

Mountain Lines

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In the previous issue of the Mountain Lines, I wrote about three of our goals for this fiscal year— recruiting 120 new Stewards, building our base of support, and establishing a long range plan. We have made progress in each of these areas. Two Steward classes have graduated; our new Public Ally, June Cho, has sprung into action, and planning has begun. We have also initiated the Nature Guide program (docents on the Gateway’s Bajada Nature Trail), which prompted the theme of this issue: Diversity.

The Nature Guides program opens up a new opportunity to diversify our team. The Steward program’s 400 members come from around the world, speak many languages, and come from almost every walk of life. With the creation of the Nature Guides, MSC now has a volunteer program that occurs in the Preserve through which teens, the elderly, and those with physical challenges can volunteer. Teenagers 15 to 19 years of age and persons in wheelchairs or who are unable to walk long distances are encouraged to become Stewards and share the amazing stories of the Preserve with our visitors. Training in both trailside education and the natural history of the area is provided. No prior experience is needed – just a good attitude and a desire to participate.

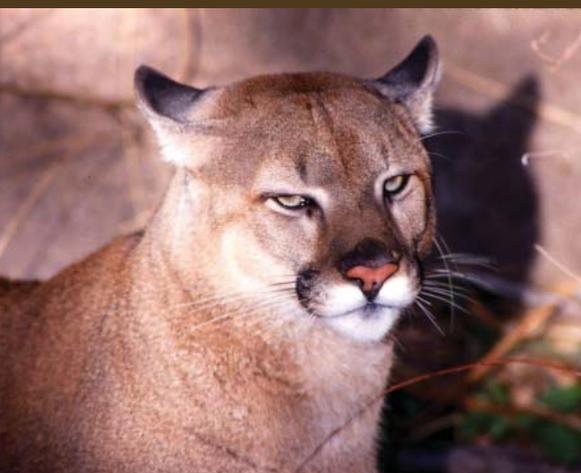
The Nature Guide program also diversifies the activities that are available to the public in the Preserve by providing a drop-in, education experience. These volunteers bring the Preserve to life by using the exhibits, hands-on items, and surrounding environment. This, in turn, diversifies the natural history messages that MSC can deliver. These volunteers are learning about everything from soil crusts to weather patterns. As this program continues, the volunteers’ knowledge base will grow, enriching the experience for visitors and volunteers alike.

MSC is diversifying and growing. We need your support. Please consider joining our team as a volunteer or making a gift to support programs like Nature Guides. You make us strong and effective! Thank you for your support and commitment to MSC and the Preserve.

See you on the trails!

Ruthie

Get Up Close and Personal... With Wildlife



Here are two opportunities to see some of the Preserve’s residents close up. Southwest Wildlife Refuge and Educational Foundation is an accredited sanctuary for animals that cannot be released back into the wild. They also specialize as a sanctuary for the Mexican gray wolf. During this experience, you will participate in an educational guided tour of the facility geared for families and children. The center is home to bears, mountain lions, bobcats, coyotes, tortoises, owls, javelina, and other animals native to the Sonoran Desert. After the SWREF tour, beginning about 10:20 a.m., MSC Steward Len Marcisz will lead a 75-minute hike through the lush desert land next to SWREF for those who wish to stay and enjoy more of the morning with MSC.

January 16th or February 13th, 9 a.m.

Cost: \$10/Adults, \$8/Children

Registration Required

Meeting location provided upon registration

Call Jill at (480) 998-7971 extension 104, or email jill@mcdowellsonoran.org to register.

About MSC

The McDowell Sonoran Conservancy champions the completion and sustainability of the McDowell Sonoran Preserve for the benefit of this and future generations. We connect the community to the Preserve through public and private partnerships, environmental education and stewardship.

Mountain Lines

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Gateway...

Your access to new trails and native knowledge

Alice Demetra, MSC Steward

Hiking the McDowell Sonoran Preserve's Gateway trails offers many pleasures—exercise, stunning views, fresh air under sunny skies. Such adventures can also provide a gateway to learning about the role of desert plants in the lives of the native people who once called the Gateway area their home. Native people shared an abiding oneness with their land. As a Pima woman would say, “our souls are tied to the land.” From the time of the Archaic hunters and gatherers, to the Upland Hohokam, to the Pima and Papago, all groups honored and respected their land as a source of food and medicine.

“WHAT'S FOR DINNER?”

Just steps from the Gateway Trailhead you'll encounter a focal point of many southwestern cultures, an icon of the Sonoran Desert, the saguaro. Some native people marked the beginning of their calendar year in June with the harvest of juicy, crimson saguaro fruit. Large quantities of fruit were kneaded in pots, resulting in juice, pulp and seeds. Juice was enjoyed fresh, boiled into syrup, or fermented into wine. Pulp, which possessed a faint watermelon-like taste, was prepared as jam, or sun-dried for use throughout the year. The numerous tiny, black seeds were ground into meal or used as animal feed.



Ironwood Beans

Harvested in June, raw green palo verde seeds were enjoyed by native people for their sweet, tender, green pea-like flavor. Mature seeds were roasted and ground into meal that was stored for later use.

Appearing in early summer, ironwood seeds were bitter and mildly toxic in their raw state. After soaking, native people roasted or parched them. Seeds were eaten whole, tasting somewhat like peanuts, or ground into meal that could be saved for gruel or baking.

The mature, brittle, straw-colored seed pods of the mesquite tree were harvested during late summer. The pod's soft inner tissue was eaten raw, while dried pods were ground into meal. Mesquite meal had a caramel-like sweetness, with a texture similar to crushed graham crackers. Water was added to this

meal to form dough that could be pressed into small cakes and dried for storage. These cakes later could be rehydrated and eaten, cooked in water as gruel or used as a thickener in stews. A frothy intoxicating drink was prepared by fermenting mesquite meal and water.

At the intersection of Horseshoe Trail and Gateway Loop, you'll be treated to nature's display of three of the four cholla found in the Preserve—teddy bear, chainfruit, and buckhorn. (Christmas cholla is found along other Preserve trails.) Each cholla had a food role in native diets.

Due to their unapproachable, prickly nature, teddy bear cholla were not the first choice among native people as a food source. However, when necessary, they pit-baked flower buds and roasted the tender young joints.

The hanging fruits of the chainfruit cholla could be gathered by native people year round. The fleshy, green inner pulp was eaten raw, boiled and mashed, or briefly roasted.

Many native people favored buckhorn cholla buds for their abundance, ease of harvest, and preferred taste. After de-spinning, buds were pit-roasted, sun-dried to prevent spoilage, then stored for consumption throughout the year. Their taste has been described as similar to Brussels sprouts or asparagus.

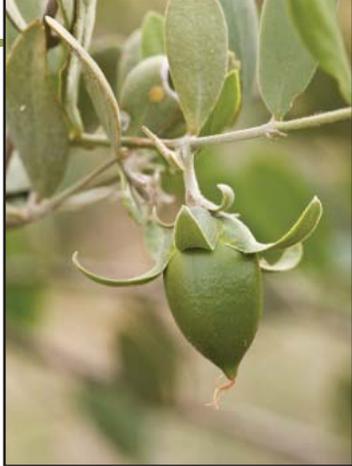
Along the Gateway access trail, as well as on Horseshoe and Gateway Loop, you'll spy an occasional prickly pear, whose pads and fruits were valued Sonoran Desert foods. After removal of spines and glochids, pads were eaten raw or cooked as a green vegetable. Raw pads had a tart green bean flavor, while cooked pads had a mucilaginous texture and a taste similar to okra. The purple-red pulp of prickly pear fruit was eaten fresh, having a berry-like taste hinting of watermelon or strawberry. Prickly pear juice was pressed for drinks or thickened into syrup.

After a brief clockwise climb up Gateway Loop, scan the landscape for barrel and hedgehog cacti, as well as an occasional wolfberry bush.



Prickly Pear Fruit

cont...



Jojoba Beans

The sour lemony fruits on the crown of the barrel cactus were consumed raw, as were

the crunchy seeds within. Barrel cactus pulp was soaked to leach out acidity, cut into strips, and sun-dried. These chunks were later added to mesquite broth for stew or boiled in saguaro syrup for sweet treats.

The fuchsia flowers of the hedgehog contained nectar that was used by native people to sweeten meal. The tiny scarlet fruits were enjoyed seasonally by the Pima and Papago.

The red, many-seeded berries of the wolfberry were eaten fresh, cooked into syrup and sauce, or sun-dried for addition to soups or stews.

Yucca can be found at higher elevations along the Tom's Thumb trail. The white, waxy, bell-shaped flowers of the soaptree yucca were eaten fresh or lightly roasted, presenting a moist, lettuce-like or jicama-like flavor. Ripening to a reddish hue August through October, the plump fruit of the banana yucca was served raw or roasted, with a taste akin to summer squash. Sun-dried pulp was boiled in water for syrup as well as kneaded into cakes for winter use.

"OUCH, THAT HURTS"

Native people, through generations of observation and experimentation, found medicinal uses for a myriad of desert plants. Along the Gateway, Windgate, and Bell Pass trails, you'll notice abundant brittlebush and bursage. These shrubs, though not used for food, were employed by native peoples to cure everyday aches and pains.

Tea steeped from dried brittlebush flowers was applied topically to soothe skin inflammation, rash, and sunburn pain. The Tohono O'odham (formerly Papago) lodged the pliable, amber sap beads oozing from brittlebush stems into teeth to relieve toothache pain.

Dried leaves of triangle-leaf bursage were steeped as tea, and then applied topically as an antiseptic wash. In a hot tea, the anti-inflammatory, anti-secretory properties of bursage eased sinus and allergy problems.

Creosote and white ratany, both well represented on all Gateway area trails, also served the medicinal needs of native people. Creosote was revered as the most important medicinal plant among both Pima and Papago. Leaf tea was applied topically for chapped skin and as an antiseptic dressing for cuts and bruises. Powdered leaves were applied as deodorant by the

Pima. A tincture from leaves and roots was used to treat blood disorders. Creosote leaf tea was drunk as a treatment for everything from gas to gallstones, headache to high blood pressure.

Tea brewed from dried ratany roots was gargled for mouth sores and sore throats. Taken internally, the astringent ratany root tea treated diarrhea, colitis-like symptoms, and hemorrhoids.

Along the Horseshoe trail, check the washes for stands of jojoba. The anti-inflammatory effect of jojoba leaf tea treated breathing difficulties and calmed irritated mucous membranes. Jojoba nuts were crushed on flat rocks; the waxy insides were dampened with water, with the resulting salve-like mix applied as a skin emollient.

On Gateway Loop, you'll find ocotillo and mormon tea, plants that also found their way into the earliest Sonoran Desert medicine kits.

Native people brewed an ocotillo bark tea, applying it topically to relieve fatigued limbs and to reduce swelling. Taken internally, tea brewed from the inner bark relieved constipation.

Raw stems of mormon tea were chewed by Archaic Hunters and Gatherers as an appetite suppressant. Chewing stems also increased saliva for temporary relief from thirst. The leafless twigs were boiled and brewed as a remedy for kidney pain, urinary tract inflammation, allergies and asthma.

WORDS OF CAUTION

Though many Sonoran Desert plants are edible, not all are palatable or agreeable. Moderation is key, as many plants are high in alkaloids that can cause intestinal distress. Never eat any portion of any plant unless you are certain of its identity, harmlessness, and means of preparation. Consumption by animals is not a reliable indicator of edibility or medicinal use. Always exercise caution when handling desert plants. Be advised that Chapter 21 of Scottsdale code states that "no person shall destroy, dig up, mutilate, collect, cut, harvest, or remove any live or dead tree or plant material in or from the Preserve."

HIKING . . . LEARNING

Many of the plants described above had additional significance in the lives of native people by serving as building materials, having decorative uses, acting as fuel for cooking and warmth, and playing a role in social and spiritual rituals. But that's a story and a hike for another day on the McDowell Sonoran Preserve's Gateway area trails....

Enjoy Gateway's present beauty as well as its past traditions.

Reflect on the lives of earlier Sonoran Desert residents, and how their food and medicinal needs were harmoniously intertwined with the plants of their environment. Whether a regular hiker on the Gateway trails or a new visitor to the McDowell Sonoran Preserve, hopefully you will also share this Cocopah sentiment: “I own this land with my heart.”

Thanks to my fellow Stewards for their contributions:

—Bill McNulty for spotting the palo verde, ironwood, and mesquite trio at N33 39.188, W 111 51.44; .3 miles up the trail from marker DP7

—Mary Lou Mulloy for assistance while scouting the Gateway area trails

—Joni Millavec for her yucca advice

—Don Bierman and Marianne Jensen for their photographs

A Desert Dinner Menu

Mesquite Cornbread

(courtesy of Native Seeds SEARCH, Tucson)

¾ c. each cornmeal and flour

½ c. mesquite meal ***

2 tsp. baking powder

½ tsp. each baking soda and salt

1 c. buttermilk or yogurt

2 eggs

3 T. maple syrup or honey

3 T. oil

Combine dry ingredients in medium-sized bowl.

Combine wet ingredients and stir into the dry ingredients just until combined. Spread into greased 8"x8" pan. Bake 20-25 minutes at 350° F.

Optional to mix in with dry ingredients: 1 c. fresh or frozen corn, ¾ c. grated jack cheese, 3 T. minced onion, 1 T. chipotle flakes

***Mesquite meal is available at Whole Foods and at www.nativeseeds.org.

Natalie's Prickly Pear BBQ Sauce

(<http://www.bajaaz.org/prickly-pear-recipes>)

1 ¼ c. prickly pear nectar *** Or homemade prickly pear juice

¾ c. frozen apple juice concentrate

½ c. diced green bell peppers

½ c. apple cider vinegar

½ c. red chile paste or 1 t. red chile powder

2 T. fresh roasted green chiles

1 T. diced fresh jalapenos

1 envelope unflavored gelatin

4 t. soy sauce, pinch of salt

Mesquite tortillas

Blend all ingredients and simmer 20 minutes until thick. Use on any type of meat or freeze for later use.

***Prickly pear nectar (99% juice and pulp) is available from Arizona Cactus Ranch in Green Valley, AZ. Visit www.arizonacactusranch.com

This product is not the same as the "Prickly Pear Syrup" sold in food stores and souvenir shops.

Serve your BBQ wrapped in mesquite tortillas, available frozen at New Life Health Center on Oracle Rd., Tucson, Arizona

Cholla Bud Hash

(from The Tumbleweed Gourmet by Carolyn Niethammer)

1 c. fresh, de-spined cholla buds

2 medium zucchini, chopped

1 medium onion, chopped

½ c. shredded cooked beef or pork

Chili powder, to taste

Pepper, to taste

Steam cholla buds over boiling water for 15 min.

Spread on a baking sheet in a warm spot for 1-2 hrs., until they are slightly shriveled. Saute cholla buds with chopped zucchini and onion in a saucepan sprayed with vegetable spray until soft. Add shredded meat and season to taste.

Prickly Pear Chipotle Salad Dressing

(courtesy of Tucson ethnobotanist Martha Burgess)

⅔ c. olive oil

⅓ c. red wine vinegar

⅛ c. prickly pear juice (or syrup)

3 T. chipotle flakes (start with less!)

Blend all ingredients well. Adjust prickly pear juice and chipotle flakes to taste. Best if made early to allow flavors to blend.

Classic Mesquite Cookies

(courtesy of the Desert Botanical Garden)

¾ c. sugar

¾ c. margarine or butter

½ c. mesquite flour

1 ½ c. flour

2 eggs

Preheat oven to 375° F. Cream sugar and margarine. Add eggs and mix well. Sift dry ingredients and blend in. Bake for 8-10 minutes. Do not overbake—mesquite browns quickly and burns easily.

Biodiversity and the McDowell Sonoran Preserve

Ruthie Carll, MS
McDowell Sonoran Conservancy Executive Director



Biodiversity is a term that represents the variety of life on planet earth — from microscopic mosses to towering trees and everything in between. The level of the planet’s biodiversity directly correlates to environmental stability and can even affect us as individuals. We need to better understand what biodiversity is and why it is important. Our lives depend on it.

How Does Biodiversity Affect Environment Stability?

The biodiversity of an area is quantifiable – you can count the number of species and their population sizes. Scientists use biodiversity as an indicator of stability, which is difficult to determine as it is the number and quality of the relationships, or interactions, between living things that affect ecological stability. And, to make matters more difficult, we don’t know the extent of even a single species relationships – let alone those of all species in a given habitat.

In order to illustrate biodiversity’s affect on stability, let’s use the analogy of a factory. The different employee roles will represent species. In the factory, there are the highly visible jobs (i.e. easy to identify and quantify.) The general manager has a complex, pivotal role that influences the entire factory’s success. While many individuals perform specific tasks on the assembly line, as a group they are the foundation of the factory. Even some of the less visible roles such as those in the “back office” are fairly easy to identify and understand: the bookkeeper, human resources staff, and CEO’s assistant.

The functioning of the factory is also influenced, however, by less easily identifiable contributors. It is the UPS driver who brings the parts for the broken machine, the person who fills the soda machine or the soap dispensers, and the electrician that replaces the circuit that keeps blowing who also affect the factory’s success but are less easily identified. That is – until they are gone.

This is the same as in a habitat. The main contributors are easily identified. With a little more investigation, the support roles are too. In the Preserve, trees are general managers. They have complex, pivotal relationships with many species. Small shrubs such as bursage and brittlebush form the assembly line and cacti are the specialists in the back office.



It is the infrequent, hidden, or very specialized roles that are often the glue that keeps the habitat stable. Examples are the fungi in the soil that help plants survive



drought and the termites that breaks down wood. When biodiversity declines, it is like losing people in the factory. Sooner or later, one too many roles will be lost and the factory will close.

Scientists are concerned about the rate of biodiversity decline across the planet. Their fear is that, if the noticeable or known species are declining, what are we losing that we haven’t discovered yet? What role did these unknown species play in the habitat’s stability?

How Can Biodiversity Be Measured?

Biodiversity can be measured in three ways. Each has implications for the habitat as a whole.

Diversity within a Species

When you imagine a group of jackrabbits, you probably think they all look alike. You might be surprised to learn individuals in any given species are as different from each other as you and I are in our species. One jackrabbit might have slightly longer ears, another, a darker tail and coarser fur, and so on. This is due to the genetic diversity within their species. A healthy species has a lot of diversity.

In order for a species to have meaningful genetic diversity, there have to be enough members to carry the different traits. The Preserve is large, supporting populations of plants and animals with enough members to have a diverse gene pool. This is one reason why we advocate for completing the Preserve. Connecting the Tonto National Forest to the McDowell Mountain Regional Park creates a contiguous stretch of natural land that can support a healthy population of even large animals like deer and mountain lions.

Species Diversity

Species diversity refers to the number of different species in the area. The more species found in an area the better, so if one species is lost, others can fill its role. When too many of a similar group of species or a dominant species is lost, the habitat may become unsustainable.



Because the Preserve contains many landforms and a variety of environmental conditions, it provides a multitude of different habitats and is home to many species. For instance, this past wildflower season we documented 104 wildflower species in April alone. Some species specialize in a specific place, like a lichen on a south-facing cliff face. Others are generalists, like triangle-leaf bursage, which grows throughout the Preserve.



Photographers: R. Buchbinder, R. Carll, M. Jensen, E. Mertz, B. White

partnerships, environmental education, and stewardship.

Ecosystem Diversity

Ecosystems are made up of the interactions between all the living things found in a particular area with all the non-living things like soil, water and air. Tropical rainforests, grasslands and deserts are examples of ecosystems. Ecosystems with a high degree of interactions are more stable than those with fewer interactions.

The Sonoran Desert, the ecosystem in which the Preserve resides, has the greatest plant diversity of any desert in the world. It is also home to extensive numbers of animals and microbes. In fact, our Sonoran desert is one of the most diverse places on Earth. Due to the Preserve's size and physical diversity, it is one of the most diverse areas in the Sonoran Desert's Lower Colorado subdivision.

[How "Healthy" is the Preserve's Biodiversity?](#)

We believe the Preserve's biodiversity is healthy. This is not something to take for granted, however. Often in areas that experience a diversity decline, the decline is irreversible by the time it is noticeable. Because of this, we have begun planning to establish a research center, the McDowell Sonoran Preserve Field Institute, to begin examining the health and scope of the Preserve's living and non-living (i.e. rocks, water cycle, etc.) components. This planning includes input from representatives from the City of Scottsdale, ASU's Global Institute of Sustainability and School of Life Sciences, Arizona Game and Fish, and the Arizona Geologic Survey.

Some biodiversity issues that may be investigated include:

- Identifying the Preserve's plants, animals, and microbes to form a baseline for future comparison
- Determining if there is a level of trail usage at which the biodiversity level is negatively effected
- Evaluating the "edge effect" at the wildland/residential interface to monitor for negative effects to the Preserve"

[How Does MSC Protect the Preserve's Biodiversity?](#)

MSC is staying true to its mission—to champion the completion and sustainability of the McDowell Sonoran Preserve by connecting the community to the Preserve through public and private

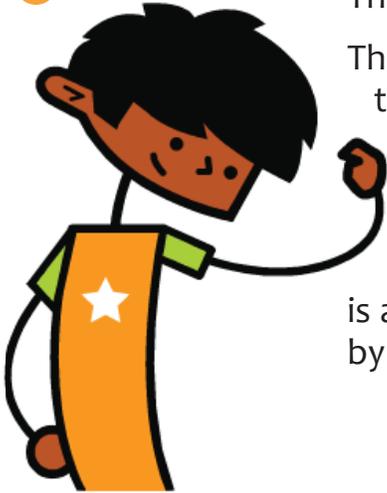
Here are a just few examples of our efforts:

- MSC is actively working with city and state trust land leadership to ensure that the Preserve is completed. An acquisition strategy for the remaining state trust land within the Preserve Boundary was recently submitted by Scottsdale city staff and the McDowell Sonoran Preserve Commission to city council, who approved initiating the first steps of the plan. MSC supports these steps and will continue to monitor and, when possible, participate in the acquisition process.
- We facilitate the donation of parcels of land suitable for conservation adjacent to the Preserve boundary. Those who own this type of land can either donate the land itself or donate a conservation easement to MSC. In most cases, this donation qualifies for tax relief as MSC is a 501(c)(3) private non-profit. MSC, in turn, donates the land or easement to the city, thus expanding the Preserve and protecting more land from habitat conversion or fragmentation.
- Introducing residents to the Preserve through meaningful experiences fosters a sense of ownership of the Preserve. MSC's Corporate Partner Program reaches out to the corporations at their locations and brings corporate groups to the Preserve for team-building trail projects. Once someone has worked on a trail, they have a connection that will ensure their support of the Preserve into the future.
- The Community Conservation Alliance is specifically targeting residents who live within a few blocks of the Preserve's boundary to ensure that they understand their potential affect on the Preserve merely by living so closely to it. This fragile urban/wildland interface is one of the longest of its kind in the nation. Those who live closest also should be the biggest advocates for the Preserve. Currently, many Stewards come from the surrounding neighborhoods and many nearby residents join our community projects.

MSC is working to protect the Preserve's biodiversity through stewardship of the McDowell Sonoran Preserve while it is still rich. We believe that this is our part of the global effort to slow the loss of biodiversity. We work hard to make sure that you and I, and generations to come, can continue to enjoy the diversity of the Sonoran desert and its mountains.

Family Fun Page

Hi Kids! I'm Sandip and I have a biodiversity puzzle for you!



This issue of the Mountain Lines is about BIODIVERSITY.

This is a big word that means "the variety of living things" in a place like the Preserve. There are many many plants and animals in the Preserve so we say that there is a high amount of biodiversity.

There are 12 animals that live in the Preserve hidden in the leaves of the tree below. Can you find them? To help you identify them, there is a list of their names on the right. But - I've turned them into a puzzle by leaving out all of the vowels.

C _ C T _ S W R _ N

J _ C K R _ B B _ T

B _ _ _

D _ _ R

H _ W K

S N _ K _

B _ T

M _ _ S _

B _ B C _ T

C _ Y _ T _

L _ Z _ R D

K _ N G _ R _ _ R _ T



Dr. Andrew Smith

Parents Association Professor
School of Life Science, Arizona State University



Dr. Andrew Smith primarily conducts research in the mountains of the western United States and on the Tibetan Plateau in China. He recently completed *A Guide to the Mammals of China* (Princeton University Press). He serves as Chair of the IUCN Species Survival Commission Lagomorph Specialist Group, and recently was a major contributor to the IUCN Global Mammal Assessment – the most comprehensive attempt to date to determine the status of the world’s mammal fauna. His interests focus on the behavior, population biology, and conservation of mammal populations utilizing studies that range from metapopulation dynamics to keystone species status. His work is designed to deepen our understanding of the complex interactions determining habitat status for the establishment of effective policies on grassland restoration, biodiversity, and economic development.

When did you first develop an interest in nature?

I must thank my parents for this – as I was introduced to camping at the ripe age of one in Tuolumne Meadows in the Sierra Nevadas. I was brought up loving the mountains, and I still consider the eastern Sierras my home. It has been my observation that ecologists and conservation scientists who have a passion for natural history and who feel comfortable in nature make the most substantial contributions to both academic and applied fields in ecology and conservation.

What is biodiversity?

Conservation scientists consider biodiversity (short from biological diversity) to encompass the variety of living organisms at all levels of organization – including genetic variability, species richness, and ecosystem complexity. Most include the processes that maintain these critical elements. In reality, biodiversity to most people is the number of species they witness in nature – whether through dedicated bird watching or simply their appreciation of the variety of species they encounter while rambling along a wilderness trail. What is most important for people to understand is the value of biodiversity, which – in addition to the aesthetic value of observing nature -- can provide critical direct and indirect economic benefits to our societies. Additionally, there are profound ethical reasons to preserve our earth’s biological heritage. Extinction truly is forever.

Why should the general public be concerned about the status of the biodiversity of our desert?

The desert in and around the Valley of the Sun represents the legacy we have inherited from our forefathers and which we should feel compelled to pass on to our children. Nothing could be more presumptuous of our society than to reduce the beauty of our desert to rubble in the name of short-term economic gain, and to bequeath a moonscape to future generations.

What began your quest to connect sound science with public policy?

The “what began” part is hard to determine, as I cannot remember a time when I did not believe that public policy was best informed by sound science (versus uninformed rants!). A role of science is to factually determine threats to our society (including the biological resources upon which we depend) and to suggest clear workable alternatives to mitigate those threats. In China I am involved in a large-scale multi-year project to determine the sustainability of the Tibetan grasslands – for biodiversity as well as the local pastoralists. This region is currently being managed with huge development projects, none of which are supported by any scientific input. Here at home I am providing data and analyses I have gathered on the American Pika since 1969 to inform the decision (due soon) as to whether or not the species should be listed as endangered under the US Endangered Species Act because of its susceptibility to climate change. This listing process has been pushed for political reasons with the intent to make the pika a poster child for global warming initiatives. However, there is no evidence that the pika is endangered, although it may be a desirable indicator species for global warming. My take on this issue is that creditable data should drive the outcome; if we cannot base public policy on sound science, we will severely jeopardize our ability to make proper decisions in the future.

If you were trying to explain to someone, child or adult, why the Preserve is important, what would you say?

The Preserve is important because it is a jewel! It is a place where we can go to relax, rejuvenate, and recalibrate ourselves from the hectic world in which we live. It is a place where we can bear witness to the beauty of the natural environment and its biodiversity. The recent large format book *Wilderness* produced by Conservation International highlights the uniqueness of the Sonoran Desert; what we have is special and we should appreciate its bounty.

What about the future of science and society makes you hopeful? Fearful?

I love my role as a professor of conservation biology. I see scores of enthusiastic, talented and committed young people who will be a major force in ensuring that we make quality decisions based on the preservation of biodiversity. Does this make me hopeful? You bet! On the other hand, we live in a society that is increasingly self-centered and selfish – one that lives moment to moment on blackberries and twitters – a society that does not appreciate the beauty and rewards of nature and biodiversity. Fearful - yes. Sad – definitely.

Update on North McDowell Access Area

Scott Hamilton
Preserve Planner,
City of Scottsdale

With the completion of the Gateway to the McDowell Sonoran Preserve under our belts, it is now time to turn our attention to the next major project on our list, the North McDowell Access Area. In general, access areas (trailheads) are critical to the management of the Preserve, as they provide well designed and managed public access points to the Preserve. It is important to provide public access to the lands the citizens have taxed themselves to acquire, and to do it in a manner that places a high value on maintaining the aesthetic and ecological integrity of the land. Construction of access areas began in 2005 with the Sunrise Trailhead and has steadily moved north, including the Lost Dog Wash Trailhead (2006), and most recently the Gateway to the McDowell Sonoran Preserve (May 2009).

The Preserve Access Area Report serves as the guiding document for access area locations and the amenities they should include. The locations are spread around the perimeter of the Preserve to provide ample opportunity for the Preserve users to disperse, and to not focus too much use in any one place. The amenities depend on the classification of the access area, which can range from minor (Sunrise), to major (Lost Dog Wash), to Gateway. The North McDowell Access Area is classified in the report as a major trailhead, on par with Lost Dog Wash.

The North McDowell Access Area will be located on the north side of the McDowell Mountains, east of 128th Street, and will serve as the primary access point to the northern end of the Tom's Thumb Trail and the planned Marcus Landslide Trail along the east flank of the McDowells. Trail connections will also be made into the McDowell Mountain Regional Park, with access to the popular Pemberton Trail. Vehicular access to the North McDowell Access Area will be from the north via 128th Street.

The amenities provided at the North McDowell Access Area will include parking for 100 passenger vehicles and 10 horse trailers, restrooms, a covered seating area, interpretive displays, hitching rails, and water facilities. The new trailhead will be designed and constructed in accordance with the City's environmental goals, and will include a photovoltaic power system, low or no water-use restrooms, graywater and rainwater harvesting, and native landscaping. Natural materials will be used to blend the aesthetics of the building into the desert environment. Site selection will focus on avoiding sensitive habitat areas and natural drainage corridors. And, methods will be utilized during construction to reduce waste and assure a high level of recycling of waste materials.



Construction of the North McDowell Access Area is scheduled to begin in the summer, with completion expected in the spring of 2011. We will keep the temporary access to the area open as long as we can, but may need to place restrictions once construction begins. Volunteers from the MSC will play an important role in salvaging cactus prior to construction, so keep an eye on the calendar of events for opportunities to get involved.

The northern end of the McDowell Mountains is an area with extraordinary rock-climbing opportunities, which has made it a popular destination for rock climbers for many decades. Many of the prominent rock features in the area carry names first given by rock climbers, such as Sven Slab, Morrell's Wall, Gardener's Wall, and of course- Tom's Thumb. The latter received its name 45 years ago in honor of Tom Krueser, a local climber who was one of the first to climb to the top of the granite spire.

The City of Scottsdale has been working closely with the Arizona Mountaineering Club (AMC) to define a series of narrow and rugged climbing access routes that provide connections for the rock climbers from the primary trails to the climbing crags. Earlier this year, the AMC received a grant from the Access Fund, a national climbing advocacy group, to fund the installation of directional signs and emergency markers along the climbing access routes. In October, the AMC sponsored an Adopt-A-Crag volunteer event, which focused on installing these signs.

If you have questions about the North McDowell Access Area, or anything else Preserve-related, please call me at (480) 312-7722 or email me – shamilton@scottsdaleaz.gov. Hope to see you on the trail!

Something New on the Trails

For exercise, a unique learning experience, or just plain fun, there's an MSC guided hike for almost every interest and hiking level. And this is true now more than ever!

Each year, over 1,000 people participate in MSC's free public hikes. The feedback from participants is overwhelmingly positive. One common request, however, is for more information in the hike program's schedule to help participants better match their interests with the many hikes.

This fall, MSC's Hike Leaders Team introduced three hike categories in response to this feedback.

Fitness Hikes:

These hikes are designed to provide a cardiovascular workout while exploring the outdoors. There will be a few stops and participants should be in good physical condition. Take a break from the gym and join us on a fitness hike!

Highlighted Hike — Sunday, Dec 20, Lookout Trail, 8:30 AM to Noon, 5.6 miles

Lookout Trail has steep, sustained, and sometimes slippery climbs through interesting rock formations leading to a spectacular point overlooking the Preserve and central and west valleys. There is a 1,150-foot elevation gain.

Recreational Hikes:

These hikes are perfect for the new and experienced hiker alike. Hike leaders proceed at a relaxed pace and several short informational stops are included. These hikes are a perfect way to explore the Preserve and learn some interesting facts about its current and past inhabitants.

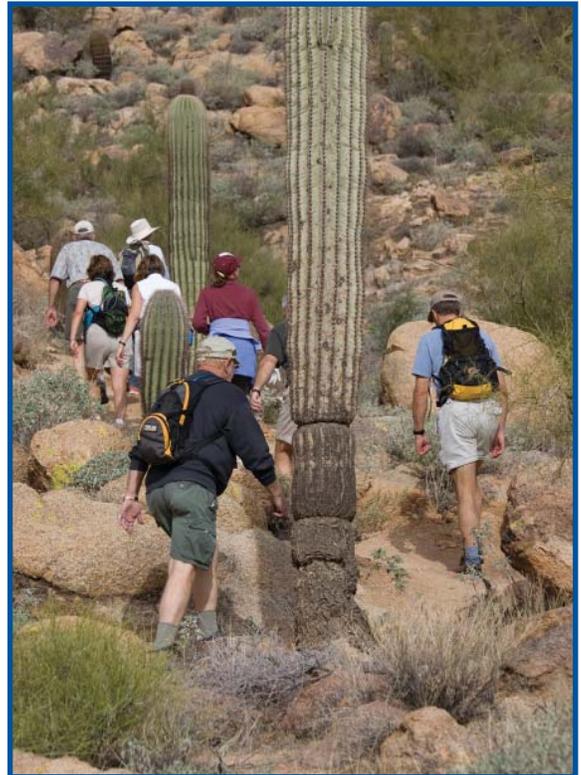


Highlighted Hike — Sunday, Dec 27, Quartz Trail to Taliesin Overlook, 8:30 AM to 11:30 AM, 5 miles

This roundtrip hike climbs to a scenic saddle overlooking Frank Lloyd Wright's architectural complex while at the same time stopping occasionally to learn about a few of this trail's residents. This hike has one short, sustained incline but otherwise gentle ups and downs.

Educational Hikes:

These hikes can be thought of as a "class on foot." They have focused topics, and are led by professional and hobbyist experts in their subjects. The distance covered will depend on the topic but will generally be fairly easy. Topics



range from photography to mining and from ethnobotany to insects.

Highlighted Hike — Saturday, Dec 12, The Micro Desert at the Gateway, 8:30 AM to 11:30 AM, 6 miles

There is an entire world at your feet! On this hike you'll learn about the small, usually overlooked plants and animals that are vital to the desert environment on the Gateway Loop trail. A 700-foot elevation gain on gradual grades.

See the website for all hike details and we'll see you on the trails!

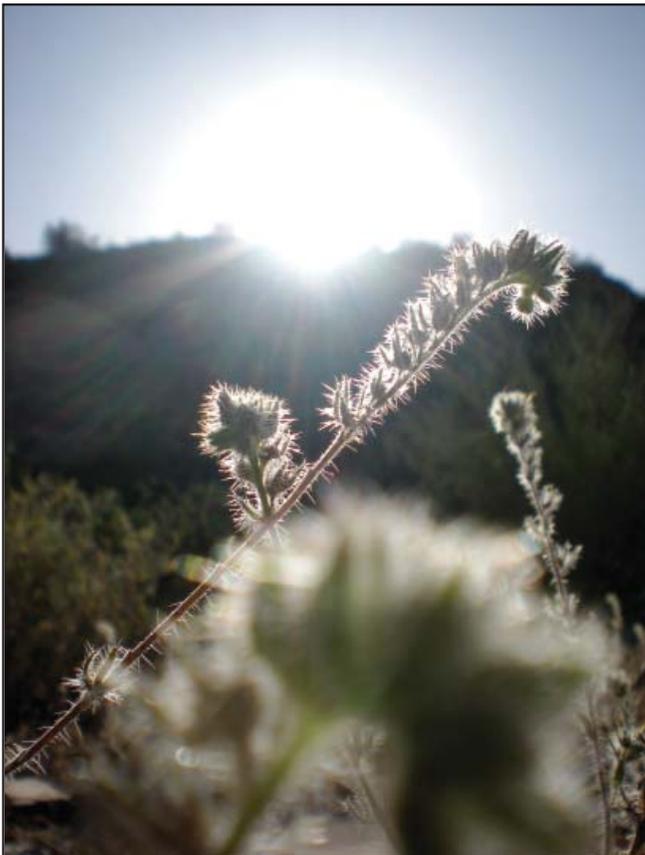


2nd Annual Focus on Conservation Photography Contest

Congratulations to the 2009 Winners!

MSC challenged you to get in to the Preserve and take your best shot. You responded with over 400 hundred entries! A panel of experts judged entries on both technical and artistic merit. Winning entries were those whose overall impact best captured the McDowell Sonoran Preserve as a natural treasure to be protected and preserved. The judging panel included Kris Sanford, photographer and current Phoenix Artist in Residence; Peter Ensenberger, Director of Photography for Arizona Highways Magazine; and Mark Klett, ASU Regents' professor and renowned photographer whose work is included in permanent exhibits worldwide including the Museum of Modern Art, New York.

Grand Prize: Don Bierman
Division: Advanced
Category: Geology

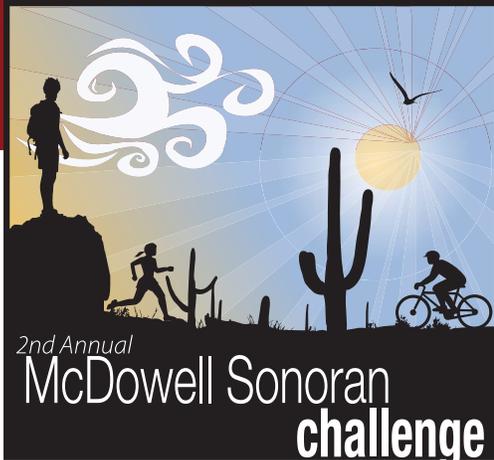


Participating in the Focus on Conservation photography contest is one way you help MSC achieve our mission. Through these photographs, we bring the Preserve into the community as a traveling exhibit, on our website, and in a printed exhibit catalog. For some, this may be their introduction to the Preserve, sparking their interest in hiking, mountain biking, or volunteering. For others, it may be an accessible way for them to experience the beauty of this living treasure.

First Runner Up: Rachel Baer
Division: Youth
Category: Flora and Fauna



When looking for something unique for a holiday gift, visit MSC for a special new book: *Focus on Conservation Photography*. This oversized book features all of the winners and some honorable mentions from this year's photography contest. The stunning photography truly brings the Sonoran Desert to life!



22 mile Mountain Bike or 9 mile Hike or 15k Run February 27, 2010

Take the Challenge on February 27th, 2010!

Run 15K, bike 22 miles, or hike 9 miles in State Trust Land designated for conservation. Through a special land use permit, we have been granted access by the Arizona State Land Department for this special event to support the McDowell Sonoran Conservancy and help spread the message that the Preserve needs to be completed.

The timed Challenge will be held on a section of the State Trust Land normally requiring a special permit. Separate courses for trail runners, mountain bikers, and hikers will lead participants through beautiful mountains and desert. Runners will race past Cone Mountain, cyclists will ride past Cholla Mountain, and hikers will experience the historic Brown's Ranch. MSC Stewards will be on hand along the course to ensure a safe and enjoyable experience for all participants.

The free fitness expo and celebration will include food and beverages, music, merchandise and fun for hike, bike and runner enthusiasts of all ages.

Cost is \$45 and includes custom reusable goodie bag.

Early registration until January 15th includes t-shirt & custom goodie bag.

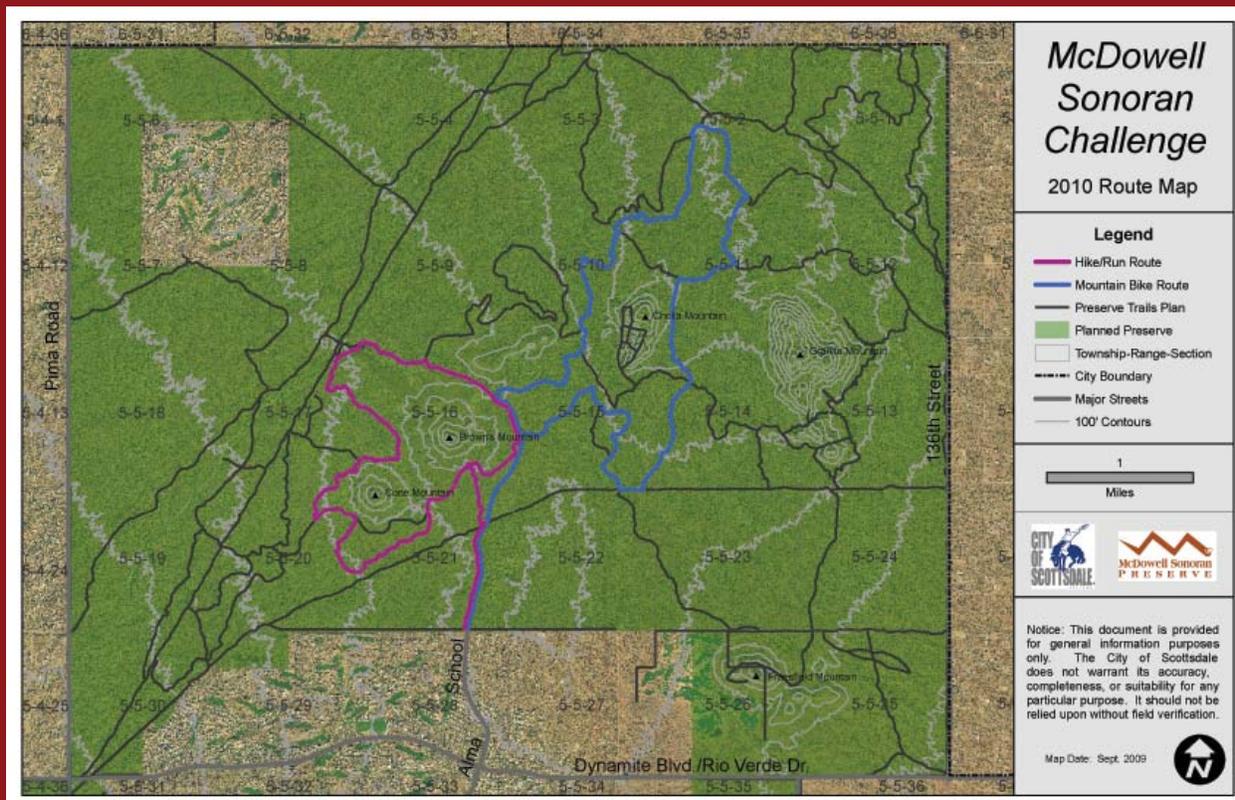
*Space is limited, so register early! T-shirts will be available for additional \$10.

Challenge Schedule

- 7:00 a.m. Packet Pickup & Late Registration*
- 8:00 a.m. Bikers start
- 8:15 a.m. Runners start
- 8:30 a.m. Hikers start
- 9:00 a.m. Fitness Expo opens

For more information, including detailed course descriptions and to register, visit:

www.mcdowellsonoran.org
www.active.com



Leave a Legacy with the McDowell Sonoran Conservancy

Donating land for conservation is one of the finest legacies a person can leave to future generations. Your generosity through a legacy gift will help protect our land now, and ensure that it will be protected in perpetuity.

If you live around the McDowell Sonoran Preserve, every day you are able to experience the wonder of this living treasure. To ensure others will have this same opportunity, you can contribute to the Preserve through a land donation to the McDowell Sonoran Conservancy. By making a gift of land you can help preserve a healthy community, clean air and water, and natural open space for the enjoyment of future generations.

There are few things that a person can do in their lifetime that can have such a lasting effect. Please contact Linda Raish at 480-998-7971 ext. 101 for more information about making a donation of land.

The great use of life is to spend it for something that will outlast it.

- William James, American philosopher

Outright Land Donation

A landowner can protect their property with the outright donation of land to the McDowell Sonoran Conservancy. An outright gift of property potentially offers the landowner maximum immediate tax benefits – the landowner may receive the full market value of the property as a charitable tax deduction, and can avoid the capital gains tax that would be due from a sale. In addition, a gift of land helps create a legacy of open space for generations to come.

Conservation Easement

Another way to ensure family lands are protected in perpetuity is the conservation easement. A conservation easement is a legal agreement a property owner makes to restrict the type and amount of development that may take place on his or her property. Each easement's restrictions are tailored to the particular property and to the interests of the individual donor. The typical easement has the effect of limiting real estate development of the property while allowing certain current uses to continue. The easement is generally put in place to protect some important conservation value of the land such as wildlife habitat.

Join Our Circle of Friends

As a community member who values the outdoors, and specifically the Sonoran Desert, you understand the importance of preserving and maintaining open space now to ensure its availability in the future. This shared appreciation of the desert is why we are inviting you to join us today as a Friend of the Preserve... either through our website at www.mcdowellsonoran.org or by returning the membership form below.

Yes!
I want to help preserve my desert and mountains by joining MSC's Circle of Friends.

<input type="checkbox"/> McDowell Sonoran Society (\$1,500+)	<input type="checkbox"/> Trailbuilder Circle (\$500)	<input type="checkbox"/> Caretaker Circle (\$250)
<input type="checkbox"/> Steward Circle (\$1,000)	<input type="checkbox"/> Hiker Circle (\$50)	<input type="checkbox"/> Other _____
<input type="checkbox"/> Pathfinder Circle (\$100)		
<input type="checkbox"/> Please charge my credit card	<input type="checkbox"/> A check is enclosed	
Credit Card # _____		Expiration Date: _____
Name as it appears on the card _____		
Name(s) by which you would like to be acknowledged _____		
Address _____		Email _____
_____		Phone _____
<input type="checkbox"/> I would prefer that my gift remain anonymous		

Mail to: McDowell Sonoran Conservancy • 16435 N. Scottsdale Rd. • Suite 110 • Scottsdale, AZ 85254

Preservation Partners

The McDowell Sonoran Conservancy is proud of the support we receive from corporate, community, public and private foundations, and recognizes this support through our Preservation Partners program.

Through financial contributions and by joining with MSC on volunteer work projects, Preservation Partners acknowledge the public value of the vital work we do. Our partners recognize that the Preserve creates economic benefits for the community. Preservation Partners enjoy the benefits of visibility and prestige to a targeted audience of more than 200,000 local residents and thousands of Scottsdale visitors.

We also are able to provide a variety of unique opportunities to connect clients and employees with the Sonoran Desert and its mountains. By engaging corporate employees to participate during family-friendly trail work projects, we create a strong voice of support for the Preserve. MSC Crew Leaders train employee volunteers at the beginning of each work day, explaining why we remove or replace plants in an area, or why removing invasive weeds from a designated section helps the Preserve. The work reinforces our messages about why people should stay on designated trails. Teams learn about how to protect the Preserve at the same time as they are forming a bond with the land. More fully committed to preservation, they take conservation messages back to others in their company.

For more information about the Preservation Partner program, please contact Linda Raish at (480) 998-7971, extension 101.

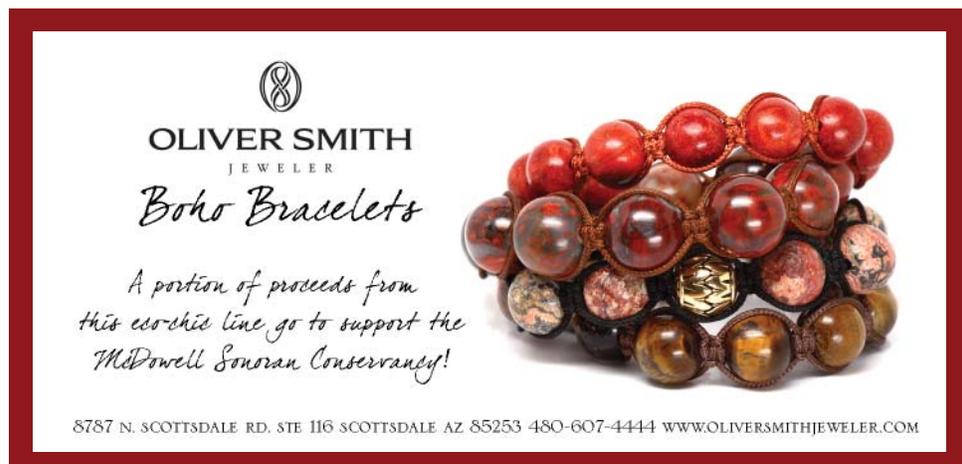
Businesses Support Preservation

Even in this tough economy, the local business community is supporting the McDowell Sonoran Conservancy! Businesses understand the value of open space. Green cities offer a high quality of life that consistently attract and retain businesses and employees. In fact, the Joint Economic Committee of Congress found that businesses are attracted more by a city's quality of life than purely by business-related factors.

Increase in demand for preserved open space and other environmental services is well-documented. A poll commissioned by the President's Commission on Americans Outdoors found that natural beauty was the single most important criterion for tourists. The economic importance of outdoor recreation is significant in Arizona, underscoring the significant contribution the Preserve makes to the local economy.

Many businesses provide an outright donation to MSC in support of open space through our Preservation Partners program, and others provide a portion of the proceeds of sales. They realize the positive effect of connecting their business, consumers, and the non-profit community through philanthropy. Oliver Smith, owner of Oliver Smith Jewelers and MSC Board member, has pledged a portion of the sales from his BOHO Bracelet line to support the McDowell Sonoran Preserve. Businesses also offer special discounts to MSC volunteers and donors. We appreciate the support we receive from the business community, and encourage others to join the conservation cause by purchasing goods and services from our partners.

For more information, please visit the Oliver Smith Jeweler website at <http://www.oliversmithjeweler.com>



OLIVER SMITH
JEWELER
Boho Bracelets

*A portion of proceeds from
this eco-chic line go to support the
McDowell Sonoran Conservancy!*

8787 N. SCOTTSDALE RD. STE 116 SCOTTSDALE AZ 85253 480-607-4444 WWW.OLIVERSMITHJEWELER.COM

Matching Gifts

Multiply your gift to the McDowell Sonoran Conservancy. Thousands of companies have matching gift programs which double, or even triple, volunteer time and individual contributions made to qualifying organizations. Some companies even match gifts by retirees. To coordinate a matching gift, fill out a matching gift form obtained from your place of employment, then send the entire form to McDowell Sonoran Conservancy, 16435 North Scottsdale Road, Suite 110, Scottsdale, Arizona 85254.

If you have already been participating in your company's matching gift program, please accept our sincere appreciation for your support!

Thank you for your support!

By joining the McDowell Sonoran Conservancy, you will ensure that the McDowell Sonoran Preserve continues to be a pristine open space to visit and enjoy, as well as a permanent sanctuary for wildlife.



Wondering what to do with out of town guests this holiday season?

Visit the Bajada Nature Trail at the Gateway Trailhead!



This is the perfect venue for experiencing a real desert trail for those who don't have the time, gear, or inclination to take a long hike into the Preserve. The trail is completely barrier-free, offering everyone the opportunity to enjoy the beauty and peace found in nature.

When: Anytime between sunrise and sunset.

Where:

What: An easy stroll along a smooth, fully accessible path through natural desert, investigating the surrounding plants, animals, microbes, and history of the Gateway area.

How: No special footwear or hiking equipment needed, although water and a hat will make you more comfortable. The Preserve has no admission fee, and no reservations are needed, so you can visit whenever convenient.

Check out the calendar of events on our website for more activities www.mcdowellsonoran.org

