MCDOWELL SONORAN CONSERVANCY

Mountain Lines

MAGAZINE OF THE MCDOWELL SONORAN CONSERVANCY SUMMER 2022

FROM THE CHIEF EXECUTIVE OFFICER

Justin Owen, CNAP

As the heat brings quieter times to the valley, join us as we celebrate Jane Rau's 100th birthday. As one of the Preserve Pioneers and founders of the Conservancy, let's appreciate what she helped to create. Her passion for protecting natural open spaces has earned her a well-deserved place in our hearts and in Scottsdale's history. In honor of Jane's birthday, we worked with the City of Scottsdale to redesign the educational signage on the interpretive trail at Browns Ranch, named in Jane's honor. The focus of this trail is a desert refuge. You don't need to walk far from the trailhead before you feel the benefits of this oasis.

Enjoying natural open spaces in the summer months brings challenges due to our heat so we hope you can find some tips in this edition to help you find ways to appreciate the physical and mental health benefits while staying safe. Let's keep our pets safe too in this heat.

Our partnership with Scottsdale Unified School District (SUSD) has enabled us to create experiential learning opportunities for 7th graders. We partnered with teachers to create lessons to fill gaps that were created through COVID-19. We then worked alongside them to deliver these opportunities which thoroughly engaged their students. This is a new partnership for both SUSD and us, one that has been so successful we will be jointly expanding it in future years.

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

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:

Cover photo: Kids share what they saw in the desert today. Photo by Dennis Eckel

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Mountain Lines is published quarterly by the McDowell Sonoran Conservancy, a 501(c)(3) nonprofit organization

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Creative design donated by McDowell Sonoran Conservancy steward Dennis Eckel
Eckel Advertising & Photography

Celebrating Jane Rau

By Barbara Montgomery-Ratcliff,
McDowell Sonoran Conservancy Master Steward

Jane at the bridge that crosses the wash running under sections of the Jane Rau Trail. The wash is a refuge for animals and plants, providing moisture, shade, and a fairly unobstructed path through the area.
Photo by Dennis Eckel

Jane Rau will celebrate her 100th birthday this July, and I'm sure you will join me in wishing her the happiest of birthday celebrations! The occasion also invites us to remember and celebrate Jane's accomplishments as an environmentalist and community activist who turned her love of the mountains and desert into a crusade to protect them in their natural state. As a result, Jane, along with the other Preserve Pioneers, successfully persuaded Scottsdale residents, business leaders, teachers, city officials, and more to work together to create Scottsdale's McDowell Sonoran Preserve, which is protecting and preserving over 30,500 acres of desert and mountains.

The first seeds of Jane Rau's love of the McDowell Mountains and the Sonoran Desert were planted when she and her husband, Leonard ("Link"), a general contractor, came to the valley from Cleveland, Ohio, in 1961. They built a house in Paradise Valley, but not long after, they concluded that the lifestyle wasn't a good fit for them, and they returned to Ohio. By 1967, when they moved back to Arizona, their love of the desert and mountains had blossomed. They looked for land far north of Scottsdale's city center, beyond the municipal boundary. Within five days, they bought 20 acres of desert land, with sweeping vistas of saguaros, cholla, mesquite, and other desert plants, and diverse resident wildlife. Link built them a Hogan-style home, and there they raised their four children, adapted to a Western lifestyle, and quickly came to appreciate the unique beauty and drama of natural open spaces.

Jane enjoying a panoramic view of the Preserve she worked so hard to help create.

Many people actively worked to plan for the McDowell Sonoran Preserve and to make the plan work. Pictured here are MSLT staff and board members in 2003. Front row, from left: Claire Miller, Christine Kovac, Jane Rau, Laura Fisher, Joan Fudala, Myrna Smith, and Anne Collins. Back row, from left: Bob Cafarella, Mark Knops, Carla, Sue Livingston, Chet Andrews, Tom Walsh, and Bob Freund.

Jane began speaking out in defense of the desert in the 1980s. Scottsdale had stepped up efforts to annex and rezone rural land, and Jane and other area residents formed a group called "County Residents Against Scottsdale Harassment" (CRASH) to counter annexation and protect their rural zoning. Eventually, the group softened its name to the "Desert Foothills Homeowners Association," but they remained strong in their resistance to annexation and rezoning. Nevertheless, in October 1983, Scottsdale officially annexed the Rau's and their neighbors' properties.

This didn't deter Jane in her efforts to protect and preserve the Sonoran Desert and its mountains. As President of the Desert Foothills Homeowners Association and later of the Greater Pinnacle Peak Homeowners Association, Jane wrote a regular column in A Peek at the Peak, a monthly publication featuring the local news. She wrote about topics like the animals of the desert, the need to set aside land as natural open spaces, the problems with development in the desert, and how to contact legislators to ask them to approve land preservation legislation. She spoke at Scottsdale's City Council meetings, and, in 1988, she ran for City Council, advocating that Scottsdale should control its growth, preserve the desert, and conserve water. Though she lost the election, she continued to attend City Council meetings, advocating the protection of the desert and mountains. She came armed with strong arguments and homemade muffins for the Mayor and Council members. Jane noted that she had no professional title like others who signed up to speak, so she listed herself as: "Jane Rau, Burr Under the City's Saddle." She described the first time she went to the City Hall Kiva to argue the zoning issue: "I was a bleeding heart. I got absolutely nowhere. The second time I went, I took maps to show them where the washes and major problems were. The zoning attorney said: 'Wow, she has become sophisticated in one jump!' "

Jane has a reputation for being tenacious and tough, which she has often reinforced by telling people that her middle name is "Tenacity." She returned to this theme in a recent conversation with stewards, laughingly saying that she is a Leo and reminding us that Leos never quit. Photo by Dennis Eckel

Jane wasn't usually aiming for sophistication, but she regularly hit the bull's eye for powerful messages. For example, the Arizona Republic recounted a story about Jane's tenacity in efforts to preserve and protect the desert and its inhabitants. As the story goes, one day, on a bike ride in the desert, Jane "came upon an ironwood tree that had stood near Jomax Road for 1,000 years or more. The tree had been bulldozed by workers installing water lines. Jane took some of the wood, polished it, and presented a piece to every city council member." Quoting Jane, "I told them it was a piece of conscience to remind them that you don't have to destroy things just to get something done quickly, that you could have gone around the old ironwood tree."

Over time, Jane grew more concerned about further development expanding along the foothills of the

McDowell Mountains. In researching what might be done to deter this, Jane learned about land trusts. In 1990, she and Karen Bertiger co-signed the incorporation papers and, with other concerned citizens, founded the McDowell Sonoran Land Trust (MSLT) to lead advocacy efforts for preserving the land. By May 1991, MSLT had received 501 (c)(3) status, categorizing it as a non-profit organization, and could receive and manage donations toward buying land for a preserve. Jane's passion for preservation was shared by many others who became active in MSLT, and together, they convinced the City Council that preserving the McDowells called for immediate action. By 1995, the City of Scottsdale and MSLT were working more closely toward achieving the vision of the Preserve. The City had created the McDowell Sonoran Preserve Commission, and Jane and other supporters actively campaigned for the "Save Our McDowells" ballot initiative, which passed a two-tenths of one percent sales tax increase to fund land purchases for the McDowell Sonoran Preserve. Jane was a key advocate in bringing three more funding proposals to the voters, which all passed. Jane also was a member of the Desert Preservation Task Force, whose recommendations led to the expansion of the Preserve into the northern desert region. In 2005, the McDowell Sonoran Land Trust changed its name to the McDowell Sonoran Conservancy.

Jane at the dedication of the Jane Rau Trail in 2014. Photo by Joan Fudala

Asked recently about why she worked so hard and so persistently to protect the desert and mountains, Jane responded, "It is so special it had to be saved!" She added, "I am a Leo, and Leos never quit."

With the Preserve a reality, Jane has contributed her time and talent to its ongoing support. She became a steward, has helped maintain trails, and has given countless talks about the desert. Jane served six years on the Preserve Commission and is a member of the Conservancy's Board of Directors. She also continues to enjoy spending time in the Preserve and is "so thrilled by all the people who get out to the Preserve to learn about the desert."

Jane's accomplishments have been widely recognized. In 2004, she was inducted into the Scottsdale History Hall of Fame. In 2008, she was honored as the Land Trust Alliance's National Conservation Volunteer of the Year, and she received the Hon Kachina Volunteer Award, given annually for improving the lives of others in the community. In 2014, the City of Scottsdale named the "Jane Rau Trail" at Brown's Ranch Trailhead in her honor. In 2019 Jane was one of 12 recognized by the City of Scottsdale as Preserve Pioneers.

This year, the Conservancy and City of Scottsdale are honoring Jane by expanding the interpretive signage along the Jane Rau Trail. The signs will explore how the area is a desert refuge that protects native plants and animals and provides people an escape from urban living. Some signs will invite interaction from visitors as they learn more about this special place. Installation of the new signs is anticipated to happen late in 2022.

Happy Birthday, Jane! Our heartfelt thanks for all you have done to protect Scottsdale's McDowell Sonoran Preserve's natural open space.

Four Easy Ways to Support the Conservancy

amazonsmile

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.

Fry's Food & Drug Stores Community Rewards Program

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.

Facebook Fundraising

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.

Target Circle

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.

A Hotter, Drier Preserve in the Future

By: Melanie Tluczek,
McDowell Sonoran Conservancy Director of Science and Education

*Invasive plants, such as stinknet (*Oncosiphon piluliferum*), have greater tolerance for hotter and drier conditions, and benefit from environmental disturbance. This gives them an advantage over many non-introduced species. Photo by Lynne Russell*

Scottsdale's McDowell Sonoran Preserve was created with the vision of a thriving, natural Sonoran Desert space that would be sustained in perpetuity for the benefit of all. Looking to the future, one of the biggest challenges we face is the unpredictability of our climate. Unlike the weather, which is short-term, climate describes larger temperature and precipitation patterns that occur over more extended periods. It shapes the natural world in ways that have long-lasting effects on plant and animal species and the overall landscape.

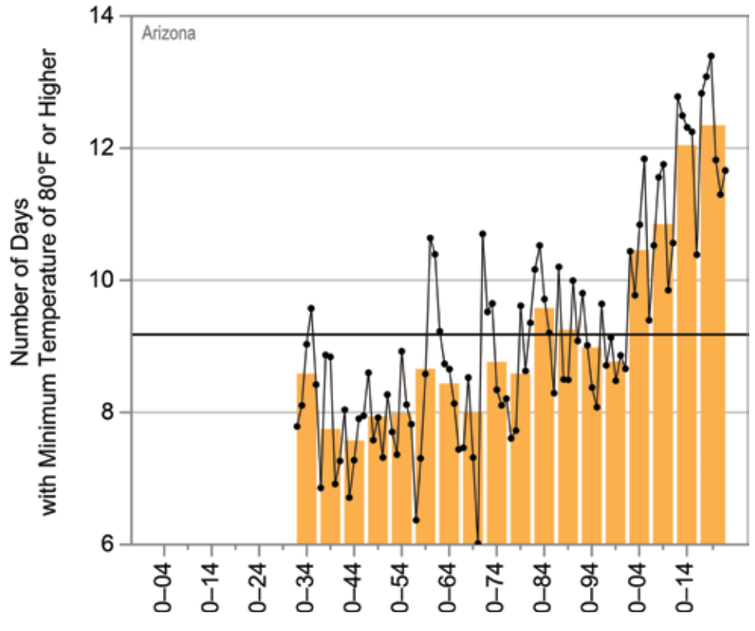
The University of Arizona CLIMAS (Climate Assessment for the Southwest) group pulls together one of the largest datasets on climate in the Southwest. This information is used by scientists, farmers, ranchers, land managers, urban planners, and industry leaders to understand how the near- and long-term patterns affect their land and vocations. Thousands of studies and models point to the climate in the southwest getting progressively hotter and drier for at least the next 100 years. Things are getting less predictable as well. Models show that rain will be less frequent, but when it does occur, storms will be more significant, creating larger flooding events. The combination of these conditions can result in increased wildfires, insect outbreaks, reduction in overall surface water, and catastrophic flooding.

What does this mean for our corner of the Sonoran Desert? As the largest urban preserve in North America, our proximity to buildings and paved surfaces means higher temperatures due to radiating heat, driving up day and night temperatures. Many cacti rely on cool nighttime temperatures to grow and reproduce and are stressed when the heat persists into nighttime hours. Our common invasive species have more pathways into the Preserve through landscaping and on vehicles and hiking boots, increasing fire risk, which further decreases the survivability of native species. More torrential rains create greater surface run-off, increasing erosion on Preserve trails and in surrounding neighborhoods.

Although the challenges are great, understanding them can help us mitigate the impacts and adapt. The McDowell Sonoran Conservancy, through the Parsons Field Institute, is studying those impacts and taking action. Scientists and volunteers team up to conduct biodiversity monitoring throughout the year, helping us understand whether the number of species in the Preserve is increasing, decreasing, or static. Much like taking one's temperature can help determine the health of a human body, looking at the biodiversity of a place can help determine the health of the ecosystem. It also partners with the National Phenology Network to examine how plants and animals are shifting their cycles in response to temperature and precipitation. Changes in either of these will trigger targeted conservation efforts. Working with the City of Scottsdale to remove invasive grasses and educate residents about planting native species helps reduce the risk of fire and protects our native plants and animals. Restoring damaged lands by introducing native plants and controlling erosion also helps decrease potential problems in the future.

There are many ways one can help at home and in the workplace. Conserving water will help protect water resources, which will undoubtedly grow more precious over time. Reducing the introduction of invasive plants by replacing them with natives in landscaping, removing them in neighborhoods, and making sure not to transport seeds on our clothing, hiking shoes, or vehicles can help reduce the risk of fires in the Preserve. Advocating for green spaces in our communities helps mitigate increased heat and can provide wildlife corridors when done correctly. Purchasing items locally helps the local economy and reduces the fossil fuels needed to get them from production to customer. Last, joining the Conservancy as a volunteer provides numerous opportunities to help study, take action, and teach others how to protect our Preserve and the Sonoran Desert into the future.

*Native plants, such as Graham's fishhook cactus (*Cochemiea grahamii*) are adapted to aridity, but how much aridity can they take? Photo by Lynne Russell*



Data from the National Oceanic and Atmospheric Administration (NOAA) shows the annual increase in number of days with minimum temperatures above 80 degrees fahrenheit in Arizona.

Hiking Safely in the Summer Heat

By RickyRey Pfadenhauer,
McDowell Sonoran Conservancy Master Steward

These hikers appear to be well-prepared for summer hiking. They are traveling on a trail without extreme elevation changes. They have plenty of water, are dressed in lightweight clothing, and are carrying packs with room for extra water and snacks. It would be even better if she was wearing a hat to help shade her head. Photo by Dennis Eckel

The summer is a wonderful time to enjoy Scottsdale's McDowell Sonoran Preserve and its natural beauty. As many residents leave town to flee the heat, the season offers a quieter, less congested Preserve for those of us who remain. It's a perfect time to hike, connect with nature, and explore the Preserve's incredible scenery while practicing a few safety precautions to protect you and your four-legged hiking companion.

The major safety issue is the summer heat. Daytime temperatures can top 110 degrees. If the temperature is over 90 degrees at your start time, it is safer to postpone your hike. The combination of extreme heat, direct sun, and lack of shade and humidity create hazardous conditions that can lead to dehydration, heat exhaustion, and even heat stroke in humans and pets if precautions aren't taken.

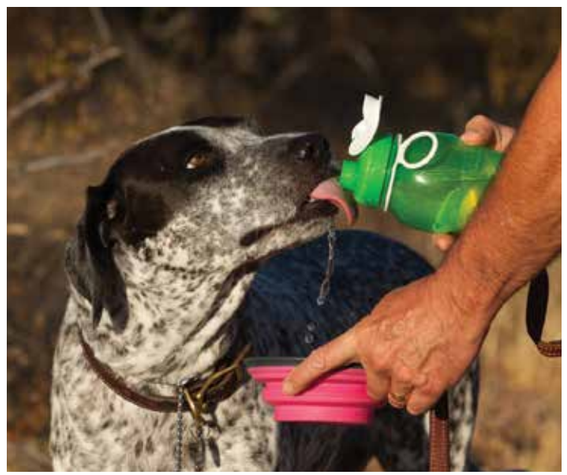
Make sure you are well hydrated before you start a hike and tell others where you are hiking. In summer, it is best to begin your hike at sunrise when temperatures are their lowest and the terrain is cool. Plan to hike shorter distances than usual. Summer is monsoon season, so check the weather forecast. If a monsoon is predicted postpone your hike.

Intense heat mandates having an abundance of water when hiking. Minimum water consumption is 0.5 to 1 liter (16 to 32 oz.) every hour. Drinking sports drinks and eating snacks like trail mix, salty pretzels, and protein can compensate for lost electrolytes. Having a lightweight backpack containing a water reservoir (2-liter minimum) and room for extra water bottles, sunblock, and a first aid kit is helpful.

Another precaution is to wear lightweight clothing and dress in layers, removing layers as the day heats up. Some hikers like to wear pants that can convert to shorts by unzipping the lower segment of the pant leg. Also, lightweight hiking boots of breathable material are good for summer.

A dog can be a hiker's best trail buddy but in summer dogs need extra care. Choose a trail carefully, keeping the distance short and the terrain level and smooth. An early start renders cooler temperatures and more air moisture, keeping your dog and his paws comfortable. Have extra bottles of water for him and a collapsible bowl for drinking. Strenuous hiking requires water consumption of 1.5 ounces per 1 pound of body weight per day. Finally, an air temperature of 86 degrees can have a ground temperature of 100+ degrees, which can result in burned or torn paw pads. Therefore, consider protective hiking boots to save your pet's paws from burns and cuts.

A dog showing signs of heat stress can cool down by laying flat on a cool surface in the shade and by having cool water poured on his head and body.



Frequent water stops during a hike are good for humans and their pets. A collapsible water bowl can help dogs enjoy every drop of their water. Photo by Dennis Eckel

Dogs do not perspire like humans. To remain cool, they release body heat through their noses, paw pads. and by panting. For most dogs, an air temperature of over 80 degrees is too hot for hiking in the desert. A dog's normal temperature ranges from 99 to 102 degrees. Over 104 signals heat stress, over 105 registers heat exhaustion, and over 106 signals heatstroke. At this point, emergency veterinary care is required.

Therefore, it is important to monitor your dog's behavior for signs of heat stress: panting that is becoming more intense, shade-seeking behavior, or an unwillingness to rise. These are signs that you need to slow your hike, find or create shade, and cool your dog. Cooling techniques include pouring cool water over his head and body and applying ice packs under the front legs. Cooling mats, vests, and collars are also beneficial.

The McDowell Sonoran Preserve is a wondrous place for humans and pets to explore during the summer. However, an ounce of prevention is worth a pound of cure! Therefore, adjust your hike plans to summer conditions before you get on the trail.

Monitoring and Preserving Important Cultural Sites

By Joe Nychay,
McDowell Sonoran Conservancy Lead Steward

This rock formation, now called Cathedral Rock, is believed to have been used as temporary shelter by Archaic and Hohokam people while they moved through the area gathering food. Photo by Dennis Eckel

When spending time enjoying the beauty of Scottsdale's McDowell Sonoran Preserve with its amazing rock formations, diverse plant life, and fascinating wildlife, it is sometimes easy to forget that this area also has a rich human history. For many centuries indigenous people, settlers, ranchers, farmers, and the U.S. military have lived on or passed through this part of the Sonoran Desert, leaving their mark on this unique land.

This grinding area at the base of Cathedral Rock is believed to have been used by the Archaic/Hohokam people for grinding bean pods into flour. Photo by Dennis Eckel

As part of the City of Scottsdale's long-term planning for the Preserve, the consultant firm Logan Simpson completed and presented the McDowell Sonoran Preserve Cultural Resources Master Plan in June 2016. Among its recommendations, the plan called for the development and implementation of a volunteer stewardship program to routinely monitor and report on culturally important locations within the boundaries of the Preserve.

The recommendations contained in the Preserve's cultural resources plan mirror those of the Arizona Site Steward Program, developed by former Governor Bruce Babbitt and his Archaeological Advisory Commission in 1985 to support the protection of cultural sites on public land. Administered by Arizona State Parks in conjunction with the State Historic Preservation Office (SHPO), it now encompasses the entire state and has over 30 local, state, federal and nonprofit partners, including the City of Scottsdale, and the McDowell Sonoran Conservancy. Its chief objective is to report any natural deterioration, destruction, or vandalism to these prehistory and historic archaeological sites to land managers. The mission also involves public awareness and education as well as outreach activities.

Balanced Rock is very popular with people who visit the Preserve now and was likely visited by the Archaic and Hohokam people who traveled through the area until about 1450 AD. Photo by Dennis Eckel

The McDowell Sonoran Conservancy has partnered with the City of Scottsdale and Arizona State Parks to establish a team of Site Stewards who are tasked with the ongoing monitoring and evaluation of these cultural sites. Site Stewards in the Conservancy's PastFinder Program will establish a baseline report on the sites and visit them on a regular basis to assess their condition and to identify any potential threat to their long-term preservation. The Site Steward program is operating as part of the state program.

PastFinder's, which is one of nine Conservancy programs, has a mission to collect, preserve, interpret, and disseminate historical information about the McDowell Mountains and their surrounding area. Thus, the program is well-suited to take the lead in implementing this project. PastFinders have studied Archaic and Hohokam cultures, mining in the McDowells, ranching, local military presence, and the historical impact of women who have lived in the area. These experiences have made PastFinders the ideal group for implementing the Site Steward program in the Preserve.

Brown's Ranch is a fine example of an Arizona cattle ranch and homestead that began operation in the early 1900s. Photo by Dennis Eckel

Site Stewards completed a training program conducted by Arizona State Parks that included both classroom and field training. Some of the subjects covered were Arizona State and Federal Archaeological and Preservation Laws, Site Protocol, Cultural Sensitivity, Identifying Damage and Vandalism and Reporting Site Status. The individuals who completed the training were certified by Arizona State Parks and are now qualified to work as Site Stewards, both within the Preserve and outside of it.

The initial sites to be monitored in the program are located in the northern part of the Preserve. Most of these sites are intentionally not accessible via the established trail system but some are available to be accessed by the public. Visitors can use established trails to visit the Cathedral Rock and Balanced Rock sites. The Corral Trail can be used to go through the Brown's Ranch site but all off-trail access to any site is strictly prohibited.

The long-term goal of the Site Steward program is to add additional sites over time and ultimately cover the entirety of the Preserve. The hope is that these culturally important sites can remain intact and protected as part of the rich human history of the McDowell Mountains.

What Did You See Today?

By Dennis Eckel, McDowell Sonoran Conservancy Steward, and Susan Matthews, McDowell Sonoran Conservancy Lead Steward. Photography by Dennis Eckel and Art Ranz

Even the youngest visitors to the McDowell Sonoran Preserve take delight in its biodiversity and the majesty of the mountains. They are intrigued by little animal holes and notice the colors of butterflies. They love the breezes making their way between large boulders. Some get lucky and are offered a surprise horse ride.

As these children finished their hikes, we asked them what they saw. Their answers remind us to pause, take in our surroundings, and enjoy the beauty of the desert.

Isabella, age 6, from Florida

"I saw little holes. Scorpions live in the holes, but I didn't see one.

I went riding on a horse. The lady offered it to me. The horse was named Rosie. I also touched the horse.

I'm not sure I have a favorite thing. I like a lot of stuff."

Talitha, age 9, from Illinois

"I saw cactus and butterflies.

Some butterflies were orange and brown. Others were black and blue."

I saw red flowers."

Emilie, age 10, from Connecticut

"I saw some lizards.

We went to Cathedral Rock. There were two rocks tilted in and there was a lot of wind.

We saw purple flowers on a little cactus. The really tall cactus are called Saguaro!

I like the hiking and nice weather. I liked the trail. It was easy but longer."

Will, age 4, from Arizona

I liked the spiders in the ground.
I was looking for dinosaurs, but didn't find any.

Frances, from Connecticut

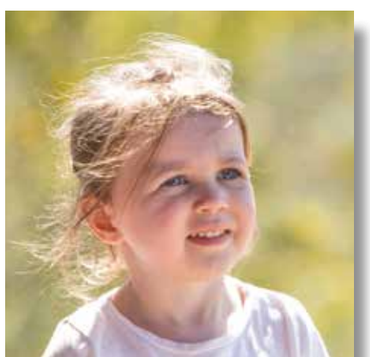
" I hiked to Cathedral Rock where I saw flowers and cactus that were so tall.

It was windy. I liked it (the wind) because it was hot."

Ottilie, age 3, from Arizona

"I saw two lizards and some butterflies.

I saw a really big cactus. "



Mateo, age 6, from Illinois

"I saw a bunch of cactuses. It was like different cactus arms, and they let out some more. They kind of look like bushes.

I only know the barrel cactus.

I did see desert holes. "

Cooper, age 7, from Arizona

"I saw lots of rocks and holes in the ground. I think snakes lived there.

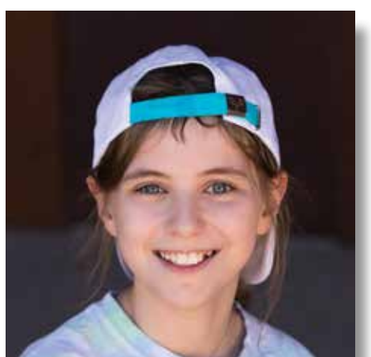
I saw birds in the holes in the cactus."

Lila, age 11, from Ohio

"The animals are my favorite – snakes and spiders. I saw a lot of lizards and I saw birds sitting on the cactus.

I learned how important it is to drink a lot of water.

The desert makes me feel hot."



Avery, age 8, from Wisconsin

"I saw cactuses and they were all different sizes. Some were taller than me. Mostly the little ones had flowers. I saw a lot of rocks and they were really large. I also saw lots and lots of sand.

I saw a grasshopper.

My favorite thing was seeing the wood inside the cactus, and that's really cool. I saw some cactus skeletons."

Cloe, age 5, from Arizona

"There were a lot of crystals. I found them on the hills.

I saw lots of bees that were looking for me.

The bees take the pollen and put it around other flowers. I saw pretty flowers and pretty rocks that were kind of pink."

Felicity, age 9, from Arizona

I saw a lot of pretty flowers

I want to go back and ride my bike there.

I liked beautiful horses on the trail.

Justin, age 8, from Arizona

"To be completely honest with you, my favorite part about the desert is the mountains. I love to wake up and see the mountains. And mountains don't hurt you as much as cactus do.

What I like about hiking is that it feels like you're inside a mountain.

I like going on different paths and looking for crystals."

Redman, age 9, from California

"I learned about desert wildlife and how the ecosystem works.

There are lots of parts. Each is special and they all are critical to how the ecosystem works.

You can use plants and animals to survive. Some have very good nutrition."

Blake, age 11, from California

"I saw a lot of cacti. A lot of rocks. We saw some cacti that had flowers on them. I saw a lot of flies.

I think the desert is really cool and deserty.

The best thing is the really giant cactus. Definitely around 32 feet."

Quinn, age 10, from Illinois

"We hiked Saguaro Trail and saw a lot of quartz and cactus.

We saw flowers on the smaller cactus. I saw pink and yellow flowers. The yellow was probably my favorite.

I saw three lizards. They were really fast.

My favorite thing was all the rocks! Because I want to be a geologist!"

Verna, age 11, from California

Hike on the Bajada Trail-

"I learned that Ironwoods can live up to 600 years.

Rattlesnakes have several stages of defense before biting you. And saguaro need to be 50-75 years old before they bloom.

I saw lizards and bugs. I think they were flies or bees."

The Preserve's Cutest Ambassadors

By Gina Clark, McDowell Sonoran Conservancy Lead Steward

Mini ambassadors and human trailhead ambassadors prepare to greet Preserve visitors, make them feel welcome, and provide an interesting ice-breaker to start conversations about hiking and biking in the Preserve. Photo by Dennis Eckel

McDowell Sonoran Conservancy ambassadors volunteer thousands of hours each year to help visitors have a safe, rewarding, and enjoyable time in Scottsdale's McDowell Sonoran Preserve. These ambassadors, wearing Conservancy "blue shirts," greet visitors at trailheads and on the trails. Without a doubt, our cutest Preserve ambassadors come in mini sizes.

Ambassadors Mazy, Dolly, and Buddy are miniature horses while Boone and Josie are miniature donkeys. They patrol the Preserve with their owner and Conservancy steward Terry Holmes-Stecyk. What the minis lack in stature they make up for in personality.

Preserve visitors of all ages enjoy meeting and learning about mini ambassadors like Josie, who is a mini donkey. Photo by Dennis Eckel

"Boone was the first mini ambassador, taking Pathfinder shifts with me at Granite Mountain and Brown's Ranch Trailheads. I found by having Boone with me, I could better engage with visitors to the Preserve. The minis offer a unique engagement for visitors, making their experiences in the Preserve special," says Terry.

The minis, at times all five of them, can be found patrolling trails at Brown's Ranch and Granite Mountain Trailheads with Terry and fellow stewards. Terry explains, "The minis are small and adorable and attract visitors, young and old alike." All the minis sport blue vests for their important work in the Preserve and Dolly often wears a tutu with her vest.

Terry Holmes-Stecyk, accompanied by Boone, her miniature donkey, helps a visitor choose a trail route that fits his interests and skills. The animals attract the attention of visitors and encourage interaction with human trailhead ambassadors. Photo by Dennis Eckel

Meeting mini ambassadors on the trails enhances the specialness of being in the Preserve for kids and can lead to a discussion with stewards about the similarities and differences between wildlife and domesticated animals. Photo by Dennis Eckel

Miniature horses are bred to resemble full-size horses but can be no taller than 38 inches when measured at the withers, the ridge between the shoulder blades to the ground. Miniature donkeys are a separate breed from donkeys and are native to the Mediterranean islands of Sicily and Sardinia. Miniature donkeys are no taller than 36 inches measured from the highest point of the shoulders to the ground.

Beyond their work in the Preserve, these mini ambassadors bring joy to children and adults in need, through their work as therapy minis for Tender Little Hearts Mini Tales and Assisted Equine Services, which Terry founded in 2019. Terry is an Equine Specialist, certified in the Eagala Model, the global standard for psychotherapy and personal development incorporating horses and donkeys. The minis are qualified therapy animals.

Terry focuses on therapy outreach for children and adults with special needs, development issues, disabilities, veterans with PTSD, and those in need of emotional relief therapy. Wearing their therapy vests, safety shoes, and potty bags these mini wonders ride elevators, traverse corridors, and even enter hospital rooms.

"The minis bring so much joy to people. The situations vary, from a senior with dementia recalling the farm they grew up on to a very sick patient feeling the love from a mini nuzzling a shoulder," remarks Terry. "When the minis visit, they are petted, brushed, and kissed by young and old alike. Dolly is often greeted by seniors singing "Hello Dolly."

The charity also promotes literacy and reading encouragement for children through Mini-Tales. Children read stories to the minis during library and school visits and may also view recorded books or read to the minis on the Tender Little Hearts website (www.tenderlittlehearts.org).

Sometimes after a heart-wrenching volunteer visit, Terry and the minis will head to the Preserve to decompress. Terry has been a steward for many years, and she is passionate about sharing the wonders of the Sonoran Desert with visitors. "I know what a gift the desert is, and when Scottsdale purchased land for the Preserve, I wanted to be a part of getting others to appreciate its beauty."

With guidance from the interpretive signs, students have the opportunity to develop their observational skills and learn why the Sonoran Desert is such a special place. Photo courtesy of Scottsdale Unified School District

The New Bajada Explores Program

By Claire Musser,
McDowell Sonoran Conservancy Education Manager

The last two years have been difficult for us all, with the pandemic significantly impacting the learning taking place in our schools. Students have struggled with remote learning and being back in the classroom has highlighted the gaps in student knowledge and understanding. Not to be discouraged, the Scottsdale Unified School District (SUSD) decided to take on the challenge to increase student attainment in science and seek ways to re-engage and inspire their students.

In Fall 2021, Johanna Kaiser, the Science Academic Coach from the Scottsdale Unified School District, reached out to the education staff at the McDowell Sonoran Conservancy, asking if we might work with them to design an active learning experience in science for 7th graders. As a result, the Conservancy collaborated with seven middle school teachers to develop a field trip program that would address some of the Arizona academic standards that have been difficult to meet via online learning. The field trips took place across six days, between February and March 2022, with over 650 7th-grade students visiting the Bajada Trail at the Gateway Trailhead in Scottsdale's McDowell Sonoran Preserve. With the support and guidance of Conservancy staff, stewards, and teachers, students

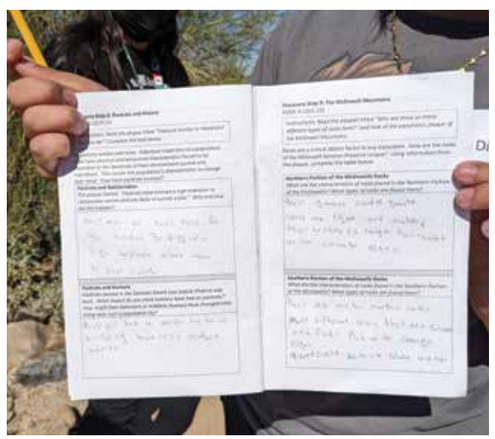
The fieldwork requires students to engage with the interpretive sign in order to better understand the complexities of the Sonoran Desert. Photo courtesy of Scottsdale Unified School District

Learning about the desert while in the desert is learning in a living lab. Students came away with a greater appreciation of this unique ecosystem and their own place in the Sonoran Desert. Photo courtesy of Scottsdale Unified School District

were given the opportunity to apply their knowledge on a citizen-science expedition. Students spent several hours collecting environmental data, responding to the interpretive signage, and learning about the diversity of life in the Sonoran Desert.

Marsha Lipps, a Legacy steward with the Conservancy who joined the students for several sessions, commented "They were very excited to be out in the Preserve! I was impressed at how well prepared the middle schoolers were at functioning in small groups to complete their projects. It was awesome to see them be self-sufficient, enthusiastic, and taking responsibility for their learning."

The Conservancy's mission is to preserve and advance natural open space through science, education, and stewardship. Both the Conservancy and SUSD are delighted with the success of this project, and how it strongly embodies the Conservancy's mission and supports our community. Johanna Kaiser says, "This partnership has pushed forward our shared goals. When organizations support each other, the students win."



Students used their field notebooks to record their observations and document this unique learning experience. Photo courtesy of Scottsdale Unified School District

The 7th-grade field trip is on the schedule for the next school year and will now be known as our Bajada Explores program. The Conservancy and SUSD are looking forward to collaborating on additional projects and sharing the beauty of the Preserve with future generations. Programs will be expanded to include high school students, after-school clubs, and teacher professional development. The Conservancy and SUSD also plan to expand their reach by inviting other organizations to participate and offering more opportunities to students across all grade levels and the valley.

Johanna Kaiser, Scottsdale Unified School District Science Coach, and Melanie Tluczek, McDowell Sonoran Conservancy Director of Science and Education, were part of the team that collaborated to create the Bajada Explores Program. Photo courtesy of Scottsdale Unified School District

Goldie Brown was known to ride her horse throughout the Upper Ranch area, which is now part of the McDowell Sonoran Preserve. Photo courtesy of the Scottsdale Historical Society

Preserve Equestrians Reflect Scottsdale's History

By Monique Wylde Williams,
McDowell Sonoran Conservancy Steward

In 1947, the Scottsdale Chamber of Commerce established a western design theme for downtown Scottsdale to celebrate the town's western heritage, promoting the area as "The West's Most Western Town." In 1951, with a population of about 2,000 residents living within one square mile of the downtown area, the city was incorporated and adopted the Chamber's slogan as Scottsdale's official motto.

View of Upper DC Ranch in operation. Photo courtesy of the Scottsdale Historical Society

This moniker was a huge nod to the ongoing cattle ranching that comprised a significant portion of the early economic base of Scottsdale.

Horses were essential to the success of the ranches and were used to oversee the vast ranch land, conduct cattle drives, and carry provisions to cowboys working distant areas, among other tasks. The largest operation, DC Ranch run by E.E. Brown, reached its peak in 1950 with over 44,000 acres and 4,000 head of cattle. Much of the current McDowell Sonoran Preserve, now owned by the City of Scottsdale, was part of the original DC Ranch. The northern area was known as the "Upper Ranch" and focused on the ranch's cattle operations. Today, visitors get a sense of that history by seeing from the trails the remains of fencing, a cistern, a chicken coop, and foundations for outbuildings still visible in some of the old corral areas near the base of Brown's Mountain, near where E.E. Brown and his second wife, Goldie, resided in a red brick ranch house, whose remnants are not visible from the trail. More remains, including another cistern, fencing, and gates at the Tom's Thumb and Fraesfield Trailheads give visitors an idea of the scope of the ranch land.

This storied time gone by is brought to life daily today by the equestrians who frequent the trails of the Preserve. Every time I ride my horses in the Preserve, the ranching history of this land is ever-present in my mind. I sometimes picture "Big Brownie," as E.E. Brown was known, on his 17-hand sorrel horse "Star," overseeing a roundup of cattle in one of the corral areas accessible from the current Brown's Ranch Trailhead. I imagine Goldie Brown, with her hat tipped to the side, astride her trusty black and white paint horse as she heads out to check on the progress of a branding that might go on into the night under the light of a full moon. I feel so fortunate to experience this special landscape on the same trails and in much the same pristine condition as it was 70 or 80 years ago.

Of course, nowadays, the presence of equestrians in the Preserve isn't due to the need to do the grueling work of those early ranching years. We trailer our equines to the trailhead during daylight hours, and our purpose in being there is for recreation. We proudly share the trails with cyclists and hikers, and, when remembering the history of this place, I am often struck by the irony that a cyclist or hiker at the ranch back in the day would have stood out as equally unusual to Goldie and Big Brownie as equestrians are perceived by many visitors today.

Horses were essential to a successful cattle drive, like this one headed west on Bell Rd., around 1920. Photo courtesy of the Scottsdale Historical Society

The McDowell Sonoran Conservancy and the City of Scottsdale continue to educate visitors on sharing the trails with various user groups. Because of the consideration given to equestrians by others on the trails, the Preserve remains a top destination for horseback riders, who lend a richness to the overall experience of this special place by keeping the western ranching history alive as they ride the Preserve trails.

Scottsdale's desire to remain a horse-centered community was reaffirmed with the City Council voting on March 5, 2019, to maintain Scottsdale's seal of the horse and cowboy on the City's flag. Today, the seal adorns everything from City manhole covers to announcements of major public events.

Through the continuation of long-standing traditions such as the Parada del Sol, the Hashknife Pony Express US Mail deliveries, the Arabian and Quarter Horse Shows, and over 90 other equestrian events at WestWorld of Scottsdale in each of the past few years, and in welcoming the ongoing presence of horses on the trails in our natural spaces, we can all have a part in preserving Scottsdale's roots as the West's Most Western Town. Enjoy the ride!

Monsoon Rain Through the Eyes of Citizen Scientists

Edited by Won Fogel,
McDowell Sonoran Conservancy Master Steward, and Mary Fastiggi, McDowell Sonoran Conservancy Restoration Manager

Photo by Dennis Eckel

As summer approaches in the Sonoran Desert, our minds turn with anticipation toward monsoon rain which brings well-needed support for both plants and animals during the hot summer months. For the McDowell Sonoran Conservancy's scientific monitoring projects, monsoon rains dictate the timeline for many activities. Our editorial team interviewed several citizen scientists asking: "How do the monsoon rains impact the plants and animals you study?"

Debbie Langenfeld, Bat Project

"Most of Arizona's 28 species of bats are predators of night-flying insects such as beetles, moths, and mosquitoes. The longer daylight hours, higher humidity, warmer temperatures, and increased rainfall characteristic of the monsoon season trigger an explosion of insect populations. When it rains, it pours "snacks" for these hungry bats! Incredibly, it is thought that some species of insect-eating bats can devour hundreds of insects and half their body weight in a night. This is not just a blessing for these hungry bats but for us humans as well. Thank you bats!"

*These are pallid bats (*Antrozous pallidus*), which are insectivores, but they occasionally consume nectar, which is why these bats are covered in pollen. They're excellent pollinators. Photo by Scott Sprague*

Rob Hallagan, Tortoise Project

"Monsoon has a dramatic effect on the Sonoran Desert tortoise (*Gopherus marafkai*). The monsoon humidity and rains signal the tortoises to emerge to feed, bask and breed. In fact, they will consume most of their food and water for the entire year during this period."

A rare sight in the Preserve - a tortoise basking in the sun, perhaps thinking about the water she now has available to drink because of a recent monsoon. Photo by Won Fogel

Steve Jones, Botanist

"Monsoons induce growth of many native grasses and shrubs that flower in the fall. Among the annual grass species showing remarkable growth this year were six-weeks three-awn (*Aristida adscensionis*), six-weeks grama (*Bouteloua barbata*), and little-seed muhly (*Muhlenbergia microsperma*). Given the relatively warm winter, both six-weeks three-awn and little-seed muhly were still green and even flowering well into the 2022 spring season!

Six-weeks gama is a native grass found in southern Arizona. Its stems can be 12" – 30" in length. It grows best in dry, disturbed ground, and is often seen along roadsides. Its seeds are eaten by birds and small animals like the kangaroo rat. Photo by Steve Jones

Besides the summer annual grasses, several shrubby species flower with the monsoon including turpentine bush (*Ericameria laricifolia*), broom snakeweed (*Gutierrezia sarothrae*), and Wright's buckwheat (*Eriogonum wrightii*). All provide nectar for butterflies and other flying insects during the summer as well as fall food for seed-eating birds and other creatures."

Paul Staker, Invasive Plant Project

"Although our monsoon rains are vital to our desert plant community, they can have a negative impact by promoting the growth of two invasive grasses, fountain grass (*Pennisetum setaceum*) and buffelgrass (*Pennisetum ciliare*). These grasses thrive with ample rain and can turn green and produce seeds multiple times per year when conditions are right. Studies by the National Phenology Network have shown that it is unlikely that this will occur if there is less than an inch of rain in a 24-day period, while there is a high likelihood if more than 1.7 inches fall in a similar timeframe. We experienced this during the last two years with very little new growth in fall 2020, while we had green buffelgrass for approximately 3 months after the higher-than-normal monsoon rains of summer 2021."

Fountain grass is often used in residential areas as an ornamental landscaping plant. Unfortunately, this plant is a very dangerous one to have in our environment. It increases the spread and intensity of fires, which causes severe damage to native desert plants, including cacti. Fire safety experts advise digging it out of our yards and aggressively removing it from our open spaces.

Tom Cecil, Bird Project Assistant

"The downpours from monsoons spur plant growth, insect cornucopia explodes, groundwater is replenished, and dry stream beds vital to many desert dwellers come alive. Many local birds delay nesting or nest a second time to take advantage of this short-term bounty."

During this time Mexican bird species wander up from the south on the west winds, while from the north come southbound migrants. Because of this, most birders prefer visiting Arizona during monsoon season. This "second spring" is also a time of the greatest diversity and abundance of hummingbirds (*Trochilidae*) and butterflies (*Papilionoidea*) as well as a welcome drop in temperature creating a jump in bird activity as soon as a storm passes."

*Verdin (*Auriparus Flaviceps*) are common to the Sonoran Desert, adapt well to temperature extremes, and do not migrate. Like some other desert birds, Verdin are likely to build their nests early in the year before the hottest summer temperatures arrive, but they also nest again in late summer if it rains, producing another brood of Verdin. Photo by Dennis Eckel*

Research is ongoing about how best to protect the flora and fauna of the immense Preserve. Photos by Dennis Eckel

Protecting the Preserve: Research Updates

Protecting natural open spaces requires a combination of science, education, and stewardship. The McDowell Sonoran Conservancy is conducting more than 15 scientific projects with the goal of understanding natural resources and what is needed to protect them now and in the future. Below are brief updates about some of these projects.

Bats

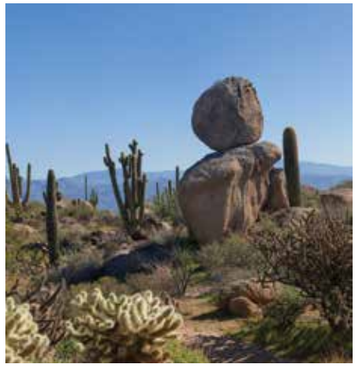
Bats (*Chiroptera*) provide critical ecosystem services. Most bats in Arizona feed mainly on insects, offering substantial pest control and potentially saving communities and farmers millions of dollars each year. Others feed on nectar and help pollinate plants, such as saguaros (*Carnegiea gigantea*) and agaves (*Agave*).

The Conservancy has identified 13 species of bats in Scottsdale's McDowell Sonoran Preserve. The latest, the Yuma myotis (*Myotis yumanensis*), was detected last year through acoustic monitoring. The Conservancy has also discovered that an old mine is a maternity roost for the Townsend's big-eared bat (*Corynorhinus townsendii*), a species with specialized roosting requirements that is highly susceptible to human disturbance. It is important to identify and protect maternity roosts because some species, like the Townsend's big-eared bat, may abandon their young if the roost is disturbed, which could significantly affect their population. The Conservancy's surveys show that the mine is used year-round by bats, which has implications for planning when human activities can occur in that area.

Arthropods

Ground-dwelling arthropods, like ants (*Formicidae*), many beetles (*Coleoptera*), and scorpions (*scorpions*), are "ecosystem engineers" because they decompose organic materials, alter soil structure, and maintain or improve water filtration. However, some arthropod groups have experienced population losses between 30 and 60% over the last 40 years. Thus, monitoring these animals can be valuable in detecting changes in ecosystem function.

Since 2012, the Conservancy has been collecting ground-dwelling arthropods at sites throughout the Preserve. The sampling design enables the comparison of variation due to natural fluctuations versus human-caused changes. A recent analysis of the data by research collaborators at Northern Arizona University indicates that the Preserve's ground-dwelling arthropod community responds strongly to temperature and rainfall. Still, there is little difference between arthropods sampled in the interior



versus those near the border of the Preserve. These findings suggest that development near the Preserve's edge may have minimal impact on these organisms but that they may be susceptible to climatic changes.

Phenology

Phenology refers to the timing of life cycle events in plants and animals, like leafing and flowering, hibernation and migration. The timing of these events affects the ecosystem, for example, when food is available for animals. Phenology also affects people, from food production to seasonal allergies. Understanding the timing of these events is essential for managing natural and human systems.

In 2017, the Conservancy began collecting phenological data at three Preserve sites twice a week. Being monitored are eight plant species – saguaro (*Carnegiea*), buckhorn cholla (*Cylindropuntia acanthocarpa*), jojoba (*Simmondsia chinensis*), soap tree yucca (*Yucca elata*), desert senna (*Senna covesii*), velvet mesquite (*Prosopis velutina*), California barrel cactus (*Ferocactus cylindraceus*), and ocotillo (*Fouquieria splendens*). Also being monitored are white-winged doves (*Zenaida asiatica*), which rely on saguaros for food. The Conservancy is sharing its observations with the USA National Phenology Network so that regional, national, and global trends can be assessed to indicate how our world is responding to climatic impacts.

Ecological Restoration of Biocrust

Biocrust is the living "skin" of the desert surface that minimizes dust and erosion while providing critical benefits to the ecosystem. Once trampled, it takes a long time to regrow on its own. In the meantime, we lose all of the benefits that biocrust provides.

The Conservancy is part of an innovative research team that is testing methods to restore biocrust more quickly. The team salvaged biocrusts from Fraesfield, Granite Mountain, and Pima Dynamite Trailheads prior to the construction of new facilities. In 2019, it planted the cultivated biocrusts into field plots near the Granite Mountain Trailhead to test different reintroduction methods. Findings indicate that methods of keeping biocrusts in place, like pellets and jute, were helpful early on. Now there is establishment across all treatments, including controls. There have been declines in plants and biocrust in the plots following a major drought. The research team is in the process of analyzing 2022 data for new insights.

Visit www.mcdowellsonoran.org for more information about these and other scientific projects.

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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.