



MCDOWELL  
SONORAN  
CONSERVANCY

# Mountain Lines

MAGAZINE OF THE MCDOWELL SONORAN CONSERVANCY WINTER 2023







Justin Owen, CNAP

These cooler winter months make us all realize why the valley is such an amazing place to live! We are so fortunate to be able to spend more time in nature and focus on both our physical and mental well-being. Maybe you can join us for one of our walks, hikes, bike rides, or trailhead events so we can experience together. You can see all of our upcoming events on our online calendar - <https://www.mcdowellsonoran.org/event>.

Educating across generations helps ensure future generations

love natural open spaces as much as we do. Our Preserve Pioneers adopted a great tactic in the early days to take school children into what is now the Preserve to help them understand the importance of natural open spaces and the role we all play in protecting them. This edition includes an exciting new project we are working on with Scottsdale School District (SUSD) called "Living Labs". We are working with SUSD on a pilot project to provide students with hands-on opportunities to collect, monitor, and analyze data on campus. We expect this to roll out across all SUSD High Schools and beyond.

Our article on mountain biking includes a line that applies to all of us. Remember, whenever you're out there, take the time to stop and look around! It's not about how many miles you covered, how much elevation you conquered, or how fast you went; it's about your experiences in this incredible, natural place.

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

### BOARD OF DIRECTORS

Shirley Baum, Chair  
Margie Traylor, Vice Chair  
Trish Stark, Treasurer  
Andrea Aker, Secretary

Cynthia Bozik	Nick Noonan
Travis Childs	Art Ranz
Karen Chuchard	Jane Rau
John DeWulf	Mike Savastio
Doug Diehl	Peter Schlosser, PhD
Diane Enos	John White
Jalina Kerr	Mark Winkleman
Don Martin	Melinda Xanthos

### CORPORATE ADVISORY BOARD

Tony Bolazina	Todd LaPorte
Bernard Clark	Tammy McLeod, PhD
Bennett Dorrance	Mike Tully

### MCDOWELL SONORAN CONSERVANCY STAFF

Chief Executive Officer  
Justin Owen, CNAP

Chief Operating Officer  
Jakki Casey

Director of Development  
Vickie McWatters

Director of Science and Education  
Melanie Tluczek

Senior Development Manager  
Sue Force

Restoration Manager  
Mary Fastiggi

Education Manager  
Claire Musser

Senior Program Manager  
Brian Whitehead

Biodiversity Manager  
Jessie Dwyer

Development Manager  
Tyler Chandler

Program and Events Manager  
Robin Sprague

Education Coordinator  
Jen Bruening

Communications Coordinator  
Trevor Heffner

Science Coordinator  
Ayla Markowski

Executive Administrator  
Michelle McCreary

Administrative Coordinator  
Sydnee Glass

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

Barbara Montgomery-Ratcliff, Editor  
McDowell Sonoran Conservancy  
Master Steward

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



Mountain Lions are very shy, making it difficult to take their photograph in the wild during daylight. This photograph was taken at the Phoenix Zoo. Photo by Dennis Eckel

## Big Cats in the Preserve

By Ayla Markowski, McDowell Sonoran Conservancy Science Coordinator

When thinking about the cryptic, mysterious species in Scottsdale's McDowell Sonoran Preserve, most of us envision those on the smaller side: desert tortoises, Gila monsters, and Townsend's big-eared bats are some that come to mind. These are wildlife that can easily hide in plain sight and emerge from their shelters strategically, only engaging in interactions with others as they please. However, cryptic

species are not limited to those on the smaller side.

Mountain lions (*Puma concolor*), also known as pumas, cougars, and panthers, are one of the most elusive, yet sizeable, wildlife species found in the Preserve. From the tip of the nose to the tip of the tail, adults can grow to be more than 8 feet long and weigh 150 pounds. Adult coloration can range from tan to grey and cubs are usually covered in black-brown spots.

Historically, mountain lions inhabited the United States from coast-to-coast. Today, they reside in 14 western states, including Arizona. Mountain lions prefer dense undergrowth to keep themselves hidden; however, they can be found from sea level to the alpine, in humid coastal forests, woodlands, arid hillsides, and deserts. In the Preserve, mountain lions may lurk in rocky outcrops, brushy canyons, and even mineshafts.



## 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:



Taking on the technical challenges near Scorpion Trail. Photo by Dennis Eckel

## Table of Contents

Big Cats in the Preserve .....	3
Living Laboratories and Inquiry-based Learning .....	8
What Is Your Trail Etiquette IQ? .....	10
A Gateway to Great Hiking.....	12
Getting Ready to Ride.....	14
John Gregory Bourke – Soldier, Scholar, Ethnographer .....	18
New Signage Coming to Brown's Ranch Trailhead .....	20
Return of the McDowell Sonoran Preserve Field Guide!.....	22
The Conservancy's Role in Regional Conservation..	24
Above and Beyond: Connecting Outside of the Preserve.....	26



Generally, mountain lions can be found wherever there is deer present. Strategic hunters, mountain lions are most active between dusk and dawn, yet, it would not be unusual to spot one out during the daytime, particularly if it has been disturbed. They are ambush predators, taking down their prey from behind, oftentimes after stalking for a long while. In the Sonoran Desert, mule deer are a preferred target, but javelina, bighorn sheep, rabbits, coyotes, and livestock are among their prey as well.

After a hunt, mountain lions often cannot finish their meal in one sitting due to the overexertion of the chase. They typically drag the meal away from the kill site to another area and cover it with debris to protect the carcass from others looking for an easy meal. Underneath the Sonoran's desert sun, this may serve to reduce spoilage as well. If you come across a fresh kill site, you should not linger because the mountain lion may still be in the area.

Solitary and territorial, mountain lions typically do not engage with others of their species. Unlike other big cats, they cannot roar and instead growl, shriek, hiss, and purr – similar to the domestic housecat. To mark their territory, mountain lions will make distinct claw marks in trees or urinate/drop feces in their area. Parenting and mating are the only instances where mountain lions socialize. Otherwise, mountain lions will fight each other, often to the death, to defend their territories from intruding and/or transient individuals.

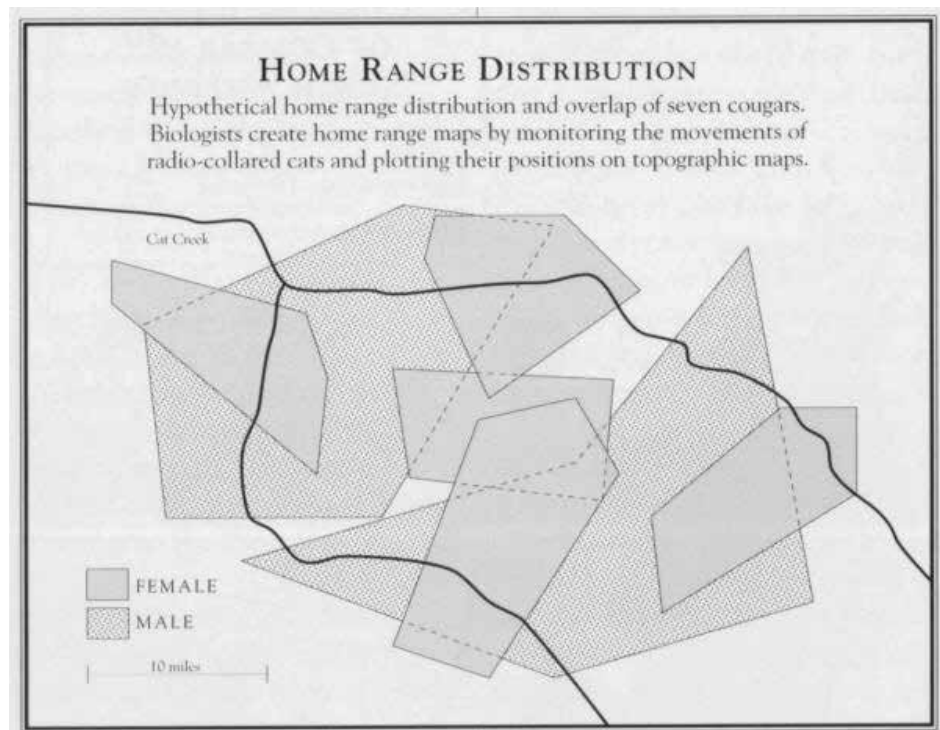
Mating can occur at any point in the year with a typical gestation period



Female mountain lions give birth to three to four cubs, who stay with her for up to two years. Between one and two years of age, cubs leave their mother to establish their own territorial range. Photo by a Conservancy camera positioned in the Preserve.

of approximately 90 days. Cubs reside with their mothers in one home range until they are about two years of age when they become fully independent and begin the perilous journey to

establish their own home range. While mountain lions are territorial, their home ranges are not entirely exclusionary. Home ranges often overlap between males and females, but never



Sketch courtesy of The Mountain Lion Foundation.

between two or more males. In the event of territory overlap, mountain lions keep clear of one another in "mutual avoidance" accomplished through sight and smell. These ranges are quite vast – an adult male's home range can span more than 100 square miles, while females typically have a smaller range between 20 and 60 square miles.

You may be wondering if mountain lions are dangerous. To their prey, yes, but to people? Rarely. When in the Preserve, it is important to remember that you are in wildlife territory. To avoid startling an animal, it is best to hike or walk in a group, making noise by talking and laughing to announce your presence. Most wildlife wants to avoid human interaction. Closely watch and supervise children and keep dogs on a 6' lease. In the unlikely event you encounter a mountain lion while recreating, it is best to do all you can to appear larger. Open your jacket, raise your arms, and speak loudly and firmly at the mountain lion. Do not approach the mountain lion, rather stand your ground. Running will trigger the mountain lion's instinct to pursue and attack. Do not crouch or bend over. A standing human looks less like a mountain lion's natural prey. Most mountain lions are trying to avoid confrontation, so give it the opportunity to escape.

More common than the mountain lion, bobcats (*Lynx rufus*) reside across North America, including Arizona and the Preserve. At first glance, a bobcat may look like a particularly large housecat. However, at over two



Bobcats are often spotted in residential areas, where they sometimes enjoy the comfort of shaded patios and their own private hunting grounds. This photo was taken in a neighborhood contiguous to the Preserve. Photo by Dennis Eckel

feet in length and at a maximum of 30 pounds, bobcats are twice as long and heavy as the average housecat. A particularly distinguishable characteristic of bobcats is the prominent, pointed tufts of fur on the tips of their ears. Their long legs and large pad-like paws have black bars, while their tail is black on the top and white underneath.

Similar to mountain lions, bobcats are crepuscular – most active at dawn and dusk. A bobcat's shelter usually changes on a daily basis. A female with kittens will have several dens she frequents on a rotating basis to keep her young safe.

Human interactions with bobcats are much more common than with other big cat species. Bobcats are bolder than their larger counterparts and can be spotted in Arizona

residents' backyards every so often. If a bobcat meanders into a yard, it is unlikely they are doing so to harm you. Typically, they have observed that an area is particularly abundant in wildlife or resources such as water (for instance, there is a water feature on the property) and see it as an opportunity for an exclusive hunting ground. Rooftops, patios, and the spaces underneath decks are favorite bobcat residences. If you notice a bobcat frequenting your yard, it's prudent to discourage it from establishing permanent residency. Remember, it is always better to keep wildlife wild. Successful deterrent is most reliably accomplished by scaring off the bobcat with loud noises. An exception to the rule is if you notice kittens anywhere on your property. In this event, contact the Arizona





Game and Fish Department (AZGAF) for advice about how to proceed.

Most of the information that researchers have learned about big cats has been through passive monitoring, such as wildlife camera deployment and radio-collaring programs, which are the safest ways researchers can study these animals. A number of organizations in Arizona, including the McDowell

*Bobcat on the move. Notice the long legs with their black bands and the black hair on the tips of the ears. Photo by a Conservancy camera positioned in the Preserve.*



*Bobcat mother with two kittens, learning how to be safe in the wild. Note the black ears with white markings on the backs. The white markings are called "false eyes," to deceive potential predators. Some scientists think that the white markings also help kittens follow their mother in dim light.*

Sonoran Conservancy, monitor big cat populations, especially in relation to urbanization. The Conservancy will soon be deploying wildlife cameras at 60 sites across the Preserve for a new study with the goal of monitoring and maintaining wildlife populations over time. The cameras are triggered by motion and heat, which enables researchers to understand how wildlife uses the landscape without disturbing them or altering their behavior. Through this project, we will work to identify and mitigate the human factors that negatively impact mountain lion and bobcat populations in the Preserve and the broader region.

Maintaining mountain lion and bobcat populations in the Preserve is important to the Preserve's ecosystem. As predators, these cats help keep wildlife populations in balance. For instance, mountain lions average a kill approximately every 6-12 days. Since the preferred prey is deer, these regular kills keep deer populations on the move so they are less likely to overgraze an area. The result is increased habitat for other species like songbirds. In these and many more ways, mountain lions and bobcats contribute to the ecological health of our Preserve. ▲▲



## 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](https://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](https://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.

## Hats On.

We've got your head covered.

Visit [conservancymerchandise.org](https://conservancymerchandise.org) to purchase your swag today!



MCDOWELL  
SONORAN  
CONSERVANCY



[mcdowellsonoran.org](https://mcdowellsonoran.org) | [info@mcdowellsonoran.org](mailto:info@mcdowellsonoran.org)





A restoration plot in the Preserve at the early stages of study. Photo by Mary Fastiggi

## Living Laboratories and Inquiry-based Learning

By Tyler Chandler, McDowell Sonoran Conservancy Development Manager

The McDowell Sonoran Conservancy, the Scottsdale Unified School District, and Scottsdale Community College are embarking on a pilot learning project for high school students based on inquiry-based science. This approach to teaching science differs from a top-down approach, where teachers provide information to students, offering “what is known.” In comparison, inquiry-based science is student-centered, with the teacher acting as a facilitator of learning. There is more emphasis on “how do we know” and less on “what

do we know.” Students benefit from opportunities to investigate a problem, search for possible solutions, make observations, ask questions, test out ideas, think creatively, and use their intuition. In other words, with inquiry-based science, students actually do science. This approach challenges students’ thinking as they investigate scientifically orientated questions by collecting evidence, evaluating explanations, and communicating and justifying their decisions.

Central to our pilot project is a living laboratory (living lab), a real-

world location or site where individuals (in this case, students and teachers) work together to explore, experiment, and evaluate ideas that address local challenges. Our living labs pilot project will focus on the issues of land degradation, invasive species management, and the effectiveness of various restoration methods. Students will use clear scientific protocols and gain a deeper understanding of why scientists adhere to such specific guidelines. Students will consider how rigorous protocols facilitate the transfer of knowledge by ensuring that experiments can be

replicated by other researchers and data can be contributed to broader regional efforts.

Saguaro High School in Scottsdale will be the location of this first living lab. The project will begin by familiarizing students with the environment around them by exploring forces that lead to a desert’s formation, the physical and behavioral adaptations of plants and animals to cope with these extremes, and why the Sonoran Desert is incredibly unique and biodiverse.

After gaining this crucial foundational knowledge, students will visit the Conservancy’s restoration plots in the McDowell Sonoran Preserve. With the guidance of the Conservancy’s Restoration Manager Mary Fastiggi, students will delve into various restoration methods. They will learn and use the same rigorous RestoreNet protocols implemented by the Conservancy, including standards for site selection, material requirements, experiment installation, data collecting, and monitoring procedures.

Equipped with these skills, students will return to their high school campus restoration site—their living lab—to begin collecting data on the site’s current condition by analyzing soil samples, recording ground cover, assessing environmental factors such as noise pollution or proximity to high-traffic areas, and identifying bird, arthropod, and plant species by using iNaturalist.

Once pre-restoration data is collected, students will design their own restoration plan, choosing which seed mixes and treatment methods to

explore while adhering to the strict protocols of the scientific community. Conservancy staff and partners will remain active participants by guiding students, asking questions, and providing feedback so students understand how they are progressing. In all cases, the driving purpose of the living lab will remain the same – creating a space for curiosity, imagination, and inquiry.

When students engage in inquiry-based science, we give them a chance to drive their own exploration of the world. They have the opportunity to learn firsthand in a remarkable living lab, experiencing and discovering as they go. And that is what scientists do. ▲▲



Botanist Steve Jones analyzing the effectiveness of different seed mix treatments in the Preserve. Photo by Mary Fastiggi



The degraded land site at Saguaro High School, prior to restoration work. Students will assess soil, characteristics of existing ground cover, and environmental conditions before developing a restoration plan. Photo by Mary Fastiggi



# What Is Your Trail Etiquette IQ?

By Susan Matthews, McDowell Sonoran Conservancy Lead Steward



This biker is observing the rule that bikers must yield to horses and hikers. Photo by Lynne Russell

When you think of etiquette, you might first think of Emily Post and rules for polite society. You may think of business etiquette and guidelines for working together in a professional workplace. But if you're a trail user in the McDowell Sonoran Preserve, it's important to think of trail etiquette.

Trail etiquette comes down to this: how should we share the trails, so all users have an enjoyable and safe experience? To test your understanding of the rules of the trail, spend a few minutes taking this short quiz.

Answers are on page 27.

- Trail users should be:
  - Courteous
  - Cooperative
  - Communicative with others
  - All of the above
- On Preserve trails, trail etiquette tells us:
  - Hikers yield to equestrians
  - Bikers yield to both hikers and equestrians
  - While not required, hikers often step aside to allow bikers to go by
  - All of the above

3. Equestrians have the right of way because:

- Horses have monocular vision, usually seeing out of one eye at a time. This means they can get skittish when there's sudden movement.
- Most horse riders in the Preserve are amateurs
- Horses don't like to stop
- All of the above

4. If you're on your bike about to round a bend and your sight line is limited:

- Go faster to get around the bend quickly
  - Slow down and call out "biker coming" or some similar means of alert
  - Get off your bike and walk around the bend
  - Stop and turn around
5. If you're hiking with friends and are pausing to take in the views:
- Stay on the trail but be careful not to block other users
  - Stand about 2 feet off the trail to ensure the trail is clear
  - It's illegal to stop on trails, so keep moving
  - You should only stop if you're going to take a photo
6. If you're hiking with your dog:
- Use a leash if your dog doesn't respond well to voice commands
  - Use a leash when children or other dogs are approaching
  - Always keep your dog on a leash in the Preserve
  - You know your pet, and it's your choice when to use a leash

How can you learn more about trail rules? Pay attention to Preserve signs. Ask for clarifications from McDowell Sonoran Conservancy stewards in blue shirts. Look the rules up in Scottsdale's Code of Ordinances, Chapter 21, Article III (<http://bit.ly/COScode>).

The City of Scottsdale and the Conservancy also coordinate educational events called Share-the-Trails Days. Stewards are stationed in the parking lots, at the trailheads, and on the busy trails to review the rules and answer questions. These events provide helpful reminders about trail etiquette so we all can enjoy beautiful, natural spaces in a courteous and safe manner. ▲▲



When a biker approaches hikers, the biker should slow down or stop before getting to the hikers to avoid startling them or causing an accident. Once the hikers become aware of an approaching bike, they are likely to move aside. Photo by Jim Tillinghast



Bikers should always yield to horses, giving them as much room as possible to pass. It is helpful for the lead biker to ask the equestrians what they would like the bikers to do because horses' reactions to others on the trail vary. Photo by Lynne Russell



# A Gateway to Great Hiking

By Gary Dokes, McDowell Sonoran Lead Steward



The hike to Inspiration Point winds ever upward among saguaros and desert shrubs. Photo by Dennis Eckel

Gateway Trailhead is truly the gateway to the McDowell Sonoran Preserve. Because of its location in Scottsdale, it hosts many out-of-town visitors wishing to exercise outdoors and learn about the Sonoran Desert and the Preserve. It also attracts hikers, bikers, and equestrians from across the Valley who come to enjoy regular fitness workouts.

Conservancy Trailhead Ambassadors and Patrollers who serve this

region of the Preserve record some of the largest numbers of visitor engagements per year compared to the other six Preserve trailheads. While all seven Preserve trailheads have wonderful, distinct attributes, I keep returning to Gateway because of its picturesque views and the way the sun rises over the mountains in the morning. Also, Gateway hosts a beautiful trailhead entrance, which includes a tabletop topographical map that offers a bird's

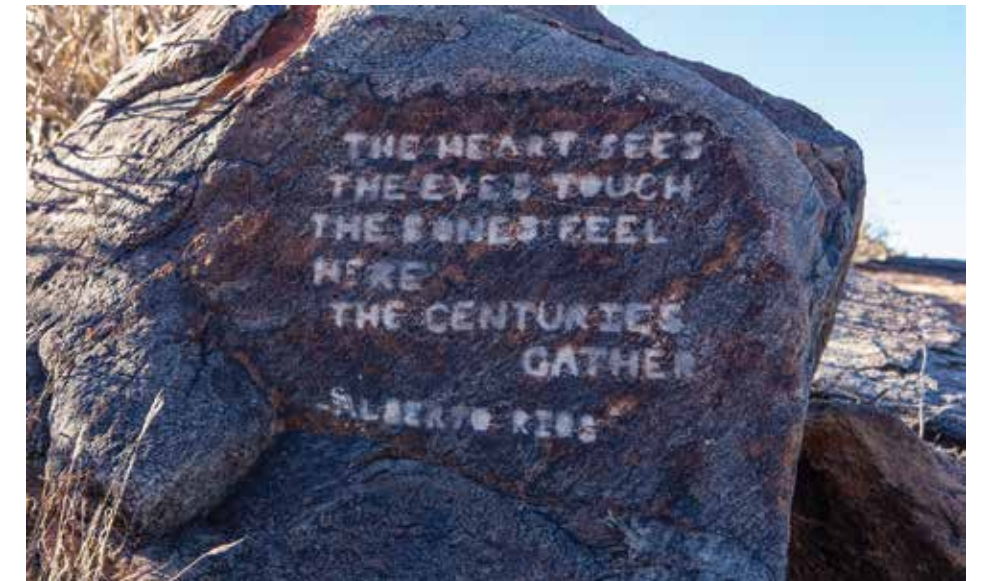
eye perspective of the 225 miles of trails within the 30,580-acre Preserve. Parking at Gateway is plentiful, restrooms are available, and the water dispenser offers chilled filtered water.

One of my favorite morning fitness hikes is from Gateway Trailhead to Inspiration Point and back, a round-trip distance of 5.6 miles, which takes about 2.5-3.5 hours. This hike is moderately challenging, gaining approximately 1,000 feet in elevation in

2.8 miles. This is a wonderful morning fitness workout that gets one in touch with one's physical conditioning. Trails are well-marked with periodic signs along the trail and at intersections showing trail direction, abbreviations of the trail names, and location numbers, which correspond to notations on the Preserve's trail map. Keeping track of where you are while hiking is an important safety precaution. Carrying plenty of water is also essential to ensure a safe, pleasurable outing. Having at least one liter (34 oz) of water per person per hour of hiking is a good rule of thumb. When you are half finished with your water, turn around and return to the trailhead. We also suggest bringing a charged cell phone, and a backpack to carry salty-n-sweet snacks, a hat, and sunglasses. Hiking poles are also helpful for the steeper sections of the route.

The route to Inspiration Point is straightforward. After leaving the trailhead on Saguaro Trail and reaching the Gateway Loop sign marker GL7, turn left and proceed north to GL5 and then GL4, continuing to WP1, which is the start of the Windgate Pass Trail. Occasionally, following a rain, I have seen a desert tortoise meandering across the trail between GL5 and WP1. If you're lucky enough to spot one, please don't touch it. Do take a photo, note your location, and tell the Trailhead Ambassador when you return to the trailhead.

The trail from WP1 continues to get steeper as you hike to WP2 and WP3 with the hill to TT17 being the rockiest and most challenging. At the TT17 junc-



Look for a dark rock with a message from an unknown author etched in white. Are these words of wisdom or a muse from the past meant to inspire? We don't know. Photo by Dennis Eckel



Sign "WP3" is one of the many location markers pointing the way along Windgate Pass Trail toward Inspiration Point. While you are at the Gateway Trailhead before your hike, pick up the McDowell Sonoran Preserve map of the southern & central regions so that you can track your locations along the route by matching the location markers you pass to those on the map. Photo by Dennis Eckel

ture, stay on Windgate Pass Trail, and Inspiration Point is 0.2 of a mile ahead. At Inspiration Point, rest and have an energy snack sitting on the rock bench and enjoy the spectacular views of the mountains and the valley below. It's not unusual to see deer peeking around the mountainside bushes in the area.

On the return trek, watch your footing as it's easy to catch a toe on a rock. Those hiking poles are especially helpful on the descent. The views on

the way down are wonderful. You can see Camelback Mountain and part of the Valley stretching to downtown Scottsdale. Just south of marker GL4, there is a hollowed-out side on a saguaro cactus, which is most easily seen on the descent. I recently noticed a cactus wren nest there with eggs inside.

The journey back provides time to reflect on your hiking accomplishment and to think about other areas of the Preserve to visit. So, where do you want to explore next? ▲▲



Cactus wren nest with eggs, which the author noticed sheltered in a saguaro along the return route to the trailhead. This is a good example of the pleasant surprises we sometimes have as we travel in the desert. Photo by Gary Dokes



## Getting Ready to Ride

By Mike Roberts, McDowell Sonoran Conservancy Steward

**M**ountain biking allows you to experience trails and locations beyond the range of most hikers. It's also one of the best forms of aerobic exercise, plus being a lot of fun! McDowell Sonoran Preserve trails offer routes for all levels, ranging from gentle cruises to technically challenging rock formations. Trails are no accident of nature; they're designed and built by experts to take advantage of natural features yet offer the most rewarding experience for all levels of riders. Continued...







Some of the trails require more technical skills for more advanced riders. Photo by Dennis Eckel

Mountain biking, with its bouncing over rocks, frequent speed changes, tight slow turns, fast descents, and

slogging up hills, is quite different from riding on roads. Learning to enjoy mountain biking, and doing



The Conservancy bike clinics provide basic mountain biking skills for newcomers to the sport. Fundamentals are practiced before heading out for a fun ride in the Preserve. Photo by Dennis Eckel

it safely, takes some learning and practice. Personal fitness certainly helps, but taking the time to learn basic techniques like getting on and off the bike (either side) on inclines, timely shifting of gears, riding over rocky, jarring terrain while pedaling uphill or braking downhill, and standing on the pedals when riding over rocks, cannot be overemphasized. There's no shame in walking over unfamiliar obstacles, which you'll later take in stride after more practice. The McDowell Sonoran Conservancy offers excellent training classes, starting with beginner rides and clinics in which the demonstrated skills can be practiced and then applied, and continuing to intermediate and advanced skill-level rides. More



Regular maintenance is recommended to keep your bike in good working order. The chain and gears should be cleaned and lubricated to prevent excessive wear. Before each ride make sure that your tires have adequate tire pressure. Photos by Dennis Eckel

information on these bike clinics and rides is online at <https://www.mcdowellsonoran.org/events/list/>. There are also some good instructional videos on YouTube, although some portray superhuman skills you won't need in the Preserve!

Mountain bikes have either front or full suspension for more control and comfort on uneven surfaces and wide knobby tires for traction. If this is something you might plan to do frequently, your bike should be professionally fitted to you. The right frame size, saddle positioning, and handlebars make a big difference to your safety, endurance, and comfort.

It is also important to have the right cycling gear. A good, well-fitting helmet is vital, as is always wearing eye protection. Fast-flying insects and loose gravel from other riders, or even your bike, are adept at finding



A good helmet and protective eye wear are essential for mountain biking. Photo by Dennis Eckel

unprotected eyes! Gloves cushion hands on handlebars and protect from brushes with the cholla or yucca that border narrow trails. Many riders wear knee/leg protection and long sleeves for the same reason. Shoes should be flat enough to grip pedals, but sturdy enough to walk in when necessary.

Your mountain bike takes a lot of punishment on the trails, so it needs regular maintenance. Vibration can work key parts loose, so it will need a thorough inspection periodically. Keep an eye on your tires and check pressures every time you ride. It's not uncommon to pick up cholla spines which can cause flats. Frequent riders often convert to a tubeless tire setup which is more puncture-resistant. After each ride, wash your bike down to remove grit and dust, and oil the chain often to ensure smooth shifting and prolong the life of chains and gears.

It is always better to ride with others as spills or bike issues occasionally happen, and you may be several miles from help. Plan routes before you go, based on your experience level, ride distance or time, exertion level, and the weather. McDowell Sonoran Preserve maps show distances between markers, as well as altitudes, which indicates how easy or arduous a route may be.

Consider trail conditions, too – a long dry spell means more loose gravel

and less tire grip, so ride accordingly. Be aware of other riders as trails get busier through the season. Most riders are courteous, but not everyone rides within their limits or respects the etiquette of yielding to those climbing hills.

Lastly, remember, whenever you're out there, take the time to stop and look around! It's not about how many miles you rode, how much elevation you conquered, or how fast you went; it's about your experiences in this incredible, natural place. ▲▲



It takes a while to master your confidence on a mountain bike, but the freedom and connection with nature are very rewarding. Photo by Dennis Eckel



# John Gregory Bourke – Soldier, Scholar, Ethnographer

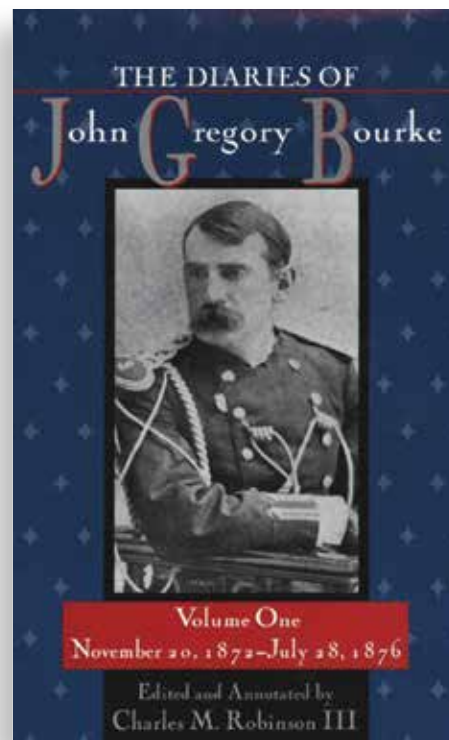
By Richard Bourke, Former McDowell Sonoran Conservancy Board Chair and Master Steward  
 Len Marcisz, Former McDowell Sonoran Conservancy Board Chair and Legacy Steward  
 Don Hadder Sr., Scottsdale Historical Society Board Member

At the age of 16, John Gregory Bourke enlisted in the Union Army during the Civil War. While still a teenager, he was awarded the Congressional Medal of Honor for bravery at the Civil War Battle of Stones River, Tennessee. Having impressed his superior officers, he was recommended for admittance to the United States Military Academy at West Point, graduating in 1869.

By September 1871, he was named aide-de-camp to General George Crook, for whom Arizona's General Crook Trail is named. Bourke accompanied Crook through the early Arizona Apache campaigns, the Sioux and Cheyenne campaigns on the northern plains, and the closing Apache campaign in Arizona and Mexico, which involved the pursuit of the Apache leader Geronimo.

While General Crook is well known among popular historians, makers of western movies, and the interested public, his indispensable but lesser-known aide, John Gregory Bourke, maintains a following among serious western historians, anthropologists, and ethnographers. This is in large part because, in November 1872, Bourke began making daily, ethnographic entries in journals that described

army life and Native American life, observations gained by immersing himself in the two different cultures. He kept these journals throughout the remainder of his life, and they are considered invaluable original sources and research documents by western

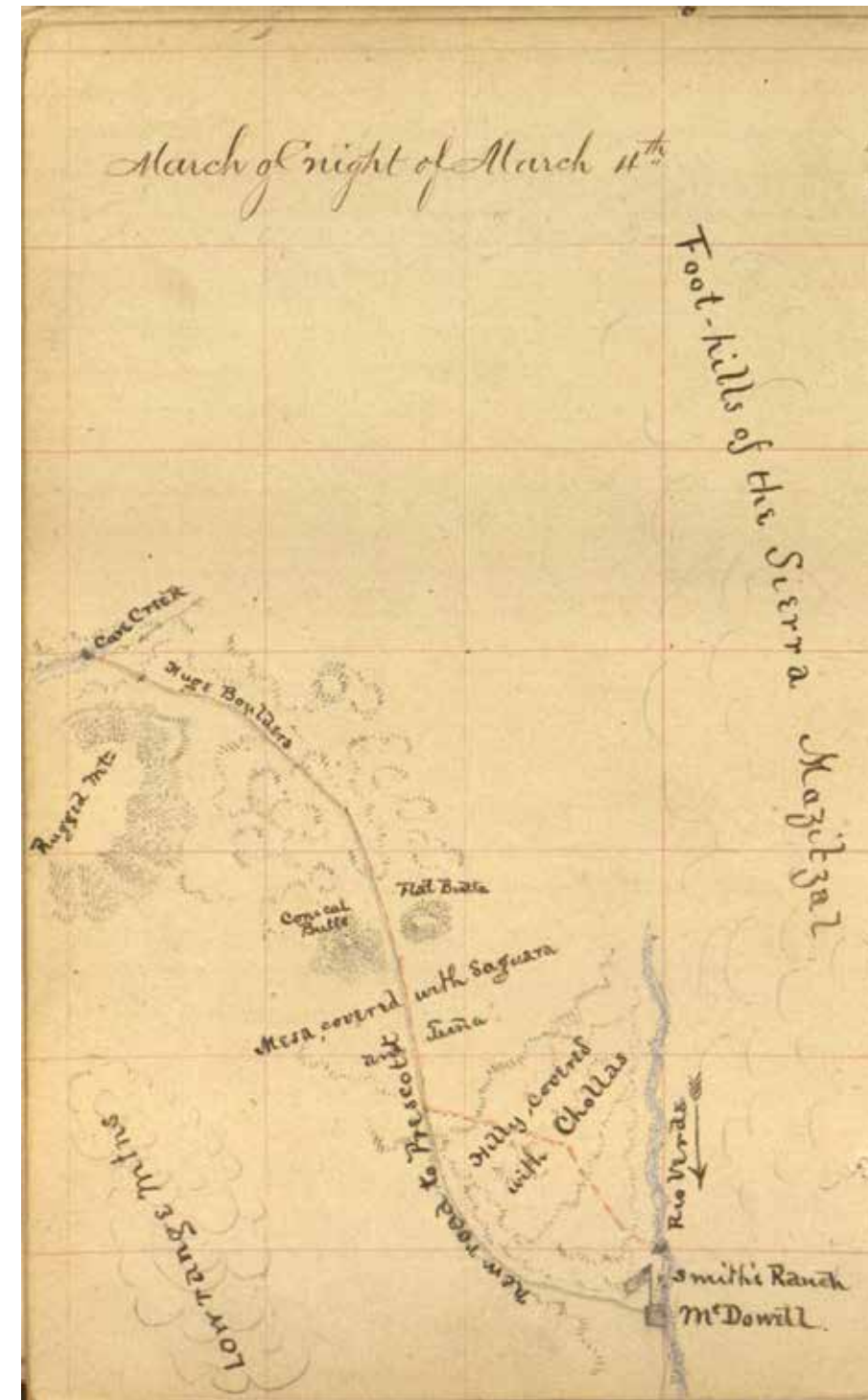


John Gregory Bourke, pictured here on the cover of "The Diaries of John Gregory Bourke - Volume One, November 20, 1872 - July 28, 1876," used his diary notes about meetings with native tribal leaders and visits to southwestern towns as a basis for later books and writings. Photo courtesy of the University of North Texas Library, UNT Press.

historians. The 124 manuscript volumes are held at West Point,

The journal entry for March 14, 1873, for example, indicates Bourke left Camp McDowell and led an expedition through what is now the McDowell Mountain Regional Park and the McDowell Sonoran Preserve, camping that evening at Cave Creek. That night he drew a map of his travels delineating features now known as Cone Mountain, Brown's Mountain, Black Mountain, and Stoneman Road. His map is the earliest known recording of these features and the area known today as Brown's Ranch.

When granted time off from military duties, Bourke lived among and studied Native American cultures. He learned to speak Apache in order to further his studies. An authority regarding anthropological studies of southwestern cultures, he was elected in the late 1800s to the Association for the Advancement of Science and to the Anthropological Society of Washington. Bourke was also a prolific author during this time, writing his highly acclaimed book, *On the Border with Crook*, plus *An Apache Campaign in the Sierra Madre*, *Medicine Men of the Apache*, and *The Snake Dance of the Moquis (Hopis) of Arizona*.



Bourke's sketched map is the earliest known map of the Brown's Ranch area, showing "Conical Butte," (Cone Mountain), "Flat Butte," (Brown's Mountain), and "Rugged Mountain," (Black Mountain). Also shown is a portion of Stoneman Road, an Army supply route used between 1870 and 1890 that ran between Fort Whipple in Prescott and Fort McDowell on the west side of the Verde River.

In 1885 Bourke began a campaign for equitable treatment of Native Americans, publicly denouncing the U.S. Government's Indian programs. He advocated keeping the Chiricahua Apache in Arizona rather than exiling them to Florida. He opposed sending

Native American children to off-reservation Indian schools. Per Bourke, "Much of our trouble with these tribes could have been averted, had we shown what would appear to them as a spirit of justice and fair dealing." These were, at the time, unpopular positions.

In *The Diaries of John Gregory Bourke*, Edward Robinson wrote, "He (Bourke) began to attribute much of the (Indian) problem to avarice, ignorance, and intolerance on the part of the whites." *The Reader's Encyclopedia*



In 1881, Bourke was a guest of the Zuni (Hopi) pueblo in late 1881. He observed their multi-day religious festival and dances. He also completed this and other festival watercolor paintings. A few years earlier, Bourke had created several pictographs of Cheyenne and Crow warriors.

of the American West summarizes Bourke's contributions thusly: "One of the last in the tradition of humanist-scientific officers who recorded the American West, Bourke's historical work is vivid, observant, humorous, and his ethnological studies remain invaluable to modern scholars."

John Gregory Bourke passed away in June 1896, just short of his 50th birthday. He is interred at Arlington National Cemetery. ▲▲



# New Signage Coming to Brown's Ranch Trailhead

By Fred Mirmelstein, McDowell Sonoran Conservancy Lead Steward

Since Brown's Ranch Trailhead opened in 2013, visitors have been greeted by 22 feet of signage focused on the early human history of the area that eventually became Brown's Ranch and a portion of the northern Preserve region. These signs provided detailed information about the earliest archaic people, the Hohokam, the Yavapai, and, later, E.O.

Brown's Ranch.

While fascinating to many, this in-depth historical information didn't engage the average, casual visitor – especially children – and didn't include important safety messages. In 2022, the Conservancy partnered with the City of Scottsdale to re-envision the signage. Inspired by the vibrant signage at the new Pima Dynamite Trailhead, a

team of Conservancy staff and stewards developed the new content. The City's graphic designers are completing the project, themed: Brown's Ranch, A Cultural Crossroads. Installation of the new signage is planned for late 2022 or early 2023.

The new signs will still present human history, but in a condensed format, focusing on the cultural contri-

butions of each group. The signs will add facts and some colorful photography showcasing the area's flora, fauna, and geology. They will also talk about emergency contacts, and more, broadening the expanse of interesting and relevant information for visitors.

When reading the human history narrative, visitors will learn how earlier cultures shared common food sources such as native plants and animals, used natural medicines such as Mormon tea, agave, and yucca, and used Cathedral Rock and other geologic formations as natural shelters. Recent history highlights the US Army building Stoneman Road between Fort McDowell and Fort Whipple during the 1860s. A portion of Stoneman Road traversed what is now Brown's Ranch Road and Corral Trail.

History buffs will be glad to know that the historical information on the older signage will not be lost. It will be incorporated into the Brown's Ranch homestead interpretive trail that is in development. Additionally,

some information may move into the trailhead's display room.

New safety signage will help visitors be aware of the symptoms of heat-related stress for themselves and their dogs, suggest what to wear and what to pack on a hike or bike ride, and remind them to "Share the Trail" with others in the Preserve.

Four signs, nicknamed "sliders," can be rotated seasonally to showcase current desert activity. Topics will include flowering plants or bushes – think poppies and other wildflowers, brittlebush, and desert thorn apple – and rattlesnake activity, cactus varieties, and popular bird species, including Harris's hawks, cactus wrens, and curve-billed thrashers, to name a few.

A geology panel will illustrate the formation of what would become the McDowell Mountains, beginning about 1.4 billion years ago, and the more "recent" appearance of Brown's Mountain, largely through volcanic activity, between 15–30 million years ago.

Another panel shows how the Sonoran Desert evolved into what we see in the Preserve today, with its unique biodiversity.

The signage celebrates the 1994 founding of the Preserve and how it has grown from the first 2,860 acres to the current 30,580 acres. There's a special nod to the 2013 dedication of the Brown's Ranch Trailhead, the first in the northern Preserve.

Dorie Hansen sponsored the project in memory of her late husband Steve, an avid biker at Brown's Ranch. The dedication reads "In memory of Steven D. Hanson, who believed the Preserve and Conservancy embody his belief to leave the world better than we found it." Other major donors are also recognized.

The goal is for visitors to connect what they learn from the display to what they see and experience in the Preserve. We hope everyone will be inspired to learn more about their surroundings and will want to help protect our beautiful desert. ▲▲



Veronica Sahwany, graphic designer for the City of Scottsdale, and John Loliet, Natural Resources Area Coordinator, review and approve paper mock-ups of the new signs for the Brown's Ranch Trailhead. Photo courtesy of the City of Scottsdale

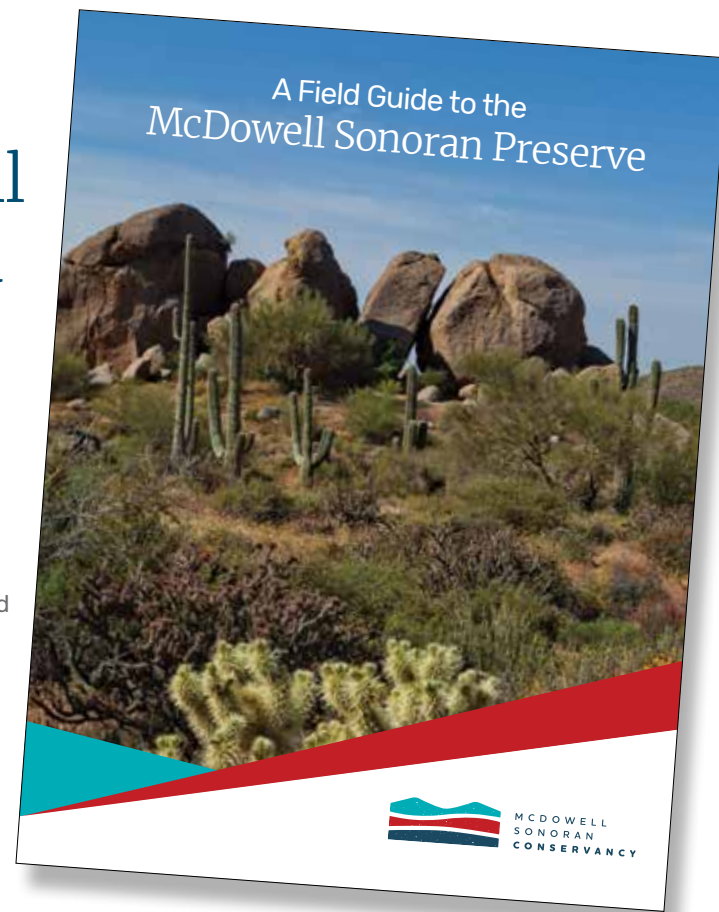


Veronica and steward Kerry Olsson discuss the format for the new donor signs. Photo courtesy of the City of Scottsdale



# Return of the McDowell Sonoran Preserve Field Guide!

By Jakki Casey, McDowell Sonoran Conservancy COO, and Master Steward



The new edition of the Field Guide to the McDowell Sonoran Preserve provides a great all-around book, covering how the Preserve was formed through to current times.

Do you know that one of the Sonoran Desert's distinguishing characteristics is that it has two periods of rainfall each year? Do you know how deserts form? Do you know how the Sonoran Desert formed? Do you know that many of the Sonoran Desert's plant species migrated thousands of years ago and adapted to the local environment? Do you recognize plants and animals you may see on the trails as you enjoy the Preserve? Do you know that our region has been inhabited continuously for some 6,500 years? Do you recognize the artifacts from native peoples that we can still see on the land?

A great way to find answers to these questions and much more is to refer to "A Field Guide for the McDowell Sonoran Preserve." This book was first published by the McDowell Sonoran Conservancy in 2006 and is coming back after being out of print for a number of years.

The first edition of the field guide was written by Conservancy stewards and friends and provided a great overview of the Preserve. It covered geology, plants, animals, human history, ecology, and some frequented trails. Over the years, a number of editions

have been printed and enjoyed by many. In 2021, the editor of the inaugural edition, Fred Klein found he had time and drive to tackle a completely updated version. Fred called on many of the original contributors who willingly returned to author new chapters. He coordinated with our amazing subject matter experts and has created a new edition that encompasses many of the same topics as the original one but provides updates and takes advantage of modern publication styles, such as including many photographs to illustrate what you may see in the Preserve. Dennis Eckel, the designer of Mountain Lines and long-term Conservancy steward, volunteered to design this new field guide and uses photographs throughout to help readers visualize topics discussed in the text.

The book is designed as an essential guide for those who spend time in the

Preserve and want to learn more about the place they enjoy so much. It helps readers understand things like plant adaptation, animal adaptations, environmental challenges for things that live here, what is unique about the Sonoran Desert, and much more.

When you are on the trails you may see our stewards working hard to maintain the trails, lead walks, hikes, or bike rides, being ambassadors at trailheads or on the trails, and much more. In addition to all of those skills, we are so fortunate to have such experts within our steward and friend groups that we are able to produce a book that will help readers understand how the Preserve was formed geologically and

ecologically. If you enjoy the book and want to learn more, attend our free public walks, hikes, and bike rides during which we interpret a myriad of topics while on the trails. For a full schedule of our free public events visit <https://www.mcdowellsonoran.org/events/list/>.

The contributors to this book provided their input for free so the net proceeds of the book will benefit the Conservancy and allow us to run our programs for the public. We thank all of the authors for sharing their knowledge and passion for a place we all appreciate so much.

We are delighted that this new Field Guide will be published and ready for purchase for the 2022 holiday season and beyond. To purchase it, either visit one of the Preserve trailheads when our stewards are present or you can purchase one online at [www.mcdowellsonoran.org](http://www.mcdowellsonoran.org) by clicking on "Shop."



## Examples of the new 174 page Field Guide

### Ringtails (*Bassariscus astutus*)

Though they resemble a small cat, ringtails (*Bassariscus astutus*) are closely related to the raccoon and coati. Adults weigh slightly more than two pounds. They are common in the McDowell Mountains, inhabiting bluffs, boulder fields and other rocky terrain. Their bushy tail is as long as their bodies and sports six or seven black rings on a white background. They prey upon a variety of small animals including rodents, bats and insects. Their scat resembles that of a young house cat and often is deposited on a ledge or other precipitous perch. About four young are born in the summer.



The animal chapter includes the ringtail which is infrequently seen but iconic to our region.

### California barrel cactus (*Ferocactus cylindraceus*)

The only barrel cactus found in the Preserve, it sometimes is called the "compass barrel" because of its usual lean to the southwest, a position that minimizes sun exposure in the hottest part of the summer day. It has no woody skeleton so it can grow to 7 feet tall at most. Flowers are yellow or orange in spring and summer.

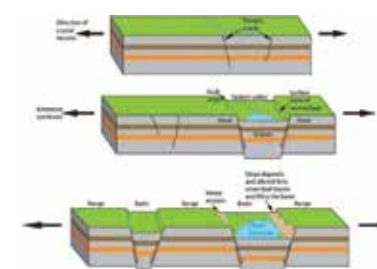


The plant chapters includes distant and closeup photos and details about trees, plants and cacti. There is also a chapter on wildflowers.

### Basin and Range: A Unique Landscape

As volcanism ended in the region, a powerful new force began to exert its influence. Beginning about 15 million years ago, as the western edge of North America subsumed the Farallon plate, it began to ride up on the Pacific plate. Moving northwesterly relative to North America's more-westward movement, the Pacific plate began to pull the southwest edge of North America with it, stretching the brittle crust in a mostly east-west direction. Parts of the southwest U.S. stretched by 200% or more, which caused cracks -- faults -- to form perpendicular to the direction of the stretching.

Blocks of the earth's crust began to slide vertically along these faults, with some blocks sinking downward while adjacent blocks rose. The sinking blocks created basins that collected sediments



The geology chapter contains graphics to help readers understand how plate tectonics have helped shape the mountains we now call the Preserve.

The Sonoran Desert has expanded or contracted many times since it began, and its present form is about 9,000 years old. Its plant and animal composition has been stable for about 4,500 years, not much time for that sort of thing. The desert continues to change because of normal climatic variations and the man-caused factors mentioned above. (See Figure 4).

### What's unique about the Sonoran Desert?

The Sonoran Desert boasts an amount and diversity of plant and animal life that visitors find surprising given the public image of a desert. It touches the Gulf of California so it's the only North American desert that isn't landlocked.

It freezes less frequently and more briefly than the other North American deserts. Many of its plant species, such as columnar cactus, have a tropical origin, which means that plants from the south migrated there thousands of years ago and adapted to the local environment as it warmed.

The distinguishing characteristic of the Sonoran Desert is its two periods of substantial rainfall. Winter weather systems sweep in from the northern Pacific on westerly winds, producing wide-

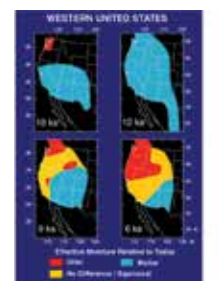


Figure 4: Most of the western United States has gotten drier since the end of the last Ice Age around 10,000 years ago. ["Ka" means "thousands of years ago."]

The ecology chapter provides us with background about the Sonoran Desert including what makes it unique.



# The Conservancy's Role in Regional Conservation

By Dan Gruber, McDowell Sonoran Conservancy Legacy Steward

Ecosystems transcend political boundaries, and environmental challenges such as climate change, invasive species, pollution, and urbanization don't care about them. That's why we need a regional approach to address these challenges. Recognizing this, in 2012 the McDowell Sonoran Conservancy was a founding member of the Central Arizona Conservation Alliance (CAZCA), hosted at the Desert Botanical Garden, and has taken leadership roles in regional activities ever since. For more than 10 years, the Conservancy has worked with CAZCA to promote regional collaboration, cooperation, and coordination of conservation efforts to protect, restore, and promote desert open spaces.

Conservancy staff and stewards have served on CAZCA's Steering Committee, its guiding body.

## CAZCA focuses on four major activities\*:

1. Ongoing communication and education among CAZCA's dozens of partner organizations. CAZCA sponsors seminars about partner work, organizes living lab sessions at partner locations, convenes all-partners meetings, and maintains an information-rich website ([www.cazca.org](http://www.cazca.org)) and social media channels.
2. Development of the Regional Open Space Strategy (ROSS). The four goals of the ROSS

represent the highest conservation priorities of the region, including:

- "Protect and Connect" outdoor spaces and natural habitats
  - "Sustain and Restore" desert lands to promote biodiversity and sustainable growth
  - "Love and Support" the Sonoran Desert by connecting people with the desert
  - "Coordinate and Elevate" by building on CAZCA's foundation to expand regional conservation and collaboration
3. Leading major regional initiatives with concrete deliverables including the development of the Greenprint, a richly detailed mapping tool to help community planners identify how to balance recreation, residents' quality of life, and critical habitat protection in central Arizona. CAZCA also sponsors the Sonoran Seed Collaborative to develop best practices for producing and harvesting native seeds for restoration work.
  4. Creating and providing leadership and support for working groups implementing on-the-ground solutions to pressing conservation needs. Desert Defenders, for example, is a collaborative community

science and volunteer program that maps and removes invasive plant species throughout the region.

The Conservancy has taken leadership roles in most of these activities. We were deeply involved in the multi-year effort to develop the ROSS, we helped support development of the Greenprint, and our staff and stewards lead much of the ongoing invasive plant management and removal activities of Desert Defenders.

In the latter role we have shared the experimental work done by the McDowell Sonoran Conservancy's Parsons Field Institute and Citizen Science program to identify the most cost-effective way to mitigate infestations of invasive plants that present significant biodiversity and fire risks in the desert. We also provide training to other regional partners in identifying invasive species and using a mobile app, which consolidates regional invasive species locations, mitigation work, and results on one map. By helping to reduce the prevalence and spread of invasive species across the region, we not only increase the health of the desert ecosystem as a whole, but we also reduce the risk of re-introduction and increased fire potential in the McDowell Sonoran Preserve.

The Preserve remains the home-base for the Conservancy. But to sustain the Preserve for future generations, we must look beyond its borders and those of Scottsdale. So many environmental challenges are regional and, in some cases, global. It is vital for the Conservancy to understand what

others are experiencing, learn from their work, and share what we learn about addressing the challenges we all face.

We can deal more effectively with current and future ecosystem challenges collectively rather than separately, so we're delighted to lead and support coordinated regional work through CAZCA.

\* Much of the information above is adapted directly from CAZCA's very informative website ([www.cazca.org](http://www.cazca.org)). ▲▲

**DESERT INVADERS**  
Keep a lookout for Sonoran Desert invaders in Maricopa County!

These invasive species are outcompeting native desert species, which local wildlife depend on for food, shelter and habitat. Many of these invasive species form dense monocultures, altering the desert landscape and creating a burnable fire risk. These species could be spreading to your area; early detection and eradication can prevent an invasion. Mapping these invaders is the first step to managing them, and preventing further spread.

- Siskinnet** (*Prosopis juliflora*) - Tree is 10 to 20 feet tall with round pink flowers and spreading growth.
- Salt Cedar** (*Zaibesia sp.*) - 20 to 25 feet tall, bushy appearance, small bright pink flowers.
- Malta Star Thistle** (*Conium maculatum*) - Sharp spines at base, deeply lobed leaves with white variegation.
- Bufflegum** (*Bassora alata*) - Bushy grass with round white flowers.
- Fountain Grass** (*Pennisetum setaceum*) - Purpleish upright stems with long inflorescences.
- Red Broom Foxtail** (*Bromus tectorum*) - Dense patches with purpleish tinge.
- Sahara Mustard** (*Brassica tournefortii*) - Branched stems with yellow flowers.

Help use the Desert Habitat! To get involved in mapping these plants, please contact CAZCA at [central@cazca.org](mailto:central@cazca.org) or call 480-441-4147. Or contact Maricopa County Public Volunteer Coordinator at [publicvolunteer@maricopa.gov](mailto:publicvolunteer@maricopa.gov) or call 602-506-9141.

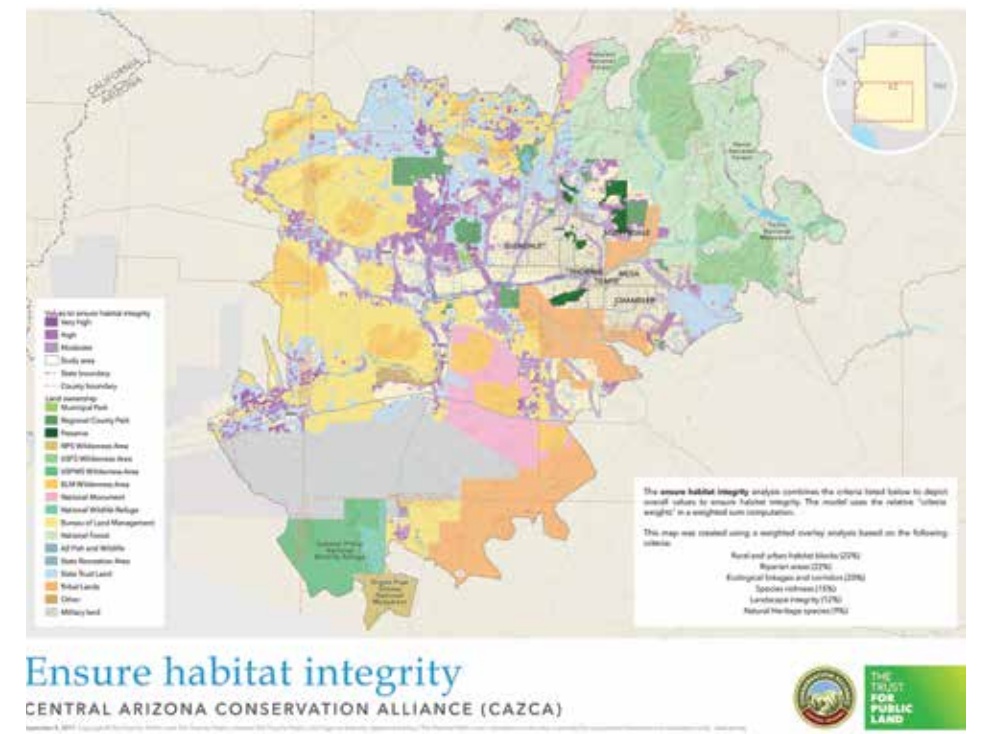
The Control and Management of these species, please visit the following website:  
 • USDA Forest Service Southwest Region (Region 5) Wild Field Guide - <https://fs.fed.us/swr/>  
 • Sonoran Vegetation Management Association - <https://www.svma.org/>

Logos for CAZCA, Desert Botanical Garden, and other partners.

These are just some of the desert invaders that are threatening native plants and creating a fire hazard in our area. If you find them on your property, please remove them by the roots, try not to disperse seeds, bag them, and dispose of them in the trash. Photo courtesy of Central Arizona Conservation Alliance.



2021 Fall Desert Defenders field trip to Cave Creek Regional Park. Desert Defenders is a collaborative citizen science program organized by CAZCA that identifies, maps, and removes invasive plant species. Photo by Willie Sommers



This map is a sample of the output from the Greenprint, a mapping tool produced by CAZCA and the Trust for Public Land with which central Arizona planners and developers can determine how best to manage space for human activities associated with quality of life and wildlife habitat protection.



# Above and Beyond: Connecting Outside of the Preserve

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

What comes to mind when you picture Scottsdale's McDowell Sonoran Preserve? Do you see the towering McDowell Mountain and Thompson Peak, or perhaps the expansive vistas behind the looming form of Tom's Thumb? Now take a bird's-eye view of the Preserve, which encompasses over a quarter of Scottsdale's land mass. Next, expand that bird's eye view, as if you are soaring above the landscape. You'll notice other natural open spaces, both large and small. The Preserve is part of a tapestry of different open spaces across the Phoenix valley. These spaces do not exist in isolation, they interact and affect each other in many ways.

The McDowell Sonoran Conservancy has been working with the City of Scottsdale for more than 30 years to advocate for, protect, study, and conserve the Preserve. The early efforts were focused on advocating for the purchase of land, which led to the creation of North America's largest urban preserve. As that dream became a reality, the Conservancy built a highly skilled group of volunteers and staff to care for the Preserve, educate visitors, and conduct research. While the Conservancy's primary focus remains the Preserve, it too is soaring higher

to look beyond the boundaries of the Preserve and the areas immediately adjacent to it. This is of critical importance for both the human community and the ecological community, which are intrinsically connected.

By soaring higher, we see the Preserve, a series of parks, the Indian Bend Wash Greenbelt, and McDowell Mountain Regional Park. If we climb even higher, we can see the open spaces of the Salt River Pima-Maricopa Indian Community, the Fort McDowell Yavapai Nation, Tonto National Forest, the Phoenix Preserve, and South Mountain. These areas may seem separated at first glance, but they are all connected, and their ecological health is connected as well.

Many plants and animals share this network of green space. Migratory birds use them as stopovers on their way to the next location. In doing so they move seeds from one space to another and even pollinate plants. Flying insects, including butterflies, moths, bees, wasps, and flies, also move across miles and boundaries pollinating, eating and being eaten, and laying eggs. Large animals such as mule deer and mountain lions utilize the network of washes and open spaces to find water, food, and mates. Studies have shown that when natural



A red-tailed hawk in flight over the Preserve. This is one of the many bird species that benefit from the network of green spaces, and serve to connect them. Photo by Lynne Janney Russell

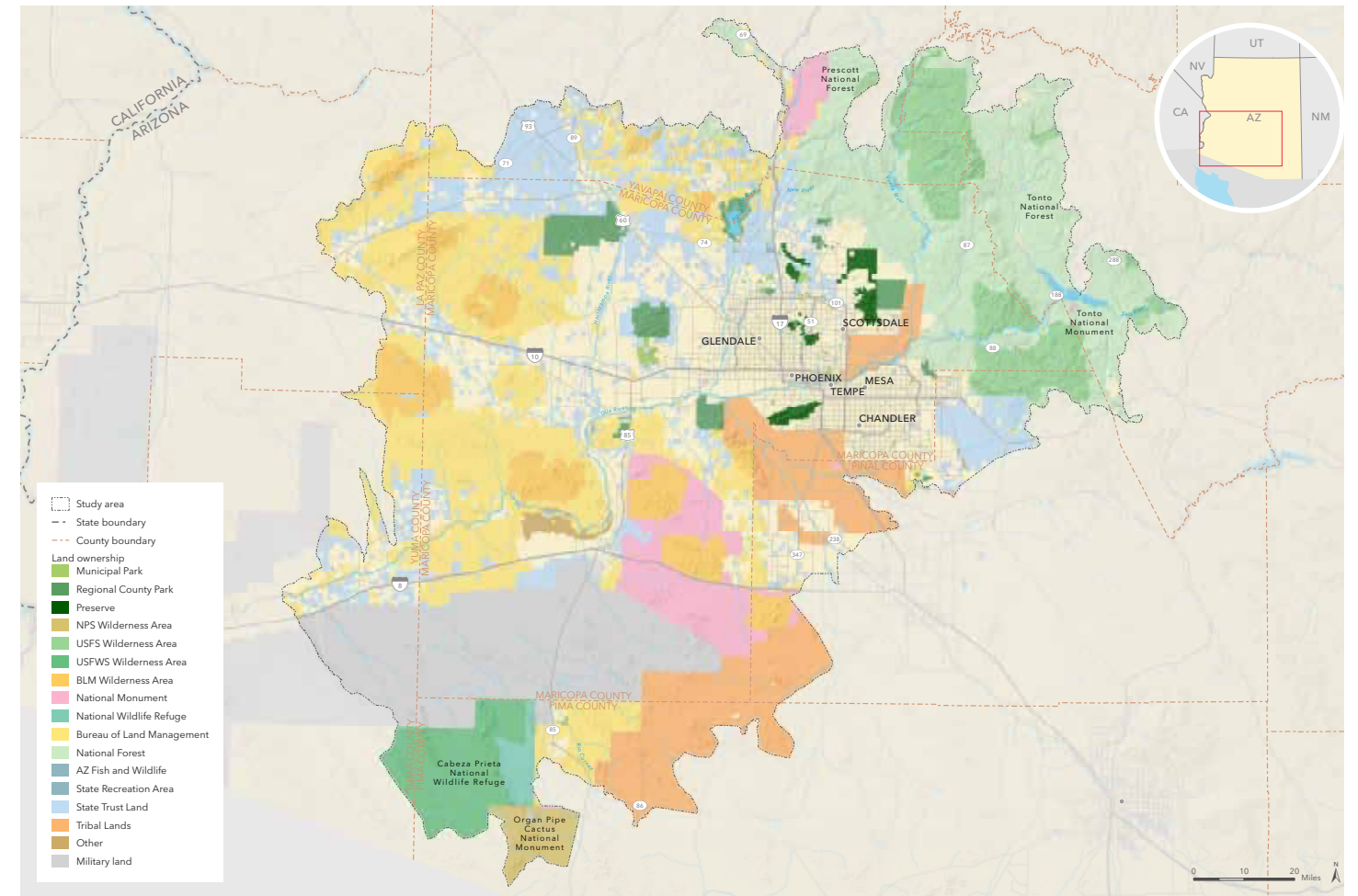
open spaces are isolated these large animals don't survive, and that has a cascading negative effect on the other plants and animals. However, biodiversity in one space can reinforce the biodiversity in other spaces.

Connection is critical for humans as well. Studies show that people who have access to natural open spaces are healthier, both mentally and physically. During the early days of Covid-19, this became extremely apparent, as the Preserve visitation went from 700,000 per year to over 1.2 million. Not only that, but these spaces can lower the temperature of areas nearby and can serve as carbon sinks, making for a healthier urban community.

(Continued on page 27)



Steward Won Fogel with students at Echo Canyon Elementary School showing off their model watershed. Childhood experiences like these are correlated with a strong commitment as an adult to preserve natural open spaces. Photo by Jen Bruening



## Regional Open Space Strategy Project Area

CENTRAL ARIZONA CONSERVATION ALLIANCE (CAZCA)

September 8, 2017. Copyright © The Trust for Public Land. The Trust for Public Land logo are federally registered marks of The Trust for Public Land. Information on this map is provided for purposes of discussion and visualization only. [www.tpl.org](http://www.tpl.org)



The Preserve and surrounding open spaces. Greenprint map courtesy of the Central Arizona Conservation Alliance, [https://web.toplgis.org/cazca\\_plan/](https://web.toplgis.org/cazca_plan/)

Our emotional connection to nature also crosses boundaries. As people learn to appreciate nature, their desire to protect and conserve it increases. This desire translates from one space to another. Thus, a child who learns about the wonders of the Sonoran Desert in their schoolyard will likely grow into an adult who will fight to protect natural open spaces in general. Expanding our work throughout the entire Scottsdale community and beyond is critical to the long-term survival and sustainability of the Preserve, and the health of our community. When we partner with other organizations, expand our community engagement, and bring lessons to students, we are both creating a healthier community and securing these beautiful spaces for everyone. ▲▲

### Answers to Trail Etiquette Quiz on pages 10 and 11:

- d. We all should be courteous, cooperative, and communicative with others.
- d. Bikers should yield to hikers, but hikers often step aside. Bikers and hikers should yield to horses.
- a. Horses have monocular vision, seeing out of one eye at a time; they also cannot see right in front of or behind them, and can get spooked easily. Best to ask the rider where to stand.
- b. Slow down, watch carefully for other trail users, and call out an alert on tight or obscured turns.
- a. When you stop, don't block the trail; and don't go off trail, which can damage delicate biocrust.
- c. Scottsdale's Code of Ordinances requires all dogs to be on a leash no longer than 6 feet when in the Preserve.





MCDOWELL  
SONORAN  
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.

# Scottsdale Community Services

Making Scottsdale the premier community for everyone!



Beautiful outdoor spaces and classes.



Support services and programs.



Free access to books, movies, music and programs.



Over 30,500 acres of Sonoran Desert waiting to be explored.

Visit [ScottsdaleAZ.gov](http://ScottsdaleAZ.gov) for more information.