



MCDOWELL
SONORAN
CONSERVANCY

Mountain Lines

MAGAZINE OF THE MCDOWELL SONORAN CONSERVANCY

FALL 2022





Justin Owen, CNAP

With the heat of summer subsiding, we can now plan for the best months ahead. With cooler weather, we can spend more time outside, enjoying the amazing natural open spaces our valley has to offer. It reminds me that we all have a role to play in protecting natural open spaces for future generations – what role will you play?

This season we are delighted to significantly increase our public walks so we can help everyone enjoy the desert. Our hikes and bike rides

continue but with the addition of walks, those who either don't want to or can't hike or ride can experience the wonder of the Sonoran Desert with us. Our trained stewards will help you see things you didn't expect, understand what makes this such a special ecosystem, learn about those who lived here before us and appreciate our surroundings. Read about the education journey our stewards go on in this edition and more information on those walks. As we introduced more walks, we also consider accessibility within the Preserve and have included some information on that within this edition too.

Internships provide a wonderful opportunity for students to plan their future career paths. We were delighted to welcome two interns to our team over the summer and hope you will enjoy reading about their experiences. For younger students, Expedition Days Live is back! Come and join us at Lost Dog Wash Trailhead Saturday November 5, 2022.

Stay safe, and I look forward to seeing you out on the trails.

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"I started with the Conservancy to learn about the desert. I stay with the Conservancy because of the people. Never have I been associated with such a widely talented, knowledgeable, experienced, and enthusiastic group with such diverse backgrounds. They enrich my life every day" Art Ranz

About Us

The McDowell Sonoran Conservancy preserves and advances natural open space through science, education, and stewardship. We create a culture that ensures, preserves, and values natural open spaces for all to enjoy.

Connect with us:



Woman taking a photo of the sunrise before her morning run. Photo by Dennis Eckel

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Stewards on Stewardship

Jakki Casey,
McDowell Sonoran Conservancy Chief Operating Officer and Master Steward

Have you ever come across our stewards (our name for volunteers) in the Preserve and wondered how they are so knowledgeable and why they are always smiling? This article will give you a brief insight into life as a steward – why they joined, why they stay and how you can spend some time with them.

Most of us apply to become McDowell Sonoran Conservancy stewards as we love to hike, bike, or

ride horses in the McDowell Sonoran Preserve. We are like minded active nature loving people who want to keep our minds and bodies active and engaged. Only after joining, do we realize the amazing array of opportunities and rich rewards waiting for us. For Jeanine Allsup "it started with a simple interest in what the Conservancy is all about. Through time, education, leadership, and friendships gained along the way the interest grew into a passion for what the

Conservancy does". The Conservancy offers so many different programs and opportunities that allow a steward to grow and expand their experiences. Denise Villalon says "The Conservancy has given me opportunities and challenges for intellectual and personal growth that I didn't know I was looking for". Ongoing education is an essential component of being steward and this is offered via a wide array of opportunities.

We enjoy learning about the Sonoran Desert so we can share that with visitors we meet along the trails. Steve Sukenik shares "The Conservancy has made it possible to pursue my passion for the outdoors and continue to gain knowledge but being able to enhance other's lives makes it even more gratifying". John Zikias shares "I initially joined as I wanted to give back to the community while being outside and staying fit. However, after I went through training and became aware of the many opportunities to explore, understand the flora and fauna of the Preserve, the geology and to efforts to protect this beautiful resource, I became much more involved. I enjoy learning more about how fragile our environment is and the efforts of so many to help ensure that the preserve is here for generations to come. I joined for a few simple reasons, the more I became involved the greater enjoyment, experiences, and knowledge I have gained."

Franco Farina, explains his transition from member of the Conservancy to Steward of the Conservancy. He says, "it all came in pieces, simple but consistent in the underlying message. Protecting the Preserve as an open space is important, knowing what makes that space special is important, educating others is important, promoting the concept of a sustainable balance between us and our environment is important, contributing to the delivery of all of this through the Conservancy organization is important. When you mix



"Our Citizen Science program provides stewards with hands-on opportunities to work on research projects in the Preserve that might ultimately benefit other desert regions around the world. After a 40-year career in industrial research and development, it's immensely rewarding to again be on an experimental team working from inception, through implementation of the experimental design, on to data collection and analysis, to determine which factors contributed to a desirable outcome". Sharon Fitts



"While I am on the trail, many visitors thank me for volunteering. Truth be told, it is me who is grateful every day for the opportunity that has been given to me by the McDowell Sonoran Conservancy" Max Sukenik



"I became a steward to learn and to share what I learned with others. I remain a steward to help the Conservancy achieve its potential as a leader in arid lands conservation and education and in science-based open space management". Dan Gruber



"The Conservancy gives a steward opportunity to interact and connect with adults and children and share their love and knowledge of the wonders of the Sonoran Desert" Rich Cochran

all this into a smiling package, you have a Steward!"

As we look to the future, Franco elaborates on the journey for the Conservancy. "The question became: can we export the Conservancy's experience and make it a blueprint for how to study and elaborate proposals for a balanced and sustainable environment? A change toward a new direction and a way of thinking is a 'nonlinear' process. New objectives and new thinking require new structures and new messages. As I saw this process evolving during the last few years, I participated in some of the conversations and initiatives along the way, and I still do. Change is not easy, it requires vision, imagination, determination, and a little faith. That's why I am still a steward."

There are three ways you can get involved. The first is the simplest, join us for some of our free public activities so we can share our passion for the Sonoran Desert. We have a full calendar of activities on our website (mcdowellsonoran.org). Secondly, consider becoming a steward. You will see from the thoughts from our stewards the opportunities and enrichment this brings. We are currently recruiting for stewards who would be interested in being interpreters and will provide those interested with training, coaching and support to prepare them for this. Lastly, as a 501(c)(3) non-profit, we appreciate donations that allow us to enhance and increase our programming. To donate: <https://www.mcdowellsonoran.org/donate>

For all of us life is a journey and we hope our paths cross during those journey's. ▲▲



Many of us are recruited on the trails. Kerry Olsson shares that he was "riding his bike in the Preserve early in the morning and ran into two stewards standing by their bikes. He asked if everything was ok and they informed me that they were stopped to look at a Queen of the Night flower. We talked for 30 minutes and I realized that this was a group of people I wanted to join; outdoor focus, community, learning oriented and volunteers to care for an incredible Preserve".



"I am able to interact with the public in various capacities and share the beauty and wonder of the McDowells and the Sonoran Desert". Denise Villalon



"Viewing stewardship as the 'careful, responsible management and guidance of something entrusted to one's care' provides both immediate and long-term gratification. Our successes as stewards of the natural environment are deeply rewarding as we experience them and, perhaps more significantly, when considered as contributions to the future". Chris Crum



"I came for the fitness and to give back to the community but stayed because of the significant opportunities to learn, educate and inform about this wonderful resource." John Zikias. Photo by Lynne Janney Russell

Four Easy Ways to Support the Conservancy



Shop from the comfort of your home and earn rewards for the McDowell Sonoran Conservancy using AmazonSmile. To link your Amazon purchases to the Conservancy, visit smile.amazon.com and select "McDowell Sonoran Conservancy" from its list of approved charities.



Now you can support the Conservancy when you shop at Fry's by joining its Community Rewards Program. Join the program by visiting frysfood.com and selecting "Fry's Community Rewards" under "Community" at the bottom of the page. Select "McDowell Sonoran Conservancy" from the list of eligible organizations.



You can create a Facebook fundraiser in support of the Conservancy. Just log into Facebook and click "Fundraiser" under "Create" in the left column. Click on "Nonprofit" and then search for "McDowell Sonoran Conservancy." from the dropdown list under "Nonprofit." Share your fundraiser with friends and family and let them know why you support our mission.



The McDowell Sonoran Conservancy is proud to announce that it's now a part of the Target Community Giving Program known as Target Circle. List the Conservancy as your non-profit partner and Target will direct a charitable donation each time you shop and use the Target Circle app.



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Fourth-grade students create a watershed model during "Expeditions Days on the Road" and explore the impact of water. Photo by Won Fogel

The Expedition Days Program Expands

By Gina Clark,
McDowell Sonoran Conservancy Lead Steward

For the past seven years, the McDowell Sonoran Conservancy has taken students on a journey of discovery in the Sonoran Desert through its Expedition Days Program. This year, the program includes three offerings: "Expedition Days Online," "Expedition Days on the Road," and "Expedition Days Live."

The Expedition Days Program delivers Arizona state academic standards as well as the Science, Technology, Engineering, Art, and Mathematics (STEAM) approach to learning through hands-on, interdis-

ciplinary experiences. All programs include fun, interactive activities, aimed at inspiring students to become advocates for the Sonoran Desert.

Claire Musser, Conservancy Education Manager, and Jen Bruening, Conservancy Education Coordinator, focus on making the Expedition Days program accessible to as many children as possible. Their key goal is to help students understand the Sonoran Desert and their role in conservation. This past Spring over 2,300 third and fourth graders participated in the program.

"Expedition Days Online," offered throughout the year, helps students journey through the Sonoran Desert virtually through engaging online experiences including "The Web of Life," "The Urban Desert," "Secrets of the Sonoran Desert," a virtual escape room, and "Documenting Wildlife," a trail camera module. The Conservancy loans game cameras to teachers for on-site exploration.

"Expedition Days on the Road" brings Conservancy staff and stewards into the classroom. Third-grade modules include "Hidden Desert,"

which explores animals' signs through scat, tracks, and desert holes, "Ecosystem Jenga," a game using building blocks to demonstrate the interdependence of species within the Sonoran Desert ecosystem, and "Trash or Treasure," teaching students how to reduce trash while respecting the artifacts that belong in the desert. Fourth-grade students learn about "Watersheds," and how water moves through landscapes, "Introduced Plants," involving the impact of invasive plants on the Sonoran Desert, and "Humans and Wildlife," which examines the challenges animals face in urban interface areas and how to reduce conflict between humans and these animals.

This coming season, "Expedition Days on the Road" will be offered from December 2022 through April 2023. Each session takes 45 minutes for up to 32 students and schools may book up to four sessions per day or over multiple days. Teachers may register their classes for any of the Expedition Days Program modules at the Conservancy website, www.mcdowellsonoran.org/expo.

Musser explains that "Kids love our 'Expedition Days on the Road program' because we come into the classroom with a fresh slate where students can reset for the day. Our activities take place on the floor and outside so everything is interactive and hands-on. They can problem-solve, using their own creativity and, as educators, we embrace their different ideas."

Bruening adds, "In one classroom, the students were creating their own

desert preserve, and one of the rules they came up with was that no humans would be allowed in the preserve - animals only. Their passion for the desert and the animals was very clear. Some days we can learn as much from them as they can from us."

The third program, "Expedition Days Live," will be held November 1-4, 2022, at the Lost Dog Wash Trailhead and invites teachers and their third and fourth-grade students to experience the McDowell Sonoran Preserve. The students will visit several interactive learning stations aligned with the other Expedition Days modules and staffed by Conservancy staff and stewards. It is expected that over 800 students will experience "Expedition Days Live" on those days with even more children attending the public event with their families on November 5.

The Expedition Days program is offered free of charge to all teachers

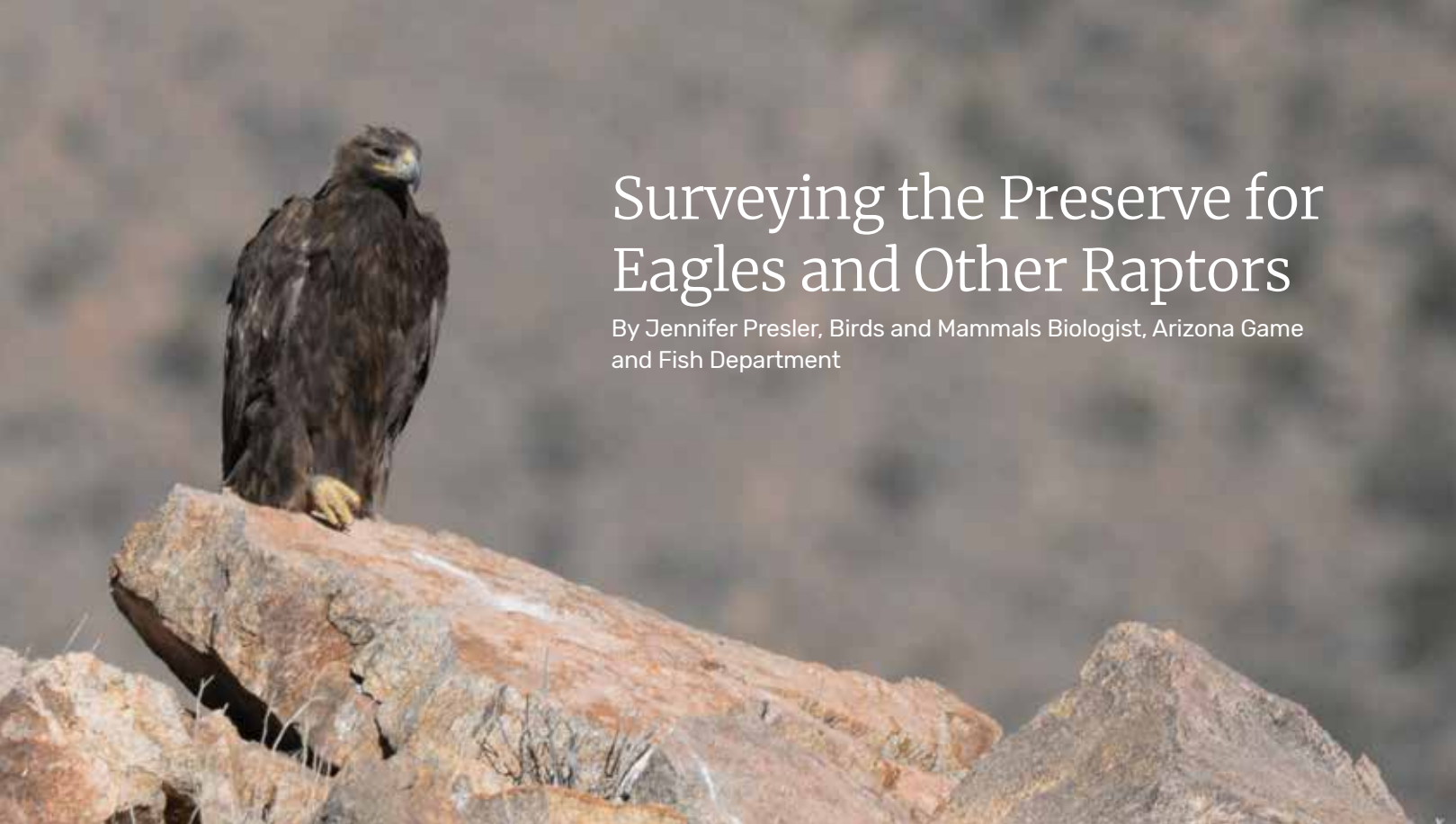


Jen Bruening, Conservancy Education Coordinator, helps students understand how rain can lead to erosion during "Expeditions Days on the Road." Photo by John Zikias

through the generous support of donors and grants, including the APS Charities, the Arizona Republic and azcentral.com through the Season for Sharing program, Cox Charities, the City of Scottsdale, and Thunderbird Charities. ▲▲



Students are filled with excitement as they step out at the Lost Dog Trailhead for the Expedition Days Live event. The program is scheduled again for this fall, November 1-4, 2022. Photo by Lynn Janney Russell



Surveying the Preserve for Eagles and Other Raptors

By Jennifer Presler, Birds and Mammals Biologist, Arizona Game and Fish Department

Golden eagles are large, brown raptors with lighter feathers on their head and neck that have a golden sheen. Males are about 2.5 feet from head to toe and weigh upwards of 10 pounds; females are larger. Photo by Kenneth Jacobson

Spring is nesting season for Arizona’s raptors, and when they take to their nests, Arizona Game and Fish biologists take to the sky. Each spring, eagle program biologists conduct nest surveys by helicopter for bald and golden eagles across the state. Compared to Arizona’s bald eagles that nest in trees and cliffs along waterways, golden eagles are more elusive and primarily nest on tall cliffs in some of Arizona’s most remote areas. They rely heavily on small mammals such as jackrabbits for sustenance. Both species are loyal to their territories and return year after year, but goldens are less consistent at laying eggs, depending on prey availability and other factors. This inconsistency makes it challenging to confirm which areas may be golden eagle territories, so biologists also track eagle-sized

nests found in eagle habitat.

Eagles and their nests have been protected in the U.S. under the Bald and Golden Eagle Protection Act since 1940, though not much was known about their distribution and status at the

time. After a noticeable decline in bald eagle populations nationwide (due in part to DDT), and their eventual listing as endangered under the Endangered Species Act in 1978, bald eagle surveys ramped up across their range. Both



An unoccupied nest that was found on the Preserve during the 2022 survey. It is unknown what species built the nest. It appears to be the right size for hawks and falcons, but a little small for an eagle. Photo by Jennifer Presler

the listing status and the accessibility of bald eagle nests along waterways allowed bald eagles to be far more documented than goldens, despite a much larger population of golden eagles in Arizona. Golden eagles also have far less historical data than their fish-eating counterparts and nesting data was only collected opportunistically in the state until 2011 when the Arizona Game and Fish Department began conducting widespread nest inventory surveys.

These surveys expanded the number of confirmed golden eagle territories from around 85 to over 340. Known eagle nests and habitats can be protected from both natural and human hazards, and searching for new nests allows for a more complete picture of the important areas these birds utilize, therefore expanding the reach of management and conservation efforts. Surveys of the known eagle territories allow biologists to track nesting activity and the number of young fledged per nesting attempt. Eventually, we will have enough data to look at population trends and stability over time.

Scottsdale’s McDowell Sonoran Preserve is home to many species of wildlife from mule deer to Gila monsters. This year, the Arizona Game and Fish Department conducted a survey for golden eagles and other raptors on the Preserve. Prior to 2022, this area had not been surveyed for nesting golden eagles. The survey revealed limited cliff-nesting habitat, with many of the mountains containing the open spaces favored by golden eagles but without the larger cliff faces



A red-tailed hawk in flight. Photo by Kyle McCarty

they prefer for nesting. The short rocky cliffs and the proximity to the city and popular hiking trails are not ideal habitat for this elusive species, though the area has supported a pair of prairie falcons for some time. During the survey, observers did find three unoccupied hawk-sized nests on the cliffs in the Preserve, one of which is shown in the photos. One red-tailed hawk was observed perched on a mountain

peak, and four others were seen flying around. As the climate and prey availability changes over time, there is a chance that different birds could move into new areas in the future. For now, visitors of the Preserve can continue to enjoy the presence of these other raptors from a distance, while making sure to keep the area wild for all of the wildlife, present and future.



A photo not taken in the Preserve of a nesting golden eagle incubating eggs. This nest is built in a pocket of a cliff, which provides excellent protection from the elements. Photo by Jennifer Presler

Connecting to the Preserve Through its Accessible Trails

By Jen Breuning,
McDowell Sonoran Conservancy Education Coordinator



Camino Campana, the Preserve's newest interpretive, accessible trail, is found in the northern part of the Preserve at Fraesfield Trailhead. Signage along the trail entices visitors to pause to learn how the animals and plants that inhabit the area adapt to thrive in the desert. Photo by Lynne Janney Russell

What draws you to Scottsdale's McDowell Sonoran Preserve? Is it the thrill of reaching Tom's Thumb with its 1,200-foot elevation gain? The seemingly endless miles of exciting bike trails? Or maybe it's the easily accessed equestrian parking for you and your horse. Over a million people visit the Preserve annually to seek out their own adventures and to connect with nature.

Historically, though, those with

mobility challenges have often reported feeling unwelcome in preserves and parks. However, the McDowell Sonoran Preserve is a place where all are welcome. The City of Scottsdale and the McDowell Sonoran Conservancy have both demonstrated that they care deeply about connecting everybody to this wonderful place.

In 2009, with the generous support of the Richard and Christine Kovach Family, the Bajada Nature Trail opened

as the Preserve's first accessible trail. This half-mile trail was established to welcome a broader audience to the Preserve, including those with mobility challenges, families, children, and those who want to learn more about the Sonoran Desert. Visitors' responses to the trail have been very positive, as reflected in the following Tripadvisor.com review:

"I explored the Bajada Nature trail on June 26, 2019. I was pleased to



A couple, visiting from out-of-state, share with Conservancy stewards how much they enjoyed their visit to the interpretive, accessible Jane Rau Trail at Brown's Ranch Trailhead. Photo by Susan Matthews

find this barrier-free trail that I could negotiate quite easily in my manual wheelchair. The trail was hard-packed and fairly flat....I enjoyed being in the great outdoors where it was easy to find peace, quiet, and natural beauty in spite of the Preserve's close proximity to downtown Scottsdale. I was also impressed with the wheelchair-accessible bathroom that was in the building adjacent to the trail."

Since the opening of the Bajada Trail, three other accessible interpretive trails have been established in the Preserve—the Jane Rau Trail (Brown's Ranch Trailhead), the Kovach Family Nature Trail (Lost Dog Wash Trailhead), and Camino Campana (Fraesfield Trailhead). These trails were designed around accessibility standards and constructed to be close to the trailheads yet immersed in the Sonoran Desert landscape.

The city is planning to open a fifth

accessible interpretive trail at the Pima Dynamite Trailhead in the future. Also, this year the Conservancy has doubled its public Guided Walk events that feature the Preserve's accessible trails. These accessible trails are also listed on Birdability's map, a crowdsourced map made available through the collaboration of the National Audubon Society and Birdability. This map features accessible birding locations all over the world.

These successes in making the Preserve more accessible have been accomplished through the collaboration of the City of Scottsdale, donors, the Conservancy and of course Conservancy stewards. From developing interpretive signs to measuring trail specifications on their hands and knees, our stewards continue to work to protect and share this enchanting piece of the Sonoran Desert. ▲▲

Description of the Kovach Family Nature Trail, an Accessible, Interpretive Trail

Location: Lost Dog Wash Trailhead
12601 N. 124th St. Scottsdale, AZ
85259

Length and Type: 0.5 miles; two lollipops connecting at the base of stems. This trail is 0.1 mi from the Lost Dog Trailhead, off the Lost Dog Trail. This portion of Lost Dog Trail is accessible.

Trail Specifications

- **Trail Surface:** The majority is surfaced with hard stabilized decomposed granite; some sections are of concrete; two very short trail bridges, made of metal grating; and one concrete-surfaced access ramp. All sections meet accessibility standards.
- **Typical Tread Width:** 80 in., with a minimum width of 53 in.
- **Typical Grade:** 3.0% and the maximum is 5.7% **Typical Cross Slope:** 1% or less

Features

- 13 interpretive signs
- 3 stone benches
- A wash

Detailed descriptions of all four accessible trails and directions to them can be found at: mcdowellsonoran.org/visit-preserve#tab-48b3ab84990872f9dae

Waking Up in the Desert

By Dennis Eckel
McDowell Sonoran Conservancy Steward

A new day begins as the sky blushes with warm tones, and soft streams of light filter onto the desert landscape. The silence is broken momentarily with the distant howl of a coyote. It's the morning's golden hour when everything becomes blanketed with a soft warm glow--the time when photographers want to be in position for some of the best image potential of the day.

The chances of spotting wildlife are highest at this time of day, too. And this morning doesn't disappoint. A small herd of mule deer grazes on the tall grasses. They look up cautiously to observe me, but then continue to feed as they realize that I don't pose any threat.

There is a stillness and quiet that soothes my soul. It's a time to breathe deeply and give thanks for how fortunate I am to be able to experience such a beautiful place.

Photo by Dennis Eckel



Photos by Dennis Eckel

Butterfly Abundance, Richness, and Diversity

By Jessie Dwyer,
McDowell Sonoran Conservancy Biodiversity Manager



The violet- or olive-clouded skipper (*Lerodea arabus*) has a brown-black underside and forewings with transparent spots. This species is one of 13 skipper butterfly species detected in the Preserve, known for their quick, darting flight. The violet-clouded skipper was identified for the first time during the fall 2021 survey. Photo by Ron Rutowski

Butterflies play important roles in terrestrial ecosystems. They serve as a food source for a wide variety of species, and many butterflies pollinate plants during their feeding activities. Butterflies are also excellent bioindicators, as changes in their populations can reflect the state of the plant and insect community. Therefore, long-term monitoring of butterfly populations can be used to assess the health of terrestrial ecosystems over time.

In 2014, the Conservancy started a long-term butterfly monitoring project in the McDowell Sonoran Preserve to

assess the abundance (i.e., number of individuals), richness (i.e., number of species), and diversity (i.e., number of individuals and species) of butterflies within the Preserve, evaluate the natural and human factors that affect butterfly populations over time in the Preserve and the larger region and use the results to develop management recommendations for butterflies and other insects in the Preserve.

The butterfly project follows a standardized scientific protocol established by the North American Butterfly Association, as well as additional rigorous procedures, to

ensure that the data are comparable year-to-year in the Preserve and to other butterfly surveys in the region. To conduct the surveys in the Preserve, six key sampling locations are selected that represent the diversity of available butterfly habitats. At each location, the same transect route (a defined, narrow section of the Preserve) is surveyed in the fall and spring season, by walking the transects in one direction to avoid counting the same butterfly twice. Surveys are started once the temperature is above 70°F when butterflies are more likely to be active and are conducted by 4-6 people, including a



The Mexican yellow (*Eurema mexicana*), sometimes called the wolf-faced sulphur, is identifiable by its pale yellow color and pointed hind wings. We were excited to have detected this species for the first time during the fall 2021 survey, as it is more common in Mexico than in the United States. Photo by Ron Rutowski



The golden-headed scalloping (*Staphylus ceos*) gets part of its name from its distinct golden-orange head. It is the most recently identified species of butterfly in the Preserve, having been observed for the first time during the spring 2022 survey. Photo by Ron Rutowski

butterfly expert to identify the species, a steward lead, a data recorder, and butterfly spotters. Once the surveys are complete, butterfly experts, Conservancy staff, and steward project leads check over the data to ensure accuracy. The Conservancy partners with faculty from Arizona State University in conducting the surveys and analyzing data.

To date, the Conservancy has conducted eight fall surveys and six spring surveys and has recorded a total of 59 butterfly species in the Preserve! The most recently detected species were the violet-clouded skipper (*Lerodea arabus*), Mexican yellow (*Eurema mexicana*), and tailed orange (*Pyristia proterpia*) in the fall of 2021 and the golden-headed scalloping (*Staphylus ceos*) in spring of 2022. The highest number of butterflies ever counted occurred during the fall 2021 survey, with abundance as much as 1,000 times higher than previous counts! There is typically high variation in butterfly abundance, richness, and diversity from year to year, with no

overall declines or increases over time.

The annual variation in butterfly abundance, richness, and diversity during the eight years of fall surveys was best explained by the previous monsoons. For the six spring surveys to date, the annual variation in butterfly abundance correlated well with the prior 12-month precipitation. The data suggest that butterfly populations

depend on monsoon rainfall for their persistence. Therefore, as the climate gets hotter and drier over the years, we can expect to see butterfly populations decline in the Preserve.

The Conservancy will continue to monitor butterflies over time

in the Preserve to detect population declines and better understand the relationship between precipitation and butterfly abundance, richness, and diversity. In addition, we intend to investigate whether the butterfly species in the Preserve are following regional trends by conducting further analyses on individual butterfly species. ▲▲



Marcus Landslide Survey Team, Spring 2022



Let's Take A Guided Walk!

By Marsha Lipps, McDowell Sonoran Conservancy Legacy Steward, and Toni Vallee, McDowell Sonoran Conservancy Master Steward

Sunrise over the bridge from Gateway Trailhead beckons walkers to the interpretive, accessible Bajada Trail, where walkers of all ages can learn about the desert and its plants and wildlife. Photo by Dennis Eckel

Have you ever looked at the McDowell Sonoran Conservancy's event schedule and thought "well, that looks interesting, but I can't hike that far" or "but I'm not a mountain biker?" Conservancy stewards recently talked with many Preserve visitors about event offerings and heard similar responses. There clearly was an unaddressed need for shorter forays into the Preserve, and a keen desire for the knowledge shared during hike and bike events.

A pilot program was developed last season in which the public and stewards participated in roughly ½-mile guided walks on the Jane Rau and Bajada interpretive trails. On the Jane Rau Trail, walk topics included wildflowers, nature as therapy, and

the lifecycle of the saguaro. On the Bajada Trail, walks included information from the Conservancy course Sonoran Desert 101 covering geology, desert ecology, flora, and fauna. Participants responded enthusiastically to these offerings.

Therefore, the Conservancy has added a guided walk focus as well. Over 50 guided walks are scheduled for the 2022/23 season from Halloween (October 31, 2022) to Earth Day weekend (April 22-23, 2023). Most of the guided walks will incorporate the interpretive trails near major trailheads, and will generally have a distance of ½ to 1 mile. A handful of slightly longer walks under 2 miles are also on the schedule, which will use short, non-interpretive trails with slight elevation.

The schedule of walks will be posted on the Conservancy's online calendar in mid-October.

Conservancy Master and Legacy stewards will give presentations during the guided walks. There will be several new, walk-adapted discovery hike topics for walks on the Jane Rau and Bajada trails. Guided walks are also scheduled for the Camino Campana interpretive trail at the Fraesfield Trailhead. This new trail area has a rich history and is incredibly interesting from a desert ecology viewpoint. Also, while most walks will start at regular seasonal hike times, afternoon walks will be added during the winter and weekday events with Scottsdale's Natural Resources Coordinators. Bird walks and a sprinkling of new topics are



Guided walks are led by stewards who are knowledgeable about what is easily seen on the route, like this saguaro, and other important things that are typically not noticed but are important for the ecological health of the desert. Photo by Dennis Eckel

also on the schedule. Finally, private walk options will be offered as well.

There are residents and tourists for whom the term "hike" is a scary concept. Most of these people can walk, and most of those with mobility issues will find the interpretive trails were designed and built to be accessible. People of all ages enjoy these trails and the ability to get out in nature.

During the Covid pandemic, many people discovered the safety and positive feelings that came from escaping

locked down lives and heading to the Preserve. In the last two years, visitation increased from previous annual highs of 750,000 to over a million visits. For those who decided to get knees, shoulders, ankles, and hips upgraded or to have other surgeries, walking more frequently may be recommended as part of their recovery plan. Others may be searching for healthy ways to be more active after dealing with various ranges of illnesses during the pandemic that affected their health, both physical and mental.



A group of trail walkers stops to listen to a Conservancy steward tell them about the Sonoran Desert and its flora and fauna. Photo by Dennis Eckel



Guided walkers look down at the wash below them on the Jane Rau Trail. The guided walk lead is explaining how the wash is a refuge for plants and wildlife, providing water, shade, and rocky nooks as shelter. Photo by Kim Stroka

Others may simply wish to see the finer details of the Preserve that a walking pace allows. Guided walks may meet these needs. Research has shown that getting out in nature enhances health and well-being. Most people feel safer interacting outside. Helping people learn more about the Preserve, the McDowell Mountains, and the Sonoran Desert seems like a worthy endeavor. If you can learn to love it, you can decide to protect it and make it sustainable for endless future generations to enjoy. ▲▲



Steward Mary Caton assists intern Sidney Kizer with radio telemetry equipment during fieldwork on the tortoise project. Photo by Dennis Eckel

Inspiring the Next Generation of Conservationists

By Brian Whitehead,
McDowell Sonoran Conservancy Program Manager

The McDowell Sonoran Conservancy hasn't had an intern since 2020, and we made up for it by having two in 2022! May we introduce Akash Ahuja and Sidney Kizer. These interns contributed over 200 hours of unpaid service the summer before their senior year at Paradise Valley High School. The Conservancy is thrilled to be able to provide this learning opportunity as a way to inspire and train the next generation of conservation advocates,



Interns Sidney Kizer (left) and Akash Ahuja (right) learn the basics of patrolling on the Camino Campana Trail with Conservancy Program Manager Brian Whitehead (center). Many stewards patrol trails in the Preserve to engage visitors and look for maintenance and safety issues. Photo by Jakki Casey

educators, and scientists.

Obtaining experience in a professional field can be challenging, and this internship exposed Sidney and Akash to various conservation-related careers. The Conservancy is a perfect organization to provide a wide variety of learning experiences for interns, from fieldwork in the intense summer heat to managing an educational setting with 3rd graders. They had opportunities to experience the many varied duties of a steward and

completed several important projects from designing a new Conservancy sticker to constructing a poster presentation. Below are their experiences in their own words.

Akash

"Over the summer, I was engaged in many activities while working at my internship with the Conservancy. Throughout the program, I learned some basic skills like proper work etiquette, how to engage with others, and how to best work in an office. I previously struggled with talking to people in formal and casual settings, but I have become more confident in my abilities over the past months. I also learned some more specialized skills like how to collect and analyze data, how to stay safe in the field, and how to engage with kids in an educational setting. I

had a lot of fun working with stewards, helping staff with their projects, and interacting with nature. My favorite part of the internship was learning how to use the telemetry equipment to locate tortoises.

Many of the people I have met have a deep passion for the Preserve, which has motivated me to work harder and do everything I can to help the planet. This internship helped me tremendously because it has shown me some of what I am not so fond of and what I enjoy. These tools will set me up for future success while choosing a career path."

Sidney

"Throughout my internship, I was privileged to work with staff and stewards who have a wealth of knowledge. The staff at the Conservancy are experts in their fields and

incredibly kind and helpful. The love everyone holds for the environment is something I found to be inspiring as a current student with an interest in pursuing a career in environmental sciences. Some of the experiences that have been most meaningful to me include working with the science and education teams.

I loved hiking through the Preserve to do fieldwork while knowing I was helping to facilitate research that could have fascinating implications. Being a part of the tortoise telemetry project was one of my favorite experiences. This fascinating project helped me appreciate how alive the desert is since many desert animals like tortoises live within burrows. Seeing how these animals act in their natural habitats helped me understand how filled with life the desert is despite appearances.

I wasn't sure what to expect from the education team but was surprised by how much I enjoyed the tasks they gave me. I enjoyed helping facilitate a camp at the Arizona Herpetological Society, where I helped engage kids in an activity where they designed their own preserves out of reusable mountain models. This and the other work I did with education showed me just how meaningful it is to educate others on the importance of natural open space."

Providing opportunities like this internship helps the McDowell Sonoran Conservancy stand out as a leader in our field. The Conservancy is proud to support conservation now and into the future. Sidney and Akash will make sure of it! ▲▲



Interns Sidney Kizer and Akash Ahuja work to create interactive educational materials that will be used across the Valley to introduce students to conservation ideas. Photo by Dennis Eckel



By Dennis Eckel,
McDowell Sonoran Conservancy Steward

Hiking in Scottsdale's McDowell Sonoran Preserve provides an opportunity to let your imagination run wild in recognizing gorillas, dinosaurs, dolphins, and hundreds of other animals and figures never seen in the desert. They're not actually there, of course, but with close observation and a little imagination, you're likely to see things you never noticed before.

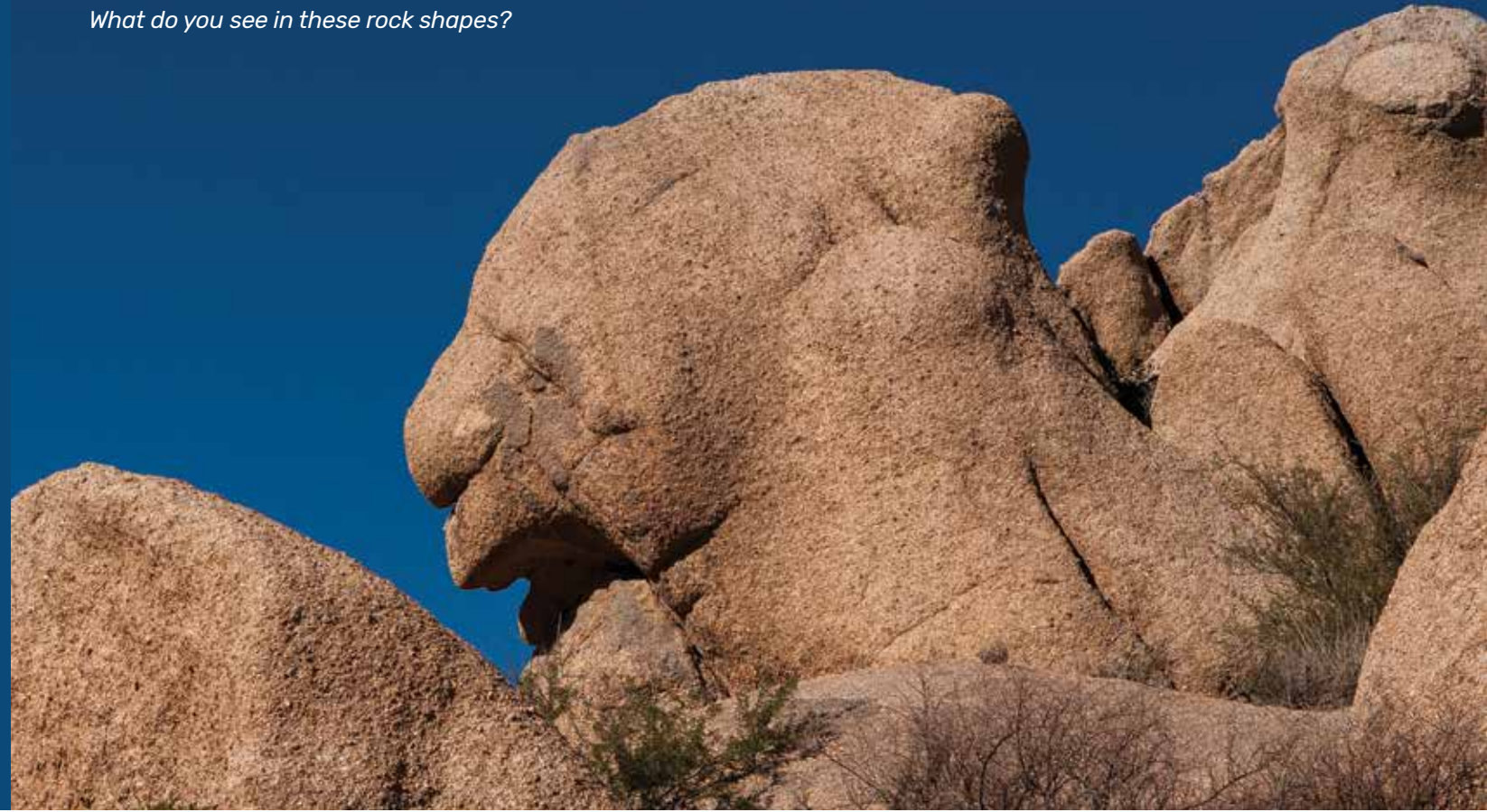
The scientific term for the human ability to see shapes or make pictures out of random forms is "pareidolia." We often do this with cloud formations. In the Preserve, our pareidolia tendencies benefit from rock formations that have eroded through millions of years into interesting contours and configurations.

These imaginative creatures may be more or less obvious depending upon the time of day, and the light and shadow that's cast upon them. Take your time and look all around you, and you'll be amazed by how many rock faces you might recognize.



Photos by Dennis Eckel

What do you see in these rock shapes?





Wow! We Have Over a Thousand Species in the Preserve!

By John Zikias,
McDowell Sonoran Conservancy Lead Steward, and
Jessie Dwyer,
McDowell Sonoran Conservancy Biodiversity Manager

Our bird surveys identify new species in the Preserve like the Willow Flycatcher (*Empidonax traillii*), identified in 2002. Photo by Mary McSparen

Scottsdale's McDowell Sonoran Preserve, due to its varied elevations and geology, has many unique ecosystems that support a wide variety of flora and fauna. Over the past 13 years, the McDowell Sonoran Conservancy's Parsons Field Institute along with steward Citizen Scientists and research partners, has implemented multiple long-term monitoring projects in the Preserve to identify and track changes in wildlife populations over time. This information improves our understanding of wildlife in the Preserve and enables us to evaluate the impact of natural and anthropogenic (i.e., human) factors, such as climate change, urbanization, and human recreation, on our wildlife populations and the ecosystem as a whole. To date, 1,027 species have been identified in the preserve (418 flora and 609 fauna).

There are several different survey techniques that the Conservancy

uses to monitor wildlife. For some of our projects (i.e., bird and butterfly projects), we use active monitoring techniques, such as point counts (counts made at a single location in the Preserve) and transect counts (counts made along a narrowly defined section of the Preserve). In both cases, the researcher is present at the site and collecting data during the survey. For other projects (i.e., bat and wildlife camera projects) we use passive monitoring techniques, such as camera trapping and acoustic monitoring, where equipment is continuously collecting data throughout the survey period, and the researcher does not need to be present.

The long-term bird monitoring project consists of daytime transect surveys three times a year and nocturnal point count surveys once a year. We currently have 187 recorded bird species in the Preserve, with the newest addition, the calliope

hummingbird (*Selasphorus calliope*), detected during the Spring 2022 survey! This fall we will be analyzing our long-term bird data to evaluate changes in bird populations in the Preserve and regionally, and whether the populations were impacted by natural or anthropogenic factors.

Butterflies are counted using transect surveys twice per year in the spring and fall. Teams consist of steward leads and spotters along with an expert. During the Spring 2022 survey, we detected the golden-headed scallopwing (*Staphylus ceos*) for the first time! To measure changes, as far as individuals are concerned, our research partner has developed statistically significant correlation coefficients that relate them to precipitation during the six months preceding the count (winter versus monsoon, rainy seasons).

For the long-term bat monitoring project, we deploy several acoustic

bat monitors in the Preserve during the spring season that are specially designed to record the ultrasonic echolocation calls of bats. Bat species can be identified by their unique call characteristics, which are displayed visually as a sonogram in a software called SonoBat. To date, 13 species have been identified in the Preserve using this survey method, with the Yuma myotis (*Myotis yumanensis*) detected for the first time in 2021! This is our second year conducting acoustic bat surveys in partnership with the North American Bat Monitoring Program, and therefore, it is too early to detect population changes.

The previous camera trapping project to detect ground-dwelling wildlife deployed motion-and-heat sensing cameras at 26 locations, primarily in the Gooseneck corridor of the Preserve. The project identified 15 species, with the American badger (*Taxidea taxus*) detected for the first time in 2020! The new wildlife camera project is expanding the number of sites to 60 locations distributed throughout the entire Preserve to better monitor populations of ground-dwelling vertebrates over time.

The Conservancy continues to conduct long-term monitoring surveys to determine the impact of climate change and urban stressors on our wildlife populations. The information gathered from this research will provide valuable information for future management practices in the Preserve and beyond. ▲▲



Mexican Yellow (*Eurema mexicana*) was first observed in the Preserve during the Conservancy's spring 2022 survey. Photo by Ron Rutowski



Species such as Townsend's big-eared bat (*Corynorhinus townsendii*) would not be identified without our monitoring research. Photo by Randall Babb



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CONSERVANCY

15300 N 90th Street,
Suite 400
Scottsdale, AZ 85260

Connect with us:



The Scottsdale McDowell Sonoran Preserve is owned by the City of Scottsdale and is managed through a unique partnership between the City of Scottsdale and the McDowell Sonoran Conservancy. Our shared goal for the Preserve is to maintain it in a natural state while providing appropriate recreational and educational opportunities for this and future generations.

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