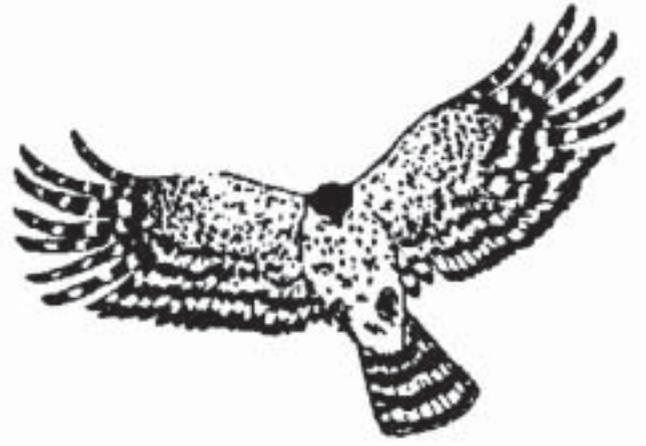


Restoring Connections



Newsletter of the Sky Island Alliance

Vol. 5 Issue 4 Winter 2002-2003



Agave palmeri, Peloncillo Mountains, NM



Sky Island Alliance

Protecting
Our Mountain Islands
& Desert Seas

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Many Thanks to Our Contributors!

Joe Cicero, SIA Volunteer of the Year 2002; Joan Eerkes, SIA tracking volunteers; Lisa Naas, guest feature, The Nature Conservancy; Penny Pederson, SIA tracking volunteer; Kathy Pitts, flora and fauna columnist; Bob VanDeven, long-time SIA volunteer; Tiffany Voltz, SIA volunteer and Sonoran Desert biologist; Peter Warshall, "maniacal sky islands naturalist," and, of course, the SIA staff.

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photo by Bob VanDeven

Front Cover

The Palmer agave is a Sky Island specialist, growing in savanna between 3,000 and 6,000 feet elevation. The pink color peculiar to *A. palmeri*'s leaves develops as the plant base works to produce a flowering stalk some 20 feet tall. Like other "century plants," an individual will grow for decades before putting all its years of accumulated energy into sending up one glorious flowering stalk. This candelabra-shaped stalk, which can grow several inches in one day, bears a plant's entire hopes for carrying its genes into the next generation. Nectar from Palmer agave flowers helps fuel the epic migrations of *Leptonycteris* bats, as well as feeding hummingbirds, moths, bees, and occasionally even climbing coatamundis. Pollination by nectar bats may determine, in part, the plant's patchy distribution.

Palmer agaves are called "lechuguillas" by people of northeastern Sonora (a name used for other agaves in various regions), where it is still used to produce food, fiber, and especially beverages. The plant's sap can be used to make a lightly-fermented, nutritious drink called *pulque*, or can be heavily fermented and distilled into a smoky-flavored tequila-style liquor called *bacanora*. Among agave species in the region, *A. palmeri* has one of the lowest concentrations of bitter compounds called saponins, making it an excellent food plant. The species has been a regional food staple for millenia. (photo by G. Bodner)

We'd like to welcome SIA's newest board member, biologist **Carlos Lopez Gonzalez**. Many of you will recognize Carlos from the superb jaguar lecture he gave in February 2002 as part of the SIA lecture series. Carlos co-authored the book, *Borderland Jaguars*, with David E. Brown. Carlos received his PhD in ecology from the *Universidad Nacional Autonoma de Mexico* in Mexico City. He has also written and co-authored many scientific articles and papers, which have appeared in *Acta Zoologica Mexicana*, *The Southwestern Naturalist*, *Journal of Wildlife Diseases* among others. He is now a professor and researcher at the *Universidad Autonoma de Queretaro*, Queretaro, Mexico. Carlos also co-coordinates the Northern Jaguar Project, which you can learn more about at www.sonoran-jaguar.org.

Seeking SIA newsletter submissions:

Send us your poetry, your words of wisdom, your art!

As you've likely noticed, the quarterly Sky Island Alliance newsletter has expanded into a larger newspaper format. We want to keep it filled with inspirational, informative material, and we'd like your help! Do you write poetry? Draw, sketch, paint, or photograph? Like to address regional conservation issues? Review books or websites? Anything that relates to the Sky Islands region is fair game! We'd also like to start a Letters to the Editor section. Send us a note! You can respond to items in our recent newsletter, comment on your experiences as a volunteer or conference-goer, etc. Also, let us know if you'd like to be a regular contributor, e.g. with a column each issue. The deadline for our next newsletter is February 8, 2003. Material submitted after that date may be saved for subsequent issues. Please email submissions to Gita at gbodner@post.harvard.edu, or mail them to Sky Island Alliance attn: Gita, P.O. Box 41165, Tucson, AZ 85717. Resolution of digital images should be at least 300 dpi if possible, but we can work with some lower resolution images.

Rambling Rants from the Director's Desk

Friends,

I hope this finds you well and in good spirits. As we approach the end of another year it seems an appropriate time to reflect on our accomplishments while looking to the challenges the future brings – and they are many. One of the most exciting occurrences this year was the Sky Island Wildlands Network (SIWN) Conference in October. This event drew more than 300 people for two days of fun and learning. A major objective was to host a conference for people working and living in the Sky Islands Region, by people working and living here. Many people were surprised at the quality and breadth of work going on in the Sky Islands (we could easily have done a four day conference) and presenters were pleased at both the opportunity to share their work and to also learn about all the cool stuff happening on their home turf.

During the conference, we recognized several people with Conservation Awards for their ground breaking work in the Sky Islands: Saguaro National Park; Raul Grijalva, former Pima County Supervisor and our new US Congressional Representative from Southern Arizona; Josiah and Valer Austin, owners of the El Coronado Ranch; and Mike Seidman, Conservation Director of the Phoenix Zoo.

Also in 2002, we made the decision to upgrade our newsletter, *Restoring Connections*. We've added many new sections and would like this publication to be, not only a vehicle for us to provide information to you, but also a forum for our members to express their feelings for and about the Sky Islands. Think of it as an opportunity to strengthen the "connection" between you and us, and as a collective celebration of this wondrous place we call home. Please submit art, poetry, photos; small town food

and watering hole reviews; articles on ecology, history, culture; nature writing, fiction, book and movie reviews, opinion; or just about anything that pertains to the Sky Islands; and, don't forget to send letters to the editors!

The greatest challenge facing us in the near future comes from Washington, DC. In the recent elections the Republican Party took control of the Senate by one vote, due to four races decided by just a few thousand votes. Unfortunately, the Bush administration has taken these results as a mandate to overturn or gut virtually every environmental law that protects our fragile landscape. Suddenly, resource industry lobbyists are writing regulations and helping create policy at the expense of public participation. The National Environmental Policy Act (NEPA), long regarded as the *Magna Carta* of environmental law, is squarely in the crosshairs. This law requires review of the environmental impacts of federal actions and, most important, is the law that guarantees the public the right to comment on proposed federal actions. This administration has created rules that would eliminate a federal agency's responsibility to solicit public comment or conduct public hearings.

Sadly, these assaults themselves have not been put before the public for scrutiny or input. There has been a well-coordinated effort to draw as little attention to these changes as possible. In the most recent example the administration chose the day before Thanksgiving for yet another attack on public involvement in releasing their proposed changes to National Forest planning regulations. In an almost complete rewrite of existing regulations, they removed requirements that all final plans be compatible with NEPA, while duplicitously claiming that their new plan would allow

for unprecedented public participation. What this really means is that the public will be allowed an opportunity for input in the early stages, *while the Forest Service is under no obligation to use that input!* When the final plan is then produced there will be neither a public comment period nor opportunity for the public to appeal the plan – even if it's terrible.

In addition to these laws, the administration has changed or proposed significant changes to laws and rules that govern clean air, clean water, mining site reclamation and cleanup, off-shore development, roadless areas, and the way in which imperiled species are managed. The most appalling aspect of this power grab is that these new regulations were developed in secrecy with industry input but none from the public. Maybe some folks like the polluted, expensive Texas Model, but we don't.

Though it will be an interesting two years until the next election, not all is doom and gloom, and at SIA we fully expect to accomplish all our goals during this time. The reasons we'll prevail are many: the amazing networks of people such as yourselves that we work with; our volunteers; the respect we've earned and relationships we've developed with land use agencies; the collaborative efforts that have been forged with conservation-minded landowners; and the mutual respect that develops through working in honest relationships with all people.

We will continue to close roads as we have in the past and expand this program to other areas (note first road closure in the Gila NF profiled in this issue). We



trained 30 new Wildlife Monitoring volunteers this year and we now have 52 folks monitoring transects in southeast Arizona. We will train and place another 30 in 2003, including our first volunteers in New Mexico. Our Ecosystem Defense program will continue to monitor and influence agency decisions to insure that they are compatible with healthy landscapes, regardless of the roadblocks the Bush administration is attempting to put in our way. Without a doubt, it will be exciting.

Most of you recently received, or will shortly, a request to help SIA financially. Many of our programs are dependent on the generosity of our membership to be fully funded. Both the Wildlife Monitoring and Road Closure programs are thus dependent. We will not only be grateful for any contribution, but this also serves as your own personal investment in the conservation of this amazing area we call home. We happily accept cash, checks, and Visa (www.skyislandalliance.org), as well as in-kind donations. We'll even come to your house and pick up the money – just give us a call. Thanks for all your help and I hope your 2003 is productive and fun. God Bless America – let's save some of it!
—David Hodges

Notes from the Field

Cowshit and Frogs: or How I Learned to Love Stock Ponds

by Trevor Hare, SIA Field Coordinator

The dirty cow-stank water was filling my chest waders, my feet were stuck under two feet of nasty cow-tank mud, and fingerling bluegill and green sunfish were jumping into the fray and wiggling inside my waders.

Phil was about to pull me over when I popped out of the mud, thoughts of mercury poisoning along with predaceous water beetles, Dobson fly and dragonfly larvae, salmonella, *E. coli* bacteria, cow shit, and the dead and decomposing bodies of hundreds of fish kept me upright as we hauled the seine to the tank edge.

Fieldwork is not always easy in aquatic and riparian systems of the Sky Islands and Desert Seas of Arizona, Mexico, and New Mexico. I will admit, though, that we spent the previous day happily hiking Sycamore Canyon in the Pajarito Mountains, 30 miles west of Nogales, Sonora/Arizona. The area

is a marvelous mosaic of Madrean Oak Woodland, Desert Grassland, and Broadleaf Riparian Forest. These communities harbor an impressive array of species — many at the northern and western edges of their distributions. Bromeliads, jaguars, cuckoos, Mexican vine snakes, blue oaks, Sonoran chub, cactus ferruginous pygmy-owl, Tarahumara frogs, gray hawks, Chiricahua leopard frogs, black hawks, box turtles, narrow-mouthed toads, trogons, and lowland leopard frogs have all been documented in the area. Some are gone, some are still to be found, hidden in shadows up under the oaks or peering

out from the pools.

The Sky Island Alliance was in the Pajarito Mountains with 12 volunteers who had committed to at least 30 surveys in the area over the next three years to look for and document the existence, and persistence of riparian species and communities. We went with Dr. Phil Rosen, an Arizona herpetologist who loves frogs and fish and snakes and lizards and all things wet and wild. What we found in that stock pond is indicative of the injury piled with insult that our riparian areas have suffered over the years. We found blue gills and sunfish, we found bullfrogs, we found crayfish, all non-native killers! We were all about to cry at the sight when lo and behold out popped a mud turtle, then another, then two more, and then a final one. We had turtles! Native turtles!

We were very happy!

The turtle dance ensued!

From the 1920s to the present day, the Arizona Game and Fish Department, private landowners, grazing allotment permittees, anglers, and others have stocked natural and manmade waters with non-native sport animals. A laundry list of game species, including bluegill and sunfish, bullfrogs and crayfish were all purposefully introduced. These non-natives have displaced and eaten our native riparian fauna to near extinction in some cases. What can be done about all this? The Sky Island Alliance is piloting a riparian inventory/monitoring/restoration program, as outlined in the previous issue of *Restoring Connections*. Please get involved! Contact the author at trevor@skyislandalliance.org or at 520/624-7080.



Tracking the Trackers

by Janice Przybyl, SIA Wildlife Monitoring Program Coordinator

On the road with Jack... hanging out in culverts... recruiting new volunteers... training new volunteers... meeting enthusiastic supporters... tracking bears and mountain lions... *phew!* It's been a fun-filled and rewarding autumn.

On September 23, the Arizona/New Mexico Jaguar Conservation Team commenced its rural outreach campaign with the debut presentation of Jack Childs' video, *On the Trail of the Jaguar*, in Bisbee. Sky Island Alliance participates on the Team. As a member of the outreach committee, I had the job of finding locales and booking sites for the seven-town tour. Each presentation consisted of a slide presentation by an official from Arizona or New Mexico Game and Fish who explained the "what is and why for's" of the Conservation Team. Jack Childs then took center stage to describe his participation on the Team and the creation of the video. The video describes Jack's first encounter with a jaguar in the Baboquivari Mountains back in 1996 and how that prompted a trip to Brazil to study jaguar predation and then goes on to explain his current involvement with setting up remote cameras along the U.S. side of the border in the hopes of capturing a jaguar on film. Success was declared in January of this year when an adult male jaguar triggered a camera the previous month. This was the third photo-documentation of a live jaguar in the United States – including Warner Glenn's remarkable photographs of a jaguar in the Peloncillo Mountain just one month prior to Jack's sighting in 1996.

After the video, a panel consisting of representatives from various government agencies, the ranching community, and environmental groups, answered questions from the audience. I personally recorded each question from the audience, so I can attest to the thoughtful and interesting questions posed – from conservation concerns to inquiries about jaguar physiology and behavior.

I would like to thank all the Wildlife

Monitoring volunteers and other folks who assisted me with publicity. Many people posted flyers or sent press releases to newspapers and newsletters. Your time and effort paid off. The outreach committee deemed the tour a success. We were well received by full houses in each town from Bisbee, to Douglas, Nogales, and Patagonia – where over 60 people packed the Town Hall – to Sierra Vista, Arivaca, and Animas, New Mexico. Many times, I had to chase people out of meeting halls well after our allotted two hours. There is definitely interest in and support for jaguar conservation throughout southeastern Arizona and in the bootheel of New Mexico.

On October 6, eleven volunteers along with Sky Island Alliance staff trekked down to the Audubon Research Ranch (ARR) near Elgin, Arizona for our quarterly track count. We all were amazed at how—with help from a little rain—the fire-scorched landscape rebounded. Only a few charred stumps, or fences, or storage barns attested to the fact that fire swept across most of the Ranch last spring. Ranch manager, Linda Kennedy gave the group some insight into the process of grassland recovery and ARR's efforts to abate the influx of non-native grasses – how even well-intended researchers, such as ourselves, transport non-native seeds onto the Ranch via our vehicles, our shoes, our clothes. Thanks Linda for the early morning chat. Afterwards the group split up to search for tracks and other wildlife sign on our four transects. We found tracks from plenty of prey species such as

javelina and deer. Teams also saw coyote and gray fox tracks and scat... even possible bear scat, though this last one was under debate. The scat was full of grasshopper parts (you all have noticed the seasonal abundance lately?) indicating that the deposit was probably made by a very large coyote.

The tracking event at Audubon Research Ranch is open to all interested folks. No tracking experience is required because an



Monitoring volunteers Cathy Waterman and Neva Connolly document a bobcat track on a transect in the Missing Link. Yes! It was cold enough that morning that they needed warm hats and mitts.

experienced tracker leads and teaches each team. This is a great opportunity to learn how we conduct track searches. Join us on January 11 for the next scheduled trip. Please call or email me for more information and to RSVP.

We are continuing to work with the Arizona Department of Transportation (ADOT) to place remote cameras in culverts under Highway 80 between St. David and Tombstone. At the October 19, Restoring Connections 2002 Conference, folks from ADOT-Natural Resources Department unveiled their prototype for housing and protecting the cameras. This project supplements our Dragoon/Whetstone corridor study. All camera placements are in

drainages that mark the western edge of our Phase I study area. Thanks to Bruce Eilerts, Siobhan E. Nordhaugen, Chuck Barclay, and Paul Langdale for all their hard work and support. I can't wait to develop the first roll of film and see what critters are utilizing culverts as passageways under the highway.

Monitoring volunteers documented a number of focal species on transects in all three of our project areas... the Missing Link, the Dragoon, and the Santa Cruz projects. Since August, Missing Link volunteers found sets of bear tracks on three transects; mountain lion sign twice on the same transect, and bobcat on all four transects. Just days ago, in the Dragoons, teams found mountain lion tracks in Stronghold drainage and in Smith Wash. These were the first documentations of mountain lion in the Dragoons and a thrill for the volunteers who have been out surveying once every six weeks since April. The drought is frustrating for our volunteers. Lack of rain makes for lousy tracking conditions because the ground becomes dry and hard packed. Almost like tracking across a parking lot. So, even if the animals are out there they leave no trace. No trace, no tracks, no data. Many, many thanks to all 36 monitoring volunteers who have been diligently surveying their transects and looking for those invisible tracks. The hard work eventually pays off.

Fifteen new recruits to the Monitoring Program will complete their training in December and will soon join the rest of the teams. 36 + 15 Wow! That makes 51 Wildlife Monitoring Volunteers. That number represents 51 enthusiastic and skilled trackers who take to heart the mission and goal of Sky Island Alliance – to protect and restore the natural biodiversity of the sky island region. I am honored to know each one of them personally and delighted to work with them in the field.

2002 Conference Field Trip Report

On the day before the Restoring Connections 2002 conference Sky Island Alliance hosted a field trip for confer-



ence attendees to the Dragoon Mountains. Twenty-four hikers accompanied Gita Bodner, Matt Skroch, and Janice Przybyl on a tour of Sky Island Alliance project sites. Janice, who coordinated the event, worried that the early morning rain may have convinced some folks to stay in bed – but no need to worry – a small crowd gathered in front of the Sky Island Alliance ready to go. The caravan of vehicles encountered a downpour just west of Benson, but we remained undaunted, because there were blue skies over the Dragoons. Folks who live nearby or drove up from Bisbee met us at Slavin Wash. Before heading out on our hike, Janice gave a quick overview of the Wildlife

Monitoring Program and pointed out the transects being surveyed by volunteers in Stronghold Wash, Slavin Wash, and Smith Wash. She wowed the crowd with her rubber feet – that's rubber molds of wildlife tracks such as mountain lion and wolf. Matt then led the group on a hike up Slavin Gulch to inspect the road closure and ecological restoration project in place since 1999. It turned out to be a beautiful day for a hike and everyone remarked on how well the restoration is proceeding on the trail and through the riparian area. After we all got a bit of exercise, sunshine, and inspiration, we headed back to our vehicles for lunch. Over sandwiches and soda, Gita talked to the group

about the report Sky Island Alliance is generating about impacts to the Dragoon area from increased recreational usage. She also discussed some of the possible management recommendations Sky Island will be making to the Forest Service that address these issues. We were proud to show-off our work and inform people about the importance of this very special area. The group consisted of locals from Tucson and the nearby area (St. David and Dragoon), conference attendees from New Mexico and Texas, and agency folks from the Forest Service, BLM, and ADOT-Natural Resources.

On the Importance of Roadless Areas

by Matt Skroch, SIA Field Programs Director

The public lands logging boom of the 1980's resulted in billions of board-feet of lumber being removed from our forests, an exponential increase in road-building projects, and a public backlash that has left the Forest Service stunned in regards to how to best manage forest lands. As a result, the National Biological Survey declared one of most prevalent forest types, ponderosa pine woodlands, one of most endangered ecosystems in the Southwest. Only five percent of old-growth ponderosa pine forests remain here – a startling statistic. While timber was shipped out of forestlands, roads were built into them. The Sky Island region also experienced a proliferation of roads from grazing, mining, and recreational off-road driving.

Today, National Forest lands claim over 450,000 miles of roads – more than any other agency. The National Highway System, for instance, manages just 160,000 miles of roads across the country. With long-inadequate funding paired with lax accountability for the management of these roads, the Forest Service and taxpayers now stare at an eight-and-a-half billion dollar backlog of maintenance needs, reconstruction projects, and road safety requirements. It has been decades since road maintenance budget sheets were out of the red – nor is it likely that these roads will ever be maintained at levels specified by forest plans. As a forward-thinker of his time, Aldo Leopold told us

in 1925 “[M]ark this well, the laws of economics are the last thing the roads booster is thinking about.”

The result? A heavily roaded landscape that diminishes ecological sustainability and scenic qualities, and constrains recreational opportunities on our public lands. We won't dwell on the negatives, but historical context helps us understand where we are today.

Within the National Forest System, there are still over 100 million acres of wilderness and roadless lands – a considerable portion of the 192 million acres managed by the Forest Service. My intention here is to underline the importance of this vanishing resource.

Protection of Roadless Areas – UPDATE

In January of 1998, Forest Service Chief Michael Dombeck proposed a moratorium on road building within most of the remaining roadless areas on National Forest lands. Until that time, it had been since 1978 when the Forest Service dealt with the management of roadless areas from a national perspective. Realizing the economic, ecological, and social benefits of preserving remaining wildlands, President Clinton then, in October 1999, directed the Forest Service to undergo a rulemaking process that would protect these lands. The American public responded with overwhelming support – sending in two million comments urging the administration to protect roadless areas (95 percent of the comments were in favor of strong roadless area protection). This momentum resulted in a final national rule, released on January 5, 2001, that would protect 58.5 million acres from road building, commercial logging, and other extractive activities. It was a monumental achievement for conservationists and wildlands around the country. For once, there was a direct order that would prevent our last stands of old growth, our last free running rivers, and our defacto wildlife refuges from being developed and degraded. Exceptions were made that allowed motorized access for public safety, timber thinning, and various grandfathered activities. It took one of America's largest timber companies, Boise Cascade, only three days to file a lawsuit against the government to halt the rule. The States of Idaho, Alaska, North Dakota, Montana, Colorado, and Wyoming all followed suit, either bringing lawsuits of their own, or supporting lawsuits of neighboring states. Unfortunately, by then the Bush Administration was taking control of office, and refused to defend the Roadless Rule at the first hearings in Idaho. With no defense, the Idaho Judge eventually issues a preliminary injunction of rule and agrees with plaintiffs that the rule was adopted illegally. Today, the fate of the original Roadless Rule stands in various courts around the country. In August 2002, the U.S. Justice Department unexpectedly issued an 80-page brief to a North Dakota court vigorously defending the Roadless Rule. Conservationists were positively surprised at the administration's decision to now, after bluffing of the rule, turn around and defend it. Coming months will bring more news on this important conservation issue – we'll keep you posted! – Matt Skroch

Taking it to the Streets



Volunteers weld a road barrier passable by foot and horse travel. From left, Jim Scarantino, Oscar Simpson, and Patty Stern

While the national debate of protecting roadless areas draws on, Sky Island Alliance and cooperating organizations continue to make positive steps toward protecting and expanding roadless areas

in the Sky Island region. In October, Sky Island Alliance, Upper Gila Watershed Alliance, New Mexico Wilderness Alliance, and Republicans for Environmental Protection held the first-ever volunteer road closure event on the Gila National Forest. Twenty-five volunteers from Tucson, Silver City, Albuquerque, and elsewhere traveled to the Big Burro Mountains west of Silver City and put three roadbeds to rest. Using welders, shovels, picks, pipe, and lots of determination, volunteers put their back into it. In two days, we successfully closed two and a half miles of roads that intruded into a previously designated roadless area near Wildhorse Canyon. Events such as this show that local citizens can make a difference, and while we continue to advocate for strong national policy, real differences are often made at home. A hearty thanks goes out to all the volunteers that made the Gila closures possible.

– Matt Skroch

In the last issue of *Restoring Connections*, you may recall an article on habitat fragmentation. Roadless areas are, by definition, unfragmented lands free of roads. Typically, these areas are defined as parcels larger than 1,000 acres. They represent less than five per cent of the continental U.S. landbase. Roadless areas within National Forests represent about two per cent of the same landbase.

In recent decades, the academic realms of ecology, wildlife biology, and conservation biology have recognized remaining roadless areas as one of the most important landscape features in conservation planning. In an increasingly urbanized and motorized environment, Americans are also demanding more wilderness experiences for recreational activities.

The ecological benefits of conserving remaining roadless areas, and working to create more, are comprehensive. These include:

- Providing core habitat for over 220 species of federally listed endangered and threatened species (25 per cent of all listed wildlife species), including more than 1,900 Forest Service-designated sensitive species.
- Landscape bulwarks against exotic species invasions. Roads and associated disturbances act as “biological highways” for invasive species.
- Protection of watersheds for aquatic species. Sedimentation from roads decreases habitat effectiveness for many riparian obligate and facultative species.
- Decreasing habitat fragmentation. Species from wolves and grizzly bears to owls and lizards respond negatively to lightly or heavily roaded landscapes. Road aversion, road attraction and roadkill, direct habitat loss, human-induced stress, and air/water/noise pollution are examples of impacts in roaded landscapes.

While we can find many benefits for the preservation of roadless areas for wildlife and plant species, it is important to stress the value of this dwindling resource for humans. As noted above, roadless and wilderness lands make up a small fraction of the U.S. landbase. Visitor days in these areas, however, have significantly increased in recent decades. When the American public was polled in 2000, 76 per cent of those polled expressed the desire to permanently protect remaining roadless areas. Wildland and wilderness experiences are in high demand – many existing wilderness areas are already attracting over-capacity visitor use. With the recent explosion in off-road vehicle use, people seeking solitude and non-motorized recreation are being pushed out of many public lands. This puts increasing pressure on nearby roadless areas, and highlights the need to protect those we have left.

In addition, wildlands free of roads also provide clean drinking water for urban populations, intact scenic landscapes, and opportunities for wildland-based tourism (bird watching in Southern Arizona accounts for one of the region's largest source of tourism revenue). It pays to protect.

On the Coronado and Apache National Forests, Sky Island Alliance is now drafting a proposal that will protect more than 700,000 acres from roads, logging, ORVs, and other extractive industries. With the help of thousands of our members and volunteers, we work for the day when unbroken, wild landscapes may forever be inherited to future generations, when vibrant communities can coexist in vibrant, healthy wildlands, and when our treasured natural heritage is ensured to accompany us into the future. Please look forward to an upcoming wilderness proposal this winter, and help us make this a reality.

The Nature Conservancy's Patagonia-Sonoita Creek Preserve

by Lisa Naas, The Nature Conservancy

In a verdant floodplain valley between the Patagonia and Santa Rita mountains of southeastern Arizona, within the watershed of Sonoita Creek, lies some of the richest of the remaining riparian (streamside) habitat in the region. One of few permanent streams, it provides for a wide array of diverse species of butterflies, birds, and endangered fishes.

Joseph Wood Krutch, the distinguished American naturalist, once said that "No other area in Arizona is more deserving of preservation" than Sonoita Creek. This site contains the first two miles of permanent flow of Sonoita Creek and the floodplains adjacent to the stream. The site contains very high biodiversity values that are primarily focused on the riparian habitats along Sonoita Creek. As the first project for The Nature Conservancy in Arizona, it captured much of the biological diversity associated with these habitat types. The watershed is mostly undeveloped and the natural processes of flooding are mostly intact and well functioning.

With the support of the Tucson Audubon Society, The Nature Conservancy purchased the Patagonia-Sonoita Creek Preserve in 1966. Through conservation easements and other voluntary landowner agreements as well as through donations of land, more than 1,350 acres are now protected along Sonoita Creek.

What to See: Plants: This preserve protects a magnificent example of the cot-

tonwood-willow riparian forest. These are the largest (over 100 feet tall) and oldest (130 years old) Fremont cottonwood trees anywhere, and this is one of the few remaining sites where this once-common forest type still persists. Arizona black walnut, velvet mesquite, velvet ash, canyon hackberry, and various willows are found in slightly different habitats throughout the preserve. Here are remnant wetlands or *ciénagas*, a once-common feature of Sonoita Creek floodplain and the most endangered natural community in Arizona. A significant number of rare and sensitive plant species are found in the Sonoita Creek watershed, including Huachuca water umbel, Santa Cruz stripped agave, and the Santa Cruz beehive cactus.

What to See: Animals: The Patagonia-Sonoita Creek Preserve is best

known for the 300 bird species observed here. Several unusual, rare, or unique species such as the gray hawk, green kingfisher, thick-billed kingbird, northern beardless-tyrannulet, violet-crowned hummingbird, and rose-throated becard, attract birdwatchers from around the world. Other animals inhabiting the preserve include mountain lion, bobcat, white-tail deer, javelina, coatimundi (chulo), coyote, desert tortoise, occasional rattlesnakes and several toads and frogs. The Patagonia-Sonoita Creek is a perennial stream fed by surface and underground springs. It is one of the very few remaining such streams that supports four native fish species, one of which, the Gila topminnow, is among the most endangered in the Southwest.



Preserve happenings:

Guided Nature Walks: If you'd like to learn more about the preserve while enjoying an easy one to two hour hike, join us for a guided nature walk every Saturday at 9 AM. Meet at the Visitor Center (no reservations needed). Visitor Hours: Wednesday-Sunday, October 1 to March 31 - 7:30AM to 4:00PM; April 1 to September 30 - 6:30AM to 4:00PM.

Closed Mondays and Tuesdays. General Admission is three dollars per person for members of The Conservancy, five dollars per person for nonmembers, and kids under 16 are free. Passes are good for seven days. A visitor center with displays and local information is staffed by volunteers during visitor hours. Group visits require prior arrangements. Directions: The Patagonia-Sonoita Creek Preserve is located about 60 miles southeast of Tucson, near the town of Patagonia. To visit the preserve, take Highway 82 to Patagonia. In town, turn west on 4th Avenue. Turn south on Pennsylvania, cross the creek, and go about one mile to the entrance. For more information about the preserve or its management, please contact Lisa Naas at (520) 378-4952 or lnaas@tnc.org.

SIA-TNC joint workday Patagonia-Sonoita Creek Preserve

Join us for a joint workday with volunteers from The Nature Conservancy. We'll do streamside cleanup, trail maintenance, and other restoration work on a fine spring creekside Saturday. Mark your calendars for May 10, and contact Trevor for details at 520/624-7080 ext. 205 or trevor@skyislandalliance.

Peloncillos: A Place of Stark Beauty and Solitude

by Rachel Kondor, SIA Ecosystem Defense and Policy Director

As we rounded the bend in the road, I saw a tawny-colored flash out of the corner of my eye. My companion exclaimed, "Mountain lion!" The animal was magnificent, running full speed across the valley in front of us. Within just seconds, the lion had run the full stretch of the valley and had disappeared over the ridge to our left. We ran to the top of ridge hoping to catch one more glimpse, but our human legs were too slow, and the animal was gone. Never had I seen an animal move so fast, with such power. The encounter left us all breathless.

We were in the Peloncillos conducting road surveys when we caught sight of the lion. Although we had hoped to see some birds and other small mammals that weekend, none of us expected to see a large cat. But, the Peloncillo mountain range can surprise you sometimes.

Straddling the Arizona-New Mexico-Mexico border region, the Peloncillos are relatively dry and low-lying in the U.S., compared to other sky islands in our region. In Mexico, the range broadens and rises, becoming wetter and larger. The Peloncillos are the only range in the sky islands that form a continuous connection from the Sierra Madre in Mexico to the Mogollon Rim of central Arizona, providing a meshing of diverse habitats from subtropical to temperate and an important regional wildlife corridor.

The diversity of wildlife present in the Peloncillos is almost overwhelming. More than 325 different bird species have been documented in the range. The Peloncillos

also boast an area containing the highest diversity of lizard species in the U.S. That area has been recognized by the Bureau of Land Management as an area of critical environmental concern and is managed to protect the species present there.

The range also provides habitat for big-horn sheep, mountain lions, coatimundis, and black bear, among others. Just a few years ago, a jaguar was sighted in the range. Historically, the Peloncillos provided habitat for wolves and someday we may see the return of the wolf to the area as the range connects with current reintroduction sites in rim country to the north.

The Peloncillos have been traversed since time immemorial, not just by wildlife, but also by human travelers of all kinds. Ancient rock art in the area provides archaeological evidence of human activity many centuries ago. The Spanish Conquistadors also blazed trails through the range. Skeleton Canyon, a small canyon on the west side of the range, was

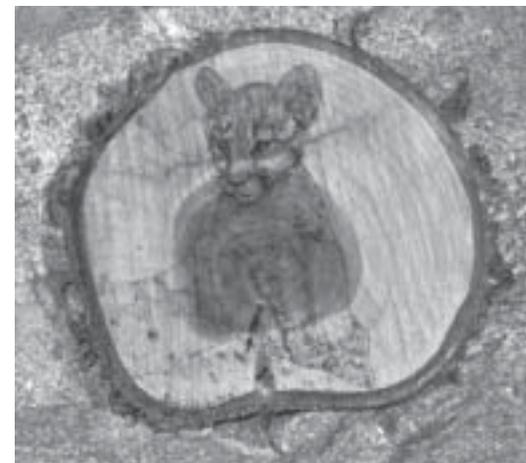
used by smugglers and Apaches alike and was the site of Geronimo's final surrender in 1886. The Mormon Battalion traveled through these mountains, and according to historical accounts, ran into some trouble with a herd of feral cattle along the way.

Private landowners, Congress, and federal agencies have long recognized the Peloncillos are deserving of special protection. Private landowners are engaging in efforts to conserve their land, and federal agencies have designated areas of critical environmental concern, a research natural area, and a zoological-botanical area, which are managed to protect their unique values. Also, Congress has designated a wilderness area, anchoring the northern part of the range, and several wilderness study areas.

Despite various efforts to preserve them, the Peloncillos are still in need of help. I-10 creates a barrier to wildlife movement between the northern and southern portions of the mountains and other roads fragment habitat throughout the range. Poor livestock practices in some areas, fire suppression, degradation of riparian areas, and clearing of land for recreation, resource extraction and development have left the Peloncillos in less than ideal condition.

The Peloncillo Mountains deserve recognition and protection as a globally

unique wildlife corridor. The Sky Island Alliance and other conservation organizations are focusing their efforts on the preservation of the region. We have done road surveys, and we have also restored habitat by closing some roads. We hope that through our efforts, and those of other entities, the Peloncillos will continue to serve as a haven for wildlife species, and as a crucial biological link between the Sierra Madre and the Rocky Mountains. It is also a wonderful place to find solitude from our hectic modern lives, and observe some remarkable animals and birds. Please join us on one of our field weekends, or visit the area on your own, sometime soon.



Woodwork by Joan Erkes

Sky Island Richness: Geology and Soils

By Peter Warshall

Lovers of the Madrean Archipelago know that these mountains hold tremendous mysteries, and that we have precious little field data to explain them. We keep looking for what has made our sky island cluster so unique on the planet. Many of us have thought about the number of islands, their size, their position in North America (especially in the North American Cordillera and Gila River Basin), their three weather systems, their unique overlap of floral and faunal provinces, their complex paleohistory, their topography, and their latitude. Here's more food for thought: what do geology, geomorphology, and soils add to our picture?

The sky islands dot the landscape between two of the largest massifs of different rocks in North America. The "continent" of the north (the Colorado Plateau/Mogollon Rim) is a stable sedimentary platform with a few explosive volcanic rocks. The "continent" of the south (the Sierra Madre Occidental) is a more recent layering of volcanic ash-flow, some of the rocks more welded together than others. The volcanics of the sky island/Sierra Madre complex maybe the biggest single volcanic ash-flow-based mass on the planet. In addition, the sky island cluster includes "metamorphic core complexes" which are a series of mountains along the seam between "old" North America (from Canada through Sonora) and the terranes formed by its crash with the Pacific Plate. The metamorphic core complexes such as the Pinalenos are built from predominantly granite and granite-like rocks. In short, the sky islands sport three general types (or mixes) of mountains - volcanic, granite, and limestone.

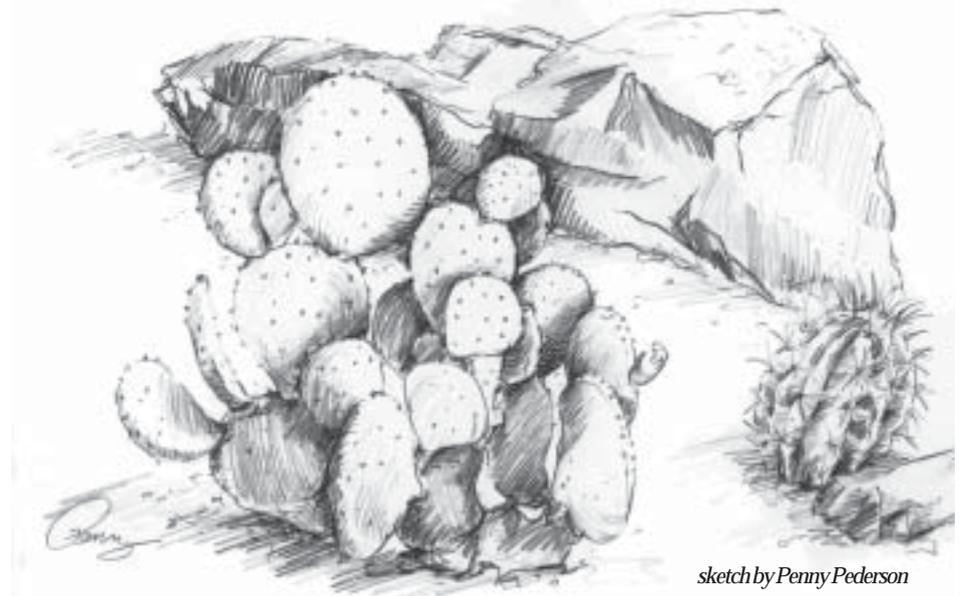
Some plants and animals prefer one kind of rock or its derived soils more than others. When the volcanic lovers, for instance, meet the sedimentary or granitic

rock and their soils, they may evolve new forms to "jump" rock types. Or, older rocks may have very different soils as they have been weathered for hundreds or tens of thousands more years. Some species may have adapted to these paleo-soils better than others. Or, some soils may have blown in from somewhere else and accumulated in layers of wind-blown caliche or sand; they too have their own specialists. Or, some soils may hold water better and, for instance, create "wetland islands" which harbor special plants and animals. The more soil varieties and rock outcrops, talus slopes and topographic forms, the more species numbers.

Another important but little studied aspect of rocks/soils/diversity is erosion from the mountain slopes to the valleys. The textures, layers, and depth of the valley soils are part of a long story of mountain contributions and valley accumulations. For sky islands, it's crucial to note if the valley soils have a calcic (caliche, carbonate) or argillic (clay) layer.

Here are a few examples:

* Yucca prefers sandy soils. When paleo-lakes receded, some of the sand accumulated into dunes alongside the sky



sketch by Penny Pederson

island mountains. For instance, look for yuccas along the San Simon, Animas, or Willcox Playa valleys. Wherever you see thick yucca groves, there's usually sand. In turn, more yuccas mean more *Xylocopa* bees, a bee that lays its eggs inside the dried yucca stems, in sealed chambers with one pollen ball of food for each egg. Usually the chambers are excavated in the stem, deep within the rosette of leaves, safe from the probing tongues of Gila woodpeckers who actually listen for the churning of the larval bee. But, if too deep within the rosette, water can pond and cause fungal rot which can kill the larva. In addition, if a female bee takes too long between furnishing pollen balls, another parasitic bee may sneak into the hole and lay its own egg containing a larva which will grow faster and kill the *Xylocopa*'s. So sand sustains this five-species food chain (actually many more).

* The barking frog prefers cracks and fissures in limestone or dwells in certain locales with calcium-rich soils like gypsum soils. It does not occur in granitic mountains nor the sandier soils derived from granite. Similarly, the little known Wet Canyon talus snail of the Pinalenos (which exists in about a one mile-long talus slope) may have particular needs for carbonate water and a unique mix of soil and rock.

* The Huachucas have a greater diversity of plants than the Pinalenos, even though the Pinalenos are taller with a greater elevational difference between valley and peaks, and a more developed spruce/fir forest. The Pinalenos are predominantly granite, while the Huachucas have a combination of rocks with quartzite, limestones, some shales and siltstones, conglomerates and some volcanics. Especially in the upper elevations, the soils and outcrops of limestone increase the number of vascular plant species on the Huachucas compared to the Pinalenos.

* In some valleys, the "fill" includes a layer of clay (the argillic horizon). Great examples are the Animas and San Rafael valleys. The clay layer has prevented the valleys from a mesquite/shrub invasion by holding the water close to the roots of the grasses and letting the grasses use all the

water. In valleys like the upper San Simon, the water has sunk below the depth of the grass roots, and only mesquites grow roots long enough to suck it up. Grasslands became scrub. Grassland diversity has been better maintained in the Animas and San Rafael valleys, increasing the abundance of pronghorn antelope and wintering birds.

It's also fun to think about how filled each valley between the sky islands has become. If a valley has filled almost to the brim with sediment from the sky island mountains, we see small "mountains" peaking out from the valley floor. If the valley has lost much of its fill down a river or the surrounding mountains erode slowly, then getting to the mountain passes is a more difficult climb. The passes through the Peloncillos are "easy" around Granite Gap and Antelope Pass, in part, because the Animas is pretty full up with sediment. These low passes have been easier "bridges" for plants, lizards, toads and snakes from the "plains" grasslands to move west and for a few of the desert reptiles to move east. When planning corridors for conservation, these easy passes require special attention, especially because humans also prefer them for major highways.

In short, I have a confession. I have always looked at sky islands from the oak woodland up, and kind of preferred to "see" the mountain and not the valleys. But geology and soils connect the two. To understand what we want to protect and where the diversity lives, we do well to look at what scientists call the "substrates" of the sky islands to see how much they can explain diversity, and how they can help in restoring sky island habitats whose soils have been lost to human enterprise. When we include the consideration of soils in the sky island ecosystem, the need to protect valley floor land becomes even clearer. Along with high granite boulder fields and limestone cliffs, we need to conserve special soils like relic sand dunes and cienaga clay loams that nurture extensive food webs. Noticing and caring about rock and soils should bring us back to Earth.



Inventory and Monitoring Volunteers Needed

The Sky Island Alliance is continuing its program to inventory, monitor, and restore populations of important species of animals in the Sky Islands of South-eastern Arizona, Northwestern New Mexico, Northeastern Sonora, and Northwestern Chihuahua. We are piloting this program with riparian inventories for native Ranid frogs and native fish.

Amphibians have experienced population declines worldwide due to habitat loss, pollution, and disease. The native Ranid frogs of the Sky Islands include the lowland leopard frog, the Chiricahua leopard frog, and the Tarahumara leopard frog. All of these species have experienced declines, from moderate to severe, throughout the Sky Island region. The Sky Island Alliance recognizes the importance of the dwindling riparian resources of southern Arizona and has decided to concentrate its Sky Island Vertebrate Inventory and Monitoring Program on these riparian-obligate species along with our native fish.

We are looking for volunteers who have experience or would like to gain experience in surveying for native fish, frogs, and other riparian-dependent species and can dedicate themselves to approximately 5-6 surveys this year and 10-12 surveys in 2003. Volunteers should be in excellent physical condition, have experience in backcountry hiking, and be ready to get wet. We will be hiking and bushwhacking in remote areas throughout the summer, so ability to deal with extreme conditions and temperatures is of paramount importance.

For more information, please contact Trevor Hare (520/624-7080; trevor@skyislandalliance.org).

The Galiuro Mountains

by Bob VanDeven

Cory and Dorita are the last to leave, grinding down the cratered jeep trail in the '78 pickup we've affectionately named Skyota. I watch them cross Jackson Creek and begin the steep climb up the ridge, engine noise carrying like the grief of some Pleistocene giant. A sparse cover of oak and manzanita is not enough to screen their progress and I can see Skyota lurching as she crests a saddle. A pause, just enough to spin the wheel hard right, then she noses over and disappears. Miles overhead two parallel streamers unspool behind an eastbound jet, the only marks on a sky bracketed by cliffs of pink andesite and volcanic tuff.

I limp back along the road to where the cabin sits surrounded by evening primroses. It's nearly dusk and cold air is sloughing off the peaks. This is the cue for the primroses to open and already some have split to reveal whorls of yellow petals. It takes only a few minutes for this counterintuitive process to unfold—flowers opening at night—and soon the yard is jeweled with dozens of three-inch blossoms waiting for the arrival of the sphinx moth. It's been a good spring. I push open the cabin door, rusted knob ratcheting uselessly in my hand, and emerge moments later with an old spindle-backed chair. In the past three days my friends and I have hiked through some of the most severe country imaginable, carving a route through Redfield Canyon and traversing the foothills on an old jeep road before heading over the West Ridge. We've soaked our bones in a warm spring and recorded no less than 52 species of wildflowers. We've seen a male bighorn (a first for most of us), gone swimming under an icy waterfall, and slept in a stone house set deep in the hollow of a cliff, but somewhere along the way a tendon parted in my right ankle. I knew it was about to go, have even scheduled surgery for the following month, but still I intend to spend the next five days in the mountains. The ankle is swollen, the pain a dull presence under 800 milligrams of ibuprofen.

Seated in the yard I find myself wishing for beer, then abruptly forget my thirst as a trio of sphinx moths flits into view. With their long tongues, sphinx moths are the only critters that can reach the nectar in a primrose. They're large—three inches or more in length—and often mistaken for hummingbirds because of their ability to hover. They zip around my legs, following some mysterious pattern or perhaps no pattern at all, never spending more than a second at each blossom. To a sphinx moth this must look like a landscape studded with giant piña colodas. Twilight comes and still they chase each other from flower to flower, their frantic search mirrored by the zigzag paths of bats swooping low over the valley. It's a sublime performance, yet in the long history of the Galiuros there have also been episodes of startling violence and human struggle.

About 25 million years ago a series of eruptions fractured the ground where I sit, sending rivers of magma across the landscape and

throwing up tall cauliflowers of ash. Rather than creating cinder cones, these eruptions laid down sheets of andesite and rhyolite, the ash settling and curing under its own weight to become a cap of welded tuff. Millions of years later a process called block faulting would cause these layers to tilt, building a pair of high ridges in the same way so many other mountains in the basin and range province were born. Thus the Galiuros took shape, subsequent years of erosion carving



In Redfield Canyon, photo by Bob VanDeven

two deep canyons between the ridges—Redfield draining to the south and Rattlesnake to the north—so that today the range appears as a narrow, elongated “H”. Early Spanish maps labeled this the Sierra de San Calistro. The name probably refers to Saint Callistus, a third century pope who gained favor within the church for purchasing and expanding a cemetery on the Via Appia. With the arrival of Anglo settlers the name “Calistro” slowly became Galiuro (pronounced *gal-oor-o*), yet centuries would pass before anyone took up residence among the jagged peaks.

One of the first Anglos to pass through was James Ohio Patty, a 19th century fur trapper who wrangled permission from the Mexican Governor in Santa Fe to trap beaver along the San Pedro River. Patty is cred-

ited with killing the first grizzly in Arizona as well as a great many other animals, but by the spring of 1824 he and his men were starving. Frequent Apache raids convinced them to gather the lightest of their possessions and make a break for it, heading directly over the Galiuros. Wrote Patty in his journal:

On the morning of the first of April, we commenced descending the mountain, from the side of which we could discern a plain before us, which, however, it required two severe days to reach... We had nothing to eat or drink. In descending from these icy mountains, we were surprised to find how warm it was on the plains. On reaching them I killed an antelope, of which we drank the warm blood; and however revolting the recital may be, to us it was refreshing, tasting like warm milk.

With reports like this coming back it's no wonder Americans steered clear of the Galiuro country. For decades afterward it was ignored, left to the bears, ringtails, Apaches, and antelope.

The next morning a cold wind blows through the cabin. I rise, dress, and make coffee. Stepping into the yard I find the primrose flowers wilted by frost, the valley lidded with clouds. By 11:00 it is snowing. I put on all the clothes I have and start a fire in the fireplace. Miners built this shelter while working a nearby claim and as I warm my hands it occurs to me their dreams of wealth were probably inspired by William Blake, a Territorial Geologist who attempted to develop a lode along the same fault line. Blake was something of a huckster and in 1902 his company's prospectus declared: “It is not our purpose to exaggerate or misquote the facts, and we say without fear of contradiction that this is the largest ledge of gold ore in Arizona, if not in the U.S.” In fact it was one of the smallest, but the only thing harder to wrest from the land than gold is the rumor of gold.

The Power family arrived in the Galiuros in 1909 after ricocheting around the west for nearly 10 years. In Rattlesnake canyon they found a place that would hold them longer than any other, a green and sinuous corridor leading away from civilization and into history. For a while they ran cattle, but in 1917 Jeff, the father, acquired an abandoned mine in the heart of the range. His wife and mother had both died and his eldest son had moved, leaving him to tend his herd with the help of a daughter, Ola May, and two younger sons, John and Tom. Before long, Ola May would also pass away, her death unexplained even after a coroner's inquest. Striking it rich must have seemed the only way to redeem a life of misfortune and poverty. The men labored to build a wagon road through 25 miles of rugged country, then purchased an old stamp mill and brought it to the mine.

Headstrong and suspicious, the old man kept his sons from registering for the draft and in the midst of World War One this was

considered a serious crime. On the morning of February 10, 1918, the county Sheriff and three other men surprised the Power men at their shack and a gunfight broke out. When it was over, Jeff Power had been mortally wounded and the Sheriff and two others lay dead. Tom and John dragged their father into the mine and attempted to make his last moments as comfortable as possible, then lit out for the Mexican border.

I shiver all night in the cabin and awake the next day determined to move camp. I load the truck and head out of the valley, morning sun blazing on the snow-covered East Ridge. Once over the saddle I can see the south end of the range, a jumble of hills and draws arranged perpendicular to the road so that the dusty ribbon is soon lost in endless folds of green. Blooming yuccas stand like candles on the slopes but give way to uniform groves of pinyon and juniper where the land rises above 6,000 feet. I drive slow. Over my left shoulder I can see Bassett Peak and for some reason I think of the B-24 bomber that lies crumpled on its flanks, remembering the day I saw it glinting in my binoculars and the rivulets of molten aluminum frozen on the cliff.

Cottonwood leaves flutter in the drainage where I leave my vehicle. I have a map but I don't really know where I'm going, only that the stream leads west into a narrow defile and that there is no trail. I find a fragment of a geode and spook a pair of mule deer who go bounding up a slope covered with shin daggers. How any mammal can run through a field of these plants without skewering itself is beyond me. River cobbles give way to shelves and channels of water-worn stone, making for an easier hike. My ankle throbs.

I've gone a mile, maybe two, when I come to a confluence. With no clear destination and no schedule I turn left and am soon forced to detour around a pool by clambering over a cliff. The rock here fractures into large plates and I kick one free, hearing it break like china in the canyon below. Up ahead it looks as though the creek must issue from a vertical wall of tuff and I descend once again to continue walking upstream. The water pours over a five-foot sill and I lever myself over, discovering at once my mistake. The creek does not issue from the wall ahead, rather it pours over the wall at the back of perfect, U-shaped grotto. A trick of the stone renders the little amphitheater invisible from anywhere downstream, yet now I can see bunches of scarlet penstemon growing nearby and hear the seductive patter of the waterfall. I sit by the shallow pool at its base, remove my boot and plunge my foot into the cool water. The pain in my ankle fades and the sun hovers just beyond the opening of the grotto, pouring an ingot of warm light into the shadowy bowl. I feel lucky. In a mountain range named after a saint who purchased a cemetery, not all have been able to find such peace.

Arizona Sycamore: A Winter's Tale

by Kathy Pitts

The glorious, golden leaves have fallen. They gather now in crispy sheets of carbonaceous material, tucking the earth into its winter bed. Above, smooth white branches reach into the blue desert sky, the tiny fists of next year's leaves held tight in hidden buds.

One of few broad-leaf, deciduous trees to find a home in the Southwestern desert, the Arizona sycamore is an elegant relict of a cooler, wetter climate. Now it is found only in wet soils along streams and canyons of the Sky Islands from about 3000 to 6000 feet. Large trees with massive trunks and spreading branches, they add a handsome grace note to their riparian home.

Their beauty is more than bark deep, however. Their root systems are valuable in protecting stream banks from erosion and their trunks are home to woodpeckers and other desert birds. In the Chiricahua and Atascosa mountains, they provide the favored nesting grounds of the elusive trogon (*Trogon elegans*).

And because sycamores are such thirsty plants, their presence is an indicator of a year-round water supply. In the pools and riffles at their feet, it's sometimes possible

to find native chubs and other aquatic species such as leopard frogs, who perhaps even now are climbing into their mud bunks for a winter nap.

Platanus wrightii is often found in association with Arizona walnut (*Juglans major*), oak (*Quercus* sp.), ash (*Fraxinus velutina*), cottonwood (*Populus fremontii*), catclaw acacia (*Acacia greggii*), wild grape (*Vitis arizonica*) and needle grass (*Stipa* sp.). This type of riparian ecosystem is home and highway to as much as 60 percent of Arizona's resident and migratory wildlife.

Two canyons are famously named for the species, one near Sedona, another west of Nogales on the border with Mexico, and at least 72 other Arizona locations are named after the sycamore—not counting the housing development in a creosote and cholla flat southeast of Tucson. But everyone has a favorite spot where the sight of a



grove first lifted their hearts and lightened their step.

The Arizona species is one of three sycamores native to North America. Sometimes called Buttonball or Plane tree, its genus name is from the Greek *platys* for broad and flat, referring to the shape of its leaves. It is unrelated to the English sycamore, which is a maple, or the Biblical sycamore, a fig, although their leaf shapes are similar.

Wind-pollinated flowers appear in spring in clusters of two to five male and female balls about an inch in diameter. The brownish ball fruit ripens in fall, gradually breaking up over the winter. Although prolific seed producers, seedling trees are uncommon as the short-lived seeds require warm, moist soil to germinate. Mature trees can reproduce vegetatively, sending up suckers from the root.

The sapwood is white to light yellow, while the heartwood is brown, with a close texture and interlocked grain. Although it is occasionally used for making boxes and mandolins, sycamore is not considered commercial timber.

Nurseries in the Tucson and Phoenix areas sometimes sell it as a desert native, but unless you have a high water table or a stream running through your front yard, this is not a good idea. The heat and stress of urban life make Arizona sycamores susceptible to scale and blight.

Better to go visit your favorite grove, in your favorite canyon, and let it work its magic once again.

Chronicles of the Many-Legged

by Joe Cicero

In early September, road survey work took SIA volunteers east from Douglas along the Geronimo Trail, past the turnoff for Guadalupe Canyon, and over the Pelloncillos by way of Clanton Draw, dropping down into the Animas Valley. In addition to the fabulous wilderness along this mountain pass and a rare opportunity to hike the interior of the Gray Ranch, the southwest corner of New Mexico held several entomological treats as well.

The blacklight we set up brought in scores of moths and other insects belonging to a wide variety of families. Late-season flyers of *Plusiotis gloriosa*, a member of a line of primarily tropical scarabs, rolled in too. These and their relatives are among the most stunning beetles in the world, and everyone who had never seen them before gawked in amazement at their brilliant iri-

descent green ground color with metallic silver stripes on the wing covers longitudinally¹.

By day, the oil beetle *Megetra punctata*, jet black with faint red stripes, was out bumbling around on various forbs. These creatures are incredible; they belong to the blister beetle family Meloidae, but, in contrast to most of their relatives, both the male and the female are flightless, and both possess a huge, bulbous abdomen. Varying in size from a grape to a prune, the abdomen dwarfs the normal-sized thorax and head, the latter two about as noticeable as those of honey ants. I've attempted in the past to explain this condition—for readers acquainted with insect development and evolution, my best guess is that a large larval body volume is a derived condition, but metamorphosis did not change to accommodate it. So, during metamorphosis, the head and thorax shrink down to their original, ancestral adult size, and the excessive, larval, volume they contain is displaced into the abdomen, which distends it enormously. First instar larvae have been found clinging to bees, a behavior called *phoresy*. When the larvae hatch, they climb up to a flower, and

wait to hitchhike a ride on pollinators. Where they go from there is not known, but it could be that they finish their larval life cycle on the provisions that solitary bees gather for their own young.

But the biggest surprise of the weekend was a small flight of the long-horned wood boring beetle *Tylosis suturalis*. This is a new record for the United States! Prior to this expedition, the species was known only from Chihuahua, Michoacan, Zacatecas, plus other southern Mexican states². Day-flying and bright red with black markings, it is undoubtedly a member of one mimicry ring or another, such as those well known to involve wasps and diurnal moths, that doesn't even occur in this northernmost distributional reach. Adults of the genus *Tylosis* are recorded on mallow-relatives *Abutilon*, *Sida* and *Sphaeralcea*. We found these beetles alighting to various unrelated plants with no apparent specificity, and we saw no mating pairs that day. Therefore, we cannot contribute any information on the phenology of this species yet. Larvae of other *Tylosis* have actually been reared out from the root crowns of these plants³, and so it is very likely that *T. suturalis* is associated with Malvaceae also.

¹Color photos of the jewel scarab fauna can be found in National Geographic Magazine, Feb 2001

²Southwestern Naturalist 38(3):241

³Thanks go to cerambycid authority Frank Hovore for consultation on the particulars of this species.



Tylosis suturalis female



Mystery Photo:

Do you know who this is? Visit us at www.skyislandalliance.org to see a whole photo.

Better than Roadkill

by David Hodges

Wilcox is at the crossroads of many Sky Island ranges. Whether the Chiricahuas, Galiuros, Santa Therasas, Peloncillos, Mt. Graham, the Blue Range, or any of the fine areas of southern New Mexico, all paths lead through this bustling metropolis. One of Wilcox's least known eateries (to the outside world) and closely guarded secrets is Rodney's, a Cajun-Mexican-Soulfood joint.

I discovered Rodney's on the way back from a road inventory trip with Matt Skroch. Tired and hungry, we were on the lookout for food and were fortunate enough to stumble across a great experience. The menu is loaded with an eclectic mix of treats. After much discussion, Matt settled on the crawdad dinner and I went for the daily special, fried catfish with vegetables and dirty rice. The crawdads arrived first with antennae and eyeballs intact. The look on Matt's face was priceless. I'm happy to report that he sucked it up and ate everything but the eyeballs. My meal was very tasty; the catfish lightly breaded and fried to perfection. Creating dirty rice is an art and one that Rodney

has mastered. The green beans and corn were a pleasant addition and gave a nice color balance to the meal.

Other foods on the menu include both bean and green chile burritos, beans and rice, liver and onions, hamburgers and fries, and assorted barbeque. Not a great place for a vegetarian but one could certainly survive here. Drinks consist of a variety of soda's self-served out of an ice chest, water, or—if in the mood for an adult beverage—you can go to the bar next door and get a drink to go. Seating consists of sidewalk tables out front with a great view of the Railroad Park, or on a nice patio with a large fig tree for shade.

The best thing about Rodney's is Rodney

himself. Friendly, outgoing and talkative, he has many wonderful stories and makes every visitor feel welcome and at home. So the next time you are near Wilcox and feeling a little hungry, head on over to Rodney's for some great eats in a friendly setting.

Rodney's is located in the old part of Wilcox next to the historic theater and on the same block as the Mercantile, the oldest continuous store in Arizona. To find, take exit 340 off I-10 and follow the direc-



tions to Chiricahua National Monument. Just before leaving Wilcox and just before crossing the railroad tracks, turn left down the street between the last row of buildings and the Railroad Park. Look to your left and you'll see it next to the bar on the corner.

Food is good and good food is gooder. This philosophy has served me well through many years of restaurant sampling. My loyalty has no reasonable limits when I find a goodun. Over the years I've found a number of gooduns (and baduns) in the rural areas of the Sky Islands. Knowing how yummy a good meal is after a day (or week) of hiking, it seems only fair that I share some of the best with our members—consider it a membership benefit!

This will be a regular feature and will occasionally give tips on some of the best places to get an adult beverage as well. We also welcome reader submissions if you have a place you think we just “need to know about.”

A Festival Feast

by Gita Bodner

Our festival benefit concert on October 5th was a smash hit. The music and socializing were great, and we put on a feast for some 200 people. Rave reviews of the food, and our desire to thank our food donors Wild Oats and Trader Joe's, prompted us to share with you our recipes for success! Our feast was prepared in mere hours, so we can guarantee that these recipes work for cooks-on-the-go! Note that all quantities are approximate. Who has time to measure when you're hosting a party for hundreds?

Quick fix super Sonoran salsa, 2 gallons:

Three 16oz cans Muir Glen Organic Fire Roasted Tomatoes

A handful of peeled raw garlic cloves
Sea salt

Fresh green jalapeños

1 small can chipotle peppers

2 to 3 pounds fresh organic tomatoes

1 to 2 bunches fresh cilantro

1 pound fresh organic yellow onions

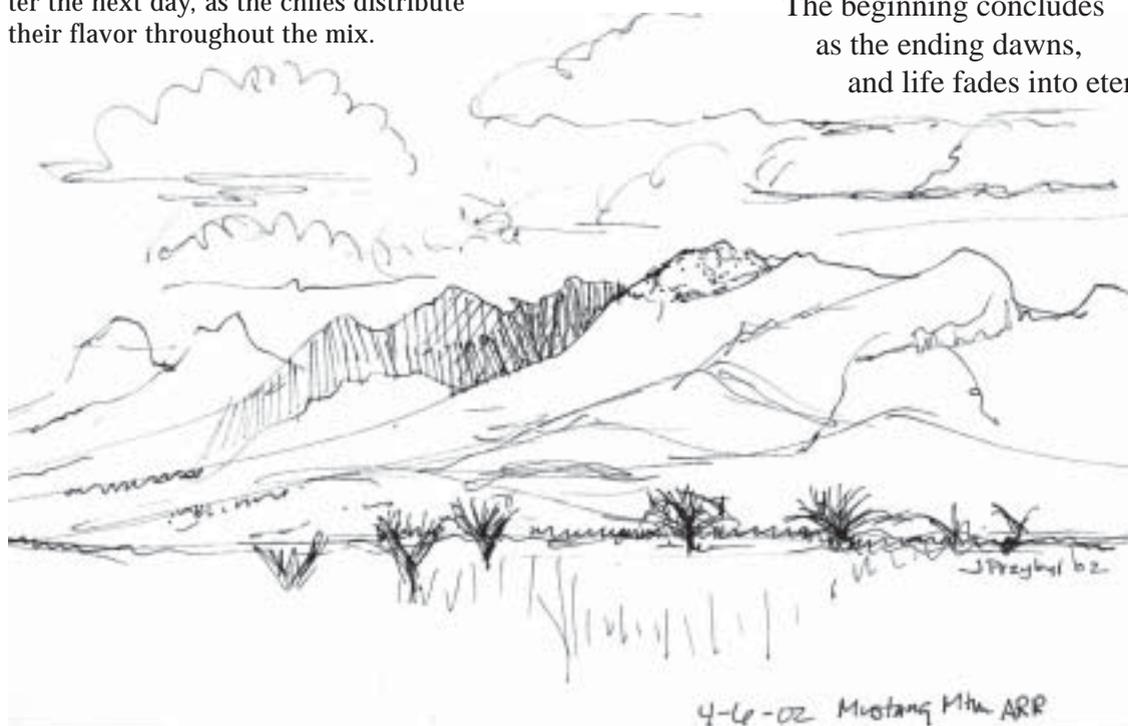
2 bunches fresh organic green onions

Several limes

Pour one can of fire-roasted tomatoes into a blender. Add as many roughly-chopped fresh tomatoes and onions as will fit, along with one chile from the chipotle can, several garlic cloves, a few jalapeños, a handful of cilantro, a pinch of salt, and juice from at least one lime. Blend just long enough to get all ingredients chopped and mixed. Adjust garlic, lime, and spices to taste. Pour into a large container with a lid. Repeat until you have more salsa than you think you and your guests could possibly consume, adjusting spices for the whole pot. Chop green onions moderately fine and add to

blended mix. Refrigerate until use. Try making one portion extra spicy for your fireproof endorphin addicts!

This salsa is best made the night before your feast, giving the flavors time to blend. The salsa tends to get a bit hotter the next day, as the chiles distribute their flavor throughout the mix.



The Storm

The wind whispers to the moonlit night,
begging the silent hills
to raise up their commanding voice,
as it seeks the valley
sheltered in their presence.

The trees listen
with deafening silence
to the torment the gusts
play upon their quaking leaves.

The mountains shake within their stony walls,
uttering a deep moan
as another shattering demand
echoes from the turbulent skies.

The storm expands,
life continues.

The beginning concludes
as the ending dawns,
and life fades into eternity...

—Tiffany Ann Voltz

Road Rattlings

by Trevor Hare

Well, another year has just about passed, and from the dominant theme of this election year, it has passed gas. From oil drilling in the Arctic National Wildlife Refuge, the rampant destruction of wildlife habitat by ATVs, more gas and oil drilling in Southern New Mexico, to war for oil in the Middle East, I am so sick of the combustion engine I could puke! I do have to admit I drive. Yes I drive, a (GASP!) SUV, a 1993 Mitsubishi Montero. I love my truck; it takes me all over Southern Arizona to fight the good fight. But something must change; I want an electric truck, better yet a solar truck. Until then I guess I'll have to drive my truck (20 mpg) out to the edge of an area we are interested in, then walk!

And walk we did, and we will continue to walk! All winter and spring long! We will walk roads, we will walk wilderness boundaries, we will walk (and sometimes wade) frog and fish transects, we will walk to public meetings, we will walk to the store, and we will walk to our neighborhood pub.

The past six months have been a whirlwind* of activity; during the summer we started to get a handle on the paperwork and then, all of a sudden, the frogs and fish lured us back outside, and we went

The Sky Island Alliance hosted two volunteer trainings on frog and fish identification and riparian survey methods for approximately 20 good folks, including more than few new to our volunteer ranks.

Back to the road, and roadless areas, we had a great fall visiting many gorgeous places and seeing some fantastic flora and fauna. In early August we explored the Apache Box and found heaven! and bears! I saw the first of the bears and like Ed Abbey I thought "...that this bear, like any other stranger, will like me, be pleased to meet me, want to know me better." I extended my hand in a friendly gesture and as happens when a bear sees a man, she was gone. A week later in the Peloncillo Mountains a lion ran a 200-meter arc along and across the road we were surveying and disappeared over a hill with three lumbering humans slow on its trail hoping for a last glimpse (see article on page 6).

In September we visited the Western Pajarito Mountains, where we looked at roads near the Mexican border, the vegetation was thick after the monsoon rains with waist high grass and the late summer wildflowers were everywhere. In late September we stayed close to Tucson and looked at the Mt. Fagan area of the Santa Rita Mountains. We camped near Rosemont Junction under the giant oaks, the area is a favorite of ATV users but north to the forest boundary (near Corona de Tucson) is mostly roadless. In October, 20 volunteers and *mi familia* camped, hiked

and partied in Sycamore Canyon, two turkeys (local and organic) were deep-fried, five gallons of veggie curry were enjoyed, one keg of Nimbus was consumed, and prizes and volunteer certificates of appreciation were presented.

November brought a backcountry mishap in the Aravaipa Canyon Wilderness and a great visit to the Gila Box together with gorgeous deciduous riparian gallery forests in their fall colors and a full complement of the animals, from frogs to bighorn and golden eagles, that call our rare desert rivers home. The mishap occurred when two new volunteers and myself overshot the turnaround time and decided to try to shortcut out of a tributary canyon above Aravaipa Canyon back to our base camp instead of retracing our route back out in the dark. But we ended up cliffed-out 200 feet above Aravaipa Creek as night fell and we had to stay put as the terrain was rough and the vegetation was sharp and profuse. While we were cold and without much food or water, I knew that the problem was the lack of any protocol for volunteers to follow in camp when we did not arrive back that night. The volunteers in camp did an admirable job of handling the situation and were greatly relieved to see us back in camp by 9:30 the next morning. I want to commend all the volunteers out with us that weekend and ensure all volunteers that a

protocol is now in place that will cover what happens in the case of a backcountry accident or mishap.

So here we sit on the cusp of a new year, an uncaring and sometimes hostile political climate calls for action, and action we will do. Exciting field trips are in store and Sky Island Alliance is ever expanding the scope and effectiveness of its programs. I invite all the concerned citizens in this spectacular neck of the woods to come out on a trip, walk some roads, collect valuable information, check out some roadless areas, sit around the campfire, enjoy a beverage, and learn more about the Sky Islands and the people and organizations working to protect this crossroads of North American Biological Diversity. We will be visiting the Coyote Mountains Wilderness, Needles Eye Wilderness and the Mescal Mountains (ya'll know what to bring), Turtle Mountain, the Gila Mountains, and to the west side of Aravaipa in March! Don't be shy—Come on out!

Watch for info on the April 11-13 Sky Islands bike race! Go to www.skyislandtrophy.com for details.

Volunteer Opportunities

In addition to our exciting and fulfilling field work opportunities (see page 7), we have lots of volunteer jobs in the office. If you can help, contact Trevor (520/624-7080; trevor@skyislandalliance.org).

• **Newsletter Contributors**—Do you enjoy writing and sharing with others? Poetry, stories, art, commentary all desired for coming issues. Work can be done from home. See page 2 for guidelines.

• **Host a house party**—Help support Sky Island conservation work by hosting fundraising events at your home. Call Acasia for details, 520/624-7080 ext. 208.

• **Data entry**—We need new volunteers to help us input field inventory data sheets into our database as well as new membership information, at the SIA office. Time is variable, moderate computer skills necessary. This step is critical for turning all our fieldwork into on-the-ground conservation action.

• Save space this spring to help with our upcoming **bike race**. Watch our website for details.

Become an SIA Program

Fund Donor

Stories in this issue and the Spring issue have been featuring projects in our Rewilding Program: road inventory and restoration, wilderness work, wildlife monitoring and the Missing Link, our Dragoons Restoration Demonstration Area.

All the necessary road closures, tracking workshops, and wilderness advocacy gets done only with extra funding, so please consider a special donation to one of the following funds:

- Roads & Restoration,
- Wildlife Monitoring (Tracking),
- Missing Link,
- Wilderness, and

• Mexico—the Chihuahua Research Station in Janos, and the Jaguar Program in Sonora.

Please make your check out to Sky Island Alliance, with a note in the Memo line about which fund you'd like to support. We'll make sure your money goes to the programs that mean the most to you, and we'll send you reports!

Wish List

- Reliable late-model vehicle for fieldwork and/or policy-related travel
- GPS units for mapping roads and wildlife sign
- Comfortable office chairs in good condition
- Table-top paper cutter, new
- Office supplies: copier paper, postage stamps, etc.

Sky Island Alliance

If you received this newsletter and it's time to renew your membership, please send in your check! If you are reading a friend's newsletter, consider joining us! We rely on members for our basic operations. Contributions are tax-deductible; we are a 501(c)3 organization.

Basic membership is only \$25, but if you add a little to that, here's a sampling of what your dollars can do:

- \$50 will help us survey 30 miles of roads.
- \$75 will sponsor volunteer training workshops.
- \$100 will close one mile of road.

Your Name _____

Address _____

City _____ State _____ Zip _____

Phone _____ E-Mail _____

Sky Island Alliance

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Thank you!

Sky Island Alliance

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Whetstone Mountain Storm

Sky Islands Wilderness

The Whetstone Mountains

As part of an upcoming wilderness proposal for the Coronado National Forest, the Whetstones are the second mountain range to be featured under our new newsletter format. Upcoming newsletters will feature different areas proposed for wilderness designation. To learn more about our roadless area surveys and wilderness work, contact us at 520/624-7080.

Rugged, remote, and largely unknown, the Whetstone Mountains form a classic Southwestern wilderness. Few have ever visited its steep canyons or seen the sweeping grassland vistas available from its ridge tops, but treasures await those sufficiently strong and adventurous. Wooded streams and isolated pine groves form islands of rare life forms, while ancient fossils bear evidence of life long past.

The Whetstone Mountains reach their oak and pine-clad high point of 7,711 feet on Apache Peak, rising approximately 3,000 feet from the grasslands at their feet. Watersheds on the eastern side drain into the San Pedro River, while those on the western side feed Cienega Creek, centerpiece of Las Cienegas National Conservation Area and one of the most important streams in southeastern Arizona. The Whetstone Mountains also form a critical linkage in the chain of Arizona's sky islands, connecting the Rincon and Santa Catalina Mountains in the north to the Huachuca Mountains and the Sierra Madre to the south.

The range's limestone core (from which it gets its name) creates spring-fed perennial streams and isolated oases throughout the range, including Wakefield and French Joe Canyons. These support rich riparian communities with frogs, turtles, cottonwood and willow trees, and a great diversity of birds. The limestone itself also supports many rare plants and animals. Though biological treasures of the Whetstones are still poorly known, a recent inventory of the range found five amphibian and 37 reptile species, including at least five species which reach the northern limits of their distribution here. This high diversity reflects the special nature of the range itself, as well as the overlaps between the fauna of the Sierra Madre and the Rocky Mountains, and the Sonoran and Chihuahuan Deserts.

For human visitors, the steep, brush-covered terrain of the Whetstones challenges even the hardest hikers. Only a few old pack trails cross its ridges, relics of ranching efforts decades ago. There are not even foot trails to the highest peaks, providing evidence of the limited visita-

tion this range has received. A small metal line shack, decaying high in one of the canyons, still has newspapers from 1939 on its floor. Like that shack, there are scattered relics of historic ranching operations scattered across the mountain range, but most have never been reached by roads and are now overgrown by shrubs and trees. The range's dense population of whitetail deer also attracts hunters, both human and feline. The south end of the Whetstones was historically the site of several small mining operations, and a few mining claims with attendant roads remain active. These have been excluded from the proposed wilderness.

Despite its rugged terrain, the Whetstones are threatened by activities in and around the range. Recreational overflow from the recently opened Kartchner Caverns State Park is increasing visitation of nearby sites, and expanding commercial development of the area. Arizona Highway 90, one mile east of the forest boundary, was expanded to four lanes to accommodate increasing traffic, thus becoming a major barrier to wildlife movement between the Whetstones and the San Pedro River. A major residential development is underway to the northeast of the range, large-lot suburban housing is filling land to the north, and second-home development is spreading out of Elgin to the southwest. Sierra Vista is growing rapidly, as are Benson and Vail, thus ringing the Whetstones with human activity. The limited set of rough forest roads within the Whetstones has been gradually expanding in some of the canyons, as off-road drivers take signs and barriers at road ends as points of departure, pushing steadily deeper into the unprotected wilderness.

