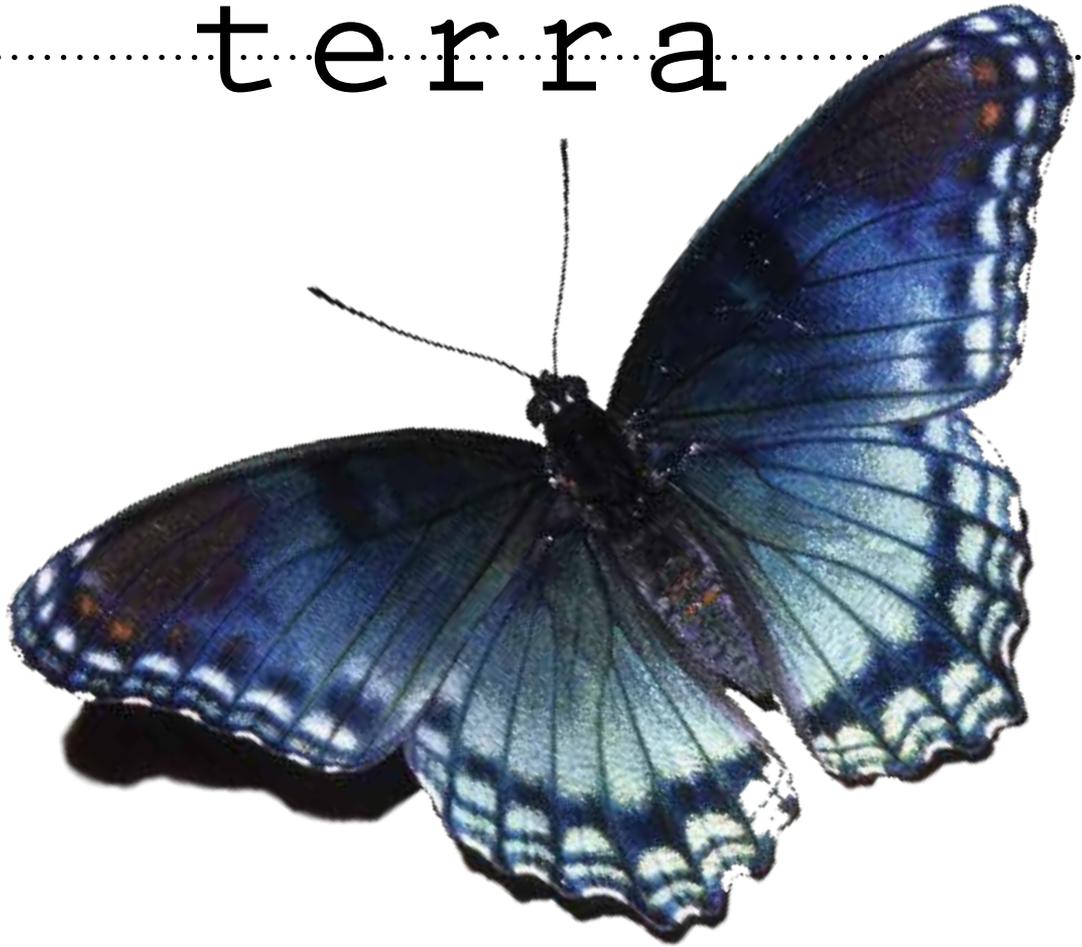


.....terra.....



ONE MAN ON A MISSION: BUTTERFLIES OF NORTH AMERICA

Exploring our world



Preserving our heritage

Volume 2, Number 1

Annual Issue: 2012



We are a community of explorers who value human connections and want to make a difference in our world through action & storytelling.

We like to keep it simple. We support exploration of our planet, and conservation of its natural and cultural heritage. We don't create new projects. We provide assistance to small & often-overlooked conservation projects and research that make a real difference, on the ground, where it counts: with local people, to save threatened wildlife and/or cultures. And we don't like jargon. Been there. Done with that.

The simple version:

We do things: To assist communities, projects & research . . . Skills training . . . Business consulting . . . Hands-on work . . .

We give things: To support projects & research. . . Tools & supplies . . . Computers & electronics . . . Vehicles . . .

We tell things: To share conservation, community & science . . . Videos, print, web & social media . . . Events & talks . . .

Join us.



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ConserVentures undertakes its first TERRA Expedition and shares the idea of "small-scale, big-results."

6 North America Butterfly Safari

Who says all the cool animals on the planet have to have claws or tusks? Bryan Reynolds, founder of the Butterflies of the World Foundation, shares a photo essay of some of North America's most beautiful creatures—proving his case that they (and their habitat) are well worth conserving.

16 Ríos en el bronco: Rivers in rough country

Keeping with our theme of small-scale, big-results, Sky Jacobs takes us on a tour of the Ríos Aros and Yaqui in one of the world's most remote regions: northern Sonora, Mexico. Although just a hundred miles from the U.S. border, this region is little-explored except by a few vaqueros and vinateros (makers of bacanora liquor). Sky and his compatriots have been undertaking biological surveys for a jaguar reserve. By Sky Jacobs; images by Sky Jacobs, Aaron Fleisch, Robert Villa, David Parsons, Heath Carey, and Alan Swanson

30 Blood & Leather: Maasai shields—recording the past to preserve the future

Last year ConserVentures agreed to assist a South Rift Maasai community with a new cultural preservation project: the making of the first authentic war shields in some 50 years. In October 2012, a small team videotaped and photographed as eight elders re-created two shields, from the killing of a cow through curing the leather, to making pigments, creating the shield, and painting the design. ConserVentures will be producing a video, book, posters, and other materials for the community's planned heritage fair and museum. Images and text by Jonathan and Roseann Hanson

56 Contributors

Photographers and writers who helped create this issue.

58 Terra view: Khan el-Khalili market, Cairo

An image from an unexpected vantage point shows that this ancient market in one of Cairo's oldest quarters has changed little over the centuries. Image by Jonathan Hanson, February 2012.



ConserVentures is a community of explorers who value human connections and want to make a difference in the world through action and storytelling.

terra comprises individually released articles, both print and electronic, sharing stories of exploration, science, and culture, and an annual collection, published in at the end of each year. Donors who contribute \$50 or more receive the annual print edition as a member benefit. Copies may be purchased online through our printing partner, MagCloud / Hewlett Packard. Please see our website for ordering information: ConserVentures.org/terra

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Image, Contents page: Roseann Hanson photographing Ntetyian ole Pasoi. (J. Hanson)

>>>news from



See video of our 2012 Blood & Leather TERRA Expedition in Kenya, ConserVentures.org/videos

Small scale. BIG results.

We might be bucking a trend here, but we don't think a conservation organization needs an \$8 million office building in Geneva or a fleet of shiny new logo'd-up Land Cruisers to accomplish things that make a significant impact in the conservation of our natural and cultural heritage.

Well, Jonathan might disagree about the Land Cruisers, but seriously: we founded ConserVentures because we've spent decades working professionally in conservation, and time and time again our experience has shown that small scale means big results.

Why? Because big money brings with it rafts of problems: entitlement, greed, strife, donor fatigue, to name a few. Meanwhile, there are thousands and thousands of wonderful efforts out there accomplishing significant results with just a few thousand dollars—or even a few hundred. One person **can** make a difference, it's not a cliché.

We dedicate this issue to three projects that are making a significant impact, and we'd hazard a guess that the total cost of these projects add up to way less than a fleet of Land Cruisers—in fact, each project probably cost a lot less than the bill for putting good tires on even four Land Cruisers.

We sincerely hope you enjoy these projects. Meanwhile, we'd like to share with you what ConserVentures has been up to in 2012:

The Americas:

Volunteer Brian DeArmon facilitated a donation through his workplace, Amcor Rigid Plastics, which has a manufacturing plant in Tucson, Arizona, to purchase two new trail cameras, batteries, protective mounts, and locks.

In the spring, Brian and his partner Marisa Rice then took the cameras to the Sierra Bacadéhuachi in Sonora (see the 2011 issue of **terra**). These cameras will help Sky Island Alliance determine if the region is home to

the field . . .

rare cats such as jaguars or ocelots—and thus worthy of scaling-up conservation efforts.

At Overland Expo 2012, we raised over \$5,000 USD to support the overall work of ConserVentures.

At a special charity auction at Overland Expo, Land Rover Las Vegas donated a Camel Trophy poster, signed by 12 ex-Camel Trophy veterans at the show, and it was auctioned off to Shane and Sandra Young (who coincidentally own a CT Land Rover and were married at the show in May). The proceeds were then passed through ConserVentures to an orphanage in Honduras, which is supported by Camel Trophy veteran Donnie Floyd and his wife, Bonnie.

Africa:

We successfully launched our first TERRA Expedition. A TERRA Expedition is a response to an urgent need to record and thus preserve a significant element of natural or cultural heritage that is in danger of being imminently lost. We were asked by the South Rift Maasai community to help them preserve an important element of their cultural identity: their war shield. We funded a five-day workshop (materials, food, translation assistance,



transportation) and documented via video and images as eight elders of the South Rift produced two beautiful shields. We share part of the full story on page 30.

Thank you for sharing our second year with us—and for supporting **small scale, big results**. We have even more big results planned for 2013. Care to join us? The world is waiting.



Roseann Hanson and Jonathan Hanson
Co-founders and ex-officio board members

Supporters ~ 2012

Without our volunteers—including our board of directors—our work would not be possible. We would like to thank the following people for donating their invaluable time and expertise:

Diane Boyer, Brian DeArmon, Bruce Douglas, Gavin Ferguson, Steve Hayden, Marisa Rice, Roseann Hanson, Jonathan Hanson.

The following volunteers have signed up for our Skills Network:

Preston Birdsong, Scott & Kacy Brown, Dave Cattell, Merv Colton, Tomas Dawson, Michael Emm, Judah Epstein, Jon Hamlin, David & Janna Hart, Jacob Isenberg, Jim Johnsen, Nathanael Kuenzli, Jayston Landon, James Little, Matt Mallery, Anthony Mancuso, Jason & Mekaela Miller, John Muli, Mark Ordway, Mario Raso, Ken Reynar, Fernando Rivero, Greg Rodriguez, Chuck Schroll, Kerry Scott, Sarah Steever, Terry Stephens, Sharon Tewksbury-Bloom & Jay Holt, Alexis West, and William Wester.

We would also like to thank our supporters for every penny of their contributions (100% goes to programs):

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Edward Beggy, M.D.

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Brian DeArmon
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Adam Torma

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Ellyn and Bill Ruttan, Matthew Burris, Karima Shaver, Lara Elin Soderstrom & Joe Manus, Doug Manzer, Charlie & Terry Beggy, Michael & Carol McCarthy



North America *Butterfly Safari*

IMAGES BY BRYAN REYNOLDS,
BUTTERFLIES OF THE WORLD FOUNDATION

So much of conservation is focused on what we like to call “charismatic megafauna”—elephants, jaguars, tigers—that it’s refreshing to see an organization devoted to something as accessible (and yet important) as butterflies. Who hasn’t admired a magnificent Monarch flouncing its way south in the fall? Or been delighted by a puddle party: dozens of butterflies drinking and dancing around wet patches of earth? In keeping with this issue’s theme of small-scale but big-impact efforts, we are running a photo essay by Bryan Reynolds, founder and CEO of the Butterflies of the World Foundation (www.botwf.org), a U.S. non-profit. Like ConserVentures’

TERRA Expeditions (see page 30), BOTWF employs world-class photography for conservation-oriented presentations as well as other forms of media and educational materials. Since its inception in 2007, BOTWF has given presentations to thousands of people, guided field trips, and conducted formal butterfly surveys and photographic expeditions to 13 U.S. states and four countries. “Our goal is simple,” says Reynolds. “To motivate people to make changes in their day-to-day lives that directly or indirectly benefit butterflies—and therefore themselves. It’s easier to relate to something as beautiful as a delicate butterfly that can be found right out anyone’s backyard.” Captions are on page 16.









Butterfly Safari

Key to Images



Page 6: **Delaware Skipper.** The skippers are a large group of butterflies that are small, very fast, and hard to identify. Butterfly enthusiasts love or hate them for all of these reasons. One good way to slow them down a bit is to watch them on flowers, such as this Delaware Skipper, *Anatrytone logan*, probing a purple coneflower for nectar.

Page 7: **Common Buckeye.** A stunning sight whenever it's encountered, a Common Buckeye, *Junonia coenia*, is obtaining nectar from asters on a fall day.

Page 8, top: **Mourning Cloak.** The Mourning Cloak, *Nymphalis antiopa*, is a stunning species that ranges throughout all of North America and temperate Eurasia. It is surprising how close someone can get to a butterfly when it's preoccupied, such as this one is. It is imbibing minerals from the damp earth.

Page 8, bottom: **Eastern Tiger Swallowtail.** The Eastern Tiger Swallowtail, *Papilio glaucus*, can be found in the eastern half of the U.S. and is one species that many people think of when they hear the word butterfly. They are common and regularly visit gardens.

Page 9, top: **Red-spotted Purple.** The Red-spotted Purple, *Limenitis arthemis astyanax*, mimics the noxious Pipevine Swallowtail. If you go north, beyond the range of the Pipevine Swallowtail, the Red-spotted Purple looks completely different: it will then have broad white stripes and its name is the White Admiral, *Limenitis arthemis arthemis*.

Page 9, bottom: **Cloudless Sulphur.** The Cloudless Sulphur, *Phoebis sennae*, can be found in the lower half of the U.S. and then down into South America. It never seems to stop flying until it comes across a good nectar source. In fact this species is readily attracted to the garden.

Page 10, top: **Pearl Crescents.** Two Pearl Crescents, *Phyciodes tharos*, are imbibing minerals from the damp soil, a process known as 'mud-puddling' or just 'puddling' for short. Mostly, only the males do this to obtain sodium, which is used during mating.

Page 10, bottom: **Variegated Fritillary.** The Variegated Fritillary, *Euptoieta claudia*, is a wide-ranging species found in much of the U.S. It loves nectar and can be easily attracted to any garden.

Page 11, top: **Arogos Skipper.** The Arogos Skipper, *Atrytone arogos*, is a rare and dwindling species. Its

presence is an excellent indicator of the quality of habitat and it can be used as an indicator of land management practices. Like most skippers, it is small, but will sit still when nectaring, such as this one is on a blanket flower.

Page 11, bottom: **Fulvia Checkerspot.** A fresh *Fulvia* Checkerspot, *Chlosyne fulvia*, basks in the early morning sun to warm up. Found in the southwestern U.S., this species can be locally common during the right time of the year.

Page 12, top: **Banded Hairstreak.** Hairstreaks are tiny, thumbnail-sized butterflies, with many species possessing hair like filaments and false head designs on the hindwings. The hindwings are rubbed up and down and this draws the attention of predators to this non-vital area. Predators will strike at this false head and only get a mouthful of wing, while the butterfly, such as this Banded Hairstreak, *Satyrrium calanus*, survives to live another day with just a bit of missing wing.

Page 12, bottom: **Little Wood-Satyr.** Fairly common in the eastern half of the U.S. in wooded habitats, the small size of a Little Wood Satyr, *Megisto cymela*, is apparent. It is perched next to an acorn cap.

Page 13, top: **Checkered White.** The Checkered White, *Pontia protodice*, can be found throughout much of North America and is readily attracted to the garden. This one is gathering nectar from a purple coneflower.

Page 13, bottom: **Reakirt's Blue.** All of the butterflies in the group called blues are tiny and delicate, most no bigger than a fingernail. In fact, most people would see more butterflies if they look down around their feet.

Left, top: **Monarch.** Most people have seen the Monarch, *Danaus plexippus*, but many don't know about the extraordinary migration of this species. The total distance traveled for some individuals is over 3,000 miles. This one was gathering nectar from a blazing star on its fall journey south.

Left, bottom: **Zebra Swallowtail.** A stunning sight whenever it is encountered, a Zebra Swallowtail, *Eurytides marcellus*, gathers nectar from a horsemint. On this day, dozens of freshly hatched individuals were observed on patches of horsemint deep into the pine forests of southeastern Oklahoma's Ouachita National Forest.

For more information or to contribute, contact Bryan Reynolds at the Butterflies of the World Foundation, 18201 Sun Valley Lane, Lexington, OK 73051-5555

(405) 527-1043

BOTWF.org or scan the QR code at right with your smartphone



Ríos en
Rivers in
el bronco
rough
country

TEXT BY SKY JACOBS

IMAGES BY SKY JACOBS, AARON
FLESCH, ROBERT VILLA, DAVID
PARSONS, HEATH CAREY, AND
ALAN SWANSON





Our adventures into the river canyons of eastern Sonora began in the early 2000s after spending several years working throughout the bronco (rough) state of Sonora, México. My best friend was an avian biologist working in Sonora, and I had always been intrigued by birds, natural history, and landscape exploration.



Our trips were driven by biological interest, deeply embedded wilderness exploration genes, and our desire to fill information gaps about the Sonoran countryside and its biota.

Anyone who has explored rural Sonora by road knows it is an exercise in patience—and withstanding a lot of jarring.

Visiting locations few scientists have been is sometimes challenging, as roads are few and often private. Backpacking has a place, but it is difficult to locate water in many areas, distances are great, and the ability to stay out for extended periods is limited.

The answer to this dilemma had been there the whole time—the rivers of Sonora. Since Sonora is battered by relentless sunshine there aren't many rivers, but the rivers that are large enough to be runnable by raft are beautiful, biologically interesting, and surprisingly roadless and remote.

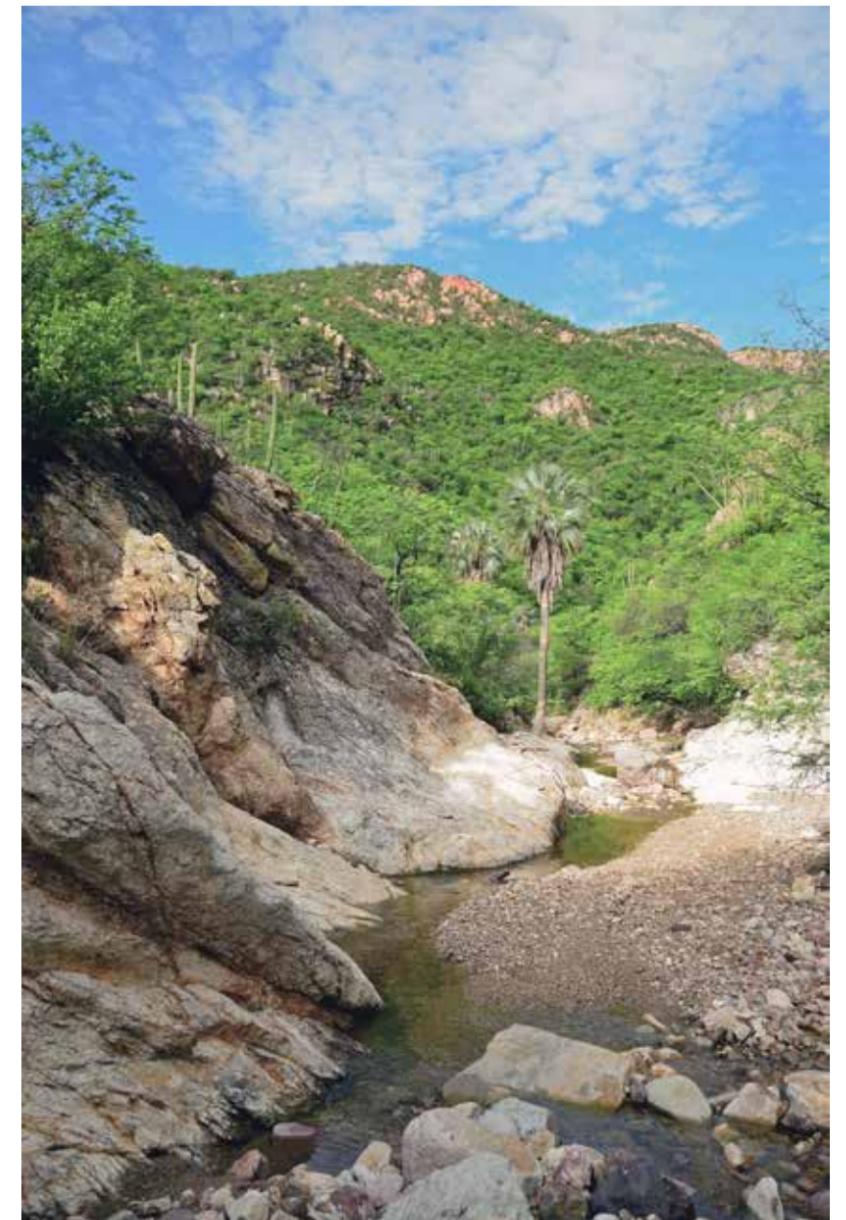
When we searched for information and guidance on running rivers in Sonora, we were surprised to find that there didn't seem to be anyone who had floated them before.

We finally heard of two people who had run a few stretches, but couldn't get many helpful details. Quite a few people told us that we were crazy. By our first boat trip on the upper Río Yaqui in 2003, we still knew next to nothing about the rivers and what surprises they might hold.

Looking back at that initial excursion it was like a gringo's first time stepping across the border in Nogales. We barely got our feet wet. It was a short stretch of the Río Yaqui that, while remote, was relatively tame.

The next monsoon season in 2004 we floated in a two-person inflatable kayak down the Río Bavispe from Granados to the Río Yaqui and then to Sahuaripa. This trip was more bold and certainly an eye-opener. Giant tropical figs and deep remote side canyons greeted us. We encountered fresh jaguar tracks in the mud, neotropical river otters, and a good list of flora and fauna at the northern ends of their range.

And there were no other humans . . .



Left, from top: Dramatic canyon walls along the Río Aros.

Roads in eastern Sonora are just a beginning of the challenge.

Right, from top: Native palms line side canyons along the rivers of Sonora, Mexico. This is "babiso" (Sabal uresana); there are also "palmas" (Brahea brandegeei). Río Bavispe joins the Río Aros, making for an impressive southwestern river.



On this trip we had no clue what was around each bend—impassable rapids, narco drug fields, exciting rare plants and birds. We found all of these things, but more importantly we found a strong and long-term connection to this amazing area.

Eastern Sonora is a tortured landscape of steep, rugged terrain. Deep canyons drain the high Sierra Madre to the east. Spring and early summer are brutally dry, hot, and sunny. There are a few roads and even fewer people.

Here in these deep canyons the Neotropics reach their northernmost extent and transition to more temperate environments. All of this is a mere 200 miles from Tucson, Arizona.

During the summer monsoon season this normally grey and leafless landscape of Sinaloan thornscrub transforms into a lush and green short-tree forest full of life. Fresh water flows everywhere. Normally stagnant or even dry rivers turn into powerful brown torrents carrying sediment, tree trunks, and the occasional rafter, toward the sea.

The Río Yaqui is the largest watershed in northwest México and is formed by two forks—the Ríos Aros and Bavispe. The

Aros drains almost the entire northern Sierra Madre including areas far into Chihuahua. The Río Bavispe drains the rest of the northern Sierra Madre, parts of northeastern Sonora, and even part of Arizona.

These mighty watersheds come together in the middle of nowhere, which is exactly where we wanted to be.

Floating down the Bavispe in 2004 we had a bit of a shock when we hit the Río Aros. It was huge. It was much bigger than we anticipated and made the Bavispe look like a small backwater.

As we looked up the Aros and its magnificent canyon, our longing to explore its secrets embedded itself. The Aros promised to be even wilder.

We knew the area was nearly devoid of human settlements until one reached the other side of the Sierra Madre spine in Chihuahua. That is a lot of wild, unexplored country!

That moment was the inspiration for what would be four more boating expeditions between 2005 and 2012 to thoroughly explore the Río Aros and its tributaries.





In 2005 we organized a large expedition with many full-sized rafts and a cadre of biologists with various specialties. This expedition helped to get the area recognized as an important biological region, and data we collected were used by Mexican biologists and resource managers to kill a dam proposal on the Aros shortly thereafter.

The importance of the area for wildlife has caught the attention of other biologists and conservationists. In 2003 the Northern Jaguar Project (NJP) purchased a 10,000-acre ranch near the Aros-Bavispe confluence in hopes of helping to protect habitat for breeding jaguars that inhabit the area. That reserve has grown to over 50,000 acres and is protecting breeding

jaguars and other wildlife in the region. NJP has also funded important research projects and has been instrumental in gaining recognition for the area in both the U.S. and México. All of our later rafting and overland expeditions would not have happened without their support.

The following photos are from our latest expedition in mid-July of 2012. This trip included two days in the car and nine days on the river. We were four biologists and two support crew floating on two inflatable kayaks and two full-size inflatable catamarans.

We successfully documented a high diversity of plants and wildlife and enjoyed scenery on par with the best in the world.

The trip had many unplanned adventures, but thankfully these always make the best memories.

For more images and information about the expedition, visit WildSonora.com

The Northern Jaguar Project is a U.S.-based non-profit partnering with Mexican counterparts to protect the northernmost breeding population of the western hemisphere's largest cat. For information: NorthernJaguarProject.org or scan the QR code with your smartphone for their latest jaguar video.



Pages 20-21: Summer rains mean the highest plant, reptile, and insect activity. Blooming *Oxalis latifolia*.

Far left: Along the Río Aros there is a higher density of black hawks (a species of concern in North America's Sky Island region) than any location the expedition has ever seen; black hawks feed almost exclusively on fish and amphibians, so their survival is directly tied to aquatic ecosystems.

Above: Big but tranquil water.



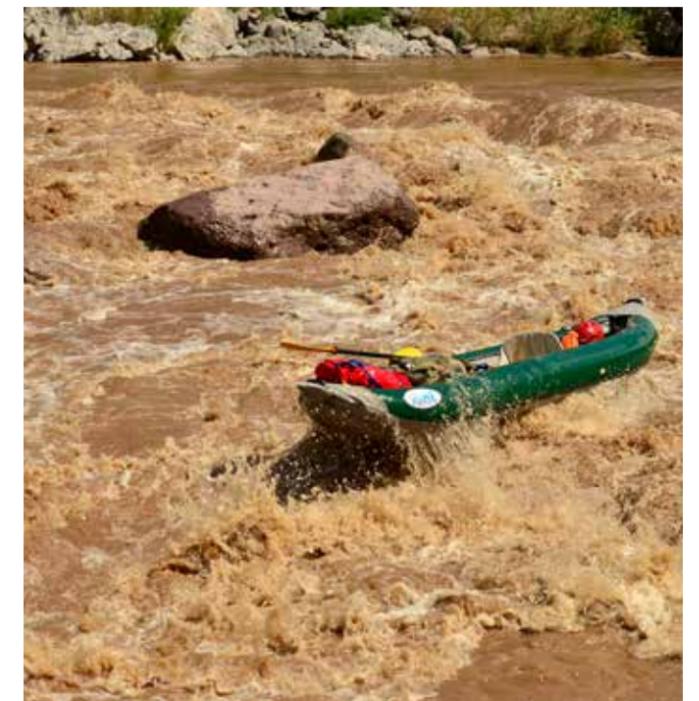
Clockwise from opposite page top: Black-necked garter snake (Thamnophis cyrtopsis) in its aquatic element. Gila monster (Heloderma suspectum), one of two venomous lizards in North America (the other is the beaded lizard, also found in Mexico). Singing male Mazatlán toad (Ollotis mazatlanensis). Sonoran whipsnake (Coluber bilineatus) basking on a warm rock

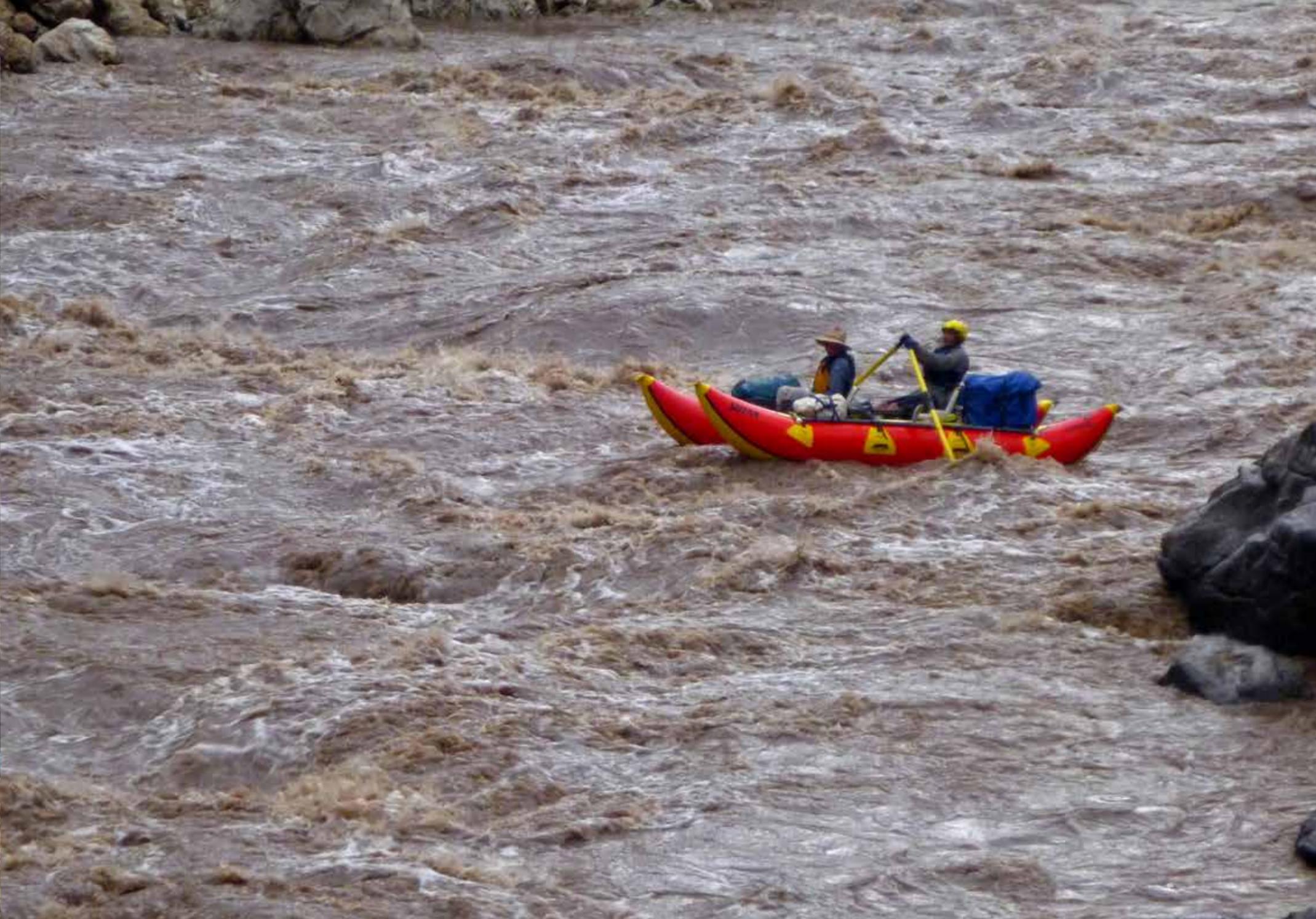


Left: La Morita, the largest rapid on the Río Aros at two very different flow levels. In April 2011 (top), a typically dry time of year, the flow was about 60 cubic meters per second (CMS), and we portaged our boats and gear through the channel in the foreground, which was perhaps moving at three CMS. In the bottom photo, during this expedition, the summer rains pumped the river up to a raging 250 CMS.

Above: One of the kayakers getting some serious water.

Right: One morning the river rose so quickly (after an overnight rain in a distant part of the watershed) that our camp was inundated and our inflatable kayak navigated the next rapids without benefit of a captain.





Left, from top: The author showing where the inundated camp was formerly pitched. Some of the crew relaxing after a hard run. The land is full of surprises, such as signs of previous industry—this stone wheel is part of a grinding mechanism, possibly for processing roasted corn (pinole).

Above: Aaron Flesch maneuvering his cat through a swift-water section—showing just how big the Aros is during the summer season.



Blood and leather:
MAASAI SHIELDS

RECORDING THE PAST TO PRESERVE THE FUTURE

South Rift Association of Land Owners

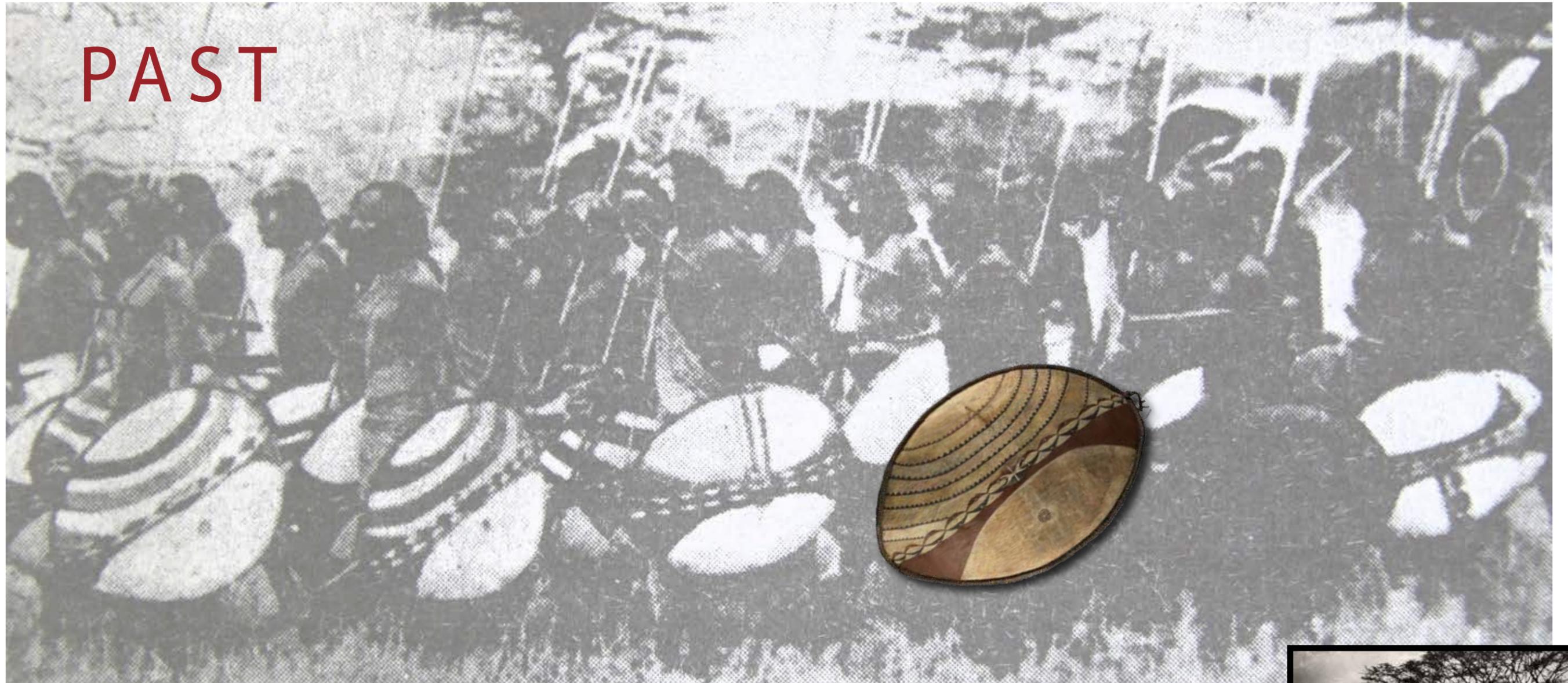


In October 2012, ConserVentures undertook its first TERRA Expedition at the request of the South Rift Association of Land Owners in southern Kenya (see Volume 1, Issue 2 of *t e r r a*). A TERRA Expedition is a hallmark of the kind of work to which ConserVentures is dedicated: responding swiftly to a need to conserve at-risk natural or cultural heritage in a community anywhere in the world, either through direct action or by recording something on film and in words (TERRA stands for Trans-Global Expedition for Rapid Recording and Action).

Elders of the South Rift Maasai recognized that several of their most iconic cultural heritage emblems were in imminent danger of disappearing. They asked ConserVentures to return to Kenya

to host and film a workshop for producing authentic Maasai war shields—something that had not been done in nearly 50 years. The last shield-bearing warriors are in their 70s now and want to pass on their knowledge to the next generations. The Blood & Leather project was born. ConserVentures raised the funds, and founders Roseann and Jonathan Hanson donated a month of their time in Kenya to help set up and then film and photograph the five-day workshop at the Lale'enok Resource Centre in Olkiramatian (the South Rift Valley). The next pages represent an excerpt from one of the publications that ConserVentures is producing, along with videos and posters, for the South Rift Maasai. Copies will be available to the general public in summer 2013.

PAST



According to their own oral tradition—which more or less jibes with modern anthropological and genetic studies—the Maasai began migrating southward from the region of what is now Sudan sometime in the 15th or 16th century.

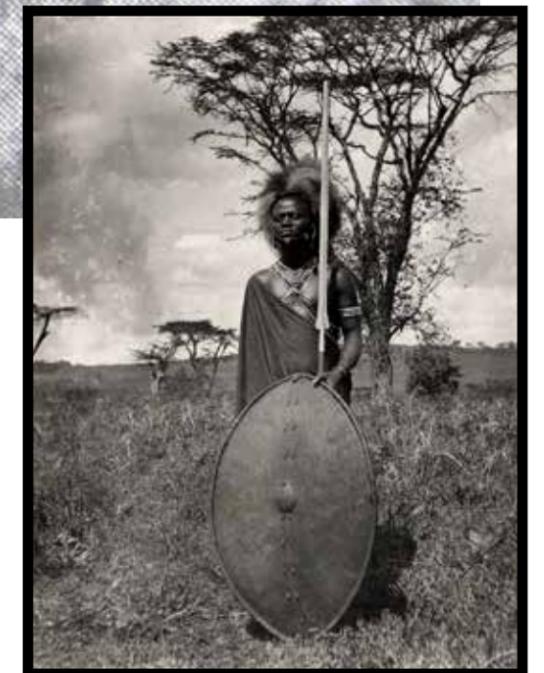
It is not known what triggered the move, although changes in climate and habitat likely played a part. In any case, the Maasai scattered the resident peoples they encountered like a hawk scatters pigeons (although some were absorbed), and for the next 300 years, the Maasai ruled a broad swath of the Rift Valley region in what is now Ethiopia, Kenya, and Tanzania. As semi-nomadic pastoralists, they moved their cattle in response to rainfall patterns, mimicking the migration routes of wild game and leaving little or no permanent impact on the land. When they needed more cattle—or when young warriors (morani) wanted to test themselves and indulge in a bit of sport—they raided other tribes, at times extending their

forays as far as the Indian Ocean coast. So pervasive was their reputation that even well-armed Arab slave-trading expeditions avoided Maasai territory (although part of the reason for this may have been that, unlike many nearby tribes, the Maasai never dealt in slaves).

Their legendary bellicosity might have even staved off European intrusion for a time, but in the 1880s and 1890s a series of disasters—epidemics of rinderpest and bovine pleuropneumonia in cattle and smallpox in humans, a severe drought, and, finally, intra-tribal warfare among different groups of Maasai (precipitated at least in part by disease and famine)—diminished Maasai power considerably. In the early 1900s, British colonial

officials exploited the nebulous and fractious nature of Maasai leadership to craft several treaties—one signed with the thumbprint of a 13-year-old “chief” whose father had been dead but days—that drastically diminished existing Maasai territories and further curtailed the ability of tribal members to move their herds with the rains. The increasingly forced sedentariness of Maasai life became a challenge that has yet to be fully solved.

Despite this loss of hegemony and territory, the tribe clung defiantly to its warrior culture. While the British discouraged (with mixed success) raiding other tribes, for at least the first half of the 20th century a young moran was free to test his courage in an equally honorable fashion—by facing down and



killing a lion while armed with just three implements: a double-edged machete, a spear, and a buffalo-hide shield.

The spear (*imperi* in Maa) comprised a long, double-edged, forged-steel blade, a wood grip, and a pointed steel butt section which balanced the weight of the blade and was equally useful for stabbing into the ground to plant the spear, or as a tip for throwing practice by simply reversing one's grip.

The oblong shield, or *elo'ngo*, was usually three to four feet tall, and typically made from rigid cape buffalo rawhide lashed with lighter, flat leather strips to a bent wood perimeter frame. A heavier vertical center strut provided reinforcement and a grip. The front was decorated with an intricate pattern in various combinations of red, white, yellow, black, and brown.

The functions of the machete and spear were pretty straightforward—but the shield had a secondary significance just as important as its primary use in defense against an enemy spear thrust or a lion's charge. The designs on the face were highly codified and revealed many details about the bearer, from his region and clan to his prowess as a warrior. Furthermore, the shield was the one possession commonly handed on to a chosen successor—not, as one would expect, a son, but more often a young man in a succeeding age group. Maasai boys are initiated into the warrior stage of life in groups of similar ages, and members of these groups remain closer to each other throughout life than they do to blood relatives. Thus a shield would be passed down strictly on merit rather than mere accident of birth. Even marks of personal bravery earned by the original owner would be painted over, so the new bearer might strive for his own.

The image of a Maasai *moran* crowned with an ostrich-feather or lion-maned headdress, spear in one hand, the other resting on a colorfully painted shield, is probably what 90 percent of us picture when asked to conjure an image of an African warrior. How could it be, then, that this shield—an implement so iconic its image is central on the Kenyan national flag—has not only disappeared from use, but is almost lost to memory among what is already nearly two generations of young Maasai men?

It happened so gradually that no alarm was raised until it was arguably too late. No longer able to move herds of cattle where they pleased through country well-populated with lions, and no longer able to raid freely, the need to carry a bulky and heavy shield faded. In 1977 Kenya abruptly banned all hunting in the country, making even the pursuit of cattle-killing lions around permanent villages a crime—and also cutting off access to wild buffalo hide. Faced with all this, and forced increasingly into a modern monetary system, many Maasai men unsentimentally sold their shields to tourists or collectors. Other shields dried

and curled in the corners of huts until simply discarded. Any vague intentions to construct new shields were easily put aside for more pressing priorities, such as surviving increasingly more frequent and severe droughts.

By 2003, when the photojournalist Elizabeth Gilbert published her stunningly photographed book *Broken Spears*, not a single one of her contemporary portraits of Maasai men included a shield. Even the gripping series of images capturing a traditional lion hunt carried out by a group of 14 warriors in Tanzania in the early 1990s reveals not a single shield, despite the extremely hazardous nature of their endeavor. Like an endangered species lost to the wild and found only in zoo exhibits, it seemed the Maasai shield had disappeared from the world except for those kept under glass and fluorescent lighting in museums, or sold now and then through high-end tribal art dealers. Worse yet, “Maasai shields” could still be purchased easily in any roadside tourist shop in Kenya or Tanzania—undersized, shoddily made, randomly painted shadow facsimiles of the real thing, the equivalent of a squeaking stuffed-toy representation of that endangered species bought from the zoo's gift shop.

And there things might have remained—and ended—but for the foresight of a few Maasai leaders in Kenya's South Rift Valley, who recognized what a tragedy it would be if knowledge of the Maasai shield faded away but for captions under grainy photographs and numbered inventory tags under exhibits; if those who had made and painted and borne shields in battle or against charging lions died without passing on their stories.

As luck would have it, their musings took place at a SORALO (South Rift Association of Land Owners, a Maasai community organization) board meeting, at which ConserVentures co-founder Roseann Hanson and Kenyan conservation biologist Dr. David Western were present. And as it happened, only weeks before Roseann and I had been discussing the lack of evidence of Maasai shields in any of the communities we had visited over the last five years, despite the continued abundance of spears. Dr. Western, who has been working with the Maasai in Amboseli since the 1960s, quizzed the Maasai men about their knowledge of shields, which was nearly nil, they admitted, despite several of them being close to 60 years old.

Roseann recognized immediately that this could be an opportunity for a ConserVentures TERRA Expedition, which are designed to rapidly record—and take action to preserve—wildlife, habitat, and significant cultural heritage in danger of disappearing. When she discussed the idea with the elders and other members of the South Rift Maasai community, they responded enthusiastically. The Maasai had the history but lacked the free time and means to record it; through ConserVentures, we had the means and skills to do so.



PRESENT



Continued from page 35 . . . One big question remained, though, and it was emblematic of the situation that no one present at that meeting could answer it: Were there any elders left who had not only carried shields, but could remember with accuracy the symbolism of the *sirata* (as the decorations on the front are known), and who could provide reliable stories of their use? Dr. Western's opinion was that we were ". . . right on the edge of being too late." He remembered scattered raiding still occurring when he began his research, and recalled those involved carrying shields. But even he didn't know for sure if any former shield bearers were still alive—and would be willing to talk about their experiences.

We found out much sooner than we expected. In October 2011 we brought a ConserVentures team to Kenya to conduct a workshop for the South Rift Game Scouts, a group of Maasai rangers who monitor wildlife activity and fight poaching across several Maasai communities—fulfilling the modern equivalent of the role of traditional warriors (photo, above, 2011). During the workshop, held at the Lale'enok Resource Center in the South Rift, we asked if anyone knew elders who might have had personal experience with shields. One of the young men raised his hand and said, "I think my father might."

This seemed altogether too easy (and we naively doubted a man this young could have a father old enough to retain such

knowledge)—but we made arrangements to visit Tonkei ole Rimpaine the next day. Late in the afternoon, with Albert Kusayo, the manager of the South Rift Resource Center, along as interpreter, we drove to Rimpaine's manyatta. As soon as Rimpaine walked up, we both knew from one look at him that we'd struck gold the first time out: an immense presence of strength and leadership—the essence of warrior—simply radiated from the man. And after meeting four of his five wives, we realized why he could have such a young son (and in fact has much younger children), even though he later showed us the government document recording his birth in 1941. Most importantly, after we sat down and asked about the health of his family and cattle—an inviolate first requirement of any



conversation in Maasai country—and explained why we were there, his face slowly lit up, and he began a long account of his experiences as a shield bearer, so spontaneous, unaffected, and deeply detailed that it could not possibly have been made up or embellished. Albert struggled to keep up the translation, and it was obvious from his frequent expressions of wonder that he had no more knowledge of the subject than we did.

Rimpaine, who is chairman of the Olkiramatian Maasai community’s Conservation Committee, agreed completely that losing the history of the Maasai shield would represent a cultural tragedy, and indicated he would be happy to participate in a formal interview. He also mentioned an age mate born in a nearby community who had been a shield bearer, and whom he thought would also be happy to help. This was luck beyond our wildest hopes—but then Rimpaine dropped a bomb on us. Why, he mused, should we stop at producing a written record of shield history and symbolism? Why not organize a workshop to make new ones?

Warming to his subject, Rimpaine wondered if such a workshop could inspire a new generation of young Maasai men to renew a much-needed pride in their cultural history, while at the same time perhaps creating a way to earn income from genuine, finely crafted and authentic cultural artifacts. At the very least, the successful recreation of a few shields would comprise a valuable display for a Maasai heritage center and annual festival, which are coincidentally being planned for a 2013 debut at the nearby Ologesailie archaeological site. There is a renaissance of cultural and nature conservation growing in the South Rift, largely spearheaded by the dynamic John Kamanga, the young elected chairman of the Olkiramatian community and director of SORALO. John is quick to point out that culture and nature, for the Maasai, are inextricably tied and by preserving one, it is preserving the other. Although the shield and spear are symbols of war and hunting, it’s important to know that the Maasai respect for conservation and wildlife is real, and embedded in their culture, especially through the act of dealing with predators face to face. And there’s a flipside: predators like lions steer clear of communities where they have to deal with aggressive warriors, reducing both predation on livestock and subsequent predator killing. In this case, the so-called “balance” of nature and man would be true.

We left with Tonkei’s promise to meet with us in two weeks along with his age-mate, Karinte ole Manka. Our heads were spinning.

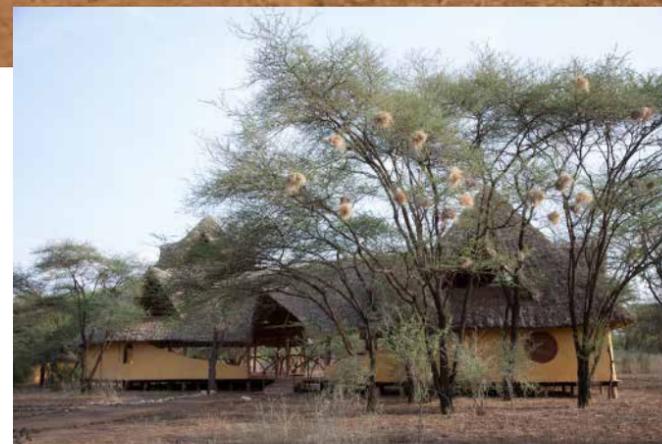
A fortnight later we spent an entire day with Rimpaine and Manka at the Lale’enok Resource Center. The two looked at old photographs we’d brought of Maasai warriors carrying shields, and were able to identify their home region. We digitally

recorded their discussions, which included the minute detail of how shields were constructed—right down to the different kinds of wood used for the perimeter frame and central strut. We then brought out blank art paper and colored pencils, and they spent a couple of hours slowly drawing a facsimile of their clan pattern. It was fascinating to watch as the two reinforced each other’s memory of the design and colors, until they arrived at something clearly representative. It was even more fascinating to watch the reaction of our young interpreters, Albert Kusayo and Joel Njonjo, whose interest and excitement grew palpably with each bit of information and every side story of raiding and lion hunting.

Rimpaine and Manka had apparently been discussing the idea of making new shields, because they had a plan all laid out for us. First, they reasoned, it would be impossible to obtain a fresh hide from a cape buffalo (already-tanned leather is of no use), but a fine substitute could be had in a strong, older black bull, and they suggested buying two—which would not only provide enough material for several shields but of course would also provide food for the workshop participants. Roseann and I looked at each other and thought simultaneously, *This will make for an interesting fund-raising plea.* They then suggested that a two-week period would be needed for the entire process, since the raw hide first had to be buried to season in the large dung heap that is the central feature of the thorn kraal where the cattle and goats spend each night. They listed the materials needed to make paint for each of the *sirata* colors—a project in its own right, since, for example, the blue and black are made by burning livestock bones to ash, separating the different colors, and mixing with milk and blood, respectively; the red is made by mixing ochre with blood. As we scribbled notes about tree species, bones, and cattle prices, Roseann and I were already thinking of when we could schedule the workshop, which volunteers we might solicit to help, and, of course, how we would go about raising funds for the whole thing. One fact was accepted without a word being said: This was a project in which we and anyone remotely involved with ConserVentures would be thrilled and honored to participate. — Jonathan Hanson

* * * *

We did return one year almost to the day, and spent over a week with Rimpaine, Manka, and six others as they meticulously re-created two gorgeous shields in late October 2012. The overall time was compressed for us since several hides had been prepped ahead of our arrival, though we did record the killing, skinning, and hide-prep of a cow (not a bull, like we had thought . . . we have yet to take up that little detail with the team!). The pages that follow are an excerpt of the book we are producing for the community. We are also editing a documentary film of the entire process.



Above: The artisans, from left: Majakus ene Saitaga, Rijano ene Ntetiyan, Sipala ole Mpoee, Moyiange ene Sampao, Marakiti ole Kalempo, Ntetiyan ole Pasoi, and former shield-bearers Tonkei ole Rimpaine and Karinte ole Manka. Not pictured: Bebi ene Mugesa.

Counterclockwise from left: The meeting hall of Lale’enok Resource Centre in Olkiramatian, South Rift, Kenya. Manka, Rimpaine, and Mpoee working on the frames. Sketches from the 2011 interview with Manka and Rimpaine describing the Olkiramatian shield. The group was not able to source the yellow color in time for this workshop since it comes from Tanzania.





PAST



PRESENT



LEATHER



WOOD



PIGMENT



FRAME



LASHING



DESIGN



FUTURE

*Research Material
Acknowledgements
About SORALO*



PIGMENT

Traditional pigments comprise primary colors created from local or trade-available substances. The main colors seen historically on Maasai shields are red, black, white, blue, and yellow. The only color the group was not able to re-create was yellow (olbukoi), which comes from the bark of a tree that grows in the Tanzania highlands just south of the Kenya border.

At right, Tonkei ole Rimpaine and a youth from Ntetiyan ole Pasoi's boma prepare bones to be burned overnight. The rib and leg bones are from a mix of wildlife and cattle, collected from the nearby bush.



The bones are burned in a hot fire all afternoon, then left overnight to cool. In the past, guilds of artisans undertook specific tasks such as gathering and making pigments, working leather and wood, and creating metalwork like spears and knives. Today, the only guild still creating crafts are women's beadwork groups. It took much discussion and canvassing of the workshop group's members to recall the proper bones, other supplies, and techniques to create the correct hues.



Once cooled, the bones are separated into piles to create different colors.

The bones which contain marrow produce the prized blue-gray.

The layer just beyond the marrow, under the surface, produces a pure black.

The group went to the nearby Uaso Ngiro River to gather half a dozen large stones, selected for their flat surfaces and hardness.

The rocks are used in pairs to grind the bone into powder.





This cross-section of bone shows the blue-gray interior that is used to create the blue pigment.

It took four people about three hours to process enough black and gray pigment for two shields.

The white pigment (not shown) is a limestone powder purchased at the weekly village market. It comes from Enkeju Enturoto—"the stream of white lime"—in the Oldorko area in Kenya's Rift Valley, north of Olkiramatian.



The black and gray parts are painstakingly separated from the bones and carefully ground between rocks into very fine powder.

The group uses paper grocery-style bags laid flat to collect the pigments, then transfer them to plastic baggies for safe-keeping.

In the past, the Maasai would have used gourds as containers.



Red ochre powder bought at the local market. Ochres are among the earliest pigments used by mankind and are derived from naturally tinted clay containing mineral oxides. Chemically, it is hydrated iron oxide, mineralogically known as limonite. Modern artists' pigments continue to use the terms "yellow ochre" and "red ochre" for specific hues. Red ochre (Fe₂O₃) is the anhydrate of yellow ochre, which turns red when heated because heat drives off the water ligands. (Source: Wikipedia)

Ochre would have been acquired by trade in the past. Today it is bought at the weekly village markets.



After slaughtering the cow to make leather, the blood is saved in whatever containers are at hand. In this case, it is an old Famous Grouse bottle (top) and a champagne bottle (bottom). Fresh, whole milk is brought from a nearby boma. The animal proteins in the milk and blood help bind the pigment to the leather.

Red = oloyokie. Red ochre powder mixed with blood.

Black = olorok. Carbonized bone meal mixed with blood.

White = enturoto. Limestone powder mixed with milk.

Blue = orpus (or orbus). Burned marrow bone meal mixed with milk. Due to an error in the grinding process, too much black was mixed with the gray, so some commercial blue pigment powder was added to the mix (see above, bottom right container).





LASHING



Sipala ole Mpoë uses metal rods heated in a fire to burn holes around the perimeter of the rawhide shield shape.

The holes are for the goatskin lashings that bind the shield to the outer wood frame.



Several of the women assisted Mpoë by maintaining a hot fire and by alternately keeping one of two pokers heating in the flames.



The process is slow and tedious. The holes are about 5 millimeters in diameter, and spaced about 1 centimeter apart.

Tonkei ole Rimpaine inspects the first rawhide piece with its perimeter holes completed.

Each shield is sized to the warrior who will carry it: they are meant to cover a man from his neck and chest down to his knees. In this group, the shields were sized to the two shield-bearer warriors, Rimpaine and Manka.



To keep the rawhide supple when it's not being worked on, it is buried in dirt.



Rimpaine holds a goathide strip while Mpoe scrapes off the hair. This was the process that was most time-consuming and tedious for the group.



Many meters of goathide strips are needed to bind the rawhide to the wood frame.



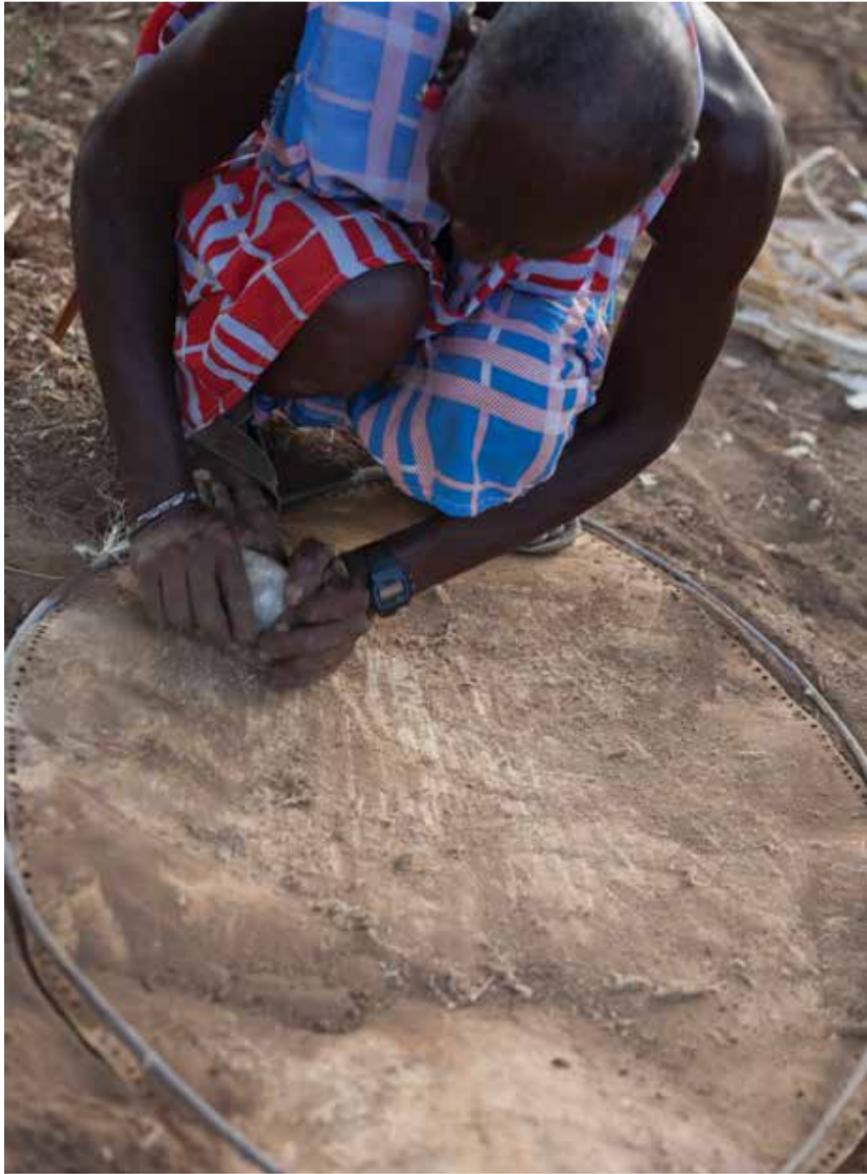
Goat hair flew everywhere and got into everyone's clothing and onto their skin.

Ntetiyan ole Pasoi gathers up some of the completed goatskin strips to estimate the amount needed to bind one shield frame (laid out in the dirt above the buried leather) to the rawhide face.



Pasoi uses pieces of plastic twine to temporarily bind the frame to the rawhide face while it is still buried, keeping it flat and easy to manipulate.





Pasoi walked down to the Uaso Ngiro River to retrieve several fist-sized, rough-textured stones with which to scrape the face and backside of the rawhide before the lashing process begins.



The abrasive stones remove remnants of the hair and pieces of outer skin, making the shield face more smooth for the paint.

The first wrap is the most important—the end of the thong must be incorporated into the subsequent lashing so it does not come unwound.



Moyiangei ene Sampao assists Pasoi with the lashing process. It takes many hands to complete the complicated lashing, which has a criss-cross pattern.



Cultural Heritage

One of the hidden outcomes of the shield workshop was explained to us by South Rift Association of Land Owners executive director John Kamanga, who is also the elected chairman of the local Olkiramatian community. “Young children and adults alike observed the process throughout the week we worked on the shields. They were able to spend time with the elders, appreciate their knowledge, and learn from them. We are still a people who learn by observation and by rote.

“This workshop has proven that we have much to share, and also much work to do to preserve important aspects of our famous culture. We will be hosting more of these workshops in the future, in our community and at our cultural fair and museum for the general public.”

ConserVentures will be printing books, posters, and producing DVDs and other materials for the community’s fair and museum. In 2013 we will return to the region to assist with the next phase of their cultural preservation project: blacksmithing.

For more information about the South Rift Maasai community, visit:

www.SORALO.org

or use your smartphone to scan the QR code below.



Young boys at the boma of Ntetyian ole Pasoi spent the entire workshop observing and learning, quietly but intently. Maasai children are accustomed to learning by observation and rote.

Image by Roseann Hanson





Photos: Down-time in the Rio Aros (courtesy the Rio Aros Expedition (left); Bryan Reynolds relaxing after a full day chasing butterflies in the North Dakota Badlands (below).



contributors . . .

As a child, **BRYAN REYNOLDS** developed a passion for nature while on his family's farm in northwestern Wisconsin. After serving 20 years in the United States Air Force, he retired to pursue a career in nature and wildlife photography. Bryan's list of editorial clients is extensive and

includes publications of the National Geographic Society, the Smithsonian Institution, The Nature Conservancy, the Xerces Society, the American Arachnological Society, the Lepidopterists' Society and many books, postcards, calendars, nature center/museum displays, and magazines such as Outdoor Photographer, Discover, Nature Photographer, Highlights for Children, Photo Techniques, Birds and Blooms and many more. He is also the founder, president and executive director of the non-profit Butterflies of the World Foundation (www.botwf.org), whose mission is to improve public awareness of the conservation of butterflies and butterfly habitat, and to enhance public enjoyment of butterflies through educational programs and presentations using world-class photography. His butterfly photography expeditions have now taken him to 13 U.S. states and five countries. He has been featured in several magazines and is a regular guest on the popular Oklahoma Gardening program. During 2011 and 2012 he gave 85 fast-paced and entertaining programs to thousands of butterfly enthusiasts. Bryan's passion for butterflies and their conservation comes through enthusiastically during his programs.



SKY JACOBS is a Southwest native whose roots are deeply embedded in the Sky Islands, Madrean Highlands, and Sonoran Desert. He has worked primarily as a naturalist, administrator, and website developer for many organizations, including Watershed Management Group, Sky Island Alliance, the University of Arizona, SWCA Biological Consultants, National Park Service, and Arizona Mining Reform Coalition. Sky tries to protect the region's biodiversity through conservation action and education, as well as his own lifestyle choices. Sky spends his time exploring the wildest and most remote parts of Arizona and Sonora, attempting photography, studying birds and plants, brewing beer, and playing with native vegetation in his yard. See his photography and information about the region at www.WildSonora.com.

JONATHAN HANSON has explored North America, Europe, and Africa by boot, bike, kayak, motorcycle, and vehicle. He has published a dozen books, gaining several awards along the way. He has also written for nearly two dozen magazines, was a correspondent for Outside Magazine, and co-founded and was executive editor of Overland Journal from 2007 to 2011. He loves the technical aspects of overland travel almost as much as the travel itself, and has a particular obsession for flashlights, and knives, and tents . . . For several years Jonathan operated a sea kayak guide service, leading tours in Mexico's Sea of Cortez, and he teaches wildlife tracking, nature writing, and photography. He is an elected Fellow of the Explorer's Club. He is currently co-director of Overland Expo, and of ConserVentures Charitable Organization, promoting exploration of the planet and conservation of its natural and cultural heritage.

For more than two decades **ROSEANN HANSON** has worked throughout the American West, northern Mexico, and East Africa as a naturalist guide, journalist, and conservation program director. Her diverse work has involved thousands of miles of overland travel experience, from the deep backcountry of Mexico's Sierra Madre to Ethiopia's Omo Valley, and from Arctic Canada to the plains of the Serengeti. Whether leading nature tours, guiding 4WD adventure safaris for ConserVentures, or teaching animal tracking for conservation groups, she enjoys integrating conservation, science, outdoor skills, cultural awareness, and travel into her work. In 2009 she founded Overland Expo, one of the world's largest do-it-yourself adventure travel events. She is a fellow of the Royal Geographical Society, and has a weakness for leopard spots.



terra view



Pita bread and vegetable vendors chat in the Khan el-Khalili market in Cairo's ancient quarter. 2/15/2012 - 8:14 am. Canon 5D Mark II, 200mm f/4.0 at 1/125 second (400 ISO). Jonathan Hanson

We can all write checks . . .



. . . it takes commitment to get out and do things.



As explorers, we like to become engaged with people and projects we discover as we travel. Whether building cabins for a jaguar reserve in Mexico, helping a Maasai community protect wildlife and preserve their culture, or delivering donated equipment to a small Mongolian nature park, we support conservation, face to face. Join ConserVentures on an expedition or volunteer on your own at a community project. Contribute your skills. Make a difference. Change your life.

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*Clockwise from far left: Ntetiyan ole Pasoi assumes the stance of a warrior with a newly made war shield (Roseann Hanson); Maasai elders discussing posters of historic shields housed at the British Museum (Roseann Hanson); rest stop on the Río Aros, Sonora, Mexico (Sky Jacobs); Reakirt's Blue butterfly (Bryan Reynolds).
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