



**SKY
ISLAND
ALLIANCE**
Protecting our Mountain Islands
and Desert Seas

Restoring Connections

Vol. 11 Issue 3 Autumn 2008

Newsletter of the **Sky Island Alliance**

Why Should We Care?



Broad-billed Hummingbirds in the Sierra Azul, Sonora (Rancho El Aribabi). Courtesy Sky Jacobs.

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From the Director's Desk: Change Here, Change There

by Matt Skroch, Executive Director

be fooled by the deception of power, for we hold it within ourselves. Therefore, never for a moment doubt yourself as an important part of empowering change through your support for Sky Island Alliance — I say that in earnest, without regard for what may be the popular political slogan of late.

There is a different kind in change in the winds as well. In December, I will transition away from my duties as Sky Island Alliance's Executive Director and become a member and volunteer. We approach this particular change as an opportunity, as it stems from a thoughtful decision on my part to return to graduate school, and a thoughtful process initiated by our board and staff to ensure our leadership post is passed to capable hands. Words, whether written or spoken, will never suffice in effectively conveying my deep consideration for and connection with this organization. I am proud to be but one part of this grand organization, who along with the varied and innumerable contributions of our members, volunteers, staff, board, and partners have and will continue to achieve great heights as a regional, community-integrated conservation organization.

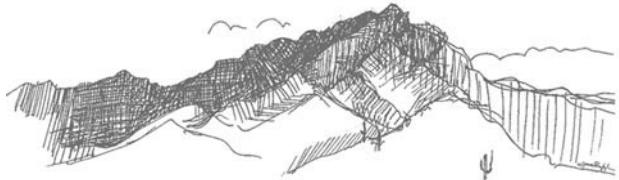
In the next edition of Restoring Connections, please look forward to meeting our next Executive Director. Right now we're in the process of finalizing who the lucky candidate will be. In the meantime, the Landscape Restoration

Program has a beautiful ciénega to restore, the Wilderness Program has the Tumacacori Highlands legislation to help usher through Congress, our Wildlife Linkages Program has its *twelfth* citizen scientist training to coordinate, our Northern Mexico Conservation Program has more ocelots to protect, and our Policy and Planning Program has its seminal "State of the Coronado National Forest" report to release for the important Forest planning work happening this winter. There's more too — lots more, and you're about to read additional ways we're engaged all across the region. Yes, some things never do change.

Folks, I look forward to seeing you around the campfire, at an event, or simply on our list of supporters in our next Annual Report. It takes all kinds. I hope you'll join me, as a fellow member, this coming Holiday Season in making a substantial gift to Sky Island Alliance. The organization depends on you and I to make sure the type of change we want actually happens, and our financial support is what ultimately keeps our vision for protecting the critters and wildlands of this incredible region not just a good idea, but a shared reality we can rejoice in.

With very best regards,

A handwritten signature in black ink, appearing to read "Matt Skroch".



Sky Island Alliance is a non-profit membership organization dedicated to the protection and restoration of the rich natural heritage of native species and habitats in the Sky Island region of the southwestern United States and northwestern Mexico. Sky Island Alliance works with volunteers, scientists, land owners, public officials and government agencies to establish protected areas, restore healthy landscapes and promote public appreciation of the region's unique biological diversity.

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Landscape Restoration Field Schedule

Onward to Spring 2009

16–19 January

(note: that includes Monday, MLK Day)

6–8 and 20–22 February

6–8 and 20–22 March

3–5 April

24–26 April

(AWC/SIA Wilderness Weekend in the Catalinas)

There's always more opportunities to rejoice in / restore our Sky Islands!

Watch www.skyislandalliance.org for the latest schedule!

or contact Sarah at 520.624.7080 x23 or sarah@skyislandalliance.org

Next issue? Inspire us!
Send your essays, art, poetry, photography, book reviews, and article ideas to julie@skyislandalliance.org

Sky Island Alliance Benefit Concert

December 6, at the Hut

4th Ave & 8th St (SW corner)

Party starts at 6pm

An evening of folk, roots, reggae, Americana and surf rock! With live music from the Determined Luddites, Planet Jam, Dusty Buskers, Shrimp Chaperone, and many more!



All proceeds go to Sky Island Alliance



Because We Can! by Julie St. John, Editor

I moved to Tucson for two reasons. Because family is important to me — I wanted to be near my parents who had just retired here. And because I was already falling in love with everything about the Sonoran Desert and the Sky Islands. My Dad had recently joined the Southern Arizona Hiking Club and, shortly after I moved here, I went along for Gil Jimenez' Blue Moon hike up Agua Caliente and down La Milagrosa on New Year's Day, 1991. On that hike, I made my first Tucson friend. I have always called Susan the cairn on my path, for through her I met friends, and their friends, and within two years' of cairns I had found the Answer to Life, the Universe and Everything: *Protect Your Environment and Fellow Species.*

So while my Dad was identifying with Thoreau in being a specialist (the Catalinas) rather than a generalist (the rest of the SAHC destinations), I was not only educating myself by lacing up my hiking boots, but also by immersing myself in the conservation issues of the region, and getting to know the wonderful people out there who had also heard the Call. Dad's path and mine crossed on a regular basis but conversation at the dinner table could be a bit contentious. While some families have an unspoken agreement to skirt around religion and politics, Dad and I learned to avoid a more eclectic range of topics — from "is it worth our while to try to eradicate buffelgrass" to "should hikers blaze their own trails in the Catalinas." And he led a loyal cadre of hikers to magical offtrail destinations in the Catalina Mountains til his 80th birthday.

My father died May 28 after seven rollercoaster weeks in the hospital, rehab and hospice — dying from a femur broken so ironically at home when he had spent almost twenty years in an intimate relationship with steep, manzanita-enclosed slopes. This issue of *Restoring Connections* is not only a pre-election issue, but a personal one for me. As I started crafting it, I realized I was putting forth one last dinner table argument... and surely I'd get the last word this time.

But no, that was not to be, because the whole time it turns out Dad had just been playing, as he used to say, "the devil's advocate." At a service we held for him October 3, over a dozen of his friends stood up and told Wayne stories, and for me it was an unexpected glimpse of the man behind the curtain... someone, like me, who believed it was important to do the right thing, even in the face of incredible odds: Because we should.

Only he never told anyone. He just did it.

All of the essays in this issue — including Richard Felger's amazing "Desert Tree Dreams" — are responses to my call: *Why Should We Care?* I reached out to people with all sorts of perspectives (not everyone could write for this issue, look for more answers in issues to come) because I wanted as many voices as possible to give shape to the answer. Because in the end, no one can answer that question for anyone but themselves — we all have our own reasons, some of which we never tell a soul.

Twenty years ago *Mindwalk* was released, based on Fritjof Capra's (*The Tao of Physics*) writings. The three characters — a physicist, an ex-patriot poet, and a U.S. Senator who had just lost his party's bid for President — discuss the imminent crises of the day: global warming, pollution, health, and more. What boggles my mind is that twenty years later the crises have only worsened. And it's not like we have a viable Pro-Environment presidential candidate in the wings. The environment continues to be, at best, a second-tier issue.

So what do we do? I'm thinking we need to find more creative ways to vote. We all leave a footprint on this Earth no matter how green our ethic. It's no longer enough to drive a Prius, commute on your bike, install solar panels, or be a locavore — those are all good things, but they are for the most part solitary (and admit it, sometimes self-congratulatory) acts. It's time to rephrase "Why Should I Care" and "What Can I Do" to include the people around you — and not just the people who you know agree with you — and ask "What Can WE Do?"

What is going to make a difference is Many Voices Raised in Unison — everyone knows the Emperor has no clothes but no one wants to say it all by their lonesome. All together, repeat after me:

**It's not that there is so little we can do...
rather that there is SO MUCH THAT CAN BE DONE!**

For Quality of Life

by Scott Mencke

"What's that Dad?" I asked, between gasps of breath in the cold, mountain air.

"That," he indicated, extending his middle finger in the air in its general direction, "is the SaddleBrooke development."

"It's ugly," said my little brother.

"Yeah," I said. "How can they let that happen to the mountain?"

My Dad patted us on the shoulders and explained, in the best way that he could, to his two young boys.

We were sitting up near Wolf's Teeth, on the west end of the Catalina Mountain range. We'd spent all morning alternatively climbing the steep trail from our campsite in Pima Canyon, and stopping to strain our eyes in search of the illusive big horn sheep he told us he'd seen up there so many times before. We did see some sheep that day.

That was about 30 years ago.

The sheep are all gone now, and SaddleBrooke is a well-known resort. It is one of many that have encroached upon the mountain, like gaudy billboards on an otherwise scenic highway. They've stolen habitat from threatened and endangered species. They've blocked or inhibited access to trails and canyons that lead into a mountain range once believed to be impenetrable.

The range was long ago penetrated. A paved road allows anyone with a motor vehicle access all the way to the top, where cabins with full amenities, a radio tower, a restaurant and a ski lift offer comforts and direct ties to modern society. Where once grizzlies, mountain lions, and wolves majestically ruled, now picnickers fatten themselves on junk food from the tailgates of minivans. Even the few remaining black bears have developed a taste for Doritos.

The answer to my question so many years ago, was, according to my dad: money, selfishness, and too many people, in no particular order. Humanity has taken over the entire valley. It has mined the resources of the area to the brink of bankruptcy. This is all justified by a twisted "survival of the fittest" excuse. When then, if ever, does the "fittest" species with the self-declared, "uniquely human characteristics" of reason and conscience become held accountable for consideration of its equally important neighbors? And for the planet that gave them life and gives them — at least for now — sustainability?

I need a place to ponder these questions and others. I need a place where I can break away and

clear my head of the media blitz, the silent and invisible arrows of society's traditional and contrived conscience.

I need the wilderness.

I need it for sanity. I need it for health. I need it for perspective. I need it for escape, from all the wicked craziness that spills into my life every day.

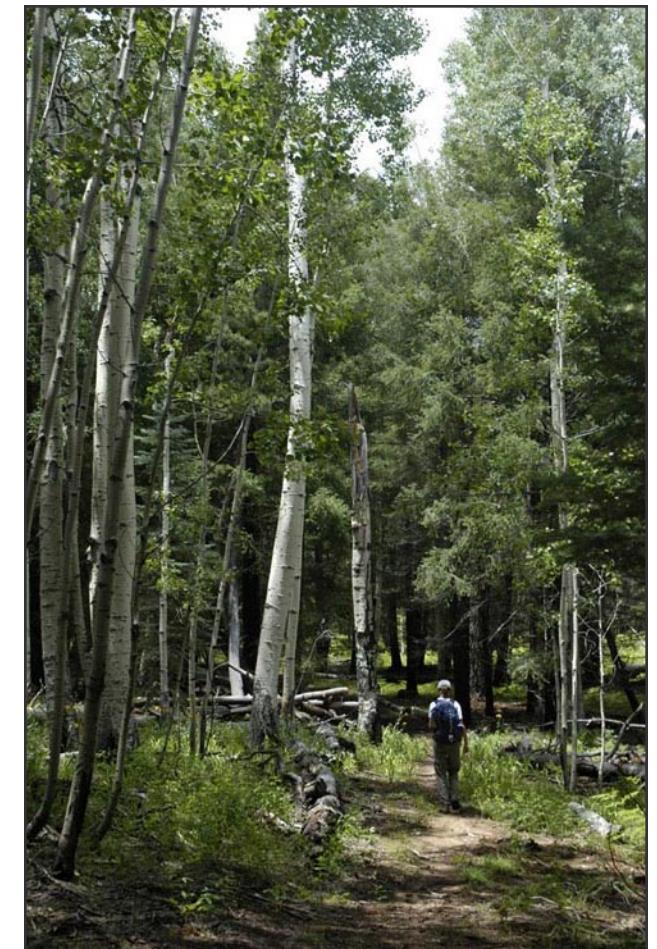
This first became apparent in my youth while spending a lot of time riding horses in the desert surrounding Pantano Stables on Houghton Road. At the time, the stables were on the far eastern outskirts of the city. I saw my first flash flood in Pantano Wash. I was out playing Indian, riding bareback on my Welsh Pony, trying to master the art of riding sideways, dangling off to one side of the poor girl with a chunk of mane in one hand, legs wrapped tightly around her belly, trying to pick up rocks from the ground with my free hand. I heard the roar about the same time I saw Ginger lay her ears back. I pulled myself back atop her as she broke into a full gallop with no prodding. A three-foot-high wall of water was coming right at us, with enough force to end all future Indian games. We were both young then, and the water didn't get us. And once the head of the flood had passed, Ginger was tied to a tree and I immediately transmogrified from Indian to Huck Finn, cruising along Southern Arizona's temporary version of the Mississippi.

The hours that passed around Pantano Stables were other-worldly to me, an absolute fantasy, an escape from the reality of the wickedness of the public schoolyard, soul-less teachers and evil school administrators, of bullies on the prowl, of divorcing parents, the breakdown of all expectations.

At the same time, it wasn't fantasy, but absolute reality. I jumped off sand cliffs, played with tarantulas, got impaled by jumping cactus, thrown into mesquite branches. I was mesmerized by the methodical advance of the desert tortoise, excited by the discovery of a nest of baby snakes, scared absolutely shitless by the warnings of the six-foot-long diamondback rattler who mothered those baby snakes.

The stables are still there. But the corridor is gone. No one is chasing snakes and slipping into the Rincons from Pantano Stables. It is fenced off. Smothered by development.

To not have spent time in the wild is to be fundamentally weakened as a member of a species. It is like being an animal raised in a zoo. Our technology-crazed world is accommodating more and more of this abuse, weakening the species.



Mt. Graham. Courtesy Sky jacobs.

I find it hard to understand how any human being can claim to know herself or himself without having laid in the dirt and stared at the stars, without having walked a mountain trail, where time and distance take on unknown proportions. I don't know how one can know oneself without having smelled the pines on a crisp mountain morning, having breathed the salt water spray of a wave breaking on the Pacific shore, or smelled the pungent aroma of the creosote tree following a late summer monsoon. These are the senses that frame one's being. And when one has no frame, one sags, like a worn out little hiker.

My father dragged me all over the trails of the mountain ranges in Southern Arizona when I was young, almost to the point that I'd wished I had no father. But the long trails, cold nights and steep hills brought me to understand the value of elbowroom, and the understanding that the destination is the journey.

I still roam to these places, places where the wind and the rain and the heat still mean something. Mean everything. Harder and harder, they are to find, like whooping cranes, wild orchids and big horn sheep.

So fight on, Sky Island Alliance, fight on.

—

After years seeking out the final frontier, most notably in the Northern Territory of Australia, it occurred to Scott that the last frontier may well be back where he started from, the Southwest, where one can still drive down a dirt road, park his vehicle and wander into the mountains unmolested.

Bundles of Sticks

by Melissa Lamberton

I've seen a beaver dam only once, on summer vacation at a lake in the White Mountains. The dam itself was nothing special: A tangled mesh of logs, packed together with mud and leaves, some of them still green. The beaver was nowhere in sight. He's probably inside, my father told me.

I was fascinated by the idea that there was a hidden chamber beneath the water, imagining knobby furniture and dripping walls. A bridge of branches led from bank to dam, but I was eight and not brave enough to cross it on my own.

What defines our relationship to the land? In the law, it is the system of rights that give a person exclusive control over certain plots of soil or stretches of water. Environmental lawyers describe property rights as a "bundle of sticks," and they include even the right to destroy what we own.

I wonder what a beaver, shaping his home branch by branch over the years, would think of such a notion. His bundle of sticks is an integral part of a river's life cycle, shaping its rhythm and regulating its pulse. On the San Pedro River, reintroduced beavers bring health back to the ecosystem. Newly-formed lakes enrich the soil and coax diverse species to take root. Water that once rushed through crumbling banks now swirls into lazy pools and seeps into the aquifer beneath, impartially bestowing itself on wells and cottonwood roots.

Like other animals, we alter the environment we live in, creating safe havens in the wilderness. But humans might be unique in our ability to destroy the means of our survival. In Arizona, we drink ghost water from faucets that borrow against time. Our property system fences out the environment just as surely as our human neighbors. Trees have no standing to sue in courts of law, and rivers cannot speak.

Why should the rights of rivers matter? In the end, how we treat the natural world may determine our species' fate. Parents know instinctively that soil, leaves, and lakes are essential to the wonder and delight of childhood. Inured by air conditioning and canals, it is easy to forget that nature is also necessary to survival.

It matters even more because there is still time ahead to nurture a world where human and environmental values do not conflict. Our exclusive rights to use and destroy can give way to a gentler lease, in which the environment itself has a claim to its health and longevity. We can find ways to use nature's resources without destroying its integrity. Stick by stick, we can build a new bundle of rights that encompasses rivers, trees, mountains, and the livelihoods of future generations.

Sometimes it is hard to picture what this world would look like. Then I remember summer in the White Mountains, and the taste of fresh fish and blackberries for breakfast. Time stretches before me. I am eight and standing on the beaver dam where my father carried me, becoming part of the river.

Melissa Lamberton is a undergraduate at the University of Arizona majoring in Environmental Science and Creative Writing. She is a native Tucsonan and a published poet. Currently she is the Education Coordinator for NASA's Phoenix Mars Mission.

Speak up For a Quiet and Healthy Forest!

This November the Coronado National Forest will be resuming public meetings to present draft sections of the revised Forest Management Plan. The Forest is seeking input on their draft **Desired Conditions**, their proposed maps of **Land Use Zones**, and their first draft of **Potential Wilderness Areas**.

Over the past two years, Sky Island Alliance has been hard at work compiling a comprehensive report entitled *State of the Coronado National Forest: An Assessment and Recommendations for the 21st Century*. This report examines the Coronado National Forest as a whole, and individual mountain ranges in great detail. The report will be available on our website prior to the start of Forest Service meetings. Utilize this great tool to inform yourself about the special values of each mountain range on the Forest and to formulate comments to the Forest Service. Visit www.skyislandalliance.org for more information.

This is your opportunity to speak up to ensure conservation-based management, to protect quiet areas, and to protect areas suitable for wilderness on the Forest! Visit the Sky Island Action center at www.skyislandaction.org for background information on Forest Planning. Sign up for Sky Island Alliance email alerts at www.skyislandalliance.org/email_lists.htm and receive our most up-to-date talking points before you attend the meetings.

Your input can make a difference!

Please attend one or more public meetings:

Meetings will be a modified open house format with a short introductory presentation at the top of each hour. The presentations will provide both an update and a description of the task for the evening.

Safford Ranger District

Nov 5 Wednesday 5:30–8:30pm General Services Assembly Room
921 Thatcher Blvd, Safford

Douglas Ranger District

Nov 6 Thursday 4:00–7:00pm Rodeo Community Center
Rodeo, NM

Nov 12 Wednesday 4:00–7:00pm Cochise College, Douglas Campus
Rooms 501A&B
4190 W. State Hwy 80, Douglas

Sierra Vista Ranger District

Nov 13 Thursday 4:00–7:00pm Buena High School Commons Room
5225 East Buena School Road
Sierra Vista

Nogales Ranger District

Nov 17 Monday 4:00–7:00pm Esplendor Resort, Sonoran Ballroom
1069 Camino Caralampi, Rio Rico

Santa Catalina Ranger District

Nov 20 Thursday 4:00–7:00pm Sheraton Tucson Hotel & Suites
5151 E. Grant, Tucson

Forest-wide

Nov 22 Saturday 9:00am–12:00pm Cochise College, Benson Campus
1025 State Route 90

If you cannot make these meetings, you can still have input!

Let the Forest Service know what you think by contacting Jennifer Ruyle at 520.388.8300 or coronado-plan@fs.fed.us.

For more information contact Louise Misztal at 520.624.7080 x19, or louise@skyislandalliance.org.

The Selfish Confession of a Wildlife Conservationist

by Juan Carlos Bravo

When I was teenager I was asked, "Why do people care for all those damned species?" The question seemed so out of place, it took me awhile to realize that most people don't see any advantage in such care. Many years down the line, now fully dedicated to protecting "...those damned species," I take pause to ask myself the same thing, and the only answer I can find is humbling and very unromantic: *We care about them because we are selfish.*

Our sylvan brethren have walked the path of history along with us, transforming and shaping our fates just as we have theirs. At times they were so intermingled with our ancestors it was hard to discern any significant difference between humans and the rest of the animals in our environment; we were prey, carrion, predators, seed dispersers and maybe even parasites.

That we share a common ancestry, a common planet and a common set of traits that define us all as living beings is enough for many of us to be concerned for the survival of the most threatened among our ranks. Such concern is a manifestation of empathy and altruism, qualities some might consider hindrances in our evolution towards becoming the dominant species, but that have shown time and time again to be advantageous adaptations to secure our long-term survival. They are what I call *tools for achieving perfect selfishness.*

It is because we care for what happens to others that we build networks capable of supporting even the weak and ill. This allows us to profit from their qualities, for who knows how many geniuses humanity would have lost if survival depended only on health and strength. We could still be trying to figure out how to forge steel or how to domesticate corn. Evidence shows that feeling empathy and being altruistic pays off — because we do not know the challenges we must face in the future, we have no way of knowing who will prove to be better fitted to face them — thus protecting diversity increases our collective chances of surviving changes.

The same holds true when we look at the network beyond our species. We have no way of knowing which plant or animal will yield the knowledge that can save us from threats we cannot even imagine, just like we could not envision our species fighting epidemics of AIDS, devastating effects of climate change or holes of ozone in our atmosphere.

But apart from securing our survival, there are more immediate reasons why we should care for wildlife. There are spiritual reasons: we are all living beings with a thing some call a soul, and even if we don't know what

it is exactly or how it operates, we all know there is something else in our minds beyond our thoughts. Only those who have separated themselves from nature can doubt we share whatever the "spirit" is, with wildlife.

There are ethical reasons as well: because we question ourselves, and the fairness of our judgments and actions, every time we threaten or obliterate another life form.

There are also scientific reasons. Science advances by understanding our universe, not by destroying it. Losing any life-form compromises our chances of understanding life itself, precisely because our understanding is still very limited.

And there are plain and base economic reasons: because economies suffer huge losses as a consequence of extermination and overexploitation, direly demonstrated by the depletion of fish banks and other so-called resources.

In the end, we care for wildlife either for *our* peace of mind, for *our* profit, for expanding *our* knowledge and ultimately for increasing *our* chances of survival. They all boil down to the same point: benefiting our selfish, little-minded selves.

Having acknowledged so much, we may at least choose to care for the nobler aspects of ourselves, my personal favorite, for the *transcendence of our humanity*. For if we are to disappear, the life most likely to cling on to this planet — life in the shape of bacteria and cockroaches — will not understand or expand upon the wonders we have wrought with art and science. Through art and science, the most human of disciplines, we transcend beyond the scope of any other animal. Although I personally hope we continue as a species, I know we cannot do it on our own — we need as many of the creatures in our world as we can salvage if we are to prove ourselves worthy of having shared existence with them.

The simple answer:

by Nancy Zierenberg

Because it means life or death. Maybe not for all life on earth. Barring our whole planet exploding due to nuclear holocaust or a dead-on meteor, some life will probably continue, geologically speaking, but probably not much of life-as-we-know-it if we stay on the current path.

Some of us have always cared because we understand the connection between the whole life network. But many don't seem to have a clue and don't make time to think about connectivity. It amazes me that often people who have children don't do this. Or perhaps they feel there is really little they can do to make things better, except by example in their own lives. One to one. Person by person. Those changes make the most lasting impact, but will it be enough? Time will tell.

That brings us to personal satisfaction and joy. That's why we do the little things, and the occasional extraordinary things. Even those who constantly seek connections with Nature are seekers of connections with other humans. Meeting like-minds and becoming friends brings us joy. Seeing the light turn on in others brings us satisfaction in spreading that joy that experiencing Nature gives. I think these are reasons enough.

Nancy is a born again, and again, and again pagan (with a slight interlude of early-onset catholicism) who does her best to live by the golden rule. She is a true pessimist, with a twist of optimism that allows her to eat, drink and be merry to the end! She is a long-time member of the SIA board.



Spadefoot toad.
Courtesy Mary Platter Rieger.

Juan Carlos G. Bravo has been involved in conservation since 1999 initially as part of the team that produced *Especies*, a magazine published by Naturalia (www.naturalia.org.mx) that showcases biodiversity and conservation in Mexico. He has been Naturalia's regional representative in Northwestern Mexico since 2005, a position from which he aims to secure and reconnect wilderness from the Sky Islands to Sinaloa, in what is one of Mexico's remotest and best preserved regions.

For our Communities

by Melanie Lenart

While the world's temperature rose by about 1 degree Fahrenheit this past century, Arizona's temperature climbed by some 3 degrees since the mid-1970s.

Unlike the global annual average, the state values used here include the "urban heat island effect"—the extra heating that occurs in cities where concrete and asphalt meet blasting rays of sunshine. That's one reason we should care about the communities that exist between sky islands.

For a firsthand sample of the urban heat island effect, try touching an unsheltered concrete bench on a June afternoon. In Tucson, the south-facing bus stop benches on Speedway emanate heat for several feet in every direction. To sit on one is to do a slow burn. It highlights the importance of recent city efforts to build shade into bus stops.

Providing shade becomes more essential as global warming bumps up urban heating. Taking the bus, riding a bike and walking are just the activities that can help reduce the greenhouse gas emissions that are raising the world's temperature. Yet doing these activities in a desert city in summer can pose real health risks even now.

This will become increasingly important in time. Arizona's summer temperatures are projected to rise by another 3 to 4 degrees on average by mid-century—not counting the urban heat island effect this time.

A little shade can go a long way in making things tolerable. Studies in Phoenix neighborhoods and New Mexican forests found temperatures at the ground surface regularly run 20 and 30 degrees Fahrenheit cooler when measurements are made in the shade vs. in summer sun.

Shade similarly protects our own surface — our skin — from the heating, scalding and dehydrating effect of direct sunlight.

Plants provide the best kind of shade because they offer another heat-busting service as well: evaporative cooling. Trees and other plants transpire water, transporting it from the soil to the air. This process can reduce nearby air temperatures by some 4 to 6 degrees Fahrenheit.

Trees around a home can cut cooling costs and boost comfort. That's why Trees for Tucson will provide a couple of seedlings for \$8 each, as long as they're planted in the right places in relation to windows and sunlight.

Of course, plants require water to perform their cooling services. That's something any desert dweller has to consider. Climate change projections for the Southwest suggest that declining precipitation will join rising

temperatures in a one-two punch to increase regional aridity. And water supplies are already limited, right?

Right. But not quite as much as we imagine, at least within the city. Pavement covers huge expanses of the landscape, repelling water that can be directed to and collected for trees. Many neighborhood associations have put this into practice with curb-cutting projects that funnel streetflow to seedlings.

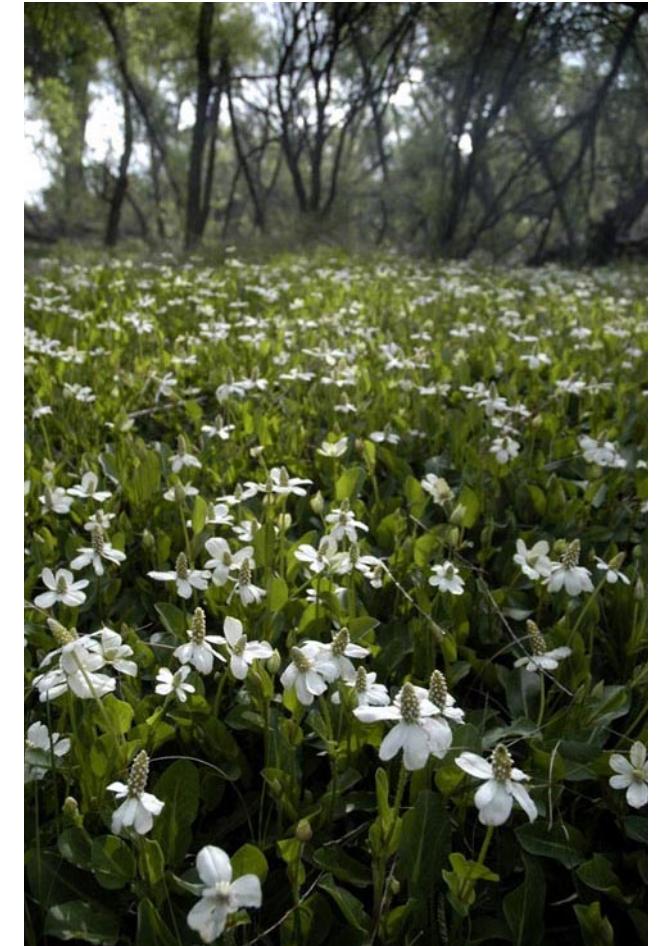
Rooftops also serve as excellent deflectors of rainwater. So do solar panels, for that matter. Flexible plastic tubes can capture and redirect rooftop rainwater toward gardens and trees—or, even better, water-harvesting cisterns.

The Southwest has many fine permaculturists who can help with the details. And Brad Lancaster's books on water harvesting can inform do-it-yourselfers on the art of creating desert oases.

A deliberate effort to create oases of shaded shelter in desert communities will benefit those seeking to cut their greenhouse gas emissions by biking, walking and taking the bus.

These oases could also shelter wildlife, especially lizards and birds. With well-placed design, they could act as corridors to help some animals track down new niches as climate change shifts habitat out from under them.

As summer temperatures continue to rise in the Southwest, desert dwellers will come to appreciate



Yerba mansa, Rio Cocospera, Rancho El Aribabi.
Courtesy Sky Jacobs.

shade even more. Planting the seeds and seedlings now just might help us all weather the coming changes.

Melanie Lenart is an environmental scientist and writer who lives in Tucson. Her 2007 publication with others, Global Warming in the Southwest, is available at www.climas.arizona.edu/pubs/pdfs/GWSouthwest.pdf.

Picnic in the Park!

You're invited to the 10th Annual Volunteer Appreciation Party!

When: Sunday, November 2nd, 1:00pm

Where: Himmel Park (S of Speedway & E of Tucson Blvd.)
at the NE corner of the park by the library

What: Food, beverages, raffle, games and a good time!

Why: To celebrate all of our hard working, dedicated volunteers!

Dust off the ol' frisbee, get your bocce ball arm in shape and join Sky Island Alliance for an afternoon of fun in the park!

All you need to bring is yourself, your family and a smile!

RSVPs appreciated but not necessary!

To RSVP or ask questions, contact Sarah at 520.624.7080 x23 or sarah@skyislandalliance.org

For the Wildlife

by Karla Pelz

When I was a kid I had a teacher who told me that when I grew up there were not going to be animals anymore. That naive comment from my teacher really struck me and made me feel very disappointed for a long time. I really thought that I would never see animals like bears and jaguars or golden eagles and trogons.

Now, after many years, I can happily say that he was mistaken. Fortunately, I have been able to see wildlife in their natural environment. And even better, I have had the opportunity to study several species in their habitats. However, through my studies I have also seen, first hand, how we have harmed and reduced the distribution of species like the Mexican gray wolf, black footed ferrets, etc., and I am not sure that wildlife species will survive more than a few more generations. Perhaps my teacher's prediction wasn't that wrong in the end.

I see kids now and I am afraid it is my turn to tell them that by the time they grow up they won't be able to see moose and mountain lions in the wild. This fear strikes me even more than it did when I was a kid. I now realize that the problem is not only that we are little by little dragging species to extinction, but that we are at the same time diminishing, to their minimal expression, the different ecosystems that sustain these species.

Every year the Earth loses enormous portions of its rain forest, woodlands, and grasslands to our incommensurable anthropogenic activities. These losses are the consequences of turning wilderness into agriculture lands, roads and human settlements. Change and disruption of habitat have reduced the number of several species, constricting them to smaller areas and seriously fragmenting their populations. Just in North America, 243 animals have gone extinct since 1500 A.D., and the country with the higher loss of species is the U.S. Recent modifications to the Endangered Species Act that reduce their protection are placing even more species at a higher risk of extinction.

In the same way, the construction of the wall between the U.S. and Mexico will prevent the free movement of several sky island species whose ranges extend across the border. The rapid construction of the wall is already reducing the connectivity among populations and constraining their dispersal and migratory patterns. These sky islands species are facing a critical moment; their survival is at risk.

Our regional concern in the sky islands can be extrapolated nationwide. Especially if we add to this conflict the consequences of global warming, digging the oceans to obtain petrol, and flawed policies that allow the murder of numerous species of wildlife. I care about the future of this planet and its wildlife. Not only because it was nice to see wildlife in the wild when I grew up, but also because by altering the wildlife and its habitat we change the equilibrium of the Earth. This is the only home we have, neither wildlife nor we have another place to go.

I don't want to stand in front of kids and tell them that there used to be wolves and bears across North America, but not anymore because we killed them all — directly or indirectly — to satisfy the selfish desires of few powerful people. I don't want to say that we were not able to stop digging the

oceans to get our fuel when we had the option of using other sources of energy. I do care, and I want to say that we were able to make the right decision and conserve the treasures of our natural world, our Earth.

Karla is a graduate student pursuing a PhD on wildlife management at the University of Arizona. Her research interest is wildlife ecology and conservation genetics. She is currently working on the phylogeny and conservation genetics of the American beaver.

You can be part of JAGUAR and OCELOT conservation efforts in the Sky Island region! Adopt a camera and support on-the-ground research & conservation.

INTERESTED?

Please contact Sergio Avila at
sergio@skyislandalliance.org.

For more information on this project, please visit
www.skyislandalliance.org/jaguars.htm

Books of Note

Want to expand your perspective about *Why We Should Care?* Sky Island Alliance staff recommends:

Art in the Wilderness — Yes, we're biased, and yes, it's that good! See page 13

Mike recommends:

1964 Wilderness Act, section 2(a)

The Creation: An Appeal to Save Life on Earth
by E.O. Wilson

To the Last Whale [song] by Graham Nash & David Crosby

Galapagos by Kurt Vonnegut

Louise recommends:

The Diversity of Life by E.O. Wilson — *Just in case you haven't realized how amazing mother earth really is...or how imperiled biological diversity is.*

Jessica recommends:

Gaviotas: A Village to Reinvent the World (*her favorite!*) and **The World Without Us** both by Alan Weisman

Soul Among Lions: The Cougar as a Peaceful Adversary by Harley Shaw

The Omnivore's Dilemma by Michael Pollan
Last Child in the Woods: Saving our Children from Nature-Deficient Disorder by Richard Louv

Field Notes from a Catastrophe: Man, Nature and Climate Change by Elizabeth Kolbert (*very well written*)
When Smoke Ran like Water: Tales of Environmental Deception and the Battle Against Pollution by Devra Davis

Sarah recommends:

For the Time Being by Annie Dillard
Creative Energy; Bearing Witness for the Earth by Thomas Berry

On The Loose by Terry and Renny Russell — poems and photos from two brothers finding triumph and tragedy in wild places in the late 60s:

"We must look funny to Someone,
tumbling through the universe locked in a death grip with
our tiny ball Earth and ripping her busily to pieces,
trailing a stinking film of gas and pieces of satellites
and mushroom and dust clouds.

Think of her new.

An unspoiled country lying open to the sun.
Think of oceans of beauty, instead of scattered puddles,
muddy and drying up."

Trevor says: Of course we care because of two books—
Desert Solitaire and **Sand County Almanac**
Also inspiring are:

Snakes: The Evolution of Mystery in Nature by Harry W. Greene

Ocean Power by Ofelia Zepeda

Desierto by Chuck Bowden

The Diversity of Life by E.O. Wilson

A View from Bald Hill by Bock and Bock

Snake Venom Poisoning by Findlay Russell

Desert Tree Dreams

by Richard Felger

It is August 1540 and Hernando de Alarcón has reached the Colorado River Delta. No GPS, no cell phone, no map. The natives ran like hell when they saw those huge water monsters. They could see their wings move. Finally someone figured out they were just wooden houses on huge rafts and the wings were like huge skirts. It was summertime and no mention of heat in the various accounts. It was the end of the Little Ice Age but even still, Europeans at the delta and Yuma in the middle of summer? All that water and endless cottonwood and willow forests evaporating must have had a cooling effect, ameliorating the heat.

Some men in the little town of Mexico City had the idea of sending Alarcón's ships up the west coast to supply Coronado's main expedition heading to the rumored fabled gold city of Cibola, which turned out to be the Zuni pueblos. They reckoned

Cibola would not be far from the coast. Alarcón and some of his men went up past the Gila Confluence, famous until the end of the 19th century.

Imagine the Gila flowing full of fish all the way from New Mexico, and the Colorado slicing through the mountain forests and desert, the rivers joining at Yuma, the great Gila Confluence. River steamers docking at Yuma in the mid-1800s. You booked passage on an ocean liner, sails and steam, at San Francisco and rounded the tip of Baja and sailed up the Gulf. Change to a flat-bottom river steamer at the American Port Isabel at the end of the gulf. Thirty-foot tides and a monthly tidal bore make for caution. Five days to reach Yuma at the Gila Confluence. All day steaming up river, ever-vigilant boatmen watching for tree trunks, sometimes whole trees floating downriver — making nighttime travel too dangerous. Five gringo woodlots on the river on the Mexican side. The river steamers tie up through the night while 6-foot Cocopa men load cottonwood and willow logs. For nearly half a century the woodlots fueled the steamship traffic, until the transcontinental railroad put them out of business. You see photos of gigantic woodpiles set in cottonwood and willow forests. Apparently they did not have to move the woodlots — the supply seemed endless. Those trees must have grown incredibly fast. Do you know what the kids in Yuma call the Gila Confluence today? They call it Shit Creek, a trashy muddy tamarisk tangle of mosquitoes, rusting refrigerators, plastittrash, diapers, needles and condoms.

Alarcón treated his native hosts with dignity and engaged in meaningful trade and gifts. He brought wheat and chickens but apparently they did not survive. I wonder if Alarcón was able to tell them not to plant wheat in the summer heat? The natives provided fresh produce and fish, and "bread made from mesquite" flour and gleefully pulled his little wooden auxiliary boats upriver. Less than a month later on his second ascent of the river, the Indians weren't so friendly — they knew the grisly stories of the Coronado entrada — guns and war dogs, murder, rape and pillage. Alarcón and his men waited in vain to rendezvous with the Coronado expedition. He left a sign on a tree (a mesquite?), "Alarcón came this far. There are letters at the foot of this tree." Some time later the Indians led Melchior Díaz to the tree where there were letters in a bottle. Díaz had come overland westward from Zuni. They were guided over well-trodden trails, many of which ran along rivers across the desert. You could walk in the shade of great cottonwoods and go swimming anywhere, hard-packed damp earth, places without spines. Fresh fish, the folks along the rivers lived on fresh fish.



Kapok near Sierra Mazatan. Courtesy Sky Jacobs.

Carl Sauer said, "Man is the enemy of the tree" and I will add "the turtle"

Two deserts have the highest diversity of trees, The Namib, the world's "oldest" desert, perhaps 15 million years old (as a desert), with 180 desert and desert-edge trees species, and the Sonoran Desert with 120 species of desert trees and many more at the desert edge. Both are tropical-derived deserts, drawing on neighboring semiarid subtropical floras. In contrast, the winter-cold, high plateau deserts like the Great Basin and the enormous multiple deserts of interior China each have only about half a dozen tree species.

Do you know how many species of trees are in your home range? In the desert in Arizona there are nearly 50 species. When you walk, oh ok, when you drive, down the street, do you know all the trees? Where they came from?

And which ones will keep going and maybe reproduce and establish when all the people are gone after WWW III?

It took me a while to realize people don't find their way around by the trees — as far as I was concerned, we lived on *Platanus orientalis* street. Walking to school I worked out what it would be like after the people were gone. Sidewalks heaved up by tree roots, lawns dying and English ivy crawling through movie stars' houses, native oaks shading out Old World olives. Bermuda grass, and some natives too, splitting apart the asphalt to make places for sumacs and prickly pears. Pacific pond turtles, sycamores, willows, cottonwoods, ashes and oaks, and smiley-faced giant newts re-establishing in the Los Angles River dreaming of Aldous Huxley, Greta Garbo, and Krishnamurti picnicking in the riverbed before it got put in a concrete straight jacket. Drive along the Arroyo Seco freeway, L.A.'s first, on the way to Pasadena and see old sycamores, ash, walnut, California live oak, willows and Australian acacias, and you can figure out what the river corridors were like. Find yourself a sandy picnic place among water-smooth granitic rocks and crackly sycamore leaves.

Just before the last people are gone I'd tear down the cages of the zoo at Griffith Park. Lions roam the tree fern forest in Fern Dell but the water is turned off and the lions make it to the tar pits but the ferns die of thirst. My alligators that later went to the zoo when I went to college probably wouldn't find enough water. My best hope was for the Galapagos tortoises, lumbering down Western Avenue and turning right at Wilshire to find enough prickly pears and grasses to form a breeding colony and someday radiating replacements for the North American giant land tortoises. Would they eventually make it all the way to Kansas where they lived until the first Indians arrived?

Other hopes turn to cranky old Ed Abbey's dynamite-laden houseboats floating into Colorado River dams. The river runs wild again, green gallery forests writhing, meandering, double heliced from piney mountains. Slicing muddy red down the desert all the way to the sea. Ed's houseboats clearing cement-clogged river veins. What a glorious fantasy. All that river water, nutrients flushing a thousand miles — hot, rotting biomass fueling seething sea life, giant totoaba returning in spring to spawn in tidal sloughs, vaquitas jumping for joy. Giant sea turtles and baby sharks riding the tidal bore.

In the lifetime of my parents, Aldo Leopold and his brother drifted lazily in the green lagoons. It's there again — as the Ciénega de Santa Clara

resuscitated with agricultural wastewater — the largest wetland in the Sonoran Desert — soon to be deprived of water again, this time by the U.S. Bureau of Reclamation's Yuma Desalination Plant. Where a little bit of water seeps out of agricultural fields on the Mexico side and trickles down dusty channels, you get some cottonwoods and willows snapping back into reality. Where the water still flows and floods on the U.S. side, restoration is producing renewed riparian forests.

When the Colorado ran free, a few times in every century in a maxed-out El Niño year, the river swung wide and dumped into the Salton Basin below sea level. The biggest floods would re-fill Lake Cahuilla. Total refill might take 17 years to reach the old bathtub line you see scratched across the travertine rocks on the west side of the highway, west of the Salton Sea. It was 1905 when the river last burst its banks (an irrigation scheme helped it happen) and started cascading into the dry lakebed. White foremen laughed at the Indian salt miners who threw down their picks and shovels and fled to high ground. The Southern Pacific Railroad kept moving their tracks and finally abandoned the once-dry crossing.

Sometimes as the Lake Cahuilla was filling, the delta was deprived of its river and most of the forest died. One of the last times was in 700 AD. The delta people would lose water for their crops and try to move north, but have to do battle with the upriver Yumans. Water wars, just like the next wars in the Middle East. Maybe people will figure out how to get off oil but you have to have water and you will pay what you have to and fight for it.

Lake Cahuilla is filling and the delta turns into cracked mud a hundred miles across like it is today. Fish run into the reformed Lake Cahuilla. Cattails and trees take hold of the shore and The People rebuild lakeside fish traps. Some noisy birds fly in from Palm Springs and poop palm seeds, *Washingtonia filifera*, and in just a dozen years fan palms are poking through the willows and cottonwoods, mesquites and screwbeans. Women fill burden baskets with the black, ripe, date-flavored palm fruits, good for sweets and wine and easy to dry and store. Mesquite pods are super big and sweet, screwbean pods too. Men find migrating white pelicans on a little island in the lake at night by torchlight and just club them. And all the fish we want and water to irrigate endless crops. Life is easy except everyone else wants a lakeside view and the only transfer of title is going to be by blood.



There are nearly 120 species of trees across the 300,000 sq. km of the Sonoran Desert, our desert surrounding the Gulf of California trough. Just a few species line the few rivers — but that's where

the trees formed the biggest desert forests. These are winter-deciduous trees of temperate origin. Actually there are trees almost everywhere across the Sonoran Desert — desert ironwood, smoke tree, palo verdes, a bunch of acacias, and other legume trees — its largely a legume tree diversity, some tree ocotillos, a tree morning glory, burseras, caper trees like *Forchhammeria* and *Atamisquea*. *Ficus* on cliffs and in riparian canyons, some palms, and a long list of trees that most gringos have never heard of or seen. Mostly foreshadow drought-deciduous trees of tropical origin and affinity. Southerners marching north. Cross the frost line going south, add more summer monsoon rain, and the diversity and density of the trees goes way up. It's a desert left over from the tropics.

But take a Bedouin or an ecologist from Saudi Arabia out to the Sonoran Desert — they'll say this is no desert. European botanists might say a desert is a place without trees. *Wüste*, a wasteland, is the German word for desert.

So why does the Sonoran Desert have so many different tree species? It comes down to three things: PEOPLE, HABITAT DIVERSITY, and THE TROPICS.

What defines a tree? For much of the world, the definition of a tree might be the species making up the canopy, or the tallest woody plants. For the Trees of Sonora with Mat Johnson and Michael Wilson and the ongoing project on the Desert Trees of the World with James Aronson and Edouard Le Floc'h — we decided that ideally a tree should normally be 5 meters or more in height, have a well-formed trunk or main stem, and be theoretically climbable (thorns and saguaros aside). However, James and Edouard decided to include some Old World "dwarf trees." Shall we make *Welwitschia* an honorary tree? It's the biggest thing on the Namib fog desert dunes besides being the strangest plant on earth.

People...

Of course man is the enemy of the tree. And of course there is more to it than that. But before looking at habitat diversity and the influence of going poleward from the tropics, let's take a look at the people and trees and some Old World deserts — Africa from the Atlantic across the Sahara and the Middle East and onward across the Old Soviet empire to northern China — desertification at the hand of man. Persia to the deserts of China. The lands of Genghis Khan and then Timurlane and conservation by head pyramids. Mostly forests before Christ. Horsemen torch the forest for grasslands. In the time of Omar Khayyam endless grassy steppes from Eurasia to China and Mongolia — the trees huddle along rivers and streams. And finally the land turns into desert.

In the last decade of the Soviet Empire I got to see the Karakum Desert and steppes of Turkmenistan to the Uzbekistan border. I was there for an IUCN Survival Service Commission meeting in Ashkhabad. In the early mornings I went along with the bird watchers when we broke free from our KGB handlers (they didn't want to battle vodka hangovers at dawn) and taxied down to the Iranian border. I saw deep canyons sheltering relict streamside elms, ailanthus, and other deciduous temperate trees, and here and there on rocky crags an endemic pistachio and the rare Afghanistan fig, *Ficus afganistanica*. One day out of seven in Ashkhabad is a sand storm out of Dune. Windows have double casings with a 12-inch sand/dust trap between panes of glass. Omar Khayyam's lovers sat beneath poplar trees on the banks of the Karakum River with bread, wine, and thou. At the Soviet-sponsored opera, boy meets girl along the Karakum Canal, taking their break from driving tractors. There are no wild trees.

East of Chardzhu along the Uzbek border we are at the Repetek Sandy Preserve, the desert dunes stretching on to China. Home to the northernmost cobra and monitor lizard and herds of endangered animals: wild Bactrian camels, two-humped dark brown and fury, gazelles and long-legged antelopes. The Soviets are trying to stabilize moving dunes China-reclamation-style. Grass sod, desert grasses that look a bit like the Sonoran Desert big galleta, *Hilaria rigida*, are laid out in crisscross grids across the sand. Across the dunes we see widely-scattered desert trees: *Ammodendron argenteum*, a silver-leaved legume that reminds me of a scrawny tree that forgot to grow sideways, halfway between a desert ironwood, *Olneya tesota*, and a smoke tree, *Psorothamnus spinescens*. And black saxaul, *Haloxylon aphyllum* plus white saxaul, *H. persicum*, chenopods related to *Salsola*, the Russian thistle — but like *Salsola* on steroids. *Saxaul* has fat, semi-succulent limbs and near leafless stems and twigs, reaching to 5 or 6+ meters in the blinding sun. The *Ammodendron* offers no shade so Sylvia and I take a respite from the 100°+F September day in the shade of the spreading saxaul. The sand in front of us starts to vibrate and is moving towards us. It's only early afternoon and so far the Russians haven't forced any vodka on us. It doesn't take long to realize the movements are long-legged ticks running towards us. Get used to ticks if you have lots of mammals. That's why Englishmen wore short pants in East Africa — you can see the ticks crawling up your legs and brush them off. That's really why they don't let game park tourists walk about.

Far off to the east and north are the great inland high-elevation deserts of China. If you make your way to the expansive high plateau of the China deserts you see great moving dunes, stony barren mountains, and occasional narrow

green valleys. The Taklamakan, Lop Nur, and the Gobi Desert. The China-Mongolia deserts are hot and dry all summer, and cold and dry all winter — severe winter freezing limiting botanical diversity. About the only trees are two poplars including small groves of *Populus euphratica* (= *P. diversifolia*), *Elaeagnus* (Russian olive), and *Calligonum* (leafless polygon shrubs or small trees). The only green are some fields and vineyards huddled in bottomlands cleft into treeless dry slopes and moving dunes. If there were any other trees they are gone. Sometimes you see the hulk of a saxaul or live ones around an oasis. In an email, James Aronson writes, "In two words, the desert canopies there got smashed about 2,000 years ago. There used to be lots more than what we see and that which we see now is pretty poor indeed in size, except for that emblematic *Populus euphratica* that sometimes has magnificent stands in inter-dune areas with high ground water." However, the paucity of tree diversity might not entirely be due to people. The Great Basin Desert of Utah likewise has very few tree species, due to severe winter freezing plus drought. Remember the hot/dry foresummer of 2002 when we first noticed Gobi Desert dust blowing into western America? And how uptight the Chinese have become about dunes marching to Beijing?

On other occasions I did fieldwork in the Middle East and African deserts. The parched lands surrounding the Red Sea look like the near barren lands along the Salton Sea in California. You have to search for trees. An occasional goat-grazed umbrella acacia, *Acacia tortilis* (*Vachellia tortilis*, = *V. raddiana*); maybe a *Salvadora persica* tree, its branches hacked; some scruffy *Ziziphus*; and *Tamarix* trees in hypersaline soils. In the Sinai and elsewhere across Sahara-Arabian deserts you mostly find the few tree species at oases.

It was a hot, early summer day at Sheck al Suweid, a date palm oasis in the Sinai. Sedges and grasses grew green across the brackish oasis. A few *Ficus sycomorus* huddled next to date palms, reminding me of *Ficus palmeri* in riparian Sonoran canyons like Nacapule. A Bedouin led his camels down the dunes into the oasis. It looked like Egypt and then I realized I really was in Egypt. For more than 40 centuries, herders like the Bedouin would fan out in front of their camels and pull up any little shrub or clump of grass and bring it to their animals. You keep cutting trees for firewood, graze your goats and camels and cattle, reduce the green cover and eventually the albido of the land rises and the days grow hotter and the nights colder as humidity and rainfall drops — the forest retreats and where giraffes and gazelles grazed its the Sahara with desert stretching from the Atlantic to China.

North America didn't have domestic grazing animals until the European invasion, although the



Mesquite blossom. Courtesy Mary Platter Rieger.

South Americans had llamas that resulted in some cross-Andean introduction of trees. Even without grazing animals, after about 14 millennia people had managed to off a lot of wildlife and make some changes to the trees. If you blame cows for blowing out the ciénegas, like the swamp in the Tucson Valley, and the riparian trees, wreaking havoc on the understory and biological crust, and changing the grasslands, what do you think it was like when the first Paleo-Americans got here when elephants, wild horses and zebras, camels and giant ground sloths were eating and smashing vegetation? Do you really think elephants walked lightly? I bet the mesquites had bigger spines.

Habitat Diversity...

Another thing that impressed me was the difference in the texture of the landscape between the Sonoran and other deserts. For most of the deserts of the world we were able list the trees and check off in a database the place where you would find them — the habitat or niche — like dune,

wadi, rocky slope. It seemed like each tree species would be found in a single habitat type. Then I tried to do the same for Sonoran Desert trees and found it to be nearly impossible. Where do you find ironwood or saguaro? Rocky slopes and arroyos and desert plains and even cliffs, etc. In the western desert, in the driest places, saguaros grow along dry watercourses. The Sonoran Desert ranges from subtropical thornscrub to an arboreal desert to extreme desert, from essentially frost-free to moderate winter freezing, from predominantly summer monsoon rains to scanty winter rains, and includes fog desert, mangrove fringes, moving dunes and stable surfaces, tidal wetlands, great river deltas, once live rivers, lowland plains and higher valley plains, rocky hills and high mountains, volcanic and granitic, sea cliffs and sandy shores. You name it in geomorphology and we got it, we got a desert with lots of texture, and topographic diversity leads to biological diversity. That's one of the biggest differences between the Sonoran Desert and most of the other deserts of the world. Add a small and relatively shorter time for human



Kapok and vine. Courtesy Sky Jacobs.

mischief without grazing livestock, mild winters and proximity to the tropics and you have the formula for floristic diversity, tree diversity.

The Tropics Connection...

By now we have talked about the Sonoran Desert and its proximity to the American dry tropics, the tropical deciduous forest giving way to thornscrub and then to desert. The boundaries are fuzzy and Forrest Shreve, who brought us the concept of the Sonoran Desert, regarded the Foothills of Sonora as the southern part of the Sonoran Desert, a region now defrocked from the concept of desert and moved to thornscrub. The Sonoran Desert is really just a dried-up tropics until you go to the northern and western margins and get the winter-rainfall, frost-tolerant elements left over from temperate America.

So what makes a desert? Some say anything less than 400 mm of rain per year. The most stringent European and Middle Eastern desert ecologist would say it's a place where there are no trees, except along watercourses and rivers. Rivers slice through deserts but none originate in deserts — so that is a beginning for a definition. I add that there are no primates native to deserts, people being the only primates to really establish in deserts. There are no orchids, one the most diverse plant families on earth. Well, as always, there has to be an exception: the stream orchid, *Epipactis gigantea*, follows Deep Creek into Death Valley and extends to the desert edge in a few other wetland places. There are no *Carex* species in the Sonoran Desert, a worldwide genus of sedges with perhaps 2,000 species. Exequiel Ezcurra and Valdemar Rodrigues, building on what Forrest Shreve wrote more than half a

century earlier, showed that deserts are places where rainfall is unpredictable. The more severe the desert, the more unpredictable the rainfall. Desert trees have to be able to hunker down and make it through long, tough, rainless times.

The Sierra del Rosario is a stark, isolated granitic mountain surrounded by moving dunes west of the Pinacate in northwestern Sonora. Larry May's rain gauges showed empty month after searing month, 36 in total. I went with Larry on one of his hell-bent trips through the Gran Desierto, recording information from his rain gauges. Desert tree beargrass, *Nolina bigelovii*, marching down dry, jagged granitic slopes and parched, hanging canyons and cliffs, scarcely looked effected by the long drought. How can it do it? The long, slender and flat leaves were green and healthy looking. Other tree *Nolinas* in more favorable, subtropical places, like *N. matapensis* in Sierra Madre in Sonora and *N. beldingii* in the mountains well above the desert of Baja California Sur, grow in wetter places where the trees really make up a forest. When we looked at SEM photographs of *N. bigelovii* from the Sierra del Rosario, we saw that the stomata were sunken in the bottom of longitudinal grooves or furrows. Like the little out-of-place Sonoran Desert cactus *Peniocereus striatus* and the *Nolina* relative, *Calabaustris hookeri* from the Chihuahuan Desert, the stomata were coated with an amorphous waxy-looking substance. We washed the leaves in plain water and then looked at them with SEM photos and that waxy-looking stomata covering was gone. We figured it is a transpiration-reducing polysaccharide. A few big saguaros made it through that long drought in the Sierra del Rosario but they had water reserves, and there were no small saguaros. Desert ironwood, *Olcaya tesota*, and western honey mesquite, *Prosopis glandulosa* var. *torreyana*, along washes, made it by shedding leaves and some showed stem die-back.

Mesquites usually green up after the last frost because their roots descend down to groundwater. Ever look at the hydraulics on a desert legume (other kinds of legumes too, but not all have them)? Have you seen how mesquites and some other legumes go to sleep at night? The leaflets fold up together. Get a mesquite leaf and look for those wrinkled rubbery-looking green to reddish brown areas, the pulvini, at the base of the whole leaf, at the junction of the pinnae and the leafstalk, and smaller ones at the base of each small leaflet. Nighttime is a good time to reduce water-losing surface area when the leaf can no longer eat sunlight, or when it's too hot or too dry, and water balance can go haywire. Pulvini were invented in wetter places, but still where it was worthwhile to save on the water bill. If we are talking about mesquite, the Sonoran Desert, or desert trees of the world, it's worthwhile to take a look at the diversity of the genus *Prosopis*. About

four-dozen species in semiarid to truly arid places around the world, but not native to Australia and southern Africa, and not in the colder more poleward deserts. The New World *Algarobia* group of the genus constitutes the mesquites, about two dozen species in South America and half a dozen in North America. Another group, the screwbeans, occurs in North and South America. And other sections of the genus, with about half dozen species, range from North Africa to India.

Mesquite was the staff of life across much of the arid and semiarid Americas. In the Sonoran Desert, before missionaries, wheat, and cows, mesquite was the single most widespread and important resource for food and fuel, for nomadic hunter/gatherers to the agricultural folks in townhouses along the rivers. Even the Aztecs made mesquitamales. Mesquite pods were often dried or parched and processed into fine flour to make cakes and meal-sized drinks (*atole*). You built house frames from mesquite, being mindful to harvest the logs and poles in winter when the sap, the sugary phloem, was not flowing so that powder post beetles wouldn't consume the wood. Sweet mesquite pods hold the promise for energy and water-efficient crops for the arid belts of misery circling the world in ever-expanding human population.

A major factor in the evolution for the tree life form is to get up above your neighbors, to get up to the light so you can eat sunlight. So why have a tree life form in the desert where there is hardly a struggle for canopy space? (Sometimes there is such a struggle, along watercourses, dry or not.) Often it is because that's the evolutionary/genetic baggage that comes along with the ancestry. Making it in the desert means figuring out how to conserve, hoard, or get to the water, and to keep from being eaten — spines, chemical warfare like terpenes and alkaloids, and/or fast growth to keep ahead of the plant predators. Trees can't hide like a burrowing sand snake or run like a rabbit, or hideout as a seed when it's dry like the desert wildflowers. Trees have to stand there and take it. "Take it like a desert tree" should be the motto for the 21st century.

Do you think we can have live rivers and desert trees with bulging million-strong cities strewn across the world's deserts?



Richard Felger has conducted research in most of the deserts of the world, especially the Sonoran Desert, and has been active in national and international conservation. He has more than 100 publications in botany, ethnobiology, new food crops for arid regions, and other fields. In 1991 he joined a group of friends establishing the Sky Island Alliance, meeting in Tucson in Susie Brandes' living room. He is a research associate at the Environmental Research Laboratory, University of Arizona and the San Diego Natural History Museum.

Because it's time

by Randy Serraglio

Some years from now, it is entirely possible (and increasingly likely) that the last living American pika will retreat to a shadowy crevice on the highest rocky peak and desperately try to outlast a climatic catastrophe for which it has no defense, panting and gasping as inescapable heat compromises its final refuge.

If the specter of a pathetically convulsing "boulder bunny" with the weight of its every ancestor on its tiny shoulders doesn't compel you, then I guess emaciated polar bears, desiccated leopard frogs, and shriveled topminnows aren't likely to do the trick, either. But consider the larger implications of the pika blinking out after millennia of successful adaptation and persistence in one of the harshest habitats in America. Or ponder the significance of the multitude of other coal-mine canaries that are in danger of succumbing to climate change over the next century.

Now think of yourself, and your species, standing amidst this tragedy of vanishing natural history, not unlike the curator of the Smithsonian as it burns to the ground around you. For some time we have smelled the smoke. Now the flames are clearly visible, quite literally in the form of crowning fires, but also shrinking ice, thawing tundra, bubbling methane, and yes, imminent extinction.

Yet, despite the undeniable, too many of us remain in denial. In this election year, largely due to popular acclaim, an institution that ostensibly represents one-half of our political consciousness has taken as its mantra, "Drill, baby, drill!" The vast majority of us still care more about the price of gas at the pump than the ratio of gases in the atmosphere.

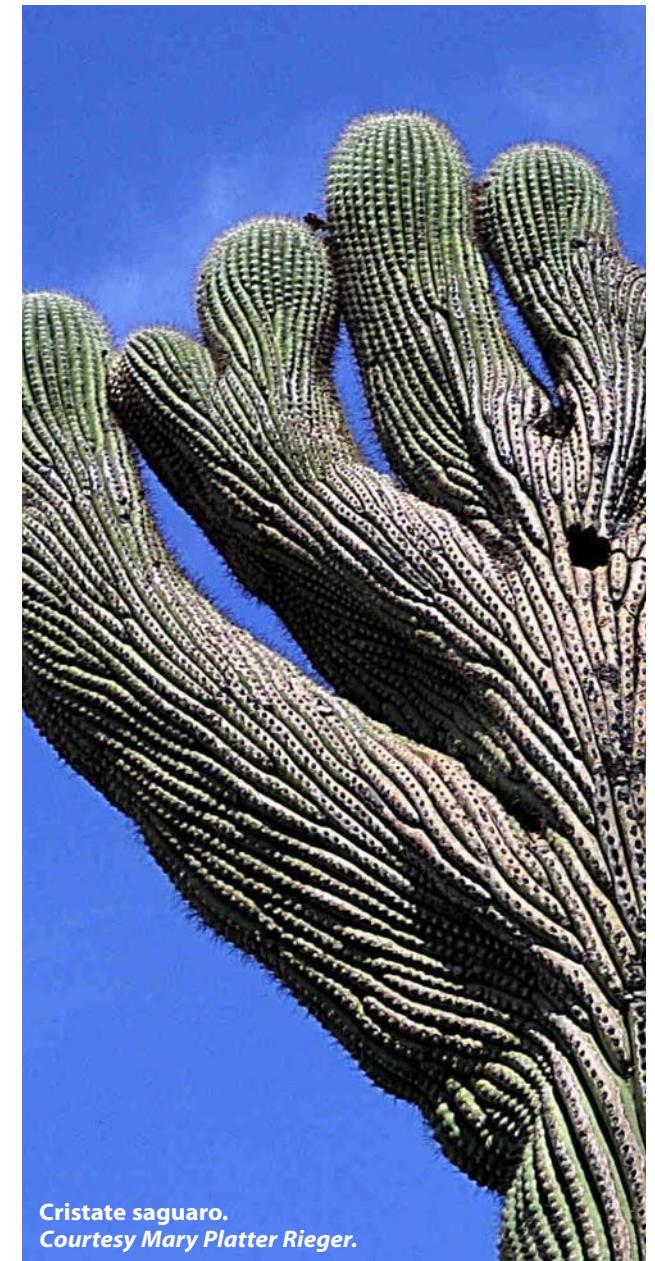
One of the reasons, of course, is that we humans are the first animal species to develop the capacity to arrive at the conclusion that we are neither species nor animal, that we are something profoundly different, that we are fundamentally disconnected from the natural world in a way that immunizes us against the ruthless truths and cruel consequences of ecology.

Much has been made of opposable thumbs and internal combustion, but I would argue that this illusion is the greatest threat to the world around us, the notion that we have somehow graduated from a lesser form of life to one that need no longer practice environmental responsibility in order to survive.

For every other species, such responsibility is hardwired into its existence. The dynamic is simple: live in harmony with your environment, or die. The consequences of imbalance do not always result in extinction, but at the very least hard punishment is meted out in the form of crashing populations and desperate times.

So, here we are, in the burning building that we ignited, and what to do? Well, maybe the deniers are right. Maybe we can find a way out before it crashes down upon us. Maybe a handful of us will dig tunnels beneath the earth or escape to Mars and begin a radical evolution that completes our new essence. But I must say, as one who loves to gamble, I do not like our chances. Besides, its many flaws notwithstanding, I'll take *Homo sapiens* over radical evolution. I say we put the fire out, or share the pika's fate.

Randy Serraglio works for the Center for Biological Diversity in a possibly quixotic attempt to secure a future for all species, great or small. On a personal level, he is willing to covertly arm cadres of rebellious pikas if it would help.



Cristate saguaro.
Courtesy Mary Platter Rieger.

3000 Loose Rock Check Dams later: from Cottonwood Canyon, the Chiricahuas

by Jane Martin

We should care because this is the opportunity of this lifetime that we have been collectively waiting for: besides, heroes are never made ahead of time.

There is an old story told of an early scientific study where scientists decided to observe the survival instincts in mammals. They took a metal cage and put a dog in it. It was a large cage with open metal spaces where they could observe the dog. First the door was open when they observed the dog. Then they observed the dog with the door closed. Next they wired the cage so that exactly one half of it gave the animal electric shocks, keeping the other half just how it was. The dog tried each half of the cage and clearly preferred the half without any electrical current. After numerous observations the scientists wired the other half of the cage so that the whole floor of the dog's cage gave off a shock. The dog laid down, giving up. Obviously believing itself to have no way of stopping what was happening to it. The scientists had opened the door.

We should care because in this final hour of our blue planet there still exists infinite possibility for the birth of a new world creation myth. The door has been opened.

We can lie down giving in to the ferocity of this maelstrom of human failings (yours, mine ours, theirs)... or seize the opportunity of this one and only planetary near-death experience. Our time of being shocked has been used up. The door is open. Come on.... it is not that there is nothing that can be done! It is that there is so much to do! Each of us is needed. Now.

Jane Martin fell in love with the Chiricahuas on a moonless night 30 years ago. She practices psychotherapy in Tucson, guided by the ecological principle that each living being has an ongoing and central relationship with every other element that makes up his or her living environment.

Seeing

by Ken Lamberton

This September morning, to my surprise, the Santa Cruz River roars past me where last night I walked a dry, rock-studded arroyo of sand. Now, apparently due to an overnight thunderstorm somewhere south of me, the river is a corrugated gray torrent forty feet wide.

I push through a bank of desert broom and amaranth. The channel of the Santa Cruz sweeps across an open, stony floodplain, punctuated occasionally with twenty-foot cottonwoods and Mexican elder. The river's cottonwood-willow forest, one of the rarest forests in the world and inhabiting less than two percent of the Southwest, has dwindled to scattered trees. Somewhere, a gray hawk screams. It may be the last one I'll encounter on my way north across southern Arizona.

By midday, humidity and sweat soak my khaki shirt, brightening letters reading, "Same shirt. Different day." The river has drawn down from a muddy flood to six thin fingers of foam grasping at sand. Ahead, the channel becomes a straight, narrow ditch, lined with seep willow and yellow snakeweed, its banks woven together with tangles of Bermuda grass. Flocks of common sulphur butterflies siphon moisture and salts from patches of mud, looking like tiny yellow sails on a chocolate sea.

Beneath Elephant Head Road bridge, the clay pots of swallow nests cling to the concrete supports as if slung there like spit wads. I smell something familiar: the rich aroma of bat guano. In the mud at my feet, ridges of tiny oblong pellets rise directly under the bridge's concrete expansion joints. I twist my head to peer into a seam and the darkness begins speaking to me in pitched whispers. I drop my pack and pull out my flashlight. Hundreds of tiny faces look back. Pin-prick eyes and Shar-pei noses, ears like seraphim wings. I stand in the Sistine Chapel surrounded by angels.

Mexican free-tailed bats are the most common bat in the Southwest and generally migrate to Arizona in March, then return to Mexico in October. In the old mining town of Bisbee, Mexican freetails leak from one-hundred-year-old buildings like the one above Café La Roca, emerging from a hidden seam in pulses as if someone were blowing bubbles. In the ghost town of Ruby, freetails plume out of a deep mineshaft like smoke. And, all over Tucson, the bats drop from their roosts under bridges and stadiums to wheel across a crepuscular sky.



Cactus Ferruginous Pygmy-owl near Sierra San Juan, Sonora. Courtesy Sky Jacobs.

These bats will be departing to the south soon, ending their all-summer, sunset to sunrise, 150-mile insect-feeding forays during which no moth, beetle, or mosquito is safe. And this evening I think about their long journey as the sun begins to cast its longer, redder wavelengths into a reef of clouds while the moon pulls away from the opposite horizon. I'm walking the riverbed when suddenly something out of place catches my eye. A great blue heron shakes out its gray cassock of feathers and lifts itself out of the sandy channel on monastic wings. The bird is huge, prehistoric, reptilian, with bent wings that lean into a Cretaceous sky as it drifts, circles, and slips out of view. It could be an animal cobbled to my imagination, all beak and neck and dangling feet, but it's real. Here, in a desert that scours you down to essences like hunger and hope, encountering one great blue heron is an excess. Seeing a squealing colony of free-tailed bats is an extravagance.

There is a *seeing* that goes beyond what I do with my eyes. This kind of seeing is more a

participation, a penetration. To see the world in a grain of sand — to see its dimensions so clearly — that I am part of the picture. There are days when I don't get it right, when my sight is dimmed, when I allow a patina to form over my view of the world and lose the wonder of the simplest things. And perhaps, this is why I care so much about the place in which I live, its sun-hammered landscape of black stones and dry rivers. I can imagine what it would be like if, say, for instance, the Mexican freetails failed to return to the Southwest next spring. If the dark recesses under bridges and inside mineshafts and old buildings were empty of those Shar-pei faces. If the night sky were absent of those seraphim wings. For me, it would be a kind of blindness.

Ken Lamberton recently relocated to a stone cabin in the Mule Mountains outside Bisbee where he is seeing all kinds of new creatures — like giant vinegaroons in his kitchen sink!

To enhance your love life

by Doug Bland

Of all the reasons there are for protecting wilderness and caring for the environment, there is one that is too little honored: Caring for Creation is good for your sex life.

Better than romance novels, chick flicks and candlelight dinners, the natural world is filled with the erotic. Next time you are out for a hike with your beloved, stop to wonder over the alluring scent and the suggestive shape of nature's most notorious flirt—the flower blossom. Consider the inspiration of Weaver's Needle in the morning. Forget the crass, insensitive calls to "Drill, baby, drill!"—a tactless turn-off if there ever was one. Nature teaches the seductive value of sensuous curves, firm caresses, soft moonlight and a slow hand. Nature is God's best aphrodisiac.

A dozen times a day I receive unsolicited emails that promise to enhance my love life through pharmaceuticals, sensual lotions, erotic toys and tantric techniques. It is clear that sex sells.

Perhaps it is time for Sky Island Alliance and the wider environmental community to promote the libido-fortifying benefits of caring for the earth. If you truly want to enhance your love life, protect the environment.

You may be surprised that a "man of the cloth" advocates the erotic value of caring for the environment, but I think I'm standing on strong, biblical precedent as I do so. Genesis tells us that God placed first man and first woman in a Garden of sensual delights. Inspired by the example of the birds and the bees, the flowers and the trees, "they were naked and they were not ashamed." (Genesis 2:29).

If you are looking to increase your ardor with the help of erotic literature, check out the Song of Solomon. It's a love poem that celebrates the joys of erotic love. The lovers exult both in the beauty of each other's bodies and also in the sensuous delights surrounding them—trees, fruits, flowers, fountains of living water.

Your breasts are like fawns,
twins of a gazelle, grazing among
the first spring flowers.
The sweet, fragrant curves of your body;
the soft, spiced contours of your flesh
Invite me, and I come. I stay
until dawn breathes its light
and night slips away.

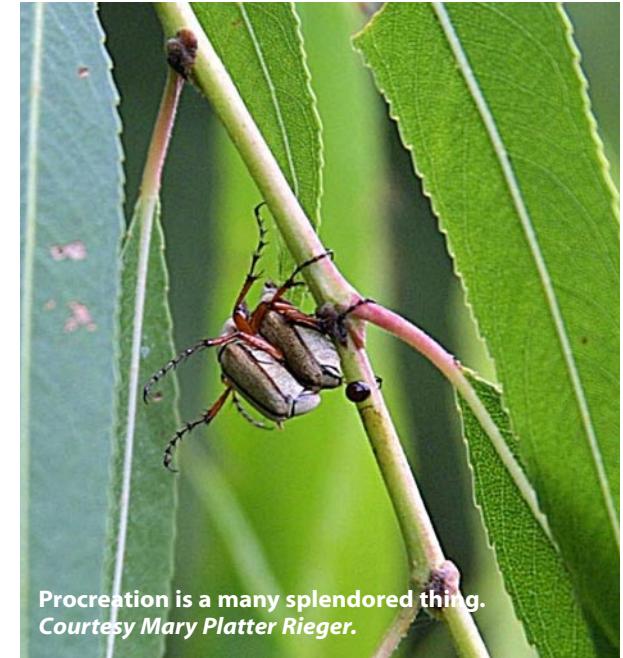
(Song of Solomon 4:5-6)

Here, sexual desire is a gift of God, source of our life energy, and one of the most potent means of communication and communion. Sexuality expresses God's intention that people find authentic humanness and fulfillment not in isolation but in intimacy and relationship—with each other, with the larger creation and with God.

I just got married last April. Though I am the pastor of a church with a beautiful sanctuary, Amy and I decided that we wanted to get married outside. We chose to say our vows at Boyce Thompson Arboretum, surrounded by blossoms, birds and rocky mesas. As part of the ceremony, we used scripture from the Song of Songs:

Arise my love, my fair one,
for now the winter is past,
 the rain is over and gone.
The flowers appear on the earth;
 the time of singing has come,
 and the voice of the turtle dove
 is heard in the land." (2:10-12)

Amy and I affirm that our marriage commitments are reciprocal, both between the two of us and between us and the larger world. Like the lovers in the Song of Songs, our lives find their source and inspiration from the natural world. In grateful response, we vowed that we would not only love each other but we promised that we would care for the earth. We ended our wedding ceremony with a poem by the Sufi mystic, Rumi:



Procreation is a many splendored thing.
Courtesy Mary Platter Rieger.

These tender words
we said to
one another
have been shared
in the secret heart
of heaven
and one day,
like the rain,
they will fall
and spread
and the whole earth
will be green
with our love.

Why care for the environment and protect wild places? The best reason I can think of is this: your love life depends on it!

Rev. Doug Bland is the Pastor, of Community Christian Church in Tempe, AZ, and Chair, of the Arizona Ecumenical Council Earth Care Commission

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Back of Beyond

by Michael S. Smith

Wilderness ... is real and this they do know; when the pressure becomes more than they can stand, somewhere back of beyond, where roads and steel and towns are still forgotten, they will find release.

Sigurd Olson (1938)

You might have seen me at a gathering, standing alone in a corner, periodically looking outside, toward the mountains, wild country where I feel more comfortable than in a crowd of people.

But if you approached me and began a conversation about wilderness, you'd see a dramatic transformation. My eyes would light up and my voice rise, for I love the American backcountry. I'm two-thirds through my odyssey to visit all 57 national parks. These are our crown jewels, our most spectacular places, ranking just behind our experiment in liberty as our great contribution to the world. As a veteran, I served America, but I serve her better by speaking up for these places, remnants of the frontier, often under appreciated and under attack.

I might excitedly tell you about the wolf — a wolf! — in my campsite on Isle Royale, 12 feet away, ten trail miles from the nearest other person. Or Alaska's Brooks Range, containing the granite spires of the Arrigetch and large rivers with names like Kongakut, Killik, Koyukuk, Sheenjek and Alatna. Traveling this country, by pack and paddle through vast valleys, home to caribou, Dall sheep and grizzly, is life-altering. I've been next to a herd of elk at Wind Cave, and the next day seen bighorn in South Dakota's Badlands. Now a different individual from that guy in the corner, I tell of hearing loons in the Boundary Waters, drinking water directly from a lake and paddling solo by a moose, five days from town, during an October blizzard. I've seen moisture laden wind hit cliffs on Big Bend's South Rim, rise and condense, at eye level, the same orographic lift that produces clouds and rain in our Sky Islands. I might recall the backcountry triad of wilderness, completely dark skies and total quiet, deep down on the Grand Canyon's Tonto platform. Or how early one morning on Mt. Kimball, I saw the shadow profile of the Catalinas etched out over Oro Valley. I would be released from shyness as I spoke of the release I found back of beyond, still out there, still unspoiled.

If you stuck around, I might wave my arms describing central Nebraska in March, mornings where tens of thousands of Sandhill Cranes simultaneously took off from the Platte in a visual and auditory mélange that nearly defies description. We still see this show because Americans with foresight preserved sixty miles of braided river the way it was before Manifest Destiny. Our wild country: America, still the beautiful.

If you wondered how a loner could talk so much, I would reply it is because I have been fortunate enough to hear what the wild country out there, the back of beyond, had to say.



Mike Smith, retired neurologist and statistician, has lived in Tucson since 1977 with his wife and several cats. An avid flat water canoeist, hiker and solar eclipse chaser, he is a volunteer math tutor at two high schools and volunteers at Rowe Sanctuary (Nebraska) during Crane season.

It's nothing like the Discovery Channel.

by Jennifer Yates, University of Georgia.

I am a senior wildlife major at the University of Georgia, and until August, I had never ventured farther west than Texas, and I had never been to Mexico. My dream is to work with cats both through research with wild populations and also care of captive populations; so when I started looking for a senior thesis project, I knew I wanted to find something amazing that involved cats. When my professor told me about Sky Island Alliance and Sergio Avila's project with ocelots, I was ecstatic. I knew this was where I wanted to go, so I was excited when Sergio responded to me saying that he and Sky Island Alliance would love to help me with my thesis. I started preparing for my trip to Arizona to learn more about the project and data collection.

The day finally came, and as I boarded my flight, I wondered what I would experience. I had seen the area in photographs, but nothing could prepare me for the following week. It was late when Sergio picked me up from the airport so I did not notice at the time, but Tucson is surrounded by some pretty amazing mountains.

Jessica Lamberton was very generous and welcomed me into her home for the time that I spent in Tucson. I had an absolute blast hanging out with her. I also met several people at Sky Island Alliance while in Tucson including Sky Jacobs, Mike Quigley, Trevor Hare, Janice Przybyl, Acasia Berry, and many others. Everyone was very nice, and it was great to see what a close-knit group they were. My days in Tucson before and after our trip to El Aribabi were a blast. I tried new foods (Indian, as well as a few Mexican dishes) and visited the Arizona-Sonora Desert Museum. It never really seemed like I was working, even though I accomplished a lot of work toward my thesis.

Sergio, Janice, and I spent five days at El Aribabi checking camera traps. I even met Carlos Robles, who is very nice, and I admire his conservation efforts. I enjoyed every second of my time at El Aribabi, even though it was the toughest five days of my life, both physically and mentally. I have spent time in the field in my classes, but it was nothing like this. As Sergio said, "It's nothing like the Discovery Channel." The hikes were difficult, but just seeing the picturesque views kept me from noticing how tiring the hikes to each camera actually were. Additionally, the views from atop Sierra Azul were some of the most gorgeous I have ever seen. The canyons and mountainsides were amazing, and they appeared completely untouched by humans. The day we visited the ocelot cameras was extremely long and difficult. We left early and were gone until dusk. It was disappointing to see that the vegetation had thrived during the monsoons and grown over many of the cameras, but just knowing that I was walking where ocelots had walked was an unforgettable feeling. The hike to the final camera of the day was by far the hardest, and I must have fallen at least four times, but it was completely worth it. Dangling from a rock in the middle of a storm, I learned that I am a much stronger person than I thought I was. I do not think I would have fared so well without Sergio and Janice's never-ending encouragement and praise. I survived the ultimate test — five days in the middle of nowhere, hiking to remote areas down rocky and often steep canyons to check cameras whose pictures were a constant surprise.

I have so much more respect and admiration for wildlife researchers after this trip. Sergio's work is extremely difficult. His cameras are in very remote locations because that is where the wildlife is, so this camera placement is a necessity. Checking these cameras is not possible without some considerable risks. I am proud to say that I survived my trip, in more ways than one, and I would do it again in a heartbeat.

For now, I am back in good old Athens, Georgia analyzing all of the data from the last year and a half of photographs. I cannot wait until I graduate in December, at which time I can start looking for a project of my own. I can only hope that I end up somewhere as beautiful as the southwest region where I visited and hopefully working with the cats that fascinate me so much.

The Earth, the Sky, and Waiting Tables

by Donna Stevens

Driving a borrowed car, with my \$1300 tax refund check in hand, I rolled into New Mexico. On August 29, 1983, I crossed the state line into the Land of Enchantment. I was a single mom with two kids under six, a failed relationship, no job. My friend Bill, who drove to Santa Fe with me, asked, just once, "What if you don't find a job?" "I have to," I replied, and to his credit, he didn't try to talk me out of it. I will always be grateful to him for that.

In Santa Fe, I fell in love. I fell hard, and I fell fast. But this time, my beloved was not a person, but the land. I felt I was living in a foreign country, and I spent hours getting lost on purpose.

Everything was a revelation: the earth, the vegetation, the dry air, the monsoons. But it was the sky that made me drunk with love.

I found a job, and managed to squeak by. A couple of years later, I bought land in southwest New Mexico. The purchase was based on practical considerations: the land was affordable, at the end of a dead-end road, no down payment required. I was not in love with this land. There was no

stream, no high elevation pines, no deep woods, none of the features I believed were prerequisites for beauty. The sky, of course, was magnificent.

I have now lived on this land for twenty years, and have developed a deep love for it. I sometimes entertain thoughts of moving into town, to cut down on my driving. But I know I can't. With the man who is now my husband, I built my home, and planted hundreds of trees. I know which hollow oak limb once housed a ringtail cat, where the javelinas chomp acorns, when the dark-eyed juncos return for the winter. How could I leave these things that mean so much to me?

This corner of New Mexico qualifies as economically depressed. Jobs are scarce and low paying, and I ended up waiting tables for ten years. I can't deny there were some tough times, but I never once considered leaving. Living below the poverty line in New Mexico, you have lots of company. Sometimes when I return to Chicago, my hometown, I start to covet stuff, like fashionable clothes and fine furniture, good restaurants and great live music.

As soon as I return home, everything else falls away, and I recognize, yet again, that I am a truly wealthy person.

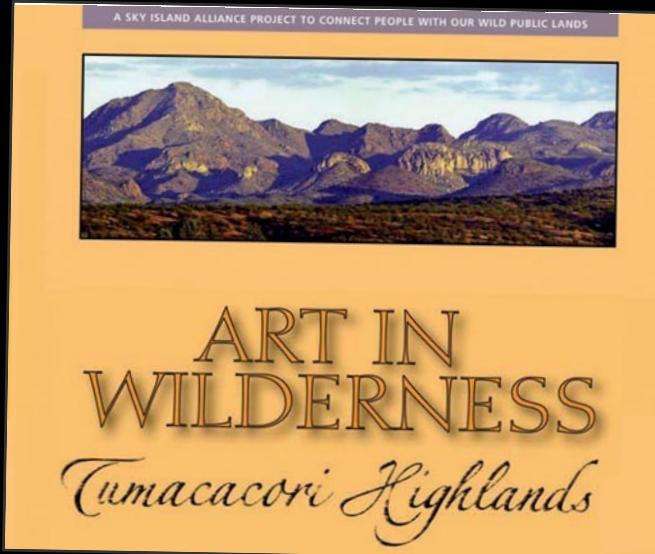
Some have the great fortune to be born in a place that suits them, and some people like the adventure of moving to new places. I found a home that fits me perfectly, and that has made all the difference.

When asked to write this essay, I was given a choice of subjects: caring for the land, or quality of life. In the end, I couldn't separate the two.



Donna Stevens works for the Upper Gila Watershed Alliance on the issue of off-road vehicles in the Gila National Forest. She also is employed by the Gila Conservation Coalition, the coalition working to protect the Gila River from an ecologically harmful diversion. She's grateful to have retired from waitressing.

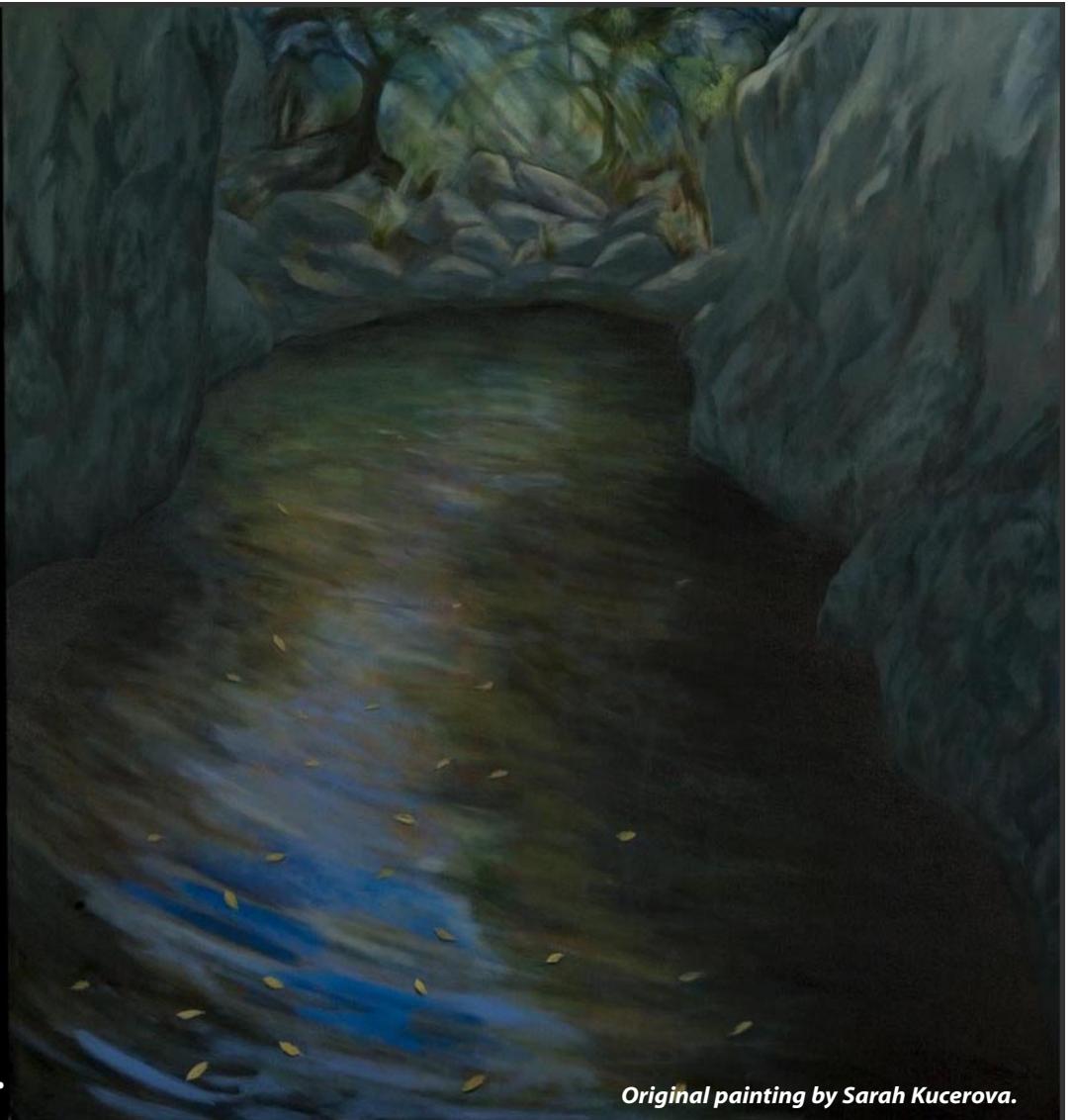
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Protecting Our Mountain Islands and Desert Seas...

Sky Island Alliance's dedicated staff advance the organization's goals every day — in the field with volunteers, around the map table planning strategies, in the office, at the meeting, doing outreach... you name it, if it's important to the Sky Island region, we are there. In this issue of *Restoring Connections*, we are introducing a new feature which will help you stay up to date on our programs and their progress. We hope you're impressed — let us know!

Wilderness

There are indicators that summer has come to a close: it's under 100-degrees in Tucson, students are back in schools, the monsoon green is fading from the mountains. In Washington, DC, the signs of autumn are also visible: leaves are beginning to fall on the National Mall, Congress is trying to wrap up a year's worth of work and adjourn, the election is fast-approaching.

The Tumacacori Highlands Wilderness bill is active; having received its initial hearing in the House Natural Resources Committee's Subcommittee on National Parks, Forests and Public Lands (chaired by the bill's sponsor, Congressman Grijalva). The next step of progress will likely await the seating of the new Congress in January. Like a Friday afternoon commute on the Beltway, these things take time.

As we go into the end of the year, among the talk of the war, the bailouts, the "drill here, drill now" subterfuge, the attack ads, the economy, let's remember that we're blessed to have, among our personal joys, the collective benefits of democracy and wilderness. When we go to candidates' talks, when we write our elected officials, when we go to the polls on November 4th, let's keep wilderness and the preservation of our natural heritage in the discussion, on the agenda, as a priority. Come the new year, with a new Administration and a new Congress, let's solve some problems, move America forward, and get more wilderness designated in Arizona. And in between, let's get out to wild Arizona—take a hike, share a sunset, stargaze—and remember why it matters.

Landscape Restoration

I often hear that summers are too damn hot to venture out into the deserts and mountains of our region, but I am here to tell you all — summers are great out there! Just ask a snake! And the summer of 2008 will go down in the history of SIA as totally awesome!

Dry summer started with one-rock damming,

willow pole planting, and swimming on the San Francisco River, then volunteers and staff performed above and beyond in an all-out effort to eradicate those pesky bullfrogs from a gorgeous canyon in the Huachucas. We then traveled to Ciénega Creek to continue our road closure work and to protect riparian areas and grasslands from ORV abuses. A couple of Saturdays were spent locally in the Rincons helping to restore lowland leopard frog habitat. And of course we continued ciénega restoration planning at our current favorite place, the Peloncillo Mountains.

Wet summer started with a bang in the Santa Catalinas where we surveyed the trail system and burned areas, found lush growth, healthy trails and lots of water both flowing and falling. We then returned to Las Ciéneas to continue the good fight against the destructive machines etching new smears into the landscape. Back in the Peloncillos, we searched for frogs, snakes and turtles and finalized our site design for the ciénega restoration project where we will replace a ridge taken out by a previous rancher to create a creek channel to drain the wetlands. At summer's end we found ourselves again along the San Francisco River doing erosion control in continued restoration of a rapidly healing riparian wonderland.

Wildlife Linkages

Linking field data to conservation action with the help of volunteers.

A dozen workshops... this Fall the Wildlife Linkages Program will be conducting its twelfth training workshop for new tracking volunteers. Each workshop brings a new crop of highly motivated citizen scientists into the Sky Island Alliance volunteer force.

At the beginning of 2008 with the influx of volunteers from workshop #11 we were able to re-engage two important dormant tracking transects on Las Cienegas National Conservation Area. One in Forty-nine Wash and one in North Canyon. Data from these two transects and from our other transects on the NCA continue to demonstrate the importance of the Ciénega Creek watershed both as habitat and movement corridor for many species including mountain lion, bobcat, coati. Unfortunately we are also documenting resource damage from recreational overuse, especially illegal ORV travel through washes.

Speaking of wildlife and Las Ciéneas — we are very pleased that Arizona Game and Fish Dept. chose LCNCA as the first site for black-tailed prairie dog reintroduction. Releases start this Fall. Be on the alert for our electronic notices with details on the next opportunity to help with this release project.

Volunteers are continuing to collect tracking data

in the Tortolita Linkage between the Tortolita and Tucson Mountains and last Spring we started a new transect in the eastern arm of that linkage between the Santa Catalina and Tortolita Mountains. The new transect parallels Oracle Road just north of Catalina State Park. In addition we are encouraging residents in that area to report any wildlife they see: dead or alive, on the highway or near their homes via critters@skyislandalliance.org. This info combined with our tracking and roadkill data from ADOT and Arizona Game and Fish Dept. will help produce a more comprehensive picture of how wildlife utilize the landscape and where wildlife attempt to cross the road. Oracle Road is slated for widening and our data will help ADOT design enhanced wildlife crossings where they are needed most. More impacts loom in the proposed annexation of Arroyo Grande — 9,000 acres of open state land within the wildlife linkage. We've been at the table with Oro Valley, Arizona Game and Fish, Pima County, State Lands, and others to determine the best configuration of development that leaves the wildlife linkage intact.

And in Santa Cruz County, there are two Propositions on the ballot that if approved will negatively impact the Tumacacori-Santa Rita wildlife linkage. Last year the Santa Cruz County Supervisors voted to approve two massive urban developments in the northwest corner of the county. Both developments, Las Mesas and Sopori Development would destroy the rural character of the region and impact wildlife habitat and movement. Needless to say we are urging voters in Santa Cruz County to vote NO on Propositions 400 and 401.

From the field to the table to the ballot box, we can make a difference!!!!

Policy and Planning

Wilderness Suitability on the Coronado National Forest

The Coronado National Forest is revising and updating its Forest Management Plan that was written in 1986. As part of the plan revision, both the Arizona Wilderness Act of 1984 and the National Forest Management Act require the Coronado National Forest to analyze the Forest for areas of potential wilderness. Sky Island Alliance planning staff have identified wilderness quality lands that are suitable for wilderness study. As the Forest Service moves forward with development of the new management plan, we will be working to ensure that the remaining wild, untrammeled, and road free areas on the forest are considered as potential wilderness and adequately protected.

Coronado Forest personnel who are most familiar with on-the-ground conditions in each area of the



Ecology of the Sky Island fauna: a gray fox carries its prey, a cotton tail rabbit, at early morning. Our remote cameras have captured this behavior with mountain lions, bobcats and gray foxes as predators; deer, rabbits and wood rats as prey.

Forest will be charged with identification of wilderness quality lands. We're busy meeting with Forest Service staff to ensure the best possible process for wilderness recommendations. Sky Island Alliance has identified the following areas that should be further studied for wilderness suitability:

Santa Catalinas, 128,986 acres; **Chiricahuas**, 175,271 acres; **Dragoons**, 38,190 acres; **Galiuros**, 51,225 acres; **Huachucas**, 98,583 acres; **Pinaleños**, 130,037 acres, in addition to 62,000 acres in the Pinaleños WSA; **Santa Ritas**, 56,141 acres; **Santa Teresas**, 20,363 acres; **Tumacacori Highlands**, 81,230 acres, in addition to 13,308 acres in the Pajarito Wilderness; **Peloncillos**, 49,476 acres, in addition to existing WSAs; **Whetstones**, 40,189 acres; and **Winchesters**, 25,065 acres.

You can help! Attend Forest Service public meetings this fall. See page 5 of this newsletter and visit our website for more information.

Northern Mexico Conservation Program

X-ray of a young program

In the twenty months of life of the Northern Mexico Conservation Program (NMCP), Sky Island Alliance has set the bar high in conservation, education and research in the borderlands. Allied with a number of local conservation-minded ranchers with an innovative approach, using the strong commitment and expertise of volunteers, utilizing wild feline's presence as indicator of ecosystem health, and supported by our members and donors, we have come to fill a niche in the Mexican Sky Islands that will lead to future conservation of remote wild lands in northern Mexico.

Some numbers (February 2007 to September 2008):

Ranches currently involved in wildlife research: five; over 30,000 acres of study area.

Local ranching families actively participating: seven.

Field trips: seventeen; total days in the field: sixty-nine.

Field trip participants: forty-one SIA volunteers; seven SIA staff, two SIA board members, and two reporters, representing U.S., Mexico and Spain.

Participant occupations: teachers, students, writers, painters, naturalists, trackers, birdwatchers, herpetologists, biologists, photographers and more.

Initial number of remote cameras: twenty-one (15 film; 6 digital). Current number: fifteen (3 lost to flooding, 3 to vandalism).

Number of mammal species recorded (remote photographs, tracking and direct observation): twenty; including ocelot, puma and black bear photos; jaguar and badger tracks and numerous deer, javelina and coati direct observations.

Media pieces about the NMCP or its results in: Audubon Magazine, Discovery Channel Online, Agencia EFE, Univision, Telemundo, La Estrella de Tucson, Sierra Club Newsletter (Rincon Group), Arizona Wilderness Coalition Newsletter.



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Protecting our Mountain Islands
and Desert Seas

Join us!

Join or renew here OR through our secure website:
www.skyislandalliance.org

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 \$35, 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.

Fill this out, or donate online. It's quick, easy and safe!

Name: _____

Address: _____

City, State & Zip: _____

Phone & Email: _____ - _____

\$35 \$50 \$75 \$100 Other \$ _____
(any amount helps and is appreciated!)

My check is enclosed
 Please bill \$_____ to my: MasterCard Visa American Express

Card No.: _____ Exp. Date: _____

Security Code: _____ (usually the last 3-4 digits on the back of the card by the signature panel)
Card billing zip code if different: _____

Sky Island Alliance PO Box 41165, Tucson, AZ 85717

Tumacacori T-Shirts!!

"The vanishing wilderness is yet a part of our western heritage. We westerners have known the wilds during our lifetimes and we must see to it that our grandchildren are not denied the same rich experience during theirs." ~ Senator Frank Church



Get your "Friends of the Tumacacori Highlands" t-shirts now!

- 100% organic cotton; **not** pre-shrunk.
- Pen-and-ink Jaguar logo on the front!
- Wilderness quotation (see above) on the back!
- Men's on a light-tan shirt, women's on a green-tea shirt.
- See pictures on our website at: www.TumacacoriWild.org

How many? What sizes?

Men's cut

Quantity	Size
_____	XL
_____	L
_____	M
_____	S

Women's cut

Quantity	Size
_____	XL
_____	L
_____	M

Where would you like your shirt(s) shipped?

Name: _____

Address: _____

City, State, ZIP: _____

Phone number (just in case): _____



Send this form with payment to:
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Since 1998, volunteers working with Sky Island Alliance have spent more than 50,000 hours turning their concern for our surrounding environment into tangible, hands-on action. As a grassroots organization, we could not achieve the results we do without the efforts of our dedicated volunteers — the real roots in “grassroots.” The purpose of this column is to celebrate our volunteers and to share a little bit about who they are.

Volunteers Make It Happen

by Sarah Williams, Field Associate & Volunteer Coordinator

One of the richest benefits of volunteering at Sky Island Alliance is the opportunity to visit breathtaking places within our Sky Island region that you may have never been to or even heard of. Places that you will remember for a long time because of the sweet smell of the wildflowers shadowing the path to your tent, or the way the morning sun illuminated the steep canyon walls surrounding the camp site. For Nick Van Kleek, the best thing about spending time in these places is the chance to experience the lucky feeling of being alive and healthy while immersed in wild beauty.

Nick became a member of SIA seven years ago after a hearing about a friend's experience from a road inventory trip. Since then he has been a regular volunteer, donating much of his free time over the past 5 years to the Wildlife Monitoring and Landscape Restoration Programs. "I can lose track of myself in the city, and the regular intervals of the wildlife tracking program act as a kind of sanity check. I make a living on a computer, and I love the physical labor and the visible accomplishments of the restoration trips." Besides contributing real labor to restore and improve the health of the land, Nick also enjoys

interacting with the other volunteers. For him, field weekends are, "a chance to be around good people — I feel like I'm with my tribe on an SIA trip."

Van Kleek's favorite place in the Sky Island region is usually the one he hasn't seen yet but plans to explore on an upcoming trip. Currently, "it's the last one I just visited, a canyon on the San Francisco River," he said, referring to a recent restoration weekend in a gorgeous, hidden nook in southwestern New Mexico.

With a conservation degree under his belt that he may put to use professionally one day, it is work as a software engineer that keeps Nick busy. Away from the desk, he has a varied pallet for hobbies close to the Earth like organic gardening, water harvesting and "green" community oriented architecture. He is also a student of Argentine tango and captivated by places where Spanish is the primary language. Above it all he dedicates a substantial chunk of time every week to journaling adding that he finds, "the examined life is much more interesting."

Over the years Nick has many stories to tell from trips in the field but it was his virgin voyage with SIA

that sticks out as one of his favorites. "I pulled into camp after dark, after driving down a road that I really wasn't sure I could get back out on. The group around the campfire was passing around a flask of tequila and arguing about Latin names. Trevor introduced everyone and said there were a couple more people off killing bullfrogs. Being, up until then an armchair conservationist, I didn't know if he was kidding or not. I thought maybe this was a standard joke on the newcomers. But I figured either way it was going to be an interesting group."

Fortunately, the people in that group were interesting and Nick soon realized that they too cared deeply about protecting the Sky Island region. Merging the work done in the field with the opportunity to meet others who share a similar vision for conservation keeps Nick steadily involved with Sky Island Alliance and our mission. "Human creations can be great but they have their limits. To me the work is about keeping the source alive."

