GRAND CANYON TRUST COLORADO PLATEAU

Advocate

FALL/WINTER 2015

Tribes Unite to Protect the Bears Ears

PLUS

Community Conservation from Casamance to the Four Corners

The Future of Lake Powell

MESSAGE from the Chairman of the Board
STEVE MARTIN

In 1985, when the Grand Canyon Trust was formed, the situation on the Colorado Plateau looked almost hopeless, with coal-fired power plant emissions enshrouding views, Glen Canyon Dam damaging beaches and riparian habitats in the Grand Canyon, 16 million tons of uranium tailings leaching into the Colorado River in Moab, and irresponsible grazing practices destroying fragile forest and desert ecosystems. If we were going to protect the vast natural and cultural landscapes and lifeways of the plateau, land management practices and policies had to change. So a group of visionaries came together on a river trip through the Grand Canyon and pledged to take action, founding the Grand Canyon Trust and melding science, principle and savvy to defend the towering red rock cliffs and plummeting canyons we all cherish.

This edition of the *Advocate* celebrates the 30th anniversary of the Grand Canyon Trust, and highlights some of its many achievements.

In the next 30 years, an even greater effort is needed to protect this place many call our greatest national treasure—and some of us are privileged to call home—and that's where you can help. Rampant energy development, uranium mining, ill-conceived commercial tourism, climate change and drought, inefficient public lands policies, and paltry funding for land management all threaten this beloved region.

Your engagement and support are vital to defending the priceless landscapes of the plateau. I invite you to enjoy this issue of the *Advocate* and to help us achieve our vision of a healthy and prosperous region in the future by supporting the Trust with a financial contribution. Whether you've been with us all along, or you've just joined as a new member, your involvement and your gifts are essential to our success. Together, we can protect the diverse resources and communities of this special place for another 30 years, and beyond.

CELEBRATING 30 years
GRAND CANYON TRUST

Protecting the wild heart of the West since 1985

ON THE COVER
Horse riders from the Bit'ahnii Clan reenact the historic arrival of their ancestors at the Bears Ears summer camp. TIM PETERSON
timpetersonphotography.com

EDITOR'S NOTE
The views expressed by the contributors in this issue are solely their own and do not necessarily represent the views of the Grand Canyon Trust.

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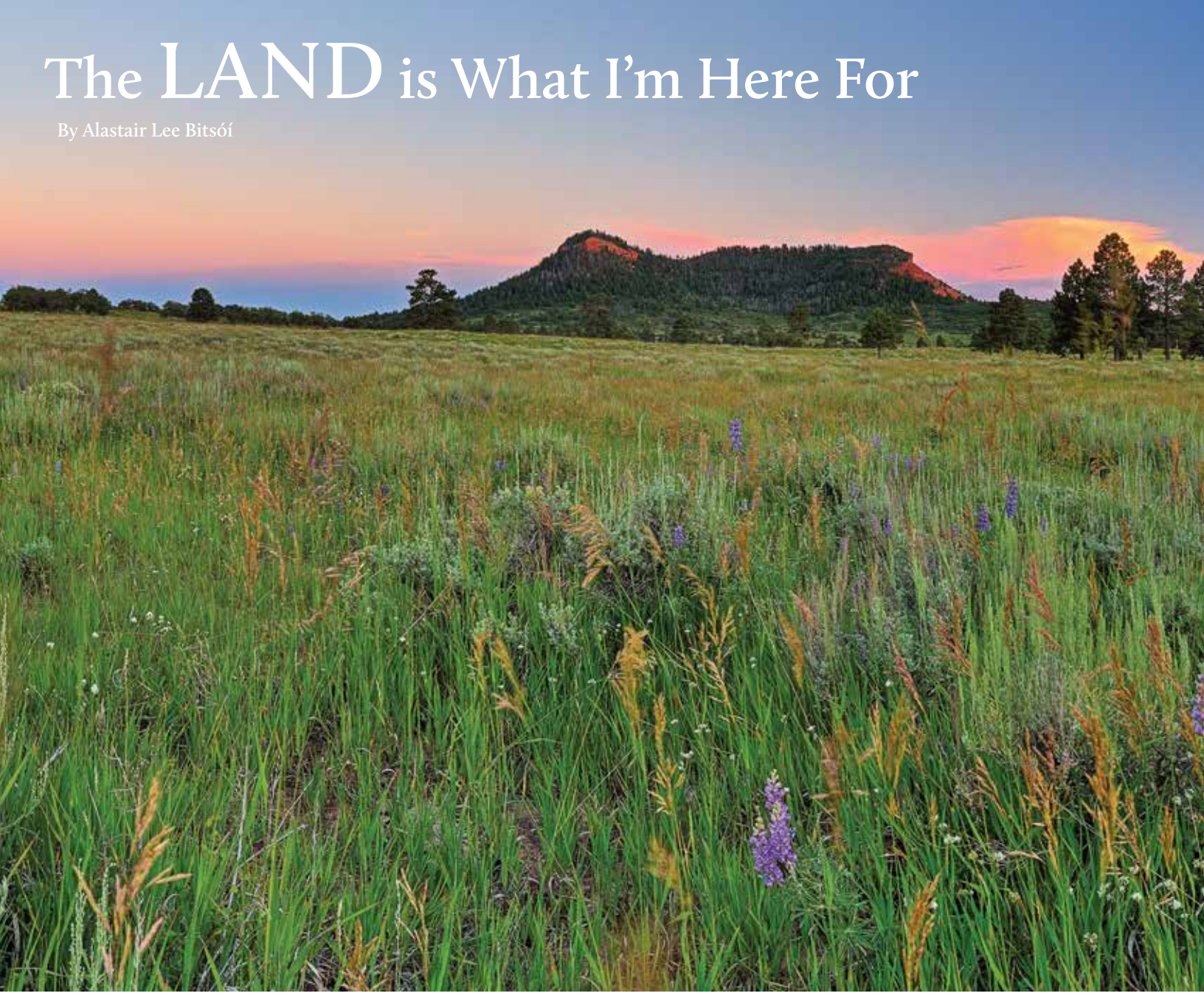
The LAND is What I'm Here For

By Alastair Lee Bitsóí

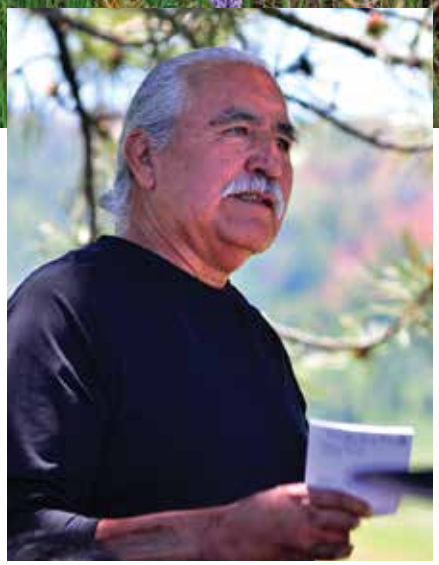


Malcolm Lehi remembers the stories his father told him about the Bears Ears Buttes and the deep cultural ties of the Ute Mountain Ute Tribe to the mountainous knolls, canyons, forests, water and wildlife of the Manti-La Sal National Forest and surrounding public lands.

It's where Lehi, a lawmaker and member of the Ute Mountain Ute Tribal Council, harvests chokecherries, knowledge passed down by his father, who taught Lehi where to find them. It's mid-July and the berries are about the size of a quarter.

"They're ripe right now," Lehi says, adding that he told Willie Grayeyes, of Navajo Mountain, Utah, about the wild berries. Both men were attending an intertribal gathering of cultural leaders and Native families connected to the Bears Ears who want to see the region protected.

The Bears Ears Buttes at sunset. TIM PETERSON



Utah Diné Bikéyah board chairman Willie Grayeyes (above) and Malcom Lehi, Ute Mountain Ute Tribal Council member, address assembled federal and tribal officials at the Bears Ears summer gathering. TIM PETERSON

After learning the news, Grayeyes borrowed Lehi's horse and rode west through the wet sagebrush and pine trees, away from the Bears Ears Buttes, to a hogan—a traditional wooden structure made from logs and mud—to see the berries for himself.

The hogan, according to Lehi, is where his own family camped during traditional seasonal migrations. Known as "hooghan nimazi" in Navajo, the hogan is a Navajo cultural site that once sheltered 19th century Navajo headman Chief Manuelito and the Bit'ahnii (Within His Cover) Clan. It

Eric Descheenie, co-chair of the Bears Ears Intertribal Coalition, addresses the Bears Ears summer gathering, including Kevin Washburn, Assistant Secretary for Indian Affairs at the U.S. Department of the Interior, Arthur "Butch" Blazer, Deputy Undersecretary of Agriculture in charge of the Forest Service, and Jonathan Jarvis, Director of the National Park Service. TIM PETERSON

lies just a few miles away from Shash Jaá ("the Bears Ears"). Manuelito, who was born in 1818 at the Bears Ears, is best known for his role in brokering the 1868 treaty of Bosque Redondo, allowing the Navajo to return to their homelands in the Four Corners; he encouraged young Navajos to climb the educational ladder and protect the Navajo people. In her 2007 biography, *Reclaiming Diné History: The Legacies of Navajo Chief Manuelito and Juanita*, historian Jennifer Nez Denetdale, herself a descendent of Manuelito, says: "Today, for both whites and Navajos, albeit in different ways, Manuelito remains a symbol—the spirit of Navajo resistance."

The hogan is one of over 100,000 archeologically and culturally significant sites in the Bears Ears area (see map on page 8), according to archaeologists who study the region. Tribes fear that looters seeking to cash in on Native American artifacts will further desecrate cultural sites in the area, many of which have already been ransacked.

The Bears Ears are significant to both Lehi and Grayeyes, whose ancestors hunted deer, elk, and wild turkeys here, as their relatives do today. Tribal members harvest medicinal herbs such as sage, juniper, and mountain tobacco, as well as edible wild onions in the area. Some of these herbs are still used for healing in the Ute Mountain Ute Bear Dance and in Navajo ceremonies like the Blessing/Beauty Way.

Many Navajos hid out here from Kit Carson's raiders, avoiding the Long Walk, a testament to the area's ruggedness and remoteness.

Both men will tell you how their ancestors migrated with the seasons up and down the Abajo Mountains—from the canyon country near the banks of the San Juan River to Cedar Mesa and up to the Bears Ears Buttes.

"I want to take the aboriginal lands back to our people," Lehi said, explaining that Ute Mountain Utes historically herded livestock in the high country.

The Navajo call the region "Náhonidzó" ("the escaping place"); many Navajos hid out here from Kit Carson's raiders, avoiding the Long Walk, a testament to the area's ruggedness and remoteness. Presently, the U.S. Forest Service, Bureau of Land Management, and National Park Service jointly manage the area. This, however, could soon change.

The Bears Ears Intertribal Coalition, led by a core group of five tribes and formally supported by 25 Colorado Plateau tribes brought together by Native non-profit Utah Diné Bikéyah, is urging President Obama to protect approximately 1.9 million acres of public lands by designating a new Bears Ears National Monument co-managed by the tribes. Utah Diné Bikéyah has done extensive groundwork through local community organizing, including collecting data and documenting interviews for cultural mapping of the Bears Ears region. Many of the tribes have passed resolutions in support of the idea within their respective legislatures. It's the only Native American-led push for a national monument in the 109-year history of the Antiquities Act.

"The land is what I'm here for," added Lehi, who had disassembled his weekend camp and was waiting for Grayeyes to return from his berry hunt to load his horse into its trailer.

Representatives of the Forest Service, Bureau of Land Management,

Bureau of Indian Affairs, National Park Service and high-ranking Obama administration officials attended the July Bears Ears Intertribal Coalition meeting, which included members of the Ute Mountain Ute, Northern Ute, Hopi, Zuni, Navajo, Cochiti Pueblo and other tribes. The meeting took place in a meadow, just below the Bears Ears Buttes.

According to Kevin Washburn, Assistant Secretary for Indian Affairs at the U.S. Department of the Interior, the Obama administration is committed to upholding trust, accountability, and treaty obligations to Indian tribes.

"We share the desire of tribal leaders to protect sacred places and leave the earth better than we found it," Washburn said in a Department of Interior blog post days after the meeting.

Instead of broad general protection, tribes want to ensure a national monument will also include a place at the table for them to work with federal agencies to help manage the land. Tribal leaders recognize that a Bears Ears co-management proposal presents an opportunity for them to come together for the first time in a way that demonstrates their presence and sovereign power to help manage public lands to which they have unique cultural attachments.

Lehi was initially reluctant to join forces with Utah Diné Bikéyah because he worried the monument proposal disproportionately favored Navajo interests. But after the first Bears Ears Intertribal Coalition meeting, Lehi began to understand that the proposal represents an opportunity for the Ute Mountain Ute to help co-manage a Bears Ears National Monument. After all, the area includes Ute Mountain Ute ancestral lands.

Making sure the coalition speaks with one voice is critical, Lehi said, noting that this approach is the coalition's best bet when it comes to countering possible opposition from Utah congressional leaders, as well as state leaders, ranchers, off-roaders and the uranium and oil and gas industries. Speaking with a united voice has already resulted in more tribal support, with the effort focused on protecting the region from further natural resource exploitation. Across the region, non-profits are standing behind the tribes and their leadership in support of protection.

Campfire bread being prepared and venison readied for roasting at the Bears Ears summer gathering. Nadia Armajo sings at an April Bears Ears gathering in Bluff, Utah.

ABOVE: TIM PETERSON, BELOW: DONOVAN QUINTERO

According to Lehi, the Ute Mountain Ute Tribe has banned uranium and oil and gas development on its reservation and is pushing for a similar ban in the Bears Ears proposal.

The older Grayeyes, who is Utah Diné Bikéyah's board chairman, had much more to add about the Bears Ears proposal.

According to Grayeyes, Manuelito's Bit'ahnii people weren't the only ones who lived in the Bears Ears. Other Navajo clans, including the Hashtłishnii (Mud) Clan and Hooghan łáni (Many Hogans) Clan, trace their roots to the region as far back as 1,003 AD.

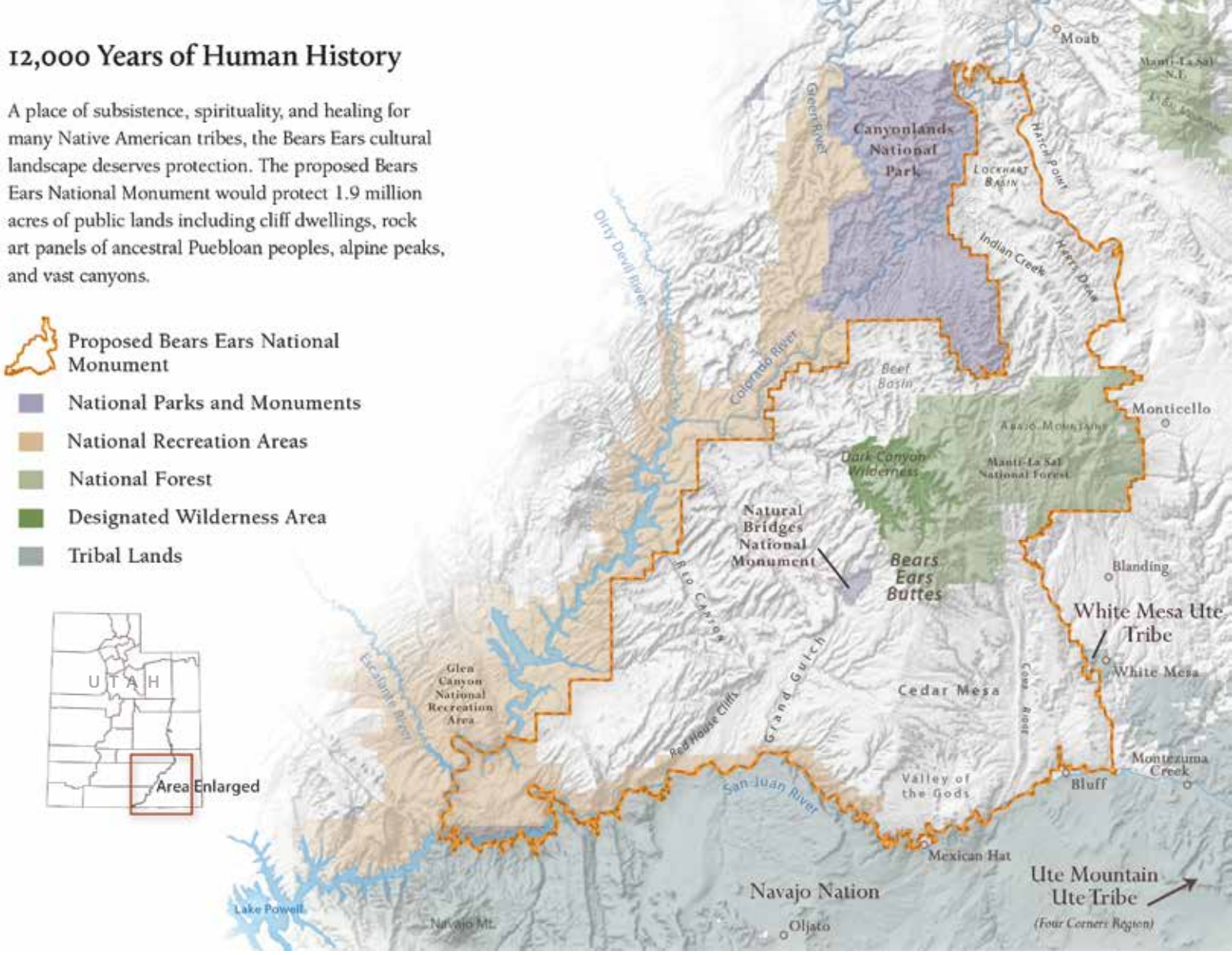
"I'm sure there are other dwellings still existing elsewhere…in these canyons, that are probably earlier than that," Grayeyes said, noting that interviews with elders and medicine men from Navajo communities in Utah referenced longstanding connections with the canyon lands and forests in and around the Bears Ears.

Physical presence and evidence of Navajo occupation was enough for the coalition to lobby the Navajo Nation for support of the initiative, especially since looting, grave robbing and vandalism are rampant under current Forest Service and Bureau of Land Management control.

In April 2013, the Navajo Nation and Utah Diné Bikéyah proposed the creation of a conservation area with

12,000 Years of Human History

A place of subsistence, spirituality, and healing for many Native American tribes, the Bears Ears cultural landscape deserves protection. The proposed Bears Ears National Monument would protect 1.9 million acres of public lands including cliff dwellings, rock art panels of ancestral Puebloan peoples, alpine peaks, and vast canyons.



wilderness designations. This past spring, the Navajo Nation Council passed legislation supporting permanent protection for the area.

"I think this is a unique, one-of-a-kind landscape that we need to designate as a monument," Grayeyes said. "There is no other place on earth that compares to the composition of this land."

With no plan to protect it, non-Native Americans would develop the land, Grayeyes said, explaining that any economic development in the area would deface its natural beauty. "Once you disturb a landscape of this magnitude, you will never, ever preserve [or restore] it back to its natural state," he added.

Once the Bears Ears is designated a national monument, the need for law enforcement to patrol and monitor sacred sites would increase, Grayeyes said.

Congressionally, the coalition faces the threat of amendments that would weaken the Antiquities Act of 1906, a federal law that grants U.S. presidents the authority to create national monuments from public lands to protect natural, cultural or scientific features.

"There needs to be a position from the tribes to show Congress not to make any amendments," Grayeyes said, adding that the act is key to protecting the Bears Ears region. "In this case, [the act is] 100 percent applicable to what we're doing and they want to limit or eliminate this instrument, which is so important to Native Americans."

Grayeyes is calling on all Native Americans to lobby Congress not to amend the act.

Evangline Grey of Westwater, Utah, an isolated community in the Aneth Chapter of the Navajo Nation, also attended the July coalition gathering. Grey is of the Bit'ahnii Clan, the same lineage as Manuelito. Protecting the Bears Ears is important for her and the 120 or so Navajos that live in this small community. The Bears Ears region is the ancestral homeland of at least 29 Westwater families.

"If this Bear Ears continues to be another open area for miners and for oil and gas...the whole place is going to be ruined," Grey said. "This is why we are asking the president to sign this into a monument. That way it can be protected."

According to Grey, converting the area into a national monument would allow Native people to continue to travel

Above: Stella Eyetoo, age 94, the oldest living Ute elder, shared her connection to the Bears Ears with the coalition.
Below: Meeting attendees water their horses in a pond in the meadow below the Bears Ears.
PHOTOS THIS PAGE: DONOVAN QUINTERO

to the Bears Ears and to other cultural sites to offer prayers, collect herbs, harvest wood and hunt wild game. Grey noted that current management of the area is unduly influenced by non-Native ranchers and off-roaders.

Jonah Yellowman, of Halgaitoh Wash, Utah, wasn't sure about the coalition until he began thinking of how the proposal would impact him as a Native American Church roadman—a priest who conducts all night peyote ceremonies, a common practice among Navajo and Ute tribal members.

Yellowman relies heavily on the Abajo Mountains for wood sources to conduct his Native American Church ceremonies, and must first get a permit through the Bureau of Land Management or Forest Service before collecting firewood or harvesting Douglas firs for tipi poles.

The evening before members of the intertribal coalition, federal, state and tribal leaders and their families assembled at the Bears Ears, Yellowman conducted a Native American Church service on the site and prayed for all life forms.

He recounted how the animal and plant spirits were thirsty for blessings and how he offered prayers, songs and tobacco in their honor. This explains why deer came near the coalition's camp during the intertribal gathering, Yellowman said.

"Where I live [in Monument Valley] we don't have trees, plants or medicines," Yellowman said, adding that preserving and protecting the Bears Ears is important for tribal sustenance and survival. "We're not going to lose what we have—our prayers and traditions."

This long history and myriad tribal stories and connections have united the 25 tribes of the Bears Ears Intertribal Coalition.

"We've never been given this opportunity to speak on behalf of our sacred sites on public lands," said Hopi Vice Chairman Alfred Lomahquahu. "This landscape has been called home by so many Native American cultures over several millennia, so it is the right approach to protect the Bears Ears landscape as a coalition of tribal nations."

Alastair Lee Bitsóí is a freelance writer from Naschitti, New Mexico. He worked as a reporter for the Navajo Times *from 2011 to 2015 and is currently pursuing a graduate degree in public health at New York University.*

DONOVAN QUINTERO

Community Conservation from Casamance to the Colorado Plateau

REVITALIZING LANDSCAPES, LIVELIHOODS AND CULTURES

By Kyra Busch with Grazia Borrini-Feyerabend and Tony Skrelunas

Ten years ago, fishermen in the Casamance region of Senegal decided it was time to take action. Fish stocks were dropping at alarming rates. Youth were leaving the villages. Women were complaining that "the good life" had gone.

For generations, the mangrove estuaries of the Casamance River had provided them with abundant fish and shellfish that, along with traditional rice cultivation, were a staple source of food and income for the residents of the region. Fishing rules had always been governed by traditional laws, cultural practices and taboos. No one, for instance, would have been foolish enough to disturb the *bolong Mitij*, an area where a powerful spirit lived and no one was allowed to fish, or even walk, let alone cut poles from the mangroves.

But in 1960, as Senegal gained independence from France, management of natural resources which had remained *de facto* under local control during the colonial period, moved to a centralized national government. New fishing rules granted all citizens of Senegal equal access to fisheries—whether they were commercial fishermen from the North using motorized boats and armed with deadly, almost invisible monofilament nets, or local fishermen paddling in wooden canoes and fishing exclusively with locally-made cotton nets. National fishing regulations were not uniformly implemented, and traditional fishermen suffered. Elders who tried to enforce the old rules found themselves in jail.

With the loss of cultural guidelines came declining fish stocks and food scarcity. Young people began leaving for the capital, Dakar. For the local Casamance fishermen, it was clear: if they were to maintain their lifestyle and provide food for their families, something needed to change drastically.

Over the past seven years, the eight Djola villages of Mangagoulack have resumed management of their fisheries, reinstating Djola traditions. Their stunning successes have raised eyebrows around the world. The rules are simple: no motorboats and no monofilament nets. River channels and waterways are assigned a color: red, orange or yellow. Red zones, where the powerful Mitij and other spirits continue to live, are closed to fishing activity. Orange zones are for village use only. To improve food sovereignty, fish caught in these areas must be sold and eaten locally at a price that everyone can afford. Yellow zones remain open to any fisherman who obeys the boat and net rules. Volunteer community teams take turns monitoring and enforcing the rules, established through community meetings with municipal and regional authorities and publicized through their own radio programs. In addition to fish, women have created rules for the natural resources they traditionally collect: shellfish and mangroves poles. The conserved area of the eight villages is now called *Kawawana*, an acronym of a Djola phrase meaning "our common heritage to be preserved by us all."

By once again engaging families in governing and managing *Kawawana*, the Djola community has achieved the beautiful vision of its name. Fish stocks have recovered (catches increased by 100% between 2010 and 2012), the size and diversity of fish have improved, and other species (birds, dolphins,

Hopi Tribe member Ruby Chimera teaches traditional food preparation. DONOVAN QUINTERO

alligators) are returning to the rivers. Parents are teaching their children to fish and repair nets traditionally, raising money for school supplies and even attracting family members back from Dakar. Amazingly, the community was even able to organize to protect its forest from a new charcoal-making development scheme.

Kawawana is one of many global examples of Indigenous Peoples' and community conserved areas (ICCAs), territories established and governed by and for a local community. Since 2010, it has gained formal recognition from the Senegalese government, and the Kawawana leadership have joined an international association known as the ICCA Consortium. Through stories like Kawawana's, communities around the world are demonstrating that revitalizing local governance and cultural practices can bring about environmental conservation and sustainable livelihoods. Indigenous Peoples' and community conserved areas are also showing that the inverse is true: a restored local environment can help recreate food sovereignty and community solidarity and revitalize economies, culture and pride.

In 2008, the World Bank released a report estimating that the traditional homelands and territories of Indigenous Peoples contain 80 percent of the world's remaining biodiversity. This is even more remarkable considering that Indigenous Peoples manage only 22 percent of the world's land surface and represent less than five percent of the global population.

Here on the Colorado Plateau, a newly launched Navajo initiative is seeking to create similar gains to those achieved in Kawawana. On the Navajo Nation, developers have proposed building a gondola that would ferry up to 10,000 tourists a day to the bottom of the Grand Canyon. The gondola would introduce an intensive form of tourism that threatens cultural sites while offering little economic benefit to resident communities. In a region bombarded with economic development proposals that don't often align with the values of local communities, the DinéHozhó L3C—a social entrepreneurship venture which brings together seven Navajo communities, Navajo Parks and Recreation, and several non-profits across the western region of the Navajo Nation—is proposing an alternative low-impact eco-tourism model rooted in traditional knowledge and culture. Their proposal would develop ventures ranging from medicinal herb collection and basket making to sustainable farming and bed and breakfasts that

DONOVAN QUINTERO

On the Navajo reservation, non-profit cooperative North Leupp Family Farms is empowering local farmers to become regional producers of traditional blue corn, with plans to build its own milling facility. STACEY JENSEN

could meet tourism interests while creating investment opportunities in tribal communities. Ideally, new sustainable eco-tourism services would protect land and sacred sites, while tempting tribal youths back from cities like Phoenix (see Edward Dee's article "Investing with Heart" on page 22).

Indigenous Peoples' and community conserved areas, whether or not the term is used, offer a solution that is increasingly recognized by scientists, policy makers and others in the conservation community as key to the future of biodiversity. As we ponder the next 30 years of conservation, it can be helpful to see how much the field has changed in the past 30 years. In the 1980s, the terms "biological diversity" and then "biodiversity" were first adopted by scientists, spreading to policy makers and throughout the conservation world, to express the wealth and natural wonder of animal and plant life. By the early 2000s, the conservation community, led by Conservation International, expanded this concept, noting that biodiversity tended to cluster, with extreme density and ecological richness, in areas known as "hotspots." Over the ensuing decade, much of the work of conservation began with the premise that preserving biodiversity meant preserving hotspots.

However, there is a second piece to that puzzle, which is to say that preserving biodiversity cannot focus on hotspots alone. Imagine a bird migration corridor in which only the richest hotpots, say the Everglades or the Amazon, are protected. This is fabulous when the birds are there, and troubling when they migrate anywhere outside of those protected zones.

And even hotspots face pressures both within and outside their borders. Thinking through the Casamance example, fisheries may face pollution from upstream agricultural runoff, industries or local motorboats. Forests may be threatened by the pressure to exploit timber, minerals or wildlife to make a quick profit. Recognizing these and other limitations, conservationists are moving toward landscape approaches which see parcels of land or water as situated within an ecological web of biological, cultural, political and economic processes. And with landscape approaches, the role of governance becomes increasingly important, leading to greater recognition of who is helping to maintain biodiversity and how they are doing it.

In 2008, around the time the Djola communities began organizing, the World Bank released a report estimating that the traditional homelands and territories of Indigenous Peoples contain 80 percent of the world's remaining biodiversity. This is even more remarkable considering that Indigenous Peoples manage only 22 percent of the world's land surface and represent less than five percent of the global population[1].

[1]Sobrevila, C. "The Role of Indigenous Peoples in Biodiversity Conservation: the natural but often forgotten partners." The World Bank. May 2008.

In 2010, the Convention on Biological Diversity, a global treaty ratified by 196 countries, set out 20 targets for the next decade of strategic action on biodiversity. Two of these targets specifically recognize the role of Indigenous Peoples and local communities in biodiversity conservation, including via their specific knowledge, wisdom and practices. The 2014 World Parks Congress, a once-a-decade event hosted by the world's oldest and largest environmental organization, the International Union for the Conservation of Nature, declared that the preservation of nature requires both protected areas established by state governments as well as areas conserved by Indigenous Peoples and local communities. Importantly, the congress also recognized that these conservation efforts should happen both within and outside national protected area systems and without any imposed framework.

Just off the coast of British Columbia, on Meares Island, another ICCA Consortium member, the Tla-o-qui-aht First Nation, has illustrated how formal structures, like parks and cultural institutions, can work together by declaring their own territory as a collection of tribal parks. Following a declaration by tribal elders in 1984, Tla-o-qui-aht Tribal Parks formalized an agreement with Parks Canada (the equivalent of the U.S. National Park Service) and the District of Tofino. The community eloquently explains why their form of governance differs from other parks:

> "A park is usually a protected area which excludes most human activities apart from recreation. A tribal park integrates human activities while caring for the ecosystem at the same time—this was done successfully by our ancestors, resulting in superior ecologic integrity of the whole landscape in the territory.

Raising a tipi at the July 2015 Bears Ears Intertribal Coalition meeting. DONOVAN QUINTERO

> To pursue tribal parks actively today means that we must look to uses which avoid harming and instead benefit the land and water. For example, clear cut logging and industrial mining would be prohibited, while low-impact ecotourism, habitat restoration, and carefully-controlled run-of-river energy generation would be allowed. To be successful, tribal parks will need to manage existing land uses and interests, and provide a comprehensive vision for present and future generations."

Similar efforts are underway on the Colorado Plateau. A project to create a world-class Navajo Nation tribal park system that would cater to cultural and eco-tourism industries and benefit local communities while preserving traditional ways of life and critical natural resources is beginning with a small cultural mapping pilot project in the Little Colorado River parks region. Members of the Intertribal Gatherings, a group of elders and cultural leaders from twelve tribes across the plateau dedicated to preserving traditional knowledge and ways of life, will soon travel to coastal First Nations in British Columbia to learn from efforts like the Tla-o-qui-aht Tribal Parks.

Separately, a coalition led by the Hopi, Zuni, Ute Mountain Ute, Ute Indian Tribe of the Uintah and Ouray, and Navajo, and supported by over 25 tribes across the Southwest, is urging the Obama administration to designate 1.9 million acres of public lands—including the ancestral homelands of many tribes—as a new Bears Ears National Monument. The monument would be co-managed by the tribes, allowing tribal members to maintain their traditional livelihoods and cultural practices, including hunting, gathering, and ceremonial uses. It's the first monument proposal to originate in Indian Country in the 109-year history of the Antiquities Act.

If we are all to be successful in conserving the earth and its splendor for future generations, we would do well to follow the Tla-o-qui-aht vision—recognizing whole landscapes, acknowledging the critical role of communities as stewards of these landscapes and seeking pathways for local economic growth that allow a continued relationship between peoples and their homelands. Happily, from Casamance to Canada to the Colorado Plateau, exciting possibilities abound and we no longer have to wonder whether this can be achieved.

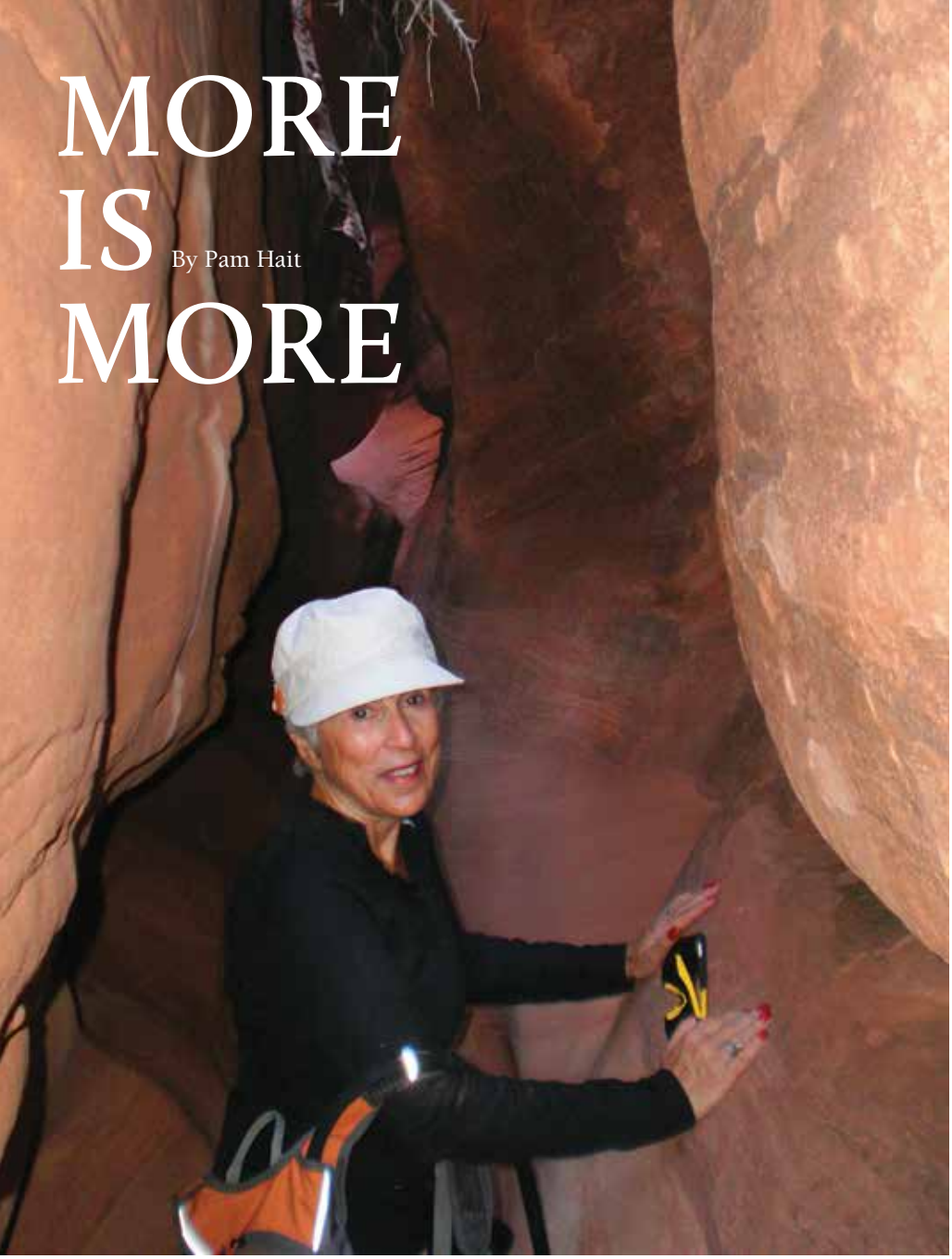
Kyra is a program officer at the Christensen Fund working globally and in the U.S. Southwest to support food sovereignty and resilient landscapes. Kyra is a graduate of the Yale School of Forestry and Environmental Studies and a Switzer Environmental Fellow.

Dr. Grazia Borrini-Feyerabend has worked on conservation and community rights for nearly thirty years. Grazia is currently Global Coordinator of the ICCA Consortium, President of the Paul K. Feyerabend Foundation, and a member of the governing body of French National Parks.

Tony Skrelunas directs the Trust's Native America Program.

MORE IS MORE

By Pam Hait



GLEN HAIT

FIRST, YOU SHOULD KNOW I have legs that can hold up a baby grand piano. This fact became relevant after my husband and I moved to Arizona more than forty years ago and I discovered the extraordinary landscape of the Colorado Plateau, a place that begs to be hiked, a land where long legs are a definite advantage.

While I loved Arizona, I knew little about the Colorado Plateau and less about conservation. My first encounter with the Grand Canyon struck terror in my heart. My husband and I were strolling along the South Rim one dark September evening when a gust of wind lifted the baby carrier holding our infant daughter, shaking it violently. In the instant when we lunged to steady the basket, I understood the savagery of the natural world and the feral power of that awesome chasm.

I learned to love the plateau by traveling on magazine assignments to the Hopi and Navajo reservations, and vacationing with our family at national parks and monuments. Seeing made me a passionate believer. Experiencing the red buttes and flowering meadows, soaring sandstone cliffs and plunging canyons, Technicolor sunsets and star-strewn skies, made me want to help save it all. I began writing about environmental issues and signed up to be a foot soldier for conservation. Soon, I was making calls and sending thank you notes to elected officials who made good environmental decisions, and protesting their bad choices. I signed petitions to support environmental causes and encouraged friends to sign too. As a journalist, I knew that elected officials always tally votes, so calls and letters count. Going unabashedly public with my passion for protecting the environment—and especially the Colorado Plateau—made me a likely suspect for the board of trustees of the Grand Canyon Trust.

I joined the board in 1998, filled with awe and apprehension. Historically, this organization has a genius for attracting giants. Two of the founders of the Grand Canyon Trust—Stewart Udall and Bruce Babbitt—served as U.S. secretary of the interior. At my first meeting, I found myself face-to-face with David Getches, our chairman. The next week, he was quoted at length in *The Wall Street Journal*, identified as the foremost expert on water law in the West. I sat next to Charles Wilkinson, a renowned law professor, to discover that he wrote *Fire on the Plateau: Conflict and Endurance in the American Southwest*, one of my favorite books. In time, Charles would succeed David as chairman. I remember looking around the table in panic that day: what could I bring to this conversation?

In time, I figured out I'm not a former solicitor general, like one of our

trustees. I couldn't write a hugely generous check to launch the Native America program, like another. I'm not a successful Washington, D.C. litigator with a famous name, like our former chairman, Ty Cobb. Nor am I a prominent Salt Lake City lawyer and environmental advocate like Lou Callister, who also led our organization. But I could—and did—get smart about issues that threaten the air, water and land of the Colorado Plateau. I could and do write checks to support our mission and I can help spread the word about our work.

We don't win every fight we wage, but when we do, it's miraculous. On my last Colorado River trip, we made camp in the late afternoon and heard only the sound of laughter and water lapping against the rocks. The Trust pushed hard for sane policies to prohibit canyon overflights and preserve that quiet. Quiet pervades the plateau. I felt the hush when I dropped into a slot canyon on the Escalante and squeezed myself small to inch past narrow walls. And again, when I returned to the golden muted land of Capitol Reef to scramble over the giant sandstone domes and trek miles through sandy washes.

Parks are the heart of our work. The Grand Canyon Trust was born in the bottom of the Grand Canyon, and, in a cosmic coincidence, 30 years later, Steve Martin, a former superintendent of Grand Canyon National Park, is our chair. He brings a 35-year career with the National Park Service. Yes, we still attract giants. Our newest board members are Terry Goddard, a former mayor of Phoenix and former Arizona attorney general, and Mark Udall, a former U.S. senator from Colorado who previously served in the U.S. House of Representatives. I love that Terry, whose father Sam was governor of Arizona, is a historian, and Mark, the son of Morris "Mo" Udall and the nephew of Stewart Udall, is an experienced mountaineer who has climbed Colorado's 100 tallest peaks.

The Colorado Plateau is home to more than 55 national parks, monuments and wilderness areas and 15 Native American tribes.

It's good to have a mountaineer on board because steep challenges lie ahead. Our beloved landscape is in danger of being loved to death. In 1985, the year the Trust was established, 2.7 million people visited Grand Canyon National Park. In 2014, the park recorded almost 4.8 million visitors. According to a 2015 report by the American Hiking Society, 273 million people visited America's national parks in 2013. Hiking is exploding as a national recreational pastime, and national parks and monuments remain the big attraction. The Colorado Plateau is home to more than 55 national parks, monuments and wilderness areas and 15 Native American tribes. It's at the epicenter of all the action.

Yet, it is also under siege. Invasive users, including mining, fracking and purveyors of inappropriate development, are pushing for activities that will destroy the singular beauty of this place and wipe out its ecosystems forever. These forces have faces and voices—individuals and corporations who lobby our elected leaders and contribute to re-election campaigns. In contrast, the natural constituency of the Colorado Plateau is pretty quiet: the whoosh of the hawk diving for a rodent, the hoot of an owl, the slithering of a snake, the scratching of a ringtail, the rumble of a thunder cloud, the beat of Native drums.

That's why your support is vital. Together we put a face and a voice to the "wild heart of the American West." Your letters and calls, signed petitions and emails, matter because elected officials respond to critical mass. More is more in politics. You can help us by telling and retelling our story to your family, friends and colleagues: how extraordinary geological events pulled at this landscape, raising it more than a vertical mile and leaving us a fragile, arid otherworld scoured with canyons and adorned with arches and bridges, pillars and spires. You can stand with our Native American neighbors who know, through their stories, that this land is sacred. You can volunteer your time on the plateau, and you can open your checkbook so we can cajole and lobby, and, when necessary, sue to defend the dazzling diversity of life that depends on this rare habitat. If you're already doing this, thank you. If not, now is a great time to start.

The red rocks of the Colorado Plateau fired my imagination, but the Grand Canyon Trust inspired my dedication. It transformed a girl whose first experience in the "wild" took place at the grassy Fabyan Park in Batavia, Illinois, where her father would hop into the empty bear cage, shake the bars and roar, into a confirmed conservationist who has hiked rim-to-rim in the Grand Canyon (okay, with an overnight at Phantom Ranch) several times and explored many trails on the plateau. I've learned that hiking is an apt metaphor for the work the Trust does. We keep putting one foot in front of the other and we never give up. Best of all, long legs are not required.

Pam Hait is a freelance writer, author, and a partner in Strategies, a strategic communications firm. She is a member of the Grand Canyon Trust's Board of Trustees and lives in Paradise Valley, AZ with her husband, Glen.

The FUTURE of

Right now, discussions are taking place among Western water managers as to how to better manage Colorado River water. For anyone who follows water policy in the West, this is not a big surprise. The current system of water management is collapsing in front of our eyes. Proposals that once seemed crazy are now on the table.

One of these proposals—considered a Don Quixote, "tilting at windmill" idea a decade ago—is now a real possibility. The idea is simple: take Lake Powell water and transfer it to Lake Mead where less water will seep into the banks. That is, fill Mead first and use Lake Powell if needed. This will effectively "drain Lake Powell."

Two years ago, the Glen Canyon Institute commissioned and published a peer-reviewed study that showed that storing water in Lake Mead rather than in Lake Powell would yield a savings of 300,000 acre feet of water or more per year—equal to the entire state of Nevada's annual Colorado River water allocation. While more water evaporates from Lake Mead because of its greater surface area and higher temperatures, there is a lot more seeping into the banks at Lake Powell. Lake Mead is mostly hard rock, whereas Lake Powell is porous sandstone, which allows water to trickle through into underground aquifers, never to be recovered.

This study has changed the entire discussion of water management on the Colorado River. For the first time, water managers are talking about a subject that has been taboo: moving the water stored in Lake Powell into Lake Mead. But more remarkably, they are actually listening to the environmental community. The reason for

LAKE POWELL

By Richard Ingebretsen MD, PhD

SHANE MCDERMOTT

this is simple: we are offering what the water managers need—sustainability. They are in a lot of trouble. The system that they have built is unsustainable and that unsustainability is starting to rear its ugly head. Environmentalists, defined by sustainability, can help design a water system that will last, and, in so doing, restore two of the most splendid of all canyons in the world.

It's unbelievable that beautiful Glen Canyon has served as a water storage facility for the Bureau of Reclamation for the past 50 years. The decision to dam and store water in this uniquely beautiful place was made when the West was operating in an era of apparent excess water, and, quite frankly, people did not know better. But now the West no longer has "excess" water. People are using more water than the Colorado River provides. This changes everything.

Levels at Lake Powell and Lake Mead are dropping. Glen Canyon, the most priceless of all canyons of the Colorado River, has already begun to re-emerge from the water and restore itself. We are now on the verge of the day when the level of Lake Powell will be so low that the power generating stations will not be able to generate electricity. At that point, the last major argument to keep water behind the dam will evaporate.

When it comes to Glen Canyon Dam, the latest and most compelling scientific work being performed now is with power. Water produces power by turning generators at the base of dams. The higher the intake for water is above the generators, the greater the distance water will fall, thus creating more power. Soon the level of Lake Powell will be too low for water to be drawn into the intakes. From our studies, we have learned that sending Lake Powell water into Lake Mead will generate more power than trying to continue generating electricity from the two existing power plants with low water levels at both lakes.

People are concerned that if water is drained from Glen Canyon, the canyon will be ruined, that sediment buildup and the white bathtub rings will have taken their toll. That is not true—the canyons do restore. And you don't have to look very far to find examples. Travel to the upper stretches of Cataract Canyon where the river

This is our chance to make an incredible and historic difference.
Let us be loud and strong, and let us be clear—we want Glen Canyon back.

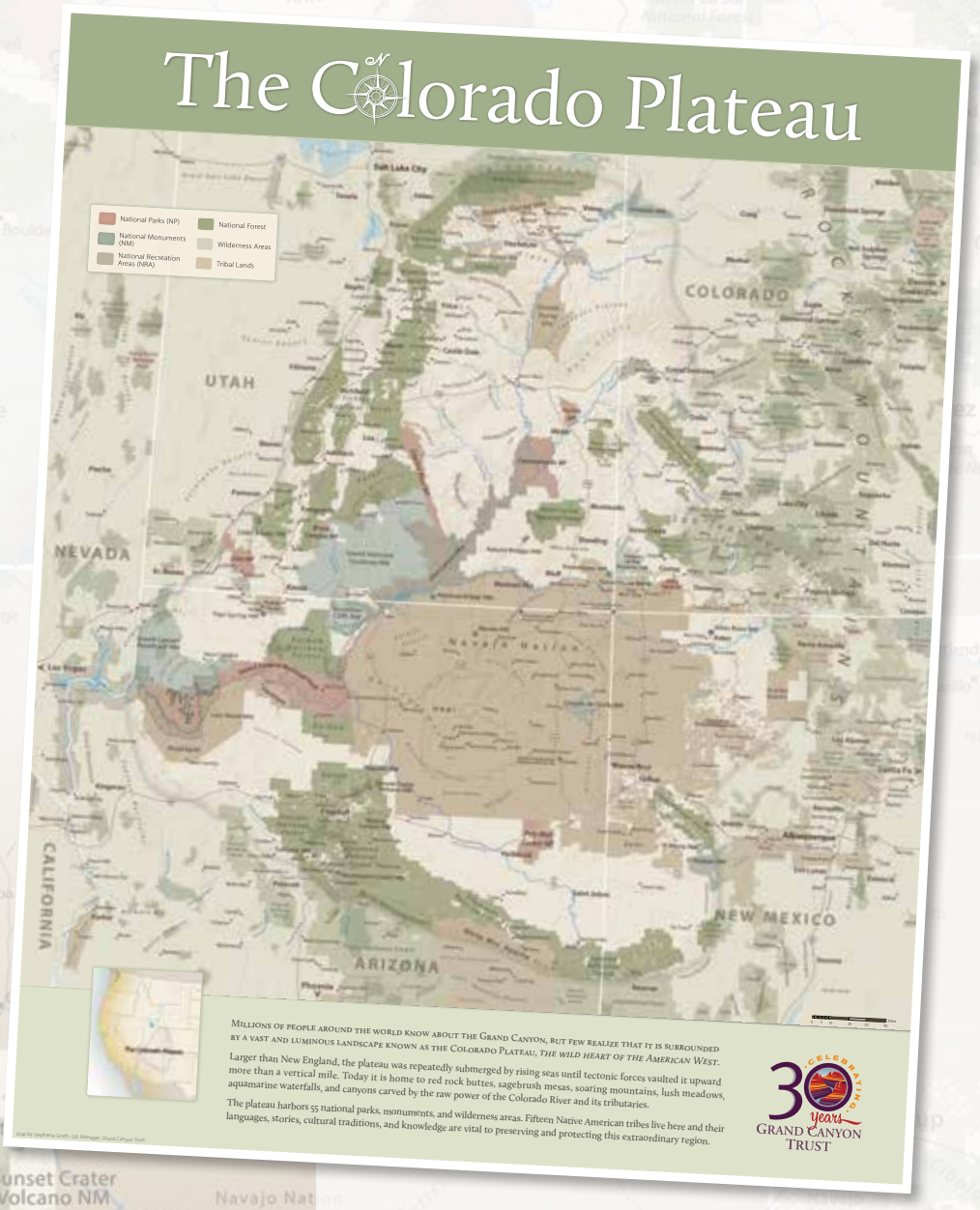
Narrow Canyon, below Cataract Canyon, going into Glen Canyon, a section of river that used to be approximately 40 feet under Lake Powell.
ERIC BALKEN, GLEN CANYON INSTITUTE

has washed out virtually all of the sediment, erased the bathtub ring, and restored 14 large rapids—all of which were once drowned under Lake Powell. Hike up the Escalante River to any one of a number of canyons where floods have brought the waterfalls, redbuds and alcoves back to their original splendor. Visit Hole in the Rock, where the pioneers wrote their names on the walls or Fort Moqui at Hite, where John Wesley Powell's inscription will never again be underwater. Take a trip this spring, when Lake Powell will be very, very low, and explore firsthand the incredible restored canyons of Glen Canyon. One thing is certain: when the lake is gone, the Glen will restore.

So where do we go from here? Governments manage and make decisions in crisis. Well, we are in one now. Critical decisions are being made. Currently, the river is managed under an interim agreement signed by the seven basin states in 2007. This agreement is set to expire in about 10 years, and so water managers are beginning discussions on a new one. In the 1950s, when decisions were first being made to build huge dams, there was not a strong voice to protect the environment, but there is one now. We are that voice, and we need to be heard.

This is our chance to make an incredible and historic difference. Let us be loud and strong, and let us be clear—we want Glen Canyon back. We want to stop the destruction of the Grand Canyon. The most realistic and sustainable future for this area is a natural restoration of the canyons. In Glen Canyon, much of this wondrous place, including nearly 40 miles of the Colorado River, 20 miles of the San Juan and 30 miles of the Escalante River, is free again, ready for this and future generations to enjoy. The biological heart of the Colorado Plateau is gathering national attention and a restored, free-flowing Colorado River is breathing new life into the soaring red rock canyons of the legendary Glen.

Richard Ingebretsen is Associate Dean for the College of Science and Professor of Medicine at the University of Utah, and founder and president of Glen Canyon Institute, a non-profit organization based in Salt Lake City, Utah.



IN CELEBRATION OF OUR 30TH ANNIVERSARY

We've created a one-of-a-kind map of the Colorado Plateau. With your donation of $250 or more, you'll receive a limited-edition, 16" by 20" copy, shipped rolled and ready to frame.

It's our way of saying thank you for protecting this incredible place—and a way for you to keep it close, no matter where you are.

A Lone Woolf By Kate Watters

"As a painter, I love distance because
it smears out the details I tend to get too mired in."

"You need to have faith in the process," artist Suze Woolf says emphatically, using her paintbrush to punctuate her point.

Suze, a full-time, self-taught watercolor artist, is a woman of exorbitant energy in a compact, athletic frame. True to her own teachings that "watercolor rewards boldness," she volunteered to drive from her home in Seattle to the middle of nowhere in House Rock Valley, take up residence at the remote 1877 Kane Ranch headquarters building, on the North Rim Ranches, and get busy painting.

In her 21 days at the North Rim Ranches, Suze finished 37 small paintings of the surrounding landscape, bringing the north rim of the Grand Canyon alive with brush and paint. Watercolor, as a medium, affords Suze spontaneity and speed. With her portable paint set, she can begin a painting in moments and finish within hours. During her stay, places like Coyotte Buttes, the Vermilion Cliffs, and Triple Alcove served as her plein air studio. According to Suze, who draws inspiration from Los Angeles artist Robert Irwin's biography, *Seeing is Forgetting the Name of the Thing One Sees*, "seeing begins when naming ends."

Her strokes of vermilion blend with turquoise, and she's the first to admit that she's not a slave to reality.

"You are the master of the picture. If the tent looks better closer to Saddle Mountain, make it so."

Instead of trying to exactly render the scene, she infuses her personality into every painting. The looseness of her thick brush strokes breaks open the sky, lighting up the crack that is Marble Canyon and making the grasslands dance.

Shinumo Butte, *Day Twenty-One*, Watercolor on Paper, 15"x11"

See more of Suze's paintings of the North Rim Ranches in the online edition of the *Advocate*. grandcanyontrust.org/advocatemag

INVESTING WITH HEART

How L3Cs could transform communities on the western Navajo reservation

By Edward Dee

DONOVAN QUINTERO

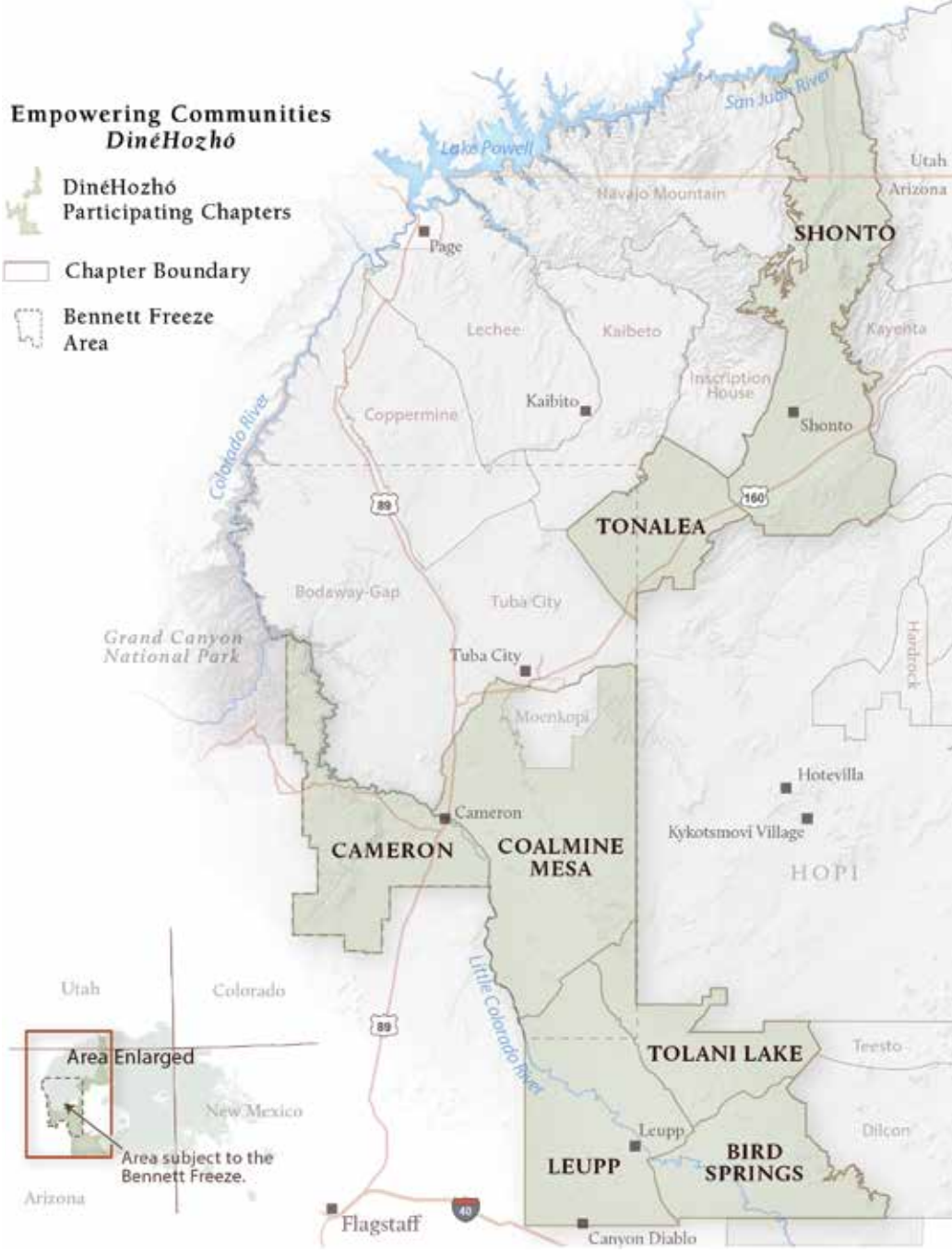
Guests at the Navajo-owned and operated Shash Diné Eco-Retreat sleep in a traditional earth-floor hogan. Owners Baya and Paul Meehan hope to expand the traditional Navajo B&B, south of Page, Arizona, and draw a larger clientele of cultural and eco-tourists. DONOVAN QUINTERO

Understanding social entrepreneurship on the Navajo Nation first requires a Navajo language lesson. And of course, defining a single word in Navajo requires a whole paragraph of English.

In Diné philosophy, the basic concept of "Hozhó" is the Navajo people's highest aim, not only for themselves, but for the world around them. The pursuit of Hozhó is not relegated to ceremonial songs and prayers. The term is frequently used in everyday speech. According to ethnographer Gary Witherspoon, "A Navajo uses this concept to express his happiness, his health, the beauty of his land, and the harmony of his relations with others."

The Diné Innovative Network of Economies in Hozhó (DinéHozhó) is a grassroots organization that brings together seven chapters in the western region of the Navajo reservation in Arizona (the reservation is divided into 110 chapters). These western chapters are banding together to create sustainable jobs in tourism, agriculture, and retail, and keep the profits in Navajo communities.

The need for jobs in this part of the reservation is great. The economic landscape in many of the DinéHozhó partner chapters, which include Leupp, Birdsprings, Tolani Lake, Cameron, Coalmine Mesa, Tonalea, and Shonto, is bleak. The majority of these communities were covered by the Bennett Freeze,[1] which effectively exiled Navajos—and Hopis—from their land for over 40 years and prevented those who stayed from making any improvements or repairs to their homes. If a window broke, the Bennett Freeze required it to stay broken, paralyzing local communities in a state of poverty seldom seen in America. Though the Bennett Freeze was lifted by President Obama in 2009, the affected areas are still suffering from deliberate underdevelopment, which makes them particularly vulnerable to unsavory economic schemes. Several of the partner chapters are located adjacent to the Bodaway-Gap chapter, on the eastern edge of Marble Canyon, which for the past several years has been the target of the proposed Grand Canyon Escalade tramway project. That project looks at development from a strictly neoliberal economic perspective, striving to extract the most out of the natural resources available with little regard for the consequences.



DinéHozhó is committed to reversing the long-standing social and economic injustices brought on by the Bennett Freeze. The DinéHozhó concept embodies human dignity and respect, encouraging local people to relate to each other in ways that are reciprocal and mutually beneficial, trusting, and that align with traditional values, ecological awareness and ethics. In short, DinéHozhó wants to do business on the Navajo reservation differently by embracing the demand for sustainable, heritage-based tourism and allowing Navajos to make a living by preserving cultural traditions and skills, from storytelling to hogan building.

Of course, to do this, they first needed a legal framework for their venture within Navajo Nation law.

On December 29, 2014, the Navajo Nation Council, the legislative body

[1] In 1966, Commissioner of Indian Affairs Robert Bennett imposed a land freeze, stopping all development on the western Navajo reservation following a land dispute between the Navajo Nation and Hopi Tribe covering some 1.6 million acres. The land freeze was the direct result of competition for control of the water and coal needed to generate power for burgeoning southern California and Arizona. In this competition, coal and power-generating giants and federal agencies had an advantage over both Navajo and Hopi tribal governments, an advantage that was maintained by dividing the two tribes. This divide-and-rule pattern imposed by the federal government dates back to the 1930s, when the Bureau of Indian Affairs established the Hopi tribal government and recognized an exclusive use area for the Hopi on and around Black Mesa, in the middle of the much larger 1882 Executive Order Navajo reservation.

DONOVAN QUINTERO

of the tribal government equivalent to the U.S. Congress, passed a resolution authorizing the creation of a low-profit limited liability company (L3C) statute, a new legal for-profit structure that enables a social-benefit outcome. L3Cs are hybrids that effectively bridge the gap between non-profit and for-profit investing by providing a structure for investments in enterprises whose main focus is social good rather than maximizing profits—in short, social entrepreneurship ventures. Prior to the resolution, only nine states and two American Indian tribal governments (the Oglala Sioux Nation and the Crow Nation) had adopted L3C legislation. The Navajo Nation is the largest American Indian tribal government to allow L3C incorporation.

With this framework now in place, DinéHozhó is poised to open the floodgates on an opportunity-driven movement of social entrepreneurship that is unique to the Diné lifeway, an approach that no Navajo community has yet pursued. According to Austrian American economist Joseph A. Schumpeter, a leading thinker on the subject: "Social entrepreneurs are individuals who reform or revolutionize the patterns of producing social value, shifting resources into areas of higher yield for society." Fundamentally, social entrepreneurship involves pattern-breaking ideas that seek large-scale sustainable change. To succeed, the DinéHozhó venture requires local Navajo chapters, the existing Navajo Nation Tribal Parks and Recreation Department, and a handful of non-profit organizations to work together.

DONOVAN QUINTERO

DinéHozhó includes both non-profit and for-profit components. This hybrid setup creates job opportunities for weavers, medicinal herb gatherers, hogan builders, dryland farmers, basket makers, singers, and dancers to share their traditional knowledge with tourists interested in Navajo culture and history.

DinéHozhó includes both non-profit and for-profit components. This hybrid setup creates job opportunities for weavers, medicinal herb gatherers, hogan builders, dryland farmers, basket makers, singers, and dancers to share their traditional knowledge with tourists interested in Navajo culture and history. The DinéHozhó model offers an outlet for entrepreneurial spirits at a time when the Navajo Nation, like many tribal governments, is facing harsh federal cutbacks. The venture will build the capacity of ecotourism entrepreneurs by providing assistance in business planning, marketing, basic finance and management, and offering workshops and trainings

to give entrepreneurs the tools they need to succeed, financed by private philanthropic capital.

A key component for DinéHozhó under the newly adopted Navajo L3C framework is the potential to attract significant program-related investments (PRIs). PRIs are investments private foundations make to further their social missions, such as promoting wealth creation and asset-building for low-income communities in the western Navajo region.

The land base of the DinéHozhó partner chapters includes a swath of 160,000 acres of rural land along the Little Colorado River and the east rim of the Grand Canyon, a location of great potential interest for philanthropic investment. DinéHozhó can serve as a catalyst and vehicle for securing private funds to assure that development of these lands bolsters the local economy while also protecting the world-class vistas and other natural resources important to people everywhere.

Economic need in the region is dire, with high unemployment and a poverty rate hovering around 43 percent. The median household income on the Navajo Nation is $27,389, roughly half that of the state of Arizona overall ($51,310), an alarming contrast in one of the most developed and wealthy nations on earth. But Navajo people, like many other tribal communities, are deeply concerned about protecting and preserving their culture, land, language, and traditional stories. Large economic development projects like Grand Canyon Escalade violate the ecological and cultural sensibilities not only of the traditional Diné, but also of other tribes with sacred ties to the Grand Canyon. Simply put, the Diné "Hozhó" principle cannot be compromised for grandiose projects like Escalade. The DinéHozhó L3C investment platform offers a clear alternative to this outsized and out-of-touch version of development by taking a multidimensional approach that embraces existing social, cultural, and environmental capacities in the western Navajo region within the context of sustainable tourism.

The power of social innovation and community-based self-determination are part of an ecological imperative. We must plan for the whole, rather than focusing on isolated parts. Despite decades of unjust underdevelopment, western Navajos are beginning to emerge as economic drivers of their own future, with DinéHozhó providing a place for traditional knowledge and ways of seeing the larger world in an economy based on social justice and sustainability.

DinéHozhó works in collaboration with the Grand Canyon Trust, with technical assistance from Arizona State University's School of Community Resources and Development and the Julie Ann Wrigley Global Institute of Sustainability.

Edward Dee holds degrees in public administration and business administration; a Ph.D. student in the School of Sustainability at Arizona State University, his research areas include policy and governance, traditional ecological knowledge, and sustainable tourism.

Volunteer Power

Tess Ahern, Urban Planner, Colorado Springs, CO
Volunteer and member since: 2011
Total hours donated: 260

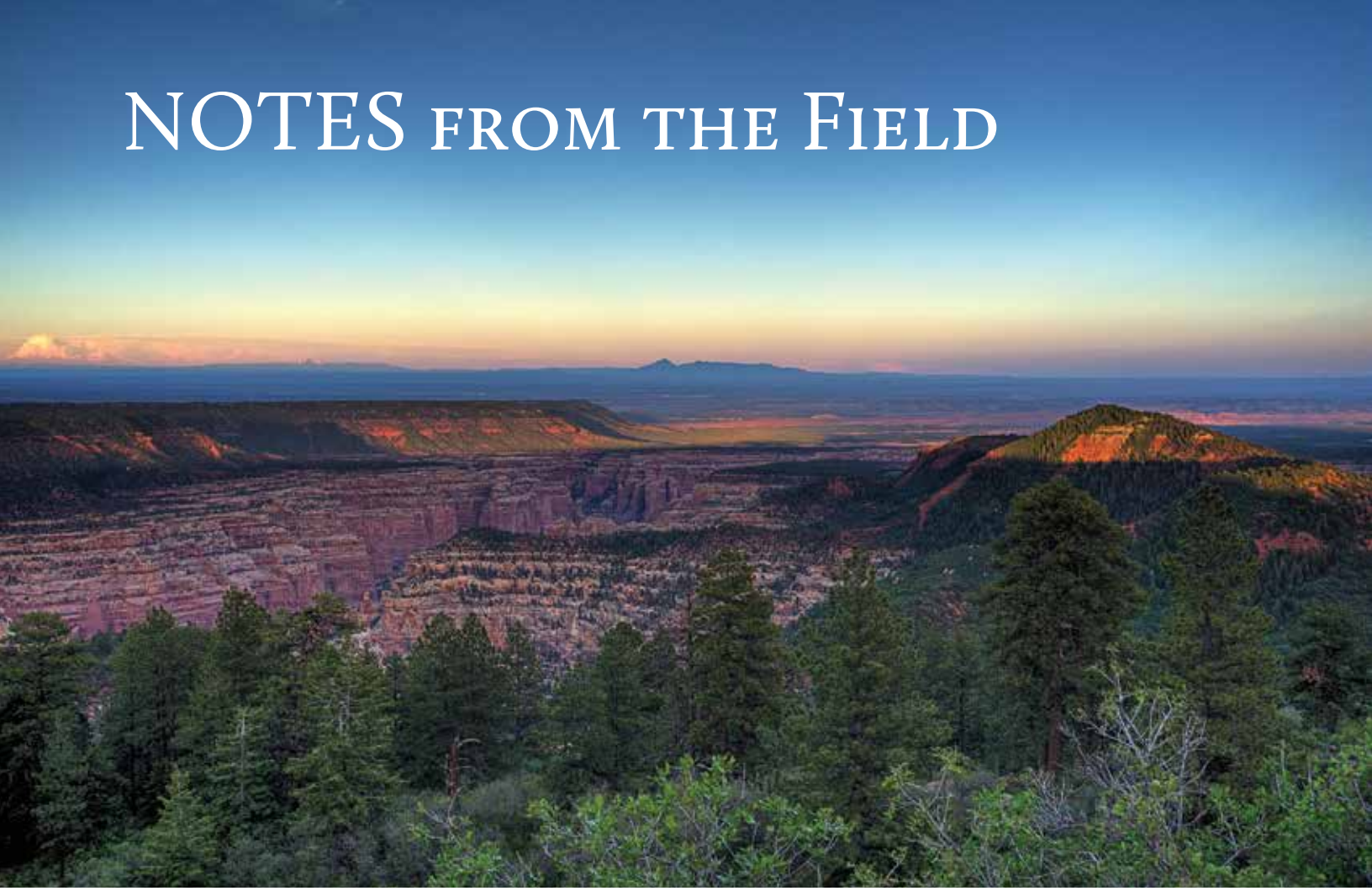
Tess was on a backpacking trip in the Grand Canyon when she saw a flier about a Grand Canyon Trust tamarisk removal project. As soon as she could carve out the time and resources to volunteer, she did—and she's been coming back every summer for the last five years! Tess has volunteered on beaver habitat assessments, invasive plant removals, and wildlife habitat monitoring.

Why Tess Volunteers: "The passion of Mary O'Brien and the Trust staff is infectious. I love being around that energy, learning about the plateau from experts in conservation, and exploring parts of the Four Corners states I might not otherwise see."

Dedicated volunteers like Tess help us protect and restore the Colorado Plateau.

Thank you!

NOTES from the Field



Sleeping Ute and Arch Canyon inside the Bears Ears Cultural Landscape. TIM PETERSON

Dispatches from Grand Canyon Trust staff on the front lines of conservation across the Colorado Plateau.

GRAND CANYON

The new Navajo administration remains firmly opposed to the proposed Escalade tramway, though developers are still courting investors. We're keeping an ear to the ground, monitoring developers' activities and lobbying efforts. An appeal is underway to halt uranium mining at the Canyon Mine, six miles from the South Rim. In the interim, Canyon Mine may resume sinking shaft at any time. As for the proposed Tusayan mega-development, the Forest Service is still deciding whether to require a full-blown environmental impact statement. A petition appealing EPA's proposed rule for coal power plant emissions that are reducing visibility at the Grand Canyon and other national parks is pending before the 9th Circuit Court. Meanwhile, efforts to craft a clean energy transition for Navajo Generating Station, with Hopi and Navajo partners as equity shareholders, are ongoing.

UTAH WILDLANDS

After years of meetings and field visits, Utah Representative Rob Bishop is finally slated to release draft legislation in Congress for up to eight eastern Utah counties under the Public Lands Initiative (PLI). If done correctly, the PLI could resolve public lands issues across 18 million acres in Utah by designating 4 million acres of new wilderness, national conservation areas and watershed protection zones while exchanging state lands out of newly protected areas. If not, we may be facing the fight of the decade to improve or defeat odious legislation in Congress. As one door closes in the PLI, another is opening in the form of a unique tribally-led effort to protect the Bears Ears cultural landscape in southeast Utah as a new 1.9 million acre national monument (See Alastair Bitsóí's article "The Land Is What I'm Here For" on page 4).

NATIVE AMERICA

The Native America team is assisting the Bears Ears Intertribal Coalition, set up and led by tribes to push for a new tribally co-managed Bears Ears National Monument. Meanwhile, our

"With potential risks of rattlesnakes, fire ants, bees, and worst of all–getting a 5.7-liter-engine Dodge Ram truck stuck in the sand–our isolated field biology job could sound like a nightmare or a dream. But misadventures aside, the act of listening, observing, and responding to the landscape created an intimate relationship and sense of place I've only experienced on the plateau."

Contract field biologist Ysa Diaz, who spent four weeks on the Paria Plateau identifying birds for the Vermilion Cliffs National Monument Songbird Survey.

intertribal gathering at Southern Ute, along with the Intertribal Learning Center in Tuba City, have focused on climate change adaptation and traditional farming and food systems. An intertribal knowledge exchange trip is planned to coastal First Nations in British Columbia to learn about efforts to create tribal land protections there. We're moving forward with the general management planning project to build a world-class Navajo Nation tribal park system by conducting a small pilot project on cultural mapping in the Little Colorado region. The Native American Business Incubator Network graduated its first class of Native entrepreneurs this summer and is actively seeking funding sources to empower a new cohort of aspiring entrepreneurs and support sustainable, community-based development for tribes.

UTAH FORESTS

The Utah Forests team is wearing the soles of their hiking boots thin, reassessing beaver dams in three creeks to document the unique ability of beaver to slow and store water, raise and repair stream channels, and transform our forests over time. The team is also documenting how landscapes suffer where beaver are killed. In addition to pitching in on native grass studies in the White Mesa Cultural and Conservation Area, removing thistles in reference areas in the Manti-La Sal and Fishlake National Forests, and assessing springs on Elk Ridge, the team is in the second year of a 2-year project looking at biological soil crusts (the "skin" of the desert) at 200 sites in Grand Staircase-Escalante National Monument, as well as documenting the havoc exotic goats are wreaking in the Mt. Peale Research Natural Area.

THE FOUR FOREST RESTORATION INITIATIVE

4FRI's first 1 million acre effort to restore northern Arizona's ponderosa pine forests—the culmination of decades of work by dozens of organizations and individuals, including the Trust, is finally moving forward. 400,000 acres will be thinned and burned, protecting the headwaters of watersheds critical to millions downstream. Tens of thousands of acres of critical wildlife habitat will be protected, 72 springs restored, and hundreds of miles of unnecessary roads closed. The project will create more than 600 jobs and inject $100-$200 million per year in taxable revenue into rural economies. 4FRI will also bring per-acre treatment costs down from a prohibitive $1,000 per acre to about $200 per acre or less, saving hundreds of millions of dollars in wildfire suppression and rehabilitation costs.

Top: A wildlife camera trap snapped this photo of a mountain lion on the Kaibab Plateau (North Rim Ranches). J. HOLM AND B. DICKSON
Center: The 25 tribes of the Bears Ears Intertribal Coalition are working to protect 1.9 million acres of southeastern Utah. DONOVAN QUINTERO
Bottom: Kenneth Maryboy gathers herbs above Arch Canyon. TIM PETERSON

Utah Forests program interns Sujata Gautam and Marcy Brown identify native and exotic grasses in the White Mesa Cultural and Conservation Area. MARRA CLAY

NORTH RIM RANCHES

The 850,000 acre landscape of the North Rim Ranches is an ideal outdoor classroom and research laboratory. Currently, we've teamed up with scientists and researchers to model wildlife habitat use through camera trapping, seed and study native plant "greenstrips" to stop invasive cheatgrass in its tracks and reduce the impact of wildfire, and set up gardens to monitor plant responses to climate change over time. We're also restoring springs and surveying songbirds and bats on the North Rim Ranches. Initial results suggest at least 30 songbird species and 19 bat species live on the Paria Plateau (see "The Night Shift" on page 30).

VOLUNTEER PROGRAM

So far this year, 260 volunteers have donated 13,000 hours to support Trust work across the Colorado Plateau. 120 citizen scientists contributed their sweat, muscle, and brainpower to over a dozen fieldwork projects, including climate change adaptation research, habitat restoration, and data collection that will influence public lands management decisions. 180 young conservationists have contributed over 9,000 hours to Trust program work through conservation internships, the Uplift Conservation Conference, and service learning projects on public and tribal lands.

ENERGY PROGRAM

The Trust is leading the effort to reform obsolete and flawed mining regulations that allow uranium mines to operate in the Grand Canyon region without updated environmental review or adequate monitoring. Our campaign to prevent the White Mesa Uranium Mill from harming public health or contaminating southeastern Utah's air, water, and land continues on multiple fronts with our lawsuit in progress and outreach to regulators. A short advocacy film will be released in 2016. This summer, we finalized our lawsuit against the Bureau of Land Management's decision to allocate 810,000 acres of public lands in the Colorado River Basin for oil shale and tar sands mining. We're also working to ensure that the BLM regulates methane—a potent greenhouse gas—from industrial oil and gas operations on public lands.

Calling all...

bookworms, literature lovers, and casual readers!

We're starting the **Grand Canyon Trust Book Club**, and we're pleased to announce our inaugural selections:

THE EMERALD MILE

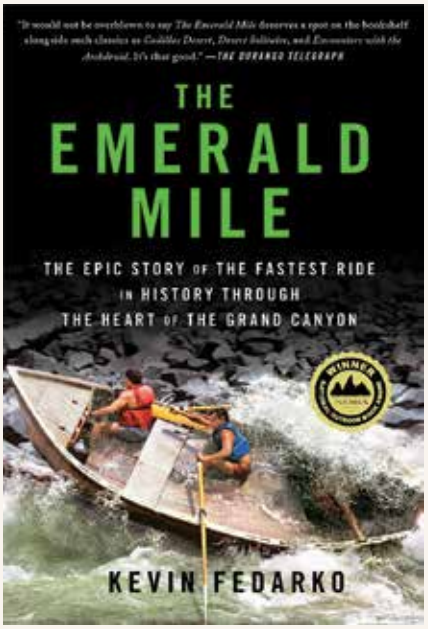
Hop on board as author Kevin Fedarko pilots you through the 1983 speed run and fastest ride in history through the heart of the Grand Canyon.

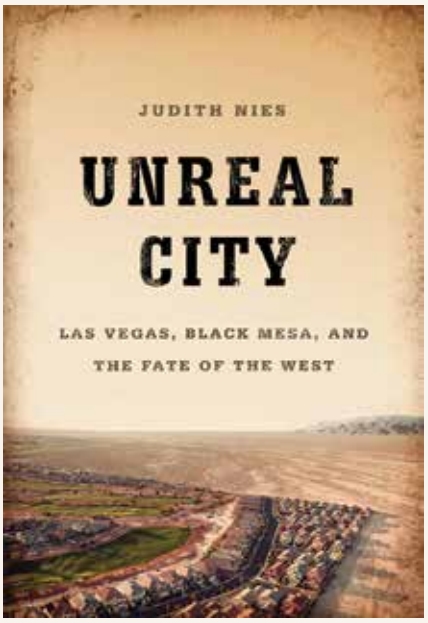
"The Emerald Mile re-creates an incredible voyage through the flood-swollen Grand Canyon in such heart-pounding detail that you need to pause every few pages to catch your breath…"
– The Dallas Morning News

This epic adventure tale melds Colorado River history and politics with personal passion and river lore. A Grand Canyon boatman himself, Fedarko plunges below the rim, pursuing wooden boats through raging whitewater, and tells the story of commercial guiding, the Glen Canyon Dam, and the canyon itself.

Please join us on January 13, 2016 for a conversation with author Kevin Fedarko to discuss The Emerald Mile, the Colorado River, and current Grand Canyon issues.

Q&A with author KEVIN FEDARKO
Wednesday, January 13, 2016
7:00 pm
Grand Canyon Trust Homestead
2601 N. Fort Valley Road
Flagstaff, AZ 86001





UNREAL CITY

In this story of raw deals, cultural injustices, and political maneuvering, journalist Judith Nies uncovers the hidden history of the struggle over 21 billion tons of coal beneath Black Mesa that fueled the growth of Las Vegas, Phoenix, and Los Angeles. From mob connections and the Hoover Dam to Indian boarding schools and tribal relocation, the book is filled with cultural collisions and surprises.

"Unreal City is a thriller equal to any fiction out there…Nies takes us from the halls of political power to the boardrooms of industry to the mesa-top villages and hogans of Black Mesa to tell this story of the energy demands of southwestern cities and the impact on traditional Native Americans."
– Lucy Moore, environmental mediator and author

Please join us on April 23, 2016 for a conversation with author Judith Nies, who will be joining us remotely from her home in Massachusetts!

Q&A with author JUDITH NIES
Saturday, April 23, 2016
2:00 pm
Grand Canyon Trust Homestead
2601 N. Fort Valley Road
Flagstaff, AZ 86001

Note: Each event is limited to 15 people. Contact Ellen Heyn (928-774-7488 or eheyn@grandcanyontrust.org) to reserve your spot. If you don't live in Flagstaff but would like to join us, we're offering five remote-access spots. Keep an eye on the Trust blog for discussion questions, forums, and our next book selections!

The plateau is yours for the reading…let's get started.

The Night Shift Your Call May Be Recorded

No one knows exactly how many bat species live on the rugged and remote Paria Plateau, in the Vermilion Cliffs National Monument. In 2013, a team of scientists set up microphones across the Paria to record bat echolocation calls, which are unique to each bat species. The many months of maintaining these stations have been an adventure, but data collection is just the first step. Now, **renowned bat biologist Dr. Michael O'Farrell** is lending his expertise to the review of the Paria Plateau bat data to discover just how many species left messages on these scientific answering machines.

How long have you been tracking bat species in the Southwest?

I began working with bats on September 5, 1964, when I was 20 years old. I initiated the first focused study of free-living bats away from roosts in Nevada using the newest technology then available: mist nets, nylon or polyester mesh nets suspended between two poles like a volleyball net, used to capture bats without harming them. I was a student involved in desert pupfish research and only started bat work as a class project. Not knowing the literature, I continued to net bats through the fall and winter and only after the fact pieced together that bats weren't supposed to be active in north temperate regions in the winter! I was hooked.

How do the microphones work?

The Anabat system uses a broadband electret microphone. This specific system will only display the harmonic with the greatest energy—recording only the loudest calls. Different species produce calls at different energy levels, therefore quiet species may need to get really close to the microphones (within three meters) while others are quite loud and can be detected at distances greater than 100 meters. It's critical to understand these parameters in order to analyze acoustic data.

How many hours of recordings are we talking about?

For the Vermilion Cliffs study, we chose four long-term sites for data collection, all night, every night. To get greater detail for such a large area on a limited budget, we also deployed five mobile units at two-week intervals. By shifting the locations of the mobile units, we were able to sample the range of habitat types across the 198,500 acre Paria Plateau. Although recording is continuous from sunset to sunrise, the periods of silence are not recorded. The algorithm we use is based on sound detected and attributed only to bats. After one or more calls are detected, a period of silence greater than five seconds triggers those calls being saved to a digital file. Continuous calls result in increasingly larger files until the 15-second mark, at which point that block of data is saved to a file. We end up with thousands of small files no longer than 15 seconds each.

How many calls are there in a typical night?

There's no such thing as a typical night. Bat activity varies from site to site and from night to night at any location. An interesting night might be discovering a recording of a new species at a study site. A really interesting night might be a new species for the whole state, or a new behavior for a particular species. We are easily entertained.

How many have you listened to so far?

I don't actually listen to recordings. It's counterintuitive, but acoustic identification of bats is performed visually. It requires sitting at the computer, scanning each and every data file visually and entering a species identification code for each species. As of July 2015, I'd examined 54,225 files from the four stationary sites and 457,568 files from 25 mobile sites—about 130 hours of work. I'm about halfway through two years of data.

What's your set-up for analyzing the recordings?

I'm locked at my computer, staring intently at the screen in total concentration.

The Pallid bat (*Antrozous pallidus*), one of 19 species discovered so far on the Paria Plateau. Pallid bats emit a skunk-like odor that may be used as a defense mechanism. BRUCE D. TAUBERT, ARIZONA GAME & FISH DEPARTMENT

One cannot do this for long periods of time. Usually, I can do about 1600 files per hour and I have done as many as 11,500 files in a single day. One season, I processed over 750,000 files and it took several months before I could sit down and maintain concentration for more than a half hour at a time!

How can you tell bat species apart?

Simply put, I use the time and frequency of the call to identify the bat species, then look at the frequency range and shape of calls to tell species apart. In reality, it is much more complex—I have to look at the range in variation and how calls change depending on surroundings and specific behavior. Each species has a distinct vocal pattern, but it's common for individual species within a given genus to have similar shapes but different frequency ranges. Bats species that are closely related often sound more alike. Larger species within a genus might use vocalizations at lower frequency ranges than small species—imagine a tall person with a deep voice and small person with a high-pitched voice. When this occurs, each species would differ from the next in size by about 8-10 kHz.

What have you discovered so far?

We've recorded 19 species of bats over the first year of the study. Among these are the smallest and largest species in the United States: the parastrelle (*Parastrellus hesperus*) and the mastiff bat (*Eumops perotis*), respectively. There are three tree-roosting migratory species: the silver-haired bat, red bat, and hoary bat. There are also three related species that may be considered rare or of special concern: Townsend's big-eared bat, the spotted bat and Allen's big-eared bat.

Is this concentration of species unusual?

Species diversity is high within the monument, primarily due to habitat diversity, specific habitat mosaic, and proximity to the Colorado River drainage.

Why are bats an important conservation focus?

Bats are the only mammals that fly. They fill a wide variety of feeding niches, similar to that of birds, and reflect, essentially, the night shift. They are long-lived with low reproductive potential and tend to roost in large numbers, which makes them vulnerable to vandalism and other disturbances, and slow to recover. In the desert Southwest, they are important cyclers of energy and nutrition. Among the insectivores, they play a big role in pest control, particularly in forests.

Final results of the study, a partnership between the Grand Canyon Trust, Friends of The Cliffs and the Bureau of Land Management, are expected in early 2016. The study is made possible by a grant from the National Landscape Conservation System.

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Members Make Our Work Possible!

Meet Amy Prince

FROM: Flagstaff, Arizona
MEMBER SINCE: 2012

FAVORITE PLACE ON THE COLORADO PLATEAU:
There are so many! I love the moment I see the Vermilion Cliffs in the distance when driving Highway 89 from Flagstaff.

WHY I GIVE:
I donate because I see the results of the Trust's work: getting more citizen scientists involved, raising awareness of critical issues affecting our fragile desert home, fostering alliances between stakeholders, partnering with agencies to incorporate science into land management.

GETTING OUT ON THE LAND:
In 2010, I started volunteering with the Trust, documenting plants at springs in the Vermilion Cliffs area. I then decided to do a Trust project as my master's thesis in botany. The Trust is helping create long-term, sustainable connections between people and the Colorado Plateau landscape, and I want to be a part of that!

Thank you, Amy!