



Mountain Lines

Vol.14, No. 7 May, 2008 Preserving Our Desert and Mountains www.mcdowellsonoran.org

Candidates' Forum: The Future of the McDowell Sonoran Preserve

The McDowell Sonoran Conservancy (MSC) will sponsor and host a candidates' forum on the future of the McDowell Sonoran Preserve at 7 p.m. Wednesday, July 16, at the Granite Reef Senior Center, 1700 N. Granite Reef Rd., in Scottsdale.

Invitees will include the Scottsdale Mayoral candidates and incumbents and contenders for the three other city council posts up for election. Balloting is scheduled for Sept. 2.

Under the session's format each of the candidates will make brief introductory remarks on the subject and then answer questions from a panel of news people and other experts on the Preserve and the broader land-preservation issue. Questions from the public also will be entertained. Ruthie Carll, MSC's executive director, will moderate the discussion.

The forum and election come at an important time for the Preserve, Scottsdale's open-land treasure. A January jury award of \$81.9 million to the homebuilder Toll Brothers for 383 acres that had been designated as the Gateway to the Preserve was larger than many had expected. It raised questions about the city's ability to purchase the remaining



A candidates forum allows candidates for public office to express their views openly so audience members can understand their positions and make informed voting choices.

acres of trust land. Without state action enabling municipalities to avoid auction in purchasing trust land they wish to preserve, the land may be hard to acquire, and difficult decisions about its disposition will have to be made.

An effort by Governor Napolitano and some state legislators to craft a referendum on the matter is stalled. A new initiative has been launched but it remains to be seen if backers can gather enough signatures to get it on this November's ballot.

Sponsorship of the forum is in keeping with MSC's role as advocate for the land-preservation cause in Scottsdale and throughout Arizona. The private, non-profit, non-partisan organization also conducts desert-education programs and is Scottsdale's partner in maintaining, patrolling and welcoming visitors to the Preserve. Its more than 250 volunteer stewards annually contribute to the city thousands of work-hours in these functions. 🏠

16,000 acres of state trust land included in the voter approved boundary.

The future of the northern area was put into question by the November, 2006, defeat of Proposition 106, a statewide initiative to reform the way the state sells its 9 million

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We had just established "overcoming threats to the Preserve" as the theme for this issue.



I looked out the window at the Preserve during our Mountain Lines meeting. Our office windows provide a beautiful view of Tom's Thumb. The mountains look so rugged, like nothing could threaten them. We've just experienced an amazing spring filled with wildflowers. Reports of tortoises emerging from their winter homes are coming in, and new trails are being planned. The plants and animals that live on the rocky slopes are well adapted to the dry summer months ahead. The city has made progress acquiring the remaining private land within the voter-approved Preserve boundary and when state land reform passes, we should be able to acquire the rest. On the surface, the Preserve doesn't appear to be threatened.

So what topics would we include in an issue about threats? We started a list of story ideas: wildfires, invasive plants, urban sprawl, monsoon damage, public policy, artifact theft, unsympathetic legislators, unlawful plant and animal removal, vandalism, global warming. In reality, there are many threats to overcome.

I read the articles as they came in, evaluating the strength of the message. I wasn't sure we'd said enough. Would our readers be touched by these topics and feel compelled to act?

I have a passion for nature. To me, the fact that the blob of tar-like growth (cryptogamic crusts - described on page 10) could be older than our nation is incredible! And the thought that I could kill it with a footstep makes me feel responsible. I thought of those tortoises too: how many of them will be taken out of the Preserve this year? If only people knew how specialized they are and how hard they are to keep as pets. The thought that these animals need my voice makes me feel... responsible.

It seems to me that the biggest threat to the Preserve is a community that doesn't feel responsible for its well-being. The definition of responsibility is the state, fact, or position of being accountable to somebody or for something. The Preserve belongs to all of us and we all should take responsibility for it. Only we can be held accountable for its protection.

There is a burden with responsibility, but also a reward. We in Scottsdale have the largest urban preserve in the country. We enjoy the natural desert from our doorstep. We see gila monsters, the largest venomous lizard in North America, and pygmy weed, a plant that is only an inch tall. Our boulders bear neon-green lichen and thousand-year-old petroglyphs. The Preserve is filled with amazing stories. If each of us takes responsibility, we can each share in the burden and the reward.

Here's what you can do:

Volunteer – We need each of you to help. You can work inside or out, with a computer or a shovel, alone or on a team.

Donate – MSC relies on charitable contributions to carry out its important work. Your gift allows us to be effective in overcoming the threats that face the Preserve each day.

Learn – Pick up our Field Guide to the McDowell Sonoran Preserve or the Natural History of the Sonoran Desert at the office or through our website. As Baba Diom, a Senegalese conservationist said: In the end, we will conserve only what we love, we will only love what we understand, we understand only what we are taught.

Share – Bring someone on a hike that has never been to the Preserve. Send our website link to your friends and suggest they check us out.

Ruthie Carll
Executive Director

About The MSC

The McDowell Sonoran Conservancy's commitment to the community is to champion the preservation of the Sonoran Desert and its mountains, facilitate the community's relationship with preserved land, and develop a culture of stewardship within the community. It is our goal to secure for future generations their unique environmental and archeological heritage.

Mountain Lines

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MSC Preserve Patrol Program

by BJ Heggli, MSC Steward Preserve Operations Chair

When MSC Stewards first began patrolling the McDowell Sonoran Preserve and the state trust land north of Dynamite Boulevard, most reports were monthly and limited to major trail issues. The reports were prioritized and repairs were scheduled by Claire Miller, Scottsdale's preserve manager.

MSC leadership revised the Preserve Patrol Program in August, 2007, to provide more detailed information to city offices. The plan sought to create a more-precise picture of the trails being patrolled. It was divided into phases.



These mountain bike patrol members (left to right) Jack Adams, Dave Bradford, and BJ Heggli, show off their yellow MSC Bike Patrol jerseys

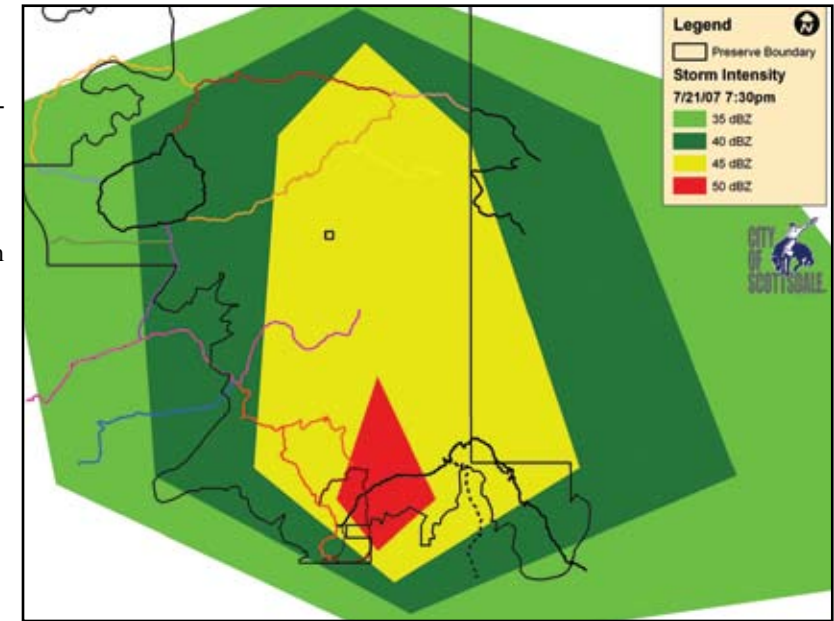
In Phase I, Stewards reported patrol activities on a weekly basis. Weekly summaries were provided to the Scottsdale Preserve Department. Reports included Preserve trails, city trails leading into the Preserve and state trust land. Patrols were reported even if there were no issues of major concern. They were prioritized by Claire and MSC's construction and maintenance chair, Joni Millavec. Minor issues started to be handled by MSC volunteers directly, through Joni. Also instituted was a Storm Watch Alert Program that targets Preserve areas at the onset of a potentially damaging storm and alerts Stewards to patrol selected trails.

The results of Phase I have been outstanding, with hundreds of hours of patrol work reported. Each of the southern Preserve trails receives several visits a week. Central areas are patrolled at least once a week and about 80% of the trails in the state trust land at least monthly.

Phase II, instituted 3 months later, began with MSC leaders meeting with the Preservation Department to refine reporting and coverage, and continue implementation.

In Phase III, further expansion of the program will include improved patrol reporting methods and create a searchable, linkable data base. Through this process, MSC can continually review Steward staffing needs to meet city of Scottsdale's patrol goals.

MSC's commitment to the community is to be the "boots on the ground". This year, between August 2007 and April 2008, MSC Stewards conducted 1600 patrols contributing more than 4,000 hours of service. This helps keep the Preserve trails in good condition and cost to the city at a minimum. 🏠



This storm map shows how radar can pinpoint areas with the highest potential for damage. Ringtail and Sunrise Trails took the brunt of this storm on 7/21/07. This system helps MSC dispatch patrols effectively.

WHY I CARE...

by BJ Heggli, MSC Master Steward and Preserve Operations Chair

When I moved to Scottsdale in 1994 I had very little knowledge of the Sonoran Desert. But I started exploring, mostly on my mountain bike. I discovered the few unofficial trails in the McDowell Mountains at the time and also the trails in the northern state trust land. The mountains and the north area seemed like one seamless tract that belonged together.

I quickly fell in love with the desert and spent most of my free time there. I was taken by the beauty, the fauna and the varied geology of the different areas. I had been thinking of ways to offer some payback to the community for the pleasure the land gave me, but didn't know how. One day I read a short article in the paper about MSLT. Thanks to Dick Benson I made contact and joined the group as an assistant Steward, eventually graduating in class 5. I met giants like Jane, Chet, Carla and others. Their vision and determination is why we have the Preserve today. We should never forget what they did.

We are lucky to have the unique situation of the city of Scottsdale creating the Preserve and embracing such activities as hiking, mountain biking, horseback riding and rock climbing. This is an example for other cities to follow. The model for operating the Preserve also is unique, with a very small city staff relying mostly on volunteers. This offers us Stewards a way to participate and show how we care.

My focus always has been the land. I strongly believe that our DNA of stewardship is based on boots on the trail, in any form available. The land is what gives us tremendous pleasure and peace. It speaks to us in so many individual ways. I love the desert and the mountains!

Invasive Plants Threaten McDowell Sonoran Preserve

Dedicated volunteers and City of Scottsdale staff working hard to reduce danger

by Barb Pringle, MSC Steward and Jerry Miller, McDowell Sonoran Preserve Commissioner

Green invaders are stalking our beloved Sonoran desert. These plants are alien species purposely or accidentally relocated to a new environment where they are displacing native species. According to the U.S. Department of Agriculture, 2,000 non-native plants exist in the U.S., with about 400 of those designated as threatening to native plants. Nationally, invasive weeds cover 133 million acres and are spreading at the rate of 1.7 million acres annually.

Invasive plants are a serious danger to the Preserve for two major reasons:

Fire - Once hot weather arrives and plants dry out, fire danger increases. Non-native plants magnify the danger by creating more fuel and decreasing natural spacing among native plants. Unlike forests, the desert evolved without frequent wildfires, so a fire in the desert leaves a long-lasting scar. Repeated desert fire can transform a desert into a savannah.

Habitat loss - Invasive plants rob native species of water, nutrients, light and space. Desert wildlife suffers from the loss of native forage and habitat.

Eight problem plants

The local press has focused on the **buffelgrass** threat in Phoenix and Tucson, but the problem in our Preserve goes beyond that. Several years before Phoenix recognized the threat, a small volunteer group was able to identify and attack small and widely separated buffelgrass colonies.

Unfortunately, the Preserve also is under threat from another grass that is very challenging to remove. **Fountain grass** grows in thick infestations in and around the Preserve, often in areas difficult to access. It grows rapidly, spreads easily and burns hotly. It thrives in many yards (maybe even yours or your neighbors) and is sold in local commercial nurseries.

Six other plants are also eradication targets due to their invasive nature and fire danger. **Desert broom** is a native that has become invasive because of its aggressiveness in overtaking disturbed land such as roadsides and new landscaping. **Red brome grass, tamarisk/salt cedar, Malta starthistle, Saharan mustard and Bermuda grass** are also on the list. For information about them check the City of Scottsdale (COS) Invasive Plants brochure, written by MSC and COS participants and funded by the COS fire department, and available on the COS Preservation website.



Removing bunch grasses is a difficult task! Every part of the plant, including the roots, must go.

Partners in Protection and Planning

Any attempt to protect the Preserve requires involvement of outside areas, including private lands bordering the Preserve, the Tonto National Forest and McDowell Mountain Regional Park. Invaluable assistance has come from the Central Arizona Weed Management Area (CAWMA), whose mission is to protect the health of central Arizona lands, waters and people from

invasive plants. Scottsdale, through the volunteer participation of MSC stewards and Preserve Commission members, has

Fountain Grass

It grows rapidly, spreads easily and burns hotly. It thrives in many yards (maybe even yours or your neighbors) and is sold in local commercial nurseries.

worked actively with CAWMA professionals. With their help, an Invasive Weed Management Plan was submitted to and accepted by the Preserve Commission in early 2007. The plan guides current and future efforts, calling for physical and sometimes chemical control activities within and surrounding the Preserve; education of businesses and homeowners; and policy changes in city guidelines on invasive plants.



This wash is filled with fountain grass. When it rains, seeds will be spread over great distances.

Please help

Over the past four years, a small group of professionals and volunteers from MSC, Boy Scouts and civic groups has been involved in developing and implementing invasive-plant removal techniques. These loyal volunteers will continue battling the invasion so that our Preserve is protected for future generations to enjoy. Please join future weed removal projects. It's a great workout in the fresh air and you'll help protect your Preserve. See Trail Projects on the calendar at

www.mcdowelsonoran.org/calendar. 🗓️



Desert Broom



Red Brome carpets the desert floor, out competing native plants and providing fuel for fire.



Summer Wildfires

Native plants help overcome wildfire threat

Due to extensive drought over the past several years, Arizona has suffered many summer wildfires. Most are caused by lightning strikes during high-wind conditions, or people's carelessness. Wildfire behavior is determined by three environmental factors: topography, weather and fuels. There have been 17 wildfires in Arizona since 1990 that have exceeded 20,000 acres. In 2005, 419,617 acres burned across the Tonto National Forest, including 248,310 in the lightning-sparked Cave Creek Complex Fire, the largest in Arizona history. It burned from near Bartlett Lake to near New River, causing more than \$18 million in damage.

The loss of desert habitat from wildfires can be tremendous. The largest recorded saguaro cactus, standing at 13.8 meters, was injured in the Cave Creek Complex Fire, and later collapsed. Wildfires often devastate a desert area for decades because some wildlife habitat and plant life is particularly sensitive to ecosystem disturbance and can suffer long-term setbacks.

Experts at Arizona Game and Fish are hopeful we will not have a harsh wildfire season this year. According to Randy Babb, biologist for Arizona Game and Fish, "the most common ground cover this season in many areas is a small bur called pectocarya, or combseed. The rains seemed to favor it over the exotic species like red brome and Mediterranean grass. Because this little annual is native, we are hoping for a mild wildfire season."

Fast and effective detection is a key factor in wildfire fighting. MSC Stewards patrol the Preserve during summer months looking for wildfire signs. Each July 4, MSC Stewards man access areas throughout the night to discourage the setting off of fire-causing fireworks.

Right: Live combseed; Notice the tiny burs, shaped like combs, that give this plant its name. Below: Dried Combseed; Combseed, the darker brown plant carpeting the ground in this picture actually provides little fuel for fire. Photo Credit: R Carll



on the trails

Creating a Safe Environment

by Claire Miller, Preserve Manager, City of Scottsdale Preservation Department



At a recent MSC Stewards' Retreat we were happy to have special guests in attendance – the three officers currently representing the city's Park and Preserve police unit. Sergeant Jeromie O'Meara and Officers Aaron Bolin and Wesley Shaffer spent time with our group, chatted for a bit and answered questions from the stewardship ranks. While the talks were informal, the information the officers shared was most valuable.

We've been awaiting this team since funding for their positions was approved several years ago. It was difficult to get the unit off the ground, not because there wasn't interest in it but because the Police Department's top priority has been to maintain the emergency response and general patrol activity residents depend upon. But while public-safety needs come first, special-unit activities are not unimportant. Over the next several months, as they finish other assignments, additional officers will join the Park and Preserve unit.

This team of officers uses a variety of patrol methods to accomplish its tasks. You might see them on foot or bicycle, in a quad or a 4WD truck. They can call in additional police resources, such as the mounted patrol unit and the bicycle patrol unit. It's a true team effort to help protect our precious Preserve.

MSC Stewards can provide critical information to the unit by taking down and forwarding details of incidents they witness. The unit has been responsive to these reports. It has been working diligently in the Lost Dog, Ringtail and Sunrise areas, making its presence known and checking for Preserve violations such as dogs at large. It also has organized concentrated enforcement activities in the Granite Mountain Multiuse Area along with other Scottsdale units and representatives from other law enforcement agencies.

If you see any of our officers in the Preserve, take the opportunity to say hello and thank them for the great service they are providing! 🙌

ask an expert

Q: Are the tortoises people have as pets members of the same species I see in the Preserve?

From John in Chandler

A: There are several species of tortoises in the pet trade, most of which are from Africa. Desert tortoises (*Gopherus agassizii*) are a protected species. It is illegal to buy or sell them in Arizona. They cannot be collected, killed, moved or interfered with in any way without express permission from the Arizona Game and Fish Department. People are among tortoises' greatest enemies. If you come across a tortoise on the trail, observe it only from a distance; if you touch or otherwise startle it, it may urinate from fear. Tortoises store water in their bladders and can't afford to lose it without a new source immediately at hand.

It's never a good idea to take an animal or plant from its home. Most will not survive the move. Here are a few reasons to think twice before considering native tortoises as pets:

- They eat a specialized diet that is difficult to provide; the native grasses they eat are hard to obtain in the large quantities they need to survive.
- They live a very long time and may outlive their owner. Tortoises in this situation are often abandoned.



Photo: Lisa Schram

- They hibernate for about 6 months a year and need very specific conditions to survive during this time. They could be left behind if the owner moves during winter months because the owner may not know where they are hibernating.
- Because they can't swim they should not live around bodies of deep water, such as a swimming pool.

If you decide that you want to keep a desert tortoise anyway, please go through the proper channels to adopt one. Contact the Arizona Game and Fish Department for more information.

MSC Summer Hikes

The McDowell Sonoran Conservancy will offer five early out- early back summer hikes on Saturdays beginning June 7. All will begin at 6:30 a.m. and finish at 9:30 a.m. or earlier, before the days get too hot.

The hikes will be led by experienced MSC guides who are experts in desert subjects. All are free. Hikers should wear sturdy, covered shoes or boots and bring ample water. Hats, sunscreen and snacks are suggested.



Photo: Eileen Slicker

June 7—Gateway Loop. A 5.2-mile hike with a 700-foot elevation gain in the newly opened Gateway Area of the McDowell Sonoran Preserve. Mostly gradual grades but with a few steep spots. About 3 hours. Meet at the lot at 104th St. south of McDowell Mountain Ranch Rd.

June 14—Ringtail Loop. A 2.5-mile trip past fine examples of Sonoran Desert plants. Mild inclines only. About 1 1/2 hours. Meet at the Lost Dog Trailhead lot on 124th St. north of Via Linda.

June 21—Talesin Overlook via the Quartz Trail. About a 5-mile round trip with a 500-foot elevation gain to a saddle overlooking Frank Lloyd Wright's architectural complex. Climbing is on gradual grades. About 2 1/2 hours. Meet at the lot at 104th St. just south of McDowell Mountain Ranch Rd.

June 28—Cactus Trail. A 3.2-mile loop passes through a saguaro forest. Mostly mild inclines but a few steep places. About 2 hours. Meet at the end of Alma School Rd. north of Dynamite Blvd.

July 5—Balanced Rock. A 4-mile hike to a striking rock formation in the state trust land. Mild inclines only. About 2 1/2 hours. Meet at the end of Alma School Rd. north of Dynamite Blvd.



Know Before You Go

Whether you hike on your own or with a group, visiting the Preserve provides an up-close experience with its treasures. When hiking, particularly on your own, we recommend you follow these tips to ensure a safe and enjoyable experience:

Know the Trail

Plan your route ahead of time. Learn your trail's distance and difficulty, major intersections and access points. Trail maps for the Preserve are available at MSC's office and the Scottsdale's Convention and Visitors Bureau Visitor Center. There are map boards at many Preserve trailheads, and route markers along the way. Markers in the Preserve are numbered. In case of an emergency, these numbers can help rescuers find you.

Pace Yourself

Don't hike in one direction until you are tired and then turn back; you don't want to be exhausted at your trip's midpoint. Don't hesitate to ask other trail users for directions. MSC Stewards in their light-blue shirts, or the yellow-shirted Bike Patrol, often are out assisting hikers.

Carry the Right Supplies

- The most important thing to remember when you prepare for a hike is to bring enough water. Set out the amount you think you'll need and then double it. If your dog is accompanying you, remember that it needs as much water as you do.
- The sound of a whistle will travel much farther than a cry for help, making it a valuable safety aid. When dehydrated or injured, people often can't shout or yell.

- The best equipment to have in an emergency is a cell phone. A call for help to 911 can be answered almost instantly.
- A regular outdoor recreationist also should invest in a GPS unit; even the least expensive one will serve the purpose of pinpointing your location to rescuers.
- Carry a nail scissors, pliers or tweezers. Cactuses can't fly, shoot or in any way leap at you, but if you brush against one chances are you will come away with spines that must be removed, and the sooner the better. The worst offenders are members of the cholla family. The spines of these plants have barbs that can prevent them from being easily removed.

Tell someone where you are going

Before you hike, mountain bike, ride horseback or go rock climbing, make sure someone knows where you are going and when you expect to return.

Wear the right clothing

It may seem contradictory, but the more of your body that's covered the less you will be affected by the heat. Lightweight pants and a long-sleeved shirt are the best things to wear while hiking. A lightweight hat with a wide brim is a must. Boots or heavy walking shoes are highly recommended.

Know the warning signs of overheating or dehydration

- Your face is red and your neck is white.
- You stop sweating.
- You are sweating and feel chills.
- You are becoming uncoordinated.

If any of these things occur, find shade and rest. Sip water rather than gulp it; your body can't absorb water quickly and gulping may cause vomiting. When you feel you have recovered, return to the trailhead as quickly as possible.

MSC offers Summer Steward Training for the First Time

Demand for steward training classes has prompted MSC's first-ever summer steward training.

A 12-hour course provides all the information that a volunteer needs in order to become an MSC Steward. Participants learn about the McDowell Sonoran Preserve, the partnership between MSC and the City of Scottsdale, and the methods MSC uses to meet its mission. MSC program chairs will be on hand to explain their programs and the work MSC volunteers do to care for the Preserve.

Participants also learn the Preserve trail system, map and GPS reading, reporting trail conditions and doing minor repairs, and how to have a safe experience as a Steward. Graduates receive MSC Steward blue shirts and are able to begin volunteering in a few program areas right away.

When: Saturday July 26, August 2 and August 9 from 8 a.m.- Noon

Where: Village Health Club at DC Ranch

Fee: \$30

Sign up by calling 480-998-7971 x 105 or emailing volunteer@mcdowellsonoran.org



Wildflower Reporting

By Dan Gruber, MSC Master Steward



As the wildflowers began to pop up in late February—much to everybody's surprise after the dry fall—we started to get questions

about where to see them in the Preserve and what was blooming on the various trails. MSC Steward Preserve Operations chair, BJ Heggli enlisted the many stewards who regularly patrol Preserve trails and State Trust land to note what flowers they saw and to send the information to me. Throughout March and into April I got reports—often accompanied by great pictures—about wildflowers from all over the current and future Preserve. In some cases, the stewards even did their own research and identified the flowers. In other cases, they provided descriptions and photos so that I and others could do the identifications. (Special thanks to Wendy Hodgson and Kathy Rice of the Desert Botanical Garden and to botanist Steve Jones for their great identification assistance.) As a result of this cooperative effort, we were able to produce weekly wildflower reports and special alerts through March and into April that for the first time provided wildflower viewing information specifically for the Preserve trails and the major hiking routes on the northern Scottsdale State Trust land.

Thanks to the photographic efforts of steward Marianne Wallace (who also helped with identification), MSC Executive Director Ruthie Carll and some public-domain photos from Wikipedia, the reports were fully photo-illustrated and posted every week on the new MSC website. Copies of the reports were sent to all the MSC steward program chairs and to the Scottsdale Convention and Visitors Bureau, which included a direct link to the MSC home page on their website.

MSC has gotten a very positive response to these reports. Many people at the trailheads and on our public hikes have complimented the work and thanked us for providing the information. MSC website visits have increased. The SCVB has thanked us for our efforts. Based on the value of this service to MSC volunteers, Preserve users, and visitors, we intend to repeat these reports in the future. The great wildflower season just ending has given us a large stock of pictures and descriptions that we can use again in future years.

The many favorable comments we've received also show that this has been a valuable contribution to public education about the Preserve and the desert, which is part of MSC's mission. Many thanks to all of the volunteers who submitted wildflower observations and pictures; this would not have been possible without their participation. Now with some luck and a little fall and winter rain, the wildflowers (and our reports) will return next year.

McDowell Sonoran Summer Series

The McDowell Sonoran Conservancy provides outstanding continuing education opportunities throughout the year. Please join us!

The McDowell Sonoran Conservancy, Center for Urban and Native Wildlife (CNUW) and the city of Scottsdale present the McDowell Sonoran Summer Series, talks by experts offering ideas and theories on the conservation, sustainability and science of the Sonoran Desert.

The series began in May and will extend through July. Presentations get underway at 6 p.m. every Thursday at Scottsdale Community College. Series is scheduled to be in the Peridot room, but check the calendar on the website a few days before each talk for confirmation. Bring a brown-bag dinner and we'll supply beverages and cookies.



Photo: Randy Babb

June 5th

Dr. Chad Johnson, Assistant Professor Integrated Natural Sciences, ASU will present The Behavior, Ecology & Evolution of Cannibalistic Spiders: "Why can't they just get along" showing the importance of spiders as a predator in the Preserve ecosystem.

June 12th

Dr. Susanne Neuer, Professor, Biogeochemistry, ASU will present Algae Blooms in the Salt River— as a major water resource for the Valley, learn how the Salt River's health affects all of us.



June 19th

Join Dr. Steven Semken, Geoscience education researcher and ethnogeologist, CRESMET as he presents Geosciences and People's 'sense of place': Engaging People in Learning About Geosciences. Understand how our 'sense of place' is grounded in the unique geology found in the Valley - including the Preserve.

June 26th

Phyllis Strupp, Life Coach, will share a presentation entitled Our Brainy Desert Elders. This interactive presentation focuses on how people think about their surroundings.

July 3rd No presentation in honor of Independence Day

July 10th

Conrad Stora, Director of the Office of Research Publications, ASU and nationally renowned author will present a night of storytelling. He will share the stories of the Preserve's inhabitants in a fun and enjoyable way through The Desert Night Shift: "A Pack Rat Story" & "Life in the Desert: A Desert Tortoise Tale."

July 17th

Meg White, Center for Native and Urban Wildlife, will provide an update on her research entitled Brown's Ranch Research Project: Invasive Plants.

July 24th

Ann Kinzig, Assistant Professor, School of Life Sciences, ASU will present The Study of Birds. As an urban preserve, birds are the most significant organisms that bridge the urban/wild land interface. This is an opportunity to learn about their effect on the Preserve.

July 31st

Alice Demetra, MSC Steward and Chair of MSC Education Department will share a taste of the desert. This ethnobotany presentation will allow participants to taste native foods including foods made with mesquite flour, prickly pear fruit and agave syrup.

For more information and to register, contact the MSC office at (480) 998-7971, extension 105.

If we learn, finally, that what we need to "manage" is not the land so much as ourselves in the land, we will have turned the history of American land-use on its head.

- Gaylord Nelson, Founder of Earth Day

Cryptogamic Crusts

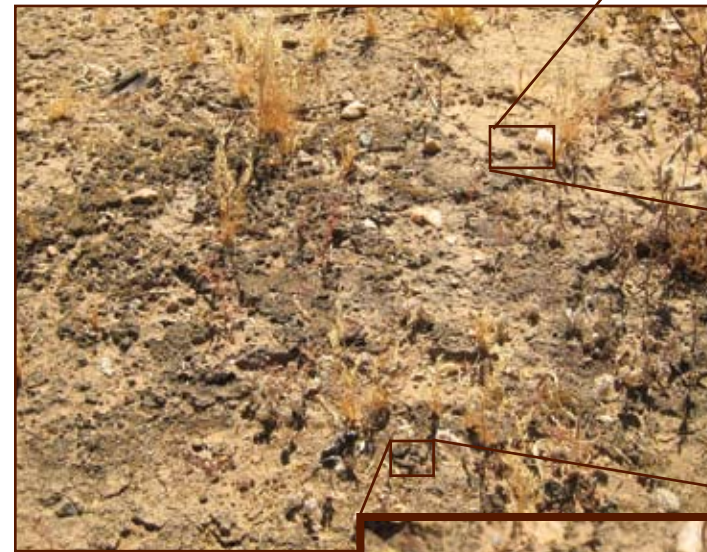
By Glenn Teufel, retired AT&T executive, early Lost Dog Wash trail builder and hiker



All cryptogamic crusts have different compilations of organisms yet share the same overall characteristics. Cyanobacteria, also known as blue-green algae, comprise the majority of the organisms in the crust. They use sunlight to photosynthesize sugars from carbon dioxide and water. They also secrete a sticky slime that acts like a biological mortar, trapping sand and clay and creating a matrix that forms the crust. This

provides a colonizing environment for the lichens, mosses and fungi. Blue-green algae require a lot of sunlight to survive; therefore, if anything covers the crust, these organisms die. As they act as the foundation organisms, the crust itself then dies.

We often pay attention to large flora and fauna and miss the interesting stories of the vital tiny inhabitants of the Preserve. Cryptogamic crusts are an extremely important part of the Sonoran Desert ecosystem. It is important that we learn about them because their continued existence may depend on us.



left: Mats of cryptogamic crust often look like something has been spilled on the ground and then dried. In reality, they are made up of thousands of tiny organisms. above: Small plants like this moss are often part of the community of organisms in cryptogamic crusts. below: It is difficult to think that this is a living thing let alone a network of many different species living together. Photos: Ruthie Carll

Cryptogamic crusts are a tightly bound mesh of tiny organisms living together as a unit and growing across the surface of the soil in desert climates. Cyanobacteria (blue-green algae), lichens, mosses, fungi and small plants make up this crust. ‘Cryptogam’ is a botanical term derived from the Greek

crypticus, meaning hidden, and gamos, meaning marriage. The term usually is used to describe a plant having no seeds, such as a fern or moss. For many years biologists knew that cryptogamic crusts were alive but didn’t understand what kind of organisms they were or how they grew and reproduced. This led to their identification as “hidden marriages.”

In untouched deserts areas more than 70% of the ground cover may be cryptogamic crusts. Because it looks like tar, some people mistakenly refer to it as “desert pavement,” a term used to describe a flat area covered by tightly packed pebbles and small rocks resulting in something much like a cobblestone road. Unlike desert pavement, cryptogamic crusts are living organisms and are quite fragile.

Crusts have three important roles in the ecosystem: moisture retention, nutrient cycling and soil stabilization. Our soil is extremely dry and nutrient deficient. It will wash away in a heavy rain. This makes it difficult for plants to live here. Their roots dry up, they can’t absorb nutrients to sustain themselves and the rain can wash their foundation out from under them. Soils covered with cryptogamic crust have been shown to be moister, have a greater concentration of nutrients and be significantly more stable than areas not so covered.

These crusts must be hardy organisms to fill this role in the ecosystem – right? Unfortunately, this isn’t correct. Cryptogamic crusts in the Sonoran Desert can take decades, even centuries, to form a significant mat. All it takes to kill them is a footstep. The weight of a hiker, biker or large animal like a horse or a cow is more than these organisms can sustain.

The next time you are in the Preserve, or in any natural desert area, keep your eyes peeled for the tar-like crust. When you spot one, remember that it is likely that the dead-looking thing has been there since before Arizona was a state. Then, get back on the trail! 🚶

Interview With a Scientist

Ben Minter

Assistant Professor of Life Sciences, Arizona State University



Q: What is your research focus and why?

A: Basically, I study the values and ideas that motivate our behavior in the environment, both past and present. My academic field, environmental ethics, is a branch of applied or “practical” philosophy devoted to identifying and defending the moral obligations we have to nature (that is, our duties toward individual plants and animals, as well as species and ecosystems) – and comparing the weight of these obligations to other social interests, such as economic growth and resource development.

Q: For many, the Preserve is a pleasant outdoor setting for physical exercise. For others, the relationship has a ‘biology flavor’ - intellectual exercise maybe. Can you comment about this type of psychological relationship to nature and its impact on individuals or on society?

A: Henry David Thoreau wrote in Walden that “Our village life would stagnate if it were not for the unexplored forests and meadows which surround it.” His point was that a “civilized” society needs to be continuously refreshed by the experience of nature, especially its beauty and vitality (what today we might refer to as its “biological richness”). The idea that contact with the natural environment has a therapeutic effect on individuals and society as a whole thus has a rich pedigree in American environmental thought (one that runs from Thoreau, to John Muir, to Aldo Leopold and beyond). Some environmental philosophers today describe this effect as the “transformative value” of nature – its ability to change the way we think about what we value and care about. It’s a powerful notion, one that continues to grab attention. Richard Louv’s recent book, *The Last Child in the Woods*, captures much of the psychological aspects of the idea in his discussion of “nature-deficit disorder” among children: the mental and physical costs of becoming disconnected from nature in modern society.

Q: What do you view as a threat to the urban / natural open space relationship?

A: Unfortunately, there are many, and I could list the usual suspects: unplanned development/suburban sprawl, lack of adequate public transportation, the carving up of the landscape with gargantuan subdivisions, etc. But to my mind one of the more difficult – and ironic – threats is actually the great infatuation with nature shared by many urban dwellers. We all want to be close to nature, to have a house (or room) with a view, to have access to good hiking. If there were only a few thousand of us in the valley, that probably wouldn’t be much of a problem. But when you magnify this impulse by a million or more, it becomes a considerable threat, something akin to “loving nature to death.” We are all at least partially implicated in the loss of open space (and the experience of undeveloped nature generally) to the degree that we want to be close to it and enjoy it.

Q: How can this threat be dealt with?

A: It requires a shift in perspective, an awareness that there should be appropriate limits on our appetite for development and growth – and the total freedom of settlement -- even if this means we have to sacrifice that awesome scenic view or the three-minute-walk to a trail head. I am under no illusion, though, that this kind of shift will be easy, or that it will ever be complete.

Q: What do you think about locally focused environmentalism? Can we make a difference locally? It seems the whole world is in crisis and local efforts may not impact the global issues.

A: Of course we can make a difference locally – and we must. It is true that a lot of the attention right now is on hugely complex global problems like climate change, but even this has a local, personal dimension (e.g., the cars we drive, the energy we conserve, the food we eat, etc). I would argue, in fact, that we are witnessing today the strong resurgence of locally-based environmentalism – what some have called “civic environmentalism” – that links concern for community health and well-being with environmental protection/sustainability. One of the most powerful examples of this phenomenon is the sustainable agriculture movement (as seen in farmers’ markets, community-supported agriculture, etc.). The connection between the health of the human community and the land has always been a part of the American environmental tradition, as I try to document in my recent book, *The Landscape of Reform* (MIT Press).

Q: If you could meet with a group of local residents, what topics would you discuss with them and why?

A: I would be very interested in hearing about their own values and attitudes toward environmental protection and conservation – and what specific events, places, and people in their lives helped to shape them. I’d also like to introduce them to what I take to be the most compelling and influential ideas of environmental ethics, including the historical roots of American environmentalism and the changing character of our political and policy debates about the “right” way to treat nature.

Q: Would you have the same conversation with local kids?

A: With kids it would be a little different in that I would want to introduce them to some of the remarkable characters that have shaped the story of American conservation and environmental reform: John Muir, Aldo Leopold, Rachel Carson, and others. Their passion for nature and its protection is, I think, contagious, and their life experiences are full of the kind of dramatic and transformative moments that many, especially young people, can identify with.

A Healthful Taste of the Sonoran Desert

Three common species of mesquite trees are native to Arizona: the velvet mesquite (*Prosopis velutina*), honey mesquite (*Prosopis glandulosa*), and screwbean mesquite (*Prosopis pubescens*). Native Americans used many parts of the trees, including the bark and honey from mesquite flowers, in their daily lives. Mesquite meal made from beans was an integral part of their daily diet.

The mature, brittle, straw-colored seed pods of mesquite trees were harvested by Native People during late summer. The soft inner tissue of the pod, called the mesocarp, was eaten raw. In some trees, this tissue might be 20% to 30% sugar—a desert candy bar. Dried pods were ground into meal that had a caramel-like sweetness, with a texture similar to crushed graham crackers. Water was added to the meal to make a sticky dough which then was pressed into small cakes and dried for storage. These cakes could be rehydrated and eaten raw, cooked in water to make gruel or used as a thickener in stew. A frothy drink was created by fermenting a mixture of mesquite meal and water. Pods also were steeped for a tea that had a delicate vanilla scent and flavor.

When not in his blue MSC Steward shirt, Richard Robinson is assistant manager for food service at Scottsdale Healthcare Shea. Richard notes that in today's recipes, mesquite meal is used as a spice, but can be used as a flour in other recipes. Mesquite flour can be purchased online at www.desertusa.com, at Native Seeds/SEARCH, (866) 622-5561, 526 N. Fourth Avenue, Tucson, AZ 85705, or at Whole Foods stores in Scottsdale, Tempe and Chandler.

Here are some of Richard's favorite mesquite recipes. Enjoy a healthful taste of the Sonoran desert! *Stewards Richard Robinson and Alice Demetra contributed to this article. *Recipe courtesy of casadefruta.com.*



Overcoming threats through conservation

Mesquite trees are a keystone species of the Sonoran Desert. This means that they significantly influence many other species. The health of keystone species is vital; as the term suggests, the habitat can come tumbling down without them.

What comes to mind when you hear the word “mesquite”? Chances are, barbeque. Alas, people enjoy mesquite flavor all too well, which is why the trees are being over-harvested to make the charcoal that produces the taste. But there's a better way to get that flavor. Using mesquite bean pods on your grill will do the trick while leaving the trees to provide their resources year after year.

Collect the pods in mid-summer when they are crisp and falling to the ground, and store them in a receptacle. Leave the lid ajar so dampness doesn't rot them. Only collect pods from trees in your yard to be sure they have not been sprayed with pesticide. Expect small bruchid beetles-- seed-eaters-- to emerge from the pods and fly away, leaving small, harmless holes. Before firing up the grill soak a good-sized handful of beans in water for a few hours. Put them in with the coals when you put on the meat. The pods' smoke will impart the great mesquite flavor to the meat.

Be sure you can identify mesquite from other trees before doing this. Mesquite bean pods are long and light-tan when dry. They are solid, so when you snap one in half the seeds won't fall out.

ask an expert

Q: I'm new to the area and I've been told that you can see the Milky Way from this area. Is that true? I've never seen it.

From Janice in Scottsdale

A: Our galaxy, the Milky Way, is most easily seen in autumn. It is overhead in the sky at that time, and quite bright.

What we call the Milky Way appears as a faint band of light crossing the heavens. It consists of billions of stars, most of which are too far away to be seen individually. The light they emit is seen as a whitish glow beyond other brighter, nearer stars.

Ancient peoples called this band or river of light the “Milky Way,” without knowing what it really is. The Greeks called it “Galaxias,” which the Romans turned into “Via Lactea.” Our words galaxy, lactose and lactic all stem from this etymology.

Even though the Milky Way is a disk-shaped collection of several hundred billion stars, it looks like a band to us. That's because we (meaning Earth) are in it, looking out into space. When looking in the direction of the edges it appears as a belt crossing the sky. When looking in perpendicular directions to the “lay” of the disk, there is no Milky Way to be seen. Since Earth is tilted relative to the plane of the Galaxy, it crosses overhead only at certain times.

You need to get away from city lights to see it well. Large urban



This image of the Milky Way is mosaic of multiple shots on large-format film. Photo: Digital Sky LLC

open areas, such as the McDowell Sonoran Preserve, help reduce light “pollution” for the entire Valley and make stargazing easier.

In the fall evening sky, look overhead for a big group of stars called informally the “Northern Cross” (officially, “Cygnus the Swan”). The long member of the cross lies pretty much along the plane of the Milky Way. In late spring or early summer, you can see the same arrangement in the pre-dawn sky.

Our expert, Richard Allen, is a Certified Professional-Geologist (AIPG), Accredited Gemologist** (AIGS), and avid astronomer. For more information, go to www.gemland.com*

Mesquite flan*

Flan

- 8 eggs
- 1 quart of milk
- 1 cup of sugar
- 1 cup of Mesquite flour

Caramel topping

- 1 cup water
- 1 cup sugar
- 1 Teaspoon of rum

First, make the caramel syrup by boiling the mixture a cup of sugar and cup of water until the water evaporates and the caramel obtains the color of honey. Add the rum and remove from the burner. Mix the eggs, sugar, milk, and mesquite flour and place this mixture in a flan mold that has been lined with the caramel. Bake for one hour at 350 F with a cookie sheet with water below the flan mold. Remove the flan from the mold. Add water to the mold (after removing the flan), place on a burner on the stove, allow the liquid to boil and concentrate until it becomes a thick syrup. Pour this syrup over the flan. Serve cold.

Mesquite Oatmeal Raisin Cookies

- 1 cup (2 sticks) butter
- 1 cup firmly packed brown sugar
- 1 cup granulated sugar
- 4 eggs
- 1/2 teaspoon vanilla
- 1 cup all purpose flour
- 1 tablespoon baking soda
- 1/2 teaspoon cinnamon
- 3 cups Quaker quick oats
- 1/2 cup mesquite flour
- 1 cup raisins
- 1/2 teaspoon salt
- 2 teaspoons guar gum

Heat oven to 350° F. Beat together butter and sugar until creamy. Add eggs and vanilla and beat well. Add regular flour, mesquite flour, baking soda, cinnamon, guar gum and salt and mix well. Stir in oats and raisins mix well. Drop by rounded tablespoon onto ungreased cookie sheet. Bake 12-14 minutes. Cool 1 minute and move to wire rack. Makes about 4 dozen.

*Recipe courtesy of Anita Lavaisse**

Mesquite apple nut muffins

- 2 tablespoons of Mesquite flour
- 1/2 cup of whole wheat flour
- 1/2 cup of refined wheat flour
- 1/2 teaspoon baking soda
- 1/2 teaspoon of salt
- 1/3 cup of sugar
- 1/4 cup of vegetable oil
- 1 teaspoon of vanilla
- 2 eggs
- 1 apple cut in pieces
- 1/4 cup of chopped nuts
- 1/3 cup of milk.

Mix the dry ingredients. Separately mix the liquid ingredients with the beaten eggs. Add half the dry ingredients to the liquid ingredients. Then add the nuts, chopped apples and the rest of the moist ingredients and mix well. Place in oven at 350° F for 25 minutes and then test with a toothpick to see if it comes out clean.

*Recipe courtesy of Pam Mathison**

MSC Preservation Partner Profile Wells Fargo Foundation

Recently, volunteers from Wells Fargo & Company enjoyed a Saturday working in the McDowell Sonoran Preserve. Their efforts helped to mitigate an eroded and rutted segment of unauthorized trail. Their work included installing "rock checks" as erosion-control structures, covering the trail scar with dead plant material and re-vegetating the site with cactus.

Wells Fargo is Arizona's third-largest private employer, with a work force of more than 13,500 people. The company opened its first Arizona office in Tucson in 1860, a stop on the Overland "Butterfield" Stage route. By 1870, gold discoveries had prompted the opening of offices in Yuma and Ehrenberg to serve the mining camps. By 1918, Wells Fargo served customers in 103 locations across Arizona, the nation's newest state.

"Wells Fargo is glad to support local environmental organizations through contributions and volunteerism," says Dave Howell, the company's community relations director. "Our employees enjoy volunteering their time to make a difference-- in the Preserve and across the state."

The McDowell Sonoran Conservancy is proud of the support it receives 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, our Preservation Partners acknowledge the public value of the vital work we do.

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



Investing in the Future

McDowell Sonoran Society and MSC Lifetime Members are community leaders and conservation advocates. They support ecologically sustainable public policies and care for the McDowell Sonoran Preserve. They come together at special events and activities to enjoy the natural world and learn about the diverse plants and animals of the Sonoran Desert.

The dedication of our McDowell Sonoran Society and Lifetime members enables the McDowell Sonoran Conservancy to protect our area's open spaces, provide educational programs for people of all ages and advance the conservation agenda.

We gratefully acknowledge the commitment to preservation of our MSC Founding Members of the McDowell Sonoran Society (as of April 30, 2008):



Anonymous
Bobby and Susan Alpert
Don Basta
Brad and Lisa Berry
Lyle and Nancy Campbell
John and Peggy Chamberlain
Richard and Gloria Cochran
Anne Collins*
TJ Connors*
William Cope
Leslie Dashew and Jack Salisbury
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BJ Shortridge
Oliver and Aimee Smith
Vernon and Cille Swaback*
BJ Tatro
H.B. and Jocelyn Wallace*
Tom and Laurel Walsh
Craig and Connie Weatherup
Allan and Diana Winston

*Denotes Lifetime member

There still is time to join! Make a gift before June 30, 2008, and you will forever be known as a McDowell Sonoran Society Founding Member.

Become a friend of MSC

Your Support + MSC = A Sustainable Preserve

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.

With over one-third of the City of Scottsdale permanently preserved as open space, we have a big job to do and rely on the help of our more than 3000 Circle of Friends members!

Please accept my gift of:

\$1,500 \$1,000 \$500 \$250 \$100 \$50 Other: _____

I have enclosed a check (Please make checks payable to MSC)

Please charge my credit card Credit Card # _____

Exp. Date _____ CVV # _____ (Visa / MC / AmEx / Discover)

Mail to:
MSC
16435 N. Scottsdale Rd.
Suite 110
Scottsdale, AZ 85254

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.

"It is our task in our time and in our generation, to hand down undiminished to those who come after us, as was handed down to us by those who went before, the natural wealth and beauty which is ours."

- John F. Kennedy



McDowell Sonoran Land Conservancy
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news and notes

Retail? In a Non-Profit? How do these go together?

Retail sales help non-profits generate income ... It's hard to imagine a museum without a gift shop! The IRS allows non-profit organizations to earn income through retail sales if the products sold are related to the mission of the organization. The products support the mission and are therefore sold for their use rather than only for profit. The income MSC earns through retail sales contributes about 1% of total revenue per year.

Here are a few examples of our retail items and how they support our mission:

The Field Guide of the McDowell Sonoran Preserve – Meets our mission to educate the community about the Preserve and its residents.

Greenbags - As a conservation-focused organization, we promote green-living. Reducing packaging is a large part of having a lighter footprint on the planet.

Hats – Recommended hiking gear includes wearing a hat. Stay tuned for our new line of light-weight full-brim hiking hats.

Safety Equipment – A mirror and whistle can save your life if you are injured in the Preserve.

Maps – most of our maps are free. Stop by the office and pick one up!

