtles in Costa Rica. The life-changing trip rekindled Jeff's love of reptiles and upon his return to the States, he focused his work on snakes, "due to the mystery of them," and pursued a master's degree in Ecology at the University of Arizona.

For more than a decade, Jeff studied reptile ecology in the Southwest, including social behavior and habitat selection of three rattlesnake species at Muleshoe. In 2014, Jeff and his partner co-founded Advocates for Snake Preservation (ASP), an organization

Continued on page 16

focused on changing how people view and treat snakes by showing what they are really like, in contrast to their sinister media portrayals. In 2017, Jeff and ASP co-founder Melissa Amarello received the Jarchow Conservation Award for “commitment and creativity in studying snake behaviors and tireless and continuous efforts to use scientific knowledge to advocate for snake conservation through outreach and social activism.”

Now that Jeff is preserve manager at Muleshoe, he continues monitoring the creatures he knows best (reptiles and amphibians) to gain valuable insights into the health of the ecosystem and effectiveness of restoration efforts. But he is most excited to “build on the decades of effort to restore Muleshoe’s grasslands and glorious streams and explore additional ways to use nature-based solutions to capture runoff and promote soil productivity so that plants and animals can thrive.”

IN HIS WORDS

“My early fascination with animals taught me the value of being in wild and vibrant places. I am so excited to find ways to protect and even improve the places that support the wildlife I love.”



“Aravaipa is in my soul,” states Cherilea “Cheri” Hays. And that may be an understatement.

Cheri’s family has lived in Aravaipa Valley, on and off, since the 1880’s, when her great-grandfather drove cattle from Texas to Arizona. Cheri herself was born at the family ranch after her parents

CHERILEA “CHERI” HAYS

Aravaipa Canyon Preserve Assistant

YEARS AT TNC: 22

EXPERTISE:

All Things Aravaipa

IN HER WORDS

“I always loved the land out here, was always sensitive to animals. Aravaipa is the biggest unfragmented piece of land besides the Grand Canyon in the state of Arizona where wildlife can move around – there’s no highway, there’s no freeway going through it. It’s one of the few places where they can move from mountain range to mountain range.”



were unable to make it to the hospital in time for the birth.

Over the last several decades, Cheri has witnessed a great deal in the valley, including severe storm flooding in 1978 that required her family be flown to safety via helicopter. While that initially deterred some of them from returning to Aravaipa, ultimately her family is still there today.

As a young girl, Cheri’s great uncle Joe told her stories of the Aravaipa Valley, painting a picture of “rolling hills, no erosion and with grass always belly high to a horse.” She wondered if it could be that way once again. Decades later, Cheri was one of the people helping restore that “belly high” grass as the Aravaipa Canyon Preserve assistant, a position she has held for the last 22 years.

Today, Cheri and Mark Haberstick are responsible for the abundant health of Aravaipa Creek, with its native fish and the new growth in the Canyon, the native grass cropping and managed cattle grazing. Their work has been instrumental in protecting the place she has always called home.



DAN WOLGAST

Lower San Pedro Preserve Manager

YEARS AT TNC: 17

EXPERTISE: Native Plant Species

IN HIS WORDS

“I figured a job where I get to walk around in the woods building things, protecting my friends from harm, even creating a sanctuary for those friends, was just about the best thing I could think of.”



“If I’m in the forest, I’m looking for mushrooms, pinecones and tiny flowers hidden behind rocks. On the coast? Give me rocks and tide pools. In the city? Lead me to a nursery or botanical garden.” In other words, Lower San Pedro Preserve Manager Dan Wolgast loves to be outdoors.

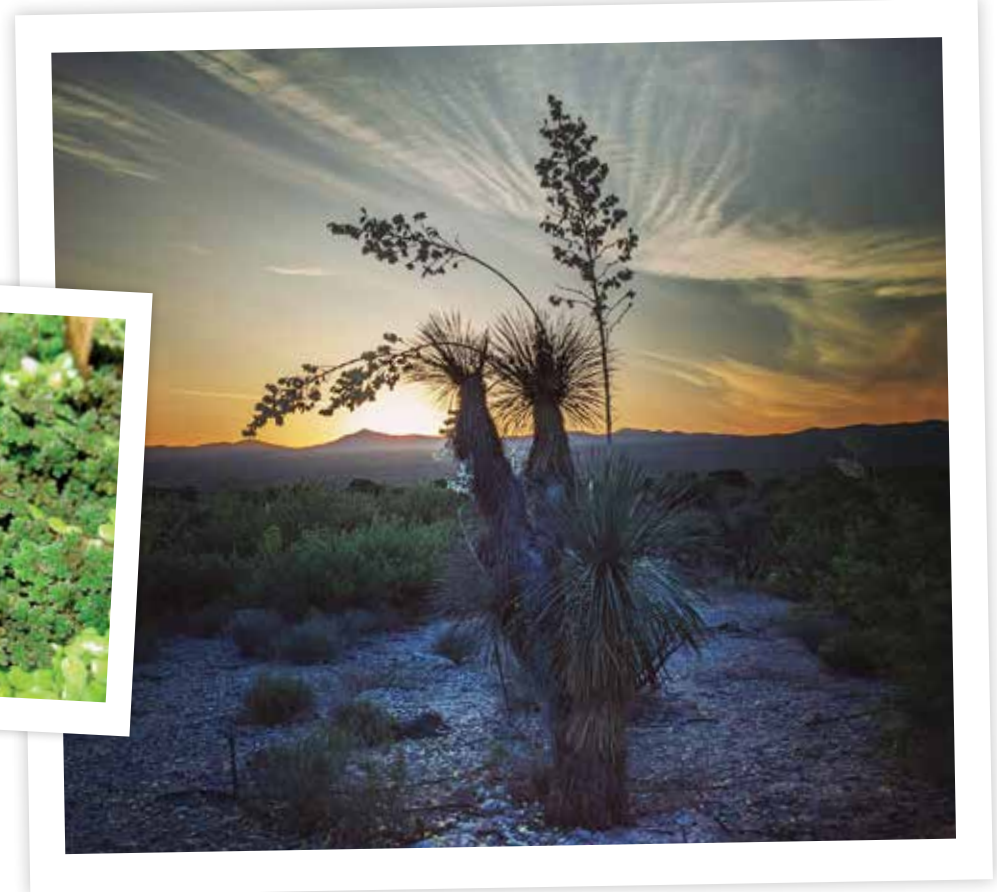
Born in rural northwest New Jersey, Dan spent his waking moments exploring the woods, examining rocks and handling snakes. At 13, his family moved to Tucson, and it was love at first sight. “The desert got in me,” he says, and to this day he loves nothing more.

Nothing more other than his wife, Jamie, that is, who has her own ties to the desert. For five years, she and Dan lived on a ranch in West Aravaipa that has been in her family since the early 50’s. The couple started their respective careers working at a plant nursery

in Tucson. That soon turned into jobs in environmental education and habitat restoration with the Tucson Audubon Society for Dan and nursery management at Tucson Botanical Gardens for Jamie.

When they moved to the family ranch, they found it was the perfect place to start a native plant nursery of their own. And their neighbors? Mark Haberstick and Cheri Hays. Two people particularly interested in the Wolgast’s native plant expertise.

Soon Dan was partnering with Mark, providing 3,000 giant sacatons for a native grass restoration project on Cobra Ranch, a critical part of Aravaipa Canyon Preserve. Not only was the partnership successful, but the Wolgast’s are now on their third iteration of the nursery, growing an ever-changing palette of species for wholesale and local restoration work.





Jim & Marion Durham



Jim and I support TNC as a way to ensure that future generations of humans, plants and animals will be able to experience natural places – as opposed to the “concrete jungle” we mainly inhabit in our daily lives.

Today we are pained and concerned for the future – we are witness to how much human behavior toward our environment negatively affects the livability of all things existing in those habitats. One positive action we see is how TNC is teaching and demonstrating that this interaction can be improved, and how livability can be sustained for all.

Jim grew up in Flagstaff when the population wasn't yet 10,000 people. I grew up in densely populated Southern California, where freeways were the deciding factor in where anything living and breathing existed. Both of us absorbed the unspoken need for unaffected spaces where human activity didn't dominate or destroy.

Today we depend on organizations like TNC to keep those vital natural habitats and species alive and thriving. We can no longer physically assist – but we will continue to support conservation through our financial planning now and into the future. Our legacy is linked to The Nature Conservancy and the Earth.

Sincerely yours,
Jim and Marion Durham

WHAT'S YOUR STORY?

We'd love to hear from members about why they are passionate about nature and why they decided to include the Conservancy in their estate giving plans. Please send your story to **Mark Ryan** at mdryan@tnc.org

A Volunteer's Account

25 Years of Wet-Dry Mapping the San Pedro



Wet-dry mapping is a valuable tool for Arizona's conservation work, providing data on how drought affects Arizona's water flow and habitats.

For 24 years, hundreds of volunteers have traversed 300 miles along the San Pedro River and its key tributaries, from Mexico to Arizona, mapping where the water is and isn't.

Ralph Waldt is one such volunteer. In his own words, Ralph explains how meaningful wet-dry mapping is to him personally.



Pick up Ralph's book, *The Life of the San Pedro River* at <https://waldt.square.site>.

For the past twenty years, I have participated in a coordinated volunteer project aimed at monitoring the presence of water along the length of the San Pedro River in southeastern Arizona. Organized by The Nature Conservancy, this project provides data to scientists, land managers, and others on the health of the river system during the hottest and driest month of the year. The data is collected the old-fashioned way – gathered by teams who experience the river in the most intimate manner possible, by walking and wading. Every June, I collect a portion of this data along a rare, perennially flowing reach located in the river's middle valley, often accompanied by friends and neighbors, including two this year.

We began walking around 5:30 a.m. along a waterless stretch of the riverbed. Almost immediately, we discovered fresh tracks of an adult black bear and a cougar. One and a half miles in, the magic of water appeared and flowed steadily. Because of dense brush, we waded – an easier way to travel as long as one can avoid hidden lenses of quicksand. More mammal signs and tracks appeared; deer, javelina, coyote, bobcat, raccoon, coati, skunks, cottontail rabbits, mice and rock squirrels. Familiar bird songs spilled from the forest; summer tanagers and kingbirds, ash-throated flycatchers and song sparrows, and more.

Wading this desert river in the heat of June is magical. The cottonwood-willow forest stands tall and green, casting shade enabled by millions of fluttering leaves. Eight-foot-tall burr reed (*genus Scirpus*) plants crowd the riverbanks. Aquatic patches of speedwell (*genus Veronica*) glitter with blue-purple blossoms. Tall willows form vivid green arches. Many

butterflies, bees, and wasps drink from the water's edge, and scores of lowland leopard frogs leap at one's every step. Below the surface, schools of long-finned dace are darting like shafts of animated light through the clear water. The continued presence of native frogs and fish are strong, positive indicators of the health of this aquatic ecosystem.

We waded for a couple of miles until the waterway started to broaden and I suspected a beaver dam was ahead. Before long, we could see the beaver pond clearly, then the dam, plugging the river with a meter-tall, thirty-foot span of branches, twigs, tree limbs, rocks, and mud. I was elated to see that this reach of the river had beaver activity. The ecological and hydrologic benefits of beavers to this river are legion. I devoted an essay to this important topic in my book, *The Life of the San Pedro River*.

My companions and I slithered down the steep riverbank to begin the final stretch. Suddenly one of my friends pulled me out of harm's way. A 3-foot western diamondback rattlesnake, coiled too close for comfort, erupted in a frenzy of rattling. The forward third of the reptile's body was off the ground in an s-curve as the snake's glistening black tongue waved slowly, curled backwards over its snout, ready to strike. My fresh shoe print was 14 inches away and had I not been yanked so suddenly by my alert friend, this snake would have probably tagged me. In twenty years, and hundreds of diamondback encounters, I have never come so close to one. This experience underscores a crucial rule – you should watch every footstep during the warmer months in southern Arizona! Sometimes, that is easier said than done.



CLOCKWISE A roadrunner with lunch © Levi Plummer, AZ Student Photo Contest 2021; Jack Rabbit © Frank Klein/TNC Photo Contest 2019; Golden-winged Warbler © Scott Keys/TNC Photo Contest 2019

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